# Changes in Labor Force Participation in the United States

Chinhui Juhn and Simon Potter

T he labor force participation rate in the United States increased almost continuously for two-and-a-half decades after the mid-1960s, pausing only briefly during economic downturns, as shown in Figure 1, where the shaded regions signify recessions. The pace of growth slowed considerably during the 1990s, however, and after reaching a record high of 67.3 percent in the first quarter of 2000, participation had declined by 1.5 percentage points by 2005. This paper reviews the social and demographic trends that contributed to the movements in the labor force participation rate in the second half of the twentieth century. It also examines the manner in which developments in the 2000s reflect a break from past trends.

Understanding changes in the labor force participation rate is important for a number of reasons. The share of the adult population that participates in the labor force—either by working or by looking for work—determines the size of the labor force, which in turn is central to constructing a measure of potential GDP and for making projections of future GDP growth. In the 1970s and the 1980s, for example, the entry of married women greatly expanded the labor force and potential GDP. As the "baby boom" generation—people born between 1946 and 1964—approach retirement age, how will the size of the U.S. labor force evolve? Will labor market participation of married women continue to grow over the next several decades? Will older workers continue in the labor force until later ages? As a related issue, much of the discussion regarding the solvency of Social Security hinges on projections of the labor force participation rate. The Social Security Trustees are projecting that the participation rate of older people will increase and that the overall

■ *Chinhui Juhn is Professor of Economics, University of Houston, Houston, Texas. Simon Potter is Economist, Federal Reserve Bank of New York, New York City, New York. Their e-mail addresses are ⟨cjuhn@uh.edu⟩ and ⟨Simon.Potter@ny.frb.org⟩, respectively.*

Figure 1
Civilian Labor Force Participation Rate
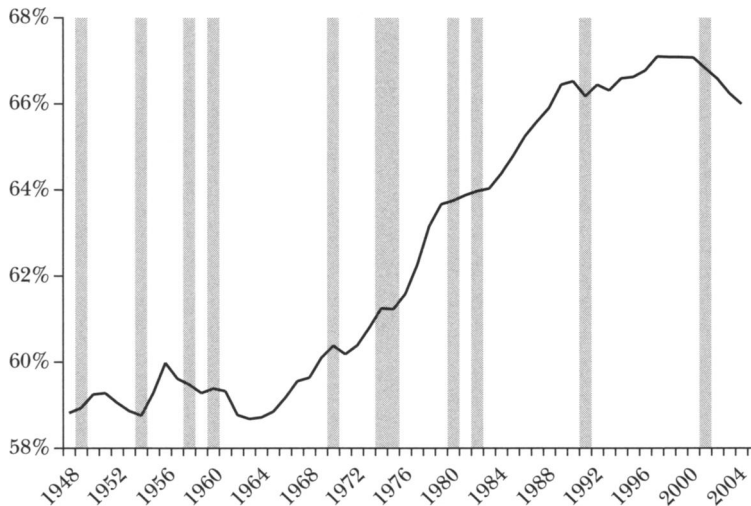
Note: Shading indicates NBER-dated recessions.

labor force participation rate will increase from its 2005 levels (Board of Trustees, 2005).

The labor force participation rate is also important for assessing the extent of slack in the labor market. The unemployment rate alone, without understanding participation behavior, has become a less reliable indicator of labor market conditions. For example, the labor force participation rate fell nearly a percentage point from the end of the 2001 recession to 2005. This decline in the labor force participation rate may help to explain why the unemployment rate remained relatively low—5.0 percent in the fourth quarter of 2005—despite lackluster job creation during the years after the 2001 recession. Do workers increasingly respond to adverse labor demand shocks by exiting the labor force—and perhaps relying on income support programs such as Social Security Disability Insurance—rather than entering unemployment? Might those who leave the labor force be induced to reenter the labor force?

We begin by defining the labor force participation rate and its major components. The following sections then examine the labor force participation rate in specific groups: women, prime-age males, older workers and younger workers. The conclusion considers some explanations for the recent decline in the labor force participation rate and some implications.

The Aggregate Labor Force Participation Rate and Its Components

The labor force participation rate is defined as the percentage of the working-age population who are either working (the employed) or not working but actively

