

Labor Force

for *Historical Statistics of the United States*, *Millennial Edition*

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For much of human history, and in much of the world even today, the vast majority of the population work for a living. Except for those too young, too old, or too sick, and for the “idle classes” – those with power or resources to command food, clothing and shelter from others – people work, and do so for most of their lives.

In contrast to this common human reference to labor, the term “Labor Force” has a technical definition which was created and refined during the social, economic, and political crises accompanying the Great Depression of the 1930s. To determine an individual's status according to the labor force concept, people are asked about their activities during a specific reference week and, on the basis of their answers, are classified as either employed, unemployed, or out of the labor force. The labor force, according to this measure, is the sum of the employed and the unemployed.

The employed are defined as those adults who, during the reference week, (1) did any work at all as paid employees, worked in their own business, profession, or on their own farm, or who worked 15 hours or more as unpaid workers in a family-operated enterprise; plus (2) those who did not work but who had jobs or businesses from which they were temporarily absent due to illness, bad weather, vacation, child-care problems, labor dispute, parental leave, or other family or personal obligations – whether or not they were paid by their employers for the time off and whether or not they were seeking other jobs.¹ Each employed person is counted only once, even if he or she holds more than one job. Multiple jobholders are counted in the job at which they worked the greatest number of hours during the reference week. Included in the total are employed citizens of foreign countries who are residing in the United States. Excluded are persons whose only activity consisted of unpaid work around their own home, such as housework, painting, repairing, etc. or volunteer work for religious, charitable, and similar organizations.

The unemployed are those who had no employment during the reference week, but who were available for work and who had made specific efforts, such as contacting employers, to find work during a specified period. Those who are neither employed nor unemployed are classified as “out of the labor force.” Additional details for assigning individuals across the categories employed, unemployed, and out of the labor force are spelled out in the notes to table <sbca.2a>.

The Bureau of Labor Statistics, in collaboration with the Census Bureau, first implemented the labor force concept in 1940. It was devised during the 1930s to assist macroeconomic policy makers who needed an indicator that would tell them whether their interventions into the economy were having the desired effect of lowering unemployment. An earlier definition of unemployment was based on replies to the question, “do you have an occupation?” and, if not, “are you willing and able to work?” Analysts found that people in objectively similar situations often answered these questions differently. For this reason, the answers could not be used reliably to compare labor force participation rates across individuals or cities or to compare changes in such rates over time. The cornerstone of the modern labor force concept is the objectivity of the criteria used to assign individuals across

¹ “Adults” were defined as persons 14 years of age and older through 1947 and persons 16 years of age and older beginning in 1947. There are two values for the labor force in 1947, one for each age grouping. See <sbca.2a>.

categories: clearly specified activities rather than attitudes and a clear reference period for which the criteria are applied (Lebergott, 1975).

While the labor force concept is highly precise on the question, “who is in and who is out of the labor force,” and “who is employed and who is unemployed,” it does not distinguish among many other aspects of labor that are critical to the development of the economy and to the well-being of workers. For example, persons working 60 hours a week, those working one hour a week, and those on vacation are all “in the labor force” and “employed” and on equal footing in the official framework. Workers with highly developed skills and those supplying purely manual labor are counted equally. Much of the work done by women is not counted at all. For these reasons, for most historical or policy questions involving change in the labor force must be studied in conjunction with data on change in hours of work, the skills of the workforce, wages, working conditions, occupations, child care and other family services, and household production.

Despite its limitations, “labor force” has proved to be a highly useful concept for policy makers. Statistics on the unemployment rate and labor force participation are among the most commonly-cited indicators of the health of the economy, often making headlines when the latest figures are released. Increases in the unemployment rate and decreases in the labor force participation rate correlate strongly with other measures of economic downturn. Indeed, for some scholars, these labor market indicators are the premier measures of economic fluctuations. See <business fluctuations chapter essay>.

1. Modern Labor Force Estimates

The three major sources of data on the size and composition of the labor force are the decennial censuses of population, the Current Population Survey (CPS), and the Current Employment Survey (CES). The Census and CPS are surveys of households; the CES is a survey of employers.

The census of population made its first inquiries regarding work behavior in 1850, when it asked free males 15 years of age and older to report their occupation, if any. In 1860 the census extended the inquiry to free women. 1870 is the first year in which occupation statistics are available for the majority of the black population since they were enslaved and their occupations not enumerated at the time of the earlier censuses. Not until 1940 did the census shift its questions regarding work behavior to reflect the labor force concept discussed above. (See the IPUMS website for a convenient listing of the precise questions asked by census enumerators and the portion of the population to which the questions were directed at each census date.)

The effort that would become the CPS was also begun in 1940 when the Census initiated a monthly national sample survey of households. For studies of the labor force in the second half of the twentieth century and beyond the CPS is the most widely-used source. These data are also the source for official estimates of unemployment. The CPS provides labor force data at a much higher frequency and with more personal background characteristics than the census. The major background characteristics are age, sex, marital status, presence of children, race,

Hispanic origin, industry, occupation, and unemployment according to reason and duration. Tables <sbca.a.2a> and <sbca.a.2b> provide an overview of labor force estimates based on the CPS. Over 10 other tables provide additional detail. Here we report annual averages calculated from the monthly figures.

The CES is the third major source of national, historical labor force data. These data are collected by the Bureau of Labor Statistics from the monthly payroll records of a sample of non-farm business establishments. The firms submit the data voluntarily. In 1999, the Bureau surveyed 400,000 establishments employing about a third of all wage and salary workers. The surveys provide detailed industry data on employment, hours, and earnings of workers on nonfarm payrolls. The CES counts workers each time they appear on a payroll during the reference period. Thus, unlike the CPS, a person with two jobs is counted twice. Tables <sbcs.s.3> and <sbcs.s.6> provide an overview of labor force estimates based on the CES. Many other tables in this chapter and in others provide additional industry detail.

2. Historical Labor Force Estimates

The evident value of the labor force concept for understanding the development of the economy has prompted scholars to devote considerable effort to developing historical labor force and unemployment estimates that are consistent with the modern definition. The principle starting point for all of these estimates is the Census of Population.

From 1850, when it first asked about occupation, through 1930 after which it abandoned the approach, Census employment figures were based on the "gainful worker" concept. A gainful worker is defined as a person (over some given age) who reports an occupation. Scholars have devoted considerable attention to the comparability of the gainful worker and labor force concepts and have achieved widespread agreement on three points. First, the gainful worker and the labor force concepts probably would have yielded similar statistics for prime-age males had both questions been asked at the same time. Second, the gainful worker and labor force concepts produce different estimates for youthful and older males and for females of all ages. This is because when the census asked about occupation, it did not indicate the period of time for which the question of occupation pertained. This was not a serious problem in the case of prime-age males since most of them were employed year-round, but many scholars believe that the question elicited inconsistent responses from youthful and older males and from females. Stanley Lebergott considered this a serious problem. He writes:

The question as posed by the enumerator made no reference to time. The response thus varied substantially with the individual. Many persons who were retired or permanently disabled and who had not worked for some time reported their former line of work and were counted as gainful workers. On the other hand, many employed persons did not enter themselves as gainful workers, because they considered themselves as students or housewives and their current employment as only temporary [Lebergott, 1975, p. 124].

Finally, the third point of scholarly consensus is that while the instructions to enumerators regarding the occupation question became more precise (and lengthy) over the years, they were generally consistent from one census to the next except in the case of the 1910 census. In that year the census included special instructions to enumerators that substantially raised the gainful worker rates of children and women – especially black women – relative to reports for the previous and following censuses. For example, the labor force participation rate of black women rises from 43.7 percent in 1900 to 58.1 percent in 1910 and then falls back down to 42.9 percent in 1920, according to the official census definition (<sbca.11.8>). The special entreaties to enumerators also reduced the recorded labor force participation rates of older men. The interpretation of the 1910 figures is the subject of a large literature. See Smuts, 1960; Lebergott, 1964; Oppenheimer, 1970; Conk, 1978; Folbre and Able, 1989; Goldin, 1990; Sobek, 2001 and further discussion below.

2.a Prime Age Males

Because the gainful worker and labor force concepts produce similar results for prime-age males, the estimation of this segment of the labor force for the period 1850 through 1930 is a fairly straightforward matter. That said, scholars who developed these estimates have invested tremendous efforts to ascertain that the overall estimates and estimates for individual sectors are consistent with other evidence on the development of the economy. Key efforts are Durand (1948), Carson (1949), Fabricant (1949), Long (1958), Lebergott (1964, 1966, 1975, and 1984), and Weiss (1992, 1999).

To greatly simplify a complicated procedure, the estimation process for prime-age males for the years 1850 through 1930 involves taking the census gainful worker figures, purging them of evident errors, adding in the male slaves who were omitted from the occupational counts of 1850 and 1860, and checking the resulting levels and trends for consistency with other relevant statistical series.

Perhaps the most serious estimation problem for the prime-age male labor force for these years has nothing to do with the overall size of the labor force, but with the distribution of laborers between agriculture and non-agriculture. The problem arises because the census of occupations categorized many agricultural laborers as “laborers, not elsewhere classified.” The occupation statistics developed by Matthew Sobek and displayed in tables <sbco.1> through <sbco.18Y> make an adjustment to “laborers, not elsewhere classified” for the years 1850 through 1880 by recoding those who reside on a farm as farm laborers. For all other years it reports laborers exactly as the census reported them. For this reason, the Sobek statistics regarding the occupational distribution of the labor force probably understate the share of the labor force in agriculture for the years 1900-1930. The Lebergott and Weiss estimates of the agricultural labor force, shown in <sbcs.1>, incorporate adjustments to the census figures for agricultural laborers. For a discussion of the methods underlying these estimates see Lebergott (1964, pp. 156-161) and Weiss (1999).

Estimates of the prime-age male labor force for the period prior to 1850 required even greater efforts. To produce the estimates presented in <sbcs.1>, both Lebergott and Weiss began with the 1850 and 1860 figures and worked backwards in time. They examined the demographic and geographic structure of the population; the fragmentary data from the censuses of manufacturing that were conducted in 1820 and 1840, and a variety of industry-specific data. For example, Lebergott's estimates of employment in teaching are based on contemporary sources such as statistics of scholars and schools and local studies that he then projects to the country as a whole. Weiss took a similar approach except that he generated individual estimates for each state. He evaluates fragmentary data on manufacturing employment in light of demographic data such as age, gender, race and rural residence to judge their consistency and coverage and to improve their overall reliability. The art as well as the science of such work lies in getting all of the pieces of the puzzle to fit.

Historical estimates of the prime-age male labor force are presented in several tables. For the decennial census years 1800 through 1900 Weiss offers estimates of the labor force participation of males 16 years of age and older, with disaggregations by race in tables <sbcs.w.1>, <sbcs.w.2>, and <sbcs.w.3>. For decennial census year 1860 through 1990 Sobek offers estimates of male labor force participation rates by five-year age groups in table <sbcs.a.5>.

