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APPENDIX C

Labor Force, the Unemployed, and the Employed in Adult-Male Equivalents

TABLE C-1

United States:

Labor Force, the Unemployed, and the Employed in Persons 10 and
Older and in Adult-Male Equivalents, 1890-1950

(millions)

	1890	1900	1910	1920	1930	1940	1950
PERSONS							
<i>April</i>							
Labor force	23.2	28.8	36.2	41.7	48.9	52.8	60.1
Unemployed	...	...	1.3 ^a	...	3.2 ^c	8.0 ^d	2.9 ^e
Employed	...	...	34.9 ^f	...	45.7 ^f	44.8	57.2
<i>Monthly average</i>							
Labor force ^g	23.6	29.3	36.8	42.4	49.7	54.1 ^h	61.1 ^h
Unemployed	1.2 ⁱ	2.2 ⁱ	1.3	1.6 ^j	5.7 ^k	7.7 ^h	2.6 ^h
Employed	22.4	27.1	35.5	40.8	44.0	46.4	58.5
MONTHLY AVERAGE ADULT-MALE EQUIVALENTS ^l							
Labor force	19.6	24.3	30.9	35.9	42.9	46.9	53.9
Unemployed	1.1	2.0	1.2	1.5	5.3	6.9	2.2
Employed	18.5	22.3	29.7	34.4	37.6	40.0	51.7

Source and concepts: Appendix Table A-2, Chapter 3, and Appendixes E and F.

^a The census of 1910 had asked a question on unemployment but had never published the returns. At the author's request in 1948 a special tabulation was made. Since it covered only wage and salary workers 16 and older, the small degree of idleness among own-account workers and children 10-15 was estimated. Estimates were based on the relation of the unemployment rates of these groups to those of employees 16 and older, as reported by the 1930 census.

^b No question on unemployment was included in the 1920 census.

^c Class A and B unemployed. *Census of Unemployment, 1930*, Vol. I, p. 13. For discussion of the problems of classifying the idle in 1930, see Supplementary Appendix H.

^d The 8 million in April 1940 consisted of 5.1 million seeking jobs and 2.9 million on the rolls of federal emergency relief agencies, excluding the National Youth Administration. The census enumerated 2.5 million emergency workers but accepted the larger number registered. *Census of Population, 1940*, Vol. III, *The Labor Force*, Part 1, p. 3.

^e *Census of Population, 1950*, "Employment and Income in the United States by Region," *Preliminary Reports, 1951*, PC-7, No. 2, p. 21.

^f Labor force minus the number of unemployed.

^g The average in each decade year 1890-1930 was approximated by enlarging the labor force figure for April by 1.7 per cent, the mean excess of the monthly average, over the April labor force in 1947, 1948, and 1949. *Current Population Reports, Monthly Report on the Labor Force*, Series P-57, Bureau of the Census. These years were selected because they embraced a period when the seasonal pattern of employment would not be disturbed by cyclical or war-induced variations.

^h The labor force count of April 1940 by the decennial census was increased by 2.4 per cent of its absolute amount, and the unemployment figure was reduced by

APPENDIX C

3.6 per cent. These changes relied on the ratios of annual averages to April estimates. *Current Population Reports, Labor Force, Employment, and Unemployment in the United States, 1940 to 1946*, Series P-50, No. 2, p. 11. The labor force and unemployment decennial figures of April 1950 were multiplied by 1.016 and 0.886 respectively, ratios derived from *Current Population Reports, The Labor Force*, Series P-50, No. 31, p. 15.

¹In 1890 and 1900 the census reported unemployment for 1-3 months, 4-6 months, or 7-12 months during the years June 1, 1889 to May 30, 1890, and June 1, 1899 to May 30, 1900. The census turned the results into yearly means by taking the duration in each group as the mid-point. The method was not wholly satisfactory. Census reports: *1890, Report on Population of the United States*, Vol. 1, Part 2, p. cxxxvii, and *Compendium of the Eleventh Census*, Part 3, p. 387; *1900 (Special Reports), Occupations at the Twelfth Census*, pp. ccxxv-ccxxxiv. To shift the means for the two years ended May 30, 1890 and 1900 to those for the calendar years, it was decided, after study of employment and output data, that since unemployment was probably not greatly different in the last halves of 1890 and 1900 from that in the last halves of 1889 or 1899, the percentages in 1889-1890 and 1899-1900 could be used for 1890 and 1900. See: Clarence D. Long's monthly index of building permits in United States cities during 1889-1890 and 1899-1900, in *Building Cycles and the Theory of Investment*; Princeton University Press, 1940, chart following p. 98; The American Telephone and Telegraph Company's index of "general business" in Wesley C. Mitchell, *Business Cycles, The Problem and Its Setting*, National Bureau of Economic Research, 1927, p. 296; Committee on Unemployment and Business Cycles of the President's Conference on Unemployment, and a Special Staff of the NBER, *Business Cycles and Unemployment*, McGraw-Hill, 1923, Chart 10, p. 62; W. H. Shaw, *Value of Commodity Output since 1869*, NBER, 1947, pp. 34-35, 39, 51-52, 62.

²Since the 1920 census did not include a question on unemployment, the average here relies on Leo Wolman's estimate (1.4 million) for nonagricultural employees, supplemented to cover the small degree of unemployment among own-account workers and farmers, based on the 1930 ratios of unemployment rates of these groups to those of nonagricultural employees. Committee on Recent Economic Changes of the President's Conference on Unemployment, and . . . the NBER, *Recent Economic Changes in the United States*, 1921, p. 478. The 0.6 million figure, published by the National Industrial Conference Board in the *Economic Almanac* (1950, p. 163), is almost certainly too low: Clarence D. Long, *The Labor Force in Wartime America*, NBER, Occasional Paper 14, 1944, pp. 39-46.

