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APPENDIX C

WAGE EARNERS AND SALARIED PERSONNEL IN MANUFACTURING, 1919-1939

1. Employment of Wage Earners and Salaried Personnel in Ohio Manufacturing Industries, 1919-1939

STATISTICAL information on the monthly employment of (1) wage earners, (2) bookkeepers, stenographers, and office clerks, and (3) salespeople (not traveling) is supplied by Ohio establishments under the jurisdiction of the state workmen's compensation insurance law. From 1919 to 1923, establishments employing five or more persons were required to report; after 1923, establishments employing three or more were required to report.

Since the number of manufacturing establishments reporting is not the same from year to year, we considered the monthly data within each year to be a separate segment. Throughout the twelve months of each year, however, the establishments are identical. Firms required to report which failed to do so were mostly those employing a relatively small number of persons. Firms employing less than the minimum in one year will report the next year if they employ more than the minimum, and vice versa. Some small firms employing less than the minimum in one year may merge or be absorbed by a large firm the next year.

The wage-earner employment segments were brought into alignment by a method developed by V Lewis Bassie which least affects the relative monthly movement within each year and the December-January movement between consecutive years (see Frederick M. Cone, *Monthly Income Payments in the United States, 1929-40*, Dept. of Commerce, Economic Series No. 6, 1940, pp. 27-28). We first distributed the difference between the "true" movement from December of the preceding year to January of a given year and the December-January movement of the Ohio wage-earner series by applying an annual correction factor to the original monthly data in the given year. We then applied monthly correction factors based on a third-degree curve to the two years to smooth the December-January discontinuity. For 1919-1923 the annual correction factor was computed by dividing (1) the ratio of the Bureau of Labor Statistics index of factory employment, United States manufactures, for January of a given year to the December index of the preceding year by (2) the ratio of the number of wage earners employed in

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Ohio manufactures in January of the given year to the number of wage earners employed in December of the preceding year. For 1924-1939 the factor was computed by using (1) December and January data of the index of factory employment, Ohio manufactures, in the numerator and (2) the number of Ohio wage earners in the denominator. The index of factory employment, Ohio manufactures, was constructed by the Bureau of Business Research of Ohio State University. This series, which starts in 1923, is from the *Survey of Current Business* (Dept. of Commerce, March 1942, p. 17).

The monthly data on salaried personnel in manufacturing were aligned by applying the monthly ratios of number of salaried employees to wage earners, based on the original data, to the aligned original wage-earner series.

The wage-earner series was adjusted for seasonal variations by the National Bureau of Economic Research. No adjustment of the salaried employee series was necessary since it showed virtually no seasonal movement. The two series appear in Table C-1.

Ohio employment data are from *Fluctuation in Employment in Ohio, 1914 to 1929* (BLS, Bulletin 553, 1932); *Rates of Wages, Fluctuations of Employment, Wage and Salary Payments in Ohio, 1930 to 1937 Inclusive, Exclusive of Coal Mines and Quarries* (Division of Labor Statistics, Dept. of Industrial Relations of Ohio, Report 29); and unpublished tables furnished by the Department of Industrial Relations of Ohio for 1938-1939.

2. *Employment and Payrolls of Wage Earners, 1920-1939, and Salaried Personnel, 1922-1936, in Wisconsin Manufacturing Industries*

The indexes of employment and payrolls of wage earners in Wisconsin for July 1920 to December 1929 on the base 1925-1927 = 100 are from *Wisconsin Labor Market* (Industrial Commission of Wisconsin, July 1931, January 1932, and August 1937); data for the second segment, January 1929 to February 1939, are from the December 1938 and succeeding issues of the *Wisconsin Labor Market*. The indexes in the second segment have been adjusted by the Industrial Commission of Wisconsin to the levels of successive United States censuses of manufactures, while in the first segment, census of manufactures data were used only for weighting indexes of component industrial groups.

