

An international comparison of labor force participation, 1977–84

International comparisons of labor force participation in six countries, including the United States, show vastly different patterns, both overall and for demographic groups

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Over the past decade there have been substantial changes in the structure and performance of labor markets in most countries. These changes stem from changes in various economic factors such as the oil price crises in 1974 and 1978 and the subsequent slowdown in economic growth and emergence of international recession. However, labor force responses since 1975 to these changes have varied considerably between countries and the outcomes may usefully be compared and contrasted. In this article, six countries with similar approaches to labor force measurement are compared.¹ The largest is the United States, followed by Japan and West Germany. The smallest markets considered are, in order of size, Canada, Australia, and Sweden.

The aggregate participation rates in each country are shown in table 1. The range is large. Sweden had the highest labor force participation rate, followed by Canada, the United States, Japan, Australia, and West Germany.²

The overall changes in labor force participation since 1975 are also shown in table 1. In Australia the labor force participation rate fell 1.7 percentage points from 61.6 percent in 1975. West Germany and Japan experienced little change in the aggregate participation rate. By contrast, labor markets in the other countries were characterized by large growth in participation rates, particularly in Canada and the United States. In Sweden, which had the highest proportion

of the working age population in the labor force of any country considered, the participation rate rose by slightly less.

The magnitude and nature of these different changes in the aggregate labor force participation rate can be seen more clearly by examining the change in the labor force participation rate (shown in column 3) decomposed into the change in the employment-population ratio (shown in column 4) and, completing the identity, the change in the unemployment-population ratio.³

In all countries but the United States, the employment-population ratio either increased by less than the participation rate or fell between 1975 and 1984. Australia and West Germany also stand apart from the remaining countries, having experienced both a large decline in employment growth relative to population growth and hefty increases in unemployment. The fall in participation in Australia decomposes into a large fall in the employment-population ratio accompanied by a smaller offsetting increase in unemployment. In West Germany, contrary to the Australian experience, the effect of a fall in the employment-population ratio was completely offset by an increase in unemployment. In Japan, almost all of the small increase in the participation rate was attributable to a small increase in the employment-population ratio, while, in Canada, most of the increase in participation rate decomposes into a dominant increase in unemployment. In Sweden, both employment and unemployment grew roughly by the same magnitude, at least according to the official "unadjusted data" for the popula-

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tion aged 16 to 74. BLS estimates, shown as the "unadjusted data" for the population aged 16 and over, suggest that in Sweden the participation rate altered predominantly from an increase in unemployment with very little change in the employment-population ratio.

Of all the countries examined, the Australian and U.S. experiences appear to be unique at either end of the spectrum. Only Australia experienced a large decline in the participation rate together with a very large increase in the unemployment-population ratio, and only the United States experienced a large increase in the participation rate together with a decline in the unemployment-population ratio.

Changes in composition

Observed changes in the labor force may reflect shifts in the age and sex structure of the population, changes in labor force behavior within demographic groups, or both. The role of composition effects vis-à-vis behavioral influences is examined in this section.

The effect of demographic changes can be measured by computing the aggregate participation rate for 1984, maintaining the 1975 participation rates for each individual demographic group. The difference between the 1975 and the 1984 rate calculated by assuming no participation change in the demographic components indicates that change in the participation rate was due solely to demographic shifts. Between 1975 and 1984, demographic shifts would have marginally altered the aggregate participation rates of the United States, Canada, and Sweden. (See table 2.) More substantial shifts occurred in Australia (down 1.1 percentage points), Japan (down 1.1 percentage points), and West Germany (up 0.8 percentage points).

After adjusting for demographic factors, West Germany appears to have had similar experiences to Australia. Thus Australia and West Germany were the only countries to have experienced behaviorally induced declines in aggregate labor force participation and large increases in unemployment.

Participation rates by sex

The participation rates of men and women are shown for each country in table 3. Male participation rates varied little between most countries but the rate for West Germany was particularly low. In 1984, Japan had the highest rate (78.9 percent), followed by Canada, the United States, Sweden, Australia, and West Germany which had the lowest (71.9 percent).

Between 1975 and 1984, male labor force participation fell in all countries. Australia experienced the largest change, from 80.5 to 75.7 percent, and the United States the smallest, from 77.9 to 76.4 percent. Most of these changes were because of shifts in behavior rather than demographic factors as the following tabulations of the percentage point change due to the effect of demographic change show:

Australia . . .	-0.3	Sweden	-0.2 (unadjusted) or 0.1 (BLS adjusted)
Canada	0.6	United States . . .	0.5
Japan	-0.6	West Germany . . .	0.7

Female participation rates varied considerably between countries and the Australian and West German rates were low, compared with Sweden, the United States, Canada, and Japan.

Female participation rates rose in all countries but the magnitude of the increases varied widely. The rates rose markedly in Canada, Sweden, and the United States. Small increases were recorded in Japan, West Germany, and Australia.

Estimates of the change in participation, net of the effects of demographic shifts, result in large gains in Canada, Sweden, and the United States, moderate gains in Japan and Australia, and a very small increase in West Germany.