³A special census survey was made for January 1, 1931, covering 21 selected urban areas with a combined population of over 20 million. The means of the unemployment percentages of these same areas as of April 1, 1930 and January 1, 1931, were used to extend the April rate to the whole country for the year. *Census of Unemployment, 1930*, Vol. II, pp. 365-366.

⁴For explanation of the weights used in converting the labor force of women and teen-agers to adult-male equivalents, see text of this appendix. The same weights were used for the employed and the unemployed.

APPENDIX C

TABLE C-2

United States:
Labor Force, the Unemployed, and the Employed in Adult-Male
Equivalents, 1940-1956

(millions)

ANNUAL AND QUARTERLY AVERAGES, ^a ADJUSTED FOR SEASONAL VARIATIONS ^b								
	<i>Labor Force</i>	<i>Unem- ployed^b</i>	<i>Employed</i>		<i>Labor Force</i>	<i>Unem- ployed</i>	<i>Employed</i>	
1940	47.7	7.1	40.6	1945	54.1	0.9	53.2	
I	47.4	7.0	40.4	I	55.5	0.6	54.9	
II	47.6	7.0	40.6	II	54.9	0.6	54.3	
III	48.0	7.2	40.8	III	53.8	0.9	52.9	
IV	47.7	7.2	40.5	IV	52.1	1.4	50.7	
1941	48.8	4.8	44.0	1946	51.9	2.0	49.9	
I	47.8	5.1	42.7	I	51.8	1.9	49.9	
II	48.9	5.1	43.8	II	51.7	2.0	49.7	
III	49.3	5.1	44.2	III	52.0	1.9	50.1	
IV	49.0	3.7	45.3	IV	52.1	2.0	50.1	
1942	50.6	2.2	48.4	1947	52.9	1.8	51.1	
I	49.4	3.4	46.0	I	52.5	1.7	50.8	
II	50.3	2.4	47.9	II	52.9	1.9	51.0	
III	50.8	1.9	48.9	III	53.0	2.0	51.0	
IV	52.1	1.3	50.8	IV	53.0	1.7	51.3	
1943	53.6	0.9	52.7	1948	53.8	1.8	52.0	
I	53.0	1.2	51.8	I	53.5	1.7	51.8	
II	53.5	0.9	52.6	II	53.5	1.7	51.8	
III	53.7	0.9	52.8	III	54.2	1.8	52.4	
IV	54.0	0.6	53.4	IV	54.2	1.8	52.4	
1944	54.3	0.6	53.7	1949	54.8	3.0	51.8	
I	54.0	0.6	53.4	I	54.7	2.2	52.5	
II	54.4	0.6	53.8	II	54.6	2.9	51.7	
III	54.2	0.6	53.6	III	54.8	3.3	51.5	
IV	54.7	0.4	54.3	IV	55.3	3.6	51.7	

APPENDIX C

TABLE C-2, *continued*

ANNUAL AND QUARTERLY AVERAGES, ^a ADJUSTED FOR SEASONAL VARIATIONS ^b							
	<i>Labor Force</i>	<i>Unem- ployed^b</i>	<i>Employed</i>		<i>Labor Force</i>	<i>Unem- ployed</i>	<i>Employed</i>
1950	55.8	2.7	53.1	1954	58.5	2.8	55.7
I	55.6	3.3	52.3	I	58.7	2.6	56.1
II	55.4	2.8	52.6	II	58.4	2.9	55.5
III	55.7	2.4	53.3	III	58.4	2.9	55.5
IV	56.3	2.2	54.1	IV	58.5	2.8	55.7
1951	57.2	1.7	55.5	1955	59.3	2.2	57.1
I	57.0	1.8	55.2	I	58.8	2.4	56.4
II	56.8	1.6	55.2	II	59.1	2.3	56.8
III	57.2	1.5	55.7	III	59.8	2.1	57.7
IV	57.8	1.8	56.0	IV	59.7	2.1	57.6
1952	57.5	1.5	56.0	1956	60.5	1.9	58.6
I	57.6	1.5	56.1	I	60.9	2.0	58.9
II	57.2	1.5	55.7	II	60.3	1.9	58.4
III	57.5	1.6	55.9	III	59.8	1.9	57.9
IV	57.6	1.5	56.1	IV	61.1	2.0	59.1
1953	57.8	1.3	56.5				
I	58.5	1.3	57.2				
II	57.5	1.3	56.2				
III	57.5	1.2	56.3				
IV	57.7	1.5	56.2				

Source and concepts: Appendix Table B-1, Chapter 3, and Appendixes E and F.

^a The female labor force was converted to adult-male equivalents on the basis of the ratio of the earnings of females to those of males: 0.58 in 1940 and 0.67 in 1950. The ratio was assumed to rise by roughly 0.01 each year during the intervening decade and to be 0.68 during 1951-1954. Adjustment was made for changes in the proportion of children 14-19 without dealing with the 14-19 groups on a quarterly basis, utilizing the ratios established by complete age-sex analysis in April of each year. The changes were instituted annually, in the first quarter. They were not large enough to cause a significant hiatus between the last quarter of each year and the first quarter of the next.

^b See note *a* to Table B-1. Unemployment was not adjusted for the period 1942-1945, when the seasonal variation in idleness was suspended by high wartime employment.