searching for work (the unemployed). The relevant population for the official statistics is the civilian noninstitutional population of at least 16 years of age. In 2005, the civilian noninstitutional population of the United States was 226 million; thus, a 1 percentage point movement in the labor force participation rate involves a net change in the labor market status of 2.26 million people. One issue we will discuss below is how the growing number of men in penal institutions affects the labor force statistics.
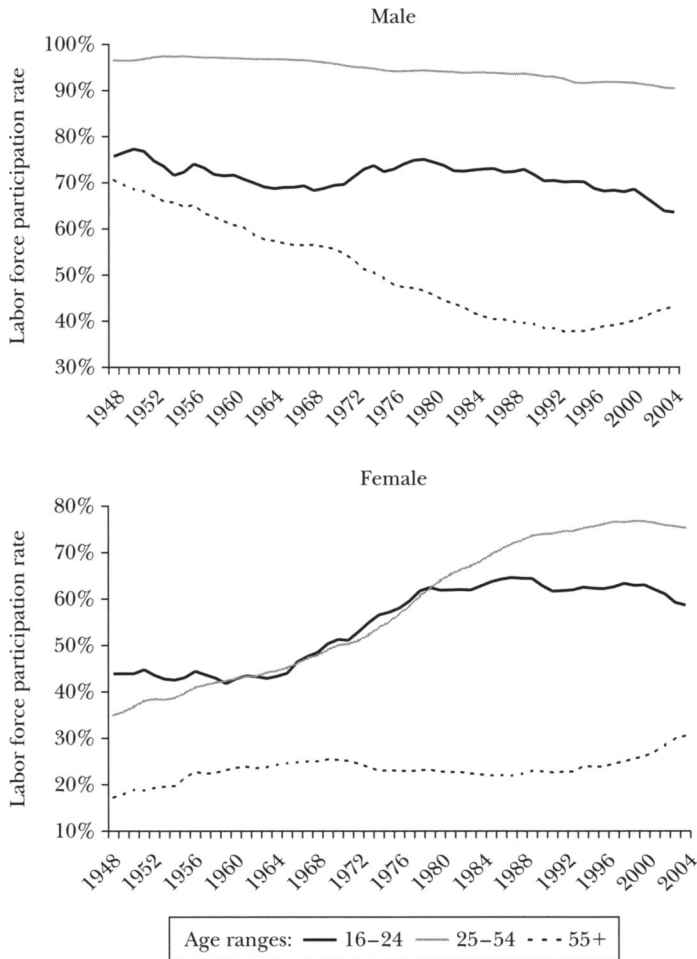
The labor force participation rate is estimated by the Bureau of Labor Statistics from the responses in the Current Population Survey (CPS). The CPS collects information from respondents each month, and in March additional information is collected on employment and earnings during the previous year. In 2005, the CPS included about 60,000 households. The estimation of the labor force participation rate from the sample is made more precise by using population information on the size of different groups (including information on six age and gender groups and on racial and ethnic groups by state) in combination with information from the previous month. The population information for each subgroup comes from the decennial census counts, with adjustments made between census years for deaths, net migration, net military service and net flows into institutions. With the large sample and additional information on population, sampling error tends to be low for the aggregate labor force participation rate, but sampling error can be high for smaller subgroups.

The employment concept in the labor force participation rate relates to any paid work by the individual in the reference week (the Sunday through Saturday that includes the twelfth day of the month). There is no minimum number of hours, and individuals are counted as employed during the week even if they were temporarily absent. Some temporary absences might not be paid, but might still count as employment if there is continuing relationship with the employer. There is a small group of employed persons (around 100,000) who are unpaid workers in family-operated enterprises. They must "work" 15 hours in the reference week to be counted as employed. To be defined as unemployed an individual must have had no employment in the reference week *and* have been involved in job search within the last four weeks.

Changes in the labor force participation rate can be decomposed into two main categories: changes in population weights for each subgroup and changes in the labor force participation rate of particular subgroups. As an example of a change in population weights, the aging of the baby boom cohort has caused the prime-age 25–54 year-old population to increase from approximately 50 percent of the over-16 population in 1975 to nearly 58 percent in 1996. Since prime-age men and women tend to have higher participation rates than either younger or older groups, this trend contributes to an increase in the aggregate participation rate.

The labor force participation rate of specific groups evolves as well. Figure 2 shows some of the substantial trends for men and women by age group. For example, labor force participation rates for men and women over 55 have tended to rise in recent years, while rates have fallen for other age groups. The labor force

Figure 2
Male and Female Labor Force Participation by Age

participation rate for men and women aged 16–24 has been dropping since the late 1990s. Labor force participation rates for prime-age men and women aged 25–54 have dropped in the 2000s, although the decline for men is a continuation of a mild long-term trend while the decline for women is a reversal of a long-term trend. One thing to keep in mind in interpreting all of these numbers, however, is even in 2004, we may be observing lingering business-cycle effects from the long economic boom of the late 1990s, which may have driven labor force participation rates to unsustainably high levels at that time.

In Table 1, we carry out a series of counterfactual estimates, first letting the population weights vary while keeping the subgroup labor force participation rates constant, and then keeping the population weights constant while allowing the

Table 1

Contribution of Population Shares, Changes in Male and Female Labor Force Participation Rate (LFPR)

	A	B	C	D	E
Year	Actual LFPR (percent)	Predicted, LFPR at 1979 levels (percent)	Predicted, female LFPR at 1979 levels (percent)	Predicted, LFPR at 1999 levels (percent)	Predicted, female LFPR at 1999 levels (percent)
1969	60.1	63.6	64.7	66.6	66.6
1979	63.7	63.7	63.7	66.4	66.4
1989	66.4	63.9	62.9	67.0	67.0
1999	67.1	63.8	62.1	67.1	67.1
2004	66.0	63.6	61.3	66.8	66.8

	F	G	H	I
Time period	Actual change (percentage points)	Contribution of pop. shares (percentage points)	Contribution of male LFPR (percentage points)	Contribution of female LFPR (percentage points)
1969–1979[a]	3.6	0.1	−1.1	4.6
1979–1989	2.8	0.2	−1.0	3.5
1989–1999[b]	0.6	0.1	−0.9	1.4
1999–2004	−1.1	−0.2	−0.6	−0.3

