

## Utilization of labor resources in Japan and the United States

*On the basis of U.S. definitions, Japan's unemployment rate surpassed the U.S. rate for the first time in 2000; expanded measures show a much greater gap between the two countries' underutilization rates*

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Studies comparing unemployment rates in the United States and Japan on the basis of pre-1994 U.S. definitions and concepts of unemployment have engendered considerable debate concerning procedures for adjusting the rates for comparability across national boundaries. The debate can be boiled down into the following two points: (1) Japan's official unemployment rate was being understated because the Japanese definition of unemployment was quite different from those of other developed countries. (2) Japan's expanded unemployment rate, in which the scope of unemployment was enlarged to include other forms of labor underutilization, was relatively high among developed countries, compared with its low official unemployment rates.

In opposition to the first argument, many labor economists asserted that Japan's official unemployment rate was changed only slightly by adjustments based on U.S. definitions and concepts and that the rate was well below the U.S. official unemployment rate even after the adjustment. These same economists agreed, however, with the second argument and recognized that Japan's labor market was not as efficient as the official unemployment rate indicated. The reason for this gap, they maintained, was the existence of a relatively large degree of slack in the labor pool, consisting of workers who were pushed into hidden unemployment during recessions (for example,

discouraged workers).

During the decade of the 1990s, economic conditions in both the United States and Japan changed dramatically. At the beginning of 2001, the U.S. economy had experienced a long-term expansion that began in March 1991,<sup>1</sup> and the official unemployment rate had fallen during that period, to just over 4 percent. By contrast, Japan's economy has experienced an extended downturn since 1991, when the asset bubble burst,<sup>2</sup> and although it underwent a small cyclical upturn from 1994 to 1997, it again turned downward from 1997 to 1999.<sup>3</sup> It is often said that this long-term recession was caused by the fall of real-estate and stock prices and a reduction in lending by financial institutions.

Japan's official unemployment rate has soared during the same period. At the beginning of 2001, it was approaching 5 percent, a figure higher than the official U.S. unemployment rate at the time.

Reflecting the long-term downturn of Japan's economy, "restructuring" within Japanese industries has brought higher unemployment, especially among white-collar workers.<sup>4</sup> Some Japanese economists argue that the country's well-known "long-term employment system"<sup>5</sup> can no longer be sustained and that job security went by the wayside during the past decade.

Still, no rigorous comparison has been made of unemployment rates in these countries on the

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basis of the 1994 revisions to U.S. definitions and concepts. It may be that changes in the U.S. definition of unemployment will have a large impact on the comparison. Furthermore, the U.S. definitions of the expanded measures of unemployment, U-1 through U-6, were changed in 1995, and no comparisons have been made on the basis of these new concepts. The analysis presented in this article builds upon earlier work by Constance Sorrentino published in the *Review*; a synopsis of Sorrentino's findings for the pre-1994 period is given in the appendix.

In this article, data used in both countries are described, and a brief outline of the revisions to the U.S. Current Population Survey (CPS) is given. Next, Japan's unemployment rates (including expanded ones) are adjusted to conform with current U.S. definitions and concepts, and the U.S. and Japanese rates are compared. Finally, the underutilization of Japan's labor resources and its implications on the structure of the labor market are examined.

## Data resources and CPS revisions

*Official unemployment rate.* In the United States, the official unemployment rate is reported every month by the Bureau of Labor Statistics, based on data collected in the CPS.<sup>6</sup> The latest revisions to the CPS were carried out in 1994.<sup>7</sup> The revisions introduced had only a minor impact on the U.S. unemployment rate, even though some definitions, the questionnaires, and the data collection methods were revised markedly. Both the former and current definitions of unemployment are shown in exhibit 1.

In Japan, the official unemployment rate is reported every month in the Labor Force Survey (hereafter, "Regular Survey") conducted monthly by the Statistics Bureau of the Ministry of Public Management, Home Affairs, Posts and Telecommunications.<sup>8</sup> The official definition of unemployment in Japan also is shown in exhibit 1.

Two methods of adjustment might be used to compare official unemployment rates in the United States and Japan. In one, Japan's official unemployment rate would be adjusted to match the U.S. definitions and concepts; in the other, the U.S. official unemployment rate would be adjusted to match Japan's. The latter adjustment, however, is not possible.

The Japanese Regular Survey's questionnaire is not a parallel of the CPS survey and is not sufficient to adjust Japan's official unemployment rate to U.S. definitions and concepts. Therefore, the results of the Regular Survey do not facilitate any meaningful comparison. Accordingly, to adjust the Japanese unemployment rate to U.S. Concepts, it is necessary to use data from the Special Survey of the Labor Force Survey (hereafter, the "Special Survey"), conducted in February and August every year by the Statistics Bureau.<sup>9</sup> The Special

Survey complements the Regular Survey by interviewing persons outside the labor force and provides more detailed information on their desire to work, reasons for giving up their job search, and past jobseeking activities.

Many labor economists used to worry that the results for February might not match those for another month, because February is on the near end of both the Japanese fiscal year and the country's school year. It is possible to adjust Japan's unemployment rates for August by using data from the Special Surveys of 1999 and 2000, so, at least for those years, the results of February and August can be compared.<sup>10</sup> Such a comparison indicates that no serious differences exist. Therefore, the February results are just as valid as the August ones, and they are used in this analysis.<sup>11</sup>

In contrast, it is impossible to adjust the official U.S. unemployment rate to Japan's definitions and concepts. In order to make such an adjustment, more detailed questions concerning jobseeking activities by unemployed persons in the most recent week and past job applications by persons outside the labor force would need to be added to the CPS questionnaire.

*Supplementary unemployment rates.* In the United States, in addition to the official unemployment rate, supplementary measures of labor underutilization are constructed regularly on the basis of the CPS. These measures, originally labeled U-1 through U-7, were reported every quarter from 1976 through 1993. U-6 takes account of persons working part time for economic reasons, while U-7 encompasses discouraged workers. Their content is shown in exhibit A-1 in the appendix.<sup>12</sup>

The seven alternative measures were replaced by six (U-1 through U-6) in October 1995. These six measures are reported every month in the CPS results. Their content is shown in exhibit 2.<sup>13</sup> Only U-3 through U-6 are considered in this article. U-3 is the official U.S. unemployment rate, while U-4, U-5, and U-6 successively add discouraged workers, all other "marginally attached" workers, and persons working part time for economic reasons.

Under the 1994 CPS revision, the definition of "discouraged workers" was changed, and a new concept of workers "marginally attached" to the labor force was introduced. The former and current definitions of "discouraged workers" are presented in exhibit 3, as is the definition of "marginally attached workers."

In Japan, supplementary measures of unemployment rates such as U-1 through U-6 are not reported regularly or officially in either the Regular Survey or the Special Survey, because the concepts of discouraged workers, marginally attached workers, and persons working part time for economic reasons are not used officially.

*Discouraged workers (added at U-4).* According to the earlier definition, discouraged workers were persons outside

## Exhibit 1. Comparison of definitions and concepts of official unemployment in the United States and Japan

United States	Japan
<p>Definitions and concepts before 1994 CPS revision:</p> <p>Persons who are not working, but who are currently available for work and who actively sought a job within the last 4 weeks</p> <p>Persons who are on layoff</p> <p>Persons who are waiting to start a new job within 30 days and are currently available for work</p> <p>Definitions and concepts after 1994 CPS revision:</p> <p>Persons who are not working, but who are currently available for work and who actively sought a job within the last 4 weeks, including persons who are waiting to start a new job within 30 days and who have searched for work within the last 4 weeks.</p> <p>Persons who are on layoff</p>	<p>Persons who are not working at all in the reference week, but who are currently available for work and who actively sought a job in the reference week</p> <p>Persons who are awaiting evaluation of previous employment applications</p>

SOURCE: U.S. information from Sharon R. Cohany, Anne E. Polivka, and Jennifer M. Rothgeb, "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings*, January 1994, pp. 13-35; Japanese information from Labor Force Survey, Statistics Bureau, Tokyo.

## Exhibit 2. Alternative measures of unemployment and other forms of labor resource underutilization, U-1 through U-6

Rate	Definition	Rate	Definition
U-1	Long-duration unemployment rate: Persons unemployed 15 or more weeks ÷ civilian labor force	U-5	Rate adding marginally attached workers: Total unemployed persons + discouraged workers + all other marginally attached workers ÷ civilian labor force + all marginally attached workers
U-2	Job loser rate: Job losers + persons who completed temporary jobs ÷ civilian labor force	U-6	Rate encompassing persons working part time for economic reasons: Total unemployed persons + all marginally attached workers + persons working part time for economic reasons ÷ civilian labor force + all marginally attached workers
U-3	Official unemployment rate: Total unemployed persons ÷ civilian labor force		
U-4	Rate adding discouraged workers: Total unemployed persons + discouraged workers ÷ civilian labor force + discouraged workers		

SOURCE: John E. Bregger and Steven E. Haugen, "BLS introduces new range of alternative unemployment measures," *Monthly Labor Review*, October 1995, pp. 19-26.

the labor force who wanted to work and who gave market-related reasons for giving up their job search; their availability for a job was presupposed. Many, however, criticized this definition. The most frequent criticism was that measuring the number of discouraged workers involves subjective criteria. In other words, one's desire for work and one's perceptions of the chance of finding a job are subjective matters and depend on the respondent's state of mind.<sup>14</sup> The critics doubted that all discouraged workers were strongly attached to the labor market.<sup>15</sup>

The objective in changing the definition of "discouraged workers" was to lessen the subjectivity and arbitrariness of the measure. Under the new definition, for persons to be classified as discouraged, they must state explicitly that they are currently available for work, and they must have engaged in some job search activities within the past year. In addition, they must more explicitly satisfy the conditions required in the former definition. To confirm whether a person outside the labor force who desires work is currently available for a

**Exhibit 3. Comparison of former and current definitions of expanded unemployment**

Category	Former definition	Current definition
Discouraged workers	Persons who are not currently looking for a job because they feel that their search would be in vain, based on the following job-market-related reasons (believes no work available in line of work or geographical area; could not find any work; lacks necessary schooling, training, skills, or experience; employer thinks applicant is too young or too old; other typical discrimination) and who want and are available for work	Persons who are not currently looking for a job because they feel that their search would be in vain, based on the following job-market-related reasons (believes no work available in line of work or geographical area; could not find any work; lacks necessary schooling, training, skills, or experience; employer thinks applicant is too young or too old; other typical discrimination), who explicitly want and are currently available for work, and who have searched for work in the previous year (except the previous 4 weeks)
Marginally attached workers	None	Discouraged workers, plus other marginally attached workers, defined as persons who are not currently looking for a job because they feel that their search would be in vain, based on the following other-than-job-market-related reasons (reasons such as child care problems, family responsibilities, and transportation problems), who explicitly want and are currently available for work, and who have searched for work in the previous year (except the previous 4 weeks)

SOURCE: Sharon R. Cohany, Anne E. Polivka, and Jennifer M. Rothgeb, "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings*, January 1994, pp. 13–35.

job, the person is asked, "Last week, could you have started a job if one had been offered?" Formerly, the person's availability was inferred from responses to other questions.

