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Chapter Title: Labor Force Estimates, 1914-1923

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the labor force. In times of great depression millions who have no chance of filling a job might conceivably go on claiming employability because they would be employable in normal times. Moreover, some young persons, wives, and old people who may say (honestly enough) they are actively seeking work would, if the chief breadwinner of the family got his job back or a raise in wages, quit their jobs or their search for jobs and thus sever their labor market attachment.

The net outcome of these two psychological tendencies cannot be determined by mere logical deduction. For the purposes of this study it is even less vital than it may seem. Concerning the group clinging to its normal employability, perhaps the best standard after all is an economic system running rather satisfactorily (normally). Should labor force status admit only those able to hold a job under the most trying conditions, *though the very process of employing them would abolish these abnormal conditions?*

The 'psychic' unemployed, in the labor force only during depressions, clearly belong neither to the net productive force nor to the normal labor force.⁵ Anyway, no appreciable number of them has ever been included in the census labor force figures (Sec. 4). Consequently, the propensities measured by the census and monthly poll may well reflect without serious distortion the true fluctuations in the labor force. If so, the propensity to be in the productive labor force is rather insensitive to economic fluctuations. That this is so is shown by the census experience, and, when effects of the draft are eliminated, by the monthly poll experience also (Sec. 4).

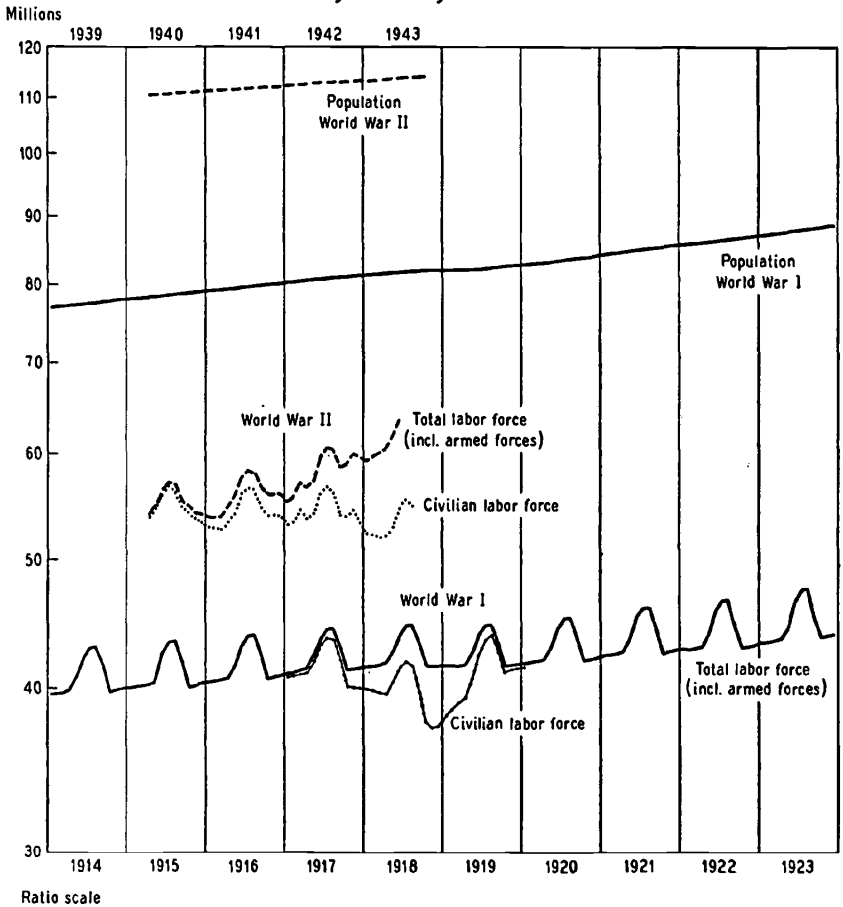
2 LABOR FORCE ESTIMATES, 1914-1923

Structural Estimates of the Normal Labor Force

Before 1940 the United States labor force was not counted oftener than at the decennial censuses of population. The monthly figures, 1914-23, explained in Appendix A and depicted in Charts 1 and 2, are mere interpolations of them and rest upon two assumptions:

⁵ Loring Wood of the War Production Board has requested me to emphasize the point, already implied, that many of the additional workers might conceivably get jobs and thus force primary workers into unemployment. If the number of these cases happened to be relatively large, the term 'psychic' work seekers would not be truly descriptive. The inflation in the number of unemployed, though equal to the number of additional workers, would consist of both 'psychic' and 'real' work seekers. Actually my term psychic work seekers is intended to describe, not the personnel of a true cohort, but a *statistical equivalent* of the inflation in work seekers due to psychological consequences of economic depression.