The conclusion is that changes in labor force participation rates for both men and women in all countries mainly reflect changes in behavior. It would appear, however, that demographic influences are important in contrasting changing patterns of female labor force participation in Australia with

Table 1. Labor force participation rates and the relative shares of changes in employment and unemployment to changes in labor force participation, six countries, 1975 and 1984¹

Country	Labor force participation rate		Employment-population ratio		Percentage point change in the:		
	1975	1984	1975	1984	Labor force participation rate	Employment-population ratio	Unemployment-population ratio
Australia	61.6	59.9	58.8	54.8	-1.7	-4.0	2.3
Canada	61.1	64.8	56.9	57.4	3.7	0.5	3.2
Japan	63.0	63.5	61.9	61.8	0.5	-0.1	0.6
Sweden:							
Unadjusted	69.6	71.9	68.5	69.6	2.3	1.1	1.2
BLS adjusted ²	65.9	67.0	64.8	64.9	1.1	0.1	1.0
United States	61.2	64.4	56.1	59.5	3.2	3.4	-0.2
West Germany ³	55.5	55.6	53.6	51.6	0.1	-2.0	2.1

¹ Refers to annual average data in Canada, Sweden, the United States, and Japan (except for 1984, where an 11-month average was used). The data for Australia refer to the August survey and were chosen because it is the only month for which a historically consistent time series exists. The data used for West Germany are from the microcensus and are collected each April/May. The microcensus data were chosen because they are the only labor force data collected in West

Germany which conform to International Labor Organization concepts and definitions.

² The published Swedish data are shown as "unadjusted" and refer to the population aged 16 to 74. BLS calculations of the labor force participation rate and employment-population ratios for the population aged 16 and over are shown as "BLS adjusted."

³ The latest data available are for 1983 and the data refer to that year.

those that occurred in West Germany.

Further insights can be gained by considering separately the change in the male and female participation rates relative to the change in employment. Between 1975 and 1984, most of the decline in male labor force participation occurred on the employment side with offsetting increases in unemployment. Large declines in employment were significant in Australia and West Germany, and to a lesser extent, Canada. Modest rises in employment occurred in Japan and Sweden. The United States contrasts with all other countries, but particularly Australia and West Germany. The United States had the smallest decline in the male employment-population ratio and was the only country to achieve an improvement in the male unemployment-population ratio.

Similarly, much of the increase in female participation occurred on the employment side with relatively small increases in unemployment. This holds for all countries except Australia and West Germany. In these countries, unemployment increases accounted for much of the rise in participation rates. Again the United States contrasts starkly. The United States recorded the largest increase in the female employment-population ratio and at the same time was the only country able to achieve an improvement in the unemployment-population ratio.

Demographic groups

Comparisons of labor force participation of various demographic groups in the six countries highlight the reasons why Australia and West Germany have performed so poorly relative to the other countries, and the United States in particular. The groups compared are teenagers and young adults, prime working age persons (aged 25 to 54), and older persons (aged 55 and over).⁴

Teenagers and young adults. The youth labor market is conventionally split into teenage (that is, aged 15 to 19 or 16 to 19) and young adult (aged 20 to 24) groups for analysis, because each component typically exhibits different labor force behavior. These differences are usually reflected in differentiated policy interest in the two groups.

The participation rates of teenagers in each country are shown in table 4. The variation is remarkable. In 1984, for example, the participation rate for female teenagers ranged from 55.7 percent in Australia to only 18.4 percent in Japan.

Between 1975 and 1984, large differences between countries are evident in both the direction and magnitude of change in teenage labor force participation rates. Large declines were recorded in teenage participation rates of Sweden and West Germany. The participation rates of Swedish teenagers fell from 59.0 to 43.8 percent for males and from 56.2 to 47.0 percent for females.⁵ West German teenage male participation rates fell from 57.2 to 46.1 percent for males and from 50.7 to 38.6 percent for females. In contrast, small declines in teenage participation rates were

Table 2. Estimates of contributions of demographic and behavioral changes to labor force participation rate changes, 1975 and 1984¹

Country	Participation rate			Change in participation rate due to:	
	1975	1984	1984 using 1975 weight	Demographic shift	Behavioral shift
Australia	61.6	59.9	60.5	-1.1	-0.6
Canada	61.1	64.8	61.0	-0.1	3.7
Japan	63.0	63.5	61.9	-1.1	1.6
Sweden:					
Unadjusted	69.6	71.9	69.4	-0.2	2.5
BLS adjusted	65.9	67.0	66.0	0.1	1.0
United States	61.2	64.4	61.3	0.1	3.1
West Germany ²	55.5	55.6	56.3	0.8	-0.7

¹ Refers to annual average data in Canada, Sweden, the United States, and Japan (except for 1984, where an 11-month average was used). The data for Australia refer to the August survey and were chosen because it is the only month for which a historically consistent time series exists. The data used for West Germany are from the microcensus and are collected each April/May. The microcensus data were chosen because they are the only labor force data collected in West Germany which conform to International Labor Organization concepts and definitions.

² The latest data available are for 1983 and the data refer to that year.

recorded in Australia and Japan for both males and females.⁶ In the United States and in Canada, male teenagers recorded small declines while small increases were recorded for female teenagers.