Indexes of employment and payrolls of salaried personnel in

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TABLE C-1
 Wage Earners and Salaried Personnel,
 Ohio Manufacturing Industries, 1919-1939
 (thousands of persons)
 A. Wage Earners

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1919	678.0	643.6	627.4	621.0	619.0	643.3	690.6	716.5	715.9	686.1	736.2	774.7
1920	773.2	747.5	758.1	746.6	727.9	751.8	760.6	728.5	706.3	677.7	631.0	574.4
1921	502.0	482.1	465.5	463.1	460.0	455.7	436.9	443.3	440.7	450.1	467.1	463.0
1922	465.3	475.0	490.1	505.2	526.4	557.6	570.3	580.8	574.0	581.7	603.6	633.0
1923	637.9	642.5	658.4	655.5	662.8	672.2	660.0	666.0	645.1	645.6	654.7	649.0
1924	652.3	650.5	646.3	633.9	600.0	562.5	562.3	573.5	586.1	595.5	598.9	617.8
1925	637.1	629.2	629.9	631.9	636.6	638.8	650.2	656.8	666.7	677.0	687.2	685.9
1926	675.0	665.0	659.8	662.4	658.4	663.7	672.2	681.4	690.1	688.6	679.9	667.8
1927	653.4	661.3	663.5	660.0	657.5	658.8	651.5	648.6	644.1	635.7	628.0	625.4
1928	634.6	645.8	647.7	645.4	653.9	662.6	673.6	686.2	690.5	693.3	698.5	699.4
1929	717.8	722.2	720.4	725.6	733.3	734.7	746.7	738.4	728.6	717.7	677.3	651.5
1930	648.9	634.6	621.6	628.7	621.9	604.0	585.0	570.9	559.1	547.5	534.0	525.7
1931	512.4	505.6	504.5	506.1	503.0	493.4	486.8	472.1	465.1	450.5	450.4	441.1
1932	437.9	434.0	419.8	405.3	397.3	394.3	387.6	372.4	382.4	387.5	391.3	389.8
1933	383.8	388.7	354.5	375.7	403.9	452.0	491.7	522.2	525.3	514.5	487.5	490.8
1934	498.1	522.6	548.1	553.2	576.3	582.7	536.8	526.4	508.1	507.1	503.5	532.5
1935	566.9	588.4	590.2	586.8	579.7	583.8	585.2	586.6	596.6	605.5	602.3	607.4
1936	612.1	606.1	601.6	622.7	624.6	635.0	656.7	637.1	662.8	673.3	668.4	694.1
1937	692.0	712.1	710.9	708.8	725.5	702.9	741.2	734.1	730.1	711.0	657.7	630.6
1938	576.2	576.3	560.2	548.7	536.9	536.1	543.8	554.9	569.1	572.9	584.5	601.7
1939	596.8	599.5	596.0	594.0	585.9	600.9	608.7	615.6	639.4	666.3	670.3	685.1

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TABLE C-1 (continued)
B. Salaried Personnel
(thousands of persons)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1919	68.9	69.1	69.8	70.5	70.9	72.0	74.1	76.1	76.1	77.1	78.7	79.8
1920	76.9	79.3	80.7	81.7	82.0	82.6	82.5	80.8	78.4	75.9	73.4	71.3
1921	70.8	69.0	67.7	66.3	65.2	63.6	61.8	61.2	60.3	59.6	59.4	59.1
1922	61.2	61.2	61.3	61.8	62.5	63.8	64.3	64.7	65.0	65.1	65.4	65.8
1923	69.1	69.9	70.9	71.5	72.1	72.8	73.1	73.0	72.8	72.5	72.3	72.6
1924	72.6	72.9	73.1	73.5	73.0	72.6	73.0	73.0	72.9	72.7	73.0	73.0
1925	74.1	74.6	75.0	75.2	75.5	75.9	76.7	76.9	77.0	77.1	77.4	77.1
1926	77.8	78.2	78.8	79.0	79.4	79.5	79.8	80.1	80.0	80.1	80.4	79.8
1927	79.5	80.0	80.3	80.6	80.6	80.8	80.7	80.3	80.5	79.8	79.3	79.1
1928	79.0	79.1	79.5	79.8	79.8	80.3	80.8	81.2	81.4	81.4	81.1	81.4
1929	85.8	86.7	87.5	87.8	88.3	89.1	90.0	90.4	90.0	89.5	88.9	87.7
1930	85.6	85.3	85.3	85.0	84.7	84.0	82.9	81.8	80.4	80.0	78.6	77.9
1931	73.7	73.4	73.2	72.7	72.1	71.4	70.2	69.3	68.2	66.7	65.7	64.8
1932	65.9	65.4	64.9	63.8	62.5	61.2	60.0	59.0	59.0	58.7	58.3	57.9
1933	57.7	57.3	55.8	55.4	56.1	57.2	58.5	60.3	60.9	61.8	61.4	61.3
1934	63.1	63.8	64.5	65.5	66.3	66.7	66.9	67.1	66.8	66.7	66.6	67.2
1935	69.3	69.9	70.5	71.0	71.6	72.0	72.3	72.8	72.9	73.0	73.1	73.3
1936	75.2	75.5	76.1	76.8	77.6	78.6	79.8	80.6	80.9	81.3	81.9	82.9
1937	84.5	85.4	86.4	88.0	88.9	89.5	91.3	91.9	92.1	91.9	90.8	90.2
1938	85.2	84.4	83.9	83.3	83.1	83.0	83.2	83.3	83.2	83.3	83.9	84.4
1939	83.4	83.6	83.8	83.9	84.2	84.9	85.7	86.2	86.7	87.2	87.9	88.1

