

# Compensation in the Construction Industry

Bulletin 1656

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# Compensation in the Construction Industry: Employment Patterns, Union Scales, and Earnings

**U. S. DEPARTMENT OF LABOR**  
**George P. Shultz, Secretary**

**Bureau of Labor Statistics**  
**Geoffrey H. Moore, Commissioner**

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## Preface

This study, covering the post-World War II period, was designed to shed some light on the complex relationship between wage rates and annual earnings of contract construction workers. It assembles in one place most of the available data on the industry's wage and earnings structure and relates these data to other relevant material.

Chapter I presents an introduction to the study and a brief interrelated summary of subsequent chapters. The second and third chapters explore the organization of the industry, including factors such as its occupational composition and degree of collective bargaining coverage, employment and unemployment, work stoppages, and industrial hazards. These two chapters establish a frame of reference for the analysis in subsequent chapters which connect the factors to the wage-earnings relationship. The differences between construction scales and maintenance wages, and the difference between construction workers' average hourly earnings and union scales are examined in this study. Trends and recent changes in scales, benefit costs, and earnings are also studied. The last chapter analyzes annual earnings and total compensation and describes the relationship between earnings and the industry's organization, occupational composition, and employment patterns.

The study does not answer all of the questions about why high wages and low earnings exist side by side in the contract construction industry. Nor—because there are substantial gaps in the available data series—could it. Many of the gaps are noted in the text. However, a few major gaps that create the greatest difficulties to an understanding and analysis of the industry's wage and earnings structure are highlighted in the following paragraph.

No estimate of the proportion of workers covered by collective bargaining agreements by craft can be made even though an estimate of the proportion of workers in all crafts that are covered by bargaining agreements has been developed in this study. In addition, while some estimate of the occupational composition of the industry as a whole is possible, no estimate of the number of workers by craft is available by length of employment during the year, by wage rates or even by industry segment. Moreover, while the Bureau regularly publishes estimates of gross weekly hours worked, these estimates, because of the mass in- and out-movements of workers, cannot be converted into realistic approximations of average annual hours worked by individuals. Further information about the proportion of total paid hours that were premium overtime hours is unavailable.

Some data for later periods than used in this study became available between the time of study completion and printing. These data affirm the conclusions of the study.

This bulletin was prepared in the Bureau's Office of Wages and Industrial Relations by Arnold Strasser, Ross E. Azevedo, and H. Charles Spring. The project, to which Albert A. Belman, Lily Mary David, Howard N. Fullerton, Thomas C. Mobley, and Norman J. Samuels among others made important contributions, was directed by Arnold Strasser.



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## Compensation in the Construction Industry

### Chapter 1. Introduction and Summary

Construction wages are high; annual earnings are generally low. This paradoxical situation exists, it has been assumed, largely because construction work is seasonal, hazardous, and subject to an extensive amount of downtime due to adverse weather conditions and industrial controversy, among other factors. The assertion has been made that the industry is highly organized and that the unions control both the supply of labor by limiting the number of apprentices, and the price of labor.

Despite the importance of the contract construction industry in our economy, these shibboleths have not been tested. However, the absence of such studies does not imply an absence of data. Massive amounts of data are generated about the construction industry each year. Unfortunately, much of the data are obtained in investigations designed for limited purposes and are deficient for broader gage economic analysis.

Notwithstanding the many data problems, this study shows that apparently some of the ancient claims about the contract construction industry are all too true. Construction work is seasonal, hazardous, and subject to many factors that combined are not present in other goods producing industries. Construction is not the prime source of wage and salary employment for many of the individuals who work in the industry.

The industry has various types of firms—some of which, however, may shift from one industry segment to another with great ease. The labor force is also fragmented into a number of specialized crafts, few of which are mutually exclusive at all times and places. Most, however, appear to be highly unionized. The proportion of employed workers covered by collectively bargained agreements, however, varies both by season and by type of work activity.

The industry is basically local and unions negotiate wage scales for each craft on a local basis. The negotiated scales for the skilled crafts are among the highest wage rates in the United States. Nevertheless, average hourly earnings of all construction workers, tend toward the lower union scales because they are strongly affected by nonunion wages, and the rates paid almost one-fourth of the construction force. Notwithstanding this dampening effect, the gross average hourly earnings of construction workers are generally greater than those of any other groups of production or nonsupervisory employees in the private sector. Their weekly earnings, despite relatively short workweeks, are also among the highest in the economy.

Work in the industry is seasonal. Construction employment fluctuates widely during the year; average employment in the most active month generally exceeds employment in the least active month by more than 600,000. In addition, and probably largely because of the seasonal variations in demand for workers, about one-third of the contract construction workers find employment in the industry for only one of the four quarters in the year. Moreover, more than one-fourth of the industry's total work force earn most of their annual income in some other industry. In addition, many of the workers who earn all or the major part of their annual earnings in contract construction employment are only marginally attached to the labor force (e. g., students).

Short work years, even among the industry's major earners (those who earn all or the major part of their annual earnings in the industry) are a characteristic of the industry—only about half of construction's major earners work in the industry during all four quarters of the year. Moreover, inclement weather reduces work opportunities even during the industry's busiest months; and a substantial number of man-days of work are lost each year because of work injuries and work stoppages resulting from labor disputes. Similar employment patterns are not to be found in any other nonagricultural goods producing industry.

Annual earnings of construction industry employees (about 16 percent of whom are office workers) as a result of the interaction of high wage rates but relatively short work years are lower than those of their counterparts in substantially all other industries except retail trade and services. Annual earnings of the industry's major earners who worked in the industry during all four quarters of the year, however, exceed those of four-quarter workers in all but a few of manufacturing, mining, and transportation industries.

## Chapter 2. Industry Organization and Activity

### The Industry

Contract construction is one of the more important industries in the country. Its characteristics, however, are not those typically associated with large scale activity.

A few large construction firms operate over large parts of the country. Most construction firms are small and operate only in their local areas. The labor supply is also primarily local and is highly fragmented into craft groups that claim jurisdiction over specified types of work. Entry into most of the skilled construction crafts requires specialized training and examination which, unlike the situation in most other industries, frequently is conducted by or is under the auspices of a craft union.

The fragmentation of the labor supply into numerous specialized crafts is similar to the industrial specialization of firms that operate in the industry.

The industry<sup>1</sup> includes establishments engaged primarily in contract construction including new work, additions, alterations, and repairs. Three broad types of establishments are included in the industry: (1) General building contractors engaged primarily in the construction of residential, farm, industrial, commercial, and public or other buildings (SIC 15); (2) general contractors engaged in heavy construction such as highways and streets, bridges, sewers, railroads, irrigation projects, flood control projects and marine construction, and miscellaneous types of construction work other than building (SIC 16); (3) special trade contractors who undertake specialized activities such as plumbing, painting, plastering, carpentering, and electrical work (SIC 17).

Notwithstanding the primary specialization of the individual construction establishment, considerable overlap exists in the functions performed by each type of firm. A general contractor may perform some special trades work. A special trades contractor may act as a general contractor. A building contractor may undertake some heavy construction work and a heavy construction firm may do general building construction work.<sup>2</sup>

The degree of specialization within the industry, particularly in the special trades sector of the industry, is even greater than that suggested by the industrial classification of firms. Some firms work on new construction only, others do both new construction and alteration and repair work. These facts (discussed in more detail subsequently) have important ramifications in the unionization and wage structure of the industry.

<sup>1</sup> Division C--Contract Construction--as defined in the 1967 edition of the Standard Industrial Classification Manual (SIC) prepared by the U. S. Bureau of the Budget.

<sup>2</sup> Construction of new facilities, and the alteration or repair of existing facilities also is done by firms whose primary activity is the sale or lease of real estate and by manufacturing and nonmanufacturing firms for their own account and use, or as a service incidental to their sale of prefabricated equipment and materials. Included in this category are subdividers and developers (SIC 655) engaged in subdividing real property into lots and developing it for resale on their own account or for others, and operative builders (e. g., speculative builders, condominium developers, and cooperative apartment builders) primarily engaged in construction for sale on their own account (SIC 6561).

To the extent possible, the analysis presented in this bulletin is limited to contract construction (Division C). The omission of data for other industries from the employment and earnings statistics discussed in subsequent sections of this report slightly limits the examination of construction wages. This limitation results from the fact that some of the Nation's largest builders are industrially classified in the real estate industries. However, average annual employment in these industries (SIC's 655 and 6561) during 1967, for example, amounted to about 113,400 workers--approximately 1 worker for every 30 employed by contract construction firms (SIC 15, 16, and 17).

For a detailed explanation of the industrial classification of different types of construction work see p. 27 of the SIC Manual.

The organization of the contract construction industry is by work function rather than by product. This functional orientation, which is unique among the goods producing sector, generally reflects the nature of the product, the historical development of the craft structure of the work force, and local statutory requirements. The variety of construction activities, most of which are still performed on the building site, some of which require high degrees of skill, and some of which cannot be performed elsewhere, necessitates numerous contractors to handle various operations. However, many of the operations, particularly in the skilled crafts, require relatively small capital investments by the entrepreneur. Hence, depending on business conditions, firms enter and leave the market with comparative ease.

The demand for the finished construction product is unlike that for goods produced by most other industries. In the construction industry, the contractor is responsible for organizing the factor of production to build a product, on a stipulated site that meets the buyer's specifications. Several consequences have resulted from this market system: (1) The use of mass production techniques has been retarded.<sup>3</sup> This results from the heterogeneity of products that are demanded, plus variations in local building code standards, and the fact that the complete product is immobile. In addition, while the construction unions have accepted many innovations in technique, they have tended to moderate the introduction of any technique that would reduce the employment opportunities of their membership.<sup>4</sup> (2) The demand for contract construction fluctuates widely. Individual producers have not been able to "smooth out" the demand—even in the single family housing market—in any substantial way. (3) Numerous firms, usually small and primarily in the special trades and general building construction segments of the industry, form in good times to share the "feast" and disappear when the "famine" sets in. The low capital requirements for much of the industry—often only a set of tools (which many skilled craftsmen already own)—allows the individual entrepreneur to hire a few workers and form his own company.<sup>5</sup>

The market and the industry's response have been of prime influence in determining the organizational size of firms in the industry. The picture, however, is obscured by the industrywide tendency to organize a separate legal enterprise for each major building contract. Nevertheless, the available data indicate that there has been remarkable stability in the distribution of establishments by employment size group since the end of World War II.<sup>6</sup> In 1966, as in most other post-World War II years, about 91 percent of the industry's operating units employed fewer than 20 workers; and about 97 percent employed fewer than 50 workers; only about 1 percent of all establishments employed 100 workers or more.

<sup>3</sup> The failure to adopt new technology does not necessarily imply that construction advancements are behind that of other industries. The Battelle Memorial Institute in its report on The State of the Art of Prefabrication in the Construction Industry (Columbus, Ohio, September 1967), has concluded that construction technology, rather than lagging behind, is about 10 years ahead of the industry. On the other hand, the U. S. Department of Commerce has found that "Shortages of skilled craftsmen in the construction trades and rising wage demands have contributed to increased mechanization in all phases of the construction industry. New building materials and methods have led to greater mechanization of residential and nonresidential construction . . . builders have found that increased use of construction machinery can raise their productivity." (U. S. Department of Commerce, Business and Defense Services Administration, Growth Pace Setters in American Industry, 1958-68, Washington, D. C., 1968, p. 28.)

<sup>4</sup> Historically the building trades unions have attempted to maintain identity through craft separation. Such separation, particularly considering the changes in construction technology over the years and the variations in the degree of unionization extent in the different sections of the country and in the different types of construction projects (e. g., private home vs. highway construction), does not mean that the craft groups are mutually exclusive. The nature of some work (e. g., sheet-metal work and paperhanging, among others) often crosses traditional lines of craft jurisdiction. In addition, developments such as plaster wallboard, preglazed windows, and metal door jambs cross the job domains of carpenters, plasterers, glazers, and sheet-metal workers, and make the lines of craft separation less distinct.

<sup>5</sup> An additional feature of the construction industry is the competition between small construction firms and the industry's craftsmen who free lance in the evenings and on weekends as well as when they are between jobs. Data on the incidence of such moonlighting are unavailable. Nevertheless it exists—primarily because of the low capital (and in some cases no capital) requirements for such work; the relatively high degree of skill needed to perform the work and the homeowner or small businessman's inability to do handiwork or his lack of time or interest.

<sup>6</sup> The data which underlie this analysis are based on the Bureau of the Census' concept of a reporting unit. In nonmanufacturing industries, the Bureau of the Census counts employers once in each county for each industry in which they operate. Thus the data overstate the number of firms (separate legal entities) but understate their employment size; and understate the number of operating establishments while overstating their employment size. The terms "firms," "establishments," and "reporting units" are used synonymously in this report. For additional detail, see Bureau of the Census, County Business Patterns (U. S. Government Printing Office, Washington, D. C.), various years beginning 1946.

Data for 1967 became available subsequent to the preparation of this section. While the 1967 statistics are somewhat different from those for 1966, the conclusions drawn on the basis of the earlier years still prevail.

Although the relative importance of operating units grouped by employment size has remained stable over the last two decades, the number of units in the industry has increased more than twofold and employment in the industry has about doubled. (See table 1.)

Table 1. Distribution of operating units, employment, and change, by industry segment

Industry	Percent of—				Percent change 1946-66 (1946=100)	
	Reporting units		Employment		Reporting units	Employ- ment
	1946	1966	1946	1966		
Total-----	100	100	100	100	227	198
General building contractors -----	23	29	40	32	280	158
Heavy construction contractors -----	8	9	17	20	249	237
Special trades contractors -----	68	62	43	48	204	220

SOURCES: Bureau of the Census and Bureau of Labor Statistics.

Because contract construction firms can easily move from one branch of the industry to another, and because data about the number of construction units by industry segment, and accordingly employment, are among the least satisfactory of all official statistics it is difficult to assess the actual changes in the composition of the industry during the post-World War II period. Nevertheless, the available data indicate that almost three times as many general building contractors were in business in 1966 as in 1946. Nevertheless, employment in this segment of the industry has declined as a proportion of total construction employment while that of both heavy construction and special trades contractors has increased. The shifts in the relative importance of the different types of construction firms which suggest that the industry is becoming even more specialized than it had been, appear to result, at least in part from the declining proportionate importance of private residential construction.

#### Occupational Composition of the Industry

Approximately 1 of every 7 employees in the construction industry worked in a professional, technical, managerial, clerical, or sales job in 1960—the date of the most recent data.<sup>7</sup> The bulk of the industry's employment as shown in the table on page 6, however, is split on about a 6 to 2 ratio between craftsmen<sup>8</sup> and helpers. These two groups, together with apprentices and service workers, account for 84 percent of the industry's total work force.

Because of a lack of mass production techniques there is a continual need for large numbers of skilled craftsmen, many of whom are trained as apprentices. While mechanical equipment has been developed to perform the heaviest work in construction, the industry employs large numbers of unskilled workers and most construction jobs still require physical strength and stamina. This has limited the number of jobs for women. However, the need for substantial numbers of workers able to do relatively hard labor has provided opportunities at relatively high wages for unskilled immigrants, or recently, for unskilled migrants from the rural South.

Women who were about one-fourth of the industry's office staff constitute a substantial proportion (about two-thirds) of the clerical force only.<sup>9</sup>

<sup>7</sup> Unless otherwise noted, all data in this section are based on the Bureau of the Census, U. S. Census of Population: 1960—Occupation by Industry, 1963. The construction industry as defined by the Census Bureau includes contract construction and separable governmental units engaged in construction operations. The Bureau of Labor Statistics definition of "Construction Workers" is slightly different from that employed here. In essence, construction workers, as defined by the Bureau, include all workers other than professional, technical, managerial, sales, and clerical employees.

<sup>8</sup> The terms craftsmen and journeymen as used in this report include all workers, except apprentices, classified by the Census Bureau as craftsmen, foremen, and kindred workers or as operatives and kindred workers.

<sup>9</sup> The 1960 census data indicated that almost as many women are employed in journeyman craft occupations as are employed in the industry's top professional, managerial, and sales jobs where women constitute about 3 percent of the employees. Interestingly, however, women apparently are seeking and obtaining craft jobs in increasing numbers. While women hold less than one-half percent of all journeyman craft jobs, the census data (based on a 5-percent sample) indicate that they were about 1 percent of the industry's apprentices.

Table 2. Construction industry employment, by sex and occupational group, 1960

Occupational group	Number of workers			Percent of workers			
	Total	By sex		Total	By sex		
		Men	Women		All	Men	Women
Total employed -----	3,062,038	2,931,880	130,158	100	100	96	4
Office and related workers -----	478,971	367,119	111,852	16	100	77	23
Professional and technical workers -----	167,170	162,756	4,414	5	100	97	3
Managers and officials -----	147,621	142,806	4,815	5	100	97	3
Clerical and kindred workers -----	152,944	51,298	101,646	5	100	34	66
Salesworkers -----	11,236	10,259	977	(1)	100	91	9
Construction workers -----	2,538,391	2,526,021	12,370	83	100	100	(1)
Craftsmen, operatives, and foremen -----	1,893,134	1,884,811	8,323	62	100	100	(1)
Apprentices -----	24,496	24,318	178	1	100	99	1
Helpers and laborers -----	620,761	616,892	3,869	20	100	99	1
Service workers -----	19,188	14,778	4,410	1	100	77	23
Protective service workers -----	6,845	6,825	20	(1)	100	100	(1)
Janitors, cleaners, and porters -----	8,475	5,538	2,937	(1)	100	65	35

<sup>1</sup> Less than 0.5 percent.

NOTE: The number of workers by occupational group does not add to total because of the inclusion of 23,962 men and 1,526 women in the total whose occupation was not reported. All percentages have been rounded.

SOURCE: Bureau of the Census.

Women are also an important part of the industry's service worker staff. Employed primarily as charwomen and cleaners, women constitute about one-fourth of all service workers. Service workers, however, made up only about 1 percent of all employees in the industry and janitorial workers were only about one-third of the service staff. The other major group of service workers—those in protective service occupations (e.g., guards and watchmen), who were only a slightly smaller proportion of the total service group than janitors, were almost all men.

### Craftsmen

Journeymen,<sup>10</sup> accounting for 62 percent of total construction employment, work at many different crafts. Nevertheless, seven crafts—each with at least 100,000 journeymen workers—predominate. About 70 percent of all journeymen craft workers are employed as brick-masons; carpenters; electricians; excavating, grading, and road machinery operators; painters; plumbers; and truck and tractor drivers.

Carpenters are numerically the most important group of journeymen in the industry (about 25 percent). The number of journeymen in the three next largest groups (painters, plumbers, and truck and tractor drivers) combined constitute about 24 percent of all journeymen.

<sup>10</sup> A journeyman is generally considered to be a craftsman who mastered his trade by serving an apprenticeship. However, some of the crafts engaged in the building trades do not have formal apprenticeship programs. Hence, for purposes of this bulletin, any worker employed as a fully qualified craftsman, foreman, operative or kindred worker, as defined by the Bureau of the Census, is considered to be a journeyman worker. The occupational designations used by the Bureau of the Census compress a number of crafts recognized in the construction industry as separable occupations (or trades) into single occupational categories. For detailed information about the classification system used by the Bureau of the Census, see 1960 Census of Population, Classified Index of Occupations and Industries, Washington, D. C., 1960.

The list of journeyman worker occupations (see table 3) reveals the complex nature of the construction industry. Construction work proceeds on land and at sea. Accordingly, the industry employs sailors and deckhands (who are less than 0.5 percent of all journeymen) as well as truck and tractor drivers (8 percent) and excavating, grading, and road machinery operators (7 percent). The industry requires workers with expert knowledge about blasting procedures (less than 0.1 percent of all journeymen work in these crafts) as well as cement finishers (about 2 percent of the journeymen) among many others.

### Apprentices

Apprentices, who constitute only about 1 percent of the industry's total work force, are employed in the industry in a ratio of about 1 apprentice to every 75 journeymen. However, not all crafts are apprenticeable. Among the trades with the greatest number of apprentices (table 3) the apprentice to journeyman ratio varies from about 1 to 20 in the electrical and plumbing trades to approximately 1 apprentice to more than 50 brickmasons and 90 carpenters.<sup>11</sup>

While the ratio of apprentices to journeymen carpenters is substantially different from those in the other three crafts cited, the proportion of carpenter apprentices to all apprentices is only slightly different from the industrywide proportion of carpenters to all craftsmen. The differential ratios between crafts are, as indicated in the following tabulation, primarily due to the fact that a substantially greater proportion of apprentices than of all journeymen are in the electrical and plumbing trades.

Trade	Percent of all—	
	Apprentices	Journeymen
Bricklayers and masons-----	10	7
Carpenters -----	21	25
Electricians -----	21	6
Plumbers and pipefitters-----	27	8

Apprenticeship is not the only means by which a worker can gain journeyman status. A worker can move from the helper category—though with perhaps more difficulty than an apprentice and possibly only after more working time has elapsed—to journeyman status. In the carpentering trades, for example, there are almost six times as many carpenter helpers as apprentices for a combined ratio of about 1 apprentice or helper to every 14 journeymen. Possibly only very few carpenters' helpers will ever become journeymen. Nevertheless, this is another avenue toward fully qualified journeymen status that some workers can take—particularly those who cannot gain entry into the formal apprenticeship programs.<sup>12</sup>

Data about the extent of unionization of carpenters, or any other craft, are not available with any precision. Nevertheless, unionization of each craft must be kept in mind when evaluating the craft ratio of apprentices to journeymen.

<sup>11</sup> Substantial difference exists between the number of apprentices reported by the Bureau of the Census and the number reported by the Department of Labor's Bureau of Apprenticeship and Training (BAT). In 1960, the census reported (based on a 5-percent sample) that 81,786 apprentices were in all crafts and industries in America. The number of apprentices participating in registered programs in that year (and not all programs are registered) as reported by BAT was 172,161. Some of the differences are due to sampling and other statistical errors and some are due to reporting error. To the extent that some apprentices were classified by the person responding to the census interview as journeymen, the apprentice to journeyman ratio is understated.

<sup>12</sup> For additional discussion of this and related points, see, Edgar Weinberg, "Reducing Skill Shortages in Construction," Monthly Labor Review, February 1969, pp. 3-9.

The short-term employment situation, prevalent in construction, mitigates against the establishment of formal apprenticeship programs by individual employers. Such programs, which often take 3 or 4 years can be effective only when the relationship between the apprentice and the training agency is stable. Hence, most of the important apprenticeship situations in the construction industry are in the unionized sector where the employers jointly participate with the union, and the union provides the apprentices with the stable relationship required.<sup>13</sup>

The ratio of apprentices to journeymen in the organized sector of the construction industry is substantially higher than in the industry as a whole. The apprentice to journeyman ratios in the electrical and plumbing trades in the organized sector appear to be about 1 to 9 or about twice as high as in the industry as a whole. Among the trowel and carpentering trades in the organized sector, as indicated in the following tabulation, the ratios indicate that there are about twice as many bricklayer and almost four times as many carpenter apprentices for the same relative number of journeymen.

Trade	Number of active journeymen per apprentice as of—	
	July 1967	July 1960
Asbestos workers -----	5	6
Bricklayers -----	21	19
Carpenters -----	25	27
Cement finishers -----	26	20
Electricians -----	9	8
Glaziers -----	13	10
Lathers -----	14	10
Marble setters -----	20	11
Mosaic and terrazzo workers -----	19	14
Painters -----	29	31
Pipe fitters -----	10	( <sup>1</sup> )
Plasterers -----	30	20
Plumbers -----	9	10
Rodmen -----	16	40
Roofers, composition -----	7	8
Roofers, slate and tile -----	8	13
Sheet-metal workers -----	8	8
Stonemasons -----	33	25
Structural-iron workers -----	15	27
Tile layers -----	17	15

<sup>1</sup> Data not available.

The data presented in the tabulation are based on information provided by local unions included in the Bureau of Labor Statistics study of union wages and hours in the building trades.<sup>14</sup> They indicate that the unionized sector in most of the trades has either maintained about the same ratio or has improved the ratio of apprentices to journeymen since the beginning of this decade.

<sup>13</sup> Very little is now known about the number of apprentices in each step of their respective program. A forthcoming report by the Equal Employment Opportunity Commission, limited to selected apprenticeship programs conducted under joint labor-management auspices, is expected to provide information about the number of apprentices during 1967 by race and year of apprenticeship. The available data do suggest that Negroes and members of other minority groups once enrolled in an apprenticeship program have better than average chances of attaining journeyman status. In addition, the latest data indicate that the number and proportion of minority group apprentices is growing rapidly (see "Reaching Out for Apprentices," in *Manpower*, June 1969, pp. 8-13).

<sup>14</sup> See BLS *Union Wage and Hours: Building Trades July 1, 1968*, Bulletin 1621, 1969.

A few trades, particularly the plasterers, marble setters, stonemasons, cement finishers, mosaic and terrazzo workers, and lathers appreciably decreased the ratio of apprentices to journeyman workers. The most marked decrease was in the plastering trades where the ratios declined from 1 apprentice to 20 journeymen in 1960, to 1 to 30 in 1967.<sup>15</sup>

### Unionization

Historically construction workers have tended to join together—separately. At least 26 national and international unions draw all or some of their membership from the contract construction industry.<sup>16</sup> Aggregate construction industry membership of these 26 known unions was 2,288,000 in 1966. However, union membership by craft and the proportion of workers covered by union agreements are not known.

Despite the general absence of studies showing the proportion of construction workers employed by firms with collective bargaining agreements, an estimate of the proportion, based on minimum and maximum limits established by collateral data, can be made.

Construction Workers. The minimum estimate of bargaining agreement coverage of construction workers is set by the extent of unionization in general building construction (SIC 15), the only construction industry for which nationwide data are available. A BLS study<sup>17</sup> indicates that 45 percent of the construction workers in this industry are employed by firms in which bargaining agreements cover a majority of the workers.

The maximum is established by the proportion of workers who are union members. During 1966, construction worker union membership equalled about 80 percent of average annual construction worker employment but 98 percent of February and 73 percent of August employment.<sup>18</sup> However, not all of the union members were employed in contract construction. An unknown proportion worked outside the construction industry for real estate firms or for manufacturing and other nonmanufacturing enterprises, and some were retired workers who continued to be active union members. In addition, the union membership statistics which are based on a count of "average dues-paying membership" reflect changes (occurring over the year as members die, retire, or otherwise drop their membership and as new members join) but do not fully reflect the extent of unemployment among union members.

<sup>15</sup> Data for the 2 years are not strictly comparable. In each year the city data collected was weighted to represent all cities with a population of 100,000 or more. The 1960 statistics were weighted by data from the 1950 Census of Population; the 1967 statistics were weighted on the basis of 1960 population data. Between the 2 census years more than 25 cities were added to the list of those with a population of 100,000 or more. Accordingly, the number of workers by trade cannot be accurately compared on a year-to-year basis. The ratios, however, should be largely unaffected by the differences in the number of cities represented by each study.

Notwithstanding the difficulties in comparing the aggregate number of workers by craft over the period, the increase in the number of cities represented would be expected to have the effect of increasing the number of journeymen and apprentices in each trade. Among all the trades for which data are presented in the tabulation, only the plasterers and lathers did not meet this expectation. In 1967, the number of apprentices and the number of journeyman workers in these crafts were below the numbers recorded in the 1960 study.

<sup>16</sup> Directory of National and International Labor Unions in the United States, 1967, Bulletin 1596, 1968. Aggregate membership of the 26 unions attributable to contract construction was 2,463,000 of which 2,288,000 were estimated to belong to United States locals.

Unionization in the construction industry occurred early in U.S. industrial history. As early as 1791 the carpenters formed craft locals. In that year, Philadelphia carpenters staged the first known building trades strike in the United States. (See Brief History of the American Labor Movement, Bulletin 1000, 1964 edition.)

<sup>17</sup> See appendix A.

<sup>18</sup> The apparent increase in union membership relative to employment results from the comparison of membership at a single point in time to a variable (employment) which fluctuates during the year. Employment in the industry's unionized sector may increase substantially during months of peak construction activity (although relative to the nonunion sector, covered employment may remain constant). Nevertheless, union membership may remain relatively constant. The areas of high activity may draw union workers from low activity areas and/or may issue temporary work permits to nonunion workers. When these work permits expire, the holder who does not automatically gain union membership or any of the rights of a union member, returns to the nonunion sector or leaves the industry.

The range estimates based on membership employment relationships can be refined by an examination of the industry. Many building construction firms are engaged primarily or exclusively in private home construction or alteration in which unionization is generally conceded to be less common than in other types of construction; hence, unionization probably is more widespread in other construction industries, which employ two-thirds of all contract construction workers.

The extent to which heavy and special trades firms are organized is not known. However, some recent studies conducted by the New York State Division of Employment indicate that between two-thirds and three-fourths of the journeymen painters and plumbers in New York City were covered by union contracts. Statistics for New York City probably are not parallel with those for other areas. Nevertheless, they clearly indicate that special trades contracting is far less than completely organized, and that probably about one-fourth or more of the special trades employees work for nonunion firms.

Assumptions about heavy construction must be based partly on the fact that proportionately more firms in heavy construction than in either general building or special trades construction are large and hence are likely to employ a substantial permanent work force (even though employment in heavy construction fluctuates more on a proportionate basis than in either general building or special trades) which facilitates unionization. On the other hand, there is no reason to assume that all heavy construction is carried on by unionized firms.

Considering all factors, it seems reasonable to assume that an average of about 60 to 70 percent of the construction workers are employed by firms that have collectively bargained agreements covering a majority of the workers.

This estimate of collective bargaining coverage suggests that bargaining agreement coverage in construction is in about the same position today that it had been more than three decades ago. In 1936, a BLS survey indicated that about 68 percent of the employed construction workers were union members.<sup>19</sup>

Office Workers. Office worker organization in contract construction is estimated to be very low. Only about 4 percent of the office workers in general building construction<sup>20</sup> are covered by agreements and most of the major construction unions do not have white-collar members.<sup>21</sup>

Changing Degrees of Unionization. The degree of unionization in the industry changes over the year as the work force expands and contracts. In addition, between years (and presumably within a single year) the proportion of workers covered by collectively bargained agreements is affected by the extent to which the work mix changes, that is, to the extent that workers can obtain jobs with firms that do new construction work as opposed to firms that only or principally do alteration and repair work.

Data to support these conclusions are quite sparse. The findings of a few studies conducted by the New York State Division of Employment (DE) do shed some light on the subject. In November 1967, according to a DE study of plumbing, heating, and air-conditioning work (SIC 1711), 73 percent of the journeyman plumbers employed in New York City were covered by collectively bargained agreements. In June 1960, when approximately one-third fewer plumbers were employed in the City, 80 percent were covered by union

<sup>19</sup> The current estimate of collective bargaining coverage and the 1936 estimate of unionization are not strictly compatible. The current estimate is based on the concept of majority coverage--thus if 51 percent of a firm's employees were covered by bargaining agreements all workers were considered to be covered--if 51 percent or more workers were not covered by contractual provisions all workers in the establishment were considered not covered. The 1936 estimate was based on a head count within each unit studied. The 1936 survey was also limited to building contractors and those subcontractors that did work for general building contractors. In general, heavy construction contractors and those subcontractors that worked only with heavy contractors were excluded from the survey scope. For detailed information about the 1936 study, see Sanford, Edward P., "Wage Rates and Hours of Labor in the Building Trades," Monthly Labor Review, August 1937, pp. 281-300. William Haber and Harold M. Levinson have suggested, in Labor Relations and Productivity in the Building Trades (University of Michigan, Ann Arbor, 1956), that the 1936 estimates were too high.

<sup>20</sup> See appendix A.

<sup>21</sup> Bulletin 1596, op. cit.

contracts. The differences in the union-nonunion ratios between these two periods result almost entirely from changes in the proportion of workers employed by nonunion firms that only did alteration and repair work.<sup>22</sup>

Another set of studies conducted by the New York agency also tend to confirm the generalizations. In October 1967, according to a DE survey, 64 percent of the painters employed in New York City were covered by union contracts—12 percent fewer than in November 1964 when there were approximately 6 percent more painters than in 1967.<sup>23</sup>

The difference in the proportion of painters working under union contract, as was the case with the plumbers, resulted primarily from work mix.<sup>24</sup>

These data do not suggest that union membership fluctuates. Rather, they imply that union workers will accept nonunion employment when necessary. The extent to which a worker needs to shift between the organized and unorganized firm, however, is unknown. The ease with which some firms enter and leave the market place, the short-term nature of most construction employment, and the frequency with which construction workers change their jobs tend to facilitate these intraindustry shifts.

### Construction Activity<sup>25</sup>

Total construction activity, which now constitutes about 12.5 percent of gross national product, has more than doubled since 1946. In that year, private construction was 85 percent (\$21.8 billion) and public construction was about 15 percent (\$3.9 billion) of the total value of new construction (in 1957-59 dollars) put in place. Since then the value of private construction (in constant dollars), increasing in all but 5 years, has practically doubled; the value of public construction, declining below the previous year's level only twice in the last 20 years, has increased fivefold. Because of the different rates by which the private and public sectors grew, private construction in 1966 was about 66 percent (\$42.0 billion) and public construction about 33 percent (\$19.7 billion) of the total value of new construction put in place. (See table 4.)

<sup>22</sup> In 1967, 46 percent of the journeyman plumbers worked for such firms--and 42 percent of these workers were covered by bargaining agreements. In 1960, 27 percent worked for alteration firms--and 38 percent worked under union contracts. In both years, firms that did new construction work employed only union labor; and firms that did both new construction and alteration and repair work were almost entirely unionized (98 percent in 1967; 92 percent in 1960). New York State Department of Labor, Division of Employment, Wages and Hours in Selected Occupations in the Plumbing, Heating and Air Conditioning Industry, June 1960, Wage Bulletin 860, and Earnings and Hours of Full-Time Workers in Selected Occupations, Plumbing, Heating and Air Conditioning Work, New York City, November 1967, Wage Report 102. Permission to use data from these studies, which were conducted by the State agency for administrative use only, was granted by the New York State Division of Employment.

<sup>23</sup> New York State Department of Labor, Division of Employment, Earnings and Hours of Full-Time Workers in Selected Occupations, Painting and Decorating Work, New York City, October 1967, Wage Report 100, and November 1964, Wage Report 42.

<sup>24</sup> In both years, all painters employed by firms that did new construction work only were covered by union contracts. In both years, the vast majority of painters employed by firms that did both new construction and alteration and repair work were unionized (85 percent in 1967, 99 percent in 1964). However, in 1967 more than four-fifths of the workers compared with two-fifths in 1964 worked for firms that only did alteration and repair work and 42 percent of these workers were not covered by bargaining agreements; in 1964, 60 percent of the alteration painters were employed by unorganized firms. Caution must be exercised in making broad gage assumptions based on these data. In New York City, as in most other cities in the Nation, a firm's geographical area of activity is not necessarily bounded by geopolitical borders. The surveys conducted by the State agency, however, were. The State studies, conducted on a sample basis, were designed to include only those workers employed in New York City by firms in the specified industries that could be identified as having work operations in the city. Hence, workers at job sites located outside the New York City boundaries but who were employed by city firms were out of scope of the State studies. In addition, the number of workers by occupation employed in New York City during each survey period is subject to the usual errors associated with statistical surveys. Further, numerical and proportionate changes by occupation and type of work over time may reflect cyclical fluctuations, different levels of technology and productivity, and the relative ease of entry of firms into the industry and from one work segment of the industry to another.

<sup>25</sup> This discussion relates to total construction activity in the economy including work done by contract construction firms, government agencies, and by firms in other nonconstruction industries. In the text, all measurement of level and change in value of construction put in place is based on constant (1957-59) dollars. In 1966, the value of new construction put in place was \$61.7 billion in constant dollars; the value in current dollars amounted to \$74.4 billion. Final data for subsequent years were not available at the time this section was prepared. However, the Business and Defense Service Administration of the U. S. Department of Commerce estimated that the total value of new construction put in place during 1967 was \$76,716,000 (in current dollars and the value of 1968 construction put in place amounted to \$84,700,000). For detail see U. S. Department of Commerce Business and Defense Service Administration, U. S. Industrial Outlook, 1969, Washington, D. C., 1968. For additional detailed information about construction activity, see Lipsye, Robert E. and Doris Preston, Source Book of Statistics Relating to Construction, National Bureau of Economic Research, New York, 1966, and Bureau of the Census, Housing Construction Statistics: 1889 to 1964, Washington, D. C., 1966.

Within the private sector, the value of residential construction, in constant dollars, has been on a downward trend while the trend for nonresidential construction was downward until 1951 and upward since then.

The value of private residential construction put in place has ranged between about \$19 and \$23 billion (in 1957-59 dollars) since 1950—a level about double that of 1946, the first full year after World War II. As a proportion of the total value of all construction put in place, residential construction grew from 42 percent of the 1946 total to 52 percent in 1950; since then it has been on a downward trend. In 1966, private residential construction, valued at almost \$20 billion, was less than 33 percent of all construction activity. Private nonresidential buildings constituted about 25 percent of all construction in 1946, and slid to about 12.5 percent in 1950, but has risen fairly consistently since then. In 1966, private nonresidential construction, valued at slightly more than \$15 billion, accounted for only a fractionally smaller proportion of total construction value than in 1946.

The value of new construction put in place by public agencies has increased from about \$4 billion in 1946 to almost \$20 billion in 1966. The major factors contributing to this fivefold increase which doubled the relative importance of public construction activity in the economy was the more than sevenfold increase in the value of new highways and a more than ninefold increase in the value of nonresidential public buildings. Highway expenditures, which amounted to almost \$7.4 billion in 1966 and made up 12 percent of all new construction, with the exception of a few years, have moved consistently upward since the end of World War II. The value of new public buildings, starting with \$717 million in value put in place during 1946, increased annually until the 1954 high of \$5.4 billion and then fluctuated between \$4.3 and \$4.8 billion during the 1955-62 period. In 1963, the value of nonresidential public buildings put in place amounted to \$5.2 billion and in 1966, after succeeding higher value years, amounts to \$6.5 billion, almost 11 percent of the total value of 1966 construction.

### Productivity

Widely accepted measures of productivity for the construction industry are not yet available for various conceptual and technical reasons.<sup>26</sup> Although the Bureau of the Census is developing price indexes based on sales prices adjusted for changes in quality, so far such series are available for only private, single family dwellings. Currently available cost indexes which are used as deflators can be misleading because they do not take account of improvements in the utilization of labor and materials in construction and, therefore, overstate increases in construction prices. For this reason, estimates of the growth of real output in contract construction and hence, output per man-hour, tend to be understated. These estimates show that productivity in contract construction increased at an average annual rate of about 2 percent in the postwar period, compared with the 3-percent annual rate for the private economy.

The Bureau of Labor Statistics studies of labor requirements for various types of construction projects do, however, afford some insight into changing productivity in two sectors: Federally-aided highways and schools. The data available for these sectors indicate productivity gains averaging about 2.7 to 3.2 percent a year since 1958.<sup>27</sup>

<sup>26</sup> This section was primarily prepared in the Bureau's Office of Productivity, Technology, and Growth.

<sup>27</sup> On-site man-hours per \$1,000 of road contract (in constant 1958 dollars)--the reciprocal of output per man-hour--declined by about 17.5 percent between 1958 and 1964, or about 3.2 percent per year on the average. A recent study of school construction labor requirements shows that on-site man-hour requirements per square foot declined by about 2.7 percent a year between 1959 and 1964-65. These studies are based on data collected from records kept by contractors and subcontractors and from reports submitted to various government agencies. Future studies will provide information about trends in labor requirements for other types of construction. For details see: Labor Requirements for Federal Office Building Construction, Bulletin 1331, 1962; Labor and Material Requirements for Civil Works Construction by the Corps of Engineers, Bulletin 1390, 1964; Labor and Material Requirements for Private One-Family House Construction, Bulletin 1404, 1964; Labor Requirements for Hospital Construction, Bulletin 1340, 1962; and Labor Requirements for School Construction, Bulletin 1299, 1961. Also see Stephen G. Thompson, "The Rise in Building Productivity: Since World War II, Output Per Building Construction Worker in the United States has Risen a Surprising 13 Percent," Architectural Forum, May 1958, pp. 103-105 and 204-205, and Christopher A. Sims, "Efficiency in the Construction Industry," in vol. II, technical studies, The Report of the Presidents Committee on Urban Housing, U.S. Government Printing Office, Washington, D.C., 1968.

Table 3. Number and percent of wage and salary workers by detailed occupation, contract construction,<sup>1</sup> 1960

Occupation	Number	Percent	Occupation	Number	Percent
Total employed -----	3,062,038	100.0	Craftsmen, foremen, operatives, and kindred workers—Continued		
Professional, technical, and kindred workers -----	167,170	5.5	Machinists -----	2,746	0.1
Accountants and auditors -----	12,043	.4	Mechanics and repairmen -----	86,872	2.8
Architects -----	1,107	( <sup>2</sup> )	Air conditioning, heating and refrigeration -----	14,321	.5
Designers -----	3,319	( <sup>2</sup> )	Automobile -----	5,718	.2
Draftsmen -----	12,796	.4	Radio and television -----	582	( <sup>2</sup> )
Engineers, technical -----	87,370	2.9	Millwrights -----	4,634	.2
Civil -----	73,861	2.4	Oilers and greasers, except auto -----	8,989	.3
Electrical -----	3,398	.1	Painters, construction and maintenance--	156,053	5.1
Industrial -----	1,333	( <sup>2</sup> )	Paperhangers -----	2,681	.1
Mechanical -----	4,990	.2	Plasterers -----	31,471	1.0
Sales -----	2,188	.1	Plumbers and pipefitters -----	147,139	4.8
Natural scientists -----	1,046	( <sup>2</sup> )	Roofers and slaters -----	35,540	1.2
Surveyors -----	13,464	.4	Sailors and deck hands -----	1,963	.1
Technicians, engineering and physical sciences -----	6,723	.2	Sawyers -----	1,094	( <sup>2</sup> )
Managers, officials, and proprie- tors, except farm -----	147,621	4.8	Stationary engineers -----	4,057	.1
Clerical and kindred workers -----	152,944	5.0	Stationary firemen -----	1,257	( <sup>2</sup> )
Salesworkers -----	11,236	.4	Structural metal workers -----	32,929	1.1
Craftsmen, foremen, operatives, and kindred workers -----	1,893,134	61.8	Taxicab drivers and chauffeurs -----	1,747	.1
Asbestos and insulation workers -----	9,949	.3	Tinsmiths, coppersmiths, and sheet- metal workers -----	29,993	1.0
Blasters and powdermen -----	1,250	( <sup>2</sup> )	Truck and tractor drivers -----	150,038	4.9
Boilermakers -----	3,629	.1	Welders and flame cutters -----	29,645	1.0
Brickmasons, stonemasons, and tile setters -----	127,156	4.2	Apprentices -----	24,496	.8
Cabinetmakers -----	4,618	.2	Bricklayers and masons -----	2,450	.1
Carpenters -----	480,914	15.7	Carpenters -----	5,200	.2
Cement and concrete finishers -----	36,353	1.2	Electricians -----	5,251	.2
Chainmen, rodmen, and axmen, surveying -----	3,347	.1	Plumbers and pipefitters -----	6,544	.2
Cranemen, derrickmen, and hoistmen --	16,227	.5	Service workers -----	19,188	.6
Electricians -----	107,904	3.5	Chambermaids and maids -----	600	( <sup>2</sup> )
Excavating, grading, and road machinery operators -----	141,362	4.6	Charwomen and cleaners -----	2,489	.1
Foremen (n. e. c.) -----	95,547	3.1	Cooks, except private household -----	1,157	( <sup>2</sup> )
Glaziers -----	4,143	.1	Janitors and sextons -----	4,696	.2
Inspectors (n. e. c.) -----	14,606	.5	Porters -----	690	( <sup>2</sup> )
Linemen and servicemen, telephone, telegraph, and power -----	7,873	.3	Protective service workers -----	6,845	.2
			Laborers -----	620,761	20.3
			Carpenters' helpers -----	29,751	1.0
			Gardeners, except farm and groundskeepers -----	3,350	.1
			Teamsters and truckdrivers: Helpers--	1,495	( <sup>2</sup> )
			Warehousemen (n. e. c.) -----	1,780	.1

<sup>1</sup> See footnote 2, p. 3.<sup>2</sup> Less than 0.05 percent.

NOTE: Detail by occupation does not add to totals because: (a) All occupations with fewer than 1,000 persons have been excluded from this table; and (b) 25,488 workers whose occupations were not reported are included in the total. All percentages have been rounded.

SOURCE: U. S. Department of Commerce, Bureau of the Census, U. S. Census of Population: 1960 Occupation by Industry (final report PC (2)-7C), Washington, D. C., 1963.

Table 4. Annual value of new construction put in place in the United States in 1957-59 dollars and percent distribution by type of construction, 1946-66<sup>1</sup>

Type of construction	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
	Millions of dollars										
Total, new construction -----	25,668	29,573	34,681	36,605	43,576	42,596	42,882	44,747	47,164	51,717	50,034
Private -----	21,787	24,682	28,385	27,779	34,309	31,387	30,334	31,818	33,721	38,394	36,651
Public -----	3,881	4,891	6,296	8,826	9,267	11,209	12,548	12,929	13,443	13,323	13,383
	Percent										
Total, new construction -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private <sup>2</sup> -----	84.9	83.5	81.8	75.9	78.7	73.7	70.7	71.1	71.5	74.2	73.3
Residential buildings (nonfarm) -----	42.0	47.5	48.3	44.8	51.5	43.1	41.5	41.0	42.9	45.7	41.7
Nonresidential buildings -----	25.3	16.9	15.0	12.9	12.2	15.6	14.2	15.0	15.5	16.8	19.0
Farm construction -----	7.5	6.6	5.9	5.5	4.4	4.2	4.2	3.8	3.4	2.9	2.9
Public utilities -----	9.6	12.1	12.3	12.4	10.3	10.6	10.7	11.1	9.4	8.5	1.3
Public <sup>2</sup> -----	15.1	16.5	18.2	24.1	21.3	26.3	29.3	28.9	28.5	25.8	27.7
Residential buildings -----	2.5	1.0	.6	1.3	1.0	1.6	1.7	1.4	.8	.6	.6
Nonresidential buildings -----	2.8	3.1	5.2	7.8	7.5	10.4	11.7	11.4	11.4	9.2	8.7
Military facilities -----	1.3	1.0	.6	.5	.5	2.5	3.8	3.3	2.5	2.8	2.9
Highways -----	4.2	5.6	5.3	7.3	6.2	5.7	6.3	7.2	8.7	8.5	8.9
Sewer and water systems -----	1.5	2.1	2.4	2.6	2.2	2.5	2.4	2.4	2.5	2.4	2.8
Conservation and development -----	2.1	2.5	3.0	3.5	3.1	2.9	2.7	2.5	1.9	1.5	1.8
		1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
	Millions of dollars										
Total, new construction -----	49,878	50,270	54,222	52,171	53,087	55,948	58,101	59,172	62,213	61,692	
Private -----	35,753	34,868	38,218	36,518	36,428	39,056	40,308	40,861	43,100	42,033	
Public -----	14,125	15,402	16,004	15,653	16,659	16,892	17,793	18,311	19,113	19,659	
	Percent										
Total, new construction -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private <sup>2</sup> -----	71.7	69.4	70.5	70.0	68.6	69.8	69.4	69.1	69.3	68.1	
Residential buildings (nonfarm) -----	38.7	39.6	43.6	39.9	39.0	40.8	41.5	39.7	36.6	32.1	
Nonresidential buildings -----	19.6	17.3	15.9	18.6	18.8	18.9	17.7	18.9	22.4	24.5	
Farm construction -----	2.9	2.8	2.5	2.4	2.4	2.2	2.1	19.8	1.8	1.8	
Public utilities -----	10.1	9.3	8.1	8.6	8.0	7.5	7.7	8.0	7.9	(3)	
Public <sup>2</sup> -----	28.3	30.6	29.5	30.0	31.4	30.2	30.6	30.9	30.7	31.9	
Residential buildings -----	1.0	1.7	1.7	1.3	1.5	1.6	.8	.9	.8	.9	
Nonresidential buildings -----	9.3	9.3	8.1	8.7	9.0	8.3	9.1	9.5	9.7	10.6	
Military facilities -----	2.6	2.8	2.8	2.6	2.5	2.1	1.9	1.4	1.2	1.0	
Highways -----	9.5	10.9	11.1	11.0	11.6	11.5	12.1	11.8	11.4	11.9	
Sewer and water systems -----	2.8	2.8	2.6	2.6	2.7	2.8	2.7	3.2	3.1	2.9	
Conservation and development -----	2.0	2.0	2.0	2.1	2.4	2.4	2.5	2.4	2.6	2.7	

<sup>1</sup> Beginning 1959 includes Alaska and Hawaii.<sup>2</sup> Detail does not add to total because of the inclusion of types of construction not shown separately.<sup>3</sup> Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census.