The impact of the revisions on estimates of the number and nature of discouraged workers was quite large. The estimated number of discouraged workers was reduced by approximately half, and the individuals remaining were judged to be those more closely attached to the labor market.<sup>16</sup>

*Marginally attached workers (added at U-5).* Discouraged workers are a subset of a larger group of workers who are not in the labor force, but who are considered marginally attached to the labor market. This larger group, described simply as "marginally attached workers," consists of persons outside the labor force who desire to work, who are

currently available for a job, who have searched for a job in the past year, and who give either job market-related reasons or other reasons (such as the unavailability of child care) for abandoning their job search.

*Part time for economic reasons (added at U-6).* Before the 1994 CPS revisions, for part-time workers to be classified as persons working part time for economic reasons, they had to be deemed desirous of, and currently available for, full-time work, but without having had any explicit test of either their desire or their availability for work. After the revisions, it became possible to test these individuals' desire and availability for work explicitly with a redesigned questionnaire. The objective of such explicit testing is to minimize the subjectivity and arbitrariness of the measure.

For part-time workers to be classified as persons working part time for economic reasons, they must state their reasons for working part time, such as slack work, slower business, or an inability to find full-time work. In addition to answering this question, they are asked the following question about their desire and current availability for full-time work: "Last week, could you have worked full time if the hours had been available?" It is reported that, as a result of the revisions, estimates of the number of persons working part time for economic reasons were reduced by approximately 20 percent.<sup>17</sup>

## Adjustment procedures

Because of differences in the two surveys, Japan's official unemployment rate must be adjusted to match current U.S. definitions and concepts. For example, in a procedural difference, the Japanese survey is conveyed to the respondent as a self-administered questionnaire, whereas the U.S. survey is presented in an interview format, with the surveyor questioning the respondent and recording the answers elicited. This difference manifests itself in, among other things, different conceptions of the respondent's availability for work. Adjustment takes account of this disparity, as well as other significant definitional differences.

*Inactive jobseekers.* In Japan, some unemployed persons would not be counted as such under U.S. concepts. Of unemployed persons awaiting evaluation of their job applications, those who submitted their applications within the previous 4 weeks are classified as unemployed under the current U.S. definitions and concepts. Unemployed persons in Japan who are awaiting evaluation of job applications submitted more than 4 weeks previously are considered "inactive jobseekers" by U.S. definitions and should be subtracted from reported official unemployment. This adjustment can be made.

*Jobseekers not in the labor force.* In Japan, some persons classified as not in the labor force are found, under further questioning in the February survey, to be currently available for work and to have sought a job in the previous 2 to 4 weeks. Although enumerated as "not in the labor force," these individuals should be added to reported official unemployment for comparability with U.S. concepts. For the purposes of this article, these individuals are collectively called "jobseekers not in the labor force." However, persons who meet the conditions for being classified as jobseekers not in the labor force, but who are not looking for work because they are homemakers or are attending school, must be excluded from the category on the grounds that they are not currently available for work. This adjustment can be made.

*Persons waiting to start a new job within 30 days.* In addi-

tion to the preceding adjustments, persons waiting to start a new job within 30 days, who are currently available for a job, and who have searched for work within the previous 4 weeks must be added to reported official Japanese unemployment for comparability with U.S. concepts from 1994 onward. (Prior to 1994, this group also was considered to be unemployed in the United States, but without the jobseeking requirement.)

However, recent school graduates who are waiting to start a new job must be excluded from the category, because they have been promised that they will start a new job on April 1. The Japanese would find it strange to consider these persons representative of an underutilization of labor resources.

In the Special Survey, persons waiting to start a new job within 30 days are classified as persons outside the labor force and are surveyed separately from other persons outside the labor force. Accordingly, the category of "jobseekers not in the labor force" also does not include persons waiting to start a new job within 30 days, who are currently available for a job, and who have searched for work within the past 4 weeks.

Through 1993, the Special Survey did not ask persons waiting to start a new job within 30 days about their current availability for a job and their job search activities within the previous 4 weeks. A redesign of the questionnaire and tabulation was introduced into the Special Survey in 1994. Since then, persons waiting to start a new job within 30 days have been asked about their current job availability. However, they are not asked about their job search activities in the previous 4 weeks. Therefore, the survey cannot yield the exact number of individuals classified as persons waiting to start a new job within 30 days, who are not recent graduates, who are currently available for a job, and who have searched for work within the previous 4 weeks. (Individuals with these characteristics would be counted as unemployed under U.S. concepts.)

One compromise solution to this problem is to classify all persons who are waiting to start a new job within 30 days, who are not recent graduates, and who are currently available for work as unemployed.<sup>18</sup> This article unavoidably employs such a classification, adding all these persons to the adjusted unemployed. Accordingly, the adjusted Japanese unemployment figure, undoubtedly, is overestimated to a slight degree.

*Layoff.* In the United States, persons who are on layoff are classified as unemployed. In contrast, in Japan, those laid off are not considered to be unemployed; instead, they are classified as employed—with a job, but not at work.

In Japan, during recessions, if a reduction in operations is necessary, Japanese firms sometimes put employees on a sort of temporary leave in order to reduce working hours. Such absentees remain on the payroll, but usually do not receive their full salary. Most of these employees believe that they will return to work.

Temporary absentees cannot be considered unemployed in Japan, because they are still strongly attached to their job; thus it is not appropriate to classify them as unemployed in this article.<sup>19</sup>

*Current job availability.* In the Japanese Special Survey, prior to 1995, persons classified as unemployed were tested only implicitly on their current job availability. The instructions for filling in the questionnaire, but not the questions themselves, asked persons classified as unemployed to confirm their current job availability. Since 1995, persons classified as unemployed have been tested explicitly on their current job availability. Therefore, from at least that year, Japan's official unemployment might not be overestimated on this point.

*Job search method.* In the United States, in the CPS, persons who answer or place newspaper ads, visit employment offices or businesses, call a firm to inquire about a position, send job applications, or ask friends or family members for job leads are considered to have engaged in an active job search activity and, if they meet the other requisite criteria, are classified as unemployed. Persons who merely read classified advertisements in the newspaper are considered to have engaged in a passive job search activity and are, consequently, not classified as unemployed.<sup>20</sup>

In Japan, in the Special Survey, respondents select from among the following items to characterize their job search activities:

- (a) Applying to a public employment security office or a private employment office
- (b) Examining advertisements or magazines on job vacancies
- (c) Finding out [about jobs] through school or from acquaintances
- (d) Applying to a prospective employer directly
- (e) Preparing to start a business
- (f) Other

Items (a), (c), (d), and (e) are classified as active job search methods. Items (b) and (f), however, are ambiguous: whether they are active or passive seems to depend on whether an overt action has been taken. Therefore, on this score, Japan's official unemployment rate and the adjusted rate may be overestimated.

*Labor force.* In addition to adjusting official unemployment data, it is necessary to adjust Japan's labor force estimates, as reported in the Special Survey, according to U.S. definitions and concepts. The reason for this adjustment is that the labor force figure is used as the denominator in unemployment rate calculations. Adjusting the Japanese labor force estimates

requires unpaid family workers working fewer than 15 hours per week<sup>21</sup> and members of the Self-Defense Forces<sup>22</sup> to be subtracted from the reported labor force figures. Inactive jobseekers also must be subtracted from those estimates, and jobseekers not in the labor force must be added. The number of persons waiting to start a new job within 30 days who are currently available for work, except for recent graduates, is added as well.

*Expanded unemployment rates.* Japan's expanded unemployment rates under the U-4-through-U-6 framework also can be calculated by using data from the Special Survey, because information on persons outside the labor force who desire to work is available and more detailed information on part-time workers is available as well. *Discouraged workers* are persons outside the labor force who desire to work, but who are not looking for a job because they believe that they have no prospect of finding one. *Other marginally attached workers* are persons outside the labor force who desire to work, but who are not looking for a job because they are attending school or keeping house, they have no time to look for a job, they are temporarily ill, or they have other reasons for not looking. All marginally attached workers (including discouraged workers) must be able to take up a job immediately and must have searched for a job within the past year, except for the previous 4 weeks. An interesting issue to be discussed later is whether inactive jobseekers should be included among discouraged workers or marginally attached workers.

## Adjustments and comparisons

The previous section presented the reasons Japan's unemployment rates need to be adjusted for closer comparability with U.S. concepts. In the current section, the adjusted data are provided and compared for the period 1994–2000. First, adjustments are made to the official Japanese unemployment rates. Then adjustments to the expanded rates U-4 through U-6 are addressed.