As seen above, changes in age composition could explain the changes observed. In Sweden, roughly half of the fall in the male teen participation rate (7.6 of 16.3 percentage points) was because of shifts in the age composition. Among female teenagers, demographic effects should have raised the participation rate 0.2 percentage points but actually it fell 6.9 percentage points. In Canada, demographic effects should have increased the male teen participation rate 1.3 percentage points but it fell 0.6 percentage points. Demographic changes should have increased the female teen participation rate 1.4 percentage points, but the actual increase was 3.3 percentage points. Similarly, in the United States demographic effects should have raised participation rates of male teens by 0.6 percentage points and female teens by 0.4 percentage points but, the actual changes were -3.1 and +2.7 percentage points. In other words, the evidence suggests that demographic influences are swamped by behavioral changes, at least in Sweden, Canada, and the United States, the only countries for which the data is available at a low level of aggregation.

The usual explanation of declining teenage participation rates is that increasing proportions of young people are staying in school. This argument is consistent with teenage participation rate trends in Sweden, West Germany, and Japan. In Australia, Canada, and the United States, however, substantial increases in teenage labor force participation have occurred among teenagers still in school.

The nature of the change in teenage participation rates can be better appreciated by considering the relative contribution of employment and unemployment changes. In Australia and West Germany, many were unable to find work because the growth in employment substantially lagged the

Table 3. Labor force participation rates and the relative shares of employment and unemployment to changes in the labor force participation of men and women six countries, 1975 and 1984

Country and Sex	Labor force participation rate			Employment-population ratio		Percentage point change in the:		
	1975	1984	1984 using 1975 weights	1975		Labor force participation rate	Employment-population ratio	Unemployment-population ratio
				1975	1984			
Men:								
Australia	80.5	75.7	80.2	77.7	69.1	- 4.8	8.6	3.8
Canada	78.4	76.6	79.1	73.5	68.0	- 1.8	- 5.5	3.7
Japan	81.4	78.9	80.8	79.8	76.8	- 2.5	- 3.0	0.5
Sweden:								
Unadjusted	80.0	76.3	79.8	78.9	74.0	- 3.7	- 4.9	1.2
BLS adjusted ³	77.0	73.0	76.4	(2)	(2)	- 4.0	(2)	(2)
United States	77.9	76.4	78.4	71.7	70.7	- 1.5	- 1.0	- 0.5
West Germany ⁴	74.5	71.9	75.2	72.1	67.4	- 2.6	- 4.7	2.1
Women:								
Australia	43.0	44.6	41.3	40.3	40.9	1.6	0.6	1.0
Canada	44.4	53.5	43.7	40.8	47.3	9.1	6.5	2.6
Japan	45.7	49.0	44.1	45.0	47.6	3.3	2.6	0.7
Sweden:								
Unadjusted	59.2	67.5	59.4	58.0	65.3	8.3	7.3	1.0
BLS adjusted ³	55.2	61.5	54.5	(2)	(2)	6.3	(2)	(2)
United States	46.3	53.6	46.0	42.0	49.5	7.3	7.5	- 0.2
West Germany ⁴	38.8	41.0	39.3	37.4	37.5	2.2	0.1	2.1

¹ Refers to annual average data in Canada, Sweden, the United States, and Japan (except for 1984, where an 11-month average was used). The data for Australia refer to the August survey and were chosen because it is the only month for which a historically consistent time series exists. The data used for West Germany are from the microcensus and are collected each April/May. The microcensus data were chosen because they are the only labor force data collected in West Germany which conform to International Labor Organization concepts and definitions.

² Unfortunately, separate estimates of employment of the sexes aged 75 and over were not available to calculate the relevant employment-population ratios.

³ The published Swedish data are shown as "unadjusted" and refer to the population aged 16 to 74. BLS calculations of the labor force participation rate and employment population ratios for the population aged 16 and over are shown as "BLS adjusted."

⁴ The latest data available are for 1983 and the data refer to that year.

growth in the population. In the United States, the situation would appear to be entirely different, unemployment changed little and even improved slightly for female teenagers.⁷ In Canada, employment and unemployment changes substantially offset each other for men, but for women most of the increased participation was reflected in increased unemployment. In all other countries, substantial declines in the teenage employment-population ratio occurred with little or no increase in unemployment.

There has been less of a difference between the countries in the participation rate trends of young adults than for teenagers. Australia, along with Canada and the United States, had the highest male young adult participation rates in 1984. (See table 4.) Sweden and West Germany had rates that lay midway on the range, and Japan had a relatively low rate, 70.9 percent.

Male young adult participation rates have changed very little over time in all countries except Japan.⁸ Participation rates fell there from 76.5 to 70.9 percent, which may reflect the strong move towards further education.

Some differences were apparent in the relative importance of changes in the employment component vis á vis the unemployment component to changes in young adult male participation rates. Almost all of the large decline in Japan reflected declines in employment with little or no unemployment effect. In all other countries, except the United States, declines in employment were largely offset by increases in unemployment. These were substantial in Australia and Canada, and to a lesser extent in West Germany. Only in the

United States was there an increase in the employment-population ratio of young adult men and a reduction in the unemployment-population ratio.

The participation rates of young women were lower than those for men. In 1984, the rate for women ranged from 80.4 to 68.9 percent, and was highest in Sweden, followed by Canada, Australia, West Germany, the United States, and Japan.