APPENDIX C

TABLE C-3

Great Britain:

Labor Force, the Unemployed, and the Employed in Persons 14 and Older and in Adult-Male Equivalents, 1911-1951

(millions)

	1911	1921	1931	1939	1951 ^a
PERSONS					
Census month ^a					
Labor force	18.2	19.3	21.1	22.9	22.6
Unemployed	0.3 ^b	2.4 ^c	2.6 ^d	1.4 ^d	0.4
Employed	17.9	16.9	18.5	21.5	22.2
Monthly average ^e					
Labor force	18.2	19.3	21.1	22.9	22.7 ^f
Unemployed	0.3	1.8	2.6	1.5	0.4 ^f
Employed	17.9	17.5	18.5	21.4	22.3
ADULT-MALE EQUIVALENTS ^g					
Monthly average					
Labor force	14.0	15.3	16.9	18.3	19.2
Unemployed	0.2	1.6	2.3	1.3	0.4
Employed	13.8	13.7	14.6	17.0	18.8

Source and concepts: Appendix Table A-9, Chapter 3, and Appendix F.

^a April in the years 1911, 1931, and 1951; June in 1921 and 1939. The 1951 statistics are from a 1 per cent sample tabulation. *Census 1951, Great Britain, One Percent Sample Tables*, London, General Register Office, 1952, Part I, p. 63.

^b Not in census returns. Approximated from idleness reported by trade unions. As justification for using the latter in connection with the subsequent employment exchange material, see W. H. Beveridge, *Full Employment in a Free Society*, Norton, 1945, p. 72.

^c Not published by the census. The number of insured jobless in 1921, as given by the *Nineteenth Abstract of Labour Statistics of the United Kingdom* (London, Ministry of Labour, 1928, Cmd. 3140, pp. 44, 79) differs from the 2.2 million reported by employment exchanges in the *Ministry of Labour Gazette* (London, July 1921, p. 361). According to T. S. Chegwiddin and G. Myrddin-Evans, "It is, however, probable that, at any rate among wage earners, the number of unemployed persons not included in the Ministry of Labour Statistics is inconsiderable." (*The Employment Exchange Service of Great Britain*, London, Macmillan, 1934, p. 59.)

^d In 1931 the census, utilizing a "not at work" concept, enumerated 0.2 million fewer unemployed than were registered by the insurance plans. The figures in both 1931 and 1939 include the insured and uninsured idle on the register of employment exchanges, and those who were "wholly idle," "temporarily stopped," and "normally in casual employment."

^e Average population and labor force in each decade year during 1911-1939 were assumed to be the same as those reported by the census, or estimated in this study for the census month.

^f Reported by the 1951 census from a 1 per cent sample of the enumeration. The average labor force for the year was obtained by multiplying the April figure by the ratio of the average working population at four quarterly dates to that for the end of March (*Monthly Digest of Statistics*, London, Central Statistical Office, No. 74, February 1952, p. 19). Unemployment for the year was assumed to be the same as that for April, on the basis of unemployment exchange data.

^g For explanation of the weights used in converting the labor force of women and teen-agers to adult-male equivalents, see text of this appendix following Table C-7. The same weights were used for the employed and the unemployed.

APPENDIX C

TABLE C-4

Canada:

Labor Force, the Unemployed, and the Employed in Persons 14 and Older and in Adult-Male Equivalents, 1911-1951

(millions)

	1911	1921	1931	1941	1951
PERSONS					
June					
Labor force	2.7	3.2	3.9	4.7	5.3
Unemployed ^a	...	0.3	0.6	0.3	0.1
Employed ^b	...	2.9	3.3	4.4	5.2
Monthly average					
Labor force ^c	2.7	3.2	3.9	4.7	5.3
Unemployed ^d	...	0.3	0.6	0.3	0.1
Employed ^b	...	2.9	3.3	4.4	5.2
ADULT-MALE EQUIVALENTS ^e					
Monthly average					
Labor force	2.3	2.7	3.4	4.0	4.6
Unemployed	...	0.3	0.6	0.3	0.1
Employed	...	2.4	2.8	3.7	4.5

Source and concepts: Appendix Table A-11, Chapter 3, and Appendix F.

^a For discussion of unemployment before 1921, see *Administration of Public Employment Offices and Unemployment Insurance*, New York, Industrial Relations Counselors, Inc., 1935, p. 16. The number in 1921 was extrapolated from that in 1931 by an index of trade union joblessness (*Canada Year Book*, Ottawa, Dominion Bureau of Statistics, 1933, p. 769). The source for 1931-1951: *Census of Canada* (Ottawa, Dominion Bureau of Statistics): 1931, Vol. vi, pp. 3, 1303; 1941, Vol. vi, pp. 920-921, 1010; 1951, Vol. iv, Table 1, p. 2.

The idle in 1931-1951 include persons absent from jobs because of illness, accident, holidays, and strikes. New seekers of work in 1931 were assumed to have amounted to the same percentage of gainfully employed wage earners as in 1941. A small allowance for the self-employed was added for the latter year on the basis of their relationship to idle wage and salary workers in the United States in 1930. The ratio was taken from the 1930, instead of the 1940 census because employment conditions in the two countries were more comparable in 1930.

^b Employment in 1921 and 1931 was derived by subtracting the number of unemployed from the labor force, but in 1941 and 1951 it was enumerated separately.

^c During 1947-1949, the labor force in June proved to be extremely close to the average for the four quarterly dates. In 1951 it was exactly the same (*The Labor Force*, Ottawa, Dominion Bureau of Statistics, Aug. 18, 1951, p. 12 and March 1952, p. 5). Since there is no reason to suppose that the situation differed in 1911, 1921, 1931, or 1941, the June labor force is taken to represent the annual figure in each of these years.