Note: Column (B) and (D) predicts aggregate LFPR by holding all group-specific LFPR constant at 1979 and 1999 levels respectively and allowing only population weights to vary. Column (C) and (E) predict aggregate LFPR by holding female LFPR constant at 1979 and 1999 levels respectively and allowing only population weights and male LFPR to vary over time. Column (G) calculates changes for the indicated years based on numbers in column (B) and (D). Column (H) calculates changes for the indicated years based on numbers in column (C) and (E) and subtracts column (G). Column (I) subtracts (G) and (H) from the actual change reported in (F). Numbers reported have been rounded to one decimal place.
[a] The changes reported use 1979 as the base year.
[b] The changes reported use 1999 as the base year.

subgroup participation rates to vary. For this analysis, we break down the labor force by seven age groups (16–19, 20–24, 25–34, 35–44, 45–54, 55–64 and 65+) and both genders. Column A shows the actual labor force participation rate in 1969, 1979, 1989, 1999 and 2004. The first four years are chosen because they roughly represent ends of economic expansions and 2004 is included because it is the most recent year for which we have data available. Column F shows the changes between the years, and how a rise in labor force participation rates first slowed and then reversed itself.

Column B of Table 1 shows the predicted labor market participation rates if all groups are fixed at the 1979 level, but the population weights of each group are allowed to vary. Column G shows the changes over time in this predicted series. Clearly, changing population weights have played a relatively minor role in the evolution of the labor force participation rate in recent decades. However, the

aging of the baby-boom will have a larger dampening effect on participation in the future as the cohort ages.

   To assess the role of changing male labor force participation rates, we construct another "predicted" participation series by holding only female participation rates constant at the 1979 level. (The decompositions depend on the choice of the base year. However, the qualitative conclusions of the analysis are unaffected if a different base year is chosen.) This counterfactual series, corresponding to the combined effect of changing population weights and changing male participation rates, is reported in column C. The contribution of the male participation rates alone, shown in column H, is constructed by calculating the changes in the predicted series in C and subtracting the contribution of the population weights reported in G. Finally, the contribution of changing female participation rates is calculated as a residual by subtracting columns G and H from the actual change reported in column F. From 1979 to 1989, total labor force participation increased 2.8 percentage points. The rise in female participation rates contributed a 3.5 percentage point increase, while male participation rates contributed a 1.0 percentage point decline. Over the 1990s, female participation slowed considerably, contributing only a 1.4 percentage point increase. In the latest period, 1999–2004, all three factors contributed to a decline. The sharp turnaround in female labor force participation rates is the major reason for the change in the overall participation trends pre- and post-1989. We now turn to a close examination of labor force participation rates for specific groups, starting with women.

Will Women's Labor Force Participation Continue to Rise?

   The biggest story in labor force participation rates in recent decades involves the labor force attachment of women. The top row of Table 2 shows the rising labor force participation rate of women age 20–60 in the 1970s and 1980s, the slower rise in the 1990s, and the slight decline in the first half of the 2000s. We focus on this broader definition of "prime-age" to incorporate decisions of women in their early 20s. Using the micro-level data of the March Current Population Surveys, we can compare labor force participation across different groups of women and gain some insights into the underlying causes of this pattern and how female labor force participation may evolve in the future.

   Table 2 first compares labor force participation rates of women by marital status. The increase in female labor supply was largely fueled by changes that occurred among married women. Married women's participation rate increased from 43.7 percent in 1969 to 72.2 percent in 1999. In contrast, participation increased 4.4 percentage points among never-married women, and 10.7 percentage points among women who were widowed or divorced. For married women, the most rapid gains occurred during the 1970s and the 1980s, with considerable slowing down in the 1990s. Since 1999, participation rates of all women have declined slightly.

Table 2

Labor Force Participation Rate of Women Aged 20–60 by Marital Status, Children, Race and Education

	1969	1979	1989	1999	2004
Women, aged 20–60	49.9	61.7	70.9	74.9	73.4
A. Marital status					
All married	43.7	56.1	67.5	72.2	70.8
Widowed/divorced	67.9	71.1	75.0	78.6	78.4
Never married	74.6	77.2	78.3	79.0	76.2
B. Marital status and presence of children					
Married mothers	38.9	52.4	65.8	70.3	68.4
Widowed/divorced mothers	61.3	68.1	72.5	80.4	81.0
Never-married mothers	62.9	65.3	63.0	75.4	71.7
C. Race					
White	48.9	61.4	71.1	75.0	73.6
Black	58.1	64.2	70.5	76.2	74.8
Other	50.2	61.9	68.3	69.4	68.2
D. Education					
High school dropouts	43.5	46.8	48.3	53.0	50.9
High school graduates	52.0	63.2	71.4	73.2	70.8
Some college	51.4	66.3	75.6	77.6	76.1
College graduates	62.3	75.4	82.7	83.4	81.2

Source: March Current Population Survey micro data.
Note: The table reports the fraction of civilian women aged 20–60 who were in the labor force during the survey week.

Table 2 next compares labor force participation trends for mothers, divided according to their marital status. Participation of married mothers increased 26.9 percentage points from 1969 to 1989, increased at a much slower rate during the 1990s, and declined slightly since 1999. Participation of never-married mothers remained flat from 1969 to 1989, but increased dramatically to 75.4 percent in 1999. The steep increase in participation of single mothers most likely reflects the impact of the 1996 welfare reform act, in which the welfare entitlements embodied in the old Aid for Families with Dependent Children (AFDC) program were transformed into more temporary and conditional assistance in the Temporary Assistance to Needy Families (TANF) program. Another impetus for rising participation among this group is the expansion of the Earned Income Tax Credit program (EITC). The tight labor market of the second half of the 1990s probably also played a role. For detailed discussion of how these changes affected the labor force participation of low-skilled women, see Moffitt (2003), Blank (2002), Grogger (2003), Eissa and Liebman (1996) and Meyer and Rosenbaum (2001).

