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# Population Change and the Supply of Labor

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IT goes without saying that the most authoritative and succinct review of the links between population growth and labor force change appears in the *Book of Genesis*.<sup>1</sup> It is difficult to decide how much more can usefully be said on the subject. But there has been a welter of secular experience since that report. And there have been some excellent recent studies of that experience.<sup>2</sup>

To an economist, the most interesting question may well concern how population growth affects the extent of the market and the division of labor. Certainly from the time that Smith emphasized the link between the extent of the market and the division of labor, and Hodgskin fitfully exorcised the Malthusian devil by insisting that population gains forced further division of labor,<sup>3</sup> these subjects have been worked over many times—though not always to advantage.<sup>4</sup> Fortunately, this vital topic is in the competent hands of Coale and Kuznets. I shall therefore deal with other aspects.

The essential and necessary relationship that links short-run population and labor force change is simple to describe: there is none. A country's population may rise, with no corresponding gains in its labor force. When Chadwick and others brought sanitation to London in the nineteenth

<sup>1</sup> "Unto the woman he said . . . in pain thou shalt bring forth children . . . And unto Adam he said . . . cursed is the ground for thy sake; in toil shalt thou eat of it all the days of thy life."

<sup>2</sup> The most lucid and comprehensive contemporary study that emphasizes population-labor force relationships appears as Chapter xi in the United Nations, *Population Studies*, no. 17, *The Determinants and Consequences of Population Trends*, 1953. Essential contributions appear in the well-known studies by Durand, Jaffe, Wolfbein, Stewart, and Douglas as well as less directly in the labor force analyses by Palmer, Miller, and others.

<sup>3</sup> Scott Gordon, "The London Economist and the High Tide of Laissez-Faire," *Journal of Political Economy*, December, 1955, p. 473, quotes Hodgskin as remonstrating: "an increase in population provides a larger market, permits a more extensive division of labor." Hodgskin actually emphasized the euphoric impact of population gains on technological changes.

<sup>4</sup> Young's tautology is deservedly famous: "The division of labour depends upon the extent of the market, but the extent of the market also depends upon the division of labour." Allyn Young, "Increasing Returns and Economic Progress," *Economic Journal*, December, 1928, p. 539.

Note: This paper was prepared while the writer was on leave from, and has no connection with the work of, the Budget Bureau.

century, when a more complex bureaucratic organization brought DDT to Ceylon after World War II, sharp changes in mortality and in population occurred, but without corresponding gains in the labor force. It is equally clear that the labor force can rise without the population gaining correspondingly: thus the enormous jump in our labor force during the war took place with only limited change in the population totals.<sup>5</sup>

But while there may be no necessary tie, the size of the labor force does in fact tend to be limited by the size of the population in an era of nationalism and xenophobia.<sup>6</sup> (It is difficult, for example, to imagine foreign sailors continuing to comprise the bulk of America's seamen, as they did in the nineteenth century.)<sup>7</sup> And in the longer term population, surges and declines do imply changes in the labor force—granting merely the useful assumptions that man must earn his daily bread and that a high level of inertia in human behavior is confidently to be counted upon. The most challenging aspects of the population-labor force link, however, are to be found in the study of how changes in population and the labor force are related to their causes. For such causes encompass the major social, economic, and political factors at work in a society.

In the present paper we will consider first some effects of immigration on U.S. labor force gains over the past century. Second, we shall consider how changing social goals for child and women workers affected the labor force, and population-labor force relationships.

### *Immigration and Labor Supply*

Birth and death take place without special reference to the labor force requirements of given geographic areas. The transfer of population from place to place has therefore long been an integral mechanism in adjusting labor supply and demand.<sup>8</sup>

The nature of this transfer is of considerable importance. Folk migrations in historic time have tended to involve entire families. When the

<sup>5</sup> A completely different view appears in Sydney H. Coontz, *Population Theories and the Economic Interpretation*, 1957, ch. 8. Coontz concludes, "In summary, the economic analysis proceeds on the assumption that population is the dependent variable reflecting both long- and short-run changes in the demand for labour," p. 183, referring back to Young, Smith, and Malthus, pp. 88-89.

<sup>6</sup> This generalization is less true where such qualifications do not apply—say, for the regular movement of laborers from Ruanda-Urandi to Kenya, or Java to Malaya.

<sup>7</sup> *Remarks on the Scarcity of American Seamen and the Remedy*, by a Gentleman Connected with the New York Press, printed at the Herald Office, New York, 1845, p. 17. Chairman Reed of the Committee on Naval Affairs is quoted as saying that 100,000 of the 109,000 men in the Navy and Merchant Marine were foreigners. It is to be doubted that this estimate was finally precise, but it does at least suggest that a majority were foreigners.

<sup>8</sup> It need not be, of course. Trade alone could fairly well bring the adjustment.

## POPULATION CHANGE AND SUPPLY OF LABOR

Marcomanni moved to the uplands of Bohemia, when the Athenians settled the islands of Asia Minor, a balanced population change and labor force change occurred: dependents as well as working adults moved.

The key characteristic of migration to the United States in the past century, however, has been that adults in the prime labor force ages tended to dominate migration. The labor force increased by a far greater proportion than did the population. Thus, despite higher birth rates among the foreign born, less than 7 per cent of this group were under 15 years of age in 1880—as compared to 42 per cent for native whites.<sup>9</sup>

In addition to the dominance of adults in the migration, there was a disproportionate tendency for men to migrate even if married. Thus, an extensive survey by the Immigration Commission as late as 1910 reported that 23 per cent of the married immigrants in their survey had wives still living in the old country.<sup>10</sup>

While this particular pattern tended to reflect the dominance of four nativity groups (Magyar, Slovak, Italian, and Russian) in the later migration, males also composed the larger share in the earlier migration of Irish and Germans, though the latter were mostly unmarried.

The causes of this movement were twofold. The first was a vision of America as a land, perhaps not of milk and honey, but at least of veal cutlets and gooseberry pie—at reasonable prices.<sup>11</sup> Where conditions in Europe were intolerable, the migration push was as critical as the pull.

What converted a dream castle into steerage space and what produced selective migration of males, was sponsored migration by American firms.

In a labor-scarce country, without limits on immigration, substantial attempts to attract labor were perhaps to be expected. When heavy, bunched demands for labor were created by such projects as canal construction, a choice appeared to be posed between bidding up wages to attract labor from other pursuits—or importing it.<sup>12</sup>

“I wish to reduce the price of labor on the Canal to ten dollars per month of 26 working days. It is now 12 and 13 dollars a month,” wrote

<sup>9</sup> 1880 Census, *Statistics of the Population of the United States*, p. 549. These figures seem basically inconsistent with the age distribution of immigrants. Reports in this and other Censuses are consistent, would appear to rest on more reliable procedures than the *pro forma* queries of immigration officers on a mere statistical point.

<sup>10</sup> U.S. Immigration Commission, *Immigration Reports*, Part 23, Vol. 11, *Immigrants in Industry*, p. 383. The reports covered 145,354 immigrants.

<sup>11</sup> Morris Birkbeck, *Notes on a Journey in America*, Severn and Co., London, 1819, p. 64, “coffee, rolls, biscuits, dry toast, waffles . . . pickerill salted . . . veal cutlets, boiled ham, gooseberry pie, stewed currants, preserved cranberries, butter and cheese—for all this for myself and three children” plus fodder for 4 horses—the charge was “6 shillings and nine pence sterling.”

<sup>12</sup> In principle productivity gains could moderate the dilemma—and did over the course of time.

the President of the Chesapeake and Ohio Canal Company to his emigration agent.<sup>13</sup>

The advantages to foreign labor seemed clear enough. "Meat, three times a day," he wrote to the American Consul in Liverpool, "a plenty of bread and vegetables, with a reasonable allowance of liquor, and eight, ten or twelve dollars a month for wages would, we have supposed, prove a powerful attraction to those who, narrowed down in the circle of their employments have at this moment, a year of scarcity presented to them."<sup>14</sup> And such early recruiting attempts in Dublin, Belfast, and Cork did help to initiate a stream of migration "beneficial to both England and the United States."<sup>15</sup>

When gold was discovered in California, wrote a contemporary, "workers were dear . . . and slavery was prohibited. This directed the attention of moneyed men to the great proletariat of China: they sent many ships there and imported within a few years 40,000 Chinamen."<sup>16</sup>

In some instances a highly local situation constituted the incentive for directed migration. Demands for high wages were made against the Delaware and Hudson Canal in 1832. The Directors found that "Against this evil the only effectual remedy was the introduction of additional miners from abroad. This was done as promptly as possible and to such an extent that it is believed a recurrence of the evil will not be experienced."<sup>17</sup>

A cotton planter in 1866, trying to reestablish a Sea Island plantation and finding the local labor easy and unreliable, reported that "I have sent to the Ionian Islands to get fifteen Greeks at an expense of \$2,000 and I hope they are on their way now."<sup>18</sup>

Whether the canals of Maryland or Louisiana were involved, or the plantations of South Carolina or Texas, sponsored migration emphasized the importation of single males. Time, to some extent, and rising wage rates for females, tended to correct the resulting imbalance in the sex ratio. Thus, one writer's tongue-in-cheek comment on the frontier's

<sup>13</sup> Mercer to Richards, July 8, 1829. C. and O. Letterbook, U.S. National Archives, p. 84.

<sup>14</sup> Mercer to Maury, November 28, 1828. C. and O. Letterbook, pp. 38-39.

<sup>15</sup> Mercer to Barbour, November 18, 1828: "I will write to Canning directly for it would be beneficial to both England and the United States to relieve the dominions of the former of a wretched surplus population."

<sup>16</sup> Janos Zantus, May 5, 1857, writing from San Francisco, quoted in "California for Hungarian Readers," *California Historical Society Quarterly*, June, 1949.

<sup>17</sup> *Annual Report of the Board of Managers of the Delaware and Hudson Canal Company for the year 1832*, New York, 1833, p. 35.

<sup>18</sup> Edward S. Philbrick in *Report of the United States Revenue Commission on Cotton*, Special Report no. 3, Appendix, U.S. Treasury Department, 1866.

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shortage of women for housework: "The supply is not equal to the demand as girls who come to Minnesota always have numerous advantageous offers of marriages, some one or more (sic) of which they are generally sensible enough to accept."<sup>19</sup>

Specifying the orders of magnitude involved is a difficult matter. We can, however, see them somewhat darkly through the Census data on the sex ratio in pioneer states and territories:<sup>20</sup>

	Free white males per 100 females	
	1820	1840
	Age 26-45	Age 30-40
Alabama	137	128
Mississippi	164	153
Louisiana	197	206
Indiana	117	115
Illinois	138	139
Missouri	155	138
Michigan	179	135
Arkansas	156	155
Florida	—	230
Wisconsin	—	235
Iowa	—	105
U.S.	104	111

The limitations of such ratios as measures of migrant characteristics are well known.<sup>21</sup> Yet it seems reasonable to infer that men constituted a disproportionately great share of the migrants who pioneered the mid-western and southeastern states.

It was not until the railroad building period began that the migration of single males diminished in relative importance. Beginning perhaps as early as 1851, when the Erie ran its first emigrant train, the emphasis changed to importing families who would settle on the railroad lands and provide a continuing source of traffic.<sup>22</sup> This shift meant that the supply of labor, once provided with a minimum of population increase, now was associated with greater gains in population as women and children entered these lands in increasing proportions.

<sup>19</sup> *The Immigrants' Guide to Minnesota in 1856*, by an Old Resident, W. W. Wales, St. Anthony, 1856, p. 67.

<sup>20</sup> Computed from 1820 Population Census, p. 1, and 1840 Census, p. 474.

<sup>21</sup> Cf. the pointed discussion in Dorothy Thomas, *Research Memorandum on Migration during the Depression*, Social Science Research Council, 1937.

<sup>22</sup> Frank Andrew, *Railroads and Farming*, U.S. Department of Agriculture, Bureau of Statistics, Bulletin 100, 1912, pp. 8, 18.

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To this point comments have related primarily to white migration. What of the major migrant stream from Africa? Several pieces of evidence suggest a no less substantial tendency for males to predominate among the nonwhite group. The "uniform practice of dealers in selecting cargoes of negroes on the African coast, (was) to purchase a considerably larger proportion of males than females. All witnesses agree on the fact, though they differ as to the motive."<sup>23</sup> Confirmation is suggested by the practice in supplying other systems of plantation agriculture. According to an American physician who dealt extensively in slaves prior to 1830 "the proportion of sexes of Africans who are brought to Brazil (is) about 1 to 10," women being taken only when the captains put 1 or 2 in a lot of 10 and insisted on a sale en bloc.<sup>24</sup>

The migration pattern after 1865, of course, was quite different. As General John A. Wagener of South Carolina wrote in 1867, "South Carolina has never heretofore taken steps, officially, to induce immigration because of her peculiar institution of African slavery, which enabled her inhabitants to prosper and live in patriarchal peace and contentedness. . . . Slavery is now, however, with her own consent, forever abolished."<sup>25</sup> The labor force ceased to meet local demand requirements. Although the population totals were as high as ever, and although the South continued to have population exports for many decades, widespread attempts were made to sponsor labor force replacements. Thus, General Wagener was made Commissioner of Education for South Carolina about this time and similar positions were established in other states. The work of such commissions, however, does not appear to have had any great impact on either the labor force or population totals.<sup>26</sup>

The migration process involved in the peopling of the American states reflected, in sum, concentrated demands for labor, sometimes taking the form of directed migration. Such demands, in the early decades, were primarily for labor, not for population. As a result, a disproportionately great share of all migrants were males in the prime age groups. With

<sup>23</sup> Report of the Freedmen's Commission, in U.S. Congress, *The War of the Rebellion*, Series 3, Volume 4, p. 324.