CHART 1
Population 10 Years and Older and the Labor Force,
by Military Status



Ratio scale

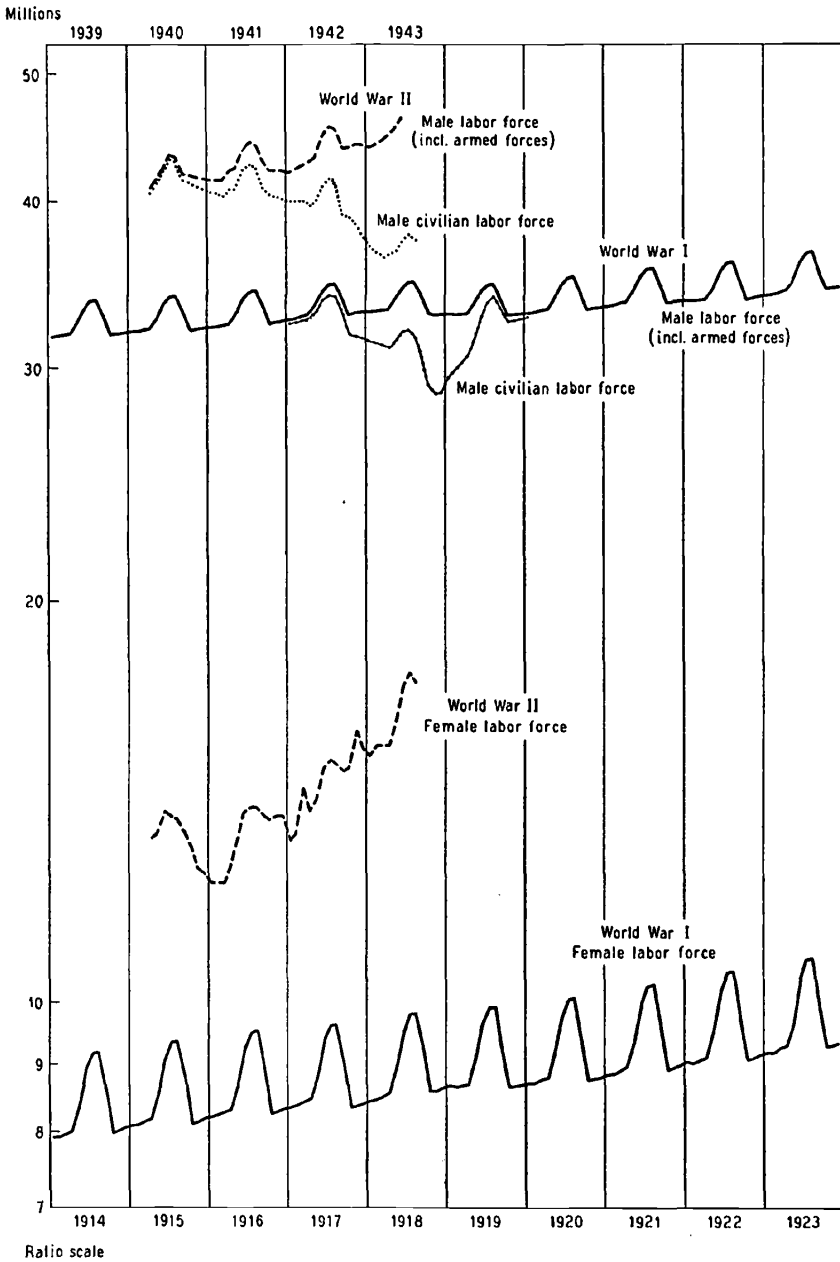
First, that the labor force propensities of persons of a given age and sex follow the census to census trend. Second, that the labor force increases and decreases only with opposite movements in the marriage status of women and the school attendance of children.

If these two assumptions are sound, two kinds of information were needed to deduce the labor force of each month. One concerned the labor force propensities at census dates. These, of course, were already at hand. The other concerned the population's size, age, and sex, and its school and marriage status in each intervening month. The latter information was difficult to get.⁶ First it

⁶ The magnitude of the task will be set out in considerable detail in a later publication. Brief notes on the method are given in Appendix A.

CHART 2

Males and Females 10 Years and Older in the Labor Force



was necessary to obtain estimates of the population itself. Annual estimates of males and females 10-13, 14-17, 18-24, 25-44, 45-64,

and 65 and older were arrived at by the age-survival-immigration, or cohorts, method. Estimates for 1914-19 are my own, those for 1920-23 have been newly prepared by the Census Bureau.