The next comparison in Table 2 is by race. White women experienced the largest gain in labor force participation, with participation increasing 22.2 percentage points from 1969 to 1989. The increase among black women was considerably less—rising by 12.4 percentage points over the same period. In 1989, white women surpassed black women, who have had historically much greater attachment to the

labor force. Since 1989, however, participation has increased somewhat more for black women, probably because they were disproportionately affected by the changes in welfare and tax policies just mentioned. Thus, the dramatic rise in female participation that occurred during the 1970s and the 1980s was largely due to changing behavior among married white women with children—women who in 1970 were most likely to be part of a "traditional" household with the husband as wage earner and the wife as the homemaker. By 1989, the underlying forces that generated this rapid increase appear to have largely played out. On the other hand, participation increased briskly in the 1990s for single mothers.

Finally, Table 2 documents women's labor force participation rates by education category. For women with a high school degree and better, participation increased 19 percentage points or more during the 1970s and the 1980s. Women without a high school degree posted only modest gains with participation increasing 4.8 percentage points during this same period. One concern with this comparison is that as educational attainment has increased over time, the negative implications in the labor force of being a high school dropout may have worsened over time. Also, the fraction of high school dropout women aged 20–60 who self-identify themselves as "Hispanic" in the March data has increased more than four-fold from about 10 percent in 1976 to 43 percent in 2004. Since high-school-dropout Hispanic women have lower participation rates, this change in composition would also lead to lower average participation rates. These compositional changes notwithstanding, the comparison across education groups suggests that the rise in female supply is related in part to greater demand for high-skill jobs and greater availability of such jobs. The diverging employment pattern for women by education mirrors rising inequality of wages and incomes that occurred during this period, a phenomenon that has been documented extensively (Katz and Murphy, 1992; Autor and Katz, 1999).

What led to the rapid rise in married women's labor force participation in the 1970s and the 1980s? Understanding the source of the increase may shed light on the slowdown in labor force growth of women during the 1990s as well as the most recent downturn in women's labor force participation. Potential explanations of changes in women's labor market participation can be categorized as "demand-side" factors that emphasize women's market wage and "supply-side" factors that emphasize shifts in women's reservation wage. A common theme of the demand-side explanation is that the decline in manufacturing and the rise of service sector jobs has favored the comparative advantage of women relative to men and increased the relative demand for "female" labor (Galor and Weil, 1996). Weinberg (2000) finds some evidence that demand for "female" labor is positively correlated with computer investment at the industry level, suggesting that women may have benefited from the information technology revolution. A compelling piece of evidence in favor of demand shifts is the coincident rise of the education premium and relative wage of women during the 1980s (Welch, 2000). Both phenomena are consistent with an increase in demand for cognitive skills. This explanation also works well in the 1990s, since both female labor supply and inequality growth

slowed down during this period. It works, perhaps, less well for the 1970s. While female labor supply increased rapidly during this decade, skill demand did not increase in a similarly robust fashion (Autor and Katz, 1999).

A common strategy for assessing the role of market wages on labor force participation is to estimate the relationship between these variables using cross-sectional data. The coefficient describing how changes in wages cause changes in labor force participation can be interpreted as a cross-section elasticity, which can be used to estimate how much of the change in labor force participation over time can be predicted with aggregate changes in women's market wage. Using this approach, Goldin (1990) and Smith and Ward (1985) attribute approximately half of the rise in labor force participation of married women to increases in women's market wage. (Pencavel (1998), on the other hand, finds that very little of lifetime participation differences across cohorts can be explained by observed wage differences.) This approach does pose a number of difficulties. First, the estimated cross-sectional wage elasticities are small and shrinking (Heim, 2004; Blau and Kahn, 2005). Second, changes in market opportunities are calculated based on women who are currently working, and then these estimates are applied to women who are making a choice about whether to enter the labor force, which makes sample-selection bias a serious concern (Heckman, 1979). Mulligan and Rubinstein (2004) make corrections for changing selection and find little evidence that real wages for women increased over time.

Some possible supply-side explanations for changes in the labor force participation rate of women include changes in divorce rates, changes in household technology and changes in husband's income. Divorce can increase the aggregate labor force participation rate of women by increasing the proportion of unmarried women, who have a higher propensity to participate in the labor market. An increase in the *risk* of divorce may increase *married* women's participation as well, to the extent that married women stay in the labor force to hedge against future income risk associated with divorce. Johnson and Skinner (1986) estimate that these two channels together account for about 2.6 of the 15 percentage-points rise in women's labor force participation from 1960 to 1980. Changes in divorce laws and the adoption of unilateral divorce may also affect labor supply by changing the bargaining position within marriage even when it does not directly lead to divorce (Peters, 1986). Gray (1998) reports that unilateral divorce increased the bargaining position of wives in community property jurisdictions, which in turn increased women's market work while reducing household production.

