

## International unemployment indicators, 1983-93

*Sweden has the largest increase in labor underutilization for 1983-93 when part-time work for economic reasons is taken into account; Japan's rate increases most when discouraged workers are added*

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Seven unemployment indicators, known as U-1 to U-7, for nine major industrial countries were presented in the March 1993 issue of the *Monthly Labor Review*.<sup>1</sup> The data in the initial analysis covered just the year 1989. The indicators have a large cyclical component, and international relationships might change, depending on the phase of the business cycle in each country. To investigate these relationships further, this article presents data for a series of years, spanning relatively high and low unemployment periods from 1983 to 1993.

The sequence of indicators U-1 to U-7 illustrates a range of unemployment measures going from a very narrow to a very broad view. Under this framework, U-5 is the official, usually cited U.S. unemployment rate, referred to as the *conventional measure* here. U-1 through U-4 narrow in on certain types of unemployment that reflect parts of U-5, while U-6 and U-7 portray broader concepts of underutilization than U-5, respectively bringing into consideration persons working part time for economic reasons and discouraged workers.

In general, this article reinforces the findings of the 1993 one. The principal finding of that study was that Japan and Sweden, the countries with the lowest unemployment rates as conventionally measured, had by far the largest increases when the definition was expanded to include persons working part time for economic reasons and discouraged workers. This continued to be the case. The current study shows that,

in times of recession and recovery alike, the Japanese unemployment rate consistently tripled when these additional measures of underutilization of labor were incorporated. For Sweden, the most inclusive indicator more than doubled until 1992-93, when labor market conditions deteriorated drastically and the conventional rate jumped sharply, resulting in some closing of the differential between the conventional and expanded rates.

Sweden's unemployment rate, which was the lowest of all countries in the earlier study, has subsequently risen to unprecedented postwar levels due to a severe recession. In 1993, Sweden's unemployment rate of 9.3 percent, as conventionally defined, surpassed the U.S. rate for the first time. Understanding the effect of Sweden's pioneering programs for retraining and employing the unemployed is important to gaining an appreciation of that country's labor market situation. The addition of persons in labor market programs further increased Sweden's already high 1993 conventional unemployment rate to 14 percent. Of course, other countries have persons in labor market programs, but their proportion of the labor force is small compared with Sweden's.

In the earlier study, Sweden maintained the lowest rates for most of the indicators, even when labor market program participants were added. In this new study, Japan replaces Sweden as the country with the best labor market performance across the entire spectrum of indicators in 1992-93.

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### Upcoming changes in alternative indicators

From 1976 to 1993, the Bureau of Labor Statistics published a range of indicators known as U-1 to U-7. The framework embodying these indicators was introduced in Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3-10. From January 1977 until December 1993, the seven indicators for the United States were published each month in the news release, *Employment Situation*.

The Current Population Survey, which is the source of the U.S. data used in the current article, was revised as of January 1994. The survey was redesigned to include new and revised questions regarding individuals' employment and unemployment activities, and the collection methodology was changed to a totally computerized environment. (For further information, see "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings* (Bureau of Labor Statistics, February 1994), pp. 17-22.) As a result, publication of the alternative unemployment indicators for the United States was suspended. A forthcoming article in the *Review* will introduce a new framework of alternative indicators for the United States. The series of international indicators, U-1 to U-7, ends with the 1993 figures shown in the current article. Upon its introduction, the new U.S. framework will be assessed to see whether international comparisons are feasible.

Another way of looking at the data is to present them in the form of three elements of labor underutilization: unemployment, part-time work for economic reasons, and discouragement with the labor market. Such a classification shows that unemployment is the largest of the three in all of the countries studied except Japan and Sweden. Thus, for these two countries, standard unemployment comparisons miss a great deal of labor force underutilization. Also, ranking the countries according to total labor underutilization rates differs from ranking them according to unemployment rates. For example, Italy was in the middle of the range of unemployment rates, but had the highest rate of total labor underutilization.

Data for Australia, which was not covered in the earlier study, are included in this article. For Germany, the earlier study referred to the former West Germany. In the present study, data for West Germany continue to be presented until 1992, when the coverage changes to unified Germany. The addition of what was formerly East Germany raised the indicators for Germany throughout the spectrum. Some small revisions are made to the previously published data for Sweden and the United Kingdom, and significant revisions are made to three of the indicators for France and to the U-7 indicator for Japan. (See the appendix for information about these revisions.)

### Seven indicators

In recognition of the fact that the official rate of unemployment is not ideally suited to all types of analyses or uses, the Bureau of Labor Statistics for many years published a series of alternative measures of unemployment based on definitions that were either narrower or broader than the conventional measure. The box on page 33 defines the seven indicators.<sup>2</sup>

Some of the indicators yield lower unemployment figures than the conventional standard does, while others result in higher figures. Under the U-1 through U-7 framework, U-5 is the official, usually cited unemployment rate—the rate from which all the others are derived by either adding or subtracting different population groups. The first four, narrow, indicators (U-1 to U-4) focus on certain "more serious" types of unemployment—respectively, long-term unemployment, job loss, adult unemployment, and unemployment of seekers of full-time jobs.

U-6 and U-7 portray broader concepts of unemployment than does U-5, bringing into consideration two additional elements of underutilization of labor: persons working part time for economic reasons and discouraged workers.<sup>3</sup> U-6 includes the number of unemployed persons seeking full-time work, plus one-half of the number of unemployed persons seeking part-time work and one-half of the number of those involuntarily on part-time schedules for economic reasons. The reasoning behind this formulation is that involuntary part-time workers should be counted as at least partially unemployed; similarly, unemployed persons seeking only part-time work should be given just half the weight of unemployed persons seeking full-time jobs, because their employed counterparts work, on average, only about half of a full workweek. This indicator moves from the activity-based concept of the labor force used in all the earlier indicators to a "time lost" type of concept.

Discouraged workers, added at U-7, are defined as persons without work who want a job, but who are not looking for work because they believe that their search will be unsuccessful.<sup>4</sup> Discouraged workers are somewhat more broadly defined in the data presented for Japan and Italy. In both countries, because of the special nature of their labor markets, there is a sizable group of persons who want work, are available for work, and are classified as unemployed,<sup>5</sup> even though they did not seek employment in the 4 weeks preceding the survey. These persons are awaiting the results of previous applications. The Bureau adjusts the data for Japan and Italy by removing such individuals from U-5, but adding them to U-7. This group does not fit precisely into the framework of rates, falling somewhere between U-5 and U-7. No similar adjustment is needed for the other countries studied, because the numbers involved are small.<sup>6</sup>

The conventionally defined unemployment rate, U-5, remains the most widely accepted measure of unemployment

in all countries. Although the other indicators—particularly the expanded ones—are viewed with interest, none of them has been widely adopted by data users for either domestic or international analysis.<sup>7</sup> There are three basic reasons for this. First, the U-5 definition is simple and objective, involving no value judgments about a person's relative need for work or personal characteristics. Second, as will be shown later, while the alternative measures differ significantly in level, they reflect very similar trends over time; that is, they all send out essentially the same "signal" regarding whether labor market conditions are improving or deteriorating. Third, for purposes of comparison with other countries—especially the major U.S. trading partners—users recognize the need for a "common currency": the rate based on the International Labor Office standards. U-5 is the most readily available, well-understood, and comparable measure.

Nevertheless, it is instructive to assess international differences in terms of the alternative measures, because they point out differences that are not expressed by the conventional measure.

### Period studied

The year 1983 was chosen as the initial year for the analysis because it was the first year a new series of European Union labor force surveys<sup>8</sup> was compiled in accordance with International Labor Office (ILO) concepts that allowed for international comparisons. A historically compatible series of indicators could be calculated for the full period 1983-93 for five countries: the United States, Canada, Australia, France, and the United Kingdom. However, even for three of these countries, a few indicators were missing for some years: U-7 was unavailable for France before 1989, and U-2 began in 1987 for Australia and in 1984 for the United Kingdom. Japan's series was fully available from 1984 onward. Thus, only the United States and Canada had the full complement of indicators available for all of the years studied.

For the other countries examined, time series analysis for the period was further constrained by changes in surveys. Because of the unavailability of comparable data for earlier years, the German series begins (partially) in 1984, Italy's in 1986, and Sweden's in 1987. Only three of the indicators could be calculated for Germany in 1984; a more complete series (missing only U-7) begins in 1985.

In 1992, revisions were made in European Union survey definitions, causing a historical break more significant for Italy and the Netherlands than for France, Germany, and the United Kingdom. Because of this break, as well as a significant modification in the Dutch national definitions, the data series for the Netherlands terminates in 1991 in this article.

Italian data for 1992 and 1993 are shown, but the rates for earlier years are somewhat understated.

The data are annual averages for the United States, Canada, Australia, and Sweden. Japan's data refer to February of each year, and the data for the European Union countries generally refer to the spring, except that Italian data for 1992 are for October.

### Patterns over time

Table 1 shows the seven indicators for the United States and the nine foreign countries studied for the years from 1983 to 1993 for which data were available. The figures relate to both sexes combined; figures were also calculated for men and women separately, but are not shown in the table.<sup>9</sup> Some averages for men and for women are presented later in the article.

Chart 1 depicts the trend over time of six indicators (U-4 is excluded because it is virtually the same as U-5) for the United States, Australia, Japan, France, Italy, and Sweden.

#### Alternative unemployment indicators

U-1 *Long-duration unemployment rate*: Persons unemployed 13 weeks (see footnote 2 in text) or longer, as a percent of the civilian labor force.

U-2 *Job loser rate*: Job losers, as a percent of the civilian labor force.

U-3 *Adult unemployment rate*: Unemployed persons aged 25 and older, as a percent of the civilian labor force aged 25 and older.

U-4 *Full-time unemployment rate*: Unemployed seekers of full-time jobs, as a percent of the full-time labor force.

U-5 *Conventional unemployment rate*: Number of persons not working, but available for and seeking work, as a percent of the civilian labor force. Only persons on layoff and persons waiting to start a new job are not required to seek work in the past 4 weeks, a necessary condition for all others classified as unemployed.

U-6 *Rate encompassing half of the persons working part time for economic reasons*: Number of seekers of full-time jobs, plus one-half of all seekers of part-time jobs, plus one-half of all persons working part time for economic reasons, as a percent of the civilian labor force, less one-half of the part-time labor force.

U-7 *Rate adding discouraged workers*: U-6 plus discouraged workers in the numerator and denominator.