<sup>24</sup> Jose Clifford testimony in Great Britain, Parliamentary Papers, Session January 31-August 15, 1850, Vol. ix, p. 154. Clifford stated that he had extensive slave trading experience until the trade was outlawed in Brazil in 1830. Cf. R. B. Sheridan, "The Commercial and Financial Organization of the British Slave Trade," *Economic History Review*, August, 1958, p. 259, for a similar conclusion based on trade with the West Indies.

<sup>25</sup> South Carolina, *A Home for the Industrious Immigrant*, Charleston, 1867, p. 5.

<sup>26</sup> Data in the 1880 Census, *Population*, p. 426, indicates that several southern states showed declines in the number of foreign born after 1860, most had no significant change, while Missouri and Texas had significant gains. These gains are readily explicable by other factors.

the ending of canal construction, of slavery, and of the opulent opportunities in Mississippi and Alabama during the flush days, a more settled type of migration began. The slave coffle and the single horse were replaced as symbols of movement by the covered wagon, transferring the lares and penates of entire households. In recent years, of course, population change has been almost solely a matter of working out permutations in the parent population of native Americans.

### *Child Labor and Fertility Change*

Where is the man with soul so dead that he interests himself only in the economic aspects of children? But these are the ones on which the economist—who is by profession neither bachelor nor married man—can most usefully comment. It has long been noted by economists that an increase in the number of children will eventually increase the labor supply and therefore tend to drive down wages. How many poor law administrators since Malthus have counseled the working class against the folly of seeking higher living standards without also limiting philo-progenitiveness. Yet while an abstract "working class" may suffer, any specific family may benefit. It must take the labor market as it finds it; in past centuries more children per family have usually meant more income per family. "Considerations of the economic and social advantages to be derived from children were once powerful motives in encouraging large families. Of patriarchal society it was said 'Happy is he who has his quiver full of them'; in agricultural communities, especially new ones, the farmer literally produces his own farm hands."<sup>27</sup> The contribution that children can make in their parents' old age is, of course, a second, highly important economic factor.<sup>28</sup>

In a labor-scarce country, such as the United States in the nineteenth century, the natural desire for children would, to say the least, not run contrary to what a calculation of their mere economic value would indicate. In the U.S. today, with fewer farmers than Chicagoans, it is difficult to credit an 1819 report that the population of the mid-West was "so thinly scattered" that "there were but twelve human habitations in two hundred square miles, and these occupied principally by hunters."<sup>29</sup>

<sup>27</sup> James A. Field, *Essays on Population and Other Papers*, 1931, pp. 278f. Cf. Isaiah Bowman, *The Pioneer Fringe*, 1931, p. 251, on children in other pioneering societies.

<sup>28</sup> Speaking to another way of life, but not a wholly different one, is the finding of a recent survey of Japanese opinion, in which the proportion of adult males expecting to depend on their children in their old age was 25% in the major cities and more than double—57%—in rural areas. Quoted in Horace Belshaw, *Population Growth and Levels of Consumption*, 1956, p. 33.

<sup>29</sup> John Lorain, *Hints to Emigrants*, 1819, p. 78.



But, given these conditions, one writer warned potential immigrants, "no assistance worthy of notice can be obtained from others outside the family."<sup>30</sup> Under such circumstances a high birth rate was not wholly unexpected. A late nineteenth century publication of the Department of Agriculture, noting an 1846 record of "a family of 26 strong healthy boys," adds that "Today a family of five children is a rarity. This, of course, affects the amount of help."<sup>31</sup>

When U.S. factories began to proliferate, the economic value of children became still greater. Cotton factories became a new source of demand for child labor. "It is well known," remarked a writer in 1815, "that in this country . . . children, from their birth until they are of an age to go into apprenticeship (say 14 or 16) render little service to their parents; this is more especially the case in towns. But it is this description of persons who are required in cotton and woolen workers."<sup>32</sup>

In Rhode Island, where the mills began, 42 per cent of those who staffed the cotton mills in 1832 were in fact boys under 12. The average for New England and the country as a whole was about 20 per cent.<sup>33</sup> These children provided a substantial supplement to family income, being paid a quarter as much as adult males.<sup>34</sup>

How the growing demand for labor in the mills may have affected population growth is not altogether clear. The English Census for 1821 asserted that the manufacturing population was, in part, increasing rapidly because, "in many Manufactures, Children are able to maintain themselves at an early age, and so entail little expense on their Parents, to the obvious encouragement of marriage."<sup>35</sup>

However, no similar encouragement is apparent in the United States with its long-term decline in fertility rates. And a priori one can surmise that in a labor-scarce country such as the United States at this early date, children had been sufficiently valuable on farms so that the mere growth of the manufacturing system would not increase supply. At most, it would divert population increase to nonfarm pursuits.

<sup>30</sup> *ibid.*

<sup>31</sup> U.S. Department of Agriculture, Miscellaneous Series, Report no. 4, *Wages of Farm Labor in the United States*, 1892.

<sup>32</sup> *Niles Magazine*, October 7, 1815, p. 96.

<sup>33</sup> These figures are weighted averages of reports appearing in U.S. Congress Serial Set 222,223, *Documents Relative to the Statistics of Manufactures in the United States*, 1833, Duff Green, Washington, Vols. I and II. The definition of "boys" as being those under 12 is indicated by the Report of the New York Convention of Friends of the Manufacturing Interest appearing in *Niles Register*, XLII, Addendum, 1832, March-August, p. 7.

<sup>34</sup> Ratio computed from data in Serial Set 222,223.

<sup>35</sup> Quoted by T. H. Marshall in E. M. Carus-Wilson, *Essays in Economic History*, 1955, p. 330.

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Children were no less valuable under slavery. As a great Southern architect and engineer noted, "It may indeed be justly considered one of the excellencies of the cultivation of cotton, that in its collection no manual labour is lost. Neither age nor childhood, if in health, is prevented from giving its aid in this innocent and useful pursuit. Children from eight years old can be employed to advantage."<sup>36</sup>

This "excellency" was not lost sight of on most plantations. Even after the heavy discounting for future mortality, the sales value of children was great enough to suggest the nontrivial value of their labor. About 1820 the average sales value of girls aged 5-10 was set at \$175 by the Maryland Orphans court—or perhaps half the value of an adult male.<sup>37</sup> Even in 1865, \$400 and more was paid in New Mexico for "a likely girl of not more than eight years old, healthy and intelligent."<sup>38</sup> Considering how uncertain the continuation of slavery was in 1865, most of the latter price must have reflected advantages expected to be realized in the very near future.

Given the distinct contribution that child labor made to the family or plantation exchequer throughout the nineteenth century, its decline in the twentieth century hardly reflects any inability of the economy to continue utilizing such labor efficiently. Instead, the change would seem to stem from concurrent changes in family values and social attitudes.

Was such a factor the ever-increasing level of education? The spread of free public schools is, of course, a matter of history. From 1850 to 1950 the following rise took place:<sup>39</sup>

Year	Children Aged 5-14	Enrollment in public schools	Ratio
1850	6,132	3,354	55%
1950	24,329	20,242	83%

Some parents had repeated the calculation made by John Stuart Mill, if not by Horace Mann, of the advantage to the individual of forgoing an immediate income to assure an eventual higher one.<sup>40</sup> Many had been

<sup>36</sup> Robert Mills, *Statistics of South Carolina*, Hurlburt and Lloyd, Charleston, 1826, p. 153.

<sup>37</sup> *American Historical Review*, Vol. 19, 1914, p. 817.

<sup>38</sup> According to Kirby Benedict, Chief Justice of the New Mexico Supreme Court, quoted in LeRoy R. Hafen and Ann W. Hafen, *The Old Spanish Trail*, 1954, p. 280.

<sup>39</sup> The 1850 data are from *The Seventh Census of the United States: 1850*, 1854, pp. xl, xlii-xliv. They are based on school reports and were used as being more reliable than the population census count. The 1950 data are from the 1950 Census, Vol. 11, *Characteristics of the Population*, Part 1, Tables 38, 111, and relate only to those age 5-14.

<sup>40</sup> Entering school in 1807, Sophia Simpson was unable to pronounce the letter H. "Do try," said her teacher, "for it will be a thousand pounds in your pocket." Sophia S. Simpson, *Two Hundred Years Ago*, Otis Clapp, Boston, 1859, p. 47.

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moved by other factors. The rise in educational horizons, however, seems to have had no discernible impact before 1900 in reducing the child labor force.<sup>41</sup>

The decisive factor in reducing the nineteenth century child labor force was the steady decline in birth rates, from roughly 55 per thousand population in 1820 to 20 by 1940.<sup>42</sup>

We can compare the contribution of fertility declines and the drop in the proportion of children working, using data from Table 1:<sup>43</sup>

TABLE 1  
Number of Children Ever Born  
(per 1,000 women, by color)

Mothers' Year of Birth	Adjusted		Native White		Negro	
	Native White	Negro	as reported in Census of			
			1910	1940	1910	1940
1835-44	5,172	7,433	4,863		7,000	
1845-54	5,034	7,216	4,805		6,897	
1855-59	4,729	6,783	4,583		6,580	
1860-64	4,408	6,257	4,339		6,162	
1865-69	4,050	5,484	4,050	3,544	5,484	4,678
1870-74	3,538	4,515	3,538		4,515	
1875-84	3,375	4,169		3,221		3,985
1885-89	3,118	3,802		3,022		3,688
1890-94	2,966	3,391		2,920		3,340
1895-99	2,738	3,091		2,738		3,091

Source. See footnote 45, p. 387.

The number of child workers is estimated simply as the product of the worker rate and the number of children ever born.<sup>44</sup> It measures the

<sup>41</sup> The proportion of children working shows no signs of decline in any of the scanty indications we possess for the nineteenth century. In fact the Census figures for 1870-1900 suggest a possible rise near the end of the period as new mills opened in the South.

<sup>42</sup> Conrad Taeuber and Irene Taeuber, *The Changing Population of the United States*, 1958, p. 249.

<sup>43</sup> Fertility data from above table. Worker rate data from Alba M. Edwards, *Census of 1940, Comparative Occupation Statistics for the United States, 1870 to 1940*, p. 92. This assumes, for arithmetic convenience, that the first child is born when the mother is aged 20. Other assumptions would make little difference. More important, the 1870 worker rate seems unreasonably low, the adjustment made by Edwards for the 1870 undercount perhaps being insufficient. The 1880 rate is therefore used for 1870, being more meaningful for a longer view even if the 1870 figure properly reflects the immediate postwar disturbances.

<sup>44</sup> Because the worker rate relates to all children the absolute levels are meaningless and therefore not shown.

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average number of children, of those born to each group of mothers, that worked between the ages of 10 and 15. Its decline from the first to the second period derives solely from the fertility decline—since worker rates actually rose. The subsequent drop in child workers from the period around 1900 (mothers born 1865-1869) to the depression years, reflects primarily the fall in worker rates. For even if the number of children ever born had not changed, the number of child workers would still have fallen by 74 per cent—nearly as much as their actual 85 per cent decline.<sup>45</sup>

*Indices of*

<i>Mothers' year of birth</i>	<i>Number of children (ever born per 1,000 native-white females)</i>	<i>Child worker rate in year 1st child becomes 10 years of age</i>	<i>Number of child workers</i>
1835-44	100.0	100.0	100
1865-69	78.3	108.3	85
1895-99	52.9	28.0	15

From the earliest period of settlement, therefore, children's work made a significant contribution to our national product. Despite the continued monetization of such work, however, fertility rates fell over the course of the entire nineteenth century. Other values than the incomes potentially provided by their young children became increasingly important to American families. The proportion of the children sent to work did not decline until the vague dawn of the twentieth century. Since World War I it has been the significant decline in child worker rates which accounts for the diminishing share of children in the labor force. The fruits of philosophy and of education alike led to a decline in child labor.

<sup>45</sup> 1940 Census, *Differential Fertility, 1940 and 1910: Women by Number of Children Ever Born*, Table III. This report gives differing figures from the 1940 and from the 1910 Census on the number of children born to the same groups of women. The causes of these differences are discussed lucidly in Tacuber and Tacuber, *op. cit.*, p. 255.