2.b Females

Estimating the labor force participation rates of women prior to 1940 poses its own difficult set of problems and is the subject of another vast literature. A point of agreement is that the early censuses missed a substantial amount of women's market work. Worker surveys undertaken independently of the population census consistently indicate far more female, but not male, employment.

There are several reasons why women's paid employment was undercounted. One is that census enumerators may have forgotten to ask about women's gainful employment. The Census's own commentary on the occupation statistics in 1870 and 1880 speculated that women and children employed in factories had been "omitted in large numbers." In 1910, Census special instructions to its enumerators designed to reduce enumerators' oversight of women's work resulted in dramatic jumps in their recorded gainful worker rates. When these special exhortations were dropped for the 1920 census, the recorded gainful worker rates for women returned to their former low levels. A second reason is that the women themselves or their husbands may have been reluctant to report women's gainful employment. As Folbre and Able note, "Both the middle-class 'cult of domesticity' and the working-class concept of the 'family wage' dictated that a wife's proper place was in the home" (Folbre and Able, 1989, p. 551). Census commentary on the 1880 occupation returns refers to the "indisposition of the persons themselves or the heads of families to speak of them [women] as in employment."

Finally, there is evidence that the census itself – at least in 1880 – published female employment totals that were far smaller than the returns collected by enumerators. Comparing the PUMS sample of the manuscript census

with the published totals for 1880, Carter and Sutch (1996) discovered that the original enumerations exceeded the published totals by 35, 44, and 146 percent respectively for girls age 10 to 15, women aged 16 to 59, and women age 60 and older. They deduce that a large share of women who were recorded by census enumerators as "housekeepers" (together with a sizeable number of women who reported other occupations) were systematically edited out of the gainful worker totals. This was the case despite the fact that the term "housekeeper" was reserved for those who engaged in housekeeping activity for pay, while the term "keeping house" was used for those engaged in housekeeping for their own families.

Thus, there is abundant evidence to suggest that published census estimates of female employment in the gainful-worker era are too low. The question is, by how much?

Claudia Goldin (1986) undertook a detailed examination of the 1890 census returns in an effort to quantify the magnitude of the omissions and to develop female labor force estimates for the pre-1940 period that are designed to be consistent with the labor force concept. She argues persuasively that it was not the shift from the gainful worker to the labor force concept per se that is the source of incomparabilities, but the inappropriate omission of female workers in three particular sectors: boardinghouse keepers, family-based agriculture, and manufacturing.

Theoretically the shift from the "gainful worker" to the "labor force" concept might have reduced female employment totals if, for example, the gainful worker concept captured women whose part-time and intermittent work would be missed by the labor force concept. Because the labor force concept measures only those who are working or searching for work in a given reference week, an individual in the pre-labor force era would have to be gainfully occupied on average half of the year and, if engaged in unpaid family labor, for over 14 hours per week, in order to be included. Because estimates of women's hours and weeks of work in the late-nineteenth and early twentieth centuries indicate that those women who were engaged were engaged mostly full time, Goldin concludes that the gainful worker and labor force definitions would have produced similar employment estimates had both been used to collect data during the period when the census collected female gainful worker statistics (1870-1930).

The standard labor force participation rate in 1890 for women 15-64 years of age is 19.0 percent for all women and 4.6 percent for married women (Goldin 1986, p. 559). Had the omitted female boarding house keepers, manufacturing workers, and unpaid family farm laborers been included, Goldin estimates that the labor force participation rate for all women would have been somewhere between 24.6 and 25.7 percent and the rate for married women somewhere between 12.3 and 14.0 percent (Goldin 1986, p. 577). Thus for married women especially, the inclusion of omitted work has a big effect on their estimated labor force participation rate.

Able and Folbre (1990) used the manuscript census returns for two small Massachusetts communities in 1880 to make their own adjustments to the official gainful worker figures for married women. They added into the gainful worker ranks those married women living in households with boarders who were not boarders themselves and who were not listed with an occupation. They made similar adjustments for females engaged in family businesses and in home and factory-based manufacturing. Overall, the Able-Folbre adjustments raise married women's

estimated labor force participation rate from 10.1 to 47.3 percent in one community and from 9.9 to 68.2 percent in the other (Able and Folbre 1990, p. 174). Clearly official and adjusted estimates of women's labor force participation imply substantially different views of women's economic role in the economy at the time.

It should be emphasized that the historical estimates of female labor force participation presented here do not incorporate the adjustments suggested by Goldin (1986) or by Able and Folbre (1990). They therefore certainly understate female employment levels both relative to males at the same time and relative to females in the latter part of the twentieth century.

A different question regarding women's work is whether market-based measures such as labor force and gainful employment are misleading when a substantial share of the productive energies of many women are devoted to non-market activities. For certain questions, such as how has output changed over time, the market measure produces serious distortions. At least since the late-nineteenth century when women's labor force participation has been rising over time, the market measure understates total output in the early years and exaggerates the growth of output over time. Goldin (1986) estimates that in 1890 approximately 14 percent of farm housewives' 65-hour work week was devoted to household production of the clothing, baked goods, and meals which, by 1980, were purchased on the market. Nancy Folbre and Barnet Wagman (1993) estimate that in 1800 the total output of the economy would have been somewhere between a fifth to a third larger than standard estimates had the value of household production been included. For a more extended discussion of household production see <household production essay>. For implications for measures of economic growth see <nipa.essay>.

2.c Youth

There is widespread agreement that the censuses of occupations also underreported the occupations of youth relative to those of prime age males. The reasons are similar to the reasons offered for the underenumeration of women's market work. Employed youth typically worked part-time or part-year. Their status was reported by parents who might consider them primarily as students or who may have wished to conceal their gainful activity. Census enumerators may have failed to ask about the employment status of youth.

It is not clear, however, whether youth employment would have been higher if measured according to the labor force concept. The fact that some employed youth were not recorded as gainfully occupied biases the gainful worker measure downward as compared with the labor force measure of youth employment. But there may be an upward bias to the gainful worker measure if, for instance, youth recorded with an occupation worked only a small number of hours each day or only part time during the year. This issue remains unresolved.

The two estimates of youth employment prior to 1940 that we present here are derived from responses to the census of population's gainful worker question. Weiss's estimates for the decennial census years 1800-1900 pertain to youth aged 10 to 15 and are disaggregated by sex, race, and legal status (<sbw.1>, <sbw.2>, <sbw.4>, and <sbw.5>). Weiss's national estimates were built up from state-level estimates. They are based on

the assumption that participation rates for free youth in each state were equal to the average youth participation rate for the years 1870 through 1910 as developed by Alba Edwards (See Edwards, 1943, and Weiss 1999, p. 30). For slaves, Weiss assumed a labor force participation rate of 90 percent for males and females in all age groups, including youth. Weiss's estimates are based on a close reading of the scholarly literature and reflect the views of many quantitatively-oriented economic historians. See Weiss (1999) for additional detail. By construction, the Weiss figures show largely unchanging labor force participation rates for white boys and girls over the period, but a marked decline in the participation of black youth following the abolition of slavery.

The youth employment estimates prepared by Sobek for the years 1860-1970 are derived from the IPUMS and are disaggregated by sex and age for the free population aged 10 to 15 (<sub>a.3>). Beginning in 1880 they show an almost continuous decline in youth participation rates for both boys and girls and at every age. The exception is the apparent rise in the participation rates of 14- and 15-year olds between 1940 and 1960.

Both the Weiss and Sobek youth employment estimates differ sharply from the older estimates developed by Alba Edwards of the U.S. Census Bureau who revised the published occupation figures for youth for the years 1870 to 1940 in an effort to improve their comparability. Edwards's estimates indicate a substantial *increase* in the labor force participation of youths between 1870 and 1900. Over this period, according to Edwards, the employment incidence of boys grew by more than a third, rising from 19.3 up to 26.1 percent, while that of girls increased from 7.0 to 10.2 percent. After 1900, Edwards reports that youth employment rates fell dramatically, so that by 1930 fewer than 5 percent of 10-to-15 year-olds were gainfully occupied.

This view of rising youth employment rates during industrialization was challenged by Carter and Sutch (1996) who discovered that the published census totals for youth in 1880 were only 75 percent of the level originally collected by census enumerators. Since the published statistics for 1880 formed the basis for Edwards' adjustment of the 1890 numbers and since the 1870 statistics were collected and tabulated using the same protocol as in 1880, the Carter-Sutch finding calls into question the validity of Edwards's series. If the IPUMS figures are accepted and substituted for those from the published volumes, the stylized facts of long-term change in youth employment show a decline, not an increase. The Sobek series, which is calculated directly from the IPUMS, naturally shows this decline. The Weiss series which is based on the assumption that the true youth employment rate is the average of the published rates for the years 1880 through 1910 shows no trend. Neither of these scholars embraces the view that youth labor force participation was rising during the period of industrialization.

2.d Older Males

Generating estimates of the older male labor force for the years before 1940 involves all of the problems discussed earlier regarding the labor force estimation of prime-age males plus one more. Because the census question regarding gainful occupation did not indicate a reference time period, the gainful worker figures may

overstate the labor force participation of elders. Some older workers reported their former line of work even though they were retired. The question is, how many?

Roger Ransom and Richard Sutch (1986) proposed removing from reported gainful employment all workers 60 years of age and older who reported six or more months of unemployment – a group they call the “permanently unemployed.” They argue that these older men reporting long-term unemployment were, by the modern definition, really retired. If accepted, their calculations imply high but *falling* rates of male retirement between 1870 and 1900 and a small rise between 1900 and 1930. The retirement rate in this context is the percent of men 60 years of age and older who are not gainfully occupied. Jon Moen (1987 and 1988), Robert Margo (1993), and Dora Costa (1998) argue that all of the older, long-term unemployed are properly included in the labor force. Moen and Costa generated male retirement rate estimates that are quite low in the nineteenth century and which begin to rise, but slowly, about 1880.

The dispute has important consequences for a variety of issues in American economic and social history. If the Ransom-Sutch estimates are accepted, then the retirement rate for men age 60 and older had reached one-third as early as 1900. This implies that there was little or no trend in the overall participation rates of the elderly between 1900 and 1930 and that New Deal-era social legislation initiated a trend toward increased retirement. If the Moen and Costa estimates are accepted, then retirement rates would appear to have increased throughout the industrial era and Social Security emerges as just one of several determinants of the relatively high retirement rates of the post-World War II period. Because they remain controversial, we have not included retirement estimates in this work.

3. Characteristics of the Labor Force

The term “characteristics of the labor force” refers to demographic factors such as gender, age, race, ethnicity, nativity, marital status, and presence of children; labor productivity factors such as job experience, education, and vocational training; full-verses part-time status; matters of deployment such as the occupational, industrial, and geographic distribution of the labor force; and legal and institutional factors such as slavery, contract labor, trade unions, and the size and organization of employing units.

In an economy as dynamic as that of the United States the characteristics of the labor force are constantly changing. The table below, together with five brief snapshots taken at roughly 50-year intervals beginning in 1800, was constructed to highlight the principal shifts. Many of these labor force characteristics are discussed individually and in detail elsewhere in these volumes.

