UNITED STATES DEPARTMENT OF LABOR
Frances Perkins, *Secretary*
BUREAU OF LABOR STATISTICS
Isador Lubin, *Commissioner*

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Wages in Cotton-Goods Manufacturing

Prepared by

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UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., November 4, 1938.

THE SECRETARY OF LABOR:

I have the honor to transmit herewith a report on Wages in Cotton-Goods Manufacturing, prepared by Mr. A. F. Hinrichs, Chief Economist for the Bureau of Labor Statistics.

ISADOR LUBIN, *Commissioner.*

HON. FRANCES PERKINS,
Secretary of Labor.

PREFACE

The administrative use of wage data presupposes a full examination of the wages of an industry set in their economic background. Wage studies cannot be presented as routine tabulations of data isolated from their economic setting. As regards wage material, the primary function of the Bureau of Labor Statistics is to present incontrovertible facts relating to hours and earnings. It is not the function of the Bureau to draw administrative conclusions as between alternative lines of conduct that may be suggested by the facts. In this sense, therefore, the attention of the Bureau is focussed primarily upon the technical problems of wage-data collection and tabulation. However, the questions of what data should be collected, and of what facts are worth presenting depends upon a knowledge of the uses to which the data are to be put. The more specific the economic application of the facts with reference to wages, the more intensive should be the preliminary study of the industrial background. Therefore, part I, virtually half of this report, deals with the economic setting of the wage data. Part II represents an analysis of the wage data as they bear upon the problem of wage determination.

This survey of wages in the cotton-goods industry is the twentieth detailed study of wages in that industry made by the Bureau of Labor Statistics since 1909. It was made at this time for the use of the Administrator of the Fair Labor Standards Act, in order that authoritative information might be available at an early date to Industry Committee No. 1, appointed under the provisions of the Fair Labor Standards Act of 1938.

The report was prepared by A. F. Hinrichs, chief economist of the Bureau of Labor Statistics, assisted by N. A. Tolles. It is in fact an evidence of the scale on which economic research must now be conducted. For economic materials the Bureau has drawn heavily from other Government agencies, notably from the Federal Trade Commission and the Bureau of the Census. The Bureau of the Census has furnished generous cooperation in the form of special tabulations. The Division of Employment and Pay Rolls of the Bureau of Labor Statistics, Lewis E. Talbert, chief, analyzed current monthly reports received for many years from cotton mills, and, for the period of August 1938, secured such extensive cooperation from the industry as to enable the presentation of wage data for establishments employ-

ing 95 percent of the workers in the industry. The Bureau's Division of Wage and Hour Statistics, Jacob Perlman, chief, has tabulated and analyzed distributions of earnings of individual workers from reports covering the earnings of each of 90,000 workers in the industry in April 1937 and from detailed reports of wage-rate changes in individual occupations in individual mills between April 1937 and August 1938. As regards the productivity of workers, the Bureau has drawn upon unpublished materials in its files prepared by George S. Sommaripa for a joint study by the Bureau of Labor Statistics and the National Research Project. Only such facilities of collection and analysis and the possibility of manifold combinations of the data in the Machine Tabulation Division of the Bureau has made a project of this scope possible. For the data themselves, the Bureau is indebted to those establishments in the industry who have cooperated with us in voluntarily furnishing confidential information month after month and year after year, to the end that through such pooling of individual figures it may be possible for a disinterested agency to see the picture of wages in the cotton industry as a whole and to see the separate segments of that picture in their relationship to each other.

ISADOR LUBIN,
Commissioner of Labor Statistics.

NOVEMBER 4, 1938.

Part I

Background of the Industry

Bulletin No. 663 of the

United States Bureau of Labor Statistics

Wages in Cotton-Goods Manufacturing

Chapter I

Description of the Industry

Cotton is the primary fiber used in textile manufacturing and accounts for somewhat more than 70 percent of the fiber consumption by weight (table 1). The related-industry group of cotton manufactures, as classified by the Bureau of the Census, consisted of 1,223 establishments with 383,002 wage earners in 1935. It is the largest group under the jurisdiction of Industry Committee No. 1 (Fair Labor Standards Act), employing somewhat more than half the workers in all of the industries under the jurisdiction of the committee.

TABLE 1.—*Consumption by United States mills of 5 textile fibers*

Calendar year	Quantity (millions of pounds)					
	Lint cotton	Rayon [1]	Raw silk delivered to United States mills	Scoured wool [3]	Raw jute, jute yarn, and jute fabric, including bags or sacks	Total
1911–14	2,589.3	3.5	[2] 30.0	249.4	[4] 623.8	3,496.0
1915	2,911.4	6.6	[2] 31.1	339.1	[4] 562.2	3,850.4
1916	3,197.7	6.6	[2] 40.9	362.6	[4] 595.0	4,202.8
1917	3,278.4	6.8	[2] 43.4	347.5	[4] 753.0	4,429.1
1918	2,977.1	6.0	[2] 48.7	371.2	[4] 610.4	4,013.4
1919	2,859.1	9.3	[2] 55.5	283.1	585.1	3,792.1
1920	2,822.3	8.7	28.5	264.3	733.1	3,856.9
1921	2,595.3	19.8	43.0	299.7	547.0	3,604.8
1922	2,909.8	24.7	48.9	312.8	701.7	3,997.9
1923	3,120.5	32.6	47.7	311.3	806.8	4,318.9
1924	2,636.6	42.2	48.8	249.7	679.2	3,656.5
1925	3,074.7	58.3	66.7	251.7	809.3	4,260.7
1926	3,214.8	60.6	66.7	254.7	781.7	4,378.5
1927	3,587.7	100.0	73.3	258.7	790.2	4,809.9
1928	3,184.2	100.1	75.9	232.4	791.5	4,384.1
1929	3,422.7	131.4	82.4	253.2	802.0	4,691.7
1930	2,610.9	118.0	77.4	200.7	733.9	3,740.9
1931	2,656.6	157.4	79.1	237.7	573.6	3,704.4
1932	2,463.3	152.0	73.7	188.5	449.2	3,326.7
1933	3,052.5	211.9	62.4	245.5	538.2	4,110.5
1934	2,655.4	194.8	61.4	167.6	506.5	3,585.7
1935	2,754.7	252.7	66.1	319.1	635.4	4,028.0
1936	3,463.5	297.6	60.5	278.3	737.5	4,837.4
1937	3,655.6	261.2	56.6	248.1	919.2	5,140.7

[1] Excludes rayon staple fiber. [2] Imports. [3] Apparel class wool only. [4] Fiscal year ended June 30.

Sources: Cotton, compiled from monthly figures of the Bureau of the Census; rayon, the Rayon Organon, Special Supplement, January 1938; silk, Bureau of Foreign and Domestic Commerce; wool, through 1917, Yearbook, U. S. Department of Agriculture, 1918 through 1937, Bureau of Census report, March 1928; jute, U. S. Tariff Commission.

Related-Industry Group of Cotton Manufactures

The related-industry group of cotton manufactures under the census classifications of 1935 includes cotton woven goods over 12 inches in width and cotton yarn and thread. Prior to 1935 the census classified these two as the cotton-goods industry. In 1935 the census also included cotton narrow fabrics, formerly classified as cotton small wares, and fish nets and seines in the related-industry group of cotton manufactures. General totals are available for each of these four groups in 1935, whose relative importance is indicated in table 2. Detailed figures on materials consumed and products manufactured are available in 1935 only for the related-industry group as a whole. The values shown in table 2 are the value of the total production of establishments primarily engaged in producing cotton woven goods, cotton yarn, etc., and include secondary types of product. For example, approximately $22,000,000 of the value shown represents cotton waste sold and the value of old bagging and ties from cotton bales.

The values exclusively of cotton woven goods and other cotton products are reported in detail but the value is summated under cotton manufactures irrespective of the type of establishment in which they were produced. Thus, cotton woven goods over 12 inches wide with a value of $710,000,000 were produced in 1935, for the most part in establishments primarily engaged in the production of such woven goods but also to some extent as secondary products in establishments primarily engaged in the manufacture of rayon or some other product. Similarly, the reported value of cotton narrow fabrics was $41,000,000. Cotton yarn and thread production, aggregating $241,000,000, consisted primarily of yarn produced for sale (together with card laps and roving) valued at $138,000,000; thread, $35,000,000; tire cord on cones, $24,000,000; and of yarn produced for interplant or intercorporate transfer, $24,000,000.

TABLE 2.—*Numbers of establishments, wage earners, wages, and value of products in the related-industry group "Cotton manufactures," 1935*

Branch of industry	Number of establishments	Number of wage earners	Wages	Value of products
Total "Cotton manufactures"	1,223	383,002	$247,844,395	$1,030,767,654
Cotton woven goods (over 12 inches in width)	670	295,648	192,768,943	768,737,741
Cotton yarn and thread	372	73,414	43,569,891	214,834,658
Cotton narrow fabrics	170	13,466	11,106,696	44,593,174
Fish nets and seines	11	474	398,865	2,602,081

Source: Biennial Census of Manufactures, 1935, pp. 259–261.

The overwhelming bulk of the establishments in this industry manufacture cotton products exclusively. In 1935 they produced $1,001,000,000 worth of cotton woven goods, narrow fabrics, yarn,

thread, fish nets, and other cotton products. In addition, they produced only $24,000,000 [1] worth of products which were not classified as cotton manufactures. More than half of these other products of cotton-textile establishments consisted of rayon, silk, and other products which are within the jurisdiction of Industry Committee No. 1.

Furthermore, almost all "cotton manufactures" are produced in these same establishments. Out of a total of cotton-goods production valued at $1,036,000,000 in 1935, only $34,000,000 [2] worth was made as secondary product by establishments whose primary production was classified in other industries. All but $3,200,000 worth of this secondary product appears to have been made in establishments that come within the jurisdiction of Industry Committee No. 1.

The establishments that are classified in the cotton-manufacturing group process most of the cotton used in manufacturing (table 3). The balance of the establishments using cotton, except those primarily making wool and felt goods, are also under the jurisdiction of this committee.

TABLE 3.—*Consumption of raw cotton and cotton waste and purchases of cotton yarn, 1935*

[Thousands of pounds]

Consuming industry	Raw cotton consumed	Cotton waste consumed	Raw cotton and cotton waste		Cotton yarn purchased
			Total	Estimated yarn equivalent [1]	
Cotton manufactures	2,553,980		2,553,980	2,201,707	134,206
Other industries	112,814	20,518	133,332	114,942	258,846
Cordage and twine	45,983		45,983	39,641	7,563
Knit goods [2]	32,117	10,342	42,459	36,603	170,368
Rayon manufactures	21,683	560	22,243	19,175	10,199
Wool and hair manufactures	12,512	7,801	20,313	17,511	37,315
Felt goods, except woven felt	519	1,815	2,334	2,012	
Carpets and rugs	[3]	[3]	[3]	[3]	19,803
Lace goods					11,612
Silk manufactures					1,986
Totals: 9 textile industries	[4] 2,666,794	20,518	2,687,312	2,316,649	393,052

[1] Computed at 100 pounds of yarn to 116 pounds of cotton.
[2] Including hosiery.
[3] Not separately available.
[4] The total cotton consumption specifically reported to the census by industry falls short of the 2,754,700,000 pounds as estimated in table 35 of "Revised Tables on Cotton Textiles * * * of the Cabinet Committee on the Cotton Textile Industry," April 1937, by 87,906,000 pounds, or 3 percent.

Within the related-industry group of cotton-manufacturing establishments, the most homogeneous and overwhelmingly important producers are those making cotton woven goods over 12 inches in

[1] The Census of Manufactures for 1935 classified the $20,000,000 worth of cotton twine, cordage, and rope both in the cotton goods and in the cordage industries. The establishments operating primarily as cotton mills produced $6,000,000 of this product and establishments operating primarily as cordage and twine mills produced $14,000,000 of this product. (See Report to the Wage and Hour Administrator, "Definition of the Textile Industry for Committee No. 1," Oct. 10, 1938, table IV, p. 13.)

[2] See preceding note and the report, there cited, table VIII, p. 28.

width and those making cotton yarn and thread. The detailed analysis of wages in this report relates primarily to these producers. At times, this report will necessarily refer to the related-industry group as a whole. In general, however, the traditional groups of yarn mills and mills making grey goods over 12 inches wide can be studied by themselves and this combination is especially useful for historical comparisons because it was the grouping used by the census prior to 1935.

Cotton Goods

The cotton-goods industry has employed slightly more than 1 person out of every 20 engaged in manufacturing since the middle of the nineteenth century. It was of even greater relative importance in earlier decades. The number of establishments is no greater today than it was in 1850, but there are about 4 times as many wage earners and they are processing 9 or 10 times as much cotton (table 4).

TABLE 4.—*Summary of cotton-goods industry [1] of the United States*

Year	Mills	Capital invested	Total spindles [2]	Total looms	Cotton consumed (running bales) [3]	Wage earners (average for the year)	Wages paid	Value of products
		Thousands			*Thousands*		*Thousands*	*Thousands*
1831	801	$40,613	[4] 1,246,703	33,433	156	62,208	[5]	$32,000
1840	1,240	[5]	[4] 2,284,631	[5]	237	72,119	[5]	46,350
1850	1,094	74,501	[4] 3,998,022	[5]	577	92,286	$16,275	65,502
1860	1,091	98,585	[4] 5,235,727	126,313	845	122,028	23,940	115,682
1870	956	140,706	[4] 7,132,415	157,310	797	135,369	39,044	177,490
1880	756	208,280	[4] 10,653,435	225,759	1,570	172,544	42,041	192,090
1889	905	354,021	14,384,180	324,866	2,309	218,876	66,025	267,982
1899	973	460,843	19,472,232	450,682	3,672	297,929	85,126	332,806
1904	1,077	605,100	23,687,495	540,910	3,981	310,458	94,378	442,451
1909	1,208	808,413	28,573,435	632,963	5,091	371,182	129,790	615,218
1914	1,179	867,044	32,744,012	672,754	5,577	379,366	146,130	676,569
1919	1,288	1,853,100	36,443,156	692,169	5,766	430,966	355,475	2,125,272
1921	1,328	[5]	36,617,584	[5]	4,893	412,058	328,227	1,278,221
1923	1,375	[5]	37,408,689	[5]	6,666	471,503	396,603	1,901,126
1925	1,366	[5]	37,928,792	[5]	6,193	445,184	353,883	1,714,368
1927	1,347	[5]	36,695,516	715,046	7,190	467,596	380,910	1,567,401
1929	1,281	[5]	34,819,534	653,667	7,091	424,916	324,289	1,524,177
1931	1,140	[5]	32,673,212	588,128	5,263	329,962	219,680	305,792
1933	1,057	[5]	30,892,666	[5]	6,137	379,445	216,384	861,170
1934	[5]	[5]	30,942,258	[5]	5,700	[5]	[5]	[5]
1935	1,042	[5]	30,092,758	509,345	5,361	369,062	236,339	983,572

[1] Excluding cotton narrow fabrics (or small wares).
[2] Total cotton spindles in the United States unless otherwise specified (see note 4).
[3] Total cotton consumed in cotton manufactures during crop years.
[4] Active spindles in cotton-goods industry only; data not available as to total spindles.
[5] Not available.

Source: Bureau of the Census.

TABLE 5.—*Employment and pay rolls in the cotton-goods industry, 1933–38*

Month	1933	1934	1935	1936	1937	1938
Employment						
January	319,400	410,900	402,900	377,700	433,000	364,900
February	316,800	430,800	403,400	376,400	440,000	361,400
March	306,200	443,600	397,200	376,900	443,100	364,000
April	312,400	443,600	379,900	372,400	445,800	350,300
May	337,100	434,300	362,300	372,400	445,300	340,600
June	390,500	401,600	349,000	373,800	434,300	335,800
July	432,100	391,900	336,700	384,400	429,900	345,500
August	441,400	375,500	333,600	396,300	425,000	359,200
September	432,500	215,200	347,700	402,500	414,400	[1] 366,700
October	437,800	398,500	361,400	409,100	395,400	
November	421,000	395,900	372,900	417,100	383,900	
December	408,200	402,900	379,500	425,000	374,600	
Average	379,600	395,400	368,900	390,400	422,100	
Weekly pay rolls						
January	$3,027,000	$4,987,000	$5,168,000	$4,842,000	$6,352,000	$4,454,000
February	2,999,000	5,375,000	5,209,000	4,856,000	6,373,000	4,509,000
March	2,736,000	5,639,000	5,036,000	4,807,000	6,435,000	4,606,000
April	2,833,000	5,680,000	4,572,000	4,759,000	6,830,000	4,302,000
May	3,276,000	5,223,000	4,316,000	4,773,000	6,754,000	4,177,000
June	4,087,000	4,239,000	3,962,000	4,814,000	6,414,000	4,052,000
July	4,641,000	4,274,000	3,865,000	4,981,000	6,137,000	4,412,000
August	5,555,000	4,052,000	3,907,000	5,230,000	6,151,000	4,738,000
September	5,410,000	2,487,000	4,302,000	5,174,000	5,860,000	[1] 4,884,000
October	5,458,000	5,029,000	4,648,000	5,493,000	5,396,000	
November	5,133,000	4,814,000	4,717,000	5,583,000	4,863,000	
December	4,863,000	5,161,000	5,015,000	6,297,000	4,697,000	
Average	4,168,000	4,747,000	4,560,000	5,134,000	6,022,000	

[1] Preliminary.

Source: U. S. Bureau of Labor Statistics monthly reports, adjusted to the Census of Manufactures, 1935.

The peak of employment was reached in 1923, however, when an average of 471,503 wage earners were employed. An average of 369,000 were employed in the calendar year 1935. In the crop year of 1936–37, when a fifth again as much cotton was consumed as in 1923, employment reached a maximum of 445,800 in April and for the year averaged 427,000 (table 5). The sharp curtailment of employment that began in the latter half of 1937 reached a low point of 335,800 in June 1938. The tendency toward a curtailment of total employment opportunities in cotton goods persisted in spite of the sharp reduction of the hours of work accomplished under the N. R. A.[3]

[3] In this connection it should be noted, however, that the loss of employment in cotton mills is slightly greater than the loss of employment to persons formerly employed in cotton mills, for there has been some shifting of mills and their employees from cotton to rayon. Unfortunately, there are no separate data for rayon prior to 1935, but the total of cotton (including narrow fabrics), rayon, and silk employment in 1923 was 620,000 as against 509,000 in 1935.

Relative to total employment changes, the correction for added rayon employment (added both from silk and cotton) would be an incidental refinement of the data. Thus in New England cotton manufactures averaged 209,000 wage earners in 1923 and 88,000 in 1935, a loss of 121,000. Silk and rayon employment in Connecticut, Rhode Island, and Massachusetts increased from 23,703 to 29,432. With even a liberal estimate for rayon employment in Maine and New Hampshire, the net gain in silk and rayon offset no more than 5 or 6 percent of the loss in cotton.

Nationally, silk and rayon employment barely held its own from 1923 to 1935. However, there was an increase from 19,128 in 1925 to 50,550 in 1935 in the number of workers employed in rayon and allied products plants in the chemical industry. Part of this increase in employment, in effect, replaced spinning and throwing, formerly done in cotton and silk mills.

Part of it affected employment in knit underwear plants. Part of it, of course, replaced imports of silk and the use of cotton grown by farmers in this country. Even the entire increase of 30,000 workers would offset only about one-quarter of the employment lost in cotton manufactures.

The group of 1,042 establishments, which were formerly classified as the cotton-goods industry, consists of three types of mills: (a) Spinning mills; (b) weaving mills; and (c) mills engaged both in spinning and weaving. In 1935 the bulk of the industry was represented by mills that were both spinning and weaving (table 6). They had four-fifths of the spindles and all but 2½ percent of the looms. A special tabulation of census data would be required to determine precisely the number of wage earners in each of these three types of mills, but the available data indicated that the spinning and weaving mills had slightly more than four times as many workers as the spinning mills. Weaving mills which were working exclusively on purchased yarn, may employ about 2 percent of the workers in the industry.[4]

TABLE 6.—*Numbers of establishments, spindles, and looms, classified by type of establishment, in the cotton woven goods and the cotton yarn and thread industries, 1935*

Type of establishment	Number of establishments	Number of spindles	Number of looms
Total	1,042	26,550,870	508,496
Spinning and weaving mills [1]	533	21,448,215	496,083
Spinning mills	305	5,102,655	
Weaving mills	140		12,413
Mills without spindles or looms [2]	64		

[1] Since only 670 mills were classified as primarily engaged in the manufacture of woven goods (Census of Manufactures, p. 261) as compared with 673 spinning and weaving, and specialized weaving mills, it is to be presumed that 3 of these mills, engaged in both spinning and weaving, were primarily producing cotton yarn for sale.

[2] These 64 mills appear to have plants producing cotton roving or other products which require carding but not spinning equipment, or thread mills purchasing and not spinning yarn. There are also some establishments engaged in winding and spooling yarn and in warping. With the exception of thread mills, these groups are too small to be separately analyzed and involve the use of machinery and labor that is normally found in a cotton mill.

Source: Census of Manufactures, 1935, p. 290.

In an occupational wage analysis these three branches may be treated together, for the machinery and occupations found in spinning mills or in weaving mills are also found in integrated plants. However, even in a mill with a common wage policy in the several departments of the mill, the average hourly earnings of workers in the weaving division are higher than in the yarn division. Thus in integrated cotton grey-goods mills in the South, wage earners in the weaving division average 3 cents an hour more than wage earners in the yarn divisions of the same plants. This is due to a different balance of skilled, semiskilled, and unskilled occupations in the several departments.

It follows, merely because of differences in the proportion of skilled workers, that weaving plants tend to have higher average hourly earnings than integrated spinning and weaving plants. The specialized

[4] Out of 784 establishments with 319,294 wage earners reporting to the Bureau of Labor Statistics in August 1938, 69 establishments with 5,756 wage earners were engaged exclusively in weaving.

cotton-textile weaving industry has never been as important in the United States as it is in Great Britain. Moreover, specialized weaving in the United States has been of declining importance in recent years (table 7). In general, it is so small that it does not affect the over-all picture. But, unimportant as it is in the two main cotton manufacturing centers, the New England States and the cotton-growing States, it is to be noted that more than one-third of the looms in the cotton-textile industry of the Middle Atlantic and East North Central States are in specialized weaving establishments.

TABLE 7.—*Cotton-textile weaving mills, 1929, 1931, 1935*

Region and date	Number of establishments	Number of looms	Percentage of total looms in designated area
United States:			*Percent*
1935	140	12,413	2.4
1931	181	17,275	2.9
1929	207	22,357	3.4
Cotton-growing States: [1]			
1935	26	4,038	1.2
1931	33	4,805	1.4
1929	42	6,153	1.8
New England States:			
1935	22	1,784	1.2
1931	38	3,388	1.5
1929	36	5,113	1.9
Other States: [2]			
1935	92	6,591	35.2
1931	110	9,082	33.8
1929	129	11,091	38.2

[1] Cotton-growing States comprise: Alabama, California, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.
[2] Other States comprise: Illinois, Indiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin; in addition, Delaware for 1929.

Source: Census of Manufactures, 1935, p. 290.

The various types of cotton-textile operations are distributed unevenly among the different sections of the country. This fact must be borne in mind whenever regional comparisons of average hourly earnings are made, because the operators on different processes are paid at different rates. These contrasts include, not only differences in the distribution as between the weaving and the integrated spinning and weaving mills,[5] but also differences in the distribution as between yarn mills and grey-goods mills. The average earnings in an integrated mill are 1.4 cents per hour higher than the average earnings of employees in its spinning division.[6] It follows that a

[5] Thus, in the joint publication by the Bureau of the Census and the Bureau of Labor Statistics, "Man-Hour Statistics for 59 Selected Industries, 1935," this influence of specialized weaving on the average is of fundamental importance in explaining minor differences in average hourly earnings by districts. For example, average hourly earnings in 26 establishments in Rhode Island and Connecticut in the cotton woven goods branch averaged 42.6 cents, whereas 27 establishments in New York and New Jersey averaged 43.5 cents (p. 14). This is exactly the sort of difference that would be induced by the predominance of integrated plants in New England and of weaving plants in the Middle Atlantic. Pennsylvania, with an average of 49.7 cents in 31 establishments with only 1,884 employees, is dominated by the small specialty weaving establishment using highly skilled labor.

[6] August 1938: Average for southern integrated mills as a whole, 35.4 cents per hour; for spinning divisions of integrated mills, 34.0 cents. In both cases, the earnings of maintenance, power, and service workers are omitted from the averages. A negligible proportion of earnings in southern specialized weaving mills is included in the average for the southern integrated mills.

State or locality which specialized in yarn production would have a lower average of hourly earnings for its cotton-goods industry than a region which produced only grey goods, even if the wage rates for each occupation were the same in the two regions.

Specialized yarn mills employ about one-fifth of the workers in the industry. There is some production within the same establishment of yarn for sale and of woven fabric, but in general the two types of production are carried on in separate establishments. By and large, grey-goods mills manufacture and consume their own yarn and sell grey or finished woven fabric. However, 3 of the 533 mills engaged in both spinning and weaving sold a larger value of yarn than grey cloth in 1935. Many other integrated mills sold some yarn, but the value of yarn sold by all mills which spin and also weave was only about one-tenth of the total yarn sales of $134,000,000 worth of yarn sold in 1935.[7] This would appear to indicate the sale of not more than 35,000,000 pounds of cotton yarn by integrated mills, whereas cotton grey-goods mills spun 1,924,000,000 pounds of yarn for their own use. In other words, the two branches of the industry are relatively distinct as regards the establishments in which they are carried on with grey-goods mills marketing not more than 1½ to 2 percent of their yarn production which in turn constitutes about one-tenth of the yarn produced for sale.

The yarn division of the industry differs from the woven-goods branch not only in the proportion of skilled workers employed, but also in the character of its market. The cotton-spinning mills are engaged in selling yarns for a wide variety of uses as can be seen from table 8. By far the largest sales of cotton yarn are made to the knit-goods industry. In 1935 the knitting mills filled four-fifths of their cotton requirements by the purchase of about 170,000,000 pounds of yarn spun by others. These purchases amounted to more than one-third of all the yarn sold during that year. Smaller but significant amounts of yarn are sold to weavers of wide cotton goods who do not spin, to the narrow fabrics industry, and to woolen manufacturers. These three groups in 1935 each bought about 40,000,000 pounds.[8]

[7] Information furnished by the Bureau of the Census.

[8] For 1935 it may be estimated that of the 134,000,000 pounds of yarn consumed as raw material in cotton manufactures, not more than 45,000,000 pounds were consumed by weavers of goods over 12 inches wide but not spinning yarn. This assumes that on their looms they produced proportionately as much cloth by weight as was produced on the looms of integrated plants, or 2.4 percent of the 1,885,000,000 pounds of woven fabric. This leaves a consumption of about 89,000,000 pounds to account for. Cotton narrow fabrics are now classified with cotton manufactures as regards materials consumed. The purchases of yarn by the cotton small wares industry were 32,808,000 pounds in 1931, 44,644,000 pounds in 1929, and 37,524,000 in 1927 (Census of Manufactures, 1931, p. 248). Employment on narrow fabrics was 5.0 percent greater in 1935 than in 1931. It seems probable therefore that the cotton narrow fabric industry took about 35,000,000 pounds of yarn in 1935. This means that thread manufacturers and integrated grey-goods mills took not more than 54,000,000 pounds of yarn. Actually some of this may not have been bought in the open market but may have been among the 80 million pounds of yarn "sold for further manufacture to affiliated companies or transferred to other plants of the companies reporting." (Census of Manufactures, 1935, p. 286.)

Carpet and rug weavers took nearly 20,000,000 pounds and about 10,000,000 pounds apiece were taken by lace mills, by rayon mills, and by the makers of cordage and twine.

TABLE 8.—*Purchases of cotton yarn and consumption of raw cotton and cotton waste by industry, 1935*

Consuming industry	Cotton yarn purchased [1]		Raw cotton and cotton waste consumed [2]		Percentage of purchased yarn to total cotton consumption
	Thousands of pounds	Percentage of yarn sales taken	Thousands of pounds	Yarn equivalent [3]	
Knit goods	170,368	36.9	42,459	36,603	82.3
Cotton goods	134,206	29.1	2,553,980	2,201,707	5.7
Wool and hair manufacturing	37,315	8.1	20,313	17,511	68.1
Carpets and rugs	19,803	4.3	[4]	[4]	[4]
Lace goods	11,612	2.5			100.0
Rayon manufacturing	10,199	2.2	22,243	19,175	34.7
Cordage, twine, jute, and linen goods	7,563	1.6	45,983	39,641	16.0
Silk manufacturing	1,986	.4			100.0
Felt goods, except woven felts			2,334	2,012	
Exports	6,293	1.4			
Balance, not accounted for, and change in stocks	[5] 61,868	13.5			
Total, 9 industries			2,687,312	2,316,649	14.5
Total	[6] 461,213	100.0			

[1] Omitting yarn spun for own use.
[2] Omitting exports.
[3] Computed at 100 pounds of yarn to 116 pounds of cotton.
[4] Not separately available.
[5] Difference between yarn consumption accounted for by industry and total shown below. Including 39,060,000 pounds of yarn produced for crochet, darning, hand knitting, embroidery, and sewing thread.
[6] Total of yarn produced for sale, yarn produced for interplant transfer, and imports of yarn for consumption.

Sources: "Census of Manufactures" and "Foreign Commerce and Navigation."

Some establishments in each of the industries which purchase large amounts of cotton yarn are also engaged in spinning yarn for their own use. The specialized yarn producer is therefore selling an unbranded material to be used as raw material in the manufacture of articles over whose marketing he has no control. Moreover, the selling costs of the yarn mill enter as an extra cost.[9] At the same time, the yarn buyers are themselves, for the most part, manufacturing for competitive markets and are frequently in competition with mills that spin their own yarn. Yarn mills are therefore under extreme pressure to reduce some other costs by at least the amount of their selling costs below those which are normally incurred in the yarn division of an integrated plant. This subject is more fully discussed in a later chapter dealing with wages in spinning mills.

Insofar as this relationship to the market warrants a distinction between the yarn branch of the industry and the cloth branch, it involves a distinction between yarn produced for sale and yarn produced for direct mill use. It is not a distinction between establish-

[9] The cost of selling a gross of knit undershirts, for example, does not depend on whether or not the mill buys yarn or produces its own yarn.

ments specializing in spinning and those that weave cloth. Among the specialized spinning establishments are not only the mills producing yarn for commercial sale, but also those producing yarns sold for further manufacture to affiliated companies or transferred to other plants of the companies reporting. There were 389,000,000 pounds of yarn produced for sale by cotton manufacturing establishments. The bulk of this yarn was sold to manufacturers, some of whose competitors spin their own cotton yarn. On the other hand, there were 51 establishments making 44,568,000 pounds of carded yarn and 26 making 25,385,000 pounds of combed yarn that was sold to affiliated companies or transferred to other plants of the companies reporting. There is nothing in the character of the market relationship to distinguish this 70,000,000 pounds of yarn from the yarn produced and consumed within a single integrated establishment. In the one case, the yarn may be physically shipped from one plant to another; in the second case, it is moved from the spinning division to the weaving division.

The establishments engaged in the weaving of cotton goods over 12 inches in width are manufacturing a wide variety of products, many of which are only indirectly competing with one another. The various types of woven product that are included within the woven cotton-goods industry are shown in table 9.

TABLE 9.—*Production and value of various types of product included in the cotton woven goods industry, 1935*

Type of product	Pounds (in thousands)	Value (thousands of dollars)
Ounce stock (except tire duck)	90,423	27,478
Numbered duck (except tire duck)	28,151	9,632
Narrow sheetings and other coarse and medium yarn fabrics	381,744	110,409
Print-cloth-yarn fabrics	381,072	132,809
Napped fabrics	115,597	43,800
Colored cotton goods and related fabrics	255,746	88,584
Fine cotton goods	146,316	91,382
Tire fabrics	118,304	39,939
Towels, towelings, wash cloths, bath mats, and terry-woven fabrics other than towels, etc	80,198	35,197
Wide cotton fabrics	160,426	59,011
Bedspread fabrics	16,657	8,109
Pile fabrics, tapestries, and table damask	46,968	29,004
Drapery and upholstery fabrics	39,710	22,573
Cotton rugs (except bath mats)	5,198	2,137
All other woven fabrics over 12 inches in width	18,778	10,243

Source: Census of Manufactures, 1935, pp. 278–284.

The largest classes of production are narrow sheetings ($110,000,000), print cloth ($133,000,000), fine cotton goods ($91,000,000), colored cotton goods and related fabrics ($89,000,000), and wide cotton fabrics ($59,000,000).

This group of mills constitute a single industry in the sense that they use the same general types of machinery and require workers in the same general occupational categories. The influence of the transferability of workers and equipment from one type of production to another is discussed at greater length in the next chapter. Furthermore, an immediate unity of the industry arises from an endless overlapping in the production of different types of cloth that appears ultimately to connect establishments primarily engaged in producing such unrelated products as ounce duck and voile. Therefore, if an attempt is made to classify the products of the industry under section 8 (c) of the Fair Labor Standards Act, it will be desirable to make an intensive study of original census reports to determine where such overlapping is least pronounced.

Chapter 2

Competitive Character of the Cotton-Textile Market and Plant Capacity

The cotton-goods industry, like the other textile industries, is highly competitive. Large mergers of mills have not been particularly effective as a device for escaping from the competitive market. The characteristic organization of the industry is still that of grey-goods mills purchasing raw cotton in a competitive market and selling an unbranded staple product to converters, who in turn commission finishers to bleach, dye, or print the cloth to the converter's specifications. The finished product is then sold by the converter. Some units do their own finishing and converting. In general, however, a finishing plant for efficient operation requires a larger volume of grey goods than is produced in grey-goods mills which have attained an optimum size and are able to hold their own as efficient and effective competitors. The result is that large numbers of mills are in direct competition with each other. Plain print cloth, 36 inches and wider, was made in 125 mills in 1935 and narrow sheetings in 116. In some lines competition at any one time is limited to a few mills, but in the sense explained below, all 533 mills spinning and weaving cotton goods in 1935 were potentially in competition.

One striking characteristic of the cotton-textile industry is the ease with which the product of any given plant may be changed. Approximately one-quarter of the looms are designed for specialized production such as terry-toweling, wide bedsheetings and industrial fabrics, and pile fabrics. Box looms are required for certain types of fabric. On those specialty fabrics requiring specialized equipment, competition is confined to those producers possessing such equipment, except as new capital investment may be made. But plain automatic looms are used for the bulk of the work; they are used on coarse osnaburgs and fine combed broadcloth. Roughly three-quarters of the production of the cotton-goods industry is on items adapted to the type of equipment found in any standard cotton mill. It is true, for example, that loom width may vary, but more than two-fifths of the plain automatic looms are of 40-inch width.[1]

[1] Census of Manufactures, 1935, p. 293. See also Kennedy, S. J., "Profits and Losses in Textiles," 1937, p. 174.

Overhead cost imposes a greater limitation on changes in production than technology. In a well-designed mill, carding, spinning, and weaving equipment is balanced to produce a specific cloth construction. In general, a mill may use its equipment on yarn counts and fabrics within a range of about five counts either side of that count and cloth construction with reference to which its equipment is in balance. To attempt a greater change-over involves carrying idle equipment. Thus 215 cards are required to supply 47,056 long-draft spindles on sheeting yarn (22's warp, 22.5's filling), but only 150 cards are needed to supply an equal number of spindles on carded broadcloth yarn (32's warp, 38's filling).[2] Similarly, as the weight of the yarn changes, a new balance is established between the number of spindles and the number of looms. For example, in the cases cited, 1,283 automatic looms are required for the sheeting mill; 1,116 for the carded broadcloth mill.[3]

It is economical for a mill to shift into an entirely new range of goods only on a relatively long-run basis. It frequently is necessary to purchase equipment to attain balance at the new level. It certainly is necessary to make many adaptations of existing equipment. Finally, some retraining of the working force may be required.

The fact remains, however, that the adaptation of mills to new types of product is possible, and develops intensive interrelationships within the industry quite as much as does the existing overlapping of production among competing mills. From month to month, mill margins on sheetings and carded broadcloth, for example, reflect the play of separate sets of market forces. But over longer periods of time it is quite impossible to have a continuing high rate of return on one line of production and losses on another. Under such conditions, existing mills will transfer into the profitable field without any substantial new capital outlays.

The intensity of competition in the largest branches of the cotton-goods industry is indicated by all available information. It is significant, for example, that print cloth at any moment sells at an almost standardized price and that quality shows itself not so much in a higher price as in the ability of one manufacturer rather than another to sell his product. While the quality factor may determine who gets an order at a given price, it has been alleged that every producer has to meet a cut in price of even ⅛ cent a yard if he wishes to get business, irrespective of the quality of his product.

There is further evidence of the intensity of competition in the rapidity with which the industry adjusts its prices to large decrease

[2] Bureau of Labor Statistics unpublished "Survey of Technological Improvements and Developments in the Cotton-Textile Industry, 1910 to 1936," by the Barnes Textile Associates.

[3] This decrease occurs in the face of an assumption that the sheeting looms operate at 92 percent efficiency on 200 picks per minute, and the carded broadcloth looms at 92 percent efficiency on 192 picks per minute.

in cost. It is not unusual in many industries to find a marked lag in price changes, such that a fall in material costs accrues to the advantage of the processor (except as it may involve him in inventory losses). It was believed by many people in the industry that a similar situation existed in cotton goods. Thus, it was implied in the argument against the cotton processing tax in 1935 that there was enough "stickiness" of cotton-goods prices so that the repeal of the processing tax on cotton would increase the mill margin of textile mills; in other words, that they would not have to surrender the full amount of the processing tax in the selling price of grey cloth. Something of this sort did happen in the case of voile, and more particularly of combed lawn, when the processing tax was removed in January 1936. The mill margin for combed lawn after deducting raw cotton cost was 41.3 cents per pound in December 1935 and after deducting processing tax was 36.3 cents. In January after removal of the tax, the margin was 40.1 cents. In the case of sheetings and carded broadcloth, however, an almost instantaneous readjustment of price of about 4½ cents per pound of cloth was made. The mill margin for sheetings in December 1935, after deducting cotton cost which included the processing tax, was 12.72 cents per pound of cloth; in January 1936 it remained virtually unchanged, despite the fact that the processing tax was deducted from the effective price of cotton. For carded broadcloth the respective margins were 18.38 and 18.47 cents per pound. The readjustment of print cloth prices from December to January involved a decrease in the net mill margin (after tax) from 15.67 to 14.90 cents, while in combed broadcloth the net mill margin increased from 31.38 to 31.89 cents,[4] all of this despite the fact that the effective price of raw cotton was reduced by about 4½ cents per pound of cloth. None of these differences between December and January is as significant as the one outstanding fact—that competition was keen enough in each of these lines so that no mill-margin advantage accrued from a drastic and almost instantaneous change in the effective price of cotton.

Expansion

The problem of earning a return on competitive capital investment takes on an entirely different aspect under conditions of expanding and static demand. Throughout the nineteenth century there had been an almost continuous expansion of the plant capacity of the industry, both in New England and the cotton-growing States (table

[4] See tables 24 to 29.

10). In the decade 1890–1900, the South began to surge forward.[5] There was a trebling of the active cotton spindles in the South between these 2 years, and a further two and one-half fold expansion from 1900–1910. Over this 20-year period there was less than a 50-percent expansion in New England. In 1890 the South had had about one-tenth of the active spindles; by 1910 it had more than one-third. But the essential point to note is that the growth of the industry in the South was an addition to the capacity of the industry, not a relocation of existing capacity. The growth of the industry over these decades was in response to the needs of a rapidly increasing population whose per capita requirements were also increasing (table 11).

TABLE **10.**—*Active cotton spindles, by regions, 1840–1935*

[In thousands]

Year [1]	United States	New England States	Cotton-growing States	All other States
1840	2,285	1,597	181	506
1850	3,998	2,959	265	775
1860	5,236	3,859	324	1,053
1870	7,132	5,498	328	1,306
1880	10,653	8,632	561	1,460
1890	14,384	10,934	1,570	1,880
1900	19,472	13,171	4,368	1,933
1910	28,267	15,735	10,494	2,038
1915	31,964	17,101	12,956	1,908
1920	35,481	18,287	15,231	1,963
1925	35,032	15,975	17,292	1,765
1930	31,245	11,351	18,586	1,308
1935	26,701	7,763	18,212	726

[1] The figures for 1915 to 1935 relate to the 12 months ended July 31 and those for prior years to the 12 months ended August 31.

Source: Bulletin 174, "Cotton Production and Distribution," season of 1936–37, Bureau of the Census, p. 27.

Profits were substantial and furnished the means for financing expansion. The average rate of dividends in a group of mills from 1891 to 1900 was 8.52 percent; and from 1901 to 1910, 8.81 percent.[6]

There is evidence that a period of stabilization lay ahead of the industry in 1910. The tremendous expansion from 1900 to 1910 was partly the result of the introduction of the automatic loom with

[5] The increased rate of expansion in the South was due to a number of factors. Not the least important was the perfection of the band-driven ring spindle shortly before 1880. Ring spinning required less skilled labor than mule spinning, and freed the manufacturer to some extent from the older textile centers with their trained labor supply. Furthermore, the ring spindle, with substantially greater speed than the mule, was peculiarly well adapted to the production of coarser yarns. By 1899 the cotton-growing States produced 52.5 percent of the coarse yarn in the country, as against 35.9 percent spun in New England. It is also significant that coarse yarns constituted nearly 58 percent by weight of the total yarn spun in 1899. (Yarn figures compiled from Census of Manufactures' tables on cotton yarn produced for mill use or sale, except yarns for sewing thread and crochet, darning, hand-knitting, and embroidery.)

[6] Kennedy, S. J., "Profits and Losses in Textiles, 1937," p. 252. In this connection it should be borne in mind that the dividend rate is a weighted average for each year of an increasing sample of mills: 14 in 1891; 27 in 1900; 50 in 1910; and 60 in 1920. (The average for the periods shown in the text has been computed as an unweighted average of these annual rates.) Since these are mills, all of which survived to 1928 and 48 of which survived to 1934, the rate of return is presumably larrge than would be an average rate that included mills which died off.

the profits which it made possible. Under normal competitive conditions, following the expansion from 1900 to 1910, there would have been a decrease of profits. Indeed, from 1910 to 1914, the unweighted average rate of dividends did decline to 5.4 percent. But at this juncture the World War occurred and postponed the elimination of obsolete equipment that was probably necessary to restore balance within the industry. Indeed, wartime profits created the wherewithal to finance some further net expansion of the industry and the modernization of some plants. The peak capacity of New England was reached in 1922–23 when there were about 19 million spindles in place. The peak for the nation as a whole was reached in 1924–25 with about 38 million spindles (table 13).

TABLE 11.—*Cotton consumption per capita, United States, 1840–1930*

Census year	Average cotton consumption (10-year average) [1]	Population, continental United States	Cotton consumption per capita [2]
	Pounds		*Pounds*
1840	94,739,833	17,069,453	5.6
1850	236,849,265	23,191,876	10.2
1860	265,006,686	31,443,321	8.4
1870	417,565,556	38,558,371	10.8
1880	738,772,477	50,155,783	14.7
1890	1,151,648,404	62,947,714	18.3
1900	1,758,389,748	75,994,575	23.1
1910	2,431,539,911	91,972,266	26.4
1920	2,945,637,295	105,710,620	27.9
1930	2,965,544,629	122,775,046	24.2

[1] Cotton consumption is figured for the 10 years 1835–44; 1845–54; etc.
[2] Average consumption per year for decade centered on the indicated year: 1835–44; 1845–54; etc.

Source: Figures for years prior to 1931 are from "Cotton Production and Distribution, 1931–32," Bureau of the Census; figures for later years are from the 1934–35 and 1936–37 bulletins.

Stabilization of Demand

The stabilization of the demand for cotton-textile products in the post-war period has brought the problem of overexpansion to the center of the stage. In 1909 and 1914 there was available for domestic consumption about 66 yards of cloth per capita. In the 5 years 1925–29, per capita consumption was at the post-war peak and averaged 65 yards. During the depression from 1930–34 it averaged 54 yards.[7] There has been no expansion of the aggregate consumption of cotton over the last 15 years (table 12).

Cotton consumption has been subject to such extraordinary pressures over the last 20 years that it is difficult, if not impossible, to project future demands. The single year 1936–37 saw the largest consumption on record, but single years are notoriously bad bases for comparison. The 3 years August 1935 to July 1938 closely approximated the 3-year peak of August 1926 to July 1929.

[7] Kennedy, S. J., "Profits and Losses in Textiles," p. 231. Computations include an allowance for imports and exports. No allowance for changes in stocks can be made.

TABLE 12.—*Lint cotton consumed and active spindle hours, 5-year averages, by crop years*

Years beginning Aug. 1, ending July 31	Cotton consumed	Active spindle hours
	Million pounds	*Million hours*
1933–38	3,198	82,633
1928–33	3,012	83,280
1923–28	3,261	93,682

Source: Bureau of the Census.

It is dangerous to assume from table 11 that the decline in the 10-year averages of per capita consumption reflect underlying trends rather than drastic but temporary shifts in the underlying character of the market. Thus in 1905–9 and again in 1910–14 there was a per capita consumption of about 26.6 pounds per year. In the war period, with rising exports, the average was 30.2 pounds. In 1920–24 the average dropped back to 25.6 pounds, reflecting in full the post-war slump and the secondary readjustment in 1923–24. The average in 1925–29 was 27.6 pounds, the largest peace-time demand in history. The 5-year average 1930–34, covering years of extreme depression and low national income, saw a consumption of 21.4 pounds of cotton per capita.

These figures seem to indicate a stabilization of demand, rather than a contraction, in which the market for cotton goods—aside from year to year fluctuations—is highly dependent upon the size of the national income.

Contraction of Plant Capacity

Under conditions of rapid expansion of demand, the passage of time acts to restore balance; an excessive supply of equipment, or one that is called into use only to handle peak loads lasting a few months, becomes no more than adequate to handle normal volumes. With a more or less stabilized demand, excess capacity shows up with long-continued periods of idleness of equipment. This did occur in cotton textiles in the decade of the 1920's. In Massachusetts, for example, one-quarter of the spindles were idle in almost every month from 1923 to 1927. Equipment began to be idle for 12 months on end. Whereas from the year 1905–6 to the year 1920–21 there had been only 3 years in which more than about 600,000 spindles were idle throughout the year, from 1921–22 to date there has not been a year with less than 1,200,000 spindles idle throughout the year and in some years there have been 4,000,000 idle. (Chart 1.)