The method of adjusting the Census data used here was as follows: In the 1910 Census, 3,128 women born in 1865-1874 reported an average of 3.769 children; in the 1940 Census, 1,771 women born in the same period reported an average of 3.544 children. The two averages would be quite consistent if we could assume that 2,357 women (3,128 minus 1,771) had died by the latter date and had had an average of 4.030 children. Neither assumption seems grossly unreasonable. The 6.35% excess between the 1910 and 1940 reports would then be taken to reflect the steady toll of selective female mortality, and assumed to have developed at a steady rate. The contemporary 1910 report was therefore taken as standard, the rate of excess interpolated for the group born in 1865-1874 through the 1895-1899 group.

A parallel mortality bias would of course have appeared in the 1910 reports. Lacking a better measure, the same 6.35% excess was applied to the 1835-1844 group (which stands in the same relation to the 1910 Census as the 1865-1874 one does to the 1940), with interpolation to give the excess for the other years. This implicitly assumes a stable trend in selective mortality.

*Women in the Labor Force*

The link between population and labor force change is most evident when the role of women is studied, for women constitute part of this generation's population and labor force and produce the next generation of each. Relatively little information, unfortunately, is available on women's work when their work in factory and store was uncommon. This probably reflects the basic convention of our society (like most nonmatriarchal ones) that women do not work unless they work outside the home. Thus, the 1820 Census schedules, taken in the days of John Adams and John Randolph, report virtually no women in the labor force, although a large number undoubtedly did farm chores, worked in domestic service, and the like.

No factor changed the composition of the female labor force more than did the introduction of the cotton gin and the cotton mill. Let us review the longer term development, first for white and then for nonwhite females.

*White females.* After the recession of 1819, jobs under factory discipline opened up in the new centers of Great Falls, Waltham, York, and Lowell. Offering incomes larger than the imputed value of work on the family farm,<sup>46</sup> and usually paying in cash, the new factory system transformed existing labor force patterns for women.<sup>47</sup> By 1831, one of the founding fathers of Lowell could pridefully note that "No less than thirty-nine thousand females find employment in the cotton factories of the United States." Yet before "the establishment of these and other domestic manufactures this labor was almost without employment." His inference?

Daughters are now emphatically a blessing to the farmer. Many instances have come within the personal knowledge of individuals of this committee, in which the earnings of daughters have been scrupulously hoarded to enable them to pay off mortgages on the paternal farm.<sup>48</sup>

In addition to freeing the paternal homestead, daughters working in textile mills undoubtedly also provided their own dowries (as they do today in Japan)—thus linking labor force increase to subsequent population change.

<sup>46</sup> One may set the imputed value of farm female labor at something near the \$1 a week then paid to domestic servants.

<sup>47</sup> This shift may have involved only a slight increase in hours worked by the male labor force. A recent study of industrialization in a rural county found that a new factory drew female workers mostly from marginal farms, with little change in farm labor inputs. Cf. Paul H. Price *et al.*, *The Effects of Industrialization on Rural Louisiana*, January, 1958, Louisiana Agricultural Experiment Station and U.S. Department of Agriculture, Table 13, p. 42.

<sup>48</sup> P. T. Jackson in *Journal of the Proceedings of the Friends of Domestic Industry*, Baltimore, 1831, p. 111.

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It would be helpful in contemplating this interesting course of consequences if we could get a bearing on the extent to which women did enter the labor force as the factory system developed and urbanization spread. The figures in Table 2 are an attempt to provide this, indicating the change over two sixty-year periods.

TABLE 2  
Working Women: 1830-1957  
Worker Rates by Marital Status, Color, and Age

Year	All Ages						Age 35-44			
	White			Nonwhite			Native White		Nonwhite	
	Total	Single	Married	Total	Single	Married	Single	Married	Single	Married
1830 <sup>a</sup>	(8)	—	—	(90)	(90)	(90)	—	—	(95)	(95)
1890 (Durand) <sup>b</sup>	13.1	30.0	2.2	37.6	52.5	21.9	37.7	2.3	75.6	21.5
1940 (Durand) <sup>b</sup>	23.0	45.6	13.9	37.1	42.3	32.2	73.4	14.5	71.8	36.0
1940 Census	24.5	45.9	12.5	37.6	41.9	27.3	73.6	13.8	71.1	30.5
1950 Census	28.1	47.5	20.7	37.1	36.1	31.8	76.5	25.3	65.8	38.7
1951 CPS <sup>c</sup>	31.5	50.5	24.3	41.1	41.3	36.0	—	—	—	—
1957 CPS	33.9	48.0	28.7	42.5	37.9	40.2	—	—	—	—

<sup>a</sup> See Appendix A.

<sup>b</sup> Durand data for whites relate to native white.

<sup>c</sup> Current Population Survey, Census Bureau.

A variety of problems in definition and measurement besets the comparison of data from such different sources.<sup>49</sup> But reasonable adjustments for them would not change the key inference from the table: the gain between 1830 and 1890 was small as compared with that between 1890 and 1950. It is clearly impossible to measure each of the separate factors at work in creating this difference—the move to the city, the changing tide of immigration, the varying marriage and birth rates, and so on. But a summary reckoning would suggest that the dominant factor was almost certainly the changing pattern of work for women. For the proportion working rose sharply as time went on, even apart from changes in the age, nativity, marital status, rurality composition of the group.

For the period since 1890 the proof is reasonably clear. A study by Wolfbein and Jaffe of the 1890-1930 changes shows that shifts in the distribution of the female population as between various demographic

<sup>49</sup> Many of these are canvassed in Durand's basic study. Since the time that was published, further incomparabilities have occurred even within the Current Population Survey reporting. Adjustments in the 1890 data to make them comparable with the 1940 Census labor force concept have not been adopted because it is not clear whether the result would be more comparable with the actual 1950 Census figures. However, only 0.2 points are involved in Durand's adjustment.

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categories (sex, color, nativity, marital status) made a trivial contribution to the great gains in female worker rates over these four decades.<sup>50</sup> A more precise review made by Durand of our 1920-1940 experience ingeniously measures the contribution of each factor to worker rate changes, including the farm-nonfarm move.<sup>51</sup> His conclusions on this point are similar.

It should be particularly noted that the 1950 rates, high as these are, tell us only of labor force participation at a point in time. The proportion of women who work at some time during the year is far greater. For 1956 we have the following data which, though relating to both white and nonwhite married females, may fairly be taken as demonstrating for white females the greater participation during the year.<sup>52</sup>

	<i>Wives, husband present</i>	
	<i>with</i>	<i>without</i>
	<i>children under 6</i>	
Census		
Per cent in the labor force (3/57)	17.0	36.0
Per cent working in 1956	30.7	46.2
Survey of Consumer Finances		
Per cent employed in 1956	27.5	32.7

The Census data report a very substantial margin of part-year employment—both for women with young children and those without. (The data from the Survey of Consumer Finances that appear to contradict this point for those without young children are not wholly comparable. And unfortunately any of the variations in definition and enumerative approach that come to mind as explanations for these Census-SCF differences are too convincing: they explain equally well differences for women with young children—a group for which differences do not exist!)<sup>53</sup>

<sup>50</sup> S. L. Wolfbein and A. J. Jaffe, "Demographic Factors in Labor Force Growth," *American Sociological Review*, August, 1946.

<sup>51</sup> Durand, *op. cit.*, ch. 3, Table 10 and *passim*.

<sup>52</sup> Census: Current Population Reports, Series P-50, no. 81, *Family Characteristics of Working Wives: March 1957*, Tables 9, 10, and unpublished Census data. Survey of Consumer Finances: unpublished data kindly provided by Professor James Morgan from Study 650, Economic Behavior Program, relative to the 1957 Survey of Consumer Finances. Comparisons were made for 1955 (using Census reports P-50, nos. 62 and 73, and unpublished SCF data), which show similar, but less extreme, differences.

<sup>53</sup> These results are particularly puzzling since no reference, say, to differences in interviewing approach, seems to explain (a) the essentially same results for women with young children, and (b) the striking difference for those without young children. James N. Morgan notes in a private communication that "question sequences in the SCF are directed toward more complete income reports rather than employment detail," and that reports on employment status are "highly sensitive to the question asked."

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In summary, while worker rates for white females rose markedly during the nineteenth century, their gain 1900-1950 appears to have been considerably greater. The rise during a long period of national growth and expansion was nowhere nearly equal to that during the latter decades. One factor may have been the supply of slave labor, a topic to which we now turn.

*Nonwhite females.* The system of slavery, which had been faltering in the tobacco and hemp fields, took on renewed strength with the spread of the cotton gin. Female Negroes began to be used throughout the South in substantial numbers not merely as domestics but as field hands. It would appear that as early as 1820 the proportion of female slaves in the labor force was probably as great as that of males.

The broad sweep that appears if the suggested orders of magnitude (from the Appendix) are correct is shown in the following table:

Year	All Nonwhites 14 and over			Age 35-44	
	Total	Single	Married	Single	Married
Estimated 1830	(90)	(90)	(90)	(95)	(95)
1890	37.7	52.5	21.9	75.6	21.5
1950	37.1	36.1	31.8	65.8	38.7

Surely the enormous decline over the sixty-year span beginning in 1830 is the most striking aspect of this table. It is even more striking if we assume, as seems not unreasonable, a precipitous fall between 1860 and 1865. The substance of the decline appears to have been a fall in rates for married women: the rates for single women changed much more moderately. Nearly a century has passed since that time but the over-all rate in 1950 appears to be much as it was in 1865. Mild declines in the rate for single women, and mild changes in the ratio of single to married women offset the moderate rise in rates for married women.

*Population-Labor Force Trends*

Given this pattern of change in worker rates for women in the century and a quarter between the days of the first Lowell operatives and the

<sup>64</sup> 1830 figures for the 35-44 age group estimated, given the review noted in the text of 1820 Census data, at 95%—or a rate similar to that reported for males in this age group in any Census providing such data—i.e., from 1850 on. For the 10 and over category, an arbitrary reduction is made to allow for the aged and sick who, on the average, did not work 1 hour or more a week. 1890: derived from data in John Durand, *The Labor Force in the United States, 1890-1960*, 1948, pp. 216f. 1950: 1950 Census, *Employment and Personal Characteristics*, Table 11.



## ECONOMIC EFFECTS OF POPULATION CHANGE

women who assemble missile components, what can we say of some of the associated population changes?

In part, the far greater 1890-1950 rise in female worker rates than the 1830-1890 rise was produced by the changing demographic composition of the population. A still more significant force, however, must have been the falling immigration tide. Kuznets and Rubin have pointed out that nearly a fifth of the population gain in the decades from 1860 to 1890 consisted of immigrants, and about the same proportion for the labor force, with the figures dwindling rapidly in subsequent decades.<sup>55</sup> But immigrants competed disproportionately in the low wage markets where women were actual and potential employees. Especially after 1920, therefore, when immigration was drastically cut, demand shifted and an increasing proportion of women were hired.

Turning to another facet of this change, how did changing fertility rates (with their impact on the population totals) affect worker rates for females, and vice versa? To speculate on possible answers to this question, we require first a measure of fertility trends. For whites, the Census data on the number of children under 5 provide us with rough but useful indications for 1850ff.<sup>56</sup>

The level of nonwhite fertility prior to 1850, however, is a highly uncertain matter. Under conditions of slavery, a high fertility rate was a desideratum to be commended and encouraged. Testimony on this point ranges from the horrified specificity of Mrs. Kemble to the consoling skepticism of Ulrich Phillips. Both imply such a conclusion.<sup>57</sup>

Many leading Southern analysts concluded, in the words of General Jubal Early, that a "rapid multiplication of the slaves by natural increase" took place; whereas "premature emancipation" (in the words of the Reverend Robert L. Dabney) was "leading to ultimate extermination" as fertility rates fell.<sup>58</sup>

<sup>55</sup> Simon Kuznets and Ernest Rubin, *Immigration and the Foreign Born*, 1954, p. 45. The valuable discussion on pp. 43-49 deals generally with the contribution of immigration to the population and labor force increase.

<sup>56</sup> Summarized in Taeuber and Taeuber, *op. cit.*, p. 25.

<sup>57</sup> Cf. William Gilmore Simms, *The Geography of South Carolina*, Babcock and Co., Charleston, 1843, p. 21: "The slaves are very prolific, increasing in greater proportion than the whites; a sufficient proof of the mildness of their servitude and labor."