Labor Force, Selected Characteristics, 1800-2000
(Percentage of the labor force)

| Year | Agriculture | Manufacturing | Domestic Service | Clerical, Sales, Service ^a | Professions | Slave | Nonwhite | Foreign Born | Female |
|------|-------------|---------------|------------------|---------------------------------------|------------------|-------|----------|-------------------|--------|
| 1800 | 74.4 | Na | 2.4 | na | na | 30.2 | 32.6 | na | 21.4 |
| 1850 | 55.8 | 13.8 | 5.4 | 4.8 ^b | 3.0 ^b | 21.7 | 23.6 | 24.5 ^b | 19.6 |
| 1900 | 30.7 | 20.8 | 5.5 | 14.1 | 4.7 | 0.0 | 13.4 | 22.0 | 20.8 |
| 1950 | 12.0 | 26.4 | 2.5 | 27.3 | 8.9 | 0.0 | 10.0 | 8.7 | 27.9 |
| 2000 | 2.4 | 14.7 | 0.6 | 38.0 ^c | 15.6 | 0.0 | 16.5 | 10.3 ^c | 46.6 |

Footnotes: ^aExcludes domestic service; ^b1860; ^c1990. "Na" means "not available."

Sources: Agricultural share of the labor force: 1800 and 1860 from Weiss, <sbcs.s.1.16> and <sbcs.s.1.17>; 1910 and 1950 from Sobek, <sbcs.o.19.1> and <sbcs.o.19.2>; and 2000 from U.S. Census Bureau. *Statistical Abstract of the United States: 2002* (122nd edition). Washington, DC, 2002, Table 591; Manufacturing share of the labor force: 1860 from Lebergott, <sbcs.s.1.1> and <sbcs.s.1.8>; 1910 and 1950 from Sobek, <sbcs.o.19.1>, <sbcs.o.19.6>, and <sbcs.o.19.7>; and 2000 from U.S. Census Bureau. *Statistical Abstract of the United States: 2002* (122nd edition). Washington, DC, 2002, Table 591; Domestic service share of the labor force: 1800 and 1860 from Lebergott, <sbcs.s.1> and <sbcs.s.15>; 1910 and 1950 from Sobek, <sbcs.o.1> and <sbcs.o.10>; 2000 from U.S. Census Bureau. *Statistical Abstract of the United States: 2001* (121st edition). Washington, DC, 2001, Table 593; Clerical, Sales, and other service occupations as a share of the labor force: 1870 through 1990 from Sobek <sbcs.o.1.1>, <sbcs.o.1.6>, <sbcs.o.1.7>, and <sbcs.o.1.11>; Professionals as a share of the labor force: 1870 through 1950 from Sobek, <sbcs.o.1> and <sbcs.o.2>; 2000 from U.S. Census Bureau. *Statistical Abstract of the United States: 2001* (121st edition). Washington, DC, 2001, Table 593; Slave share of the labor force: from Weiss, (<sbcs.w.1.9> + <sbcs.w.1.10> + <sbcs.w.4.9> + <sbcs.w.4.10>) divided by (<sbcs.w.1.1> + <sbcs.w.1.2> + <sbcs.w.4.1> + <sbcs.w.4.2>); Nonwhite share of the labor force: 1800 and 1860 from Weiss (<sbcs.w.1.5> + <sbcs.w.1.6> + <sbcs.w.4.5> + <sbcs.w.4.6>) divided by (<sbcs.w.1.1> + <sbcs.w.1.2> + <sbcs.w.4.1> + <sbcs.w.4.2>); 1910 and 1950 from Sobek <sbcs.o.1.1>, <sbcs.o.5.1>, and <sbcs.o.7.1>; 2000 from *Statistical Abstract of the United States: 2002* (122nd edition). Washington, DC, 2002, Table 561; Foreign-born share of the labor force: 1870 through 1990 from Sobek, <sbcs.o.1.1> and <sbcs.o.9.1>. Female share of the labor force: 1800 and 1860 from Weiss, <sbcs.w.1.1>, <sbcs.w.1.2>, <sbcs.w.4.1>, and <sbcs.w.4.2>; 1910 and 1950 from Sobek <sbcs.o.1.1> and <sbcs.o.3.1>; 2000 from *Statistical Abstract of the United States: 2002* (122nd edition). Washington, DC, 2002, Table 561.

1800

In 1800 America was a largely agricultural economy; approximately three-fourths of the labor force was occupied in this one sector (<sbcs.s.1>). Over thirty percent of the workforce nationally and slightly over fifty percent of the workforce in the South were slaves. The majority of these slaves were engaged in the cultivation of tobacco for export and in the cultivation of food for their own consumption. Because enslaved women and children were just as likely as enslaved men to work in the fields, women's and children's share of total employment was also high at this time. Slave labor was concentrated in the South, yet certain Northern states also made heavy use of slave labor in 1800. In New York and New Jersey slaves accounted for 7.5 and 12.7 percent of the labor force, respectively. See <sbcs.w.7> through <sbcs.w.12> and <slavery.essay>.

Among the free agricultural labor force, the vast majority were engaged in family-owned farm operations, most of the others were slave plantation owners or white overseers on slave plantations. The labor of women and children in the fields was considerably less prevalent among the free as compared with the slave population. This is not to say that free women and children were idle. Rather, the women were engaged in household production primarily intended for the use of their families while children assisted in farm and household chores and were engaged in various sorts of skill development. Older children were also frequently engaged in land-clearing and

other farm-building activities. The labor of independent Northern farmers and their families was supplemented by that of indentured servants and other contract laborers. It is difficult from extant records to determine how prevalent contract labor was for the economy as a whole although a number of local studies suggest that this form of labor was fairly common, especially in the Middle Atlantic region. See <labor.essay> and Rothenberg (1992). Outside of agriculture, the primary occupations in 1800 were connected with ocean-going transportation and domestic service (sbc.s.1>). Many workers engaged in different occupations at different points during the year, working, for example, in agriculture during the spring planting and fall harvest, in fishing during the summer, and in home manufactures during the winter.

1860

Jumping ahead a little more than half a century to 1860 on the eve of the Civil War, the American labor force is familiar in some ways but markedly different in others. Perhaps the most significant change in the labor force over these sixty years was the growing difference between labor force characteristics in the North and in the South.

In the South, slavery remained a powerful institution. It grew in profitability and expanded geographically in a westward direction. The invention of the cotton gin in 1793 and its rapid diffusion in the years that followed greatly enhanced the value of the short-fiber cotton that was well-suited to that region's soil and climate. This technology, in combination with rising world demand for raw cotton stimulated by the industrial revolution in textiles manufactures, made cotton "King" and shifted the majority of slave laborers out of tobacco into this newly-profitable crop. Cotton cultivation spread steadily westward within the "Cotton Belt", a region that stretched from South Carolina and the Piedmont of Georgia in the east through central Alabama, Mississippi, Louisiana, and south eastern Arkansas. By 1860 it had even had made inroads into eastern Texas. The shifting geographic location of the slaves who cultivated this cotton can be seen in <esw.a.1>. The slave share of the Southern labor force remained roughly constant, but this constancy masked strikingly different developments within the region. States of the Cotton South experienced marked growth in the slave share of their labor force, so much so that by 1860 slaves accounted for approximately 70 percent of the labor force in the states of South Carolina, Georgia, and Mississippi and upwards of 60 percent in a number of neighboring states. See <sbc.w.7>, <sbc.w.8>, <sbc.w.9>, <sbc.w.10>, <sbc.w.11>, and <sbc.w.12>. Slaves declined not only as a share of the labor force, but even in absolute numbers in the states of Delaware and Maryland. See <slave.essay>. Despite the rapid growth of the slave population, slave ownership remained profitable and the average price of slaves rose through most of this period (See Sutch, 1965 and <esw.c.1>.)

Except for a brief flurry of manufacturing efforts in the 1840s when world cotton prices temporarily declined, the Southern economy remained firmly agricultural throughout the antebellum era (Bateman and Weiss, 1981). Gavin Wright (1986, 1987) explains the South's lack of manufactures and also its lack of towns, schools, and transportation improvements in terms of the economic logic of the institution of slavery. Under slavery, asset holders' wealth takes the form of moveable human property instead of immovable land, homes, and factories. Because

slaveholders' assets are mobile, they have little incentive to invest in the infrastructure – towns, roads and schools – which stimulate a rise in the price of these immovable homes, farms, and shops. Because slave assets “crowd out” physical capital in the portfolios of slave owners, investment in physical capital is reduced and economic development is held back (Ransom and Sutch, 1986).

In the North, both slavery and indentured servitude largely vanished from the labor force in the early years of the nineteenth century. Independent self-employed family enterprises and “free” hired labor emerged as the dominant institutions within the labor force. Agriculture had fallen as a share of total employment and its character had changed. Prompted by substantial improvements in internal transportation, Northern agriculture expanded westward to take advantage of more fertile soils and cheaper land. Farms became increasingly specialized, concentrating in the cultivation of grains and cereals in the west and orchard crops, vegetables, and dairy products in the east (Atack and Bateman, 1987).

During the first half of the nineteenth century the Northern labor force also began to move out of agriculture and into manufacturing, construction, trade, transportation, and services. This movement was at first gradual, but after the 1820s it began to pick up considerable momentum as the gap between productivity in manufacturing and agriculture expanded (Sokoloff, 1986 and <nipa.essay>). Virtually all of the 18 percentage point drop from 74.4 to 55.8 percent in agriculture's share of the total labor force that appears in Weiss's estimates for the period 1800 to 1860 is due to the decline in the relative importance of agriculture within the Northern states (<sbcs.s.1>).

To a disproportionate extent, the movement of the labor force out of agriculture involved the incorporation of groups that had not heavily participated before these industrial transformations. One group was young adult females who left their family farm households for wage employment, most famously to work in the cotton textile mills of New England, but also in a variety of other manufacturing industries and in a variety of services (Goldin and Sokoloff, 1982). The growing importance of these young women to the labor force of especially New England in this period can be gleaned from a study of tables <sbcs.w.7> through <sbcs.w.12> from which one can calculate the growing share of free adult women in the labor force. For example, these estimates put the female share of the 1860 labor force aged 16 years and older at 22.4 and 21.2 percent in Rhode Island and Massachusetts, respectively.

Foreign-born workers from Europe constituted the other important addition to the Northern labor force during the first half of the nineteenth century. Significantly, these immigrants did not venture into the slave South, but they flocked in large numbers to the free labor markets of the North. Immigration from Europe to the North grew gradually over the first part of the nineteenth century and intensified in the 1840s when Irish seeking to escape their country's disastrous potato famine emigrated to America. Irish emigration to the northern states continued even after the crisis of the famine subsided. The Irish were joined by immigrants arriving from England, Scotland, Germany, and other areas of northwestern Europe. These immigrants were attracted by the manufacturing and construction jobs (primarily in the construction of canals and railroads) available in New England and the Middle Atlantic states. (See <bcs.c.3> for annual estimates of flows of European immigrants beginning in 1820 and <bcs.d.3> for immigrant

occupation at the time of their arrival in the U.S.). Some historians credit the rapid expansion of American industry during this period to this large influx of foreign labor. Without this augmentation to the supply of labor, wages might have risen to the point that further expansion of manufacturing might not have been profitable. Foreign laborers were more likely than their native-born counterparts to take up positions as wage laborers in manufacturing, construction, and transportation. The foreign-born were underrepresented among self-employed farmers and even among farm laborers. Because output per worker was considerably higher outside as compared to within agriculture, the increasing concentration of the labor force in nonagricultural activities was a major source of improvement in output per worker economy-wide (<nipa.essay>).