^d For 1921, 1931, and 1941, the relationships of annual to June unemployment were calculated from trade union percentages (*Ministry of Labour Gazette*, London, February 1922, p. 220; February 1942, pp. 211, 221; and *Canada Year Book*, 1932, p. 651). Although the seasonal variation was considerable, the June ratios were found to be so close to the annual ratios that when the final data were rounded no difference in numbers could be detected.

^e For explanation of the weights used in converting the labor force of women and teen-agers to adult-male equivalents, see text of this appendix following Table C-7. The same weights were used for the employed and the unemployed.

APPENDIX C

TABLE C-5

Canada:

Labor Force, the Unemployed, and the Employed in Adult-Male
Equivalents, Annual and Quarterly Averages, 1945-1956

(in millions,^a adjusted for seasonal variations^b)

		ANNUAL AVERAGES AND QUARTERLY ESTIMATES		
		<i>Labor Force</i>	<i>Unemployed</i>	<i>Employed</i>
1945	Nov. 17	4.48	0.17	4.31
1946		4.43	0.13	4.30
	Feb. 23	4.46	0.13	4.33
	June 1	4.44	0.14	4.30
	Aug. 31	4.41	0.15	4.26
	Nov. 9	4.42	0.12	4.30
1947		4.45	0.09	4.36
	Mar. 1	4.39	0.08	4.31
	May 31	4.45	0.10	4.35
	Aug. 16	4.48	0.10	4.38
	Nov. 8	4.49	0.09	4.40
1948		4.52	0.10	4.42
	Feb. 21	4.51	0.09	4.42
	June 5	4.53	0.09	4.44
	Sept. 4	4.50	0.09	4.41
	Nov. 20	4.53	0.11	4.42
1949		4.62	0.13	4.49
	Mar. 5	4.57	0.12	4.45
	June 4	4.60	0.12	4.48
	Aug. 20	4.60	0.13	4.47
	Oct. 29	4.71	0.15	4.56
1950		4.65	0.15	4.50
	Mar. 4	4.73	0.19	4.54
	June 3 ^c	4.44	0.16	4.28
	Aug. 19	4.69	0.13	4.56
	Nov. 4	4.72	0.12	4.60
1951		4.79	0.10	4.69
	Mar. 3	4.80	0.10	4.70
	June 2	4.78	0.10	4.68
	Aug. 18	4.78	0.09	4.69
	Nov. 3	4.81	0.10	4.71
1952		4.88	0.12	4.76
	Mar. 1	4.88	0.12	4.76
	May 31	4.89	0.13	4.76
	Aug. 16	4.87	0.11	4.76
	Nov. 22	4.88	0.12	4.76
1953		4.91	0.13	4.78
	Mar. 21	4.91	0.11	4.80
	May 16	4.88	0.13	4.75
	Aug. 22	4.94	0.12	4.82
	Nov. 21	4.90	0.16	4.74

APPENDIX C

TABLE C-5, *continued*

ANNUAL AND QUARTERLY AVERAGES OF MONTHLY ESTIMATES			
	<i>Labor Force</i>	<i>Unemployed</i>	<i>Employed</i>
1953	4.91	0.13	4.77
I	4.86	0.11	4.75
II	4.91	0.11	4.80
III	4.94	0.14	4.80
IV	4.91	0.17	4.74
1954	4.96	0.23	4.73
I	4.87	0.19	4.68
II	4.95	0.22	4.73
III	4.98	0.27	4.71
IV	5.02	0.24	4.78
1955	5.13	0.22	4.91
I	5.00	0.24	4.76
II	5.09	0.27	4.82
III	5.28	0.20	5.08
IV	5.15	0.19	4.96
1956	5.20	0.17	5.04
I	5.18	0.25	4.94
II	5.14	0.16	4.99
III	5.23	0.09	5.14
IV	5.27	0.15	5.11

Source and concepts: Appendix Table B-6, Chapter 3, and Appendix F.

^a The female labor force (both employed and unemployed) was converted to adult-male equivalents on the basis of the ratio of female, to male earnings—0.55 throughout the period; no adjustment was made for children because there were so few of them in the labor force.

^b For description of the method used in adjusting for seasonal variation, see note *a* to Appendix Table B-1.

^c Excluding Manitoba which was not enumerated because of flood conditions.

APPENDIX C

TABLE C-6

New Zealand:

Labor Force, the Unemployed, and the Employed in Persons 15 and Older and in Adult-Male Equivalents, 1896-1951

(thousands)

	1896	1901 ^a	1906	1911	1921	1926	1936 ^a	1945 ^a	1951
PERSONS									
Census enumeration ^a									
Labor force	282	328	383	437	506	548	645	675	701
Unemployed	17	10	9	8	13	13	38	7	9
Employed	265	318	374	429	493	535	607	668	692
Monthly average ^b									
Labor force	282	328	383	437	506	534	650	692	701
Unemployed	17	10	9	8	13	15	44	7	9
Employed	265	318	374	429	493	519	606	685	692
ADULT-MALE EQUIVALENTS ^c									
Monthly average									
Labor force	257	297	348	394	452	480	582	611	622
Unemployed	16	10	9	8	12	14	43	7	8
Employed	241	287	339	386	440	466	539	604	614

Source and concepts: Appendix Table A-14, Chapter 3, and Appendix F. *Population Census* (Wellington, Census and Statistics Dept.): 1936, Vol. XI, *Unemployment*, pp. i, 1; 1945, Vol. IX, p. vi; 1951, Vol. IV, pp. 9-10.