## Chapter 3. Employment, Unemployment, Work Stoppages, and Industrial Hazards

### Annual Employment

Average annual employment in the contract construction industry, increasing at an annual rate of about 3.2 percent, has almost doubled since 1946 and is about two-thirds greater than in 1947. In 1947, the earliest year for which data by occupational group are available, construction workers made up seven-eighths of the industry's work force and professional, administrative, technical, managerial, and clerical workers constituted the remainder. This proportionate relationship has shifted slightly over the years. Office workers are now estimated to make up more than 1 of every 7 employees in the industry. (See table 5.)

Table 5. Average annual employment in the contract construction industry, by type of worker, 1946-67

Year	Average annual employment (in thousands)			Year	Average annual employment (in thousands)		
	Total	Construction workers	Office workers		Total	Construction workers	Office workers
1946 -----	1,661	( <sup>1</sup> )	( <sup>1</sup> )	1957 -----	2,923	2,537	386
1947 -----	1,982	1,759	223	1958 -----	2,778	2,384	394
1948 -----	2,169	1,924	245	1959 -----	2,960	2,538	422
1949 -----	2,165	1,919	246	1960 -----	2,885	2,459	426
1950 -----	2,333	2,069	264	1961 -----	2,816	2,390	426
1951 -----	2,603	2,308	295	1962 -----	2,902	2,462	440
1952 -----	2,634	2,324	310	1963 -----	2,963	2,523	440
1953 -----	2,623	2,305	327	1964 -----	3,050	2,597	453
1954 -----	2,612	2,281	331	1965 -----	3,186	2,710	476
1955 -----	2,802	2,440	362	1966 -----	3,275	2,784	491
1956 -----	2,999	2,613	386	1967 -----	3,203	2,705	498

<sup>1</sup> Not available.

The downshifts in contract construction's employment picture have resulted entirely from changes in the employment of construction workers. Annual office employment, increasing at an average yearly rate of about 4.1 percent since 1947, has never declined although office employment in 1957, 1961, and 1963 is estimated to have been at the same level as in the preceding year. In contrast, construction worker employment, increasing at an average annual rate of about 2.2 percent, has declined in 8 of the last 21 years. As a result of these differential movements in annual employment of the industry's two work forces, average construction worker employment in 1967 was only 41 percent greater than in 1947 while office worker employment of 498,000 was more than double the 1947 level of 223,000.

The declines in total construction employment, however, have not, as indicated in the following tabulation, always been indicative of lower levels in each of the industry's major groups.

Percent change in average annual employment during  
years of employment decline, 1948-67  
(change from previous years level)

Year	Contract construction	General building contractors	Heavy construction	Special trades
1949 -----	-0.2	-3.3	+3.1	+1.2
1952 -----	+1.2	-.8	+4.3	+1.7
1953 -----	-.4	-1.4	-.3	+.4
1954 -----	-.4	-3.3	-1.9	+2.5
1957 -----	-2.5	-8.2	+3.5	-.5
1958 -----	-5.0	-9.4	-2.0	-3.0
1960 -----	-2.5	-5.3	-.1	-1.7
1961 -----	-2.4	-3.7	-.4	-2.4
1967 -----	-2.2	-5.2	-1.8	-.7

The average annual rate of increase in total contract construction employment has been heavily weighted by the rapid growth of heavy construction and special trades employment. In 1946 general building construction employment constituted about 40 percent of the industrywide total, employment in special trades contracting was about 70 percent and that in heavy construction about 30 percent of the balance. Since 1946, special trades and heavy construction employment, increasing at an average annual rate of approximately 4 percent, has more than doubled; general building contractors employment, increasing at an average rate of 1.9 percent, grew by less than 50 percent over the 1946-67 period. Because of these differential movements, which reflect both increasing specialization and a relative decline in residential construction, general building contracting employment now accounts for only about 30 percent of the industrywide total; the other 70 percent is split between heavy construction and special trades employment in about the same proportion as in 1946.

General building contractors employment has declined in 9 of the last 21 years. The frequency with which general building employment diminished was about one-third greater than in heavy construction and almost double that in special trades. Employment in general building construction not only declined more often than in the other construction groups but the extent of the contraction in general building employment, during each year in which employment in general building and either or both of the other groups has declined, has been substantially greater than in the other industry groups.

Regions. Since the end of World War II, employment among the regions has grown most in the South and least in the Northeast. In 1967 employment in the South was approximately two and one-half times greater than it had been during 1946;<sup>1</sup> in 1967 employment in the Northeast was about two-thirds more than in 1946.

These differential growth patterns by region (table 9) have importantly changed the relative regional employment structure. In 1946, each of the regions, except the West, had about the same proportion of total contract construction employment. The West, where 17 percent of all construction industry employees worked, had about one-third fewer employees than any other region.<sup>2</sup> In 1967, employment in the South constituted about 35 percent of the industrywide total. The North Central and West had about the same proportion of the total as in 1946. Employment in the Northeast, about two-thirds greater in 1967 than in 1946, however, had declined from 27 percent of industrywide employment in 1946 to 23 percent in 1967.

### Seasonal Fluctuations in Construction Employment

Contract construction employment fluctuates by about 23 to 35 percent between the months of highest and lowest employment in a year. For construction workers, seasonality means serious unemployment and loss of earnings. Peak operations in the summer and fall draw many thousands of workers into the labor force who cannot find employment in the industry during the slack of winter. This pattern results in a construction unemployment rate more than double that for the Nation as a whole.<sup>3</sup>

Except for agriculture, construction has the greatest seasonal variations of any major industry division. They are much more pronounced in some types of construction activities than in others, however. In addition, the degree of seasonality varies among geographic areas as well as among the industry's three segments and the various construction occupations.

<sup>1</sup> The rapid growth of construction employment in the South undoubtedly reflects the rapid urbanization of the region. According to the Bureau of the Census "since 1940 . . . metropolitan concentration has proceeded more rapidly in the South than in any other region." (Current Population Reports, Series P-25, "Population Estimates." No. 415, January 1969.) In spite of the South's rapid urbanization during the past three decades, most Southerners still reside outside the region's metropolitan centers, and Census projections indicate that by 1975 only 49 percent of the South's population will reside in metropolitan areas—a smaller proportion than in any other region.

<sup>2</sup> In the West, employment has tended to fluctuate more than in any other region and has been declining since 1964 whereas that in all other regions has been increasing.

<sup>3</sup> See Seasonality and Manpower in Construction, Bulletin 1642, for a detailed analysis of seasonality and employment in construction.

From its low in February to its peak in August,<sup>4</sup> contract construction adds enough workers to staff every mining firm in the country, double the employment in the lumber, furniture, rubber, and stone, clay, and glass industries among others. Six months later employment will have dropped by approximately the same number. As can be seen from the following tabulation, during the last decade total employment in contract construction in August generally has been about 23 to 35 percent (about 650,000 to 900,000) higher than in February. (See table 6.)

Table 6. Extent to which employment in August exceeded that in February

Year	(Workers in thousands)							
	Contract construction		General building contractors		Heavy construction		Special trades	
	Percent	Number of workers	Percent	Number of workers	Percent	Number of workers	Percent	Number of workers
1968 -----	22.8	660	16.7	149.2	55.9	290.2	14.9	200.1
1967 -----	24.6	695	18.7	167.0	50.9	265.5	18.7	263.3
1966 -----	28.6	806	24.1	219.5	64.8	315.2	19.0	271.6
1965 -----	31.8	855	29.2	248.6	73.1	333.0	19.8	273.9
1964 -----	32.3	835	32.6	261.6	65.8	295.2	20.9	278.6
1963 -----	37.6	916	40.0	298.5	75.5	314.4	23.7	302.4
1962 -----	35.8	866	30.0	227.7	69.3	297.5	21.8	280.8
1961 -----	35.0	818	35.0	254.6	65.5	277.0	24.1	286.5
1960 -----	28.0	706	25.8	207.0	63.9	278.0	17.3	221.0
1959 -----	35.3	867	33.9	271.9	70.6	293.9	24.3	301.3
1958 -----	33.4	766	29.3	219.2	67.2	269.5	24.2	277.1

The seasonal fluctuations in employment have been most pronounced in heavy construction where the difference between February and August employment has been 50 to 75 percent of the February level.<sup>5</sup> The differences in seasonal employment in heavy construction have not only been twice as severe as in general building firms and about three times as great as among special trades contractors, but have disproportionately added to the total for all of contract construction. In 1967, for example, annual employment in heavy construction firms was about 20 percent of the contract construction total. During that year, however, the seasonal fluctuation in heavy construction employment was more than 40 percent of contract construction's February–August shift.

The extent to which peak construction employment has exceeded February employment had declined substantially during the last 5 years.<sup>6</sup> Most of the decline, however, can be attributed to the rapid employment growth in special trades contracting, where seasonal employment differences are lowest and are diminishing more rapidly than in other contract construction industries. In addition, the available data suggest that the downtrend in seasonal employment disparities can be attributed, at least in part, to the declining relative importance of residential construction and the increasing importance of nonresidential building in the construction market. Another factor that may have played an important role in the recent diminution of the seasonal variation in contract construction employment has been the

<sup>4</sup> The months of low and high employment in a year have occasionally been in some months other than February and August. (See appendix B for details.)

<sup>5</sup> In recognition of the need to further reduce seasonality in construction, the 90th Congress took an important first step towards the planning of a program to accomplish that goal. That step incorporated in Title IV—Seasonal Employment in the Construction Industry—of the 1968 amendments to the Manpower, Development and Training Act (public law 636) requires the Secretaries of Labor and Commerce to conduct a study of seasonality in the construction industry with special attention to its implications for national manpower planning. The report due by Dec. 31, 1969, is to consider, among other factors, the extent to which seasonal employment can be reduced without substantial increases in construction costs by means such as—(a) the application of modern techniques to reduce the influence of weather on construction activity; (b) the resolution of technical problems which have not been solved by existing research and development activities; (c) possible changes in contract procedures in allocation cycles and (d) improved planning and scheduling of construction projects.

Subsequently, the President issued a memorandum to the heads of departments and agencies requesting that they take a number of steps designed to reduce seasonality in construction.

<sup>6</sup> The extent of seasonal employment fluctuations over the whole post-World War II period, except during the most recent years, has not shown any discernible improvement.

reduction in unemployment rates. As a result, construction employers may have been unable to expand their summer work force, particularly among the skilled craft groups, as much as in previous years.

Because of the cold weather, seasonal fluctuations are much more pronounced in the North than in the South. In 1966, for example, employment in the West North Central region was more than 45 percent higher in August than in February, whereas in the South Atlantic region, August employment was less than 17 percent higher. Comparison between States shows that the differences were less than 10 percent in Florida and California; in Minnesota, employment was 65 percent higher in August than in February.<sup>7</sup>

### Employment Patterns of the Industry's Work Force

Contract construction's employees form a floating labor pool and shift from industry to industry and employer to employer. In 1964, for example, about two-thirds of all workers employed by contract construction firms and more than two-fifths of the industry's major earners worked in more than one major (2 digit) construction industry group or in another industry in addition to their construction employment.<sup>8</sup> Preliminary data for 1965 indicate that more than one-fourth of those who had earnings in any construction employment earned the major part of their annual wages in some other industry. The workers attachment to a single construction firm, even among the industry's major earners, is tenuous. More than one-fourth of the major earners and about one-third of those employed in the industry during each quarter of 1964 worked for more than one construction firm. (See table 7.)

Table 7. Percent of workers in 1964 who had earnings in the industry

Industry	Some earnings in the industry			Major proportions of their earnings from the industry				
	Total	Whose total earnings were from		Total	Whose total earnings were from			
		This industry only	This and other industries		This industry only			This and other industries
					All	Number of employers		
1	More than 1							
General building construction -----	100.0	34.8	65.2	100.0	57.3	41.8	15.5	42.7
Heavy construction -----	100.0	32.2	67.8	100.0	51.6	38.2	13.4	48.3
Special trades contractors --	100.0	40.6	59.4	100.0	61.9	43.3	18.6	38.2

SOURCE: BLS tabulation from the Social Security Administration's 1-percent sample data.

The employment patterns of construction industry workers are unique among the American industrial complex. In any year, only about 30 percent of the employees in the private nonfarm sector work for more than one employer. About 20 percent of all job changes in the private sector result from construction workers shifts. The only other industries in which employment patterns are similar to those found in construction are the water transportation, retail automobile repair services, and amusement industries.<sup>9</sup>

<sup>7</sup> See Bulletin 1642, op. cit., and Robert V. Myers and Sol Swerdloff, "Seasonality and Construction," *Monthly Labor Review*, September 1967, pp. 1-8.

<sup>8</sup> Major earners, as defined here, are those who earned the highest proportion of their wage and salary income in the industry. These data were tabulated by BLS from information about the 1964 work history of individuals included in the Social Security Administration's (SSA) 1-percent continuous work history sample. The employment pattern described for 1964, the latest year for which such data are available, are essentially the same as in earlier years. For additional and the latest data published by the SSA in this detail, see *Workers Under Social Security, 1960*, Washington, D.C., 1968, and *Handbook of Old-Age and Survivors Insurance Statistics* for various years through 1957.

The SSA's definition of contract construction includes all establishments that would be included in the industry under the SIC criteria and all separable governmental units (other than policymaking units)—voluntarily covered under Social Security—primarily engaged in doing work that would be classified as contract construction if done by a private firm.

<sup>9</sup> For details see *Annual Earnings and Employment Patterns in Private Nonagricultural Employment, 1964*, Report 330, 1969 and *Workers Under Social Security*, op. cit.

## Extent of Annual Employment

The extent to which construction workers change jobs and industries is rooted in the fact that construction offers less than one-half year's employment to the majority of its employees. Less than a full year of work is prevalent even among the industry's major earners. In 1964, for example, fewer than one-third of all workers and only about one-half of the major earners worked in contract construction during all four quarters of the year.

	General building construction	Heavy construction	Special trades contractors
Major earners in 1964:			
Number (thousands) -----	1,269.0	919.3	1,918.8
Percent of all workers -----	59	60	64
Percent of workers by quarters worked in the industry during 1964:			
All workers -----	100	100	100
1 -----	34	34	30
2 -----	23	23	20
3 -----	14	16	13
4 -----	30	27	-
Major earners -----	100	100	100
1 -----	14	13	12
2 -----	19	20	16
3 -----	19	23	16
4 -----	48	45	57

SOURCE: BLS tabulation from the Social Security Administration's 1-percent sample data.

Preliminary data for 1965 indicate that the industry shifts made by many workers are from one industry within the contract construction division to another. The 1965 data also indicate that the proportions of all workers and of major earners with four quarters of employment in their major (2 digit) industry group are quite similar to those noted for 1964. The 1965 data, however, show that about 43 percent of all workers and 56 percent of the major earners had four quarters of employment in the contract construction division.

Undoubtedly, the seasonal nature of construction work and the limited duration of each crafts' involvement in a particular project contributes to the shortness of many workers' annual tenure in the industry. Nevertheless, while many other industries are seriously affected by seasonal and other factors similar to those in construction, the construction industry's major earners' limited work history in the primary industry is equalled or exceeded in only a few industries—predominantly in retail trade and services.<sup>10</sup>

## Office Workers

Employment opportunities for office workers are considerably more stable than for workers engaged in construction operations. Average monthly employment of the office force, and of women, varies by only about 3 percent during the year.

Data showing the extent of office employees' work experience in the industry are not available. Data for women, who in the aggregate constitute about 5 percent of the industry's labor force but almost a quarter of its office force, however, indicates that their opportunities for stable employment in the industry are considerably greater than generally exist for men (including office and nonoffice employees).

<sup>10</sup> Ibid.

Notwithstanding women's seemingly greater prospects for continuous employment in construction, fewer than one-third of those that worked in the industry during 1964, and about one-half of the women that earned the major portion of their 1964 wages and salaries in construction, were employed by construction firms during all four quarters of the year.

These data indicate that the individual woman's employment tenure during the year is about as tenuous as that of the majority of the industry's male employees.<sup>11</sup> The absence of data on work in the industry by occupational group precludes an examination of the extent to which women in the industry's offices have employment patterns different from those of male office workers. Since men occupy most of the professional, technical, and managerial jobs, and women the clerical, some disparities in job and industry attachment must exist.

### Negroes

The proportion that Negroes are of all the major earners in construction, however, is about the same as the proportion of Negroes in the total population (11-12 percent). Despite this, Negroes made up a greater proportion of the major earners in construction during 1964 (the latest year for which data are available) than in any other industry group except tobacco manufactures (29 percent), lumber (19 percent), primary metals (13 percent), local passenger transportation (13 percent), water transportation (16 percent) eating and drinking places (14 percent), real estate (17 percent), hotels (22 percent), personal services (22 percent), auto repair services (18 percent), medical and other health services (15 percent), and private households (56 percent).<sup>12</sup> In half these industries Negro women were more than 2 of 5 Negro major earners and accounted for 26 percent of the Negro major earners in real estate. In construction, however, Negro women were about 3 percent of the Negroes that earned the major part of their 1964 wages in the industry. Thus, the only industries that are somewhat comparable to construction in terms of employment potential for Negro men are lumber, primary metal, local passenger transportation, water transportation, and auto repair services. In each of these industries Negro men account for 92 to 97 percent of all Negro major earners. These industries combined, however, employed about 3 percent fewer Negro male major earners in 1964 (465,700) than construction (478,500) but almost 48 percent more Negro women (20,800) than construction (14,000).

Industry and race	Percent of major earners who worked in the industry for 3 or 4 quarters of 1964		
	Total	3 quarters	4 quarters
General building construction -----	67	19	48
Negro -----	61	21	40
White -----	68	18	49
Heavy construction -----	68	23	45
Negro -----	61	23	38
White -----	69	23	46
Special trades -----	73	16	57
Negro -----	61	19	42
White -----	74	16	58

SOURCE: BLS tabulation from the Social Security Administration's 1-percent sample data.

<sup>11</sup> The limited data available also indicate that construction's women workers once unemployed remain unemployed for more weeks than men. See, for example, table 2 in the New York State Division of Employment report on Unemployment Insurance Beneficiaries: Benefit Years Ending in 1965 (1968).

<sup>12</sup> Railroad and railroad related employment covered by the Railroad Retirement System are excluded from this analysis. The stated proportion of Negroes in private households is considered to be an underestimate resulting from the Social Security System's coverage and reporting requirements and some nonreporting of workers that should be covered under the system. For additional and later information than that provided here, see Claire C. Hodge, "The Negro Job Situation: Has it Improved," Monthly Labor Review, January 1969, pp. 20-28.

Negroes generally have less opportunity to work a full-year in construction than do other workers and considerably fewer Negro than white major earners work in the industry for more than one-half year.

### Unemployment

Since 1948, the annual average rate of unemployment in construction has fallen below 6 percent only once—5.5 percent in 1952. The unemployment rate in all nonagricultural industries (including construction) has amounted to 5.5 percent or more in only 6 of the 20 years during the 1948-67 period. The construction rate, in each of those years as shown in the following tabulation, was about double or more than double the national rate.

Year	All nonagricultural industries	Construction	
		Total	Private <sup>1</sup>
1949 -----	6.2	11.9	12.9
1958 -----	7.1	13.7	15.2
1959 -----	5.5	12.0	13.4
1960 -----	5.6	12.2	13.5
1961 -----	6.7	14.1	15.7
1962 -----	5.5	12.0	13.5

<sup>1</sup> Excludes government.

The average annual rate of construction industry unemployment during the 20 years studied has been greater than 10 percent in 9 years, between 7 and 10 percent in 8 years, and below 7 percent in only 4 years.<sup>13</sup> When unemployment of experienced construction workers in the private sector is considered separately, the annual average rate of unemployment has been below 10 percent in only 6 of the years in the 1948-67 period.

The annual rate of unemployment in construction has been exceeded by that of another industry grouping only once since 1948. In 1954, the construction rate was 10.5 percent; the rate in mining, forestry, and fisheries was 12.3 percent. (See table 9.)

Not only is the construction unemployment rate significantly higher, usually double or more than double, the rate in the total nonagricultural sector, but unemployed contract construction workers generally make up 12 to 15 percent of the total number of unemployed nonagricultural workers. This proportion is substantially greater than construction's contribution to the Nation's total employment.<sup>14</sup>

Construction unemployment has declined since 1961 when the construction rate hit its post-World War II high of 14.1 percent (15.7 percent when only private sector employment is considered). The decline to 6.6 percent, however, was only a slightly greater rate of improvement than for the total nonagricultural sector and about the same pace as the improvement in manufacturing. (See table 10 for details.)

An examination of the limited occupational data available indicates that carpenters and other construction craftsmen tend to have more stability of employment and suffer less unemployment than other construction employees. The rates of unemployment among construction craftsmen during both months of high and of low levels of industry activity, and on an average annual basis, amount to less than one-half that of the construction laborers. Nevertheless, as table 6 shows, the unemployment rates of construction craftsmen and laborers,

<sup>13</sup> For detail in addition to that presented in table 5, see the Handbook of Labor Statistics, 1969 Bulletin 1630 and Employment and Earnings and Monthly Report on the Labor Force (various issues). Data by industry for 1946 and 1947 are not available. Hence, the 1948 unemployment rate is used here as the basis for comparison. Unless otherwise noted the construction industry as discussed in this section refers to contract construction and construction activities in all other sectors of the economy including government.

<sup>14</sup> *Ibid.* For a discussion of the "cost" of unemployment in terms of the amount per hour worked employers contribute to unemployment compensation funds and the proportion of compensation accounted for by these contributions, see p. 24 and appendix A.

except during construction's peak months, tend to be about twice as great as those for other craftsmen and laborers in the economy. During the month of most intensive construction activity (August) the unemployment rate of construction craftsmen is about one-third higher than that of craftsmen in other industries while the rate of unemployment among construction laborers is about 50 percent greater than that of all nonfarm laborers.

While the average annual level of unemployment is high in construction, the cyclical and seasonal variations are also important. In bad years, the monthly unemployment rate can be as high as 26 or 27 percent in February. In good years the rate may be as high as 13 or 14 percent. Even in years of greatest construction activity the unemployment rate usually is 4 percent or greater, and in midsummer, when construction employment is at its peak the rate generally exceeds that for workers in most other industries.

During 1966 and 1967, for example, when the average annual rate of unemployment among construction workers was 7.1 and 6.6 percent respectively, (lower than in any year since 1953) the monthly rate exceeded the annual rate in about one-half of the months and was as high as 11.4 percent in February 1966. In spite of the generally low rates in the industry during those 2 years, the rate of unemployment among construction workers exceeded the rates for every other nonagricultural group except during July and August 1966 and September and October 1967. Even during these months of particularly low unemployment, the construction rate, except in September 1967, exceeded the nonagricultural rate by more than 25 percent. In September 1967, for only the second time since 1948, the construction unemployment rate hit a low of 3.2 percent—slightly below the nonagricultural industries average of 3.5.<sup>15</sup>

To explain this high rate of joblessness in construction one must look at the economic nature of the industry. The fact that the product market of the construction industry is local in nature is an important reason for the paradox of high unemployment associated with high levels of industry activity. When the economy moves upward, construction increases in individual localities or markets. This increased local activity may mean tight demand—with numerous jobs going unfilled—in particular sections of the country while elsewhere men are seeking employment and finding none available. Those geographic disparities may be compounded by the resistance of workers to move long (or even short) distances for jobs which, they know by experience, tend to be of short duration and by the stringencies inherent in a work situation in which workers frequently have to obtain travel cards from their local union and work permits from the union of jurisdiction in the area where work is available.

In addition, construction employees can and do change jobs often because of the prevalence of short-term work on most projects. The days spent between jobs, waiting for new employment to become available, add to construction's high unemployment rate.<sup>16</sup>

The weather also robs the employee in construction of the chance to work. Countless days are lost as employees wait out the environment.

Not all of the seasonal increases and decreases in construction employment are reflected in the unemployment figures since many workers drop out of the labor force during the slack season or get jobs in other industries. In the busy season the construction industry's labor force is augmented. The movements in and out of the industry can be illustrated by observing the employment figures for a recent year. Between August 1964 and February 1965, for example, employment declined by more than 700,000, but unemployment increased by only about one-half this amount. The other half either left the labor force or moved into other industries. From February-August 1965, a period when cyclical as well

<sup>15</sup> In the 1948-67 period, the monthly unemployment rate in construction fell below 4 percent only 7 times: May 1951, 3.8 percent; August 1952, 3.9 percent; September 1952, 3.8 percent; October 1952, 3.2 percent; November 1962, 3.6 percent; October 1953, 3.9 percent; and September 1967, 3.2 percent.

<sup>16</sup> Technically, an employee who is laid off for a day or two is not counted among the unemployed. To be counted among the unemployed the construction worker could not have had any employment during the week of reference. For additional information about the conceptual framework of the unemployment statistics, see Concepts and Methods used in Manpower Statistics from the Current Population Survey Report 313; Current Population Reports, Series P-23, June 1967, No. 22.

as seasonal forces were important, employment increased by nearly 900,000. However, unemployment fell by only 400,000. Thus, most of the additional workers came from outside the industry.<sup>17</sup>

In 1965, only about half of the construction industry's employees worked a full year at a full-time job. The average time worked among full-time workers was only 42 weeks. The inclusion of government employees and the self-employed among the workers studied yields a more favorable picture than for contract construction alone. Not only are construction workers more likely to be unemployed at some time during the year than workers in any other major industry group outside agriculture, but they are also more likely to have several periods of unemployment and to be jobless for a total of 15 weeks or more.<sup>18</sup>

### Work Stoppages and Industrial Hazards

Construction workers generally lose more man-days of work each year because of industrial disputes and industrial hazards than their counterparts in any other industry. At present the economic effects of these lost days cannot be adequately measured, particularly in terms of the total cost to the involved workers and to society as a whole.

Although our measuring devices are imprecise the cost to the involved workers appears to be about 17 days of wages per occurrence. The cost per worker involved in an industrial injury is apparently substantially higher than the cost per worker involved in an industrial controversy—even when expressed simply in terms of wages lost because of time away from work. Moreover, the frequency of accidents on construction jobs is so great that work injuries annually cost the industry about 4 to 5 times more man-days of wage and salary workers time than are lost because of work stoppages. During the 1958-65 period, for example, work stoppages are estimated to have cost the industry between 1.9 and 4.8 million man-days a year—an average of about 3.8 million man-days annually. During this period, on-the-job accidents of wage and salary workers cost the industry an estimated 14 to 20 million man-days a year—an average of about 17 million man-days per year.<sup>19</sup>

Work Stoppages.<sup>20</sup> Construction strikes<sup>21</sup> since the end of World War II have been an important component in the economy's work stoppage statistics. Since 1953, when construction strikes accounted for more than two-fifths of all work stoppages in the Nation, about 15 to 25 percent of all strikes have been in the construction industries. Prior to 1953, construction strikes generally accounted for 10 to 15 percent of all work stoppages. Strikes in only one industry—basic steel—accounted for more post war idleness than construction, and over half of the steel idleness was logged in 1952 and 1959. (See table 11.)

There were more construction strikes in 1966 than in any post-World War II year except 1953. Although there were 110 fewer construction strikes in 1967 than in 1966—the severity of the 1967 strikes, in terms of an estimate of man-days cost per worker involved, was at a post-World War II high.

<sup>17</sup> Myers and Swerdloff, op. cit.

<sup>18</sup> Ibid. For additional detail, see "Work Experience of the Population in 1965," Monthly Labor Review, December 1966, pp. 1369-1377. Also reprinted with additional tabular material, as Special Labor Force Report 76.

<sup>19</sup> These measures are only rough approximations of relative amplitude. The concepts underlying both series are such that data, for contract construction, converted to estimates of man-days lost tend to misstate the number of days lost. For additional information about the methods and techniques used in constructing these series and the limitations of the data, see BLS Handbook of Methods for Surveys and Studies, Bulletin 1458 (1966). Also see footnotes 20, 22, 23, and 24, this chapter.

<sup>20</sup> This section was derived principally from Work Stoppages in Contract Construction 1946-66 (Report 346, 1968). That report which provides data for the period ending in 1966 contains information about each of the work stoppages involving 10,000 workers or more that occurred during the 1927-66 period as well as summary tabulations which provide information about work stoppages by State.

<sup>21</sup> These data include all work stoppages in major industry groups 15, 16, and 17, as defined by the Standard Industrial Classification Manual (1967), and known to the BLS and various cooperating agencies as involving six workers or more and lasting a full day or shift or longer. Figures on the number of workers involved and man-days idle include all workers made idle for as long as a shift on construction sites directly involved in a stoppage; they do not measure the indirect or secondary effects on other sites or other industries whose employees may be made idle as a result of a material or service shortage. Nor do they take any offsetting factors—such as the extent to which construction workers obtain temporary or intermittent employment on nonstruck jobs during the controversy—into consideration. For additional detail, see Bulletin 1458, op. cit. The terms "work stoppage" and "strike" are used interchangeably in this bulletin and include lockouts.

Economic issues<sup>22</sup> dominate the construction strike scene. In 1967, for example, strikes over economic issues constituted about one-third of all work stoppages that began in the year, more than two-thirds of the strikers, and over four-fifths of all idle man-days due to work stoppages.

From 1946 to 1961, the dominant issue in construction strikes was wage changes or supplementary benefits. Until 1955, more than half of all the strikes were over these issues. In 1948, almost three-quarters of the strikes were over economic issues. During the late 1940's and early 1950's, up to nine-tenths of the idleness and four-fifths of the workers on strike were attributable to economic demands. Strikes over economic issues reached their postwar peak during the 1952-54 period. In 1955, the number of workers involved in economic strikes was only half the number in 1953, and the number of man-days lost due to those strikes was two-thirds less. From 1955 through 1958, the average number of workers per strike climbed each year, as did the duration of the strikes, although the number of strikes over wages remained relatively stable. As a result, idleness attributable to economic issues in 1958 reached the levels of the early 1950's (91 percent of all construction strikes). While strikes over wage demands did not occur as frequently as jurisdictional disputes during the early 1960's they continued to account for most of the workers involved and man-days idle.

Jurisdictional disputes generally account for the greatest or second largest number of strikes begun in any year since World War II. Their impact in terms of workers involved or idleness, however, is not as important as the number would indicate.

Most jurisdictional strikes since the end of World War II have occurred during the term of the agreement.<sup>23</sup> They were short and affected only one job site. Their duration has shown no trend over the period, ranging from 3.6 man-days idle per worker to 11.0. Since 1952, the corresponding measure for all construction strikes has varied from 8.9 to 16.9 days.

Industrial Hazards. Work injuries in 1965 (the latest period for which data are available), occurring at the rate of 28.3 per million employee man-hours cost the industry an average of 92 days per case. Even the injuries which were temporary (those which do not result in death or permanent impairment but render a person unable to perform a regularly established job which is open and available to him during 1 or more days) cost an average of 18 days of work per occurrence.

The chance of on-the-job injury exists in every work situation. The risk in construction employment, however, far exceeds the risk in most other industries. In 1964 and 1965, for example, the injury frequency rates in construction were twice as high and severity rates three times as high as in manufacturing. In the total economy, only a few industries, and most of those in mining, had greater injury frequency and severity rates.<sup>24</sup>

The cost of injury in construction employment, measured in terms of employer expenditures for occupational injuries, is greater than the cost of unemployment to the employer. In 1965, for example, employers in the general building construction industry paid

<sup>22</sup> In most strikes several issues are usually in dispute and immediate and exact classification is difficult. Strikes are classified, by the BLS, in accordance with the Bureau's understanding of the major issue at the beginning of the strike.

<sup>23</sup> Since 1961, data on the status of the union-management agreement at the start of the stoppage has been available. These figures confirm the conclusion that most construction strikes occur during the term of the agreement (only the mining industry shares this strike pattern). Since these stoppages are of short duration, they result in little idleness. If all 629 "wildcat" construction strikes could have been avoided in 1966, for example, idleness would have been 5.7 million man-days rather than 6.1 million. Fifty-nine percent of the construction strikes since 1961 have occurred during the term of the agreement.

<sup>24</sup> Injury Rates by Industry, 1964 and 1965 (Report 342, 1968). For additional information about work injuries in the construction industries, see Work Injuries and Work-Injury Rates in the Highway and Street Construction Industry, 1961 (Report 257, 1963), Work Injuries and Work Injury Rates in the Street and Highway Department Industry (Report 296, 1965), Work Injuries and Work Injury Rates in the Heavy Construction Industry (Report 318, 1967), and table 140 "Work Injury Rates, by Industry, 1958-65" in Handbook of Labor Statistics, 1968, Bulletin 1600 (1968). Also see Accident Facts, an annual report of the National Safety Council.

12 cents for each hour construction workers were on the job towards workmen's compensation programs covering them. In that year, employer tax contributions toward unemployment compensation programs covering construction workers amounted to only 9 cents a working hour. In fact, workmen's compensation expenditures constituted the single largest component, after straight-time pay, of total compensation of construction workers in 1965.<sup>25</sup>

Measured in the same terms, the cost of injury for nonoffice workers in the total private nonfarm sector of the economy is substantially lower than in construction. While the economy wide measures are affected by construction, the total expenditure per 1966 working hour for workmen's compensation programs amounted to only 4 cents<sup>26</sup>—one-third of the construction level. In contrast to construction, expenditures for unemployment compensation in the total private sector (at 4 cents per hour of working time) were about the same as those for workmen's compensation; and both were substantially less important components of private sector compensation (about 1.4 percent) than was true in the general building construction industry. Compared with the level of expenditures in the manufacturing industries, construction fares even worse. In 1966, manufacturing employers paid 3 cents for each hour that production workers spent on the job for workmen's compensation programs—one-fourth the construction rate—and about 4 cents, or about 1 percent of compensation, for legally required unemployment insurance—less than one-half the construction rate.

In addition to having a marked affect on the structure of employee compensation, the extent of the injury potential in construction has undoubtedly influenced the workers' wage rates. However, the extent to which the wage rates reflect the hazardous nature of construction employment, has not been measured.

<sup>25</sup> See appendix A for details.

<sup>26</sup> For detailed information about the level and structure of employee compensation in the total private sector, see table A-1 in Employee Compensation in Selected Industries, 1966 (Report 352, 1968).

Table 8. Average annual employment by region,<sup>1</sup> contract construction, 1946-67

(Employment in thousands, index based on 1946=100)

Year	United States		Northeast		South		North Central		West	
	Number	Index	Number	Index	Number	Index	Number	Index	Number	Index
1967	3,203	193	736.2	163	1,125.5	243	840.5	185	504.0	179
1966	3,275	197	734.5	162	1,139.7	246	827.8	183	543.3	193
1965	3,186	192	717.6	159	1,082.9	234	803.2	177	557.6	198
1964	3,050	184	703.7	156	1,008.0	218	746.7	165	567.4	202
1963	2,963	178	682.7	151	949.8	205	725.1	160	558.9	199
1962	2,902	175	688.5	152	900.3	194	720.3	159	536.4	191
1961	2,816	170	664.3	147	866.8	187	738.2	163	519.7	185
1960	2,885	174	681.4	151	873.9	189	764.0	169	519.0	184
1959	2,960	178	690.5	153	899.1	194	770.5	170	523.8	186
1958	2,778	167	670.8	148	854.1	184	758.9	167	490.1	174
1957	2,923	176	704.4	156	864.5	187	805.0	178	466.8	166
1956	2,999	181	712.8	158	846.5	183	834.6	184	470.5	167
1955	2,802	169	686.8	152	795.6	172	808.0	178	446.8	159
1954	2,612	157	653.5	144	757.5	164	777.1	171	421.5	150
1953	2,623	158	639.5	141	827.7	179	742.3	164	429.1	152
1952	2,634	159	643.0	142	851.0	184	749.4	165	421.3	150
1951	2,603	157	665.5	147	819.2	177	737.3	163	420.9	150
1950	2,333	140	614.1	136	691.5	149	648.4	143	389.7	138
1949	2,165	130	562.9	124	617.2	133	599.3	132	349.1	124
1948	2,169	131	574.5	127	645.8	139	614.9	136	386.2	137
1947	1,982	119	530.2	117	586.4	127	552.9	122	338.3	120
1946	1,661	100	452.4	100	463.0	100	453.3	100	281.5	100

<sup>1</sup> The regions used in this table are: Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; South—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; North Central—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and West—Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Data for Alaska and Hawaii were incorporated into the series in 1960 and 1958, respectively. Total contract construction employment Alaska during 1960 was 5.9 thousand, and in Hawaii during 1958 was 12.7 thousand.

Table 9. Unemployment rates by major industry group, 1948-67

Year	Total unem- ployed <sup>1</sup>	Experienced wage and salary workers													
		Total	Agricul- ture	Nonagricultural industries											
				Total	Mining, fores- try, and fisher- ies	Construction		Manufacturing			Trans- portation and public utilities	Whole- sale and retail trade	Finance, insur- ance, and real estate	Service indus- tries	Public admin- istra- tion
All	Private <sup>2</sup>	Total	Durable goods			Nondur- able goods									
1948	3.4	3.7	4.7	3.7	2.9	7.6	7.8	3.5	3.4	3.6	3.0	4.3	1.6	3.5	2.0
1949	5.5	6.2	6.5	6.2	8.5	11.9	12.9	7.2	7.4	6.9	5.2	5.8	1.8	5.1	2.9
1950	5.0	5.6	8.2	5.4	6.6	10.7	11.5	5.6	5.2	6.0	4.1	5.8	2.0	5.0	2.8
1951	3.0	3.2	3.9	3.2	3.8	6.0	6.5	3.3	2.6	4.0	1.9	3.7	1.3	3.1	1.6
1952	2.7	2.9	3.9	2.8	3.4	5.5	6.0	2.8	2.4	3.3	1.9	3.1	1.5	2.6	1.1
1953 <sup>3</sup>	2.5	2.7	4.7	2.6	4.9	6.1	6.2	2.5	2.0	3.1	1.8	3.0	1.6	2.4	1.2
1954	5.0	5.5	8.0	5.4	12.3	10.5	12.9	6.1	6.5	5.7	4.8	5.2	2.0	4.0	2.0
1955	4.0	4.3	6.4	4.2	8.2	9.2	10.9	4.2	4.0	4.4	3.5	4.3	2.1	3.8	1.8
1956	3.8	3.9	6.5	3.8	6.4	8.3	10.0	4.2	4.0	4.4	2.4	4.1	1.4	3.2	1.6
1957	4.3	4.5	6.7	4.5	6.3	9.8	10.9	5.0	4.9	5.3	3.1	4.5	1.8	3.4	2.0
1958	6.8	7.2	9.9	7.1	10.6	13.7	15.2	9.2	10.5	7.6	5.6	6.7	2.9	4.6	3.0
1959	5.5	5.6	8.7	5.5	9.7	12.0	13.4	6.0	6.1	5.9	4.2	5.8	2.6	4.3	2.3
1960 <sup>3</sup>	5.6	5.7	8.0	5.6	9.5	12.2	13.5	6.2	6.3	6.0	4.3	5.9	2.4	4.1	2.6
1961	6.7	6.8	9.3	6.7	11.6	14.1	15.7	7.7	8.4	6.7	5.1	7.2	3.3	4.9	2.7
1962 <sup>3</sup>	5.6	5.5	7.3	5.5	8.6	12.0	13.5	5.8	5.7	5.9	3.9	6.3	3.1	4.3	2.2
1963	5.7	5.5	8.9	5.4	7.5	11.9	13.3	5.7	5.4	6.0	3.9	6.2	2.7	4.4	2.5
1964	5.2	5.0	9.3	4.8	7.6	9.9	11.2	4.9	4.7	5.3	3.3	5.7	2.5	4.1	2.3
1965	4.6	4.2	7.3	4.2	5.5	9.0	10.1	4.0	3.4	4.6	2.7	5.0	2.3	3.8	1.9
1966 <sup>4</sup>	3.8	3.5	6.6	3.5	3.7	7.1	8.1	3.2	2.7	3.8	2.0	4.4	2.1	3.3	1.6
1967	3.8	3.6	6.9	3.6	4.0	6.6	7.4	3.6	3.4	4.1	2.3	4.2	2.5	3.2	1.8
1966:															
January	4.4	4.3	11.9	4.2	5.9	11.2	13.0	3.8	3.3	4.4	2.4	5.3	2.1	3.5	1.8
February	4.2	4.1	11.6	4.0	5.8	11.4	13.2	3.8	3.4	4.4	2.3	5.2	1.7	3.0	1.3
March	4.0	3.9	9.4	3.8	4.3	9.9	11.3	3.5	3.0	4.1	2.6	5.1	1.7	3.1	1.4
April	3.6	3.4	6.3	3.3	3.1	8.1	9.2	3.1	2.2	4.2	2.2	4.3	1.9	2.7	1.8
May	3.7	3.2	6.4	3.2	3.3	5.7	6.3	3.0	2.4	4.0	1.8	4.5	2.0	2.8	1.5
June	4.6	3.8	4.4	3.8	1.9	4.9	5.5	3.5	3.2	3.8	2.4	4.8	2.5	4.6	1.2
July	3.9	3.4	3.4	3.4	3.1	4.5	5.1	3.2	2.9	3.7	2.4	4.5	2.1	3.4	1.5
August	3.6	3.5	5.5	3.4	1.6	4.3	4.8	3.1	3.0	3.3	1.9	4.3	2.4	4.2	1.6
September	3.3	3.2	4.1	3.2	4.8	4.8	5.3	2.8	2.4	3.3	1.7	4.0	2.0	3.4	2.5
October	3.2	3.0	4.9	3.0	3.8	5.1	5.8	2.7	2.3	3.2	1.3	3.9	2.4	3.1	1.4
November	3.4	3.2	6.7	3.1	3.3	7.2	8.1	2.8	2.2	3.6	1.6	4.2	2.2	2.9	1.6
December	3.5	3.3	8.7	3.3	4.2	9.6	10.8	3.0	2.6	3.6	1.9	3.3	1.9	3.0	1.9
1967:															
January	4.2	4.2	9.1	4.1	3.1	10.7	12.5	3.8	3.3	4.5	2.9	4.9	2.7	3.5	1.6
February	4.2	4.1	11.0	4.0	3.1	11.3	13.0	3.8	3.3	4.6	2.6	4.8	2.8	3.1	2.1
March	3.9	3.8	7.7	3.7	4.7	9.2	10.4	3.9	3.4	4.6	2.1	4.4	2.6	2.9	1.8
April	3.5	3.4	7.0	3.3	4.1	8.0	9.2	3.7	3.3	4.2	2.0	3.5	2.2	2.6	1.8
May	3.2	3.2	4.4	3.1	3.9	5.9	6.3	3.6	3.4	3.9	2.1	3.5	1.7	2.6	1.4
June	4.6	3.9	6.7	3.8	3.1	5.8	6.3	3.8	3.4	4.4	2.4	4.4	2.4	4.0	2.4
July	4.1	3.6	5.0	3.5	3.2	4.6	5.3	3.9	4.0	3.8	2.2	4.3	2.1	3.3	1.6
August	3.7	3.4	5.0	3.4	3.8	4.0	4.3	3.6	3.5	3.7	2.3	3.9	2.7	3.5	1.4
September	3.7	3.6	7.0	3.5	3.3	3.2	3.4	3.5	3.2	4.0	2.0	4.6	3.1	3.7	1.9
October	3.8	3.6	6.0	3.5	5.0	4.5	4.7	3.7	3.3	4.2	2.1	4.5	3.0	3.4	1.7
November	3.7	3.5	8.6	3.4	4.8	5.9	6.6	3.4	3.1	3.9	2.2	4.3	1.9	3.1	1.6
December	3.5	3.3	7.0	3.3	4.7	6.8	7.7	3.4	3.3	3.6	2.1	3.5	2.2	2.8	2.1

<sup>1</sup> Also includes the self-employed, unpaid family workers, and those with no previous work history, not shown separately.<sup>2</sup> Excludes the effect of construction work by government employees.<sup>3</sup> Not strictly comparable to prior years. For details see footnote 1, table 1 in the *Handbook of Labor Statistics, 1968*, BLS Bulletin 1600.<sup>4</sup> Beginning with 1966 data refer to persons 16 years of age and older. Data for prior years refer to persons 14 years of age and older.