<sup>58</sup> Jubal E. Early, *The Heritage of the South*, 1915, pp. 113-114. The full quotation reads: "Let anyone compare the condition of the African in his native land with the slaves of the South before the violent abolition of slavery, and then say whether that institution, which had produced such a vast improvement in his condition was so great a wrong after all. The most conclusive answer to the slanders against Southern slave owners is to be found in the rapid multiplication of the slaves by natural increase, which could not have taken place if such barbarities had been practiced or such immorality had existed as has been represented." Robert L. Dabney, D.D., in *A Defence of Virginia*,

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"As a factor in the increase of population" the Negro "must of necessity decline in ratio to the whole" concluded the Commissioner of Agriculture for Georgia, in his discussion of postwar labor supply.<sup>59</sup>

But did a high absolute birth rate result among nonwhites before 1861—a higher one, say, than for whites? These various pressures may only have kept the nonwhite rate above the level it would have otherwise reached. Indeed, both the 1850 and 1860 Census results suggests that fertility was approximately the same among whites and nonwhites in the South, whatever the basic fecundity trends.<sup>60</sup>

More striking still is the rise in the proportion of children that took place among the nonwhite population from 1860 to 1880. The 1900 Census report—presumably prepared by Walter Willcox—suggested that "a greatly increased birth rate . . . was one of the first results of emancipation. If that be admitted, the parallel between the emancipated Negroes in the South, and the emancipated serfs in Russia, the rate of increase among whom since emancipation has been extraordinary, is a striking one."<sup>61</sup>

Putting these elements together, we may deduce that a variety of factors led to Negro family limitation under slavery. Such factors should have been somewhat more important in 1830 than 1850, given the increased volume of transfers from the breeding states to Missouri, Texas, and the Gulf States. On the other hand, a much greater proportion of the 1830 female slave population had been transported from Africa than of the 1850 population. Setting one factor off against the other, we return to the simpler hypothesis—namely, that the level of nonwhite fertility under slavery was much the same in 1830 as in 1850 and 1860. We will

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and through Her, of the South in Recent and Pending Contests against the Sectional Party, 1867, p. 90, wrote of changes 1865–1867 in Virginia: ". . . facts already evince the doom of ultimate extermination which Southern Philanthropists have ever predicted as the result of premature emancipation is already overtaking the negro with giant strides . . . the population of blacks in 1860 being 531,000" reduced by 1867 to "340,500." Dabney was no casual observer but had been ecclesiastical professor of history and polity and systematic and polemic theology at a leading seminary, as well as adjutant general to Stonewall Jackson.

<sup>59</sup> Thomas P. Jones, Commissioner of Agriculture for the State of Georgia, *Handbook of the State of Georgia*, 1876, p. 152. "The future of the Negro in America . . . as an element in politics, his career is virtually at an end. As a factor in the increase of population, his race must of necessity decline in ratio to the whole. . . ."

<sup>60</sup> 1900 Census, *Supplementary Analysis*, p. 418, shows for 1850, 695 white and 705 nonwhite children under 5 years of age per 1,000 females 15–49. For 1860, the rates were 682 and 688, respectively.

<sup>61</sup> *ibid.*, p. 417. To get over the difficulty of the 1870 undercount, one may simply look to the 1860–1880 change, which was a slight decline for southern whites, a substantial increase for southern nonwhites, p. 418.

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therefore assume that the average of the rates reported by the Census for 1850 and 1860 applied equally well in 1830 (Table 3).<sup>62</sup>

TABLE 3  
Children under 5: 1830-1950  
(per 1,000 women aged 20-44)

Year	Native	
	White	Negro
1830 est.	1,145	988
1850 est.	892	1,010
1860 est.	905	965
1890	685	930
1900	666	845
1910	631	736
1920	604	608
1930	506	554
1940	419	513
1950	587	706

Sources: 1830-60. See text.  
1890-1950. Taeuber and Taeuber, *op. cit.*

*Population-Labor Force Relationships*

Given this background of worker rate and fertility change, what conclusions can we draw from the data summarized below:

Year	Native-White Women		Nonwhite Women	
	Worker rate per 100 women 20-44	Number of children under 5 years of age	Worker rate per 100 women 20-44	Number of children under 5 years of age
1830	8	114	90	99
1890	13.3	69	37.7	93
1950	28.1	59	37.1	71

It would be hard to find a set of figures that shows less of a simple relationship between long-run trends in worker rates and in fertility.

<sup>62</sup> These figures differ from the adjusted estimates shown in Taeuber and Taeuber, p. 251, for nonwhites. The latter writers assume a 13% understatement in reported Census totals for 1850 and 1860—the percentage found in a study covering 1925-1930. It is here assumed, however, that the true percentage for these particular years would be the same 5% as that used by Taeuber and Taeuber for whites. Because of the great monetary importance of slaves, there is no reason to believe that the underenumeration among nonwhites was greater than among whites. Reporting by planters for their slaves may in fact have produced more precise figures than did the endeavors of Census enumerators to find marginal white inhabitants. Therefore we have no basis for assuming differential underenumeration rates for the slave period.

The 1830 figure was estimated as the average of the 1850 and 1860 figures as revised on this 5% basis.

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For native whites, the worker-rate rise over the first sixty years was far less than over the second—but the fertility-rate fall over the first period was enormously greater than over the second. For nonwhites, the contrast is even more extreme. Worker rates fell precipitously over the first period, not at all over the second; fertility fell only slightly over the first period but largely over the second.

A decline in fertility must surely facilitate a rise in worker rates, yet the overriding impact of factors other than fertility change was clearly much greater. One would hardly conclude from such data that major changes in fertility are sufficient, or even necessary, conditions for major changes in worker rates. The data, of course, are chancy, and they are limited to particular Census years. Yet reasonable shifts of the worker rates, or shifts in our reference dates to a Census ten years earlier or later, would make little difference in this basic conclusion. Social and economic factors other than fertility change must have dominated the change in the female labor force.

Let us now go on to the period since 1890, for which the Census data and the basic study by John Durand make possible a review of such vital

TABLE 4  
Female Labor Force and Fertility Trends: Changes 1890-1940  
(by nativity, color, and age)

	Age Groups	Children Ever Born Per 1,000 Women	Worker Rates		Excess Married Over Single Rates
			Single	Married	
<i>Native</i>	14-24	- 299	+ 8.7	+13.8	+ 5.1
	25-34	- 707	+34.9	+15.5	-19.4
	35-44	-1,195	+35.7	+12.2	-23.5
	45-54	-1,477	+30.6	+ 9.0	-21.6
	55-64	-1,584	+22.0	+ 5.9	-16.1
	65+	-1,319	+ 3.4	+ 2.2	- 1.2
<i>Foreign</i>	14-24	- 280	- 8.6	- 0.8	+ 7.8
	25-34	- 966	+ 8.5	+15.6	+ 7.1
	35-44	-1,831	+24.9	+14.8	-10.1
	45-54	-1,851	+32.1	+ 8.9	-23.2
	55-64	-1,966	+13.1	+ 3.7	- 9.4
	65+	-1,818	- 1.0	- 0.3	+ 0.7
<i>Nonwhite</i>	14-24	- 362	-15.3	+ 5.1	+20.4
	25-34	- 968	+ 0.1	+14.2	+14.3
	35-44	-2,036	- 3.8	+14.5	+18.3
	45-54	-2,843	-12.7	+ 9.2	+21.9
	55-64	-2,912	-25.2	+ 0.5	+25.7
	65+	-2,322	-22.9	- 3.7	+19.2

factors as the changing age and marital composition of the female population. Data for the 1890-1940 change are presented in Table 4. Here we are concentrating not on the data for the entire female group—nor even for the married group per se. Now it is obvious that nativity change, migration, urbanization, and so on, all affected worker rates. How can we adjust for their influence in trying to measure the relationship between changing fertility and changing worker rates?

One method of approximate allowance is to assume that the changes in worker rates for single women will measure the changes—age for age—that would have occurred for married women apart from the factors associated with their marital status. For measuring these influences we therefore consider single women to be an enormous sample of the population. The sample may well have some biases for this measurement. But its great size, and lack of any obvious important bias, make it worthy of consideration. We therefore take the differential between the worker rates for single and married women as measuring the factors associated with marriage.

WHITE: the worker rates for married women gained *less* than did those for single women. Despite sharp declines in fertility—measured either in terms of number of children in the Census year or long-term cohort fertility—worker rates for this group did not gain relatively.

NONWHITE: the opposite pattern appears—fertility falling substantially and worker rates rising substantially.

What seems to be at work in producing these contrasting responses? An analytic tradition reaching to Malthus and beyond makes children and material acquisitions alternative goods: "we are familiar with the notion that a man's standard of living is defined by the wants he insists upon satisfying before he is willing to enlarge his family."<sup>63</sup> We might, therefore, emphasize how the decline in fertility facilitated the rise in worker rates, thereby providing a basis for increased income and acquisition.

But while some such interactions undoubtedly occurred, they are no very simple ones. Had a single-minded preference for income been the major force at work, it would have been simpler to satisfy such a preference in the traditional manner by sending children to work early and often.

We can more plausibly link the decline in fertility to a conscious

<sup>63</sup> J. A. Field, *op. cit.*, p. 231. For Malthus, as for others, "hope of bettering one's conditions was the great inducement from which restriction of numbers was to result," p. 54. Field quotes Ely's *Principles*, 1893: "The number and character of the wants which a man considers more important than marriage and family constitute his 'standard of living,'" p. 389.

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attempt to reduce the dangers and burdens of childbearing, to a desire to achieve greater comfort for mothers and greater well-being for children. As men increasingly achieved a shorter work day it was only to be expected that women too would seek equal rights. The hope might reasonably be entertained that both halves of the old jingle—"Man's work is from sun to sun; women's work is never done"—were becoming obsolete.

But given the shortened period of childbearing and responsibility that followed upon fertility declines, the time thus freed was utilized quite differently by each group. Nonwhite married women increased their worker rates more than single women; the white group did not (Table 4) and by 1940 substantially more nonwhite than white women of the prime ages and in detailed categories were in the labor force (Table 5).<sup>64</sup>

TABLE 5  
Proportion of Married Women Aged 35-44  
in the Labor Force: 1940

Area	Family Income \$600-\$999		All Incomes	
	Without Children under 10	With Children under 10	Without Children under 10	With Children under 10
<i>Metropolitan areas</i>				
Total	29.6	12.0	21.8	8.0
Nonwhite	36.5	21.5	38.2	20.1
<i>Urban places 25,000-100,000</i>				
Total	34.3	15.9	24.9	11.0
Nonwhite	54.0	—	52.1	39.8
<i>Urban places 2,500-25,000</i>				
Total	31.6	15.0	24.4	11.5
Nonwhite	44.9	29.1	50.0	37.8
<i>Rural nonfarm</i>				
Total	21.2	8.8	18.9	8.6
Nonwhite	23.0	16.4	33.2	22.8
<i>Rural farm</i>				
Total	—	—	7.5	4.2
Nonwhite	—	—	16.4	13.2
<i>U.S.</i>				
Total	—	—	19.7	7.5
Nonwhite	—	—	34.5	19.4

<sup>64</sup> 1940 Census, *Employment and Family Characteristics of Women*, Table 23. Unfortunately statistical progress has not provided data for later years.

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The plantation heritage was surely a major factor in producing this differential. What about the income insurance that a second earner provided—surely no mean consideration in a group that appears disproportionately in those industries and occupations that are hit first by unemployment?<sup>65</sup> The influence of low and unstable income, however, was surely at work among the foreign born too—employed as they were in domestic service, in basement cigar factories or rag picking, in piece-work at home, or in sweat shops. Yet the trend for foreign-born whites largely paralleled that for native whites. They adopted American standards of family size despite the high fertility traditions in which most of them were raised. And they followed prevailing American standards as to the propriety and desirability of women working outside the home; despite low and unstable incomes they did not adopt worker rates similar to those of the nonwhite group.

If we combine all the color and nativity groups (taking each of the age-nativity-color groups with complete or near-complete fertility shown in Table 4 as an independent observation) and chart worker rate change against fertility change, a broad pattern of relationship can be seen.<sup>66</sup>

Within the nonwhite group there seems to be a clear inverse relationship—the greater the decline in fertility, the greater the relative rise in worker rates. There is clearly no relationship within the foreign-born group. There may be one for native whites. But when all are considered together a moderately high correlation appears. This correlation reflects, it is believed, a tendency for gross differences in fertility levels to diminish as a national pattern developed. Greater than proportionate decreases in the initially high rates for Negroes, smaller ones for whites, brought the two sets of rates together. Over the 1830-1940 period differentials between native, foreign-born, and nonwhite worker rates and fertility rates diminished. The decline in fertility rates, while undoubtedly facilitating a rise in worker rates, hardly seems to have produced any such rise. For major portions of the female population, worker rates actually fell; for others the change bore no reasonable proportion to the change in fertility rates.

<sup>65</sup> The inverse relationship between income of husband and worker rate for wife is discussed at length in Clarence D. Long, *The Labor Force under Changing Income and Employment*, published for the National Bureau of Economic Research by Princeton University Press, 1958. Cf. also Paul Douglas, *The Theory of Wages*, 1934, ch. xi and Nedra Belloc, "Labor-Force Participation and Employment Opportunities for Women" in *Journal of the American Statistical Association*, September, 1950, especially p. 405.

<sup>66</sup> Rates for the under 35 group are ignored. The "number of children ever born" is an inadequate measure of completed fertility for the younger age groups, while the number of children under 5 is a shorter term measure, grossly affected by short term variations in economic activity and other elements.