Marginal equipment that is retained for use in a few months of the recurrent booms that characterize this industry may pay for its maintenance. But equipment that stands idle year after year, that is not used even in the wildest boom month, is a liability. It may

have resale value or junk value; it has no value as plant. The pressure on marginal equipment in the 1920's can be appreciated when it is realized that in each year from 1922–23 to 1933–34 there was a decrease in the number of spindles that were active at any time during the year. When even a good year for the industry does not bring business to this Micawber-like equipment, it is on the way out. No one can tell how much equipment was junked as the result of business judgment and how much because its owners became bankrupt through their attachment to book values. There was, however, a tremendous reduction in the number of spindles in place (table 13). Whereas New England had had 19 million spindles in place in 1922, it now has less than 7 million. The South continued to grow until 1935 but at a very much decreased rate and with a negligible net growth since 1930. The total spindles in place have decreased from about 38 million for the United States as a whole in 1925 to about 26 million at the present time.

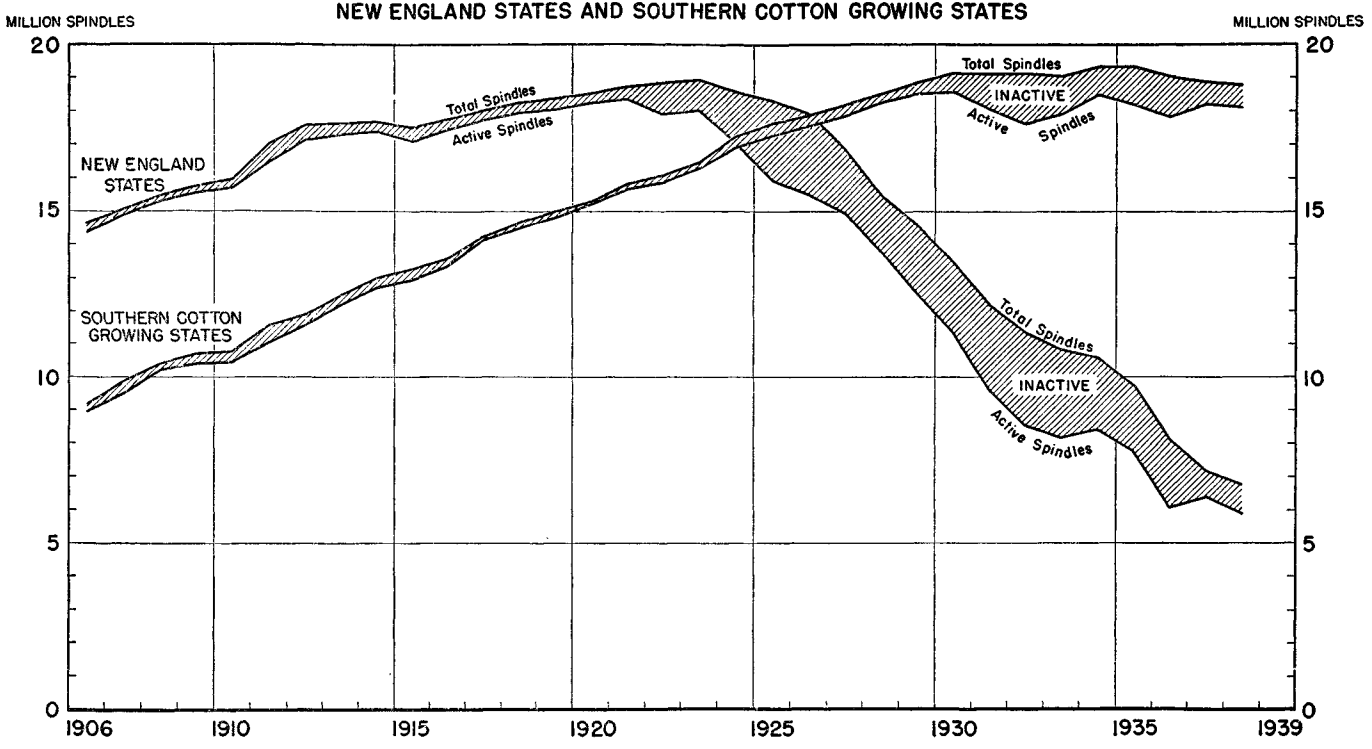
TABLE 13.—*Spindles in place at end of year and spindles active at any time during year, 1921–38*

Crop year ended July 31	Cotton-spinning spindles (thousands)					
	Cotton-growing States		New England States		Total United States	
	In place	Active	In place	Active	In place	Active
1921	15,860	15,709	18,734	18,388	36,618	36,047
1922	16,075	15,906	18,856	17,939	36,946	35,708
1923	16,458	16,310	18,930	18,054	37,409	36,260
1924	17,226	16,944	18,576	17,066	37,804	35,849
1925	17,635	17,292	18,333	15,975	37,929	35,032
1926	17,875	17,574	17,946	15,526	37,586	34,750
1927	18,169	17,894	16,871	14,995	36,696	34,410
1928	18,508	18,282	15,463	13,815	35,540	33,570
1929	18,848	18,541	14,549	12,538	34,820	32,417
1930	19,122	18,586	13,479	11,351	34,025	31,245
1931	19,109	18,073	12,168	9,655	32,673	28,980
1932	19,138	17,030	11,374	8,566	31,709	27,272
1933	19,052	17,929	10,810	8,205	30,893	26,895
1934	19,331	18,511	10,582	8,457	30,942	27,742
1935	19,340	18,212	9,741	7,763	30,093	26,701
1936	19,025	17,834	8,135	6,092	28,147	24,664
1937	18,891	18,244	7,172	6,425	26,982	25,419
1938	18,798	18,128	6,777	5,919	26,372	24,774

Source: Bureau of the Census.

TOTAL, ACTIVE AND INACTIVE COTTON SPINDLES 1906–1938

NEW ENGLAND STATES AND SOUTHERN COTTON GROWING STATES



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Chapter 3

Present Balance of Equipment and Demand

Has this reduction of equipment brought the industry back into balance? Is there still excess equipment? After all, while we speak of a stabilized demand for cotton goods, no evidence is yet available that it is subject to a substantially declining demand. Cotton consumption for the 3 years, August 1935 to July 1938, was almost exactly as large as in the 3 years August 1926 to July 1929, which had the largest consumption on record for 3 consecutive years. The year 1936–37 with 7,950,000 bales consumed was the largest single year on record. The scrapping of one-quarter of the equipment of the industry from the lower margin might well be expected to have restored balance.

The question of whether or not there is excess equipment cannot be answered, either categorically or in terms of possibilities. The largest volume of cotton ever processed never involved the use of more than 24,727,000 spindles in any 1 month; there were 27,067,000 spindles in place at the end of that month. Thus in April 1937 about 2,340,000 spindles were idle. Approximately 700,000 of these were used at some time during the year, but even in this phenomenal year more than one and one-half million spindles were continuously idle. There is some question as to whether this was excess equipment in the industry in 1937 or merely some equipment so inefficient that it could never be used and was essentially waiting for the scrap-heap. Mill margins were unusually large in 1937; there were unfilled orders on the books for almost 4 or 5 months work; and there is every evidence that the industry had pressed into use all equipment that could be used. At all events, 700,000 more spindles have been scrapped since 1937.

Machine capacity, however, has little meaning as an abstract standard. It may be noted that had active spindles been active no more hours per year in 1936–37 than they were in 1922–23 and had no more cotton been processed per spindle-hour in 1936–37 than in 1922–23, we would have faced an extreme shortage of equipment not only in 1937 but in other recent years. It would have required an average of more than 41,000,000 active spindles (plus whatever idle spindles may constitute a necessary reserve) to handle 7,950,000 bales of cotton under the operating standards prevalent in 1922–23. There

have never been more than 38,000,000 spindles in place in this country. And yet that amount of cotton was processed in 1936–37 with an average of about 24,200,000 active spindles.

TABLE 14.—*Spindle-hours and cotton consumed: United States, 1921–38*

Years ending July 31—	Active spindle-hours	Cotton consumed	Spindle-hours per bale
	Thousands	*Bales*	*Thousands*
1922	89,308,614	5,909,820	15.1
1923	101,931,101	6,666,092	15.3
1924	84,359,693	5,680,554	14.9
1925	91,054,615	6,193,417	14.7
1926	93,041,081	6,455,852	14.6
1927	102,605,403	7,189,585	14.3
1928	96,451,050	6,834,063	14.1
1929	99,604,009	7,091,065	14.0
1930	87,515,224	6,105,840	14.3
1931	75,263,548	5,262,974	14.3
1932	68,754,780	4,866,016	14.1
1933	85,264,765	6,137,395	13.9
1934	80,419,471	5,700,253	14.1
1935	72,526,102	5,360,867	13.5
1936	83,959,834	6,351,160	13.2
1937	101,224,588	7,950,079	12.7
1938	75,036,248	5,747,978	13.1

Source: "Cotton Production and Distribution, 1936–37." Figures for 1937–38 computed from data obtained directly from Bureau of the Census and from preliminary monthly releases.

Technological Improvements in Spindle Performance

The first factor responsible for this remarkable performance is a technological one. Various factors have contributed to decrease the number of spindle hours required to process a bale of cotton from 15,300 in 1922–23 to a low point of 12,700 in 1936–37 (table 14). Production per spindle hour is a function of the number of revolutions per minute and of the percentage of efficiency of operation. Speeds have been increased. The efficiency of spindle operation has increased by using larger bobbins that require less frequent doffing and by reducing breakage. The more extensive use of long-staple cotton and more careful processing in the carding department and on the spinning frames have all contributed to a higher percentage of efficiency per spindle hour.[1] The result is that whereas in the 5 years, August 1923–28, an average of 28.73 spindle hours were required to process a pound of cotton, in the 5 years, August 1933–38, only 25.84 hours were needed.[2]

While there was a decrease in the number of spindles in place from

[1] For example ,in describing good standards of equipment and performance for a sheeting mill in 1910 and again in 1936, Barnes Textile Associates specify 8,950 r. p. m. and 9,500 r. p. m. on 22's warp yarn; 8,000 r. p. m. and 8,500 r. p. m. on 22.50's filling yarn. Average weight per bobbin are calculated at 0.166 pounds and 0.190 pounds for warp yarn; 0.070 pounds and 0.110 pounds for filling yarn. Standard efficiency is estimated at 90 and 92 percent for warp spindles; 87 and 89 percent for filling spindles.

[2] Some part of this decrease may be due to a change in the proportions of coarse, medium, and fine yarn demanded. The data are inadequate to appraise fully the influence that would have been exerted by a decrease in fine yarn from 7.6 percent by weight of the total yarn produced in 1927 to 6.4 percent in 1935, of medium yarn from 41.2 percent to 39.5 percent, and an increase of coarse yarn from 51.2 percent to 54.1 percent. 1937 figures are not yet available.

the beginning of 1926 to the beginning of 1936 of slightly more than 8,400,000, only part of this decrease was an effective withdrawal of capacity; the increased volume of cotton processed per spindle hour made the 29,000,000 spindles in place in 1936 equivalent to 33,200,000 of those in place 10 years earlier.[3] The effect of this increased effectiveness of spindles can be seen by comparing figures of mill operation for the crop years 1926–27 and 1936–37. In the year 1926–27, 7,190,000 bales of cotton were consumed and the spindles operated 102,605,000,000 hours. Both were record-breaking figures. Cotton consumption remained below 1926–27 levels for a period of 10 years, but in the boom year of 1936–37, mills consumed 7,950,000 bales of cotton. Despite the fact that mills processed 10.6 percent more cotton than in the year 1926–27, they operated only 101,225,000,000 spindle-hours, 1.3 percent less hours of machine operation than in 1926–27.

Machine Hours and Effective Capacity

Competition and the elimination of surplus and obsolete equipment by the bankruptcy route has had the paradoxical effect of still further increasing excess spindlage. Technologically, production is measured by the spindle-hour. Plant capacity is measured by spindles and is governed by the customary use made of them. Spindles, when used today, are used more hours per year than was formerly the case. The search for economy has not overlooked the opportunity to spread a fixed annual overhead cost for taxes, insurance, depreciation, and even to some extent of management over more hours of machine operation in the year. The tendency to increase the average number of hours per active spindle can best be seen by examining the record in successive peak years of operation (table 15).

TABLE **15.**—*Average hours operation per year per active spindle*

Year ending July 31—	United States	New England	Cotton growing States
1923	2,945	2,439	3,505
1927	3,153	2,438	3,772
1929	3,286	2,547	3,812
1933	3,538	2,666	3,913
1937	4,183	3,625	4,413

Source: "Cotton Production and Distribution, 1936-37," Bureau of the Census.

It will be seen that whereas active spindles averaged 2,945 hours per year in 1922–23, they averaged 4,183 in 1936–37, an increase of 42 percent. In other words 1,000,000 spindles in 1936–37 were working as many spindle-hours as had been worked by 1,420,000 spindles in 1922–23.

[3] It is, of course, to be noted that the scrapping of slower band-driven spindles would have the effect of raising the average of those that are left.

This movement in the United States average is the result of two different trends, both working in the same direction. In the first place the southern mills averaged 44 percent more hours per active spindle than New England mills in 1923. Thus, with the trend of the industry away from New England and the increase in the percentage of active spindles that were in the South, it follows that, even had there been no increases in the customary hours of operation in the two regions considered separately, there would have been a rise in the national average. This can best be illustrated from the annual figures in table 16. In years of slack operation the number of spindle hours per spindle declines.[4] Thus it will be seen that both in New England and the South active spindles averaged fewer hours per year in 1929–30 than in 1922–23, but the national average rose from 2,945 hours to 3,023 hours exclusively because a larger proportion of the business was done in the South.

The second trend is toward more machine-hours of operation in each region. It will be seen that in 1922–23 the average for New England mills closely approximated the maximum of 2,500 hours a year that would be possible if every active spindle were operated on a 48-hour week, single-shift, for 52 weeks.[5] Between 1922–23 and 1926–27 there was no tendency evident to increase the hours of machine operation in New England. By 1928–29, and in still more marked fashion by 1932–33, the hours of machine operation were increased in New England either by lengthening the hours of work or by increasing the number of mills working two shifts. The 1922–23 average could have been attained if every active spindle had worked 48 hours each week; the 1932–33 rate would have also necessitated working at least 10 percent of the spindles steadily on a second shift or of putting all of the spindles on approximately a 54-hour rather than a 48-hour week.

In the South during this period there was also an extension of two-shift operation. The most typical shift operation was 54 hours. This would produce 2,800 hours per year as a maximum. The 1922–23 average operation of active spindles could have been attained by working every active spindle a full 54-hour shift and 25 percent of the spindles a second 54-hour shift. By 1932–33 it would have been necessary to work at least 40 percent of the spindles on a second 54-hour shift.

[4] This reflects partly a change in operating schedules, as, for example, the elimination of second-shift operation or a decrease from 5 days to 3 days of plant operation. It also reflects the fact that the average number of active spindles is computed from the number of spindles active at any time within the month. Thus, if a mill is completing an order and closing down part of its spindles before the end of the month, they none the less appear as active in that month. Such partial months of operation occur more frequently in slack years than in years of active business.

[5] The fact that some mills operated 54 hours and that some mills operated two shifts is concealed by the offsetting fact that obviously some spindles, active during part of the month, were not continuously operated on even a 48-hour, single-shift basis.

TABLE 16.—*Active cotton spindle-hours, average active spindles, and number of hours run per annum per average active spindle in the cotton-goods industry, 1921–38*

Year ending July 31—	Active cotton spindle-hours (thousands)			Average active spindles [1]			Number of hours run per annum per average active spindle		
	Cotton States	New England	United States	Cotton States	New England	United States	Cotton States	New England	United States
1922	47,841,112	36,783,240	89,308,614	15,445,896	15,885,678	33,075,512	3,097	2,315	2,700
1923	55,776,192	41,271,278	101,931,101	15,913,886	16,919,454	34,608,799	3,505	2,439	2,945
1924	50,598,558	30,102,267	84,359,693	16,008,964	14,740,659	32,406,130	3,161	2,042	2,603
1925	55,912,066	31,201,215	91,054,615	16,603,779	13,875,367	32,114,718	3,367	2,249	2,835
1926	58,517,714	31,541,428	93,941,081	17,024,406	13,749,091	32,356,681	3,437	2,294	2,903
1927	65,864,979	33,052,210	102,605,403	17,459,548	13,556,710	32,540,548	3,772	2,438	3,153
1928	65,272,570	27,862,205	96,451,050	17,791,734	11,867,208	31,068,683	3,669	2,348	3,104
1929	68,360,571	28,252,639	99,604,009	17,933,289	11,093,510	30,310,029	3,812	2,547	3,286
1930	61,878,373	23,038,367	87,515,224	17,827,700	9,909,206	28,953,846	3,471	2,325	3,023
1931	54,482,213	18,757,156	75,263,548	16,982,222	8,041,002	25,970,795	3,208	2,333	2,898
1932	53,612,507	13,260,356	68,754,780	16,529,298	6,392,482	23,836,048	3,243	2,074	2,884
1933	66,366,030	17,231,255	85,264,765	16,958,418	6,464,187	24,100,797	3,913	2,666	3,538
1934	59,291,245	19,289,679	80,419,471	17,602,744	7,353,688	25,668,753	3,368	2,623	3,133
1935	54,642,532	16,244,634	72,526,102	16,928,180	6,411,180	24,008,260	3,228	2,534	3,021
1936	65,275,212	16,816,341	83,959,834	16,989,732	5,389,332	23,043,940	3,842	3,120	3,643
1937	77,666,857	21,227,767	101,224,588	17,600,292	5,855,854	24,198,897	4,413	3,625	4,183
1938	59,853,350	13,706,037	75,036,248	16,968,590	4,929,655	22,520,374	3,527	2,780	3,332

[1] Computed as the average of 12 monthly reports of spindles active within the month. This figure is always less than the number of spindles operated at any time in the year and greater than the daily average of spindles operated.

Source: "Cotton Production and Distribution, 1936–37," Bureau of the Census. Figures for 1938 from preliminary monthly releases of the Bureau of the Census.

The combined increase in wages and increase in the cost of cotton in 1933 created added pressure to achieve economies of operation. The movement to extend machine-hours was somewhat concealed at first because of the low level of operations in the two crop years 1933–35. The increased business activity in 1935–36 was reflected in higher averages of hours per spindle, particularly in New England. In 1936–37 the movement showed itself in full force. Single-shift operation on 40 hours can produce 2,080 machine-hours per year. In New England active spindles averaged 3,625 hours—a rate possible if every active spindle was worked 40 hours a week and at least 74 percent worked a full second shift. In the South the average was 4,413 hours—a rate requiring not only two full shifts of 40 hours each but a third shift of 40 hours for at least 12 percent of the spindles or else a shift-week of more than 40 hours.

The second shift has in fact become all but universal. In April 1937 a survey of 244 mills by the United States Bureau of Labor Statistics showed only 2 out of 186 mills in the South and 14 of 58 plants in the North on 1 shift.[6] But in addition there was evidence of a substantial third-shift operation, though usually with a smaller working force than on the first two shifts. Fifty-six of the one hundred and eighty-six southern mills operated all departments on a third shift, while eight additional integrated mills did spinning and no weaving and two other integrated mills did weaving but no spinning on the third shift.[7] In the North, out of 58 plants, 15 operated a third shift—13 of these in all departments, and 2 in all departments except weaving.

The change in effective capacity brought about by added hours of machine operation has been especially marked in New England. In New England the mills operated virtually the same number of spindle-hours in March 1937 as in June 1933 with 1,108,000 less active spindles. More than one million spindles were displaced from use in New England over this period by increasing by one-sixth the average time each spindle operated (table 17). June 1933 and March 1937 were the 2 months of greatest cotton-textile mill activity in recent years. Despite the fact that shift hours in the South had been reduced generally from 54 to 40 over this period, southern mills in 1937 operated at a rate of only 1.8 percent less spindle-hours with a 0.9 percent increase in the number of spindles used. In other words an increased use of the second shift had almost fully compensated for the shorter shift-weeks in the South.

[6] A shift was defined as operating with not less than 10 percent as many workers as were employed in the largest shift. Almost every mill employs a few workers on jobs that are serviced continuously.

[7] An extra shift is frequently used as a means of balancing operations to machine equipment. This may have been the case with the 10 mills cited; it was probably the case of the 23 mills that ran a third shift only in connection with such processes as carding, winding, spooling, twisting, etc. These 23 mills are not included among the 66 cited in the text.

TABLE 17.—*Cotton mill spindle activity in 2 peak months*

	New England		Cotton growing States	
	Spindles active	Active spindle-hours (thousands)	Spindles active	Active spindle-hours (thousands)
June 1933	7,242,362	2,074,829	17,599,804	7,044,696
March 1937	6,134,100	[1] 2,055,790	17,760,526	[1] 6,916,783

[1] Monthly total by Bureau of Census reduced to 22/23 to eliminate the influence on hours of the fact that June 1933 had 22 working days, whereas March 1937 had 23.

The combined effect of an increase in spindle efficiency and in machine-hours was to maintain a situation of redundancy in the face of a declining number of spindles in place. There have been three periods of peak spindle activity since 1920: January to May 1923, March to June 1927, and March to June 1937. In 1923 there were 37,300,000 spindles in place; at one time or another during the crop year 1922–23, 36,260,000 spindles were active. The total number of spindle-hours operated was about the same as in 1926–27. The number of spindles in place rose to a peak of 37,940,000 in December 1924 and declined to 37,000,000 by the peak season of 1926–27. But whereas 36,260,000 spindles were active in 1923, only 34,410,000 were active in 1927 and only the fact that they processed 7.9 percent more cotton than in 1922–23 held even this number of spindles in use. Again in 1936–37 the industry operated approximately the same number of spindle-hours as in 1926–27, but processed 10.6 percent more cotton than in 1926–27 and 19.3 percent more than in 1922–23. By the time the 1937 peak of activity was reached there were only 27,000,000 spindles in place and only 25,400,000 that were used at any time during the year. Because of the concentration of work on fewer spindles working longer hours and the more effective use of spindles that were active, there were still as many idle spindles during the peak load of 1936–37 as there were in 1923 with reference to the load and standards of 1922–23.

Third Shift and Plant Capacity

The answer to the question "Is there excess capacity?" appears to turn entirely on the question of the future of the third shift. It is not possible to operate spindles continuously 120 hours a week for 6,240 hours a year. But on a 5-day work week, which allows for overhauling machinery, such a schedule can be maintained for a substantial period. In 1936–37 active spindles averaged only 4,183 hours. During the first 4 months of 1937 the industry operated at peak activity and processed 2,840,000 bales of cotton (table 18). In these 4 months the mills operated at a rate of approximately 4,420

spindle-hours per year and were processing at the rate of 8,520,000 bales a year. Had the spindles which were active in January to April been worked at any time on a full three-shift basis, they would have processed at the rate of 12,000,000 bales of cotton a year. Even with allowance for the obvious impossibility of using machinery so completely, with a widely extended use of the third shift, it is probably technically possible to process at the rate of 10,000,000 bales a year with the spindles that operated in 1936–37. Or, since an 8,000,000 bale year is the largest we have ever known, we may say that on a universal three-shift system it would be possible to process such an amount with about 6,000,000 less spindles than were used in 1937.

TABLE 18.—*Spindle-hours per working day per active spindle, 1936–38* [1]

Month	United States			New England			Cotton-growing States		
	1936	1937	1938	1936	1937	1938	1936	1937	1938
January	14.5	17.0	12.1	12.6	15.2	10.1	15.2	17.7	12.8
February	14.4	17.0	12.5	12.5	14.7	11.1	15.2	17.9	13.0
March	14.2	17.0	12.7	11.8	15.2	11.4	15.1	17.7	13.1
April	14.4	16.9	11.5	12.4	14.8	9.8	15.1	17.8	12.1
May	14.4	16.5	11.6	12.5	14.2	10.8	15.1	17.6	12.0
June	14.5	15.9	12.2	12.8	13.2	10.5	15.2	17.0	12.9
July	14.7	15.0	13.5	13.1	12.7	11.8	15.4	15.9	14.1
August	15.4	15.3	14.5	13.6	12.8	13.2	16.1	16.3	15.0
September	16.0	14.9	----	14.3	11.4	----	16.6	16.1	----
October	16.0	13.9	----	13.9	10.3	----	16.8	15.2	----
November	16.4	13.2	----	14.2	9.9	----	17.2	14.2	----
December	16.4	[2] 11.7	----	14.6	10.0	----	17.2	12.2	----

[1] Computed from monthly figures of Bureau of the Census: Total spindle hours in the month divided by the product of the number of spindles active at any time within the month times the estimated number of working days. Working days were estimated by the Bureau of Labor Statistics to include Monday through Friday with the exception of holidays. From unpublished data in the Bureau's files it appears that July 4 and Christmas are observed by virtually all mills. New Year's is generally observed in New England but not in the cotton-growing States and has been treated as a holiday in New England, a working day in the South, and a quarter of a working day for the country at large. Memorial Day, observed by about half the New England mills, is treated as a half working day in that area and a working day for the cotton-growing States and the country as a whole. Labor Day and Thanksgiving are generally observed in New England and by about one-quarter of the southern mills. They are treated as holidays in New England, quarter work days in the cotton-growing States, and half work days for the country at large.

[2] Low rates of activity are not to be interpreted as necessarily indicating a change in the shift system used. It is customary, for example, to retain the use of 2 shifts even when work is slack and to cut down the number of days worked per shift. Since the table is computed on the basis of the number of *working days*, rather than on the basis of the number of *days worked*, it reflects both part-time operation and changes in shift practice.

On the other hand, it is not certain that the increase in hours of machine operation in 1936–37 was a forerunner of extensive third-shift operations. In March and April 1937 the industry was operating at an annual rate of about 112,000,000,000 spindle-hours. If every spindle in place in March had been operated at the average annual rate for active spindles in 1935–36, they would have produced at the rate of only about 99,000,000,000 spindle-hours. Since some spindles must be idle, both for technical reasons and because of the way orders are distributed, it is evident that there was a shortage of equipment in the spring of 1937 at machine hours prevailing in 1936.

This was so despite the fact that in the year 1935–36 the South averaged almost as many hours per active spindle as in 1933 before hours were shortened and New England averaged substantially more per active spindle.

It is therefore possible to argue that the universalizing of the second shift and the extension of third-shift operation in 1937 was a sign of a shortage of equipment to handle the peak load in the spring of 1937, rather than evidence of a fundamental trend. It is quite certain that the widespread adoption of a third shift, inaugurated as standard practice under a competitive drive to achieve economies of overhead cost, spells the death of 3 to 6 million more spindles. It is one of the characteristics of competition that obsolete equipment must lose out, if buying and selling prices are the same for all competitors. The reduction of overhead costs through such devices as the third shift, when cost reductions do not bring an offsetting increase of demand, merely hastens the day when production is still further concentrated on low-cost spindles. The effect of the third shift on costs may be of competitive importance in determining the distribution of orders. Its ultimate possible effect on cost is so small that it contributes almost nothing to that 30- to 50-percent increase of demand which is necessary to warrant such additions to effective capacity as would follow from the wide-spread use of three-shift operation.

Chapter 4

Profits and Costs

As was pointed out in chapter 2, cotton-textile manufacturing is an over-expanded industry. During the past several decades the industry has, even in prosperous years, been faced with large amounts of idle equipment. Under these conditions the significance of a single figure of percentage profit or loss on aggregate textile investment is doubtful. Idle equipment is obviously held at a loss. To carry such equipment as a charge against the industry's income for long periods of time is to burden the active equipment with charges which make it extremely difficult to realize a profit on the textile investment. Such a procedure is justified only so long as it is assumed that such idle equipment will be called into use at some future time. There is, however, and has been for years, equipment in the industry on its way to the junk pile. To charge losses on this equipment against the industry in arriving at an estimate of net return on textile investment may be to say the industry operated at a loss, whereas the same volume of business with the same prices, and costs limited to the operating equipment alone, or to the equipment which was likely to be needed in the future, might show a profit or a substantially smaller loss.

There is, therefore, a limited significance that attaches to table 19, showing the annual rate of return on textile investment, from 1933 through the first half of 1936, averaging from 2.6 to 2.8 percent. These figures do, however, reflect the fact that the industry is operating under bitter pressure that retards new investment and tends to drive old investment out of the cotton-textile industry by the bankruptcy route.

TABLE **19.**—*Annual rates of return*[1] *on average total textile investment*[2] *of cotton manufacturing companies, for specific periods*

Period	Spinning and weaving companies	Spinning companies	Weaving companies
January–June 1933	4.13	3.06	4.03
July–December 1933	9.16	8.14	10.17
January–June 1934	4.34	4.07	.23
July–December 1934	[3] 1.78	[3] 1.96	[3] .31
January–June 1935	[3] 3.26	[3] 2.68	1.62
July–December 1935	1.26	2.30	.64
January–June 1936	5.10	5.54	3.52
Average	2.7	2.6	2.8

[1] Annual rates shown have been computed by doubling the actual rates for semiannual periods.
[2] Total income from textile business, before payment of interest and Federal taxes, to total investment, less good will and outside investments.
[3] Loss.

Source: Reports on Textile Industries, January 1933–June 1936, Federal Trade Commission.

A more significant picture of the profitability of the industry may be had from a study of net profits on sales. Available data on the net profit on sales for combined spinning and weaving companies [1] show that in the first half of 1933, 83 percent of the sales were made at a profit and in the last half of 1933, 91 percent were made at a profit. (Table 20.) During the strike period in the latter half of 1934 and the poor first half of 1935, respectively, 40 and 26 percent of the sales were made at a profit, while the companies had an average loss of 2.52 percent on total net textile investment. With the return of less disturbed conditions in the industry in the last half of 1935 and the first half of 1936, respectively, 70 and 83 percent of the sales were made at a profit.

Data revealing the relative profit position of individual companies show that net profits on sales were realized by all types of mills. From January 1933 to June 1936, except for the last half of 1934 and the first half of 1935, the proportion of all cotton textile companies showing a net profit on sales varied from 60 percent to 82 percent of the reporting companies. (Table 21.) In most instances more than half such companies realized net profits on sales in excess of 5 percent, and the more efficient or lowest cost companies showed profits ranging from 10 percent to more than 30 percent. In the last half of 1933 about one-third of the reporting companies realized 10 per cent or more net profits on sales. In the periods for which data are available, the percentage of total net textile investment accounted for by companies which realized a net profit on sales closely paralleled the percentage of the companies realizing such profits. Thus the percentage of net textile investment represented by companies realizing profits on sales in 1933 and 1934 ranged from 35 percent to 88 percent, while the percentage of the companies realizing profits ranged from 33 percent to 82 percent.

TABLE 20.—*Number of combined spinning and weaving companies, total sales, and sales made at a profit for semiannual periods from Jan. 1, 1933–June 30, 1936*

Period	Total companies reporting		Companies showing net profit on sales		
	Number of companies	Value of sales	Number of companies	Value of sales	Sales made at profit
					Percent
1933:					
Jan. 1–June 30	296	$271,479,241	219	$224,287,057	83
July 1–Dec. 31	296	348,558,339	255	317,430,732	91
1934:					
Jan. 1–June 30	296	375,301,911	210	281,037,233	75
July 1–Dec. 31	296	339,995,596	96	137,636,756	40
1935:					
Jan. 1–June 30	302	349,642,167	71	90,457,664	26
July 1–Dec. 31	295	377,940,527	169	264,919,716	70
1936:					
Jan. 1–June 30	264	315,335,122	185	262,114,885	83

Source: Revised Tables on Cotton Textiles—"The Cabinet Committee on the Cotton Textile Industry, April 1937."

[1] Similar data for companies engaged exclusively in spinning or weaving are not available.

TABLE 21.—*Percentage distribution of all reporting cotton-textile companies and of total reported textile investment by percentage of net profit or loss realized on sales*

[Semiannual periods 1933 to first half of 1936]

Type of cotton-textile company	Percentage of companies which realized a net profit							Percentage of net textile investment on which profit on net sales was realized [1]			
	1933		1934		1935		1936	1933		1934	
	January–June	July–December	January–June	July–December	January–June	July–December	January–June	January–June	July–December	January–June	July–December
Companies showing net profit on sales—											
Of 10 percent and over	19.48	33.04	14.24	[2] 3.07	3.08	4.49	12.61	20.33	35.03	15.41	[2] 1.99
5 percent but less than 10 percent	23.63	27.35	25.15	[2] 8.14	7.60	14.32	23.65	19.97	32.77	28.89	[2] 10.21
Less than 5 percent	27.13	21.67	29.32	21.83	18.48	41.45	33.11	33.28	19.77	25.64	22.81
Total companies showing profit	70.24	82.06	68.71	33.04	29.16	60.26	69.37	73.58	87.57	69.94	35.01
Companies showing loss on sales—											
Of less than 5 percent	10.94	8.53	12.91	24.29	25.46	18.59	15.54	8.55	6.72	12.26	21.50
5 percent but less than 10 percent	7.88	5.03	7.66	21.23	20.33	8.33	6.98	6.92	3.04	9.54	24.03
10 percent and over	10.94	4.38	10.72	21.44	25.05	12.82	8.11	10.95	2.67	8.26	19.46
Total companies showing loss	29.76	17.94	31.29	66.96	70.84	39.74	30.63	26.42	12.43	30.06	64.99
All companies reporting	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of companies reporting	457	457	457	457	487	468	444				
Net textile investment of reporting companies (millions of dollars)								853	872	909	904

[1] No data on net textile investment reported subsequent to 1934.
[2] Cotton spinning companies reported 5 percent but less than 15 percent, distributed according to distribution of "weaving" and "spinning and weaving" companies for the period reported.

Source: Reports on Textile Industries, January 1933–June 1936, Federal Trade Commission.

It is apparent from the ability of a number of companies to realize net profits on sales that under efficient management and without the burden of idle equipment the industry as a whole would show considerably larger returns on aggregate net textile investment. For example, in the last half of 1933 when the industry generally made a profit, it is to be noted that nearly one-eighth of the textile investment was in mills that operated at a loss. They had 45 percent more textile investment per $1,000 of sales than the mills that operated at a profit. In the last half of 1934, when mills with about two-thirds of the textile investment lost money, the mills that operated at a loss had 26 percent more textile investment per $1,000 of sales than the mills that operated at a profit.

As regards the importance of labor costs—the item which will be most affected by a minimum wage order—there are substantial differences among the divisions of the industry and among the several products. The ratio of labor costs to total manufacturing costs is slightly higher in integrated mills than in either the exclusively spin-

ning or weaving mills. From January 1933 to June 1936 the percentage of labor costs to total manufacturing costs ranged from 21.5 to 23.8 in weaving mills, from 23.8 to 27.3 percent in spinning mills, and from 27.1 to 29.2 percent in combined spinning and weaving mills. Changes in the proportion of labor costs do not necessarily indicate corresponding changes in wage rates. In the first half of 1936, for example, the proportion of labor costs to total costs increased due to the removal of the processing tax as a cost factor in production. Wage rates, however, decreased during this period.

Even greater differences in labor costs exist among the products of the industry. In the first half of 1936 labor was about one-quarter of the total manufacturing cost of making coarse yarn and about one-third in the case of fine combed yarn. For spinning and weaving establishments as a whole, labor cost was about 29 percent of the total manufacturing cost, ranging from somewhat less than 25 percent on medium yarn count cloth to 40 percent on fine goods (table 22).

TABLE 22.—*Percent of labor costs to total manufacturing costs, by type of product*

Type of mill and product	January–June 1936
Spinning	27.3
Carded yarn coarser than 40's	24.6
Combed yarn—both coarse and fine	28.3
Carded and combed yarn—both coarse and fine	31.0
Combed yarns 40's or finer	33.8
Spinning and weaving	29.2
Coarse colored cottons (denims, tickings, suitings, etc.)	23.0
Sheetings, drills and jeans	25.9
Duck	26.3
Mixed goods—sheetings, drills and jeans; and print-cloth-yarn fabrics	26.6
Mixed goods—fine cotton goods and rayon fabrics	27.9
Napped goods	28.2
Print-cloth-yarn fabrics	29.6
Fine cotton goods	40.8

Source: "Textile Industries In The First Half of 1936"—Federal Trade Commission, January 1937.

Any change in wage rates will more seriously affect manufacturing costs in those instances where labor costs are large. In this connection it should be borne in mind that, in precisely those cases where labor costs are a large proportion of manufacturing costs, wages tend to be above minimum levels, and fewer employees would be effected by the establishment of a minimum wage.[2]

Under conditions of competition such as exist in cotton-textile manufacturing, high-cost mills have tended to go out of existence. Mills paying higher than average wages have been able to survive only through greater efficiency. Inefficiency has been able to survive

[2] See Bureau of Labor Statistics: *Nineteenth Report on Average Hourly Earnings in Cotton Goods*, chap. IV, pp. 38–51.

only as it was able to operate at unusually low wages. Some few mills in both the North and South operate under such conditions. But in general, wages in New England have been set more by the character of the surrounding labor market than on the basis of any particularly high level of efficiency that attached to mills in that region.[3] The result has been an especially drastic purging of the inefficient equipment and management in New England. There is a strong presumption that the remaining equipment in this relatively high-wage area of the industry, as well as in the higher-wage southern mills, is operated with a higher average of efficiency than has been necessary to the survival of mills in many southern communities. Thus wages in only 8 out of 200 northern cotton mills averaged less than 35 cents per hour in August 1938, while the average of all northern mills was about 44 cents an hour. In the South, 34 out of 584 mills paid average wages of less than 25 cents an hour and wages in 60 additional mills averaged less than 30 cents an hour.

It is important to remember that efficiency is a relative term; a mill that was efficient in 1920 will be relatively inefficient in 1938 if it has not modernized its equipment. Leadership in efficiency by a mill or a region can only be maintained as new investment is continuously made. With the general unattractiveness of the cotton-textile industry to outside capital, this means essentially that efficiency is maintained through the reinvestment of adequate reserves for depreciation and that expansion must be financed from profits.

The lowest wages are perhaps more frequently associated with the operation of equipment which would, of necessity, be junked in a fully competitive labor market than with extortionate profits. The existence of such operations is one of the factors which Industry Committee No. 1 will wish to consider.

Frequently people speak of low-cost and high-cost mills, as though they constituted hard and fast groups. It has just been pointed out that technological development is essential in the long run to low-cost operation. The modernization of mills tends, however, to carry on in recurrent spurts—this year's exhibition mill is not likely to be in the vanguard after 5 years but with renewed capital outlays on a large scale may again be a leader 10 or 15 years from now. Moreover, the alertness of management changes; if the leader relaxes his efforts, he is liable to fall into the range of medium-cost mills; conversely, adversity has often led to a reorganization of mill management. Finally, low-cost mills can raise wages more easily and are less impelled to decrease wages than high-cost mills. Thus, mills show a changing relationship to the average wage in the industry.

[3] See p. 72 ff.

TABLE 23.—*Cotton print cloth: Total costs of grey goods, irrespective of construction, in 21 mills (excluding selling and interest paid) in March and October 1931–34, inclusive, and in March 1935, arranged in ascending order of costs in March 1935*

[Cents per pound]

Mill number	1931		1932		1933		1934		1935
	March	October	March	October	March	October	March	October	March
1	29.92	21.01	19.99	18.89	17.39	30.76	33.62	33.48	31.03
8	28.87	21.47	20.36	18.01	16.40	30.26	34.03	35.44	31.70
18	24.97	20.30	18.00	17.15	16.55	29.33	30.87	32.30	31.74
15	24.73	18.67	17.91	19.24	15.02	30.28	29.66	31.75	32.14
2	29.28	25.95	18.47	17.39	16.40	29.93	30.17	32.49	32.65
6	24.32	19.36	19.87	17.88	17.07	29.61	31.73	32.72	32.75
19	26.40	20.38	19.01	17.77	16.92	31.12	31.90	34.03	32.76
20	25.29	22.48	19.91	19.76	18.48	31.38	33.56	37.87	33.13
4	27.41	19.39	20.12	18.45	16.92	31.06	33.49	34.08	33.15
10	33.73	23.07	20.29	22.13	18.18	36.40	36.55	39.14	33.21
3	24.23	18.57	19.88	16.16	16.08	30.23	31.67	33.67	33.47
11	24.93	19.10	17.23	17.05	16.79	31.14	29.46	34.07	33.53
17	29.76	24.65	23.20	23.16	18.67	31.90	33.87	40.70	33.55
21	29.23	23.44	20.03	23.92	19.54	31.40	31.49	34.61	33.89
13	29.31	20.76	20.88	17.85	17.33	34.73	35.02	35.72	33.94
7	26.68	21.39	20.67	19.71	18.20	32.71	35.10	36.54	35.12
16	31.76	21.00	20.12	19.29	18.82	33.91	33.25	36.47	35.35
12	28.02	21.62	20.78	18.71	18.97	34.00	34.04	34.68	35.82
9	23.86	22.17	20.76	19.54	16.39	33.22	32.87	34.52	36.27
14	32.29	25.52	23.25	19.56	18.09	32.99	30.39	36.19	36.31
5	28.34	19.30	19.67	18.60	18.34	33.71	35.23	35.72	37.11
Average	27.78	21.41	20.02	19.06	17.45	31.91	32.76	35.06	33.74

Source: Report to the President on Cotton Cloth, U. S. Tariff Commission, April 1936.

For all of these reasons the cost relationships of a group of mills present a kaleidoscopic pattern when they are studied over a period of time (table 23). Among 21 print-cloth mills studied by the Tariff Commission for the period 1931 to 1935, it was found, when the mills were ranged from lowest cost to highest cost, that there was a cost-spread of 6.08 cents per pound of cloth in March 1935. There had been a corresponding range of 9.87 cents in March 1931. Some consistency in the ranking of mills with respect to their costs existed over this 4-year period. Thus, costs for mill No. 14, which ranked twentieth in March 1935, were above the average costs for the 21 mills in eight out of the nine periods and costs for mill No. 18, which ranked third in March 1935, were below the average costs in each of the nine periods. Such consistency was not, however, displayed by a great number of companies. As a matter of fact, of the 7 middle-cost mills in 1935, only 2 had been middle-cost mills in 1931. Three had been low-cost and two had been high-cost mills in 1931. Of the seven mills with lowest costs in 1935, only three had occupied a corresponding position in March 1931. The others had been either among the seven middle-cost mills or the seven with highest costs. The tendency that may be observed among these mills is confirmed by much wider observations [4] and is to be constantly borne in mind as a limitation upon rigid classification into "high-cost" and "low-cost" enterprises.

[4] Secrist, Horace: "The Triumph of Mediocrity in Business."

Chapter 5

Mill Margins

While there are no data on profits in the cotton-textile industry at the present time, changing mill margins trace the changing fortunes of the industry quite closely. The mill margin is the difference between the selling price of a given cloth construction and the cost of raw cotton required for its manufacture. The figures quoted in this report have been calculated by the Agricultural Adjustment Administration.

Mill margin is not to be confused with profit margin. Mill margin represents the amount available, after paying for raw cotton, to cover other raw materials and supplies, labor cost and other manufacturing expenses, overhead, selling costs, and profits. However, for any period within which wages and the productivity of labor are unchanged, changes in mill margin reflect closely changes in profit margins. While in the long run a changing mill margin may have little relation to profits or losses, for short periods, when operating costs are fairly constant, a wide margin means profitable operation; a narrow margin, reduced profits or possible losses.[1]

In particular, it must be borne in mind that mill margins on a particular construction of cloth apply quite generally to the industry as a whole. Since mills at any given time buy cotton and sell cloth at about the same prices as their competitors, it follows that they all have potentially about the same mill margin at any particular time. Whether the individual mill makes a profit or loses money with that margin depends upon its costs and upon inventory gains or losses on raw cotton. Even with mill margins as narrow as they were in the first half of 1935, about one-quarter of the mills with one-quarter of the sales made a profit.

The mill margin for print cloth is shown in table 24 by months since 1923. The prices of print cloth are those of standard print cloth 64/60 running 5.35 yards per pound. Cotton prices are the price of 1-inch staple, since this is the staple most commonly used in the manufacture of print cloth. The price of cotton per pound is adjusted to allow for a 10 percent net loss by weight in manufacture. On this basis it will be seen that the mill margin per pound of cloth, which stood at 27.37 cents in February 1923 fell to 13.02 cents in April 1924. In general it fluctuated between 17 cents and 23 cents until the end of 1929. While the decline in the margin was not

[1] See S. Doc. No. 126, 74th Cong., 1st sess.: "A Report on the Conditions and Problems of the Cotton Textile Industry," by the Cabinet Committee appointed by the President (1935), pp. 66–79.

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regular, it stood at a low of 9.16 cents in February 1933, rising to 21.72 cents in June in the market boom that preceded the N. R. A.[2] The margin in July and August was greater than in June, but, with the exception of these 2 months (and after deducting processing taxes) did not again exceed 20 cents until the end of 1936. During the first half of 1935 the margin averaged almost exactly 14 cents.

TABLE 24.—*Cotton and print cloth prices and mill margins, 1923–38*

Month	Cotton prices,[1] monthly average 1-inch staple	Print-cloth prices,[2] monthly average per yard	Mill margin[3] per pound of cloth	Month	Cotton prices,[1] monthly average 1-inch staple	Print-cloth prices,[2] monthly average per yard	Mill margin[3] per pound of cloth
1923	*Cents*	*Cents*	*Cents*	*1926*	*Cents*	*Cents*	*Cents*
January	27.39	10.69	26.76	July	18.92	7.19	17.45
February	28.62	11.06	27.37	August	18.90	7.50	19.12
March	30.21	11.12	25.92	September	17.21	7.56	21.33
April	28.28	10.75	26.09	October	13.40	6.75	21.22
May	26.47	9.88	23.45	November	13.17	6.82	21.86
June	28.20	9.81	21.15	December	12.81	6.62	21.19
July	25.87	8.56	17.06	*1927*			
August	24.82	8.94	20.25				
September	28.27	10.00	22.09	January	13.62	6.82	21.36
October	29.50	9.76	19.44	February	14.35	6.94	21.19
November	34.00	11.06	21.39	March	14.74	6.94	20.75
December	35.09	10.88	19.22	April	15.33	6.78	19.24
1924				May	16.03	6.94	18.65
				June	17.35	7.32	19.88
January	34.19	10.62	18.83	July	18.59	7.72	20.64
February	32.23	9.38	14.37	August	20.41	8.32	21.83
March	29.04	8.56	13.53	September	22.44	8.88	22.58
April	30.75	8.82	13.02	October	21.60	8.50	21.48
May	30.82	9.00	13.91	November	20.99	8.06	19.80
June	29.87	8.94	14.64	December	20.04	8.00	20.53
July	29.82	9.12	15.66	*1928*			
August	27.66	9.25	18.76				
September	23.24	8.50	19.66	January	19.44	7.94	20.88
October	23.79	8.75	20.38	February	18.35	7.69	20.75
November	24.33	9.06	21.44	March	19.51	7.50	18.44
December	24.20	9.06	21.58	April	20.51	7.75	18.67
1925				May	21.29	7.69	17.48
				June	21.57	7.75	17.49
January	24.27	9.19	22.20	July	22.00	7.81	17.34
February	25.36	9.38	22.00	August	19.47	7.38	17.85
March	26.32	9.62	22.23	September	18.47	7.44	19.28
April	25.26	9.32	21.79	October	19.28	7.75	20.04
May	24.51	9.19	21.94	November	19.50	7.81	20.11
June	25.90	9.06	19.69	December	19.87	7.63	18.74
July	25.55	9.50	22.43	*1929*			
August	24.35	9.38	23.12				
September	24.23	9.50	23.90	January	19.73	7.60	18.74
October	21.95	9.44	26.11	February	19.96	7.47	17.78
November	21.02	9.06	25.11	March	20.94	7.75	18.19
December	20.51	8.75	24.02	April	20.30	7.50	17.56
1926				May	19.58	7.26	17.08
				June	19.96	7.22	16.45
January	21.39	8.69	22.72	July	20.14	7.38	17.10
February	20.73	8.56	22.77	August	19.83	7.50	18.09
March	19.33	8.00	21.32	September	19.49	7.56	18.79
April	19.05	7.62	19.60	October	18.82	7.69	20.23
May	18.95	7.56	19.39	November	17.94	7.32	19.23
June	18.52	7.25	18.21	December	17.89	6.81	16.55

[1] Spot prices plus premium for 1-inch staple, except from January to July, inclusive, 1923, when premium quotations were not available: 1-inch staple was selected since it is believed to be most commonly used in the manufacture of print cloth.