Table 10. Unemployment rates in selected occupational groups, 1957-68

Month and year	All craftsmen and foreman	Carpenters and other construc- tion craftsmen	All nonfarm laborers	Construc- tion laborers	Month and year	All craftsmen and foremen	Carpenters and other construc- tion craftsmen	All nonfarm laborers	Construc- tion laborers
February:					Annual averages:				
1968	3.7	8.3	10.1	18.9	1967	2.5	4.7	7.5	11.7
1967	3.6	8.6	9.5	20.3	1966	2.8	5.6	7.3	11.9
1966	4.6	10.5	10.2	17.6	1965	3.6	6.9	8.4	14.5
1965	5.8	12.4	14.2	25.7	1964	4.2	7.4	10.6	16.5
1964	6.5	14.2	15.9	25.5	1963	4.8	9.0	12.1	20.5
August:					1962	5.1	9.0	12.4	20.4
1968	1.9	2.8	5.7	6.9	1961	6.3	11.2	14.5	21.7
1967	1.8	2.4	5.9	7.6	1960	5.3	9.3	12.5	19.3
1966	2.0	3.0	5.8	8.0	1959	5.3	9.1	12.4	19.0
1965	2.6	4.2	5.2	8.2	1958	6.8	10.4	14.9	21.3
1964	3.1	4.4	8.4	11.5	1957	3.8	7.0	9.4	12.6

Table 11. Work stoppages<sup>1</sup> in all industries and in contract construction, 1946-67

Year	All industries				Contract construction—total <sup>2</sup>						
	Stoppages beginning in year		Man-days idle during year		Stoppages beginning in year				Man-days idle during year (all stoppages)		
	Number	Workers involved	Number	Percent estimated private nonfarm work time	Number	Number as percent of all industries	Workers involved		Number	Number as percent of all industries	Percent of estimated contract construction working time
							Number	Percent of those in all industries			
1946	4,985	4,600	116,000	1.43	351	7.0	146	3.1	1,450	1.3	0.40
1947	3,693	2,170	34,600	.41	382	10.3	175	8.1	2,770	8.0	.66
1948	3,419	1,960	34,100	.37	380	11.1	108	5.5	1,430	4.2	.29
1949	3,606	3,030	50,500	.59	615	17.1	197	6.5	2,760	5.5	.53
1950	4,843	2,410	38,800	.40	611	12.6	237	9.8	2,460	6.3	.44
1951	4,737	2,220	22,900	.21	651	13.7	232	10.5	1,190	5.2	.18
1952	5,117	3,540	59,100	.57	794	15.5	634	17.9	6,700	11.3	1.03
1953	5,091	2,400	28,300	.26	1,039	43.3	574	23.9	8,000	28.3	1.22
1954	3,468	1,530	22,600	.19	804	23.2	437	28.6	4,800	21.2	.71
1955	4,320	2,650	28,200	.26	733	17.0	204	7.7	1,810	6.4	.28
1956	3,825	1,900	33,100	.29	784	20.5	231	12.2	2,680	8.1	.35
1957	3,673	1,390	16,500	.14	785	21.4	308	22.2	3,970	24.1	.51
1958	3,694	2,060	23,900	.22	844	22.8	326	15.8	4,790	20.0	.71
1959	3,708	1,880	69,000	.61	771	20.8	251	13.4	4,120	6.0	.58
1960	3,333	1,320	19,100	.17	773	23.2	269	20.4	4,470	23.4	.63
1961	3,367	1,450	16,300	.12	824	24.5	217	15.0	3,490	27.4	.50
1962	3,614	1,230	18,600	.16	913	25.3	284	23.1	4,150	22.3	.60
1963	3,362	941	16,100	.13	840	25.0	208	22.1	1,930	12.0	.25
1964	3,655	1,640	22,900	.18	944	25.8	248	15.1	2,790	12.2	.35
1965	3,963	1,550	23,300	.18	943	23.8	301	19.4	4,630	19.9	.57
1966	4,405	1,960	25,400	.18	977	22.2	455	23.2	6,140	24.2	.73
1967	4,595	2,870	42,100	.30	867	18.9	305	10.6	5,160	12.2	.62

	Contract construction by major issue											
	Economic issues			Working conditions <sup>3</sup>			Union organization and security			Jurisdictional disputes <sup>4</sup>		
	Beginning in year		Man-days idle (all stoppages)	Beginning in year		Man-days idle (all stoppages)	Beginning in year		Man-days idle (all stoppages)	Beginning in year		Man-days idle (all stoppages)
	Number	Workers involved		Number	Workers involved		Number	Workers involved		Number	Workers involved	
1946	236	90.4	859.0	22	1.5	8.6	52	14.9	393.0	40	39.0	187.0
1947	242	151.0	2,390.0	16	4.3	23.2	56	8.2	122.0	68	11.2	232.0
1948	287	93.0	1,310.0	11	1.1	4.8	48	9.6	84.6	31	4.0	32.9
1949	369	159.0	2,480.0	39	4.2	17.2	107	12.0	124.0	99	21.6	137.0
1950	335	190.0	2,070.0	45	10.6	101.0	105	10.1	127.0	124	25.4	166.0
1951	274	105.0	594.0	99	52.1	204.0	71	9.9	66.3	198	63.4	317.0
1952	365	339.0	5,500.0	121	79.3	285.0	97	32.1	119.0	200	183.0	798.0
1953	630	449.0	7,330.0	103	40.3	158.0	122	18.8	116.0	176	64.8	391.0
1954	412	286.0	4,170.0	103	45.5	201.0	120	15.9	73.6	164	88.9	353.0
1955	328	126.0	1,440.0	91	23.8	78.1	111	31.6	163.0	198	22.6	131.0
1956	365	166.0	2,250.0	75	12.4	76.6	110	11.5	96.3	228	41.1	256.0
1957	340	180.0	3,360.0	86	31.2	185.0	126	15.3	121.0	229	81.1	295.0
1958	413	252.0	4,380.0	77	35.2	185.0	94	11.1	90.9	252	26.8	134.0
1959	307	157.0	2,670.0	77	8.1	45.1	111	64.4	1,260.0	269	20.1	139.0
1960	274	180.0	2,550.0	112	21.2	102.0	99	44.6	1,710.0	266	21.1	98.2
1961	282	123.0	1,990.0	118	13.7	90.6	113	50.1	1,260.0	303	28.2	154.0
1962	344	215.0	3,600.0	146	14.7	52.0	129	28.8	379.0	288	26.0	121.0
1963	272	115.0	1,350.0	121	23.0	106.0	123	35.4	321.0	319	33.9	149.0
1964	287	164.0	2,080.0	116	12.8	82.9	142	25.0	404.0	396	46.0	224.0
1965	282	159.0	2,890.0	119	21.2	307.0	126	71.7	1,210.0	409	49.8	220.0
1966	317	301.0	3,970.0	100	45.8	571.0	114	53.8	1,280.0	437	53.4	301.0
1967	293	208.0	4,170.0	78	19.8	147.0	105	10.9	120.0	387	65.2	717.0

<sup>1</sup> All work stoppages known to the Bureau of Labor Statistics and its various cooperating agencies, involving 6 or more workers and lasting a full day or shift or longer, are included in this table. Figures on "workers involved" and "man-days idle" cover all workers made idle for as long as 1 shift in establishments directly involved in a stoppage. They do not measure the indirect or secondary effects on other establishments or industries whose employees are made idle as a result of material or service shortages. Workers are counted more than once if involved in more than 1 stoppage during the year.

<sup>2</sup> Includes stoppages not reported separately by major issue.

<sup>3</sup> Includes stoppages over job security, safety, overtime, discharges and similar grievances.

<sup>4</sup> Includes a few stoppages over union administration and other inter- and intraunion matters.

NOTE: Because of rounding, sums of individual items may not equal totals.

## Chapter 4. Union Scales and Benefits

The contract construction industry is highly unionized and most construction workers employed by unionized firms are paid scale level wages. Thus, the average hourly earnings of all construction workers are substantially affected by the level of union wage scales. These scales, however, cannot be used as earnings proxies. Craft scales vary significantly by area; the ratio of apprentices to journeymen in the apprenticeable trades and the ratio of journeymen to helpers and laborers varies by trade and presumably by area. In addition, some workers shift between the union and nonunion sectors of the industry; some craftsmen are paid at rates which exceed the negotiated scales; and the scales do not reflect the extent to which hours worked are compensated at premium rates.

Although union scales cannot be used as direct estimates of hourly earnings, changes in negotiated scales do forecast increases in earnings levels and, as discussed subsequently in this chapter, also appear to foreshadow the dimensions of the next round of wage increases.

### Recent Wage and Benefit Cost Changes

Average hourly earnings of construction workers have exceeded those of production workers in most other industries during the entire post-World War II period. Recent negotiations indicate a continuation of this trend. (See table 12.)

Between 1965 and 1969 approximately 1.3 million construction workers—about four-fifths of those for whom data are available—received increases under newly negotiated major contracts.<sup>1</sup> The remaining one-fifth of the workers covered by major agreements did not negotiate new contracts during this period, but a majority of them received wage increases that had been negotiated in earlier years. In any year—because most construction contracts are negotiated for 3-year terms and because most provide for deferred wage increases—most of the wage increases put into effect result from negotiations in earlier years.

Construction wage negotiations are typically conducted at the local level. Negotiations within a year tend to be concentrated in one or two regions of the country and affect only a portion of the regions' construction work force. In 1967, for example, 265,000 construction workers were affected by contracts negotiated in that year. Of those workers, 54 percent were in the North Central region;<sup>2</sup> in contrast about 3 percent of all involved workers were employed in the Pacific region. In 1968, however, approximately 60 percent of the 400,000 workers covered under new major agreements were in the Pacific region; the North Central region included only about 23 percent of those that concluded negotiations in that year. A majority of the contracts have a 3-year term. Therefore the East Coast, which had its last large scale round of bargaining in 1966, should be the dominant area in which negotiations are conducted during 1969. This incidence of regional expirations is peculiar to the construction industry and may have significant effect on subsequent bargaining. Although

<sup>1</sup> A major contract is defined as one that covers 1,000 workers or more. The discussion in this section is limited to major contract situations, data for which are available in the files of the Bureau's Current Wage Developments section. Data for minor situations (those covering fewer than 1,000 workers) and for nonunion situations are not available. Since 1965, approximately 1.6 million construction workers were affected either by newly negotiated or deferred wage increases. This worker count includes a worker each time a wage change is effectuated. Thus some workers may be counted more than once as they change jobs during a contract period.

<sup>2</sup> The regions, for purposes of this analysis, are: New England--Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut; North Atlantic--New York, New Jersey, Pennsylvania, and Delaware; Southern--Maryland, District of Columbia, West Virginia, Tennessee, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas; North Central--Ohio, Kentucky, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Montana; and Pacific--Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Nevada, California, Oregon, Washington, Hawaii, and Alaska.

Region	Construction workers affected by collective bargaining			
	Number (in thousands)		Percent	
	1968	1967	1968	1967
Total -----	400	265	100.0	100.0
New England-----	4	18	(1)	6.7
North Atlantic-----	30	67	8.0	25.3
Southern-----	39	29	10.0	10.8
North Central-----	91	144	22.8	54.5
Pacific-----	239	7	59.8	2.7

<sup>1</sup> Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal totals.

wage bargaining is local, available (but unpublished) data suggest that the average rate of construction wage increases in a region (though each individual settlement typically is independently concluded by the local parties) tends to be higher—on the average—than those agreed upon in the preceding year's negotiations generally centered in another region.<sup>3</sup> This regional escalation is probably more the result of economy wide inflationary pressures than of any other factor. However, the possibility of the emergence of some form of pattern bargaining in the contract construction industry should not be overlooked. Subsequent examination, when data for additional years are available, should shed more light on the subject.

In many other major manufacturing and nonmanufacturing industries (e.g., mining; lumber; paper; rubber; stone, clay, and glass; automobile; basic steel; copper; trucking; railroads; and maritime industries) a wage and benefit pattern is concluded between one or more unions and one or more large firms and the pattern is followed closely by other unions and companies in the industry. In construction, however, wages are negotiated at the local level without any particular regard to wage and benefit patterns and levels in other areas. There are very few national or industrywide agreements in the construction industry. Those which do exist are concerned principally with working conditions and to some extent supplementary benefits plans.<sup>4</sup> Wage rates or scales even in the few national agreements are usually determined by local parties.

Another major difference between bargaining in the construction industry and in other industries is the use of options to divert (diversion provisions). Such options, under which the union unilaterally allocates an agreed upon cents-per-hour increase to wages or benefits, or to a combination of wages and benefits,<sup>5</sup> are relatively common in construction but are rarely found in other industries. Diversion provisions were included in about one-fifth of the major construction contracts negotiated in 1967 and in about one-fourth of those concluded in 1968. Diversion provisions typically are operative only after the first contract year. Hence, subsequent discussion of separate wage changes and benefit changes in construction is limited necessarily to the first contract year.

New Contracts. The pace at which total compensation payments per worker have increased as a result of contract settlements has risen each year since 1965; the rate of 1968 negotiated increases was greater than in any other year for which comparable data are

<sup>3</sup> A few of the contracts concluded in 1968 were for 4 or 5 years. These contracts were concentrated in the North Central region. The North Central region will have a major round of bargaining again in 1970; West Coast negotiations will dominate the 1971 bargaining. The 5-year agreements expiring in the North Central region in 1972, therefore may parallel the West Coast gains (typically higher than in other areas of the country) more closely than those in the other North Central contracts.

<sup>4</sup> Among other national agreements are the National Sprinkler Agreement, the National Tank Fabricating Agreement, and the Laborers International Union Pension Plan.

<sup>5</sup> Data on the allocation of the increases generally are not available. Estimates of the actual allocation, however, usually can be obtained by comparing new agreements with prior ones. Estimates of the allocation of the increases were made, for use in subsequent analysis, after considering previous allocations and the present and historical wage-benefit relationship in the situation(s). To the extent that these allocation estimates are in error, the individual wage change and benefit change data will be affected; the total compensation cost figures will be unaffected.

available.<sup>6</sup> In each year the median annual rates of increase exceeded the average of those negotiated in all major contracts in the private nonfarm economy. In 1968, the median increase in compensation cost in new construction contracts, as shown in table 7, was 8.6 percent. The same measure for all other industries, excluding government, was 6.0 percent.<sup>7</sup>

Compensation cost increases over the life of construction agreements differ in size and in timing from increases in most other industries. An analysis of negotiated scales in recent construction agreements indicates that wage increases sometimes are "front loaded" even though the total package cost is distributed evenly over the term of the agreement or even "back loaded."<sup>8</sup> Wage increases negotiated in 1967, for example, were heavily "front loaded." Construction worker first-year wage changes amounted to 7.8 percent of estimated straight-time average hourly earnings<sup>9</sup> of the affected workers. The annual rate of change of the total wage increase average over the life of the agreement, however, amounted to only 6.9 percent. Subsequent year wage changes, then, were necessarily smaller than those in the first contract year. This pattern is similar to that found in other industries in recent years. Construction's compensation costs have been uniform, or back loaded relative to other industries, even though wage increases have been front loaded in some years and back loaded in others. On the other hand, both wage changes and total compensation costs averaged over the life of the agreements have been consistently front loaded in all other industries.

**Deferred Increases.** A much larger group of construction workers usually is affected by deferred increases than are affected by first year changes negotiated during the year. In 1967, for example, 935,000 construction workers covered under major agreements received deferred wage changes resulting from negotiations in earlier years, but only 265,000 workers received wage increases as a result of negotiations within 1967. The following year 829,000 construction workers received deferred changes while 400,000 received first year increases. In 1969, 848,000 are scheduled to receive deferred wage changes.

Some of these deferred changes have been agreed upon as many as 5 years in advance,<sup>10</sup> but the majority are negotiated only 2 years prior to their effective dates. In 1968, the differential between newly negotiated first year changes and deferred increases was 10 cents an hour. First year wage changes in 1968 averaged 35 cents an hour; deferred changes amounted to only 25 cents an hour. For 1969, deferred increases will average 35 cents an hour.

Construction industry deferred wage changes, as indicated in the following tabulation, are smaller than construction first year wage changes.

Provision	Median cents-per-hour increase during--			
	1969	1968	1967	1966
Construction:				
First year changes -----	( <sup>1</sup> )	35	30	21
Deferred from previous negotiations -----	35	25	24	20

<sup>1</sup> Not available.

<sup>6</sup> Since 1961, the earliest data for which any estimates of construction settlement costs are available, the rate of annual cost increases (based on an equal timing concept) was lower in 2 years (1962 and 1964) than in the preceding year. Since 1964, however, the rate of cost increase in each year has been equal to, or greater than, that in the preceding year.

The medians were derived by arraying the number of workers by the size of the settlement rate of increase. This measure, rather than weighted means, was used to exclude the effect of extreme settlements.

For the purposes of computing the package costs, the journeymen hourly wage rate was used for computation. When several rates for a single craft group are specified in a contract, the single rate estimated to be the most frequently paid is used as the estimated average wage. The total package costs were then computed using these rates.

<sup>7</sup> For a detailed description of the measures used to estimate cost increase and the method of estimation see the article by Lily Mary David and Victor J. Sheifer, "Estimating the Cost of Collective Bargaining Settlements," *Monthly Labor Review*, May 1969, pp. 16-26

<sup>8</sup> A contract is front loaded when the cost changes in the early years of the contract are higher than in subsequent years.

<sup>9</sup> Straight-time average hourly earnings refer to the journeymen scales as defined in footnote 6, above.

<sup>10</sup> The following is a distribution of workers receiving deferred wage increase in 1969 by the year in which they were negotiated.

Year-----	1968	1967	1966	1965	1964
Workers (in thousands)-----	380	266	96	98	10

The structure of deferred wage changes in the construction industry differs from that in other industries. Deferred changes in construction, like first year changes, are larger than deferred increases in other industries. The differential has varied in recent years, but has always been in favor of construction. Further, provisions for more than one increase in a year are common in construction, but are uncommon in other industries. The most typical combination lately used in construction being an increase of 25 cents an hour in January and another 25-cent raise in June or July. Another popular combination is an increase in June and another in December. Besides two increases of 25 cents each, an alternative frequently used is two increases totaling 25 cents, usually one 15-cent increase and a 10-cent one. The distribution of workers receiving increases by month indicates that about three-fourths of the affected workers receive their deferred wage change(s) in the first 6 months of the year with about one-half of the increases effective in either May or June.

	1969	1968
	(Workers in thousands)	
Jan-----	153	178
Feb-----	5	4
Mar-----	32	41
April-----	86	81
May-----	257	242
June-----	243	205
July-----	119	159
Aug-----	17	19
Sept-----	32	29
Oct-----	29	27
Nov-----	26	26
Dec-----	34	17

The large size, relative to those in other industries, of both the first contract year increases and those in subsequent years in the construction industry is the result of several factors. Most of them will be discussed in detail in other sections of this report. Closely related to wage changes, however, are cost-of-living adjustments. Such clauses are rarely found in major construction agreements. Where they exist they most frequently provide guaranteed annual increases of not less than 20 cents an hour, plus additional increases based on changes in the Consumer Price Index.

### Building Trades Scales and Benefits Since World War II

For many years the Bureau of Labor Statistics has published annual and quarterly reports of wage scales in the building trades. The report available for analysis and inclusion in this study provides wage rate data for 24 journeymen trades and nine helper and laborer classifications as of July 1967.<sup>11</sup> In addition, data on employer contributions to funds for insurance (health and welfare), pensions, and/or vacations are reported.

The union scales and employer contributions for selected benefits are defined as (1) the basic (minimum) wage scales (excluding holiday, vacation, or other benefit payments made or credited to the worker each pay period) and (2) the minimum employer contributions for one or more benefits. Rates different from the negotiated minimum, which may be paid for special qualifications or other reasons, are not discussed.<sup>12</sup>

Current Levels of Union Scales. The average union scale, as of July 1, 1967, was \$5.09 for all journeymen, and \$3.83 for helpers and laborers (table 13).<sup>13</sup> Including the average employer contribution for health, welfare, and other insurance programs, the rates

<sup>11</sup> Data for 1968 became available after this and other chapters based on union scale data had been completed. An examination of the 1968 data suggests that basically the relationships and the trends as described through July 1967 have continued through July 1968.

<sup>12</sup> The data on union scales and fringe benefit payments discussed in this section pertain to crafts that would be predominantly included in SIC 15--General building construction, and SIC 17--Special trades contractors. Heavy construction wage scales are not included in the union scales discussed here. For a discussion of heavy construction scales see chap. 7. The two categories included constitute almost 80 percent of the employment in contract construction.

<sup>13</sup> This discussion is based upon, Union Wages and Hours: Building Trades, July 1, 1967, Bulletin 1590. For 1968 data see, Union Wages and Hours: Building Trades, July 1, 1968, Bulletin 1621 (1969).

were \$5.55 and \$4.19 respectively. The highest average union hourly wage rates were for machinists (\$5.39) among the journeymen and for terrazzo workers' helpers (\$4.34) among the helpers and laborers. The lowest wage rates were \$4.63 for paperhangers and \$3.06 for composition roofers' helpers.

Table 14 indicates regional differences in wage scales as well as interoccupational differentials for the individual regions. This table illustrates the diversity of regional rates possible for the same occupation.

In general, rates were highest in the Middle Atlantic and Pacific regions, lowest in the Southwest and Southeast. Among journeymen the highest average rate was the \$6.04 paid to machinists in the Pacific region. The lowest average rate for machinists was \$4.72 paid in the Southwest. The lowest average journeyman rate was \$3.54 paid hourly to roofers, both composition and slate and tile, in the Southeast region. The highest average rates for these trades were the \$5.32 for composition roofers in the Middle Atlantic region and \$5.51 for slate and tile roofers in the New England region.

Among helpers and laborers, the highest average rate was for bricklayers' tenders in the Middle Atlantic region, \$4.96 an hour. This craft averaged only about one-half as much in the Southwest region, \$2.51 an hour. Composition roofers' helpers had the lowest average scale—\$2.20 in the Southwest region. This compares to their highest average rate, \$3.96 in the Middle Atlantic region.

The rate differential between journeymen and helpers was greatest in the Southern areas and least in the Middle Atlantic region. The helpers average hourly wage rate of \$4.51 in the Middle Atlantic region—a rate which exceeded the journeyman average in the South—amounted to 75 percent of the Middle Atlantic journeyman rate of \$5.56. In the Southeast, the helpers rate was only 56 percent of the average journeymen rate, \$4.35; and in the Southwest, helpers were paid at an average of 63 percent of the journeyman's \$4.38 rate.<sup>14</sup>

The question of measuring and evaluating regional and occupational differentials in union scales is a thorny one. Because negotiations occur at different times for different trades and are beginning to take on a pattern where bargaining is conducted by the bulk of the trades in a region in a particular year and fall in different regions in different years, any regional differentials will compress and expand depending upon the year in which the measurement is taken.

When employer contributions to fringe benefits are taken into consideration, the picture is changed a little. Table 8 shows that supplementary contributions range, among journeymen, from a low of 19 cents an hour for machinists to a high of 76 cents an hour for plumbers. Among helpers and laborers, the range is from 17 cents an hour for composition roofers' helpers to 45 cents an hour for plasterers' laborers. These differentials mean that the largest average total payment is made to the plumbers—pushing their average scale up to \$6.13 an hour. The lowest average journeyman scale plus employer contribution was \$4.90 for paperhangers.

Among helpers and laborers, a 22-cent-an-hour contribution kept the terrazzo workers' helpers at the top of the union scale, while at the same time, an average contribution of 71 cents an hour makes the composition roofers' helpers the lowest paid over all.

Comparing fringe payments as a percent of the hourly scale, an element of union choice can be measured. While fringe or supplementary payments average 9.2 percent for all journeymen in 1967, they amounted to only 3.5 percent for machinists but 14.2 percent for plumbers. Among helpers and laborers, plasterers' laborers were high with an 11.2-percent average while the terrazzo workers' helpers were at 5.1 percent. These compare with an all helpers and laborers average of 9.3 percent. What these figures indicate is that some trades generally have a strong preference for fringe benefits while others do not.

<sup>14</sup> Since these rates are weighted averages for individual communities within regions, they do not accurately represent the true range of rates that exists among cities within individual trades. For details see, Bulletin 1621, op. cit. Rates by city may range by 25 percent above and below the regional average.

Although the pattern is not universal, the indications are that, on a national basis, the relationship between union scales and employer fringe payments is positive. On the average, high levels of fringe payments tend to be associated with high union scales. However, the relationships for individual cities are not as clear. There is no consistent relationship between wages and fringe benefits levels in the largest cities surveyed. In cities of smaller size, the relationship was generally slight.

Comparison With Other Union Scales. To allow additional perspective on the union wage scales paid in building trades, they were compared, on national and regional bases, with those rates paid in the three other industries for which the Bureau prepares annual surveys: Printing trades, motortruck drivers and helpers, and local transit operating employees.

Several relationships are apparent from an inspection of table 15. First, the average rate paid to journeymen in building trades is higher than that for any of the other industries studied. The rate paid to helpers and laborers is higher than that paid to anyone except printers. Second, the spread of union scales between the highest and lowest regions is much wider in the building trades than in other industries. This spread is \$1.32 for the industry as a whole, \$1.21 for journeymen, and \$1.77 for helpers and laborers. Among the other industries the largest spread was 98 cents, three-quarters the building industry average, for the local transit operating employees. These differences are probably due, among other factors, to the fact that other occupations tend to have negotiated contracts which generally cover much larger geographical areas thus allowing for more rate uniformity. Third, although the lowest average union building trades scales were in the Southeast region, they were lowest in the Southeast for local transit operating employees but in the Southwest for printing trades and motortruck drivers. Fourth, the highest union scales for the building trades and for local transit operating employees were in the Middle Atlantic region; the highest rates for the printing trades and motortruck drivers and helpers were in the Pacific region.

Trend Behavior of Union Hourly Scales.<sup>15</sup> The wage scale which prevails at any point in time reflects the interaction of a variety of economic, social, and political forces. Over time, however, the basic forces of supply and demand will be registered in the price paid—the wage rate—for labor.

Overall, union scales in the building trades have increased from an average of \$1.91 in 1947 to \$4.59 in 1966, an increase of 140 percent or 4.7 percent a year.<sup>16</sup> The increase was 137 percent for journeymen, or a 4.6 percent annual rate of increase, somewhat less than the 5.6 percent annual rate for helpers and laborers, who received a 180 percent total increase.

These increases are the averages of the increases received by the individual trades. It is from these rates for particular occupational classifications that most insight can be gained into forces acting upon the demand for and supply of labor to the construction industry.

Since 1947, the general wage trend has been upward, with only minor breaks. However, not all scales moved up at the same rate. Among journeymen, the rate for plasterers, for example, between 1947 and 1966, moved from \$2.27 an hour to \$4.89, or a 115 percent increase. This is at an average annual rate of about 4.1 percent, about one-half a percentage point below the average rate for all trades. By contrast, the rate for sheet-metal workers increased from \$1.99 to \$4.89 over this period, an annual average increase of 4.8 percent for a 146 percent total increase.

<sup>15</sup> The trends discussed in the following section refer to the period 1947 or 1949 through 1966 or 1967. The periods for which data are available vary somewhat among industries but the use of different starting and ending dates does not appear to affect trends in any substantial way.

<sup>16</sup> The Bureau's indexes of union hourly wage rates (scales) in the building trades (available for the 1907-68 period) indicate that the annual rate of increase during the 1947-66 period was 4.8 percent for all trades, 4.7 percent for journeymen, and 5.4 percent for helpers and laborers. For detail, see Bulletin 1590, op. cit. A more detailed description of the construction of these indexes may be found in chap. 16 (pp. 136-140) of the BLS Handbook of Methods for Surveys and Studies, Bulletin 1458 (1966).

These differences in the rate of growth of union scales are due to a variety of factors that affect the demand for the products of the construction industry. Changes in the types of finished products and materials used have reduced the need for certain skills and increased the need for others. These changes, in turn, would be reflected in the relative wages paid to the particular skill groups which were in lesser or greater demand over time. The fact that plasterers' wage scales rose at a rate lower than the average was because of a decline in the relative demand for this skill.<sup>17</sup> Similarly, the fact that sheet-metal workers' average wage scales increased at a rate which was higher than the average for the industry indicates an upward movement to the relative demand for this skill.

Indeed, developments in the construction industry would support the above conclusion. The use of dry wall has reduced the amount of work done, or demand, for plasterers (particularly in residential construction) and the expansion of air-conditioning and forced air heating have substantially increased the demand for sheet-metal workers.

Trends in Regional Union Scales. Regional wage rate relationships in 1966 were quite similar to those existing in 1949 (tables 16 and 17). In 1966, the Southeast and Southwest regions were still the lowest on the wage scale. The Middle Atlantic region was still at the upper end of the wage scale. In the other regions journeymen were ranked in about the same relative way as helpers and laborers. In 1949, data for journeymen and helpers and laborers indicate that both occupational groups received the highest wages in the Middle Atlantic and Great Lakes regions.<sup>18</sup> The lowest wage scales were, as indicated in table 4, in the Southeast and Southwest regions. Between these rankings, however, there is a substantial difference in the ranking of regions as between the two skill groups. The third lowest rate for journeymen is in the Mountain region, for helpers and laborers it is in the Border States. The other regions, ranked in ascending order of journeymen's wage scales, are New England, Pacific, Border States, Middle West, and Great Lakes. The corresponding ordering of regions for helpers and laborers is the Border States, Mountain and the Middle West and New England, which are tied.

### Contractual Hours in Building Trades

Part of the negotiation process in construction is the decision on the number of hours for which particular rates will be paid. On July 1, 1967, contractual straight-time hours in contract construction average 39.2 a week. Table 18 shows that 85 percent of union members worked under contracts providing for a 40-hour workweek. While there was a wide range of contractual hours in the industry, the only other significant grouping came at the 35-hour level, where 12 percent of union workers were clustered.

Some of the shortest straight-time workweeks in American industry have been instituted in the construction industry. Despite this, average straight-time hours of work have been essentially unchanged during the post-World War II period, as shown in the tabulation below.

Year	Average straight-time weekly hours	Year	Average straight-time weekly hours
1946-----	39.2	1957-----	39.4
1947-----	39.2	1958-----	39.3
1948-----	39.2	1959-----	39.3
1949-----	39.2	1960-----	39.3
1950-----	39.3	1961-----	39.3
1951-----	39.3	1962-----	39.3
1952-----	39.3	1963-----	39.2
1953-----	39.4	1964-----	39.3
1954-----	39.4	1965-----	39.2
1955-----	39.4	1966-----	39.2
1956-----	39.4	1967-----	39.2

<sup>17</sup> This does not mean, however, that the absolute demand for this skill has fallen. More plasterers were employed in 1966 than in 1947, but they did not represent as large a proportion of the total work force.

<sup>18</sup> 1949 was the first year the Bureau tabulated a regional breakdown of the union scales.

The straight-time workweek was 39.2 hours in 1947 and was still at that level in 1966 and 1967. There does not appear to be a significant trend toward changes in scheduled hours.<sup>19</sup>

The short straight-time workweek is localized in a few areas and in a few contracts. Table 19 gives the average contractual hours in nine cities for 1947 and 1967. Even in New York City, where average hours worked at straight-time rates are lowest, the average workweek of journeymen was slightly higher, but that of helpers and laborers was slightly lower in 1967 than in 1947. The reasons for the increased hours standards in just a few situations are not clear. The increased hours standards were introduced in the 1950's when work was readily available. It is possible that with an increase in the volume of work available to most construction trades, unions accepted longer straight-time workweeks in return for larger package settlements. The most significant reduction in the straight-time hours standard, on the other hand, was negotiated by the New York City electricians in the early 1960's when unemployment among the electricians was high and the union was seeking some means by which to spread work among its membership.

<sup>19</sup> At the present no regional breakdown of weekly straight-time hours has been made; therefore city data must be used.

These averages are simple averages of the contractual hours for individual crafts. Thus, although they take less than complete cognizance of the changes in the skill composition, they do provide an indication of the differences in level between these two periods.

Table 12. Median annual rates of increase negotiated in major<sup>1</sup> settlements, 1961-68

Measure	1968		1967		1966		1965		1964		1963		1962		1961	
	Con- struc- tion	All indus- tries														
Actual <sup>2</sup> -----	8.5	6.6	7.1	5.5	( <sup>3</sup> )	4.7	( <sup>3</sup> )									
Equal <sup>2</sup> -----	8.6	6.0	7.2	5.2	6.6	4.0	6.6	3.3	4.5	( <sup>3</sup> )	45.0	( <sup>3</sup> )	44.1	( <sup>3</sup> )	45.2	( <sup>3</sup> )
First year wages -----	7.8	7.2	7.8	5.7	5.0	4.8	4.5	3.9	4.3	3.2	5.0	3.4	4.1	3.6	5.2	2.9
Wages over the life -----	7.9	5.2	6.9	5.0	5.6	3.9	5.2	3.3	( <sup>3</sup> )	3.0	( <sup>3</sup> )	2.5	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Number of workers affected (in thousands) -----	400	2,273	265	4,366	310	3,390	311	3,590	243	4,305	458	3,370	372	4,037	235	4,035

<sup>1</sup> Situations including 1,000 workers or more.

The all industries data are subject to the following limitations: In 1968 they exclude government; in 1967 and 1966 they include construction but exclude government; in prior years they exclude the construction, government, finances, insurance, real estate, and services industries.

<sup>2</sup> The actual time measure is based on data weighted by the length of time each wage and benefit cost change is in effect. The equal timing measure assumes that changes occur throughout the contract term and that their effect is uniform throughout the entire term. For a detailed description of the measures see "Estimating the Cost of Collective Bargaining Settlements."

<sup>3</sup> Data are not available or not computed.

<sup>4</sup> Data are estimated.

Table 13. Average union hourly wage rates and employer contributions<sup>1</sup> in the building trades, July 1, 1967

Trade	Average rate per hour, July 1, 1967	Average employer con- tribution <sup>1</sup> per hour, July 1, 1967	Average rate plus employer contribution per hour, July 1, 1967
All building trades -----	\$4.83	\$0.44	\$5.27
Journeyman -----	\$5.09	\$0.47	\$5.55
Asbestos workers -----	5.17	.46	5.63
Boilermakers -----	5.27	.53	5.80
Bricklayers -----	5.28	.59	5.87
Carpenters -----	5.01	.46	5.47
Cement finishers -----	4.83	.41	5.24
Electricians (inside wiremen) -----	5.24	.43	5.67
Elevator constructors -----	5.26	.39	5.65
Glaziers -----	4.66	.36	5.02
Lathers -----	5.04	.45	5.49
Machinists -----	5.39	.19	5.57
Marble setters -----	5.10	.29	5.40
Mosaic and terrazzo workers -----	5.32	.34	5.66
Painters -----	4.71	.36	5.07
Paperhangers -----	4.63	.27	4.90
Pipefitters -----	5.34	.60	5.94
Plasterers -----	5.11	.54	5.64
Plumbers -----	5.36	.76	6.13
Rodmen -----	5.13	.39	5.52
Roofers, composition -----	4.78	.35	5.13
Roofers, slate and tile -----	4.66	.28	4.94
Sheet-metal workers -----	5.15	.40	5.55
Stonemasons -----	5.17	.39	5.55
Structural iron workers -----	5.23	.46	5.69
Tile layers -----	4.95	.33	5.28
Helpers and laborers -----	3.83	.36	4.19
Bricklayers' tenders -----	4.12	.35	4.47
Building laborers -----	3.74	.36	4.10
Composition roofers' helpers -----	3.06	.17	3.23
Elevator constructors' helpers -----	3.76	.38	4.14
Marble setters' helpers -----	4.20	.27	4.48
Plasterers' laborers -----	4.02	.45	4.47
Plumbers' laborers -----	3.97	.28	4.24
Terrazzo workers' helpers -----	4.34	.22	4.56
Tile layers' helpers -----	4.10	.34	4.45

<sup>1</sup> Includes employer contributions to insurance (life insurance, hospitalization, medical, surgical, and other similar types of health and welfare programs) and pension funds, and vacation payments to a fund or to the worker as provided in labor-management contracts. Averages presented are for a straight-time hour; in actual practice, however, some employer payments are calculated on the basis of total hours worked or gross payroll.

Average is for all workers in the classification including those for whom employer contributions were not specified in their particular contracts. Some contracts also provide for additional payments to other funds such as holiday, apprenticeship, and unemployment benefits. Information on payments to these funds was not collected.

NOTE: Because of rounding, sums of individual items may not equal totals.



Table 16. Average union wage scales in the building trades and United States relatives and rank, 1949 and 1966

Region	Journeyman			Helpers and laborers		
	Union scale	U. S. relative	Rank	Union scale	U. S. relative	Rank
	1949					
United States -----	\$2.34	-	-	\$1.55	-	-
New England -----	\$2.20	94.0	4	\$1.56	100.6	5.5
Middle Atlantic -----	2.66	113.7	9	1.72	111.0	9
Border States -----	2.29	97.9	6	1.35	87.1	3
Southeast -----	2.03	86.8	1	1.00	64.5	1
Great Lakes -----	2.34	100.0	8	1.65	106.5	8
Middle West -----	2.32	99.1	7	1.56	100.6	5.5
Southwest -----	2.12	90.6	2	1.13	72.9	2
Mountain -----	2.15	91.9	3	1.49	96.1	4
Pacific -----	2.24	95.7	5	1.64	105.8	7
	1966					
United States -----	\$4.83	-	-	\$3.67	-	-
New England -----	\$4.71	97.5	6	\$3.57	97.3	6
Middle Atlantic -----	5.33	110.4	9	4.35	118.5	9
Border States -----	4.44	91.9	3	2.85	77.7	3
Southeast -----	4.10	84.9	1	2.31	62.9	1
Great Lakes -----	4.78	91.0	7	3.80	103.5	7
Middlewest -----	4.59	95.0	4.5	3.53	96.2	5
Southwest -----	4.16	86.1	2	2.54	69.2	2
Mountain -----	4.59	95.0	4.5	3.31	90.2	4
Pacific -----	5.10	105.6	8	3.89	105.0	8

Table 17. Average union scales of journeymen and helpers in the building trades, craft scale index and rank, by region, July 1949 and July 1966

Craft	Region									
	United States				New England					
	1949		1966		1949			1966		
	Average union scale	Craft scale index	Average union scale	Craft scale index	Average union scale	Craft scale		Average union scale	Craft scale	
					Index	Rank		Index	Rank	
Journeyman-----	\$2.34	100.0	\$4.83	100.0	\$2.20	100.0	-	\$4.71	100.0	-
Asbestos workers -----	2.37	101.3	4.83	101.0	2.40	109.1	17	5.02	106.6	18
Boilermakers -----	2.39	102.1	5.08	105.2	2.45	111.4	18	4.95	105.1	15.5
Bricklayers -----	2.74	117.1	5.04	104.3	2.52	114.5	20	4.95	105.1	15.5
Carpenters -----	2.25	96.2	4.74	98.1	2.00	90.9	3	4.43	94.1	4
Cement finishers -----	2.27	97.0	4.57	94.6	2.47	112.3	19	4.86	103.2	9.5
Electricians -----	2.49	106.4	4.98	103.1	2.34	106.4	10	4.87	103.4	11
Elevator constructors -----	2.45	104.7	5.05	104.6	2.36	107.3	14	4.93	104.7	14
Glaziers -----	2.14	91.5	4.47	92.5	2.03	92.3	4	4.32	91.7	3
Lathers -----	2.54	108.5	4.80	99.4	2.61	118.6	23	4.99	105.9	17
Machinists -----	2.39	102.1	5.11	105.4	2.25	102.3	6	4.60	97.7	5
Marble setters -----	2.46	105.1	4.85	100.4	2.32	105.5	9	4.92	104.5	13
Mosaic and terrazzo workers -----	2.42	103.4	5.10	105.6	2.26	102.7	7	4.89	103.8	12
Painters -----	2.19	93.6	4.46	92.3	1.97	89.5	2	4.20	89.2	2
Paperhangers -----	2.14	91.5	4.37	90.5	1.75	79.5	1	4.09	86.8	1
Plasterers -----	2.67	114.1	4.89	101.2	2.59	117.7	22	4.83	102.5	8
Plumbers -----	2.52	107.7	5.08	105.2	2.35	106.8	11.5	5.07	107.6	20
Rodmen -----	2.27	97.0	4.83	100.0	2.36	107.3	14	5.20	110.4	22
Roofers, composition -----	2.19	93.6	4.54	94.0	2.24	101.8	5	4.72	100.2	6
Roofers, slate and tile -----	2.24	95.7	4.37	90.5	2.30	104.5	8	5.20	110.4	22
Sheet-metal workers -----	2.29	97.9	4.89	101.2	2.36	107.3	14	4.80	101.9	7
Stonemasons -----	2.66	113.7	4.89	101.2	2.56	116.4	21	5.04	107.0	19
Structural iron workers -----	2.42	103.4	4.97	102.9	2.39	108.6	16	5.20	110.4	22
Tile layers -----	2.49	106.4	4.79	99.2	2.35	106.8	11.5	4.86	103.2	9.5
Helpers and laborers -----	1.55	100.0	3.67	100.0	1.56	100.0	-	3.57	100.0	-
Bricklayers' tenders -----	1.68	108.4	3.93	107.1	1.56	100.0	2	3.56	99.7	4
Building laborers -----	1.47	94.8	3.56	97.0	1.54	98.7	1	3.55	99.4	3
Composition roofers' helpers -----	1.31	84.5	2.90	79.0	1.68	107.7	6.5	3.49	97.8	2
Elevator constructors' helpers -----	1.73	111.6	3.64	99.2	1.66	106.4	3.5	3.45	96.6	1
Marble setters' helpers -----	1.60	103.2	3.97	108.2	1.67	107.1	5	3.94	110.4	8
Plasterers' helpers -----	1.80	116.1	3.89	106.0	1.69	108.3	8	3.71	103.9	6
Plumbers' laborers -----	1.64	105.8	3.82	104.1	-	-	-	4.07	114.0	9
Terrazzo workers' helpers -----	1.86	120.0	4.14	112.8	1.66	106.4	3.5	3.92	109.8	7
Tile layers' helpers -----	1.83	118.1	3.96	107.9	1.68	107.7	6.5	3.57	100.0	5

Table 17. Average union scales of journeymen and helpers in the building trades, craft scale index and rank, by region, July 1949 and July 1966—Continued

Craft	Region											
	Middle Atlantic						Border States					
	1949			1966			1949			1966		
	Average union scale	Craft scale		Average union scale	Craft scale		Average union scale	Craft scale		Average union scale	Craft scale	
	Index	Rank		Index	Rank		Index	Rank		Index	Rank	
Journeymen .....	\$2.66	100.0	-	\$5.33	100.0	-	\$2.29	100.0	-	\$4.44	100.0	-
Asbestos workers .....	2.62	98.5	10.5	5.23	98.1	10.5	2.23	97.4	8	4.56	102.7	13
Boilermakers .....	2.63	98.9	13	5.54	103.9	19	2.25	98.3	10.5	4.84	109.0	23
Bricklayers .....	3.06	115.0	23	5.53	103.6	18	2.84	124.0	22	4.30	108.1	20
Carpenters .....	2.62	98.5	10.5	5.50	103.2	17	2.20	96.1	7	4.12	92.8	4
Cement finishers .....	2.59	97.4	7.5	5.33	100.0	13	2.10	91.7	4.5	4.08	91.9	3
Electricians .....	2.84	106.8	20	5.27	98.9	12	2.32	101.3	13	4.67	105.2	16.5
Elevator constructors .....	2.62	98.5	10.5	5.64	105.8	21	2.60	113.5	20	4.68	105.4	18
Glaziers .....	2.44	91.7	3	4.96	93.1	4	2.10	91.7	4.5	4.16	93.7	6
Lathers .....	2.75	103.4	18	5.37	100.8	14	2.50	109.2	18	4.32	97.3	9
Machinists .....	2.55	95.9	5	5.67	106.4	22	2.28	99.6	12	4.67	105.2	16.5
Marble setters .....	2.62	98.5	10.5	5.23	98.1	10.5	2.54	110.9	19	4.74	106.8	19
Mosaic and terrazzo workers .....	2.66	100.0	14.5	5.83	109.4	23	2.37	103.5	15	4.22	95.0	8
Painters .....	2.37	89.1	2	4.71	88.4	3	2.00	87.3	3	4.16	93.7	6
Paperhangers .....	2.13	80.1	1	4.22	79.2	1	1.82	79.5	1.5	4.43	99.8	11
Plasterers .....	3.05	114.7	22	5.48	102.8	16	2.62	114.4	21	4.37	98.4	10
Plumbers .....	2.81	105.6	19	5.09	95.5	6	2.37	103.5	15	4.62	104.1	15
Rodmen .....	2.59	97.4	7.5	5.46	102.4	15	2.25	98.3	10.5	4.59	103.4	14
Roofers, composition .....	2.47	92.9	4	5.06	94.9	5	1.82	79.5	1.5	3.47	78.2	2
Roofers, slate and tile .....	2.73	102.6	16.5	4.56	85.6	2	2.15	93.9	6	3.32	74.8	1
Sheet-metal workers .....	2.58	97.0	6	5.18	97.2	9	2.24	97.8	9	4.49	101.1	12
Stonemasons .....	2.85	107.1	21	5.17	97.0	8	2.89	126.2	23	4.82	108.6	21
Structural iron workers .....	2.73	102.6	16.5	5.57	104.5	20	2.48	108.3	17	4.83	108.8	22
Tile layers .....	2.66	100.0	14.5	5.11	95.9	7	2.37	103.5	15	4.16	93.7	6
Helpers and laborers .....	1.72	100.0	-	4.35	100.0	-	1.35	100.0	-	2.85	100.0	-
Bricklayers' tenders .....	1.88	109.3	5.5	4.72	108.5	8	1.43	105.9	3	2.75	96.5	2
Building laborers .....	1.59	97.4	2	4.19	96.3	4	1.32	97.8	1	2.82	93.9	3
Composition roofers' helpers .....	1.46	84.9	1	3.86	88.7	1	1.45	107.4	4	2.74	96.1	1
Elevator constructors' helpers .....	1.88	109.3	5.5	4.18	96.1	3	1.76	130.4	9	3.26	114.4	7
Marble setters' helpers .....	1.71	99.4	4	4.41	101.4	7	1.70	125.9	7.5	3.60	126.3	9
Plasterers' helpers .....	2.02	117.4	7.5	4.39	100.9	6	1.56	115.6	5	3.00	105.3	4
Plumbers' laborers .....	1.69	98.3	3	4.10	94.3	2	1.39	103.0	2	3.02	106.0	5
Terrazzo workers' helpers .....	2.06	119.8	9	4.75	109.2	9	1.59	117.8	6	3.15	110.5	6
Tile layers' helpers .....	2.02	117.4	7.5	4.28	98.4	5	1.60	125.2	7.5	3.35	117.5	8
	Southeast						Great Lakes					
Journeymen .....	\$2.03	100.0	-	\$4.10	100.0	-	\$2.34	100.0	-	\$4.78	100.0	-
Asbestos workers .....	2.10	103.4	10	4.23	103.2	15	2.35	100.4	11.5	4.98	104.2	19.5
Boilermakers .....	2.25	110.8	14	4.45	108.5	22	2.37	101.3	15	2.98	104.2	19.5
Bricklayers .....	2.46	121.2	22	4.48	109.3	23	2.53	108.1	23	4.96	103.8	18
Carpenters .....	1.90	93.6	5	3.94	96.1	6.5	2.32	99.1	8.5	4.70	98.3	9
Cement finishers .....	1.97	97.0	7.5	3.64	88.8	4	2.27	97.0	6	4.64	97.1	5.5
Electricians .....	2.21	108.9	12	4.30	104.9	17	2.45	104.7	20	4.93	103.1	16
Elevator constructors .....	2.34	115.3	17.5	4.27	104.1	16	2.35	100.4	11.5	4.90	102.5	15
Glaziers .....	1.83	90.1	3	3.54	86.3	3	2.22	94.9	2	4.44	92.9	3
Lathers .....	2.29	112.8	15	3.95	96.3	8	2.48	106.0	21	4.66	97.5	7.5
Machinists .....	2.22	109.4	13	4.40	107.3	20	2.42	103.4	18.5	5.01	104.8	21.5
Marble setters .....	2.39	117.7	20.5	4.38	106.8	19	2.35	100.4	11.5	4.84	101.3	14
Mosaic and terrazzo workers .....	2.39	117.7	20.5	4.05	98.8	11	2.30	98.3	7	4.64	87.1	5.5
Painters .....	1.87	92.1	4	3.85	93.9	5	2.22	94.9	2	4.43	92.7	2
Paperhangers .....	1.98	97.5	9	3.94	96.1	6.5	2.25	96.2	4.5	4.39	91.8	1
Plasterers .....	2.32	114.3	16	4.02	98.0	10	2.50	106.8	22	4.71	98.5	10
Plumbers .....	2.36	116.3	19	4.41	107.6	21	2.42	103.4	18.5	4.94	103.3	17
Rodmen .....	1.97	97.0	7.5	4.08	99.5	12	2.32	99.1	8.5	5.01	103.3	21.5
Roofers, composition .....	1.67	82.3	1	3.30	80.5	2	2.25	96.2	4.5	4.63	96.9	4
Roofers, slate and tile .....	1.79	88.2	2	3.23	78.8	1	2.35	100.4	11.5	4.79	100.2	11
Sheet-metal workers .....	1.95	96.1	6	4.13	100.7	13	2.22	94.9	2	4.80	100.4	12.5
Stonemasons .....	2.47	121.7	23	4.35	106.1	18	2.37	101.3	15	4.80	100.4	12.5
Structural iron workers .....	2.15	105.9	11	4.16	101.5	14	2.37	101.3	15	5.05	105.6	23
Tile layers .....	2.34	115.3	17.5	3.99	97.3	9	2.38	101.7	17	4.66	97.5	7.5
Helpers and laborers .....	1.00	100.0	-	2.31	100.0	-	1.65	100.0	-	3.80	100.0	-
Bricklayers' tenders .....	1.02	102.0	3	2.31	100.0	3	1.71	103.6	4	3.81	100.3	5
Building laborers .....	.99	95.0	2	2.23	96.5	2	1.60	97.0	2	3.79	99.7	4
Composition roofers' helpers .....	.89	89.0	1	1.96	84.8	1	1.44	87.3	1	3.48	91.6	2
Elevator constructors' helpers .....	1.63	163.0	6	3.01	130.3	6	1.65	100.0	3	3.40	89.5	1
Marble setters' helpers .....	1.04	104.0	-	-	-	-	1.76	106.7	6	3.92	103.2	7
Plasterers' helpers .....	1.14	114.0	5	2.56	110.8	5	1.87	113.3	9	3.91	102.9	6
Plumbers' laborers .....	1.05	105.0	4	2.40	103.9	4	1.72	104.2	5	3.94	103.7	8
Terrazzo workers' helpers .....	1.05	105.0	-	-	-	-	1.86	112.7	8	3.98	104.7	9
Tile layers' helpers .....	1.02	102.0	-	-	-	-	1.77	107.3	7	3.78	99.5	3