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Our experience since 1940 is a striking supplement. I have referred above to "the" American standard of living. But that standard refused to stay still—and the income goal for all Americans rose at an accelerated pace as prices jumped and a multitude of new jobs opened. Not only were opportunities for women's work increasing at a great rate—but they were taken up. Thus, the proportion of women with young children who worked nearly tripled from 1940 to 1957 (Table 6).<sup>67</sup> Not only did

TABLE 6  
Working Wives, 1940-1957  
(per cent in labor force by age and by presence of young children)

	Under 65	18-24	25-34	35-44	45-64
<b>U.S. WHITE AND NONWHITE</b>					
<i>Without children under 6</i>					
1940	16.5	26.7	26.9	17.0	9.0
1950	27.5	45.5	39.8	31.5	18.4
1954	34.4	—	—	—	—
1957	38.2	—	—	—	—
<i>With children under 6</i>					
1940	6.1	5.8	6.5	5.6	5.5
1950	10.6	9.9	10.5	11.2	11.7
1954	14.9	—	—	—	—
1957	17.0	—	—	—	—
<b>U.S. NONWHITE</b>					
<i>Without children under 6</i>					
1940	31.5	32.6	38.9	32.7	22.7
1950	37.8	36.5	46.3	43.6	27.9
1954	46.4	—	—	—	—
1957	50.7	—	—	—	—
<i>With children under 6</i>					
1940	14.9	13.6	14.9	16.4	16.5
1950	17.3	12.8	18.2	20.6	20.0
1954	21.8	—	—	—	—
1957	24.0	—	—	—	—

<sup>67</sup> 1940: computed from 1940 Census, *Employment and Family Characteristics of Women*, Tables 4 and 5. The overall total relates to women 18-64. Durand, *op. cit.*, p. 207, gives adjustment factors to make the 1940 Census data comparable with the CPS data for 1945ff. These suggest that limited increases in the estimates shown above are necessary for strict comparability with more recent data.

1950: 1950 Census, *General Characteristics of Families*, Tables 12 and 13.

1954: Current Population Reports, no. 62, *Marital and Family Characteristics of the Labor Force in the United States, April 1955 and 1954*, Table 3, p. 50. This source reports data for married women of all ages. These were adjusted to apply to those under 65 by the difference between these groups that can be computed from the 1950 data. For those with children under 6, no adjustment is required. For those without children under 6,



worker rates increase when the responsibilities of child rearing declined; they rose even when such responsibilities increased.

The rise in second and third births would certainly have tended to keep women with children under 6 from working. The rise in first births would have tended to reduce the over-all worker rate for newly-married women. The sharp decline in domestic servants since the war, also the shift in population to the suburbs (to houses from apartments), would also have exercised a restraining effect.

What appear to be the major factors that offset these forces and made worker rates for females rise more, and faster, than ever before in our history? A minor contribution was certainly made by the move from farm to city.<sup>68</sup> Another small factor was the change in composition of the female population.<sup>69</sup> But the major factors lie elsewhere—two on the supply side, and two on the demand.

(1) On the supply side the major incentive is to be found in the dazzling array of material goods now incorporated into the American standard of living. Some may define this as the means to an easier life; others, as the desire to keep up with the Joneses (as they keep up with the Smiths); still others, as the crass materialism characteristic of the postwar Byzantine periods in world history. But however such interpretations are decided, the result is the same. In recent years in the United States, the consumer in "consumer durables" has proved to be the working wife.<sup>70</sup>

A recent study, made for quite different purposes, throws a brilliant light on one side of this problem. If we look at Table 7, we see a clear tendency at each income level for a greater proportion of families with working wives to have debts than families with only the husband working.<sup>71</sup> (Rosett's study, using 1952 Survey of Consumer Finances

the 1950 data showed 25.3 for all ages and 27.5 for under 64, and a 36.1 to 37.8 contrast for nonwhites. These absolute differences in 1950 were assumed to apply in 1954 as well.

1957: Current Population Reports, P-50, no. 81, *Family Characteristics of Working Wives*, March, 1957, Table 9, and unpublished Census data. The reported all-age data were adjusted to under-65 levels by the same procedure as used above for 1954.

<sup>68</sup> For the 1920-1940 period this contribution was minor for the over-30 year group, significant for the 20-24 group. Cf. John Durand, "Married Women in the Labor Force," *American Journal of Sociology*, November, 1946, pp. 220-221.

<sup>69</sup> But not much. A trivial increase in the proportion of nonwhite females to total 14 and over works in the opposite direction.

<sup>70</sup> It does not, of course, have to follow that these causes and consequences were without parallel in other countries. The rising worker rate for women, especially married women, in other countries is discussed in UN, *Determinants*, p. 200f. and in Long's forthcoming monograph.

<sup>71</sup> These data are based on a supplement to the Census Bureau's Current Population Survey for August, 1956, and appear in Federal Reserve Board, *Consumer Instalment Credit*, Part 1, Vol. 2, *Growth and Import*, 1957, Table D-1.

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TABLE 7

Family Income	Families with Debts as a Per Cent of all Families (1956)		Excess
	With Husband Only Working (1)	With Wife and Husband Working (2)	(2) - (1) (3)
Under \$3,000	57	65	+8
\$3,000-\$4,999	71	72	+1
\$5,000-\$7,499	74	78	+4
\$7,500 and over	67	74	+7

data, suggests the same conclusion.<sup>72</sup>) The excess for the families with working wives would be still greater if we classified the families by their husband's income alone—as is essentially done in the above table for the other families. (For families with working wives almost by definition have come from lower levels of income if classified by husbands' income.)

In summary, families with working wives not merely have higher incomes but more commonly acquire debts, despite, or because of, the wife's work. It is doubtful, on the latter alternative, whether it is possible to know, or particularly useful to assert, the priority of the chicken or the egg. Work by the wife *and* the incurring of debts are interrelated means to the prompt acquisition of consumer durables.

We can proceed a bit further by examining the type of debt involved (Table 8).<sup>73</sup> A priori one might not expect any significant differences by type of debt, but the figures do in fact show sharp contrasts. Families with working wives, far more than those without, go into debt for cars and household equipment—at every income level. This excess does not appear where mortgage debt and car debt are both present. And where *only* mortgages are involved, or mortgages and household equipment debt, the pattern is actually reversed.<sup>74</sup> A steadily widening gap appears in Table 8 between families with working wives and those without, as one proceeds across from the figures for auto purchase, through auto purchase in combination with houses, to data for house purchase.

Today's wife will enter the labor force to work for a car, washing machine, a refrigerator. Such durable items can be delivered at once,

<sup>72</sup> *Econometrica*, March, 1958, p. 326.

<sup>73</sup> Federal Reserve Board, *Consumer Instalment Credit* . . . , p. 237f. It has been assumed that the husband worked both in those families reporting one paid worker and in those where 2 or more workers were reported, one being the wife.

<sup>74</sup> In explaining this contrast one must make due allowance for the role of FHA regulations, and the stipulations of the capital market, as not counting the income of the wife as a sufficiently solid source for buttressing mortgage loans. This element, however, does not preclude the wife's working.

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TABLE 8  
Debtors by Type of Debt, August, 1956

Income	All Debtors	Debtors for		
		Cars Alone or With Household Equipment	Mortgages and Cars	Mortgages Alone or With Household Equipment
<i>Under \$3,000</i>				
Husband working	100	20	2	26
Wife and husband working	100	23	2	19
		+3	0	-7
<i>\$3,000-\$4,999</i>				
Husband working	100	21	7	39
Wife and husband working	100	24	7	34
		+3	0	-5
<i>\$5,000-\$7,499</i>				
Husband working	100	14	12	49
Wife and husband working	100	23	10	36
		+9	-2	-13
<i>\$7,500 and over</i>				
Husband working	100	11	15	58
Wife and husband working	100	18	12	47
		+7	-3	-11

and title acquired within a finite time. They require only temporary labor force participation by the wife.<sup>75</sup> The purchase of a home, on the other hand, is a long-range affair. Its final acquisition is necessarily obscured in the indefinite future.<sup>76</sup> A further influence that one might assume to be at work in producing this result is the tendency for house acquisition to operate as a surrogate variable for the presence of young

<sup>75</sup> Cf. Federal Reserve Board, *Consumer Instalment Credit* . . . , p. 186, in which Murray Wernick states ". . . both the increased seeking of employment by married women and the incurrence of debt may be influenced by the desire for the ownership of additional durable goods." The "very high incidence of credit use and indebtedness among families in which the head is employed and the wife is unemployed and looking for work" suggest that "financial pressures are a factor influencing the wife to enter and remain in the labor market, when employment opportunities and incomes are at high levels."

<sup>76</sup> Morgan's comment on spurious correlation is not a contradiction of this point but an apexesis. He does not disagree with the point that at every family income level today's wife is more likely to enter the labor force to help purchase a car or other durable than to help buy a house. He is asking whether this is equally true within given age and parity groups. The implication that young married women without children must per se prefer to buy durables rather than houses does not follow, of course, and need not. But the point is an interesting one and it is to be hoped that the Survey of Consumer Finances will enlighten us on this point in future surveys. Since income advances with age, Table 7 gives us a crude indication that at higher ages there is no growing inclination to work for mortgage payments rather than cars and other durables. If anything, the reverse may be indicated by the table.

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children. However, the over-all relationship between age and mortgage debt is not negative, as it should be to make this factor real and substantial.<sup>77</sup>

(2) A second factor in getting more women to enter the work force has been the reduction in family income receipt from once customary sources, such as, as already noted, the decline in working children, and such as the decline in family income from boarders and lodgers—for urban families a source once second only to earnings by the family head (see Table 9).<sup>78</sup>

TABLE 9  
Proportion of Urban Families

Year	With Lodgers			With Income from Lodgers or Boarders
	Native White	Foreign Born	All Families	
1901	—	—	—	23
1910	10.0	32.9	(17.6)	—
1930	9.0	10.2	9.8	—
1941	—	—	—	12
1950	—	—	(5.0)	8

On the demand side, where the increasing opportunities for work by women appear, two factors may be briefly mentioned. One is particularly associated with the rise in female worker rates that followed after the

<sup>77</sup> The proportion with mortgage debt rises steadily with age. The proportion with mortgage debt alone or in combination with household equipment or miscellaneous debt also shows a tendency to rise with age. FRB, *Consumer Instalment Credit* . . . , p. 236. Most important, for present purposes, no decline with age is apparent for mortgage debt.

<sup>78</sup> 1901: *Eighteenth Annual Report of the Commissioner of Labor, 1903, 1904*, p. 363.

1910: U.S. Immigration Commission, *Reports*, Part 23, 1, 1911, Vol. 19, p. 128. The Commission only reports rates for native white and for foreign-born white. The Negro rate was assumed as equal to the foreign born. All three were then weighted together by the number of married males in each nativity-color group. 1910 Census, *Population*, p. 522. The number of married males was equal to 90% of the number of families, *ibid.*, p. 1285.

1930: Census of Population, *Families*, Vol. vi, p. 24.

1941: Bureau of Labor Statistics Bulletin no. 822, *Family Spending and Saving in Wartime*, 1945, pp. 33, 95.

1950: Census of Housing, *Nonfarm Housing Characteristics*, Vol. 11, Part 1, Table A-10. Of 35.9 million occupied dwelling units 2.2 had nonrelatives living in the household. This ratio of about 6% was reduced to 5% to allow for servants living in.

1950: BLS-Wharton School of Finance and Commerce, *Study of Consumer Expenditures Incomes and Savings*, 1956, xi, p. 4.

Data in the 1901 report on the proportion with lodgers—running to about 2% for natives and for foreign born—were ignored as unreasonably low. They must reflect a confusion in reporting between lodgers and boarders and/or the special characteristics of the sample. It is suggestive that one-third of the reporting families paid union dues (including one-half of the sample families from Pennsylvania). *ibid.*, p. 501.

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closing off of immigration—namely, the significant gap between prevailing male and female wages. A second, of slight importance during World War I and of major importance during World War II, was the removal of a large share of the experienced labor force at the time that increased demands for production were being made. The combination brought dramatic changes in the tables of organization traditional in many industries, and increased the opportunities for female employment.

In sum, the very substantial 1830–1865, and 1890–1950 rises in the proportion of women in the labor force may be attributed to a variety of supply and demand factors, few of which are closely associated with population changes. Fertility declines helped make it possible for an increasing number of women to work. But they were hardly essential: in some periods the trend was actually opposite to what an a priori analysis might have indicated. And conversely, while the increasing participation of women in the labor force may have limited birth rates over “what they would have been otherwise,” the rapid rise in birth rates since 1940 suggests that it did not produce any absolute decline in rates.

### *Convergence*

The outstanding development in the United States labor force–population relationships over the past century has been that of convergence: differentials between social groups, nativity groups, and regions have tended to diminish and (in some instances) to dwindle away. Fertility rates have risen for certain groups while for others they have plummeted. Worker rates have stayed rigidly fixed at levels established many years ago for some categories, and have shifted rapidly for others. The one uniformity at work throughout these phenomena is that the spread between the rates for the different social, age, and nativity groups tended to diminish. This tendency is related to the economist’s equalizing of marginal factor returns, to the anthropologist’s acculturation, to the statistician’s regression to the mean. But it is not quite the same as any of these. The process is dynamic, the goal is perpetually in motion, and noneconomic factors, as well as economic advantage, are being maximized. Let us consider some instances of such convergence.