The expansion of Northern manufacturing undercut the markets and the income of many American artisanal craftsmen who had previously dominated the production of these goods. In industries such as iron implements, textiles, stonecutting and woodcutting, to name only a few, the wages of skilled craftsmen fell relative to those of common labor (<sbcb.19>). One response of artisan workers to these developments was to form for the first time organized craft labor unions as a way of gaining more control over development within their industries. During economic downturns, labor demonstrations took place in many Northern cities; by 1860 several trades could boast national organizations that represented their interests. See <unions.essay> and Wilentz, 1984.

1910

On the eve of World War I the labor force looked markedly different than it had a half-century earlier. Slavery had been abolished by the passage of the Thirteenth Amendment to the Constitution in 1865. Agriculture had shrunk to less than a third of total employment; manufacturing now employed one-in-five workers. Clerical, sales, and service positions outside of domestic service had grown in relative importance by more than three-fold. The foreign-born and women (there is some overlap in these two categories) each accounted for a little over a fifth of the workforce (See <sbco.1>, <sbco.2>, <sbco.3> and <sbco.8>). Large-scale establishments powered by such inanimate forces as water, coal, steam, and the recently-introduced electricity were the norm. At the same time differences between Northern and the Southern labor markets were as prominent as they had been on the eve of the Civil War.

The most important change in the Southern labor force during the half century following 1860 was the South's defeat in the Civil War and the subsequent abolition of slavery. Ransom and Sutch emphasize that one immediate effect of the abolition of slavery was that former slaves could decide for themselves about how much labor to supply. In response to this newfound freedom former slaves radically reduced their labor force participation to fit the norms of other free laborers. Ransom and Sutch explain:

Emancipation gave the ex-slave the freedom to lighten his burden and, for the first time, reserve a portion of his time for himself. The slave was literally worked to the limit of his economic capacity. Once free, he quite naturally chose to work less, so that he might reserve a portion of each day in which to enjoy the fruits of his labor, fruits that had previously been taken from him by his master. The result was that the amount of labor

offered by each freedman and his family was substantially less than when slavery forced every man, woman, and child to work long hours throughout the year. Rather than work like slaves, the freedmen chose to offer an amount of labor comparable to the standard for free laborers of the time. (Ransom and Sutch, 1977 [2001]: 44).

Ransom and Sutch estimate that the withdrawal of former-slave labor was on the order of 28 to 37 percent of the total black labor force (Ransom and Sutch, 1977 [2001], Appendix C). Their estimates include separate calculations for withdrawals from the labor force and also changes in days worked per week and hours worked per day for those who remained engaged. Ransom and Sutch argued that the rate of labor force withdrawal differed across demographic groups. The Weiss calculations presented here reflect that view. For adult males, Ransom and Sutch and Weiss estimate the decline was relatively modest. By contrast, among adult women and among children of both sexes the labor force withdrawal was substantial. Weiss estimates that the total black labor force – including those who were formerly free in addition to those who were formerly enslaved– declined by 12.4 percent for males and 60.0 percent for females between 1860 and 1870. Recall that the labor force records whether a person is in or out; it does not take account of adjustments in days or hours of work by those who continue to participate (<sb.c.w.2.7 and sb.c.w.5.7>). Since evidence suggests that many ex-slaves who retained their attachment to the labor force nonetheless reduced their days and/or hours of employment, the Weiss figures underestimate the total work reduction of ex-slaves.

Ransom and Sutch go on to demonstrate that the sizeable reduction in black labor in the South had profound implications for many institutions and economic outcomes in the post-bellum Southern economy. Rather than working as wage laborers as Southern whites had hoped, the blacks' withdrawal from the labor force enabled them to successfully bargain for the farm tenancy which gave them considerably greater autonomy. Wright (1986, 1987) demonstrates how the abolition of slavery stimulated other positive developments within the Southern economy. These included increased manufacturing activity; improved movement of Southern laborers from low to high-wage regions within the South. Nonetheless, even by 1910 the Southern labor market remained isolated from that of the rest of the nation. Southern wages were low and few Southern workers moved from the low-wage South to the high-wage North. See <labor.essay> for additional details.

In the North, the characteristics of the labor force also changed substantially between 1860 and 1910. Continued improvements in transportation, led by the significant expansion of the railroad network and including the completion of the transcontinental railroad in 1868, further stimulated the westward movement of the labor force and Northern agriculture's continuing specialization in marketable crops. Agricultural productivity nationwide grew substantially between 1870 and 1910, with virtually all productivity improvements occurring in the North (<alo.c.5.3>). Because of these agricultural productivity gains, agricultural employment *fell* as a share of total employment.

In America nationwide between the Civil War decade and 1910, farmers' and farm laborers' share of the total workforce fell from 46 to 31 percent (sb.c.o.1>). A disproportionate share of this transition of the labor force out of agriculture occurred within the North.

The largest relative employment gains nationwide occurred among clerical, sales, service, and professional occupations. In 1870 none of these individual sectors employed more than three percent of the labor force nationwide; collectively they employed less than eight percent of the workforce. By 1910, however, these occupations had more than doubled their share, registering 19 percent of the total labor force economy wide (<sbco.1>). At the same time, the employment of operatives, generally engaged in semi-skilled manufacturing work, rose as well. From a rather substantial 13 percent of the labor force in 1870 operatives came to occupy 16 percent of the national labor force by 1910 (<sbco.1>). Manufacturing operatives were increasingly employed in large manufacturing establishments where they had less say in the organization of their work and the terms of their employment. These shifts in the balance of employer and employee power prompted a whole host of responses including strikes, formation of labor unions, passage of labor legislation, and the rise of internal labor markets characterized by job ladders, employer-sponsored retirement schemes, and other forms of personnel management (Nelson, 1975; Jacoby, 1985).

Enabled by another remarkable transportation improvement – the ocean-going steam ship – immigrants continued to arrive from Northern and Western Europe in large numbers and were joined at the end of the nineteenth century by immigrants from Southern and Eastern Europe. Early in the period there had also been a brief influx of immigrants from China and Japan, but these flows were halted by legislation and international agreements that reduced immigration from Asia to a trickle by 1910 (see <immigration.essay>).

The immigrants tended to locate wherever wages were high and employment was growing most rapidly at the time of their arrival. Immigrants during this period were attracted to the burgeoning manufacturing and construction sectors. While 22 percent of the 1910 labor force were foreign-born, foreign-born workers accounted for 31 percent of all operatives and 41 percent of laborers outside of agriculture (<sbco.8> and <sbco.9>). Not only did immigrant laborers facilitate the expansion of these growing sectors over the long run, but they also played an important role in overcoming short-run bottlenecks. Because immigrants timed their arrival (and departure) to coincide with the availability of employment opportunities, their involvement in the American economy allowed for longer economic expansions and shorter contractions than would have been the case had employers been forced to rely on domestic labor supplies alone (Carter and Sutch, 1999).

Women's employment had also grown as a share of the labor force and over this period as women began to enter new industries and occupations. In 1910 women accounted for 21 percent of the labor force, up from 15 percent in 1870 (<sbco.1> and <sbco.3>). Women's share of professional employment grew from 27 to 45 percent over the same period, largely because of their increasing employment in teaching (Perlman and Margo, 2001). Women also made significant advances in clerical, sales, and to a lesser extent service work (Rotella, 1981). At the same time, women's employment outside the home remained largely restricted to the period of life after school-leaving and before marriage. Few married women were employed in wage work during the period. Those married

women who did engage in employment outside the home were likely to be married to men who were unemployed, disabled, or who otherwise faced difficulty in earning an adequate income (Goldin 1990).

A different milestone for the American labor force over the second half of the nineteenth century was the achievement of near universal literacy by 1910. Among persons 14 years of age and older, the percentage illiterate in 1910 was only 7.7 percent. A disproportionate share of the illiterate population were blacks living in the South who had not yet overcome the educational disadvantages imposed by slavery. Among blacks 14 years of age and older in 1910 31 percent were illiterate. Among whites, only 5 percent of the native born but 13 percent of foreign born were illiterate (<cg.c.2>). This would be a remarkable achievement for any country at the beginning of the twentieth century, but it was especially notable in America since such a large proportion of the labor force arrived as young adults, having received their education in countries that were behind in their educational development.

We have emphasized so far long-term trends in the characteristics of the labor force between 1860 and 1910, but an important new development during this period was the appearance of labor market fluctuations that condemned large numbers of wage workers to involuntary unemployment for extended periods of time. The most severe depressions of this period occurred from October 1873 to March 1879; from March 1887 to May 1888; from January 1893 to June 1894; from December 1895 to June 1897; and from May 1907 to June 1908. See <bfc.a.2>, <sbc.a.2.6>, and <fluctuations.essay>. These industrial downturns prompted worker unrest, encouraged the formation of labor unions, and legislative initiatives designed to protect industrial workers from some of the consequences of unfettered labor market operation (Keyssar, 1986).

1950

By 1950 the United States was clearly the world's largest and most powerful economy and its labor force looked markedly different than it had just 40 years earlier. Manufacturing was the country's single largest industrial sector, occupying 26 percent of the labor force. Clerical, sales, service, and professional occupations had grown more rapidly while agriculture and domestic service work had declined. Foreign-born workers had declined to less than nine percent of the labor force, their lowest share in more than a century-and-a-half. While women's share of total employment changed only slightly, white women's occupational distribution was substantially altered. White women had largely abandoned domestic service by 1950 and moved into white collar occupations in the professions, non-domestic services, and especially into secretarial and clerical work which, by 1950 had become the single largest occupational category for white women workers. Almost a third were engaged in office work at that date (<sbc.o.6>).

Blacks had moved out of the rural South in large numbers to take up jobs in urban, industrial employment. A high school diploma had become the educational norm. The labor market of 1950 was regulated by a vast array of new laws at the federal, state, and local levels which affected a range of labor market outcomes including the minimum wage, overtime pay, worker health and safety insurance, and retirement. A few years earlier Congress had

passed the Employment Act of 1946, charging the federal government with responsibility for maintaining maximum employment.

Between 1910 and 1950 the pace of economic growth quickened, partly because of the continued growth in capital per worker and also because of the increasing importance of knowledge-based improvements in technology and industrial organization (See <nipa.3>). In the first half of the twentieth century these latter factors had become the major source of increases in output per capita (Abramovitz and David, 2000). The rapid advance in productivity prompted substantial shifts of the labor force across industries and occupations. The manufacturing sector grew. The agricultural sector began to contract beginning in the 1920s when food prices fell and many farmers' incomes were not sufficient to cover their expenses (<sbco.28a.72>, <phld.1.3>, and <aol.b.3.8>). Stimulated by the technological advances and stimulating their further development, was the continuing growth in the educational attainment of the labor force. Whereas the majority of the workforce had completed only primary school at the beginning of the century, by 1950 high school graduation had become the norm.