**Table 1. Alternative unemployment indicators, U-1 to U-7, 10 countries, available years, 1983-93**

[In percent]

Country and year	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>United States</b>							
1983	4.0	5.6	7.5	9.5	9.6	12.6	13.9
1984	2.6	3.9	5.8	7.2	7.5	10.1	11.2
1985	2.2	3.6	5.6	6.8	7.2	9.6	10.6
1986	2.1	3.4	5.4	6.6	7.0	9.4	10.3
1987	1.8	3.0	4.8	5.8	6.2	8.5	9.3
1988	1.5	2.5	4.3	5.2	5.5	7.6	8.4
1989	1.2	2.4	4.0	4.9	5.3	7.2	7.9
1990	1.3	2.7	4.4	5.2	5.5	7.6	8.2
1991	2.0	3.7	5.4	6.5	6.7	9.2	10.0
1992	2.8	4.2	6.1	7.1	7.4	10.0	10.8
1993	2.5	3.7	5.6	6.5	6.8	9.3	10.2
<b>Canada</b>							
1983	6.1	7.0	10.3	11.9	11.8	14.3	15.7
1984	5.4	6.4	9.3	11.2	11.2	13.8	14.8
1985	5.0	5.8	8.8	10.3	10.5	12.9	13.8
1986	4.3	5.3	8.0	9.4	9.5	12.0	12.7
1987	4.0	4.8	7.5	8.7	8.8	11.1	11.7
1988	3.3	4.0	6.7	7.6	7.8	9.8	10.3
1989	3.1	3.9	6.6	7.4	7.5	9.5	9.9
1990	3.3	4.4	7.0	8.0	8.1	10.1	10.6
1991	4.8	6.1	9.0	10.3	10.3	12.9	13.6
1992	5.7	6.7	9.9	11.1	11.3	14.2	14.9
1993	5.9	6.5	9.9	11.0	11.2	14.4	15.2
<b>Australia</b>							
1983	6.2	( <sup>1</sup> )	7.0	10.1	10.0	12.2	13.6
1984	5.7	( <sup>1</sup> )	6.3	9.0	9.0	11.0	12.3
1985	5.1	( <sup>1</sup> )	5.9	8.1	8.3	10.1	11.2
1986	4.7	( <sup>1</sup> )	5.7	7.9	8.1	10.1	11.1
1987	4.8	2.7	5.9	8.0	8.1	10.3	11.4
1988	4.1	2.3	5.3	6.9	7.2	9.3	10.3
1989	3.2	1.8	4.6	5.8	6.2	8.3	9.2
1990	3.5	2.4	5.1	6.7	6.9	9.4	10.4
1991	5.9	4.1	7.3	9.6	9.6	12.9	14.3
1992	7.4	4.4	8.4	10.9	10.8	14.7	16.2
1993	7.4	3.9	8.7	11.0	10.9	14.8	16.3
<b>Japan</b>							
1984	1.4	.8	2.3	2.2	2.6	3.8	7.6
1985	1.3	.8	2.2	2.2	2.6	3.7	8.0
1986	1.4	.8	2.2	2.2	2.6	3.7	8.1
1987	1.6	.7	2.3	2.3	2.8	3.9	8.6
1988	1.4	.7	2.1	2.0	2.6	3.3	7.7
1989	1.1	.5	1.8	1.8	2.2	3.1	7.1
1990	1.0	.4	1.7	1.6	2.1	2.7	6.4
1991	.9	.4	1.4	1.5	1.9	2.5	6.0
1992	.9	.4	1.5	1.6	1.9	2.7	6.1
1993	1.1	.6	1.8	1.8	2.2	3.2	7.0
<b>Sweden</b>							
1987	.9	1.2	1.6	2.2	2.2	4.9	5.5
1988	.7	.9	1.4	2.0	1.9	4.1	4.5
1989	.6	.7	1.1	1.6	1.6	3.7	4.1
1990	.6	.8	1.3	1.9	1.8	4.1	4.6
1991	1.2	1.7	2.3	3.3	3.1	6.0	6.9
1992	2.7	3.5	4.2	6.2	5.6	9.5	10.8
1993	5.1	6.4	6.7	9.9	9.3	14.3	15.8
<b>European Union</b>							
<b>France</b>							
1983	6.7	3.4	5.6	8.3	8.0	9.5	( <sup>1</sup> )
1984	8.0	.9	6.5	10.2	9.6	11.5	( <sup>1</sup> )
1985	8.9	4.1	7.2	10.9	10.3	12.5	( <sup>1</sup> )
1986	8.8	4.2	7.7	10.8	10.3	13.3	( <sup>1</sup> )
1987	9.2	4.7	8.4	11.3	10.8	13.5	( <sup>1</sup> )
1988	8.6	4.4	8.2	10.7	10.3	12.8	( <sup>1</sup> )
1989	8.1	4.1	8.1	10.0	9.7	12.3	12.4

**Table 1. Continued—Alternative unemployment indicators, U-1 to U-7, 10 countries, available years, 1983-93**

[In percent]

Country and year	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>Continued—France</b>							
1990 .....	7.6	4.5	7.7	9.7	9.5	11.7	11.8
1991 .....	7.5	4.5	7.7	9.7	9.3	11.3	11.5
1992 .....	7.5	5.9	8.7	10.8	10.4	12.7	12.9
1993 .....	8.5	6.9	9.6	12.1	11.5	14.5	14.7
<b>Germany</b>							
<b>West Germany</b>							
1983 .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1984 .....	5.4	( <sup>1</sup> )	5.8	( <sup>1</sup> )	6.7	( <sup>1</sup> )	( <sup>1</sup> )
1985 .....	5.6	2.4	6.2	6.5	6.9	7.2	( <sup>1</sup> )
1986 .....	5.5	2.3	6.3	6.2	6.7	7.0	( <sup>1</sup> )
1987 .....	5.6	2.5	6.7	6.5	6.9	7.3	( <sup>1</sup> )
1988 .....	5.2	2.1	6.2	5.9	6.4	6.7	( <sup>1</sup> )
1989 .....	4.6	1.7	5.8	5.3	5.8	6.0	( <sup>1</sup> )
1990 .....	4.0	1.3	5.0	4.6	4.9	5.2	( <sup>1</sup> )
1991 .....	3.2	1.1	4.2	4.0	4.1	4.5	( <sup>1</sup> )
<b>Unified Germany</b>							
1992 .....	5.0	3.6	6.4	6.4	6.4	7.1	( <sup>1</sup> )
1993 .....	6.1	4.4	7.8	7.9	7.7	8.8	( <sup>1</sup> )
<b>Italy</b>							
1986 .....	6.8	.6	3.3	7.4	7.2	9.7	15.9
1987 .....	7.2	.7	3.7	7.9	7.6	10.3	16.1
1988 .....	7.3	.6	3.9	8.0	7.7	10.1	16.0
1989 .....	7.3	.6	4.3	8.0	7.8	10.0	15.8
1990 .....	6.3	.5	3.8	6.9	6.6	8.5	13.8
1991 .....	6.4	.6	3.9	7.0	6.8	9.0	15.0
1992 <sup>2</sup> .....	8.0	1.4	6.0	9.5	9.5	11.5	6.2
1993 .....	9.3	1.9	6.8	10.4	10.4	12.7	18.0
<b>Netherlands</b>							
1983 .....	10.4	( <sup>1</sup> )	9.5	11.6	11.9		
1984 .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1985 .....	9.2	( <sup>1</sup> )	8.8	10.2	10.6	12.1	12.4
1986 .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1987 .....	7.8	( <sup>1</sup> )	8.0	7.8	10.0	12.5	13.4
1988 .....	7.5	1.2	8.1	7.5	9.5	12.4	13.3
1989 .....	6.9	1.1	7.6	6.9	8.8	11.8	12.6
1990 .....	5.9	.6	6.9	5.8	7.8	10.5	11.4
1991 .....	5.3	.6	6.4	5.5	7.4	10.2	10.9
<b>United Kingdom</b>							
1983 .....	9.0	( <sup>1</sup> )	8.5	13.0	11.1	13.1	13.9
1984 .....	8.7	3.2	8.6	12.5	11.0	13.0	13.8
1985 .....	9.1	2.8	9.5	12.5	11.5	13.3	14.1
1986 .....	8.9	2.7	9.5	12.6	11.6	13.4	14.3
1987 .....	8.5	2.6	9.6	12.2	11.1	13.0	13.6
1988 .....	6.8	2.1	7.8	9.7	9.1	10.6	11.1
1989 .....	5.2	1.5	6.6	8.0	7.4	8.7	9.1
1990 .....	4.7	1.4	6.1	7.5	7.0	8.1	8.4
1991 .....	5.8	2.6	7.3	9.6	8.6	10.3	10.6
1992 .....	7.4	4.0	8.4	11.5	9.8	12.2	12.8
1993 .....	8.2	4.2	8.8	12.1	10.3	13.1	13.8

<sup>1</sup> Not available.

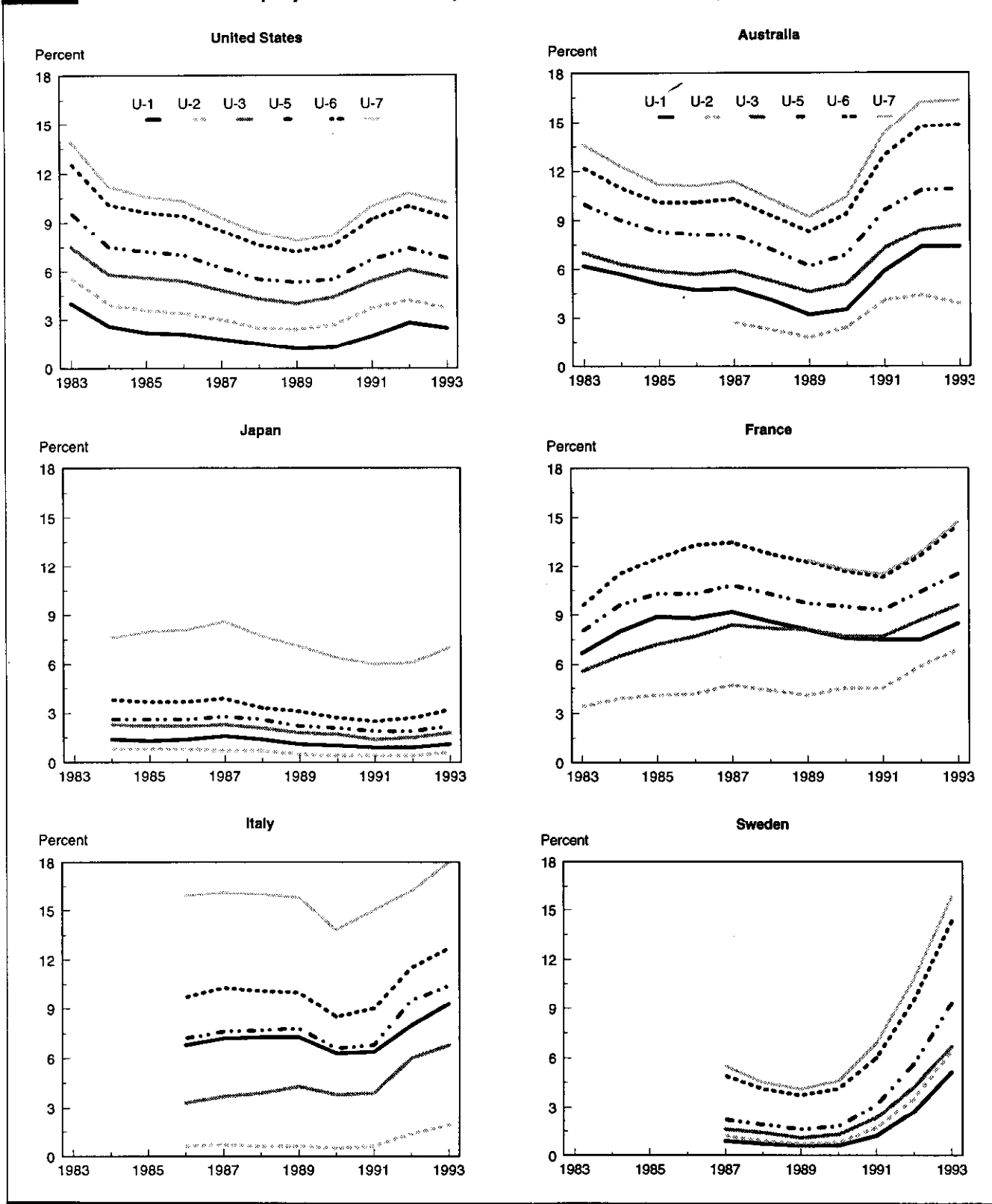
<sup>2</sup> Break in series for Italy. New survey methods were introduced in 1992 that raised the adjusted U-5 rate by approximately 1 percentage point.