In recent years, the labor force participation rates of young women have increased markedly in all countries except West Germany, where the rise was much smaller. The reasons for this upsurge were mainly the expansion of the service sector (which employs large numbers of women), increased opportunities in part-time labor markets, and declining fertility.⁹ The very high labor force participation rate of young women in Sweden has also reflected changes in taxation arrangements for married women, the introduction of parenthood insurance in the 1970's, and government-financed child care centers.¹⁰

The relative contributions of employment and unemployment changes to these increases varied considerably between the countries. Only in the United States, which achieved the largest increase in the female young adult employment-population ratio of any country, was there a reduction in the unemployment-population ratio. Japan also achieved strong employment growth with a small increase in unemployment. West Germany was the only country to experience an actual decline in the employment-population ratio, with a substantial increase in unemployment. Canada

had the lowest increase in the employment-population ratio, but the largest increase in unemployment, while Australia and Sweden experienced more moderate increases in both.

Prime working age persons. Prime working age men (aged 25 to 54) have the highest participation rates of any population subgroup. (See table 4.) Unlike other age groups, there has been little change in the labor force participation of prime working age men in any of the countries considered. In 1984, Japan had the highest rate followed by Sweden, West Germany, the United States, Australia, and Canada. The close similarity across all countries is not surprising, however, given the high degree of labor market attachment of men in the prime working age range.

While Australia had the second highest prime working age male participation rate in 1975 (96 percent), it had the second lowest rate in 1984 (93.6 percent). This decline has been larger than in any other country and, although small in magnitude, is highly significant given the degree of labor force commitment by prime working age men. Moderate declines were experienced in Canada and West Germany, and slight declines occurred in Sweden, the United States, and Japan.

The participation of prime working age men are hardly affected by shifts in the age composition of this group. These shifts would have marginally increased participation rates in Australia (0.4 percentage points), Canada (0.1 percentage points), Sweden (0.2 percentage points), and the United States (0.3 percentage points), and marginally decreased participation in West Germany (0.1 percentage points) and Japan (0.1 percentage points). Behavioral, rather than demographic, influences were important.

These declines in prime working age participation rates are generally attributed to the variety of governmental programs and subsidies (for example, sickness and disabilities payments and retraining programs) available to persons not in the labor force or wishing to leave it. It has also been argued that the increasing participation of married women has relieved prime working age men of the burden of being the sole family breadwinner. In theory, these changes give these men opportunities to reduce their participation, although in practice there are no studies to suggest that these factors have any significant effect.

While the changes in all countries were small, some quite different patterns have emerged in the relative contributions of changes in employment and unemployment. Participation has declined since 1975 in Australia, Canada, and West Germany because their historically large declines in employment were not wholly offset by increases in unemployment. However, the declines were double those of most countries. Japan, the United States, and Sweden have recorded slight declines in participation among prime working age men since 1975, but these changes were predominantly the result of a small decline in employment, relative to the population, with a smaller increase in unemployment.

Unlike the male participation patterns, enormous changes have occurred since 1975 in the labor force participation of prime working age women. Again major differences are apparent between Australia and West Germany and the other countries. In 1984, female labor force participation was still lowest in Australia (55 percent) and West Germany (57.1 percent) and highest in Sweden (88.1 percent). The American, Canadian, and Japanese rates were much higher than Australia and West Germany, but still were well below those for Sweden.

Between 1975 and 1984, the participation rate of prime working age women rose 12 to 16 percentage points in Canada, Sweden, the United States, and Japan. Much less spectacular rises were recorded in Australia (6.7 percent) and West Germany (5.9 percent).

Changes in the age composition of prime working age women again had very little influence on their participation rate. Changes in age composition would have raised the participation rate in Australia by 1.6 percentage points, Japan by 1.0 percentage points, Sweden by 0.4 percentage points, Canada by 0.3 percentage points, and West Germany by 0.2 percentage points and would have lowered the rate in the United States by 0.1 percentage points. Once again, we believe that behavioral, not demographic, changes were important.

Several reasons appear important in explaining these patterns of change in behavior. The expansion of employment in the service sector and the expansion of part-time employment opportunities. Both of these areas of employment tend to be dominated by women in most countries (particularly Australia, Canada, Sweden, and the United States). However, in Japan, female employment in the service sector has been much lower than in other countries, and there are comparatively few women in part-time employment in West Germany.¹¹

These developments suggest that an increase in employment opportunities is a major reason for the upsurge in the labor force participation of prime working age women and this is borne out by an examination of the sources of labor force participation changes. In Canada, Japan, Sweden, and the United States (all of which have had the largest increases since 1975), the increases resulted from large increases in employment and small changes in unemployment. Even in Australia, the employment increases were still dominant. Only in West Germany were increases in unemployment larger than employment growth.