*Adjusted official unemployment rates.* The details and results of adjusting Japan's official unemployment rate to the U.S. definitions and concepts from 1994 to 2000 for February are shown in table 1 for both sexes, in table 2 for men, and in table 3 for women. Table 1 shows that for both sexes, when U.S. concepts are applied, Japan's official unemployment rate, U-3, is slightly overestimated, with the adjusted rate below the official unemployment rate by 0.2 to 0.3 percentage point. The reason for this difference is that the number of inactive jobseekers subtracted from the unemployed is greater than the sum of the following two additions to the unemployed: (1) persons waiting to start a new job within 30 days who are

currently available for work and who are not recent graduates and (2) the number of jobseekers not in the labor force.

No significant male-female difference appears in the Japanese official unemployment rate, although the rate for men is slightly higher than that for women. Table 2 shows, however, that Japan's official unemployment rate is overestimated for men: U-3 for men is below the official unemployment rate by 0.4 to 0.9 percentage point. The number of male inactive jobseekers—which is more than double the number of female inactive jobseekers—accounts for most of the unemployed men added to the Japanese figures.

By contrast, table 3 shows that when U.S. concepts are applied, the official unemployment rate is slightly underestimated for women: U-3 for women is above the official unemployment rate by 0.2 to 0.4 percentage point. One factor involved in explaining this underestimation is that the number of jobseekers not in the labor force is larger than the number of inactive jobseekers among women. Another factor is the relatively large number of women waiting to start a new job within 30 days who are currently available for work and are not recent graduates.

From these results, we can confirm that there still exists a male-female difference in U-3, but the degree of this difference has become smaller than that estimated by Sorrentino in each of 1984, 1987, 1989, and 1993. One reason for this smaller difference is the reduction by half in the number of persons waiting to start a new job within 30 days, except for recent graduates, because their current job availability is now tested in the survey.

The next several sections present adjustments to the expanded unemployment rates U-4 through U-6. Because discouraged workers are added to the unemployed at U-4, their measurement is discussed first, followed by all marginally attached persons (U-5), and persons working part time for economic reasons (U-6).

*Discouraged workers.* Japan does not have a concept of “discouraged workers,” but something akin to the U.S. concept can be gleaned from the data collected in the Special Survey. Changes in both the U.S. definition in 1994 and the Japanese survey questionnaire in 1997 have important effects on the outcome of the analysis. A further complication is that, for Japan, a decision has to be made on how to treat the aforementioned inactive jobseekers. Some of these persons could be discouraged workers, and whether they are included in that category has a significant impact on the survey results.

In what follows, the method of determining the number of discouraged workers in Japan is described, using the U.S. definition that was revised in 1994. Problems in determining the number who are currently available are addressed, and the inactive jobseekers are discussed. After that, some remarks are made concerning the impact of the change in the U.S.

definition on the estimated number of discouraged workers.

In the Special Surveys, persons not in the labor force are questioned in detail about their desire for work, the last time they sought work, the reasons they are not currently seeking work, and their availability for work. The number of persons who desired work, who sought work in the past year, and who were available for work, but were not seeking it currently because they believed that there was “no prospect of finding a job,” were determined to be the group most closely comparable to discouraged workers in the United States. (See the second column of exhibit 3 for the current U.S. definition.)

Determining the number who were “available for work” was not straightforward prior to 1997. In surveys carried out before that year, these persons were asked, “If you find a job now, can you take it?” The respondents were requested to choose one of the following answers:

- (a) Yes, immediately
- (b) Yes, but later
- (c) No or undecided

Seemingly, an answer “yes, immediately” indicates that the respondent is currently available for work. Persons responding in this way were deemed to be discouraged workers under U.S. concepts if they also met the other criteria of the definition. However, it is possible that some persons who answered “yes, but later” are currently available for work, because they might think that they “can start a job within this week,” but “cannot start a job immediately.” Alternatively, some of those who answered “yes, immediately” might be able start a job more than 1 week later. Thus, the number of discouraged workers who would be counted as that under U.S. concepts remained ambiguous.

In 1997, a minor redesign was introduced into Japan's Special Survey questionnaire that clarified the availability problem. Persons not in the labor force, but who desired to work, would thereafter have to respond with one of the following answers to the question asking them when they could take a job:

- (a) Yes, immediately
- (b) Yes, but later
- (c) Within 2 weeks
- (d) More than 2 weeks later
- (e) No or undecided

Those classified as discouraged workers are now clearly limited to persons who choose “yes, immediately” and who meet the other criteria described.

Besides discouraged workers as just delineated, another group may be discouraged: the inactive jobseekers. Recall that these are persons who have been eliminated from the Japanese unemployed for purposes of approaching compara-

**Table 1.** Japan's alternative measures of unemployment and other forms of labor resource underutilization: U-3 through U-6, February 1994-2000, men and women

[In thousands]

Category	1994	1995	1996	1997	1998	1999	2000
Reported unemployed .....	1,940	1,990	2,240	2,300	2,460	3,130	3,270
Less unemployed who are inactive jobseekers ..	410	410	440	440	490	590	650
Plus jobseekers not in labor force and currently available for work .....	120	120	100	140	130	120	210
Plus persons waiting to start a new job within 30 days <sup>1</sup> .....	100	130	140	110	110	110	150
<b>Adjusted unemployed .....</b>	<b>1,750</b>	<b>1,830</b>	<b>2,040</b>	<b>2,110</b>	<b>2,210</b>	<b>2,770</b>	<b>2,980</b>
Discouraged workers .....	190	330	360	320	350	460	530
Discouraged workers <sup>2</sup> .....	600	740	800	760	840	1,050	1,180
U-4 numerator .....	1,940	2,160	2,400	2,430	2,560	3,230	3,510
U-4 numerator <sup>2</sup> .....	2,350	2,570	2,840	2,870	3,050	3,820	4,160
Marginally attached workers <sup>3</sup> .....	640	870	900	900	980	1,200	1,360
U-5 numerator <sup>3</sup> .....	2,390	2,700	2,940	3,010	3,190	3,970	4,340
Part-time workers for economic reasons .....	1,490	3,330	1,630	1,490	1,780	2,320	2,270
U-6 numerator <sup>3</sup> .....	3,880	6,030	4,570	4,500	4,970	6,290	6,610
Reported labor force .....	64,840	65,020	65,100	66,350	66,450	66,360	66,270
Less family workers working fewer than 15 hours per week .....	430	430	430	420	420	420	380
Less Self-Defense Forces .....	240	240	240	240	240	240	240
Less unemployed who are inactive jobseekers .....	410	410	440	440	490	590	650
Plus jobseekers not in labor force and available for work .....	120	120	100	140	130	120	210
Plus persons waiting to start a new job within 30 days .....	100	130	140	110	110	110	150
<b>Adjusted labor force .....</b>	<b>63,980</b>	<b>64,190</b>	<b>64,230</b>	<b>65,500</b>	<b>65,540</b>	<b>65,360</b>	<b>65,360</b>
U-4 denominator .....	64,170	64,520	64,590	65,820	65,890	65,800	65,890
U-4 denominator <sup>2</sup> .....	64,580	64,930	66,030	66,260	66,380	66,390	66,540
U-5 and U-6 denominator <sup>3</sup> .....	64,620	65,060	65,130	66,400	66,520	66,540	66,720
Reported official unemployment rate (percent) ...	3.0	3.1	3.4	3.5	3.7	4.7	4.9
<b>Adjusted unemployment rate (U-3) .....</b>	<b>2.7</b>	<b>2.9</b>	<b>3.2</b>	<b>3.2</b>	<b>3.4</b>	<b>4.2</b>	<b>4.6</b>
U-4 (percent) .....	3.0	3.4	3.7	3.7	3.9	4.9	5.3
U-4 (percent) <sup>2</sup> .....	3.6	4.0	4.4	4.3	4.6	5.8	6.3
U-5 (percent) <sup>3</sup> .....	3.7	4.2	4.5	4.5	4.8	6.0	6.5
U-6 (percent) <sup>3</sup> .....	6.0	9.3	7.0	6.8	7.5	9.5	9.9
U-4/U-3 .....	1.11	1.17	1.16	1.16	1.15	1.17	1.15
U-4/U-3 <sup>2</sup> .....	1.33	1.38	1.38	1.34	1.35	1.38	1.37
U-5/U-3 <sup>3</sup> .....	1.37	1.45	1.41	1.41	1.41	1.43	1.41
U-6/U-3 <sup>3</sup> .....	2.22	3.21	2.19	2.13	2.21	2.26	2.15

<sup>1</sup> Persons waiting to start a new job within 30 days are currently available for work and do not include recent graduates.

<sup>2</sup> Inactive jobseekers are classified as discouraged workers.

<sup>3</sup> Inactive jobseekers are classified as marginally attached workers.

NOTE: Sums do not necessarily add to totals because of rounding.

SOURCE: Special Survey of the Labor Force Survey, Statistics Bureau, Tokyo.

bility with U.S. concepts, on the grounds that they did not actively seek work in the previous 4 weeks. Because Japan counts them as unemployed, they are not questioned about whether their state of mind can be characterized as "discouraged." It is known, however, that they are available for work and that they looked for work in the previous year. Accordingly, one can reasonably speculate that some of them are not currently looking for a job because they think the search will be in vain.

Because of the absence of specific information on inactive jobseekers, two estimates of discouraged workers are shown in tables 1, 2, and 3. The first does not include any of the inactive jobseekers and comprises only those persons initially classified

as not in the labor force who met all the U.S. criteria for being discouraged workers. The second estimate includes all of the inactive jobseekers as discouraged workers. The estimates are significantly different. For example, including all inactive jobseekers doubles the discouraged-worker estimate for 2000, and the effect is even larger in other years.

Both the former and current U.S. definitions of discouraged workers are presented in exhibit 3. The 1994 change in definition had a large impact on the number of discouraged workers in both the United States and Japan. In the two countries, the number of discouraged workers was drastically reduced, mainly because of the new requirement for having

undertaken a job search in the previous year and for explicitly demonstrating one's current availability for work during the reference week. Therefore, the results of the comparisons set forth here for the period 1994-2000 are quite different in magnitude from the comparisons for the years prior to 1994, as presented in Sorrentino's studies. (See appendix.)