Table 17. Average union scales of journeymen and helpers in the building trades, craft scale index and rank, by region, July 1949 and July 1966—Continued

Craft	Region											
	Middle West						Southwest					
	1949			1966			1949			1966		
	Average union scale	Craft scale		Average union scale	Craft scale		Average union scale	Craft scale		Average union scale	Craft scale	
	Index	Rank		Index	Rank		Index	Rank		Index	Rank	
Journeyman	\$2.32	100.0	-	\$4.59	100.0	-	\$2.12	100.0	-	\$4.16	100.0	-
Asbestos workers	2.38	102.6	13	4.70	102.4	16.5	2.25	106.1	12	4.60	110.6	22.5
Boilermakers	2.29	98.7	7	4.71	102.6	19	2.25	106.1	12	4.60	110.6	22.5
Bricklayers	2.70	116.4	23	4.88	106.3	21	2.58	121.7	21	4.45	107.0	18
Carpenters	2.25	97.0	6	4.47	97.4	8	1.99	93.9	6	3.98	95.7	8
Cement finishers	2.33	100.4	10	4.38	95.4	5	2.04	96.2	8	3.94	94.7	7
Electricians	2.41	103.9	17.5	5.03	109.6	23	2.29	108.0	15.5	4.43	106.5	17
Elevator constructors	2.42	104.3	19.5	4.66	101.5	13	2.36	111.3	18.5	4.18	100.5	11
Glaziers	2.22	95.7	5	4.28	93.2	4	1.79	84.4	3	3.75	90.1	3
Lathers	2.35	101.3	11	4.70	102.4	16.5	2.59	122.2	22.5	4.24	101.9	14
Machinists	2.36	101.7	12	4.41	96.1	7	2.25	106.1	12	4.58	110.1	21
Marble setters	2.39	103.0	14.5	4.71	102.6	19	2.36	111.3	18.5	4.20	101.0	13
Mosaic and terrazzo workers	2.41	103.9	17.5	4.69	102.2	15	2.26	106.6	14	3.90	93.7	6
Painters	2.16	93.1	3	4.26	92.8	3	1.91	90.1	5	3.83	92.1	4
Paperhangers	2.14	92.2	2	4.39	95.6	6	1.84	86.8	4	3.86	92.8	5
Plasterers	2.55	109.9	21	4.54	98.9	10	2.48	117.0	20	4.28	102.9	15.5
Plumbers	2.42	104.3	19.5	4.94	107.6	22	2.31	109.0	17	4.46	107.2	19.5
Rodmen	2.40	103.4	16	4.49	97.8	9	2.00	94.3	7	4.06	97.6	10
Roofers, composition	2.19	94.4	4	4.14	90.2	2	1.78	84.0	2	3.64	87.5	2
Roofers, slate and tile	1.96	84.5	1	3.97	86.5	1	1.77	83.5	1	3.63	87.3	1
Sheet-metal workers	2.31	99.6	8	4.67	101.7	14	2.20	103.8	10	4.28	102.9	15.5
Stonemasons	2.56	110.3	22	4.71	102.6	19	2.59	122.2	22.5	4.47	107.5	19.5
Structural iron workers	2.32	100.0	9	4.56	99.3	11	2.19	103.3	9	4.19	100.7	12
Tile layers	2.39	103.0	14.5	4.62	100.7	12	2.29	108.0	15.5	4.02	96.6	9
Helpers and laborers	1.56	100.0	-	3.53	100.0	-	1.13	100.0	-	2.54	100.0	-
Bricklayers' tenders	1.64	105.1	5	3.60	103.7	5	1.31	115.9	7	2.74	107.9	7
Building laborers	1.48	94.9	1	3.40	96.3	2	1.06	93.8	3	2.48	97.6	5
Composition roofers' helpers	-	-	-	3.45	97.7	-	1.05	92.9	1.5	2.15	84.6	2
Elevator constructors' helpers	1.73	110.9	6	3.26	92.4	1	1.65	146.0	9	3.04	119.7	9
Marble setters' helpers	1.57	100.6	2	3.68	104.2	6	1.34	118.6	8	2.31	90.9	3.5
Plasterers' helpers	1.78	114.1	8	3.57	101.1	4	1.29	114.2	6	2.67	105.1	6
Plumbers' laborers	1.74	111.5	7	4.04	114.4	8	1.05	92.9	1.5	2.78	109.4	8
Terrazzo workers' helpers	1.62	103.8	3	3.85	109.1	7	1.25	110.6	4	2.31	90.9	3.5
Tile layers' helpers	1.63	104.5	4	3.42	96.9	3	1.27	112.4	5	2.11	83.1	1
	Mountain						Pacific					
Journeyman	\$2.15	100.0	-	\$4.59	100.0	-	\$2.24	100.0	-	\$5.10	100.0	-
Asbestos workers	2.13	99.1	12	4.44	96.7	7	2.29	102.2	10	5.36	105.1	19
Boilermakers	2.32	107.9	16	4.90	106.8	21	2.35	104.9	13	5.34	104.7	18
Bricklayers	2.84	132.1	23	4.85	105.7	20	2.77	123.7	23	5.07	99.4	13
Carpenters	2.03	94.4	5	4.51	98.3	10	2.11	94.2	2	4.84	94.9	6
Cement finishers	2.12	98.6	11	4.50	98.0	8.5	2.16	96.4	4.5	4.65	91.2	2
Electricians	2.26	105.1	14	4.79	104.4	19	2.46	109.8	17	5.46	107.1	20
Elevator constructors	2.22	103.3	13	4.72	102.8	17	2.48	110.7	18	3.52	104.3	17
Glaziers	1.87	87.0	1	3.92	85.4	2	1.97	87.9	1	4.78	93.7	4
Lathers	2.46	114.4	18	4.59	100.0	12	2.41	107.6	16	4.74	92.9	3
Machinists	2.07	96.3	8.5	5.39	117.4	23	2.38	106.3	14	5.68	111.4	23
Marble setters	2.37	110.2	17	4.14	90.2	4	2.39	106.7	15	5.10	100.0	14
Mosaic and terrazzo workers	2.58	120.0	21	4.67	101.7	13	2.32	103.6	11.5	4.92	96.5	9
Painters	2.00	93.0	3	4.12	89.8	3	2.18	97.3	6	4.87	95.5	8
Paperhangers	2.04	94.9	6	4.26	92.8	5	2.15	96.0	3	4.94	96.9	10
Plasterers	2.48	115.3	19.5	4.57	99.6	11	2.63	117.4	21	4.85	95.1	7
Plumbers	2.30	107.0	15	4.70	102.4	14.5	2.49	111.2	19	5.65	110.8	22
Rodmen	2.07	96.3	8.5	4.71	102.6	16	2.16	96.4	4.5	5.06	99.2	12
Roofers, composition	1.97	91.6	2	4.50	98.0	8.5	2.23	99.6	9	4.79	93.9	5
Roofers, slate and tile	2.02	94.0	4	3.69	80.4	1	2.21	98.7	7	4.60	90.2	1
Sheet-metal workers	2.06	95.8	7	4.70	102.4	14.5	2.22	99.1	8	5.50	107.8	21
Stonemasons	2.71	126.0	22	4.98	108.5	22	2.73	121.9	22	4.97	97.5	11
Structural iron workers	2.08	96.7	10	4.73	103.1	18	2.32	103.6	11.5	5.28	103.5	16
Tile layers	2.48	115.3	19.5	4.40	95.9	6	2.54	113.4	20	5.15	101.0	15
Helpers and laborers	1.49	100.0	-	3.31	100.0	-	1.64	100.0	-	3.89	100.0	-
Bricklayers' tenders	1.74	116.8	8	3.70	111.8	7	1.93	117.7	7	4.23	108.7	6
Building laborers	1.40	94.0	4	3.23	97.6	1	1.56	95.1	1	3.79	97.4	2
Composition roofers' helpers	-	-	-	-	-	-	-	-	-	-	-	-
Elevator constructors' helpers	1.54	103.4	2	3.33	100.6	3	1.75	106.7	3	3.69	94.9	1
Marble setters' helpers	1.60	107.4	6	3.60	108.8	6	1.81	110.4	4	4.04	103.9	4
Plasterers' helpers	1.78	119.5	5	3.38	102.1	4	2.20	134.1	8	4.45	114.4	8
Plumbers' laborers	1.66	111.4	7	3.79	114.5	8	1.74	106.1	2	3.97	102.1	3
Terrazzo workers' helpers	1.51	101.3	1	3.44	103.9	5	1.85	112.8	5	4.35	111.8	7
Tile layers' helpers	1.67	112.1	3	3.31	100.0	2	1.88	114.6	6	4.16	106.9	5

Table 18. Distribution of union members in the building trades by straight-time weekly hours, July 1, 1967

Trade	Average hours per week	Percent of union members having a workweek of—							
		25 hours	30 hours	35 hours	Over 35 and under 37.5 hours	37.5 hours	Over 37.5 and under 40 hours	40 hours	42.5 hours
All building trades -----	39.2	0.7	0.4	12.2	0.8	0.7	0.2	85.0	( <sup>1</sup> )
Journeyman -----	39.1	0.8	0.4	13.5	1.0	0.9	0.2	83.3	-
Asbestos workers -----	39.8	-	-	4.9	-	-	-	95.1	-
Boilermakers -----	39.5	-	-	9.7	-	2.3	-	88.0	-
Bricklayers -----	39.0	-	-	18.6	-	1.9	-	79.5	-
Carpenters -----	39.1	-	-	16.2	2.0	-	-	81.8	-
Cement finishers -----	39.7	-	-	6.7	-	-	-	93.3	-
Electricians (inside wiremen) -----	37.9	8.9	-	13.9	1.0	2.9	1.1	72.6	-
Elevator constructors -----	39.1	-	-	17.6	-	-	-	82.4	-
Glaziers -----	39.7	-	-	5.2	-	-	-	94.8	-
Lathers -----	38.9	-	-	20.7	-	-	1.5	77.8	-
Machinists -----	39.9	-	-	2.8	-	-	-	97.2	-
Marble setters -----	39.2	-	-	16.0	-	-	-	84.0	-
Mosaic and terrazzo workers -----	38.3	-	-	34.9	-	-	-	65.1	-
Painters -----	38.7	-	.1	25.1	-	-	-	74.8	-
Paperhangers -----	39.5	-	-	9.9	-	-	-	90.1	-
Pipefitters -----	39.7	-	-	6.1	.3	1.0	-	92.6	-
Plasterers -----	37.5	-	22.6	4.7	-	-	-	72.7	-
Plumbers -----	39.3	-	-	12.1	1.2	2.7	-	84.1	-
Rodmen -----	39.8	-	-	3.4	-	-	-	96.6	-
Roofers, composition -----	39.4	-	-	8.6	-	1.8	5.5	84.1	-
Roofers, slate and tile -----	39.7	-	-	2.9	-	4.2	.7	92.2	-
Sheet-metal workers -----	39.4	-	-	9.3	2.4	2.0	-	86.3	-
Stonemasons -----	39.3	-	-	13.0	-	2.2	-	84.8	-
Structural iron workers -----	39.9	-	-	2.9	-	-	-	97.1	-
Tile layers -----	40.0	-	-	-	-	-	-	100.0	-
Helpers and laborers -----	39.6	-	.7	7.5	-	-	-	91.8	0.1
Bricklayers' tenders -----	38.7	-	-	26.3	-	-	-	73.7	-
Building laborers -----	39.8	-	-	3.6	-	-	-	96.4	-
Composition roofers' helpers -----	40.0	-	-	-	-	-	-	100.0	-
Elevator constructors' helpers -----	38.9	-	-	22.1	-	-	-	77.9	-
Marble setters' helpers -----	39.4	-	-	12.2	-	-	-	87.8	-
Plasterers' laborers -----	38.8	-	10.7	2.9	-	-	-	85.4	1.0
Plumbers' laborers -----	40.0	-	-	-	-	-	-	100.0	-
Terrazzo workers' helpers -----	38.9	-	-	22.0	-	-	-	78.0	-
Tile layers' helpers -----	40.0	-	-	-	-	-	-	100.0	-

<sup>1</sup> Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 19. Average union straight-time hours in the building trades, 9 selected cities, 1947 and 1967

Year and trade	Atlanta	Baltimore	Boston	Chicago	Dallas	Denver	Kansas City	Los Angeles	New York City
1947:									
Journeyman -----	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.6	34.3
Helpers and laborers -----	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.7	36.9
1967:									
Journeyman -----	40.0	40.0	40.0	39.7	40.0	40.0	40.0	39.5	34.7
Helpers and laborers -----	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	35.8

NOTE: Figures are simple unweighted averages of individual crafts.

## Chapter 5. Building Construction Scales and Maintenance Wages<sup>1</sup>

A study covering three crafts in 50 metropolitan areas in late 1965 or early 1966<sup>2</sup> indicated that union scales of skilled workers in building construction were almost uniformly higher than the average straight-time hourly earnings of such workers in maintenance activities.<sup>3</sup> The three crafts were carpenters, electricians, and painters. Few individual maintenance workers in these trades were paid as much as the union scale for construction work in their area.

### Differentials and Overlap

Union scales of construction carpenters were 11 to 73 percent higher than average hourly earnings of maintenance carpenters in the same area, with the difference amounting to 33 percent or more in half the cities. For the electricians, scales were 18 to 63 percent higher than average hourly earnings of maintenance electricians, with a difference of at least 39 percent in half the cities. Scales for painters in building construction were lower than the average hourly pay of maintenance painters in only one city—Richmond, Va. Elsewhere differentials in favor of union scales for painters were smaller than for maintenance electricians or carpenters; they ranged from 7 to 54 percent, with a differential of at least 27 percent in half the metropolitan areas surveyed. (See table 20.)

In cents per hour, the construction-maintenance differentials ranged among cities from 34 cents to \$2.45 for carpenters and from 66.5 cents to \$2.01 for electricians. Maintenance painters in Richmond earned 34 cents more, on the average, than the union scale for construction painters. In a majority of cities, the differentials were 85 cents to \$1.30 for carpenters, \$1.10 to \$1.50 for electricians, and 55 cents to \$1.10 for painters.

Differentials varied not only among cities but among the three trades within the same city (table 21). To some extent, this lack of uniformity reflects intercity differences in the industries in which maintenance workers are concentrated and the extent of unionization of maintenance workers, as well as differences in local bargaining conditions among the three construction crafts.<sup>4</sup>

The spread between construction scales and maintenance pay varied more among cities within a region than among regions. For carpenters and electricians, however, differentials in favor of building scales tended to be proportionately greater in the Northeast than in other cities. Of 10 cities with the greatest differentials, the Northeast accounted for 7 for carpenters, 8 for electricians, and 5 for painters. Three cities with the greatest differentials for carpenters and painters and two for electricians were in the South. The greatest differentials occurred in New York City, where union scales exceeded average hourly earnings for maintenance employees in the same trade by 50 to 73 percent; New Haven, where the range was 48 to 61 percent; Trenton, 42 to 61; Boston, 44 to 62; and Pittsburgh, 41 to 52 percent.

<sup>1</sup> This chapter was excerpted from the article by Lily Mary David and T. P. Kanninen "Workers' Wages in Construction and Maintenance," Monthly Labor Review, January 1968.

<sup>2</sup> Data vary among cities from September 1965 to May 1966. (See table 1.)

<sup>3</sup> The comparisons presented here are limited to union wage scales or straight-time hourly earnings and take no account of expenditures for benefits. For a discussion of such expenditures, see the section on "Compensation" in chap. 8 and appendix B.

<sup>4</sup> Differences in the relative importance of various industries as well as in the extent of unionization among cities presumably affected the size of the differential for all three trades. For example, the relative importance of employment in the service industries in New York reduced average hourly earnings for maintenance workers in that city.

An analysis of the distribution of individual maintenance workers' earnings indicates very little overlap between their pay and the union construction scales in the city in which they work.<sup>5</sup> The overlap was confined largely to trade, where some stores paid their maintenance workers the construction scale. Their payment of the construction scale may be related in part to the fact that for relatively large projects, they hire union workers temporarily or contract work out to a union contractor. Moreover, in some of the other industry divisions—for example, utilities—the pay scale for maintenance workers is governed by a job evaluation system for all blue-collar workers. (See table 22.)

### Meaning of the Differential

In evaluating these differentials, a number of distinctions between construction and maintenance work should be recognized: There are substantial differences in the number of days worked in a year, since construction workers lose time because of weather and because of shifting from job to job as work on a project is completed. Even though newer methods of construction have reduced the exposure of building trades employees to weather, their working conditions are usually still more rigorous than those of maintenance employees.

Data on union scales are limited to the central city; the information on average hourly earnings of maintenance workers pertains to all those employed throughout the metropolitan area. In some areas, there may be a difference in union scales between the central city and outlying communities. Moreover, the information for maintenance workers includes union and nonunion establishments.

### Trends

When this chapter was prepared, information was available on trends in earnings and union scales only from 1955 to 1966 (table 23). It indicates that in all cities, the absolute differentials (cents per hour) have grown substantially. In a majority of cities, also they have grown in relative terms, although the percentage differentials have not changed markedly in most jobs and areas, and in some cases they have not grown at all. A substantial widening in percentage differentials did take place for Boston electricians and painters, Buffalo electricians, New York City and St. Louis carpenters, Atlanta and Baltimore painters, and Memphis carpenters and painters. On the other hand, percentage differentials did not widen at all for Buffalo carpenters and painters, Philadelphia carpenters, Atlanta and Cleveland carpenters and electricians, Baltimore carpenters, Dallas electricians and painters, Chicago painters, and Denver electricians.

<sup>5</sup> The construction scale in an area consists of a single rate for the occupation—the basic (minimum) wage scale established by the union agreement. Rates in excess of the negotiated minimum, which may be paid for special qualifications or other reasons, are not included but are probably paid to relatively few workers. By contrast, the data reported for maintenance workers consist of their actual average hourly earnings, which vary among establishments and among individuals within the same establishment. The information for maintenance workers includes workers employed in both union and nonunion establishments.

Table 20. Straight-time average hourly earnings in maintenance work and union scales in building construction, 3 trades in 50 areas, 1965-66

Region, metropolitan area, and date of survey	Carpenters				Electricians				Painters			
	Average hourly earnings in mainte- nance	Union scales in building construc- tion	Construction rate higher by—		Average hourly earnings in mainte- nance	Union scales in building construc- tion	Construction rate higher by—		Average hourly earnings in mainte- nance	Union scales in building construc- tion	Construction rate higher by—	
			Dollars per hour	Per- cent			Dollars per hour	Per- cent			Dollars per hour	Per- cent
<b>Northeast:</b>												
Boston, Oct. 1965 -----	\$3.13	\$4.50	\$1.37	44	\$3.24	\$5.25	\$2.01	62	\$2.88	\$4.20	\$1.32	46
Buffalo, Dec. 1965 -----	3.17	4.315	1.145	36	3.49	5.11	1.62	46	3.19	4.125	.935	29
New Haven, Jan. 1966 ----	2.79	4.50	1.71	61	3.04	4.75	1.71	56	2.88	4.25	1.37	48
New York, Apr. 1966 ----	3.35	5.80	2.45	73	3.46	5.20	1.74	50	3.16	4.80	1.64	52
Philadelphia, Nov. 1965--	3.38	4.45	1.07	32	3.33	5.25	1.92	58	3.03	3.975	.945	31
Pittsburgh, Jan. 1966 ----	3.34	5.075	1.735	52	3.45	5.25	1.80	52	3.14	4.425	1.285	41
Portland, Nov. 1965 ----	2.52	3.70	1.18	47	2.75	3.95	1.20	44	2.33	2.50	.17	7
Providence-Pawtucket, May 1966 -----	2.66	3.95	1.29	48	2.97	4.55	1.58	53	2.68	3.60	.92	34
Trenton, Dec. 1965 -----	3.08	4.80	1.72	56	3.30	5.30	2.00	61	3.09	4.375	1.285	42
York, Feb. 1966 -----	2.62	3.55	.93	35	2.94	4.40	1.46	50	2.59	3.05	.46	18
<b>South:</b>												
Atlanta, May 1966 -----	2.97	4.00	1.03	35	3.46	4.30	.84	24	2.82	4.25	1.43	51
Baltimore, Nov. 1965 ----	3.11	4.09	.98	32	3.23	4.70	1.47	46	2.98	4.05	1.07	36
Birmingham, Apr. 1966--	3.31	3.90	.59	18	3.67	4.35	.68	19	3.06	4.00	.94	31
Charleston, Apr. 1966 ----	3.58	4.475	.895	25	3.58	4.45	.87	24	3.53	3.65	.12	3
Chattanooga, Sept. 1965--	2.45	3.85	1.40	57	2.91	4.25	1.34	46	2.78	3.75	.97	35
Dallas, Nov. 1965 -----	2.95	4.15	1.20	41	3.18	4.275	1.095	34	2.81	3.913	1.103	39
Houston, June 1966 -----	3.61	4.32	.71	20	3.69	4.355	.665	18	3.51	4.035	.525	15
Jacksonville, Jan. 1966--	2.82	3.75	.93	33	3.18	4.40	1.22	38	2.67	3.50	.83	31
Little Rock-N. Little Rock, Aug. 1965 -----	2.47	3.65	1.18	48	2.67	4.35	1.68	63	-	-	-	-
Louisville, Feb. 1966 ----	3.40	4.125	.725	21	3.57	4.545	.975	27	3.25	3.82	.57	18
Memphis, Jan. 1966 -----	2.62	4.00	1.38	53	3.22	4.525	1.305	41	2.71	3.80	1.09	40
Miami, Dec. 1965 -----	2.85	3.90	1.05	37	3.05	4.55	1.50	49	2.52	3.57	1.05	45
New Orleans, Feb. 1966 -----	3.09	3.90	.81	26	3.30	4.40	1.10	33	2.99	3.375	.385	13
Richmond, Nov. 1965 ----	3.11	3.45	.34	11	3.30	4.05	.75	23	3.09	2.75	-.34	-11
Savannah, May 1966 ----	3.14	3.80	.66	21	3.35	4.35	1.00	30	3.07	3.375	.305	10
Washington, D. C.-Md.- Va., Oct. 1965 -----	3.19	4.10	.91	29	3.30	4.90	1.60	48	2.84	4.37	1.53	54
<b>North Central:</b>												
Chicago, Apr. 1966 -----	3.66	4.85	1.19	33	3.67	4.95	1.28	35	3.86	4.60	.74	19
Cincinnati, Mar. 1965 ----	3.26	4.40	1.14	35	3.35	4.75	1.40	42	3.20	4.00	.80	25
Cleveland, Sept. 1965 ----	3.36	4.75	1.39	41	3.46	4.89	1.43	41	3.22	4.56	1.34	42
Columbus, Oct. 1965 ----	3.22	4.14	.92	29	3.37	4.60	1.23	36	3.13	3.65	.52	17
Davenport-Rock Island- Moline, Oct. 1965 -----	3.33	4.12	.79	24	3.67	4.56	.89	24	3.21	3.77	.56	17
Dayton, Jan. 1966 -----	3.53	4.38	.85	24	3.52	4.64	1.12	32	3.34	4.00	.66	20
Des Moines, Feb. 1966 --	3.46	4.20	.74	21	3.54	4.60	1.06	30	3.37	3.90	.53	16
Detroit, Jan. 1966 -----	3.51	4.43	.92	26	3.73	5.00	1.27	34	3.40	4.00	.60	18
Indianapolis, Dec. 1965--	3.39	4.40	1.01	30	3.53	4.625	1.095	31	3.34	4.10	.76	23
Kansas City, Nov. 1965 --	3.49	4.15	.66	19	3.63	4.85	1.22	34	3.49	4.075	.585	17
Milwaukee, Apr. 1966 ----	3.40	4.26	.86	25	3.70	4.60	.90	24	3.45	4.01	.56	16
Omaha, Oct. 1965 -----	3.11	4.10	.99	32	3.42	4.60	1.18	35	3.29	3.825	.535	16
St. Louis, Oct. 1965 ----	3.34	4.675	1.335	40	3.63	5.15	1.52	42	3.35	4.34	.99	30
<b>South Bend,</b>												
Mar. 1966 -----	3.39	4.15	.76	22	3.41	4.50	1.09	32	3.51	3.80	.29	8
Toledo, Feb. 1966 -----	3.49	4.495	1.005	29	3.44	4.75	1.31	38	3.28	4.165	.885	27
Wichita, Oct. 1965 ----	2.95	3.825	.875	30	3.14	4.65	1.51	48	2.93	3.50	.57	19
Youngstown-Warren, Nov. 1965 -----	3.38	4.50	1.12	33	3.61	4.625	1.015	28	3.20	4.14	.94	29
<b>West:</b>												
Denver, Dec. 1965 -----	3.22	4.415	1.195	37	3.41	4.62	1.21	35	3.35	3.85	.50	15
<b>Los Angeles-Long</b>												
Beach, Mar. 1966 -----	3.39	4.64	1.25	37	3.68	5.46	1.78	48	3.37	4.76	1.39	41
Phoenix, Mar. 1966 ----	3.35	4.505	1.155	34	3.56	5.00	1.44	40	3.05	4.05	1.00	33
Portland, May 1966 ----	3.39	4.68	1.29	38	3.61	5.00	1.39	39	3.49	4.05	.56	16
<b>Salt Lake City,</b>												
Dec. 1965 -----	3.25	4.10	.85	26	3.30	4.60	1.30	39	3.24	3.85	.61	19
San Diego, Nov. 1965 ----	3.32	4.75	1.43	43	3.83	5.50	1.67	44	3.24	4.82	1.58	49
Spokane, June 1966 ----	3.53	4.45	.92	26	3.60	4.538	.938	26	3.43	4.38	.95	28

Table 21. Areas with highest and lowest percentage differential between union scales in construction and straight-time average hourly earnings of maintenance workers, 3 crafts, 1965-66

Carpenters		Electricians		Painters	
Metropolitan area	Percent differential— wage scales over maintenance average hourly earnings	Metropolitan area	Percent differential— wage scales over maintenance average hourly earnings	Metropolitan area	Percent differential— wage scales over maintenance average hourly earnings
Highest differentials					
New York -----	73	Little Rock-North Little Rock -----	63	Washington, D. C. -----	54
New Haven -----	61	Boston -----	62	New York -----	52
Chattanooga -----	57	Trenton -----	61	Atlanta -----	51
Trenton -----	56	Philadelphia -----	58	San Diego -----	49
Memphis -----	53	New Haven -----	56	New Haven -----	48
Pittsburgh -----	52	Providence- Pawtucket -----	53	Boston -----	46
Little Rock-North Little Rock -----	48	Pittsburgh -----	52	Cleveland -----	42
Providence- Pawtucket -----	48	New York -----	50	Miami -----	42
Portland, Maine -----	47	York -----	50	Trenton -----	44
Boston -----	44	Miami -----	49	Pittsburgh -----	41
Lowest differentials					
Richmond -----	11	Houston -----	18	Charleston, W. Va. -----	3
Birmingham -----	18	Birmingham -----	19	Portland, Maine -----	7
Kansas City -----	19	Richmond -----	23	South Bend -----	8
Houston -----	20	Davenport-Rock Island -----	24	Savannah -----	10
Savannah -----	21	Atlanta -----	24	Richmond -----	11
Louisville -----	21	Charleston, W. Va. -----	24	New Orleans -----	13
Des Moines -----	21	Milwaukee -----	24	Denver -----	15
South Bend -----	22	Spokane -----	26	Houston -----	15
Dayton -----	24	Louisville -----	27	Portland, Oreg. -----	16
Davenport-Rock Island -----	24	Youngstown-Warren -----	28	Omaha -----	16

Table 22. Proportion of maintenance workers receiving union construction scales in major metropolitan areas, by region, 1965-66

Percent of maintenance workers receiving union scale or more	Number of metropolitan areas in which specified percent of maintenance workers received union scale or more				
	United States	Northeast	South	North Central	West
Areas studied -----	50	10	16	17	7
<b>Carpenters:</b>					
None -----	20	4	8	3	5
Less than 2 percent -----	9	4	2	3	0
2-4 percent -----	8	1	0	5	2
5-9 percent -----	7	1	4	2	-
10 percent or more -----	6	0	2	4	-
<b>Electricians:</b>					
None -----	40	9	12	12	7
Less than 2 percent -----	7	1	1	5	-
2-4 percent -----	1	-	1	-	-
5-9 percent -----	2	-	2	-	-
10 percent or more -----	-	-	-	-	-
<b>Painters:</b>					
None -----	17	4	6	2	5
Less than 2 percent -----	11	3	3	4	1
2-4 percent -----	4	-	1	3	-
5-9 percent -----	5	-	1	3	1
10 percent or more -----	13	3	5	5	-

Table 23. Differences between union construction scales and straight-time average hourly earnings of maintenance workers, 3 trades in selected metropolitan areas, 1955-66

Region and metro- politan area	Excess of construction rates over maintenance straight-time average hourly earnings for—											
	Carpenters				Electricians				Painters			
	1955	1966	Percent excess		1955	1966	Percent excess		1955	1966	Percent excess	
		1955	1966	1955	1966	1955	1966	1955	1966	1955	1966	
<b>Northeast:</b>												
Boston -----	\$0.83	\$1.37	41	44	\$0.88	\$2.01	42	62	\$0.70	\$1.32	39	46
Buffalo -----	.795	1.145	36	36	.87	1.62	38	46	.73	.935	36	29
New York City -----	1.21	2.45	55	73	1.05	1.75	47	50	.97	1.64	47	52
Philadelphia -----	.91	1.07	40	32	1.25	1.92	56	58	.55	.945	27	31
<b>South:</b>												
Atlanta -----	.68	1.03	35	35	.77	.84	35	24	.67	1.43	35	51
Baltimore -----	.69	0.98	33	32	.795	1.47	36	46	.43	1.07	22	36
Dallas -----	.77	1.20	39	41	.90	1.095	43	34	.735	1.103	39	39
Memphis -----	.535	1.38	29	53	.83	1.305	39	41	.513	1.09	29	40
<b>Middle West:</b>												
Chicago -----	.69	1.19	27	33	.84	1.28	34	35	.575	.74	23	19
Cleveland -----	1.055	1.39	48	41	.955	1.43	41	41	.82	1.34	38	42
St. Louis -----	.78	1.335	34	40	.90	1.52	38	42	.66	.99	29	30
<b>Far West:</b>												
Denver -----	.69	1.195	32	37	.86	1.21	40	35	.57	.50	28	15
Los Angeles -----	.475	1.25	21	37	.78	1.78	32	48	.51	1.39	23	41
Portland -----	.27	1.29	11	38	.57	1.39	24	39	.23	.56	10	16

## Chapter 6. Construction Workers' Hourly Earnings and Union Scales

Construction workers' hourly earnings, increasing at an average annual rate of about 5.1 percent (from 1947 through 1967) have exceeded those of their nonsupervisory counterparts in virtually every other industry.<sup>1</sup> Nonetheless, construction workers' gross average hourly earnings—which vary significantly among contract construction's three major segments—are considerably lower than indicated by the average building trades union scales.

In general, the average hourly earnings of all construction workers have followed more closely the wage pattern indicated by union scales for helpers and laborers in the building trades than either the average scale for journeymen or the average scale for all building trades workers. Since the end of World War II, the average building trades union scale for all trades (journeymen, helpers and laborers combined) has exceeded the gross average hourly earnings of all construction workers by about 15 to 20 percent.<sup>2</sup> However, over the 21-year period for which data are available (table 26), construction workers' average hourly earnings and the average building trades scales have moved closer together. The greatest compression was in the spread between average earnings of all construction workers and the building trades scale for helpers and laborers. In 1947, average hourly earnings were about 17 percent greater than the helper and laborer scale; by 1965, the spread had contracted to about 3 percent but by 1967 had widened again to about 7 percent.<sup>3</sup> The percentage differential between the average building trades scale for helpers and laborers and the scale for journeymen also has been contracting during the post-World War II years. Since 1947, the average building trades scale for helpers and laborers has risen by about 5.6 percent annually, that for journeymen only about 4.6 percent. Overall, the average helpers and laborers scale has increased about 30 percent more than the journeymen rate. Thus, one of the major factors in the changing relationship between gross hourly earnings and building trades scales appears to be a change in the relationships between helpers and laborers scales and those for journeymen crafts workers.<sup>4</sup>

Since World War II the hourly earnings patterns in contract construction's three major segments have followed somewhat different paths. Not only have the average hourly earnings of special trades workers been higher than those of workers employed by general building or heavy construction contractors, but the pace at which their hourly earnings have risen over the years has been more consistent than in either of the other segments. Hourly earnings (averaged on an annual basis) in special trades and in general building construction have increased at an average of about 5.0 percent a year or about 13.6 and 12.5 cents an hour a year, respectively. The rate of increase in the heavy construction segment was about 5.1 percent, about 11.9 cents an hour. Special trades construction has shown the least variation over the period; the range of annual increases was 2.8 to 9.7 percent. Heavy construction has varied the most—1.3 to 12.3 percent a year.

### Special Trades

The average hourly earnings of special trades workers, unlike either general building or heavy construction workers, more closely parallels the average scale for all building trades workers than the average rate for either journeymen or for helpers and laborers. As between the journeymen and the helpers and laborers scales, the special trades workers' average hourly earnings tend to be substantially closer to the building trade journeymen

<sup>1</sup> See chap. 7 for details.

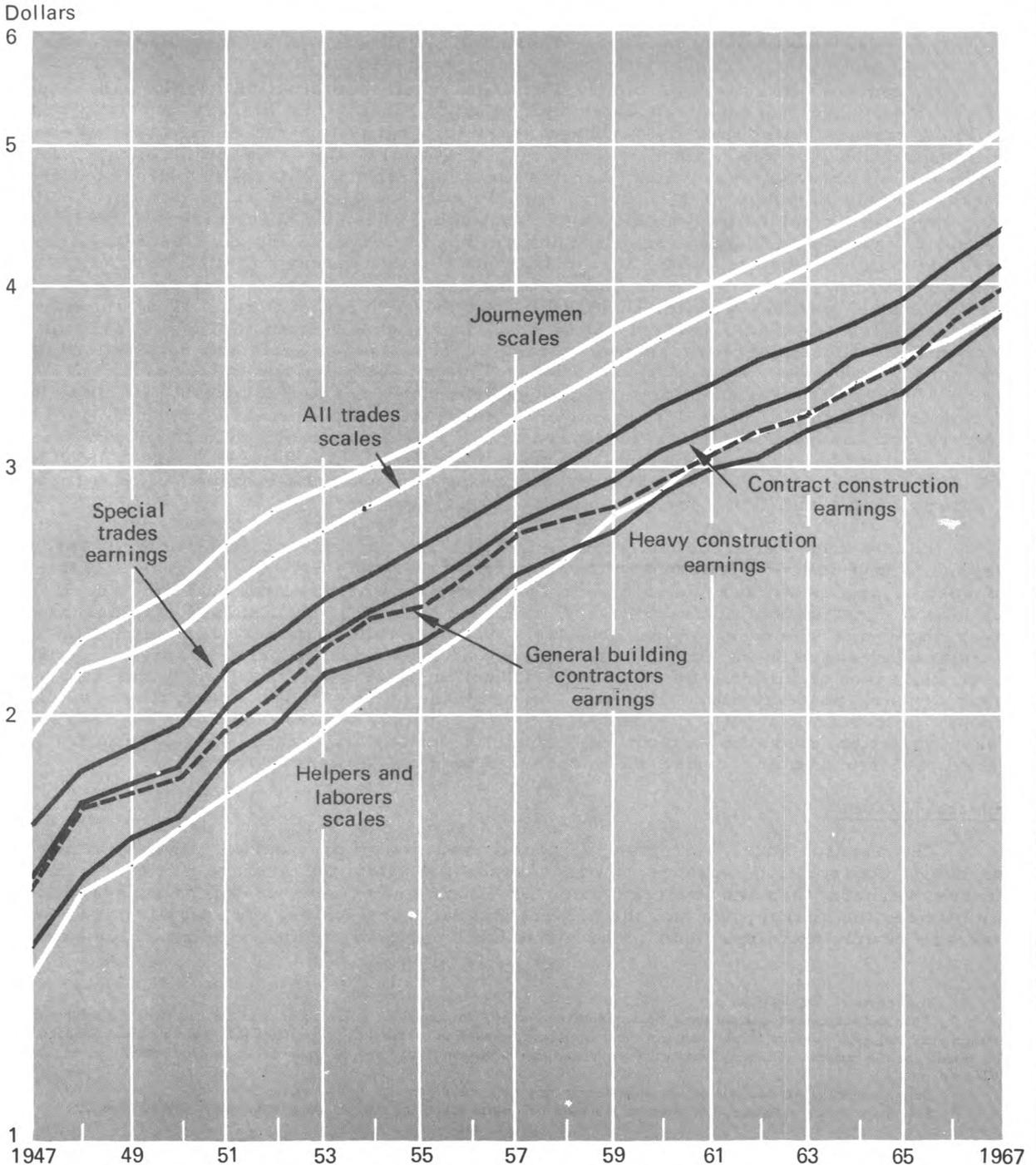
<sup>2</sup> This and subsequent comparisons, unless otherwise noted, are based on union scale data for the building trades as of July 1 of each year and gross average hourly earnings of construction workers as of the July pay period (of that year) which ended closest to the middle of the month. For a definition of the construction segments covered by these scales, see footnote 12, p. 32, and Bulletin 1621, op. cit.

<sup>3</sup> Data permitting an analysis of, or explaining, this new movement are not available.

<sup>4</sup> See chap. 4 for a further discussion of the trend of union scales in the building trades since World War II.

Chart 1.

### Construction Workers' Gross Average Hourly Earnings and Building Trades Union Scales, July 1947-67



Note: Average hourly earnings are as of the middle of July of each year, and union scales are as of July 1.  
 Source: Bureau of Labor Statistics.

craft scales than those for helpers and laborers. This relationship probably exists because the predominant group of workers employed by special trades firms are skilled craftsmen. Some of the firms these craftsmen work for, however, are unorganized and pay rates which are lower than scale wages. The difference between union and nonunion wages explains, at least in part, the difference between the average earnings of all special trade workers and the average scale for all building trade workers.

Data on wages or earnings in the union and in the nonunion sectors of special trades construction are generally nonexistent. However, some data for New York City based on studies conducted by the New York State Division of Employment are available. These data indicate that the gaps between the hourly earnings of union and nonunion workers are wide; for example, in October 1967, the median straight-time hourly earnings of all full-time journeymen painters employed by special trades painting firms was \$4.25 an hour.<sup>5</sup> Approximately 64 percent of these journeymen were employed by unionized firms, some of which did new construction work only; some primarily did alteration and repair; and some did both alteration and new construction work. All of the new construction firms employed only union painters. These painters had median hourly earnings of \$5.03.

Painters employed by alteration and repair firms had a median wage of \$4.20 an hour, 83 cents less than the median of new construction painters. The differential probably results from the fact that about 42 percent of the alteration painters were unorganized.<sup>6</sup> In addition, while 40 percent of the alteration painters or more earned \$4.20 an hour, about 42 percent earned less than \$4 an hour, and about 17 percent earned less than \$3. On the other hand, some painters were paid more than the scale rate. In contrast, none of the new construction painters earned less than \$4.80 an hour and none of the painters employed by firms that did both kinds of work earned less than \$3. The median earnings of this latter group—85 percent of whom were unionized—was \$4.71 an hour.

A similar relationship between straight-time hourly earnings of plumbers employed by special trades plumbing firms (SIC 1711) in the various sectors of the industry was found in another New York State study. That study, relating to earnings of New York City plumbers during November 1967, is summarized in table 24.<sup>7</sup>

Table 24. Number of plumbers and their straight-time hourly earnings, November 1967

Type of plumbing firm	Workers		Straight-time hourly earnings			
	Number	Percent union	Median	Mean	Concentration of 40 percent or more	Middle 50 percent range
Total-----	3,897	73	( <sup>1</sup> )	\$4.83	( <sup>1</sup> )	( <sup>1</sup> )
New construction-----	1,894	100	\$5.38	\$5.51	\$5.35	\$5.35-\$5.94
Alteration and repair-----	1,783	42	3.77	4.02	-	3.10- 5.39
New construction and/or alteration and repair-----	220	98	5.39	5.47	5.35	5.35- 5.94

<sup>1</sup> Not available.

In construction union workers appear to accept employment in nonunion firms—at less than the applicable union scale—when employment in the union sector is unavailable. When job opportunities are available in the union sector, the union worker returns to such employment. Although hourly, daily, and weekly earnings in nonunion employment tend to be lower than those possible in unionized situations, the acceptance of a temporary nonunion job does boost the worker's annual earnings.

<sup>5</sup> A full-time workweek was considered to consist of 30 hours or more. A special trades painting firm was defined as an establishment covered by the New York State Unemployment Insurance Law and classified in accordance with the 1957 edition of the Standard Industrial Classification Manual in SIC 1721. See footnotes 22-24, p. 11, for additional information about the New York State studies.

<sup>6</sup> This is the probable reason. The DE study, which provided detail by type of firm, did not show separate detail by union status.

<sup>7</sup> See footnotes 23 and 24, p. 11, for additional information about this study.

## General Building and Heavy Construction

The average hourly earnings—building trade wage scale relationships in the general building and heavy construction segments of the contract construction industry suggest that either helpers and laborers constitute a large proportion of the work force or that a large proportion of the work force in these segments of the construction industry are unorganized.

The interrelationship between these factors may explain why the average hourly earnings of general building construction workers dipped below the average building trades scale for helpers and laborers in 1961 and only rose above it in 1966. However, it does not explain why average hourly earnings of all heavy construction workers dropped below the average building trades scale for helpers and laborers in 1959 and have yet to exceed them. Since heavy construction is assumed to be highly organized the reason for the differential movement in heavy construction workers' earnings and building trade scales must result either because the occupational mix in heavy construction is substantially different than in general building trades, and/or the union scale rates pertaining to heavy construction are lower than those which apply to the building trades, or because, since 1958, most contract construction work may have been carried on in relatively low scale areas. (This latter hypothesis may also be relevant to the general building situation in the early 1960's.)

Data that would shed some light on the levels of contract construction activity by area are largely unavailable. However, contract construction employment has risen more rapidly in the South and in the North Central regions than in the other regions of the country. The average building trades scales in the South are considerably lower than those in the rest of the country. Building trades scales in the North Central region are about on a par with the national averages, although they are lower than those which prevail in the Northeast or the far West.

The actual distribution of workers by occupation among the various construction segments is not known. However, since laborers and helpers, drivers, machinery operators and their associated operative groups account for almost two-fifths of all construction workers—practically all the rest are special trades craftsmen—a reasonable assumption is that most of them are employed primarily by general and heavy construction contractors. Some helpers and laborers, particularly those associated with a skilled craft (e.g., plumbers' helpers), of course, are employed by the special trades firms for which the skilled craftsmen work. Some truckdrivers and machinery operators also are employed by such special trades firms as those engaged in excavating and foundation work and wrecking and demolition work. The majority, however, are probably employed by general building and heavy construction contractors.

If laborers and helpers, truckdrivers and machinery operators among others, as assumed, are employed predominantly by general building and heavy construction firms, then it must be assumed that they are employed in about the same proportions—one to the other—as in construction as a whole. Thus, there must be about two construction laborers for every truckdriver and another two laborers for every machinery operator in the general building and heavy construction industries. Firms in these industry segments also employ large numbers of skilled craft workers—probably carpenters.<sup>8</sup> Nonetheless, the predominant position of the three groups noted would be relatively unaffected by the employment of other groupings of workers.

Helpers and laborers wage scales are lower than those for any skilled craft; the union scales for truckdrivers employed by construction firms typically are substantially lower than the building trades scales for journeymen craft workers, though somewhat higher than the helper and laborer scales. On the other hand, the union scales for machinery operators tend to be either the highest or among the highest in an area.<sup>9</sup> Building trades scales for carpenters, who are presumed to be the other major occupational group employed by general building and heavy construction contractors, are usually among the lowest of the craft scales.<sup>10</sup>

<sup>8</sup> This assumption is based on the fact that carpenters who constitute about one-fourth of all construction workers perform functions basic to any construction activity.

<sup>9</sup> For detail, see table 15 in Bulletin 1590, op. cit.

<sup>10</sup> See table 13 for details.