NOTE: U-1, long-term unemployment rate; U-2, job loser rate; U-3, adult unemployment rate; U-4, full-time unemployment rate; U-5, conventional rate;

U-6, rate encompassing persons working part time for economic reasons; U-7, U-6 plus discouraged workers.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

**Chart 1. Alternative unemployment indicators, U-1 to U-3 and U-5 to U-7, six countries, 1983-93**



**Table 2. Alternative unemployment indicators, U-1 to U-7, 10 countries, average rates for available years, 1983-93**

[In percent]

Country	Years	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>Both sexes</b>								
United States .....	1983-93	2.2	3.5	5.4	6.5	6.8	9.2	10.1
Canada .....	1983-93	4.6	5.5	8.5	9.7	9.8	12.3	13.0
Australia .....	1983-93	5.3	<sup>1</sup> 3.1	6.4	8.5	8.6	11.2	12.4
Japan .....	1984-93	1.2	.6	1.9	1.9	2.4	3.3	7.3
Sweden .....	1987-93	1.7	2.2	2.7	3.9	3.6	6.7	7.5
European Union:								
France .....	1983-93	8.1	4.6	7.8	10.4	10.0	12.3	<sup>2</sup> 12.7
Germany <sup>3</sup> .....	1985-93	5.0	2.4	6.1	5.9	6.2	6.6	(*)
West Germany .....	1985-91	4.8	1.9	5.8	5.6	6.0	6.3	(*)
Unified Germany .....	1992-93	5.6	4.0	7.1	7.2	7.1	8.0	(*)
Italy .....	1986-93	7.3	.9	4.5	8.1	8.0	10.2	15.9
Netherlands .....	1983, 1985, 1987-91	7.6	<sup>5</sup> .9	7.9	7.9	9.4	11.7	12.4
United Kingdom .....	1983-93	7.5	<sup>6</sup> 2.7	8.2	11.0	9.9	11.7	12.3
<b>Men</b>								
United States .....	1983-93	2.6	4.3	5.4	6.5	6.9	8.8	9.5
Canada .....	1983-93	4.8	6.5	8.1	9.6	9.9	11.3	11.9
Australia .....	1983-93	5.6	<sup>1</sup> 3.9	6.4	8.3	8.5	10.1	10.6
Japan .....	1984-93	1.2	.7	1.7	1.9	2.1	2.7	4.3
Sweden .....	1987-93	2.0	2.6	3.0	4.1	4.1	5.5	6.2
European Union:								
France .....	1983-93	6.4	4.3	6.2	8.4	8.0	9.2	<sup>2</sup> 9.2
Germany <sup>3</sup> .....	1985-93	4.2	2.2	5.0	5.2	5.2	5.5	(*)
West Germany .....	1985-91	4.1	1.9	4.8	5.0	5.1	5.2	(*)
Unified Germany .....	1992-93	4.4	3.2	5.7	5.7	5.8	6.3	(*)
Italy .....	1986-93	5.2	.8	3.0	5.8	5.7	7.5	10.3
Netherlands .....	1983, 1985, 1987-91	6.3	<sup>5</sup> .9	6.2	7.3	7.7	8.7	9.0
United Kingdom .....	1983-93	8.5	<sup>6</sup> 3.7	8.9	11.1	10.7	11.7	12.3
<b>Women</b>								
United States .....	1983-93	1.8	2.6	5.3	6.5	6.7	9.7	10.9
Canada .....	1983-93	4.3	4.3	8.7	9.8	9.9	13.7	14.7
Australia .....	1983-93	4.8	<sup>1</sup> 2.0	6.3	9.2	8.8	13.0	15.5
Japan .....	1984-93	1.3	.5	2.4	2.0	2.8	4.3	11.8
Sweden .....	1987-93	1.4	1.7	2.3	3.5	3.6	8.2	9.1
European Union:								
France .....	1983-93	10.3	5.1	9.8	13.6	12.4	16.7	<sup>2</sup> 17.4
Germany <sup>3</sup> .....	1985-93	6.1	2.6	7.7	7.4	7.6	8.6	(*)
West Germany .....	1985-91	5.8	1.9	7.3	6.8	7.3	8.1	(*)
Unified Germany .....	1992-93	7.0	5.1	9.1	9.7	8.8	10.6	(*)
Italy .....	1986-93	11.2	.9	7.2	13.1	12.0	15.7	25.7
Netherlands .....	1983, 1985, 1987-91	9.6	<sup>5</sup> .9	11.0	9.4	12.2	17.9	19.2
United Kingdom .....	1983-93	6.0	<sup>6</sup> 1.4	7.3	10.7	8.8	11.7	12.4

<sup>1</sup> 1987-93.

<sup>2</sup> 1989-93.

<sup>3</sup> Former West Germany, 1985-91; unified Germany, 1992-93.

<sup>4</sup> Data not available.

<sup>5</sup> 1988-91.

<sup>6</sup> 1984-93.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

The general pattern of all seven indicators in all of the countries studied, including those not shown, is movement in tandem. Another observation is that only in the two North American countries (Canada's pattern is similar to the United States') and Sweden did U-1 through U-7 represent a progression from low to successively higher unemployment rates.

Although U-4 is not shown in the chart, some mention of it should be made. In most countries, the unemployment rate relating to full-time workers (U-4) was noticeably higher than the adult unemployment rate (U-3). The gap between these two rates was widest in Italy, where adult unemployment is very low and most unemployment is associated with young persons. By contrast, in Japan, the youth-adult differential was much narrower than in Italy, and the two rates tended to be the same. Germany and the Netherlands had the same pattern as Japan for U-3 and U-4.

In all but the Netherlands and the United Kingdom, U-4 (the rate for full-time workers) virtually coincided with U-5, the conventional measure. In these two countries, the unemployment rates associated with seekers of full-time and of part-time jobs were widely different. In the Netherlands, the rate for seekers of part-time jobs was almost twice as high as the rate for seekers of full-time jobs. Consequently, U-4 was substantially below U-5 in that country. In the United Kingdom, the opposite was true, and the high rate for seekers of full-time jobs was reflected in U-4's surpassing U-5.

The upward climb of unemployment in Sweden since 1990 is dramatically portrayed in the chart. Sweden's series begins with the year 1987, but earlier years would have shown rates in the range of the low 1987 levels. Sweden's U-5 rate averaged 3 percent from 1983 to 1986, equivalent to about 2.6 percent according to the survey methods and definitions used in 1993.

### Averages over time

Table 2 presents the indicators in terms of their averages over the available years of the 1983-93 period. Table 3 expresses these figures in terms of each indicator's ratio to the conventional measure, U-5. This is a convenient means of comparing the various rates within and among countries. The averages for the period would generally show the same comparative results as the figures for any given year; exceptions are the higher levels of unemployment experienced in Sweden and unified Germany in 1992-93, which changed some relationships that existed in prior years. Tables 2 and 3 show the data for the former West Germany and unified Germany separately.

In each table, figures are shown for both sexes, for men, and for women. Data for U-7 are not available for Germany. For France, data on discouraged workers were available only

for 1989-93, and the average for these years is included in the table.

Tables 2 and 3 recapture some of the findings already portrayed in chart 1. The ratios form a progression from low to successively higher rates only in the United States and Canada. Sweden's pattern is similar, except that U-4 is above U-5. All the European Union countries had much higher ratios at U-1 than at U-2, and Australia was more like the European countries than the North American countries. Italy was at the extreme: on average, long-duration unemployment made up more than 90 percent of conventionally measured unemployment in Italy, while job losers accounted for only about 10 percent. West Germany had a very low job loser rate, but unified Germany's rate was above the U.S. average.

Table 3 shows that Sweden had by far the largest proportionate increases in unemployment as measured by U-6, which takes into account the hours lost by persons working part time for economic reasons. The Swedish U-6 rate was more than 80 percent higher than the U-5 rate, on average, whereas the increases for the other countries were much smaller. Sweden's ratio of U-6 to U-5 declined as unemployment rose in 1992-93. However, even the lower values of this ratio were higher than the U-6/U-5 ratio in other countries. Germany had the smallest increase in U-6 over U-5, and even the higher 1992-93 figures for unified Germany were lower than for the other countries. In the United States, U-6 ranged from 31 percent to 38 percent higher than U-5 throughout the 1983-93 period. Except for Sweden, other countries also had ratios that fluctuated over time within a narrow range.

Japan had by far the largest proportionate increase in unemployment as measured by U-7. The rate accounting for both persons holding part-time jobs for economic reasons and discouraged workers was about triple the conventional measure in every year of the period. In those years in which unemployment was lowest in Japan (1991-92), U-7 was about 320 percent higher than U-5; in the year when Japanese unemployment was highest (1987), U-7 was 307 percent higher than the conventional rate. Thus, a large contingent of potential workers who are not in the labor force overhangs the Japanese labor market at all times.

Japan's increase in U-6 over U-5 was about the same as that for the United States, but the addition of discouraged workers made U-7 increase much more in Japan than in the United States and other countries. Italy also experienced a large increase in its U-7 rate.

With some differences in degree, the foregoing relationships held for both men and women. (See table 3.) For the narrower indicators, U-1 through U-4, the differences between the rates for men and women in relation to U-5 were not large for most countries. Women tended to have lower



**Table 3. Alternative unemployment indicators, U-1 to U-7, 10 countries, average ratios of each indicator to U-5 for available years, 1983-93**

[In percent]

Country	Years	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>Both sexes</b>								
United States .....	1983-93	32	51	79	96	100	135	149
Canada .....	1983-93	47	56	87	99	100	126	133
Australia .....	1983-93	62	<sup>1</sup> 36	74	99	100	130	144
Japan .....	1984-93	50	25	79	79	100	138	304
Sweden .....	1987-93	47	61	75	108	100	188	208
<b>European Union:</b>								
France .....	1983-93	81	46	78	104	100	123	<sup>2</sup> 127
Germany <sup>3</sup> .....	1985-93	81	39	98	95	100	106	( <sup>4</sup> )
West Germany .....	1985-91	80	32	97	93	100	105	( <sup>4</sup> )
Unified Germany .....	1992-93	79	56	100	101	100	113	( <sup>4</sup> )
Italy .....	1986-93	91	11	56	101	100	128	199
Netherlands .....	1983, 1985, 1987-91	81	<sup>5</sup> 10	84	84	100	124	132
United Kingdom .....	1983-93	76	<sup>6</sup> 27	83	111	100	118	124
<b>Men</b>								
United States .....	1983-93	38	62	78	94	100	128	138
Canada .....	1983-93	48	66	82	97	100	114	120
Australia .....	1983-93	66	<sup>1</sup> 46	75	98	100	119	125
Japan .....	1984-93	57	33	81	90	100	129	205
Sweden .....	1987-93	49	63	73	100	100	134	151
<b>European Union:</b>								
France .....	1983-93	80	54	78	105	100	115	<sup>2</sup> 115
Germany <sup>3</sup> .....	1985-93	81	42	96	100	100	106	( <sup>4</sup> )
West Germany .....	1985-91	80	37	94	98	100	102	( <sup>4</sup> )
Unified Germany .....	1992-93	76	55	98	98	100	109	( <sup>4</sup> )
Italy .....	1986-93	91	14	53	102	100	132	181
Netherlands .....	1983, 1985, 1987-91	82	<sup>5</sup> 12	81	95	100	113	117
United Kingdom .....	1983-93	79	<sup>6</sup> 35	83	104	100	109	115
<b>Women</b>								
United States .....	1983-93	27	39	79	97	100	145	163
Canada .....	1983-93	43	43	88	99	100	138	148
Australia .....	1983-93	55	<sup>1</sup> 23	72	105	100	148	176
Japan .....	1984-93	46	18	86	71	100	154	421
Sweden .....	1987-93	39	47	64	97	100	228	253
<b>European Union:</b>								
France .....	1983-93	83	41	79	110	100	135	<sup>2</sup> 140
Germany <sup>3</sup> .....	1985-93	80	34	101	97	100	113	( <sup>4</sup> )
West Germany .....	1985-91	79	26	100	93	100	111	( <sup>4</sup> )
Unified Germany .....	1992-93	80	58	103	110	100	120	( <sup>4</sup> )
Italy .....	1986-93	93	8	60	109	100	131	214
Netherlands .....	1983, 1985, 1987-91	79	<sup>5</sup> 7	90	77	100	147	157
United Kingdom .....	1983-93	68	<sup>6</sup> 16	83	122	100	133	141

<sup>1</sup> 1987-93

<sup>2</sup> 1989-93.