Declining fertility rates are also frequently cited as important in the marked upsurge in prime working age female labor force participation. In the last two decades, fertility rates have fallen in most Western countries except Sweden (which already had a very low rate in the 1960's) and Japan (where fertility has actually risen slightly over the last two decades). Other reasons often cited are the radical improvements in "household technology" and the development of commercial substitutes for household products—dryclean-

Table 4. Labor force participation rates and the relative shares of employment and unemployment to changes in the labor force participation of selected age groups, six countries, 1975-1984¹

Age, sex, and country	Labor force participation rate		Employment-population rate		Percentage point change in the:		
	1975	1984	1975	1984	Labor force participation rate	Employment-population ratio	Unemployment-population ratio
Teenagers²							
Male:							
Australia	60.0	59.1	53.5	46.0	-0.9	-7.5	6.6
Canada	54.6	54.0	46.2	42.5	-0.6	-3.7	3.1
Japan	20.5	18.4	19.5	16.7	-2.1	-2.8	0.7
Sweden	59.0	43.8	56.5	41.5	-15.2	-15.0	0.2
United States	59.1	56.0	47.2	44.9	-3.1	-2.3	0.7
West Germany ³	57.2	46.1	53.5	40.6	-11.1	-12.9	1.8
Female:							
Australia	57.3	55.7	48.7	44.7	-1.6	-4.0	2.4
Canada	47.4	50.3	40.6	41.0	2.9	0.4	2.5
Japan	21.7	18.4	21.2	17.5	-3.3	-3.7	0.4
Sweden	56.2	47.0	52.2	44.8	-9.2	-7.4	1.8
United States	49.1	51.8	39.4	42.5	2.7	3.1	-0.4
West Germany ³	50.7	38.6	47.3	32.1	-12.1	-15.2	3.1
Ages 20 to 24							
Male:							
Australia	90.1	89.4	85.4	76.6	-0.7	-8.8	8.1
Canada	85.0	83.7	76.1	68.3	-1.3	-7.8	6.5
Japan	76.5	70.9	74.1	68.1	-5.6	-6.0	0.4
Sweden	82.7	82.8	80.9	77.7	0.1	-3.2	3.3
United States	84.5	85.0	72.4	74.9	0.5	2.5	-2.0
West Germany ³	79.8	80.1	75.8	72.2	0.3	-3.6	3.9
Female:							
Australia	65.3	71.7	60.8	64.3	6.4	3.5	2.9
Canada	67.0	74.6	60.9	63.5	7.6	2.6	5.0
Japan	72.5	68.9	64.4	68.9	6.3	4.5	1.8
Sweden	73.7	80.4	71.1	74.8	6.7	3.7	3.0
United States	64.1	70.4	56.0	62.7	6.3	6.7	-0.4
West Germany ³	68.4	70.5	65.5	62.7	2.1	-2.8	4.9
Ages 25 to 54							
Male:							
Australia	96.0	93.6	93.7	87.8	-2.4	-5.9	3.5
Canada	94.8	93.5	90.8	84.8	-1.3	-6.0	4.7
Japan	97.4	97.0	95.9	95.1	-0.4	-0.8	0.4
Sweden	95.2	94.9	94.4	92.9	-0.3	-1.5	1.2
United States	94.4	93.9	89.0	88.4	-0.5	-0.6	0.1
West Germany ³	95.9	94.7	93.2	89.5	-1.2	-3.7	2.5
Female:							
Australia	48.3	55.0	47.2	51.7	6.7	3.5	3.2
Canada	50.5	66.7	47.1	59.9	16.2	12.8	0.7
Japan	52.2	65.5	51.4	63.8	13.3	12.8	0.7
Sweden	74.2	88.1	73.2	86.1	13.9	12.9	1.0
United States	55.1	68.2	51.0	63.9	13.1	12.9	0.2
West Germany ³	51.2	57.1	49.6	52.7	5.9	3.1	9.0
Ages 55 to 64							
Male:							
Australia	79.1	61.2	76.5	57.4	-17.9	-19.1	1.2
Canada	79.3	71.1	76.2	65.2	-8.2	-11.0	2.8
Japan	86.0	83.9	83.3	79.6	-2.1	-3.7	1.6
Sweden	82.8	76.2	80.7	73.0	-6.6	-7.7	1.1
United States	75.6	68.5	72.4	65.1	-7.1	-7.3	-0.2
West Germany ³	69.2	62.9	67.3	55.9	-6.3	-11.4	5.1
Female:							
Australia	23.7	19.8	23.2	19.2	-3.9	-4.0	0.1
Canada	30.8	33.4	29.3	30.9	2.6	1.6	1.0
Japan	43.7	45.3	43.1	44.4	1.6	1.3	0.3
Sweden	49.6	59.6	48.9	56.6	10.0	7.7	2.3
United States	41.0	42.1	38.9	39.9	1.1	1.0	0.1
West Germany ³	25.3	26.8	24.7	25.4	1.5	0.7	0.8

¹ Refers to annual average data in Canada, Sweden, the United States, and Japan (except for 1984, where an 11-month average was used). The data for Australia refer to the August survey and were chosen because it is the only month for which a historically consistent time series exists. The data used for West Germany are from the microcensus and are collected each April/May. The microcensus data were chosen because they are the only labor force data collected in West Germany

which conform to International Labor Organization concepts and definitions.

² Teenagers refer to 15- to 19-year-olds in Australia, Canada, Japan, and West Germany, and to 16- to 19-year-olds in Sweden and the United States.

³ The latest data available were for 1983 and the data refer to that year.

ing, fast-foods, restaurants—which have released female labor for the market place. Finally, improved education among women may have shifted their preferences in favor of work outside the home.