Source: See Appendix C, section 1.

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Wisconsin manufactures for 1922 to January 1927 were constructed by using data on the percentage change in employment and payrolls from January 1922 to a given month, and for February 1927 to 1936 by using the percentage change from the preceding to a given month. Where data were missing—i.e. for August-October 1929 (employment and payrolls), January-February 1932 (employment), and January-March 1932 (payrolls)—it was assumed that the percentage change was zero. The index was computed on the base January 1922 = 100. The data on percentage change, taken from monthly issues of *Wisconsin Labor Market*, cover nonmanual workers in manufacturing and in a very small number of mines and quarries for 1922-1931; from 1932 to January 1936, after which no data are available, clerical employees in manufacturing are represented.

The employment and payrolls series for wage earners were adjusted by the National Bureau of Economic Research for seasonal variations. No seasonal adjustment was made of the two salaried personnel series (except for employment in 1922-1929), since their seasonal variation was negligible. Table C-2 presents the employment and payroll data for wage earners and salaried personnel.

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TABLE C-2
 Indexes of Employment and Payrolls of Wage Earners, 1920-1939,
 and of Salaried Personnel, 1922-1936, Wisconsin Manufacturing Industries
 A. Wage Earners
 (1925-1927 = 100)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1920												
Employment	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	115.9	115.6	113.9	108.7	101.9	94.9
Payrolls	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	130.3	132.6	129.5	120.8	110.1	98.6
1921												
Employment	84.3	84.0	80.9	76.8	76.3	73.7	72.0	74.9	77.2	78.3	78.5	79.4
Payrolls	84.7	76.5	74.0	70.7	67.3	62.6	61.4	64.9	64.5	63.8	63.4	65.4
1922												
Employment	79.4	78.9	81.5	83.5	87.4	91.2	91.8	91.9	91.8	93.3	97.0	98.6
Payrolls	63.8	63.8	64.9	67.9	72.4	77.0	78.6	77.9	80.1	81.3	88.1	90.4
1923												
Employment	101.1	101.9	101.7	103.1	102.3	103.6	103.5	103.3	101.8	100.6	101.8	100.7
Payrolls	92.8	90.4	90.3	94.6	97.2	98.7	98.1	97.6	97.3	96.7	99.1	96.4
1924												
Employment	100.7	102.0	103.0	101.1	96.9	92.8	93.1	93.0	93.9	95.6	97.4	98.1
Payrolls	96.6	99.0	99.6	96.8	93.0	85.5	86.6	87.1	88.6	91.5	94.2	97.0
1925												
Employment	99.5	99.3	98.8	99.4	101.3	102.0	103.6	101.5	102.5	102.6	102.6	104.1
Payrolls	100.1	98.0	96.3	98.3	101.3	100.3	104.8	102.8	102.3	104.0	103.1	105.8
1926												
Employment	104.1	103.8	102.6	102.0	101.7	101.0	101.5	102.9	102.5	100.7	99.8	98.0
Payrolls	107.2	105.4	104.4	104.5	102.8	101.7	102.0	101.2	102.2	102.9	96.7	95.0
1927												
Employment	97.5	98.3	98.0	96.9	96.2	96.6	96.4	99.2	97.8	97.3	93.8	94.0
Payrolls	98.2	98.5	96.9	97.1	93.7	96.9	96.7	100.2	97.8	94.8	93.0	93.5
1928												
Employment	94.0	93.9	93.8	93.5	94.6	95.4	96.1	98.4	98.8	99.3	98.7	98.4
Payrolls	90.9	93.2	99.2	92.2	94.2	99.3	97.3	102.0	102.4	103.8	103.4	98.4
1929												
Employment	98.1	99.1	99.7	101.1	102.0	101.1	99.6	102.3	101.0	102.0	99.6	95.1
Payrolls	98.3	103.5	103.0	105.3	103.8	101.5	98.9	103.3	98.9	102.0	99.6	90.2