<sup>3</sup> Former West Germany, 1985-91; unified Germany, 1992-93.

<sup>4</sup> Data not available.

<sup>5</sup> 1988-91.

<sup>6</sup> 1984-93.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

U-1 (long-duration unemployment) rates, compared with U-5, than did men in those countries that were not members of the European Union. Within the Union, except for the United Kingdom, the differences between U-1 and U-5 were about the same for men as for women. In all the countries, the job loser rate (U-2) was more favorable for women than for men, compared with U-5. With few exceptions, adult unemployment rates (U-3) and full-time unemployment rates (U-4) had similar relationships to U-5 for both men and women.

Greater sex-related differences showed up in the expanded rates. In every country studied except Italy, underutilization, as measured by U-6 and U-7, increased to a considerably greater extent for women than it did for men, and in Sweden and Japan in particular, the difference was very large. (See

table 3.) In Sweden, the U-7 rate increased just 50 percent for men, but about 2-1/2 times for women, over the U-5 rate. In Japan, U-7 for men was more than double the U-5 rate, but for women it was more than 4 times as great as U-5. In Italy, the ratios of U-6 to U-5 were virtually the same for both sexes, but the spread at U-7 was less favorable for women. These tendencies generally held during recession and recovery alike.

### Rankings

Table 4 ranks the 10 countries examined in terms of each of the seven indicators, from lowest (best) to highest (worst), on average, over the available years of the 1983-93 period. Japan's labor market outperformed the others with regard to every

**Table 4. Rankings of 10 countries from lowest to highest average rate, available years, 1983-93**

Rank	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>Both sexes</b>							
1 .....	Japan 1.2	Japan 0.6	Japan 1.9	Japan 1.9	Japan 2.4	Japan 3.3	Japan 7.3
2 .....	Sweden 1.7	Italy .9	Sweden 2.7	Sweden 3.9	Sweden 3.6	Germany 6.6	Sweden 7.5
3 .....	United States 2.0	Netherlands .9	Italy 4.5	Germany 5.9	Germany 6.2	Sweden 6.7	United States 10.1
4 .....	Canada 4.6	Sweden 2.2	United States 5.4	United States 6.5	United States 6.8	United States 9.2	United Kingdom 12.3
5 .....	Germany 5.0	Germany 2.4	Germany 6.1	Netherlands 7.9	Italy 8.0	Italy 10.2	Australia 12.4
6 .....	Australia 5.3	United Kingdom 2.7	Australia 6.4	Italy 8.1	Australia 8.6	Australia 11.2	Netherlands 12.4
7 .....	Italy 7.3	Australia 3.1	France 7.8	Australia 8.5	Netherlands 9.4	Netherlands 11.7	France 12.7
8 .....	United Kingdom 7.5	United States 3.5	Netherlands 7.9	Canada 9.7	Canada 9.8	United Kingdom 11.7	Canada 13.0
9 .....	Netherlands 7.6	France 4.6	United Kingdom 8.2	France 10.4	United Kingdom 9.9	Canada 12.3	Italy 15.9
10 .....	France 8.1	Canada 5.5	Canada 8.5	United Kingdom 11.0	France 10.0	France 12.3	Germany (1)
<b>Men</b>							
1 .....	Japan 1.2	Japan .7	Japan .7	Japan 1.9	Japan 2.1	Japan 2.7	Japan 4.3
2 .....	Sweden 2.0	Italy .8	Italy .8	Sweden 4.1	Sweden 4.1	Germany 5.5	Sweden 6.2
3 .....	United States 2.6	Netherlands .9	Netherlands .9	Germany 5.2	Germany 5.2	Sweden 5.5	Netherlands 9.0
4 .....	Germany 4.2	Germany 2.2	Germany 2.2	Italy 5.8	Italy 5.7	Italy 7.5	France 9.2
5 .....	Canada 4.8	Sweden 2.6	Sweden 3.0	United States 6.5	United States 6.9	Netherlands 8.7	United States 9.5
6 .....	Italy 5.2	United Kingdom 3.7	United Kingdom 3.7	Netherlands 7.3	Netherlands 7.7	United States 8.8	Italy 10.3
7 .....	Australia 5.6	Australia 3.9	Australia 3.9	Australia 8.3	France 8.0	France 9.2	Australia 10.6
8 .....	Netherlands 6.3	United States 4.3	United States 4.3	France 8.4	Australia 8.5	Australia 10.1	Canada 11.9
9 .....	France 6.4	France 4.3	France 4.3	Canada 9.6	Canada 9.9	Canada 11.3	United Kingdom 12.3
10 .....	United Kingdom 8.5	Canada 6.5	Canada 6.5	United Kingdom 11.1	United Kingdom 10.7	United Kingdom 11.7	Germany (1)
<b>Women</b>							
1 .....	Japan 1.3	Japan .5	Sweden 2.3	Japan 2.0	Japan 2.8	Japan 4.3	Sweden 9.1
2 .....	Sweden 1.4	Italy .9	Japan 2.4	Sweden 3.5	Sweden 3.6	Sweden 8.2	United States 10.9
3 .....	United States 1.8	Netherlands .9	United States 5.3	United States 6.5	United States 6.7	Germany 8.6	Japan 11.9
4 .....	Canada 4.3	United Kingdom 1.4	Australia 6.3	Germany 7.4	Germany 7.6	United States 9.7	United Kingdom 12.4
5 .....	Australia 4.8	Sweden 1.7	Italy 7.2	Australia 9.2	Australia 8.8	United Kingdom 11.7	Canada 14.7
6 .....	United Kingdom 6.0	Australia 2.0	United Kingdom 7.3	Netherlands 9.4	United Kingdom 8.8	Australia 13.0	Australia 15.5
7 .....	Germany 6.1	Germany 2.6	Germany 7.7	Canada 9.8	Canada 9.9	Canada 13.7	France 17.4
8 .....	Netherlands 9.6	United States 2.6	Canada 8.7	United Kingdom 10.7	Italy 12.0	Italy 15.7	Netherlands 19.2
9 .....	France 10.3	Canada 4.3	France 9.8	Italy 13.1	Netherlands 12.2	France 16.7	Italy 25.7
10 .....	Italy 11.2	France 5.1	Netherlands 11.0	France 13.6	France 12.4	Netherlands 17.9	Germany (1)

<sup>1</sup> No data available to rank Germany.

NOTE: See table 2 for available years for each indicator.

SOURCE: Table 2.

indicator. Sweden was second to Japan except for U-2 (job losers), where it was displaced by Italy and the Netherlands, and U-6, where it was virtually tied with Germany for second place. Sweden's rankings are undoubtedly affected by the lack of data for the years 1983-86, which were years of relatively low unemployment. If they had been included, Sweden would most likely have outranked Japan, as it did in each year of the 1987-90 period.<sup>10</sup> Also, the table ranks Germany's averages for the 1985-93 period, with the 1985-91 data referring to the former West Germany and 1992 and 1993 referring to unified Germany. Because of the higher unemployment in the former East Germany, a ranking for unified Germany based only on the 1992-93 period would have been less favorable for all of the indicators except U-6.

The United States ranked from third to fourth best for every indicator except job losers (U-2). At 3.5 percent, the U.S. average for this rate was relatively high. Indeed, only France's and Canada's U-2 rates were higher. Job loser unemployment averaged under 1 percent in Japan, Italy, and the Netherlands.

All indicators for France, Canada (except U-1), and the United Kingdom, the countries with the highest conventional (U-5) rates, were at the high (worst) end of the spectrum. Canada had the highest job loser and adult unemployment rates and was virtually tied with France for the highest U-6 rate. France's long-duration unemployment rate (U-1) ranked highest, while the United Kingdom had the highest full-time unemployment rate (U-4). Italy, which had a midrange U-5 rate, had the highest U-7 rate.

The rankings changed somewhat when the sex of the person was taken into account. The most striking change was for Japanese women, who experienced a relatively high U-7 rate. Ranking best in their U-6 rate among women in all the countries

studied, Japanese women fell behind women in both the United States and Sweden when discouraged workers were added. Dutch women had the highest (again, worst) U-3 and U-6 rankings and the next-to-highest U-5 and U-7 rankings. Dutch men fared much better in these categories.

The 1993 study presented an indepth analysis of each of the seven indicators and the reasons behind the international differences noted. The next two sections highlight results relating to two of the narrow indicators—U-2 and U-3—and the section that follows uses the data developed for U-6 and U-7 to present measures of total labor underutilization. The final section, on Sweden, takes into account that country's participants in labor market programs, through a broader measure of labor underutilization.

### Unemployment by former status

Unemployed persons can be classified into four categories based on their former employment status: job losers, job leavers, new entrants into the labor force, and reentrants into the labor force. Table 5 shows each of these four groups as a percent of the civilian labor force, averaged for the available years from 1983 to 1993. U-2 focuses on job losers.

The foregoing analysis showed that U-2 rates were relatively low in Japan and Europe (except for France), compared with North America, throughout the period studied. This reflects the greater level of job security and protection for regular workers in Japan and Europe. Italy was an extreme case, with virtually no job loser unemployment, but a very high proportion of unemployment associated with new entrants into the labor market. Throughout the 1986-93 period, new entrants in Italy

**Table 5. Unemployment rates by former status, average of available years, 1983-93**

[In percent]				
Country	Job losers	Job leavers	New entrants	Reentrants
United States .....	3.5	0.8	0.8	1.7
Canada .....	5.5	1.7	.4	2.3
Australia .....	3.1	1.4	1.5	2.2
Japan .....	.6	.9	( <sup>1</sup> )	( <sup>1</sup> )
Sweden .....	2.2	.3	.5	.6
<b>European Union</b>				
France .....	4.6	2.0	1.3	2.1
Germany .....	2.4	1.9	.4	1.5
West Germany (1985-91) .....	1.9	2.0	.5	1.6
Unified Germany (1992-93) .....	4.0	1.4	.3	1.4
Italy .....	.9	.2	5.2	1.7
Netherlands .....	.9	1.9	1.7	3.7
United Kingdom .....	2.7	2.6	1.0	3.2

<sup>1</sup> Not available separately; combined rate for new entrants and reentrants was 0.9 percent.