Table 4 illustrates the effect of applying the 1994 CPS defi-

nitions to the Japanese data on discouraged workers. The rows headed "(D)" and "(E)," for men and for women, present the results based on the earlier definition. If all of the inactive jobseekers are excluded, then, in 2000, the number of discouraged workers in Japan under the current definition is only one-quarter of the number that it was under the old definition (140,000, compared with 570,000). If the inactive jobseekers

**Table 2.** Japan's alternative measures of unemployment and other forms of labor resource underutilization, U-3 through U-6, February 1994-2000, men

[In thousands]

Category	1994	1995	1996	1997	1998	1999	2000
Reported unemployed .....	1,100	1,170	1,330	1,350	1,510	1,890	2,040
Less unemployed who are inactive jobseekers .....	280	270	310	310	350	430	470
Plus jobseekers not in labor force and currently available for work .....	30	20	20	30	30	40	60
Plus persons waiting to start a new job within 30 days <sup>1</sup> .....	30	40	40	30	40	40	60
<b>Adjusted unemployed .....</b>	<b>880</b>	<b>960</b>	<b>1,080</b>	<b>1,100</b>	<b>1,230</b>	<b>1,540</b>	<b>1,690</b>
Discouraged workers .....	40	90	90	70	80	140	140
Discouraged workers <sup>2</sup> .....	320	360	400	380	430	570	610
U-4 numerator .....	920	1,050	1,170	1,170	1,310	1,680	1,830
U-4 numerator <sup>2</sup> .....	1,200	1,320	1,480	1,480	1,660	2,110	2,300
Marginally attached workers <sup>3</sup> .....	340	410	440	430	470	630	670
U-5 numerator <sup>3</sup> .....	1,220	1,370	1,520	1,530	1,700	2,170	2,360
Part-time workers for economic reasons .....	520	950	610	550	690	890	840
U-6 numerator <sup>3</sup> .....	1,740	2,320	2,130	2,080	2,390	3,060	3,200
Reported labor force .....	38,860	38,840	39,070	39,610	39,590	39,690	39,600
Less family workers working fewer than 15 hours per week .....	40	40	40	40	40	40	30
Less Self-Defense Forces .....	230	230	230	230	230	230	230
Less unemployed who are inactive jobseekers .....	280	270	310	310	350	430	470
Plus jobseekers not in labor force and available for work .....	30	20	20	30	30	40	60
Plus persons waiting to start a new job within 30 days .....	30	40	40	30	40	40	60
<b>Adjusted labor force .....</b>	<b>38,370</b>	<b>38,360</b>	<b>38,550</b>	<b>39,090</b>	<b>39,040</b>	<b>39,070</b>	<b>38,980</b>
U-4 denominator .....	38,410	38,450	38,640	39,160	39,120	39,210	39,120
U-4 denominator <sup>2</sup> .....	38,690	38,720	38,950	39,470	39,470	39,640	39,590
U-5 and U-6 denominator <sup>3</sup> .....	38,710	38,770	38,990	39,520	39,510	39,700	39,650
Reported official unemployment rate (percent) .....	2.8	3.0	3.4	3.4	3.8	4.8	5.2
<b>Adjusted unemployment rate (U-3) .....</b>	<b>2.3</b>	<b>2.5</b>	<b>2.8</b>	<b>2.8</b>	<b>3.2</b>	<b>3.9</b>	<b>4.3</b>
U-4 (percent) .....	2.4	2.7	3.0	3.0	3.4	4.3	4.7
U-4 (percent) <sup>2</sup> .....	3.1	3.4	3.8	3.8	4.2	5.3	5.8
U-5 (percent) <sup>3</sup> .....	3.2	3.5	3.9	3.9	4.3	5.5	6.0
U-6 (percent) <sup>3</sup> .....	4.5	6.0	5.5	5.3	6.1	7.7	8.1
U-4/U-3 .....	1.04	1.08	1.07	1.07	1.06	1.10	1.10
U-4/U-3 <sup>2</sup> .....	1.35	1.36	1.36	1.36	1.31	1.36	1.35
U-5/U-3 <sup>3</sup> .....	1.39	1.40	1.39	1.39	1.34	1.41	1.40
U-6/U-3 <sup>3</sup> .....	1.96	2.40	1.96	1.89	1.91	1.97	1.88

<sup>1</sup> Persons waiting to start a new job within 30 days are currently available for work and do not include recent graduates.

<sup>2</sup> Inactive jobseekers are classified as discouraged workers.

<sup>3</sup> Inactive jobseekers are classified as marginally attached workers.

NOTE: Sums do not necessarily add to totals because of rounding.

SOURCE: Special Survey of the Labor Force Survey, Statistics Bureau, Tokyo.

**Table 3.** Japan's alternative measures of unemployment and other forms of labor resource underutilization, U-3 through U-6, February 1994-2000, women

[In thousands]

Category	1994	1995	1996	1997	1998	1999	2000
Reported unemployed .....	840	820	910	940	950	1,240	1,230
Less unemployed who are inactive jobseekers .....	130	140	130	130	140	160	180
Plus jobseekers not in labor force and currently available for work .....	90	90	700	110	100	80	160
Plus persons waiting to start a new job within 30 days <sup>1</sup> .....	60	80	100	80	70	70	90
<b>Adjusted unemployed .....</b>	<b>860</b>	<b>850</b>	<b>950</b>	<b>1,000</b>	<b>980</b>	<b>1,230</b>	<b>1,300</b>
Discouraged workers .....	150	250	260	250	260	320	390
Discouraged workers <sup>2</sup> .....	280	390	390	380	400	480	570
U-4 numerator .....	1,010	1,100	1,210	1,250	1,240	1,550	1,690
U-4 numerator <sup>2</sup> .....	1,140	1,240	1,340	1,380	1,380	1,710	1,870
Marginally attached workers <sup>3</sup> .....	300	480	470	460	500	580	680
U-5 numerator <sup>3</sup> .....	1,160	1,330	1,420	1,460	1,480	1,810	1,980
Part-time workers for economic reasons .....	970	2,380	1,020	940	1,080	1,430	1,440
U-6 numerator <sup>3</sup> .....	2,130	3,710	2,440	2,400	2,560	3,240	3,420
Reported labor force .....	25,970	26,180	26,030	26,740	26,860	26,670	26,670
Less family workers working fewer than 15 hours per week .....	390	390	390	370	370	370	350
Less Self-Defense Force .....	10	10	10	10	10	10	10
Less unemployed who are inactive jobseekers .....	130	140	130	130	140	160	180
Plus jobseekers not in labor force and available for work .....	90	90	70	110	100	80	160
Plus persons waiting to start a new job within 30 days .....	60	80	100	80	70	70	90
<b>Adjusted labor forces .....</b>	<b>25,590</b>	<b>25,810</b>	<b>25,670</b>	<b>26,420</b>	<b>26,510</b>	<b>26,280</b>	<b>26,380</b>
U-4 denominator .....	25,740	26,060	25,930	26,670	26,770	26,600	26,770
U-4 denominator <sup>2</sup> .....	25,870	26,200	26,060	26,800	26,910	26,760	26,950
U-5 and U-6 denominator <sup>3</sup> .....	25,890	26,290	26,140	26,880	27,010	26,860	27,060
Reported official unemployment rate (percent) .....	3.2	3.1	3.5	3.5	3.5	4.7	4.6
<b>Adjusted unemployment rate (U-3) .....</b>	<b>3.4</b>	<b>3.3</b>	<b>3.7</b>	<b>3.8</b>	<b>3.7</b>	<b>4.7</b>	<b>4.9</b>
U-4 .....	3.9	4.2	4.7	4.7	4.6	5.8	6.3
U-4 <sup>2</sup> .....	4.4	4.7	5.1	5.2	5.1	6.4	6.9
U-5 <sup>3</sup> .....	4.5	5.1	5.4	5.4	5.5	6.7	7.3
U-6 <sup>3</sup> .....	8.2	14.1	9.3	8.9	9.5	12.1	12.6
U-4/U-3 .....	1.15	1.27	1.27	1.24	1.24	1.23	1.29
U-4/U-3 <sup>2</sup> .....	1.29	1.42	1.38	1.37	1.38	1.36	1.41
U-5/U-3 <sup>3</sup> .....	1.32	1.55	1.46	1.42	1.49	1.43	1.49
U-6/U-3 <sup>3</sup> .....	2.41	4.27	2.51	2.34	2.57	2.57	2.57

<sup>1</sup> Persons waiting to start a new job within 30 days are currently available for work and do not include recent graduates

<sup>2</sup> Inactive jobseekers are classified as discouraged workers.

<sup>3</sup> Inactive jobseekers are classified as marginally attached workers.

NOTE: Sums do not necessarily add to totals because of rounding.

SOURCE: Special Survey of the Labor Force Survey, Statistics Bureau, Tokyo.

are included, then the decrease is less: about 60 percent of the former number of discouraged workers are still counted (610,000, compared with 1,040,000). Recall that in the United States, the new definition resulted in cutting the number of discouraged workers in half.

The reduction in the estimated number of discouraged workers is a direct result of the testing of respondents' current availability and past job search activities. Both factors contribute to the reduction, but it is difficult to discern the effect of each separately.

The number of discouraged workers estimated on the basis of the current CPS definitions and concepts has increased in Japan in greater proportion than the increase in U-3. Therefore, discouraged workers might seem now to be more closely

connected to the job market as a result of the CPS revisions. In Japan, however, the labor force attachment of discouraged workers has not been examined empirically, so no data are available on what percentage of discouraged workers entered or returned to the labor market or even whether they tested the job market.