The comparatively small increase in prime working age female participation in West Germany probably reflects the historical importance of foreign workers at times of employment expansion and this may have restricted the opportunities for women to successfully enter the labor force. The guest worker has not been significant since the early 1970's but neither has there been a significant employment expansion. While female participation rates have generally been lower in Europe, the higher rates in North America and Scandinavia are now beginning to be replicated in other European countries and the differences currently observed are probably differences in timing and in the overall pace of job growth.

Older persons. People aged 55 and over are defined here as "older persons." The group is split into those aged 55 to 64 and those aged 65 and over, because the participation rates of the latter group are substantially lower than those of the former.

The participation rate of men aged 55 to 64 in 1984 was lower in Australia and West Germany than in most other countries. The rate was relatively high in Japan, Sweden, Canada, and the United States. (See table 4.)

The changes in the participation rate of these men since 1975 have been quite different between Australia and other countries. A particularly large drop was observed in Australia. A large decline was also recorded in Canada. Modest decreases were observed in Sweden and the United States, and only a marginal decline was observed in Japan. While a modest decline was also observed in West Germany, it occurred from an already low base.

Shifts in the age composition of this group should have raised participation rates in West Germany (6.3 percentage points) and lowered participation rates in the United States (0.2 percentage points), Australia (0.3 percentage points), and Sweden (0.5 percentage points). Similar computations could not be made for Canada or Japan. This suggests that age composition effects were insignificant explanations of the overall declines. The age composition effect calculation also shows that the behavioral shifts in West Germany are much greater than indicated by a comparison of participation rates over time.

Declines in the participation rates of older men in Australia and in most countries reflect large declines in employment. In Australia and Canada, the participation drop was because of a decrease in the employment-population ratio with little change in unemployment. The declining participation of older men reflects trends towards earlier retirement ages and the expansion of pension schemes. The reasons for a high participation rate and very small declines in participation in Japan are also related to cultural factors and the

pension system, which is not generous.¹²

The trends in the labor force participation rates of older women aged 55 to 64 have been rather different than those of older men. The participation rate of women aged 55 to 64 in 1984 ranged from a low 19.8 percent in Australia to 59.6 percent in Sweden.

Since 1975, there have been small declines in the participation rates of older women in Australia. In the same period, very small increases were recorded in the United States, Canada, Japan, and West Germany. A large increase was recorded in Sweden.

Shifts in the age composition of this group would have raised participation rates by an insignificant amount in the United States (0.3 percentage points) and lowered it by an insignificant amount in Australia (1.5 percentage points). However, the increase in the participation rate of German women aged 55 to 64 is illusory because demographic shifts should have increased the participation rate by 2.5 percentage points.

Much more variation in participation rates and their employment and unemployment components was evident for older women aged 55 to 64 than for men. For women of this age group, participation declined only in Australia, reflecting a large drop in employment which was not offset by a small rise in unemployment. In West Germany, a slight increase in participation reflected small increases in employment and unemployment. In Sweden, the United States, and Japan, increased participation was almost entirely brought about by rises in employment.

The main feature of these comparisons is that substantial declines in the labor force participation rates of older men have occurred in all countries, yet those trends have not been replicated for older women. In Australia the declines that occurred for women were much smaller than those for men, and in West Germany, Canada, Sweden, Japan, and the United States, an increase in participation was actually observed.

In 1984, the between-country ranking of labor force participation rates for men aged 65 and over was similar. The rate was markedly higher in Japan than in the United States, Canada, Sweden, Australia, and West Germany.

The labor force participation rates of women aged 65 and over in 1984 ranged widely between countries, from 16.3 percent in Japan to 2.5 percent in Australia. The Australian rate was also considerably lower than that of the United States. Only in West Germany did the rate approach that in Australia. The Australian rates have, however, always been low relative to other countries. In the last decade the participation rate in Australia has gradually declined from around 4 percent to 2.5 percent. Declines in the labor force participation rates of women aged 65 and over in other countries have been marginal in the last 10 years.

Conclusions

A comparison of the change in labor force participation

rates, decomposed into changes in the employment and unemployment-population ratios, shows a large disparity in job creation capability between the United States and many other advanced nations. The contrasts between the two extremes—the United States, on one hand, and Australia and Germany, on the other, are illustrative. Australian and West German participation rates, adjusted for change in the demographic composition of the labor force, fell between 1975 and 1984. Underlying these behaviorally induced declines in labor force participation were large declines in employment relative to population growth and hefty increases in the unemployment-population ratio. By contrast, the United States experienced a large behaviorally induced increase in the participation rate, accompanied by strong growth in the employment ratio and a small decline in the

unemployment-population ratio.

Comparisons of labor force participation rates for demographic groups also confirm Australia's and Germany's poor performance relative to the rest, and to the United States in particular. In both, large withdrawals from the labor force, especially among older men, and small increases in female participation rates occurred. Modest falls in male participation rates and enormous increases in female rates occurred in the United States and to a lesser extent in the other countries. These changes suggest substantial increases in unemployment, both recorded and hidden, in Australia and Germany, and estimates suggest a jobless rate of almost double the official rate in Australia and one and a half times it in Germany.¹³ □

—FOOTNOTES—

ACKNOWLEDGMENT: Chris Robinson of the Australian Department of Employment and Industrial Relations contributed greatly towards the work which formed the basis of this article. Also, many helpful comments and advice came from Constance Sorrentino, Patricia Capdevielle, Joyanna Moy, and Arthur Neef of the Bureau of Labor Statistics.