The principal task in estimating the population was to get good yearly reckonings for 1914-19. Although my estimates of aggregate population 10 and older agree with the newly revised Census estimate of the total population,⁷ my figures for age-sex groups were rebuilt by the cohorts method. This device, while laborious, seemed more exact than the census device of constructing parabolic age-sex groups through census dates, then adjusting these age-sex interpolations to the totals constructed from annual births, deaths, and immigration, though it cannot be proved to have yielded more exact results. It is impossible here to go into the many problems that had to be solved: of smoothing for inaccurate age reporting at census dates, manifested in the bunching of ages at familiar or round numbers; of allowing for the varying incompleteness of different census counts; of finding exact and detailed migration and death data. At any rate, the total population figures obtained by taking the demographic factors into account exceed the former census figures obtained by arithmetic progressions—in some years by as much as one and a third million. Though the former census figures have been superseded by the new census estimates mentioned above as agreeing with my own, the National Industrial Conference Board's labor force estimates were based on the superseded figures, a fact of some importance for the discussion in Section 7.

The next step was to estimate monthly figures; except for a few months in 1914 and 1918-19, they are linear interpolations between the yearly estimates at July. The two exceptions were periods of reversal of migration and of influenza pandemic, respectively, when the linearity was modified by means of migration and death statistics. After monthly estimates of the sex and detailed age groups had been made, each child and female group had to be sub-classified by its school or marital status. Monthly statistics on students by sex and age were hard to come by and are not entirely trustworthy.

Rather complete school enrollments for alternate years were obtained from the United States Office of Education; good materials on yearly enrollment from the state departments of education and from

⁷ As nearly as can be figured. My estimates cover population 10 and over; comparable census figures had to be gotten by subtracting the census estimates of population 0-9 from census totals; exact comparison is therefore impossible. This and other problems have been analyzed in detail for a later publication.

colleges. Monthly enrollment figures for public schools by sex and grade were, however, sent in by only four cities;⁸ and college and university enrollments by class (from which monthly data could be approximated) by only fifteen higher institutions. Furthermore, in the decennial census school data, the answers were obscure as to what time of year attendance referred to and how 'grades' might be converted into 'ages.'

When the structure and status of the population had been ascertained, estimates of the monthly labor force could be built upon them. Accordingly, the percentages of each age-sex-status group in the labor force at census time were interpolated monthly; these monthly percentages were then applied to the number of people in that group.⁹ Some soundings indicated that further classification, by color and nativity, would not give more exact results, except perhaps for the school-age group. For that group, however, school enrollments were not available in such detail, and it seemed more reliable to reckon the labor force under 25 by means of school enrollment data alone (Charts 3 and 4).

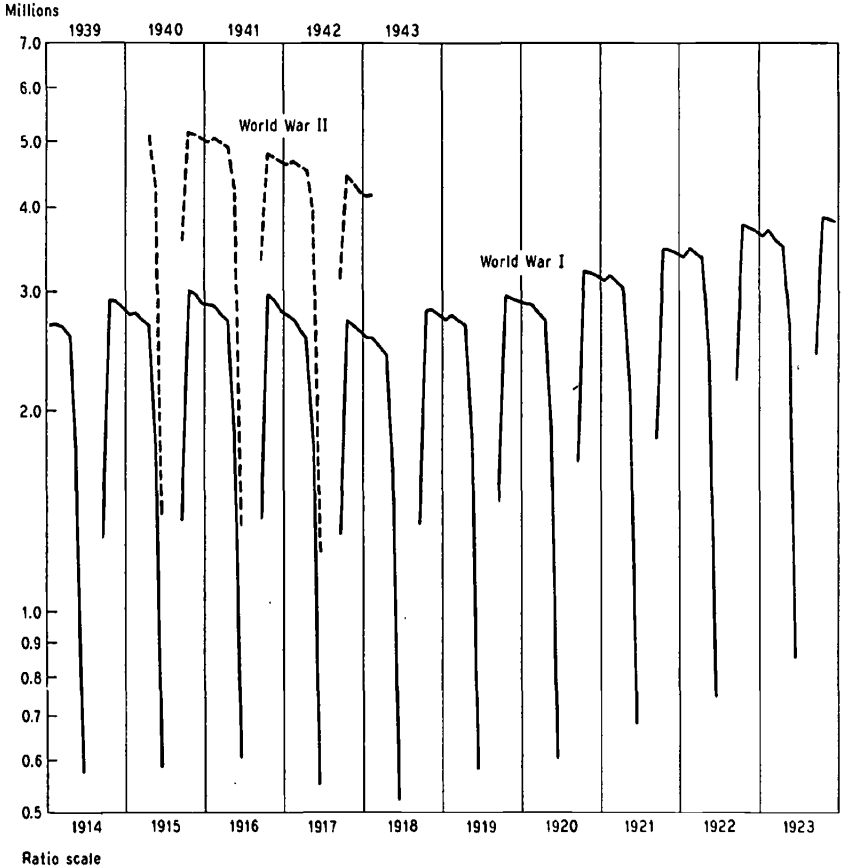
Though the propensity to be in the labor force may be the same at various census dates, population characteristics remaining constant, it may fluctuate with changes in population characteristics. It may fluctuate also as the result of seasons, depressions, and wars. Seasonal variations are treated in Section 4.