^a The census was enumerated in March of 1901 and 1936, in September of 1945, and in April of the other years.

^b Because data on fluctuations within the year were lacking for 1896-1921, the monthly averages are assumed to be the same as the census enumerations. However, variations in factory employment during 1926 and 1936, in idleness rates of trade union members during 1926 and in the registration of the unemployed during 1936, indicated that the annual data did not differ significantly from those of the censuses. The monthly average for each category in 1951 and that for the unemployed in 1945 are also assumed to be the same as the census enumerations—on the ground that employment in industry, as registered by national employment service statistics in 1951, and unemployment benefits in force in 1945 and 1951 yielded annual averages very close to the census data. *New Zealand Official Year Book: 1929*, p. 860; *1938*, p. 802; *1947-1949*, p. 717; *1951-1952*, p. 868. *Statistical Report, Prices Etc. for the Year 1926*, p. 64; *Statistical Report on the Factory and Building Production of the Dominion of New Zealand for the Year 1936-7*, p. 35; *Report on Prices, Wages, and Labour Statistics of New Zealand for the Years 1951-52 and 1952-53*, pp. 53, 58-65. All Wellington, Census and Statistics Dept.

^c For explanation of the weights used in converting the labor force of women and teen-agers to adult-male equivalents, see text of this appendix following Table C-7. The same weights were used for the employed and the unemployed.

TABLE C-7

Germany:

Labor Force, the Unemployed, and the Employed in Persons 14 and Older and in Adult-Male Equivalents, 1895-1950

(millions)

	Post-World War I Boundaries (without Saar)					Federal Republic of Germany (without Berlin)		
	1895	1907	1925	1933	1939	1939	1946	1950
PERSONS								
Census month ^a								
Labor force	19.4	24.8	31.8	32.2	34.9	20.3 ^e	19.4 ^f	22.1 ^g
Unemployed	0.3 ^b	0.5 ^c	0.6 ^d	5.9 ^d	0.1 ^e	0.0 ^e	1.2 ^f	1.4 ^g
Employed	19.1	24.3	31.2	26.3	34.8	20.3 ^e	18.2 ^f	20.7 ^g
Monthly average								
Labor force	19.4	24.8	31.3	31.6	33.5	19.6 ^e	19.4 ^f	21.9 ^g
Unemployed	0.3 ^b	0.5 ^c	1.3 ^d	5.7 ^d	0.1 ^e	0.1 ^e	1.2 ^f	1.8 ^g
Employed	19.1 ^b	24.3 ^c	30.0 ^d	25.9 ^d	33.4 ^e	19.5 ^e	18.2 ^f	20.1 ^g
ADULT-MALE EQUIVALENTS ^b								
Monthly average								
Labor force	14.6	18.5	23.7	24.9	25.4	14.9	14.7	17.2
Unemployed	0.2	0.5	1.3	5.2	0.1	0.1	1.0	1.5
Employed	14.4	18.0	22.4	19.7	25.3	14.8	13.7	15.7

Source and concepts: Appendix Table A-17, Chapter 3, and Appendix F; *Vierteljahrshefte zur Statistik des Deutschen Reichs*, Berlin, Kaiserliches Statistisches Amt, 1896, Vol. v, Supplement to Vol. 4, pp. 16, 18.

^a Census months: 1895-1933, April; 1939, May; 1946, October; 1950, September.

^b Unemployment was adjusted to that within the post-World War I boundaries on the basis of census data. Averages for employment and unemployment are taken to be the same as the census figures for April 1, the assumption regarding unemployment resting on quarterly material for 1910 and 1911. *Statistisches Jahrbuch*, Berlin, Kaiserliches Statistisches Amt, 1912, p. 404.

^c The rate of joblessness, 1.6 per cent, reported by trade unions was extended to a percentage of the labor force by multiplying it by the ratio of the census to the trade union percentage in 1925, yielding 1.9 per cent or 0.5 million. For conversion of April, to annual idleness, see previous note.

^d April figures, reported by the census, were multiplied by ratios of average monthly, to April data reported by health insurance schemes for employment and by trade unions for unemployment. *Statistisches Jahrbuch* (Statistisches Reichsamt), 1926, p. 294; 1935, pp. 18, 306. *Weekly Report of the Institut für Konjunkturforschung*, Berlin, February 1934, Third Supplement, Appendix D.

^e For the Federal Republic of Germany, estimates by the Wirtschaftswissenschaftliches Institut der Gewerkschaften include wage and salary workers and exclude the self-employed. May and yearly employment and unemployment were reported by employment offices for the older and for the enlarged territory. *Statistisches Jahrbuch*, 1941-1942, pp. 410, 426. In determining yearly averages the same percentage rate was attached to the Federal Republic of Germany. *Deutschland in Zahlen*, Köln, Wirtschaftswissenschaftliches Institut der Gewerkschaften, 1951, p. 33.

^f Census data. *Wirtschaft und Statistik*, Wiesbaden, Statistisches Amt des Vereinigten Wirtschaftsgebietes, February 1950, p. 1168.*

^g Census data. *Statistik der Bundesrepublik Deutschland, Die Berufliche und Soziale Gliederung der Bevölkerung Nach der Zählung vom 13.9.1950*, Wiesbaden, Statistisches Amt des Vereinigten Wirtschaftsgebietes, Vol. 36, Part 1, No. 2, pp. 14-15; yearly averages from *Wirtschaft und Statistik*, December 1950, p. 1293,* and January 1952 (Statistisches Bundesamt), p. 7.*

^h For explanation of the weights used in converting the labor force of women and teen-agers to adult-male equivalents, see text following this table. The same weights were used for the employed and the unemployed.