¹ Details about labor force concepts definitions and data collection methods in each country are given in the appendix and in: Australian Bureau of Statistics, *The Labour Force, August 1984*, Catalogue No. 6203, Canberra, 1984 (and previous issues) for Australia; Statistics Canada, *The Labour Force, December 1984*, Catalogue No. 71-001, Ottawa, 1984 (and previous issues) for Canada; Statistics Bureau, *Annual Report of the Labour Force Survey 1984*, Prime Ministers Office, Tokyo, 1984 (and previous issues) for Japan; Statistiska Centralbyran, *Arbetskraftsundersökningen, Series AKU-Arsmedelstal*, Stockholm, 1984 (and previous issues) for Sweden; Bureau of Labor Statistics, *Employment and Earnings, January 1985*, U.S. Department of Labor, Washington, DC, 1985 and *Labor Force Statistics Derived From the Current Population Survey, A Data Book Vols. I & II* for the United States; and Statistisches Bundesamt, *Stund und Entwicklung der Erwerbstätigkeit*, Reihe 4.1.1 Fascherie 1 - Bevölkerung und Erwerbstätigkeit Wiesbaden, 1983 (and previous issues) for West Germany.

² The published Swedish participation rate is even higher (71.9 percent in 1984). Part of the explanation of why the published Swedish rate is so high is that the labor force is expressed as a proportion of the population aged 16 to 74. In other countries no maximum age is used to restrict the numbers in the working age population. The BLS has estimated that the inclusion of the population aged 75 and over would reduce the participation in 1984 by around 5 percentage points. The BLS estimates are used here.

³ These components of the labor force participation rate are conventionally referred to as ratios. Strictly speaking, however, they are rates as the ratios are expressed in percentage terms. For instance, the employment-population ratio is calculated as the ratio of the number employed to the number in the working age population multiplied by 100. The unemployment-population ratio is similarly calculated. It is also important to stress that an examination of labor force participation rate changes in terms of the relative contributions of the employment-population and unemployment-population ratios does not imply anything about the underlying causal factors which have led to participation changes. For instance, if participation rate changes were largely because of changes in the employment-population ratio, it does not necessarily mean that the change was demand-determined. Similarly, participation rate changes that were mainly caused by changes in the unemployment-population ratio are not necessarily supply-determined. Finally some comments on the use of the employment-population rather than a conventional unemployment rate are needed. The unemployment-population ratio is used for convenience because it completes the identity. If the reader feels more comfortable with an unemployment rate this can easily be calculated by dividing the unemployment-population ratio by the participation rate.

⁴ In the United States and Sweden, the young age groups refer to men and women aged 16 to 24, and in Sweden, the older age groups refer to men and women aged 55 to 74.

⁵ Measurement differences may complicate the interpretation of these figures. For instance, in Sweden, unlike in other countries, all full-time teenage students who are looking for work are automatically not counted as unemployed. However, this should make a minor contribution to the difference observed. The differences in the age definitions of teenagers also affects the figures. Teenagers are defined as persons aged 15 to 19 in Australia, Canada, Japan, and West Germany, and as 16 to 19 years of age in Sweden and the United States. Comparisons of specific cohorts within the teenage group are possible between Australia and Canada and Australia and the United States but when this is done it becomes apparent that the bulk of the difference in teenage labor force participation between countries is primarily due to differences in participation behavior rather than to differences in the age distribution or measurement of the teenage population.

⁶ Between 1975 and 1981 male teenage participation rates in Australia increased to 62.0 percent and female rates declined marginally to 57.0 percent.

⁷ It should be noted, however, that a large teenage unemployment problem already existed in 1975 which was not evident in most of the other countries.

⁸ It was not possible to analyze the effects of changing age composition among young adults because none of the countries published data for subcomponents.

⁹ By the same argument, differences in the rate of change will also reflect differences in fertility and education, as well as labor force factors identified here.

¹⁰ For a discussion of these influences, see Constance Sorrentino, "International comparisons of labor force participation, 1960-81," *Monthly Labor Review*, February 1983, pp. 23-36. Also see G. Eliasson, B. Holmlund and F. Stafford (eds.), *Studies in Labor Market Behavior: Sweden and the United States* (Industrial Institute of Economic and Social Research, Stockholm, 1981).

¹¹ Constance Sorrentino, "International comparisons," and see also Japan Institute of Labour, *The Japanese Employment System*, Japanese Industrial Relations Series No. 6, Tokyo 1980; and Japan Institute of Labour, *The Problems of Working Women*, Japanese Industrial Relations Series No. 8, Tokyo 1981.

¹² For further explanation see Constance Sorrentino, "International comparisons."

¹³ See *Who's in the Labour Force: A Study of Labour Force Participation*, Research Report No. 7 (Bureau of Labour Market Research, 1985).

APPENDIX: International differences in measuring the labor force

Scope, coverage, and method of labor force surveys

The approach to regular monthly labor force measurement in Australia, Canada, Japan, Sweden, and the United States is the "labor force" or "activity" approach in accordance with the standard International Labor Organization (ILO) guidelines for the definition and measurement of labor market concepts. In West Germany, an annual microcensus of the population is also taken, from which measures of the labor force are made according to the activity approach and this is used in the article.