*Marginally attached workers.* This group includes discouraged workers and all other persons who wanted a job, who sought work in the previous year, but not the past 4 weeks, and who were currently available for work. That is, the group includes the discouraged, as well as persons who gave other reasons for not seeking work in the past 4 weeks, even though they expressed a desire for a job.

It is easier to decide how to classify inactive jobseekers (unemployed persons awaiting evaluation of job applications submitted more than 4 weeks previously) at this point. Although the Special Survey does not question them further, it can be assumed that inactive jobseekers wanted a job (because they have applied for one) and that they most likely looked for work in the past year (because they are awaiting evaluation of a job application). Also, given that they were initially classified as unemployed in the survey, it can be assumed that they were available for work. Thus, all of the inactive jobseekers are allocated to the marginally attached group (U-5). It is possible that this group is slightly overestimated, because some may indeed be awaiting evaluation of their application for more than a year.

*Part time for economic reasons.* In the Special Survey, part-time workers are not questioned explicitly about their desire or current availability for full-time work. Because, since 1994, U.S. concepts require part-time workers to desire, and to be

available for, full-time work in order to be classified as working part time for economic reasons, it is not possible to determine the precise number of persons working part time for economic reasons in Japan.

In Japan, workers who work fewer than 35 hours in the reference week are classified as part-time workers. They are asked about their reasons for working part time and their desire for full-time work. In this regard, they are requested to choose from among the following answers:

Normal work time is fewer than 35 hours.

- (a) I wish to work 35 or more hours.
- (b) I wish to work fewer than 35 hours.

Reasons imposed by business or employer:

- (c) Slack in businesses
- (d) Other
- (e) Due to own or family condition
- (f) Bad weather
- (g) Other

In this article, part-time workers who choose (a) and (c) are

**Table 4.** Estimated number of discouraged workers in Japan, by sex, February 1994-2000

[In thousands]

Category	1994	1995	1996	1997	1998	1999	2000
<b>Men</b>							
(A) Adjusted official unemployment .....	880	960	1,080	1,100	1,230	1,540	1,690
(B) Discouraged workers, based on the current concepts <sup>1</sup> .....	40	90	90	70	80	140	140
(C) Discouraged workers, based on the current concepts <sup>2</sup> .....	320	360	400	380	430	570	610
(D) Discouraged workers, based on the earlier concepts <sup>1</sup> .....	480	540	510	440	480	560	570
(E) Discouraged workers, based on the earlier concepts <sup>2</sup> .....	760	810	820	750	830	990	1,040
(B)/(A) .....	.05	.09	.08	.06	.07	.09	.08
(C)/(A) .....	.36	.38	.37	.35	.35	.37	.36
(D)/(A) .....	.55	.56	.47	.40	.39	.36	.34
(E)/(A) .....	.86	.84	.76	.68	.68	.64	.62
(B)/(D) .....	.08	.17	.18	.16	.17	.25	.25
(C)/(E) .....	.42	.44	.49	.51	.52	.58	.59
<b>Women</b>							
(A) Adjusted official unemployment .....	860	880	950	1,000	980	1,230	1,300
(B) Discouraged workers, based on the current concepts <sup>1</sup> .....	150	250	260	250	260	320	390
(C) Discouraged workers, based on the current concepts <sup>2</sup> .....	280	390	390	380	400	480	570
(D) Discouraged workers, based on the earlier concepts <sup>1</sup> .....	1,990	2,110	2,270	1,640	1,670	1,880	1,850
(E) Discouraged workers, based on the earlier concepts <sup>2</sup> .....	2,120	2,250	2,400	1,770	1,810	2,040	2,030
(B)/(A) .....	.17	.29	.27	.25	.27	.26	.30
(C)/(A) .....	.33	.46	.41	.38	.41	.39	.44
(D)/(A) .....	2.31	2.48	2.39	1.64	1.70	1.53	1.42
(E)/(A) .....	2.47	2.65	2.53	1.77	1.85	1.66	1.56
(B)/(D) .....	.08	.12	.12	.15	.16	.17	.21
(C)/(E) .....	.13	.17	.16	.22	.22	.24	.28

<sup>1</sup> Inactive jobseekers are not classified as discouraged workers.

<sup>2</sup> Inactive jobseekers are classified as discouraged workers.

SOURCE: Special Survey of the Labor Force Survey, Statistics Bureau, Tokyo.

classified as persons working part time for economic reasons for purposes of comparison with the same U.S. category. The former are asked about their desire for a full-time job, but not about their current availability for full-time work. The latter are asked about neither their desire for a full-time job nor their current availability for full-time work. Therefore, it is possible that the number of persons working part time for economic reasons in Japan is overestimated in relation to U.S. concepts, which, as mentioned earlier, require the person to desire, and be available for, full-time work.

In the Special Survey conducted in 1995, the design of the questionnaire for part-time workers was different from that of other years. In the 1995 Special Survey, the focus was on part-time workers whose normal worktime was fewer than 35 hours per week. These workers were asked not only about their desire for full-time work, but also about their reasons for working fewer than 35 hours. This change in the design of the questionnaire might have induced time to express their desire for full-time work. The number of part-time workers whose normal worktime was fewer than 35 hours and who wished to work 35 or more hours was extraordinarily large. In the 1995 Special Survey, workers who worked fewer than 35 hours in the reference week were requested to choose from among the following answers:

Normal worktime in fewer than 35 hours.

Reasons imposed by business or employer:

- (a) Slack in businesses
- (b) Other
- (c) Due to own or family condition
- (d) Bad weather
- (e) Other

If normal worktime is fewer than 35 hours, why [is that so]?

- (a) I do not wish to work 35 hours  
or  
I wish to work 35 hour or more hours, but [I am unable to because]
- (b) Of bad business conditions
- (c) I cannot find work [for] 35 or more hours
- (d) Of [my] own or [my] family[']s condition
- (e) Other

*Estimates of expanded unemployment rates.* The details and results of calculating U-4 through U-6 for Japan from 1994 to 2000 for February are shown in tables 1, 2, and 3. The relative ratios of expanded unemployment rates to the official unemployment rate, U-3, also are given in these tables.

(1) *U-4 and U-5.* Because of the problems just discussed concerning the classification of inactive jobseekers, it is not possible to determine the precise number of discouraged workers in Japan. Accordingly, the tables show the alterna-

tive unemployment measure U-4 as a range, depending on how discouraged workers are classified.

If inactive jobseekers *are* classified as discouraged workers, then the number of discouraged workers is an upper limit in which the range of discouraged workers is fully expanded. U-4 and U-5 also represent an upper limit.

If inactive jobseekers *are not* classified as discouraged workers, then the number of discouraged workers is a lower limit that falls strictly within U.S. definitions and concepts. U-4 related to the number of such workers also is a lower limit.

If inactive jobseekers *are* classified as discouraged workers, then U-4 is higher than U-3 by 0.9 to 1.7 percentage points for both sexes during the 1994-2000 period. The increase in the number of male inactive jobseekers then contributes significantly to the growth in the number of male discouraged workers. The ratio of U-4 to U-3 for women is slightly higher than that for men.

If inactive jobseekers *are not* classified as discouraged workers for both sexes, then the number of discouraged workers increases from 1994 to 2000 in proportion to the increase in U-3—particularly in 1999 and 2000, when U-3 rose rapidly. U-4 also increases and is higher than U-3 by 0.3 to 0.7 percentage point during that period. The ratio of U-4 to U-3 for women is clearly higher than that for men.

With all inactive jobseekers classified as marginally attached workers, the number of marginally attached workers might be slightly overestimated, because inactive jobseekers who applied for a job more than 1 year before the date of the survey and who did not search for a job during the subsequent year would be included in the count of marginally attached workers. The estimate is then an upper limit for U-5, which in that case is higher than U-3 by 1.4 points for both sexes during the 1994-2000 period. (See U-5/U-3 ratio in table 1.) Also, the increase in the number of male inactive jobseekers contributes significantly to the growth in the number of male marginally attached workers. Except for 1994, during the 1995-2000 period, the relative ratio of U-5 to U-3 for women was slightly higher than that for men.

Some labor economists might imagine that in Japan the number of females classified as marginally attached workers is quite large because many women are homemakers and cannot work in spite of their desire to do so. The figures in the tables, however, contradict these expectations. The number of women who desire work, but who are not seeking a job because they are homemakers, is relatively large in Japan, but most of these women are not currently available for work and have not engaged in jobseeking activities previously. This gap between intention and activity in Japanese women warrants further investigation.

(2) *U-6.* At U-6, persons working part time for economic reasons are added to U-5. For both sexes, the number of per-

sons working part time for economic reasons increased roughly in proportion to the increase in U-3 from 1994 to 2000, except in 1996. The number was especially high in 1999 and 2000, reflecting a concomitant increase in U-3.

More than 60 percent of persons working part time for economic reasons are women, so there is a significant male-female difference in the ratio of U-6 to U-3. Specifically, the ratio for women is much higher than that for men.

## Comparison of United States and Japan

The official U.S. unemployment rate U-3, as well as the alternative measures U-4 through U-6, are shown in table 5 for the period 1994–2000.<sup>23</sup> All of the figures are annual averages. The ratios of the expanded unemployment rates to the official rate also are shown.

For both sexes, as U-3 declined during the period, U-4 through U-6 also declined. U-3 appears to exhibit no significant male-female difference. The ratio of U-4 to U-3 is almost the same for men as for women. There is, however, a significant male-female difference in the ratios of U-5 to U-3 and U-6 to U-3, with the ratios for women clearly higher than those for men. These results imply that in the United States, the probability of falling into the category of “other margin-

ally attached workers” or “persons working part time for economic reasons” is higher for women. Therefore, in the United States, the degree of underutilization of female labor resources may be said to be higher than that of male labor resources.

The rates U-3 through U-6 for the United States and Japan may be compared each year by using the data shown in tables 1, 3, 4, and 5. The comparison requires caution, however, because Japan’s yearly averaged figure is not available and the unemployment rate is affected by economic fluctuations. Although no significant differences are found in the results for February and August in 1999 and 2000, it is still wise to take care when comparing rates.