NOTE: Available years as noted on table 1 for U-2.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

had unemployment rates in the 5-percent range. This figure stands out because none of the other countries studied had an unemployment rate for new entrants exceeding 2 percent during the period.

Among the European Union countries, only France had a pattern similar to North America's, with job losers bearing the brunt of unemployment among the four categories listed. The 1993 study postulated that this was because 1989 was a year of high unemployment for France, and job losses tend to be cyclical. However, even in France's years of lower unemployment during the 1980's, the higher job loser rates persisted. West Germany had the more typical European Union pattern in most years, with job losers having rates similar to or lower than those of job leavers. Nonetheless, unified Germany experienced much higher job loser rates compared with the other categories. This resulted in the job loser average for Germany moving above the averages of the other groups for the period. The phenomenon was related to the difficulties of transition to a market economy in the former East Germany.

### Youth and adult unemployment

Unemployment among adults (aged 25 and older), as reflected in U-3, was significantly lower than unemployment among youth (under age 25) in every country studied except Germany, where a strong apprenticeship system shields many youth from unemployment. In all the other countries, there was a significant youth-adult differential, as shown in the following tabulation of averages for the available years:

	<i>Adult rate</i>	<i>Youth rate</i>	<i>Ratio, youth to adult</i>
United States .....	5.4	13.1	2.4
Canada .....	8.5	15.9	1.9
Australia .....	6.4	15.8	2.5
Japan .....	2.0	5.6	2.8
Sweden .....	2.7	9.7	3.6
European Union:			
France .....	7.8	22.5	2.9
Germany .....	6.0	7.1	1.2
West Germany .....	5.8	7.2	1.2
Unified Germany .....	7.1	7.0	1.0
Italy .....	4.5	25.9	5.8
Netherlands .....	7.9	15.3	1.9
United Kingdom .....	8.2	15.8	1.9

Because of the low youth-adult unemployment differential in Germany, that country's U-3 and U-5 unemployment rates were virtually identical. The incorporation of the former East

Germany into unified Germany in 1992 did not alter this fact. In contrast, U-3 was significantly lower than the conventional U-5 rate in all the other countries studied. (See table 3.)

Italy's U-3 measure was particularly low in relation to U-5 because youth unemployment there was about 6 times higher than adult unemployment. Indeed, most Italian unemployment occurs among persons under age 25, a phenomenon related to the job loser-new entrant difference for Italy. New entrants into the Italian labor market tend to be young persons, and adults with established jobs tend to be shielded from unemployment in Italy, although they may be subject to underemployment in the form of reduced hours. Nevertheless, the gap between youth and adult unemployment closed somewhat in 1992 and 1993 as the youth-to-adult ratio fell to under 5 percent. Some of this decline could have been caused by the changes instituted in the Italian survey in 1992. (See appendix.)

### Elements of labor underutilization

Going beyond the U-1 to U-7 framework, we can use the data developed in this study to analyze labor underutilization across countries in its three readily measurable forms: unemployment as conventionally defined (the U-5 indicator); persons working part time for economic reasons (part of the U-6 indicator); and discouraged workers (added at the U-7 level). In the reformulation of the data that is set forth in this section, there is no half-weighting of involuntary part-time workers and persons seeking part-time jobs, as was done with U-6 and U-7 earlier. Therefore, the new indicator to be presented represents the number of people underutilized to some degree, either partially or totally.

Two types of measurement are shown in table 6: (1) a proportionate distribution of the three types of labor underutilization and (2) each form of underutilization as a percent of the civilian labor force. (Note that discouraged workers are not part of the labor force, but if they were added to the labor force in these calculations, the results would be virtually the same.) The data are averages for the available years from 1983 to 1993.

Table 6 and chart 2 show that unemployment is the largest of the three elements in all of the countries studied except Japan and Sweden. By this measure, unemployed persons in the United States comprised, on average, a little more than half of all underutilized persons. The unemployed were around three-fifths of the total in Canada, Australia, and the Netherlands, and accounted for even higher proportions in France, Germany, and the United Kingdom. (However, Germany does not measure discouraged workers, so that the German proportions relate to only two of the three elements.)

In Japan, unemployed persons made up only somewhat more than one-quarter of all persons who were underutilized.

**Table 6. Elements of labor underutilization, 10 countries, averages of available years, 1983-93**

Country	Percent distribution			Percent of civilian labor force			
	Unemployed	Part time for economic reasons	Discouraged workers	Unemployed	Part time for economic reasons	Discouraged workers	Total labor underutilization
United States .....	54.6	38.0	7.4	6.8	4.7	0.9	12.4
Canada .....	64.0	30.7	5.2	9.8	4.7	.8	15.3
Australia .....	58.6	32.6	8.7	8.6	4.8	1.3	14.8
Japan .....	27.3	23.7	48.9	2.3	2.0	4.2	8.6
Sweden .....	40.8	50.5	8.7	3.6	4.5	.8	8.9
<b>European Union</b>							
France .....	70.2	28.7	1.1	10.1	4.1	.2	14.3
Germany .....	85.7	14.3	( <sup>1</sup> )	6.2	1.0	( <sup>1</sup> )	( <sup>1</sup> )
West Germany .....	86.9	13.1	( <sup>1</sup> )	5.9	.9	( <sup>1</sup> )	( <sup>1</sup> )
Unified Germany .....	83.1	16.9	( <sup>1</sup> )	7.1	1.4	( <sup>1</sup> )	( <sup>1</sup> )
Italy .....	45.3	18.9	35.8	8.0	3.3	6.3	17.5
Netherlands .....	62.9	32.8	4.4	9.5	5.0	.7	15.2
United Kingdom .....	77.4	17.9	4.7	9.8	2.3	.6	12.7

<sup>1</sup> Not available.

NOTE: See table 7 for available years. Persons seeking part-time jobs and persons working part time for economic reasons are fully counted in this tabulation, in contrast to U-6 and U-7, for which they are only half-weighted.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

Discouraged workers were the predominant manifestation of labor underutilization in Japan, at almost half of the total. Thus, discouraged workers in Japan comprised about the same proportion of underutilization as unemployed persons did in the United States. In Sweden, persons involuntarily working part time were the main element of underutilization.

Persons working part time for economic reasons and discouraged workers together added 5 to 7 percentage points to the unemployment rate in most countries, on average, for the 1983-93 period. The United Kingdom had the smallest addition—about 3 percentage points, while Italy had the largest—9.5 percentage points.

Unemployment rates, on average for the period, varied from 2.3 percent in Japan to 10 percent in France. On the other hand, the rate of total labor underutilization varied from 8 percent in Japan and 10 percent in Sweden to 17.5 percent in Italy. France, the country with the highest unemployment rate, ranked in the middle of the range on the total underutilization basis because its discouraged worker rates were very low. (The discouraged worker rates for France were averages for 1989-93, the only years for which such rates were available.) Italy, on the other hand, ranked in the middle of the range of unemployment rates, but had the highest rate of total labor underutilization.

The economic part-time rate was highest in the Netherlands, at 5 percent. With the exception of the Netherlands, involuntary part-time rates in the European Union countries were significantly lower than in North America, Australia, and Sweden. The discouraged worker rates were 4 percent in Japan and 6 percent in Italy, far higher than in any of the other countries. As noted earlier, the definition of discour-

aged workers is somewhat broader in these countries, including within its scope persons who are awaiting the results of jobseeking efforts. Discouraged worker rates were 1 percent or less in all the other countries studied.

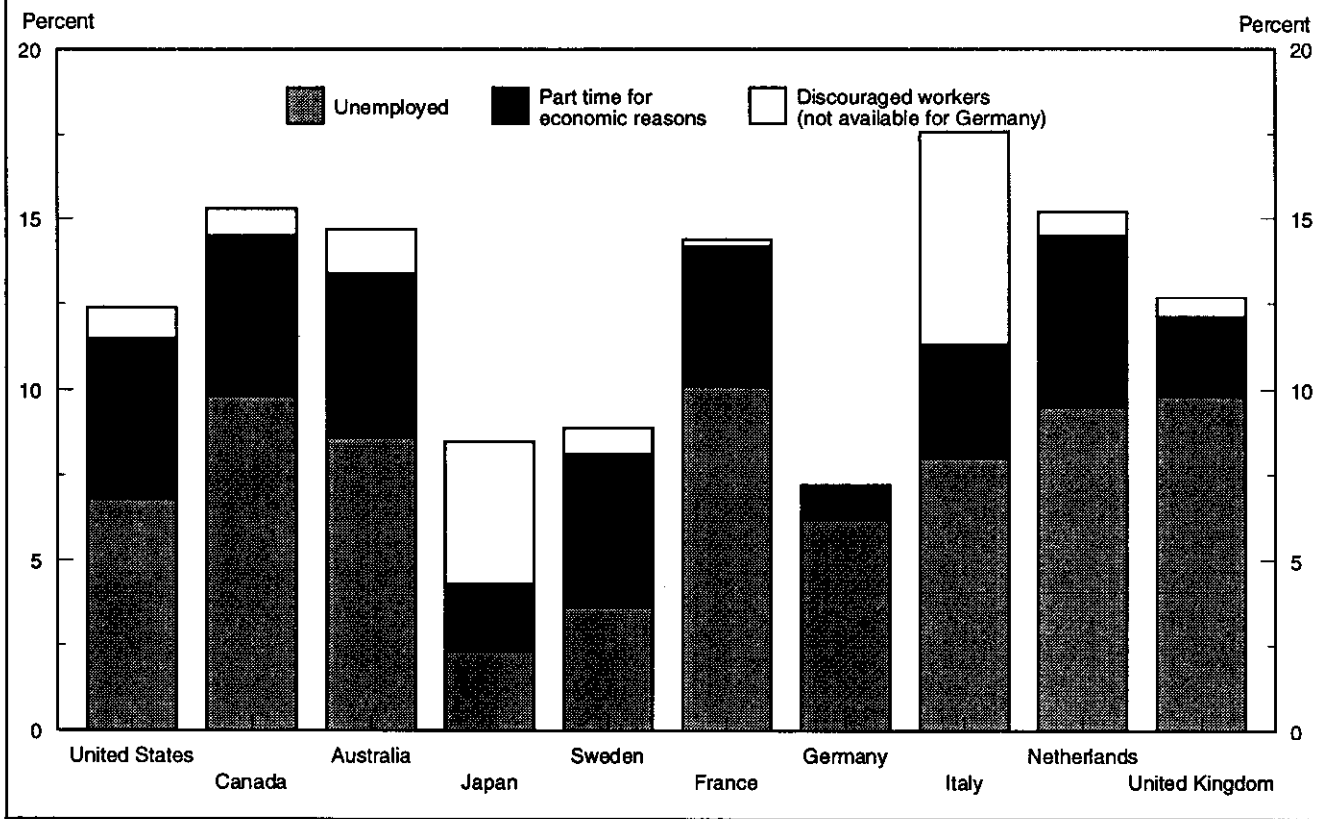
In Japan, large numbers of women who are temporary or casual workers withdraw from the labor force when they lose their jobs, rather than seek work. Such workers generally bear the brunt of labor market adjustments in Japan. In this way, Japanese employers have flexibility in their work forces during economic downturns, enabling regular workers—predominantly men in larger Japanese enterprises—to be virtually assured of employment until they retire, under Japan's so called lifetime employment system.<sup>11</sup>

Italy's labor market matches people with jobs very slowly. Hence, there is a large number of persons who want work and are awaiting the results of previous job applications or are awaiting the results of competitions for jobs in the public sector (which can take a year or longer), rather than actively seeking work. As noted earlier, they have been added to the discouraged worker figures for Italy, even though they may not be in a state of mind we would characterize as discouragement.