Another proposed explanation for the long-term rise in the labor force participation rate of women is the introduction of labor-saving technology in the household sector such as washing machines and microwave ovens (Greenwood, Seshadri and Yorukoglu, 2005). However, it's not clear how well this explanation explains either the acceleration in women's labor force participation in the 1970s and 1980s or the slowdown in the 1990s and 2000s.

Finally, the stagnation or decline of real wages for many low-skilled men since the early 1970s may have induced women into the labor market to offset the decline

in their husbands' earnings. The problem with this explanation is that women married to high-wage husbands—who generally experienced rising incomes during this period—increased their labor supply even faster than women married to low-wage husbands, whose earnings were declining. For example, women married to men in the bottom quintile of earnings had a 46 percent labor force participation rate in 1969, rising to 66 percent in 1999. However, women married to men in the top quintile of earnings had a 31 percent labor force participation rate in 1969, also rising to 66 percent by 1999. Of course, this pattern does not rule out a role for the impact of husband's earnings on labor force participation of wives, but it does suggest that such effects were subsidiary to women responding to their own wage effects. Since wives of high-wage husbands are themselves highly educated and skilled, it is likely that these women were responding to the higher skill premiums prevailing during this period.

Wives in high-income households may have been enticed into the labor market by the Tax Reform Act of 1986 which reduced the top marginal tax rate from 50 to 28 percent. Eissa (1995) finds that participation of married women at the 99th percentile of the income distribution increased 9 percentage points while participation of women at the 75th percentile rose 5.3 percentage points. The rapid rise in the skill premiums during the 1980s makes it difficult to isolate the impact of the tax reforms. With regards to changes in the *average* labor supply of married women, the 1986 tax reform is thought to have had only a modest effect (Hausman and Poterba, 1987). More generally, the fact that other OECD countries have also experienced a rapid rise in married women's labor force participation suggests that country-specific tax policies cannot account for the bulk of the change (Mincer, 1985; U.S. Bureau of the Census, 2006).

The decisions that a woman makes early in life regarding human capital investments, marriage and fertility will shape the value of her market and nonmarket time in subsequent periods. Some women at age 20 plan to focus their time on marriage and children, with occasional spells in the labor force; others may plan on a lifelong career which in some cases may delay, or even preclude, marriage and children. How these lifetime plans have evolved across different generations may be illustrated by following birth-cohorts at different ages. Figure 3 compares participation rates of women born in different periods. Look first at the line for women born during the 1935–45 period. Their pattern is a higher labor force participation rate at a young age, a drop in participation during child-bearing years, a rise in labor force participation after child-bearing years, and then a decline as retirement approaches. Comparing the patterns across generations of women suggests two patterns. First, the curves tend to rise, showing higher labor force participation rates for women over time, but the rise appears to have stopped with the most recent generation. Second, the dip in labor force participation during child-bearing years has grown smaller over time and has essentially disappeared with the most recent birth cohorts. This pattern is consistent with the dramatic increase in participation among mothers with small children (Klerman and Leibowitz, 1995). For the two most recent cohorts, participation reached nearly 76 percent when

Figure 3
Age-Specific Labor Force Participation Rate by Cohort for Women
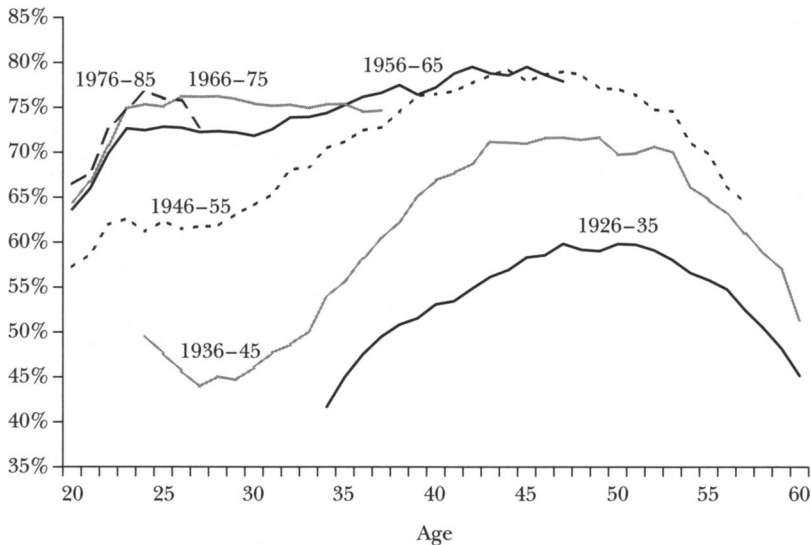
these groups were in their mid-20s, which is close to the 80 percent level of women at age 45 in recent periods. The major source of growth in the labor force participation of women—the increase in the participation of women in prime child-bearing years—had largely come to an end by the 1990s. However, the decline of labor force participation of women in the early 2000s includes both married and single women, and seems to be fueled by weak labor market conditions. It would be premature, therefore, to conclude at this point that the trend towards greater labor market participation by married women has actually reversed.