General Building. Not only is a large proportion of the general building construction work force presumed to be in relatively low scale occupational groups but more than half the workers are employed by nonunion firms. In 1965, the most recent year for which data by union status are available, about 55 percent of the general building construction workers were employed by nonunion firms.<sup>11</sup> Average straight-time hourly earnings of all general building construction workers in 1965 were \$3.46 a working hour—about 9 cents more than the average scale for helpers and laborers. In that year, straight-time hourly earnings in the organized sector at an average of \$4.18 an hour of working time were only about 6 percent below the average of all building trades scales. Earnings in the unorganized sector, however, at \$2.79 an hour were about 25 percent lower than the helpers and laborers scale.

Heavy Construction. Most heavy construction workers, unlike their counterparts in the general building segment of the industry, are presumed to be employed at union scale wages or better.<sup>12</sup> However, the union scales which pertain to heavy construction work are typically equal to or lower than those which apply to general building construction and special trades work.

The Bureau of Labor Statistics does not prepare any computations using union scale data for the heavy construction segment of the contract construction industry. However, the BLS publishes union scale data for engineers (power equipment operators) in each of the cities currently included in the building trades union wage study program for which such data are available.

Engineers' rates usually differ by machine. Specific rates are established for each type and size of machine although, in some cases, the same rate may apply to a whole class of machines. In most cities, the available data indicated that there was either only one contract for engineers, or a comparison of rates on a machine-by-machine basis indicated that the engineer scales for building construction work were the same as those for heavy construction work.<sup>13</sup> However, there was a wage rate differential between building and heavy construction work in 15 of the 68 cities for which building trades scales are available. In 80 percent of these cities the higher rate—machine-by-machine—was for building construction work.<sup>14</sup>

Data on union scales of heavy construction laborers are published by Engineering News Record. Their data for heavy and for building laborers (in conjunction with the BLS building laborer scales) indicate that union scales for these two laboring groups are usually the same. However, there was a differential between the building and heavy construction rates in 12 of the 39 cities for which observation of both types of laborers were available from recent studies.<sup>15</sup> In 10 of the 12 cities, the building laborer rate was from 5 to 30 cents an hour higher than the heavy laborer rate (the median differential was 11.25 cents). In the other two cities, both in the Mid-West, the heavy construction rate was higher than the building laborers' rate.

Truckdrivers are employed in all segments of the building construction industry. However, it seems reasonable to assume that the proportion of drivers to other workers is directly associated with the amount of material to be moved at or away from the site.<sup>16</sup> Thus, the highest proportions of truckdrivers would reasonably be expected to be employed by general building and heavy construction contractors.

It is not known whether proportionately more truckdrivers (on an absolute or proportionate basis) are employed by general building or heavy construction firms. Nor is it

<sup>11</sup> See appendix A for details.

<sup>12</sup> See chap. 2 for discussion of unionization.

<sup>13</sup> Bulletin 1590, op. cit.

<sup>14</sup> Engineers that operate more than one machine during the course of the day are typically paid for each hour worked at the scale applicable to the highest rated machine.

<sup>15</sup> "Building Trades Wage Rates in 42 Cities - August 1, 1967," Engineering News Record, September 21, 1967, pp. 114-119, and Bulletin 1590, op. cit.

<sup>16</sup> Although documentary evidence is not available it is generally agreed that most drivers who bring supplies to the site are employed by the supplier of the material not the construction firm.

possible to make an independent assessment of these relationships. On the basis of all the evidence it seems likely, however, that the bulk of the construction truckdrivers are employed by heavy construction firms.<sup>17</sup>

The union scales for truckdrivers employed by contract construction firms are substantially below the building trades scale for journeyman craft workers and are often lower than the average building trades scale for helpers and laborers. The average construction truckdrivers rate, in 55 cities for which construction truckdrivers and building construction scales were available,<sup>18</sup> exceeded the average journeyman craft rate in only one city.

Union scales for construction truckdrivers, as can be seen from the following tabulation, are most frequently equal to between 70 and 80 percent of the average scale for journeymen craft workers and equal or exceed the helpers and laborer scale by up to 15 percent.

Percent of building trades scale	Number of matched cities where the average truckdriver rate was equal to the specified proportion of the average building scale rate for	
	Journeymen	Helpers and laborers
Total-----	55	55
Less than 60 percent -----	2	-
60 and under 70 percent -----	6	-
70 and under 75 percent -----	12	-
75 and under 80 percent -----	19	-
80 and under 85 percent -----	3	-
85 and under 90 percent -----	8	4
90 and under 95 percent -----	3	9
95 and under 100 percent -----	1	5
100 and under 105 percent -----	1	11
105 and under 110 percent -----	-	8
110 and under 115 percent -----	-	12
115 and under 120 percent -----	-	2
120 percent or more -----	-	4

In a few cases (about 7 percent of those studied), the truckdriver scale amounts to less than 60 percent or more than 95 percent of the journeyman craft worker rate. However, in one-third of the cities for which data are available, the average truckdriver scale is below that of the building trades helpers and laborers.

<sup>17</sup> If this assumption is wrong, the only other hypothesis that explains the low hourly earnings level of heavy construction workers is that a large proportion of them work for nonunion firms at substantially less than union rates. This hypothesis has already been rejected.

<sup>18</sup> Computed for each city for which construction truckdrivers and building trade scale data were available. The construction truckdriver data were obtained from Union Wages and Hours: Motortruck Drivers and Helpers, July 1, 1967 (Bulletin 1591, 1968). Each construction truckdriver rate in a city was weighted equally in computing the city average. This technique assumes that an equal number of workers drove each different type of truck. In reality, a plurality (perhaps a majority) of them probably drive dump trucks which typically are the lowest scale rate vehicles.

Table 25. Average union scales in the building trades by craft grouping, and gross average hourly earnings of construction workers, July 1947-67

Year <sup>1</sup>	Average union scales in the building trades			Average hourly earnings of construction workers in—			
	All trades	Journeyman	Helpers and laborers	Contract construction	General building contractors	Heavy construction	Special trades
1947	\$ 1.91	\$ 2.04	\$ 1.31	\$ 1.53	\$ 1.50	\$ 1.37	\$ 1.65
1948	2.11	2.25	1.49	1.72	1.70	1.54	1.82
1949	2.18	2.34	1.55	1.78	1.75	1.62	1.89
1950	2.29	2.45	1.65	1.84	1.79	1.68	1.96
1951	2.42	2.60	1.75	2.02	1.95	1.87	2.15
1952	2.57	2.76	1.84	2.11	2.04	1.96	2.24
1953	2.69	2.88	1.95	2.27	2.22	2.10	2.40
1954	2.80	2.99	2.05	2.36	2.32	2.17	2.50
1955	2.90	3.09	2.16	2.44	2.38	2.23	2.59
1956	3.04	3.22	2.29	2.55	2.50	2.35	2.71
1957	3.20	3.39	2.45	2.70	2.64	2.50	2.86
1958	3.34	3.54	2.55	2.81	2.72	2.58	3.00
1959	3.51	3.71	2.74	2.91	2.79	2.68	3.13
1960	3.66	3.86	2.88	3.06	2.91	2.85	3.29
1961	3.83	4.02	3.06	3.17	3.02	2.98	3.39
1962	3.95	4.15	3.15	3.29	3.14	3.02	3.53
1963	4.10	4.31	3.26	3.38	3.24	3.13	3.62
1964	4.25	4.46	3.40	3.53	3.39	3.25	3.77
1965	4.42	4.64	3.54	3.65	3.50	3.36	3.91
1966	4.59	4.83	3.67	3.86	3.73	3.56	4.11
1967	4.83	5.09	3.83	4.10	3.96	3.80	4.35

<sup>1</sup> Average hourly earnings are as of the middle of July of each year; union scales are as of July 1.

Table 26. Contract construction workers gross average hourly earnings as a percent of the average union scale in the building trades, July 1947-67

Year <sup>1</sup>	Contract construction			General building construction			Heavy construction			Special trades		
	All trades	Journey- men	Helpers and laborers	All trades	Journey- men	Helpers and laborers	All trades	Journey- men	Helpers and laborers	All trades	Journey- men	Helpers and laborers
1947	80.1	75.0	116.8	78.5	73.5	114.5	71.7	67.2	104.6	86.4	80.9	126.0
1948	81.5	76.4	115.4	80.6	75.6	114.1	73.0	68.4	103.4	86.3	80.9	122.1
1949	81.7	76.1	114.8	80.3	74.8	112.9	74.3	69.2	104.5	86.7	80.8	121.9
1950	80.3	75.1	111.5	78.2	73.1	108.5	73.4	68.6	101.8	85.6	80.0	118.8
1951	83.5	77.7	115.4	80.6	75.0	111.4	77.3	71.9	106.9	88.8	82.7	122.9
1952	82.1	76.4	114.7	79.4	73.9	110.9	76.3	71.0	106.5	87.2	81.2	121.7
1953	84.4	78.8	116.4	82.5	77.1	113.8	78.1	72.9	107.7	89.2	83.3	123.1
1954	84.2	78.9	115.1	82.9	77.6	113.2	77.5	72.6	105.9	89.3	83.6	122.0
1955	84.1	79.0	113.0	82.1	77.0	110.2	76.9	72.2	103.2	89.3	83.8	119.9
1956	83.9	79.2	111.4	82.2	77.6	109.2	77.3	73.0	102.6	89.1	84.2	118.3
1957	84.4	79.6	110.2	82.5	77.9	107.8	78.1	73.7	102.0	89.4	84.4	116.7
1958	84.1	79.4	110.2	81.4	76.8	106.7	77.2	72.9	101.2	89.8	84.7	117.6
1959	82.9	78.4	106.2	79.5	75.2	101.8	76.4	72.2	97.8	89.2	84.4	114.2
1960	83.6	79.3	106.3	79.5	75.4	101.0	77.9	73.8	99.0	89.9	85.2	114.2
1961	82.8	78.9	103.6	78.9	75.1	98.7	77.8	74.1	97.4	88.5	84.5	110.8
1962	83.3	79.3	104.4	79.5	75.7	99.7	76.5	72.8	95.9	89.4	85.1	112.1
1963	82.4	78.4	103.7	79.0	75.2	99.4	76.3	72.6	96.0	88.3	84.0	111.0
1964	83.1	79.1	103.8	79.8	76.0	99.7	76.5	72.9	95.6	88.7	84.5	110.9
1965	82.6	78.7	103.1	79.2	75.4	98.9	76.0	72.4	94.9	88.5	84.3	110.5
1966	84.1	79.9	105.2	81.3	77.2	101.6	77.6	73.7	97.0	89.5	85.1	112.0
1967	84.4	80.6	107.0	82.0	77.8	103.4	78.7	74.7	99.2	90.1	85.5	113.6

<sup>1</sup> Average hourly earnings are as of the middle of July of each year; union scales are as of July 1.



## Chapter 7. The Trend of Hourly and Weekly Earnings

Average hourly earnings of construction workers have increased at an average annual rate of 5.1 percent or about 13.5 cents an hour during each of the last 21 years.<sup>1</sup> The annual changes from 1947 to 1968 have ranged from a low of 2.5 percent (6 cents) in 1955 to a high of 6.6 percent (27 cents) in 1968.

During the 1947-68 period, construction workers gross average hourly earnings rose approximately 2.3 times faster than prices (as determined by the Consumer Price Index) and were generally substantially higher than the hourly earnings level of production or non-supervisory workers in virtually every other industry. This relationship between construction workers hourly earnings and that of other workers is substantially similar to that noted in 1900. In that year Levasseur wrote that:<sup>2</sup>

"If we except a small body of men like the steelrollers who operate difficult machines, and a small number of fine artificers who receive an exceptional compensation everywhere and particularly in America, there is no class of trades in which average wages are so high as in the building trades, especially in the cities."

The only major exceptions to the post-World War II generalizations about the hourly earnings relationships between contract construction workers and workers in other industries occurred before 1959. The gross average hourly earnings level (on an annual average basis) achieved by construction workers has been surpassed only once and then only by a fraction. In 1959, production workers in petroleum and coal products firms earned about 1 cent an hour (on an annual basis) more than construction workers. In some months in other pre-1959 years, the hourly earnings of workers in few industries particularly petroleum refining, newspaper printing and publishing, and mining were greater than those of construction workers. However, when averaged for the whole year, construction workers hourly earnings were higher than those of workers in any other industry.

Construction workers average weekly earnings (averaged over the year), like their hourly earnings, have also been higher than those of workers in most other industries. Their weekly earnings, however, have been exceeded regularly (on an annual basis) by those of production workers in the petroleum refining industry and have been topped in a few years by those in the primary metal, transportation equipment, printing and publishing, and mining industries.

Even though weekly earnings in construction relative to other industries have not been as high as hourly earnings they have increased at about the same rate as hourly earnings. Increasing at an average annual rate of 5 percent a year since 1947, average weekly earnings have risen almost \$5 a week each year. Like hourly earnings, the smallest increase occurred in 1955 when weekly earnings rose only 2.2 percent or \$1.99 a week. The largest percent change was in 1948, when weekly earnings rose 10.9 percent above the 1947 level, but the largest dollar change occurred in 1967 when an additional \$8.69 a week was earned.

Weekly earnings (table 28) are a function of hourly earnings and weekly hours. Even though construction workers' hourly earnings (table 27) exceed those of workers in other industries, their average weekly hours (table 29) are generally lower than those of other industry workers.<sup>3</sup> During the 21-year period under consideration average weekly hours in the contract construction industry were lower than those of any goods-production industry, except apparel. In the main, gross average weekly hours in the construction industry were below the level in wholesale trade and were frequently equal to or lower than those in the retail trade, and in the finance, insurance, and real estate industries.

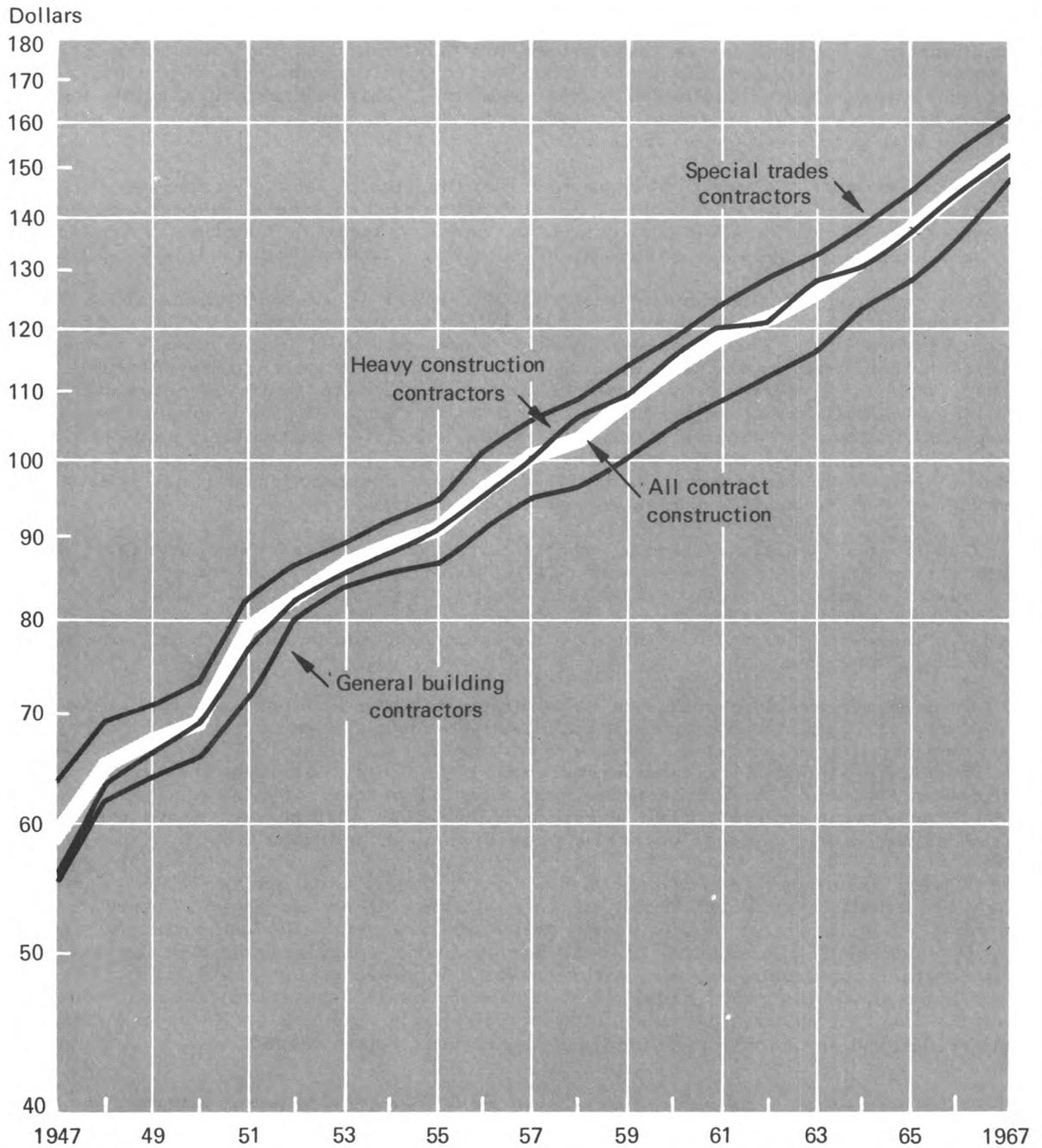
<sup>1</sup> The analysis presented in this chapter relates to construction workers employed by contract construction firms only.

<sup>2</sup> E. Levasseur, *The American Workman*, Baltimore, John Hopkins Press, 1900, p. 302.

<sup>3</sup> This discussion is limited to gross average weekly hours. Data on the number of overtime hours worked by contract construction workers are not available.

Chart 2.

### Construction Workers' Average Weekly Earnings, Annual Averages, 1947-67



Source: Bureau of Labor Statistics.

## Intraindustry Variations

Hourly earnings in the general building and special trades segments of the construction industry increased at an average rate of about 5.0 percent a year while earnings in heavy construction rose an average about 5.1 percent a year from 1947 through 1967. The average annual increase in the three construction segments amounted to about 12.5, 13.6, and 11.9 cents an hour respectively, each year. The least variation in the rate of change was in the special trades construction segment where the annual increases ranged from 2.8 to 9.7 percent. The rate of change has varied most in heavy construction where the increases ranged from 1.3 to 12.3 percent a year. Throughout the post-World War II period, special trades workers have earned more each hour than the others, and building construction workers have earned more than heavy construction workers. (See table 30.)

Special trades construction workers gross weekly earnings are markedly higher than those of either heavy or general building construction workers. Heavy construction workers' weekly earnings are considerably below those of the special trades workers but exceed those of the workers employed by general building firms.

Heavy construction workers' weekly earnings are not only relatively higher than expected on the basis of their hourly earnings and those of other construction workers but, on the average, have been increasing at a faster pace than those of special trades or general building workers. Since 1947, average weekly earnings of heavy construction workers have increased at an average rate of 5.3 percent a year. In contrast, weekly earnings of general building construction workers have risen at an annual average rate of 4.9 percent and those of special trades workers have increased by about 4.7 percent a year.

Changes in hourly and weekly earnings partly reflect the actual variations in the wage-earnings patterns of construction workers during the last 21 years. They also reflect differences in the base from which the computations are made.

The rates of increase of both hourly and weekly earnings of heavy construction workers have been greater than those of general building or special trades workers. In monetary terms, however, special trades workers hourly earnings have increased 34 cents and those of general building workers have risen by about 12 cents more than those of the heavy construction workers.

The change in weekly earnings reflects the changes that have occurred over the period in hourly earnings and in the average number of hours worked per week. Heavy construction workers average weekly hours have been increasing; those of other construction workers have been decreasing. The differences in average hourly and weekly earnings and average hours worked per week in 1947 and in 1967 in each segment of the contract construction industry and in the industry as a whole are shown in the following tabulation.

	<u>Contract construction</u>			
	All	General building	Heavy construction	Special trades
Average hourly earnings:				
1947 -----	\$1.54	\$1.50	\$1.38	\$1.65
1967 -----	4.11	3.99	3.75	4.36
Percent change -----	167	166	172	164
Absolute change -----	2.57	2.49	2.37	2.71
Average weekly hours:				
1947 -----	38.2	37.0	40.0	38.7
1967 -----	37.7	36.5	41.1	36.9
Percent change -----	-1.3	-1.4	+2.8	-4.7
Absolute change -----	-.5	-.5	+1.1	-1.8
Average weekly earnings:				
1947 -----	\$58.87	\$55.54	\$55.20	\$63.74
1967 -----	154.95	145.64	154.13	160.88
Percent change -----	163	162	179	152
Absolute change -----	96.08	90.10	98.93	97.14

Table 27. Gross average hourly earnings of production or nonsupervisory workers on private nonagricultural payrolls, 1947-67

Industry	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
Total private -----	\$2.68	\$2.56	\$2.45	\$2.36	\$2.28	\$2.22	\$2.14	\$2.09	\$2.02	\$1.95	\$1.89
Mining -----	\$3.19	\$3.05	\$2.92	\$2.81	\$2.75	\$2.70	\$2.64	\$2.61	\$2.56	\$2.47	\$2.46
Contract construction -----	4.11	3.89	3.70	3.55	3.41	3.31	3.20	3.08	2.93	2.82	2.71
Manufacturing -----	2.83	2.72	2.61	2.53	2.46	2.39	2.32	2.26	2.19	2.11	2.05
Durable goods -----	3.00	2.90	2.79	2.71	2.63	2.56	2.49	2.43	2.36	2.26	2.19
Ordnance and accessories -----	3.17	3.17	3.13	3.03	2.93	2.83	2.75	2.65	2.57	2.51	2.36
Lumber and wood products -----	2.36	2.25	2.17	2.11	2.04	1.99	1.95	1.89	1.87	1.79	1.74
Furniture and fixtures -----	2.33	2.21	2.12	2.05	2.00	1.95	1.91	1.88	1.83	1.78	1.75
Stone, clay, and glass products -----	2.82	2.72	2.62	2.53	2.47	2.41	2.34	2.28	2.22	2.12	2.05
Primary metal industries -----	3.34	3.28	3.18	3.11	3.04	2.98	2.90	2.81	2.77	2.64	2.50
Fabricated metal products -----	2.98	2.88	2.76	2.68	2.61	2.55	2.49	2.43	2.35	2.25	2.16
Machinery, except electrical -----	3.19	3.09	2.96	2.87	2.78	2.71	2.62	2.55	2.48	2.37	2.29
Electrical equipment -----	2.77	2.65	2.58	2.51	2.46	2.40	2.35	2.28	2.20	2.12	2.04
Transportation equipment -----	3.44	3.33	3.21	3.09	3.01	2.91	2.80	2.74	2.64	2.51	2.39
Instruments and related products -----	2.85	2.73	2.62	2.54	2.49	2.44	2.38	2.31	2.24	2.15	2.06
Miscellaneous manufacturing -----	2.35	2.22	2.14	2.08	2.03	1.98	1.92	1.89	1.84	1.79	1.75
Nondurable goods -----	2.57	2.45	2.36	2.29	2.22	2.17	2.11	2.05	1.98	1.91	1.85
Food and kindred products -----	2.64	2.52	2.43	2.37	2.30	2.24	2.17	2.11	2.02	1.94	1.85
Tobacco manufactures -----	2.27	2.19	2.09	1.95	1.91	1.85	1.78	1.70	1.64	1.59	1.53
Textile mill products -----	2.06	1.96	1.87	1.79	1.71	1.68	1.63	1.61	1.56	1.49	1.49
Apparel and other textile products -----	2.03	1.89	1.83	1.79	1.73	1.69	1.64	1.59	1.56	1.54	1.51
Paper and allied products -----	2.87	2.75	2.65	2.56	2.48	2.40	2.34	2.26	2.18	2.10	2.02
Printing and publishing -----	3.28	3.16	3.06	2.97	2.89	2.82	2.75	2.68	2.59	2.49	2.40
Chemicals and allied products -----	3.10	2.99	2.89	2.80	2.72	2.65	2.58	2.50	2.40	2.29	2.20
Petroleum and coal products -----	3.58	3.41	3.28	3.20	3.16	3.05	3.01	2.89	2.85	2.73	2.66
Rubber and plastics products -----	2.75	2.67	2.61	2.54	2.47	2.44	2.38	2.32	2.27	2.19	2.11
Leather and leather products -----	2.07	1.94	1.88	1.82	1.76	1.72	1.68	1.64	1.59	1.56	1.52
Wholesale and retail trade -----	2.25	2.13	2.03	1.96	1.89	1.83	1.76	1.71	1.66	1.60	1.54
Wholesale trade -----	2.88	2.73	2.61	2.52	2.45	2.37	2.31	2.24	2.18	2.09	2.02
Retail trade -----	2.01	1.91	1.82	1.75	1.68	1.63	1.56	1.52	1.47	1.42	1.37
Finance, insurance, and real estate -----	2.58	2.47	2.39	2.30	2.25	2.17	2.09	2.02	1.95	1.89	1.84
		1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
Total private -----	\$1.80	\$1.71	\$1.65	\$1.61	\$1.52	\$1.45	\$1.335	\$1.275	\$1.225	\$1.131	
Mining -----	\$2.33	\$2.20	\$2.14	\$2.14	\$2.01	\$1.93	\$1.772	\$1.717	\$1.664	\$1.469	
Contract construction -----	2.57	2.45	2.39	2.28	2.13	2.02	1.863	1.792	1.713	1.541	
Manufacturing -----	1.95	1.86	1.78	1.74	1.65	1.56	1.440	1.378	1.328	1.217	
Durable goods -----	2.08	1.99	1.90	1.86	1.75	1.65	1.519	1.453	1.395	1.278	
Ordnance and accessories -----	2.21	2.07	2.00	1.92	1.82	1.71	1.564	1.481	1.387	1.306	
Lumber and wood products -----	1.69	1.62	1.57	1.55	1.49	1.41	1.298	1.225	1.190	1.090	
Furniture and fixtures -----	1.69	1.62	1.57	1.54	1.47	1.39	1.282	1.234	1.192	1.097	
Stone, clay, and glass products -----	1.96	1.86	1.77	1.72	1.61	1.54	1.438	1.368	1.307	1.194	
Primary metal industries -----	2.36	2.24	2.10	2.06	1.90	1.81	1.647	1.587	1.522	1.388	
Fabricated metal products -----	2.05	1.96	1.88	1.83	1.72	1.64	1.519	1.447	1.384	1.265	
Machinery, except electrical -----	2.20	2.08	2.00	1.95	1.85	1.75	1.601	1.523	1.462	1.344	
Electrical equipment -----	1.95	1.84	1.79	1.74	1.65	1.56	1.444	1.412	1.360	1.247	
Transportation equipment -----	2.29	2.21	2.11	2.05	1.95	1.84	1.722	1.644	1.567	1.436	
Instruments and related products -----	1.97	1.87	1.80	1.75	1.69	1.59	1.448	1.370	1.308	1.197	
Miscellaneous manufacturing -----	1.69	1.61	1.56	1.52	1.45	1.36	1.275	1.218	1.184	1.106	
Nondurable goods -----	1.77	1.67	1.62	1.58	1.51	1.44	1.347	1.295	1.250	1.145	
Food and kindred products -----	1.76	1.66	1.59	1.53	1.44	1.35	1.262	1.206	1.153	1.063	
Tobacco manufactures -----	1.45	1.34	1.30	1.25	1.18	1.14	1.076	.999	.956	.905	
Textile mill products -----	1.44	1.38	1.36	1.36	1.34	1.32	1.228	1.181	1.155	1.035	
Apparel and other textile products -----	1.47	1.37	1.37	1.35	1.32	1.31	1.240	1.209	1.220	1.161	
Paper and allied products -----	1.92	1.81	1.73	1.67	1.59	1.51	1.398	1.329	1.279	1.153	
Printing and publishing -----	2.33	2.26	2.18	2.11	2.02	1.91	1.832	1.769	1.654	1.476	
Chemicals and allied products -----	2.09	1.97	1.89	1.81	1.69	1.62	1.497	1.417	1.343	1.221	
Petroleum and coal products -----	2.54	2.37	2.29	2.22	2.10	1.99	1.841	1.798	1.707	1.502	
Rubber and plastics products -----	2.03	1.96	1.84	1.80	1.71	1.58	1.472	1.410	1.361	1.300	
Leather and leather products -----	1.48	1.39	1.36	1.35	1.30	1.25	1.170	1.122	1.105	1.038	
Wholesale and retail trade -----	1.47	1.40	1.35	1.30	1.23	1.18	1.100	1.060	1.010	.940	
Wholesale trade -----	1.94	1.83	1.76	1.70	1.61	1.52	1.427	1.360	1.308	1.220	
Retail trade -----	1.30	1.25	1.20	1.16	1.10	1.06	.983	.951	.901	.838	
Finance, insurance, and real estate -----	1.78	1.70	1.65	1.58	1.51	1.45	1.340	1.260	1.200	1.140	

Table 28. Gross average weekly earnings of production or nonsupervisory workers on private nonagricultural payrolls, 1947-67

Industry	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
Total private -----	\$101.84	\$98.82	\$95.06	\$91.33	\$88.46	\$85.91	\$82.60	\$80.67	\$78.78	\$75.08	\$73.33
Mining -----	\$135.89	\$130.24	\$123.52	\$117.74	\$114.40	\$110.43	\$106.92	\$105.44	\$103.68	\$96.08	\$98.65
Contract construction -----	154.95	146.26	138.38	132.06	127.19	122.47	118.08	113.04	108.41	103.78	100.27
Manufacturing -----	114.90	112.34	107.53	102.97	99.63	96.56	92.34	89.72	88.26	82.71	81.59
Durable goods -----	123.60	122.09	117.18	112.19	108.09	104.07	100.35	97.44	96.05	89.27	88.26
Ordnance and accessories -----	132.19	133.77	131.15	122.72	120.42	116.60	113.03	108.39	106.14	102.41	95.58
Lumber and wood products -----	94.87	91.80	88.75	85.24	81.80	79.20	76.23	73.71	74.24	69.09	66.64
Furniture and fixtures -----	94.13	91.72	88.19	84.46	81.80	79.37	76.40	75.20	74.48	69.95	69.83
Stone, clay, and glass products -----	117.31	114.24	110.04	105.50	102.26	98.57	95.24	92.57	91.46	84.80	82.82
Primary metal industries -----	137.27	138.09	133.88	130.00	124.64	119.80	114.84	109.59	112.19	101.11	99.00
Fabricated metal products -----	123.67	122.11	116.20	111.76	108.05	104.81	100.85	98.42	96.12	89.78	88.34
Machinery, except electrical -----	135.89	135.34	127.58	121.69	116.20	113.01	107.42	104.55	102.92	94.33	94.12
Electrical equipment -----	111.35	109.18	105.78	101.66	99.14	97.44	94.47	90.74	89.10	83.95	81.80
Transportation equipment -----	142.42	141.86	137.71	130.09	126.72	122.22	113.40	111.52	107.45	100.40	97.51
Instruments and related products -----	117.71	114.93	108.47	103.63	101.59	99.80	96.87	93.32	91.39	85.57	83.22
Miscellaneous manufacturing -----	92.59	88.80	85.39	82.37	80.39	78.61	75.84	74.28	73.42	70.17	69.48
Nondurable goods -----	102.03	98.49	94.64	90.91	87.91	85.93	82.92	80.36	78.61	74.11	72.52
Food and kindred products -----	107.98	103.82	99.87	97.17	94.30	91.84	88.75	86.09	82.82	79.15	75.48
Tobacco manufactures -----	87.62	85.19	79.21	75.66	73.92	71.41	69.42	64.94	64.12	62.17	58.75
Textile mill products -----	84.25	82.12	78.17	73.39	69.43	68.21	65.04	63.60	63.02	57.51	57.96
Apparel and other textile products -----	73.08	68.80	66.61	64.26	62.45	61.18	58.06	56.29	56.63	54.05	53.91
Paper and allied products -----	122.84	119.35	114.22	109.57	105.90	102.00	99.45	95.15	93.30	87.99	85.45
Printing and publishing -----	125.95	122.61	118.12	114.35	110.69	108.01	105.05	102.91	99.46	94.62	92.64
Chemicals and allied products -----	128.96	125.58	121.09	116.48	112.88	110.24	106.81	103.25	99.36	93.20	89.98
Petroleum and coal products -----	152.87	144.58	138.42	133.76	131.77	126.88	124.31	118.78	117.42	111.66	108.53
Rubber and plastics products -----	113.85	112.14	109.62	104.90	100.78	100.04	96.15	92.57	93.75	85.85	85.67
Leather and leather products -----	78.87	74.88	71.82	68.98	66.00	64.67	62.83	60.52	60.10	57.25	56.85
Wholesale and retail trade -----	82.13	79.02	76.53	74.28	72.01	69.91	67.41	66.01	64.41	61.76	59.60
Wholesale trade -----	116.06	111.11	106.49	102.31	99.47	96.22	93.56	90.72	88.51	84.02	81.41
Retail trade -----	70.95	68.57	66.61	64.75	62.66	60.96	58.66	57.76	56.15	54.10	52.20
Finance, insurance, and real estate -----	95.46	92.13	88.91	85.79	84.38	80.94	77.12	75.14	72.74	70.12	67.53
		1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
Total private -----		\$70.74	\$67.72	\$64.52	\$63.76	\$60.65	\$57.86	\$53.13	\$50.24	\$49.00	\$45.58
Mining -----		\$95.06	\$89.54	\$82.60	\$83.03	\$77.59	\$74.11	\$67.16	\$62.33	\$65.56	\$59.94
Contract construction -----		96.38	90.90	88.91	86.41	82.86	76.96	69.68	67.56	65.27	58.87
Manufacturing -----		78.78	75.70	70.49	70.47	67.16	63.34	58.32	53.88	53.12	49.17
Durable goods -----		85.28	82.19	76.19	76.63	72.63	68.48	62.43	57.25	56.36	51.76
Ordnance and accessories -----		91.72	83.63	79.80	78.14	77.35	74.04	65.06	58.80	57.28	53.81
Lumber and wood products -----		65.57	63.99	61.39	60.76	59.15	55.41	51.27	48.02	47.60	43.93
Furniture and fixtures -----		68.78	67.07	62.80	62.99	60.86	57.13	53.59	49.36	48.87	45.53
Stone, clay, and glass products -----		80.56	77.00	71.69	70.18	66.17	63.76	59.10	54.31	53.19	48.95
Primary metal industries -----		96.76	92.51	81.48	84.46	77.52	75.30	67.36	60.94	61.18	55.38
Fabricated metal products -----		84.67	81.73	76.70	76.49	71.72	68.55	63.04	57.45	56.33	51.74
Machinery, except electrical -----		93.06	87.36	81.40	82.68	79.55	76.13	67.08	60.31	60.38	55.78
Electrical equipment -----		79.56	74.89	71.24	70.99	67.98	64.27	59.35	55.77	54.54	50.25
Transportation equipment -----		94.81	93.48	86.30	85.28	81.51	75.81	71.29	65.10	61.74	57.01
Instruments and related products -----		80.77	76.48	72.00	72.63	70.98	67.10	59.80	54.39	52.58	48.36
Miscellaneous manufacturing -----		67.60	64.88	61.78	61.56	59.02	55.08	52.02	48.23	48.07	44.79
Nondurable goods -----		70.09	66.63	63.18	62.57	59.95	56.88	53.48	50.38	49.50	46.03
Food and kindred products -----		72.69	68.89	65.67	63.50	60.34	56.84	52.88	50.53	48.89	45.92
Tobacco manufactures -----		56.26	51.86	48.88	47.63	45.31	43.89	41.00	37.26	36.61	35.20
Textile mill products -----		57.17	55.34	52.09	53.18	52.39	51.22	48.63	44.41	45.28	40.99
Apparel and other textile products -----		52.92	49.73	48.36	48.74	47.92	46.64	44.64	42.80	43.68	41.80
Paper and allied products -----		82.18	78.01	73.18	71.81	68.05	65.08	60.53	55.42	54.74	49.69
Printing and publishing -----		90.64	87.91	83.93	82.29	78.58	74.30	71.26	68.64	65.17	59.34
Chemicals and allied products -----		85.90	80.97	77.11	74.21	69.12	66.91	61.68	57.67	55.33	50.31
Petroleum and coal products -----		104.14	96.93	93.20	90.35	85.05	81.19	75.11	72.46	69.30	60.98
Rubber and plastics products -----		82.01	81.93	73.23	72.72	69.77	64.31	60.35	54.14	53.35	51.87
Leather and leather products -----		55.65	52.68	50.18	50.90	49.92	46.13	43.99	41.07	41.11	40.07
Wholesale and retail trade -----		57.48	55.16	53.33	51.35	49.20	47.79	44.55	42.93	40.80	38.07
Wholesale trade -----		78.57	74.48	71.28	69.02	65.53	62.02	58.08	55.49	53.63	50.14
Retail trade -----		50.18	48.75	47.14	45.36	43.38	42.82	39.71	38.42	36.22	33.77
Finance, insurance, and real estate -----		65.68	63.92	62.04	59.57	57.08	54.67	50.52	47.63	45.48	43.21

Table 29. Gross average weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, 1947-67

Industry	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
Total private .....	38.0	38.6	38.8	38.7	38.8	38.7	38.6	38.6	39.0	38.5	38.8
Mining .....	42.6	42.7	42.3	41.9	41.6	40.9	40.5	40.4	40.5	38.9	40.1
Contract construction .....	37.7	37.6	37.4	37.2	37.3	37.0	36.9	36.7	37.0	36.9	37.0
Manufacturing .....	40.6	41.3	41.2	40.7	40.5	40.4	39.8	39.7	40.3	39.2	39.8
Durable goods .....	41.2	42.1	42.0	41.4	41.1	40.9	40.3	40.1	40.7	39.5	40.3
Ordnance and accessories .....	41.7	42.2	41.9	40.5	41.1	41.2	41.1	40.9	41.3	40.8	40.5
Lumber and wood products .....	40.2	40.8	40.9	40.4	40.1	39.8	39.4	39.0	39.7	38.6	38.3
Furniture and fixtures .....	40.4	41.5	41.6	41.2	40.9	40.7	40.0	40.0	40.7	39.3	39.9
Stone, clay, and glass products .....	41.6	42.0	42.0	41.7	41.4	40.9	40.7	40.6	41.2	40.0	40.4
Primary metal industries .....	41.1	42.1	42.1	41.8	41.0	40.2	39.6	39.0	40.5	38.3	39.6
Fabricated metal products .....	41.5	42.4	42.1	41.7	41.4	41.1	40.5	40.5	40.9	39.9	40.9
Machinery, except electrical .....	42.6	43.8	43.1	42.4	41.8	41.7	41.0	41.0	41.5	39.8	41.1
Electrical equipment .....	40.2	41.2	41.0	40.5	40.3	40.6	40.2	39.8	40.5	39.6	40.1
Transportation equipment .....	41.4	42.6	42.9	42.1	42.1	42.0	40.5	40.7	40.7	40.0	40.8
Instruments and related products .....	41.3	42.1	41.4	40.8	40.8	40.9	40.7	40.4	40.8	39.8	40.4
Miscellaneous manufacturing .....	39.4	40.0	39.9	39.6	39.6	39.7	39.5	39.3	39.9	39.2	39.7
Nondurable goods .....	39.7	40.2	40.1	39.7	39.6	39.6	39.3	39.2	39.7	38.8	39.2
Food and kindred products .....	40.9	41.2	41.1	41.0	41.0	40.9	41.0	40.8	41.0	40.8	40.8
Tobacco manufactures .....	38.6	38.9	37.9	38.8	38.7	38.6	39.0	38.2	39.1	39.1	38.4
Textile mill products .....	40.9	41.9	41.8	41.0	40.6	40.6	39.9	39.5	40.4	38.6	38.9
Apparel and other textile products .....	36.0	36.4	36.4	35.9	36.1	36.2	35.4	35.4	36.3	35.1	35.7
Paper and allied products .....	42.8	43.4	43.1	42.8	42.7	42.5	42.5	42.1	42.8	41.9	42.3
Printing and publishing .....	38.4	38.8	38.6	38.5	38.3	38.3	38.2	38.4	38.4	38.0	38.6
Chemicals and allied products .....	41.6	42.0	41.9	41.6	41.5	41.6	41.4	41.3	41.4	40.7	40.9
Petroleum and coal products .....	42.7	42.4	42.2	41.8	41.7	41.6	41.3	41.1	41.2	40.9	40.8
Rubber and plastics products .....	41.4	42.0	42.0	41.3	40.8	41.0	40.4	39.9	41.3	39.2	40.6
Leather and leather products .....	38.1	38.6	38.2	37.9	37.5	37.6	37.4	36.9	37.8	36.7	37.4
Wholesale and retail trade .....	36.5	37.1	37.7	37.9	38.1	38.2	38.3	38.6	38.8	38.6	38.7
Wholesale trade .....	40.3	40.7	40.8	40.6	40.6	40.6	40.5	40.5	40.6	40.2	40.3
Retail trade .....	35.3	35.9	36.6	37.0	37.3	37.4	37.6	38.0	38.2	38.1	38.1
Finance, insurance, and real estate .....	37.0	37.3	37.2	37.3	37.5	37.3	36.9	37.2	37.3	37.1	36.7
		1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
Total private .....		39.3	39.6	39.1	39.6	39.9	39.9	39.8	39.4	40.0	40.3
Mining .....		40.8	40.7	38.6	38.8	38.6	38.4	37.9	36.3	39.4	40.8
Contract construction .....		37.5	37.1	37.2	37.9	38.9	38.1	37.4	37.7	38.1	38.2
Manufacturing .....		40.4	40.7	39.6	40.5	40.7	40.6	40.5	39.1	40.0	40.4
Durable goods .....		41.0	41.3	40.1	41.2	41.5	41.5	41.1	39.4	40.4	40.5
Ordnance and accessories .....		41.5	40.4	39.9	40.7	42.5	43.3	41.6	39.7	41.3	41.2
Lumber and wood products .....		38.8	39.5	39.1	39.2	39.7	39.3	39.5	39.2	40.0	40.3
Furniture and fixtures .....		40.7	41.4	40.0	40.9	41.4	41.1	41.8	40.0	41.0	41.5
Stone, clay, and glass products .....		41.1	41.4	40.5	40.8	41.1	41.4	41.1	39.7	40.7	41.0
Primary metal industries .....		41.0	41.3	38.8	41.0	40.8	41.6	40.9	38.4	40.2	39.9
Fabricated metal products .....		41.3	41.7	40.8	41.8	41.7	41.8	41.5	39.7	40.7	40.9
Machinery, except electrical .....		42.3	42.0	40.7	42.4	43.0	43.5	41.9	39.6	41.3	41.5
Electrical equipment .....		40.8	40.7	39.8	40.8	41.2	41.2	41.1	39.5	40.1	40.3
Transportation equipment .....		41.4	42.3	40.9	41.6	41.8	41.2	41.4	39.6	39.4	39.7
Instruments and related products .....		41.0	40.9	40.0	41.5	42.0	42.2	41.3	39.7	40.2	40.4
Miscellaneous manufacturing .....		40.0	40.3	39.6	40.5	40.7	40.5	40.8	39.6	40.6	40.5
Nondurable goods .....		39.6	30.9	39.0	39.6	39.7	39.5	39.7	38.9	39.6	40.2
Food and kindred products .....		41.3	41.5	41.3	41.5	41.9	42.1	41.9	41.9	42.4	43.2
Tobacco manufactures .....		38.8	38.7	37.6	38.1	38.4	38.5	38.1	37.3	38.3	38.9
Textile mill products .....		39.7	40.1	38.3	39.1	39.1	38.8	39.6	37.6	39.2	39.6
Apparel and other textile products .....		36.0	36.3	35.3	36.1	36.3	35.6	36.0	35.4	35.8	36.0
Paper and allied products .....		42.8	43.1	42.3	43.0	42.8	43.1	43.3	41.7	42.8	43.1
Printing and publishing .....		38.9	38.9	38.5	39.0	38.9	38.9	38.9	38.8	39.4	40.2
Chemicals and allied products .....		41.1	41.1	40.8	41.0	40.9	41.3	41.2	40.7	41.2	41.2
Petroleum and coal products .....		41.0	40.9	40.7	40.7	40.5	40.8	40.8	40.3	40.6	40.6
Rubber and plastics products .....		40.4	41.8	39.8	40.4	40.8	40.7	41.0	38.4	39.2	39.9
Leather and leather products .....		37.6	37.9	36.9	37.7	38.4	36.9	37.6	36.6	37.2	38.6
Wholesale and retail trade .....		39.1	39.4	39.5	39.5	40.0	40.5	40.5	40.5	40.4	40.5
Wholesale trade .....		40.5	40.7	40.5	40.6	40.7	40.8	40.7	40.8	41.0	41.1
Retail trade .....		38.6	39.0	39.2	39.1	39.8	40.4	40.4	40.4	40.2	40.3
Finance, insurance, and real estate .....		36.9	37.6	37.6	37.7	37.8	37.7	37.7	37.8	37.9	37.9

Table 30. Construction workers average weekly and hourly earnings and average weekly hours, by month, 1947-68