Punctuating these long-run trends were several unique and turbulent events. The United States was involved in two world wars; it endured a crippling, 11-year long depression; and it closed its doors to mass immigration. The outbreak of the world war in Europe in 1914 had a powerful impact on the American labor force. The arrival of immigrants from Europe slowed considerably as fewer potential immigrants were allowed to leave their home countries and as transportation across the Atlantic became riskier and more expensive. All the while, demand for American manufactured products soared as warring nations sought armaments, military provisions, and civilian goods that their own factories were unable to adequately supply under wartime conditions. The combination of reduced foreign labor and increased labor demand led to rising wage rates and employment shortages. These conditions inspired Northern industrialists for the first time on a large scale to begin recruiting Southern blacks for their northern industrial positions. These labor recruitment efforts initiated the "Great Migration" of blacks out of the South (Collins, 1997). In 1910, only 11 percent of the black population lived outside the South but by 1950, 32 percent of the black population and a considerably larger percentage of the black labor force did so. For most blacks, the abandonment of the South also meant the abandonment of agricultural for industry. This Great Migration produced large gains for blacks in terms of wages, education, and political expression (Margo, 1990). It played an important role in the integration of Southern and Northern labor markets (Wright, 1986, 1987; Rosenbloom, 2002).

Following World War I, immigration returned to its pre-war levels but was soon halted by the severely restrictive regulations embodied in the Quota Acts of the 1920s. The high unemployment associated with the onset of the Great Depression of the 1930s brought the small remaining immigrant flow to a complete halt. In fact, more foreign-born persons left the United States for other countries than arrived here from abroad. There was a limited resumption of immigration during the Second World War, but the flows remained small. Thus, by 1950 the foreign-born share of the labor force was considerably smaller than it had been for well over a century.

The economic boom of the 1920s witnessed acceleration in the growth of large corporations and the development of elaborate personnel management systems. Corporations expanded their clerical, sales, service, and professional staffs and opened many of these new positions to female workers.

The prosperous 1920s, however, were followed by the Great Depression of the 1930s, the most catastrophic of the recurrent industrial depressions that had first appeared in the latter half of the nineteenth century. At its depth in 1932, almost a fourth of the total labor force and a third of the nonagricultural labor force was unemployed (<sbca.2>). Despite a partial recovery in 1937, the Great Depression lasted fully 11 years, ending only when the government began mobilizing the economy to fight World War II (See <fluctuations.essay>). During the 1930s the government expanded both its size and reach; it enacted a broad range of measures that substantially altered the operation of the labor market and which remain prominent institutional features of the economy at the end of the twentieth century. Federal social security, old-age assistance, and unemployment insurance were all introduced at this time (<fishback-zilliack.essay>). So were laws that enhanced organized labor's ability to recruit new union members and to pursue its interests vis-à-vis employers. Since these laws were national in scope, they played an important role in standardizing the operation of labor markets in different regions of the country, in particular in bringing conditions in the low-wage South onto a par with those in the rest of the nation. While scholars differ on the details of whether this New Deal legislation would have been enacted about that time even in the absence of a Great Depression, all agree that the legal and institutional changes of that decade played a powerful role in changing the nature of labor market operation in the years that followed (Bordo, Goldin, and White, 1998).

The onset of World War II prompted further changes to the American labor force. Unemployment fell as the government geared up for war-time production and drafted young adult males into military service. By 1945 almost 12 million men and a quarter of a million women were engaged as military personnel on activity duty (<sgga.3>). The number of males engaged in active duty at this time is equivalent to about two-thirds of the total male population aged 15-29 years of age in that year (<mrha.5>). To accomplish its production goals, the government enticed millions of women – married and single – into the labor force. This wartime work experience permanently changed public perceptions of women's economic roles and is widely believed to have contributed to the marked expansion of women's roles in the years that followed (Goldin 1990).

2000

From an historical perspective, perhaps the single most striking characteristic of the 2000 labor force is the prominent role of women. In 2000 women comprise nearly half of the total labor force and almost half of these female workers were married. The growth in women's share of the labor force was accomplished through two complementary processes, an increase in women's participation rates and a decline in men's. The share of women 16 years of age and older participating in the labor force grew from 33.9 percent in 1950 to 60.2 percent in 2000 (<sbca.a.8>). Men's participation rates overall fell from 86.4 to 74.7 percent, with virtually the entire decline occurring among older men. In 2000 only 67 percent of males 55-64 years of age and 18 percent of those 65 years of age and older were labor force participants. This compares with 87 and 46 percent, respectively, in 1950 (<sbca.a.6>).

Foreign-born workers were a much more prominent presence in the 2000 labor force than they had been 50 years earlier. Immigrant flows had resumed in the post-World War II era and they were fed by entrants from different parts of the world. In 1950 the overwhelming majority of the foreign born workforce was of European origin whereas by 2000 persons from Asia and Latin America formed the majority. The successive waves of migration from Latin America were so large in the previous 50 years that, in 2000, almost 11 percent of the *total* labor force was of Hispanic origin (calculated from <sbca.a.12> and <sbca.a.14>).

The 2000 labor force was highly educated. Thirty percent had a college degree while fewer than 10 percent had not completed high school (Census, 2002, Table 564). White collar work in the professions and in clerical, sales and service occupations accounted for over half of the total workforce (<sbco.o.1> and <sbco.o.2>); manufacturing had declined to almost half its 1950s level while agriculture had shrunk to a mere 2 percent of the labor force economy-wide (<sbco.o.19>).

Unions were far less powerful than they had been a half century earlier. Union members accounted for only 13 percent of the workforce in 2000(<sbce.e.1.6> divided by <sbca.a.2a.2>). At the same time, unemployment posed less of a threat to workers. Between 1950 and 2000, unemployment averaged 5.7 percent; down from an average during the previous 50 year period of 6.8 percent. Moreover, prior to 1950 unemployment reached 22.9 percent in 1932 and exceeded 10 percent for a total of eight years. In the post-1950 period, the highest level of recorded unemployment was 9.7 percent in 1982 (calculated from <sbca.a.2.6> and <sbca.a.2a.8>).

This new face to the 2000 labor market was the product of a complex set of developments that included both continuity and change compared with the previous period. The continuing growth of labor productivity, rising incomes, low unemployment; the resumption of large-scale immigration; and the revolution in the social and political roles of minorities and women are among the most important of these.

Labor productivity continued to advance with improvements in the quality of inputs, such as more educated labor and more sophisticated machinery and organization, leading the advance (Abramovitz and David, 2000 and <productivity.essay>). This labor productivity growth, combined with growth in the labor-to-population and capital-to-labor ratios over the period as a whole produced an overall rate of growth of real GDP per capita of 2.2 percent

percent annum, a rate that exceeded that for any of the previous periods discussed here (<nipa.3>). A 2.2 percent annual growth rate sustained for fifty-years translates into a three-fold increase in real per capita income.

The growth in both labor productivity and in per capita income influenced the deployment of the labor force in a variety of ways. As incomes rose consumers shifted demand away from standardized products and toward custom-made manufactured goods; imported specialty products; and services, especially health care, transportation, education, and insurance. The rise in demand for these new goods, increasing international specialization and trade, and rapid technological advance prompted shifts in the deployment of the labor force across industries.

Manufacturing employment fell as a share of the total from 26 to 15 percent. Within manufacturing, the share of workers employed by the very large firms (those employing one thousand or more workers) fell as well from 33 to only 20 percent of the labor force (<sbc.d.30.3>). Business services, such as advertising, building services, personnel supply services, and computer and data processing services; educational services; and other professional services such as health, legal and social services more than doubled their labor force share since 1950 to reach 5.9, 9.4, and 12.9 percent of the labor force, respectively by 2000 (<sbc.o.19>).

The growing female share of the paid labor force is bound up with these industrial and occupational shifts in a variety of interesting and mutually-reinforcing ways. Women's activities figure into the demand side since it was women's willingness to reallocate their time from unpaid household work and into the paid labor force that contributed to the strong and growing effective demand for products such as education, transportation, and insurance, which cannot be produced in the home. Women's activities figure into the supply side since their high levels of education and labor market entry have facilitated the rapid growth of employment without a rapid increase in the costs of production.

After the Second World War immigration to the United States resumed. With the recovery of the economy, the American labor market was once more attractive to potential immigrants. Furthermore, the U.S. had created loopholes in the program of strict numerical control of immigration. In acknowledgement of strategic wartime alliances and in an effort to influence the character of post-war international relations, the U.S. loosened bans on immigration from Asia, created special admission categories to accommodate persons displaced by the Second World War and encouraged the immigration of the highly educated. These programs were expanded with the onset of the Cold War that followed (for a list of these programs see <bcs.tab.02>; for numbers admitted by program see <bcs.e.5>).

Another source of foreign-born labor in this period was migrant labor for agriculture which was drawn largely from Mexico. Tight labor markets during World War II produced an agricultural laborers program that was continued into the 1950s and early 1960s. During most of the 1950s and early 1960s the number of workers entering the United States under the auspices of such programs was more than double the number of persons admitted as regular immigrants (<bcs.e.8>). When the U.S. ended the program unilaterally in 1964, the migrant labor flows continued, but in an undocumented form.

In 1965 the United States repealed the Quota Acts of the 1920s that had starkly restricted immigration from much of the world and substituted the Preference System. The Preference System allowed for higher annual levels of immigration and greatly facilitated the entry of immigrants from Asia (<immigration.essay>). Following the mid-1960s, the share of the American labor force born in Asia and Latin America grew rapidly. These foreign-born workers in the late nineteenth century were a more diverse group than those a hundred years earlier. Back then, the majority of immigrants came out of agricultural backgrounds and took up places in unskilled occupations in the growing manufacturing sector of the economy. There were few professionals, but also few agricultural workers. At the end of the twentieth century, a much higher share of the foreign-born workforce is employed in a professional position than was true a century earlier. At the same time, it is also true that a disproportionate share of the foreign-born population is employed as agricultural laborers and as manual service workers in the hospitality industry. In 1990, the foreign-born share of the agricultural labor force was more than double its share of the labor force overall (<BCS.D.3>, <BCS.D.4>, <SBC.O.8>, <SBC.O.9>, and <laborforce.fig.1>).

We postpone the discussion of changes in the labor market roles of minorities and women during the second half of the twentieth century for the next section on labor force participation.

4. Labor Force Participation

While most workers report that their own labor force participation is a necessity rather than a matter of choice, the historical record reveals enormous variation over time in the participation rates of different groups. For example, in the nineteenth century married women's labor force participation was rare and that of youth and older men much more common than today. Thus, a long-term perspective reveals that society-wide labor force participation rates are clearly flexible. There are many ways for households to satisfy their demand for money income.