Participation of Prime-Age Males: A Skills Story

The labor force participation rate of prime-age males, those aged 25–54, fell roughly 6 percentage points from approximately 96 percent in 1969 to 90 percent in 2004, as shown earlier in Figure 2. This change may not appear large. However, since prime-age men accounted for nearly 40 percent of total civilian labor force in 1969, these seemingly small changes in rates translate into large declines in the number of potential workers. Moreover, while marriage and children complicate labor supply decisions of women, and older workers face various retirement decisions, in our culture we expect that prime-age males desire to work. Over the past three decades, we have witnessed profound changes in the U.S. labor market with one recurring theme being a decline in demand for less-skilled workers. The result has been both a decline in wages among less-skilled men and also a sharp fall in the

employment of less-educated men. Table 3 documents some of the major trends in labor force status of prime-age males.

The first two rows of Table 3 report percentages of prime-age males who are unemployed and who are out of the labor force. From 1969 to 1989, there were similar increases in secular unemployment and nonparticipation, with unemployment rising 3.3 percentage points and nonparticipation rising 3 percentage points. Over the 1990s, unemployment and nonparticipation followed very different paths, with unemployment declining to its lowest level since the late 1960s while nonparticipation continued to rise. As dropping out of the labor force, rather than entering unemployment, appears to have become the predominant response to poor labor market conditions, the unemployment rate has become an increasingly unreliable indicator of labor market conditions for prime-age males. The next row of Table 3 reports the percentage of prime-age men who did not work even a single week during the year previous to the survey. In 1969, 2.6 percent fell into this category. By 1999, 7.6 percent of prime-age men did not work a single week and this number rose to 10.2 percent in 2004. A lack of work during the entire year suggests that these men have left the labor force for all intents and purposes. The final row in Panel A shows the relative share of those who report disability or illness as the reason for not working the entire year. This share has continued to grow over time, particularly since the latter half of the 1980s. Autor and Duggan (2003; this issue) find that liberalization of eligibility rules for Social Security Disability Insurance benefits, together with negative shifts in the demand for low-skilled workers, account for the majority of the rise in disability rolls and nonparticipation rates.

Labor market participation trends for white men and black men in different education categories are shown in Panels B and C of Table 3. The dispersion in outcomes across skill groups is tremendous. The participation rate of white male high school dropouts has fallen nearly 12 percentage points from 94.6 percent in 1969 to 82.8 percent in 2004. In contrast, the participation rate of white male college graduates has declined 2.5 percentage points. Among black male high school dropouts, labor force participation has fallen an astonishing 31.7 percentage points since 1969 so that by 2004, more than 40 percent were not in the labor force.

The previous section documented the tremendous rise in married women's labor supply. Does this mean that married men are taking on greater responsibilities at home? It seems unlikely. Data on time spent doing housework, for example suggests that increases for men have been relatively minor (Blau, 1998). Table 4 presents some other evidence comparing labor market participation rates of men by presence and work status of the wife. The first row of Table 4 shows participation rates for men who have never married, are widowed or divorced or otherwise do not live with a wife in the same household. The second row reports participation rates of men with wives who are not in the labor force during the survey week. The last row refers to men with wives who are in the labor force during the survey week. Among single men, labor force participation declined nearly 5 percentage points from 1969 to 2004. The participation decline among men with nonworking wives has been even larger, declining 7.7 percentage points from 1969 to 2004. Men with

Table 3

Labor Force Status of Prime-Aged Males 25–54 Years Old

	1969	*1979*	*1989*	*1999*	*2004*
A. Nonemployment category					
Unemployed	1.2	3.7	4.5	3.2	5.1
Out of the labor force	3.8	5.6	6.8	9.0	10.5
Did not work last year	2.6	4.8	6.0	7.6	10.2
Did not work last year due to disability/illness	1.9	3.0	3.3	4.6	5.5
B. Labor force participation by education: white males					
High school dropouts	94.6	90.0	85.9	83.2	82.8
High school graduates	98.1	96.3	94.5	91.9	89.4
Some college	96.7	95.6	94.9	93.0	91.4
College graduates	97.7	97.3	97.4	95.9	95.2
C. Labor force participation by education: black males					
High school dropouts	90.8	80.3	75.6	60.7	59.1
High school graduates	94.9	92.4	87.8	82.3	77.8
Some college	93.6	92.7	92.7	86.9	82.5
College graduates	93.7	94.9	96.3	91.7	91.6

Source: March Current Population Survey micro data.
Note: Education in the Current Population Surveys is reported by years of completed schooling prior to 1992 and by highest degree attained after 1992. To make the groups comparable across years, we follow the method recommended by Jaeger (1997).

Table 4

Labor Force Participation of Prime-Aged Males by Presence and Labor Status of Wife

	1969	*1979*	*1989*	*1999*	*2004*
No wife present	89.4	88.6	87.9	84.3	84.8
Wife not in labor force	97.7	95.5	93.8	90.9	90.0
Wife in labor force	97.2	96.7	96.7	94.7	93.8

Source: March Current Population Survey micro data.

working wives have experienced the smallest decline in participation—a decline of 3.4 percentage points since 1969. Thus, substitution of husband's time for wife's time within the household does not appear to be the key to understanding recent trends in labor force participation. Rather, it seems that households where both the wife and husband are skilled increased their labor supply relative to other household types.