Year	A. Contract construction												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
Average weekly earnings													
1947 -----	\$58.87	\$55.59	\$54.94	\$56.79	\$56.40	\$57.80	\$58.18	\$59.14	\$60.18	\$61.03	\$61.89	\$59.95	\$62.51
1948 -----	65.27	61.81	61.73	62.38	63.07	63.47	65.94	66.66	67.22	67.74	67.30	65.55	68.53
1949 -----	67.56	66.97	66.95	66.64	66.80	68.51	68.31	68.31	68.86	67.56	68.72	66.82	66.69
1950 -----	69.68	64.89	63.24	64.85	67.05	68.70	69.64	69.73	71.56	71.48	73.42	73.23	72.86
1951 -----	76.96	73.11	71.08	72.44	74.63	77.00	77.39	78.98	79.58	80.16	81.16	76.96	79.25
1952 -----	82.86	79.63	80.85	78.70	80.22	80.70	82.18	83.13	84.53	86.80	87.56	83.32	86.14
1953 -----	86.41	83.40	84.07	83.93	84.00	85.73	86.91	86.71	88.85	86.07	90.79	87.89	87.32
1954 -----	88.91	82.11	87.82	88.16	87.79	89.11	90.15	90.68	88.56	90.38	93.00	88.69	88.94
1955 -----	90.90	86.51	86.02	88.69	87.36	90.62	91.23	93.45	92.61	95.34	93.00	88.89	92.25
1956 -----	96.38	90.11	91.84	89.56	92.74	94.50	97.79	97.67	99.33	100.62	101.13	96.78	98.05
1957 -----	100.27	92.92	99.06	97.89	98.52	100.34	101.95	102.87	104.72	104.60	103.78	96.95	99.60
1958 -----	103.78	101.16	94.75	100.60	101.28	104.35	103.69	105.09	107.06	108.02	108.87	104.03	103.31
1959 -----	108.41	104.11	100.92	103.61	107.14	108.58	110.69	110.58	113.10	109.59	111.53	107.04	110.77
1960 -----	113.04	106.96	106.40	107.88	112.04	112.11	113.93	116.89	117.35	117.25	118.87	111.03	108.73
1961 -----	118.08	115.75	114.75	112.77	113.13	116.29	119.51	120.14	122.43	120.80	123.39	118.63	115.17
1962 -----	122.47	111.56	113.72	118.41	120.74	123.83	121.88	126.34	127.71	128.64	127.59	121.61	118.67
1963 -----	127.19	120.71	117.64	122.36	124.21	127.30	129.02	130.13	131.97	131.79	134.59	124.51	124.61
1964 -----	132.06	121.38	126.37	128.12	130.61	133.00	133.32	134.49	137.03	131.39	139.37	132.10	134.32
1965 -----	138.38	131.77	131.73	134.32	132.85	140.18	139.46	140.89	143.54	139.13	144.77	136.50	140.62
1966 -----	146.26	138.34	139.41	143.26	141.34	142.46	147.07	150.54	150.15	152.43	152.85	144.51	149.20
1967 -----	154.95	149.92	144.32	147.20	147.60	150.29	153.95	158.67	159.06	162.96	160.78	161.63	155.13
1968 -----	163.81	151.90	154.57	154.94	159.27	162.43	164.74	167.52	169.94	172.99	172.80	158.20	168.06
Average hourly earnings													
1947 -----	\$1.541	\$1.463	\$1.465	\$1.479	\$1.496	\$1.513	\$1.515	\$1.532	\$1.551	\$1.577	\$1.595	\$1.616	\$1.632
1948 -----	1.713	1.644	1.673	1.668	1.673	1.679	1.695	1.718	1.728	1.746	1.748	1.762	1.780
1949 -----	1.792	1.781	1.795	1.793	1.791	1.784	1.779	1.784	1.784	1.792	1.799	1.806	1.827
1950 -----	1.863	1.828	1.833	1.837	1.822	1.832	1.823	1.835	1.849	1.891	1.902	1.917	1.948
1951 -----	2.02	1.96	1.98	1.99	1.99	2.00	2.01	2.02	2.03	2.05	2.06	2.08	2.08
1952 -----	2.13	2.09	2.10	2.11	2.10	2.08	2.07	2.11	2.14	2.17	2.20	2.21	2.22
1953 -----	2.28	2.23	2.23	2.25	2.24	2.25	2.24	2.27	2.29	2.32	2.34	2.35	2.36
1954 -----	2.39	2.38	2.38	2.37	2.36	2.37	2.36	2.36	2.38	2.40	2.41	2.41	2.43
1955 -----	2.45	2.43	2.43	2.41	2.42	2.41	2.42	2.44	2.45	2.47	2.48	2.49	2.50
1956 -----	2.57	2.51	2.53	2.53	2.52	2.52	2.54	2.55	2.58	2.60	2.62	2.63	2.65
1957 -----	2.71	2.67	2.67	2.66	2.67	2.69	2.69	2.70	2.72	2.76	2.76	2.77	2.79
1958 -----	2.82	2.81	2.82	2.81	2.79	2.79	2.78	2.81	2.81	2.85	2.85	2.85	2.91
1959 -----	2.93	2.90	2.90	2.87	2.88	2.88	2.89	2.91	2.93	2.97	2.99	2.99	3.01
1960 -----	3.08	3.03	3.04	3.10	3.02	3.03	3.03	3.06	3.08	3.11	3.12	3.11	3.17
1961 -----	3.20	3.18	3.17	3.15	3.16	3.16	3.17	3.17	3.18	3.23	3.23	3.25	3.30
1962 -----	3.31	3.34	3.24	3.28	3.29	3.25	3.25	3.29	3.30	3.35	3.34	3.35	3.41
1963 -----	3.41	3.41	3.40	3.38	3.33	3.35	3.36	3.38	3.41	3.45	3.46	3.43	3.53
1964 -----	3.55	3.57	3.53	3.51	3.53	3.50	3.49	3.53	3.55	3.59	3.62	3.58	3.64
1965 -----	3.70	3.63	3.69	3.66	3.62	3.66	3.67	3.65	3.69	3.75	3.77	3.75	3.78
1966 -----	3.89	3.79	3.83	3.80	3.82	3.84	3.84	3.86	3.90	3.98	3.97	3.97	4.00
1967 -----	4.11	4.03	4.02	4.00	4.00	4.04	4.03	4.10	4.11	4.20	4.22	4.22	4.25
1968 -----	4.38	4.34	4.27	4.28	4.27	4.32	4.29	4.34	4.38	4.47	4.50	4.52	4.53
Average weekly hours													
1947 -----	38.2	38.0	37.5	38.4	37.7	38.2	38.4	38.6	38.8	38.7	38.8	37.1	38.3
1948 -----	38.1	37.6	36.9	37.4	37.7	37.8	38.9	38.8	38.9	38.8	38.5	37.2	38.5
1949 -----	37.7	37.6	37.3	37.0	37.3	38.4	38.4	38.4	38.6	37.7	38.2	37.0	36.5
1950 -----	37.4	35.5	34.5	35.3	36.8	37.5	38.2	38.0	38.7	37.8	38.6	38.2	37.4
1951 -----	38.1	37.3	35.9	36.4	37.5	38.5	38.5	39.1	39.2	39.1	39.4	37.0	38.1
1952 -----	38.9	38.1	38.5	37.3	38.2	38.8	39.7	39.4	39.5	40.0	39.8	37.7	38.8
1953 -----	37.9	37.4	37.7	37.3	37.5	38.1	38.8	38.2	38.8	37.1	38.8	37.4	37.0
1954 -----	37.2	34.5	36.9	37.2	37.2	37.6	38.2	38.2	38.1	36.9	37.5	36.8	36.6
1955 -----	37.1	35.6	35.4	36.8	36.1	37.6	37.7	38.3	37.8	38.6	37.5	35.7	36.9
1956 -----	37.5	35.9	36.3	35.4	36.8	37.5	38.5	38.3	38.5	38.7	38.6	36.8	37.0
1957 -----	37.0	34.8	37.1	36.8	36.9	37.3	37.9	38.1	38.5	37.9	37.6	35.0	35.7
1958 -----	36.8	36.0	33.6	35.8	36.3	37.4	37.3	37.4	38.1	37.9	38.2	36.5	35.5
1959 -----	37.0	35.9	34.8	36.1	37.2	37.7	38.3	38.0	38.6	36.9	37.3	35.8	36.8
1960 -----	36.7	35.3	35.0	34.8	37.1	37.0	37.6	38.2	38.1	37.7	38.1	35.7	34.3
1961 -----	36.9	36.4	36.2	35.8	35.8	36.8	37.7	37.9	38.5	37.4	38.2	36.5	34.9
1962 -----	37.0	33.4	35.1	36.1	36.7	38.1	37.5	38.4	38.7	38.4	38.2	36.3	34.8
1963 -----	37.3	35.4	34.6	36.2	37.3	38.0	38.4	38.5	38.7	38.2	38.9	36.3	35.3
1964 -----	37.2	34.0	35.8	36.5	37.0	38.0	38.2	38.1	38.6	36.6	38.5	36.9	36.9
1965 -----	37.4	36.3	35.7	36.7	36.7	38.3	38.0	38.6	38.9	37.1	38.4	36.4	37.2
1966 -----	37.6	36.5	36.4	37.7	37.0	37.1	38.3	39.0	38.5	38.3	38.5	36.4	37.3
1967 -----	37.7	37.2	35.9	36.8	36.9	37.2	38.2	38.7	38.7	38.8	38.1	38.3	36.5
1968 -----	37.4	35.0	36.2	36.2	37.3	37.6	38.4	38.6	38.8	38.7	38.4	35.0	37.1

Table 30. Construction workers average weekly and hourly earnings and average weekly hours, by month, 1947-68--Continued

Year	B. General building contractors - SIC 15												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
	Average weekly earnings												
1947 -----	\$55.54	\$52.76	\$51.26	\$54.21	\$52.67	\$54.13	\$54.65	\$56.06	\$57.27	\$57.21	\$58.19	\$56.48	\$58.72
1948 -----	61.86	58.04	58.00	58.84	59.13	60.41	62.63	63.51	63.94	64.13	63.69	62.11	65.61
1949 -----	64.17	63.97	63.96	63.83	63.93	65.38	64.80	64.33	65.01	63.82	64.96	63.36	63.12
1950 -----	65.81	60.81	58.94	61.04	63.08	64.90	65.36	65.76	67.77	67.63	69.53	69.75	68.57
1951 -----	71.76	69.33	65.66	66.97	69.87	71.97	71.97	73.13	73.52	74.45	76.23	72.80	74.82
1952 -----	79.34	75.22	76.20	73.20	77.18	76.23	78.61	80.38	80.77	82.32	83.74	81.37	84.50
1953 -----	83.69	82.51	82.94	82.13	83.00	83.66	84.75	83.47	85.57	82.13	86.49	84.50	83.95
1954 -----	85.54	78.54	85.05	86.44	85.61	85.74	86.07	85.61	87.56	85.20	87.71	85.80	87.00
1955 -----	86.40	84.83	81.98	85.32	83.66	86.38	86.27	88.06	88.32	89.65	87.72	84.28	87.96
1956 -----	90.86	84.77	86.24	84.04	88.07	89.78	92.13	92.25	93.74	94.74	95.49	92.11	92.36
1957 -----	94.78	85.99	94.38	91.85	93.34	94.84	96.42	97.42	99.11	98.09	98.09	91.19	93.50
1958 -----	96.92	96.02	87.63	95.74	95.58	97.56	97.11	97.92	99.46	99.00	100.65	97.98	94.64
1959 -----	100.32	97.09	95.14	97.23	99.72	100.55	101.94	101.00	103.41	101.82	103.10	98.44	103.03
1960 -----	103.72	99.71	98.60	98.31	103.68	104.11	104.26	107.09	106.95	106.26	108.11	102.76	99.33
1961 -----	108.83	107.46	106.50	103.70	105.05	108.78	109.56	110.23	111.74	109.85	112.98	110.05	106.13
1962 -----	112.50	102.08	106.30	109.55	111.78	114.14	111.91	115.55	116.55	117.44	116.75	112.99	108.22
1963 -----	117.36	110.42	108.51	112.99	115.12	117.12	117.85	119.88	121.64	121.18	124.58	116.20	116.28
1964 -----	122.79	111.49	118.66	121.36	122.44	123.03	123.34	123.40	126.57	122.49	128.43	123.53	124.94
1965 -----	128.16	123.19	122.84	126.02	124.24	129.54	127.78	129.15	131.33	128.52	132.85	127.06	132.50
1966 -----	136.49	130.31	131.01	134.69	132.83	132.80	135.79	138.38	138.74	141.30	142.43	137.32	141.93
1967 -----	145.64	141.96	136.54	139.98	140.04	141.84	142.76	146.92	148.83	151.78	150.02	153.30	149.51
1968 -----	152.70	142.80	147.44	147.33	149.14	151.79	151.94	153.87	156.91	158.98	160.52	149.02	159.64
	Average hourly earnings												
1947 -----	\$1.501	\$1.422	\$1.420	\$1.434	\$1.451	\$1.475	\$1.485	\$1.495	\$1.511	\$1.542	\$1.560	\$1.582	\$1.587
1948 -----	1.681	1.599	1.620	1.612	1.629	1.655	1.670	1.698	1.705	1.724	1.726	1.735	1.745
1949 -----	1.763	1.743	1.762	1.773	1.771	1.767	1.756	1.748	1.757	1.763	1.770	1.765	1.788
1950 -----	1.823	1.778	1.786	1.790	1.777	1.788	1.776	1.787	1.812	1.858	1.869	1.885	1.910
1951 -----	1.95	1.91	1.92	1.93	1.93	1.94	1.94	1.95	1.95	1.98	1.98	2.00	1.99
1952 -----	2.05	1.99	2.00	2.00	2.01	1.98	1.98	2.04	2.05	2.10	2.12	2.13	2.15
1953 -----	2.22	2.16	2.16	2.19	2.19	2.19	2.19	2.22	2.24	2.25	2.27	2.29	2.30
1954 -----	2.35	2.31	2.33	2.33	2.32	2.33	2.32	2.32	2.36	2.38	2.39	2.39	2.41
1955 -----	2.40	2.41	2.39	2.37	2.37	2.36	2.37	2.38	2.40	2.41	2.43	2.45	2.45
1956 -----	2.51	2.45	2.45	2.45	2.46	2.48	2.49	2.50	2.52	2.54	2.56	2.58	2.58
1957 -----	2.64	2.59	2.60	2.58	2.60	2.62	2.62	2.64	2.65	2.68	2.68	2.69	2.71
1958 -----	2.73	2.72	2.73	2.72	2.70	2.71	2.69	2.72	2.71	2.75	2.75	2.76	2.80
1959 -----	2.81	2.79	2.79	2.77	2.77	2.77	2.77	2.79	2.81	2.86	2.88	2.87	2.87
1960 -----	2.93	2.89	2.90	2.97	2.88	2.90	2.88	2.91	2.93	2.96	2.97	2.97	3.01
1961 -----	3.04	3.01	3.00	2.98	3.01	3.03	3.01	3.02	3.02	3.06	3.07	3.10	3.14
1962 -----	3.16	3.18	3.09	3.13	3.14	3.11	3.10	3.14	3.15	3.20	3.19	3.21	3.24
1963 -----	3.26	3.21	3.22	3.21	3.18	3.20	3.22	3.24	3.27	3.32	3.34	3.32	3.39
1964 -----	3.43	3.42	3.40	3.39	3.42	3.38	3.37	3.39	3.43	3.47	3.49	3.47	3.49
1965 -----	3.55	3.47	3.53	3.52	3.49	3.52	3.52	3.50	3.54	3.61	3.62	3.62	3.64
1966 -----	3.76	3.65	3.68	3.66	3.70	3.72	3.71	3.73	3.77	3.85	3.86	3.89	3.91
1967 -----	3.99	3.90	3.89	3.91	3.89	3.94	3.89	3.96	3.99	4.08	4.11	4.11	4.13
1968 -----	4.23	4.20	4.13	4.15	4.12	4.17	4.14	4.17	4.23	4.32	4.35	4.37	4.41
	Average weekly hours												
1947 -----	37.0	37.1	36.1	37.8	36.3	36.7	36.8	37.5	37.9	37.1	37.3	35.7	37.0
1948 -----	36.8	36.3	35.8	36.5	36.3	36.5	37.5	37.4	37.5	37.2	36.9	35.8	37.6
1949 -----	36.4	36.7	36.3	36.0	36.1	37.0	36.9	36.8	37.0	36.2	36.7	35.9	35.3
1950 -----	36.1	34.2	33.0	34.1	35.5	36.3	36.8	36.8	37.4	36.4	37.2	37.0	35.9
1951 -----	36.8	36.3	34.2	34.7	36.2	37.1	37.1	37.5	37.7	37.6	38.5	36.4	37.6
1952 -----	38.7	37.8	38.1	36.6	38.4	38.5	39.7	39.4	39.4	39.2	39.5	38.2	39.3
1953 -----	37.7	38.2	38.4	37.5	37.9	38.2	38.7	37.6	38.2	36.5	38.1	36.9	36.5
1954 -----	36.4	34.0	36.5	37.1	36.9	36.8	37.1	36.9	37.1	35.8	36.7	35.9	36.1
1955 -----	36.0	35.2	34.3	36.0	35.3	36.6	36.4	37.0	36.8	37.2	36.1	34.4	35.9
1956 -----	36.2	34.6	35.2	34.3	35.8	36.2	37.0	36.9	37.2	37.3	37.3	35.7	35.8
1957 -----	35.9	33.2	36.3	35.6	35.9	36.2	36.8	36.9	37.4	36.6	36.6	33.9	34.5
1958 -----	35.5	35.3	32.1	35.2	35.4	36.0	36.1	36.0	36.7	36.0	36.6	35.5	33.8
1959 -----	35.7	34.8	34.1	35.1	36.0	36.3	36.8	36.2	36.8	35.6	35.8	34.3	35.9
1960 -----	35.4	34.5	34.0	33.1	36.0	35.9	36.2	36.8	36.5	35.9	36.4	34.6	33.0
1961 -----	35.8	35.7	35.5	34.8	34.9	35.9	36.4	36.5	37.0	35.9	36.8	35.5	33.8
1962 -----	35.6	32.1	34.4	35.0	35.6	36.7	36.1	36.8	37.0	36.7	36.6	35.2	33.4
1963 -----	36.0	34.4	33.7	35.2	36.2	36.6	36.6	37.0	37.2	36.5	37.3	35.0	34.3
1964 -----	35.8	32.6	34.9	35.8	35.8	36.4	36.6	36.4	36.9	35.3	36.8	35.6	35.8
1965 -----	36.1	35.5	34.8	35.8	35.6	36.8	36.3	36.9	37.1	35.6	36.7	35.1	36.4
1966 -----	36.3	35.7	35.6	36.8	35.9	35.7	36.6	37.1	36.8	36.7	36.9	35.3	36.3
1967 -----	36.5	36.4	35.1	35.8	36.0	36.0	36.7	37.1	37.3	37.2	36.5	37.3	36.2
1968 -----	36.1	34.0	35.7	35.5	36.2	36.4	36.7	36.9	37.0	36.8	36.9	34.1	36.2

Table 30. Construction workers average weekly and hourly earnings and average weekly hours, by month, 1947-68—Continued

Year	C. Heavy construction contractors - SIC 16												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
	Average weekly earnings												
1947 -----	\$55.20	\$51.14	\$51.91	\$52.32	\$52.72	\$54.38	\$54.34	\$55.84	\$56.72	\$57.65	\$58.32	\$55.74	\$56.84
1948 -----	63.24	57.26	58.63	59.83	60.89	60.29	63.75	64.65	65.64	66.77	66.63	61.86	65.97
1949 -----	66.59	63.95	64.44	63.72	64.88	67.59	67.62	68.40	68.72	66.99	68.93	66.28	64.47
1950 -----	69.54	62.10	63.41	64.72	67.61	67.89	69.84	69.80	72.42	71.84	73.53	71.42	71.57
1951 -----	76.89	70.71	68.42	70.25	74.34	77.10	77.42	80.41	80.89	80.22	82.41	75.27	75.27
1952 -----	82.60	77.42	78.59	75.66	78.20	80.12	82.49	82.12	85.22	89.15	89.42	80.55	82.81
1953 -----	85.24	79.52	80.73	79.87	80.55	83.01	86.73	87.78	90.74	86.00	92.21	86.11	85.06
1954 -----	87.85	79.42	86.58	85.17	84.71	88.73	91.14	92.01	91.56	87.60	88.70	88.88	84.70
1955 -----	90.09	80.44	83.44	86.55	84.64	89.28	91.05	94.11	94.05	96.95	94.21	87.85	90.29
1956 -----	96.12	88.01	89.24	86.86	90.00	93.61	99.22	99.88	100.73	102.53	102.43	95.52	94.71
1957 -----	99.35	89.65	95.92	95.20	95.65	98.31	100.78	104.75	106.34	104.30	103.38	93.59	97.16
1958 -----	105.56	98.30	92.01	97.15	99.58	106.81	104.81	106.30	110.76	112.99	115.01	104.52	101.64
1959 -----	109.34	101.01	95.94	103.20	106.37	108.62	114.28	114.44	117.61	109.75	112.46	105.81	108.23
1960 -----	115.30	102.10	104.12	109.80	112.61	112.46	116.06	120.27	122.54	122.38	124.39	111.36	108.62
1961 -----	120.09	115.44	113.68	112.03	111.45	117.31	123.07	123.97	128.57	123.42	128.47	118.56	113.09
1962 -----	122.31	106.73	110.78	116.72	118.20	125.16	123.07	128.35	131.20	130.48	128.29	118.90	111.63
1963 -----	128.44	115.82	110.33	116.91	122.36	126.96	132.44	135.22	137.46	137.28	139.52	123.78	117.21
1964 -----	131.78	116.93	121.20	120.90	126.63	132.82	135.04	138.13	140.71	130.68	142.71	129.68	127.59
1965 -----	137.90	126.68	123.58	127.79	127.12	140.28	140.95	143.81	148.86	139.04	149.10	136.22	132.99
1966 -----	145.55	133.23	131.41	139.06	137.94	137.46	150.10	154.50	153.19	156.56	156.40	139.32	142.84
1967 -----	154.13	143.75	140.82	140.14	140.30	145.16	155.45	162.64	165.07	167.70	163.31	160.09	144.01
1968 -----	166.45	144.60	149.36	148.61	159.10	164.02	171.94	178.30	179.63	180.54	177.24	153.18	164.83
	Average hourly earnings												
1947 -----	\$1.380	\$1.298	\$1.288	\$1.318	\$1.338	\$1.356	\$1.345	\$1.372	\$1.397	\$1.420	\$1.433	\$1.444	\$1.465
1948 -----	1.550	1.499	1.547	1.538	1.511	1.511	1.525	1.543	1.548	1.571	1.579	1.578	1.617
1949 -----	1.628	1.615	1.619	1.609	1.614	1.617	1.610	1.617	1.617	1.634	1.645	1.657	1.679
1950 -----	1.696	1.656	1.673	1.668	1.649	1.664	1.659	1.678	1.692	1.727	1.726	1.742	1.776
1951 -----	1.88	1.79	1.81	1.82	1.84	1.84	1.87	1.87	1.89	1.91	1.93	1.94	1.93
1952 -----	2.00	1.95	1.95	1.96	1.96	1.94	1.95	1.96	2.01	2.04	2.07	2.06	2.06
1953 -----	2.11	2.06	2.07	2.08	2.06	2.07	2.07	2.10	2.13	2.15	2.18	2.18	2.17
1954 -----	2.18	2.20	2.17	2.14	2.15	2.18	2.17	2.17	2.18	2.19	2.19	2.20	2.20
1955 -----	2.23	2.18	2.19	2.18	2.21	2.21	2.21	2.23	2.25	2.26	2.27	2.27	2.28
1956 -----	2.35	2.28	2.30	2.31	2.29	2.30	2.34	2.35	2.37	2.39	2.41	2.40	2.41
1957 -----	2.49	2.41	2.41	2.41	2.44	2.47	2.47	2.50	2.52	2.55	2.54	2.55	2.55
1958 -----	2.60	2.56	2.57	2.57	2.56	2.58	2.55	2.58	2.60	2.64	2.65	2.60	2.64
1959 -----	2.68	2.59	2.60	2.58	2.62	2.63	2.67	2.68	2.71	2.73	2.77	2.72	2.74
1960 -----	2.84	2.73	2.74	2.83	2.74	2.77	2.79	2.85	2.89	2.90	2.92	2.87	2.92
1961 -----	2.98	2.93	2.90	2.88	2.91	2.94	2.98	2.98	2.99	3.04	3.03	3.04	3.09
1962 -----	3.02	3.13	2.90	2.97	3.00	2.98	2.98	3.02	3.03	3.07	3.04	3.01	3.05
1963 -----	3.11	3.04	2.99	2.99	2.97	3.03	3.08	3.13	3.16	3.20	3.20	3.11	3.22
1964 -----	3.23	3.23	3.14	3.10	3.15	3.17	3.20	3.25	3.28	3.30	3.35	3.21	3.28
1965 -----	3.38	3.24	3.34	3.26	3.21	3.34	3.38	3.36	3.43	3.45	3.50	3.44	3.41
1966 -----	3.55	3.39	3.44	3.40	3.44	3.48	3.54	3.56	3.63	3.71	3.68	3.60	3.58
1967 -----	3.75	3.63	3.62	3.53	3.57	3.62	3.71	3.80	3.83	3.90	3.87	3.83	3.82
1968 -----	4.04	3.94	3.82	3.85	3.89	4.02	3.98	4.08	4.12	4.16	4.19	4.14	4.08
	Average weekly hours												
1947 -----	40.0	39.4	40.3	39.7	39.4	40.1	40.4	40.7	40.6	40.6	40.7	38.6	38.8
1948 -----	40.8	38.2	37.9	38.9	40.3	39.9	41.8	41.9	42.4	42.5	42.2	39.2	40.8
1949 -----	40.9	39.6	39.8	39.6	40.2	41.8	42.0	42.3	42.5	41.0	41.9	40.0	38.4
1950 -----	41.0	37.5	37.9	38.8	41.0	40.8	42.1	41.6	42.8	41.6	42.6	41.0	40.3
1951 -----	40.9	39.5	37.8	38.6	40.4	41.9	41.4	43.0	42.8	42.0	42.7	38.8	39.0
1952 -----	41.3	39.7	40.3	38.6	39.9	41.3	42.3	41.9	42.4	43.7	43.2	39.1	40.2
1953 -----	40.4	38.6	39.0	38.4	39.1	40.1	41.9	41.8	42.6	40.0	42.3	39.5	39.2
1954 -----	40.3	36.1	39.9	39.8	39.4	40.7	42.0	42.4	42.0	40.0	40.5	40.4	38.5
1955 -----	40.4	36.9	38.1	39.7	38.3	40.4	41.2	42.2	41.8	42.9	41.5	38.7	39.6
1956 -----	40.9	38.6	38.8	37.6	39.3	40.7	42.4	42.5	42.5	42.9	42.5	39.8	39.3
1957 -----	39.9	37.2	39.8	39.5	39.2	39.8	40.8	41.9	42.2	40.9	40.7	36.7	38.1
1958 -----	40.6	38.4	35.8	37.8	38.9	41.4	41.1	41.2	42.6	42.8	43.4	40.3	38.5
1959 -----	40.8	39.0	36.9	40.0	40.6	41.3	42.8	42.7	43.4	40.2	40.6	38.9	39.5
1960 -----	40.6	37.4	38.0	38.8	41.1	40.6	41.6	42.2	42.4	42.2	42.6	38.8	37.2
1961 -----	40.3	39.4	39.2	38.9	38.3	39.9	41.3	41.6	43.0	40.6	42.4	39.0	36.6
1962 -----	40.5	34.1	38.2	39.3	39.4	42.0	41.3	42.5	43.3	42.5	42.2	39.5	36.6
1963 -----	41.3	38.1	36.9	39.1	41.2	41.9	43.0	43.2	43.5	42.9	43.6	39.8	36.4
1964 -----	40.8	36.2	38.6	39.0	40.2	41.9	42.2	42.5	42.9	39.6	42.6	40.4	38.9
1965 -----	40.8	39.1	37.0	39.2	39.6	42.0	41.7	42.8	43.4	40.3	42.6	39.6	39.0
1966 -----	41.0	39.3	38.2	40.9	40.1	39.5	42.4	43.4	42.2	42.2	42.5	38.7	39.9
1967 -----	41.1	39.6	38.9	39.7	39.3	40.1	41.9	42.8	43.1	43.0	42.2	41.8	37.7
1968 -----	41.2	36.7	39.1	38.6	40.9	40.8	43.2	43.7	43.6	43.4	42.3	37.0	40.4

Table 30. Construction workers average weekly and hourly earnings and average weekly hours, by month, 1947-68—Continued

Year	D. Special trades constructors - SIC 17												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
Average weekly earnings													
1947 -----	\$63.74	\$59.90	\$59.54	\$60.75	\$61.28	\$62.78	\$63.38	\$63.70	\$64.64	\$66.13	\$66.76	\$65.02	\$67.93
1948 -----	69.48	66.76	66.00	66.64	67.39	67.84	69.88	70.65	71.21	71.60	70.89	70.24	72.12
1949 -----	70.99	70.80	70.57	69.26	70.20	71.55	71.67	71.90	72.24	71.21	71.82	70.13	70.47
1950 -----	73.00	68.99	66.67	68.15	69.94	72.23	73.13	73.35	74.79	74.75	76.89	76.95	77.17
1951 -----	81.92	77.42	76.49	77.91	79.34	81.37	82.99	83.64	84.24	85.63	85.58	81.33	84.42
1952 -----	86.26	84.29	85.57	84.38	83.78	84.52	85.86	85.57	87.10	89.70	90.32	85.88	88.83
1953 -----	88.93	85.90	86.38	86.98	86.74	88.30	89.01	89.28	90.75	89.30	93.74	91.76	91.13
1954 -----	91.62	85.75	90.25	91.00	90.89	92.50	93.13	93.50	93.25	91.98	92.99	90.97	92.20
1955 -----	94.69	89.82	89.66	92.09	91.08	94.49	95.12	97.64	95.83	98.92	96.94	93.01	96.78
1956 -----	100.64	95.04	96.29	94.52	97.36	99.32	101.68	101.63	103.30	104.60	104.98	100.91	103.60
1957 -----	105.41	99.33	103.86	103.49	104.14	105.45	106.96	106.11	108.38	108.92	108.12	102.84	104.73
1958 -----	108.00	105.44	100.39	104.78	105.97	107.74	107.81	109.20	110.47	111.57	111.87	108.58	109.39
1959 -----	113.62	110.05	106.26	108.68	112.79	114.70	115.63	115.50	117.44	115.07	116.71	113.60	117.90
1960 -----	118.11	113.40	112.45	112.50	117.61	117.69	119.64	122.06	122.76	121.88	123.91	117.23	114.58
1961 -----	123.44	121.36	119.99	118.96	118.96	121.32	124.38	125.43	126.45	126.59	127.97	124.20	121.80
1962 -----	128.50	119.33	119.71	124.25	126.70	129.83	128.08	131.67	132.75	134.98	133.91	128.16	127.40
1963 -----	133.23	128.47	125.56	129.95	131.04	134.30	135.38	135.03	136.50	136.90	138.74	130.66	132.77
1964 -----	138.35	128.56	133.10	134.64	136.86	139.13	139.50	139.87	142.51	137.54	144.38	138.67	142.80
1965 -----	145.39	139.29	139.23	141.60	140.48	147.41	146.61	147.41	149.72	146.00	149.97	143.24	148.74
1966 -----	152.81	146.61	147.38	150.66	148.15	151.29	153.38	156.59	156.49	157.88	158.34	151.56	156.09
1967 -----	160.88	157.14	150.38	154.64	155.86	157.81	159.96	164.00	163.13	168.28	166.21	167.48	162.90
1968 -----	169.36	159.95	161.17	162.08	165.62	168.54	168.72	170.75	172.88	177.75	178.50	166.56	174.60
Average hourly earnings													
1947 -----	\$1.647	\$1.560	\$1.571	\$1.578	\$1.600	\$1.618	\$1.625	\$1.646	\$1.666	\$1.687	\$1.703	\$1.720	\$1.733
1948 -----	1.814	1.734	1.760	1.763	1.778	1.776	1.801	1.821	1.840	1.855	1.851	1.868	1.878
1949 -----	1.893	1.873	1.887	1.882	1.887	1.883	1.886	1.892	1.896	1.899	1.900	1.911	1.915
1950 -----	1.973	1.927	1.927	1.936	1.932	1.947	1.945	1.956	1.963	2.004	2.018	2.025	2.047
1951 -----	2.15	2.07	2.09	2.10	2.11	2.13	2.15	2.15	2.16	2.19	2.20	2.21	2.21
1952 -----	2.27	2.23	2.24	2.25	2.24	2.23	2.23	2.24	2.28	2.30	2.34	2.34	2.35
1953 -----	2.41	2.36	2.36	2.37	2.37	2.38	2.38	2.40	2.42	2.46	2.48	2.48	2.49
1954 -----	2.51	2.50	2.50	2.50	2.49	2.50	2.49	2.50	2.50	2.52	2.52	2.52	2.54
1955 -----	2.58	2.53	2.54	2.53	2.53	2.54	2.55	2.59	2.59	2.61	2.62	2.62	2.63
1956 -----	2.72	2.64	2.66	2.67	2.66	2.67	2.69	2.71	2.74	2.76	2.77	2.78	2.80
1957 -----	2.88	2.83	2.83	2.82	2.83	2.85	2.86	2.86	2.89	2.92	2.93	2.93	2.95
1958 -----	3.00	2.97	2.97	2.96	2.96	2.96	2.97	3.00	3.01	3.04	3.04	3.05	3.09
1959 -----	3.13	3.10	3.08	3.07	3.09	3.10	3.10	3.13	3.14	3.17	3.18	3.20	3.23
1960 -----	3.29	3.24	3.25	3.28	3.24	3.26	3.26	3.29	3.30	3.33	3.34	3.34	3.38
1961 -----	3.41	3.39	3.38	3.37	3.37	3.37	3.38	3.39	3.39	3.44	3.44	3.45	3.49
1962 -----	3.54	3.52	3.48	3.50	3.50	3.49	3.49	3.53	3.54	3.59	3.59	3.59	3.64
1963 -----	3.65	3.66	3.65	3.63	3.60	3.62	3.61	3.62	3.64	3.69	3.68	3.66	3.74
1964 -----	3.78	3.77	3.76	3.74	3.76	3.73	3.73	3.77	3.77	3.81	3.84	3.82	3.87
1965 -----	3.94	3.88	3.90	3.89	3.87	3.91	3.92	3.91	3.94	4.00	4.01	3.99	4.02
1966 -----	4.13	4.05	4.06	4.05	4.07	4.10	4.09	4.11	4.14	4.21	4.20	4.21	4.23
1967 -----	4.36	4.27	4.26	4.26	4.27	4.30	4.30	4.35	4.35	4.44	4.48	4.49	4.50
1968 -----	4.64	4.57	4.54	4.54	4.55	4.58	4.56	4.59	4.61	4.74	4.76	4.80	4.81
Average weekly hours													
1947 -----	38.7	38.4	37.9	38.5	38.3	38.8	39.0	38.7	38.8	39.2	39.2	37.8	39.2
1948 -----	38.3	38.5	37.5	37.8	37.9	38.2	38.8	38.8	38.7	38.6	38.3	37.6	38.4
1949 -----	37.5	37.8	37.4	36.8	37.2	38.0	38.0	38.0	38.1	37.5	37.8	36.7	36.8
1950 -----	37.0	35.8	34.6	35.2	36.2	37.1	37.6	37.5	38.1	37.3	38.1	38.0	37.7
1951 -----	38.1	37.4	36.6	37.1	37.6	38.2	38.6	38.9	39.0	39.1	38.9	36.8	38.2
1952 -----	38.0	37.8	38.2	37.5	37.4	37.9	38.5	38.2	38.2	39.0	38.6	36.7	37.8
1953 -----	36.9	36.4	36.6	36.7	36.6	37.1	37.4	37.2	37.5	36.3	37.8	37.0	36.6
1954 -----	36.5	34.3	36.1	36.4	36.5	37.0	37.4	37.4	37.3	36.5	36.9	36.1	36.3
1955 -----	36.7	35.5	35.3	36.4	36.0	37.2	37.3	37.7	37.0	37.9	37.0	35.5	36.8
1956 -----	37.0	36.0	36.2	35.4	36.6	37.2	37.8	37.5	37.7	37.9	37.9	36.3	37.0
1957 -----	36.6	35.1	36.7	36.7	36.8	37.0	37.4	37.1	37.5	37.3	36.9	35.1	35.5
1958 -----	36.0	35.5	33.8	35.4	35.8	36.4	36.3	36.4	36.7	36.7	36.8	35.6	35.4
1959 -----	36.3	35.5	34.5	35.4	36.5	37.0	37.3	36.9	37.4	36.3	36.7	35.5	36.5
1960 -----	35.9	35.0	34.6	34.3	36.3	36.1	36.7	37.1	37.2	36.6	37.1	35.1	33.9
1961 -----	36.2	35.8	35.5	35.3	35.3	36.0	36.8	37.0	37.3	36.8	37.2	36.0	34.9
1962 -----	36.3	33.9	34.4	35.5	36.2	37.2	36.7	37.3	37.5	37.6	37.3	35.7	35.0
1963 -----	36.5	35.1	34.4	35.8	36.4	37.1	37.5	37.3	37.5	37.1	37.7	35.7	35.5
1964 -----	36.6	34.1	35.4	36.0	36.4	37.3	37.4	37.1	37.8	36.1	37.6	36.3	36.9
1965 -----	36.9	35.9	35.7	36.4	36.3	37.7	37.4	37.7	38.0	36.5	37.4	35.9	37.0
1966 -----	37.0	36.2	36.3	37.2	36.4	36.9	37.5	38.1	37.8	37.5	37.7	36.0	36.9
1967 -----	36.9	36.8	35.3	36.3	36.5	36.7	37.2	37.7	37.5	37.9	37.1	37.3	36.2
1968 -----	36.5	35.0	35.5	35.7	36.4	36.8	37.0	37.2	37.5	37.5	37.5	34.7	36.3

## Chapter 8. Annual Earnings

Construction workers hourly and weekly earnings vastly exceed those of their counterparts in most other private sector industries. The annual earnings of all employees in the construction industry, however, tend to be lower than those of workers in most industries except retail trade and services.<sup>1</sup>

A worker's annual wage and salary earnings are the product of two factors: The rate of pay per unit of service and the extent to which the service is performed. These variables, which are themselves dependent on a host of others differ by occupation, union status, industry, and area. In addition, workers do not necessarily work in only one occupation or industry during the year; they may work at multiple jobs in the same week; and may move into or out of the employed labor force at various times during the year. Annual wage and salary earnings, therefore, cannot be extrapolated from estimates of hourly or weekly earnings with any precision unless employment is relatively constant and the variations in other factors can be accounted for or are known to offset each other.

Generally, there is a high correlation between rates of pay and annual wage and salary earnings in most industries because the work year for a large proportion of the employees is relatively uniform. In construction, however, employment is seasonal, projects are frequently completed within relatively short periods of time, and some of the workers cannot find other employment immediately after their job on a project has been completed. In addition, unemployment in the industry is high, inclement weather robs workers of days of work, and many days of work time are lost because of work stoppages and industrial injuries. As a result, the actual annual earnings of construction's major earners—those who earn the largest part of their annual earnings in the industry—are substantially below those of their counterparts in the mining industries; most manufacturing industries; the transportation, communication and public utility industries; wholesale trade; and about one-fourth of the finance, insurance and real estate industries.<sup>2</sup> (See table 33.)

The low level of actual annual wage and salary earnings exists in the construction industry despite the fact that construction workers when employed are paid at an average hourly rate that substantially exceeds that of nonoffice workers in virtually every industry for which data are available.<sup>3</sup> These high average hourly earnings ratios produce weekly earnings that in 1964, the latest year for which actual wage and salary earnings data are available, exceeded those of nonoffice workers in the total private nonfarm sector by about \$41. Thus, one would assume that annual wage and salary earnings of contract construction employees would, on the average, be higher than those of employees in other industries.

The difference which exists between construction employees expected average annual earnings, based on assumptions of full-time year-round work for each worker and actual wage and salary earnings, is largely the result of short work years. An examination of the employment patterns of the industry's work force reveals that about half of construction's major earners work in the industry fewer than four quarters of the year.

<sup>1</sup> Unless otherwise noted all discussions of annual wage and salary earnings are based on special tabulations made by the BLS from the Social Security Administration's 1-percent sample data adjusted to reflect earnings which exceed the maximum taxable social security wage level.

<sup>2</sup> See chap. 3 and 4 for details.

<sup>3</sup> The limited data available indicates, as expected for high wage rate workers, that construction workers when unemployed also receive higher weekly benefits than beneficiaries from other industries. For detail, see New York State Division of Employment, Unemployment Insurance Beneficiaries, . . . op. cit., and Commonwealth of Pennsylvania, Department of Labor and Industry, Bureau of Employment Security, Continuous Wage and Benefit History of Workers Covered by the Pennsylvania Unemployment Compensation Law, Report 6, Harrisburg, Pa., July 1968. The New York data also indicate that construction workers whose base period earnings were sufficiently high to establish a maximum benefit rate received unemployment benefits for more weeks than construction workers who had lower base period earnings.

Satisfactory comparisons of actual wage and salary earnings in construction employment with full-time year-round earnings are not possible. Detailed information by construction industry segment (i. e., general building, heavy, and special trades) on full-time year-round earnings is not currently available nor are statistics on the actual earnings available for contract construction as a whole.<sup>4</sup> Nevertheless, it is apparent that there is a wide gulf between estimated full-time year-round and actual construction industry wage and salary earnings. The gap narrows considerably when estimates of standardized annual earnings (full-time year-round workers) and average actual earnings of workers employed in the industry during all four quarters of the year are compared.<sup>5</sup>

Annual wage and salary earnings vary by occupation, union status, industry, and the extent to which work (or service) is performed. Available annual earnings, data, however, permit an examination of earnings only of all workers grouped together by some measure of industry attachment.

That annual earnings vary by occupation is more than substantiated by data (from the Current Population Survey) on total money earnings. These data provide a picture of wage and salary and self-employment earnings of workers in broad occupational groupings by a measure of industry attachment. For construction workers, the data are particularly important if, as theorized in chapter 3, some workers actually shift from an employed to a self-employed status during the course of a single year.

### Actual Annual Earnings

In 1964, the actual average (mean) wage and salary earnings of construction industry workers employed in each of the industry's major groups ranged from an estimated \$2,515 in general building construction, to \$3,089 in special trades contracting.<sup>6</sup> These annual averages, however, are highly affected by the large proportion of workers employed in the industry for only a fraction of the year and by workers who earned the major part of their wages or salaries in another industry but worked in construction part of the year. About one-fourth to one-third of the workers who had some earnings in construction, as indicated in chapter 3, earned the major part of their annual earnings in such employment and only one-half of the industry's major earners were employed in construction during all four quarters of the year.

Median construction industry earnings of all workers employed at any time and to any extent in each of the industry's major groups ranged from \$1,130 in general building construction to \$1,548 in special trades.<sup>7</sup> Median annual industry earnings of construction's major earners, amounting to \$2,988 in general building construction, \$3,488 in heavy construction, and \$3,750 in special trades, however, was more than double the median level for major earners and other workers combined.

<sup>4</sup> In the future, the BLS expects to obtain actual earnings data at the all contract construction level. It is not possible to simply average the average (mean) earnings data now available for each construction segment (i. e., 2-digit industry) to derive an estimate of average earnings in the contract construction industry as a whole. For a detailed explanation of why such a procedure cannot be properly adopted, see Report 330, op. cit.

<sup>5</sup> The data which underlie the discussion of standardized earnings were obtained from the U.S. Department of Commerce, Office of Business Economics and are presented in table 35. Standardized earnings are defined as "average annual earnings per full-time employee and measure wage and salary income per man-year of full-time work. The definition of the contract construction industry as applied in this statistical series is essentially the SIC definition for Division C, Contract Construction. For information about the conceptual framework of and the basic technique used in constructing the estimate of "Average Annual Earnings Per Full-Time Employee by Industry," see: Edward F. Denison, "Revised Estimates of Wages and Salaries in the National Income, 1929-43," Survey of Current Business, June 1945, pp. 17-19. For detailed information about earnings in industries and years not presented in table 28, see table 6.5 in the "National Income Issue" of the Survey of Current Business, July 1968, and in The National Income and Product Account of the United States, 1929-65, a supplement to the Survey of Current Business.

<sup>6</sup> In comparison, standardized 1964 earnings amounted to \$6,332. The analysis contained in this section is based on special tabulations made by the BLS of data from the SSA's 1-percent continuous work history sample. See footnotes 7, 8, and 9 p. 18 for additional information about the scope and method of study.

<sup>7</sup> The median is the value which divides the distribution into co-equal halves. Because of technical programing problems, data for each individual were aggregated only at the major group level (e.g., special trades) and not at the divisional level. The earnings data presented in this section, therefore may understate average annual remuneration from construction employment. Divisional level tabulations are planned for the future. Unless otherwise noted all actual earnings data presented in this report relate to 1964. The earnings relationships described here are essentially similar to those for earlier years. See footnote 7, p. 18 for additional information.

Median annual earnings of major earners computed without regard to the extent of their industry attachment (as measured by quarters of work) was greatest for special trades employees. A different relationship, however, existed when the extent of industry employment (by quarters of work) was held constant in the computational procedure.

In 1964, major earners employed in heavy construction had greater earnings per quarter<sup>8</sup> of employment than their counterparts in either general building or special trades construction.<sup>9</sup> This finding, based on the data presented in table 34, runs counter to most other findings about the relationship between heavy construction and other construction employment developed in previous chapters. Nevertheless, this finding plus those previously discussed suggests that heavy construction employment, though more seasonal than other construction work and paid at hourly rates which on the average are lower than other construction rates, provides more hours per week and more consecutive weeks of work than employment in either general building or special trades construction.

Weekly hours of work in heavy construction are greater than those in general building or special trades. Data showing the number of weeks worked, however, are not available.

About two-fifths of construction major earners work in more than one industry (including different industries—at the 2- and 3-digit level of aggregation—within the Contract Construction Division).<sup>10</sup> The extent to which they depend on supplementary employment to increase their annual earnings, as indicated in table 31, differs among the industry's three groups and within each group by duration of major industry employment.

In essence, the data presented in tables 31 and 34 suggest that a majority of the one- and two-quarter workers, as well as a substantial proportion of the three-quarter workers, have only a marginal attachment to the employed labor force and an even more tenuous attachment to the construction industry.

Table 31. Average (mean) wage and salary income of major earners, by quarters worked in their major industry

Industry of major earnings and source of income	Any quarter	1 quarter	2 quarters	3 quarters	4 quarters
<u>General building construction</u>					
Total earnings, all industries -----	\$4, 285	\$593	\$1, 925	\$3, 571	\$6, 579
General building construction ----	3, 852	447	1, 385	2, 764	6, 250
Difference -----	433	146	540	807	329
Percent of total -----	10	25	28	23	5
<u>Heavy construction</u>					
Total earnings, all industries ----	4, 842	695	2, 312	4, 353	7, 377
Heavy construction -----	4, 382	481	1, 612	3, 577	7, 116
Difference -----	460	214	700	776	261
Percent of total -----	10	31	30	18	4
<u>Special trades</u>					
Total earnings, all industries ----	4, 780	516	1, 837	3, 355	6, 897
Special trades -----	4, 476	410	1, 364	2, 721	6, 677
Difference -----	304	106	473	634	220
Percent of total -----	6	21	26	19	3

<sup>8</sup> A quarter of employment is defined as a calendar quarter in which any wages or salaries were earned.