To eliminate the effects of economic fluctuations, each measure U-3 through U-6 of both countries from 1994 to 2000 was averaged. The results are shown in table 6. Averaged ratios of U-4 through U-6 to U-3 also are shown. There are two cases for Japan’s discouraged workers: in one, inactive jobseekers *are not* classified as discouraged workers; in the other, inactive jobseekers *are* classified as discouraged workers.

Japan’s official unemployment rate is lower than U-3 for the United States, and Japan’s adjusted unemployment rate U-3 also is lower than U-3 for the United States for both sexes together, for men, and for women. Japan’s expanded

**Table 5.** U.S. alternative measures of unemployment and other forms of labor resource underutilization, U-3 through U-6, annual averages, 1994–2000

[In percent]

Rate	1994	1995	1996	1997	1998	1999	2000
<b>Total</b>							
U-3 .....	6.1	5.6	5.4	4.9	4.5	4.2	4.0
U-4 .....	6.5	5.9	5.7	5.2	4.7	4.4	4.2
U-5 .....	7.4	6.7	6.5	5.9	5.4	5.0	4.8
U-6 .....	10.9	10.1	9.7	8.9	8.0	7.4	7.0
U-4/U-3 .....	1.06	1.05	1.05	1.05	1.04	1.05	1.05
U-5/U-3 .....	1.21	1.20	1.20	1.20	1.20	1.19	1.20
U-6/U-3 .....	1.78	1.80	1.79	1.80	1.79	1.77	1.75
<b>Men</b>							
U-3 .....	6.2	5.6	5.4	4.9	4.4	4.1	3.9
U-4 .....	6.6	5.9	5.7	5.1	4.7	4.3	4.1
U-5 .....	7.3	6.6	6.3	5.7	5.2	4.8	4.7
U-6 .....	10.5	9.6	9.2	8.4	7.6	7.0	6.7
U-4/U-3 .....	1.06	1.06	1.06	1.05	1.06	1.05	1.05
U-5/U-3 .....	1.18	1.18	1.18	1.17	1.18	1.18	1.19
U-6/U-3 .....	1.70	1.73	1.71	1.72	1.73	1.71	1.71
<b>Women</b>							
U-3 .....	6.0	5.6	5.4	5.0	4.6	4.3	4.1
U-4 .....	6.3	5.9	5.7	5.2	4.8	4.5	4.3
U-5 .....	7.5	6.9	6.7	6.1	5.6	5.3	5.0
U-6 .....	11.3	10.6	10.2	9.4	8.5	7.9	7.4
U-4/U-3 .....	1.05	1.05	1.05	1.04	1.04	1.04	1.04
U-5/U-3 .....	1.25	1.23	1.23	1.22	1.22	1.21	1.20
U-6/U-3 .....	1.88	1.88	1.88	1.87	1.85	1.82	1.80

SOURCE: Current Population Survey, U.S. Bureau of Labor Statistics and Bureau of the Census.

**Table 6.** Unemployment rates and labor resource underutilization in the United States and Japan, 1994–2000 averages (annual for United States, February for Japan)

[In percent]

Rate	Both sexes		Men		Women	
	United States	Japan	United States	Japan	United States	Japan
Official .....	5.0	3.8	4.9	3.8	5.0	3.7
U-3 .....	5.0	3.5	4.9	3.1	5.0	3.9
U-4 .....	5.2	4.0	5.2	3.4	5.2	4.9
U-4 <sup>1</sup> .....	...	4.7	...	4.2	...	5.4
U-5 <sup>2</sup> .....	6.0	4.9	5.8	4.3	6.2	5.7
U-6 <sup>2</sup> .....	8.8	8.0	8.4	6.2	9.3	10.7
U-4/U-3 .....	1.05	1.15	1.06	1.08	1.04	1.24
U-4/U-3 <sup>1</sup> .....	...	1.36	...	1.35	...	1.38
U-5/U-3 <sup>2</sup> .....	1.20	1.41	1.18	1.39	1.23	1.45
U-6/U-3 <sup>2</sup> .....	1.78	2.31	1.71	1.98	1.86	2.72

<sup>1</sup> Inactive jobseekers are classified as discouraged workers in Japan.

<sup>2</sup> Inactive jobseekers are classified as marginally attached workers in Japan.

Source: United States—Current Population Survey, U.S. Bureau of Labor

Statistics, and Bureau of the Census; Japan—Special Survey of the Labor Force Survey,\* Japanese Statistics Bureau.

unemployment rate encompassing discouraged workers, U-4, is below the U.S. level for both sexes together and for men, even when inactive jobseekers are classified as discouraged workers. However, Japan's U-4 for women is higher than its counterpart in the United States when inactive jobseekers are classified as discouraged workers. The Japanese ratio of U-4 to U-3 is higher than the U.S. ratio for both sexes together, for men, and for women, even when inactive jobseekers are not classified as discouraged workers.

All of these results indicate that even after asking respondents about their current availability for a job and their past job search activities, surveys find that the number of Japanese discouraged workers—especially women—is still relatively large. After taking discouraged workers into account, Japan's underutilization of labor resources is still relatively high compared with that of the United States, especially for women.

Japan's expanded unemployment rate encompassing marginally attached workers, U-5, is below the U.S. level for both sexes, for men, and for women. Japan's relative ratio of U-5 to U-3 is above the U.S. level for both sexes, for men, and for women. With marginally attached workers taken into account, the degree of Japan's labor resource underutilization is also relatively high compared with the U.S. level.

Japan's expanded unemployment rate encompassing marginally attached workers and persons working part time for economic reasons, U-6, is below the U.S. level for both sexes and for men. Japan's U-6 for women is well above the U.S. level.

Japan's ratio of U-6 to U-3 is clearly higher than the U.S. level for both sexes. The ratio of U-6 to U-3 for men is approximately the same as that for the United States. The ratio of

U-6 to U-3 for Japanese women is much higher than that of their U.S. counterparts.

The results regarding U-6 indicate that the number of persons working part time for economic reasons is relatively large in Japan, even if we discount the factor that that number is overestimated in comparison with estimates produced in accordance with U.S. concepts. Japanese women especially have a higher tendency to work part time for economic reasons.

When marginally attached workers and persons working part time for economic reasons are taken into account, Japan's labor resource underutilization is seen to be relatively high compared with that of the United States, especially as regards women. Large numbers of persons working part time for economic reasons contribute to the underutilization of labor resources.

Through the foregoing investigations, it becomes clear that the changes in definitions and concepts of discouraged workers have a large impact on comparisons of unemployment rates in the two countries. Similarly, changes in the definitions and concepts of persons working part time for economic reasons also have a considerable impact on the comparisons.

From the preceding analysis, it becomes evident as well that in Japan there exist gender-related differences in the underutilization of labor resources. Women are more underutilized than men, although less so when the 1994 CPS revisions are taken into account. The analysis also suggests that Japan's labor resources would be seen as more underutilized than U.S. labor resources if the official unemployment rates of both countries were the same. The degree of underutilization of labor resources as measured by U-4 depends on whether one places inactive jobseekers in the group of discouraged workers. However, it is clear that almost all the inactive jobseekers

should be classified as other marginally attached workers at U-5. Nonetheless, more detailed information about inactive jobseekers has not been collected in Japan, and this paucity of information restricts investigations examining the country's underutilization of labor resources.

Another caveat is that persons on temporary leave (discussed earlier in the section on layoffs), persons given little work to do, and temporary workers who do not expect their jobs to last are not included in this analysis of underutilization, because they did not fit into the foregoing framework. Individuals in such situations also form a part of Japan's underutilization of labor resources, and they are discussed in the next section.

### Implications of the comparisons

The differences in the labor market structures of Japan and the United States are reflected in the preceding findings. The explanation given by Sorrentino for these differences is basically valid, but we have to apply her ideas to current conditions, because labor market structures and the surrounding environment have changed since the publication of her articles.

In Japan, for many years large and medium-sized companies have guaranteed the long-term employment of core employees. Although most core employees are men, the number of female core employees has been increasing. The Equal Employment Opportunity Law, enacted in 1985, has intensified this trend.

Most core employees begin working for their employers after graduating from college, and they have to leave at the mandatory retirement age. Many Japanese managers of large and medium-sized companies recognize that the long-term employment system has contributed much to the accumulation of human capital by developing firm-specific skills in core employees. These managers express their intention to maintain the system in the future.

Firms tend to hoard core workers during recessions in order to avoid losing firm-specific skills. Even middle-aged or elderly core employees who did not climb the career ladder can stay on at a firm without losing their jobs, because they are given pseudomanagement posts. This practice can be considered a form of underutilization. Core employees receive a retirement allowance, and sometimes a corporate pension, upon mandatory retirement. The longer the length of tenure, the greater is the award.

It is often said that social institutions have complemented the long-term employment system, so the vested rights and benefits of core employees have been maintained. Japanese managers cannot dismiss core employees freely, because dismissal at will is restricted by legislation. Certain specified conditions must be met to fulfill judicial precedents.<sup>24</sup>

In Japan, retirement benefits are not portable, so the em-

ployee cannot convey his or her rights upon quitting a job before mandatory retirement. Accordingly, worker mobility is greatly restricted.

Many companies were forced to restructure this past decade as Japan experienced some economic sluggishness. Past studies show that in severe recessions, if firms sustain deficits for more than two consecutive terms (usually 2 years), they cannot avoid reducing their staffs.<sup>25</sup> Interestingly, regardless of the country's social institutions, it is possible to reduce the number of core employees because the long-term employment system is based on an implicit contract between employer and employee.

During recession, employers often use the early retirement system as a means of reducing their staffs. Paying extra severance pay induces some core employees to retire at an age younger than the mandatory retirement age. Older employees frequently are forced or persuaded to accept the offer of early retirement. Restraint in hiring recent graduates also is an effective method of reducing the number of core employees, because older core employees have no choice but to retire under the mandatory retirement system.