Retirement of Older Workers

From the late nineteenth century until recently, older men have tended to retire at ever-earlier ages. However, as shown in Figure 2, labor force participation rates

Table 5
Labor Force Participation Rates of Men by Birth Cohort

	Age				
Birth cohort	*45–49*	*50–54*	*55–59*	*60–64*	*65–69*
1906–10			86.5	72.7	35.6
1911–15		92.6	88.6	66.3	28.6
1916–20	95.1	93.2	84.0	59.7	25.3
1921–25	95.3	89.8	81.8	55.7	26.4
1926–30	93.8	89.6	80.2	54.5	26.8
1931–35	92.8	88.8	79.1	54.0	29.7
1939–40	92.7	88.7	78.3	56.4	35.3
1941–45	92.3	87.1	77.1	63.7	
1946–50	90.8	86.8	80.4		

Source: March Current Population Surveys.

among older men stabilized by the late 1980s or early 1990s and in fact increased slightly since that period. Indeed, the rise in life expectancy shifted the age composition among the 55+ group toward much older men and women with very low probabilities of participating in the labor force. If we were to hold age composition constant, we would calculate a bigger increase in participation among this group.

Some of the key factors in the lengthy decline of the labor force participation rate for older men include the introduction of Social Security, a secular rise in incomes making it easier to accumulate for retirement, and the rise of inexpensive and attractive retirement lifestyles (Costa, 1998). However, in more recent decades these factors appear to be less critical. For example, the participation of older men, particularly those aged 55–64, declined precipitously during the early 1970s and the 1980s, falling from 83.4 percent in 1969 to 67.2 percent in 1989. A number of papers have explored the impact of the changes in Social Security benefits during this period and they find surprisingly small effects. Anderson, Gustman and Steinmeier (1999), for example, find that changes in Social Security and pension plans can account for only about a quarter of the decline in participation of men in their early 60s and none of the decline for men 65 and older. The pattern of decline across skill categories among 55–64 year olds mirror the changes among younger men, suggesting that declining demand for less-skilled workers also had an impact on older workers (Peracchi and Welch, 1994).

Table 5 reports changes in labor force participation rates for older men. Labor force participation rates fell sharply for the 1911–15 and 1916–20 cohorts, compared with the experience of the previous cohort. Men born in 1911–15 were in their early 60s during the 1970s when Social Security benefits were rising rapidly. Consistent with the story of men responding to higher retirement income, participation rates for this group at age 60–64 fell 6.4 percentage points relative to the cohort born five years earlier. Rising Social Security benefits provide a less compelling explanation for the

Table 6

School Enrollment and Labor Force Participation Rate by School Enrollment Status: 16–24 Year Olds

	Enrolled in school		In labor force	
Year	% Enrolled full time	% Enrolled part time	LFPR of Full-time students	LFPR of Part-time students
16–19 year olds				
1989	74.2	2.7	42.5	81.4
1999	76.6	3.3	42.2	77.3
2004	80.5	3.0	34.3	71.6
20–24 year olds				
1989	22.6	4.5	53.7	87.6
1999	27.6	6.5	54.0	86.4
2004	30.4	6.3	52.0	86.6

Source: March Current Population Surveys.

declines observed for the cohort born in 1916–20. Due to the Social Security amendments enacted in 1977, benefits were significantly reduced. However, the participation of this group at age 60–64 fell 6.6 percentage points relative to the previous cohort (Krueger and Pischke, 1992). The participation rate of this cohort was also lower at the earlier age of 55–59 when Social Security benefits were not a direct factor, suggesting other factors must have played a role.

For the three following cohorts—those born in 1921–25, 1926–30 and 1931–35—labor force participation rates are lower relative to the previous cohort for ages prior to 65 and higher relative to the previous cohort for ages after 65. Gustman and Steinmeier (2005) suggest that heterogeneous time discount rates in the population may be a way to understand these changes. On the one hand, rising Social Security benefits (particularly relative to wages) may induce earlier retirement for those with high time discount rates. On the other hand, the increase in Social Security credits for delayed retirement may have induced men with lower time discount rates to continue to work after 65.

The youngest cohorts displayed in Table 5, those born after 1936 who reach age 65 in 2001 or later, have increased labor force participation relative to the previous cohort even at age 60–64. One potential explanation may be the movement of pension plans from defined-benefit to defined-contribution plans, since defined-contribution plans continue to increase retirement benefits and assets regardless of age. Older workers may also delay retirement to remain covered under employer-sponsored health insurance plans until they become eligible for Medicare at age 65 (Purcell, 2005). Going forward, the normal retirement age at which workers become eligible for full Social Security benefits will gradually be extended to 67. Another program change that may be proposed is the increase in the early retirement age from the current 62. Both of these program changes are likely to bolster the increase in labor force participation at older ages.

Labor Market Participation of Youths

Younger workers and teenagers have reduced labor market participation since the mid-1980s. A key factor for the young is the interaction of schooling and work decisions. Table 6 explores labor force participation rates related to recent trends in school enrollment. The top panel shows that full-time school enrollment for 16–19 year olds has increased 6 percentage points from 74.2 percent to 80.5 percent over the period 1989–2004. In addition, labor market participation among those who were enrolled as full-time students declined from 42.5 percent to 34.3 percent. Not only were teenagers more likely to enroll in school, they were less likely to be working when enrolled. The employment of teenagers whose predominant activity is school is highly cyclical. Also, because teenagers typically work few hours, their contribution to movements in the aggregate labor supply is relatively minor. Among 20–24 years olds, the major development is the increase in full-time school enrollment. Since 1989, the fraction enrolled in school full time increased nearly 8 percentage points from 22.6 to 30.4 percent. Since slightly over half of full-time students participate in the labor force, higher enrollments have reduced participation rates for the group as a whole.