Economists explain patterns and trends in labor force participation with reference to an economic model originally developed to explain consumers' choices among commodities (Killingsworth, 1983). According to this model, the individual is assumed to select between two goods, one purchased in the market and the other produced at home. Leisure is included among the home-produced goods. They participate in the labor force in order to earn the money they require for the purchase of these market goods. Individuals face a number of constraints in this process: their time is fixed at 24 hours per day, their assets and nonmarket income are not boundless; their productivities and returns in the market and nonmarket venues are limited in specific ways; and they have biophysical requirements for sleeping and eating.

This consumer choice model of labor force participation is generally recast from an individual to a family or household perspective to take account of the fact that individuals' decisions are influenced by the wages and the household productivity of other family members. Of course, family members make their labor supply decisions simultaneously rather than piece-meal so that it remains to be explained why families sent older children into the

labor force while keeping the wife/mother in household labor in late-nineteenth century but did the opposite in the late-twentieth century.

Labor force participation may also be cast in a lifecycle perspective in which individuals' decisions regarding current activity are made with an eye to the future and are influenced by the value of assets that they have already accumulated. A typical lifecycle employment pattern involves working and saving as a young adult and then reducing the work effort and drawing down savings at older ages (Modigliani, 1966).

The economist's labor supply model was developed to explain individual differences in labor force participation at a single point in time. For example, why is one 58-year old in the labor force while a neighbor is retired? Is it differences in earnings opportunities, income of spouses, pensions, health, or something else? Alternatively one might ask why education is positively correlated with labor force participation. Is it simply that better educated individuals have access to higher wages or is there some independent effect of education itself? A primary goal of such investigations is to answer policy-related questions. One might be interested, for example, in predicting the impact of a proposed change in social security benefits on the probability of retirement at different ages. Appropriately, for this purpose, such modeling focuses on factors that distinguish among individuals at some single point in time and leaves aside factors that influence all individuals and which change slowly over time.

To explain long-term change in labor force participation one must bring these "background characteristics" explicitly into the analysis. Economic historians distinguish among two major categories of background characteristics: cohort effects and trends.

(Birth) cohorts refer to individuals born about the same time. "Cohort effects" refer to developments that distinguish the life experience of one birth cohort from another. Familiar examples are war; famine; economic depression; political struggles; legislative change; and technological developments such as the advent of television, the automobile, or airline travel. Such events appear to have a lifelong impact on those coming of age at the time they occur (<cohort.essay>). The impact of such events is reinforced by the fact that, for a variety of reasons, individuals' behavior depends to some extent upon the behavior of those around them (Schelling, 1978). Thus, for example, individuals are more likely to marry at young ages if their peers are doing so.

Many decisions that affect lifetime labor supply behavior are made as young adults. Especially pertinent are decisions regarding education, marriage, family size, and geographic location. For example, a woman who has a large number of children may find she is unable to respond to an unexpected decline in discrimination or to an increase in wage rates for many years, perhaps never. Cohort effects can differ markedly from one birth cohort to the next.

"Trends" also influence long-term change in labor supply. By "trends" I mean social norms, legal regimes, and institutions that change over time and that affect all individuals in the economy. Such norms, laws, and institutions are typically not part of the economist's model of labor supply precisely because the economist focuses on differences across individuals or cohorts at a single point in time while norms, laws, and institutions are typically

the same for everyone. Nonetheless, if the focus is on long-term change, then trends may be quite important. To take one example, discrimination against women in professional employment or social attitudes that stigmatize married women's employment may lead some women to decide against labor market participation altogether. A reduction in such discrimination and stigma may be more important than changes in wages in explaining change in women's labor force participation over time.

Goldin (1983, 1990) parsed the determinants of change in women's labor force participation between 1940 and 1970 into the three categories embraced here: point-in-time effects such as income and wages that can improve or deteriorate from one year to the next; cohort effects such as educational attainment, marital status, and fertility, which are generally fixed by age 30 or so; and trends in difficult-to-quantify factors such as social norms, laws, and institutions. She concludes that each of these categories, on its own, can account for only about a third of the total change in women's labor force participation over time. In other words, it is important to consider all three categories.

4.a Male Labor Force Participation

The long-term pattern of male labor force participation since 1870 is shown in <laborforce.fig.2> and <sbca.a.11>. In nineteenth-century America, an estimated 90 percent of adult white males 16 years of age and older, and a slightly higher percentage of nonwhites, were engaged in the labor force. Beginning about 1920 this high rate of labor force participation began to decline, so that by 2000 the respective participation rates of whites and nonwhites were only 75 and 71 percent (<sbca.a.12>).

The entire decline in male labor force participation over the twentieth century occurred at the younger and, especially, at the older ages; the participation rates of males 20 to 44 years of age changed not at all (<laborforce.fig.3> and table <sbca.a.6>). Young males increasingly delayed their entry into the labor force in order to extend their schooling while older males began their retirement at increasingly younger ages. Earlier retirement is by far the largest component in the overall decline in the labor force participation of men over time. As table <sbca.a.6> indicates, the labor force participation rate of males 55 to 64 years of age was close to 90 percent between 1947 and 1960. During the 1970s and 1980s this rate fell substantially but then remained essentially unchanged during the 1990s. In 2000 the labor force participation rate of males 55 to 64 years is 67.3 percent.

The long-term trend toward more and earlier retirement is thought to be a reflection of three principle developments: rising real incomes, the movement out of self-employment, and the rise of institutions such as social security and old-age pensions. Rising incomes have allowed individuals to enjoy more of all goods, including more retirement. Self-employment has given way to wage and salary employment in large business enterprises which have been able to offer increasingly more attractive relative rewards to labor (<sbcs.s.9>, <sbca.a.21>, and <sbcs.s.10> through <sbcs.s.13>). Nonetheless, the improved earnings in wage and salary work come at the expense of less flexibility regarding the extent, pace and content of the work. The self-employed worker controls these qualities him or herself, which means that in self-employment the worker can accommodate the various personal circumstances

that change with age. Large enterprises tend to adopt elaborate and rather inflexible internal personnel policies that limit workers' ability to make such adjustments. In fact, some employment policies of large firms, pension policies in particular, are specifically designed to encourage workers' early retirement. These firm-based pensions reinforce the effect of social security, veterans' benefits, and other public pensions in encouraging older workers to withdraw from the labor force at relatively young ages. A different long-term trend working in the opposite direction is improvements in health. Dora Costa (1998) has shown that over the twentieth century not only has mortality fallen, but the average level of health has improved. Since poor health is one reason why workers retire, health improvement, taken by itself, ought to have prompted reductions in retirement over time. That has not happened. Overall then, rising real incomes, the movement out of self-employment, and the rise of pensions have overwhelmed the effects of long term improvements in health, leading to substantially lower rates of labor force participation among older males over time.

Labor force participation rates of males, but especially older males, also vary with the business cycle. Downturns in the economy and increases in the unemployment rate are associated with reductions in the labor force participation while periods of economic expansion leads to increases (Coleman and Pencavel, 1993 and <sbca.6>). It is also the case that older males with the lowest levels of education exhibit the lowest levels of labor force participation and that differences in the participation rates of those with the highest and the lowest levels of educational attainment have grown over time (compare <sbca.17.5> with <sbca.17.8>). Taken together, these data suggest that for at least some older males, difficulty in obtaining employment may play a role in their decision to leave the labor force. They are also consistent with the view that interesting work conducted in a pleasant environment may be increasingly necessary in order to keep older workers in the labor force.

It is interesting that long-term changes in wage rates appear to have little or no effect on the labor force participation decisions of males. According to the simple model of labor supply described earlier, an increase in the market wage has two off-setting effects. On the one side, an increase in the wage means that a given hour's worth of work generates more income and therefore more command over market-produced goods and services. This produces a positive relationship between the wage and labor force participation. On the other side, an increase in the wage increases income and therefore offers the possibility of purchasing more of all goods, leisure and early retirement included. This consideration produces a negative relationship between the wage and labor force participation. The first effect has been shown to dominate for males who are already labor market participants, that is, higher wages appear to induce male workers to work longer hours. But for males both in and out of the labor force, changes in the wage rate seem not affect the participation decision one way or the other (Pencavel, 1986; Colemand and Pencavel, 1993; Blundell and MaCurdy, 1999).

4.b Female Labor Force Participation

Figure <laborforce.fig.2 and <sbca.11> display official statistics concerning the long term pattern of female labor force participation from the mid-nineteenth century. These statistics show a sizeable, steady advance for white women since the first census estimates of female employment in 1860. At that time, only 13.1 percent of 16 to 64-year-olds were gainfully occupied according to the census count. By 1990, the rate was almost 60 percent. (See <sbca.11>). The long-term pattern of nonwhite women's labor force participation is complicated by the experience of slavery and then emancipation. An estimated 90 percent of enslaved women were engaged in the labor force. The 1870 census, the first following emancipation, estimates the labor force participation rate of all nonwhite women at 39.2 percent, a rate higher than that of white women at the time but far below that of women under slavery. Over time the labor force participation rate of nonwhite women rose so that in 1990 it too stood at almost 60 percent. As described in detail above, scholars have shown that these official estimates certainly understate the extent of women's paid employment in the nineteenth and early-twentieth centuries. But even after adjusting for these underestimates, the substantial rise in women's labor force participation remains.

In the nineteenth century, many women lived their lives without ever becoming engaged in market work; for most of those who did participate the experience was a relatively brief life episode (<sbca.15> and <sbca.16>). In 1880, the first year when female labor force participation rates by marital status are available, 33.7 percent of single, 23.5 percent of widowed and divorced, but only 5.7 of married women were labor force participants. Over the twentieth century the participation of women in all marital status categories grew, with the largest gains made by married women who were living with their husbands (the official category is "married, spouse present"). In 1999, 68.7 percent of single, 61.2 percent of married, and 49.1 of widowed and divorced women 16 years of age and older were labor force participants (<sbca.16>).² As one can infer from these statistics, by the end of the twentieth century a large proportion of women were participating in the labor force throughout their adult lives, even while caring for young children. In 1999, fully 59.2 percent of married women with spouse present and with children under the age of three were in the labor force (<sbca.18>).

The process by which the female population transitioned from low to high rates of labor force participation can be summarized in a simple phrase: women's labor force participation has increased across the board. Women's labor force participation increased within every age group. Between 1948 when the modern annual data on women's labor force participation begins, through our last year of data, 1999, women's labor force participation increased in each and every age group (<sbca.8> and <laborforce.fig.4>). Only among young adults and only in recent years has there been a trending down of female labor force participation. This is a case in which the labor force participation rates of young women mirror those of young men. Both increasingly postponed labor market entry in order to extend their schooling.

² The average age of the widowed and divorced women is considerably greater than that of women who are single and married, husband present. This age effect is the primarily reason for their low participation rate.