There is no hard evidence which proves that job security is declining in Japan, but some job losers who were core employees have contributed to the soaring official unemployment rate in Japan. At the same time, opportunities for youths to get a good job are scarce and limited to the time just after graduation from school. Reflecting this scarcity of opportunity, the number of unemployed youths soared during the decade.<sup>26</sup>

Note that core employees protected by the long-term employment system are only about one-fourth of total employment in Japan.<sup>27</sup> In most Japanese small companies, the long-term employment system has not been adopted, although some such companies have tried to adopt it, modeling its use on that in large-sized companies. In general, the level of an employee's skills in a firm depends on the employee's tenure with the firm. Because labor mobility between small companies has been relatively high in Japan, employees have not formed enough firm-specific skills. Many who worked for small companies lost their jobs as a result of restructuring or the business folding. Male non-white-collar workers and female clerks working for small companies are prone to lose their jobs during recessions. They cannot find new jobs easily, because they lack the requisite skills. These job losers have contributed much to the soaring official unemployment rate.

A recent survey supplementary to the Regular Survey investigated the situation of unemployed persons who lost their jobs. The survey revealed that persons older than 45 years, persons who had been in unskilled jobs, and persons who worked for small firms account for a large portion of job losers.<sup>28</sup>

In Japan, the situation of discouraged workers and

those classified as “other marginally attached workers” has not yet been surveyed. Thus, the reason they fell into those categories is not clear, and any explanation thereof is speculative.

As mentioned earlier, in Japan it is possible, but not easy, to reduce the number of core employees of large and medium-sized companies. Reducing the number of nonregular workers, such as part-time workers, temporary workers who do not expect their jobs to last (also called “dispatched workers”), and seasonal workers, is the major method by means of which Japan’s large and medium-sized companies reduce their staffs during recessions. Because women account for the major portion of part-time workers and dispatched workers, and because most of them also are engaged in housework, during recessions they might become discouraged workers or “other marginally attached workers,” bypassing a categorization of “unemployed” altogether.

Also as mentioned earlier, in Japan there are male discouraged workers, although their number is relatively small. The number of male part-time workers and dispatched workers has increased recently. Possibly, many are often seasonally employed as factory workers or construction workers. Some work away from their hometowns in major cities during the winter. They might come back to their hometowns and become discouraged or marginally attached to the labor market when they lose their jobs.

Finally, also worthy of mention is the increase in the number of persons working part time for economic reasons during recession. The reason they fall into such a category is not clear, and, again, whatever explanation is tendered is speculative. In that vein, employers can reduce working hours as a method of coping with recession. In fact, it is easier for employers to reduce employees’ working hours than to reduce the number of workers. Doing so, however, would increase the number of persons working part time for economic reasons during recession.

In Japan, part-time workers are officially defined as workers who work fewer than 35 hours a week. However, many, who also are called *contingent workers* in the United States, work more than 35 hours a week. These individuals are not core employees and are hired under short-term contracts. Women account for the major portion of this type of part-time worker. Such workers might become part-time workers for economic reasons during recession. If so, employers’ strategies accelerate this trend, because, to reduce costs, employers increase the composition of part-time workers and dispatched workers in their employ, instead of decreasing the number of full-time workers.

During the Japanese recession of the past decade, many core regular jobs were abolished. By contrast, many

nonregular jobs were created. Part-time workers replaced core workers through attrition. Obviously, this kind of job creation does not guarantee any improvement in the economic welfare of part-time workers.

In accordance with a phenomenon known as the “added-worker effect,” Japanese women who usually are engaged in housework tend to enter the labor market during recession because their husbands’ wages are reduced. However, most of them cannot find full-time or part-time jobs that satisfy their desired conditions, so they have to engage in part-time jobs with undesirable working conditions. Some are unable to find a job at all and give up searching. These women might become discouraged or might be classified as “other marginally attached workers” without being engaged in part-time work.

Also noteworthy in Japan is the fact that some *men* work part time for economic reasons. There are several possible explanations for their doing so.

Male heads of household who lost their jobs as a result of restructuring or their companies folding are forced to engage in stopgap jobs if they cannot find full-time work after their unemployment insurance benefits run out. Therefore, they become part-time workers for economic reasons.

Some persons who were core workers for large and medium-sized companies have to work after their mandatory retirement because they have to pay back housing loans and because they may have to wait until they reach an older age to receive their full pensions. Full-time opportunities for them are scarce, and they tend to become nonregular workers, such as part-time workers or consultants.

Unemployed men and women who worked for small companies likely are hard pressed to find new jobs because of both their age and outdated skills, so they may find themselves forced to engage in part-time work. It is also difficult for recent graduates to find full-time jobs during a recession, because of restrictions on hiring by employers. Some are accordingly forced to work part time, contrary to what they desire.

In order for a country to utilize labor resources more efficiently, its market mechanisms must work more effectively. That, however, requires some reformation of the labor market, such as promoting the learning of skills, creating jobs, and reducing job search costs. In Japan, data concerning job turnover and labor turnover are scarce, and as a result, the relationship between restructuring and unemployment is not clear. The paucity of data restricts research into how a worker becomes unemployed. More detailed investigations on the activities of the labor force are necessary to implement more effective improvements, as is more detailed research into the activities related to labor slack. □

## Notes

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<sup>1</sup> U.S. business cycle expansions and contractions are reported by the Business Cycle Dating Committee of the National Bureau of Economic Research.

<sup>2</sup> In Japan, stock prices and land prices appreciated greatly during the late 1980s and the beginning of the 1990s. For example, the Nikkei Stock Average 225 reported by Nihon Keizai Shimbun, Inc., recorded 12,556 yen in 1985 and 38,915 yen, its highest value ever, at the end of 1989. Similarly, the Urban Land Price Index reported by the Japan Real Estate Institute (1990 = 100) recorded 61.7 in March 1985 for nationwide commercial areas and 111.7, its highest value ever, in September 1991. The growth rates of both of these indexes exceeded the growth rate of nominal GDP. However, prices have fallen in the 1990s: the Nikkei Stock Average 225 was down to 17,160 yen in 2000, and the Urban Land Price Index also was down, to 51.6 in March 2001.

<sup>3</sup> Japan's business cycle expansions and contractions are determined by the Working Group of Indices of Business Conditions of the Japanese Government Cabinet Office.

<sup>4</sup> In Japan, "restructuring," as applied to private companies, usually means "reducing the number of employees without reforming the firm's management system."

<sup>5</sup> A number of economists use the term "lifetime employment" or "lifetime commitment" instead of "long-term employment." Strictly speaking, "lifetime" is incorrect, because firms do not guarantee employment for the entire lifetime of a worker.

<sup>6</sup> The cps is conducted jointly by the Bureau of Labor Statistics and the Bureau of the Census.

<sup>7</sup> For detailed information on the cps revisions, see Sharon R. Cohany, Anne E. Polivka, and Jennifer M. Rothgeb, "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings*, January 1994, pp. 13–35.

<sup>8</sup> The Statistics Bureau was under the Management and Coordination Agency of the Prime Minister's Office until the beginning of 2001. The change is a result of the reorganization of ministries in the Japanese Government.

<sup>9</sup> The Special Survey was conducted in March until 1983 and in February from 1983 to 1998. Since 1999, it has been conducted semi-annually, in February and August, reflecting the seriousness of employment conditions in Japan.

<sup>10</sup> The August results are not reported in this article, but are available, together with background data, upon request.

<sup>11</sup> Sorrentino pointed out the importance of this observation; see Constance Sorrentino, "Japan's low unemployment: an in-depth analysis," *Monthly Labor Review*, March 1984, pp. 18–27.

<sup>12</sup> The concept of "alternative unemployment rates" was proposed by Julius Shiskin, who pointed out that it was not appropriate to apply the official unemployment rate to every policy objective. (See Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3–10.)

<sup>13</sup> The new measures are explained in John E. Bregger and Steven E. Haugen, "BLS introduces new range of alternative unemployment measures," *Monthly Labor Review*, October 1995, pp. 19–26.

<sup>14</sup> In its report on the cps, the Levitan Commission criticized the definition of discouraged workers and recommended revisions thereto. See Robert L. Stein, "National Commission recommends changes in labor force statistics," *Monthly Labor Review*, April 1980, pp. 11–21.

<sup>15</sup> Paul O. Flaim, "Discouraged workers and changes in unemployment," *Monthly Labor Review*, March 1973, pp. 8–16, established a fairly strong cyclical sensitivity in the number of discouraged workers. Given his result, one might conclude that discouraged workers have strong links to the job market and that they test the market periodically and are ready to jump back into it if they believe that jobs are available. However, Flaim also found that more than half of discouraged workers had not looked for work in more than 1 year and that the majority seldom test the job market. He concluded that only some discouraged workers returned to work or resumed searching for a job. (See Paul O. Flaim, "Discouraged workers: how strong are their links to the job market?" *Monthly Labor Review*, August 1984, pp. 8–11.)

<sup>16</sup> Cohany, Polivka, and Rothgeb used the former and current definitions of "discouraged workers," cps data, and the cps parallel survey and found that the estimated number of discouraged workers was reduced to about two-fifths the former count by the revision. They concluded that requiring jobseeking activity within the previous year contributed to a substantial lowering of the estimate of the number of discouraged workers. (See Cohany, Polivka, and Rothgeb, "Revisions in the Current Population Survey.") Monica D. Castillo, "Persons outside the labor force who want a job," *Monthly Labor Review*, July 1998, pp. 34–42, pointed out that in the United States, only 45 percent of persons classified as discouraged workers in 1994 had become a part of the labor force in 1995, but the labor force attachment of discouraged workers had become stronger than before.

<sup>17</sup> See Cohany, Polivka, and Rothgeb, "Revisions in the Current Population Survey."