[2] Standard print cloth, 38½-inch 64/60, 5.35 yards per pound.

[3] The mill margin for print cloth is obtained by subtracting the cost of cotton in the cloth from the pound price of cloth. The former is obtained by dividing the price of 1-inch staple by 0.9 to adjust for net loss in weight, and the latter by multiplying the price per yard by 5.35.

[2] Most of these orders were, of course, filled later and the price reflected an anticipation of rising costs.

TABLE 24.—*Cotton and print cloth prices and mill margins, 1923–38*—Continued

Month	Cotton prices, monthly average 1-inch staple	Print-cloth prices, monthly average per yard	Mill margin per pound of cloth
1930			
	Cents	*Cents*	*Cents*
January	17.81	6.75	16.32
February	16.36	6.32	15.63
March	15.99	6.12	14.97
April	16.65	6.12	14.24
May	16.14	6.00	14.17
June	14.20	5.50	13.64
July	13.21	5.32	13.78
August	12.04	4.94	13.05
September	10.94	5.38	16.62
October	10.92	5.44	16.97
November	11.19	5.69	18.01
December	10.19	5.12	16.07
1931			
January	10.37	5.19	16.25
February	11.12	5.19	15.41
March	11.15	5.56	17.36
April	10.43	5.12	15.80
May	9.60	4.88	15.44
June	9.32	4.76	15.11
July	9.56	4.68	14.42
August	7.47	4.26	14.49
September	6.58	3.88	13.45
October	6.13	3.69	12.93
November	6.36	3.47	11.49
December	6.18	3.32	10.89
1932			
January	6.55	3.53	11.61
February	6.80	3.88	13.20
March	6.89	3.82	12.78
April	6.28	3.44	11.42
May	5.86	3.00	9.54
June	5.29	2.97	10.01
July	5.84	3.10	10.09
August	7.38	3.82	12.24
September	7.79	4.06	13.06
October	6.85	3.75	12.45
November	6.46	3.25	10.21
December	6.12	3.32	10.96
1933			
January	6.37	3.16	9.83
February	6.20	3.00	9.16
March	6.54	3.19	9.80
April	7.19	3.54	10.95
May	8.84	5.00	16.93
June	9.63	6.06	21.72
July	10.96	6.62	23.24 [4]
August	9.81	7.18	[5] 22.99–27.51
September	9.79	6.56	19.70–24.22
October	9.76	6.56	19.74–24.26
November	10.24	6.56	19.20–23.72
December	10.42	6.50	18.68–23.20
1934			
January	11.50	6.82	19.19–23.71
February	12.68	7.06	19–16–23.68
March	12.70	6.88	18.18–22.70
April	12.31	6.62	17.18–21.70
May	11.93	6.25	15.66–20.18
June	12.69	6.38	15.51–20.03
1934			
July	13.28	6.62	16.14–20.66
August	13.86	7.12	18.17–22.69
September	13.55	7.19	18.89–23.41
October	13.18	6.94	17.97–22.49
November	13.36	6.06	13.06–17.58
December	13.39	6.75	16.71–21.23
1935			
January	13.40	6.13	13.39–17.91
February	13.35	6.44	15.10–19.62
March	12.47	6.13	14.42–18.94
April	12.74	6.06	13.74–18.26
May	13.08	6.19	14.07–18.59
June	12.72	6.06	13.77–18.29
July	12.90	5.88	12.61–17.13
August	12.02	6.00	14.22–18.74
September	11.16	6.31	16.84–21.36
October	11.71	6.38	16.60–21.12
November	12.57	6.31	15.27–19.79
December	12.55	6.38	15.67–20.19
1936			
January	12.49	5.38	14.90
February	12.22	5.53	16.01
March	12.44	5.44	15.28
April	12.57	5.22	13.96
May	12.26	5.06	13.45
June	12.85	5.38	14.50
July	13.90	6.06	16.98
August	13.03	5.88	16.98
September	12.96	6.31	19.36
October	13.12	6.75	21.53
November	13.21	7.50	25.45
December	13.88	7.50	24.71
1937			
January	14.34	7.83	25.96
February	14.43	7.40	23.56
March	15.70	7.72	23.86
April	15.51	7.56	23.22
May	14.72	6.96	20.88
June	14.10	6.53	19.27
July	13.72	6.30	18.47
August	11.33	5.79	18.39
September	9.52	5.16	17.03
October	8.94	4.87	16.12
November	8.64	4.68	15.44
December	8.96	4.51	14.17
1938			
January	9.33	4.72	14.88
February	9.62	4.77	14.83
March	9.49	4.71	14.66
April	9.35	4.56	14.01
May	9.13	4.50	13.94
June	8.98	4.33	13.19
July	9.43	4.67	14.50
August	8.92	4.42	13.74
September	8.66	4.33	13.55

[4] Mill margin before deduction for processing tax adjustment. The processing tax was discontinued on Jan. 6, 1936.

[5] From August 1933 to Dec. 31, 1935, mill margin after deducting 4.52 cents, which is the calculated adjustment for processing tax.

Source: Cotton prices, 10-spot markets; cotton premiums, Memphis market; print-cloth prices—Daily News Record.

The market boom in the latter half of 1936 lifted the margin per pound of print cloth from 13.45 cents in May to 25.45 cents in November. While the peak was reached in January 1937 for print cloth prices and not until March for cotton prices, the margin remained above 23.22 cents through April. It was in this setting that many mills increased wages in December 1936 and April 1937. Even after allowance for higher labor costs, however, the margin was almost unique in the experience of the industry.

Orders slackened sharply in the first half of 1937 and became a trickle by the middle of the year. Print-cloth prices fell from 7½ to 4½ cents a yard, reflecting both the break in cotton prices and the break in orders. The mill margin declined to 14.17 cents in December 1937. Prices firmed in the opening months of 1938 but again declined, the mill margin reaching a low point of 13.19 cents in June. It was in this period, it will be recalled, that wage cuts in the South began to be especially numerous.

New orders in June again gave the market some strength and the mill margin rose temporarily to 14.50 cents. But in September it averaged 13.55 cents and on October 7, 1938, stood at 13.12 cents.

Mill margins for other types of cloth have followed the same general pattern. They differ significantly in detail, however. Therefore margins, similarly computed, are presented in table 25 for sheeting, table 26 for carded broadcloth, table 27 for combed broadcloth, table 28 for voile, and table 29 for combed lawn. In the case of these constructions, however, the mill margin alone is shown, whereas the print-cloth table also shows cotton and cloth prices. In some cases the mill margin has fallen by more than 40 percent since the beginning of 1937; in no case, by less than 25 percent. Compared with the mill margins existing in 1935 and early 1936, combed lawn and voile are in the strongest position; sheetings and carded broadcloth in the weakest.

As the mill margin becomes narrower and narrower, there is increasing resistance to further reductions of price. If the wage-scale can be freely cut, there is perhaps no sticking point for prices. Thus, print-cloth margins fell from an 18–20 cent range in 1929, itself not an especially good year, to 11–16 cents in 1931, and finally to 9.16 cents in February 1933. Such recurrent wage decreases as occurred between 1931 and 1933 permitted mills to decrease operating costs and to continue to exert competitive pressure for yet further decreases in mill margins. But in a period of relatively stable costs, every time that the mill margin falls below the operating costs of a high-cost mill, it tends to relieve the market of competitive pressure and to act as a stabilizer. Even under the most rigorous competition, prices that do not cover the current operating expenses of the highest-cost pro-

ducers, whose facilities are needed to supply the market demand, cannot be long continued.

The evidence offered by present mill margins is that a significant increase in costs is more likely to appear in higher selling prices than in a narrower mill margin. It is significant, for example, that print-cloth margins have not stayed below the September 1938 level in any 3 consecutive months since 1933. The present margins, so far as statistical evidence goes, appear to be close to the costs of the most efficient producers.

TABLE 25.—*Mill margins* [1] *for sheeting (37-inch, 48 by 48, 4.00), 1923–38*

[In cents]

Month	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	17.33	13.05	15.63	15.49	13.63	11.75	12.30	10.60	11.11
February	17.72	10.74	14.29	15.47	14.06	11.44	11.28	10.97	9.52
March	14.91	9.81	13.40	16.11	14.01	9.92	11.02	10.62	10.00
April	14.10	8.39	12.47	14.70	13 36	10.52	11.42	10.41	9.92
May	11.07	7.59	11.05	13.82	12.67	11.66	10.98	10.44	9.85
June	10.19	9.13	9.09	14.05	14.59	11.59	9.84	11.56	10.92
July	10.26	9.90	10.48	14.57	13.49	11.91	10.68	11.19	9.62
August	14.09	13.82	12.82	16.39	15.71	12.96	12.20	10.62	10.22
September	16.78	15.73	14.19	17.79	15.98	12.79	12.99	12.24	10.00
October	13.89	15.88	16.96	16.70	14.39	13.25	13.94	12.85	9.37
November	14.76	15.98	17.39	14.24	13.07	12.98	13.63	12.55	9.15
December	10.27	15.52	17.02	13.40	11.66	12.33	11.03	12.30	9.06

Month	1932	1933	1934	1935	1936	1937	1938
			[2]	[2]			
January	8.93	6.60	10.64–15.16	11.82–15.34	12.61	18.69	11.31
February	9.41	6.26	11.40–15.92	11.38–15.90	12.66	18.83	10.69
March	9.36	6.12	11.57–16.09	11.66–16.18	11.60	19.00	10.52
April	8.80	7.70	10.76–15.28	10.37–14.89	11.14	19.94	10.60
May	7.99	11.85	10.19–14.71	10.30–14.82	11.40	18.26	10.72
June	7.74	15.69	10.62–15.14	10.42–14.94	11.95	15.67	10.09
July	6.60	18.79 [2]	11.50–16.02	9.66–14.18	13.43	15.41	11.43
August	7.65	[3] 19.21–23.73	12.62–17.14	10.61–15.13	13.83	13.87	11.46
September	9.54	15.03–19.55	13.68–18.20	11.60–16.12	14.37	13.35	10.68
October	9.16	13.06–17.58	12.46–16.98	12.54–17.06	14.83	13.80	--------
November	8.30	11.24–15.76	11.16–15.68	12.40–16.92	17.12	12.81	--------
December	7.16	10.75–15.27	11.00–15.52	12.72–17.24	17.99	11.65	--------

[1] Pound price of cloth minus cost of cotton in 1 pound of cloth.
[2] These columns show mill margin before deduction for processing-tax adjustment.
[3] Adjusted by subtracting 4.52 cents from the mill margin to cover the added cost imposed by the processing tax. These cost factors take into consideration the allowance for net waste. These adjustments apply from August 1933 to December 1935.

Source: Cotton prices, 10 spot markets; sheeting prices, Daily News Record.

TABLE 26.—*Mill margins*[1] *for broadcloth—carded (37–37½ inches, 100 by 60, 4.10), 1925–38*

[In cents]

Month	1925[2]	1926	1927	1928	1929	1930	1931	1932
January	29.20	25.45	26.96	21.93	20.91	17.62	19.31	15.61
February	29.35	26.62	27.17	21.75	19.89	17.47	19.47	15.57
March	27.64	23.70	26.45	22.08	20.56	15.94	20.08	13.52
April	26.22	20.31	26.21	21.94	21.13	15.27	19.22	12.03
May	23.67	21.15	23.38	21.62	19.73	14.46	16.39	9.38
June	22.62	19.48	23.11	20.23	18.79	16.08	14.82	9.99
July	25.67	21.02	21.20	19.27	18.59	16.27	14.07	9.79
August	26.60	23.46	22.25	20.28	19.87	16.32	14.06	12.27
September	29.54	27.30	21.62	22.17	20.75	18.84	14.10	12.10
October	31.13	26.69	20.38	22.62	20.97	19.92	14.71	13.47
November	27.66	28.34	19.53	20.94	18.76	19.62	14.24	11.07
December	26.26	27.71	10.67	21.41	17.26	19.13	14.14	12.78

Month	1933	1934	1935	1936	1937	1938
		[3]	[3]			
January	11.45	20.63–25.15	16.32–20.84	18.47	24.91	14.28
February	10.78	20.92–25.44	15.22–19.74	18.77	22.09	14.60
March	11.35	20.27–24.79	15.13–19.65	17.81	20.55	14.11
April	11.22	19.50–24.02	15.52–20.04	15.17	20.40	13.69
May	16.52	18.90–23.42	15.30–19.82	14.65	18.20	14.19
June	20.72	17.53–22.05	14.70–19.22	14.47	17.11	13.39
July	20.63 [3]	17.06–21.58	13.84–18.36	15.43	16.57	14.77
August	[4] 21.55–26.07	17.38–21.90	15.76–20.28	15.97	17.96	14.79
September	20.07–24.59	17.56–22.08	18.22–22.74	17.52	16.83	15.10
October	20.47–24.99	17.14–21.66	18.56–23.08	19.86	16.01	----------
November	20.09–24.61	15.62–20.14	17.94–22.46	23.58	15.34	----------
December	20.41–24.93	15.83–20.35	18.38–22.90	24.73	13.70	----------

[1] Pound price of cloth minus cost of cotton in 1 pound of cloth.
[2] Prices not quoted prior to this year.
[3] These columns show mill margin before deduction for processing-tax adjustment.
[4] Adjusted by subtracting 4.52 cents from the mill margin to cover the added cost imposed by the processing tax. These cost factors take into consideration the allowance for net waste. These adjustments apply from August 1933 to December 1935.

Source: Cotton prices, 10 spot markets; cotton premiums, Memphis market; carded broadcloth prices, Daily News Record.

TABLE 27.—*Mill margins* [1] *for broadcloth—combed (37-inch, 128 by 68, 4.40), 1924–38*

[In cents]

Month	1924	1925	1926	1927	1928	1929	1930	1931	1932
January	[2]	66.49	49.89	50.88	45.67	44.06	42.25	38.74	29.94
February	[2]	66.44	50.72	51.05	45.42	43.48	41.30	36.22	30.26
March	[2]	60.71	50.91	51.49	42.93	41.58	40.60	37.19	28.11
April	57.91	52.19	48.80	49.97	42.96	41.16	40.25	38.59	25.80
May	58.70	49.20	47.19	47.96	43.12	42.00	38.19	38.39	26.35
June	60.06	48.84	45.38	46.38	42.65	40.74	40.94	37.89	24.06
July	57.35	52.69	45.75	45.21	43.49	40.55	41.92	37.60	24.40
August	58.98	52.37	45.95	44.59	44.90	42.19	42.05	39.61	24.08
September	66.61	53.10	48.30	46.72	46.79	42.04	42.96	39.45	25.59
October	65.79	53.99	52.15	47.21	46.68	43.98	44.15	36.64	25.61
November	65.60	52.82	50.72	45.68	44.79	43.88	40.49	35.43	23.91
December	64.66	51.10	50.95	45.48	44.23	43.03	40.52	32.05	23.78

Month	1933	1934	1935	1936	1937	1938
		[3]	[3]			
January	22.33	32.95–37.95	32.91–37.91	31.89	40.45	28.94
February	21.67	32.19–37.19	30.62–35.62	31.22	38.86	28.85
March	21.69	31.55–36.55	31.20–36.20	29.55	37.15	27.83
April	21.49	30.01–35.01	29.85–34.85	28.27	36.37	27.50
May	24.42	28.26–33.26	30.46–35.46	26.66	33.32	27.36
June	34.02	26.74–31.74	29.83–34.83	25.96	31.58	27.00
July	42.86 [3]	27.48–32.48	28.71–33.71	29.17	31.84	28.87
August	[4] 44.74–49.74	28.57–33.57	30.19–35.19	28.65	33.02	29.20
September	40.28–45.28	31.41–36.41	33.71–38.71	31.39	31.92	27.91
October	40.46–45.46	31.38–36.38	33.24–38.24	33.39	29.41	----------
November	35.16–40.16	30.28–35.28	32.07–37.07	36.91	29.78	----------
December	32.31–37.31	30.65–35.65	31.38–36.38	39.14	28.53	----------

[1] Pound price of cloth minus cost of cotton in 1 pound of cloth.
[2] Not quoted.
[3] These columns show mill margin before deduction for processing-tax adjustment.
[4] Adjusted by subtracting 5 cents from the mill margin to cover the added cost imposed by the processing tax. These cost factors take into consideration the allowance for net waste. These adjustments apply from August 1933 to December 1935.

Source: Cotton prices, New York market; cotton premiums, Memphis market; combed broadcloth prices, Daily News Record.

TABLE 28.—*Mill margins* [1] *for voile (40-inch, 60 by 56, ordinary (8.22)), 1923–38*

[In cents]

Month	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	91.42	80.92	59.72	56.12	54.70	56.30	49.07	46.14	42.69
February	92.41	78.89	62.35	58.68	58.89	55.87	48.44	48.12	45.45
March	98.50	70.96	63.10	56.40	60.28	54.73	47.74	48.50	48.55
April	98.14	63.31	60.85	55.15	61.86	53.17	47.44	46.27	47.89
May	86.88	58.89	58.42	66.37	58.40	52.11	47.51	43.90	49.11
June	82.73	59.68	59.68	58.11	54.63	52.51	48.81	46.34	47.08
July	84.10	57.04	61.22	54.44	52.21	52.30	48.51	46.30	43.75
August	80.64	62.28	59.80	53.10	54.07	53.36	48.99	46.54	44.27
September	84.66	61.26	60.13	54.30	60.76	54.30	48.25	46.46	44.51
October	84.78	62.94	60.56	57.16	63.20	52.25	48.15	45.30	44.83
November	83.05	60.99	55.99	55.95	62.79	51.50	48.43	43.91	43.32
December	79.20	62.26	54.17	55.19	55.84	50.53	45.72	43.02	42.82

Month	1932	1933	1934	1935	1936	1937	1938
			(2)	(2)			
January	43.30	26.45	38.46–43.46	35.78–40.78	33.38	53.91	44.01
February	42.97	25.99	42.24–47.24	33.60–38.60	34.85	54.56	41.97
March	41.03	25.60	46.95–51.95	32.89–37.89	35.84	53.25	40.89
April	42.10	26.89	46.62–51.62	29.73–34.73	34.56	53.81	39.53
May	41.66	29.96	43.64–48.64	28.32–33.32	34.93	51.36	39.67
June	40.86	30.43	38.65–43.65	29.09–34.09	33.78	46.30	39.64
July	36.98	37.50 (2)	36.99–41.99	28.62–33.62	34.40	46.37	39.05
August	34.99	[3] 41.21–46.21	36.39–41.39	29.55–34.55	34.60	48.42	39.73
September	36.39	42.24–47.24	38.26–43.26	30.24–35.24	35.14	48.90	40.49
October	37.87	42.45–47.45	36.98–41.98	30.65–35.65	39.18	46.87	----
November	35.13	39.04–44.04	34.93–39.93	28.58–33.58	45.91	46.96	----
December	33.16	38.07–43.07	34.67–39.67	30.44–35.44	50.25	44.90	----

[1] Pound price of cloth minus cost of cotton in 1 pound of cloth.
[2] These columns show mill margin before deduction for processing-tax adjustment.
[3] Adjusted by subtracting 5 cents from the mill margin to cover the added cost imposed by the processing tax. These cost factors take into consideration the allowance for net waste. These adjustments apply from August 1933 to December 1935.

Source: Cotton prices, New York market; cotton premiums, Memphis market; voile prices, Daily News Record.

TABLE 29.—*Mill margins* [1] *for combed lawn (40-inch, 76 by 72, 9), 1923–38*

[In cents]

Month	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	80.74	66.52	69.38	70.39	71.14	71.14	64.29	52.37	49.01
February	82.92	68.28	67.58	73.32	72.07	70.82	62.06	53.58	48.16
March	83.34	73.28	62.50	72.79	71.80	68.74	58.64	51.97	52.18
April	82.02	71.81	60.99	71.66	67.58	69.85	59.40	50.73	53.54
May	79.49	68.51	63.30	71.04	68.88	68.80	58.02	51.22	52.42
June	73.77	69.52	64.85	73.38	62.56	69.87	59.00	52.46	51.94
July	72.12	67.58	67.78	74.60	60.59	67.32	52.08	51.66	47.69
August	69.71	67.64	70.35	72.86	66.00	70.36	56.02	50.53	47.18
September	72.49	73.49	70.51	75.12	63.90	69.75	56.61	51.02	49.15
October	70.38	68.85	71.91	79.08	70.63	68.37	57.49	51.60	46.79
November	67.34	71.78	70.49	76.10	70.72	64.35	56.21	50.10	43.51
December	64.15	71.06	70.02	74.15	71.53	66.55	53.61	49.88	43.29

Month	1932	1933	1934	1935	1936	1937	1938
			(2)	(2)			
January	42.39	35.31	47.83–52.83	42.63–47.63	40.12	64.95	36.29
February	42.61	34.43	54.52–59.52	40.08–45.08	40.99	62.90	35.32
March	41.02	33.50	54.46–59.46	37.10–42.10	40.89	59.46	34.22
April	41.79	37.85	49.53–54.53	32.21–37.21	40.59	58.14	33.07
May	41.32	43.64	42.08–47.08	32.22–37.22	39.19	50.75	33.46
June	41.41	44.33	36.20–41.20	32.27–37.27	36.82	47.48	33.31
July	38.94	54.27 (2)	37.47–42.47	30.86–35.86	41.68	46.84	35.79
August	37.49	[3] 57.79–62.79	42.95–47.95	32.92–37.92	39.78	47.60	36.00
September	41.50	51.94–56.94	42.26–47.26	36.77–41.77	43.12	44.21	34.71
October	41.32	50.79–55.79	39.88–44.88	36.81–41.81	48.10	40.46	-------
November	37.27	44.74–49.74	38.06–43.06	34.70–39.70	60.94	38.89	-------
December	35.67	43.59–48.59	40.35–45.35	36.31–41.31	65.11	37.39	-------

[1] Pound price of cloth minus cost of cotton in 1 pound of cloth.
[2] These columns show mill margin before deduction for processing-tax adjustment.
[3] Adjusted by subtracting 5 cents from the mill margin to cover the added cost imposed by the processing tax. These cost factors take into consideration the allowance for net waste. These adjustments apply from August 1933 to December 1935.

Source: Cotton prices, New York market; cotton premiums, Memphis market; combed lawn prices, Daily News Record.

Chapter 6

Productivity and Equipment

To translate mill margins into a measure of probable margins of profit, it is necessary to take into account labor costs and other manufacturing expenses. Labor cost is the most important single item, accounting for somewhat more than half of the value added in the manufacture of cotton goods.

It must not be assumed, however, that average hourly earnings over a period of time are proportional to labor cost. Labor cost is the quotient of earnings per hour divided by output per man-hour. Both earnings and output per man-hour have risen with the passage of time. At any given time there may be fairly close relationships between the labor costs of two mills differing widely as regards wage rates because differences in output per man-hour offset differences in wages; or, there may be identity of wage rates coupled with wide differences in labor cost due to the same differences. Therefore, average hourly earnings should be compared directly with mill margins only within periods in which output per man-hour has been fairly constant. Similarly, inferences as to the profitability of relatively low-wage mills at any time should be governed by a consideration of output per man-hour in such mills as compared with the average.

Despite the fact that the manufacture of cotton goods was one of the earliest manufacturing processes to be mechanized, substantial improvements in manufacturing technique continue to occur. Spinning, for example, has been subjected to three revolutionary technical advances within the past 50 or 60 years. The perfection of ring-spinning in the 1870's has already been mentioned. In the United States ring-spinning definitely superseded mule-spinning for coarse and medium yarns, and in the development of ring-spinning, the expansion of the industry in the South received a definite stimulus. Shortly before the World War the tape-driven ring-spindle was introduced. The more constant tension under the tape-drive made for smoother operation of the spindle and for a more constant yarn diameter, thus allowing more effective use of ring-spinning on finer counts of yarn and permitting the operation of spindles at higher speed on any given yarn count than had been possible with band-driven spindles. Finally, within the last decade, long-draft spinning has been introduced, permitting a coarser roving to be used on the spinning frame to produce a yarn of any given count. This has permitted the

elimination of drawing-frame processes in the carding department that prepares cotton for spinning. Over and above these fundamental changes in machinery, there have been incidental but cumulatively very important minor changes in design and materials.

Increases in the national average output per man-hour would tend to follow the introduction of new techniques. Actually a rising average may occur from any one of three influences: Technical progress of the most efficient mills; the building of new plant; or the elimination from production of inefficient producers with the consequent concentration of production in the hands of more efficient producers. The rapid elimination of plants with obsolete production standards may result in a more rapid rise in average output per man-hour for the industry as a whole than can be achieved by the most efficient producers through the utilization of the latest improvements in technique.

The increase in the national average of output per man-hour in the last 10 years has been remarkable. The estimates presented in table 30 have been prepared by the Bureau of Labor Statistics on the basis of cotton consumption as a measure of output and estimated total pay rolls divided by average hourly earnings as a measure of man-hours worked. It will be seen that from 1928 to 1932 there was an increase of 17 percent in output per man-hour. During this period the price of cotton and of cotton cloth and wages all fell drastically. Between 1932 and 1936 the industry was subjected to the pressure of rising raw material and labor costs. Average output per man-hour increased by another 27 percent. For the period 1928 to 1936 as a whole, the increase amounted to 49 percent.

TABLE 30.—*Index of output per man-hour in the cotton-goods industry* [1]

[Average 1932=100]

Year	Index of output per man-hour	Year	Index of output per man-hour
1928	85	1934	109
1930	92	1935	117
1932	100	1936	127
1933	105	1937	129

[1] Based on index of employment, revised to conform to the 1935 census.

These figures are a significant measure of the increasing effectiveness of labor-time used in the cotton-goods industry, and explain the fact that employment in 1937 was not as large as in 1927, despite shortened hours. They cannot be used to measure the appropriateness of the wage rate in 1936. From 1929 to 1935, 239 cotton-goods establishments disappeared. It is a fair assumption that the average output per worker in 1928 in the group of establishments that later went out

of business was less than the average for the industry in that year. In that event, the mere disappearance of these firms would result in a higher national average computed from the establishments that remained in 1936. In the statistics just presented an indeterminate part of the increase in the national average was probably due to the disappearance of low productivity establishments, whose failure measured their inability to continue to pay prices that other establishments were able to pay and still survive. Part of the increase undoubtedly reflects also a gain in output per man-hour of establishments that continued in operation from 1928 to 1936, as well perhaps as the development of new producing units.

The increase in the national average output per man-hour should, however, serve to warn those who would compare mill margins and wages in 1928 with mill margins and wages in 1936, for example. Average hourly earnings in 1928 were 32.4 cents; in 1936, 36.8 cents. In 1928 there were presumably many establishments paying average wages and approximating the average output per man-hour that survived to 1936. If output per man-hour in such an establishment increased as much as the national average, it would have been as possible to pay wages of 48.4 cents in 1936 [1] as it was to pay 32.4 cents in 1928. Alternatively, the employer might pay average wages of 36.8 cents in 1936 and offer his goods for sale with about 12.5 percent less mill margin than he needed in 1928 to make a profit.

An increase of about 50 percent in output per man-hour might have been achieved by a mill that had obsolete equipment in 1928 and that had thoroughly modernized its plant by 1936. The Bureau of Labor Statistics requested the Barnes Textile Associates to prepare reports contrasting mill operations in 1910 and 1936.[2] It was assumed that in each period a mill was equipped with the best available machinery in that period and was operated at speeds and with an efficiency characteristic of good management in that period. It was found in the case of sheetings 36 inches wide, 56 x 60 (22's warp yarn and 22.50's filling yarn), running 4.00 yards per pound, that the most modern mill in 1910 might have produced 15.80 yards of grey cloth per man-hour, whereas a similarly well-managed mill built with the equipment available in 1936 might have been expected to produce 24.56 yards of grey cloth per man-hour. This is an increase of output per man-hour of 55 percent.[3]

As another part of this study of productivity in the cotton-textile industry, the Bureau of Labor Statistics analyzed actual changes in

[1] From this figure of 48.4 cents should be deducted an allowance for a return on any additional investment per worker that may have been necessary to achieve the higher output per man-hour.

[2] This was part of a general study of the productivity of labor in cotton-textile mills made by the Bureau of Labor Statistics and the National Research Project. George S. Sommaripa conducted the study. In this chapter materials have been drawn from his unpublished manuscript.

[3] See Stern, Boris: Mechanical Changes in the Cotton-Textile Industry, 1910 to 1936, Monthly Labor Review, August 1937, pp. 316-341, for a more detailed discussion.

output per man-hour in 11 mills from 1923 to 1936.[4] While many extraneous factors, such as changes in cloth construction, influenced the individual mill figures, this group of mills does show large increases in output per man-hour. In the carding department of these 11 mills, the smallest increase was 14 percent. Half the mills showed an increase in the output per man-hour in the carding department of more than one-third. In the spinning department, half the mills showed a gain of more than 25 percent. In weaving, gains ranged up to 50 percent; 5 mills showed increases of one-third or more in output measured in yards per hour. Five mills showed increases of 20 percent or less, one showing an actual decrease in yards per hour but changing in the period to a more difficult weave.

At any given time, there are comparatively few completely modernized plants in operation. In recent years especially, few new mills have been built. Modernization, on the other hand, often takes place department by department, or even process by process. Thus the picture of a completely modern mill is an idealization: Some few mills may attain the production that is theoretically available to good management with the latest equipment by virtue of modernization; others, by virtue of superlative management. The standards of production described in the Barnes Textile Associates study are those which competition in 1910 was forcing alert management to attain. Indicative measures of progress toward its attainment have been presented. The ideal standard for good management is at least 55 percent higher in 1936 than in 1910, and progress toward the attainment of this ideal as a normal level for the margin of competition is already under way, and foreshadows the further disappearance or replacement of equipment and methods of management that were competitively adequate in 1910.

These changes in potential output per man-hour are so large that it is important to estimate the age and quality of the equipment now in place. Such estimates also shed light on the character of the changes in competitive conditions brought about by the removal of nearly 11,500,000 spindles in the last 14 years.

There are no direct data bearing on the age of existing equipment. In the spring of 1935 there were about 30,500,000 spindles in place in the United States. The date of installation has been estimated as follows: [5]

[4] Gains between 1923 and 1927 are also included in the figures shown for 7 mills in the text. In some cases, changes in mill equipment or mill practice were made between 1923 and 1927 with little subsequent gain, while other mills made similar changes in later years.

For 7 mills data are available from 1923–27, for 3 from 1927, and 1 for 1928.

[5] From unpublished manuscript of Bureau of Labor Statistics by George Sommaripa. Source of the estimate confidential, but estimate accepted as reasonable by leaders of the industry.

Spindles installed:

Prior to 1900	5, 000, 000
1900 to 1909, inclusive	10, 500, 000
1910 to 1919, inclusive	8, 600, 000
1920 to 1934, inclusive	6, 400, 000
Total	30, 500, 000

New installations of spindles by years are shown in table 31 and indicate the following totals:

1910–14	5, 357, 494
1915–19	5, 304, 894
1920–24	3, 255, 074
1925–29	1, 625, 116
1930–34	1, 479, 320
1935–37 (3 years)	1, 456, 914

Since there were about 19,500,000 active spindles in 1900, and presumably about 20,000,000 in place, this means that by 1935 about three-quarters had been junked or exported as second-hand machinery.

TABLE 31.—*New spinning spindles shipped for installation in United States, 1910–37*

Year	Spindles	Percent of total	Year	Spindles	Percent of total
1910	1, 420, 936	7. 7	1925	334, 964	1. 8
1911	951, 320	5. 1	1926	217, 264	1. 2
1912	1, 091, 786	5. 9	1927	496, 192	2. 7
1913	1, 015, 952	5. 5	1928	255, 912	1. 4
1914	877, 500	4. 7	1929	320, 784	1. 7
1915	1, 140, 136	6. 2	1930	251, 936	1. 4
1916	1, 137, 346	6. 1	1931	205, 068	1. 1
1917	1, 009, 028	5. 5	1932	143, 908	.8
1918	835, 380	4. 5	1933	348, 568	1. 9
1919	1, 183, 004	6. 4	1934	529, 840	2. 9
1920	723, 948	3. 9	1935	214, 874	1. 2
1921	621, 646	3. 4	1936	469, 316	2. 5
1922	570, 888	3. 1	1937	772, 724	4. 2
1923	872, 244	4. 7			
1924	466, 348	2. 5		18, 478, 812	100. 0

The period 1900 to 1910 had witnessed a net growth of about 8,400,000 in the number of active spindles and a decrease of 640,000 in the number of mule spindles.[6] It seems probable therefore that new installations totalled about 9,000,000 spindles and did not exceed the 10,650,000 of the next decade. The figures of 1,420,000 spindles installed in 1910 may have been an all-time record. Installations at a decreased rate continued through 1923. For the 10 years, 1925–34, installations averaged about 300,000 spindles a year. At this rate it would have required a century to replace all spindles in place. In 1937, however, there was a sharp increase in installations of new equipment.

These data incidentally throw into relief the rehabilitation of New England mills during the World War. In 1900 New England had about 4¼ million mule spindles and 9 million frame spindles. The South had almost no mules and somewhat more than 4 million ring spindles.

[6] Bureau of the Census: Bulletin 174, *Cotton Production and Distribution*, 1936–37, p. 22.

From 1900 to 1910 there was a net addition of 6 million active ring spindles in the South and of only about 2 million in New England (after allowance is made for the withdrawal of possibly 400,000 mules). But between 1910 and 1920 New England showed a net growth of 2,550,000 spindles, abandoned 2,200,000 mule spindles, and may have shared to the extent of at least 1,000,000 in the retirement of early ring spindles. There may, therefore, have been a total installation of about 5¾ million ring spindles in New England during the war decade. Slightly less than this number were installed in the South.[7]

Down to the end of 1924, the disappearance of spindles seems to have been largely confined to mule spindles. From 1910 to 1920 there was a net growth of the number of spindles in place of about 6,850,000 spindles. There were installations of about 10,650,000, indicating a disappearance of about 3,800,000. The number of mule spindles between 1909 and 1920 decreased by about 2,200,000, leaving about 1,600,000 for the retirement of ring spindles some of which had been installed nearly half a century before. From 1920 to the end of 1924 there was a further disappearance of about 950,000 spindles, indicated by a net growth of about 2,300,000 and installation of about 3,250,000. The number of mule spindles in place declined 680,000 from 1920 to 1924.

The decline in the number of spindles in New England in the first years of the 1920's reflects in large part the high proportion of the mule spindles that were in New England. Mule spindles in place declined 470,000 in New England from the end of 1920 to the end of 1924. Some of these may have been removed prior to January 1923 when New England's cotton spindles in place reached a peak of 19,000,000. By the end of 1924 the number had declined by 465,000.

At the end of 1924 when national spindlage reached a maximum of nearly 38,000,000 spindles, there were still 2,648,000 mule spindles in place in the United States (about half the number that had been active in 1899 and probably also in 1890). Of these 2,257,000 were in New England, 305,000 in "other" States, and 86,000 in the cotton-growing States. These were old spindles, obsolete with reference to the production of any but the finest yarns. All but 715,000 had been retired by the end of 1934. Therefore, mule spindles account for about one-fifth of the total decrease in spindles in place over the last 14 years.

The fact that roughly half of the spindles in place in 1935 were installed prior to 1910 and hence were certainly of the band-driven type (except as they also included a few hundred thousand mule spindles) is significant. Tape-driven frames can be, and are being,

[7] To the extent that spindles were moved from New England to the South, an addition should be made for new spindles installed in New England.

adapted to long-draft spinning. Some band-driven frames have been changed over to long draft, but the amount of such conversion is believed to be relatively small and most of it is not believed worth the new investment. Therefore, spinning equipment that is 25 or 30 years old appears to be definitely obsolete for the production of the cotton yarns most commonly produced. It is probable that the net decrease of about 4,200,000 spindles since 1935 has been confined to this equipment. To this net figure of 4,200,000 should be added the 1,450,000 new spinning spindles shipped for installation in the United States in 1935–37 and perhaps an allowance of another 150,000 for installations in the first 8 months of 1938 for which period no data are yet available. This would indicate a present ratio of about 9,700,000 spindles installed prior to 1910 to 16,600,000 installed more recently. Some of these are themselves hand-driven.[8] On the other hand, it is estimated by machinery manufacturers that about 8,000,000 spindles are operating on long-draft spinning.

The age of looms, as of spinning spindles, is greater than the age which conservative opinion of cotton-textile executives would judge to limit the usefulness and serviceability of looms. Every year, looms have been improved by the development of batteries, warp-stop motions, feelers, thread cutters, take-ups, let-offs, pick motion, larger bobbins, or larger roll for cloth; these and higher speed have contributed to the greater economy of the modern loom. Mr. Sommaripa estimates, on the basis of information from machinery manufacturers, that about half of the looms now installed are over 20 years old. The dates of installations are given in table 32.

TABLE 32.—*Installations of new looms in mills*

Year	Number of looms
1900–04	63,764
1905–09	83,150
1910–14	117,035
1915–19	93,489
1920–24	97,209
1925–29	76,039
1930–34	31,397

From these figures for spinning and weaving equipment one would anticipate great differences in output per man-hour in the cotton mills of the country. Such differences are greater than equipment alone makes necessary, because the quality of management also differs from mill to mill. Exact measures of this spread are not available, but special tabulations of census data [9] for carded yarn mills indicate

[8] In 1931 a large manufacturer estimated that 6,000,000 spindles installed during 1910–30 were band-driven and about 8,000,000 were tape-driven. Perhaps as many as half of these tape-driven spindles have been converted to long-draft.

[9] Made under the direction of Arthur F. Beal, special agent of the Bureau of the Census.

its magnitude.[10] In general, it may be noted that among these 29 southern yarn mills there was a range of output from about 3 or 4 pounds to about 8 or 9 pounds per man-hour (table 33).

TABLE 33.—*Output per man-hour in 29 southern carded cotton-yarn mills, producing yarn with reported value of 27.0 to 29.9 cents per pound, 1935*

Output per man-hour (pounds of yarn)	Number of establishments	Wages	Man-hours	Pounds of yarn produced	Value of yarn produced	Average wages per hour
						Cents
3.00–3.99	4	$263,592	877,610	3,316,613	$945,956	30.0
4.00–4.99	4	231,648	669,535	2,911,703	829,994	34.6
5.00–5.99	11	1,673,842	5,313,455	28,196,144	7,898,422	31.5
6.00–6.99	6	683,881	2,095,342	13,187,305	3,803,885	32.6
7.00–8.99	4	453,915	1,268,469	10,019,549	2,810,894	35.8
Total	29	3,306,878	10,224,411	57,631,314	16,289,151	32.3

Source: Special tabulation of the Census of Manufactures, 1935.

As is to be expected in comparing 29 mills in various locations and under different managements, there is not a perfect correlation between wages and output per hour. Some low-wage mills achieve an average or better than average output and hence achieve extremely low labor costs. Other mills with wages above the average have low output per hour and hence exceptionally high labor costs per pound of yarn. But these cases are not the rule. On the average the low-wage mills also have a low output per man-hour; the high-wage mills a higher output. This average relationship is shown in table 34, and the broad generalization of this relationship of wages to output can probably be sustained for carded yarn mills as a whole.

TABLE 34.—*Wages and output in 29 southern carded cotton yarn mills, producing yarn with reported value of 27.0 to 29.9 cents per pound, 1935*

Average wages per hour	Number of establishments	Wages	Man-hours	Pounds of yarn produced	Value of yarn produced	Pounds of yarn per man-hour
Under 27.2 cents	3	$133,953	531,641	2,544,331	$712,213	4.79
27.2–30.3	5	577,459	1,959,809	10,287,733	2,869,030	5.25
30.4–31.9	6	659,844	2,105,860	10,944,163	3,083,323	5.20
32.0–33.6	7	924,227	2,820,720	16,086,056	4,620,022	5.70
33.7–35.3	4	540,931	1,559,839	9,088,230	2,560,257	5.83
35.4 cents and over	4	470,464	1,246,542	8,680,801	2,444,306	6.96
Total	29	3,306,878	10,224,411	57,631,314	16,289,151	5.63

Source: Special tabulation of the Census of Manufactures, 1935.

These data are not adequate to generalize on the relationship of labor cost per pound and wages. For this particular group of 29

[10] The data presented relate to all carded yarn mills reporting a value of yarn of 27.0 to 29.9 cents per pound. This is a more homogeneous classification than the census classification of coarse yarn which covers counts of 20's or under or medium yarn which includes 21's to 40's. Yarn with such value was produced in about equal quantities by mills reported as engaged primarily on coarse yarn and primarily on medium yarn. There were in all 95 yarn mills reporting man-hours that were engaged almost exclusively in producing coarse or medium carded yarn for sale.

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mills in 1935, the average labor cost per pound of yarn (valued at 27 to 30 cents per pound) was 5.73 cents. The lowest average labor costs per pound were achieved by the small group of 3 mills that averaged 22 percent less than average wages. The next lowest average cost was that of the small group of 4 mills averaging about 17 percent more than the average wage. As between the 11 mills paying somewhat less than 32 cents and the 11 mills just above them in the scale of wages, wage differences just about iron out differences in productivity.

Changes in average hourly earnings that result from the establishment of minimum wages, and which affect average earnings to a larger extent in low-wage than in high-wage mills, therefore have a somewhat different significance than percentage wage increases applied to all workers in the industry as a whole. A low minimum wage may result in no increase in labor costs nor in additional costs to the consumer of textile products, but merely in a series of readjustments within the industry.

The objective established in the Fair Labor Standards Act of a 40-cent minimum wage will involve a general adjustment of wage scales in the industry. In this connection, therefore, it is well to return to a consideration of recent trends in productivity and wages. From 1936 to 1937 average hourly earnings rose from about 36.8 cents to about 42.2 cents. In August 1938, the average stood at 38.3 cents. It is therefore significant to note that the index of productivity rose from 127 in 1936 to 129 in 1937 and in August 1938 stood at slightly above 130. Within this period average output per man-hour has risen almost enough to offset the net wage increase since 1936, without taking into account the question of whether wages had lagged behind rising output in earlier years. The cotton-goods industry has given substantial evidence of its capacity to assimilate rising wages without increased labor-cost. The essential problem is one of the rate at which adjustments are made—a problem that arises out of the fact that a wage rate increase at the moment that it is made usually involves an increase of labor costs, while output per man-hour rises gradually.

Chapter 7

Foreign Trade

A minimum wage order, fixing minimum wages at so low a level as to leave marginal costs undisturbed, would presumably not affect the production or consumption of cotton goods. Individual producers might be forced to revised production standards or might change their employment policy with reference to particular jobs. To some extent there would probably be a transfer of business from low-wage mills to more efficient and equally low-cost mills now paying higher wages but utilizing only part of their capacity because of competition from low-wage mills.

A minimum wage sufficiently high to affect wage standards in the average mill would probably affect labor costs at the time the wage was instituted, though experience shows that over longer periods a rising average level of productivity tends to eliminate the increase in labor cost. If higher labor costs are incurred by producers generally, the industry may be affected through repercussions in the field of foreign trade or in the domestic market. In this chapter we therefore examine the relations of the American cotton-textile industry to the world market.

The United States is the world's largest producer of cotton textiles, consuming annually about twice as much raw cotton as either the United Kingdom or Japan. The greater part of the domestic production is consumed in the home market whereas about three-fourths of the Japanese and British production goes into the export trade. As measured by total imports and exports the United States is definitely on a net export basis. Exports of both cotton yarns and countable cotton cloths greatly exceed imports.

Imports of cotton yarns have been smaller in recent years than at any time since 1890. Under the Tariff Act of 1930 (June 18, 1930, to present) imports of cotton yarn have averaged 1,708,208 pounds per year, having an average annual value of $1,334,556 (table 35). These averages represent a substantial decrease from imports in the 1920's. Under the Tariff Act of 1922 (September 22, 1922, to June 17, 1930) imports of cotton yarn averaged 3,581,021 pounds having an average annual value of $4,330,145.

TABLE 35.—*Cotton yarn: United States imports for consumption, 1922–37*

Year	Quantity	Value
	Pounds	
1922	5,412,342	$5,033,885
1923	5,061,552	5,504,934
1924	3,943,564	4,687,378
1925	3,678,403	5,398,892
1926	3,592,373	4,245,356
1927	3,248,292	3,733,335
1928	2,609,144	3,341,618
1929	2,652,880	3,296,742
1930 (Jan. 1 to June 17, 1930)	1,226,718	1,460,885
Total (2,826 days, act of 1922)	27,725,934	33,526,033
Annual average (act of 1922)	3,581,021	4,330,149
1930 (June 18 to Dec. 31, 1930)	534,969	508,314
1931	1,421,781	1,162,811
1932	1,295,687	774,550
1933	1,597,365	1,121,497
1934	1,743,555	1,456,889
1935	2,150,390	1,712,286
1936	2,125,736	1,651,692
1937	2,019,299	1,681,462
Total (2,754 days, act of 1930)	12,888,782	10,069,501
Annual average (act of 1930 to Dec. 31, 1937)	1,708,208	1,334,556

Source: U. S. Tariff Commission.

Imported yarns consist principally of fine-count yarns and specialties which are not produced in large quantities in the United States. Imports, for the most part, supply a demand of domestic consumers for yarns which normally are not produced in this country—such as fine yarns for laces, fast-colored fine yarns for labels, etc. Imports of cotton yarns are negligible in comparison to domestic production and are only a fraction as large as exports.