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TABLE C-2 (continued)
A. Wage Earners (continued)
(1925-1927 = 100)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1929												
Employment	104.1	105.3	106.0	107.6	108.6	107.5	105.8	108.6	107.1	107.9	105.2	100.2
Payrolls	106.7	112.8	112.5	115.1	113.5	110.9	107.9	112.6	107.5	110.6	107.7	97.1
1930												
Employment	102.2	100.6	97.6	96.5	96.0	91.2	87.9	85.3	84.3	82.3	80.2	80.2
Payrolls	99.9	99.5	96.9	93.6	92.0	85.6	80.0	75.3	74.1	72.1	67.6	67.3
1931												
Employment	80.4	79.3	77.0	76.7	77.2	75.0	73.8	72.3	72.7	68.5	66.7	66.4
Payrolls	65.5	67.5	66.3	65.1	65.1	62.1	59.0	56.5	53.6	49.2	48.4	48.8
1932												
Employment	65.3	66.3	64.5	62.6	60.7	58.7	55.6	55.3	56.9	56.2	56.4	56.0
Payrolls	45.9	47.0	44.9	40.9	38.6	35.5	32.1	33.0	34.8	35.8	36.1	34.3
1933												
Employment	55.1	55.3	53.2	55.2	57.9	63.1	65.5	69.2	72.4	72.9	72.3	71.9
Payrolls	33.0	32.6	29.5	32.7	37.1	42.8	45.2	48.7	49.6	49.3	48.4	48.1
1934												
Employment	72.2	72.3	72.0	72.4	77.2	76.8	74.5	74.1	74.1	73.7	74.0	76.3
Payrolls	50.4	51.2	52.3	52.6	57.5	57.7	56.1	54.4	52.3	53.3	54.8	58.9
1935												
Employment	78.1	79.3	78.4	78.1	79.3	79.7	80.8	82.0	82.7	82.6	82.8	83.4
Payrolls	60.9	62.3	60.7	60.6	61.5	62.7	68.1	66.1	70.3	67.5	69.2	73.3
1936												
Employment	83.3	83.0	82.1	82.8	85.0	85.7	85.0	84.7	89.3	91.5	92.9	95.3
Payrolls	74.6	69.5	70.6	70.2	73.1	74.9	73.5	76.2	77.4	83.7	88.3	93.0
1937												
Employment	99.1	99.6	100.2	101.8	101.7	101.0	104.1	102.2	105.2	101.5	98.0	94.0
Payrolls	97.6	99.4	99.3	102.0	103.7	104.0	108.3	107.4	106.1	104.9	101.4	94.1
1938												
Employment	88.5	86.7	83.7	82.7	81.8	82.0	86.4	84.2	82.8	81.3	82.4	84.8
Payrolls	87.9	84.3	79.5	76.8	76.2	76.0	80.6	79.3	77.5	78.2	82.1	87.4
1939												
Employment	84.0	84.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Payrolls	86.4	88.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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TABLE C-2 (continued)
 B. Salaried Personnel
 (January 1922 = 100)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1922												
Employment	100.0	101.4	102.6	102.4	103.0	104.7	105.4	108.4	105.7	105.5	102.6	105.3
Payrolls	100.0	100.3	101.4	97.3	100.4	102.3	103.2	105.0	100.3	101.1	100.1	103.1
1923												
Employment	106.0	106.0	106.0	105.8	106.8	108.1	108.1	110.4	109.3	110.1	110.5	111.3
Payrolls	101.7	102.5	101.9	102.1	103.7	106.4	106.6	109.0	108.5	109.3	109.9	110.1
1924												
Employment	110.5	110.8	110.7	109.6	108.6	109.2	107.9	109.7	109.7	108.0	110.6	110.8
Payrolls	109.5	112.0	112.8	113.0	114.1	115.0	115.5	114.1	113.9	117.4	117.5	117.4
1925												
Employment	111.7	111.5	111.6	112.5	111.1	113.6	113.4	112.7	114.0	114.9	114.7	113.2
Payrolls	121.2	120.5	121.0	124.1	120.6	126.0	124.1	122.1	122.6	123.7	124.4	124.2
1926												
Employment	114.5	116.3	116.5	116.6	116.3	116.3	117.4	119.4	119.8	120.5	120.5	120.4
Payrolls	124.2	127.3	127.7	126.6	126.9	128.3	129.4	130.2	128.9	130.2	130.3	129.9
1927												
Employment	120.9	121.0	121.7	122.2	122.8	121.7	121.9	122.8	123.5	123.8	124.9	124.1
Payrolls	132.4	134.0	135.6	135.9	138.1	137.0	136.9	139.0	137.6	136.5	137.7	139.8
1928												
Employment	122.3	120.9	119.9	120.9	120.4	118.9	119.7	122.1	124.1	124.3	124.3	123.9
Payrolls	137.0	135.8	139.9	139.6	139.2	137.4	140.0	142.2	139.9	142.8	140.8	142.1
1929												
Employment	124.9	124.6	124.3	124.9	126.4	124.6	124.8	124.8	124.8	124.8	125.0	125.7
Payrolls	145.2	145.5	145.4	146.6	149.4	148.8	149.2	149.2	149.2	149.2	149.2	147.4