In Table 2 we can review the trend of United States worker rates for females over a century and a quarter.<sup>79</sup> Because of obvious

<sup>79</sup> 1820: data estimated as outlined in text above. 1890, 1940: Durand, *op. cit.*, pp. 49, 216–217. These Census data have been made as comparable as possible by Durand. The data used relate to native whites and to nonwhites, to single and to married women. 1940, 1950: 1950 Census, *Employment and Personal Characteristics*, Table 11. The data relate to all whites, to nonwhites; to married women, spouse present, and to single

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incomparabilities in the data over time,<sup>80</sup> the table is set up to permit rough generalizations with respect to change over overlapping periods.

What, then, do these data indicate on the convergence of worker rates? First, white-nonwhite comparisons. The nonwhite rate was 16 times as great as the white rate when the Napoleonic wars closed. It was only 3 times as great by 1890; not quite twice as much in 1940; and only half again as great by 1957. The nonwhite rate for married women in 1890 was 10 times that for whites. By 1940 it was less than 3 times as great. Over the same period the nonwhite rate for single women fell from a rate nearly double the white rate to one virtually the same.

Since 1940, white and nonwhite married women's rates have further converged, but rates for nonwhite single women have decreased, producing divergence rather than convergence for this group.<sup>81</sup>

Second, we can look at the contrast between the rates for single and married women. The proportion of unmarried white women working, in ratio to married white women, in 1890 was 14 times as great; in 1940 was less than 4 times as great; in 1957 was less than twice as great. For nonwhite women the ending of slavery increased the spread between rates for single and married females: married women no longer worked

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women. 1951, 1957: Census Bureau, Current Population Reports, Series P-50, no. 39, *Marital and Family Characteristics of the Labor Force: April 1951*, Table 2 and P-50, no. 76, *Marital Status of Workers: March 1957*, Table 3.

<sup>80</sup> (1) The crudeness of the 1820 data has been emphasized above. (2) We may note that the 1890 and 1940 Durand data represent the most informed and careful attempt to provide comparability between these Census reports. (3) The 1940 and 1950 data marked "Census" are published as comparable by the Census. (4) Two major empirical differences separate the two sets of 1940 figures: the Durand data used here relate to native whites, and to all married women, while the Census data relate to all whites, and to married women-spouse present. (The omission of spouse-absent in the latter group accounts for the major incomparability in the table—for nonwhites.) Unfortunately progress has made it impossible to show separate figures for 1950ff. for native whites, leading to some incomparability with the earlier data. Data in Table 5 of *Employment and Personal Characteristics*, however, show over-all worker rates for foreign born and native whites by age. The two are within 10% of each other and, given the small weight for foreign born by 1950, the incomparability is probably not significant. (5) The Current Population Survey appears to secure more comprehensive reporting than does the census, and this factor accounts for most of the 1950-1951 difference, rather than the impact of Korea. Thus for March, 1950, the Census reports a worker rate of 31.8 for married nonwhites, while the Current Population Survey, P-50, no. 29, Table 6, reports 37.0. For whites the comparison was 20.7 and 22.8.

<sup>81</sup> The precision of Consumer Population Survey worker rates for the small group of nonwhite single females is not great but the downward drift seems unquestionable for the years 1951-1957: 41.3; 40.8; 38.6; 43.4; 35.9; 35.6; 37.9. One cause of this drift (the 1953-1954 rise probably reflects the energetic control and enumerative efforts associated with the new sample introduced in that period) was the rise in school attendance rates for nonwhite females, these rates rising toward the levels for whites. School enrollment of nonwhite females 14-17 rose from 71.9 to 81.1% between 1950 and 1956. Cf. Census Bureau, Current Population Reports, P-20, nos. 34 and 74.

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in as great numbers as single women. Beginning from the first date of a free market shown in Table 2, however, the differential declined sharply from 1890 to 1940, and continued to decline thereafter.

For the native-white versus foreign-born white comparison, the initial contrast was far smaller and the convergence far less. For the foreign group as a whole, rates were almost half again above the native in 1890, were about a quarter below the native by 1940.<sup>82</sup> This narrowing occurred primarily in the younger age groups. Durand suggests that selective immigration was a significant factor at work in the 14-19 age groups.<sup>83</sup> In any event, the spread for each of the age groups under 44 diminished markedly, whereas those for the older ages changed little or increased somewhat. This contrast suggests the greater flexibility, the prompter adoption of American standards by the younger groups, and the contrasting reluctance to change on the part of those whose work patterns tended to be formed abroad or in large foreign-born enclaves in this country.

Third, we can note that white male-female worker rate differentials narrowed considerably: over-all male rates changed very little, while female rates rose greatly. For nonwhites, however, no narrowing since 1865 can be demonstrated.

The trend in fertility rates was also toward a reduction in differentials.<sup>84</sup> We are fortunate here in having two different time dimensions, unlike the worker rate area where our measure only describes activity in a limited period. And in these data it is clear that the phenomenon of convergence also occurs, not as anything inevitable or mystical, but simply as an aspect of human adjustment in a free social and economic market.

Table 1 indicates that the differential between white and nonwhite women born in the most recent period was markedly under that for those born in earlier years. By referring to Table 3, we can go on to see the impact of the free market. For 1850 and 1860 the white and nonwhite fertility rates (measured in terms of number of children under 5 at the Census date) were much the same.<sup>85</sup> With the end of slavery a dramatic change occurred: fertility rates among nonwhites ranged from 20 to 30

<sup>82</sup> These and related data are summarized conveniently in Durand, *op. cit.*, p. 49 and pp. 216f.

<sup>83</sup> *ibid.*, p. 49.

<sup>84</sup> The subject is discussed in fuller detail in Charles Westoff, "Differential Fertility in the United States: 1900 to 1952," *American Sociological Review*, October, 1954.

<sup>85</sup> We assume that the Census need not be corrected any more for the omission of slaves than of whites. The wisdom of this assumption, as noted earlier, in preference to the procedure of using the higher rate indicated by the 1925-1930 study, is that masters would rarely be ignorant of the total count of slaves, and, in addition, would be seriously interested in a full count for purposes of Congressional representation.

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per cent above those for whites in the next two or three Censuses.<sup>86</sup> The rates then began to converge toward virtual identity in 1920. The subsequent impact of the depression is well known and here we can contrast (a) the short-term impact that made birth rates for the two groups diverge markedly, from (b) the longer-run tendency (indicated by data on completed fertility) toward a reduced differential.

Within the white group differentials between regions and states diminished. A single indication is given by the relationship between two regional averages. The East South Central average for children under 5 per 1,000 women was one of the highest in the nation in 1800, and was still one of the highest in 1950. New England ranked among the lowest at each date. But while the former rate was about 60 per cent above that for New England in 1800 it ran only about 20 per cent more in 1950. More generally, one may note that a very clear inverse correlation exists between the state-by-state averages of fertility rates in 1870-1910 and the declines from that level to the 1910-1940 levels.<sup>87</sup>

The causes of such convergence were primarily social and economic. In the social area we are dealing with the steady endeavor of marginal groups to adopt the dominant American standards—migrants forsaking their work patterns<sup>88</sup> as well as food intake patterns, changing the desired dimensions of their family and of their clothes. In the economic area, the endeavors of the employer to secure low-cost labor, and of the migrant and woman worker to secure higher incomes, joined to equalize marginal returns by severely reducing wage differentials, affecting family incomes and eventually family patterns of labor force participation.

### *Some Conclusions*

This brief review of United States labor force trends in past decades has begun from certain premises and has suggested certain inferences. Labor-force change has been sometimes a slow, sometimes a startling, process. In other countries and other climes there may well have been a quasi-automatic link between population change and labor-force change. But changing economic and social goals have precluded any such simple

<sup>86</sup> Because of the undercount in 1870, the testimony of this Census cannot be firmly accepted. Hence we must look to the next two Censuses for confirmation.

<sup>87</sup> State fertility data for the two dates appear in an unpublished thesis by Bernard Okun. If one simply charts his data (a) for the initial period against (b) the changes from one period to the next, a marked inverse correlation appears. It is to be hoped that these or similar data will become available as part of the major study on population redistribution and economic growth being made under the direction of Simon Kuznets and Dorothy Thomas.

<sup>88</sup> A fascinating discussion of the occupational ladder has recently been completed by E. P. Hutchinson in *Immigrants and Their Children*, Wiley, 1957.



linkage in the United States. These changing goals have evidenced themselves in migration, fertility, and mortality shifts that affected both our population and our labor force.

The expansive mood of the American economy has nowhere been better established than by the process of migration, with both human and material resources shifting toward an ever-changing optimum. For many decades the flood of migrants from Europe and Africa made a substantial contribution to American population growth. Much of this migration (being directed toward building our canals, settling the prairies, stocking the plantations) was very selective, tending to bring more males than females, more adults than children. The increments to the labor force were greater, relatively, than those to the population totals. When railroads became a major factor, when canal construction tapered off, and when slavery ended, migration began to include a growing proportion of entire families rather than merely single males.

A second factor at work was the long-term downward trend in birth rates throughout most of the nineteenth century. This decline, of course, accompanied great absolute gains in population and the labor force. (We need not concern ourselves here with Francis Walker's speculations as to how great the growth might otherwise have been, the possible substitution of immigrants for native births, and so on.) The decreases in the United States child labor force began about 1900, after a century of declining birth rates, and are not particularly to be associated with those declines.

A third major factor in population growth is that of mortality.<sup>89</sup> But while short-term peaks in malaria sharply affected the supply of labor in, say, the James River and Kanawha canal, or typhoid that in New Orleans, major changes in mortality had little historical impact on the labor force. The unrepresentative Massachusetts data suggest that little advance was made in the nineteenth century.<sup>90</sup> Mortality reductions have, of course, become a significant force for population growth in the twentieth century.<sup>91</sup> But they exerted little short-term impact on the labor force: the man who enters the labor force today will provide only about 10 per cent more years of work to the economy over his lifetime than did his

<sup>89</sup> Special emphasis on mortality in its direct impact and also in the survival to reproductive ages is given in K. F. Helleiner, "The Vital Revolution Reconsidered," *Canadian Journal of Economics and Political Science*, February, 1957.

<sup>90</sup> The complete expectation of life for white males aged 20 and over in Massachusetts changed hardly at all from 1850 to 1900. *Historical Statistics of the United States*, p. 45.

<sup>91</sup> Cf. the useful review in Mortimer Spiegelman, "Mortality Trends and Prospects and Their Implications," *Annals of the American Academy of Political and Social Science*, March, 1958.

predecessor back in 1900.<sup>92</sup> (The long-run impact on the next generation's supply of labor—and of population—is a further, and deeper, problem for study.)

Beyond these forces affecting both population and labor force change are those that have substantially changed the labor force while bringing only trivial changes in population. First, without question, is the ending of slavery—and with it the sharpest fall in worker rates over the entire record of United States experience. Thus, the over-all participation in the labor force today is well under that prevailing in slave times.<sup>93</sup> Second, is the decline since 1900 in worker rates for children. New value systems—or more accurately, the wider adoption of older ones—set great store by children not working until they had reached 8 years of age, then 10, then 16. Third, is the long-term rise in worker rates for women, with especially pronounced gains after World Wars I and II. The contribution of reductions in fertility to this rise has frequently been overstated—particularly given the increase since 1945 in both the number of women with babies and with jobs. On the supply side, the rise in female worker rates reflects the endless search for a higher standard of material well-being, particularly that euphoric state which is felt to attach to the possession of consumer durables. Given the concurrent shortening of the male work week, and the reduction in income from boarders and lodgers, rising female worker rates were the obvious means toward higher incomes. On the demand side, women's work may be considered as a *pis aller* for the traditional sources of cheap labor—slaves, immigrants, children—as these became increasingly exiguous.

Throughout these long years of population and labor force change, differentials in fertility rates, as in worker rates, among the several groups in the population were reduced. Convergence toward a standard American pattern of fertility and labor force participation tended to follow. That pattern was not a fixed, irretrievable one, but in the process of change and formation as the economy and the social order continuously developed. The process of convergence helps explain the contradiction between what static cross-section data on worker rates and fertility differentials tell us and what the time series on American economic development report. Static data indicate that upper income families

<sup>92</sup> Stuart Garfinkle, "Changes in Working Life of Men, 1900 to 2000," *Monthly Labor Review*, March, 1955, estimates a work-life expectation rising from 39.4 to 43.2.

<sup>93</sup> This is contradictory to the estimate in the major pioneering report by P. K. Whelpton, "Occupational Groups in the United States, 1820-1920," *Journal of the American Statistical Association*, September, 1926, p. 342. The basic source of the difference probably lies in Whelpton's use of 1870 and 1880 ratios of domestic servants to population. The present procedure would allow for a higher proportion under slavery.