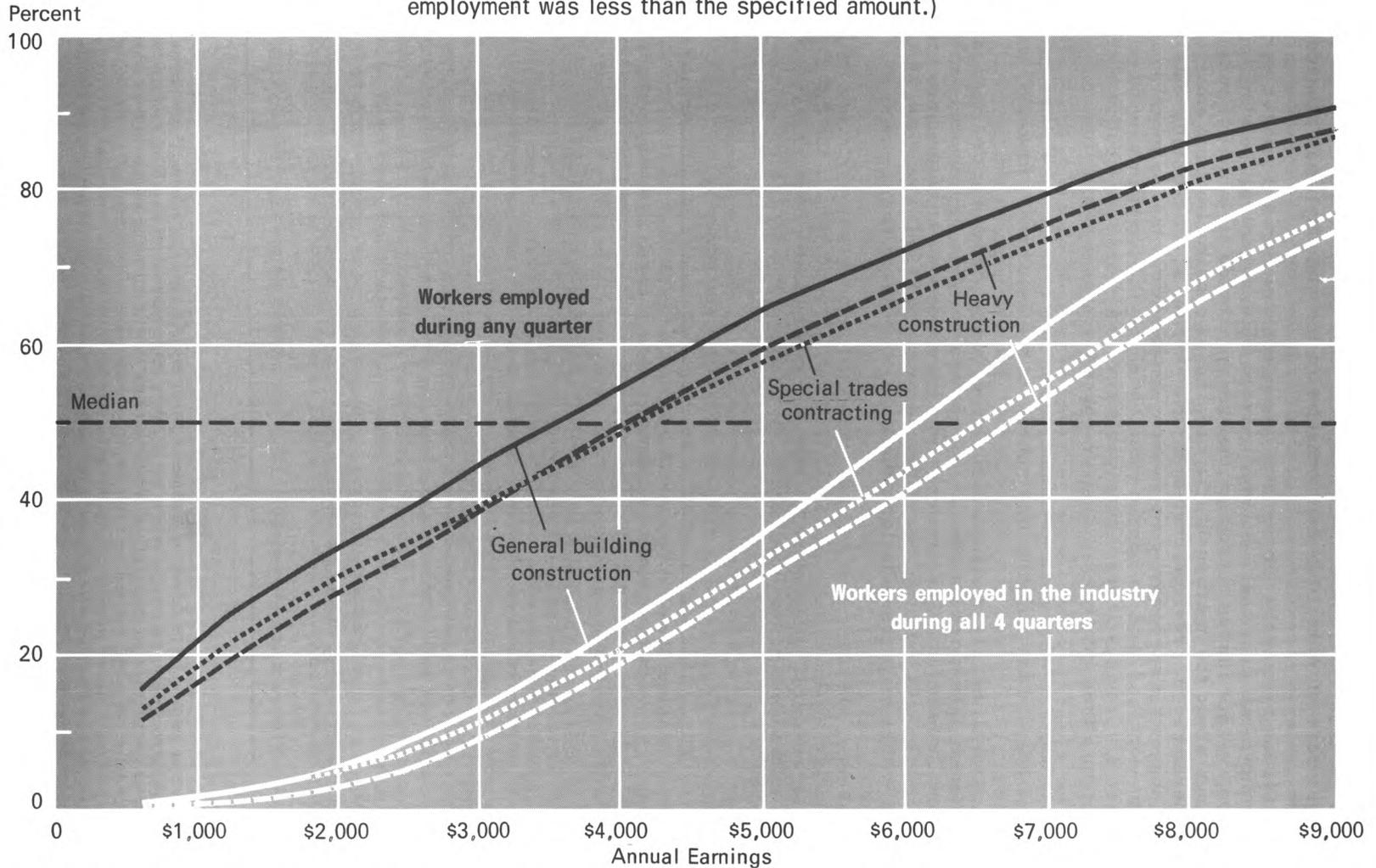
<sup>9</sup> Although heavy constructions major earners had higher average earnings per quarter of employment than major earners in general building or special trades contracting, the average earnings level of all major earners—without regard to quarters of employment—in special trades contracting exceeded that of heavy constructions major earners. This seemingly anomalous relationship results from the fact that a greater proportion of special trades than heavy construction major earners worked during all four quarters of the year. Each grouping of workers were assigned their appropriate weights and the apparent anomaly results from the mathematical relationship between the groups.

<sup>10</sup> The extent to which general building construction's major earners, for example, work in heavy construction and/or special trades employment as opposed to employment in other nonconstruction industries is not known.

Chart 3.

### Annual Earnings of Construction's Major Earners, 1964

(Percent of major earners whose total wage and salary earnings in all employment was less than the specified amount.)



Source: Bureau of Labor Statistics tabulation of data from the Social Security Administration's one-percent continuous work history sample.

In 1964, standardized average earnings for full-time year-round contract construction employees was estimated to be \$6,332.<sup>11</sup> On the average, therefore, workers employed on a full-time basis during one quarter or more of 1964 would have earned about the amounts shown in the following tabulation.

Quarters of employment	Estimated average standardized earnings
1 -----	\$1,582
2 -----	3,166
3 -----	4,749
4 -----	6,332

Among the industry's major earners, however, only about 5 percent of the one-quarter workers, 10 percent of the two-quarter workers, and between about 20 to 25 percent of the three-quarter workers earned that much or more. In fact, actual average earnings per quarter of construction industry employment, as indicated in the following tabulation, were substantially below anticipated full-time earnings for all but four-quarter workers.

Industry	Mean actual construction industry earnings of major earners as a percent of estimated standardized earnings for workers employed in the industry during—			
	1 quarter	2 quarters	3 quarters	4 quarters
General building -----	28	44	58	99
Heavy construction -----	30	51	75	112
Special trades -----	26	43	57	105

Even among four-quarter workers, who on the average earned more than the amount indicated by the standardized estimates, large proportions of workers were marginally attached to the industry and the employed labor force. During 1964, almost one-half of the four-quarter workers earned less than \$6,332 (standardized annual earnings) in construction employment, and about two-fifths earned less than that amount in all wage and salary employment (in construction and other industries). In fact, approximately one-eighth of the four-quarter construction workers earned less than \$3,000 in all wage and salary employment during 1964 and about 4 percent earned less than \$1,800.

Industry earnings of construction's major earners are substantially lower than those of major earners in most other industries except retail trade and most services.<sup>12</sup> However, construction's major earners who worked in the industry during each quarter of 1964 fared substantially better. Among those employed in the industry during all four quarters of the year, median earnings in construction employment amounted to \$5,776 in general building employment; \$6,562 in heavy construction; and \$6,379 in special trades. These median earnings of four-quarter workers were exceeded by the earnings of four-quarter workers in only a handful of industries, mostly in the transportation, mining, and durable goods manufacturing industries. (See table 33.)

Even though the earnings of construction's major earners can be measured, the degree or extent of their attachment to the contract construction industry or even the employed labor force has not been satisfactorily measured. Although the rate of unemployment attributable to the construction industries is greater than in any other private sector industry, the low earnings of the one- and two- and even some three- and four-quarter workers cannot be attributed entirely to unemployment.

<sup>11</sup> *Survey of Current Business*, July 1968, table 6.5, p. 42. Also see footnote 2, p. 18.

<sup>12</sup> See table 33 and Report 330, op. cit., for additional comparative industrial information.

The available earnings data, coupled with the knowledge that construction employment peaks during the summer months, suggests that some of the workers, particularly those employed in construction for only one or two quarters in the year, are not regular full-year members of the labor force and that others, like public school personnel, not covered by social security in their regular job, seek and find construction jobs during their regular vacation period. Data obtained from the Current Population Survey confirms this conclusion.<sup>13</sup>

### Total Money Earnings

In 1967, median money earnings<sup>14</sup> from wage and salary employment and from self-employment of contract construction's primary earners were below those of men and women whose earnings were primarily drawn from most other industries. Full-time year-round construction workers earned more than the all-industry median for full-time workers, but less than their counterparts in most of the industries for which separate data are available (see table 35).

These findings, based on data for 1967 from the Current Population Survey, confirm previous findings based solely on wage and salary earnings data from the social security records.<sup>15</sup> The data however, do not permit a complete and accurate comparison between wage and salary earnings and total money earnings. Nevertheless, if some workers actually shift from an employed to a self-employed status, during the course of the year, their total money earnings should be greater than wage and salary earnings alone.

Available data, however, suggest that such shifts contribute little to the annual earnings of the average full-time year-round construction employee. The computed standardized annual wage and salary earnings data indicate that the full-time year-round construction employee earned a mean average of about \$7,450 in 1967 (see table 32). For 1967, the mean average money earnings of all full-time year-round construction employees was \$7,455 (the median was \$6,984).<sup>16</sup>

Therefore, while some construction workers may shift between employment and self-employment those who do must be primarily among those whose total earnings are obtained during less than a full work year. On the other hand, some full-time year-round workers possibly may shift from an employed to a self-employed status in an attempt to maintain an earnings flow. The evidence supporting this assumption is very thin and may be more the result of differences in definitions between diverse statistical series and the usual errors associated with sample studies. However, the observed difference between median money earnings of all workers and full-time year-round workers, of about 25 percent in 1967 (30 percent in 1964),<sup>17</sup> is considerably narrower than the more than 50-percent difference between median actual wage and salary earnings of all construction employees (from all employment) and those who worked during all four quarters of the year. This assumption also gains some small support from the relationship between median money earnings of full-time year-round workers and of all workers by occupation. The two occupational groups in which workers should be able to shift between an employed and a self-employed status most easily

<sup>13</sup> For details, see Bulletin 1642, op. cit.

<sup>14</sup> Money earnings are the sum of money wages or salary and net income (adjusted to reflect losses in self-employment) from farm and nonfarm self-employed. About one-fifth of all construction workers are self-employed. These approximately 760,000 workers (in addition to those discussed in chap. 1) are distributed occupationally as follows: Professional and managerial, 31.6 percent; clerical and sales, 2.5 percent; craftsmen and operatives, 62.2 percent; and other workers, 3.7 percent.

Construction, as defined in the Current Population Survey, includes governmental units engaged in construction work. For details see footnote 9, p. 18 and the Bureau of the Census, 1960 Census of Population, Classified Index of Occupations and Industries, op. cit.

<sup>15</sup> Data for previous years reveal essentially the same relationships between construction and other industries. For detailed information about the Current Population Survey, see the "Consumer Income" issue (series p. 60, No. 60) of the Current Population Reports, 1969, and Bureau of the Census, the Current Population Survey—A Report on Methodology, Technical Paper No. 7, 1963 and Concepts and Methods used in Manpower Statistics from the Current Population Survey, Report 313 and Current Populations Report Series p. 23, No. 22, 1967.

<sup>16</sup> Some entrepreneurs may earn substantially more than construction employees who do not also obtain self-employment earnings. However, as a group, full-time entrepreneurs have little effect on the industry's earnings curve and probably earn only about as much as the average full-time year-round employee with comparable occupational (craft) skills.

<sup>17</sup> For details, see the "Consumer Income" issue of Current Population Reports (Series P-60, No. 47) September 1965.

are the professional and managerial workers and the craftsmen and operatives. The relative differential between median earnings of all workers in these occupations and the full-time year-round workers were, as indicated in the following tabulation, substantially lower than that for other occupational groupings.

Occupational group	Percent difference in median money earnings of all workers in the group and full-time year-round workers
Total -----	25
Professional and managerial ----	11
Clerical and sales -----	33
Craftsmen and operatives-----	17
Other workers <sup>1</sup> -----	50

<sup>1</sup> Principally laborers and service workers.

Earnings by Occupation. For the first time the 1967 data from the Current Population Survey provided information about total money earnings of workers in broad occupational grouping by industry. The data, for the construction industry are summarized in the following tabulation.

Occupational group	Median total money earnings in 1967		
	Men and women	Men	Women
<u>All workers</u>			
Total-----	\$5,580	\$5,789	\$3,019
Professional and managerial -----	8,597	8,874	( <sup>1</sup> )
Clerical and sales -----	4,085	6,869	3,394
Craftsmen and operatives-----	6,030	6,085	( <sup>1</sup> )
Other workers-----	3,031	3,064	( <sup>1</sup> )
<u>Year-round full-time workers</u>			
Total-----	6,984	7,200	4,368
Professional and managerial -----	9,513	9,695	( <sup>1</sup> )
Clerical and sales -----	5,422	( <sup>1</sup> )	4,710
Craftsmen and operatives-----	7,028	7,077	( <sup>1</sup> )
Other workers-----	4,538	4,546	( <sup>1</sup> )

<sup>1</sup> Data do not meet publication criteria.

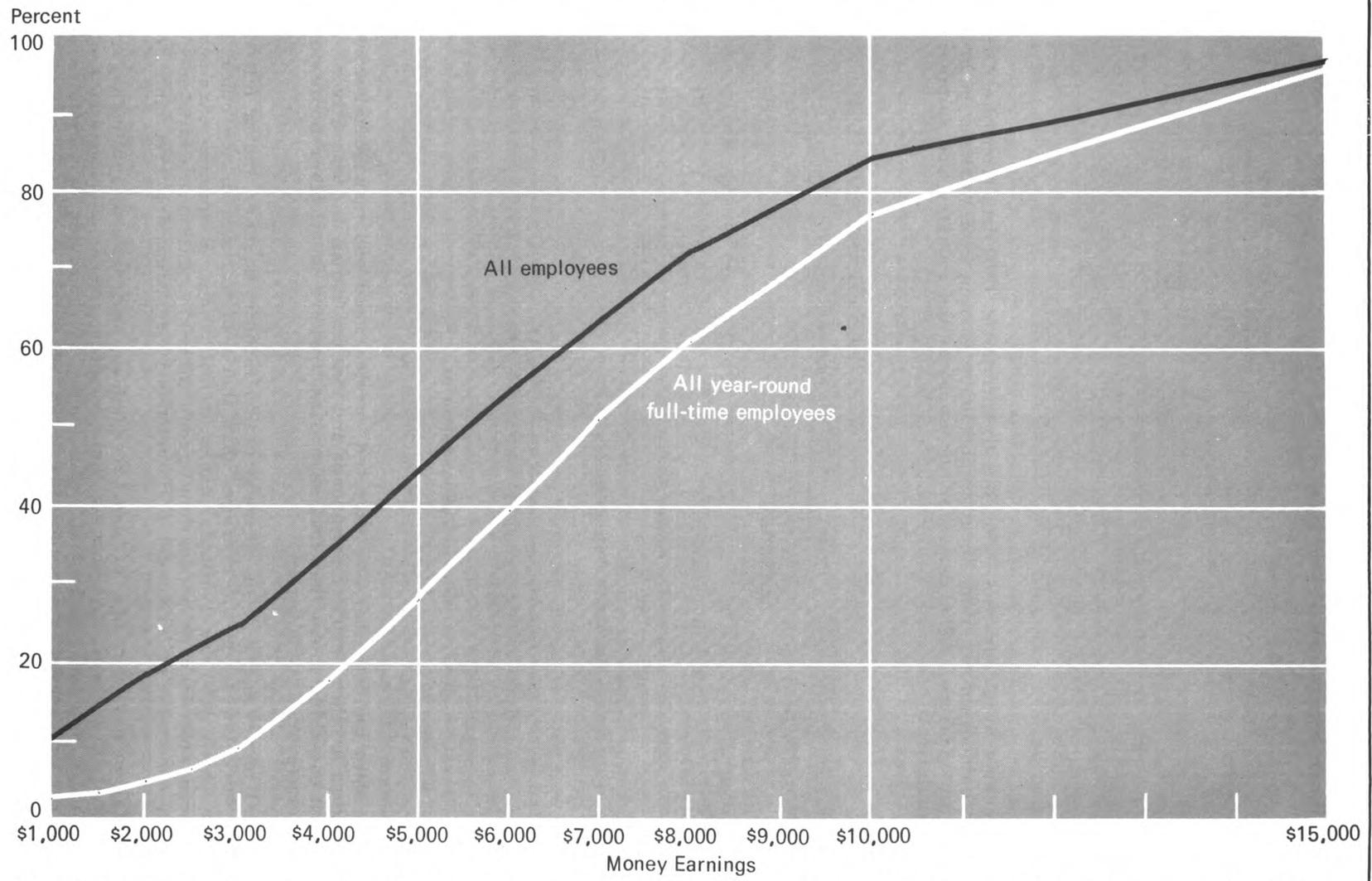
The data indicate that, as expected, professional and managerial workers earn more than workers in other occupational groups and that craftsmen and operatives, on the average, earn about one-third more than that earned by workers in all other nonprofessional occupational groups.

Total money earnings of all construction industry earners and of full-time year-round workers were lower, on the average, than those of workers in any other industry (among those for which data are available) except retail trade. Examining earnings of men and of women separately in each occupational group for which data are available by sex, however, reveals a somewhat different set of interindustry relationships. (See table 36.)

Total money earnings of men engaged in professional and managerial construction occupations were lower than that of their counterparts in all industries other than retail trade. Full-time year-round construction managers, however, earned more, on the average, than their counterparts in any industry group other than the manufacturing industries.

Chart 4.

### Total Money Earnings of All and Year-Round Full-Time Workers, Construction, 1967 <sup>1/</sup>

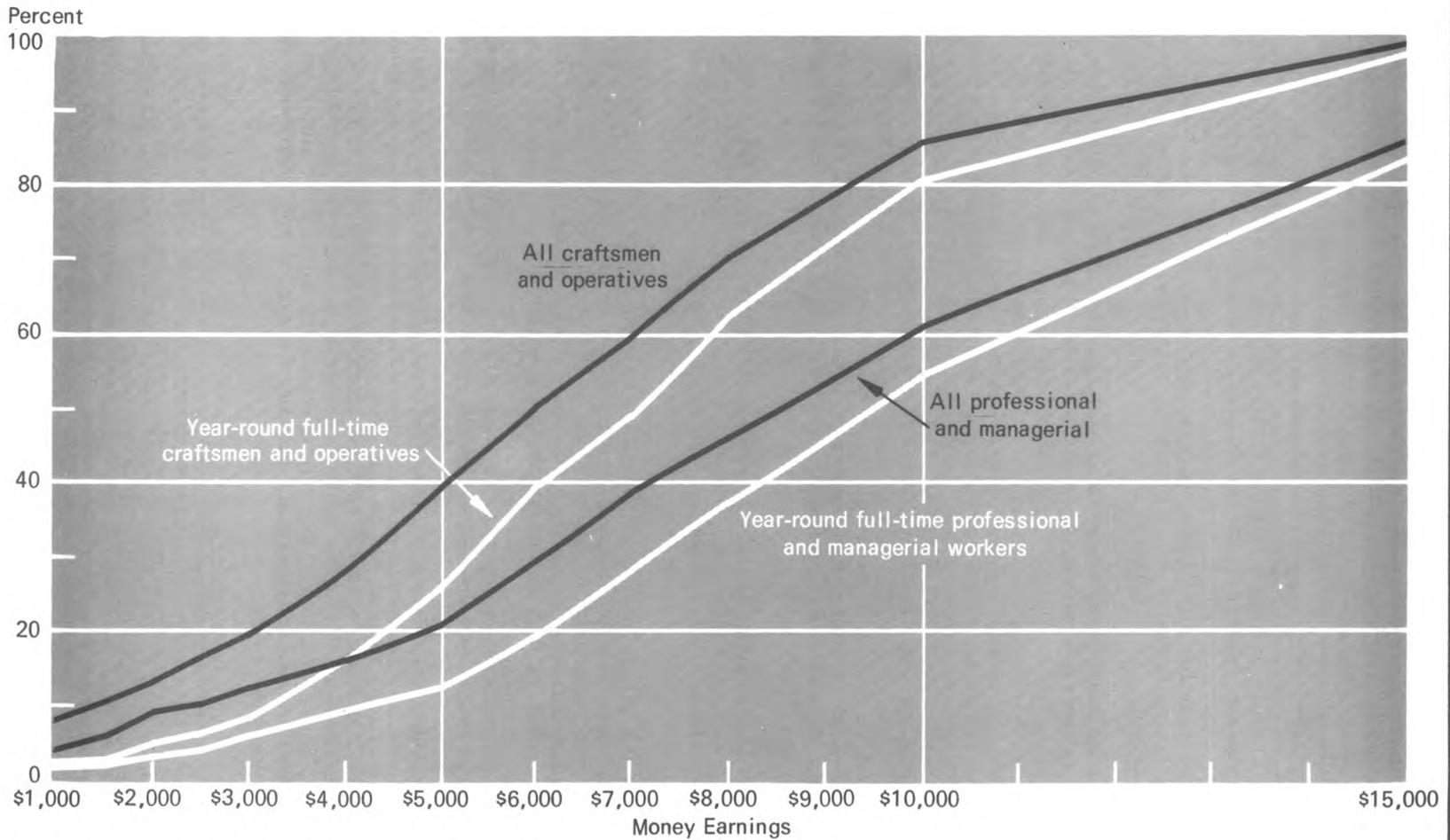


<sup>1/</sup> Includes wage and salary employees and self-employed persons.

Source: U.S. Department of Commerce, Bureau of the Census.

Chart 5.

### Total Money Earnings of All and Year-Round Full-Time Professional and Managerial Workers, Craftsmen and Operatives, Construction, 1967 <sup>1/</sup>



<sup>1/</sup> Includes wage and salary employees and self-employed persons.

Source: U.S. Department of Commerce, Bureau of the Census.

Construction's male clerical and sales staff earned more than their counterparts in nondurable goods manufacturing and retail trade. Earnings of women engaged in clerical and sales occupations, however, were lower than those of like workers in other industries, except retail trade. Among the full-time year-round female clerical and salesworkers, however, only those engaged in durable goods manufacturing and transportation, communications, and public utilities industries had higher median earnings than construction's women clerks and salespersons.

The total money earnings of construction's male craftsmen and operatives were lower than those of their counterparts in the durable and nondurable goods manufacturing and the transportation, communications, and public utilities industries. Median earnings of full-time year-round construction craftsmen were higher than those of craftsmen in the nondurable goods manufacturing industry but were still exceeded by those of craftsmen in the durable goods manufacturing and the transportation, communications, and public utilities industries.

Earnings of other workers employed in the construction industries, principally service workers and laborers, tended to be lower than those of workers in any other industry.

### Compensation

Compensation consists of gross money wages paid to employees and cash disbursements by employers for social and private welfare plans for the benefit of employees. In construction, as in the total private nonfarm economy, approximately 90 percent of the total compensation bill is paid directly to the workers. The other 10 percent is paid to third parties—such as government agencies, insurance carriers, and funds—that subsequently make payments to workers or provide them with economic security against certain specified contingencies.<sup>18</sup>

Although a similarity exists in the distribution of the total employer disbursement between direct and indirect compensation in construction and the private nonfarm economy, there are substantial differences in the allocation of the payments made by employers in construction, manufacturing, and the private sector as a whole.

Data on the structure of compensation payments are not available for construction as a whole, though data on expenditures during 1965 in the general building construction industry are available (see appendix A). The level of expenditures in general building construction is probably quite different from that of other construction segments, though the structure is probably similar to that in construction as a whole.

The major difference between the structure of compensation in construction and in the private nonfarm sector and the manufacturing industries (as indicated in the following tabulation) is in the proportion of the total paid for leave time and the differences in the importance of the legally required insurance programs and private welfare plans.

In construction, almost all of the gross employer payments to workers are for time worked. Only 2 percent of total compensation is paid to the workers for leave time and nonproduction bonuses.<sup>19</sup> In the private nonfarm economy as a whole and in the manufacturing sector, leave and bonus expenditures are three to four times as large a proportion of compensation as in construction; practically all of the difference was attributable to leave time payments.

<sup>18</sup> For details, see tables 6.1 and 6.2 in the "National Income" issue of the Survey of Current Business, op. cit.; Report 352, Employee Compensation in Selected Industries, 1966; and appendix B.

<sup>19</sup> An examination of the structure of construction compensation by employee group (appendix A) reveals that practically all of the leave and bonus payments were made to office workers. About one-third of the construction workers were employed by firms with such expenditures; more than eight-tenths of the office employees, however, worked for firms that had expenditures for either leave, bonuses, or both. In addition, few construction workers even among those employed by firms that do have expenditures for leave time actually receive such pay.

Compensation	General building construction (1965)	Private nonfarm economy (1966)	Manufac- turing industries (1966)
Total compensation -----	100.0	100.0	100.0
Gross payments to workers <sup>1</sup> -----	89.9	89.9	89.2
Pay for time worked -----	87.7	83.0	81.6
Pay for leave time -----	1.1	5.6	6.3
Bonuses -----	.9	1.2	1.3
Expenditures in addition to payroll -----	10.1	10.1	10.8
Legally required -----	6.8	5.2	4.9
Workmen's compensation -----	2.5	.9	.7
Unemployment insurance -----	1.9	1.1	1.1
Retirement income and protection -----	2.4	3.1	3.0
Private welfare plans -----	3.4	3.9	5.9
Life, accident, and health insurance -----	1.6	2.1	2.6
Pension and retirement plans -----	1.4	2.5	2.9
Vacation and holiday funds -----	.4	.1	( <sup>2</sup> )
Savings and thrift plans -----	-	.1	.2
Severance pay or supplemental unemployment benefit funds -----	-	( <sup>2</sup> )	.1

<sup>1</sup> Includes terminal payments not presented separately.

<sup>2</sup> Less than 0.05 percent.

Construction employer's expenditures in addition to payroll are weighted heavily toward those required by law. Legally required insurance programs account for twice (6.8 percent) as large a proportion of construction employees compensation as payments for private welfare plans. In contrast the relationship between legally required and private welfare expenditures in the private nonfarm economy as a whole is more nearly equal. In fact, the presumption is that if data for construction were excluded from the total the resulting statistics would indicate that private nonfarm employers—except construction—have higher expenditures for private welfare plans than for legally required insurance programs. This is the case in the manufacturing industries. In manufacturing, employers outlays for legally required insurance programs, which constitute 4.9 percent of compensation (40 percent less than in construction), are about 20 percent lower than those for private welfare plans. Private welfare expenditures in manufacturing account for 5.9 percent of compensation—more than one-half again as great a proportion of employee compensation than the 3.4 percent which obtains in construction.<sup>20</sup>

<sup>20</sup> See chap. 3 for a discussion of some of the factors which underlie these differences.

Table 32. Standardized average annual earnings per full-time employee by industry, 1946 and 1967

Industry	Mean average		Index (contract construction 1946=100.0)		Percent change	
	1967	1946	1967	1946	Average annual	1946-67
All private industries <sup>1</sup> -----	\$6,209	\$2,359	245.6	93.0	4.7	164
Contract construction -----	\$7,450	\$2,537	293.7	100.0	5.3	194
Mining -----	7,545	2,719	297.4	107.2	5.0	177
Manufacturing <sup>2</sup> -----	6,879	2,517	271.1	99.2	4.9	173
Durable goods -----	7,368	2,615	290.4	103.1	5.1	182
Lumber and wood products -----	5,168	1,813	203.7	71.5	5.1	185
Furniture and fixtures -----	5,465	2,187	215.4	86.2	4.5	150
Stone, clay, and glass -----	6,774	2,380	267.0	93.8	5.1	185
Primary metal industries -----	7,875	2,707	310.4	106.7	5.2	191
Machinery, except electrical -----	7,831	2,862	308.7	112.8	4.9	174
Electrical equipment -----	7,070	2,615	278.7	103.1	4.8	170
Transportation equipment:						
Motor vehicles -----	8,511	2,814	335.5	110.9	5.4	203
Other -----	8,454	2,971	333.2	117.1	5.1	185
Miscellaneous manufactures -----	5,665	2,442	223.3	96.3	4.1	132
Nondurable goods -----	6,179	2,404	243.6	94.8	4.6	157
Food and kindred products -----	6,316	2,385	249.0	94.0	4.8	165
Tobacco manufactures -----	5,276	1,779	207.6	70.1	5.3	196
Textiles mill products -----	4,926	2,056	194.2	81.0	4.3	140
Apparel and other textile products -----	4,264	2,192	168.1	86.4	3.3	96
Paper and allied products -----	7,175	2,535	282.8	99.9	5.1	183
Printing and publishing -----	7,000	2,862	275.9	112.8	4.4	145
Chemicals and allied products -----	8,136	2,765	320.7	109.0	5.3	194
Petroleum and coal products -----	8,967	3,183	353.4	125.5	5.1	182
Rubber and plastics products -----	6,638	2,826	261.6	111.4	4.1	135
Leather and leather products -----	4,623	2,131	182.2	84.0	3.8	117
Transportation equipment -----	8,127	2,973	320.3	117.2	4.9	173
Communication -----	7,047	2,499	277.8	98.5	5.1	182
Public utilities -----	7,964	2,665	313.9	105.0	5.4	199
Trade -----	5,890	2,378	232.2	93.7	4.4	148
Wholesale trade -----	7,958	3,021	313.7	119.1	4.7	163
Retail trade -----	5,076	2,141	200.1	84.4	4.2	137
Finance, insurance, and real estate -----	6,720	2,570	264.9	101.3	4.7	162
Services -----	4,730	1,863	186.4	73.4	4.5	154

<sup>1</sup> Includes the agriculture, forestry, and fisheries industry division not presented separately.

<sup>2</sup> Includes the fabricated metal and instruments industries not presented separately.

SOURCE: U.S. Department of Commerce, Office of Business Economics.

Table 33. Median annual wage and salary earnings of major earners by industry and quarters worked in the industry of major earnings, 1964

Industry of major earnings	Any quarter		4 quarters	
	Earnings in—			
	This industry only	This and other industries	This industry only	This and other industries
<u>Contract construction</u>				
General building construction .....	\$2,988	\$3,564	\$5,776	\$6,075
Heavy construction .....	3,484	4,093	6,562	6,719
Special trades contractors .....	3,750	4,180	6,379	6,566
<u>Mining</u>				
Metal mining .....	5,697	5,809	6,363	6,423
Anthracite mining .....	4,500	4,617	4,867	4,873
Bituminous coal and lignite mining .....	5,617	5,681	6,188	6,216
Oil and gas extraction .....	5,447	5,569	6,565	6,586
Nonmetallic minerals, except fuels .....	4,364	4,554	5,548	5,621
<u>Manufacturing</u>				
Ordnance and accessories .....	6,506	6,626	7,227	7,311
Food and kindred products .....	3,592	3,826	5,435	5,486
Tobacco manufactures .....	2,871	2,958	4,285	4,315
Textile mill products .....	3,244	3,305	3,719	3,741
Apparel and other textile products .....	2,356	2,415	2,874	2,889
Lumber and wood products .....	2,712	2,859	4,068	4,122
Furniture and fixtures .....	3,405	3,562	4,361	4,435
Paper and allied products .....	4,990	5,093	5,796	5,840
Printing and publishing .....	4,451	4,592	6,070	6,140
Chemicals and allied products .....	5,897	5,980	6,591	6,646
Petroleum and coal products .....	7,006	7,078	7,399	7,459
Rubber and plastics products, n. e. c. ....	4,387	4,563	5,545	5,619
Leather and leather products .....	2,695	2,771	3,394	3,430
Stone, clay, and glass products .....	4,703	4,769	5,591	5,644
Primary metal industries .....	6,259	6,356	6,754	6,814
Fabricated metal products .....	4,900	5,032	5,908	5,975
Machinery, except electrical .....	5,611	5,756	6,420	6,478
Electrical equipment and supplies .....	4,767	4,807	5,640	5,698
Transportation equipment .....	6,331	6,444	6,987	7,059
Instruments and related products .....	4,970	5,109	5,918	5,984
Miscellaneous manufacturing industries .....	2,785	2,916	4,147	4,208
<u>Transportation, communication, and public utilities</u>				
Local and interurban passenger transportation .....	3,954	4,227	5,321	5,414
Trucking and warehousing .....	4,825	5,032	6,555	6,603
Water transportation .....	4,982	5,391	6,474	6,843
Air transportation .....	6,333	6,433	6,886	6,947
Pipeline transportation .....	7,180	7,182	7,533	7,543
Transportation services .....	4,120	4,473	5,469	5,570
Communication .....	4,689	4,698	5,385	5,433
Public utilities .....	6,353	6,423	6,713	6,777
<u>Trade</u>				
Wholesale trade .....	4,365	4,588	5,687	5,760
Retail trade:				
Building materials and farm equipment .....	3,008	3,290	4,352	4,522
Retail general merchandise .....	1,335	1,455	2,909	2,937
Food stores .....	1,786	1,954	3,862	3,910
Auto dealers and service stations .....	2,824	3,122	4,666	4,706
Apparel and accessory stores .....	1,389	1,503	2,886	2,917
Furniture and home furnishing stores .....	2,792	3,022	4,451	4,567
Eating and drinking places .....	819	887	2,100	2,147
Miscellaneous retail stores .....	1,573	1,720	3,369	3,417
<u>Finance, insurance, and real estate</u>				
Banking .....	3,727	3,790	4,320	4,353
Crédit agencies other than banks .....	3,524	3,701	4,536	4,598
Security, commodity brokers, and service .....	4,901	4,918	5,981	6,000
Insurance carriers .....	4,094	4,255	5,045	5,141
Insurance agents, brokers, and service .....	3,489	3,616	4,585	4,619
Real estate .....	2,136	2,404	3,849	3,955
Combined real estate, insurance, etc .....	2,896	3,022	4,371	4,486
Holding and other investment companies .....	3,356	3,667	5,756	5,850
<u>Services</u>				
Hotels and other lodging services .....	980	1,092	2,428	2,496
Personal service .....	1,769	1,856	2,859	2,890
Miscellaneous business service .....	2,116	2,422	4,743	4,769
Auto repair, services, and garages .....	2,241	2,630	4,578	4,649
Miscellaneous repair services .....	3,367	3,748	5,200	5,293
Motion pictures .....	1,027	1,143	4,400	4,600
Amusement and recreation services, n. e. c. ....	939	1,063	3,540	3,658
Medical and other services .....	2,168	2,232	3,101	3,119
Legal services .....	3,229	3,413	4,503	4,531
Educational services .....	3,435	3,540	4,851	4,856
Museums, botanical, and zoological gardens .....	2,954	3,300	4,600	4,800
Nonprofit membership organizations .....	1,739	1,891	3,599	3,633
Private households .....	725	738	1,057	1,061
Miscellaneous services .....	4,441	4,674	6,634	6,713

SOURCE: Bureau of Labor Statistics tabulation of data from the Social Security Administration's 1-percent continuous work history sample.

Table 34. Percent distribution of major earners by earnings in their major industry and in all wage and salary employment, by quarter worked in their industry of major earnings, 1964

Earnings	Any	1	2	3	4	Any	1	2	3	4
	quarter	quarter	quarters	quarters	quarters	quarter	quarter	quarters	quarters	quarters
	Earnings in this industry					Earnings in all wage and salary employment				
General building construction										
Percent of workers -----	<sup>1</sup> 100.0	14.0	19.3	18.7	48.1	<sup>1</sup> 100.0	14.0	19.3	18.7	48.1
Earning less than—										
\$600 -----	17.4	77.3	27.5	5.2	.7	15.4	72.0	22.3	4.2	.5
\$1,200 -----	28.1	92.2	55.4	18.3	2.3	24.7	87.3	45.6	14.4	2.1
\$1,800 -----	36.2	97.2	72.5	33.6	5.0	32.1	94.3	62.3	26.2	4.3
\$2,400 -----	43.5	98.4	84.1	48.5	9.5	38.3	96.6	72.3	37.3	8.1
\$3,000 -----	50.1	98.6	90.9	61.2	15.3	44.5	97.6	80.9	47.7	13.2
\$4,000 -----	59.9	99.0	96.3	79.4	26.3	54.3	98.3	88.2	65.7	23.5
\$5,000 -----	69.4	100.0	99.3	91.5	40.0	64.0	99.3	93.5	78.4	36.3
\$6,000 -----	76.4	( <sup>2</sup> )	99.7	95.6	52.8	72.1	99.5	96.0	86.0	49.1
\$7,000 -----	83.0	( <sup>2</sup> )	99.7	97.7	65.8	79.6	99.5	97.3	91.5	62.7
\$8,000 -----	88.2	( <sup>2</sup> )	99.7	98.6	76.1	86.0	99.7	98.5	95.0	73.6
\$9,000 -----	92.1	( <sup>2</sup> )	99.7	99.1	84.1	90.8	99.8	99.2	97.2	82.4
Average annual earnings:										
Mean -----	\$3,852	\$447	\$1,385	\$2,764	\$6,250	\$4,285	\$593	\$1,925	\$3,571	\$6,579
Median -----	2,988	381	1,079	2,472	5,776	3,564	417	1,352	3,110	6,075
Heavy construction										
Percent of workers -----	<sup>1</sup> 100.0	12.7	19.6	22.8	44.8	<sup>1</sup> 100.0	12.7	19.6	22.8	44.8
Earning less than—										
\$600 -----	13.4	72.3	18.1	2.0	.3	11.3	63.8	13.6	1.5	.3
\$1,200 -----	22.9	90.8	45.1	8.5	1.2	19.4	83.9	35.0	5.8	1.2
\$1,800 -----	31.3	96.8	66.5	19.9	3.1	26.2	91.4	51.7	14.5	2.5
\$2,400 -----	37.9	98.2	79.4	31.7	5.9	32.3	95.6	64.1	23.4	5.0
\$3,000 -----	44.7	99.2	88.1	44.6	10.4	38.6	97.4	73.6	33.0	9.4
\$4,000 -----	55.3	99.7	95.1	63.8	20.9	49.1	98.2	84.0	50.9	18.9
\$5,000 -----	65.2	100.0	99.0	80.7	32.7	59.3	98.8	91.1	66.7	30.3
\$6,000 -----	71.3	( <sup>2</sup> )	99.4	86.2	43.3	67.0	99.3	94.1	76.7	40.9
\$7,000 -----	78.5	( <sup>2</sup> )	99.5	92.8	55.9	75.3	99.6	96.6	85.8	53.7
\$8,000 -----	84.4	( <sup>2</sup> )	99.6	97.1	67.0	82.0	99.7	97.9	92.2	64.8
\$9,000 -----	89.1	( <sup>2</sup> )	99.7	98.6	76.6	87.3	99.9	98.5	95.7	74.6
Average annual earnings:										
Mean -----	\$4,382	\$481	\$1,612	\$3,577	\$7,116	\$4,842	\$695	\$2,312	\$4,353	\$7,377
Median -----	3,484	410	1,338	3,251	6,562	4,093	468	1,739	3,956	6,719
Special trades contracting										
Percent of workers -----	<sup>1</sup> 100.0	11.7	15.5	16.3	56.5	<sup>1</sup> 100.0	11.7	15.5	16.3	56.5
Earning less than—										
\$600 -----	14.6	78.7	26.5	5.8	.6	12.9	72.2	21.5	4.9	.5
\$1,200 -----	24.2	93.2	55.8	20.1	2.4	21.4	89.1	46.2	15.7	2.3
\$1,800 -----	31.1	97.5	74.0	34.0	4.8	27.9	95.4	63.5	27.5	4.2
\$2,400 -----	37.4	99.0	84.3	49.3	8.3	33.4	97.7	73.7	39.4	7.4
\$3,000 -----	43.0	99.4	91.1	61.6	12.7	38.9	98.6	81.7	50.7	11.4
\$4,000 -----	52.3	99.7	96.2	78.8	22.9	48.4	99.3	89.7	68.2	20.8
\$5,000 -----	61.7	100.0	99.3	91.2	35.0	58.0	99.9	94.8	81.4	32.6
\$6,000 -----	68.7	( <sup>2</sup> )	99.6	95.6	46.0	65.5	99.9	96.9	87.8	43.4
\$7,000 -----	75.8	( <sup>2</sup> )	99.7	98.1	57.8	73.3	99.9	98.2	92.7	55.4
\$8,000 -----	82.2	( <sup>2</sup> )	99.8	99.2	68.8	80.3	99.9	98.9	95.7	66.8
\$9,000 -----	87.8	( <sup>2</sup> )	99.8	99.4	78.7	86.8	100.0	99.6	97.9	77.3
Average annual earnings:										
Mean -----	\$4,476	\$410	\$1,364	\$2,721	\$6,677	\$4,780	\$516	\$1,837	\$3,355	\$6,897
Median -----	3,750	371	1,068	2,431	6,379	4,180	416	1,333	2,959	6,566

<sup>1</sup> There were 1,269 thousands major earners in general building construction, 919.3 thousands in heavy construction, and 1,918.8 thousands in special trades contracting in 1964.

<sup>2</sup> A fractional proportion of the workers (less than 0.05 percent) may have earned more than the indicated amount.

NOTE: Because of rounding, detail may not add to totals.

SOURCE: Bureau of Labor Statistics tabulation of data from the Social Security Administration's 1-percent continuous work history sample.

Table 35. Median total money earnings by sex, industry, and occupation of longest job, 1967

Industry	Men					Women				
	Total	Professional and managerial	Clerical and sales	Craftsmen and operatives	Other workers	Total	Professional and managerial	Clerical and sales	Craftsmen and operatives	Other workers
All workers										
All industries <sup>1</sup> .....	\$6,020	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	\$2,351	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Construction .....	5,789	\$8,874	\$6,869	\$6,085	\$3,064	3,019	( <sup>3</sup> )	\$3,394	( <sup>3</sup> )	( <sup>3</sup> )
Mining .....	6,967	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Manufacturing .....	6,782	10,417	6,335	6,523	4,458	3,274	\$5,575	4,072	\$2,974	\$2,468
Durable goods .....	6,951	10,757	6,863	6,646	4,614	3,727	6,239	4,356	3,319	2,987
Nondurable goods .....	6,444	9,810	5,463	6,244	4,186	3,009	5,170	3,688	2,773	2,167
Transportation, communication, and public utilities .....	7,034	9,278	6,865	6,970	4,901	3,982	( <sup>3</sup> )	4,090	1,185	( <sup>3</sup> )
Wholesale trade .....	6,469	8,984	6,945	5,247	3,293	3,336	( <sup>3</sup> )	3,623	2,042	( <sup>3</sup> )
Retail trade .....	4,314	7,316	3,180	4,394	1,408	1,519	3,342	1,578	2,071	1,049
Finance, insurance, and real estate .....	7,382	9,225	7,174	5,245	3,301	3,598	5,103	3,565	( <sup>3</sup> )	( <sup>3</sup> )
Year-round workers										
All industries <sup>1</sup> .....	\$7,182	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	\$4,150	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Construction .....	7,200	\$9,695	( <sup>3</sup> )	\$7,077	\$4,546	4,368	( <sup>3</sup> )	\$4,710	( <sup>3</sup> )	( <sup>3</sup> )
Mining .....	7,690	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Manufacturing .....	7,430	10,889	\$7,280	6,994	5,578	4,139	\$6,354	4,849	\$3,732	\$3,481
Durable goods .....	7,553	11,233	7,299	7,117	5,589	4,562	6,497	4,979	4,153	( <sup>3</sup> )
Nondurable goods .....	7,199	10,159	7,251	6,752	5,556	3,810	6,218	4,661	3,530	( <sup>3</sup> )
Transportation, communication, and public utilities .....	7,624	9,615	7,227	7,505	6,052	4,925	( <sup>3</sup> )	4,812	( <sup>3</sup> )	( <sup>3</sup> )
Wholesale trade .....	7,343	9,536	7,597	6,020	4,979	4,621	( <sup>3</sup> )	4,587	( <sup>3</sup> )	( <sup>3</sup> )
Retail trade .....	6,503	7,687	5,998	6,080	4,719	3,350	4,251	3,440	3,340	2,399
Finance, insurance, and real estate .....	8,132	9,537	7,828	( <sup>2</sup> )	4,563	4,384	5,681	4,294	( <sup>3</sup> )	( <sup>3</sup> )

<sup>1</sup> Includes the agriculture, forestry, and fisheries, the service industries, and public administration not presented separately.

<sup>2</sup> Not available.

<sup>3</sup> Data do not meet publication criteria.

SOURCE: U.S. Department of Commerce, Bureau of the Census.

Table 36. Total money earnings of contract construction workers by occupation of longest job, all workers and year-round full-time workers, 1967  
(Includes wage and salary employees and self-employed workers)

Earnings	All workers					Year-round full-time workers				
	Construction total	Professional and managerial	Craftsmen and operatives	Clerical and sales	Other workers	Construction total	Professional and managerial	Craftsmen and operatives	Clerical and sales	Other workers
Percent of workers .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Earning less than:										
\$1,000 .....	10.5	3.3	7.1	10.4	26.7	2.2	1.8	2.1	0.1	3.5
\$1,500 .....	14.1	5.2	10.0	16.6	33.4	3.1	2.2	2.8	1.2	6.7
\$2,000 .....	17.8	8.2	13.1	23.5	38.3	4.8	3.0	4.5	3.0	10.5
\$2,500 .....	21.6	9.7	16.3	30.6	44.6	6.6	3.7	6.1	4.7	15.6
\$3,000 .....	24.6	12.0	18.8	33.6	49.6	8.9	5.4	7.9	5.9	21.2
\$4,000 .....	34.0	15.6	27.6	48.9	63.6	17.6	8.6	15.6	21.9	40.6
\$5,000 .....	44.2	20.4	38.6	62.2	75.1	27.9	12.1	25.9	42.0	58.1
\$6,000 .....	54.2	28.5	49.7	74.6	82.2	39.3	19.1	38.2	61.0	69.4
\$7,000 .....	63.5	37.6	59.5	81.1	90.7	50.2	27.6	49.7	72.2	81.2
\$8,000 .....	72.2	45.4	70.0	89.3	95.1	60.9	36.7	61.9	80.5	88.7
\$10,000 .....	84.8	60.8	85.5	94.1	98.8	77.4	54.3	80.5	89.4	96.8
\$15,000 .....	96.8	85.8	98.6	98.4	99.8	95.1	83.5	98.3	97.0	99.5
Median annual money earnings .....	\$5,580	\$8,597	\$6,030	\$4,085	\$3,031	\$6,984	\$9,513	\$7,028	\$5,422	\$4,538

SOURCE: U.S. Department of Commerce, Bureau of the Census.

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## Appendix A. Employee Compensation and Payroll Hours: Building Construction, 1965

### Scope and Method of Study

This study covered all establishments in SIC 151, general building contractors, classified according to the 1957 edition of the Standard Industrial Classification Manual (SIC) and 1963 supplement prepared by the U.S. Bureau of the Budget. Survey coverage extended to the 50 States and the District of Columbia.

Data were obtained from 409 sample companies employing approximately 69,000 workers—about 7 percent of total employment in the building construction industry during 1965. Each sample unit was weighted according to its probability of selection and further adjusted to industry totals based on data from the Bureau's monthly employment statistics program.

### Definition of Terms

Compensation, for purposes of this study, is defined as the sum of the payments subject to Federal withholding taxes made by employers directly to their employees (before deductions of any type), and the expenditures made by employers for legally required insurance programs and private welfare plans for the benefit of employees.

Expenditure Ratios for "all establishments" represent the expenditures for the practice divided by total compensation for all establishments—both those that had and those that did not have expenditures—whereas the ratios for "establishments that had expenditures for the practice" relate the same expenditures to the total compensation of only those establishments that reported an actual expenditure. The expenditure rates represent the same expenditures divided by the corresponding man-hours.

Hours Paid For consists of aggregate hours worked, paid leave hours, rest periods coffee breaks, machine down-time, and other nonleave hours paid for but not worked, for which employers made direct payments to workers during the year. Working Time excludes paid leave hours.

The Middle Range was determined by expenditures in companies that cumulatively employed workers at the 25th and 75th percentiles. These two points were selected from an ascending magnituded array of company employment ranked by compensation outlays.

The Median is defined as the value at which one-half of the workers were employed by companies whose expenditures were below this value, and one-half were employes by companies having expenditures above this value. In some cases, however, there may be a clustering of observations at the median value.

All Employees consist of the two employee groups defined below. Proprietors, members of unincorporated firms, and unpaid family workers are not considered to be employed and therefore were excluded from this study.

Construction Workers include all nonsupervisory workers and working foreman engaged in building, altering, demolishing, excavating, mining, pumping, fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping, trucking, hauling, maintenance, repair, janitorial, watchmen services, product development, auxiliary production for the plant's own use (e.g., powerplant), recordkeeping, and other services closely associated with the above production operations.

Office and Related Workers include all employees in executive, administrative, and management positions above the working supervisor level. Professional, technical, office clerical, and sales employees also are included in this category.