Over time, the three component rates of labor underutilization tended to move cyclically in the same direction, as would be expected, but cyclical movements in the rates of unemployment were generally greater than movements in the rates of those working part time for economic reasons and in the rates of discouraged workers. These trends are illustrated in table 7. There were some exceptions, however.

In the United States, unemployment declined from 7.4 per-

Chart 2. Elements of labor underutilization, averages of available years, 10 countries, 1983-93



cent in 1992 to 6.8 percent in 1993, but the involuntary part-time and discouraged worker rates remained the same. Thus, improvement in the labor market was first seen in the unemployment rate, but other forms of labor underutilization remained high. In previous years, when the declines in unemployment rates were greater, these other forms also moved downward.

Sweden's sharp upward trend in unemployment in the early 1990's was accompanied by significant increases in both involuntary part-time and discouraged workers. The unemployment rate in 1993 was more than 4 times as high as the rate in 1987, while the discouraged worker rate in 1993 was 2-1/2 times the rate in 1987. The involuntary part-time rate was about 40 percent higher in 1993 than in 1987.

Unified Germany's upward movement in unemployment was accompanied by increases in involuntary part-time workers. Prior to 1992, the rate of those working part time for economic reasons moved narrowly and was generally 1 percent or less of the labor force. In 1992-93, for unified Germany, the rate rose to more than 1 percent of the labor force. (No data on discouraged workers were available for Germany for the entire period studied.)

### Sweden's labor market programs

Sweden has been a pioneer in the provision of labor market programs for retraining and employing the unemployed.<sup>12</sup> These programs have been used as an economic instrument for countercyclical purposes. For many years, the programs helped keep Swedish unemployment low, even during economic downturns. However, as Swedish unemployment rose to unprecedented postwar levels in the early 1990's, the number of persons participating in the programs increased, but they could no longer hold down unemployment, as they had in previous, milder recessions. Even after completing the programs, participants could not find work, due to a lack of job creation in Sweden.

A special unemployment rate can be constructed to take into account Sweden's labor market programs, which absorb a substantial number of potentially unemployed persons. In 1993, when the conventionally unemployed in Sweden totaled 415,000, there were, on average, about 220,000 persons in these programs. Without such programs, most of these individuals would probably have been either unemployed or discouraged workers.

Sweden's U-5 rate of 9.3 percent in 1993 would have risen

**Table 7. Elements of labor underutilization in 10 countries, available years, 1983-93**

Country and year	Unemp- ployed	Part time for economic reasons	Discouraged workers	Total labor under- utilization	Country and year	Unemp- ployed	Part time for economic reasons	Discouraged workers	Total labor under- utilization
<b>United States</b>					<b>Continued—France</b>				
1983 .....	9.6	5.6	1.4	16.7	1985 .....	10.3	3.3	( <sup>1</sup> )	( <sup>1</sup> )
1984 .....	7.5	5.1	1.1	13.7	1986 .....	10.3	4.9	( <sup>1</sup> )	( <sup>1</sup> )
1985 .....	7.2	4.8	1.0	13.1	1987 .....	10.8	4.4	( <sup>1</sup> )	( <sup>1</sup> )
1986 .....	7.0	4.7	1.0	12.7	1988 .....	10.3	4.2	( <sup>1</sup> )	( <sup>1</sup> )
1987 .....	6.2	4.5	.9	11.6	1989 .....	9.7	4.4	.2	14.3
1988 .....	5.5	4.3	.8	10.6	1990 .....	9.5	3.8	.2	13.5
1989 .....	5.3	4.0	.7	9.9	1991 .....	9.3	3.4	.1	12.8
1990 .....	5.5	4.1	.7	10.3	1992 .....	10.4	3.9	.1	14.4
1991 .....	6.7	4.8	.8	12.4	1993 .....	11.5	5.0	.2	16.7
1992 .....	7.4	5.0	.9	13.3	Average, 1989-93 <sup>2</sup> ..	10.1	4.1	.2	14.3
1993 .....	6.8	5.0	.9	12.7	<b>Germany</b>				
Average, 1983-93 ..	6.8	4.7	.9	12.4	<b>West Germany</b>				
<b>Canada</b>					1985 .....	6.9	.9	( <sup>1</sup> )	( <sup>1</sup> )
1983 .....	11.8	4.6	1.5	18.0	1986 .....	6.7	1.0	( <sup>1</sup> )	( <sup>1</sup> )
1984 .....	11.2	4.9	1.2	17.3	1987 .....	6.9	1.1	( <sup>1</sup> )	( <sup>1</sup> )
1985 .....	10.5	4.8	.9	16.1	1988 .....	6.4	1.0	( <sup>1</sup> )	( <sup>1</sup> )
1986 .....	9.5	4.7	.8	15.0	1989 .....	5.8	.9	( <sup>1</sup> )	( <sup>1</sup> )
1987 .....	8.8	4.4	.7	13.9	1990 .....	4.9	.7	( <sup>1</sup> )	( <sup>1</sup> )
1988 .....	7.8	4.0	.5	12.2	1991 .....	4.1	.7	( <sup>1</sup> )	( <sup>1</sup> )
1989 .....	7.5	3.7	.5	11.8	Average, 1985-91 ..	5.9	.9	( <sup>1</sup> )	( <sup>1</sup> )
1990 .....	8.1	3.9	.5	12.5	<b>Unified Germany</b>				
1991 .....	10.3	4.9	.8	16.0	1992 .....	6.4	1.2	( <sup>1</sup> )	( <sup>1</sup> )
1992 .....	11.3	5.6	.8	17.7	1993 .....	7.7	1.6	( <sup>1</sup> )	( <sup>1</sup> )
1993 .....	11.2	6.2	.9	18.3	Average, 1992-93 ..	7.1	1.4	( <sup>1</sup> )	( <sup>1</sup> )
Average, 1983-93 ..	9.8	4.7	.8	15.3	Average, 1985-93 ..	6.2	1.0	( <sup>1</sup> )	( <sup>1</sup> )
<b>Australia</b>					<b>Italy</b>				
1983 .....	10.0	4.0	1.6	15.6	1986 .....	7.2	3.5	6.9	17.6
1984 .....	9.0	3.7	1.4	14.1	1987 .....	7.6	3.8	6.5	17.9
1985 .....	8.3	3.5	1.2	12.9	1988 .....	7.7	3.4	6.6	17.7
1986 .....	8.1	3.8	1.1	13.0	1989 .....	7.8	3.3	6.4	17.5
1987 .....	8.1	4.2	1.1	13.4	1990 .....	6.6	2.9	5.8	15.3
1988 .....	7.2	4.0	1.1	12.3	1991 .....	6.8	3.2	6.6	16.6
1989 .....	6.2	4.1	.9	11.2	1992 <sup>3</sup> .....	9.5	3.1	5.1	17.8
1990 .....	6.9	4.7	1.0	12.6	1993 .....	10.4	3.3	6.1	19.8
1991 .....	9.6	6.1	1.5	17.1	Average, 1986-93 ..	8.0	3.3	6.3	17.5
1992 .....	10.8	7.0	1.7	19.5	<b>Netherlands</b>				
1993 .....	10.9	7.0	1.7	19.6	1983 .....	11.9	1.0	.2	13.1
Average, 1983-93 ..	8.6	4.8	1.3	14.8	1984 .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
<b>Japan</b>					1985 .....	10.6	2.8	.4	13.7
1984 .....	2.6	2.4	4.0	9.1	1986 .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1985 .....	2.6	2.4	4.6	9.5	1987 .....	10.0	5.8	.9	16.7
1986 .....	2.6	2.4	4.7	9.7	1988 .....	9.5	6.2	.9	16.6
1987 .....	2.8	2.5	5.0	10.3	1989 .....	8.8	6.4	.7	15.9
1988 .....	2.6	1.9	4.6	9.1	1990 .....	7.8	5.9	.8	14.5
1989 .....	2.2	2.1	4.1	8.4	1991 .....	7.4	5.9	.6	13.9
1990 .....	2.1	1.6	3.9	7.5	Average, 1983, 1985, 1987-91 .....	9.5	5.0	.7	15.2
1991 .....	1.9	1.4	3.7	6.9	<b>United Kingdom</b>				
1992 .....	1.9	1.6	3.6	7.1	1983 .....	11.1	1.9	.8	13.8
1993 .....	2.2	2.1	3.9	8.2	1984 .....	11.0	2.2	.9	14.1
Average, 1984-93 ..	2.3	2.0	4.2	8.6	1985 .....	11.5	2.2	.9	14.6
<b>Sweden</b>					1986 .....	11.6	2.3	.9	14.8
1987 .....	2.2	4.4	.6	7.1	1987 .....	11.1	2.4	.6	14.1
1988 .....	1.9	3.6	.4	5.9	1988 .....	9.1	2.2	.4	11.7
1989 .....	1.6	3.4	.4	5.3	1989 .....	7.4	1.8	.4	9.6
1990 .....	1.8	3.6	.5	5.9	1990 .....	7.0	1.6	.3	8.9
1991 .....	3.1	4.6	.8	8.5	1991 .....	8.6	2.2	.3	11.0
1992 .....	5.6	5.6	1.3	12.5	1992 .....	9.8	2.9	.6	13.2
1993 .....	9.3	6.3	1.5	17.2	1993 .....	10.3	3.3	.7	14.3
Average, 1987-93 ..	3.6	4.5	.8	8.9	Average, 1983-93 ..	9.8	2.3	.6	12.7
<b>European Union:</b>									
<b>France</b>									
1983 .....	8.0	2.4	( <sup>1</sup> )	( <sup>1</sup> )					
1984 .....	9.6	2.9	( <sup>1</sup> )	( <sup>1</sup> )					

<sup>1</sup> Not available.

<sup>2</sup> Averages calculated only for 1989-93 because of lack of data on discouraged workers in 1983-88.

<sup>3</sup> Break in series for Italy. New survey methods were introduced that raised the adjusted U-5 rate by approximately 1 percentage point.

NOTE: Persons seeking part-time jobs and persons working part time for economic reasons are fully counted in this tabulation, in contrast to U-6 and U-7, for which they are only half-weighted.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

to 14 percent if all of the individuals in the labor market programs had been unemployed. Adding these persons to the U-7 rate would have increased it from 15.8 percent to 20.8 percent. A figure of this magnitude would have ranked Sweden, instead of Italy, as the country with the highest U-7 rate. This is a major change from the situation in 1989, when a comparably derived rate left Sweden virtually tied with Japan for the low-

est U-7 rate among the countries studied. In terms of total labor underutilization, Sweden's 1993 rate would have increased from 17 percent to 22 percent of the labor force. With U-7 measured this way, Sweden would have had the highest labor underutilization of all the countries studied. Of course, other countries have persons in labor market programs, but in each, the size of the group is small compared with Sweden's.