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have fewer children than lower, also fewer working women. The time series report, however, that the proportion of white women who work has gained since 1830, the proportion of nonwhite women since the end of slavery, and that the largest gains in fertility have occurred during the period of marked income rise since 1940. The only uniformity that more or less reconciles these contradictory statements is the long-term tendency toward a reduction of fertility and worker rate differentials among the various social and economic groups.

### Appendix A

#### WHITE FEMALE LABOR FORCE: 1830-1950

For 1830, at nearly the beginning of the factory system on any significant scale, we can develop a total as the sum of four component estimates.

1. *Factory workers: 60,000.* Contemporary sources give a reasonably complete enumeration of all females employed in cotton and woollen mills, in the manufacture of palm leaf hats, and in the manufacture of shoes, as well as those in industries with few female employees.<sup>94</sup>

2. *Free servants: 80,000.* The largest single group of white female workers—servants—was estimated from a regression against the number of white families, the relationship between the two series for 1850-1930 being a very close one. A description of procedures for estimating the number of white families prior to 1850, and of the various sources used, appears in Appendix B.

3. *Farm workers: 0.* As noted above, examination of the 1820 schedules now in the National Archives showed very few women reported as gainfully occupied, and virtually none in the rural areas where, if anywhere, the farm workers would have been found. The 1870 Census (*Population*, Table xxvii), the first showing data separately for females, showed no female farm laborers except in the Southern states, that group clearly being the nonwhite category. For example Indiana, with 181,491 male farm operators in 1870 reported only 22 female farm laborers. And in none of the Northern and Western states were any but a handful of farmers' wives and female family members included. Even the excellent

<sup>94</sup> U.S. Congress, Serial Set 222,223, *Statistics of Manufactures*, 1833. These data were adjusted in some instances to broader totals from the immediately preceding survey by the New York Convention of Friends of the Manufacturing Interest, *Niles Register*, xlii, March-August, 1832, Addendum, p. 7. With 39,000 in cotton and hand weaving, 2,900 in wool, 3,300 in palm leaf hat manufactures, and 4,800 in shoe manufacture, it was assumed that there were no more than 10,000 in other manufacturing, other branches being infrequent employers of women.

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1900 Census (*Population*, 1, Table xxxiii) shows the same pattern. Therefore for comparability with later Censuses we include no female family farm workers in 1830. Those who desire to include this group will have to make estimates both for 1830 and for years in which the published Census figures in principle include, but in practice exclude, this group.

4. *Other employees: 25,000.* Analysis of the occupational distribution of females beginning with 1880—when we first have separate Census data for females—suggests that a half-century earlier the significant occupations not covered in (1) and (2) above would have been primarily milliners and seamstresses. An arbitrary 25,000 was added for these latter occupations on the basis of the trend for all mantua makers, seamstresses, milliners, and tailors from 1850 to 1880.

The ratio of these figures to the number of white females 10 and over<sup>95</sup> is 8 per cent.<sup>96</sup>

For 1890 we have the Census reports, while for 1950 we must adjust the Census figures to cover the 10-and-over group.<sup>97</sup>

<i>Year</i>	<i>Per cent of white females in the labor force (Aged 10 and over)</i>
1830	8
1890	13.3
1950	26.0

NONWHITE FEMALE LABOR FORCE: 1830-1950

Our basic source of data is the Census. The major problem in using its reports, however, is that no Census counted among the gainfully occupied Negro slaves the substantial number that worked as domestic

<sup>95</sup> 1850 Census, *Compendium*, p. 5. A small number of nonwhite employees are included in the above estimate. The error will be small since the only group where their numbers would be substantial—servants—was estimated so as to exclude nonwhites.

<sup>96</sup> These and other data refer to labor force participation as currently measured. We know that housewives' work was important in the nineteenth-century economy, and it is today—though omitted in our measures. The limitation is analogous to the limitation of national income measures—and just as the income falls, in Pigou's example, when a gentleman marries his housekeeper, so does the labor force. Those who wish to eschew this paradox, and market measures, can simply take the able-bodied population, say 10 and over, as a measure of labor input. But they must do so consistently, rejecting our current measures by the same criteria that they would adjust historical estimates.

<sup>97</sup> 1890: 1900 Census, *Occupations*, p. lxxxiii.

1950: A rate of 28.1 per cent for those 14 and over appears in 1950 Census, *Population*, Vol. II, Part 1, Table 120. This was reduced on the basis of labor force survey data. Current Population Reports, Series P-50, nos. 31 and 83, enable us to compute a ratio of 33.9 for females 14 and over in August, 1950, and 31.8 for females 10 and over. The ratio of one rate to the other was applied to the reported Census total for 14 and over.

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servants. Of the two Censuses—1820 and 1840—that purported to enumerate the number of gainfully occupied slaves, that for 1840 has various internal indications of inadequacy. (For example, examination of the unpublished schedules shows sizable counties with no occupational entries.)

However, an indicative estimate for 1820 can be outlined. Taking the Census for that year, let us look to a dozen counties in which the failure to count those occupied as domestics must be a minimal problem for our purposes. In these counties, a very large number of slaves were recorded in proportion to the number of adult white males. Consequently, it can be assumed that virtually all gainfully occupied slaves in these counties were in agriculture and few in domestic service.<sup>98</sup>

Thus, if we deduct from the total number of persons reported with an occupation in Jones County, Georgia in 1820 the estimated number of whites and free colored, the residual is 4,218. But the total number of slaves aged 14 and over (males plus females) in the county was only 3,600. It is clear, therefore, that nearly all female slaves plus many (if not all) slave children aged 8–14 were also counted among the gainfully occupied.<sup>99</sup> Similar net balances were computed for the other selected counties, all indicating this type of margin.

Was an unusually high proportion of slaves gainfully occupied in these counties? Possibly so. Yet there is no reason to believe that eleemosynary traditions were stronger in other counties where slaves were present. We will, therefore, take it that the proportion of female Negroes in the labor force in these counties did not exceed that prevailing in other counties. We can reduce this 100 per cent ratio for females 10+ to allow for illness and absence for other reasons, using as an empirical guide the ratios for white males in 1850. We then arrive at something like a 95 per cent

<sup>98</sup> The following counties were used: Jones and Jasper, Georgia; Monroe, Alabama; Feliciana, Point Coupee, St. Charles, Louisiana; Davidson, Tennessee; St. James-Colleton, St. Thomas, Georgetown, Beaufort, South Carolina; Wilkinson, Mississippi. The number of white males aged 10 and over gainfully occupied in each county was estimated from the proportion reported for the state in the 1850 Census—that ratio changing little even in later years. This number was then deducted from the total (male and female, free and slave) reported by the 1820 Census as having any occupation. Since examination of the individual schedules now in the U.S. Archives indicated no white women with occupations reported—and the merest handful of free colored—the balance must have been Negro slaves.

<sup>99</sup> Specific examples may make the point clearer, Micajah Pickett, Sr., of Franklin County Mississippi, reported 27 in agriculture in 1820—a figure larger than that obtained by counting all whites in his family aged 10 and over plus all slaves 14 and over. James Jackson, of Green County Georgia, reported, in 1840, 144 in agriculture, but had only 2 whites in his family and 131 slaves aged 10 and over. Elizabeth McLendon, of Harris County Georgia, reported 14 in agriculture in 1840, but had only 1 white person in the family, 10 slaves aged 10 and over and 4 under 10 years of age.

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worker rate for Negro female slaves in the prime age group. A compatible rate for all aged 10 and over would be 90 per cent.<sup>100</sup>

The over-all rate, furthermore, has been assumed to apply equally well both to married and unmarried female slaves. The only reasons for married slaves to have been absent from domestic or field work more than unmarried ones are associated with childbirth. But since Negro children were both marketable and marketed under slavery, parturition did not remove Negro females from the labor force engaged in the production of what contemporary markets treated as capital or consumer goods.

*Appendix B*

SERVANTS

1870-1930: Edwards, *op. cit.*, Tables 8, 10.

1860: 1860 Census, *Population of the United States in 1860* (1864) pp. 663, 667, 675. The totals reported for domestics, laundresses, and servants were added to give an all-servants figure.

TABLE B-1  
Families and Servants, 1790-1950

Year	Number of White Families (000)	Number of Servants (000)
1790	558	—
1800	(755)	—
1810	(1,025)	—
1820	(1,380)	(40)
1830	(1,865)	(80)
1840	(2,520)	(200)
1850	3,598	(350)
1860	5,211	(600)
1870	(6,650)	1,033
1880	(8,680)	1,153
1890	11,255	1,544
1900	14,064	1,710
1910	18,002	2,039
1920	21,826	1,801
1930	26,983	2,776
1940	31,680	3,111
1950	38,429	2,848

<sup>100</sup> Contemporary definitions count in the labor force all persons, apart from unpaid family workers, if they work 1 hour or more during the week. Under slavery even elderly and infirm Negroes made sufficient small contributions of labor to reach this standard.

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1850: The Seventh Census of the United States, 1850 (1854) p. lxxvi. The 1850 figures relates to free males aged 15 and over. An estimate for all servants was made as follows. The number of female servants in 1860 was computed as 90.6 per cent of the total, and in 1850, at 93.9 per cent. (These percentages were estimated on the assumption of a 3.3 per cent change from one decade to the next—the same as that occurring between 1870 and 1880.) These figures may be contrasted with percentage of 87 per cent for 1870 and roughly 84 per cent for 1880, 1890, and 1900.

1830: Estimated from the relationship for 1850–1930 between number of white families and servants with the regression line assumed to have a zero origin. Particular weight was given to the 1850–1860 trend in estimating 1830, assuming that the level following 1870 was generally higher than in prior years as nonwhite females, freed from slavery, entered the free labor market.

### WHITE FAMILIES

1890–1950: 1950 Census, *General Characteristics of Families*, p. 2A-8.

1790, 1850, 1860: The number of free families appears in *Historical Statistics of the United States*, p. 29, and minor adjustment was made for free Negroes.

1870–1880: The change in the average size of family appears in 1900 Census, *Supplemental Analysis*, p. 382, and was used to extrapolate the 1890 average size of white families.

1800–1840: The white population was divided by the estimated size of family. The population figures were from *Historical Statistics*, p. 25. The average size of family was estimated from the regression of the 1790, 1850–1900 figures for (a) average size of family, on (b) number of children under 5 per 1,000 females in white families. Data on children from Taeuber and Taeuber, *op. cit.*, p. 251.

### C O M M E N T

JAMES N. MORGAN, Survey Research Center, University of Michigan

I shall not presume to criticize Lebergott's methods of measuring labor force participation, nor his measures of fertility, but merely express my awe that he was able to make estimates for early periods.

I have mostly a few small queries, and one or two general interpretative comments:

Is the statement that the factories in Waltham, Lowell, etc. in 1820 offered incomes larger than the imputed value of work on the family farm true for both wives and daughters, and what is the evidence as to the relative rewards from factory and home work?

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A table is given on the proportion of white females aged 10 and over who were in the labor force in 1830, 1890, and 1950. What about the proportion of white males who were in the labor force at these dates? With growing use of factory production, presumably a growing proportion of men, too, became employed rather than self-employed.

As to the comparison between Census and *Surveys of Consumer Finances* on labor force participation of married women, I have to report that the situation is worse than Lebergott implies. The table below, which I was able to prepare and send to Lebergott only after his paper was written, indicates that the differences are probably not due to understating of incidental employment only in the *Survey of Consumer Finances*. For women

TABLE 1  
Amount of Labor Force Participation of Married Women<sup>1</sup> Who Work,  
Census vs. SCF<sup>2</sup>

Circumstances of Employment	Children Under 18		Children, Some or All Under 6		Children, All 6-17 Years <sup>3</sup>	
	Census 1956	SCFS 1957	Census 1956	SCF 1957	Census 1956	SCF 1957
<i>Full Time</i>						
50-52 weeks	43.5	40.0	16.3	16.6	30.5	28.3
40-49 weeks	10.3	13.9	6.1	6.7	7.8	7.8
27-39 weeks	7.9	12.3	9.7	12.0	8.0	13.1
1-26 weeks	12.5	14.0	32.6	37.6	17.0	16.5
<i>Part Time</i>						
27 weeks or more	17.3	11.5	16.5	3.8	22.0	17.0
1-26 weeks	8.5	8.2	18.9	23.4	14.8	17.3
	100.0	99.8	100.1	100.1	100.1	100.0
<i>Number of cases where wife works</i>	—	313	—	215	—	203
<i>Per cent of families where wife works</i>	45.4	—	30.7	—	47.5	—
<i>Per cent of S.U.'s where wife works</i>	—	39.3	—	30.3	—	34.5
<i>Number of cases where there is a wife present</i>	—	807	—	704	—	655

<sup>1</sup> SCF: Head married, two adults present (at least) } In practice, identical in almost  
Census: Married, both husband and wife present } all cases  
but: SCF is spending units, Census is families, i.e., only wives of family heads, not of related secondary units.