Adjustment to Adult-Male Equivalents

Aside from differences in productivity based on sex and age, women and children earn less than adult males (1) because they ordinarily command lower hourly rates, even for equal work; (2) because they hold the less desirable jobs; and (3) because they work fewer hours and less regularly. This study does not differentiate the variations in pay due to differences in skill, for though the tendency to be in the labor force may be affected by earnings, there is no expectation that these variations would require separate treatment. The purpose here is to ensure that increases in the proportion of women and children who work for low wages do not produce a deflationary effect on average earnings and thus produce in turn a spurious correlation between the labor force and income. Women and children therefore, are weighted merely according to earnings, whatever may be the reason for their lower rates of pay.

UNITED STATES.

The hourly wages of women appear to have ranged between a tenth and a fourth, and to have averaged a sixth, below those of men in the same work.¹ Women generally have never tended to be in the same work: the fact that they normally aspire to less skilled or responsible jobs, and lose more time than men for sickness, shopping, housework, or courting, and vary somewhat in age, explains why their weekly or annual earnings are still lower. For the three decades between 1890 and 1919, there are no separate records for male and female compensation in all industries, but there are enough data on manufacturing to indicate that the relative average weekly pay of female factory workers remained fairly stable—at about 52–54 per cent of that of males. Since 1919, however, the rise in the ratio of female, to male earnings has been appreciable. The pronounced increase since 1939 is

¹ For example, see: wage rates cited for men and women labelers and packers in the paint and varnish industries in eleven large cities in August 1947, or those for general and payroll clerks and hand bookkeepers in fifteen manufacturing industries in 1946, in "Equal Pay for Equal Work for Women," in *Subcommittee of House Committee on Education and Labor, on H. R. 4273, H. R. 4408, Feb. 10, 1948, p. 12*; John H. McNeely, "Salaries in Land Grant Universities and Colleges," processed, Office of Education, Pamphlet No. 23, November 1931, p. 3; A. J. Klein, "Survey of Land Grant Colleges and Universities," processed, Office of Education, Bulletin 9, 1930, pp. 386–389; average hourly earnings of employees in radio, electrical, soap, and meat-packing enterprises, in Temporary National Economic Committee, "Hourly Earnings of Employees in Large and Small Enterprises," Monograph No. 14, 1940, 76th Cong., 3rd Sess., p. 14; median full-time earnings of women in relation to those of men in cotton mills, South Carolina and Maine, 1932, in M. E. Pidgeon, "Variations in Wage Rates under Corresponding Conditions," Bulletin of the Women's Bureau, No. 122, 1935, p. 56.

APPENDIX C

seen not only in factory payrolls but also in the income statistics for households of workers employed in manufacturing. Table C-8 of this appendix presents the approximations used in weighting women in the labor force to adult-male equivalents. The ratios in other industries may differ somewhat from those in manufacturing, but there is no indication that the latter are not representative.

TABLE C-8

United States:

Average Weekly Earnings of Females as Percentage of Those of Males, Manufacturing Industries, 1889-1949

1889	1899	1909	1919	1929	1939	1949
0.52	0.54	0.54	0.54	0.57	0.58	0.67

Source and explanation: Census of the United States: 1900, Davis R. Dewey (Special Reports), *Employees and Wages, Manufactures*, Part 4, Vol. x, pp. 29-99; 1920, Paul F. Brissenden, *Earnings of Factory Workers, 1899 to 1927* (Census Monographs X), p. 85; 1940, *Wage or Salary Income in 1939, Population, The Labor Force* (Sample Statistics), pp. 133-136. Maurice Leven, *Income in the Various States: Its Sources and Distribution, 1919, 1920, and 1921*, National Bureau of Economic Research, 1925, p. 79; M. A. Beney, *Wages, Hours, and Employment in the United States, 1914-36*, National Industrial Conference Board, 1936, pp. 48-50; *Handbook of Facts on Women Workers*, Dept. of Labor, Bull. 237, 1950, p. 29. Derivation of percentages: 1889, median weekly earnings of males and females 16 and older, employed in a selected group of 15 manufacturing industries during the year ended June 1, 1890; 1899-1919, actual annual earnings of males and females 16 and older in all manufacturing industries combined; 1929 and 1939, weekly earnings of males and females of all ages in 25 manufacturing industries reporting to the N.I.C.B. (the ratio of female, to male earnings in this group is somewhat above the 53 per cent derived from the census household data on 1939 median wages and salaries of workers employed in manufacturing in March 1940); 1949, average weekly earnings of male and female production workers in manufacturing industries, reported by the N.I.C.B. for 1948 and by the state departments of labor in Illinois and in New York for 1949. Pertinent data for 1949 were not included in the preliminary reports of the 1950 census, but a current population report for 1947 reveals that median income of females in factories was 62 per cent of that of males. Although in both years the percentages based on the census figures were below those of the N.I.C.B. and of the two states, the relative rise for women was the same.

The relative weekly earnings of children showed still lower ratios to those of men—roughly 30 per cent in manufacturing during 1889-1919 for those under 16, and in all industries in 1939 for those 14-19 who worked 12 months of that year.² Throughout 1889-1949, a worker under 20 years of age is therefore given a weight in the labor force which is equal to one-third that of an adult male.

GREAT BRITAIN, CANADA, NEW ZEALAND, AND GERMANY.