## Footnotes

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<sup>1</sup> Constance Sorrentino, "International comparisons of unemployment indicators," *Monthly Labor Review*, March 1993, pp. 3-24.

<sup>2</sup> U-1 has been redefined slightly for comparative purposes. In the published figures pertaining to the United States, it represented persons unemployed 15 weeks or longer, as a percent of the civilian labor force. However, most other countries break their categories denoting duration of employment at 3 months (13 weeks), rather than 15 weeks. Because U.S. data are available (in unpublished form) for durations of a single week, these data were used to modify the U-1 measure for the United States to conform with the definition citing 13 weeks or longer as the breakpoint. This modification makes only a slight difference in the U-1 rate for the United States, increasing it by about one-tenth of 1 percentage point.

<sup>3</sup> U-7 is not available for Germany throughout the years covered and is not available for France prior to 1989.

<sup>4</sup> This was the U.S. definition prevailing prior to the 1994 revisions to the Current Population Survey. Beginning in 1994, persons classified as discouraged must also have looked for a job within the past year and must have been available for work during the reference week. (A direct question on availability was added in 1994; previously, the availability of these persons had been inferred from other responses.)

<sup>5</sup> Italy has excluded these persons from the unemployed since October 1992. (See appendix.)

<sup>6</sup> For example, Canada's 1993 survey enumerated only 21,000 persons "waiting for replies" among those who want work and are available for work, but who are not classified as unemployed. Their inclusion would add 0.1 percentage point to the Canadian discouraged worker rate. Data from the Statistical Office of the European Communities (EUROSTAT) also indicate very small numbers of such persons in the major European Union countries, except for Italy.

<sup>7</sup> The Organization for Economic Cooperation and Development (OECD) frequently cites data on persons working part time for economic reasons and on discouraged workers in analyses published in its *Employment Outlook* series. The July 1995 edition of *Employment Outlook* contains a chapter entitled "Supplementary Measures of Labour Market Slack," which examines in detail the data on involuntary part-time workers and discouraged workers in OECD member countries.

<sup>8</sup> EUROSTAT processes and disseminates data forwarded by member countries from labor force surveys conducted each spring. These surveys have been carried out annually in most countries since 1983.

<sup>9</sup> Tabulations of the indicators by sex are available upon request from the author.

<sup>10</sup> Sweden's unemployment rates in 1983-86 averaged about 3 percent, slightly above the average for Japan (2.7 percent). However, Sweden's rates for 1983-86 are probably overstated by about 0.4 percentage point for comparisons, because they include persons seeking jobs within the past 60 days. In 1987, Sweden's definition of unemployment was changed to come into accord with the 4-week job search period used in the United States.

<sup>11</sup> A deep recession in Japan beginning in the early 1990's has resulted in pressures on the lifetime employment system. Indeed, some employers in hard-hit industries have begun to solicit the early retirement of middle-aged white-collar workers who expected lifetime employment. For a further analysis, see Haruo Shimada, "Recession and changes in labour practices in Japan," *International Labour Review*, vol. 132, no. 2, 1993, pp. 159-60.

<sup>12</sup> For further information see Sorrentino, "International comparisons," p. 17, and the accompanying citations.

## APPENDIX: Revisions and addition of statistics on Australia

This appendix presents information on (1) revisions to the European Union surveys; (2) revisions to a component of the statistics on persons working part time for economic reasons in France and on discouraged workers in the United Kingdom; (3) revisions made in the methods applied to the data on Japanese unemployment; (4) revisions to account for a break in the series on Swedish unemployment; and (5) unemployment statistics for Australia, a country not included in the 1993 study. That study<sup>1</sup> contained an appendix<sup>2</sup> explaining the sources, methods, and definitions used. The information is, in general, applicable to the current study and will not be repeated in this appendix.

**European Union surveys.** The European Union surveys compiled and published by the Statistical Office of the European Union

(EUROSTAT) are the source of data on the alternative indicators for France, Germany, Italy, the Netherlands, and the United Kingdom. The concepts and definitions used in the EUROSTAT surveys have been derived from the International Labor Office (ILO) guidelines since 1983. With minor exceptions, the United States and other countries also apply these guidelines.

The integration into the 1992 surveys of a more exact implementation of the ILO guidelines implies that the comparability between the 1983-91 series and the new series from 1992 is slightly impaired. EUROSTAT states that "the fact that both sets of definitions continue to rest upon the ILO guidelines ensures that the differences are minimal."<sup>3</sup>

The first of the changes instituted in 1992 has to do with the definition of the *population of working age*, which has been modi-



fied to apply to persons aged 15 years or older (instead of 14 years, as in the previous survey). The effect of this change is minimal, as very few 14-year-olds were included in the labor force of the European Union countries in 1991.

The definition of *employed persons* is unchanged. The definition of *unemployed persons* contains the following differences:

- Persons seeking to become self-employed are now considered unemployed only if they satisfy the same criteria of seeking work and availability for work as persons seeking work as employees. That is, they must be taking specific actions to become self-employed in the past 4 weeks (such as applying for a business license or looking for a business location) and be available to start work in the next 2 weeks. Before 1992, these criteria were not applied to this small group.
- Persons not at work and hoping to be reengaged by a former employer ("temporary layoffs") are, similarly, now considered unemployed only if they satisfy the usual criteria of seeking work and availability for work, which were not previously applied. These individuals also are a very small group.
- Persons without employment are considered unemployed only if they are available for work and have used an active method of job search within the past 4 weeks. The survey questionnaires were modified to permit active methods to be distinguished from passive methods. Persons using only passive forms of job search—awaiting the results of having applied for a job, waiting for a call from a public employment office, awaiting the results of a competitive recruitment exam for the public sector—are no longer enumerated as unemployed.<sup>4</sup> In the absence of comparative data from both the old and new sets of questions, it is difficult to estimate the effect of this change, but most member countries had already complied with the new definition.

All three of the foregoing modifications serve to lower unemployment, compared with the prior surveys. Together, then, they could result in some degree of overstatement in those surveys, compared with the 1992–93 surveys. EUROSTAT believes that the effect of the changes in 1992 were negligible for France, Germany, and the United Kingdom, but considerable for the Netherlands and Italy. EUROSTAT provided the following tabulation estimating unemployment under the old definition and comparing it with unemployment under the new definition in 1992 for four of the countries (figures are in thousands):

	<i>Old</i>	<i>New</i>
France .....	2,524	2,514
Germany .....	2,494	2,467
Italy .....	3,141	2,191
United Kingdom .....	2,795	2,755

The Bureau of Labor Statistics has made adjustments to the pre-1992 data for Italy that mitigate the difference indicated by this tabulation. These adjustments were also made to the 1989 data for Italy in the 1993 article and throughout the time series for Italy for 1986–91 in the current article. (See the discussion of Italy in the next column.) No adjustments were made for the other countries because, except for the Netherlands, the differences were small. (EUROSTAT could not provide data on the old basis for the Netherlands.)

The changes that were implemented may have resulted in

certain inconsistencies in the data, which should be remedied as the new version of the survey becomes more familiar. In some countries, it was not possible for all of the modifications to be implemented fully. In France, the new questionnaire was implemented only for that section of the sample which was interviewed using computers, with the result that nonresponse rates were very high for some variables. This effect will gradually disappear with the general phasing-in of computer interviewing. Nonresponses were distributed by BLS according to the proportions derived from the respondents.

In the Netherlands, beginning in 1992, the ILO guidelines were not observed with respect to the 1-hour criterion for classification as employed, so certain figures had to be imputed by EUROSTAT. The Dutch national definition was changed in 1992 to include an employment threshold of 12 hours: persons were counted as employed only if they worked 12 or more hours during the reference week and as unemployed only if they sought at least 12 hours of work for that week. The ILO definition recommends the use of a 1-hour threshold for employment and imposes no hours threshold for the seeking of employment. Because there are no Dutch data relating to these two conditions, the ILO (and EUROSTAT) definition could not be well reproduced in the data for the Netherlands. Indeed, after careful study, BLS found the 1992 and 1993 Dutch data out of line with past trends and decided to exclude those years from the study, ending the Dutch series of indicators in 1991.

Italy's statistical office made a major revision to the labor force survey in October 1992 that brought it more in line with the EUROSTAT guidelines. A new method of automatic editing and imputation of missing data was introduced. The definition of unemployment was changed to include only those who were actively looking for a job within the 30 days preceding the survey and who were available for work. Under the definitions prevailing prior to 1992, the Italian national data, as well as the data reported by EUROSTAT, counted many persons as unemployed who engaged in passive job searches only, such as awaiting the results of recruitment exams in the public sector. In the 1993 study, BLS made an adjustment to exclude these persons, but data on both the old and the new basis for 1992 indicate that the adjustment was probably too high. The adjustment of the old 1992 data resulted in an unemployment rate that was 1 percentage point below the rate for the data on the new basis. This overadjustment was partially due to inaccurate adjustments for nonrespondents. The change in the Italian survey methods and questionnaire also had an impact on the results. The new survey questionnaire, for example, has produced an increase in reported job search activity by unemployed persons.

BLS has adjusted Italy's unemployment rates for 1987–91 downward by excluding from the unemployed persons who had not actively sought work in the past 30 days (plus an estimated number of nonrespondents), according to data reported by the Italian statistical office. Although this adjustment is probably too high (based on the aforementioned 1992 relationships), it continues to be used in the present study because the Italian statistical office has not published detailed data on the new basis for any period prior to October 1992. Thus, Italy's unemployment rates for 1991 and earlier years shown in this study are likely to be somewhat understated in comparison with the 1992–93 data.

EUROSTAT used the October 1992 survey results for Italy, rather than the spring survey results, because of the aforementioned change. For all other European Union countries, the 1992 survey data refer to the spring. Data for 1993 refer to the spring for all European Union countries, including Italy.

*Revision for France.* For France, in the 1993 study, a proxy had to be used for "persons working part time because they could not find full-time work," a component of persons working part time for economic reasons (involving calculations of U-4, U-6, and U-7). The proxy was the number of persons working part time who worked their usual (or more) hours and who were seeking another or a second job. The 1993 article had noted that "this proxy understates the true number to the extent that persons working part time involuntarily did not seek more work."<sup>5</sup> In 1992, an actual figure for the group working part time because they could not find a full-time position became available from the French labor force survey, as reported to EUROSTAT. The new data revealed that the proxy severely understated the size of this group: instead of the 276,000 persons indicated by the proxy, 852,000 persons were enumerated as working part time because they could not find a full-time position. Using the actual figure, BLS raised U-6 from 11.6 percent to 12.7 percent in 1992 and moved U-7 up from 11.7 percent to 12.9 percent. U-4, the unemployment rate applicable to persons seeking full-time jobs, was revised downward from 11.2 percent to 10.8 percent because the level of the full-time labor force was increased by the revision. (The full-time labor force includes all persons working part time for economic reasons.) A similar downward revision was indicated by the 1993 figures. An adjustment was made for all years from 1983 to 1991, based on the 1992 proportions.

*Revision for the United Kingdom.* The British Department of Employment alerted BLS to an error in the calculation of data on discouraged workers reported to EUROSTAT. This error has now been corrected by the Department, and the revised figures were supplied to BLS for all years relevant to the study. The effect of the revision was small, lowering the 1989 U-7 rate from 9.3 percent to 9.1 percent.