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TABLE C-2 (continued)
B. Salaried Personnel (continued)
(January 1922 = 100)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1930												
Employment	126.2	127.0	127.7	126.3	125.9	125.2	124.4	124.3	121.2	119.2	118.3	115.8
Payrolls	149.2	150.1	151.7	150.1	128.3	131.6	125.9	123.5	122.2	121.6	119.4	116.8
1931												
Employment	113.8	114.9	114.4	113.6	112.6	111.2	110.6	109.1	108.1	107.7	105.1	104.2
Payrolls	114.9	122.5	120.9	111.3	111.2	108.6	108.8	106.7	105.3	102.8	104.9	100.4
1932												
Employment	104.2	104.2	102.7	99.6	96.8	93.5	91.2	90.1	90.2	90.7	90.6	89.1
Payrolls	100.4	100.4	100.4	97.3	97.7	85.9	80.7	78.6	79.2	80.3	79.7	77.1
1933												
Employment	86.7	86.2	85.4	85.6	86.1	88.6	91.5	95.1	97.1	98.8	98.3	98.6
Payrolls	76.7	73.9	72.8	71.9	72.4	74.2	76.2	79.8	81.8	87.3	84.3	85.3
1934												
Employment	97.0	95.8	96.8	97.2	98.7	100.2	98.1	97.5	97.3	96.7	97.8	98.7
Payrolls	85.8	82.5	83.6	87.4	85.0	85.9	84.1	80.1	80.0	80.1	81.2	81.9
1935												
Employment	99.0	100.0	100.8	101.8	102.2	102.8	103.5	105.1	105.5	104.8	105.0	105.3
Payrolls	82.8	84.3	85.2	85.5	86.2	86.7	86.8	87.7	94.0	89.1	88.9	94.7
1936												
Employment	106.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Payrolls	102.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

n.a. = not available.

Source: See Appendix C, section 2.