<sup>2</sup> Survey Research Center Economic Behavior Program.

<sup>3</sup> SCF includes a few units here with children under 6 where Head is 45 or older.



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who report they worked during the last year, the two sources give quite similar distributions on the proportion of the year worked, and full or part time.

My table compared data from two different years, but Lebergott also compared 1955 data from both sources and found a similar discrepancy. There are minor differences, including the fact that the SCF is on a spending unit basis and the Current Population Reports on a family basis, but these differences would not explain the apparent discrepancy in results.

It is useful, however, to know the actual questions used, since labor force participation has proven notoriously sensitive to the questions used, and even to the training of the interviewers.<sup>1</sup> The *Survey of Consumer Finances* has elaborated the question sequences in recent years, and the reason for using the 1958 Survey in the table was that it used more questions.

The sequence, coming after a whole set of questions on sources of income, and income of the head, runs:

Did your wife have any income during the year?

If yes: Was it from wages, salary, a business or what?

How much did she receive? (taken down for each source).

If wife had wages or salary: How many weeks did she work either full time or part time?

When she was working did she usually work full time or part time or what?

The Current Population Survey questions, asked for all persons 14 years old or over, are:

In 1957, how many weeks did . . . work either full time or part time (not counting work around the house)? (Include paid vacations and paid sick leave.)

If none: Even though . . . did not work in 1957 did he spend any time trying to find a job?

What was the main reason . . . did not work in 1957?

(Here boxes to be checked include "ill or disabled", "keeping house", "could not find work", etc. Presumably only "could not find work" would result in the individual being counted in the labor force.)

It appears likely that the Kinsey-like approach of the CPS questions, which do not ask whether the individual had any income, or even whether

<sup>1</sup> Gertrude Bancroft, "Current Unemployment Statistics of the Census Bureau," in *The Measurement and Behavior of Unemployment*, published by Princeton University Press for the National Bureau of Economic Research, 1957.

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she worked, but rather start by assuming the work and ask first how many weeks she worked, might avoid underreporting more than the SCF sequence. They might also lead to some overreporting in CPS, but in either case the CPS should then have more reports of part time or incidental employment—and this is not the case.

We are left then with some unexplained differences. Perhaps they arise from unemployed or self-employed women. The former are omitted from the SCF definition of working wives. The latter may be omitted if they do not receive an income separate from that of their husband.

After the conference, Conrad Taeuber forwarded the following information from Robert J. Pearl of the Census Bureau: "One immediate source of difference is that the Survey of Consumer Finances apparently excluded unpaid family work (since the introductory question related to income of the wife) whereas our survey as usual included this group. We do not have a breakdown of unpaid family workers by marital status and presence or absence of children, but the over-all annual worker rate for women (per cent of female population with any work experience during the year) would have been reduced by as much as 4 percentage points if the unpaid group had been excluded from our figures."<sup>2</sup>

Table 4 in Lebergott's paper has some interesting aspects which were not discussed. For instance, young and old single nonwhite women reduced their labor force participation between 1890 and 1940. This requires that they have some other source of economic support, presumably their relatives. Does it also imply less available housework? And why should the *increase* in participation of nonwhite women be restricted to married women between 25 and 44 years old? Does this represent factory work, or home work that was previously done by slaves, or what?

Is it possible that there was a slow tendency for the market place to eliminate some nonwhite workers—the very old and the young—who had been utilized when their marginal cost was nearly zero because of slavery, and perhaps for a time thereafter? Were factory jobs that opened to nonwhite women mostly those requiring the strength and stamina of middle-aged people, such as work in commercial laundries?

Noting the large increase in the proportion of married women with children who are in the labor force, it is possible that a desire for more children, or higher quality children, to use Gary Becker's phrase, leads to increased income—from the wife's work, rather than the reverse causation where income determines the number of children? Or perhaps

<sup>2</sup> Letter from Conrad Taeuber to Stanley Lebergott and James N. Morgan, December 23, 1958.

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children turn out to cost more than the parents anticipated, given the standards of the culture.

Tables 7 and 8 appear to permit some spurious correlation because durables and the debts associated with durables are mostly bought and incurred earlier in the life cycle than a house, in many cases before the first child is born. The house is generally purchased later, often when the wife has left the labor force to have children. In other words, there are relationships of debt to home ownership and stage in the family life cycle which may cast some doubt on the motivational interpretation given by Lebergott that the wife will go to work to help get a car or durable, but not for a home. Since mortgage payments are mostly made during the period when there are small children, and this is also the period when the wife is least able or able to work, the tables can have a different interpretation.

I agree with the conclusion that the rise in the proportion of women in the labor force can be attributed to "a variety of supply and demand factors, few of which are closely associated with population changes."

A general problem of interpretation has to do with the economic meaning of data on participation in the labor force, particularly in the case of women, and over periods when more and more economic activity was being transferred from the home or farm to the factory or store. This is not to denigrate the importance of the data, or their intrinsic interest, but to suggest that interpretations as to motivation, or as to the economic or welfare implications of the data, must be made in the light of these considerations.

There is a growing body of research on the present-day motivations of women workers, and the impact of their outside work on the home. Certainly, when a wife works it mostly means that she and her husband do more total work. They may also, however, use some of the earned money to pay someone else to do housework. Or they may make use of relatives or friends in various ways difficult to catch in the statistics. Since leisure is also an economic good, but one with no market price nor record of its purchase or sale, welfare implications are difficult to make. Even the total labor force can be affected in different ways. Insofar as women work in food-processing factories, doing for dollars what they formerly did at home without pay, their total work efforts may not increase much, but the records will show more income and more employment.

I do not know just how one should analyze trends in labor force, gross national product, and the like, in the light of these considerations, but

some attention might be given to adding to GNP estimates of the value of (a) housewives' services at home, and (b) leisure, the value of the residual of sixteen hours a day not spent working. Trends in such a measure *in toto* and relative to the total person-hours of work should be most revealing.

JOHN DURAND, United Nations

I want to begin by talking about population and labor force relationships in a more general and elementary way than Lebergott has done. This may help to show how his contributions fit into the general picture.

In the first place, the labor force is not merely *related* to the population, it is a *part* of the population. It is not merely *influenced* by demographic variables, it *is* a demographic variable. Likewise the percentages of labor force members in different sex-age groups of the population, which we call "participation rates," are also demographic variables—not like sex and age, which are inherent characteristics of individuals, but like marital status or farm-residence. The participation rates have a seasonal variation and on occasions they may change considerably from year to year, as we saw during the war, but large short-term variations are extraordinary. Normally these rates change slowly, and in an orderly progression; they have a certain stability and predictability which befits a demographic variable. Consequently, both over long and short periods, the growth of the population is normally the main determinant of the growth of the labor force—or rather, the growth of the adult population. If the annual average labor force in 1956 was about 2 per cent larger than in 1955, it was mainly because the adult population increased roughly in that ratio; and this is the usual state of affairs. And if we can predict the size of the adult population in the year 2,000, we shall not be very far wrong in predicting the size of the labor force.

The growth of the labor force is therefore determined primarily by the fundamental demographic factors of fertility, mortality, and migration. The influences of these factors can be measured in an approximate way by the methods illustrated in Notestein's paper. In his charts, even if they are limited to the female population, we can see in a general way how the changes of fertility, mortality, net immigration, and also the peculiarities of the original age structure, affected the size of the labor force and its numerical relation to the total population during a 25-year period.

For a more accurate measure of the effects of these demographic variables, it is necessary to introduce labor force participation rates into the calculations, and take account of the changes in these rates and their

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interaction with the changing numbers in the different sex-age groups of the adult population. This analysis can be extended back to earlier periods, and in this way we can get a more exact measure, for instance, of the effect of changing fertility on the number of children in the labor force than Lebergott has given.

For still more accurate measures, we should have to take account of interactions between labor force participation rates on the one hand and the fertility, mortality, and migration rates on the other hand. These interactions, however, are of a secondary order of importance. The level of fertility affects the participation rates of women, and vice versa. Lebergott refers to the studies of the changes during 1890-1930 and 1920-1940 which showed that the decline of fertility could have accounted for only a small share of the large increase in the number of working women. Gertrude Bancroft's new book contains an analysis of the growth of the female labor force between 1940 and 1950 which indicates that the marriage and baby boom had a fairly important restraining influence, but not enough to prevent a very large increase in the female labor force during this decade.<sup>1</sup>

Changing mortality rates can also affect labor force participation rates through the medium of widowhood and orphanhood, but here we are considering influences of really small relative importance. Large-scale immigration or emigration is more important, as it is likely that the migrants will not only be largely in the sex-age groups to which the highest participation rates apply, but also that their participation rates will be higher than those of nonmigrants of the same sex and age. However, in the United States, international migration during the last 30 years has not been large enough to rank as a major factor. Off-farm migration of the native population is now much more important as a factor influencing the trend of the labor force participation rates.

It is also necessary to consider the possibility that the participation rates may be influenced by changes in the rate of population growth. If the increase of the adult population lags behind the demand for labor, participation rates may rise, and if population growth overtakes demand, participation rates may fall. I say *may*; I do not know if it is true, and if it is true, we have no means of estimating the amount of the effect. Lebergott thinks that the increasing female participation rates in the last few decades could be explained partly by the cutting off of immigration. It may be so, but I think it is equally possible that this effect was unimportant.

<sup>1</sup> *The American Labor Force*, Wiley, 1958.

It is also possible, as Lebergott says, that changes in the participation rates for some sex-age groups tend to produce compensating changes in other groups. He refers to increasing female rates being stimulated partly by the loss of other customary sources of family income—income, that is, from employed children and from lodgers. I will not take issue, but I do not think we have any evidence of this.

On the other hand it cannot be denied that the sudden removal of an important segment of the labor force is likely to provoke an increase in participation rates of other segments of the population. We saw this very clearly, of course, during the war.

I am getting over now from the demographic interrelations into "exogenous" factors, if I may be permitted to use the economists' term. As Lebergott says, we have plenty of evidence to show that "exogenous" factors have been responsible for the greater part of the changes of the participation rates in this country during the last 80 years. Sometimes these nondemographic factors are lumped under the heading of "propensity"; I have done this myself, but the term does not do justice to the importance of demand factors; it implies that membership in the labor force is open to all who wish to join, which is obviously not true—except in the sense that anyone can get under the statistical definition by seeking work, even if there is no demand whatsoever for his services.

There are three groups in the population whose participation rates have been greatly affected by changing demographic and exogenous factors: women, children, and elderly men. Lebergott has discussed the first two; to fill out the picture I will only say that the changes in the participation rates of males over 65 have been no less spectacular and persistent. The decrease in average age of retirement—or relinquishment of economic activity—has continued in the 1950's after the interruption during the war. Bancroft's tables show only 35 per cent of white males over 65 in the labor force in 1955, by comparison with 41 per cent in 1940 and 1950, and 67 per cent in 1890.<sup>2</sup>

In Lebergott's very interesting analysis of the trends in labor force participation of women and children, I want only to raise questions about a few details. For one thing, I am somewhat doubtful about the reliability of the evidence from the censuses that child labor was increasing during the late nineteenth century. As for the fascinating estimates of the female labor force in 1830, I wonder what happened to the agricultural component, and I would be glad if he would clarify this question. One more point: I am dubious of comparisons of female participation rates for

<sup>2</sup> *The American Labor Force*, Wiley, 1958.

different groups where age is not controlled. I think this applies to the data on indebtedness and purchases of durable goods on the part of families with and without working wives.

In his conclusions as to the main explanations of the most recent increase in female participation rates, Lebergott says: "On the supply side, the incentive is to be found in the dazzling array of material goods now incorporated into the American standard of living."

Bancroft's emphasis is a little different. She analyzed the female labor force with regard to educational level, occupation, family-income classes, and the like, and found that in general it is not the lower but the upper social-economic groups who are spearheading the present female invasion of the labor market—the Joneses themselves—those same elite pace-makers who have been bearing the standard of the new four-child, three-seated station wagon ideal. Bancroft says cautiously, "the data give some support for the belief that, in addition to the need or desire for income, other motives for labor force activity have assumed importance in recent years."

For the economic consequences, it is pertinent to consider that increasing employment of married women means an increasing frequency of two-worker families, which has an obvious bearing on the shape of the family-income distribution. This is relevant, of course, to the building of models for exploration of economic and demographic relationships, and for prediction of future trends of consumers' expenditures, and so forth.

I have not touched on internal migration or urban-rural and other geographical differences in natural increase and labor force participation rates, and there is hardly any time to talk about these matters now, but they are obviously of capital importance for investigation of labor force and population relationships below the national level. We now have a rich store of material for research on these aspects of the subject in the monumental compilation of historical data and estimates of internal migration and labor force by states since 1870 which recently issued from the University of Pennsylvania.<sup>3</sup>

<sup>3</sup> *Population Redistribution and Economic Growth, United States, 1870-1950*, American Philosophical Society, 1957.