*Revisions for Japan.* Consultation with the Japanese Statistics Bureau and statistics available for the first time in the 1994 survey resulted in some revisions to the Japanese data. The following three revisions were made:

- Previously, the entire National Defense Force was subtracted from the labor force in the surveys, to arrive at the civilian labor force. However, members of the National Defense Force who reside in private households are included in the surveys, and they amount to about half of the total National Defense Force. Therefore, only half of the National Defense Force should be subtracted from the reported labor force.
- A previous adjustment to the Japanese data added all persons, except students, waiting to start a new job within 30 days to the unemployed, for comparability with U.S. concepts.<sup>6</sup> This adjustment was too high, because some of these persons were not available to begin work, a requirement under U.S. concepts, and no information was available on their number. The February 1994 *Report on the Special Survey of the Labour Force Survey* provided such information for the first time, indicating that about half of the persons enumerated as waiting to start a new job in March (excluding students) were not available for work in February.<sup>7</sup> Therefore, BLS has excluded half of these persons from the adjustment in all years of the study period.
- The method of allocating "jobseekers not in the labor force" according to whether they were seeking full-time or part-time work was modified, on the advice of the Japanese Sta-

tistics Bureau. The result was an increase in the number of persons seeking a full-time job and a decrease in the number of persons seeking a part-time job.

The overall effect of these changes was small, lowering both the Japanese conventional unemployment rate and the alternative indicators by no more than one-tenth of 1 percentage point in some years and leaving them unchanged in most years.

A more significant change is the BLS revision of the data on discouraged workers used in the U-7 rate for Japan. Discouraged workers are not enumerated as such in the Japanese survey. In the 1993 study, BLS constructed an estimate of discouraged workers under U.S. concepts by summing the following groups: (1) all persons who were not in the labor force, who wanted work but were not seeking it because there was "no prospect of finding a job," and who said that they were available to take a job if they found one; (2) half of the persons who were not in the labor force, who wanted work but who were not seeking work because there was "no prospect of finding a job," and who were either not available or undecided about their availability for work if offered a job; and (3) half of the persons enumerated as unemployed, but who were not seeking work in the past 4 weeks because they were awaiting the results of previous job applications. The rationale for half-weighting groups (2) and (3) was that they seemed to only partially fit the U.S. concept of discouraged workers.

In the current study, BLS has reconsidered the treatment of groups (2) and (3). This reevaluation led to the elimination of group (2) and the inclusion of *all* persons in group (3), rather than only half of them, in the estimate of discouraged workers for Japan. Overall, the revised method resulted in a decrease of about 0.7 percentage point in Japan's U-7 rate: the rate published for 1990 in the 1993 article was 7.2 percent, and it decreased slightly to 7.1 percent due to the preceding three revisions. The rate decreased further to 6.4 percent with the changes in the method of determining the number of discouraged workers.

Some discussion of the U.S. method of enumerating discouraged workers prior to 1994 is necessary to explain the reasons behind the elimination of group (2). All persons not in the labor force are first asked, "Do you want a regular job now, either full or part time?" All who respond "Yes" or "Maybe, it depends" are then asked why they did not look for work in the previous 4 weeks. If multiple responses are given, reasons indicating that respondents are not discouraged take precedence over reasons indicating that they are. For example, if the multiple responses are "believes no work is available" and "in school," the respondent is not classified as discouraged. Thus, an implied availability test is built into the classification method.

In the Japanese survey, persons not in the labor force are first asked whether they want work. The question is phrased as follows: "Do you wish to do any work for pay or profit?" Those responding "Yes" or "Yes, if conditions are favorable" are then asked why they are not looking for work. Unlike the U.S. survey, which allowed multiple responses, the Japanese survey permits only one response. Presumably, the response given is the main reason why the person is not seeking work. Thus, all respondents who indicate that they are discouraged ("no prospect of finding a job") are potentially discouraged under U.S. concepts.

The Japanese survey then asks an explicit question about the respondent's availability: "If you find a job now, can you take it up?" Possible responses to this question are "Yes, immediately," "Yes, but later," and "No or undecided." The main point to note is that the U.S. survey had an *implied* availability requirement, while

the Japanese survey *actually asks explicitly* whether a person could take up a job now if he or she found one.

The U.S. and Japanese questions are clearly different, and a decision must be made on the best match with the U.S. concept. BLS decided that the responses "Yes" and "Yes, if conditions are favorable" to the first question in the Japanese survey approximate the responses "Yes" and "Maybe, it depends" to the first question in the U.S. survey. Of those who answer in either of the two ways mentioned in the Japanese survey, all who further respond "no prospect of finding a job" and also respond "Yes, immediately" or "Yes, but later" are taken to be discouraged workers under U.S. concepts. The group responding "Yes, but later" is included because these are persons who would accept a job *now* to start *later*. It is likely that a person in this situation would have been enumerated as discouraged in the U.S. survey. However, those responding "no or not decided" to the last question in the Japanese survey would probably not have been counted as discouraged in the United States, as those who meant "no" would not be counted because they were not available. Those who were not sure of their availability ("not decided") would most likely not be classified as discouraged under the U.S. concept either, because they were undecided about their *availability* rather than about their desire for a job. They are apparently interested in having a job at some time, but are not sure they would accept a job now even if one were offered. This implies a stage of labor force inactivity that lies beyond the scope of being a discouraged worker under U.S. concepts.

Consider now the group of persons who are classified as unemployed in the Japanese survey, but were not considered unemployed under U.S. concepts because they were not actively seeking work in the past 4 weeks. Instead, they were awaiting the results of previous job applications. BLS subtracts this group from U-5. Members of the group are in a situation somewhere between unemployment and discouragement. Some may be discouraged, while others are waiting for developments in the process of job selection, but are ready and willing to go to work now. These latter individuals, as well as those who were truly discouraged, should be fully, rather than partially, counted in a measure of underutilization, and it was decided to count them fully in the U-7 measure.

*Break in series and adjustments for Sweden.* In 1993, the measurement period for the Swedish labor force survey was changed to represent all 52 weeks of the year, rather than 1 week each month, and a new adjustment for population totals was introduced. The impact was to raise the unemployment rate by approximately 0.5 percentage point. One reason for the increase is that the prior surveys for the month of June were taken in a week before students were out of school; now all weeks in June are surveyed, and school leavers seeking vacation work are included in the unemployed. Other school vacation or holiday periods are also more completely covered by the new survey. As a result, youth unemployment moved upward more sharply in 1993 than would have been the case under the previous surveys. Statistics Sweden has published adjustment factors for 1987-92 in considerable detail, and BLS has applied these factors to arrive at adjusted figures for these years.

Data needed to adjust the Swedish data on discouraged workers to U.S. concepts are not published. Statistics Sweden has provided unpublished data to BLS for the years 1989 and 1991-93. Figures for the other years were estimated on the basis of proportions emerging from these data.

In Sweden, the concept that corresponds to "discouraged worker" is *latent arbetsokande*, or "potentially looking for a job." Falling into this category are persons who wanted work and were available for work in the reference week, but who were not seeking work for

reasons related to the labor market (for example, because no suitable work was available locally or because they thought they had little chance of finding work). One of the reasons listed in the Swedish survey is "never got around to looking for work." In addition, under Swedish definitions, full-time students who were currently available and actively seeking work during the school term are included in the concept of *latent arbetsokande*. Both of these groups have been excluded from the discouraged worker count for comparability with U.S. concepts. The students (published data on their numbers are available each year) have been reclassified as unemployed under the definition of U-5, while people who "never got around to looking for work" (number provided by Statistics Sweden for 1989 and 1991-93 and estimated by BLS for other years) remain outside the labor force.

The adjustment for students is normally small, but in 1993 it became more significant because of both the general rise in Swedish unemployment and the changes in the Swedish survey's timing. In 1993, the adjustment resulted in an increase in the Swedish U-5 rate from 8.1 percent to 9.3 percent. Before 1992, the number of students looking and available for work during the school term was very small each year.

In addition to the preceding adjustments for historical comparability, several small adjustments were made to the Swedish data on persons working "part time for economic reasons," for comparability with U.S. concepts. For the 1993 study, Statistics Sweden provided BLS with unpublished tabulations of adjusted data for 1989. Because the adjustments were very small, BLS has applied the 1989 proportions to adjust data for the other years.

*Australia.* The Australian Bureau of Statistics compiled the data for the U-1 to U-7 indicators for this article based on specifications supplied by the Bureau of Labor Statistics. The data are annual averages for the period 1983-93 derived from the monthly labor force survey. The Australian survey is very close in concepts and definitions to the U.S. labor force survey, and no adjustments were made to any of the indicators for comparability with U.S. concepts.

There is a slight understatement of persons working part time for economic reasons in the Australian statistics because the category "bad weather and plant breakdown" could not be divided into two separate subcategories. Working part time because of "bad weather" is not considered an economic reason in the U.S. survey, while doing so because of a "plant breakdown" is an economic reason. On the advice of the Australian Bureau of Statistics, BLS decided to exclude the entire category.

Data on discouraged workers in Australia were available not for every month, but generally only for March and September of each year. The Australian Bureau of Statistics annualized the semianual figures for this study. Data for job losers (U-2) were available only from 1987 onward, because no such data were collected in the earlier years.

The appendix to the 1993 study included a tabulation showing, for each country, the significant aspects of coverage and reliability of the labor force surveys used to calculate the alternative indicators. The following tabulation gives similar data for Australia, relating to the year 1989:

- Number of households in sample: 30,903
- Number of persons in sample: 66,769
- Sampling ratio: 0.5 percent
- Origin of sampling frame: population census
- Unemployment rate, 1989: 6.2 percent
- One standard error: 6.1 percent to 6.3 percent
- Two standard errors: 6.0 percent to 6.4 percent.

## Footnotes to the appendix

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<sup>1</sup> Constance Sorrentino, "International comparisons of unemployment indicators," *Monthly Labor Review*, March 1993, pp. 3-24.

<sup>2</sup> *Ibid.*, pp. 19-24.

<sup>3</sup> *Labour Force Survey: Results, 1992* (Luxembourg: Office for Official Publications of the European Union, 1994), p. 10.

<sup>4</sup> However, persons only looking at advertisements in newspapers or journals are counted as unemployed in the 1992 and earlier European Union surveys. Such a form of job search is not enough for classification as unemployed in the United States, but it is in Canada, where those who employ only this method account for about 5 percent of the unemployed. In the European Union countries, indications are that this group is also in the 5-percent range of the unemployed. No adjustment has been made on this point for Canada or the European Union countries. (Although for Italy, because the group is relatively large, an adjustment is made to exclude passive jobseekers from U-5 and add them to U-7 prior to 1992; for 1992

and 1993, data on such persons continue to be collected even though they are no longer counted as unemployed in the U-5 measure. For those 2 years, BLS has added them to U-7 without needing to subtract them from U-5.) In Japan, the number of passive jobseekers—mainly persons awaiting the results of having applied for a job—is also large, and an adjustment is made to exclude them from U-5 and add them to U-7.

<sup>5</sup> Sorrentino, "International comparisons," p. 21.

<sup>6</sup> In January 1994, the U.S. Current Population Survey definitions were changed to require a job search on the part of persons waiting to start a new job within 30 days. However, the data used in this article are not adjusted to the new U.S. concept, but remain in accord with the concepts in place prior to 1994.

<sup>7</sup> *Report on the Special Survey of the Labour Force Survey* (Japanese Statistics Bureau, Management and Coordination Agency, 1994).