TABLE 36.—*Cotton yarn: United States exports, 1922–37*

Year	Quantity (pounds)				Value			
	Carded yarn	Combed yarn		Total	Carded yarn	Combed yarn		Total
		Mercerized	Not mercerized			Mercerized	Not mercerized	
1922	9,641,982	5,861,878		15,503,860	$3,451,516	$3,364,148		$6,815,664
1923	7,327,227	4,754,157		12,081,384	3,299,164	3,333,508		6,632,672
1924	7,929,056	5,744,453		13,673,509	3,524,019	3,899,948		7,423,967
1925	13,506,064	8,385,746		21,891,810	5,708,404	6,187,796		11,896,180
1926	14,794,455	9,242,181		24,036,636	5,236,986	6,894,939		12,131,925
1927	17,495,517	8,572,708	2,472,330	28,540,555	5,723,516	$7,409,758	$1,190,550	14,323,824
1928	13,159,500	11,098,006	2,367,006	26,624,512	4,877,313	9,490,195	1,234,808	15,602,316
1929	13,919,250	12,045,768	1,526,194	27,491,212	4,681,954	10,039,415	804,078	15,525,447
1930	8,163,562	8,689,915	1,277,286	18,130,763	2,406,913	6,840,033	611,969	9,858,915
1931	6,772,711	6,476,910	1,022,259	14,271,880	1,492,087	4,353,223	372,413	6,217,723
1932	9,742,895	5,134,587	634,788	15,512,270	1,648,079	2,692,833	214,999	4,555,911
1933	8,402,157	2,094,777	1,484,410	11,981,344	1,571,213	1,132,751	595,872	3,299,836
1934	4,743,794	1,860,089	1,024,276	7,628,159	1,314,623	1,197,863	351,280	2,863,766
1935	4,140,993	1,383,383	768,828	6,293,204	1,144,043	842,150	290,792	2,276,965
1936	3,425,224	1,632,820	690,305	5,748,349	992,999	927,679	260,915	2,181,593
1937	5,268,911	1,819,984	1,023,648	8,112,543	1,566,211	1,215,456	386,605	3,168,272

Source: U. S. Tariff Commission.

United States exports of cotton yarns, since 1922, have been from 2 to 15 times as large as imports. In 1929 exports of cotton yarns amounted to 27,491,212 pounds valued at $15,525,447, of which 13,919,250 pounds valued at $4,681,954 was carded yarn, 12,045,768 pounds valued at $10,039,415 was combed mercerized yarn, and 1,526,194 pounds, valued at $804,078 was combed yarn not mercerized. (Table 36.) Exports of yarn decreased steadily from 1929 to 1936, in the latter year exports amounted to 5,748,349 pounds valued at $2,181,593. Exports in 1937 showed about a 50-percent increase over exports in 1936.

Imports of cotton cloths are likewise small when compared to domestic production and exports. Imports of countable cotton cloths since 1923 have been equivalent to from 0.5 percent to 3.5 percent of domestic production, and equivalent to from one-seventh to one-half of United States exports (table 37).

TABLE 37.—*Countable cotton cloths: Comparison of domestic production, imports, and exports in specified years, 1923–37*

Year	Quantity (square yards)			Value		
	Domestic production	Domestic exports	Imports for consumption	Domestic production	Domestic exports	Imports for consumption
1923	7,247,719,142	464,520,397	206,146,780	$1,037,767,812	$79,357,337	$44,804,119
1925	6,693,129,462	543,316,851	109,580,704	883,862,418	85,011,749	26,502,206
1927	7,842,036,580	560,042,677	63,562,980	823,162,006	74,956,059	15,792,290
1929	7,436,326,752	539,355,800	55,763,923	788,001,276	71,548,425	14,942,435
1931	6,331,053,513	360,585,679	33,554,446	432,328,970	34,201,587	6,979,887
1933	7,310,594,300	299,569,298	38,853,166	501,734,424	22,969,735	5,735,581
1934	(1)	223,481,481	40,493,622	(1)	23,915,533	6,433,559
1935	[2] 6,596,064,114	182,703,615	62,107,676	[2] 576,651,652	19,356,342	6,661,959
1936	(1)	196,525,427	111,941,610	(1)	20,959,325	10,055,957
1937	(1)	228,998,917	143,889,852	(1)	26,376,475	13,026,726

[1] Not available.
[2] Compiled from preliminary report of Census of Manufactures.
Source: Revised tables on cotton textiles—The Cabinet Committee on the Cotton Textile Industry. Imports and Exports for 1937 added.

The average annual imports of countable cotton cloths have been less under the Tariff Act of 1930 than under any act since 1914. Imports from June 18, 1930, through 1937 averaged 62,134,147 square yards valued at $7,394,197 (table 38). From October 4, 1913, to September 21, 1922, such imports averaged 76,618,376 square yards valued at $20,995,267 and from September 22, 1922, to June 17, 1930, averaged 103,303,039 square yards valued at $24,273,604. It may be noted, however, that in both 1936 and 1937 imports were above the average level from 1922–30.

TABLE 38.—*Countable cotton cloths:*[1] *United States imports for consumption, 1922–37*

Year	Quantity	Value
	Pounds	
1922	148, 343, 190	$40, 863, 635
1923	206, 146, 780	44, 804, 119
1924	183, 711, 446	38, 839, 515
1925	109, 580, 704	26, 502, 206
1926	61, 005, 063	16, 266, 646
1927	63, 562, 980	15, 792, 290
1928	58, 918, 084	15, 363, 796
1929	55, 763, 923	14, 942, 435
1930 (Jan. 1 to June 17)	31. 648, 025	7, 720, 613
Total (2,826 days, act of 1922)	799, 820, 243	187, 937, 550
Annual average (act of 1922)	103, 303, 039	24, 273, 604
1930 (June 18 to Dec. 31)	10, 223, 918	2, 804, 362
1931	33, 554, 446	6, 979, 887
1932	27, 675, 002	4, 084, 749
1933	38, 853, 166	5, 735, 581
1934	40, 494, 738	6, 433, 811
1935	62, 182, 179	6, 669, 661
1936	111, 941, 610	10, 055, 957
1937	143, 889. 852	13, 026, 726
Total (2,754 days, act of 1930)	468, 814, 911	55, 790, 734
Annual average (act of 1930)	62, 134, 147	7, 394, 197

[1] Countable cotton cloths, other than tire fabric, such as are dutiable under paragraph 904 of the Tariff Act of 1930. This table does not include cotton cloths containing silk or rayon (par. 905) or wool (par. 906).

Source: U. S. Tariff Commission.

The principal sources of imports have been in recent years the United Kingdom, Switzerland, and Japan. Imports from the United Kingdom cover a wide range from coarse cretonne specialties in the 11's to 20's yarn range to fine shirtings and voiles in the 91's to 100's yarn range. Imports from Switzerland, mainly organdies, fall within the 80's to 90's yarn range and in the 101's to 110's yarn range. Imports from Japan have in most years been confined almost entirely to a special coarse-yarn crepe. Beginning in 1934, however, they have been mainly bleached twills and shirtings made of 40's to 60's yarns, small quantities of such fabrics piece-dyed, and some ginghams.

Before the Tariff Act of 1922 the bulk of the countable cotton cloths imported into the United States were printed, piece-dyed, or yarn dyed. Under the act of 1922 there was a shift to a preponderance of grey goods, a shift largely due to the demand for cotton broadcloths to be bleached, printed, or piece-dyed according to current requirements. Under the act of 1930, imports of grey goods are subject to relatively high specific rates. This together with a change in the type of goods demanded has caused an increased proportion of the imports to be entered in the bleached condition.

Prior to 1934 imports consisted principally of fine or special cloths, the bulk of which were supplied by the United Kingdom and Switzerland. Occasionally the demand for these cloths became quite

substantial and imports increased until checked by the large-scale production of these types of goods, as staples, by domestic manufacturers. Beginning in December 1934, however, the character of imports changed and were more competitive with staple American production as a result of increasing imports from Japan.

On April 2, 1935, the United States Tariff Commission in response to a Senate resolution instituted a cost of production investigation of countable cotton cloths under section 336 of the Tariff Act of 1930. The Commission found that the statutory duties "on cotton cloth, bleached, printed, dyed, or colored, containing yarns the average number of which exceeds No. 30 but does not exceed No. 50" was not sufficient to equalize the differences in the cost of production. In response to the recommendations of the Commission, a Presidential proclamation, signed May 21, 1936, increased by about 42 percent the duties on cotton cloth, bleached, printed, dyed, or colored, containing yarns the average number of which exceeds No. 30 but does not exceed No. 50. Imports from Japan immediately decreased, but in spite of the higher rate of duty, with the rise in price of cotton cloth in the last 6 months of 1936, imports from Japan again increased and amounted to nearly 11,000,000 square yards in December.

Early in 1937 the United States producers entered into an agreement with Japanese exporters whereby exports to the United States were limited in the next 2 years (1937 and 1938) to a maximum of 255,000,000 square yards. A total of 180,000,000 square yards could be exported in 1937. Imports from Japan, in 1937, amounted to 106,214,152 square yards or between one-half and two-thirds of the quota allotment. Imports have been much less thus far in 1938 than they were in 1937.

Normally imports of countable cotton cloths have consisted principally of fine goods and specialties which are not directly competitive with the great bulk of the domestic production. Specialties which have been imported in substantial quantities from time to time in the past have disappeared from imports as soon as domestic manufacturers undertook their production on a quantity basis.

United States exports of countable cotton cloths, which consist principally of sheetings and drills, coarse colored denims and suitings, calico prints, ginghams, and chambrays, have decreased partly because the production of cotton textiles has been undertaken in foreign countries which formerly afforded a market for substantial quantities and partly because of increased competition from low-cost producing countries, notably Japan. Exports at the present are largely confined to countries in which the United States has a tariff preference, Cuba and the Philippine Islands, or to nearby countries which offer an advantage in transportation costs, Canada, Colombia, Haiti and other Central or South American countries.

Chapter 8

The Demand for Cotton Goods

All but about 3 percent of the American cotton-goods production is absorbed in the domestic market. The relationships of labor costs, prices, and consumption in this market are, therefore, of particular importance.

There is of course some relationship between cotton consumption and price. The Marketing Section of the Agricultural Adjustment Administration has estimated [1] that a rise in raw cotton prices from 10 to 20 cents a pound tends to reduce American consumption of cotton by slightly more than 1,000,000 bales. That is to say, a change in the principal constituent cost of cotton cloth equivalent to about 50 percent of the value of the cloth tends to reduce consumption by about one-sixth. They find further, that, as measured in percentage terms, "total cotton consumption abroad is less responsive to price changes than consumption in the United States."

"It is estimated that 40 percent of the cotton consumed in the United States is for wearing apparel, 40 percent for industrial and agricultural purposes, and 20 percent for household use. In certain industrial uses, cotton competes with paper, jute, and other low-priced materials. Increases in the price of cotton or in cost of manufacture may force cotton out of a competitive position with these materials. The Agricultural Adjustment Administration took cognizance of this fact while the cotton-processing tax was in effect by refunding the processing tax on large-sized cotton bags and by considering the possibility of refunding the tax on other low-order uses for cotton, while it placed compensatory taxes on the manufacturing of paper and jute into certain products that competed with cotton products. The fact that there is such a high degree of competition between cotton and other materials in the low-order uses shows the necessity of maintaining a balance between the cost of cotton goods and of competing products if shifts away from cotton goods are to be avoided. In medium-weight goods, which constitute the bulk of cotton-textile production, there probably is little change in consumption as a result of changes in the price of cotton or in the cost of processing cotton. As for fine goods, data are not sufficient to determine whether changes in costs affect consumption, but the cost of

[1] Mimeographed memorandum on "Elasticity of Demand for Cotton Textiles," submitted to the Tripartite Technical Conference of the International Labor Organization on the World Textile Industry, April 1937.

the raw material is, of course, a smaller percentage of the total cost than in the case of heavy and medium-weight goods. Consumers' preference rather than price is believed to be the determining factor. Improvements in the quality of rayon and the lower prices for silk and rayon have been major factors, without doubt, in the decline in consumption of fine cotton textiles." [2]

Cotton enters a wide variety of uses. It is used in the manufacture of automobiles and shoes, for oilcloth and draperies, for bagging and overalls, for the cheapest dresses and fine organdies. Each of the uses of cotton goods is subject to its own peculiarities of demand. In some cases, such as the automobile and shoe industries, there is no apparent relationship between the price of cotton goods and the demand for them. While each industry may control its flow of orders for cotton goods with an eye to current and prospective prices, in neither case can it be imagined that a substantial increase of demand will occur in the long run through lower prices for cotton goods. The demand for automobiles and shoes is controlled by factors essentially outside of the sphere of the cotton-textile market.[3]

The most important factor contributing to such elasticity as is found in cotton textiles may be the possibilities of substitution. The data presently available are insufficient for this Bureau to appraise the competitive relationships of paper products and cotton goods, for example. But two facts may be pointed out. The first is that cheap paper has enlarged the field of consumption. Housewives for many generations slipped a bunch of carrots into a mesh shopping bag. Bread was tucked unwrapped under the baker boy's arm. One may still wash in the brook and dry one's hands in the grass after a picnic, though paper napkins are now commonly strewn over the country-side. Therefore, to say that in 1935 there were produced $76,000,000 of kraft paper bags, paper towels and napkins, and gummed-paper tape which used about 665,000 short tons of paper,[4] is not to say that $76,000,000 would have been used for cotton bags, cotton towels and napkins, and cotton string had paper not been available. Furthermore, insofar as paper products are substituted for cotton, they are at times substituted on a preference rather than a cost basis.[5]

While the competition of cotton and paper, for example, must not be exaggerated, it is significant that the consumption of gummed-paper tape increased from 28,340 tons in 1929 [6] to 30,038 tons in

[2] Ibid., pp. 2-3.

[3] See also Kennedy, Stephen J., "Profits and Losses in Textiles," pp. 176, ff.

[4] Census of Manufactures, 1935, pp. 559-560. Quantities estimated on basis of ratio of reported value of product to the value of that part of the product for which the weight of paper used was also reported.

[5] This might not be true, if cotton goods could be visualized as so cheap that they could be thrown away after a single use. But this is a fantastic assumption; the only reasonable comparison of costs is one that compares multiple uses of a product costing more per pound with a single or a restricted number of uses of an initially cheaper article.

[6] Census of Manufactures, 1929, vol. II, p. 564.

1935. Over this same period, the production of soft-fiber twine (other than binder twine) decreased from 177,000,000 pounds to 118,000,000 pounds. Of this decrease, 35,000,000 was in cotton twine. Again it is interesting to notice that the production of turkish and terry towelling, for which no paper substitute is available, increased from 1929 to 1935 from 38,100,000 pounds to 46,200,000 pounds. Paper towels increased from 51,650 tons to an estimated 80,843 tons. Huck, damask, and Jacquard-woven towels decreased from 21,300,000 pounds in 1929 to 14,800,000 in 1935, while plain-woven towelling increased from 6,775,000 pounds to 11,120,000 pounds.

As regards household furnishings and apparel, there are insufficient data to warrant this Bureau drawing any conclusion as to the influence of price on consumption. There are in fact almost no data on consumption as such; variations in inventories of goods on the way to the consumer may be as large, or larger than, variations in consumption. Furthermore, as regards utility items, the housewife may herself stock goods if she has an income to buy when prices are low. If so, prices determine primarily the timing of her buying, not the quantity to be bought over a period of years.

While the relationship of cotton consumption and price must be described in qualitative terms and approached with experienced judgment, there is ample evidence to indicate that the American market is inadequately supplied with cotton goods. Of some few commodities it is true that the demand is almost fully satisfied. Table 39 indicates that to maintain a level of living sufficient to insure health and an adequate social adjustment in wage-earning and farm communities would require a 23-percent increase in per capita consumption of cotton. This makes no provision for increased industrial use of cotton goods. It is based on an increase of clothing and house-furnishings that would require nearly half again as much cotton as was used for these purposes in 1929.

On the basis of such data as are now available, it appears that the most important single factor in determining cotton textile consumption for apparel and household furnishings is the amount of income of low-income groups. Recent studies of the purchases of wage-earning families by the Cost of Living Division of the Bureau of Labor Statistics illustrate this clearly.[7] Purchases of women's dresses indicate one aspect of the demand for cotton goods. Among Negro wage-earning families in the South with incomes of approximately $500 the women over 18 years of age buy six dresses every 4 years, an average of

[7] The regional studies are now nearing completion and national averages are in the process of preparation. The figures cited in the text are preliminary and subject to revision. In the following discussion incomes are referred to as about $500, $1,000, and $2,000. The expenditure figures are, repectively, for families spending less than $200, less than $400 and more than $600 per expenditure unit in the family.

1.5 dresses per year. Three of these are cotton house dresses valued at about 80 cents apiece. Once every 2½ years the woman may buy a cotton street dress for about $1.70 (an average of 0.4 per year), and once every 3 years a rayon dress at an average cost of $4.25 (an average of 0.3 dress per year). Negroes are studied at this income level because of the size of the sample; at higher income levels, they purchase in about the same manner as white families of similar income.

TABLE 39.—*Estimated potential consumption of raw cotton in the United States required to maintain a level of living sufficient to insure health and an adequate social adjustment in wage-earning and farm communities*

Types of use	Approximate raw-cotton equivalent (1934)
	Pounds
Clothing	1,839,000,000
House furnishings	738,000,000
Allowances for transients in hotels, restaurants, Pullmans, hospitals, colleges, etc	118,000,000
Total clothing and housefurnishings	2,695,000,000
Estimated quantity used for industrial purposes in 1929	1,586,000,000
Total clothing, housefurnishings, and industrial	4,281,000,000
Actual consumption 1929	3,423,000,000
Potential total increase in cotton consumption over 1929 with no change in quantity used for industrial purposes	25 percent
Approximate per capita potential consumption	34
Actual per capita consumption in 1929	27.7
Approximate per capita increase in potential consumption over 1929	23 percent

Source: Machine Hour Requirements for Satisfying Normal Demands in the Cotton Textile Industry, National Recovery Administration Report, 1934. Slight changes from the report have been made in some of the figures by the Marketing Section, Agricultural Adjustment Administration, in preparation for the World Textile Conference, International Labor Organization, Washington, D. C., April 1937.

Contrast these purchases then with those in families with an income of about $1,000. A woman in such a family will buy about 10 dresses in 4 years (an average of 2.5 per year). Of these it may be expected that about half will be cotton house dresses valued at about $1 (an average of 1.2 dresses per year) and that 2 will be cotton street dresses (an average of 0.5 per year) valued at about $1.90. Finally, she will probably buy about 2 rayon or silk dresses for $5 every 3 years (an average of 0.7 per year). In other words, a woman in a family with a single steadily employed wage earner at 50 cents an hour buys two-thirds again as many dresses as one in a family in which the wage earner makes 25 cents, but she spends more than twice as much for dresses.

With another doubling of family income, that is, an increase to about $2,000, there is a trebling of the average expenditures on dresses. Most of the increase goes for silk, rayon, and wool dresses. But the expenditures per capita for women's cotton dresses doubles and the number of cotton dresses purchased increases by about two-fifths.

The same sort of expansion of consumption occurs as regards

items of men's wear. As income rises from $1,000 to about $2,000 the purchases of men's cotton shorts increase from 1.4 per year to about 2.4; purchases of men's pajamas and nightshirts from 1 every four years to 4 every five years. In the case of men's clothing, as of women's, there is a pronounced tendency for strictly utility items of low quality to give way to goods of better quality or of more expensive fibers. Thus a point is reached in the income scale at which there are very moderate increases in expenditures for cotton socks, but a man in a family with an income of about $2,000 purchases five pairs of rayon or silk socks a year, double the number purchased by a man in a family with an income of $1,000.

It is because of a rapid expansion of the quantity and a rapid improvement of the quality of cotton goods bought as the lowest incomes are left behind, that cotton stands to benefit so materially from increases of incomes among low income groups. The gains to the cotton goods industry at higher income levels are less marked chiefly because of the substitution of other fiber in many articles of apparel.

Part II

Distribution of Earnings

Chapter 9

Average Hourly Earnings in the Cotton-Goods Industry

Average hourly earnings in August 1938 in 784 establishments in the cotton-goods industry were 38.4 cents. These were either mills engaged primarily in the manufacture of woven grey goods over 12 inches wide or were in the yarn and thread division of the industry. This classification does not include establishments primarily engaged in the manufacture of cotton narrow goods or of rayon goods (whether or not the mills were formerly cotton mills), or in the finishing of cotton or other fabrics.

The Bureau of Labor Statistics receives reports on employment and pay rolls each month from about 689 cotton-goods mills. In August 1938 they employed about 285,000 workers. The Bureau estimates that in that month there were about 359,000 workers employed in the industry. This estimate is derived by adjusting employment as reported to the census for 1935 by the changes in employment reported monthly to the Bureau of Labor Statistics. While this coverage is extensive, it was of course possible that the 75,000 employees not covered by current reports were primarily in low-wage mills. The Bureau of Labor Statistics, therefore, canvassed the entire industry, asking only for employment and pay rolls and man-hours worked in the single pay-roll period ending nearest to August 15, 1938. An additional 200 usable returns were received involving individual reports for 889 cotton-goods mills with a total employment in August of 342,000. This is a coverage of 95 percent of the employment in the industry.[1]

In a great many establishments there is no record of man-hours worked. There was no report of the number of man-hours worked in the case of 105 establishments—some of them in the regular Bureau of Labor Statistics sample and others that were brought in as additions to the sample in the month of August 1938. For these plants, therefore, there can be no computation of average hourly earnings. That leaves 784 establishments with 319,000 employees covered as regards average hourly earnings in the establishment, an 89 percent sample. This is an unusually good coverage for an industry and could only be improved by extensive field work.

[1] It is always possible to estimate more accurately the percentage of employees that are covered in an industry than it is to estimate the percentage of the number of establishments covered. In 1935, there were 1,042 establishments reporting to the census that were primarily engaged in the manufacture of cotton woven goods over 12 inches in width or of cotton yarn and thread. There is no means of knowing whether the number of establishments at the present time is larger or smaller than that shown by the census for 1935.

It is significant that the results obtained from the additional plants correspond closely with the averages of the regular sample of reporting establishments. This is important because it is only for the period August 1938 that there is anything like a complete coverage of the industry. For any other period, it will be necessary to base conclusions on smaller samples of one sort or another. Plants that report regularly to the Bureau of Labor Statistics had average weekly earnings of $13.67 in August 1938. Plants that were added for this one month had average weekly earnings of $13.76, a difference which might have been substantially larger without indicating a real difference in the two samples. As to average hourly earnings, the average for the whole sample covering 89 percent of the employees in the industry is 38.35 cents. The average for the mills that were added to the sample was 38.8 cents, about 0.4 cent higher, and the average for the plants that regularly report man-hours to the Bureau of Labor Statistics is 38.27 cents. Apparently, it is quite safe to use the materials that have regularly been in the files of the Bureau of Labor Statistics for every month since 1932 as regards hours worked and for every month since 1919 as regards weekly earnings to represent conditions in the textile industry as a whole.[2]

TABLE 40.—*Average weekly earnings, average hours worked per week, and average hourly earnings in the cotton-goods industry, by years, 1932–37*

Year	Average weekly earnings	Average hours worked per week	Average hourly earnings
			Cents
1932	$10.85	44.5	23.9
1933	11.56	41.4	27.7
1934	12.58	33.2	37.8
1935	13.06	34.6	37.6
1936	13.79	37.5	36.8
1937	14.97	36.2	41.3

Source: U. S. Bureau of Labor Statistics.

Table 40 gives an historical perspective with reference to which the present average hourly earnings of about 38.3 cents may be interpreted. It shows clearly the low level of hourly earnings in 1932. The lowest point was actually reached in March and April 1933 when workers in the cotton textile industry averaged 21.4 cents. There was a sharp rise in the average from 23.1 cents in July 1933 to 36.1

[2] The Bureau of Labor Statistics sample has been successively extended and is very much better since 1932 and still better since 1934 than it was in the earlier periods. A question may, of course, be raised as to whether average hourly earnings are lower in establishments that do not report man-hours. No specific evidence is available on the subject, but there is inferential evidence in the weekly earnings of establishments reporting and not reporting man-hours. Whereas the average weekly earnings of all 889 establishments were about $13.70, the group that did not report man-hours average $13.96 per employee per week. The plants that did not report man-hours reported higher weekly earnings than those that did report man-hours. Such a result might, of course, be brought about if the mills not reporting man-hours worked very much longer hours at lower average hourly earnings than did the mills reporting man-hours. This is probably not the case in the cotton-textile industry where shift hours have been generally limited to 40.

in August 1933 that was not shown in the table. Further small increases in average hourly earnings occurred as plants adjusted themselves more fully to the code. The period 1934 to 1935 was a period of substantial stability, with average hourly earnings at about 37.7 cents.

The peak of hourly earnings was reached in the spring of 1935 with an average of 38.1 cents in March and April of that year. Monthly figures from 1935 to August 1938 are shown in table 41. The downward drift in the averages from May 1935, when the code terminated, to the end of 1936 is somewhat misleading. There was no general tendency for all mills to reduce average hourly earnings by 1.5 cents. What happened was that particular mills dropped away from the code standard and in some instances reduced wages by 10 or 20 percent.[3] The general tendency in the industry was to maintain stable wages. The averages that are shown in table 41 represent a balance of these forces—on the one hand, rather large breaks in the wage structure of individual mills, and, on the other hand, a general tendency to maintain average hourly earnings and in some mills to increase average hourly earnings.

TABLE 41.—*Average hourly earnings in the cotton-goods industry, by months, January 1935 to September 1938*

Month	1935	1936	1937	1938
	Cents	*Cents*	*Cents*	*Cents*
January	37.9	36.8	39.0	42.0
February	38.0	36.7	39.0	41.3
March	38.1	36.7	39.0	41.2
April	38.1	36.7	41.6	41.1
May	38.0	36.6	42.0	40.8
June	37.9	37.0	42.1	40.1
July	37.9	36.4	42.2	39.1
August	37.7	36.5	42.2	38.3
September	37.2	36.3	42.4	38.3
October	37.1	36.6	42.4	----
November	36.8	36.6	42.1	----
December	37.0	38.5	42.3	----
Average	37.6	36.8	41.3	----

Source: U. S. Bureau of Labor Statistics.

Subsequently there were two periods of more or less widespread increases. The first was in December 1936, the second in April 1937. Again, it is to be noted that these increases were not universally applied in the industry as a whole. The first increase restored the general average for the industry about to the level at which it had

[3] For a more detailed analysis of the movement between the spring of 1935 and the spring of 1936, see A. F. Hinrichs, "Average Hourly Earnings in Manufacturing, 1933 to 1936," Monthly Labor Review, April 1937, pp. 841–843. Thus, out of 448 establishments reporting man-hours in both April 1935 and April 1936, there was little change in average hourly earnings in 209 mills employing more than half of the total number of workers. Furthermore, 71 establishments increased earnings. In 94 establishments, there were decreases in average hourly earnings ranging from 2.5 to 7.4 percent. In 74 establishments there were decreases of 7.5 percent or more and in 5 cases, the decreases amounted to 27.5 percent or more.

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been when the code terminated. The second increase in April lifted hourly earnings to 41.6 cents and thereafter there was a gradual upward drift which terminated in October with average hourly earnings of 42.4 cents.

Wages held fairly well until January 1938 but broke in February and again in May, June, July, and August. These wage decreases were not industry-wide dated wage changes but operated like a series of successively tumbling blocks. Table 42 indicates the months in which a representative sample of 244 mills made wage decreases. It is to be noted that in 5 of these mills there was actually a wage increase between April 1937 and January 1938, and that 78 mills show no wage change between April 1937 and August 1938.[4]

TABLE 42.—*Distribution of plants in cotton-goods industry which reported wage reductions between April 1937 and August 1938, by month and region*

Month and year	North	South	United States
November 1937 [1]		2	2
December 1937		6	6
January 1938	16	4	20
February 1938	16	5	21
March 1938	1	6	7
April 1938	1	14	15
May 1938	1	21	22
June 1938	2	20	22
July 1938	1	38	39
August 1938	2	8	10
Total, April 1937–August 1938	40	[2] 114	[2] 154

[1] No wage reductions occurred between April and November 1937 in this sample.
[2] Includes 2 plants which failed to report time of wage reduction. 2 plants reported 3 wage reductions during the period covered, in June, April, and November for 1 plant, and November, December, and April for the other. 8 plants reported 2 wage reductions during the period covered, occurring in February and April in 3 plants, and December and February, January and March, March and May, and May and July, respectively, in the other 4. Each of these decreases has been tabulated separately in the month in which it occurred. Therefore, the number of decreases reported by months is larger than the number of mills shown in the summary for the year.

Average hourly earnings are shown by regions in table 43. It will be noticed that there is an 8-cent difference between the average hourly earnings in August 1938 of northern and southern cotton mills. In the interpretation of this difference, it is important to bear two points in mind: First, the figures are averages for all mills reporting; second, a small part of the difference is due to the types of mill in the two regions. As regards the first point which will be discussed in greater length, it is to be noted that a substantial number of mills in the South paid wages as high as those generally prevalent in northern mills. In connection with the second point, it is to be noted that the yarn division of the industry, which averages less than the industry as a whole, partly because of the occupational composition of the mills, is primarily concentrated in the South. In the sample presented, out of 48,578 workers in spinning mills, 41,601 were in the

[4] 7 of the 244 mills were closed in August 1938 and are not included in this summary of wage changes.

South. On the other hand, specialized weaving mills, which average higher hourly earnings than the industry as a whole, reported the same number of employees in the North and in the South. The regional difference in hourly earnings in mills that do both spinning and weaving amounted to about 6.9 cents as compared with the difference of 8 cents for the industry as a whole.

TABLE 43.—*Numbers of establishments, employees, man-hours, amount of pay roll, and average earnings per hour in the cotton-goods industry, August 1938*

Region	Number of establishments	Number of employees	Amount of weekly pay roll	Number of man-hours worked, per week	Average earnings per hour
					Cents
United States	784	319, 294	4, 363, 046	11, 374, 804	38. 35
North	200	69, 109	1, 143, 173	2, 564, 061	44. 58
South	584	250, 185	3, 219, 873	8, 810, 743	36. 54

Source: U. S. Bureau of Labor Statistics.

In this connection, it will be noted that the wage changes which have occurred in late 1937 and 1938 brought about some narrowing of the difference in the wages of northern and southern mills [5] (table 44). In 1928 and again in 1930, the southern mill average was about 30 percent less than the northern mill average and the difference between the averages in the two regions approximated 12 cents. Northern wages were decreased more than southern wages during the depression, and, in July 1933, southern wages were about 25 percent less than northern wages, the difference amounting to about 7 cents. By August 1934, due to the minimum wages established under the N. R. A. code, the difference in wages was reduced to 6.6 cents, with the southern earnings about 15 percent less than the northern wages. This spread tended to increase slightly and from July to November 1936, averaged about 7.2 cents, or 17 percent, of northern earnings.

The increase in rates in December 1936 was more widespread among northern mills than among southern mills. Thus the northern average increased from 42.1 cents in November to 45.0 cents in December, whereas the average of southern mills increased from 35.0 to 36.6 cents. The spread between the two averages was therefore 8.4 cents for December 1936 and remained at about this level through March 1937. The April 1937 increase was again more extensive among northern mills than among southern mills. By July 1937 the northern mills averaged 50.0 cents and the southern mills 39.7 cents, a difference of 10.3 cents with southern wages slightly more than 20 percent under those of the North.

[5] See Tolles, N. A., "Regional Differences in Cotton Textile Wages, 1928-37," Monthly Labor Review, January 1938.

TABLE 44.—*Comparison of average hourly earnings in northern and southern cotton-textile mills, 1928 to August 1938*

Period	Unweighted averages [1]			
	North	South	Excess of North over South	Percentage: South of North
	Cents	*Cents*	*Cents*	
1928	39.4	27.3	12.1	69.3
1930	39.7	28.1	11.6	70.8
1932	32.3	23.9	8.4	74.0
July 1933	27.6	20.5	7.1	74.3
August 1933	41.1	33.7	7.4	82.0
August 1934	42.2	35.6	6.6	84.4
1935	42.2	34.8	7.4	82.5
July 1936	41.8	34.6	7.2	82.8
July 1937	50.0	39.7	10.3	79.4
August 1938	44.6	36.6	8.0	82.0

[1] The average hourly earnings shown are not strictly comparable from 1 period to the next, being based on changing samples. The ratios of southern to northern earnings are less affected by such changes in the sample. None of the unweighted averages have been published hitherto. The sources of the earnings figures are as follows: 1928—August 1934, field studies of the Bureau of Labor Statistics; 1935—man-hour reports of the Census of Manufactures, prepared for the Bureau of Labor Statistics by Arthur F. Beal (total of cotton yarn and cotton woven goods); July 1936–August 1938— regional tabulation of employers' reports to the Bureau of Labor Statistics

This is the background against which wage reductions were made in late 1937 and 1938. Occasional reductions were made by southern mills as early as November 1937. But there was a widespread decrease among the 58 northern mills in January and February. Wage reductions in the South were extensive in April, May, June, and July, but even at the end of this period were less general than had been the northern decreases. The result was a narrowing of the difference in average wages in the two regions to 8 cents in August 1938, with southern wages 18 percent under those of the North.

If the cotton-goods industry is considered as a whole, it is among those with the lowest paid factory employees in the United States.[6] Three conditions account in some measure for the fact that the national average for the cotton-goods industry was less than two-thirds of the average hourly earnings (63.8 cents) for all manufacturing industries: First, the relatively high proportion of unskilled and semi-skilled operatives employed; and, second, the unusually large proportion of women employed in cotton textiles; and, finally, its concentration in the South.

Earnings in the cotton-textile industry in the North are lower than in many other northern industries, even for similar types of skill. While unskilled male cotton operatives averaged 40.3 cents an hour in April 1937, only 3.5 percent of the male common laborers in 16 industries surveyed in July 1937 averaged less than 40 cents. Northern loom fixers averaged 77.3 cents an hour. This rate for the most

[6] For a more detailed discussion of points covered in the following paragraphs see Bureau of Labor Statistics: *Nineteenth Report on Average Hourly Earnings in the Cotton Goods Industry, April 1937* (mimeographed) pp. 67–73.

skilled of textile operatives was less than the average of all employees in 12 manufacturing industries. The evidence seems to indicate that the pace-setters in the establishment of northern wage rates are the metal and metal-working industries, including machinery and transportation equipment. The impact of southern competition on northern cotton wages is evident throughout the post-war period; cotton textiles in the North is a low-wage industry, whether wages are considered in absolute or relative terms.

Southern cotton wages are low relative to northern cotton wages. But it does not follow from this that wages in the southern branch of the cotton-textile industry are also low relative to prevailing wages in other southern industry. The southern industry has been growing and indeed constitutes the backbone of the southern manufacturing economy. Comparison with other industries indicates that the cotton textile industry in the South occupies a more intermediate position in the general wage economy than in the North. Thus, the average hourly earnings of unskilled male labor in April 1937 were 31.3 cents in the southern cotton mills covered in the survey, as against an average entrance rate for male common labor in July 1937 of 28.1 cents in North Carolina, 23.5 cents in South Carolina, and 26.7 cents in Georgia. Even if comparison is made with the entrance rates of white laborers in these States, the average in the cotton industry is in line with, or above, prevailing practice in other industries covered in the common labor survey. In the South, as in the North, there are a number of industries paying more for the same type of skill than is paid in cotton textiles, but these industries do not dominate the southern wage economy as they do the northern.

The picture of wages in the cotton-textile industry, which has been elaborated in detail in this report, emerges out of a background of limited economic opportunities. The basic means of support in many of the States in which the industry is found is cotton-growing. The pressure of population on resources is more intense in these States than in any other part of the United States. Furthermore, superimposed on this background, are certain conventional ideas as to the economic worth of the services of some men. Cotton-textile incomes in the South are low relative to northern wage standards and also in comparison with a number of other industries in the South, but they are substantially higher than farm incomes in that area. Nor is the cotton-textile industry at the lower end of the scale as regards hourly earnings paid in manufacturing. A true understanding of cotton-textile wages requires that they be viewed against the economic background of the areas in which the industry is located.

Chapter 10

Average Hourly Earnings in Individual Mills

In the preceding analysis, average hourly earnings have been presented with reference to the industry as a whole. It is also possible to analyze the sample of 784 mills for August 1938 with reference to the average hourly earnings of the individual mills. Such a distribution is presented in table 45. Out of the total of 784 mills, there are 6 mills that averaged less than 20 cents an hour. They employed 1,211 employees. Another 28 mills averaged 20 to 25 cents and employed in all 4,714 employees. It should be noted in this connection that the number of establishments shown is the number of those with average earnings of the amounts indicated in the left-hand column of the table. The number of employees shown is the number of employees in these mills.[1]

TABLE 45.—*Average hourly earnings in the cotton-goods industry, August 1938*

[Based on man-hour data supplied to the United States Bureau of Labor Statistics by cooperating establishments]

Average hourly earnings	United States total		North		South		Cumulative percentage of total employees		
	Number of establishments	Number of employees	Number of establishments	Number of employees	Number of establishments	Number of employees	United States	North	South
Less than 20.0 cents	6	1,211	----------	----------	6	1,211	0.4	-------	0.5
20.0–24.9 cents	28	4,714	----------	----------	28	4,714	1.9	-------	2.4
25.0–27.4 cents	28	6,108	----------	----------	28	6,108	3.8	-------	4.8
27.5–29.9 cents	35	5,858	3	311	32	5,547	5.6	0.4	7.0
30.0–32.4 cents	69	18,944	----------	----------	69	18,944	11.5	.4	14.6
32.5–34.9 cents	114	44,707	5	459	109	44,248	25.5	1.1	32.3
35.0–37.4 cents	147	58,679	10	1,777	137	56,902	43.9	3.7	55.0
37.5–39.9 cents	82	49,607	15	5,310	67	44,297	59.4	11.4	72.7
40.0–44.9 cents	155	99,743	66	38,020	89	61,723	90.6	66.4	97.4
45.0–49.9 cents	55	22,191	41	16,188	14	6,003	97.6	89.8	99.8
50.0–54.9 cents	25	4,279	22	3,925	3	354	98.9	95.5	99.9
55.0–59.9 cents	[1] 11	1,580	9	1,446	[1] 2	134	99.4	97.6	100.0
60.0–64.9 cents	13	714	13	714	----------	----------	99.6	98.6	-------
65.0–69.9 cents	7	626	7	626	----------	----------	99.8	99.5	-------
70.0–74.9 cents	3	194	3	194	----------	----------	99.9	99.8	-------
75.0 cents and over	6	139	6	139	----------	----------	100.0	100.0	-------
Total	784	319,294	200	69,109	584	250,185	-------	-------	-------

[1] Includes 1 establishment at a higher rate.

[1] In a later section of this report, the earnings of individual employees will be presented. The number of employees shown in table 45 relates merely to the number of employees in mills with certain average earnings and does not relate to the number of employees whose earnings are less than 20 cents, 20 to 25 cents, etc.

The figures presented in table 45 still relate to the cotton goods industry in its entirety. There are included in this table mills engaged in spinning and weaving woven goods over 12 inches wide, as well as yarn mills making yarn for sale and specialized weaving establishments that are not engaged in spinning. A very substantial part of the spread of the earnings of individual plants shown in table 45 is due to the fact that it does contain so varied a mixture of operations. Thus the plants with average hourly earnings of more than 55 cents are for the most part specialized weaving establishments in the North. Similarly, 41 of the 62 southern establishments with average hourly earnings of less than 27.5 cents are yarn mills.

A more exact comparison is shown in table 46 which covers 410 plants engaged in both spinning and weaving. Average hourly earnings in these plants ranged from less than 20 cents an hour to slightly more than 50 cents an hour. It will be noted from this table that there is a sharp break at the upper end of the frequency distribution. There were 104 mills with 81,000 wage earners in which average hourly earnings amounted to 40.0–44.9 cents an hour. There were only 15,000 employees in mills averaging 45 cents an hour or more. In other words, spinning and weaving mills show a fairly well defined maximum of average hourly earnings in the neighborhood of 45 cents. The minimum is not so well defined. There were nearly 150,000 workers in establishments averaging less than 40 cents an hour. While comparatively few establishments had average hourly earnings of less than 32.5 cents an hour, there are exceptional cases of mills with average hourly earnings as low as 20 cents an hour.

The bulk of the mills and of the number of employees had average hourly earnings falling within the 10-cent range of 32.5 cents to 42.5 cents an hour. There were 286 mills with about 180,000 employees within these limits. There were somewhat more mills averaging 35.0 to 37.4 cents an hour than were found within any other 2.5-cent range in average hourly earnings, but the largest number of employees found in any 2.5-cent class interval was in the mills averaging 40 to 42.5 cents.

This distribution substantially clarifies the character of the differences in earnings as between northern and southern mills. The average hourly earnings for the 66 northern mills shown in the table is 43.7 cents. For the 344 southern mills, the average is 36.8 cents, but it will be seen at once from the table that this is not exclusively a regional difference. There were 65 grey goods mills in the southern sample that averaged less than 32.5 cents an hour. There were no northern mills at this wage level. Another 151 mills in the South with 79,000 workers averaged 32.5 to 37.4 cents per hour. At this level of earnings, there were 5 northern mills, but, by and large, it may be said that average hourly earnings of less than 37.5 cents an

hour are found only in the South. These mills are competing with both northern and southern mills paying more than 37.5 cents an hour. In the North the largest number of mills and the largest number of workers are found within the range of 42.5 to 44.9 cents. There were 11 southern mills in this range but the bulk of the high-wage mills in the South were paying 40.0 to 42.5 cents an hour. There were 59 such mills with 45,000 employees.

TABLE 46.—*Average hourly earnings in establishments engaged both in spinning and weaving cotton goods, by class intervals, August 1938*

Average hourly earnings	United States total		North		South	
	Number of establishments	Employees	Number of establishments	Employees	Number of establishments	Employees
Less than 20.0 cents	3	702	----	----	3	702
20.0–24.9 cents	10	2,491	----	----	10	2,491
25.0–27.4 cents	7	3,943	----	----	7	3,943
27.5–29.9 cents	14	3,777	----	----	14	3,777
30.0–32.4 cents	31	12,133	----	----	31	12,133
32.5–34.9 cents	63	34,172	2	358	61	33,814
35.0–37.4 cents	93	46,700	3	1,076	90	45,624
37.5–39.9 cents	59	44,748	9	4,378	50	40,370
40.0–42.4 cents	71	54,514	12	8,915	59	45,599
42.5–44.9 cents	33	26,834	22	19,811	11	7,023
45.0–47.4 cents	17	11,344	11	7,988	6	3,356
47.5–49.9 cents	4	1,644	2	1,292	2	352
50.0–54.9 cents	3	1,085	3	1,085	----	----
55.0–59.9 cents	2	1,037	2	1,037	----	----
Total	410	245,124	66	45,940	344	199,184

In point of fact, the apparent conclusion that there is a general difference of 2.5 cents in the wage scale of southern high-wage mills and northern mills needs to be seriously modified. Despite the fact that southern high-wage mills bulk up at an average of 40 to 42.5 cents, while the characteristic northern concentration is at 42.5 to 45 cents, southern high-wage mills pay the same wages to semiskilled workers as do northern mills. As will become evident later,[2] there is a fairly persistent tendency for higher wages to be paid semiskilled workers in southern mills and for lower wages to be paid to the unskilled, than are paid in northern mills with corresponding average earnings for the mill as a whole. This means in effect that southern mills averaging 40 to 42.5 cents are paying semiskilled workers about the same rate as is paid semiskilled workers in northern mills averaging 42.5 to 45 cents.

Tables 47 and 48 relate to yarn mills and specialized weaving mills. The yarn industry is for the most part located in the South.

[2] The relevant data are presented in table 64, p. 106. The reader will more easily understand those data when they are reached, at which point there is a footnote referring back to this page.

TABLE 47.—*Average hourly earnings in the spinning division of cotton-goods industry, by class intervals, August 1938*

Average hourly earnings	United States total		North		South	
	Number of establishments	Employees	Number of establishments	Employees	Number of establishments	Employees
Less than 20.0 cents	3	509			3	509
20.0–24.9 cents	18	2,347			18	2,347
25.0–27.4 cents	21	2,165			21	2,165
27.5–29.9 cents	15	1,455			15	1,455
30.0–32.4 cents	37	5,583			37	5,583
32.5–34.9 cents	42	9,178			42	9,178
35.0–37.4 cents	47	11,558	2	220	45	11,338
37.5–39.9 cents	18	4,711	4	897	14	3,814
40.0–44.9 cents	16	7,752	6	2,562	10	5,190
45.0–49.9 cents	6	3,113	6	3,113		
50.0–54.9 cents	3	185	3	185		
Total	226	48,556	21	6,977	205	41,579

TABLE 48.—*Average hourly earnings in the weaving division of the cotton-goods industry, by class intervals, August 1938*

Average hourly earnings	United States total		Average hourly earnings	United States total	
	Number of establishments	Employees		Number of establishments	Employees
Less than 20.0 cents			50.0–59.9 cents	14	1,039
20.0–24.9 cents			60.0–64.9 cents	8	496
25.0–27.4 cents			65.0–69.9 cents	4	355
27.5–32.4 cents	2	303	70.0–74.9 cents	3	194
32.5–34.9 cents	4	177	75.0–79.9 cents	2	71
35.0–37.4 cents	5	325	80.0–94.9 cents	3	64
37.5–39.9 cents	4	78			
40.0–44.9 cents	6	689	Total	69	5,756
45.0–49.9 cents	14	1,964			

Only 21 of the 226 establishments shown in the table are located in the North. The table is significant chiefly by way of further clarifying the dispersion of individual mill averages that was shown earlier in table 45. Eighty-seven of the southern mills with about 20,500 employees averaged 32.5 to 37.5 cents an hour. The average hourly earnings in the northern spinning mills was 44.4 cents and in southern spinning mills was 34.0 cents.

There are an insufficient number of weaving mills to show separate tabulations for the North and the South. Of the total of 69 mills, 53 were located in the northern States and 16 in the southern States. Average hourly earnings were 52.2 cents in the North and 43.8 cents in the South. The range of earnings is wider than that which was found either among spinning mills or among mills both spinning and weaving. There is a substantial dispersion of mills with averages from 40 to 65 cents though the largest concentration is at 45 to 50 cents. The mills with average hourly earnings in excess of 60 cents, it is believed, are engaged in various types of specialty weaving. In general it may be said that specialized weaving mills are so heterogeneous in character as to make the classification of little significance.

Chapter 11

Distribution of Individual Hourly Earnings

It is not enough to know what the average wages of an industry are or even to know what the average wages by establishments are. The figures which have been presented in earlier chapters set the problem in proper perspective, but they are an inadequate basis for purposes of wage determination. It makes a great deal of difference how the earnings of individual workers are distributed around the average of the plant: That is, for example, how many workers are operating at less than 40 cents or less than 25 cents an hour. A plant average of 35 cents may represent an outer range of earnings by individual workers that runs from 20 to 80 cents. In a plant or industry with another distribution of occupations and wage scales, a 35-cent plant average may be derived from a much narrower range of individual earnings as, for example, an effective range of 30 to 60 cents.