<sup>18</sup> The Ministry of Labor in Japan (which became the Ministry of Health, Labor and Welfare in 2001) employed this method in order to compare the official unemployment rates in the United States and Japan in 1999. See "White Paper on Labor" (Tokyo, Ministry of Labor, 1999), in Japanese; English summary available on the Internet at <http://www.jil.go.jp/bulletin/summary/index.htm>.

<sup>19</sup> According to International Labor Office recommendations, persons who are laid off, but who have a weak attachment to the labor force (as in the United States), should be counted as unemployed, whereas those who are laid off, but who have a strong attachment to the labor force (as in Japan), should be enumerated as employed. (See "Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the Thirteenth International Conference of Labour Statisticians (October 1982)," on the Internet at <http://www.ilo.org/public/english/bureau/stat/res/ecacpop/htm>.)

<sup>20</sup> See Constance Sorrentino, "International unemployment rates: how comparable are they?" *Monthly Labor Review*, June 2000, pp. 3–20.

<sup>21</sup> According to the U.S. definitions, unpaid family workers who work fewer than 15 hours per week are outside the labor force. Although, in Japan, the category of "family workers" might include some paid family workers, all family workers who worked fewer than 15 hours per week are subtracted from the labor force in this adjustment.

<sup>22</sup> The number of members in the Self-Defense Forces can be obtained from the "Defense White Paper," published annually by the Defense Agency. In the Regular Survey, Self-Defense Forces members who reside in an official residence provided by the Defense Agency are included in the labor force, but in the Special Survey, they are not. In order to determine civilian unemployment rates, the number of mem-

bers of the Self-Defense Forces must be subtracted from the labor force. However, in the Special Survey, Self-Defense Forces members who reside in private housing might be included in the labor force. In consultations with the Statistics Bureau of Japan, Sorrentino learned that half of the members of the Self-Defense Forces reside in private housing. (See Constance Sorrentino, "International unemployment indicators, 1983-93," *Monthly Labor Review*, August 1995, pp. 31-50.)

<sup>23</sup> U.S. data are from the BLS website, <http://www.bls.gov/webapps/legacy/cpsatab8.htm>, which gives historical data on these measures. The most recent data are found at <http://www.bls.gov/news.release/empst.t08.htm>. Data on the number of persons working part time for economic reasons, by sex, are not available at the website, so information was provided directly by the Bureau of Labor Statistics.

<sup>24</sup> In Japan, managers can legally dismiss employees with prior notice, but judicial precedents require objective and rational reasons that satisfy the following conditions: (1) the dismissal must be shown to be necessary; (2) efforts must have been undertaken to avoid dismissal; (3) the selection of those dismissed must have been carried out on a rational basis; and (4) the dismissal procedure must have been "appropriate."

<sup>25</sup> See, for example, Kazuo Koike, *Shigoto no Keizaigaku* (To-

kyo, Toyo Keizai Shinposya), 1991; and T. Suruga, "Nihon Kigyo no Koyo Tyosei," in T. Suruga and H. Chuma, *Koyo Kanko no Henka to Zyosei Rodo* (Tokyo, Tokyo Daigaku Shuppankai, 1997).

<sup>26</sup> James Brooke, "Young People Feel a Chill in Japan's Hiring Season," *The New York Times*, Apr. 1, 2002, p. A3.

<sup>27</sup> According to the Regular Survey conducted in 2000 in Japan, there were 31,970,000 men employed in the nonagricultural sector. Out of that number, only 8,430,000 were working in companies employing 500 or more workers. (The figures include part-time workers.)

<sup>28</sup> A survey conducted in August and October 1998 by the Statistics Bureau of Japan supports this idea. The survey was a supplement to the Labor Force Survey and examined the job search activities of unemployed persons who lost or left their jobs in the previous year. The survey revealed that among 1,840,000 unemployed persons, 1,050,000 were men and 790,000 women. Also,

1. of persons older than 45 years, 490,000 men and 230,000 women lost or left their jobs;
2. of persons who were engaged in jobs that did not require skilled labor, 703,000 male non-white-collar workers, 240,000 female clerks, and 230,000 female non-white-collar workers lost or left their jobs; and
3. of persons who worked for small firms with fewer than 100 employees, 600,000 men and 430,000 women lost or left their jobs.

## APPENDIX: Sorrentino's studies

This appendix briefly examines some of the work of Constance Sorrentino, an economist at the Bureau of Labor Statistics. Sorrentino has published many studies comparing international unemployment rates.<sup>1</sup> Her studies are representative of the field, and her results are accepted widely. Her studies on Japan are based on the former definitions and concepts of the CPS; she has not published any international studies based on the 1994 U.S. definitions.

In her 1983 article, Sorrentino compared the official unemployment rates, known as U-5 at the time, of the United States and Japan from 1977 through 1980, using annual average data from the CPS and using the March Japanese Special Survey. She also compared alternative unemployment rates U-6 and U-7 in both countries.

Sorrentino pointed out that Japan's official unemployment rate was underestimated slightly, but was still far below the U.S. official unemployment rate, even after the adjustment to U.S. definitions and concepts. She also pointed out that there was a noticeable difference in the adjusted unemployment rates for men and women in Japan. This difference indicated that Japan's official unemployment rate was overstated for men and understated for women. Sorrentino proposed that the reason for the difference was that, in Japan, men account for most inactive jobseekers who are reported as unemployed, while women account for the majority of jobseekers who are not in the labor force.

Sorrentino also demonstrated that broadening the concept of unemployment to account for persons working part time for economic reasons (U-6) did not reduce the difference between the United States and Japan, but that further broadening the concept to include discouraged workers (U-7) made the unemployment rates of the two countries converge. This means that Japan had larger proportionate increases in unemployment, as measured by U-7.

In interpreting these results, Sorrentino cautioned that, because

March is a special month in Japan, Japanese firms traditionally take on new workers on April 1, and new graduates are prepared to enter the labor market on that date.

Sorrentino updated her results several times. In 1987, she analyzed data from the CPS and data from the Special Survey conducted each February from 1984 through 1986. In 1989, the data she analyzed were from the CPS and from the Special Survey conducted each February from 1984 through 1988. Together with Elder, in 1993 she analyzed data from the CPS and from the Special Survey conducted each February from 1984 through 1992. All of these studies confirmed her initial findings and, using the February data for Japan, left her conclusions basically unchanged.

In 1993, Sorrentino compared the alternative unemployment rates U-1 through U-7 of nine developed countries, including Japan. (Exhibit A-1 gives the definitions of the seven rates.) Using data from February 1990 for Japan and 1989 for the other countries, she pointed out that Japan's adjusted official unemployment rate U-5 was still the second lowest among the countries studied. She also demonstrated that Japan's expanded unemployment rate U-7, encompassing persons working part time for economic reasons and discouraged workers, was double the U-5 rate for men and quadruple U-5 for women.

In 1995, Sorrentino compared alternative unemployment rates U-1 through U-7 for 10 developed countries, including Japan, from 1983 to 1993. She expanded the length of the period studied because measures such as U-1 through U-7 have a large cyclical component and international relationships might change, depending on the phase of the business cycle in each country. The results reinforced her 1993 findings.

Sorrentino gave an explanation for Japan's higher relative ratio of U-7 to U-5: under the country's long-term employment system,

## Exhibit A-1. Alternative unemployment rates, U1 through U7

Rate	Definition	Rate	Definition
U-1	Long-duration unemployment rate: Persons unemployed 15 or more weeks ÷ civilian labor force	U-5	Official unemployment rate: Total unemployed persons ÷ civilian labor force
U-2	Job loser rate: Job losers ÷ civilian labor force	U-6	Rate encompassing persons working part time for economic reasons: Full-time jobseekers + ½ × part-time jobseekers + ½ × persons working part time for economic reasons ÷ civilian labor force – ½ × part-time labor force
U-3	Adult unemployment rate: Unemployed persons aged 25 years and older ÷ civilian labor force aged 25 years and older	U-7	Rate adding discouraged workers: U-6 plus discouraged workers in the numerator and denominator
U-4	Unemployment rate for full-time workers: Unemployed persons seeking full-time jobs ÷ full-time labor force		

SOURCES: Constance Sorrentino, "International comparisons of unemployment indicators," *Monthly Labor Review*, March 1993, pp. 3–24; and John E. Bregger and Steven E. Haugen, "BLS introduces new range of alternative unemployment measures," *Monthly Labor Review*, October 1995, pp. 19–26.

core workers employed by large and medium-sized companies are mostly male and regular full-time workers shielded from unemployment through employment adjustments, while part-time workers are mostly female or older workers. Such part-time workers tend to exit the labor market and leave the labor force without falling into a categorization of "unemployed."

Sorrentino maintained that a substantial part of Japan's labor underutilization was attributable to discouraged workers and other individuals who withdrew from the labor force and that these forms of labor slack did not show up in the country's official unemployment rate. She concluded that Japan's labor market was unique in its

institutions and attitudes and that its structure was quite different from that of the United States.

One important fact relevant to Sorrentino's conclusions is that the magnitude of the male-female difference in the adjusted official unemployment rates had declined since 1984. The reduction in the number of jobseekers not in the labor force contributed to the reduction in the male-female difference. The number of such jobseekers in 1984 was one-third that in 1980. The Special Survey was conducted in March in 1980 and February in 1984. The number of jobseekers not in the labor force was relatively small in February, especially among women.

### Footnote to the appendix

<sup>1</sup> See, for example, her *Monthly Labor Review* articles, "Japan's low unemployment: an in-depth analysis," March 1984, pp. 18–27; "Japanese unemployment: BLS updates its analysis," June 1987, pp. 47–53; "Adjusted Japanese unemployment rate remains below 3 percent in 1987–88," June 1989, pp. 36–38; "International compari-

sons of unemployment indicators," March 1993, pp. 3–24; "International unemployment indicators, 1983–93," August 1995, pp. 31–50; and, together with S. Elder, "Japan's low unemployment: a BLS update and revision," October 1993, pp. 56–63.