In other lands women receive wages three-quarters to nine-tenths of those of men in identical or similar jobs, and earn still less in practi-

² Census reports of 1900, 1920, and 1940. See source note to Appendix Table C-9.

cal effect.³ The ratio of female to male earnings in Britain may have made about the same gain as in this country since before World War I, but throughout the period women's wages have remained at appreciably lower relative levels than those which prevailed in the United States. The percentages of adult-male earnings used in weighting the labor force of females 20 and older in Britain are taken to be 40 in 1911; 50 in 1921, 1931, and 1939; and 60 in 1951, approximating in round numbers and dates the percentages in Table C-9. The proportion used for British workers of both sexes under 20 in all of the decades is one-third.

Canada and Germany furnished no information on the earnings of girls and boys. It is assumed here that the pay of young people was the same, in relation to the earnings of men, as in the United States and Britain. The relative pay of females in Canada and Germany has manifested no definite trend over the years; the earnings of those 20 and older have maintained a constant proportion to the earnings of males: 55 per cent.

Data of New Zealand indicate that women earned slightly over five-tenths as much as men at various times during 1914-1945 and about six-tenths as much in 1949 and 1950. These ratios are not greatly different from those in the other countries, but in New Zealand the percentages for boys and girls are definitely above those in the United States or in Britain, and during the period through 1945 boys and girls here are given weights equal to 45 and 35 per cent, respectively, of those of adult males.

Labor Force Adjustments Considered but Not Made

In connection with our interest in measuring labor supply or input, it would have been theoretically desirable to adjust the decennially enumerated labor force as the current estimates were adjusted: deducting the number of persons who were nominally in the labor force but who were not available for work in the week or month of the enumeration, and adding the number of those who were not nominally in the labor force but who were available at that time. But it so happened in 1930 and 1940—the only years for which the data were available to permit such corrections—that the deductions and additions would have offset each other within a few hundred thousand, too few, in view of the imprecision of the data, to warrant an adjustment. For 1950, it would have

³ Comparison of wages paid women and men in nonindustrial civil service and post-office jobs, teaching, manual work in distribution and non-manual work in private industry as reported in "Highlights of the British Equal Pay Report, Royal Commission on Equal Pay, 1944-1946," processed, Women's Bureau (United States), January 1947, pp. 1-9; *Statistisches Jahrbuch für das Deutsche Reich*, 1927, Herausgegeben vom Statistischen Reichsamt, Berlin, Reimar Hobbing, p. 321.

TABLE C-9

Average Weekly Earnings of Women and Young People in Manufacturing as Percentages of Those of Males, 4 Foreign Countries, Various Periods, 1906-1951

<i>Great Britain</i>		1906 ^a	1924 ^b	1928 ^b	1940 ^c	1951 ^d					
Women 18 and older		38	48	48	47	57					
Boys under 21		36	...	...	38	39			
Girls under 18		22	...	...	27	34			
<i>Canada</i>		1911 ^e	1921 ^e	1931 ^e	1939 ^e	1941 ^e	1942 ^e	1943 ^e	1944 ^e	1945 ^e	1946 ^e
Females 10 and older		53	54	53	58	55	55	57	60	57	55
<i>New Zealand</i> ^h		1914	1939	1945	1949	1950					
Adult women		50	52	51	60	61					
Boys		47	48	47	57	58					
Girls		35	41	39	48	50					
<i>Germany</i>		1913 ⁱ	1925 ⁱ	1936 ⁱ	1939 ⁱ	1947 ^k	1950 ^k				
Females		54	58	56	54	55	59				

^a Median ratios to adult males, including persons who worked less or more than full time, based on weekly earnings in 37 manufacturing industries in the United Kingdom in the last pay week of September 1906. *Sixteenth Abstract of Labour Statistics of the United Kingdom*, London, Ministry of Labour, 1925, pp. 99-116.

^b *Twentieth Abstract of Labour Statistics of the United Kingdom*, 1929, pp. 99-100.

^c All manufacturing, week ended July 20, 1940. *Ministry of Labour Gazette*, London, November 1940, p. 280, and December 1940, p. 306. The ratios were computed by the U.S. Bureau of Labor Statistics. *Monthly Labor Review*, BLS, September 1947, p. 289.

^d Based on the last pay week in October 1951. The ratios for government and for all industries, including mining, building, and public utilities—very close to those for manufacturing—are: women, 54 per cent; youths, 42 per cent; and girls, 35 per cent. *Ministry of Labour Gazette*, March 1952, p. 82.

^e Based on the average wages of employees 10 and over, by sex, in all industries during the twelve months prior to June 1, 1911 and 1921. *Canada Year Book*, 1936, Ottawa, Dominion Bureau of Statistics, p. 801.

^f Based on the average wages of manufacturing employees 10 and over, by sex, in the twelve months preceding June 1, 1931. In all industries the percentage was 60. *Canada Year Book*, 1936, pp. 802-803.

^g Based on the average annual wages of manufacturing employees. *Canada Year Book*, 1950, p. 625.

^h *New Zealand Official Year Book*, 1950, Wellington, Census and Statistics Dept., pp. 720-722.

ⁱ Average ratios of weekly earnings of unskilled female, to skilled male employees in the textile and the Kartonnagen industries. *Statistisches Jahrbuch*, Berlin, Statistisches Reichsamt, 1927, p. 321.

^j Ratio of female, to male weekly earnings in manufacturing and mining throughout the period 1936-1943 and in March 1944. No data are available for the Federal Republic of Germany in 1939; therefore, the same ratio was used as for total Germany. *Statistisches Handbuch von Deutschland, 1928-1944*, München Länderrat des Amerikanischen Besatzungsgebiets, 1949, p. 469.