The Bureau of Labor Statistics therefore presents the results of an intensive study of the wages paid to individual workers in 244 plants in the cotton-goods industry in August 1938. The sample is representative of establishments engaged in the manufacture of cotton woven goods over 12 inches in width and in the manufacture of cotton yarn and thread.[1]

These mills employed about 89,000 workers, 22,000 in the North and 67,000 in the South. This is roughly a coverage of one-fifth of the employees of the industry. There were 55,000 males and 34,000 females. Classified on the basis of skill, using the accepted practice of the industry as regards the definition by skill, there were about 22,000 skilled workers, 47,000 semiskilled and about 20,000 unskilled workers in the cotton-textile mills studied (table 49). The subsequent tables showing the distribution of individual earnings present classifications by sex and skill. In appraising the importance of any particular group, it is therefore important to remember that the male workers in the cotton textile industry are more or less evenly divided into the three classes of skill, that about 70 percent of the females are in the semiskilled category and about equal numbers of the females are in the skilled and unskilled categories. This means that the number of unskilled or skilled females is a relatively small proportion of the total number of persons employed in the industry.

[1] It did not include bleaching and dyeing and finishing departments of mills engaged in the finishing of piece goods but does include the dyeing departments of yarn mills. It also excluded mercerizing and finishing departments of thread mills and included the yarn departments of knitting mills and of establishments in other industries consuming cotton but not classified by the census as engaged in "cotton manufactures."

TABLE 49.—*Numbers of employees covered by cotton-textile survey of the Bureau of Labor Statistics, by sex, region, and skill-grouping*

[Survey for April 1937, used also as base for survey as of August 1938]

	Total	Skilled	Semiskilled	Unskilled
United States	89,216	22,455	46,643	20,118
Males	54,904	17,801	22,712	14,391
Females	34,312	4,654	23,931	5,727
North	22,282	6,917	10,478	4,887
Males	12,664	5,211	4,247	3,206
Females	9,618	1,706	6,231	1,681
South	66,934	15,538	36,165	15,231
Males	42,240	12,590	18,465	11,185
Females	24,694	2,948	17,700	4,046

Typically a study of this sort is made by sending field workers into the field to secure pay-roll reports from a selected sample of establishments. The sample is very carefully selected in consultation with members of the industry and representatives of labor to get, as nearly as possible, a cross-section sample which is truly representative of the industry in every respect—as regards products which are made, geographical location, size of community in which the establishment is located, and size of plant.[2]

The field investigation in cotton textiles was made in the spring of 1937. The results for April 1937 have been published in mimeographed form as the "Nineteenth Report on Average Hourly Earnings in the Cotton-Goods Industry, April 1937." At the time that the survey was made, these establishments employed 91,970 workers out of an estimated total for the industry of 454,391. All 244 plants were, of course, operating in April 1937, but 7 plants, employing 2,752 workers in April 1937, were closed in August 1938. It is believed that the representative character of the sample is best maintained if it is assumed that this was a fair sample of shut-downs. Hence the workers

[2] It is obviously not possible to build a perfect 20-percent sample of an industry. An industry cannot always be divided into 5 equally representative parts. In any industry there are plants which are almost unique. To secure representation for the largest plants in the cotton-textile industry without allowing them to be overrepresented, the Bureau secured a true cross-section sample of the employees on the pay roll of the establishment. But there are less obvious unique cases in which plants have been included or excluded in their entirety, where more properly a cross section of the plant would have been taken. It is also of course true that it may be impossible to secure reports from each establishment included in the original selection, and that refusal of cooperation may result in some bias. However, when the sample which is being covered is a relatively small proportion of the total industry, and when the number of original refusals of cooperation is as small as was the case in the cotton-textile industry, it is possible to make substitutions which maintain the original representative character of the sample.

As a matter of fact, a 20- to 25-percent sample of the cotton-textile industry will probably give better results than a substantially larger coverage. If an effort is made to secure 100 percent coverage, there is no opportunity for substitution in the event of a refusal of cooperation. If such refusal occurs more commonly in particular branches of the industry than in other branches, or more commonly in low-wage plants than in high-wage plants, a 90-percent sample may carry within itself a larger amount of bias than a 20-percent sample in which the quality of the original sample has been maintained by a careful process of substitution. The size of the cross section which it is necessary to take depends upon a number of statistical considerations. A 20- to 25-percent sample is fully adequate in the case of the cotton-textile industry because of the relatively narrow dispersion of individual plant averages, the very evident tendency toward a norm of wage payment and because of the large number of units which would constitute the industry.

in these establishments are excluded from the present tabulations. This accounts for the difference between the 92,000 workers covered in the April 1937 report and the 89,000 workers covered in the report for August 1938.

With the wage changes which have taken place since April 1937, it is obvious that the distribution of individual earnings in that month cannot be assumed to represent wage conditions in August 1938. In order to avoid an immediate resurvey of mills which had so recentlv extended generous cooperation to the Bureau of Labor Statistics, and in order to prepare a distribution of earnings in August 1938, the Bureau of Labor Statistics secured a very detailed picture of the wage changes which had occurred between the pay-roll period that was scheduled in the spring of 1937 and the pay-roll period ending nearest to August 15, 1938, in each of the 244 units that cooperated with the Bureau in 1937. Whenever there was any ambiguity with reference to the character of the wage changes, a field agent went to the mill in question to clarify the problem that was involved. Wage changes were reported in sufficient detail so that they were applicable to specific occupations; if the wage rate in one occupation was changed more than in another occupation, the appropriate wage rate change was applied to each of the particular workers involved.[3]

The distribution of earnings shown in the following tables slightly understates the earnings which were probably received in August 1938. In terms of averages, the understatement of earnings may amount to as much as 1 cent though it is probably substantially less than this amount. There is no reason, to believe, however, that the distribution of the earnings of workers actually on the pay rolls in August 1938 would have shown any other points of concentration than those which are revealed by adapting 1937 earnings to 1938 wage rates.

A percentage distribution of employees according to average hourly earnings for the 89,000 workers surveyed in the cotton-goods industry in the United States is shown in table 50. It will be seen from this distribution that the average earnings for the industry and for individual establishments which have so far been discussed cover an effective range of earnings for individual workers from about 20 cents an hour to more than 70 cents an hour. The 2.4 percent of the workers receiving less than 20 cents an hour consist either of very low-paid workers in particular establishments or of learners. There is no means of telling from the present survey how many learners were

[3] See appendix for an explanation of the method which was used. Fundamentally, it involves two assumptions: First, that the proportion of employees in the various occupations remains essentially unchanged; second, that the change in the wage rate has affected the hourly earnings of each employee in a particular occupation to the same extent. In general it may be noted at this point that the averages resulting from different distribution of derived hourly earnings indicates the fundamental validity of the general distribution of wages. Insofar as the figures do not truly reflect the distribution of earnings in Augu st 1938, it appears that the error is to understate wages by small amounts.

actually employed in August 1938 when employment was at a much lower level than in April 1937. There is probably some overstatement in this tabulation of the percentage of employees receiving less than 20 cents an hour, but it is significant that in April 1937 there were actually 1.5 percent of the workers receiving less than 20 cents.

Out of the total of 89,000 workers, 8.3 percent earned less than 25 cents an hour and 18.8 percent earned less than 30 cents an hour in August 1938. These figures represent the sum of the percentages which are shown in the first column of table 50. The greatest concentration of earnings occurred within the limits of 30 but less than 35 cents, 31.4 percent of the workers falling within this 5-cent range of earnings. There was a further 19.1 percent of the workers earning 35 but less than 40 cents. Thus only slightly more than one-quarter of the workers in the cotton-textile industry averaged 40 cents or more in August 1938.

TABLE 50.—*Simple percentage distribution of employees according to average hourly earnings in cotton-goods industry in the United States, by sex and skill, August 1938*

Average hourly earnings	Total				Males				Females			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
Under 12.5 cents	0.3	(1)	0.2	1.0	0.1	(1)	(1)	0.5	0.6	0.1	0.3	2.3
12.5–14.9 cents	.4	(1)	.3	1.2	.3	(1)	0.1	.8	.6	.1	.4	2.2
15.0–17.4 cents	.7	0.1	.5	2.1	.6	0.1	.2	1.8	1.0	.1	.8	2.9
17.5–19.9 cents	1.0	.1	.9	2.2	.8	.1	.5	2.2	1.3	.2	1.3	2.2
20.0–22.4 cents	2.5	.6	2.3	5.3	2.4	.4	1.9	5.6	2.7	1.2	2.7	4.3
22.5–24.9 cents	3.4	.6	2.8	7.8	3.2	.5	2.6	7.7	3.6	.9	3.0	8.1
25.0–27.4 cents	4.3	1.0	4.1	8.3	4.2	.9	3.7	9.1	4.4	1.6	4.4	6.4
27.5–29.9 cents	6.2	2.1	6.9	9.3	5.5	1.3	5.5	10.0	7.4	3.0	8.2	7.8
30.0–32.4 cents	15.9	3.6	17.6	25.4	14.8	2.9	17.0	26.3	17.5	6.3	18.3	23.4
32.5–34.9 cents	15.5	5.7	17.7	21.0	12.9	4.2	15.9	19.1	19.5	11.3	19.5	25.8
35.0–37.4 cents	10.4	7.2	13.1	7.5	9.1	5.8	13.0	7.0	12.4	12.2	13.3	8.7
37.5–39.9 cents	8.7	7.4	11.2	4.5	8.4	6.2	12.5	4.8	9.3	12.0	10.0	3.9
40.0–42.4 cents	7.0	9.2	8.0	2.2	7.0	8.7	8.5	2.6	6.9	11.0	7.5	1.1
42.5–44.9 cents	5.2	8.6	5.4	1.0	5.6	8.3	6.2	1.1	4.6	9.9	4.6	.5
45.0–47.4 cents	4.5	10.1	3.5	.7	5.4	10.4	4.4	.8	3.1	9.3	2.5	.2
47.5–49.9 cents	3.9	10.2	2.5	.3	5.0	11.0	3.3	.4	2.2	7.1	1.7	.1
50.0–52.4 cents	2.9	8.6	1.3	.1	3.8	9.3	1.8	.1	1.4	5.8	.8	.1
52.5–57.4 cents	3.2	10.3	1.2	.1	4.6	11.6	1.9	.1	1.1	5.2	.6	(1)
57.5–62.4 cents	1.5	5.2	.3	(1)	2.2	6.1	.5	(1)	.3	1.7	.1	-------
62.5–67.4 cents	1.0	3.7	.1	(1)	1.6	4.5	.2	(1)	.1	.6	(1)	-------
67.5–72.4 cents	.7	2.8	.1	-------	1.2	3.5	.1	-------	(1)	.2	(1)	-------
72.5–77.4 cents	.4	1.4	(1)	-------	.6	1.8	(1)	-------	(1)	.1	-------	-------
77.5–82.4 cents	.1	.5	(1)	-------	.2	.6	(1)	-------	(1)	(1)	-------	-------
82.5–87.4 cents	.2	.6	(1)	-------	.3	.8	.1	-------	(1)	.1	-------	-------
87.5–92.4 cents	.1	.2	(1)	-------	.1	.2	(1)	-------	-------	-------	-------	-------
92.5–97.4 cents	(1)	.1	(1)	-------	(1)	.1	(1)	-------	-------	-------	-------	-------
97.5 cents and over	(1)	.1	(1)	-------	.1	.2	.1	-------	-------	-------	-------	-------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 1/10 of 1 percent.

There are very substantial differences in the points of concentration for the different skilled groups which are shown in the next three columns of the table. For example, it is only among skilled males

that any significant number earned more than 62½ cents. Of the 17,801 skilled males, 11.7 percent earned more than this amount. They constituted about 2.3 percent of the total number of employees in the cotton-textile industry. Taking the limit of 40 cents as an example of the differences in wage concentration for the various types of skill, there were 28 percent of the skilled workers earning less than 40 cents, 78 percent of the semiskilled and 96 percent of the unskilled workers.[4] Below the level of 30 cents were found 4 percent of the skilled, 18 percent of the semiskilled, and 37 percent of the unskilled workers. The workers shown as earning less than 25 cents in August 1938 will obviously be affected by the 25-cent standard of the Fair Labor Standards Act on October 24. This involves 1 percent of the skilled workers, 7 percent of the semiskilled, and approximately 20 percent of the unskilled workers.

The distribution of individual earnings, as shown in table 50, can advantageously be broken down on a regional basis. The first column of percentages in table 50 has a smoother, flatter contour than is characteristic of the various wage groups in the industry. Because the distribution for all workers in the United States is the end result of wages which are characteristic of different occupations in different regions and in different mills, such a distribution summarizes the over-all dimensions of a wage problem. From the point of view of an analysis of the wages which are characteristically paid different groups of workers and the way in which these groups fit into the over-all picture, it is necessary to proceed to a more detailed break-down such as is shown in tables 51 and 52 for the North and the South, respectively.

[4] In classifying by skill, the leading occupations in each group were as follows:

Skilled:
- Card grinders.
- Fixers, other than loom.
- Drawers-in, hand.
- Loom fixers.
- Second hands.
- Section hands.
- Slasher tenders.
- Smash hands.
- Warp tying machine tenders.
- Weavers.

Unskilled:
- Cleaners, machinery.
- Creelers.
- Filling and battery hands.
- Laborers.
- Learners.
- Roving men.
- Sweepers and scrubbers.
- Truckers, general
- Watchmen.

Semiskilled:
- Card tenders and strippers.
- Comber tenders.
- Doffers.
- Drawing-frame tenders.
- Oilers.
- Picker tenders.
- Slubber tenders.
- Speeder tenders.
- Spinners, frame.
- Trimmers and inspectors.
- Warper tenders.
- Winders, spoolers, and reelers.

TABLE 51.—*Simple percentage distribution of employees according to average hourly earnings in cotton-goods industry in the North, by sex and skill, August 1938*

Average hourly earnings	Total				Males				Females			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
Under 12.5 cents	[1]	-------	[1]	[1]	-------	-------	-------	-------	0.1	-------	[1]	0.1
12.5–14.9 cents	[1]	-------	[1]	0.1	[1]	-------	-------	0.1	[1]	-------	[1]	-------
15.0–17.4 cents	[1]	-------	[1]	.1	[1]	-------	-------	.1	.1	-------	[1]	.2
17.5–19.9 cents	0.1	[1]	0.1	.3	[1]	[1]	-------	.1	.2	-------	0.1	.7
20.0–22.4 cents	.2	[1]	.2	.5	0.1	-------	[1]	.3	.3	0.1	.3	.8
22.5–24.9 cents	.2	0.1	.1	.7	.1	[1]	[1]	.3	.4	.3	.1	1.4
25.0–27.4 cents	1.0	.1	.6	2.9	.9	0.1	0.7	2.7	1.0	.2	.5	3.5
27.5–29.9 cents	1.2	.3	.7	3.4	1.0	.1	.2	3.6	1.3	.6	1.0	3.1
30.0–32.4 cents	3.4	1.2	2.0	9.4	3.1	.6	1.7	9.0	3.7	3.0	2.2	10.1
32.5–34.9 cents	18.0	2.4	16.7	43.2	13.8	1.3	9.7	39.3	23.7	5.7	21.4	50.6
35.0–37.4 cents	10.5	3.6	13.2	14.4	8.0	2.4	11.3	12.8	13.7	7.0	14.5	17.3
37.5–39.9 cents	13.8	6.1	19.2	13.2	12.5	4.2	20.3	15.5	15.6	12.0	18.5	8.8
40.0–42.4 cents	10.7	7.2	15.2	6.1	9.1	5.4	14.2	8.2	12.9	12.8	15.9	1.9
42.5–44.9 cents	7.7	7.2	10.4	2.6	6.5	5.5	9.8	3.6	9.3	12.5	10.8	.7
45.0–47.4 cents	6.2	8.1	7.0	1.7	6.6	6.9	9.4	2.4	5.6	11.6	5.4	.4
47.5–49.9 cents	5.6	7.9	6.4	.8	6.3	7.6	8.6	1.0	4.8	8.7	4.9	.2
50.0–52.4 cents	5.1	11.2	3.3	.2	6.4	11.7	4.5	.3	3.4	9.8	2.5	.1
52.5–57.4 cents	5.3	11.9	3.2	.4	7.2	12.8	5.6	.5	2.7	9.6	1.5	.1
57.5–62.4 cents	3.3	9.4	.9	[1]	5.2	11.1	1.7	.1	.9	4.0	.4	-------
62.5–67.4 cents	2.7	8.2	.3	[1]	4.6	10.5	.7	.1	.2	1.3	[1]	-------
67.5–72.4 cents	2.4	7.4	.2	-------	4.2	9.7	.5	-------	.1	.3	[1]	-------
72.5–77.4 cents	1.2	3.9	[1]	-------	2.1	5.1	.1	-------	[1]	.2	-------	-------
77.5–82.4 cents	.3	.9	[1]	-------	.5	1.2	.1	-------	[1]	.1	-------	-------
82.5–87.4 cents	.6	1.9	.1	-------	1.1	2.5	.2	-------	[1]	.2	-------	-------
87.5–92.4 cents	.2	.5	.1	-------	.3	.6	.3	-------	-------	-------	-------	-------
92.5–97.4 cents	.1	.1	[1]	-------	.1	.2	.1	-------	-------	-------	-------	-------
97.5 cents and over	.2	.4	.1	-------	.3	.5	.3	-------	-------	-------	-------	-------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 1/10 of 1 percent.

The northern distribution differs from that which has just been described in table 50. First of all, the northern distribution is in general at a higher level, as would be expected from the differences in the regional averages that have already been presented. In the North approximately 6 percent of the workers receive less than 32½ cents an hour and approximately 3 percent less than 30 cents. Wages of less than 25 cents are important only in the case of learners. There is a slightly more intense concentration of earnings than was found in the earlier table. Thus, 53 percent of the earners fall within the 10-cent range of 32½ cents but less than 42½ cents, as against 50.5 percent in the 10-cent range, 30 cents but less than 40 cents, for the country as a whole. More significant still is the fact that the upper segment becomes more important. Only 1.5 percent of the workers in the industry for the country as a whole earned 67½ cents or more, whereas the corresponding percentage in the North was 5.0 percent. The most significant contrast is that which arises from the absence of a segment below 32½ cents in the North. There is a much sharper break at this point than there was for the country as a whole at the 30-cent level, 5

times as many workers received 32½ but less than 35 cents in the North as received 30 but less than 32½ cents. For the country as a whole, 2½ times as many people received between 30 and 32½ cents as received 27½ cents but less than 30 cents.

TABLE 52.—*Simple percentage distribution of employees according to average hourly earnings in cotton-goods industry in the South, by sex and skill, August 1938*

Average hourly earnings	Total				Males				Females			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
Under 12.5 cents	0.4	(1)	0.2	1.3	0.2	(1)	(1)	0.6	0.8	0.1	0.4	3.2
12.5–14.9 cents	.5	0.1	.3	1.6	.4	(1)	0.2	1.1	.9	.2	.5	3.1
15.0–17.4 cents	1.0	.1	.6	2.8	.7	0.1	.2	2.3	1.4	.1	1.0	4.0
17.5–19.9 cents	1.3	.1	1.2	2.8	1.0	.1	.6	2.8	1.8	.2	1.8	2.8
20.0–22.4 cents	3.3	.8	2.9	6.8	3.1	.6	2.3	7.2	3.7	1.8	3.5	5.8
22.5–24.9 cents	4.4	.8	3.6	10.1	4.2	.7	3.1	9.8	4.9	1.3	4.1	10.9
25.0–27.4 cents	5.4	1.4	5.1	10.1	5.2	1.2	4.4	11.0	5.7	2.4	5.8	7.7
27.5–29.9 cents	7.9	2.9	8.6	11.2	6.8	2.5	6.7	11.7	9.8	4.3	10.7	9.8
30.0–32.4 cents	20.0	4.7	22.2	30.5	18.3	3.9	20.5	31.2	22.8	8.2	23.8	28.9
32.5–34.9 cents	14.5	7.1	18.1	13.9	12.7	5.3	17.4	13.3	17.8	14.7	18.8	15.6
35.0–37.4 cents	10.3	8.8	13.2	5.3	9.4	7.3	13.4	5.3	11.8	15.3	12.9	5.1
37.5–39.9 cents	7.1	7.9	9.0	1.7	7.2	7.0	10.7	1.7	6.8	12.1	7.1	1.8
40.0–42.4 cents	5.7	10.1	6.0	.9	6.4	10.1	7.2	.9	4.6	10.0	4.6	.8
42.5–44.9 cents	4.4	9.3	3.9	.4	5.3	9.5	5.4	.4	2.8	8.6	2.4	.4
45.0–47.4 cents	4.0	11.1	2.4	.3	5.1	11.8	3.3	.4	2.1	8.0	1.5	.1
47.5–49.9 cents	3.4	11.3	1.3	.2	4.7	12.5	2.0	.2	1.2	6.1	.6	(1)
50.0–52.4 cents	2.1	7.4	.7	.1	3.0	8.4	1.2	.1	.6	3.5	.3	(1)
52.5–57.4 cents	2.6	9.5	.6	(1)	3.8	11.2	1.0	(1)	.5	2.6	.2	(1)
57.5–62.4 cents	.9	3.3	.1	(1)	1.3	4.0	.3	(1)	(1)	.3	-------	-------
62.5–67.4 cents	.4	1.7	(1)	(1)	.7	2.1	.1	(1)	(1)	.1	-------	-------
67.5–72.4 cents	.2	.8	(1)	-------	.3	.9	(1)	-------	(1)	.1	-------	-------
72.5–77.4 cents	.1	.4	(1)	-------	.1	.4	(1)	-------	(1)	(1)	-------	-------
77.5–82.4 cents	.1	.3	(1)	-------	.1	.3	(1)	-------	(1)	(1)	-------	-------
82.5–87.4 cents	(1)	.1	(1)	-------	(1)	.1	(1)	-------	-------	-------	-------	-------
87.5–92.4 cents	(1)	(1)	-------	-------	(1)	(1)	-------	-------	-------	-------	-------	-------
92.5–97.4 cents	(1)	(1)	-------	-------	(1)	(1)	-------	-------	-------	-------	-------	-------
97.5 cents and over	(1)	(1)	-------	-------	(1)	(1)	-------	-------	-------	-------	-------	-------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 1/10 of 1 percent.

Table 52 refers to the distribution of earnings of individual employees in southern mills. While earnings bulk up at what was characteristically spoken of as the "code minimum," 30 cents, there is a much larger low-wage segment in the southern distribution of earnings than in the northern distribution. There are 25 percent of the unskilled workers, 9 percent of the semiskilled, and 2 percent of the skilled workers at less than 25 cents an hour. Of the unskilled, 47 percent were at less than 30 cents; of the semiskilled, 23 percent; and of the skilled workers, 6 percent. The greater tailing in the southern distribution is due to two characteristics of wages in the South. One has already been discussed—the variation of plant averages that was presented in table 45. The other is due to the fact that the 30-cent minimum under the code was a 30-cent minimum applicable to machine workers. The

absolute minimum wage of the code was the minimum wage of 22½ cents that applied to sweepers, scrubbers, and outside laborers.

In the South, as in the North, there is a heavy concentration at the code minimum. This shows up especially in the case of semiskilled and unskilled workers. There is a greater concentration within the 5-cent range, 30 cents but less than 35 cents, in the South than there was in the 5-cent range, 32½ cents but less than 37½ cents, in the North. In the South, 34.5 percent of the workers were found within this 5-cent limit, whereas within the comparable class interval in the North there were 28.5 percent of the workers. In both the North and the South approximately half of the workers are found within a range 10 cents above the former code minimum but in the case of the North, the workers were about equally distributed within the first and second 5-cent range, and in the case of the South, about two-thirds of the workers were in the first 5-cent range. This greater concentration for all workers at the code minimum in the South arises from the fact that a greater proportion of the skilled and especially the semiskilled workers received that code minimum than was true in the North. Thus, 40 percent of the semiskilled workers in the South was found at 30 but less than 35 cents, whereas the corresponding figure in the North was 30 percent. About 12 percent of all skilled workers, male and female, and about 23 percent of the skilled females were paid 30 but less than 35 cents in the South, whereas in the North, the corresponding percentages are 6 and 13 percent. There was less concentration among the unskilled workers at the former code minimum, primarily because of the fact that a larger percentage of the unskilled workers in the South received less than the former code minimum than in the North.

Only about 2 percent of the unskilled workers in the South and 15 percent of the semiskilled received 40 cents an hour or more. Only in the case of skilled workers were earnings of 40 to 50 cents typical. This 10-cent interval embraced approximately two-fifths of all skilled workers but it is to be noted that more than half of the skilled female workers had earnings within the limits of 32½ to 42½ cents. As has already been noted, females constitute only about one-fifth of the skilled workers in the South.

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Chapter 12

Earnings of Workers in Occupations Exempted From Basic Code Minimum

One of the peculiarities of the southern wage distribution in August 1938 is the concentration among the unskilled females in the class interval of 22.5 but less than 25 cents an hour. About 10.9 percent of the unskilled females fall within that range. It will be noted in table 52 that the distribution of the earnings of unskilled females first builds up to this figure, then drops away and finally reaches a heavy concentration at about 30 cents. Since the total number of unskilled females in the South constitutes less than 5 percent of the total number of employees in the industry, no particular significance attaches to the absolute size of the percentage of 10.9 shown in table 52. However, it serves to flag one of the peculiar differences between the wage distribution of the North and the wage distribution of the South that calls for further analysis.[1]

This characteristic of bimodality goes back to the cotton-textile code. The N. R. A. code provided for two minimum wages. The basic wage, usually referred to as the minimum wage, was 30 cents an hour in the South and 32½ cents in the North. This wage applied to all employees except "cleaners and outside laborers" and learners. For cleaners and outside laborers the minimum established in the code was 75 percent of the basic minimum wage. Thus, in fact, the absolute minimum wage was 22½ cents in the South and 24⅜ cents in the North. For learners the code provided no minimum wage, but limited the learning period to six months.

Unskilled Workers

There is some question whether or not the distinction between outside laborers and cleaners and other unskilled workers grew out of an established distinction prior to the code. There was "no evidence of practices existing immediately before the code to support the differential provided for in the code between outside workers and cleaners, and such groups as filling hands and trimmers and inspectors." [2] It is possible, however, that the depression of average earnings in these occupations to 14 or 16 cents equalized differentials that may have existed traditionally. It is of course true that as wages approach an

[1] This characteristic of bimodality appears even more sharply in connection with the figures for April 1937 as presented in the Bureau of Labor Statistics "Nineteenth Report on Average Hourly Earnings in the Cotton-Goods Industry," table 7, p. 15. It will be noted in that table both in connection with unskilled males and females.

[2] See U. S. Bureau of Labor Statistics: Textile Report, Part I, pp. 33-36 (mimeographed second edition, February 4, 1935).

emergency subsistence level there is increased resistance to wage decreases.[3]

Whatever the original justification for the distinction may have been, it has become an integral part of the wage picture of the cotton textile industry. The bimodal character of the general distribution of cotton-textile wages for unskilled female workers in the South is greatly clarified by table 53. There are clearly two entirely distinct wage groups among the unskilled workers. First of all, of the 15,230 unskilled in the southern sample, 9,937 or two-thirds are in occupations that would have been subject to the basic code minimum wage of 30 cents, no matter what interpretation was placed on the term "cleaners." Three-quarters of this group (7,347) were males. Of these 7,347 workers 7.9 percent earned less than 22½ cents, the lowest level permitted in the code even for the exempt groups, and 10.3 percent earned less than 25 cents, the rate applicable after October 24, 1938. These proportions are slightly higher than the proportions among semiskilled males, 3.3 percent and 6.4 percent of whom earned less than 22½ and 25 cents respectively.

Where code standards have not been observed, their break-down has tended to restore customary differentials between semiskilled and unskilled workers through the reduction of the earnings of the unskilled. This is even more clearly shown by the fact that 18.8 percent of the unskilled workers of the type described received 25 cents but less than 30 cents, while this was true of only 11.1 percent of the semiskilled males. Thus, 29.1 percent of the unskilled male workers, clearly in occupations that had been subject to a code minimum of 30 cents, received less than 30 cents an hour in August 1938 as compared with 17.5 percent of the semiskilled.

However, even though code standards have clearly broken down in some plants, the overwhelming bulk of the unskilled group under discussion received 30 cents or more. Two-fifths of the whole group received 30 to 32½ cents and 57.1 percent received 30 but less than 35 cents.[4] Among the semiskilled there is also marked concentration at 30 to 32½ cents. Essentially, however, the sharpest distinction between this group of unskilled male workers and the semiskilled is found in the fact that only 5.3 percent of the unskilled earned as much as 37½ cents an hour, while among the semiskilled the distribution of earnings tails off more gradually with 7.9 percent earning 45 cents or more.

[3] It should be noted, however, that while male laborers were earning about $7.50 per week, female frame spinners and filling hands averaged about $6.25 in July 1933. Ibid., p. 55.

[4] The tabulation of wages has been made by 2½-cent class intervals. An inspection of machine tapes indicates that the characteristic minimum wage for this group was 30 cents in August 1938, as against 33 cents in April 1937.

TABLE 53.—*Simple percentage distribution of employees in selected unskilled occupations in the cotton-goods industry in the South, August 1938*

Average hourly earnings	Total			Males			Females		
	Laborers, sweepers, and scrubbers	Cleaners, machinery	Other [1]	Laborers, sweepers, and scrubbers	Cleaners, machinery	Other	Laborers, sweepers, and scrubbers	Cleaners, machinery	Other
Under 12.5 cents	1.6	0.9	0.2	1.2	1.2	0.2	4.4	0.2	0.2
12.5–14.9 cents	2.4	.4	.5	1.8	.5	.6	6.3	----	.3
15.0–17.4 cents	3.9	.7	1.2	3.8	1.0	1.3	4.6	----	1.0
17.5–19.9 cents	5.6	2.1	1.2	5.5	2.4	1.5	6.8	1.5	.4
20.0–22.4 cents	14.7	5.3	4.2	15.1	5.9	4.3	12.1	4.1	3.8
22.5–24.9 cents	29.6	19.4	2.9	25.8	15.0	3.4	53.7	29.4	1.5
25.0–27.4 cents	19.7	23.1	5.3	20.9	27.3	5.2	11.2	14.1	5.4
27.5–29.9 cents	6.4	9.9	13.5	7.4	11.5	13.6	.2	6.3	13.4
30.0–32.4 cents	12.0	19.5	40.1	13.8	19.5	39.6	.5	19.4	41.4
32.5–34.9 cents	2.9	12.4	18.5	3.3	11.1	17.5	.2	15.3	21.5
35.0–37.4 cents	.8	4.1	7.2	.9	2.4	7.5	----	8.0	6.5
37.5–39.9 cents	.3	1.3	2.4	.4	1.1	2.3	----	1.7	2.5
40.0–42.4 cents	.1	.5	1.3	.1	.7	1.3	----	----	1.2
42.5–44.9 cents	----	.2	.6	----	.2	.6	----	----	.6
45.0–47.4 cents	----	.1	.5	----	.1	.6	----	----	.2
47.5–49.9 cents	----	.1	.2	----	.1	.3	----	----	.1
50.0–52.4 cents	----	----	.1	----	----	.1	----	----	(2)
52.5–57.4 cents	----	----	.1	----	----	.1	----	----	(2)
57.5–62.4 cents	----	----	(2)	----	----	(2)	----	----	----
62.5–67.4 cents	----	----	(2)	----	----	(2)	----	----	----
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	3,081	1,328	9,937	2,669	916	7,347	412	412	2,590

[1] Omitting 884 learners in the South, who have been included in tables 50 and 52.
[2] Less than 1/10 of 1 percent.

Among females there is a slightly more pronounced observance of the 30-cent minimum for the 2,590 unskilled workers in occupations that clearly had been subject to the code minimum than was the case among males. There is even less difference than there was among males between this group of unskilled female workers and the semiskilled females. Thus the percentages earning less than 30 cents were, respectively, 26.0 percent and 27.8 percent, indicating no distinction in the observance of a 30-cent minimum as between, for example, filling hands, on the one hand, and trimmers and inspectors or spoolers and winders on the other. There were, however, 62.9 percent of the unskilled group of females at 30 to 35 cents, as against 42.6 percent of the semiskilled, and only 2.1 percent at 40 cents or more as against 16.2 percent among the semiskilled.

In sharp contrast with the earnings of the group of unskilled workers in occupations covered by the 30-cent minimum wage in the code are the earnings of laborers,[5] sweepers, and scrubbers.

[5] It has not been feasible in Bureau pay-roll studies to distinguish sharply between outside laborers and other laborers. More than three-quarters were described on the pay-roll transcript as "yard laborers." The balance of the group, with apparently the same earnings, were called "laborers."

Out of 2,669 males in these occupations in the southern sample, 27.4 percent received less than 22½ cents (the code minimum), 25.8 percent received 22½ but less than 25 cents, and 20.9 percent received 25 but less than 27½ cents.[6]

There is thus a well-defined difference of 5 cents or more in the prevalently observed minimum for male laborers and other unskilled males. In August 1938, there were only 412 females in the occupational groups that had been subject to a 22½-cent wage under the codes. Of these 412, all of whom were sweepers or scrubbers, more than a third were paid less than 22½ cents, seven-eighths received less than 25 cents. The most frequently recurring rate was 22½ cents and only 3 workers received 30 cents or more in August 1938.[7]

The status of the group reported as employed at the cleaning of machinery was never sharply defined under the code. The code had

[6] Among those receiving 22½ but less than 25 cents there was concentration primarily at 22½ cents (the code minimum) and 24¾ cents (the code minimum plus a 10 percent increase that had not always been rescinded). In the 25 but less than 27½-cent class interval an inspection indicates concentration at exactly 25 cents.

[7] It has been alleged that the discrimination in rates is in fact a race differential. This is not so in the case of sweepers, scrubbers, and janitors. The cotton-textile industry does not employ a large percentage of Negroes. In April 1937 out of 56,453 males, 2,301 were Negroes; and of 35,517 females, 443 were Negroes.

It is true that essentially all of the female sweepers and janitors and scrubbers in southern mills were Negroes: 391 out of 413. There were no female Negroes in this occupation in northern mills. These Negro women averaged about 21½ cents in Alabama and Georgia and about 25 cents in North and South Carolina and Virginia. There were not enough white women to warrant publication of averages, but such few women as were employed had almost exactly the same wages.

However, this is an occupation, or group of occupations, employing predominantly males. There were 438 males in the North and 1,909 in the South. All of the male Negroes in this occupation (384) were employed in southern mills and constituted ⅕ of the total number. In some States the comparative sample is large enough to be significant. There is no racial discrimination as regards the tendency to pay less than 30 cents in this occupation, for the white workers averaged less than 30 cents in all States shown in the table. In general, however, white workers in this occupation did average about 3 or 4 cents an hour more than Negroes, whose earnings averaged about 25 cents.

Male sweepers, scrubbers, and janitors

State	Number of employees		Average hourly earnings	
	White	Negro	White	Negro
			Cents	*Cents*
Alabama	156	46	26.3	22.4
Georgia	219	101	26.5	25.4
Mississippi	13	4	21.3	----
North Carolina	622	111	29.4	26.4
South Carolina	414	102	28.7	24.8
Tennessee	46	1	28.1	----
Texas	22	4	24.1	24.5

Footnotes continued on next page.

used the term "cleaners" without qualification. While the code authority regarded the term as limited to sweepers and scrubbers and held cleaners of machinery to be subject to a 30-cent minimum, there was never a legal definition to confirm the interpretation of cleaners as confined to sweepers and scrubbers. In fact, therefore, in August 1934 more than half the cleaners of machinery in southern mills were paid less than 30 cents an hour.[8]

Wage distributions for April 1937 and August 1938 indicate that confusion with reference to the status of cleaners of machinery continues. The pattern of their wages in August 1938 shows them to be occupying an intermediate position between the group that had been subject to a 22.5-cent minimum and the group that was clearly subject to the 30-cent minimum. Thus in August 1938 it appears that 11.0 percent of the male and 5.8 percent of the female cleaners of machinery received less than 22½ cents, and another 54.8 percent of

The other large occupation given a special rate under the code was outside laborers. In the Bureau of Labor Statistics tabulations a group designated as "laborers" has been combined with "yard laborers" but the latter constituted 827 of a total of 1,054. (The earnings of persons designated merely as "laborers" also shows the same general average as yard laborers.) This is exclusively a male occupation and 666 of the 818 workers in the southern sample were Negroes. (No Negroes were employed in the North in this occupation.) The averages were about the same as those first described and are shown below for workers designated as yard laborers:

Male yard laborers

State	Number of employees		Average hourly earnings	
	White	Negro	White	Negro
			Cents	*Cents*
Alabama	21	48	29.6	25.1
Georgia	26	127	25.5	24.5
North Carolina	32	173	28.1	25.4
South Carolina	6	164	26.0	23.1

These exempted occupations employ more of the Negroes working in the cotton-textile industry than any other occupation: 391 of the 443 females and 1,050 of the 2,301 males. The remaining Negroes, more than half of the males, are employed in occupations that were subject to the basic minimum wage. The following are the occupations employing more than 30 Negroes in the total sample (both North and South):

Trucker	80
Bale breaker (or opener tender)	201
Picker tender	121
Card tender	50
Waste machine tender	31
Waste picker	68
Dyehouse (various)	271
Truck driver	50
Fireman	88
Coal wheeler	36
Miscellaneous (less than 30 in any occupation)	255
Total	1,251

There are not enough Negroes in any one of the occupations to allow a comparison of white and Negro earnings.

[8] Bureau of Labor Statistics "Textile Report," Part I, February 1935, p. 20.

the males and 49.8 per cent of the females received at least 22½ cents but less than 30 cents. While the concentration at 22½–27½ cents is greater than at 30–35 cents, none the less, substantially more than a third of the cleaners of machinery received 30 cents or more.

In connection with the distinction between sweepers and other unskilled workers, it is to be noted that the policy of distinguishing yard laborers and sweepers from other types of unskilled labor was wide spread among the mills that tended to maintain a minimum wage of 30 cents in August 1938 and in April 1937 a wage of 33 cents.[9] Mill by mill tabulations are only available for April 1937. Approximately 6 percent of the workers in the southern sample in April 1937 were in occupations exempted from the 30-cent rate under the N. R. A. code. Barely 1¼ percent were classified as learners, an occupation that had not had any fixed minimum rate under the code. It is therefore especially significant to note the highest wage paid to the lowest-paid 5 percent of the workers on a mill-by-mill basis. Of 174 southern mills with more than 100 employees [10] there were only 10 that paid as many as 95 percent of their employees as much as 33 cents and 36 more mills that paid them as much as 30 cents. On the other hand, half the mills paid 5 percent of their employees not more than 26 cents. The figure of 33 cents was not the rule, in the sense that it was paid in half the southern mills, unless in enunciating the "rule" one disregards the lowest paid 15 or 20 percent of the employees (table 54), nor did the 30-cent figure appear as general practice except with reference to the better paid 85 or 90 percent in each mill.

TABLE 54.—*Highest hourly earnings of lowest paid groups of employees classified by cumulative percentage distribution of 174 cotton-goods mills, April 1937—South*

Number and percentage of mills [1]	Highest hourly earnings of the lowest paid				
	1 percent	5 percent	10 percent	15 percent	20 percent
	Cents	*Cents*	*Cents*	*Cents*	*Cents*
17 mills or 10 percent	12.5	18.0	20.4	24.0	25.0
35 mills or 20 percent	15.1	20.0	24.9	26.9	29.9
52 mills or 30 percent	17.0	23.0	26.6	30.0	31.5
70 mills or 40 percent	19.3	24.8	29.0	31.5	32.4
87 mills or 50 percent	22.0	25.9	30.6	32.5	33.0

[1] Total, 174 mills. Excluding plants of less than 100 employees.

[9] There is only collateral evidence as to the rigor with which a minimum wage was maintained for piece workers in April 1937. Under the code it was necessary to make up a wage of 30 cents an hour whether at prevailing piece rates the production indicated smaller earnings than this. In April 1937 there were two minimum standards observed by mills that accepted the principle of maintaining code standards: 30 cents by those mills that had not increased wages and 33 cents by those that had made a 10 percent increase. The frequency with which these particular figures recur is evidence of their continuing significance as benchmarks. The recurrence of earnings of odd amounts below these figures indicates a tendency to establish a rate that was not applied in the case of every worker.

[10] Mills with less than 100 employees were excluded from the calculation on the assumption that the wage paid to small percentages of the employees had extremely limited statistical significance and might distort the picture.

Legally northern mills were free to pay 24¾ cents an hour to yardmen and sweepers. Practically they operated in a labor market that made this privilege of small advantage. The situation in the North in August 1938 is clearly shown in table 55 that covers both male and female unskilled workers. In unskilled occupations that were clearly covered by the code rate of 32½ cents, a rate of 32½ cents or more applied in August 1938; 10.3 percent of the workers received less, in contrast with 29.0 percent who received less than 30 cents in the South. More than two-fifths of the northern group received more than 35 cents.

The similarity between the distribution of earnings for this group of unskilled workers and for sweepers and yardmen is much greater than in the South. In the North the dominant earnings of sweepers and yardmen are 32½ but less than 35 cents, though 30.0 percent of these workers did receive as low as 25 cents. But it is noteworthy that 15.6 percent of the yardmen and sweepers (both male and female) received 40 cents or more and that 13.5 percent of the "other" unskilled workers received 40 cents or more. In the South, it will be recalled, only 1.2 percent of the exempt group received 35 cents or more whereas 12.4 percent of the "other" group did.

TABLE 55.—*Simple percentage distribution of employees in selected unskilled occupations in the cotton-goods industry in the North, August 1938*

Average hourly earnings	Total			Males			Females	
	Laborers, sweepers, and scrubbers	Cleaners, machinery	Other [1]	Laborers, sweepers, and scrubbers	Cleaners, machinery	Other	Cleaners, machinery	Other [3]
17.5–19.9 cents			0.1			[2]		0.1
20.0–22.4 cents	0.1	0.2	.2	0.2		0.2	0.5	.1
22.5–24.9 cents		1.0	.2		0.2	.2	1.7	.1
25.0–27.4 cents	6.0	6.3	.6	4.8	7.2	.9	5.4	1.1
27.5–29.9 cents	12.0	5.5	.8	12.4	3.5	.9	7.3	1.0
30.0–32.4 cents	12.0	11.3	8.4	10.3	12.0	8.1	10.6	10.3
32.5–34.9 cents	31.2	45.6	47.0	31.9	45.2	41.0	45.9	56.7
35.0–37.4 cents	10.7	15.9	14.8	10.4	11.0	13.7	20.6	17.0
37.5–39.9 cents	12.4	10.3	14.3	13.4	13.5	16.9	7.3	8.9
40.0–42.4 cents	9.5	2.7	6.4	10.3	5.0	8.4	.5	2.5
42.5–44.9 cents	3.5	.8	2.9	3.6	1.5	3.9	.2	1.0
45.0–47.4 cents	2.0	.2	2.2	2.1	.5	3.0		.6
47.5–49.9 cents	.3		1.1	.3		1.5		.3
50.0–52.4 cents		.1	.3		.2	.4		.2
52.5–57.4 cents	.3	.1	.5	.3	.2	.7		.1
57.5–62.4 cents			.1			.1		
62.5–67.4 cents			.1			.1		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	717	824	3,182	663	401	2,093	423	1,143

[1] Omitting 164 learners in the North, who have been included in tables 50 and 51.
[2] Less than 1/10 of 1 percent.
[3] Includes 54 sweepers and scrubbers.

Learners

The proportion of workers designated as learners on the pay rolls studied in April 1937 was relatively high, 1.1 percent (table 56). This may very well reflect the fact that the textile boom was culminating in April 1937. The employment index stood at 100.9 percent of the 1923–25 average, a higher level than in any month since February 1928. Under such conditions there probably had recently been a large number of new entrants to the industry.[11] The Bureau has no information on the number of learners on pay rolls in August 1938. The employment index in cotton goods rose from 78.2 in July to 81.3 in August 1938, but even at the August level it was still at so low a level that there is little reason to believe that many persons were employed who had not at some time worked 6 weeks in the industry.[12]

TABLE 56.—*Proportion of people engaged as learners in the cotton-goods industry, July 1933, August 1933, August 1934, and April 1937*

Period	Grand total	North		South	
		Male	Female	Male	Female
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Pre-code, July 1933	1.7	1.6	2.3	1.3	2.0
Post-code, August 1933	2.3	1.7	3.6	1.4	3.5
Post-code, August 1934	.4	.4	.5	.3	.5
April 1937	1.1	.4	1.1	.6	2.5

The earnings of such learners as are still employed may be presumed to be lower than of learners in April 1937. The data for April 1937 are significant, however, and indicate an extremely low level of earnings (table 57). There was almost no recognizable standard of minimum payment. Wages of less than 12½ cents were not infrequently paid to learners.

[11] The agents did not ascertain what was meant by the term "learner" in each case. Under the code no person was supposed to be employed as a learner for more than 6 weeks.

[12] In tables 50, 51, and 52, there were distributed the estimated earnings of 1,048 learners as follows:

North:		South:	
Male	49	Male	252
Female	115	Female	632
Total	164	Total	884

The estimates might very well have eliminated this class of workers entirely, on the assumption that there were almost no learners in August 1938. Had they been omitted, the general average for the industry would have been 0.2 percent higher.

They have been allowed to remain in the distribution, in order to simplify the presentation of the method used and because there is no means of guessing how many should have been eliminated. However, they are the only group in the North with any number of employees whose earnings are shown as less than 20 cents. They constitute about three-fifths of the unskilled males and three-quarters or more of the females with earnings of less than 25 cents. In the South male learners constitute not quite one-sixth of the unskilled males earning less than 20 cents and one-tenth of those earning less than 22½ cents. Among unskilled females shown as earning less than 22½ cents, three-fifths are learners and 31 percent of those under 30 cents are learners.

TABLE 57.—*Distribution of male and female learners and female frame spinners, according to average hourly earnings in the cotton-goods industry, North and South, April 1937*

Average hourly earnings	North			South		
	Learners		Female frame spinners	Learners		Female frame spinners
	Male	Female		Male	Female	
Under 12.5 cents				7	84	19
12.5–17.4 cents	3	2	4	47	169	61
17.5–22.4 cents	6	13	1	88	149	303
22.5–27.4 cents	7	31	8	49	119	459
27.5–29.9 cents	6	11	3	14	52	404
30.0–32.4 cents	3	6	3	14	33	759
32.5–37.4 cents	3	38	40	31	25	3,886
37.5–42.4 cents	19	12	395	1	1	2,117
42.5–47.4 cents	4	2	847	1		580
47.5–52.4 cents			376			196
52.5–57.4 cents			159			41
57.5–62.4 cents			42			6
62.5–67.5 cents			5			2
Total number of employees	51	115	1,883	252	632	8,833
Average hourly earnings	*Cents* 32.5	*Cents* 30.2	*Cents* 45.7	*Cents* 22.5	*Cents* 19.6	*Cents* 35.3

The averages for learners as they developed from July 1933 are shown in table 58. It will be seen that from August 1934 to April 1937, spinners' earnings, presented for comparative purposes, rose; while learners' earnings fell substantially. Presumably there has been a further decrease in the average.