The steep decline in observed participation rates of the young may understate what has happened in the labor market for this group, because the labor force participation rate leaves out those living in institutions, and the population in the U.S. penal system increased more than six-fold between 1972 and 2000 (Pettit and Western, 2004).

Western (forthcoming) examines the implications of a rising prison population for U.S. labor force statistics. He finds that the number of convicted felons serving sentences of at least one year in state and federal prisons grew from 200,000 in 1970 to 1.4 million in 2003. In addition, the population in county jails was 700,000 in 2003. Much of the impact has been on young black males. Pettit and Western (2004) combine information from the Current Population Survey, the decennial Census and prison records, and calculate that the nonemployment ratio (unemployed plus out of the labor force plus inmates divided by civilian population) of black males aged 22–30 was around 33 percent in the late 1990s, little changed from the early 1980s. In contrast, if the increase in the inmate population is ignored, the nonemployment ratio declined from 29 percent in the early 1980s to 23 percent in the late 1990s (again using the civilian population as the denominator).

The implications of a higher rate of institutionalization for the labor force participation rates produced by the Bureau of Labor Statistics are not obvious. If the labor force characteristics of the individuals incarcerated within the group were similar to those not incarcerated, the group-specific labor force participation rate would not be affected by a rise in institutionalization. If on the other hand, the labor force participation rate of the individuals incarcerated would have been lower than others in the similar demographic group, then a higher rate of institutionalization would cause the labor force participation rate to rise for that group. To complicate matters further, there is evidence that the decennial censuses in 1970,

1980 and 1990 undercounted black males. The effect on the labor force participation rate as officially calculated of removing low-participation individuals from an undercounted group would be amplified when the estimate of the noninstitutional population of the group is also lowered.

Implications for the Future

The labor market recovery from the recession of 2001 has had a number of unusual features. First, the level of payroll employment took four years to return to its previous peak. In the previous so-called "jobless recovery" following the 1990–91 recession, it took 18 months to reach the previous peak. Other statistics such as real GDP growth, real wage and productivity growth have not lagged during the most recent business-cycle upswing in the same manner as employment growth. Second, despite the lack of job creation, the unemployment rate peaked at only 6.1 percent in the second quarter of 2003 (near its post–World War II average) and the unemployment rate had declined to around 5 percent by the end of 2005. The combination of slow employment growth and a low unemployment rate has led researchers and policymakers to consider changes in labor market participation as a possible explanation. We calculated the changes in the labor force participation rate after the trough of the business cycle. For men, the labor force participation rate dropped an average of 0.7 percentage points between the trough of the business cycle and ten quarters later for the four recessions (we exclude the short 1980 recession which was soon followed by another recession) from 1969 through 1990–91. After the 2001 recession, the labor force participation rate of men was 1.1 percentage points lower ten quarters after the trough. For women, the labor force participation rate *rose* by 1.4 percentage points on average ten quarters after the trough of the recessions from 1969 through 1990–91, with *no* recovery showing a decrease in participation. However, after the 2001 recession, the labor force participation rate of women had fallen by 0.6 percentage points ten quarters after the trough.

Consistent with the analysis above, the most striking change in the early 2000s remains the slowdown in trend in the female labor force participation rate. The employment growth in previous recoveries was fueled by a rapid increase in the labor market participation of women. Once the slowdown in the trend of the female labor participation rate is taken into account, the current recovery looks less unusual and estimates of the "slack" in the labor market are reduced (Himmelberg and McConnell, 2006). Without the brisk entry of new female participants, the "jobless recovery," where employment growth significantly lags other economic indicators, may become a standard feature of the business cycle. The average exit rate out of nonemployment for prime-age males has fallen dramatically during the past three decades, suggesting a more or less permanent withdrawal from the labor force for many who enter nonemployment. An interesting question is whether the behavior of women's participation during the recent recovery reflects a similar

tendency towards permanent withdrawal, or merely the slowdown in the rate of new entry of women into the labor force.

How will labor force growth evolve in the future? The answer to this question is crucial for a number of policy issues, in particular the solvency of Social Security. The Trustees of the Social Security Administration make detailed assumptions on male and female labor force participation until 2080 (Board of Trustees, 2005). The intermediate cost projection assumes that labor force growth slows from around 1.5 percent to around 0.5 percent by 2015 with the aging of the baby boom, and then slowly declines further to 0.2 percent by the middle of the century. This projection implies an increase of around 2 percentage points from the female participation rates observed in 2005 to a level above that observed in the late 1990s and no increase in male participation rates from 2005 levels.

However, the labor force participation rate of married women seems unlikely to rise much above the levels seen in the late 1990s. Future labor force growth for women depends on initiatives by the government or the private sector, a conclusion also reached by Ellwood (2001). Low-income single mothers may continue to enter the labor force in greater numbers with expansion of the Earned Income Tax Credit. Employer-initiated programs allowing more flexible work arrangement may arise as firms compete to attract working mothers and older workers. Reductions in disability benefits may stem the withdrawal of low-skilled men from the labor market. Changes in benefit rules for Social Security may encourage delayed retirement of older workers. But even after noting the possibility of these changes, the decades of strongly rising labor force participation rates for the U.S. economy appear to have drawn to an end.

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