Women's participation at every age has increased with each successive birth cohort. For many years economists characterized women's labor force participation over the lifecycle as a "two peaked" pattern, that is, heavy participation before marriage, withdrawal from the labor force at the time of marriage or birth of the first child, and then a return to the labor force after the youngest child was in school. This two peaked pattern is suggested by cross-sectional data displaying the labor force participation rates of women of different ages at some point in time (see <cohort.fig.1>). However Goldin (1990) has shown that an entirely different pattern emerges if one rearranges the data in a way that highlights the actual experience of successive cohorts of women as they age. For example, to view the labor market experience of women born in 1920, select the labor force participation rate of 20-year olds in 1940, 30-year olds in 1950, and so on. This measure is called a "cohort" measure since it follows the actual experience of a group of women, all of whom were born at the same time. The labor force participation rates of successive cohorts of women born in the twentieth century are shown in figure <cohort.fig.2>. In this figure it is clear that all cohorts of women born in the twentieth century increased their labor force participation as they aged, at least up to age 55. The apparent withdrawal of women from the labor force during the peak child-bearing years that is so striking in cross-sectional data for a single year does not represent the actual experience of any true cohort (<cohort.essay>).

Women's labor force participation increased at every level of family income, although much more rapidly in high-income than in low-income households. In the nineteenth century, female labor force participants tended to come from the more economically disadvantaged segments of the population – daughters and wives of men who were sick, injured, unemployed, missing, or dead. Over the twentieth century the expansion of white collar professional, managerial, clerical, sales, and service occupations and women's entry into these positions prompted substantial increases in labor force participation among women from middle- and upper-income households. By 1940, 49 percent of college-educated women were in the labor force as compared with only 22.9 percent of women with less than a high school education. By 1990 the respective percentages were 82 and 47.2 (<sbca.17>). At the same time, the educational attainment of successive cohorts of women rose. In 1940 the percentage of the female population 25 years of age and older who had completed four or more years of college was only 3.8 percent. By 1997 the figure was 21.7 percent (<cg.c.1.14>). Together, the increase in women's educational attainment and the disproportionately rapid growth in the labor force participation of well-educated women powered the growth in female labor force participation overall.

4.b.1 Income and wages

While it is clear how women's labor force participation increased, it is considerably less clear exactly *why*. The simple economic model of labor force participation highlights nonwage income and the market wage as two potentially powerful influences. An increase in a woman's nonwage income (typically the income of her spouse) is expected to reduce her labor force participation, and yet, even though the income of married men increased steadily

over time for most (but not all) married men (<sbcb.9>, <sbcb.33>, <sbcb.34>, <sbcb.35>, and <ljb.j.2>), married women's labor supply has increased rather than decreased as the model might lead us to expect.

Of course women's wages have also increased over time (<sbcb.35> and <sbcb.34>). As noted earlier, an increase in women's wage produces two off-setting effects. On the one side, it encourages labor force participation through what is called the "substitution effect." An increase in the wage rate makes it easier to acquire, say, chocolate chip cookies, by abandoning work in one's own kitchen, working for wages, and then spending the resulting income to purchase cookies from a bakery. On the other side, an increase in the wage will increase potential income, offering the possibility of purchasing more of all goods, leisure (and home cooking) included. Among women, the substitution effect has been found to predominate. That is, rising wages seem to encourage women to enter the labor force. At the same time, the rise in women's labor force participation rates, especially after the Second World War, far exceed the rise that would be predicted by the rise in wage rates alone (Goldin, 1983, 1990; Pencavel, 1997). To fully understand this long-term increase we need to consider cohort effects and trend variables as well.

4.b.2 Cohort effects

We have already noted in the descriptive section of this essay that successive cohorts of women have increased their involvement in the paid labor force (<cohort.fig.2>). To some extent these changes can be attributed to factors such as increased education, postponement of marriage, and reduced fertility – developments that have improved the rewards to women's market work and facilitated their labor force participation. Women's educational attainment has increased steadily over time. In fact, changes in the space of just a generation or two are truly enormous. For example, among women born between 1911 and 1920, 53 percent of whites and 85 percent of nonwhites had not completed high school by the time they reached their 20s; among the next generation, born between 1931 and 1940 the respective percentages were only 34 and 58. Jumping ahead to the cohort born between 1961 and 1970, only 11 and 14 percent of white and nonwhite women, respectively, had not completed high school (<coh.c.2>). Over the same time period college graduation became increasingly common. Among women born between 1911 and 1920, only 5 percent of whites and 2 percent of nonwhites had graduated from college whereas among the cohort born between 1961 and 1970, the respective proportions were 23 and 17 percent (<coh.c.4>).

Not all changes from one cohort to another facilitated labor force participation, however. White women born between the two World Wars, were far more likely to marry and to have large families than women born into earlier and, especially later cohorts. Among the cohort of white women born between 1911 and 1920, 62 percent were married by the time they reached their 20s; jumping ahead to the cohort born between 1931 and 1940 reveals a marriage rate in this age group of 77 percent. These high marriage rates, however, disappeared quickly. Among white women born between 1951 and 1960 only 56 were married by their 20s. Fertility followed the same pattern

across cohorts, with depressed fertility for women born prior to World War I, elevated fertility for women born between the World Wars, and sharply reduced fertility among the cohorts of women born after World War II. The sharply reduced marriage and fertility rates, together with their high levels of education, are an important element of the explanation for the long-term increase in female labor force participation rates, especially for the acceleration after 1970.

In emphasizing the impact of cohort-by-cohort change in educational attainment, marriage, and fertility decisions on labor force participation I do not mean to imply that these prior changes are made independently of labor market developments. On the contrary, these seemingly personal decisions have been shown to respond to a variety of economic forces society-wide. For example, in a highly-influential book, Richard Easterlin (1980) argues that the high marriage and fertility of cohorts born in the inter-war period appear to be a response to high household incomes in the 1950s – incomes that far-exceeded the income expectations they had formed as young adults growing up during the Great Depression of the 1930s. Likewise, Easterlin argues that the sharply reduced rates of marriage and fertility displayed by the post-world War II Baby Boom generation are a response to the disappointing economic conditions when this generation came of age during the 1970s.

4.b.3 Trends

“Trends” also play an important role in explaining the secular increase in women’s labor force participation over time. In contrast to “point in time effects” and cohort effects, trends are evolving influences with largely universal impacts. We highlight here two trends especially evident in the twentieth century, that have received considerable attention in the scholarly literature on women’s labor force participation. They are the rise of a consumer culture and advance in the technology of household production and changing social norms, laws, and institutions regarding the employment of women outside the home. Although we discuss these trends individually, they are closely intertwined with one another.

Economic historians have traced back many centuries the linkage between the introduction of new market goods to change in basic norms of family life, including norms regarding labor force participation. For example, Jan DeVries (1994) argues that the introduction of new textile, art, and home improvement commodities in eighteenth-century Belgium provided a powerful incentive for workers to work longer hours in order to be able to afford these attractive new products.

In American history, the expanding offerings of new consumer goods is also strongly linked to changing patterns of work, especially to changes in women’s work. Prior to American industrialization, when consumer goods were largely imported and expensive, families produced most of what they consumed. They raised their own food, processed some for storage, and prepared their daily meals. They built their own homes; produced household goods such as soap, candles, brooms, toys, furniture, and mattresses. They also produced their own thread, cloth, and apparel. The appearance of inexpensive commercial substitutes for many of these products with the advent of

American industrialization and improvements in internal transportation prompted many families to abandon home production and purchase from the market much of what they had formerly produced at home. Household production fell (<sb.c.1> and <sb.c.2>), sales of commercially-produced products rose, and many young people, especially women, left home to work in industrial employment. These new industrial workers were drawn, disproportionately from large, relatively prosperous rural families that no longer required their assistance with home production. As Thomas Dublin put it, "Although economic motives undoubtedly loomed large for these women workers, family economic need was not the principal motivation that led them to enter the mills. Mill employment offered young single women economic and social independence unknown to previous generations of New England women" (Dublin, 1994, p. 118). Although historians offer different views of its relative importance, there is ample evidence that for many of these young women one of the attractions of earning their own wages was the opportunity to purchase more fashionable dresses and hats for themselves and household furnishings for when they married. Some women worked in order to further their schooling. All of these goods were, at the time, newly available consumer goods. They were attractive in that they enabled these young women to better connect with the larger world beyond their rural origins (Dublin, 1981).

The impact of these new goods on married women's work was more complex. On the one side, the appearance of inexpensive consumer goods allowed married women to forego many arduous and time-consuming activities such as soap and candle-making. The appearance of utilities such as running water, indoor plumbing, gas, and electricity eliminated the necessity for other back-breaking tasks such as hauling water, tending wood or coal furnaces and stoves, and removing the soot that such heating devices produced (<utilities.essay>). At the same time, Ruth Schwartz Cowan (1983) shows that productivity-enhancements offered by the commercial substitutes for household production and by the new household technologies shifted, but did not reduce, married women's work in the home. She argues that social standards for cleanliness and for other household services, especially child care and meal preparation but also standards of leisure for husbands and children, rose faster than household productivity. The result, which she signals in the title of her influential book, *More Work for Mother*, was more time in household work for married women and less participation in paid labor.

Joel Mokyr (2000) argues that rising social standards for household cleanliness in the late nineteenth century were due, at least in part, to the scientific discovery of the germ theory of disease. A practical implication of the germ theory is that good hygiene could reduce the incidence of disease and speed the recovery of the ill. In Mokyr's view, the widespread acceptance of the germ theory helped to raise the social valuation of women's traditional household maintenance chores. Cleaning became more than a cosmetic or aesthetic improvement, according to this new view; it was an integral input into the health and well-being of the family. Since commercial sources of housecleaning and nursing services were largely unavailable to all but the very wealthy, Mokyr argues that families maximized their well-being by deploying mothers' labor in the home.

In the twentieth century new consumer goods began to have a more direct effect on the allocation of married women's labor. On the one hand new goods which unambiguously reduce household work such as prepared foods and meals eaten away from home became much more popular and readily available. For example, over the twentieth century, but especially since the 1950s, expenditures on food consumed away from home grew substantially. By 2000, such expenditures accounted for almost 40 percent of all expenditures on food (<lac.a.1> and <lac.a.27>). On the other hand, families' consumption bundles shifted to include goods such as automobiles, various types of insurance (old age, health, homeowners, and automobile), and college education became increasingly the norm. As Clair Brown (1994) notes, an important characteristic of all of these goods is that by their nature they cannot be produced in the home. For married women to acquire them for their families, they must enter paid employment.

Overall, then, expenditures on kitchen and other household appliances, soared along with expenditures on goods which by their nature must be produced in the market (<LAC.A.27.28>). Over the same period, women's time spent in household work declined and time spent in market work has grown (<SBC.D.25>, <SBC.C.7>).

Changing social norms, laws and institutions also impact women's labor force participation. The precise impact of such factors is difficult to quantify, of course, but it is clear that they have played an important role in shaping long-term change in women's market work. To describe one example, Joel Perlman and Robert Margo (2001, Ch. 3) examine differences across recently-settled Illinois counties in the 1850 in their propensity to employ female teachers. Illinois in this period is an interesting case study since its underlying economic environment was largely homogeneous, but it was settled by migrants from a variety of regions throughout the East that had different but entrenched attitudes regarding women's roles and, in particular, the acceptability of women as teachers. Perlman and Margo show that most of the variation in women's employment in school teaching across Illinois communities in 1850 is explained by acceptability of women's teaching in migrants' community of origin. If women taught in the counties from which settlers had come, then women were likely to teach in the new communities established by these pioneers. But if, in the next town over, pioneers arrived from communities in which teaching was men's work, then, even in their new Illinois environment, they employed men but not women as teachers.