TABLE 58.—*Average hourly earnings of male and female learners and female frame spinners, North and South, in July 1933, August 1933, August 1934, and April 1937*

Month and year	North			South		
	Learners		Female frame spinners	Learners		Female frame spinners
	Male	Female		Male	Female	
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
July 1933	17.0	11.5	23.9	13.4	10.8	16.1
August 1933	26.4	24.1	37.3	22.3	22.0	32.2
August 1934	29.1	24.1	37.8	28.4	24.2	32.1
April 1937	32.5	30.2	45.7	22.5	19.6	35.3

Source: Bureau of Labor Statistics.

Chapter 13

Average Hourly Earnings by Occupations

So far, individual earnings have been discussed with special attention to concentration points and to differences in the points of concentration for broad groups of workers. It is also important to note more specifically the differences in earnings by occupations.

The data relating to August 1938 have been tabulated for broad skill groups. No attempt has been made to tabulate the data by occupation with the exception of those data that have just been presented on the separation of the unskilled workers into the broad categories of those in occupations that had been subject under the code to the 30- and 32.5-cent minimum wage and those that had been subject to minima of 22.5 and 24.75 cents.[1] In this chapter the data relating to specific occupations are drawn from the wage study of April 1937 and of earlier years.

For comparative purposes average hourly earnings of wage earners broadly classified by skill are presented in table 59 for April 1937. For male workers employed in the northern mills, average hourly earnings in April 1937 ranged from 40.3 cents for the unskilled class to 62.6 cents for skilled workers. The difference between the earnings of the skilled and semiskilled workers was 14.7 cents and between semiskilled and unskilled 7.6 cents. This difference is more than doubled when the principal individual occupations are considered, the highest average earnings being 77.3 cents for loom fixers and the lowest average 32.5 cents for learners.

TABLE 59.—*Average hourly earnings in cotton-goods industry, by region, sex, and skill, April 1937*

Region	Total				Males				Females			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
United States	$0.409	$0.516	$0.386	$0.332	$0.425	$0.532	$0.396	$0.334	$0.380	$0.454	$0.376	$0.328
North	.489	.597	.458	.397	.521	.626	.479	.403	.445	.506	.443	.383
South	.381	.481	.365	.311	.396	.494	.377	.313	.352	.422	.351	.304

[1] The errors of the method of adjusting earnings for wage rate changes become greater as the size of the sample under observation becomes smaller. Thus, as regards semiskilled workers the distribution of the earnings of 36,000 workers in the South is probably more accurate than would be the average for 202 comber tenders.

Male workers predominate in all except two of the principal skilled occupations—hand drawers-in and smash hands. (See table 60.) In both the northern and southern mills, however, female smash hands exceeded males in number, and the hand drawers-in were nearly all women. In addition to these two skilled occupations, a comparatively large number of the weavers are women. The number of male weavers, however, exceeded the number of female weavers by a substantial margin in both regions.

Of the skilled male occupations in the North, earnings of loom fixers (77.3 cents) averaged substantially more than those of any other occupation. The supervisory occupation of second hands, the next highest paid of the skilled group, averaged 71.7 cents an hour, or 5.6 cents less. Earnings of other skilled males lagged far behind. The most important occupation numerically, namely, weavers, averaged 56.0 cents an hour. The lowest average among the skilled employees (52.1 cents) was shown for smash hands.

Among the semiskilled male occupations in the North the highest earnings were shown for twister tenders who averaged 54.6 cents and slubber tenders who averaged 53.9 cents. The lowest average—41.0 cents—was shown for oilers and trimmers and inspectors. For the unskilled males, average earnings in the northern mills ranged from 32.5 cents for learners and 37.5 cents for scrubbers and sweepers to 44.4 cents for watchmen.

In contrast with the occupational order prevailing in the North, the highest average earnings for skilled males in the South (57.9 cents) is shown for second hands, with loom fixers ranking slightly less. Earnings of other skilled males in the South varied within a comparatively narrow range. Earnings of male weavers averaged 45.3 cents an hour. The lowest average (41.6 cents an hour) was reported for smash hands. For semiskilled males in the South, average hourly earnings ranged from 33.5 cents for picker tenders to 41.0 cents for slubber tenders, the highest average being precisely the same as for the lowest average for the semiskilled group in the North. For the most numerous occupations in the semiskilled group, doffers and speeder tenders, average hourly earnings were respectively 38.6 and 40.7 cents.

TABLE 60.—*Average hourly earnings of employees in cotton-goods industry, by region, selected occupations, skill, and sex, April 1937*

Occupation, skill, and sex	North		South	
	Number of employees	Average hourly earnings	Number of employees	Average hourly earnings
Males				
Skilled:				
Card grinders	117	$0.571	438	$0.487
Fixers, other than loom	156	.565	540	.459
Loom fixers	947	.773	2,337	.570
Second hands	305	.717	953	.579
Section hands	408	.560	1,430	.486
Slasher tenders	168	.657	518	.447
Smash hands	78	.521	301	.416
Warp-tying machine tenders	70	.622	270	.510
Weavers	2,264	.560	4,371	.453
Semiskilled:				
Card tenders and strippers	484	.463	1,840	.352
Comber tenders	116	.482	177	.381
Doffers	669	.499	4,082	.386
Drawing-frame tenders	176	.433	990	.370
Oilers	343	.410	1,102	.346
Picker tenders	151	.441	610	.335
Slubber tenders	238	.539	1,204	.410
Speeder tenders	360	.498	2,899	.407
Spinners, frame	311	.470	348	.378
Trimmers and inspectors	89	.410	192	.354
Twister tenders	159	.546	988	.362
Warper tenders	18	(1)	291	.396
Winders, spoolers, and reelers	35	(1)	244	.349
Unskilled:				
Cleaners, machinery	420	.391	935	.304
Creelers	5	(1)	198	.362
Filling and battery hands	366	.390	1,406	.338
Laborers	237	.427	817	.255
Learners	51	.325	252	.225
Roving men	355	.402	1,346	.333
Sweepers and scrubbers	438	.375	1,909	.275
Truckers, general	419	.413	1,452	.347
Watchmen	191	.444	407	.318
Females				
Skilled:				
Drawers-in, hand	146	.481	341	.405
Smash hands	130	.475	366	.381
Weavers	1,529	.511	2,269	.431
Semiskilled:				
Comber tenders	98	.460	25	(1)
Doffers	268	.428	17	(1)
Drawing-frame tenders	185	.410	180	.336
Speeder tenders	1,061	.475	734	.393
Spinners, frame	1,883	.457	8,833	.353
Trimmers and inspectors	736	.392	1,074	.349
Twister tenders	195	.461	173	.360
Warper tenders	164	.453	268	.371
Winders, spoolers, and reelers	1,356	.442	5,646	.339
Unskilled:				
Cleaners, machinery	429	.378	412	.305
Creelers	118	.403	304	.348
Filling and battery hands	569	.390	1,878	.340
Learners	115	.302	632	.196
Sweepers and scrubbers	61	.357	413	.229

[1] Not enough employees to justify the computation of an average.

Among the unskilled male workers in southern mills, creelers had the highest average (36.2 cents) and learners the lowest (22.5 cents). Laborers were next to the learners, averaging 25.5 cents. In connection with unskilled occupations, it is of interest to note that in the North there were very few male creelers reported, the occupation being confined almost exclusively to women.

Occupational variations in average earnings of female workers are much more moderate than for males, principally because women are not represented in the highest-paid occupations. This is true both in the North and South. In the North, for example, the difference between the average earnings of the skilled and semiskilled female occupational groups is almost exactly the same as between the semiskilled and unskilled groups, the spread being about 6 cents. In the southern mills, the difference between the average earnings of the skilled and semiskilled female occupations amounts to 7.1 cents, and the spread between the semiskilled and unskilled is 4.7 cents.

In the North, average earnings of skilled female workers ranged from 47.5 cents to 51.1 cents an hour, the highest payments being received by weavers and the lowest by smash hands. Hourly earnings of hand drawers-in, the only other important skilled female occupation, averaged 48.1 cents. Among the semiskilled female occupations, the highest average is shown for speeder tenders (47.5 cents) and the lowest for trimmers and inspectors (39.2 cents), a spread of 8.3 cents. The two most important semiskilled female occupations, frame spinners and winders, spoolers and reelers, averaged 45.7 cents and 44.2 cents respectively. In the unskilled group, however, a difference of 10.1 cents is shown between the average of learners (30.2 cents) and that of creelers (40.3 cents).

Although the spread between earnings of workers in the same occupational group is somewhat different, the occupational order of female workers in the South is almost precisely the same as in the North. In the skilled group, weavers had the highest average (43.1 cents) and smash hands the lowest (38.1 cents), with hand drawers-in averaging 40.5 cents. For the semiskilled group the highest average is shown for speeder tenders (39.3 cents) and the lowest for drawing-frame tenders (33.6 cents). For frame spinners, the average was 35.3 cents and for winders, spoolers, and reelers, 33.9 cents. These were the two most important occupations in the semiskilled group. Finally, in the unskilled group the high (34.8 cents) was for creelers and the low (19.6 cents) for learners.

A distribution of the earnings of individuals for April 1937 in the various leading occupations is shown for the North in table 61 and for the southern sample in table 62. It will be seen that a larger number of loom fixers in the North, for example, were paid 77.5 to 82.5 cents than fell in any other 5-cent range. More than two-thirds of the loom fixers received 72.5 to 82.5 cents an hour. On the other hand a few of them received less than 50 cents an hour. Again, it will be seen that northern weavers averaged 56.0 cents for males and 51.1 cents for females, while in the South the averages were 45.3 cents and 43.1 cents, respectively. Nevertheless in the northern

sample more than 500 of the nearly 3,800 weavers earned less than 42.5 cents, less than the average weaver's earnings in the South.

Some care must be exercised in interpreting the figures on individual earnings in particular occupations. It should not be assumed, for example, that all persons with the same occupational designation are performing identical types of work. Different degrees of skill and care are required on the different products. Standards of workmanship which are acceptable in the manufacture of a relatively coarse fabric that is entering directly into industrial use are sometimes substantially lower than the standards of workmanship required on a fine piece of dress material. In general, it may be said that the more expensive the materials which the worker is handling, the more care must be exercised against spoilage. Furthermore, there are decided variations in the job assignment. Thus a weaver in one establishment may be performing functions that are performed in part by persons designated as weavers, filling hands, and loom fixers in another establishment.

TABLE 61.—*Distribution of employees according to average hourly earnings in cotton-goods industry in the North, by selected occupations, skill, and sex, April 1937*

Occupation, skill, and sex	Number of employees	Average hourly earnings	Number of employees whose average hourly earnings were—																		
			Under 12.5 cents	12.5 and under 17.5	17.5 and under 22.5	22.5 and under 27.5	27.5 and under 30.0	30.0 and under 32.5	32.5 and under 37.5	37.5 and under 42.5	42.5 and under 47.5	47.5 and under 52.5	52.5 and under 57.5	57.5 and under 62.5	62.5 and under 67.5	67.5 and under 72.5	72.5 and under 77.5	77.5 and under 82.5	82.5 and under 87.5	87.5 and under 92.5	92.5 and under 97.5	97.5 and over
Males																					
Skilled:																					
Card grinders	117	$0.571							1	1	1	13	35	50	10	4	2				
Fixers, other than loom	156	.565								9	15	36	26	39	10	10	3	2	2	3	1
Loom fixers	947	.773								1	2	11	11	21	2	58	254	388	117	66	1	15
Second hands	305	.717								5	6	20	24	32	35	30	37	30	29	36	13	8
Section hands	408	.560							3	9	47	59	98	130	31	7	14	5	4		1	
Slasher tenders	168	.657								2		7	1	34	68	33	18	2	1		1	1
Smash hands	78	.521							1		19	24	17	16	1							
Warp-tying machine tenders	70	.622								3	2	5	8	23	5	8	9	5	2			
Weavers	2,264	.560		1	1	6	8	9	39	145	243	396	425	475	224	110	41	23	98	14	6	
Semiskilled:																						
Card tenders and strippers	484	.463						4	3	60	279	90	34	14								
Comber tenders	116	.482								16	43	40	9	3	1	3		1				
Doffers	669	.499				1	1		13	77	174	154	156	66	23	4						
Drawing-frame tenders	176	.433						1	10	94	49	16	3		1	1	1					
Oilers	343	.410					1	21	25	190	78	19	3	6								
Picker tenders	151	.441						2	6	45	72	17	7	2								
Slubber tenders	238	.539							3	15	34	44	70	48	16	4	2	1	1			
Speeder tenders	360	.498				1			15	49	63	119	73	24	10	5	1					
Spinners, frame	311	.470						1	2	49	161	48	46	4								
Trimmers and inspectors	89	.410							1	67	15	4	1			1						
Twister tenders	159	.546							8	13	18	44	14	40	1	3	3		9	1		5
Unskilled:																						
Cleaners, machinery	420	.391				2	10	24	54	254	72	3	1									
Filling and battery hands	366	.390				4	3		59	283	8	6	3									
Laborers	237	.427				1	1	2	8	105	91	26	1	2								
Learners	51	.325		3	6	7	6	3	3	19	4											
Roving men	355	.402				1		2	48	226	63	14	1									
Sweepers and scrubbers	438	.375			1		20	54	93	228	38	4										

Truckers, general	419	.413				1	1	5	50	237	83	34	8										
Watchmen	191	.444			4	1	6	4	6	55	51	30	15	17	2								
Females																							
Skilled:																							
Drawers-in, hand	146	.481							21	17	36	35	13	13	4	4	2		1				
Smash hands	130	.475							3	7	61	40	19										
Weavers	1,529	.511				10	2	13	80	197	202	347	277	273	70	40	12	1	5				
Semiskilled:																							
Comber tenders	98	.460			1	2				13	38	36	6		2								
Doffers	268	.428				5		1	25	123	60	29	17	6	2								
Drawing-frame tenders	185	.410			2			1	34	104	28	13	2	1									
Speeder tenders	1,061	.475				3	1	3	26	159	351	351	113	42	11	1							
Spinners, frame	1,883	.457		4	1	8	3	3	40	395	847	376	159	42	5								
Trimmers and inspectors	736	.392							73	632	28	2	1										
Twister tenders	195	.461					1		7	61	39	50	27	9	1								
Warper tenders	164	.453							4	52	36	51	17	2	2								
Winders, spoolers, and reelers	1,356	.442			7	6	8	18	117	390	411	258	97	31	10	3							
Unskilled:																							
Cleaners, machinery	429	.378				13	2	28	75	293	18												
Creelers	118	.403							16	79	17	5	1										
Filling and battery hands	569	.390			2	1	1	4	68	482	3	4	4										
Learners	115	.302		2	13	31	11	6	38	12	2												
Sweepers and scrubbers	61	.357					12	1	23	23	1	1											

TABLE 62.—*Distribution of employees according to average hourly earnings in cotton-goods industry in the South, by selected occupations, skill, and sex, April 1937*

Occupation, skill, and sex	Number of employees	Average hourly earnings	Number of employees whose average hourly earnings were—																			
			Under 12.5 cents	12.5 and under 17.5	17.5 and under 22.5	22.5 and under 27.5	27.5 and under 30.0	30.0 and under 32.5	32.5 and under 37.5	37.5 and under 42.5	42.5 and under 47.5	47.5 and under 52.5	52.5 and under 57.5	57.5 and under 62.5	62.5 and under 67.5	67.5 and under 72.5	72.5 and under 77.5	77.5 and under 82.5	82.5 and under 87.5	87.5 and under 92.5	92.5 and under 97.5	97.5 and over
Males																						
Skilled:																						
Card grinders	438	$0.487			2	2		3	18	41	67	124	158	22	1							
Fixers, other than loom	540	.459				6	10	6	58	92	134	87	109	22	11	4			1			
Loom fixers	2,337	.570				2	10	5	19	20	61	317	680	825	237	115	30	8	3	4	1	
Second hands	953	.579					4	6	59	78	88	86	120	108	142	114	68	23	25	27		5
Section hands	1,430	.486				13	2	27	81	140	235	355	468	83	19	6	1					
Slasher tenders	518	.447				2	2	1	50	155	132	100	71	3		2						
Smash hands	301	.416			1			4	56	109	88	30	12	1								
Warp-tying machine tenders	270	.510					3	3	4	28	32	65	92	25	16	1	1					
Weavers	4,371	.453		3	49	67	82	120	448	849	825	957	665	252	42	9	2	1				
Semiskilled:																						
Card tenders and strippers	1,840	.352			34	72	82	154	895	537	63	3										
Comber tenders	177	.381					5	4	89	31	28	20										
Doffers	4,082	.386		5	63	137	122	335	1,080	1,139	701	347	114	30	8		1					
Drawing-frame tenders	990	.370			13	23	35	112	433	188	113	50	19	3	1							
Oilers	1,102	.346		1	15	45	33	98	676	221	8	3	1		1							
Picker tenders	610	.335		1	15	65	25	71	310	85	37	1										
Slubber tenders	1,204	.410		2	21	35	57	63	206	279	247	171	74	36	7	2	3	1				
Speeder tenders	2,899	.407		3	21	82	82	151	562	795	654	383	123	34	8	1						
Spinners, frame	348	.378		3	4	28	15	8	117	73	58	37	5									
Trimmers and inspectors	192	.354		2	9	5	9	16	103	26	8	8	3	2	1							
Twister tenders	988	.362			8	41	39	153	389	217	46	58	28	6	2	1						
Warper tenders	291	.396				6	7	20	77	95	54	20	10	2								
Winders, spoolers, and reelers	244	.349		2	3	18	8	37	107	44	20	4	1									
Unskilled:																						
Cleaners, machinery	935	.304	8	15	23	201	138	160	345	35	8	1	1									
Creelers	198	.362			3	12	3	9	114	31	9	13	2	1	1							
Filling and battery hands	1,406	.338		13	38	39	47	132	993	106	33	5										
Laborers	817	.255		60	106	429	52	59	104	6	1											
Learners	252	.225	7	47	88	49	14	14	31	1	1											

Roving men	1,346	.333		3	17	85	56	129	962	94												
Sweepers and scrubbers	1,909	.275	9	51	143	773	309	265	345	12	2											
Truckers, general	1,452	.347		17	12	60	39	108	965	184	31	30	5	1								
Watchmen	407	.318	1	12	31	58	20	57	163	42	12	7	2	1	1							
Females																						
Skilled:																						
Drawers-in, hand	341	.405			2	6	17	11	111	87	42	23	21	10	6	2	1	1			1	
Smash hands	366	.381			6	6	1	13	121	172	35	10			2							
Weavers	2,269	.431	1	7	36	39	50	83	264	571	473	414	283	43	4		1					
Semiskilled:																						
Drawing-frame tenders	180	.336			5	16	5	9	125	10	8	1	1									
Speeder tenders	734	.393		1	9	50	22	23	145	229	172	64	16	2	1							
Spinners, frame	8,833	.353	19	61	303	459	404	759	3,886	2,117	580	196	41	6	2							
Trimmers and inspectors	1,074	.349			2	17	31	123	786	69	23	14	4	3	2							
Twister tenders	173	.360			2	6	1	23	50	84	7											
Warper tenders	268	.371			4	5	6	8	102	111	23	7	2									
Winders, spoolers, and reelers	5,646	.339	12	71	279	524	298	750	2,027	1,116	452	84	31	2								
Unskilled:																						
Cleaners, machinery	412	.305		1	6	166	25	25	135	50	4											
Creelers	304	.348			9	15	10	25	181	39	21	4										
Filling and battery hands	1,878	.340	6	11	31	68	49	154	1,314	226	16	2	1									
Learners	632	.196	84	169	149	119	52	33	25	1												
Sweepers and scrubbers	413	.229	16	41	34	295	22	1	4													

In connection with the average hourly earnings, it is significant to trace the movement of the averages since 1933. It will be recalled that the adoption of the N. R. A. code led to a greater percentage increase in the earnings of unskilled than of skilled workers.[2] Thus from July 1933 to August 1934 there was "a fairly regular progression of the rate at which wage increases took place." Beginning with the higher wage occupations in the southern sample, those "averaging about 29 cents an hour or more increased from July 1933 to August 1934 by slightly more than 50 percent. * * * Most occupations paying 16 to 18 cents (in July 1933) increased by 80–100 percent. * * * Differences (in average hourly earnings) between occupations in the southern sample averaging 13.5 to 18 cents an hour in July 1933 were almost obliterated in August 1934, except as they were maintained by creating exempt classifications."

We have already seen that between August 1934 and August 1938 the break-down of code standards has tended to recreate differences among the unskilled and semiskilled groups through a lowering of unskilled wages. Such break-down of code standards as did occur was particularly marked between April 1937 and August 1938.

What happened to the earnings of the more skilled groups from August 1934 to April 1937? The details are presented in table 63. The incidence of wage changes was unequal as between the various occupations, and the relationship between percentage increases and average earnings was much less clearly defined than had been the case from July 1933 to August 1934. In general it appears, however, that the skilled occupations advanced more than the unskilled. This was particularly true among male workers. Thus, loom fixers and weavers, the two largest groups among the skilled males, experienced an increase of 19.3 percent and 26.7 percent. Card tenders and strippers and doffers, the two largest groups among the semiskilled males, increased 12.9 percent and 15.5 percent. In the South these two skilled occupations increased about 13 percent, the semiskilled about 10 percent. Thus there has been some tendency to re-establish differentials that had been customary. At the same time the dominant force is clearly the over-all movement of the wage scale; differential adjustments have been of less importance.

[2] U. S. Bureau of Labor Statistics: Textile Report, Part I (mimeographed), February 4, 1935, pp. 37–42.

TABLE 63.—*Average hourly earnings of employees in cotton-goods industry, by region, occupation, skill, and sex, August 1934 and April 1937* [1]

Occupation, skill, and sex	North			South		
	1934	1937	Percentage change	1934	1937	Percentage change
Males						
Skilled:						
Card grinders	$0.497	$0.571	+14.9	$0.443	$0.491	+10.8
Fixers, other than loom	.501	.565	+12.8	.408	.464	+13.7
Loom fixers	.648	.773	+19.3	.507	.574	+13.2
Second hands	.628	.717	+14.2	.539	.581	+7.8
Section hands	.487	.560	+15.0	.450	.486	+8.0
Warp-tying machine tenders	.497	.622	+25.2	.436	.514	+17.9
Weavers	.442	.560	+26.7	.401	.456	+13.7
Semiskilled:						
Card tenders and strippers	.410	.463	+12.9	.325	.353	+8.6
Doffers	.432	.499	+15.5	.349	.389	+11.5
Drawing-frame tenders	.389	.433	+11.3	.338	.371	+9.8
Oilers	.360	.410	+13.9	.315	.348	+10.5
Picker tenders	.407	.441	+8.4	.313	.338	+8.0
Slubber tenders	.488	.539	+10.5	.374	.412	+10.2
Speeder tenders	.454	.498	+9.7	.368	.409	+11.1
Spinners, frame	.445	.470	+5.6	.338	.382	+13.0
Warper tenders	[2]	[2]		.373	.396	+6.2
Winders, spoolers, and reelers [3]	[2]	[2]		.332	.349	+5.1
Unskilled:						
Cleaners, machinery	.325	.391	+20.3	.274	.306	+11.7
Creelers	[2]	[2]		.312	.362	+16.0
Filling and battery hands	.343	.390	+13.7	.311	.342	+10.0
Roving men	.360	.402	+11.7	.304	.335	+10.2
Truckers, general	.378	.413	+9.3	.303	.347	+14.5
Watchmen	.427	.444	+4.0	.327	.320	−2.1
Females						
Skilled:						
Drawers-in, hand	.427	.481	+12.6	.388	.407	+4.9
Weavers	.435	.511	+17.5	.382	.436	+14.1
Semiskilled:						
Doffers	.359	.428	+19.2	[2]	[2]	
Drawing-frame tenders	.352	.410	+16.5	.309	.338	+9.4
Speeder tenders	.402	.475	+18.2	.353	.399	+13.0
Spinners, frame	.378	.457	+20.9	.321	.355	+10.6
Trimmers and inspectors	.335	.392	+17.0	.310	.349	+12.6
Warper tenders	.399	.453	+13.5	.333	.375	+12.6
Winders, spoolers, and reelers [3]	.380	.442	+16.3	.334	.341	+2.1
Unskilled:						
Cleaners, machinery	.335	.378	+12.8	.278	.305	+9.7
Creelers	[2]	.403		.310	.354	+14.2
Filling and battery hands	.335	.390	+16.4	.307	.342	+11.4

[1] The 1937 data are exclusive of Arkansas, Mississippi, and Oklahoma, in order to make them comparable with those of 1934.
[2] Not enough employees to justify the computation of an average.
[3] The 1394 figures do not include reelers. However, these workers are relatively too few in number to invalidate the comparison between 1934 and 1937.

At any given time, and especially within a reasonably homogenous region, there tends to be a basic pattern in the relationship of the earnings of broad occupational groups. This is strikingly shown for northern mills in table 64, presenting the average hourly earnings of skilled and unskilled workers in August 1938.[3] It will be seen that in the northern mills there is a perfectly consistent relationship between the wages of the skilled and unskilled workers, the skilled in each of the four groups of mills averaging almost exactly 48 percent more than the unskilled. In the southern sample, on the other hand, the earnings of skilled workers rise more rapidly—with rising mill

[3] Other conclusions from this table were discussed on p. 76.

averages—than do the earnings of the unskilled. Among mills averaging 20 to 25 cents the skilled receive 46 percent more than the unskilled. Among mills averaging 45 to 50 cents, they average 58 percent more. While the movement is not perfectly regular, the degree of regularity that exists is sufficient to warrant generalization.

TABLE 64.—*Average hourly earnings by types of skill in mills classified by average hourly earnings, August 1938, for weaving mills and mills both spinning and weaving*

Average hourly earnings of mill (cents)	Number of mills		Number of wage earners		Average hourly earnings (cents)							
					North				South			
	North	South	North	South	Total	Skilled	Semi-skilled	Un-skilled	Total	Skilled	Semi-skilled	Un-skilled
20.0 to 24.9	-------	5	-------	1,093	------	-------	-------	-------	22.3	27.1	21.6	18.6
25.0 to 29.9	-------	13	-------	4,083	------	-------	-------	-------	27.5	34.3	26.3	21.8
30.0 to 32.4	-------	9	-------	2,856	------	-------	-------	-------	30.9	38.5	30.1	25.9
32.5 to 34.9	-------	28	-------	13,610	------	-------	-------	-------	33.7	41.0	32.4	27.3
35.0 to 37.4	-------	26	-------	13,004	------	-------	-------	-------	35.9	44.7	34.5	29.4
37.5 to 39.9	3	18	1,408	9,899	38.9	47.1	36.4	31.9	38.4	47.9	36.7	31.0
40.0 to 42.4	11	11	6,834	6,613	41.5	50.9	38.8	34.3	40.6	49.7	39.9	31.6
42.5 to 44.9	12	3	5,369	1,188	43.2	52.1	40.7	35.1	43.5	51.1	42.5	35.4
45.0 to 49.9	8	3	4,004	780	46.0	54.7	41.9	37.3	46.1	56.1	45.1	35.8

Source: Survey of 244 mills by Bureau of Labor Statistics in April 1937 and August 1938.

It will be noted, even in this comparison of broad occupational groups, that wage differences between occupations in various regions are not constant. Furthermore, the wage-relationships tend to change from year to year. It is impossible to find any constant order in which these occupations reappear year after year. For males in New England the order was found to have substantial stability from 1924 to 1932.[4] For females, however, minor inversions of position do occur. So, for example, warpers had higher wages than speeder tenders in 1924 and 1926, somewhat lower wages in 1928 and 1932, and higher wages again in July 1933. Similar minor inversions are found in the South. In general it was found that the order of occupational earnings was radically different when the order was compared between States and changed sharply from one year to the next. It is possible to say that male loom fixers in all States and in all years have invariably averaged more per year than any other occupation in the industry for which information is available in the 1920's. It is also possible to state that male card grinders, slasher tenders, warp-tying machine tenders, weavers, slubber tenders, and speeder tenders, both in individual States and in each year, have had higher average hourly earnings than male card tenders, doffers, picker tenders, and drawing-frame tenders. For females in both the North and the South the

[4] Hinrichs, A. F., and Clem, Ruth, "Historical Review of Wage Differentials in the Cotton-Textile Industry," Monthly Labor Review, vol. 40, No. 5 (May 1935), p. 1177.

shifts in position in an array based on average hourly earnings are so marked that exceptions can be found to any grouping which may be devised. Approximately, however, it may be said that weavers and drawers-in, speeder tenders, and warpers are almost invariably more highly paid than frame spinners, drawing-frame tenders, and spooler tenders. These groups in turn are generally more highly paid than creelers and inspectors. However, an ordering of occupations which holds with substantial regularity in the North does not hold in the South. For example, slasher tenders in the North regularly averaged more per hour from 1924 to 1932 than did weavers. In the South the average earnings of slasher tenders were less than those of weavers. Other inversions may also be discovered. It follows from this that the relationship of occupational averages must be looked at in broad terms. It cannot be assumed that in the past habits of the industry, there can be discovered detailed and constant occupational relationships.

Chapter 14

Average Hourly Earnings in the Yarn Division of the Industry

Attention has been called several times to the fact that average hourly earnings in the yarn division of the industry are less than average hourly earnings in the industry as a whole. There are two reasons for this. In the first place, the occupational composition of the yarn division of the industry is such as to bring about lower average hourly earnings than are found in the weaving division of the industry, even though the wage standards of the two divisions are the same. This is most clearly seen from a comparison of the average hourly earnings in the spinning and weaving division of mills that are engaged both in spinning and weaving.[1] In southern integrated mills, workers in the spinning division averaged 34.0 cents per hour in August 1938, whereas in the weaving division, they averaged 37.1 cents per hour.[2] Thus a difference of approximately 3 cents an hour as between weaving and spinning emerges out of the occupational composition of the two divisions.

This is the difference one would expect to find between a yarn mill and a weaving mill solely by virtue of the occupational composition of the two types of mill. Since an integrated mill, as the term is used in this report, is a mill that does both spinning and weaving, its average earnings will be higher than those in its spinning division and lower than those in its weaving division. The difference between spinning mills and integrated mills, on the basis of occupational composition alone, will be less than 3 cents. The average earnings in southern integrated mills in August 1938 for all workers in the sample was 35.4 cents an hour while in their spinning division it was 34.0 cents. In greater detail this relationship may be seen by comparing the average hourly earnings in table 65 for yarn mills with those shown in table 64 for integrated mills. The average hourly earnings of semiskilled workers may be used as a standard base for comparison. In yarn mills which average about 30 cents an hour for all workers, the average for semi-skilled workers alone is also about 30 cents. Semiskilled wages averaging 30 cents are found in integrated mills averaging about 31.25 cents for all workers. Similarly, a semi-

[1] For purposes of comparison, maintenance, power, and service departments are excluded (table 66).

[2] This figure includes the earnings in a small number of specialized weaving plants but would not be significantly affected by their exclusion.

skilled average of about 35 cents is associated with plant averages of about 35 cents in yarn mills, and about 36.5 cents among integrated mills. The reason for such differences is merely that skilled workers constitute about 7 or 8 percent of the wage earners in a yarn mill. Because of the presence of weavers and loom fixers in an integrated plant, skilled workers constitute more than 25 percent of the force.

TABLE 65.—*Average hourly earnings by types of skill in spinning mills, classified by average hourly earnings, South,*[1] *August 1938*

Average hourly earnings of mill	Number of—		Average hourly earnings (cents)			
	Mills	Wage earners	Total	Skilled	Semiskilled	Unskilled
20.0–24.9 cents	8	1,860	22.4	30.8	22.6	18.7
25.0–29.9 cents	10	1,576	27.3	33.8	28.0	21.4
30.0–32.4 cents	9	2,106	31.5	41.4	31.5	27.4
32.5–34.9 cents	15	3,011	33.8	41.1	33.9	29.6
35.0–37.4 cents	17	3,450	35.8	44.3	36.0	31.0
37.5–39.9 cents	[2] 5	1,658	38.5	50.6	38.8	32.1

[1] There are not enough yarn mills in the northern sample to permit the presentation of comparative figures.
[2] Including 1 establishment at a higher rate.

There is, however, a further difference between yarn mills and integrated mills. Yarn mills tend to pay less per hour than is paid in the spinning division of integrated mills. In April 1937 for the southeastern States the difference amounted to 6.2 cents on coarse carded yarn and to 4.8 cents on medium carded yarn.[3] Considering wages in the country as a whole and thus allowing for the fact that the yarn produced for sale is made primarily in the South and that New England still produces almost half of the fine yarn produced for mill use, this difference of 5 to 6 cents persists between independent yarn mills and integrated yarn mills working on similar counts.[4]

For the South as a whole independent yarn mills averaged 33.6 cents and integrated mills, 37.5 cents per hour in April 1937. The yarn mills reduced wages less than the integrated mills from 1937 to 1938 and in August 1938 averaged 31.8 cents as against 34.0 cents in the spinning division of integrated mills (table 66). However, a difference of more than 2 cents an hour persisted into this period.[5]

[3] See Bureau of Labor Statistics: Nineteenth Report on Cotton-Goods Industry, p. 41.
[4] Ibid., p. 46.
[5] There is no means of making comparable tabulations for earlier periods from date in the files of the Bureau of Labor Statistics. In the wage and hour analysis of earlier years no distinction was made between spinning, for example, in yarn mills and those in integrated mills but all workers in this occupation were tabulated together.
The regular monthly reports of employment and pay rolls to the Bureau will show higher average hourly earnings in integrated mills merely because of the presence of weaving.

TABLE 66.—*Average hourly earnings of employees in spinning division[1] of cotton-goods industry, by region, skill, sex, and type of mill, August 1938*

Region	Total		Males		Females	
	Independent mills	Integrated mills	Independent mills	Integrated mills	Independent mills	Integrated mills
United States:						
Total	$0.329	$0.354	$0.336	$0.369	$0.320	$0.336
Skilled	.420	.484	.420	.484	[2]	[2]
Semiskilled	.332	.356	.340	.369	.324	.343
Unskilled	.283	.295	.288	.302	.259	.275
North:						
Total	.402	.401	.418	.417	.387	.386
Skilled	.506	.515	.508	.516	[2]	[2]
Semiskilled	.411	.404	.434	.418	.397	.394
Unskilled	.340	.344	.345	.350	.328	.334
South:						
Total	.318	.340	.326	.356	.308	.318
Skilled	.404	.474	.404	.474	----------	[2]
Semiskilled	.321	.342	.330	.358	.313	.326
Unskilled	.271	.279	.278	.289	.230	.246

[1] Exclusive of maintenance, power, and service departments.
[2] Not enough employees to justify computation of an average.

It was pointed out in the first chapter that the yarn mill is subject to particular pressure to achieve low enough costs to offset its selling expenses. Obviously some such economy has been effected at the expense of the wage rate. Part of the reduction in costs to offset the selling expenses of yarn mills, has been achieved by seeking low labor costs through location of yarn mills in low-wage areas. Yarn mills are now located in the South even though some of their principal customers are located in the North. New England, and indeed the North generally, has been forced to surrender the yarn market almost entirely.

The movement of the yarn industry into the South and out of New England is shown in table 67. As early as 1914 the cotton-growing States had secured a substantial proportion of the coarse and medium yarn market, but produced less than one-third of the fine yarns being sold. By 1935 for all three of these classes the cotton-growing States had more than 88 percent of the market.

TABLE 67.—*Percentage of yarn produced for sale in the United States which was produced in the cotton-growing States, 1914 and 1935*

Year	Coarse	Medium	Fine
1935	92.6	95.3	88.4
1914	68.3	56.7	31.9

While there can be little doubt of the tendency for yarn production to seek low-wage areas, an historical development not only in the

United States but also in foreign countries, there has been a similar tendency in fabric production as well. Historically, it appears that spinning moves into new areas more easily than weaving, largely because of the smaller proportion of skilled workers required for ring-spinning than for weaving. The direct pressure of the competition of yarn mills with each other is probably a more important and immediate factor in establishing the relationship of yarn mill wages and integrated mill wages, than is the effort of the yarn producer to cover his selling cost out of his wage bill. There are, after all, many other factors that induce a yarn buyer to purchase yarn beside the fact that he may have to pay more for his labor than a yarn mill.[6]

Furthermore, the generalization that wages in independent yarn mills tend to be lower than in integrated spinning needs to be qualified in several respects. In the first place, it will be seen from table 66 that there was virtually no difference between average hourly earnings in northern yarn mills and in the yarn division of northern integrated mills in August 1938. This was also true in April 1937 when both averaged 45.7 cents. The similarity of earnings in the North in these two types of spinning, indicated by the averages for workers of similar skills, is strikingly confirmed by the distribution of earnings for individual workers, classified by skill, in August 1938 as presented in table 68.

[6] Yarn mills do not exist solely, or perhaps even primarily, by virtue of lower wages than those prevailing in the labor markets of the yarn-buying mills. A weaving or knitting mill requires a fairly large, standardized and regular production in order to achieve costs as low as the prices available to it in the yarn market. A mill may operate only a few looms or knitting machines, which, while efficient as regards weaving or knitting, are inadequate to consume the product of a spinning mill of efficient size. Furthermore, if the consumer of yarn requires a variety of yarns in small quantities, the expense of adapting spinning machinery to their production would add a heavy overhead cost that a spinning mill selling to a number of consumers would not face. Finally, if the consumer of yarn is serving a seasonal market, the overhead cost on idle spinning equipment may be too great to warrant establishing a spinning division in preference to paying for the cost of selling yarn. Under conditions such as those cited, the yarn mill is not in fact governed by the alternative cost of integrated spinning on the part of his customer. The reason that the yarn manufacturer in dealing with such customers is forced to seek to offset his selling cost by economies in manufacturing expense is because of the ultimate effect upon his customer's competitive power if the customer is forced to pay more for yarn than the costs of yarn spinning in the mills of his integrated competitors.

The converse evidence to support the statement that selling costs and wages alone do not determine the extent of the yarn market is found in the development of integrated spinning and weaving, and spinning and knitting. Cotton woven fabric mills generally spin their own yarn, despite the fact that workers in their spinning division average higher hourly earnings than workers in yarn mills, and despite the fact that the overhead management cost of a yarn mill added to that of a weaving or knitting mill, operating as independent units, is likely to be slightly lower than that of an integrated or full process mill. Where a place remains for the spinner of sales yarns, it appears that other advantages in cost besides a low-wage level are generally present.

TABLE 68.—*Simple percentage distribution of employees, according to average hourly earnings, in the spinning division[1] of the cotton-goods industry, August 1938, for both sexes in the North*

Average hourly earnings	All		Skilled		Semiskilled		Unskilled	
	Independent	Integrated	Independent	Integrated	Independent	Integrated	Independent	Integrated
Under 12.5 cents	0.1	(2)				0.1	0.2	0.1
12.5–14.9 cents		(2)				(2)		
15.0–17.4 cents	.1	(2)				.1	.5	.1
17.5–19.9 cents	.1	0.1				.1	.5	.1
20.0–22.4 cents	.1	.3			0.1	.3	.2	.4
22.5–24.9 cents	.1	.3			.1	.1		.9
25.0–27.4 cents	1.4	.9			.5	.3	5.0	3.3
27.5–29.9 cents	.8	1.6			.6	.6	1.5	5.8
30.0–32.4 cents	6.0	3.2		0.1	2.0	1.6	21.0	10.4
32.5–34.9 cents	13.7	18.0	1.5	1.1	8.5	12.1	34.7	46.2
35.0–37.4 cents	13.2	14.1		2.8	12.8	15.5	19.2	13.5
37.5–39.9 cents	18.1	19.6	5.9	7.1	21.2	23.0	12.5	12.5
40.0–42.4 cents	17.7	13.0	5.9	6.2	23.2	16.6	4.2	3.0
42.5–44.9 cents	7.3	9.4	9.7	6.2	9.2	11.7	.5	2.5
45.0–47.4 cents	6.6	6.2	13.4	9.0	8.0	7.4		.8
47.5–49.9 cents	5.6	4.3	11.9	11.9	6.7	4.6		.2
50.0–52.4 cents	3.8	4.1	25.2	23.0	2.7	2.9		.1
52.5–57.4 cents	3.6	2.6	10.4	13.1	4.0	2.1		.1
57.5–62.4 cents	.8	1.0	7.4	6.2	.3	.7		
62.5–67.4 cents	.4	.6	5.2	5.4		.2		
67.5–72.4 cents	.1	.4	.7	4.0		(2)		
72.5–77.4 cents	.1	.2	.7	2.6	.1			
77.5–82.4 cents	.1	(2)	.7	.4				
82.5–87.4 cents	.1	.1	.7	.7				
87.5–92.4 cents		(2)		.1				
92.5–97.4 cents		(2)		.1				
97.5 cents and over	.1		.7					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	1,817	8,374	135	723	1,281	5,962	401	1,689

[1] Exclusive of employees in maintenance, power, and service departments.
[2] Less than 1/10 of 1 percent.

In other words, the differences in earnings in independent yarn mills and integrated spinning divisions are largely confined to the South. But in August 1938, the differences in the South are confined to the earnings in skilled and semiskilled occupations. There was apparently no difference as regards the unskilled.[7]

Attention is especially directed to table 69 relating to the yarn division in the South, in which area independent yarn production is largely concentrated. First of all, as regards unskilled workers, there is no significant difference in the proportion of those receiving 35 cents an hour or more as between independent and integrated mills. In both types of mill, somewhat more than two-fifths of the unskilled workers receive 30, but less than 35 cents an hour. It may be noted that there is slightly more concentration at 30 to 32.5 cents in the case

[7] In April 1937 there were differences even among the unskilled. The averages for all workers (exclusive of power, maintenance, and service departments) in all southern mills surveyed were, for independent yarn mills and the spinning division of integrated mills, respectively: Skilled workers, 42.5 and 51.7 cents; semiskilled workers, 33.8 and 37.5 cents; unskilled workers, 28.5 and 30.7 cents.

of integrated mills than there is in the case of independent. Both among independent and integrated mills, somewhat more than half of the unskilled workers receive less than 30 cents an hour.

The main difference between the two groups of mills would appear to be that more than 25 percent of the unskilled workers in independent mills receive less than 22.5 cents an hour, whereas about 16 percent of the unskilled workers in the yarn division of integrated mills receive less than that amount. Differences such as have been noted with reference to the distribution of the earnings of unskilled workers would appear to be differences arising out of the wage policy of individual mills rather than to be differences which characterize a branch of an industry as a whole.

TABLE 69.—*Simple percentage distribution of employees, according to average hourly earnings, in the spinning division*[1] *of the cotton-goods industry, August 1938, for both sexes in the South*

Average hourly earnings	All		Skilled		Semiskilled		Unskilled	
	Independent	Integrated	Independent	Integrated	Independent	Integrated	Independent	Integrated
Under 12.5 cents	0.6	0.5	----------	----------	0.2	0.2	2.5	1.8
12.5–14.9 cents	.7	.6	----------	----------	.4	.3	2.6	2.1
15.0–17.4 cents	1.6	.9	----------	----------	1.2	.5	4.4	3.3
17.5–19.9 cents	2.5	1.4	----------	----------	1.8	1.1	6.7	3.0
20.0–22.4 cents	5.0	3.0	----------	0.3	4.5	2.5	9.4	5.9
22.5–24.9 cents	7.0	4.3	0.5	.2	7.0	2.7	9.2	12.6
25.0–27.4 cents	6.5	5.7	4.6	.7	6.1	5.0	9.2	11.0
27.5–29.9 cents	7.1	8.2	5.4	1.4	7.0	8.4	8.3	10.2
30.0–32.4 cents	19.2	22.0	4.0	1.6	19.1	21.5	26.0	31.8
32.5–34.9 cents	20.1	14.5	4.7	2.7	22.3	16.3	15.6	11.3
35.0–37.4 cents	11.2	11.3	10.2	3.5	12.8	13.7	4.0	4.5
37.5–39.9 cents	7.7	7.9	13.8	4.9	8.6	9.8	.9	1.4
40.0–42.4 cents	5.1	5.3	17.8	7.1	5.0	6.4	.4	.4
42.5–44.9 cents	2.3	4.6	12.1	11.9	1.9	5.0	.2	.3
45.0–47.4 cents	1.8	3.6	14.3	17.9	1.1	3.1	.3	.2
47.5–49.9 cents	.7	2.7	5.5	18.2	.4	1.7	.2	.2
50.0–52.4 cents	.4	1.2	3.1	8.0	.3	.9	.1	(2)
52.5–57.4 cents	.3	1.6	1.3	12.9	.3	.8	----------	(2)
57.5–62.4 cents	.1	.4	1.6	3.7	(2)	.1	----------	(2)
62.5–67.4 cents	.1	.1	.7	1.6	(2)	(2)	----------	----------
67.5–72.4 cents	----------	.1	----------	1.6	----------	(2)	----------	----------
72.5–77.4 cents	(2)	(2)	.1	.6	----------	----------	----------	----------
77.5–82.4 cents	(2)	.1	.3	1.0	----------	----------	----------	----------
82.5–87.4 cents	----------	(2)	----------	.2	----------	----------	----------	----------
87.5–92.4 cents	----------	----------	----------	----------	----------	----------	----------	----------
92.5–97.4 cents	----------	----------	----------	----------	----------	----------	----------	----------
97.5 and over	----------	(2)	----------	(2)	----------	----------	----------	----------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	12,182	28,143	746	2,126	9,493	20,818	1,943	5,199

[1] Exclusive of employees in maintenance, power, and service departments.
[2] Less than 1/10 of 1 percent.

Among semiskilled workers, it will be recalled that the independent mills averaged about 2 cents an hour less than the yarn divisions of integrated mills. This difference in the averages does not reflect any fundamental difference in the basic distribution of earnings. It arises

rather with reference to differences at the two extremes of the wage distribution. Thus we find that 15 percent of the semiskilled workers in independent yarn mills and only 7 percent of the workers in integrated mills receive less than 25 cents an hour. At the other extreme, 4 percent of the workers in independent mills receive 42.5 cents an hour or more, whereas 12 percent of the semiskilled in integrated mills receive this amount.