^k Data refer to the Federal Republic of Germany only. *Statistisches Jahrbuch*, Wiesbaden, Statistisches Bundesamt, 1952, p. 412.

APPENDIX C

been unsafe to make the net reduction called for by the figures (about a million) considering the unknown volume of additions that would surely have been required to make up for omitted entries—respondents who were not explicit as to their labor force status. Since for 1930 and 1940 these omissions have been estimated by the census to have numbered about a half million, and since the 1950 enumeration yielded 3-1/2 million fewer in the labor force than did the monthly survey for the same month, the omitted entries may, in fact, have necessitated a net addition.⁴ Under the circumstances, it seemed preferable to make no adjustment rather than one that might be in the wrong direction. Nevertheless, it seems worth while to present the following brief discussion of the nature and amount of the counter adjustments that could have been made for 1930, 1940, and 1950.

ADDITIONS.

No correction would have been needed in 1940 and 1950 for new job seekers, mainly ex-schoolboys; in both censuses such inexperienced persons were enumerated separately. They were, however, nominally excluded from all previous censuses, supposedly because they would have been unable to claim a customary occupation. That many youths were thus completely without experience, or would not have been classified in the type of work to which they aspired, may be doubted. Had an adjustment been made, the Durand-Goldfield calculation, that about 0.2 million were wrongly omitted in 1930, would have been accepted. Their estimates for the other omitted entries would have been accepted also—entries presumably omitted because of carelessness or lack of information, totaling 0.4 million in 1930 and 0.5 million in 1940.⁵

SUBTRACTIONS.

No deduction was required for persons unavailable because of strikes, since data of the Bureau of Labor Statistics indicate that work stoppages were negligible in 1930, 1940, and 1950.⁶ Nor was it necessary to subtract inmates of institutions from the 1940 and 1950 censuses, as they were not reported in these years as gainfully occupied, but 0.2 mil-

⁴ Clarence D. Long, *The Labor Force in War and Transition: Four Countries*, National Bureau of Economic Research, Occasional Paper 36, 1952, p. 48 n., and "Statistical Standards and the Census," *American Statistician*, February 1952. See also Morris Hansen's reply and Long's rejoinder in the latter publication, same issue.

⁵ *Census of Population, 1940*, Alba M. Edwards, *Comparative Occupation Statistics for the United States, 1870 to 1940*, pp. 12, 16. All data were rounded to nearest 100,000.

⁶ *Statistical Abstract of the United States, 1951*, Bureau of the Census. Idleness in man-days was computed as a percentage of working time applied to the entire labor force, and the result was rounded to the nearest 100,000.

APPENDIX C

lion were believed by Durand and Goldfield to have been erroneously included in the labor force in 1930.⁷ Persons with jobs or unemployed, but temporarily unavailable for work, could have been deducted here as reported at each census: In 1930, the ill and the disabled were in Unemployment Classes C and D, and the vacationers, in Unemployment Classes E, F, and G.⁸ The 1940 and 1950 enumerations fail to

TABLE C-10

United States:

Labor Force Adjustments Considered but Not Made, 1930-1950

(millions)

	1930	1940	1950
Add:			
1. New workers seeking jobs, not enumerated	0.2	0	0
2. Omitted entries	0.4	0.5	...
3. Gross additions	0.6	0.5	...
Subtract persons counted in labor force, but not available for work:			
4. Strikers	a	a	a
5. Inmates doing institutional work	0.2	0	0
6. Temporarily ill persons	} 0.4	0.5	0.7
7. Disabled or retired persons		0	0
8. Persons on vacation	0.3	0.2	0.3
9. Gross subtractions	0.9	0.7	1.0
10. Net subtractions	0.3	0.2	1.0

Source and explanations: See text of this appendix.

a Negligible.

analyze, by reason for idleness, those who had jobs but were not at work. The numbers ill or on vacation have been approximated here on the basis of the proportions 40 and 20 per cent respectively, derived from *Current Population Reports*.⁹ All of the disabled or retired work-

⁷ *Census of Population, 1940*, Edwards, *op. cit.*

⁸ It is possible that there were additional persons in Classes A and B unemployed who were ill, disabled, or vacationing. Though Class A covered persons who were out of a job, *able* to work, and *looking* for work, and Class B, persons having jobs but laid off without pay (excluding those sick or voluntarily idle), a breakdown disclosed that many named vacation, sickness, and disability in explanation of their idleness. While the enumerators may not always have distinguished between the original, and the current reason for unemployment, it was assumed (1) that Classes A and B covered persons genuinely unemployed in April 1930; and (2) that, where reasons for idleness conflicted with this assumption, the explanations given really explained the *original* cause of idleness. *Census of Unemployment, 1930*, Vol. I, pp. 12-13.

⁹ *Current Population Reports, Monthly Report on the Labor Force*, Series P-57, No. 94, Bureau of the Census, April 1950, p. 10.

APPENDIX C

ers in 1940 or 1950 are presumed to have been reported as not being in the labor force and therefore require no adjustment.¹⁰

Altogether, the gross numbers (in millions) that could have been subtracted were 0.9, 0.7, and 1.0 in 1930, 1940, and 1950, respectively (Table C-10, line 9). Because the censuses before 1930 offer no criteria for correcting the labor force, and any net adjustments in 1930 or 1940 would, therefore, have been slight it may be that the omitted entries would have nearly balanced the unwarranted inclusions in the earlier years as well, and that the number available for work was substantially reflected by the labor force without adjustment.

¹⁰ *Census of Population, 1950, Employment and Income in the United States, by Regions: 1950, Series PC-7.*