Similar multistage sampling methods are used in Australia, Canada, Japan, and the United States. Households are selected according to geographical location, and persons within these households are interviewed. In contrast, samples of *persons* which represent the population are selected in Sweden and West Germany. There is no reason to expect that differences in sample selection methods will lead to any significant bias in the result obtained for each country.

Some bias could result from differences in sample rotation and from differences in data collection methods. Households remain in the Australian survey for 8 months and in the Canadian survey for 6 months. In Japan, households are surveyed for 2 consecutive months in 1 year, leave the survey, and rejoin it again for the same 2 consecutive months in the following year. The U.S. system is identical except that households are surveyed for the same 4 consecutive months in each of the 2 years. In the Swedish survey, persons are interviewed once every 3 months over a 2-year period, whereas, in West Germany, a new sample is selected for each annual microcensus. However, the nature and direction of any rotation group bias that may exist in surveys has not been determined.

Differences in definitions and major concepts

The working age population is defined as those persons aged 15 and over in Australia, Canada, Japan, and West Germany. It is defined as those aged 16 and over in the United States and as those aged 16 to 74 in Sweden. In addition, the working age population refers to the civilian noninstitutionalized population in Canada and the United States; to the civilian population in Australia and West Germany; and to the total resident population in Japan and Sweden.

The importance of differences between countries in defining the working age populations to include or exclude non-civilians and institutionalized persons is difficult to determine in the absence of relevant data for all countries. Differences in the minimum age of the working age population are likely to be more important, particularly with respect to comparisons of teenage labor markets. Similarly, the maximum age of 74 in Sweden will have some effect on both older worker and aggregate labor force participation

rate comparisons between Sweden and the other countries, but adjustments are made in the tables to include persons 75 years of age and older.

The major concept underlying the employment definition is that of work for payment during the survey week. In Australia, Japan, Sweden, and West Germany, employment refers to at least 1 hour for payment. In Canada and the United States, it is any work at all for payment. The classification of persons who worked without pay in a family business as employed persons, also differs between countries. Unpaid family workers are counted as being employed if they work at least 15 hours in the survey week in Australia, Sweden, and the United States. This same group are counted as being employed if they only worked at least 1 hour in the survey week in Japan or in West Germany, and if they did any work at all during the survey week in Canada. The other dimension of the employment definition is that of persons who had a job but were not at work during the survey week. Here the differences between countries are minor. It is unlikely that any of these differences in the definitions of employment will have any more than a marginal effect on labor force comparisons between countries.

Differences in the various definitions of unemployment appear to be greater than those for either the working age population or employment. Persons who did not have a job in the survey week but had actively looked for work and were available for work are classified as unemployed. However, the available for work criterion is not used in West Germany. The main difference in unemployment definitions between countries is the time period specified as that in which active job search was carried out in order to be classified as unemployed. In Australia, Canada, and the United States this period is the *4 weeks* up to the end of the survey week. In Sweden it is *60 days* up to the end of the survey week. This will lead to higher estimates of unemployment in Sweden, than is the case for other countries. In contrast, in Japan and West Germany *no period is actually specified*. Constance Sorrentino has shown that, in Japan at least, this may well result in a tendency of job search activities to be counted only if they occurred in the survey week, thereby leading to consistently lower estimates of unemployment. On the other hand, Sorrentino has also shown that a large number of those counted as unemployed in Japan did not seek work during the month. This would be those people who have applied for employment over a month ago but who have not received a reply from their employer. This would lead to an overestimate of the unemployed. On balance, the Japanese unemployment rate is slightly understated. The position for West Germany, however, is unknown.

Two other dimensions of the unemployment definition are important. First, temporary unemployment which did not involve active job search, such as waiting to return to a

job from a temporary absence (not including illness or vacation) or waiting to start a new job in the near future, is counted as unemployment in all countries except Japan, where such persons are classified as not in the labor force. Second, in all countries except Sweden, full-time students are classified as being employed if they had a job or as being unemployed if they were actively looking for work. In Sweden, full-time students are counted as being outside the labor force during school terms even if they are actively looking for work. These factors mean that estimates of unemployment in Japan and Sweden will be lower than in other countries.

In each country the labor force is defined as all those who were counted as employed or unemployed during the survey week. The residual of the working age populations are classified as inactive or not in the labor force.

Published and adjusted labor force data

Only those countries for which data were available and measured according to the standard ILO guidelines (that is,

via the activity approach) were considered for selection in the international comparisons made in this article. Other countries were not considered because their regularly published labor force statistics are measured in a very different way and are not directly comparable with those derived from the activity approach. Hence, the approach adopted here has been to use the published labor force data from those countries for which comparable *activity* data were available.

An alternative approach to making international labor force comparisons would be to use data from various countries that have been *adjusted* to U.S. labor force concepts and definitions. Adjusted data exists for the broad aggregates and are published by the BLS. The ways in which the data are adjusted are outlined in Constance Sorrentino, *International Comparisons of Unemployment*, BLS Bulletin 1979, Washington, DC, 1978; and Constance Sorrentino, "International comparisons of labor force participation, 1960-81," *Monthly Labor Review*, February 1983, pp. 23-36. Adjustment of data to U.S. concepts and definitions has not been made for the detailed age groups examined here.

A note on communications

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