In the case of skilled workers, however, there appears to be a fundamental difference as between independent and integrated plants. It extends through the entire earnings range and results in a concentration of the earnings of skilled workers in the yarn division of integrated plants that is 7 cents or more above that for skilled workers in independent plants. Thus, 25 percent of the skilled workers in independent plants earned less than 36.4 cents, whereas the corresponding earning figure in integrated plants is 43.0 cents. On the other hand, 25 percent of the skilled workers in independent plants earned more than 45.3 cents and 25 percent of those in integrated plants earned more than 51.4 cents per hour.

It follows from this discussion, in accounting for differences in average hourly earnings, that individual variations between mills as regards wage policy are a much more important factor than generally observed differences in wage policy followed by yarn mills and integrated mills. There seems to be clear evidence of a real difference of wage policy between the two branches of the industry as regards skilled workers. But skilled workers are only 7.5 percent of the wage earners in yarn mills and a difference of 7 cents in the average earnings of this group would result in only a 0.5-cent difference in the average hourly earnings of all workers. Semiskilled workers, on the other hand, constitute almost exactly three-quarters of the wage earners in yarn mills. Apparently as a result of variations of wage-policy by individual mills, rather than by the industry branch as a whole, the average earnings of semiskilled workers are 2.1 cents less in all yarn mills studied than in the spinning division of integrated mills. This is the primary reason that the over-all average for yarn mills in the South is lower than for integrated spinning divisions.

This means that we should expect to find in the South a slightly higher proportion of yarn mills than of integrated mills with low earnings or perhaps a slightly lower proportion with high average hourly earnings. A reexamination of tables 46 and 47 reveals precisely this condition. One-fifth of the spinning mills with 12.1 percent of the reported number of employees averaged less than 27.5 cents. Integrated mills as a whole should of course average 1 or 2 cents more than spinning mills if they are paying the same wages in their spinning divisions as do yarn mills. Even with such an allowance, we find that only one-tenth of the integrated mills with 5.5 percent of the

reported number of employees average less than 30.0 cents. On the other hand, more than one-fifth of the integrated mills with 28.2 percent of the employees average 40 cents or more, whereas only slightly more than one-tenth of the yarn mills with 21.7 percent of the employees average more than 37.5 cents.

It appears clear from this analysis that the chief difference between the two branches is the degree to which a prevailing minimum wage standard of about 30 cents for semiskilled labor is observed. It is not a difference in the standard itself. But whenever any standard is made legally binding, it will affect a somewhat larger proportion of the mills and employees in the yarn branch than in the integrated mills in the industry in the South.

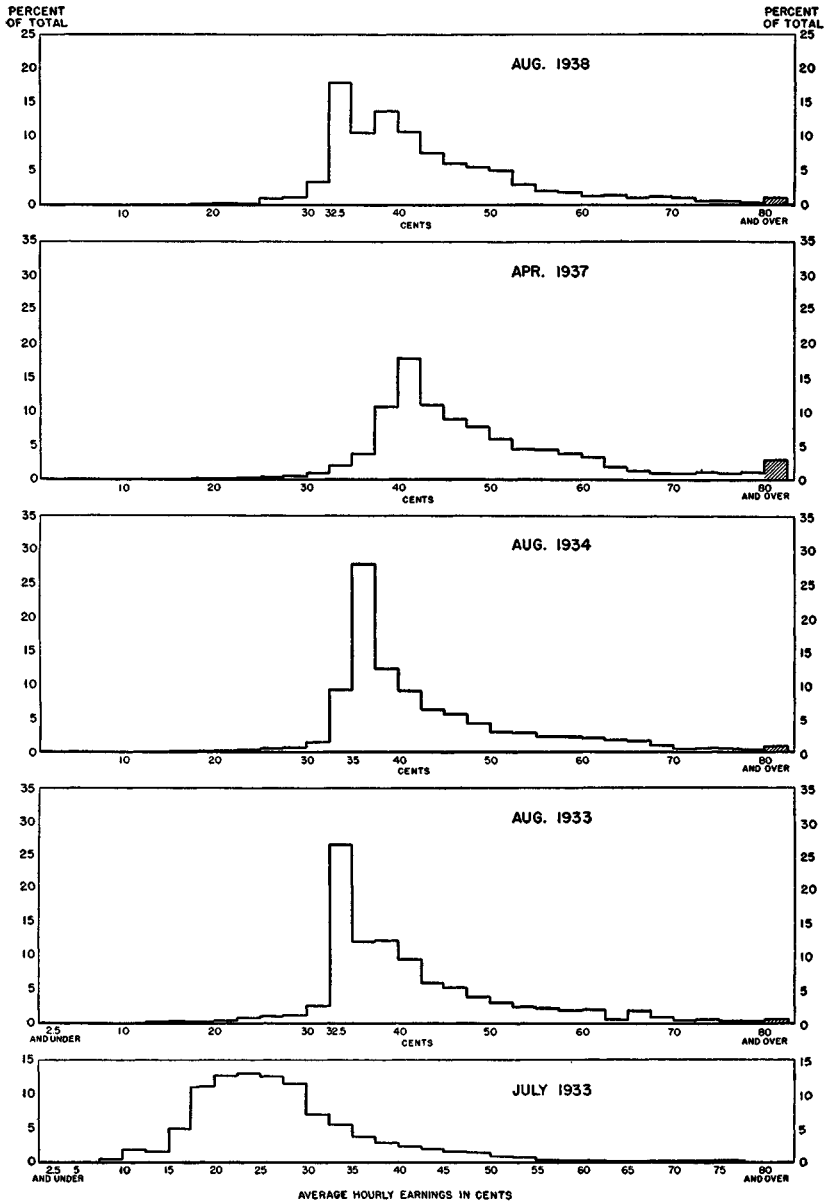
Chapter 15

The Shifting Pattern of Average Hourly Earnings Under the N. R. A. and Thereafter

Up to this point, this report has dealt almost entirely with the range of individual earnings in August 1938. To appreciate the significance of the present pattern of hourly earnings, it is important to compare this distribution for 1938 with the very different patterns of earnings in the recent past. Table 70 shows the percentages of cotton-textile workers in the North and in the South who earned the indicated amounts at five periods between July 1933, just before the N. R. A. code, and August 1938. The drastic upward shift in earnings at the time of the code (August 1933), the slight further improvement during the year after the code (August 1934), and the considerable further increases up to April 1937 are all reflected in the increasing percentages of workers shown to be earning the larger amounts per hour and the decreasing percentages earning the smaller amounts as one passes from column 1 to column 4 of each of these tables. The effect of the wage reduction of 1938 may be seen by comparing the last two columns of these tables. These shifts in the level of earnings were accompanied by important changes in the pattern of distribution. Any given minimum wage would therefore affect a different proportion of cotton textile workers today than would have been affected in past years.

In an industry subject to competitive forces and not subject to one or another form of wage regulation, there is ordinarily a wide dispersion of individual earnings. Such a distribution tends nevertheless to build up more or less regularly to a maximum concentration at about the average and then to fall away gradually with smaller and smaller proportions of the workers at higher wage levels. Such a distribution of wages in the cotton-textile industry existed in July 1933, centered on an average of approximately 18 cents in the South and 26 cents in the North. (See charts 2 and 3.)

PERCENTAGE DISTRIBUTION OF AVERAGE HOURLY EARNINGS IN THE NORTHERN REGION OF THE COTTON TEXTILE INDUSTRY



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PERCENTAGE DISTRIBUTION OF AVERAGE HOURLY EARNINGS IN THE SOUTHERN REGION OF THE COTTON TEXTILE INDUSTRY

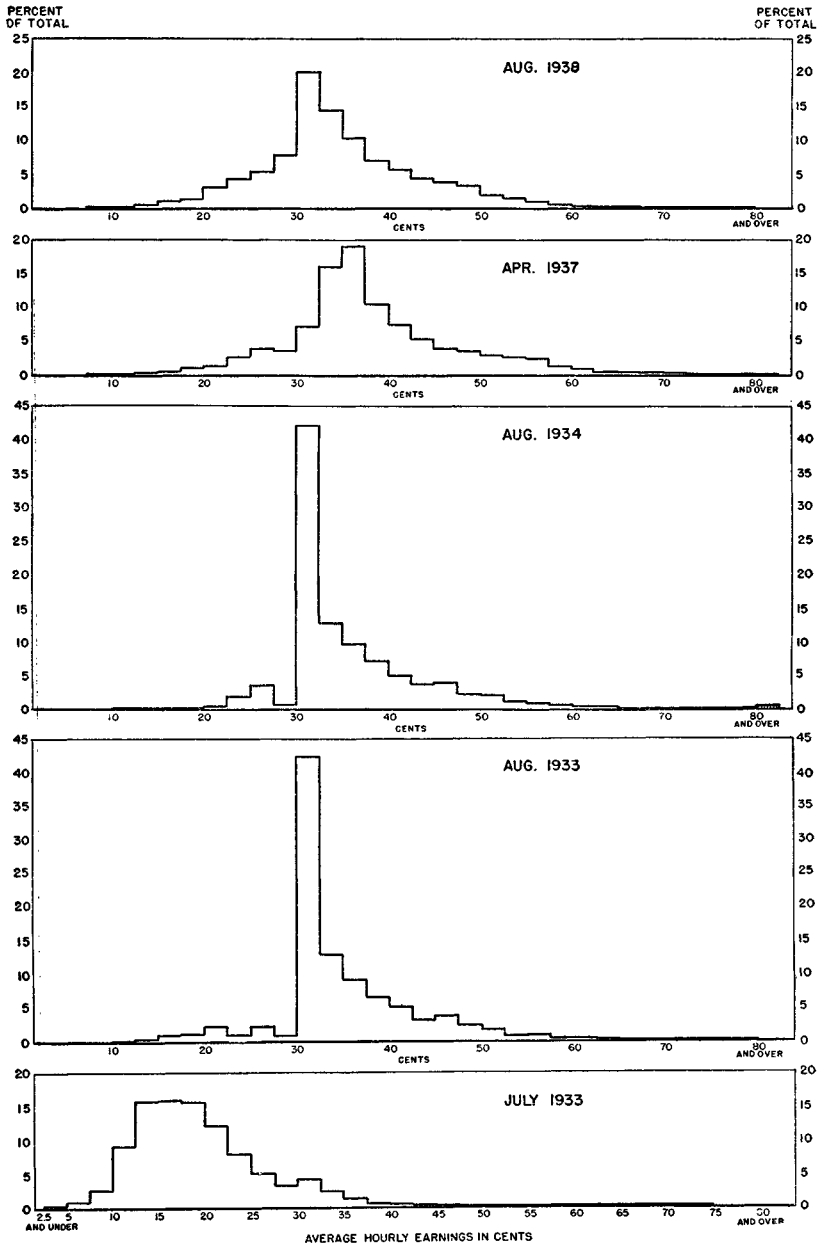


TABLE 70.—*Percentage distribution of average hourly earnings of employees in the cotton-textile industry, by region, July 1933 to August 1938*[1]

Average hourly earnings	United States					North					South				
	July 1933	August 1933	August 1934	April 1937	August 1938	July 1933	August 1933	August 1934	April 1937	August 1938	July 1933	August 1933	August 1934	April 1937	August 1938
2.5–4.9 cents	0.1	(2)									0.2				
5.0–7.4 cents	.5	(2)									.9				
7.5–9.9 cents	1.9	(2)		0.1	0.1	0.5					2.7			0.1	0.2
10.0–12.4 cents	6.5	0.1	(2)	.1	.2	2.0					9.3	0.1	(2)	.1	.2
12.5–14.9 cents	8.7	.3	(2)	.2	.4	1.7	0.2				15.8	.4	(2)	.3	.5
15.0–17.4 cents	13.2	.8	0.1	.4	.7	5.0	.3	0.1			15.9	1.1	0.1	.5	1.0
17.5–19.9 cents	12.7	.8	.1	.8	1.0	11.2	.2	.1	0.1	0.1	15.7	1.2	.1	1.0	1.3
20.0–22.4 cents	13.8	1.6	.3	1.0	2.5	12.8	.4	.2	.1	.2	12.3	2.3	.4	1.3	3.3
22.5–24.9 cents	9.4	1.0	1.3	2.1	3.4	12.9	.8	.3	.2	.2	8.2	1.1	1.9	2.7	4.4
25.0–27.4 cents	8.8	1.8	2.6	3.0	4.3	12.7	1.1	.6	.3	1.0	5.2	2.3	3.7	4.0	5.4
27.5–29.9 cents	6.5	1.0	.7	2.9	6.2	11.5	1.2	.7	.5	1.2	3.3	.9	.7	3.7	7.9
30.0–32.4 cents	5.4	27.5	27.8	5.7	15.9	7.1	2.5	1.5	1.0	3.4	4.3	42.5	42.2	7.3	20.0
32.5–34.9 cents	3.7	18.1	11.8	12.5	15.5	5.7	26.7	9.5	2.1	18.0	2.5	12.9	13.0	16.2	14.5
35.0–37.4 cents	2.4	10.3	16.3	15.1	10.4	3.8	12.2	28.1	3.9	10.5	1.3	9.2	9.9	19.0	10.3
37.5–39.9 cents	1.5	8.6	9.1	10.6	8.7	2.9	12.3	12.6	10.8	13.8	.6	6.5	7.2	10.5	7.1
40.0–42.4 cents	1.4	6.7	6.5	10.3	7.0	2.4	9.5	9.3	18.2	10.7	.5	5.0	4.9	7.6	5.7
42.5–44.9 cents	.8	4.3	4.8	6.8	5.2	1.8	6.2	6.7	11.2	7.7	.3	3.2	3.8	5.3	4.4
45.0–47.4 cents	.7	4.4	4.7	5.3	4.5	1.7	5.4	6.0	9.1	6.2	.2	3.8	4.0	4.0	4.0
47.5–49.9 cents	.7	3.0	3.0	4.8	3.9	1.6	3.9	4.5	7.9	5.6	.1	2.5	2.2	3.7	3.4
50.0–52.4 cents	.4	2.3	2.3	3.9	2.9	.8	3.2	3.1	6.2	5.1	.1	1.7	1.9	3.1	2.1
52.5–54.9 cents	.2	1.4	1.8	3.3	1.9	.6	2.4	2.9	4.6	3.1	.1	.8	1.2	2.8	1.5
55.0–57.4 cents	.1	1.4	1.4	3.0	1.3	.3	2.3	2.4	4.5	2.2	.1	.9	.8	2.5	1.1
57.5–59.9 cents	.2	1.0	1.2	2.0	.9	.2	2.0	2.4	3.9	1.9	(2)	.4	.6	1.4	.6
60.0–62.4 cents	.1	1.0	1.0	1.7	.6	.2	2.0	2.2	3.4	1.4	.1	.4	.3	1.1	.3
62.5–64.9 cents	.1	.4	.8	.8	.6	.1	.6	1.8	1.8	1.5	.1	.2	.3	.5	.2
65.0–67.4 cents	(2)	.8	.7	.6	.4	.1	1.9	1.7	1.3	1.2	(2)	.1	.1	.4	.2
67.5–69.9 cents	.1	.4	.4	.5	.4	.1	.8	1.0	1.1	1.3	(2)	.1	.1	.3	.1
70.0–72.4 cents	(2)	.2	.2	.4	.3	.1	.4	.4	1.1	1.1	.1	.1	.1	.2	.1
72.5–74.9 cents	(2)	.2	.3	.4	.2	.1	.5	.5	1.2	.6	.1	.1	.1	.1	.1
75.0–77.4 cents	(2)	.1	.2	.4	.2	.1	.3	.4	1.1	.6		.1	(2)	.1	(2)
77.5–79.9 cents	(2)	.1	.1	.4	.1		.2	.2	1.2	.2		.1	.1	.1	.1
80.0 cents and over	.1	.4	.5	.9	.3		.5	.8	3.2	1.2			.3	.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	37,911	106,394	99,402	91,970	89,218	14,680	39,948	35,055	23,500	22,282	23,231	66,446	64,347	68,470	66,934

[1] Adapted from distributions published by the Bureau of Labor Statistics. Distributions, July 1933 to 1937, estimated in part.
[2] Less than 1/10 of 1 percent.

A convenient and conventional method of measuring the dispersion of individual earnings is to measure the range between the highest earnings received by the lowest paid 25 percent of the workers (called the "first quartile" earnings) and the lowest earnings received by the highest paid 25 percent (called the "third quartile" earnings). This measures the dispersion among the 50 percent of the workers at the center of the distribution and disregards the character of the spread of earnings at the upper and lower extremes. In July 1933, this spread, embracing the earnings of half of the workers, amounted to 10.8 cents in the North and to 8.8 cents in the South. Taking the country as a whole the range was somewhat greater, because there is more uniformity of wages in either region considered separately than there is when the two regions with unlike wage standards are combined.

The significance of the range of earnings thus measured depends upon the general level of the average. Thus if every worker received a 10-percent increase or decrease, it would affect not only the average but also the range. It is therefore convenient to measure the range as a percentage of the appropriate average. The resultant percentage is referred to as a "coefficient of dispersion." As it becomes larger, it indicates a greater tendency for the wages of the central 50 percent of the workers to spread away from the average; as it becomes smaller, it indicates a tendency for their earnings to cluster more closely about the average.

TABLE 71.—*Dispersion of hourly earnings in the cotton-textile industry, 1930–38*

Period	First quartile (1)	Median (2)	Third quartile (3)	Inter-quartile range (3–1) (4)	Coefficient of dispersion (4/2) (5)
United States:	*Cents*	*Cents*	*Cents*	*Cents*	
1930	23.7	30.3	38.7	15.0	0.50
1932	17.9	24.6	31.4	13.5	.55
July 1933	17.7	21.2	27.3	9.6	.45
August 1933	[1] 30.0	34.3	41.1	11.1	.32
North: [2]					
July 1933	20.9	25.8	31.7	10.8	.42
August 1933	34.2	38.4	45.5	11.3	.29
August 1934	36.1	39.5	47.2	11.1	.28
April 1937	40.8	45.4	54.3	13.5	.30
August 1938	35.2	40.4	48.4	13.2	.33
South: [2]					
July 1933	14.4	18.3	23.2	8.8	.48
August 1933	[3] 30.0	32.4	37.9	7.9	.24
August 1934	[3] 30.0	32.7	38.5	8.5	.26
April 1937	[3] 33.0	36.7	42.8	9.8	.27
August 1938	[3] 30.0	33.5	39.6	9.6	.29

[1] It has been assumed that the concentration of individuals at the lower end of the 2.5-cent class interval, 30.0 but less than 32.5 cents, was sufficiently great to embrace 64 percent of the cases within the interval in August 1933. National measures of dispersion are not shown for the other periods because existng records do not show how many cases fell at exactly 30 cents in August 1934 and 1938, and at 33 cents in April 1933. These were probably the first quartile values. If these are assumed as first quartiles, the coefficient of dispersion rose to 0.35 in 1937 and was about 0.34 in 1938.

[2] Data not available by regions for all occupations in 1930 or 1932.

[3] There is assumed to be a concentration of about ⅔ of the cases in the class interval 30.0 to 32.5 cents at exactly 30 cents in August 1933 and 1934. The assumption of concentration in 1937 and 1938 does not influence the figure.

It will be seen from table 71 that, after allowing for the decrease in average earnings from 1930 to July 1933, there was somewhat less dispersion of earnings in 1933 for the United States as a whole than there had been in 1930. (Regional figures are not available for the earlier period.) However, the essential point to note is that the change in the extent of the dispersion, even in the face of staggering changes in the average, was comparatively small in relative terms—i. e., the absolute measure of the range of earnings changed no more than the average for the industry.

When the N. R. A. introduced generally applicable minima of 30 and 32.5 cents an hour, a wage higher than that which had been received by more than four-fifths of the workers in July 1933, the change in wages was so drastic that there would have been no method of forecasting precisely what effect it was likely to have on the distribution of wages. Nationally the dispersion of individual earnings was decreased, partly because of the fact that the code required a larger increase in southern than in most northern mills. In July 1933, the lowest quarter of the southern workers had earned no more than 14.4 cents; in August 1933 they earned 30 cents. In the North the lowest quarter of the workers were raised from an upper limit of 20.9 cents an hour to about 34.2 cents. The decrease in the national measure of dispersion also reflected the sharp decrease of dispersion within both regions. Thus, in the North the range in July 1933 between the earnings of the lowest and highest quarter of the workers had been 42 percent as large as the average earnings for all workers; in August it was 29 percent. In the South, where the range spanning this middle group of half of the workers had been about 48 percent as large as the average, the coefficient of dispersion was reduced to 24 percent of the average. That is to say that immediately prior to the code there was a slightly greater spread of earnings, even as regards the middle 50 percent of the workers in the region, than there had been in the North; after the code there was slightly less dispersion in the South than in the North. As a result of these two movements toward less dispersion between the regions and less dispersion within the regions considered separately, the range in the United States between the earnings of the lowest and highest quarter of the workers in the industry was reduced from an amount that had been about 50 percent as large as the average from 1930 to 1933, to an amount about one-third as large as the average after the code. Four-fifths of the northern workers had received less than 32.5 cents in July 1933. The code required the maintenance of weekly earnings for 40 hours equal to those that had been received for the workweek that prevailed prior to the code. This in itself required an increase for all workers of 35 percent in mills that had worked 54 hours and of 20 percent in mills that had worked 48. To bring the top earn-

ings of the lowest paid quarter of the workers up to 32.5 cents would have necessitated about a 56 percent increase. They actually were raised about 63 percent. The code had further specified that wage differentials should be maintained among the various occupations.[1] It will be seen that the absolute amount of the difference between the earnings of the upper 25 percent and the lower 25 percent of the workers was slightly larger in August 1933 than in July 1933. However, the relative increases received by the median group (49 percent) and the upper quartile (44 percent) were less then those that applied to the lowest paid workers.

In fact, however, the distribution of earnings at the lower end of the distribution was even more drastically altered than these ratios applying to the middle range of earnings indicate. The congestion at the minimum in August 1933 will be seen more clearly from chart 2. Whereas 25 percent of the workers in July had received less than 20.8 cents, the lower limit from which dispersion was measured in that month, only 7 percent received less than 32.5 cents in August. Furthermore, whereas only about 13 percent of the workers were clustered in the 2.5-cent class interval that included the first quartile in July, 27 percent were found at 32.5 to 35 cents in August. In effect, and with some allowance for over-simplification, the northern workers who had received less than 22.5 cents in July were almost all shoved up into the class of workers receiving 20 to 22.5 cents, and then the entire distribution, thus distorted, was moved up about 12.5 cents. Differences in earnings among the lower 25 percent of the workers that had existed in July were almost obliterated by August, but from this point up the dispersion of earnings was fairly well maintained, especially if differences are measured in cents per hour rather than in percentage terms.

From August 1933 to August 1934 the most drastic change in wages in the northern mills was that which occurred among the lower wage groups. Whereas in 1933, 27 percent of the workers received 32.5 to 35 cents and 12 percent received 35 to 37.5 cents, in 1934 this relationship was reversed and 10 percent received 32.5 to 35 cents, while 28 percent received 35 to 37.5 cents. In other words, while there was still an unusual concentration within 5 cents of the minimum, distinctions which had earlier prevailed within the lower paid groups began to reassert themselves. They were felt in the form of wage increases or wage readjustments that lifted the wage earners above the minimum all along the scale by a cent or so an hour, but apparently not quite as much as workers at the lower end of the scale were increased.

[1] See Bureau of Labor Statistics "Textile Report," part I (mimeographed), Feb. 4, 1935, pp. 37, ff. for a discussion.

Between August 1934 and April 1937 the most important wage changes in the North were the changes of rates in December 1936 and March 1937. Prior to this, some few mills had decreased rates. When the increases were granted, they were granted in most northern mills but not in all. To some extent, therefore, the dispersion of mill averages became more marked. But it is also significant that from 1934 to 1937 the greatest relative increase occurred at the upper end of the scale. Third quartile earnings rose 7.2 cents, whereas the first quartile rose 4.3 cents. In other words, over and above general changes in mill rates that dominated the movement in this period, there was evident a tendency to restore the wage relationships that had been customary as between skilled and unskilled occupations.

How persistent such wage relationships tend to be is indicated by the very slight change in the dispersion of earnings for the middle 50 percent of the workers from April 1937 to August 1938 when wages were decreased about 10 percent. The surviving influence of the code minimum of 32.5 cents, however, resulted in renewed concentration at that level.

The South faced a larger increase under the N. R. A. than most northern mills. The wages of some groups of unskilled workers were doubled, and indeed the top earnings of the lowest paid 25 percent of the workers were somewhat more than doubled. The result in the South was an extreme concentration of wages at the minimum that wiped out many customary differentials among the lower paid occupations. The range of earnings between the lowest paid 25 percent and the highest paid 25 percent actually declined in the face of a rising average; relative to the average, the dispersion was half as great in August as it had been in July.

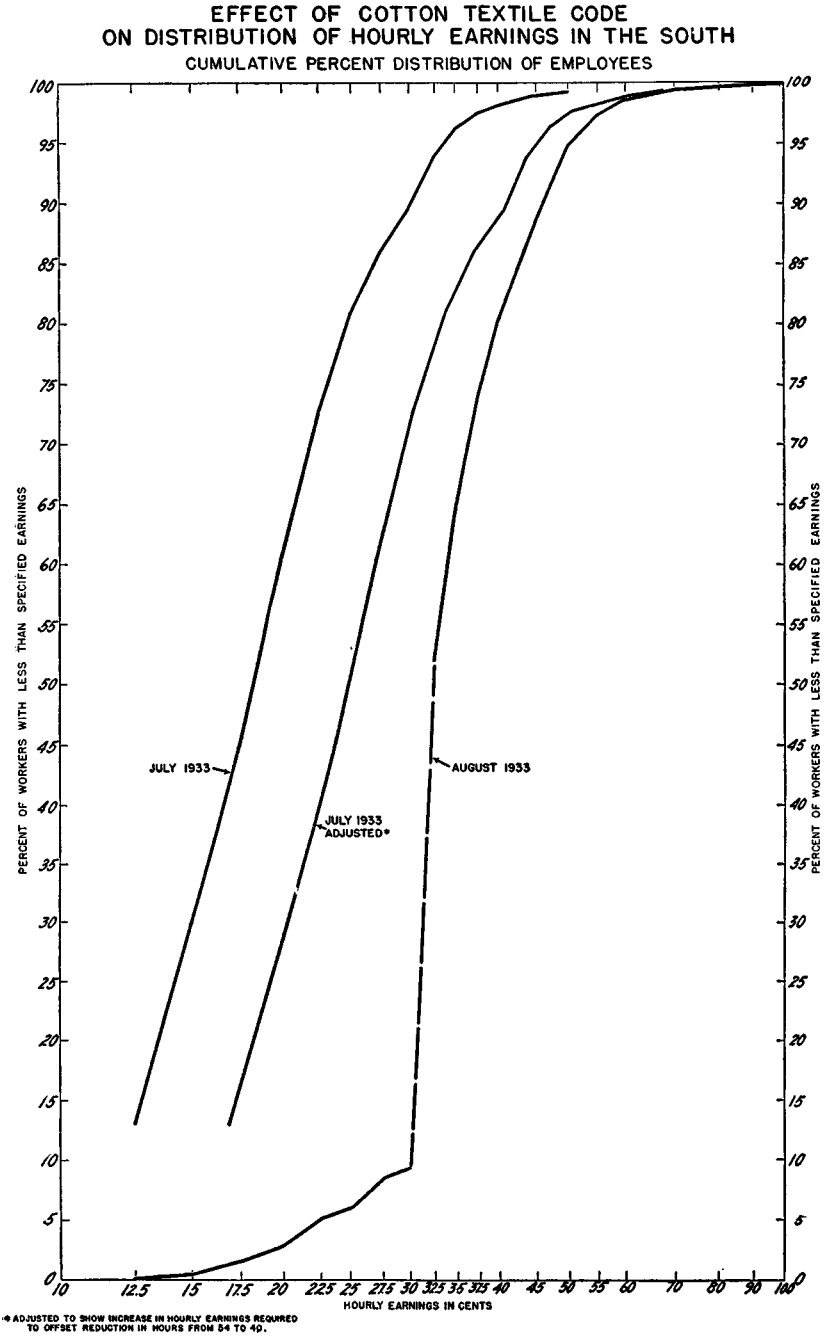
From August 1933 to August 1937 one sees in the movement of wages in the South primarily a series of cross-currents tending to tear apart the concentration at the code minimum. Under the N. R. A. this was chiefly represented by efforts to restore differentials between occupations above the minimum. In the period after the N. R. A. it represented, as has already been shown, some destruction of wage standards at the minimum as well as a further upward movement until 1937 in the average earnings in the skilled occupations. The primary movement in the post-N. R. A. period appears to have been a growing dispersion of mill averages. In the South as in the North some mills decreased earnings after the Schechter decision. The wage increase in 1937 was not followed by all mills. This tendency toward a dispersion of mill averages was not sufficiently widespread, however, to influence the measures of range for the middle 50 percent of the workers between 1934 and 1937. In 1934 the code minimum of 30 cents determined the first quartile earnings; in 1937, the code minimum plus a 10-percent wage increase determined the level. But while

there was an increase of 3 cents at the first quartile, there was a 4.0-cent increase of median earnings and 4.3 cents increase at the third quartile between 1934 and 1937.

The dispersion of earning merely between the lowest and highest quarter of the workers in the southern branch of the industry was not materially affected by wage decreases that occurred between 1937 and 1938. The coefficient of dispersion for the earnings of this middle group was in fact little greater in 1938 than in 1934. However, due largely to the dispersion of wage standards between mills, the contour of the total distribution of earnings for all workers in these 2 years shows a fundamental alteration of the pattern at the extremes (chart 3). The pillar in the center of the chart, representing the workers at 30 to 32.5 cents, is not so tall in 1938 as in 1934. There are far more workers at less than 30 cents. Whereas in the North there were about 6 or 7 percent of the workers at less than 32.5 cents in both 1934 and 1938, in the South the proportions of the workers at less than 30 cents in these respective years are 7 and 24 percent. This change, which is the most striking of all, is largely the result of a breakdown of wage standards in those mills that are averaging less than 32.5 cents an hour and particularly to the presence of a few mills that average less than 25 cents and pay almost their entire working force less than 30 cents. Over and above this fundamental movement one may also trace some movement to reestablish differentials between low-wage occupations by dropping some groups further than others, and to maintain or increase differences in the higher wage brackets. Thus, in 1938 in the South there is a slightly larger proportion of the workers at each level of earnings above 32.5 cents than was the case in 1934.

In studying the distribution of earnings in July 1933 and August 1933, it is necessary to recognize that the N. R. A. code operated with a double impact. It shortened the hours of all workers while maintaining their weekly earnings and hence increasing their hourly earnings; insofar as this did not produce a minimum wage of 30 cents an hour, the code required such a wage in the South for all workers except cleaners, outside laborers, and learners. Since hours were shortened in about the same proportion for all occupations, the hours provision of the code alone would have had the effect of generally maintaining the relative dispersion of earnings that prevailed in July 1933 while raising the median earnings from 25.7 cents to 38.4 cents. This effect is shown in the first two curves (reading from the left) on chart 4.

The dispersion of earnings decreased because of the fact that the application of the 30-cent minimum did not bring a proportionate, or even an equal increase, in earnings at higher levels. Thus, had the earnings of the lowest 25 percent of the workers been increased merely because of the shortening of hours, they would have been raised from 14.2 cents to about 19 cents (table 72). Actually they received a



further 11-cent increase because of the 30-cent minimum wage. On the other hand, half the workers received less than 18.4 cents in July and the highest paid of them should have received 24.3 cents to compensate merely for the shortening of hours. They actually received about 32.4 cents, an increase of 8 cents to correspond with the 11-cent increase of the lower paid group. The amount of the increase induced by the impact of minimum wages, as opposed to the shortening of hours, became less and less for the more highly paid groups. The level of wages received by the highest paid 90 percent increased only about 5.7 cents more than enough to offset the decrease in hours. The highest 1 or 2 percent of the workers appear to have received no more than enough to compensate for shortened hours. Thus it is evident that the immediate impact of a minimum wage representing a large wage increase cannot be assumed to be a uniform wage increase. Rather it tends to produce immediately a congestion at the minimum wage, which in turn generates pressure to restore customary differentials, in the course of time. A sufficient period of time did not elapse under the N. R. A. to determine how long a period is necessary to effect a restoration of differentials, nor to determine what ultimate and persistent changes in occupational wage relationships would have been induced by minimum wage increases as large as those provided in the code.

TABLE 72.—*Comparison of average hourly earnings in the southern cotton-textile industry, July and August 1933, with the earnings required to offset the decrease in hours from 54 to 40*

[For workers at selected relative levels of hourly earnings]

Workers, by relative average hourly earnings	Highest average earnings per hour		
	July 1933 (actual)	July 1933 (adjusted to decreased hours)	August 1933 (actual)
	Cents	*Cents*	*Cents*
Lowest-paid 25 percent	14.2	19.0	30.0
Lowest-paid 50 percent	18.4	24.3	32.4
Lowest-paid 60 percent	20.0	26.7	34.2
Lowest-paid 70 percent	22.0	29.3	36.6
Lowest-paid 80 percent	25.2	33.4	39.9
Lowest-paid 90 percent	30.4	40.3	46.0

Chapter 16

Distribution of Individual Earnings by Mill Averages

One of the questions that must be faced in recommending a minimum wage is the probable effect of any given minimum wage upon average hourly earnings in mills or groups of mills. It was evident from the dispersion of plant averages shown in table 46 that some mills would be more affected than others. It was evident from the distribution of individual earnings that some occupations would be more affected than others. But cannot these two sets of facts be related to show, for example, how plants averaging 30 cents in August 1938 have been affected by the 25-cent minimum that became applicable on October 24?

It is unnecessary to describe in detail the distributions of individual earnings, grouped by mills classified by plant average hourly earnings and presented in tables 73, 74, 74-a, 74-b, 74-c, and 75. What is significant is the fact that they do indicate quite definitely the area within which any particular minimum wage will exert an effective influence. With less accuracy in some cases but with a high degree of accuracy in other cases, one can also indicate the extent to which a particular minimum wage will influence average hourly earnings for any given group of plants. The smaller the changes in earnings that would be required by any given minimum wage, the more accurately these estimates can be made. Turning to table 74-c relating to unskilled earnings in southern integrated mills, it is evident that the 25-cent minimum wage of October 24 can have had little effect on average hourly earnings in integrated mills averaging as little as 32.5 cents an hour, and especially on those averaging as much as 35 cents. In the case of each group of mills above the level of 32.5 cents, a significant percentage of the unskilled workers had to be increased at least 2.5 cents, but such workers constitute a small proportion of the total number employed. Furthermore, it is doubtful that lifting a group of unskilled workers to 25 cents would result in any tendency to raise wages for the groups of workers that concentrated around 30 cents in August 1938. In this group of integrated mills, it would appear that the readjustments to a 25-cent minimum were more likely to involve questions of what type of workers are to be hired than to involve any change in the wage scale large enough to affect the average hourly earnings for the plant as a whole to the extent of more than ¼-cent per hour.

TABLE 73.—*Simple percentage distribution according to average hourly earnings of employees in integrated mills in the North, by skill and plant average hourly earnings, August 1938*

Average hourly earnings	Total				Skilled				Semiskilled				Unskilled			
	Plants whose average hourly earnings are—															
	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0
Under 12.5 cents	-----	0.1	-----	-----	-----	-----	-----	-----	-----	0.1	-----	-----	-----	0.1	-----	-----
12.5–14.9 cents	-----	(1)	0.1	-----	-----	-----	-----	-----	-----	(1)	-----	-----	-----	-----	0.2	-----
15.0–17.4 cents	0.1	.1	-----	-----	-----	-----	-----	-----	0.2	.1	-----	-----	0.3	.1	-----	-----
17.5–19.9 cents	.1	.1	.1	(1)	-----	-----	-----	-----	.2	.1	0.1	0.1	-----	.4	.4	0.1
20.0–22.4 cents	.3	.3	.1	0.1	0.4	-----	-----	-----	-----	.4	.1	.1	.7	.6	.1	.1
22.5–24.9 cents	.7	.2	.2	(1)	.2	(1)	0.2	-----	.6	.1	-----	-----	1.7	.4	.7	.1
25.0–27.4 cents	3.5	1.1	.4	.4	.2	.1	.1	0.1	3.2	.3	.2	.6	9.1	3.8	1.3	.7
27.5–29.9 cents	3.7	1.6	.6	.1	.4	.2	.3	.1	1.2	.7	.3	.1	14.2	5.3	1.4	.2
30.0–32.4 cents	9.9	3.1	3.6	.9	1.8	1.6	.6	.5	4.6	1.9	2.7	.6	34.5	7.0	9.8	2.1
32.5–34.9 cents	21.2	25.9	18.9	13.2	2.4	3.6	2.5	1.0	29.6	26.4	13.1	15.6	31.1	53.9	53.3	31.9
35.0–37.4 cents	16.3	10.4	8.0	10.8	8.1	5.4	3.4	1.0	27.8	13.8	11.2	11.0	3.4	10.6	8.8	29.4
37.5–39.9 cents	12.6	14.8	15.8	10.5	13.4	8.1	7.0	3.0	16.4	21.2	23.0	16.6	2.7	11.6	14.8	12.9
40.0–42.4 cents	7.7	8.7	13.7	10.2	15.2	7.2	8.6	6.0	5.8	12.7	21.4	14.6	.3	3.0	6.8	10.0
42.5–44.9 cents	6.0	7.5	6.7	9.4	11.2	8.6	7.8	5.8	5.2	9.9	8.7	14.8	-----	1.8	1.3	5.9
45.0–47.4 cents	3.6	5.4	5.8	7.7	6.6	8.7	8.7	9.3	2.7	5.6	6.2	8.4	1.0	.7	.5	3.4
47.5–49.9 cents	2.9	3.9	5.4	6.3	6.4	8.5	8.9	7.9	1.4	2.6	5.4	7.3	1.0	.5	.6	1.1
50.0–52.4 cents	3.3	4.2	5.8	6.6	8.8	11.2	12.3	12.9	.9	1.7	3.8	3.5	-----	-----	-----	.5
52.5–57.4 cents	1.0	4.1	4.4	8.8	2.9	10.7	9.4	17.8	.2	1.7	2.8	3.3	-----	.2	-----	1.6
57.5–62.4 cents	4.7	2.4	2.9	4.8	14.5	6.9	7.8	10.2	-----	.6	.6	2.0	-----	-----	-----	-----
62.5–67.4 cents	1.7	2.3	2.8	4.1	5.3	7.3	8.1	9.6	-----	.1	.3	.6	-----	-----	-----	-----
67.5–72.4 cents	.6	2.3	2.8	3.2	2.0	7.4	8.3	7.3	-----	-----	.1	.7	-----	-----	-----	-----
72.5–77.4 cents	-----	1.1	1.6	2.2	-----	3.4	4.7	5.6	-----	-----	-----	-----	-----	-----	-----	-----
77.5–82.4 cents	-----	.3	.2	.3	-----	.9	.7	.8	-----	-----	-----	-----	-----	-----	-----	-----
82.5–87.4 cents	.1	(1)	(1)	.3	.2	(1)	.1	.8	-----	-----	-----	-----	-----	-----	-----	-----
87.5–92.4 cents	-----	.1	.1	.1	-----	.2	.4	.1	-----	-----	-----	.1	-----	-----	-----	-----
92.5–97.4 cents	-----	(1)	(1)	(1)	-----	(1)	.1	.1	-----	-----	-----	-----	-----	-----	-----	-----
97.5 cents and over	-----	(1)	-----	(1)	-----	(1)	-----	.1	-----	-----	-----	-----	-----	-----	-----	-----
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	1,408	6,834	5,369	4,004	455	2,096	1,786	1,596	657	3,104	2,343	1,588	296	1,634	1,240	820

[1] Less than 1/10 of 1 percent.

TABLE 74.—*Simple percentage distribution according to average hourly earnings of all employees in integrated mills in the South, by plant average hourly earnings, August 1938*

Average hourly earnings	Plants whose average hourly earnings are—								
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0
Under 12.5 cents	3.8	1.2	0.3	0.3	0.2	0.1	(1)	-------	-------
12.5–14.9 cents	1.8	2.1	.7	.5	.2	(1)	-------	-------	-------
15.0–17.4 cents	7.8	1.9	1.8	.8	.7	.1	(1)	-------	-------
17.5–19.9 cents	5.2	5.1	2.9	.6	.6	.2	(1)	-------	-------
20.0–22.4 cents	45.6	8.9	3.3	2.9	.8	.7	.4	.1	1.2
22.5–24.9 cents	16.2	12.2	4.8	2.9	2.6	2.5	4.5	.6	.4
25.0–27.4 cents	8.6	23.1	3.7	5.1	4.1	2.2	1.5	1.3	1.4
27.5–29.9 cents	4.4	18.3	30.0	13.8	4.2	1.4	1.6	.1	2.3
30.0–32.4 cents	2.3	9.9	24.1	27.8	27.1	17.8	8.3	5.0	2.8
32.5–34.9 cents	2.0	5.9	9.8	11.9	15.9	18.0	14.5	3.5	3.8
35.0–37.4 cents	1.0	2.8	6.9	9.0	11.6	12.6	11.8	12.6	12.2
37.5–39.9 cents	.5	2.1	2.7	5.9	7.0	9.2	9.8	11.4	8.1
40.0–42.4 cents	.5	3.6	1.7	4.7	5.8	7.1	8.5	16.2	9.5
42.5–44.9 cents	.1	1.1	1.9	3.7	4.4	6.5	8.2	12.0	8.7
45.0–47.4 cents	-------	1.0	2.2	3.2	4.1	6.2	7.6	11.0	8.6
47.5–49.9 cents	-------	.2	2.4	3.9	3.8	5.1	6.3	5.0	6.3
50.0–52.4 cents	-------	.3	.4	.9	3.1	3.3	5.6	5.4	4.5
52.5–57.4 cents	-------	.3	.1	1.6	2.4	3.9	7.5	9.8	13.1
57.5–62.4 cents	.2	-------	.2	.2	.9	1.6	2.1	1.9	10.1
62.5–67.4 cents	-------	(1)	.1	.1	.3	.7	.9	2.9	5.4
67.5–72.4 cents	-------	-------	(1)	.2	.1	.4	.5	.8	.6
72.5–77.4 cents	-------	-------	(1)	(1)	.1	.1	.2	.3	.8
77.5–82.4 cents	-------	-------	(1)	(1)	(1)	.3	.1	-------	.1
82.5–87.4 cents	-------	-------	-------	(1)	(1)	(1)	(1)	.1	-------
87.5–92.4 cents	-------	-------	-------	-------	-------	(1)	.1	-------	-------
92.5–97.4 cents	-------	-------	-------	(1)	(1)	-------	(1)	-------	.1
97.5 cents and over	-------	-------	-------	(1)	(1)	-------	-------	-------	-------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	1,093	4,083	2,856	13,610	13,004	9,899	6,613	1,188	780

[1] Less than 1/10 of 1 percent.

TABLE 74-a.—*Simple percentage distribution according to average hourly earnings of skilled employees in integrated mills in the South, by plant average hourly earnings, August 1938*

Average hourly earnings	Plants whose average hourly earnings are—								
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0
Under 12.5 cents	0.4	-------	-------	0.1	-------	-------	-------	-------	-------
12.5–14.9 cents	.4	0.1	-------	(1)	-------	-------	-------	-------	-------
15.0–17.4 cents	.4	.1	0.5	.1	-------	-------	-------	-------	-------
17.5–19.9 cents	1.1	.2	.3	.2	0.1	(1)	-------	-------	-------
20.0–22.4 cents	27.1	1.1	.2	.7	.1	(1)	-------	-------	-------
22.5–24.9 cents	12.6	4.4	1.2	.6	.1	0.1	-------	-------	-------
25.0–27.4 cents	15.2	5.5	3.1	.9	.3	.1	-------	0.3	-------
27.5–29.9 cents	16.4	17.1	3.7	3.2	.5	.1	0.2	-------	-------
30.0–32.4 cents	8.6	16.6	9.6	7.0	1.9	1.6	1.8	-------	0.4
32.5–34.9 cents	8.2	12.9	18.5	11.2	6.8	2.0	2.2	1.6	.4
35.0–37.4 cents	4.1	9.7	15.9	12.7	9.7	4.1	4.3	5.4	.8
37.5–39.9 cents	2.2	7.9	8.4	10.7	9.2	5.9	2.6	6.0	2.7
40.0–42.4 cents	2.2	13.5	7.0	11.1	11.9	9.2	5.5	7.0	1.9
42.5–44.9 cents	.4	4.2	7.8	8.9	10.9	11.4	8.0	10.1	6.6
45.0–47.4 cents	-------	3.8	9.5	9.6	11.9	15.8	13.3	5.4	4.3
47.5–49.9 cents	-------	.6	10.2	12.6	12.2	15.8	13.1	8.2	1.9
50.0–52.4 cents	-------	1.2	1.8	3.1	10.8	10.7	14.1	7.3	8.9
52.5–57.4 cents	-------	1.0	.3	5.2	8.5	13.3	22.3	28.2	26.4
57.5–62.4 cents	.7	-------	.9	.7	3.2	5.3	6.5	5.7	26.0
62.5–67.4 cents	-------	.1	.5	.4	1.0	2.3	2.9	10.4	14.7
67.5–72.4 cents	-------	-------	.2	.6	.3	1.0	1.6	3.2	1.9
72.5–77.4 cents	-------	-------	.2	.1	.5	.2	.8	.9	2.3
77.5–82.4 cents	-------	-------	.2	.1	(1)	1.1	.4	-------	.4
82.5–87.4 cents	-------	-------	-------	.1	(1)	(1)	.1	.3	-------
87.5–92.4 cents	-------	-------	-------	-------	-------	(1)	.2	-------	-------
92.5–97.4 cents	-------	-------	-------	(1)	(1)	-------	.1	-------	.4
97.5 cents and over	-------	-------	-------	.1	.1	-------	-------	-------	-------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	259	1,059	653	3,888	3,445	2,703	1,891	316	258

[1] Less than 1/10 of 1 percent.