Variations during depressions are discussed in my article on The Concept of Unemployment (*Quarterly Journal of Economics*, Nov. 1942) as features of the 'gross' (psychological) labor force. Whether the psychological labor force rises or falls in depressions is tested in Section 4. The chief interest here lies in the labor force ready to work when the whistles blow—the 'net' productive labor force—and so far as possible, this is the concept used in this study. Other concepts, however fascinating for a study of community psychology, are not the concern when an economy is busy, as in wartime. The task here is to reckon the labor force of an economy that is at least

⁸ New York, Baltimore, Newport, R. I., and Portland, Ore. Hundreds of cities and counties and all forty-eight state departments of education were approached; Maryland alone could supply monthly data for 1914-23.

⁹ The labor force during May-September of each year can be set forth only as limits, because no benchmark exists for the summer labor status of vacationing school children. Moreover, the summer labor status doubtless varies pretty much as work opportunities raise and lower the generally known standards of employability. The summer maximum is based on the assumption that school children have the same labor force propensities in summer as children who do not go to school at all.

CHART 3
Males 14-24 Enrolled in School



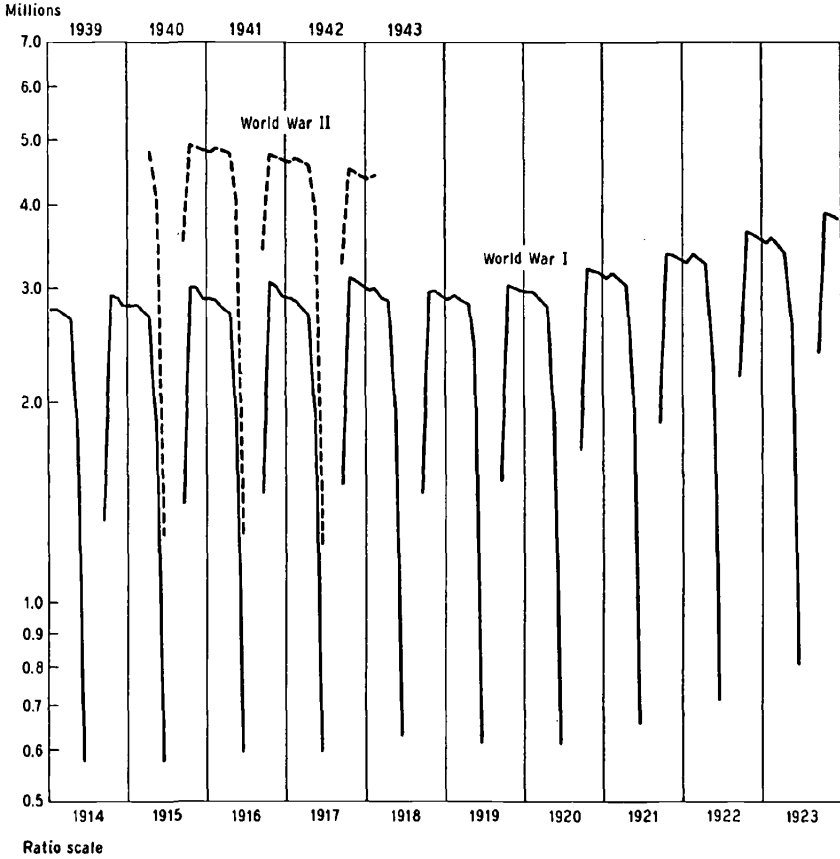
reasonably busy. Such a normal net labor force is what the census data on the whole have measured in fact, though in principle they have measured the gross labor force. For at the census dates of April 1910, January 1920, and April 1930, the nation was not far from being normally active. If allowance is made for the predictable trends mentioned, the censuses give labor force percentages that were strikingly similar for similar population groups. In studying the labor force in wartime, therefore, fluctuations in it incidental to the psychology of unemployment may well be disregarded.

Wartime additions, however, are real additions to the normal labor force, because the new members become *productively employed*, not, as may be the case in depression, *psychologically unemployed*. How to measure them in World War I is perplexing. Ups and downs in

school enrollment and in the number of married women may reflect some. Whether the normal labor force did get net reinforcements during World War I is treated in Section 7.

CHART 4

Females 14-24 Enrolled in School



3 LABOR FORCE ESTIMATES, 1940-1943

The 1940 Census and the Monthly Poll

For each month since April 1940 the nation's labor force has been reckoned by a government agency. The estimates have been made in a fashion similar to that of the Gallup opinion poll. Though the monthly poll was begun late in 1939, the month of initial published estimate (April 1940) was presumably chosen to be the same as that of the decennial census enumeration (actually as of March 24-30). Some account of the method was printed from time to time by the WPA, which had promoted it. In its last official description,