Given the evident power of such social norms, what, specifically, describes the profound changes in American women's labor force participation rates over time? A partial answer is that, at a fundamental level, there appears to be no necessary connection between the technical characteristics of employment in any particular occupation or industry and the gender composition of employment. In a study that was especially well constructed to standardize for the effects of industry, industrial technology, and norms regarding the length of the workday and worker safety protections, Gary Saxonhouse and Gavin Wright (1984) demonstrate that occupations are deemed "men's work" in Japan can be "women's work" in the United States and vice versa. Differences between these social definitions appear to depend entirely upon the relative supplies of male and female labor in the two countries at some influential point in time. Occupations designated as "men's work" in nineteenth-century America (clerical work, for

example) are “women’s work” today (Rotella, 1981 and Davies, 1982). The reverse is also true. Occupations, such as assisting with childbirth, evolved over time from women’s to men’s work (Walsh, 1977).

Again, when and under what circumstances do social norms regarding women’s and men’s work change? The scholarly literature identifies several underlying conditions that appear to extend social definitions of employment to include women and to encourage women’s involvement. Foremost among these are: temporary shortages of male workers, appearance of new technologies, and rapid expansion in the demand for workers including work reorganization. Thus Perlman and Margo (2001) find that temporary shortages of male teachers during the Civil War prompted school boards in many communities across the country (including recently settled communities in Illinois which had never before employed women to teach school) to hire women for the first time. Significantly, the (positive) war-time experience of such communities with their (temporary) wartime female teachers appears to have permanently changed their attitudes regarding the acceptability of women for teaching posts. At the conclusion of the Civil War, and beyond, the female share of the teaching force across communities was above and remained above the pre-war level despite the return of male teachers who had been called away for wartime military deployment.

Myra Strober and Carolyn Arnold (1987) tell a similar story regarding the feminization of the bank teller occupation during the Second World War. The demand for banking services, which continued and expanded during wartime, coupled with markedly reduced supplies of male labor prompted banks to reorganize financial services delivery in a way that created jobs for women and redirected a greater share of the banking labor force toward service activities. Even with the war’s end and the return to the civilian labor force of former male bank employees, the structure of bank occupations retained its heavy reliance on female workers.

There are other stories as well. Elyce Rotella (1981) and Marjorie Davies (1982) explain women’s entry into clerical work in terms of the rapid increase in demand for workers in the occupation; the development of new technologies, especially the typewriter; and the reorganization of work which removed record-keeping as a stepping stone to a managerial position and redefined it as a new, self-contained work category. Mary Roth Walsh (1977) accounts for the narrowing of opportunities for women in health care over the nineteenth century in terms of the development of occupational licensing procedures with legal clauses that directly or indirectly excluded women.

Social norms regarding responsibility for the care of children, the aged, and the infirm are another arena with enormous implications for women’s labor force participation. Historically societies have vested such responsibilities in women. While some European nations have accepted increasing social responsibility for such matters, especially over the latter half of the twentieth century, the United States has not. Norms regarding women’s responsibility for such care have changed far more slowly than norms relating to the style and content of women’s paid employment. Thus employed women, to a far greater extent than employed men, must juggle the demands of career and family. Many women responded by delaying marriage and reducing their fertility in order to pursue careers. Women who are already mothers when they enter employment are often faced with difficult choices as they balance the demands of child care and employment.

Over the long-term, legal change has greatly enlarged the sphere for women's self-determination and participation society-wide. Many of these have had direct effects on women's labor force participation. Before the mid-nineteenth century, for example, control over married women's earnings and assets rested with their husbands. Wives required their husbands' permission in order to participate in the labor force, sign contracts with merchants, and engage in many other activities essential to earning an independent livelihood. Table <sb.c.6> displays the timing of the repeal of such laws on a state-by-state basis, beginning with Maryland in 1842 and concluding with Utah in 1897.

In the latter part of the nineteenth-century, following a noticeable increase in women's industrial employment, states began to regulate the hours working conditions of women and children. Women's night work and hours of employment per working day were restricted in many states and women were excluded from employment in mining and certain types of manufacturing processes that were deemed to pose a risk to their health or to that of their unborn children. Ronnie Steinberg (1982) has compiled a useful summary of these regulations on a topic-by-topic and state-by-state basis for the period 1900 through 1970. The overall effect of such legislation is not entirely clear. Women's hours of work fell in response to the passage of restrictive hours legislation, but they fell no faster than men's hours over the same time period. Women's employment in the regulated manufacturing industries did not fall. These findings suggest that this progressive era protective legislation for women workers may have improved the ability of male workers who were not directly affected by the legislation to bargain for reduced hours and safer working conditions so that hours fell and safety improved for both male and female workers (Goldin, 1990, Ch. 7). Thus protected by law, more women were able to seek employment without encountering opposition from parents, husbands, and the general community.

In the years that followed the emphasis of gender-specific employment legislation shifted from special protection for women workers to gender equality in wages and employment. Key legislative developments were the Equal Pay act of 1963; Title VII of the Civil Rights Act of 1964; Executive Order 11246 (1965) and Executive Order 11375 (1967), or "Affirmative Action"; and Title IX of the Educational Amendments Act of 1972. "Comparable Worth" legislation was passed by a number of states beginning in the 1980s, but did not achieve national coverage. An Equal Rights Amendment to the constitution was first introduced in Congress in 1923 and passed Congress in 1972. However it was not ratified by the necessary 38 states by the July 1982 deadline (it was ratified by 35 states).

It is difficult to specify the precise impact of legislation on women's labor force participation, occupations, wages, and educational attainment over time. The limitations of such a legislative approach are obvious. The Equal Pay Act of 1963 required only equal pay for workers in essentially the same job with the same employer. Since gender-based occupational segregation at the time of the law's passage was extensive (<sb.c.o.29>), the law applied to only a small proportion of the jobs in which women worked. Title VII of the Civil Rights Act of 1964, in prohibiting discrimination in all aspects of employment – hiring, firing, training, promotion, compensation – was potentially far

more powerful. Scholarly studies do find positive impacts of such laws. See Blau and Ferber (1994) for a review of the evidence.

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TABLES

SLAVE AND FREE WORKERS

- <SBC.W.7> Free male gainful workers, by state: 1800-1900 [age 16 years and over]
- <SBC.W.8> Free female gainful workers, by state: 1800-1900 [age 16 years and over]
- <SBC.W.9> Free male gainful workers, by state: 1800-1900 [age 10 to 15 years]
- <SBC.W.10> Free female gainful workers, by state: 1800-1900 [age 10 to 15 years]
- <SBC.W.11> Male slave workers, by state: 1800-1860 [age 10 years and older]
- <SBC.W.12> Female slave workers, by state: 1800-1860

WORKFORCE

- <SBC.W.1> Male workforce, by age and race: 1800-1900 [Weiss]
- <SBC.W.2> Male workforce participation rate, by age and race: 1800-1900 [Weiss]
- <SBC.W.3> Male workforce and workforce participation rate, by age and race: 1870-1900 [IPUMS]
- <SBC.W.4> Female workforce, by age and race: 1800-1900 [Weiss]
- <SBC.W.5> Female workforce participation rate, by age and race: 1800-1900 [Weiss]
- <SBC.W.6> Female workforce and workforce participation rate, by age and race: 1870-1900 [IPUMS]
- <SBC.A.3> Labor force participation of persons age 10 to 15, by sex: 1850-1970 [decennial census estimates]
- <SBC.A.5> Male labor force participation rate, by age: 1850-1990 [decennial census estimates]
- <SBC.A.6> Male labor force, by age: 1947-2000
- <SBC.A.7> Female labor force participation rate, by age: 1860-1990 [decennial census estimates]
- <SBC.A.8> Female labor force, by age: 1947-2000
- <SBC.A.11> Labor force participation, by sex and race: 1850-1990 [decennial census estimates]
- <SBC.A.12> Male labor force, by race and Hispanic origin: 1954-2000
- <SBC.A.14> Female labor force, by race and Hispanic origin: 1954-2000
- <SBC.A.15> Female labor force participation rate, by race, marital status, and presence of children: 1880-1990 [decennial census estimates]
- <SBC.A.16> Female labor force, by marital status: 1955-1999
- <SBC.A.17> Labor force participation rate, by sex and education: 1940-1990 [decennial census estimates]
- <SBC.A.18> Labor force participation rate for married women, by age and presence of children: 1948-1999

UNEMPLOYMENT

- <SBC.A.1> Labor force participation, employment, and unemployment, by sex: 1850-1990 [decennial census estimates]
- <SBC.A.2> Labor force, employment, and unemployment: 1890-1990 [Weir]
- <SBC.A.2A> Labor force, employment, and unemployment: 1938-2000
- <SBC.A.2B> Labor force, employment, and unemployment, by sex: 1969-2000
- <SBC.A.19> Unemployment rate, by age, sex, race, and Hispanic origin: 1947-2000
- <SBC.A.20> Duration of unemployment, by sex and race: 1948-2000
- <SBC.A.23> Unpaid family workers, by sex: 1948-2000
- <SBC.A.24> Unemployed persons as a percent of the labor force, by sex, race, and reason for unemployment: 1967-2000

SELF-EMPLOYMENT

- <SBC.A.21> Self-employed workers, by sex and industry: 1948-2000
- <SBC.S.9> Self-employed persons, unpaid family workers, and domestic service employees by industry: 1900-1960 [Lebergott]
- <SBC.S.10> Self-employed persons, unpaid family workers, and private household employees, by industry: 1948-1999 [CPS]
- <SBC.S.11> Self-employed persons, by industry: 1929-1948[BEA]
- <SBC.S.12> Self-employed persons, by industry: 1948-1987[BEA]
- <SBC.S.13> Self-employed persons, by industry: 1987-1998[BEA]

EMPLOYEES BY SECTOR AND INDUSTRY

- <SBC.S.1> Persons engaged, by industry: 1800-1960 [Lebergott and Weiss]
- <SBC.S.2> Employees on nonagricultural payrolls, by industry: 1900-1940 [Lebergott]
- <SBC.S.3> Employees on nonagricultural payrolls, by industry: 1919-1999 [BLS]
- <SBC.S.4> Female employees on nonagricultural payrolls, by industry: 1959-1999 [BLS]
- <SBC.S.5> Production employees on nonagricultural payrolls, by industry: 1919-1999 [BLS]
- <SBC.S.6> Full-time equivalent employees, by industry: 1929-1948 [BEA]

<SBC.S.7> Full-time equivalent employees, by industry: 1948-1987 [BEA]
<SBC.S.8> Full-time equivalent employees, by industry: 1987-1998 [BEA]
<SBC.S.14> Persons engaged in production, by industry: 1929-1948[BEA]
<SBC.S.15> Persons engaged in production, by industry: 1948-1987 [BEA]
<SBC.S.16> Persons engaged in production, by industry: 1987-1998 [BEA]