TABLE 74–b.—*Simple percentage distribution according to average hourly earnings of semiskilled employees in integrated mills in the South, by plant average hourly earnings, August 1938*

Average hourly earnings	Plants whose average hourly earnings are—								
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0
Under 12.5 cents	3.2	0.3	0.1	(1)	0.1				
12.5–14.9 cents	2.5	.7	.6	(1)	.1				
15.0–17.4 cents	2.4	1.3	.8	0.3	.3	0.1			
17.5–19.9 cents	5.9	5.2	1.3	.4	.5	.1	(1)		
20.0–22.4 cents	53.0	8.1	1.6	1.0	.5	.2	(1)	0.1	
22.5–24.9 cents	23.0	13.9	2.5	1.4	.6	.2	0.1	.6	
25.0–27.4 cents	9.0	31.8	3.3	3.5	2.8	.6	.5	.6	
27.5–29.9 cents	.7	22.8	36.2	15.7	4.6	1.5	.9		1.0
30.0–32.4 cents	.3	10.2	34.6	38.4	28.7	18.6	6.0	.9	1.0
32.5–34.9 cents		4.6	10.7	16.0	23.2	21.5	15.4	3.0	2.0
35.0–37.4 cents		.6	6.6	10.7	17.1	19.6	15.0	11.0	14.1
37.5–39.9 cents		.1	1.2	5.7	9.0	14.8	16.4	14.4	5.0
40.0–42.4 cents		.2	.2	2.9	5.3	9.0	14.1	23.3	11.4
42.5–44.9 cents		.1	.2	2.3	3.2	6.7	12.1	15.0	15.1
45.0–47.4 cents		(1)		.9	1.8	3.6	8.0	15.9	18.2
47.5–49.9 cents		.1	.1	.5	1.2	1.6	5.4	4.5	12.1
50.0–52.4 cents				.1	.5	.7	3.2	6.1	3.4
52.5–57.4 cents		(1)		.2	.4	.7	2.3	3.9	11.4
57.5–62.4 cents				(1)	.1	.2	.5	.6	4.0
62.5–67.4 cents				(1)		.1	.1	.1	1.3
67.5–72.4 cents					(1)	.2			
72.5 cents and over						(1)			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	589	2,183	1,421	6,529	6,225	4,806	3,050	667	298

[1] Less than 1/10 of 1 percent.

TABLE 74–c.—*Simple percentage distribution according to average hourly earnings of unskilled employees in integrated mills in the South, by plant average hourly earnings, August 1938*

Average hourly earnings	Plants whose average hourly earnings are—								
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	40.0 and under 42.5	42.5 and under 45.0	45.0 and under 50.0
Under 12.5 cents	9.4	4.9	0.9	1.2	0.5	0.3	0.1		
12.5–14.9 cents	1.7	8.4	1.7	2.1	.6	.1			
15.0–17.4 cents	29.8	5.7	4.6	2.8	2.0	.3	.1		
17.5–19.9 cents	8.1	10.8	7.9	1.3	1.5	.8	.1		
20.0–22.4 cents	48.0	20.7	8.8	9.4	2.1	2.4	1.5		4.0
22.5–24.9 cents	3.0	17.4	11.8	8.5	8.8	9.8	17.4	1.5	1.3
25.0–27.4 cents		22.9	5.0	13.6	10.5	7.9	5.1	5.4	4.9
27.5–29.9 cents		8.2	40.6	22.7	7.5	2.6	4.6	.5	6.7
30.0–32.4 cents		.8	17.3	31.9	50.0	34.7	19.9	25.8	8.0
32.5–34.9 cents		.2	.9	4.4	11.8	28.9	26.9	8.3	10.3
35.0–37.4 cents				.9	3.3	8.1	14.4	29.2	22.8
37.5–39.9 cents			.5	.3	.8	1.8	5.5	9.7	18.3
40.0–42.4 cents				.5	.3	1.0	1.7	7.8	15.6
42.5–44.9 cents				.2	.1	.5	1.4	5.4	2.7
45.0–47.4 cents					.2	.7	.4	3.9	.9
47.5–49.9 cents				.1	(1)	.1	.4	1.5	3.6
50.0–52.4 cents				.1			.2		.9
52.5–57.4 cents						(1)	.1	1.0	
57.5–62.4 cents				(1)		(1)	.1		
62.5 cents and over							.1		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	235	841	782	3,193	3,334	2,390	1,672	205	224

[1] Less than 1/10 of 1 percent.

TABLE 75.—*Simple percentage distribution according to average hourly earnings of employees in spinning mills in the South, by skill and plant average hourly earnings, August 1938*

Average hourly earnings	Total						Skilled					
	Plants whose average hourly earnings are—											
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0
Under 12.5 cents	2.8	.6	.4	.1	------	------	------	------	------	------	------	------
12.5–14.9 cents	2.0	2.6	.3	.1	------	.1	------	------	------	------	------	------
15.0–17.4 cents	8.6	1.8	.6	.4	.2	.1	------	.8	------	------	------	------
17.5–19.9 cents	11.4	3.9	1.0	.6	(1)	.2	2.5	------	------	------	------	------
20.0–22.4 cents	23.9	5.8	3.1	.8	.1	1.3	5.0	------	------	------	------	------
22.5–24.9 cents	27.2	10.2	4.7	1.9	1.0	1.3	7.6	1.7	.6	------	------	------
25.0–27.4 cents	12.0	21.4	6.4	2.7	2.4	.9	29.5	9.2	------	------	------	------
27.5–29.9 cents	5.5	20.1	16.9	1.8	2.0	2.5	12.7	24.1	1.1	------	------	------
30.0–32.4 cents	3.7	24.8	33.0	23.5	17.4	6.6	9.3	16.7	7.2	3.8	1.4	------
32.5–34.9 cents	.4	3.0	13.9	38.0	28.3	15.1	1.7	5.8	10.4	6.5	3.3	2.1
35.0–37.4 cents	1.0	2.2	8.3	13.3	17.4	20.7	14.3	6.7	17.1	14.1	5.1	3.5
37.5–39.9 cents	.5	2.0	4.6	8.5	11.7	18.0	6.7	19.2	11.6	23.8	6.5	3.5
40.0–42.4 cents	.4	.8	2.5	4.4	9.0	11.9	5.0	7.5	10.4	17.3	20.6	14.5
42.5–44.9 cents	.1	.2	.8	1.8	4.6	6.9	.8	1.7	4.4	14.6	25.7	6.3
45.0–47.4 cents	------	.3	2.3	1.2	3.0	4.5	------	3.3	24.3	10.8	18.1	7.6
47.5–49.9 cents	.1	.3	.5	.3	.8	4.5	.8	3.3	3.9	2.7	5.1	20.1
50.0–52.4 cents	.1	------	.3	.2	1.1	1.9	.8	------	2.2	1.6	6.9	7.6
52.5–57.4 cents	.1	------	(1)	.3	.6	1.7	1.7	------	.6	2.7	2.2	13.9
57.5–62.4 cents	.1	------	.1	.1	.1	.7	.8	------	1.7	1.1	1.4	7.6
62.5–67.4 cents	.1	------	.3	------	.2	.5	.8	------	3.3	------	2.2	5.6
67.5–72.4 cents	------	------	(1)	(1)	------	.5	------	------	.6	.5	------	6.3
72.5–77.4 cents	------	------	------	(1)	.1	.1	------	------	------	.5	.7	1.4
77.5–82.4 cents	------	------	(1)	------	(1)	------	------	------	.6	------	.4	------
82.5 cents and over	------	------	------	------	(1)	------	------	------	------	------	.4	------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	1,860	1,576	2,106	3,011	3,450	1,658	119	120	181	185	276	144

Average hourly earnings	Semiskilled						Unskilled					
	Plants whose average hourly earnings are—											
	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0	20.0 and under 25.0	25.0 and under 30.0	30.0 and under 32.5	32.5 and under 35.0	35.0 and under 37.5	37.5 and under 40.0
Under 12.5 cents	1.1	------	.3	.1	------	------	10.8	3.8	1.0	------	------	------
12.5–14.9 cents	2.0	.1	.3	(1)	------	------	3.0	15.4	.5	.3	------	.3
15.0–17.4 cents	7.2	.8	.3	.1	------	------	17.7	6.9	1.9	2.0	1.2	.6
17.5–19.9 cents	9.9	1.3	1.0	.2	(1)	.1	21.3	17.4	1.4	3.6	------	.6
20.0–22.4 cents	24.7	4.0	1.5	.3	.1	.2	27.4	17.0	10.2	4.3	.5	5.8
22.5–24.9 cents	31.8	12.5	2.7	1.3	.3	------	15.0	3.8	13.8	6.9	4.6	6.4
25.0–27.4 cents	12.4	24.7	5.6	.9	.8	.3	4.5	11.5	11.9	15.3	10.5	3.6
27.5–29.9 cents	6.2	22.4	16.8	1.6	1.6	.9	------	7.7	23.6	3.8	4.6	9.1
30.0–32.4 cents	4.0	27.4	37.2	24.2	13.2	4.4	.3	16.5	29.0	28.4	43.3	17.6
32.5–34.9 cents	.4	3.3	16.8	41.7	30.9	13.6	------	------	4.8	30.2	28.1	26.5
35.0–37.4 cents	.1	2.2	9.1	15.0	21.5	22.6	------	------	1.7	2.3	5.3	21.6
37.5–39.9 cents	.1	.8	5.0	8.6	14.7	23.3	------	------	------	.8	1.4	4.9
40.0–42.4 cents	.1	.3	2.2	4.1	9.7	14.4	------	------	------	.3	.2	1.5
42.5–44.9 cents	------	.1	.6	1.0	3.4	8.6	------	------	------	.3	------	.9
45.0–47.4 cents	------	.1	.3	.5	2.0	5.3	------	------	------	.5	.3	.3
47.5–49.9 cents	------	------	.2	.1	.6	3.7	------	------	------	.5	------	.3
50.0–52.4 cents	------	------	.1	.1	.7	1.8	------	------	.2	.5	------	------
52.5–57.4 cents	------	------	------	.2	.5	.7	------	------	------	------	------	------
57.5–62.4 cents	------	------	------	(1)	(1)	------	------	------	------	------	------	------
62.5–67.4 cents	------	------	------	------	(1)	.1	------	------	------	------	------	------
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.00
Number of employees	1,408	1,196	1,505	2,433	2,586	1,185	333	260	420	393	588	329

[1] Less than 1/10 of 1 percent.

In integrated mills averaging less than 30 cents—and it will be recalled from table 46 that they constituted about 10 percent of the integrated mills and employed about 5 percent of the workers in the southern sample—it is evident that a 25-cent wage, as an absolute minimum, would tend to affect the wage-rate structure. It involves fundamentally an increase of at least 10 percent and, in very exceptional cases, of nearly 50 percent in absolute minimum rates. The unskilled minimum of 25 cents is well above the August average of the semiskilled and nearly equals the average level for skilled occupations in the lowest-wage plants. A resurvey of wages in these mills at the present time would reveal the extent to which rates had congested at the 25-cent level. To the extent that adjustments of skilled and semiskilled wages were made to maintain their relationship to unskilled wages, the average hourly earnings of all workers in the plant would be further increased.

Among the group of mills averaging 20 to 25 cents, an increase of possibly 4.6 cents (almost exactly 20 percent) may have been required in average hourly earnings for the plants as a whole to bring workers below 25 cents to that level. If skilled workers were given an average increase of 10 percent to partially maintain their status over the unskilled, it would have involved a further increase in the average for the plant of about 0.8 cent. Under these conditions, semiskilled and unskilled workers in these mills would all receive about 25 cents and skilled workers would average 30 cents or less.

The higher the minimum wage level, either with reference to wages in a group of mills or with reference to the industry as a whole, the more difficult it becomes to estimate quantitatively the influence which it will have on average hourly earnings. All that can be shown exactly is the groups of mills that will be most affected, and the greatest amount that average hourly earnings of a group of mills must be raised to bring all workers below 25 cents or 30 cents, for example, to 25 cents or 30 cents as the case may be. It is also possible to indicate in which groups of mills a given minimum wage promises to necessitate merely individual wage readjustments and in which groups it may set up severe pressure for equalizing wage-rate changes above the minimum.

The possibilities of estimation are illustrated in a study of the probable incidence of an absolute minimum rate of 30 cents an hour or more. An examination of the distribution of earnings, both in northern and southern mills averaging 42.5 cents an hour or more, indicates that in these mills in both regions few workers earn less than 30 cents. The number earning less than 30 cents, and perhaps even 32.5 cents, is so small that a readjustment of their wages to 30 cents would appear possible without leading to a general wage change. It might lead merely to a change in the types of workers hired. While

there is little difference between the wage distributions of northern and southern mills averaging 42.5 cents an hour or more, it will be recalled that most southern integrated mills average less than this amount. One may say, therefore, that, among the 59 or more integrated mills in the industry paying more than 42.5 cents (about one-seventh of the mills with about one-sixth of the workers shown in table 46), a minimum wage of 30 cents will have a negligible influence on average hourly earnings. Such mills, however, employ about two-thirds of the workers in the North and only about 5 percent of the workers in the South.

In plants with average hourly earnings of less than 42.5 cents, an absolute minimum rate of 30 cents for all workers will have a different incidence in the North and in the South because of the prevalence of two minimum standards in southern mill practice. There are a sufficient number of mills in the North and the South averaging 37.5 to 42.5 cents to make comparisons of wage scales at these levels possible. In the North the principal difference between the distribution of wages in mills at this level and in mills averaging 42.5 cents or more is in the rising percentage of the workers who receive less than 30 cents an hour. In all groups of northern integrated mills, earnings of 30 cents or more predominate among the unskilled and a rate of 30 cents will primarily require incidental adjustments in the cases of those individuals employed at less than 30 cents. They constitute less than one quarter of the unskilled workers in mills averaging 37.5 to 40 cents and a 2.5-cent increase will bring almost all of them, except learners, to a 30-cent rate. In the North there is no concentration of workers at particular rates below 30 cents, but rather a gradual "tailing off" of the distribution. At most, to bring the workers to a 30-cent minimum in northern integrated mills averaging 37.5 to 42.5 cents, will involve increasing average hourly earnings for all workers by less than 0.2 of a cent and, even among mills in this group with earnings of 37.5 to 40 cents, the increase in the average will be only about 0.4 cent.

In the southern mills averaging 37.5 to 42.5 cents, there is a heavy concentration of the unskilled at 30 to 35 cents and of the semiskilled at 30 to 40 cents, as in the North. But there is also present a large group of the unskilled, constituting about 5 percent of the total working force, at rates of 22.5 to 27.5 cents. It is difficult to estimate the impact in these mills, and in mills paying less per hour, of an absolute minimum rate of 30 cents or more. Under the N. R. A. the wage scale was not subjected to the pressure implicit in bringing this group to the same minimum rate as applied to other unskilled and semiskilled workers. If social pressures were to lead to the maintenance of the full difference between the earnings of these groups, the wage increase required by a 30-cent order would be in the order of 5 cents

in southern mills averaging 37.5 to 42.5 cents. This would be an average increase of 12.5 percent for this group of southern integrated mills. It represents an extreme assumption that no further congestion develops at the minimum rate of 30 cents; an assumption which has no support whatsoever in the experience of the period following the adoption of the code, but which rests entirely upon the supposition that filling hands cannot be hired at the same rate as yard laborers. As the other extreme, one would assume no general change in rates, but merely the readjustment of rates for individual workers and classes of workers paid less than 30 cents. In the southern mills averaging 37.5 to 42.5 cents, this would involve an increase in average hourly earnings of the plant as a whole of less than 0.5 cent. Thus among this group of southern integrated mills that are paying 1 to 6 cents more than the average for all integrated mills in the South, the mere adjustment of wages of less than 30 cents to 30 cents would have little more effect than it would have in northern mills with the same plant average hourly earnings. The southern mills averaging 37.5 to 42.5 cents, however, would face a more serious problem than the northern mills; they face the dilemma either of eliminating an existing wage difference between one group of unskilled workers and other unskilled and semiskilled workers, or of granting approximately a 5-cent general increase.

Among lower wage establishments the 30-cent absolute minimum, in and of itself, will lead to more substantial adjustments of average hourly earnings than among southern integrated mills paying 37.5 cents or more. Its effect will be especially marked among mills paying as low as 25 to 30 cents on the average. Among the latter mills there is a heavy concentration of unskilled workers at 17.5 to 27.5 cents and of semiskilled at 22.5 to 32.5 cents. To bring all of these workers merely to 30 cents will eliminate all effective differences between semiskilled and unskilled occupations, excepting as regards about 16 percent of the semiskilled workers now receiving 30 cents or more, unless some wage scales are raised above the minimum. Setting this problem aside, however, the average hourly earnings of these plants might be raised as much as 4.7 cents merely by bringing all workers now below 30 cents to 30 cents. This group of plants averaged 27.5 cents in August 1938. The full extent of the impact of a 30-cent minimum in this group of mills can only be estimated if some assumption is made as to the probability that raising 73 percent of the workers to 30 cents might necessitate paying some of this group more than minimum rates and of increasing rates for that quarter of the workers now above 30 cents.

A 40-cent absolute minimum, will quite obviously affect the wage structure of the entire industry. Relatively high-wage mills in both

the North and South, for example, pay most of their unskilled workers less than 40 cents. The lowest-wage mills in the South would be called upon to more than double the minimum rate which they paid in August. While less severe than the increase at the time of the N. R. A., a 40-cent minimum presupposes extensive increases, in the case of the lowest-wage mills increases larger than the average increase for the industry as a whole in 1933.

The question may be asked as to what the highest minimum wage is which may be set without imposing more than individual wage readjustments on southern integrated mills paying more per hour in August 1938 than average mills. Because of the existence of two minima in southern mills, it is quite possible that a general wage increase of as much as 5 cents might result from an absolute 30-cent minimum, even in mills averaging 37.5 to 42.5 cents. Existing rates in such mills would almost certainly not be generally disturbed by a wage order embodying two wage standards, such as existed under the N. R. A. code.

A minimum rate of 25 cents for yard laborers and sweepers and of 30 cents for all others would leave the wage structure of southern mills averaging 37.5 to 42.5 cents almost completely unaffected. It might conceivably raise average hourly earnings in these mills about 0.2 cent. As a matter of fact, even among the group of integrated mills averaging as low as 32.5 to 35.0 cents an hour, the exclusion of yardmen and sweepers from a wage order of 30 cents would make it possible for such plants to comply with the order if they increased average hourly earnings in the plants no more than 1⅞ cents. This increase would even permit the mills to lift the earnings of three-quarters of the semiskilled, now at 30 cents or more, by 2.5 cents. If the mills averaging 32.5 to 35 cents per hour merely raised unskilled workers now getting less than 25 cents to 25 cents and those now getting 27.5 to 30 cents to 30 cents, and raised all semiskilled workers at less than 30 cents to 30 cents, the average hourly earnings of all workers in the mills would not increase more than 1 cent. In other words, the impact of a minimum wage order providing two minima, 25 and 30, would be largely confined to the 125 southern integrated mills shown in table 46 that averaged less than 35 cents. They employed about 57,000 out of 200,000 workers. In some of these plants, the wages of less than one-fifth of the workers would be affected; in some extremely low-wage mills a 25–30-cent order would affect the wages of almost all workers. But among the southern mills averaging as much as 35 cents, the effect of a 25–30-cent order would be little greater than it would be among northern mills; in both cases it would leave the wage structure and the average hourly earnings of the group essentially unchanged.

In this connection, it may be noted that two minimum standards of 27.5 to 32.5 cents would probably have less effect on labor costs in southern mills paying more than 32.5 cents on the average than a flat minimum of 30 cents would have. In mills averaging 40 to 42.5 cents, such a rate would involve raising earnings for perhaps half of the unskilled workers, some to 27.5 cents, others to 32.5 cents; and raising about one-twelfth of the semiskilled workers to 32.5 cents. In addition, in mills now paying a 30-cent wage to some unskilled workers, it might involve raising their semiskilled workers by 2.5 cents in order to maintain a wage difference between the unskilled and semiskilled. Such increases would raise average hourly earnings for plants averaging 40 to 42.5 cents by 0.5 to 0.8 of a cent, depending upon the increases above 32.5 cents that were necessary. For the group of mills averaging 37.5 to 40.0 cents, the corresponding increases under the respective assumptions would average 0.8 to 1.4 cent per hour for all workers. These figures contrast with increases of 0.5 cent that would certainly be required by a flat 30-cent minimum and that might approach 5 cents as an upper limit necessary to maintain existing differences between some groups of unskilled workers and semiskilled workers. Even among mills averaging 32.5 to 35.0 cents, the increases necessitated by 27.5–32.5-cent minima would approximate 10 percent on the present average hourly earnings.

Finally, in discussing classified minimum rates that would appear not to disturb the wage-rate structure of southern integrated mills paying more than average wages in August 1938, it should be pointed out that only a small proportion of the skilled workers (of whom weavers constitute the largest group) received less than 40 cents in August in southern mills averaging 37.5 cents or more. Thus, among mills averaging 37.5 to 40 cents, about 14 percent of the skilled workers received less than 40 cents and nearly half of these in turn received as much as 37.5 cents. Among southern mills averaging 40 to 42.5 cents about 11 percent of the skilled workers received less than 40 cents in August 1938. Furthermore, there is no concentration of the skilled workers in these mills at rates so close to 40 cents as to suggest that a minimum rate of 40 cents for skilled workers would substantially affect basic rate schedules. A classified rate of 40 cents for skilled workers, unlike an absolute minimum of 40 cents for all workers, would involve important administrative problems and would affect individual employment conditions rather than the basic wage scales of mills paying more than average wages in August 1938. Its impact on the general wage scale would probably begin to appear in mills averaging 35 to 37.5 cents, and might be substantial in mills averaging 32.5 to 35 cents.

Summary

Summary

The cotton-goods industry employed about 359,000 workers in August 1938. It is the largest branch of the textile industry under the jurisdiction of the first industry committee appointed by the Administrator of the Fair Labor Standards Act. About one-fifth of the workers in cotton-goods mills are employed in establishments manufacturing yarn or thread for sale. The balance are almost all employed in establishments spinning yarn for their own use and weaving fabrics over 12 inches wide. Weaving mills that purchase their yarn furnish a small and decreasing proportion of the total employment. (Chapter 1.)

The industry is highly competitive in all of its branches. Not only are there a large number of mills making staple fabrics, like narrow sheetings and print cloth, but it is comparatively easy to convert a standard mill from the production of one type of cloth to another. Under such conditions it has proved impossible over extended periods of time for a group of mills by virtue of concentration on one line of production to show high rates of return while mills on other constructions of cloth are showing losses.

The industry grew rapidly up to the time of the World War. In the period from 1890–1910, expansion occurred more rapidly in the South than in New England. At that time expansion was an addition to the capacity of the industry, not a relocation of capacity. Per capita consumption of cotton continued to rise.

While there was some evidence of over-expansion even before the war, war profits furnished the funds necessary for the rehabilitation of equipment and for still further expansion. When demand stabilized in the post-war period, equipment began to be scrapped on a large scale. There had been an extensive withdrawal of obsolete mule spindles, primarily located in New England, from 1900 to 1920 but they had been replaced by ring-spinning frames. The continued withdrawal of mule spindles after 1920 and a cessation of new installations led at first to a moderate decrease in the number of spindles in place in New England. The movement by the end of the 1920's was proceeding rapidly with the withdrawal from New England, not alone of mule spindles, but of ring-spinning frames also. The South has had a negligible growth of spindles in place since 1930. From 1925 to 1938 there was a decrease of about 11,500,000 spindles in place

throughout the country, leaving about 26,300,000 in place at present. (Chapter 2.)

Despite this apparent decrease of capacity and despite the fact that more cotton was processed in the crop-year 1936–37 than in any other single year in our history, there were as many idle spindles in that year as there had been in the relatively prosperous year 1923. Competition has had the effect of increasing effective capacity by increasing the number of hours of plant operation. Spindles, when used today, are used more hours per year than was formerly the case. The movement tending to universalize 2-shift operation was hastened under the N. R. A. A number of plants operated on three shifts in 1937. Third-shift operation results in a decrease in costs large enough to be important under conditions of severe competition. Such decreased costs are not large enough materially to increase the market for cotton goods. The widespread adoption of a third shift will spell death to from three to six million more spindles. (Chapter 3.)

Profits in the industry averaged 2½ to 3 percent per year on textile investment over the 3½ years beginning in January 1933. It must be remembered, however, that part of this so-called textile investment was continuously idle. Some companies in even the worst periods made a profit; in good years their profits run to more than 20 percent. In periods of rising prices as much as 91 percent of the sales were made at a profit; in the depressed first half of 1935, only 26 percent.

Labor costs are about one-quarter of the value of the product of the industry in general. They range up to 40 percent of manufacturing costs on fine goods. However, where labor costs are a large proportion of manufacturing costs, wages tend to be above the average for the industry. Consequently, in such instances, relatively few employees will be affected by the establishment of a minimum wage. (Chapter 4.)

The mill margin, the amount available to the manufacturer after paying for raw cotton, has been lower in recent months than it has been over any extended period since 1933. The evidence seems to indicate that any substantial increase of costs will result in corresponding increases of selling prices. (Chapter 5.)

The significance of any given mill margin depends upon the quality of the equipment in use, the capacity of the management, and labor costs. Large increases in output per man-hour have occurred, even in the last 10 years, and have made possible the payment of higher wages, sale at a lower mill margin or a combination of both. However, there are marked differences in the quality of equipment from one plant to another. At least two-fifths of the spindles in place are nearly 30 years old and have been rendered obsolete especially by the development of long-draft spinning in the last decade. Perhaps one-third of the spindles are equipped with long-draft and may thus be

availed of to achieve increases of output per man-hour ranging up to 50 percent over what is possible in 1910 equipment.

It has been possible to keep obsolete equipment in use in some mills that have been able to pay wages below the average of the industry. In general it is true that low wages in cotton textiles are associated with low output per man-hour. There are cases in which low-wage mills achieve high output and other cases in which relatively high wages are paid despite low output, but these are the exceptions. In general, therefore, an equalization of wage scales will necessitate modernization of the more obsolete mills, or will result in a transference of business to higher-wage mills that are now partially idle because of competition from low-wage mills. (Chapter 6.)

Any substantial increase in the price of cotton goods will tend to affect both foreign trade and the domestic market. The American cotton-textile industry exports more cotton goods than it imports, but exports constitute a small proportion of the total volume of production. The industry is primarily dependent upon the domestic market. (Chapter 7.)

There are no exact measures of the relationship of cotton textile prices and domestic demand. It would appear that an increase of raw cotton prices sufficient to increase the cost of the finished goods by about 50 percent is adequate to decrease the consumption of cotton goods by about one-sixth. In many lines of use there is no relationship between cotton-goods prices and demand. The price of cotton goods does not, for example, directly affect the demand for automobiles and shoes, though both industries are large buyers of cotton goods. In some other uses there is the possibility of finding cheaper substitutes for cotton. The development of paper towels, napkins, handkerchiefs, bags, and gummed tape are all evidence, in part, of successful competition with cotton.

While about 40 percent of the cotton goes into industrial uses, about 40 percent is used for apparel and 20 percent for household furnishings. The most striking feature of the demand for cotton goods for domestic use is the very rapid increase in the expenditures for cotton goods of families at the lower end of the income scale as their income increases. It has been estimated that it would be necessary to consume 50 percent more cotton than was used in 1929 for apparel and household uses to enable wage earners and farmers to have an adequate minimum supply of cotton goods. At higher income levels, while the demand for cotton goods also increases, there is a more rapid expansion of demand for textiles made of other fibers. Therefore cotton mills stand to benefit particularly from any program or tendency that diverts an increasing share of a rising national income to the lower-income groups. (Chapter 8.)

This is the economic background of an industry which on the whole pays low wages in comparison with other manufacturing industries. In August 1938 the average hourly earnings in cotton textiles was 38.3 cents. The average in northern mills was 44.6 cents. Northern cotton mills, on the whole, paid less than was paid for similar types of skill in other northern industries. Throughout the whole post-war period there is evidence of severe competitive pressure from southern mills on the northern cotton wage scale. In the South in August 1938 cotton mills averaged 36.5 cents. It is to be noted that cotton textile wages in the South are not notably lower than wages for similar types of skill in other industries and make for higher incomes than can be earned in agriculture.

The wage increases of 1936 and 1937 created a wage differential of about 10.3 cents between the regions. The difference in August 1938, of about 8 cents was little greater than had existed under the N. R. A. and was substantially less than the differential prior to the depression. (Chapter 9.)

There can be no question of the fact that average hourly earnings are less in southern mills, considered as a whole, than in northern mills. However, many southern mills pay as much as northern mills. More than one-sixth of the southern mills with more than one-quarter of the workers averaged more than 40 cents an hour. The northern average is high primarily because few mills pay less than an average of 40 cents, whereas 5 percent or more of the southern workers are in mills averaging less than 30 cents. (Chapter 10.)

The distribution of the earnings of individual workers in August 1938 indicates that about one-tenth of the workers in the industry were affected by the 25-cent minimum wage. Virtually all of these were workers in southern mills, and in at least one-third of the cases the wage increase necessitated by the Fair Labor Standards Act was not more than 2.5 cents.

Approximately one-fifth of the workers in the industry received less than 30 cents, while nearly 70 percent received less than 40 cents in August 1938. In northern mills there is a heavy concentration at rates of 32.5 cents an hour to 35 cents; in southern mills, at 30 to 32.5 cents. (Chapter 11.)

One of the most striking aspects of the southern wage distribution is the continuation of two minimum wage standards which existed under the code. The code permitted wages of 22.5 cents an hour to outside laborers and sweepers and scrubbers. For other workers the minimum wage was 30 cents. In August 1938, almost two-thirds of the laborers, sweepers, and scrubbers received 20 to 27.5 cents an hour and less than one-sixth received 30 cents or more. On the other hand 40 percent of the workers in unskilled occupations, that

had clearly been subject to the 30-cent code minimum, received 30 to 32.5 cents and about 29 percent received less than 30 cents.

Northern mills had also had two legal minima under the N. R. A. However, in practice they never were able to avail themselves of the right to hire laborers at a lower rate than that paid to filling hands, for example. Thus, in effect, the lower rate permitted in all mills gave rise to a further difference of wages between the two regions than the differential of 2.5 cents established in the code. In August 1938, three-quarters of the laborers, sweepers, and scrubbers received 32.5 cents or more. (Chapter 12.)

There appear to be no significant differences in the minimum wages paid in different branches of the cotton-goods industry. The yarn branch of the industry, because of the fact that it sells its product to mills that are in competition with other mills that spin their own yarn, has in effect an extra selling cost. It is located almost entirely in the southern States, and has shown evidence of seeking locations in which relatively low wages can be paid. But in contrasting the differences in earnings between southern yarn mills and southern cloth mills, it appears that the only persistent difference is that affecting skilled workers who receive less in yarn mills. The unskilled workers average as much in yarn mills as in cloth mills. While semiskilled workers average less in yarn mills considered as a whole, than in cloth mills, the difference in the average appears to be due to differences among individual mills and not to reflect general characteristics of the two branches of the industry. (Chapter 14.)

The differences between mills in wages paid are large. Any given minimum wage will of course have more effect in low-wage than in relatively high-wage mills. The 25-cent minimum effective on October 24 can have had little effect on average hourly earnings in integrated mills averaging as little as 32.5 cents an hour. Adjustments to a 25-cent minimum in these mills were more likely to involve questions of what type of workers are to be hired than to involve any change in the wage scale large enough to affect average hourly earnings for the mill as a whole. Among the very low-wage mills—those paying 20 to 25 cents—a 25-cent minimum wage may have involved somewhat more than a 20 percent increase in average hourly earnings.

A minimum wage of 30 cents for all workers will affect comparatively few workers in northern mills and does not appear to involve any general change of wage scales for workers in occupations paid more than the minimum. In southern mills averaging 37.5 cents or more the mere increase to 30 cents of workers receiving less than 30 cents an hour would not involve an increase of as much as one-half cent in average hourly earnings for all workers. On the other hand, if such mills should attempt to maintain existing wage differentials between laborers and sweepers and groups of workers now receiving

30 cents or more, they will face an increase of 5 cents or more in average hourly earnings. Among southern mills averaging less than 30 cents, even disregarding the existence of two separate wage scales at minimum levels, a 30-cent minimum will raise plant averages by about 4.7 cents.

A minimum of 40 cents for all workers will affect the wage structure of the entire industry. Most unskilled employees in relatively high-wage northern and southern mills receive less than this amount. The experience of wage increases at the time of the N. R. A., summarized in chapter 15, is some guide as to the probable repercussion of a 40-cent minimum on wages above the minimum.

If the objective of a minimum wage order were to set a minimum wage of more than 25 cents and at the same time to require no general increase of wage scales in southern mills paying more than average wages, it would be necessary to set two minimum-wage rates. If two minimum-wage rates are established, it will be possible for such mills to adjust the wages of particular individuals receiving less than the minimum rates without readjustments in the general wage scale. For example, a minimum rate of 25 cents for laborers and sweepers and a 30-cent minimum for others would leave rates in such mills virtually undisturbed. Even rates of 27.5 and 32.5 cents would be less disturbing to existing wage relationships than an absolute minimum of 30 cents.

Similarly, if classified minima are considered, a 40-cent minimum for skilled workers would involve important administrative problems and would affect individual employment conditions rather than the basic wage scales of mills paying more than average wages in August 1938. (Chapter 16.)

These are the broad outlines of the picture of existing wages in the cotton textile industry with reference to which an effort is to be made to achieve the congressional objective of ultimately reaching a 40-cent minimum wage for all workers. The competitive character of the industry assures that within comparatively brief periods of time the benefits of technological advance are passed on to consumers or workers, or both. There is no exorbitant profit margin to indicate exploitation of the consumer or of workers. The main question has been whether the benefits of technological progress were to accrue to the wage earners in the form of higher wages or to consumers in the form of lower prices. The Congress decided that workers should be benefited at least to the extent of ultimately receiving a wage of 40 cents, when such wage is possible without substantially curtailing employment. The alternative opportunities for employment at higher wages than are paid in the cotton-textile industry are so limited in areas where the industry is predominantly concentrated that it is doubtful whether workers could reap the full benefits of technological

advance without such legislative assistance. This is the more true because obsolete equipment has been able to combat technical progress through low wages. Such low-wage competition has made it impossible for higher-wage mills to share the benefits of labor-saving devices extensively with their workers; rather they have been forced to turn a large part of the economy to the consumer.

The industry has evidenced its capacity to offset higher wages by means of increased output per man-hour without increasing the cost of goods to the consumer. There seems to be little question that a 40-cent minimum wage can be ultimately achieved. The main problems are problems of timing. It is one thing to say that consumers have benefitted disproportionately by the technical advances of the last 10 years; it is another to deduce from this the conclusion that substantial increases of cost can be made immediately without some decrease of consumption. It is one thing to acknowledge that a certain number of obsolete mills are bound eventually to be displaced, unless they are modernized; it is another thing to decide that they should all be displaced immediately. Certainly, no one will contend that a family dependent upon the earnings of a single breadwinner, making even 40 cents an hour, can maintain what is considered an American standard of living. However, as has already been shown in this report, the attainment of even a 40-cent minimum for the entire textile industry will involve major problems of adjustment.

Appendix

Discussion of Samples From Which Average Hourly Earnings Are Computed

The preceding discussion of earnings has involved an analysis of two different samples of cotton textile mills. Under conditions of voluntary reporting complete coverage is an ideal, not a realizable objective. Regularly each month for many years the Bureau of Labor Statistics has received reports from about 689 cotton mills. For the month of August 1938 an attempt was made to secure a report from each of the thousand or more mills in the industry. Actually 889 reports were received from mills employing 95 percent of the workers in the industry. In the present study we have been interested in average hourly earnings. Some of the 889 mills did not report the number of man-hours worked, and the analysis has therefore been confined to 784 mills that did report man-hours.

These regular monthly reports are received by mail. For that reason certain types of error in classification are inevitable. For example, rayon mills are not supposed to be tabulated in the cotton-goods industry. However, a few mills may have been recently converted to operate on rayon without notifying the Bureau of Labor Statistics that they have changed from cotton to rayon. In such event they are carried forward in the old classification until the error is discovered and corrected in a complete reclassification of reporting establishments that can only be undertaken periodically. Another problem of classification arises because all mills do not define wage earners in the same way. The Bureau of Labor Statistics requests that office workers and supervisors (other than working supervisors) shall not be reported by the mill as wage earners employed, nor payments made to them be reported as wages paid. While this definition is generally followed by mills reporting regularly to the Bureau, if any error of reporting does occur, it is in the direction of the inclusion of some workers in these higher wage groups.

For both of these reasons the average hourly earnings computed from reports by the 784 mills may be a fraction of a cent higher than would have been an average for those same mills if the data had been collected by field agents. It is always possible to classify more accurately as a result of face-to-face discussions than it is as a result of correspondence.

A second sample of 244 mills was surveyed in 1937 by field agents from the Bureau of Labor Statistics. The Bureau was not primarily interested in this study in securing average hourly earnings for the industry as a whole. That information was quite accurately available from the regularly reporting sample that included 784 mills in August 1938. In studying the 244 mills it was endeavored to secure the earnings of individual workers, accurately classified by occupation and by type of product. However, in conducting the field study, these 244 mills were so carefully selected to give a representative cross-section of the industry that the average hourly earnings of all workers in these mills for the single months of April 1937 and August 1938—even though the sample is small—are quite as significant as the average of the larger sample which is available for all months since January 1932.

Both studies show large differences in average hourly earnings between mills. It is inevitable, where such differences between individual mills exist, that the average for all mills in any two samples should differ. There is a difference between the averages derived from the regular sample of 784 mills reporting by mail and from the 244 mills covered by field agents. In the body of this report, reference has always been made to the average for August 1938 of 38.3 cents which was derived from the larger sample. Since the sample of 244 mills covered by field study yields an average of 36.9 cents for August 1938 (table A), attention was called to the fact that a discrepancy exists which is not of a sort that would affect the points of concentration of the distributions of individual earnings.

Primarily to avoid confusion in the text, no use was made of the average of 36.9 cents derived from the sample of 244 establishments covered in the field study. Obviously some explanation of the discrepancy is called for at this point.

TABLE A.—*Average hourly earnings in cotton-goods industry, by region, sex, and skill, August 1938*

Region and sex	All	Skilled	Semiskilled	Unskilled
United States:				
Males	$0.386	$0.482	$0.364	$0.304
Females	.343	.407	.341	.296
Total	.369	.467	.352	.302
North:				
Males	.465	.560	.428	.358
Females	.394	.448	.394	.340
Total	.434	.532	.408	.352
South:				
Males	.363	.450	.349	.288
Females	.323	.384	.323	.278
Total	.348	.437	.336	.285

The field survey of actual earnings of individuals employed in 244 mills was made with reference to a single pay-roll period in the spring of 1937. For 213 of these 244 establishments the data refer to a pay-roll period in the last half of April 1937, for 15 to a pay-roll period in May, and for 16 to a period in June. The average hourly earnings in this group of 244 mills in the spring of 1937 were 40.9 cents. This may be compared with an average of 41.6 cents in April 1937 and 42.0 cents in May for the larger sample of regularly reporting establishments (which had an average of 38.3 cents in August 1938). The field survey of 244 mills therefore showed average earnings in the spring of 1937 about 1 cent less than the average for the larger group of reporting establishments.

It will be noted that the difference in the spring of 1937 was about 1 cent; in August 1938 the difference in the averages for the two samples amounted to 1.4 cents. Two points need therefore to be explained: How can one account for a difference between the averages for the two samples of perhaps as much as 1 cent in the spring of 1937? Why was this discrepancy somewhat larger in August 1938 than in 1937?

The average for April 1937, derived from the field survey of 244 mills, is about 1 cent lower than the average for the larger sample in that period. There are several technical reasons why the field survey should yield a slightly lower average. It has already been pointed out that in the field survey it was possible to eliminate all rayon mills without exception and all office workers and supervisors.

It must also be pointed out that the two samples do not purport to cover absolutely identical industrial operations. The field survey of 244 mills excluded employees in the bleaching, dyeing, and finishing departments of establishments engaged in finishing piece goods as well as in weaving goods in the grey. It also excluded employees in the mercerizing and finishing departments of thread mills. Hourly earnings in some instances are higher in these departments than in other departments. It follows that the average shown for the departments studied in 244 mills is somewhat lower than the average for the 244 mills would have been, if all departments had been included. On the other hand, the larger sample of 784 mills is covered by a single report for each establishment as a whole. Thus the average is somewhat too high to reflect wages on grey goods alone. In other words, part of the difference of 1 cent in the averages for the 244 and the 784 mills in April 1937 is due to the fact that the averages measure slightly different basic categories of work.

There is a further possible explanation, however, of the 1 cent difference in the spring of 1937. It is probable that the sample of 20 percent of the industry covered by the field survey, because of the

intensive work that can be done through field agents, comes closer than the larger sample of mail reports to including a proper proportion of low-wage firms. It is fair to assume that, among mills reporting average hourly earnings each month, there is a somewhat more complete coverage of high-wage than of low-wage establishments.[1] Because of this fact, it can be argued that the average of 38.3 cents is as much as 1.0 cent higher than the true average for the industry as a whole. It seems highly probable that it is at least 0.5 cent too high.

Between the Spring of 1937 and August 1938, average hourly earnings declined in the cotton-goods industry. This fact is clearly shown in both samples. But the average for the 244 mills covered by the field study declined more than the average for the larger sample. Therefore, the difference between the averages of the two samples is greater in August 1938 than in April 1937.

This increased difference is probably due to the method that was used to adjust April 1937 earnings in the 244 mills covered by field survey in 1937 to an estimated basis for August 1938. The field survey was not repeated. Rather detailed reports of wage changes were received from each of the 244 mills that permitted an adjustment of the 1937 figures. Thus earnings in August 1938 are estimated for these 244 mills by applying wage-rate changes from the Spring of 1937 to August 1938 to the individual earnings in April 1937. The method yields essentially accurate results, as the general correspondence of the two samples indicates. But two factors should operate to create somewhat less movement in earnings than in wage rates: There is probably a selective lay-off of the slower workers, and hence of the workers with the lowest earnings, in any given occupation; piece-rate workers in the face of decreased rates often attempt to increase hourly output in order to prevent a proportional reduction in weekly earnings. Only one factor might have operated to create a greater reduction of hourly earnings than of rates—a tendency on the part of management to give less attention to the flow of work when orders are slack. This probably does not apply to the cotton-textile industry which organizes for production in slack periods by cutting down working time. Furthermore, there is reason to believe that mill

[1] In the first place, average hourly earnings reported to the census in 1935 were 36.6 cents (Census of Manufactures 1935, *Man-Hour Statistics for 59 Industries*, p. 86). Reports to the Bureau of Labor Statistics averaged 37.6 cents. The Bureau of Labor Statistics' sample did not change greatly between 1935 and 1938. (In this connection it should be noted, however, that the census in 1935 called for separate reports for the finishing departments of cotton mills. Hence the published census figures for grey-goods mills alone are slightly lower than would be the case had their finishing departments also been included.)

In the second place, when the Bureau of Labor Statistics enlarged its regular reporting sample in August 1938, it appears to have been the high-wage mills that responded most readily. While some low-wage firms were added to the Bureau's sample in August 1938, the firms that were added and that reported man-hours, paid wages that averaged 0.5 cent *higher* than those that had reported regularly.

If it is assumed that as many as 20,000 workers are employed in mills that averaged less than 30 cents an hour in August 1938 but did not reply to the Bureau's questionnaire, average hourly earnings for the industry as a whole would have been about 1 cent less than the average for the sample of 784 reporting mills.

production tended to be more disorganized under the pressure of the volumes of April 1937, which was a month of peak production, than it was in August 1938 when mills were operating with a load such as they have encountered in many months in the last few years.

There are few quantitative measures of the discrepancies in average hourly earnings introduced by these factors. In this connection it should be noted, however, that 1.1 percent of the workers in the industry were called learners in April 1937 and had very low hourly earnings. The employment index for the industry for April 1937 stood at 100.9 (1923–25=100) and in August 1938 at 82.7. It is virtually certain under these conditions that learners were laid off in larger proportion than other workers. Had all learners been laid off, without any change of rates or earnings for other workers, the average of the 244 mills in April 1937 would have been two-tenths of a cent higher than it was in April.[1]

The figures so far discussed indicated an increase in the differences between the two sets of averages from a difference of 1.0 cent in April 1937 to 1.4 cents in August 1938. Of this increase a large part is undoubtedly due to a laying off of learners that could not be taken account of in the method of estimating 1938 earnings for the 244 mills.

Actually, however, the discrepancy in the movement of the two averages is in excess of four-tenths of a cent. The average for the larger sample of regularly reporting mills is computed from a changing list of establishments. In the cotton goods industry this normally makes little difference, for cooperating establishments continue to report voluntarily with great regularity and faithfulness. But it is inevitable that some establishments should occasionally cease to report, and it is desirable that establishments be added as occasion offers. The Bureau of Labor Statistics therefore constructs a chain-index of hourly earnings, based on reports for identical establishments that report in consecutive months. Thus the change in earnings from April to May is measured from a sample of mills reporting in each of those months; the change from May to June for a slightly different group of establishments that report both in May and June, etc. The percentage changes in earnings from these paired samples are accumulated from month to month to show changes in earnings. But the resultant figure is an index number. For purposes of this report it was thought more useful to show earnings in cents per hour. Cumulatively from April 1937 through August 1938 reported average hourly earnings declined about three-tenths of a cent, merely because of

[1] In computing average hourly earnings for the 244 mills and in presenting frequency distributions for individual earnings, the learners employed in April 1937 have been carried forward to August 1938 with earnings adjusted for rate changes. Because of the uncertainty that attaches to this group, there is no discussion in the text of learners' earnings in August 1938, and little discussion of the very lowest earnings shown in the frequency distributions.

changes in the composition of the sample. Firms reporting in March and April 1937 averaged 41.6 cents in April 1937; firms reporting in July and August 1938 averaged 38.3 cents. Had there been no change in the composition of the reporting sample over this period of 16 months, the average for August 1938 might have been as high as 38.6 cents. It appears, therefore, that estimated average hourly earnings based on wage rate changes for the 244 mills covered by the field survey declined about seven-tenths of a cent more than actual hourly earnings declined in the larger sample.

On the basis of this analysis, it appears that average hourly earnings for all workers employed in the cotton goods industry in August 1938 were not as low as the average of 36.9 cents shown for the workers employed in the 244 mills covered by the field survey. These mills gave a better picture of the true average in April 1937 than they did in August 1938. It may be that if the average for these 244 mills in August 1938 truly corresponded with that for April 1937, when actual pay-roll records were studied, the average would have been as high as 37.6 cents. On the other hand, the average of 38.3 cents for the 784 regularly reporting mills is probably higher than the average for the entire industry. It is conceivable that the average might have been as low as 37.3 cents for the industry as a whole.

Considering these two separate samples together, one may perhaps say that the average for the cotton-goods industry as a whole was as low as 37.5 cents in August.

The most important practical consideration that emerges from this appraisal and reconciliation of the two averages is the effect which it may have on the interpretation of table 45 showing a distribution of the employees in 784 regularly reporting mills by average hourly earnings. An effort was made to reach every mill in the country. It is known that 5,925 workers in this sample were reported as employed in 34 mills which had averages of less than 25 cents per hour. It is definitely known therefore that 1.9 percent of the workers in a sample of 784 mills, employing 89 percent of the wage earners, were employed in mills averaging less than 25 cents. It is further known that 11,966 workers, or 3.7 percent of all workers reported, were employed in 63 mills averaging 25 to 30 cents. Beyond this it is impossible to estimate accurately the number of workers employed in low-wage mills for which no reports were received.

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