Table A-1. Percent Distribution of Employees by Region and Selected Establishment Characteristics, Building Construction, 1965

Characteristics	All employees	Construction workers	Office and related workers
Total industry employment-----	100	89	11
Regions: <sup>1</sup>			
United States -----	100	100	100
Northeast -----	20	19	27
South -----	38	39	30
North Central -----	23	23	23
West -----	18	18	20
Bargaining agreement coverage:			
Majority of construction workers covered by union contracts -----	-	45	4
None or minority of construction workers covered by union contracts -----	-	55	96

<sup>1</sup> The regions used in this study are: Northeast--Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; South--Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; North Central--Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and West--Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

NOTE: Due to rounding, sums of individual items may not equal totals.

Table A-2. Employer Expenditures for the Compensation of Employees, Building Construction, 1965

Compensation practice	All establishments									Establishments that had expenditures for pay supplements								
	All employees			Construction workers			Office and related workers			All employees			Construction workers			Office and related workers		
	Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour	
		Paid for	Working time		Paid for	Working time		Paid for	Working time		Paid for	Working time		Paid for	Working time		Paid for	Working time
Total expenditures -----	100.0	\$4.16	\$4.20	100.0	\$3.99	\$4.01	100.0	\$5.15	\$5.41	-	( <sup>1</sup> )	( <sup>1</sup> )	-	( <sup>1</sup> )	( <sup>1</sup> )	-	( <sup>1</sup> )	( <sup>1</sup> )
Gross payments to workers -----	89.9	\$3.73	\$3.78	89.1	\$3.56	\$3.57	93.4	\$4.80	\$5.05	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Straight-time pay -----	86.1	3.58	3.63	86.4	3.45	3.46	85.0	4.38	4.60	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Premium payments <sup>2</sup> -----	1.6	.06	.06	1.9	.08	.08	.4	.02	.02	2.3	\$0.11	\$0.11	2.7	\$0.12	\$0.12	1.4	\$0.08	\$0.09
Overtime, weekend, and holiday work -----	1.6	.06	.06	1.8	.08	.08	.4	.02	.02	2.2	.10	.10	2.7	.12	.12	1.4	.08	.09
Pay for leave time -----	1.1	.04	.05	.4	.02	.02	4.5	.24	.25	1.5	.06	.06	1.0	.04	.04	5.1	.27	.29
Vacations -----	.6	.02	.02	.2	.01	.01	2.2	.12	.12	.8	.03	.03	.7	.02	.03	2.7	.14	.15
Holidays -----	.5	.02	.02	.2	.01	.01	1.7	.09	.09	.6	.03	.03	.5	.02	.02	2.0	.11	.11
Sick leave -----	.1	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.5	.02	.02	.3	.01	.01	.3	.01	.01	1.0	.05	.06
Civic and personal leave -----	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.1	.01	.01	.1	.01	.01	.1	( <sup>3</sup> )	( <sup>3</sup> )	.5	.03	.03
Nonproduction bonuses -----	.9	.04	.04	.4	.01	.01	3.5	.18	.19	2.0	.09	.09	1.1	.04	.04	7.6	.40	.43
Terminal payments -----	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.1	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.3	.02	.02
Expenditures in addition to payroll -----	10.1	.42	.43	10.9	.44	.44	6.6	.33	.35	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Legally required insurance programs -----	6.8	.28	.29	7.4	.30	.30	3.8	.19	.20	6.8	.28	.29	7.4	.30	.30	3.8	.19	.20
Retirement income and protection -----	2.4	.10	.11	2.6	.11	.11	1.7	.09	.10	2.4	.10	.11	2.6	.11	.11	1.7	.09	.10
Unemployment insurance -----	1.9	.08	.08	2.0	.09	.09	1.3	.06	.06	1.9	.08	.08	2.0	.09	.09	1.3	.06	.06
Occupational injury and illness -----	2.5	.11	.11	2.8	.11	.12	.8	.04	.04	2.6	.11	.11	3.0	.12	.12	.9	.04	.05
Private welfare plans <sup>4</sup> -----	3.4	.14	.14	3.5	.14	.14	2.7	.14	.15	4.3	.20	.20	4.7	.21	.21	4.2	.23	.24
Life, accident, and health insurance -----	1.6	.06	.06	1.6	.06	.06	1.3	.06	.08	2.1	.10	.10	2.3	.11	.11	2.1	.11	.12
Contributory plans -----	-	-	-	-	-	-	-	-	-	-	-	-	1.6	.06	.06	1.6	.09	.10
Noncontributory plans -----	-	-	-	-	-	-	-	-	-	-	-	-	2.5	.13	.13	2.5	.13	.14
Pension and retirement plans -----	1.4	.05	.05	1.4	.05	.05	1.3	.06	.08	2.3	.12	.12	2.4	.12	.12	4.7	.27	.29
Contributory plans -----	-	-	-	-	-	-	-	-	-	-	-	-	2.3	.11	.11	3.2	.17	.18
Noncontributory plans -----	-	-	-	-	-	-	-	-	-	-	-	-	2.4	.13	.13	4.9	.29	.30
Vacation and holiday funds -----	.4	.01	.01	.5	.02	.02	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	1.7	.09	.09	2.0	.11	.11	2.0	.14	.14

See footnotes at end of table.

Table A-2. Employer Expenditures for the Compensation of Employees, Building Construction, 1965—Continued

Compensation practice	Percent of workers in establishments that had expenditures for the practice			Range of expenditures in establishments that had expenditures for the practice											
	All employees	Construction employees	Office and related employees	All employees				Construction workers				Office and related workers			
				Percent of compensation		Per hour paid for		Percent of compensation		Per hour paid for		Percent of compensation		Per hour paid for	
				Middle range	Median	Middle range	Median	Middle range	Median	Middle range	Median	Middle range	Median	Middle range	Median
Total expenditures -----	100	100	100	- -	-	\$2.89-\$5.18	\$4.08	- -	-	\$2.75-\$5.09	\$3.86	- -	-	\$3.65-\$6.07	\$5.12
Gross payments to workers -----	100	100	100	88-93	91	\$2.65-\$4.61	\$3.68	88-93	90	\$2.49-\$4.50	\$3.49	92-96	94	\$3.29-\$5.75	\$4.72
Straight-time pay -----	100	100	100	84-91	89	2.62-4.45	3.58	85-91	88	2.48-4.33	3.32	83-92	88	3.04-5.27	4.33
Premium payments <sup>2</sup> -----	63	61	22	1-3	1	.03-.13	.06	1-4	2	.03-.15	.08	( <sup>3</sup> ) 2	1	.01-.11	.05
Overtime, weekend, and holiday work -----	63	61	22	1-3	1	.03-.12	.06	1-4	2	.03-.14	.06	( <sup>3</sup> ) 2	1	.01-.11	.04
Pay for leave time -----	67	37	83	1-2	1	.02-.09	.04	( <sup>3</sup> ) 1	1	.01-.05	.02	3-6	5	.14-.35	.26
Vacations -----	61	26	76	( <sup>3</sup> ) 1	1	.01-.04	.03	( <sup>3</sup> ) 1	( <sup>3</sup> )	.01-.03	.01	2-4	2	.09-.18	.12
Holidays -----	63	30	80	( <sup>3</sup> ) 1	( <sup>3</sup> )	.01-.03	.02	( <sup>3</sup> ) 1	( <sup>3</sup> )	.01-.02	.01	1-2	2	.06-.14	.11
Sick leave -----	29	7	42	( <sup>3</sup> )	( <sup>3</sup> )	-.02	.01	( <sup>3</sup> )	( <sup>3</sup> )	-.01	.01	( <sup>3</sup> ) 1	1	.02-.08	.05
Civic and personal leave -----	14	2	23	( <sup>3</sup> )	( <sup>3</sup> )	-.01	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	-.01	( <sup>3</sup> )	( <sup>3</sup> ) 1	( <sup>3</sup> )	.01-.05	.02
Nonproduction bonuses -----	40	29	44	( <sup>3</sup> ) 3	1	.02-.11	.04	( <sup>3</sup> ) 1	1	( <sup>3</sup> ) -.04	.02	1-8	2	.03-.47	.12
Terminal payments -----	8	3	11	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Expenditures in addition to payroll -----	100	100	99	7-12	9	.21-.58	.33	7-12	10	.21-.58	.33	4-8	6	.16-.39	.27
Legally required insurance programs -----	100	100	99	6-8	7	.19-.35	.27	6-9	8	.20-.36	.28	3-5	4	.14-.24	.17
Retirement income and protection -----	100	100	99	2-3	3	.09-.12	.10	2-3	3	.09-.13	.10	2-2	2	.08-.10	.09
Unemployment insurance -----	99	99	99	2-2	2	.05-.11	.08	2-3	2	.05-.11	.08	1-2	1	.04-.08	.05
Occupational injury and illness -----	93	93	86	2-4	3	.06-.14	.10	2-4	3	.06-.16	.11	( <sup>3</sup> ) 1	1	.01-.08	.02
Private welfare plans <sup>4</sup> -----	65	59	59	1-6	3	.04-.31	.15	1-6	4	.05-.35	.15	2-5	3	.09-.27	.16
Life, accident, and health insurance -----	61	56	58	1-3	2	.03-.15	.09	1-3	2	.04-.16	.11	1-3	2	.04-.14	.10
Contributory plans -----	-	15	29	-	-	-	-	( <sup>3</sup> ) 2	1	.01-.09	.02	1-2	1	.03-.12	.06
Noncontributory plans -----	-	41	28	-	-	-	-	1-3	2	.06-.17	.13	1-4	2	.05-.18	.11
Pension and retirement plans -----	45	42	23	1-3	2	.06-.17	.11	1-3	2	.05-.18	.12	2-7	4	.12-.35	.19
Contributory plans -----	-	4	2	-	-	-	-	2-3	2	.09-.16	.10	2-3	2	.13-.16	.13
Noncontributory plans -----	-	38	21	-	-	-	-	1-3	3	.04-.19	.12	1-7	4	.12-.35	.20
Vacation and holiday funds -----	15	15	1	1-2	2	.02-.15	.10	( <sup>3</sup> ) 3	2	.02-.17	.13	2-2	2	.14-.14	.14

<sup>1</sup> Data for establishments that had expenditures for pay supplements do not add to totals because the base used in computing each component changed in accordance with the prevalence of expenditures for the practice.

<sup>2</sup> Includes shift differentials, not presented separately.

<sup>3</sup> Less than 0.05 percent or \$0.005.

<sup>4</sup> Includes severance or dismissal pay and/or supplemental unemployment benefit funds and savings and thrift plans, not presented separately.

<sup>5</sup> Less than 0.5 percent or \$0.005.

NOTE: Due to rounding, sums of individual items may not equal totals.

Table A-3. Employer Expenditures for the Compensation of Employees, by Bargaining Agreement Coverage of Construction Workers, Building Construction, 1965

Compensation practice	All establishments						Establishments that had expenditures for pay supplements					
	Majority of workers covered by bargaining agreements			None or minority of workers covered by bargaining agreements			Majority of workers covered by bargaining agreements			None or minority of workers covered by bargaining agreements		
	Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour		Percent of compensation	Per hour	
		Paid for	Working time		Paid for	Working time		Paid for	Working time		Paid for	Working time
Total expenditures -----	100.0	\$4.94	\$4.95	100.0	\$3.10	\$3.12	-	( <sup>1</sup> )	( <sup>1</sup> )	-	( <sup>1</sup> )	( <sup>1</sup> )
Gross payments to workers -----	87.4	\$4.32	\$4.33	91.5	\$2.84	\$2.85	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Straight-time pay -----	84.4	4.17	4.18	89.4	2.78	2.79	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Premium payments <sup>2</sup> -----	2.3	.12	.12	1.3	.04	.04	2.7	\$0.14	\$0.14	2.8	\$0.09	\$0.09
Overtime, weekend, and holiday work -----	2.2	.11	.11	1.3	.04	.04	2.6	.13	.13	2.7	.09	.09
Pay for leave time -----	.3	.01	.01	.6	.02	.02	.7	.03	.03	1.6	.05	.05
Vacations -----	.1	.01	.01	.3	.01	.01	.4	.02	.02	1.2	.03	.03
Holidays -----	.2	.01	.01	.2	.01	.01	.4	.02	.02	.9	.02	.02
Sick leave -----	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.1	.01	.01	1.8	.05	.05
Civic and personal leave -----	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.1	( <sup>3</sup> )	( <sup>3</sup> )
Nonproduction bonuses -----	.5	.02	.02	.2	.01	.01	1.2	.05	.05	.9	.03	.03
Terminal payments -----	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.1	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Expenditures in addition to payroll -----	12.6	.62	.62	8.5	.26	.27	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Legally required insurance programs -----	7.5	.38	.38	7.3	.23	.23	7.5	.38	.38	7.3	.23	.23
Retirement income and protection -----	2.4	.12	.12	2.8	.09	.09	2.4	.12	.12	2.8	.09	.09
Unemployment insurance -----	2.1	.11	.11	2.0	.06	.06	2.1	.11	.11	2.0	.06	.06
Occupational injury and illness -----	3.0	.15	.15	2.5	.08	.08	3.0	.15	.15	2.9	.09	.09
Private welfare plans <sup>4</sup> -----	5.0	.25	.25	1.1	.03	.03	5.2	.26	.26	2.9	.11	.11
Life, accident, and health insurance -----	2.3	.12	.12	.6	.02	.02	2.5	.12	.12	1.7	.05	.05
Pension and retirement plans -----	2.0	.10	.10	.4	.01	.01	2.4	.13	.13	2.6	.11	.11
Vacation and holiday funds <sup>5</sup> -----	.7	.03	.03	.2	( <sup>3</sup> )	( <sup>3</sup> )	2.0	.10	.10	2.0	.12	.12

See footnotes at end of table.

Table A-3. Employer Expenditures for the Compensation of Employees, by Bargaining Agreement Coverage of Construction Workers, Building Construction, 1965—Continued

Compensation practice	Percent of workers in establishments that had expenditures for the practice		Range of expenditures in establishments that had expenditures for the practice							
	Majority covered by bargaining agreements	None or minority covered by bargaining agreements	Majority of workers covered by bargaining agreements				None or minority of workers covered by bargaining agreements			
			Percent of compensation		Per hour paid for		Percent of compensation		Per hour paid for	
			Middle range	Median	Middle range	Median	Middle range	Median	Middle range	Median
Total expenditures -----	100	100	- -	-	\$4.39-\$5.90	\$5.04	- -	-	\$2.30-\$3.53	\$2.90
Gross payments to workers -----	100	100	86-91	88	\$3.90-\$5.06	\$4.37	90-93	92	\$2.15-\$3.26	\$2.68
Straight-time pay -----	100	100	82-89	86	3.75- 4.91	4.30	88-92	90	2.12- 3.16	2.65
Premium payments <sup>2</sup> -----	82	44	1- 3	2	.03- .15	.08	1- 4	2	.03- .13	.06
Overtime, weekend, and holiday work -----	82	44	1- 3	2	.03- .15	.08	1- 4	2	.03- .13	.06
Pay for leave time -----	42	34	( <sup>6</sup> ) 1	( <sup>6</sup> )	.01- .05	.02	( <sup>6</sup> ) 2	1	.01- .05	.02
Vacations -----	29	24	( <sup>6</sup> ) 1	( <sup>6</sup> )	.01- .03	.01	( <sup>6</sup> ) 2	1	.01- .05	.02
Holidays -----	36	25	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - .02	.01	( <sup>6</sup> ) 1	( <sup>6</sup> )	.01- .02	.01
Sick leave -----	12	3	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - .01	( <sup>6</sup> )	( <sup>6</sup> ) 1	( <sup>6</sup> )	.02- .03	.02
Civic and personal leave -----	1	3	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - ( <sup>6</sup> )	( <sup>6</sup> )
Nonproduction bonuses -----	37	22	( <sup>6</sup> ) 1	( <sup>6</sup> )	.01- .05	.03	( <sup>6</sup> ) 1	( <sup>6</sup> )	.01- .03	.01
Terminal payments -----	2	4	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - .02	( <sup>6</sup> )	( <sup>6</sup> ) ( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> ) - ( <sup>6</sup> )	( <sup>6</sup> )
Expenditures in addition to payroll -----	100	100	9-14	12	.41- .87	.58	7-10	8	.18- .31	.23
Legally required insurance programs -----	100	100	6- 9	8	.29- .44	.36	7- 9	8	.17- .29	.21
Retirement income and protection -----	100	100	2- 3	3	.11- .14	.13	3- 3	3	.06- .10	.09
Unemployment insurance -----	100	99	2- 2	2	.08- .13	.11	1- 3	2	.04- .08	.06
Occupational injury and illness -----	98	89	2- 4	3	.10- .20	.13	2- 4	3	.05- .12	.09
Private welfare plans <sup>4</sup> -----	92	32	2- 7	5	.12- .40	.25	( <sup>6</sup> ) 3	1	.01- .11	.04
Life, accident, and health insurance -----	90	28	2- 3	3	.06- .17	.13	( <sup>6</sup> ) 2	1	.01- .06	.02
Pension and retirement plans -----	78	12	1- 3	3	.05- .18	.13	1- 3	2	.04- .20	.09
Vacation and holiday funds <sup>5</sup> -----	29	3	( <sup>6</sup> ) 3	2	.01- .17	.11	2- 4	3	.14- .23	.16

<sup>1</sup> Data for establishments that had expenditures for pay supplements do not add to totals because the base used in computing each component changed in accordance with the prevalence of expenditures for the practice.

<sup>2</sup> Includes shift differentials, not presented separately.

<sup>3</sup> Less than 0.05 percent or \$0.005.

<sup>4</sup> Includes severance or dismissal pay and/or supplemental unemployment benefit funds and savings and thrift plans, not presented separately.

<sup>5</sup> In the nonunion establishments, bargaining agreements providing for vacation and holiday funds may have covered a minority of the workers in the firms with these expenditures; information about the degree of unionization below the majority group level was not collected in this study.

<sup>6</sup> Less than 0.5 percent or \$0.005.

NOTE: Due to rounding, sums of individual items may not equal totals.

Table A-4. Composition of Payroll Hours, Building Construction, 1965

Composition of payroll hours	Percent of hours paid for			Weeks of vacation paid for	Percent of employees receiving vacation pay	Number of holidays paid for	Percent of employees in establishments having the practice
	All establishments	Range in establishments that had paid leave hours					
		Middle range	Median				
All employees							
All hours paid for .....	100.0	- -	-	Total .....	100	Total .....	100
Working time .....	98.9	98-99	99	None .....	88	None .....	81
Paid leave hours .....	1.1	1- 2	1	Under 1 week .....	1	Under 3 .....	2
Vacations .....	.5	( <sup>1</sup> )- 1	1	1 and under 2 weeks .....	4	3 .....	3
Holidays .....	.4	( <sup>1</sup> )- 1	( <sup>1</sup> )	2 and under 3 weeks .....	6	4 and under 5 .....	1
Sick leave .....	.1	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	3 and under 4 weeks .....	( <sup>1</sup> )	5 and under 6 .....	3
Civic and personal leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	4 and under 5 weeks .....	( <sup>1</sup> )	6 .....	5
				5 weeks or more .....	( <sup>1</sup> )	Over 6 .....	5
Construction workers							
All hours paid for .....	100.0	- -	-	Total .....	100	Total .....	100
Working time .....	99.5	99-99	99	None .....	94	None .....	89
Paid leave hours .....	.5	( <sup>1</sup> )- 1	1	Under 1 week .....	1	Under 3 .....	2
Vacations .....	.2	( <sup>1</sup> )- 1	( <sup>1</sup> )	1 and under 2 weeks .....	3	3 .....	3
Holidays .....	.2	( <sup>1</sup> )- 1	( <sup>1</sup> )	2 and under 3 weeks .....	2	4 .....	1
Sick leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	3 and under 4 weeks .....	( <sup>1</sup> )	5 .....	2
Civic and personal leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	4 and under 5 weeks .....	( <sup>1</sup> )	6 .....	2
				5 weeks or more .....	-	Over 6 .....	2
Office and related workers							
All hours paid for .....	100.0	- -	-	Total .....	100	Total .....	100
Working time .....	95.1	93-96	94	None .....	38	None .....	20
Paid leave hours .....	4.9	4- 7	6	Under 1 week .....	2	Under 5 .....	8
Vacations .....	2.3	2- 4	3	1 and under 2 weeks .....	16	5 and under 6 .....	12
Holidays .....	1.8	2- 3	2	2 and under 3 weeks .....	41	6 and under 7 .....	36
Sick leave .....	.6	1- 2	1	3 and under 4 weeks .....	3	7 and under 8 .....	8
Civil and personal leave .....	.1	( <sup>1</sup> )- 1	( <sup>1</sup> )	4 and under 5 weeks .....	1	8 and under 9 .....	6
				5 weeks or more .....	( <sup>1</sup> )	9 and over .....	8

<sup>1</sup> Less than 0.5 percent.<sup>2</sup> Less than 0.05 percent.

NOTE: Due to rounding, sums of individual items may not equal totals.

Table A-5. Composition of Payroll Hours, By Bargaining Agreement Coverage of Construction Workers, Building Construction, 1965

Composition of payroll hours	Percent of hours paid for			Weeks of vacation paid for	Percent of employees receiving vacation pay	Number of holidays paid for	Percent of employees in establishments having the practice
	All establishments	Range in establishments that had paid leave hours					
		Middle range	Median				
Majority covered by bargaining agreements							
All hours paid for .....	100.0	- -	-	Total .....	100	Total .....	100
Working time .....	99.7	99-99	99	None .....	97	None .....	94
Paid leave hours .....	.3	( <sup>1</sup> )-1	( <sup>1</sup> )	Under 1 week .....	1	Under 4 .....	1
Vacations .....	.1	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	1 and under 2 weeks .....	1	4 .....	1
Holidays .....	.2	( <sup>1</sup> )-1	( <sup>1</sup> )	2 and under 3 weeks .....	1	5 .....	1
Sick leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	3 and under 4 weeks .....	( <sup>1</sup> )	6 .....	2
Civic and personal leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	4 and under 5 weeks .....	-	10 .....	( <sup>1</sup> )
				5 weeks or more .....	-	11 .....	1
None or minority covered by bargaining agreements							
All hours paid for .....	100.0	- -	-	Total .....	100	Total .....	100
Working time .....	99.4	98-99	99	None .....	92	None .....	85
Paid leave hours .....	.6	( <sup>1</sup> )-2	1	Under 1 week .....	1	Under 2 .....	1
Vacations .....	.3	( <sup>1</sup> )-2	1	1 and under 2 weeks .....	4	2 .....	2
Holidays .....	.2	( <sup>1</sup> )-1	( <sup>1</sup> )	2 and under 3 weeks .....	3	3 .....	4
Sick leave .....	( <sup>2</sup> )	( <sup>1</sup> )-1	( <sup>1</sup> )	3 and under 4 weeks .....	( <sup>1</sup> )	4 .....	1
Civic and personal leave .....	( <sup>2</sup> )	( <sup>1</sup> )-( <sup>1</sup> )	( <sup>1</sup> )	4 and under 5 weeks .....	( <sup>1</sup> )	5 .....	3
				5 weeks or more .....	-	6 and over .....	3

<sup>1</sup> Less than 0.5 percent.  
<sup>2</sup> Less than 0.05 percent.

NOTE: Due to rounding, sums of individual items may not equal totals.

## Appendix B. Employment in the Contract Construction Industries

Table B-1. Contract construction, average employment by occupational group and sex, 1946-68

Year	Annual average	(Workers in thousands)											
		January	February	March	April	May	June	July	August	September	October	November	December
All employees													
1946	1,861	1,220	1,251	1,375	1,528	1,817	1,701	1,802	1,887	1,923	1,910	1,887	1,826
1947	1,982	1,702	1,681	1,727	1,842	1,936	2,084	2,130	2,194	2,193	2,166	2,102	2,031
1948	2,169	1,930	1,793	1,879	2,021	2,158	2,293	2,353	2,389	2,375	2,340	2,294	2,206
1949	2,165	2,022	1,931	1,953	2,043	2,145	2,215	2,287	2,351	2,351	2,324	2,257	2,098
1950	2,333	1,929	1,870	1,916	2,086	2,258	2,430	2,549	2,648	2,646	2,653	2,592	2,422
1951	2,603	2,299	2,244	2,338	2,489	2,622	2,717	2,791	2,852	2,814	2,812	2,684	2,568
1952	2,634	2,365	2,362	2,355	2,483	2,597	2,751	2,818	2,886	2,870	2,807	2,729	2,579
1953	2,623	2,382	2,362	2,388	2,506	2,600	2,702	2,769	2,830	2,836	2,820	2,720	2,567
1954	2,612	2,288	2,295	2,351	2,497	2,606	2,721	2,793	2,851	2,830	2,792	2,738	2,578
1955	2,802	2,389	2,345	2,464	2,657	2,838	2,979	3,074	3,115	3,099	3,021	2,908	2,731
1956	2,999	2,539	2,529	2,603	2,804	3,012	3,274	3,269	3,361	3,317	3,242	3,112	2,926
1957	2,923	2,595	2,583	2,657	2,811	2,975	3,118	3,168	3,199	3,165	3,107	2,952	2,750
1958	2,778	2,520	2,295	2,419	2,583	2,759	2,884	2,974	3,061	3,071	3,067	2,991	2,715
1959	2,960	2,573	2,456	2,562	2,835	3,024	3,191	3,258	3,323	3,246	3,165	3,032	2,850
1960	2,885	2,584	2,518	2,428	2,755	2,961	3,100	3,192	3,224	3,159	3,114	2,947	2,637
1961	2,816	2,460	2,339	2,457	2,637	2,805	3,015	3,081	3,157	3,114	3,087	2,942	2,702
1962	2,902	2,426	2,418	2,480	2,769	2,961	3,068	3,227	3,284	3,224	3,179	3,036	2,750
1963	2,963	2,556	2,439	2,518	2,800	2,998	3,169	3,291	3,355	3,289	3,236	3,075	2,825
1964	3,050	2,530	2,584	2,668	2,869	3,062	3,259	3,360	3,419	3,333	3,316	3,213	2,990
1965	3,186	2,780	2,691	2,795	2,959	3,197	3,388	3,446	3,546	3,469	3,438	3,345	3,177
1966	3,275	2,941	2,822	2,989	3,162	3,278	3,520	3,615	3,628	3,512	3,434	3,292	3,111
1967	3,203	2,910	2,824	2,875	3,053	3,168	3,341	3,475	3,519	3,440	3,391	3,307	3,134
1968	3,259	2,771	2,893	2,967	3,157	3,255	3,387	3,498	3,553	3,515	3,498	3,374	3,241
Office workers													
1947	223	263	208	211	211	215	226	227	234	233	235	237	240
1948	245	233	224	232	231	242	248	254	252	255	253	259	261
1949	246	153	242	240	226	238	241	244	252	252	252	256	249
1950	264	245	233	236	240	252	266	275	284	283	288	292	287
1951	295	430	279	285	285	293	297	300	304	302	304	304	304
1952	310	278	293	296	304	306	310	317	319	319	319	320	313
1953	318	296	315	313	318	318	319	323	327	319	321	316	316
1954	321	315	310	315	321	327	332	337	343	341	341	343	338
1955	362	349	346	347	355	357	372	371	371	370	369	370	366
1956	386	363	365	368	376	383	402	402	398	402	396	387	388
1957	386	379	372	376	374	384	391	395	396	389	393	390	386
1958	394	388	381	377	381	382	391	398	402	405	407	411	412
1959	422	411	411	412	416	419	427	528	429	425	427	426	425
1960	426	423	421	422	425	426	431	433	429	427	426	425	420
1961	426	416	414	414	421	427	466	431	435	435	432	432	432
1962	440	429	426	429	435	442	445	448	430	445	445	442	439
1963	440	437	435	435	439	439	443	445	446	439	437	437	438
1964	453	437	440	444	447	455	459	514	462	459	459	458	458
1965	476	458	459	463	470	473	482	547	486	483	486	485	482
1966	491	479	484	483	484	484	496	500	500	499	499	497	495
1967	498	492	490	369	497	497	507	507	505	500	498	499	498
1968	509	497	499	502	503	508	511	613	515	516	514	514	513
Construction workers													
1947	1,759	1,499	1,473	1,516	1,631	1,721	1,858	1,903	1,960	1,960	1,931	1,865	1,791
1948	1,924	1,697	1,569	1,647	1,790	1,916	2,045	2,099	2,137	2,120	2,087	2,035	1,945
1949	1,919	1,777	1,689	1,713	1,808	1,907	1,974	2,043	2,099	2,099	2,072	2,001	1,849
1950	2,069	1,695	1,637	1,680	1,846	2,006	2,164	2,274	2,364	2,363	2,365	2,300	2,135
1951	2,308	2,021	1,965	2,053	2,204	2,329	2,420	2,491	2,548	2,512	2,508	2,380	2,264
1952	2,324	2,069	2,069	2,059	2,179	2,291	2,441	2,501	2,567	2,551	2,488	2,409	2,266
1953	2,305	2,067	2,047	2,075	2,188	2,282	2,383	2,446	2,503	2,517	2,499	2,404	2,251
1954	2,281	1,972	1,985	2,036	2,176	2,279	2,389	2,456	2,508	2,489	2,451	2,395	2,240
1955	2,440	2,041	1,999	2,117	2,302	2,481	2,607	2,703	2,744	2,729	2,652	2,538	2,365
1956	2,613	2,173	2,161	2,235	2,428	2,629	2,872	2,867	2,963	2,915	2,846	2,725	2,538
1957	2,537	2,216	2,211	2,281	2,432	2,591	2,727	2,773	2,803	2,776	2,714	2,562	2,364
1958	2,384	2,132	1,914	2,042	2,202	2,377	2,493	2,576	2,659	2,666	2,660	2,580	2,303
1959	2,538	2,162	2,045	2,150	2,419	2,605	2,784	2,830	2,894	2,821	2,738	2,606	2,425
1960	2,459	2,161	2,097	2,006	2,330	2,535	2,669	2,759	2,795	2,732	2,688	2,522	2,217
1961	2,390	2,044	1,925	2,043	2,216	2,378	2,585	2,650	2,722	2,679	2,655	2,510	2,270
1962	2,462	1,997	1,992	2,051	2,334	2,519	2,623	2,779	2,834	2,779	2,734	2,594	2,311
1963	2,523	2,119	2,004	2,083	2,361	2,559	2,726	2,846	2,909	2,850	2,799	2,638	2,387
1964	2,597	2,093	2,144	2,224	2,422	2,607	2,800	2,899	2,957	2,874	2,857	2,755	2,532
1965	2,710	2,322	2,232	2,332	2,489	2,724	2,906	2,962	3,060	2,986	2,952	2,860	2,695
1966	2,784	2,462	2,342	2,506	2,678	2,789	3,024	3,114	3,128	3,013	2,935	2,796	2,616
1967	2,705	2,418	2,334	2,384	2,556	2,671	2,834	2,968	3,014	2,940	2,893	2,808	2,636
1968	2,750	2,274	2,394	2,465	2,654	2,747	2,876	2,985	3,038	2,999	2,984	2,860	2,728
Women													
1964	146	143	146	146	147	146	146	145	147	145	146	145	145
1965	146	145	144	145	146	145	146	148	149	147	147	148	147
1966	150	147	147	147	148	149	152	153	153	152	153	152	150
1967	152	151	150	149	151	150	153	153	154	152	153	154	152
1968	155	153	154	153	152	155	158	156	156	154	156	156	156
Men													
1964	2,904	2,387	2,438	2,522	2,722	2,916	3,113	3,215	3,272	3,188	3,170	3,068	2,845
1965	3,040	2,635	2,547	2,650	2,813	3,022	3,242	3,298	3,397	3,322	3,291	3,107	3,030
1966	3,125	2,790	2,675	2,842	3,014	3,129	3,368	3,462	3,475	3,360	3,281	3,141	3,261
1967	3,053	2,759	2,674	2,726	2,902	3,018	3,188	3,322	3,365	3,288	3,238	3,153	2,982
1968	3,104	2,618	2,739	2,814	3,005	3,100	3,229	3,342	3,397	3,361	3,342	3,218	3,085

Table B-2. General building contractors (SIC 15), average employment by occupational group and sex, 1947-68

Years	(Workers in thousands)												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
All employees													
1947	762	684	667	675	709	735	793	810	831	832	821	804	787
1948	837	756	698	735	787	834	888	904	917	905	891	876	851
1949	809	775	733	738	764	795	821	850	870	865	860	843	794
1950	875	720	697	709	768	839	908	955	996	999	999	986	927
1951	991.4	882.7	845.8	895.2	946.4	998.6	1,040.1	1,065.8	1,089.4	1,073.5	1,075.1	1,013.8	970.6
1952	983.2	891.2	894.0	890.4	925.6	963.3	1,031.3	1,057.0	1,076.2	1,060.6	1,035.4	1,014.1	959.8
1953	969.2	890.6	880.6	893.2	934.0	961.9	1,000.4	1,027.6	1,047.8	1,044.7	1,028.3	988.9	932.1
1954	937.1	819.0	821.5	842.5	898.0	934.4	978.6	1,007.0	1,022.7	1,012.3	1,000.5	982.1	926.8
1955	997.2	854.0	834.2	891.2	950.4	1,004.1	1,057.6	1,101.1	1,114.8	1,091.6	1,061.3	1,031.6	974.9
1956	1,074.6	903.9	896.0	926.0	1,004.6	1,065.0	1,176.0	1,183.3	1,225.6	1,195.4	1,159.7	1,109.7	1,050.1
1957	986.8	925.6	907.9	926.4	976.0	1,013.5	1,045.8	1,082.8	1,066.0	1,032.6	1,004.9	961.5	898.5
1958	893.6	829.8	749.3	793.9	834.2	885.0	917.2	944.2	968.5	971.5	980.7	973.4	875.7
1959	959.0	850.3	801.6	833.0	923.0	980.8	1,039.7	1,055.1	1,073.5	1,043.0	1,015.1	971.9	920.4
1960	908.4	831.7	803.8	756.6	880.4	938.5	980.8	1,010.4	1,010.8	980.7	959.4	918.9	828.2
1961	874.9	772.7	727.2	765.3	817.5	864.6	932.0	954.9	981.8	960.7	956.0	915.2	850.5
1962	882.1	757.3	759.7	767.0	857.2	893.4	924.3	972.6	987.4	960.7	946.9	918.5	840.3
1963	914.1	784.6	745.6	772.1	864.4	913.5	979.0	1,024.4	1,044.1	1,014.0	996.6	956.7	874.5
1964	949.1	789.4	802.8	830.0	887.8	938.5	1,007.0	1,042.2	1,064.4	1,031.7	1,027.0	1,015.2	953.4
1965	994.0	890.9	851.8	879.4	913.7	981.2	1,047.9	1,067.7	1,100.4	1,071.3	1,058.7	1,044.0	1,021.4
1966	1,031.5	955.1	909.8	960.9	1,002.2	1,019.9	1,098.4	1,123.0	1,129.3	1,087.3	1,065.8	1,033.4	992.5
1967	977.5	925.8	891.0	897.9	931.8	956.2	1,002.4	1,037.3	1,058.0	1,030.8	1,019.9	1,006.8	972.2
1968	967.7	852.4	893.3	906.8	940.4	941.6	985.8	1,022.0	1,042.5	1,028.3	1,028.2	998.4	972.0
Office workers													
1947	73	78	70	69	69	70	76	74	76	77	75	78	81
1948	81	66	73	76	77	80	83	83	83	84	82	65	88
1949	78	77	77	76	75	74	77	77	60	80	79	82	82
1950	74	72	74	73	75	79	86	88	91	93	92	96	94
1951	95.6	88.3	88.8	92.2	91.8	94.9	99.9	98.1	99.1	99.8	98.9	98.3	100
1952	100.9	96.2	93.0	94.4	97.2	99.2	100.0	102.5	104.9	105.6	107.6	107.5	106.5
1953	105.9	105.1	104.8	103.6	106.5	105.8	108.0	110.0	110.0	107.5	106.9	103.8	100.7
1954	105.1	100.7	96.1	99.3	103.3	106.5	106.7	106.7	109.4	109.3	109.1	108.0	106.6
1955	117.1	111.0	106.8	112.3	115.0	113.5	123.7	121.1	122.6	122.3	118.9	128.6	129.0
1956	124.2	115.7	118.5	115.7	121.6	123.5	130.5	130.2	132.4	131.7	126.4	121.0	125.0
1957	120.6	122.2	116.2	116.7	119.1	120.6	123.4	126.7	125.8	121.8	120.6	118.3	115.9
1958	118.4	117.9	114.7	113.6	115.6	115.1	116.5	119.0	120.1	120.5	121.6	122.6	123.5
1959	124.6	123.6	123.5	123.0	123.6	124.3	127.3	125.9	126.7	124.9	124.4	124.6	123.7
1960	123.0	123.9	123.2	122.2	121.8	123.2	124.5	124.8	123.4	122.5	123.0	121.8	120.4
1961	122.3	119.6	118.5	118.5	120.4	121.4	123.5	122.9	124.2	123.9	124.3	125.1	124.8
1962	126.3	124.7	121.0	124.3	124.9	125.6	126.8	127.1	124.1	126.7	128.1	128.0	128.2
1963	127.1	128.1	120.0	127.0	126.9	125.5	126.0	127.7	127.7	126.8	127.1	127.5	127.4
1964	131.8	127.4	127.6	128.3	129.5	130.3	132.0	132.9	127.6	134.6	134.6	137.4	135.4
1965	141.3	136.7	138.8	138.1	139.0	140.6	142.9	144.8	134.4	162.9	142.5	142.5	142.6
1966	143.5	142.0	141.7	143.0	143.7	143.8	144.0	146.1	144.8	144.3	143.5	142.6	142.1
1967	142.2	140.8	141.1	140.3	140.7	140.4	143.2	183.3	143.4	143.6	141.3	144.2	144.3
1968	145.0	145.0	144.0	144.2	162.8	145.5	145.7	144.9	145.5	147.1	145.5	145.0	144.1
Construction workers													
1947	689	616	597	606	640	665	717	736	755	755	746	726	706
1948	756	680	625	659	710	754	805	821	834	821	809	791	763
1949	731	698	656	662	689	721	744	773	790	785	781	761	712
1950	791	648	623	636	693	760	822	867	905	905	907	890	833
1951	895.8	794.4	757	803	854.6	903.7	942.3	967.7	990.3	973.7	976.2	915.5	870.6
1952	882.3	795.0	801	796	828.4	864.1	931.3	954.5	971.8	955.6	929.8	906.6	853.3
1953	863.3	785.5	775.8	789.6	827.5	856.1	892.4	917.6	937.8	939.2	921.4	885.1	831.4
1954	832.0	718.3	725.4	743.1	794.7	827.9	871.9	900.3	913.3	903.0	891.4	874.1	820.2
1955	880.1	743.0	722.4	778.9	835.4	890.6	933.9	980.0	992.2	969.3	942.4	913.0	859.9
1956	950.4	788.2	779.5	810.3	883.0	941.5	1,045.5	1,053.1	1,093.2	1,063.9	1,033.3	988.7	925.1
1957	866.2	803.4	791.7	809.7	856.9	892.9	922.4	956.1	940.2	910.8	884.3	843.2	782.6
1958	775.2	711.9	634.6	680.3	718.3	769.9	800.7	825.2	848.4	851.0	859.1	850.8	752.2
1959	834.4	726.7	678.1	710.0	799.4	856.5	912.4	929.2	946.8	918.1	890.7	847.9	796.9
1960	785.4	707.8	680.6	634.4	758.6	815.3	856.3	885.6	886.6	858.2	836.4	797.1	707.8
1961	752.6	653.1	608.7	646.8	697.1	743.2	808.5	832.0	857.7	826.8	831.7	790.1	725.9
1962	755.8	632.6	635.7	642.7	732.3	767.8	797.5	845.5	859.7	834.0	818.8	790.5	712.1
1963	787.0	656.5	617.6	645.1	737.5	788.0	853.0	896.7	916.5	887.2	869.5	829.2	747.1
1964	817.3	662.0	675.2	701.7	758.3	808.2	875.0	909.3	930.0	897.1	892.4	879.8	818.0
1965	852.7	754.2	713.0	741.3	774.7	840.6	905.0	922.9	955.6	928.4	916.2	901.5	878.8
1966	888.0	813.1	768.1	817.9	858.5	876.1	954.4	976.9	984.5	943.4	922.3	890.8	850.4
1967	835.3	785.0	749.9	757.6	791.1	815.8	859.2	894.0	914.6	887.2	878.6	862.6	827.9
1968	822.7	707.4	749.3	762.6	797.6	796.1	840.1	887.7	897.0	881.2	882.7	853.4	827.9
Women													
1964	42.2	41.6	42.3	42.1	42.3	42.1	42.9	42.2	43.0	41.9	41.9	42.0	41.7
1965	42.0	42.1	41.8	41.4	42.5	41.9	42.0	42.0	43.6	42.1	41.5	41.5	41.6
1966	41.9	42.3	42.2	42.3	41.9	42.3	43.1	42.2	42.1	41.6	41.3	40.8	40.6
1967	40.4	41.1	40.4	40.4	40.0	40.4	40.4	40.1	40.3	40.1	40.4	40.6	40.7
1968	40.2	41.5	41.5	41.3	39.5	40.1	41.1	39.5	39.6	39.0	39.2	39.8	39.8
Men													
1964	906.9	747.8	760.5	787.9	845.5	896.4	964.1	1,000.0	1,021.4	989.8	985.1	973.2	911.7
1965	952.0	848.8	810.0	838.0	871.2	939.3	1,005.9	1,025.7	1,056.8	1,029.2	1,017.2	1,002.5	979.6
1966	977.5	912.8	867.6	918.6	871.8	977.6	1,055.3	1,080.8	1,087.2	1,024.5	1,024.5	992.6	951.9
1967	937.1	849.9	850.6	857.5	962.2	915.8	963.0	997.2	1,017.7	990.9	979.5	966.2	931.5
1968	927.5	810.9	851.8	865.5	901.8	901.5	944.7	982.5	1,002.9	989.3	989.0	958.6	932.2

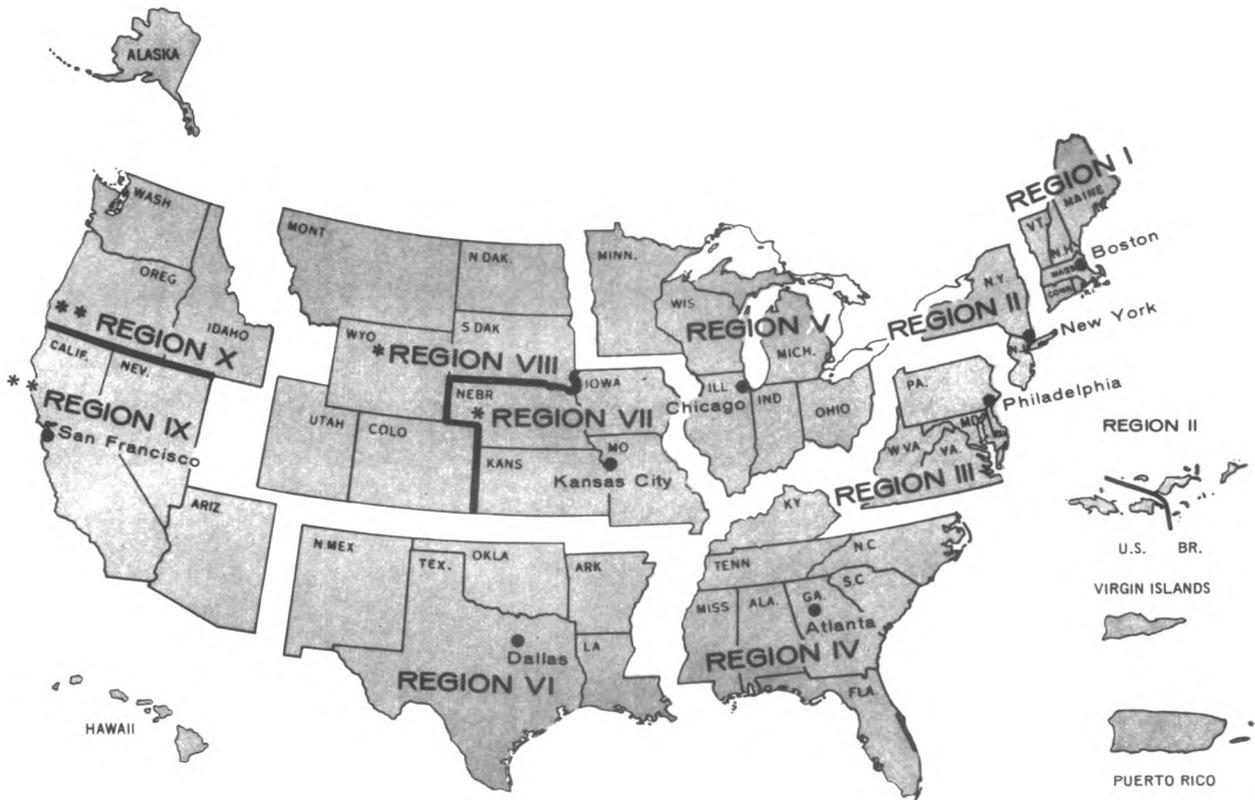
Table B-3. Heavy construction contractors (SIC 16), average employment by occupational group and sex, 1947-68

Year	(Workers in thousands)												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
All employees													
1947	363	264	264	276	321	364	408	425	442	435	420	385	245
1948	389	309	276	294	344	393	430	449	461	458	447	424	378
1949	401	322	308	327	373	417	441	458	474	471	449	419	352
1950	419	304	290	305	362	414	463	488	516	509	503	475	401
1951	461.6	357.9	346.4	368.5	433.3	480.6	513.1	530.5	543.8	530.5	522.8	476.6	434.9
1952	481.4	374.1	379.6	384.2	441.2	489.3	526.8	542.2	569.8	565.1	551.6	507.1	445.6
1953	480.1	388.3	390.5	397.9	443.5	485.3	515.6	530.1	557.1	553.2	548.2	504.5	447.4
1954	471.0	374.9	380.0	400.5	448.5	495.9	523.6	535.7	545.2	531.3	514.9	485.7	416.0
1955	483.8	363.8	354.2	375.3	434.3	493.3	534.8	562.6	572.1	575.2	559.2	524.4	456.3
1956	556.7	399.6	401.3	431.8	499.9	588.1	664.1	647.7	660.1	652.2	632.6	563.7	519.4
1957	576.0	449.6	442.5	460.1	522.5	600.9	644.3	663.5	679.9	672.4	656.3	596.7	523.2
1958	564.6	457.4	400.9	432.4	503.0	580.8	625.3	646.7	670.4	677.4	660.0	612.3	508.9
1959	586.5	438.7	416.2	458.7	551.8	625.6	676.3	697.4	710.1	683.0	657.6	602.6	519.9
1960	585.7	439.9	435.1	425.2	525.8	617.7	672.4	698.0	713.1	695.5	685.1	619.0	501.9
1961	583.3	447.7	423.0	454.8	526.5	602.2	668.2	685.9	700.0	694.9	678.0	613.3	505.2
1962	593.1	430.5	429.3	455.3	544.2	631.4	659.9	715.8	726.8	708.5	689.0	618.5	508.1
1963	599.2	444.2	416.5	445.8	546.9	633.8	688.8	715.4	730.9	717.8	699.5	624.3	526.6
1964	613.9	432.8	448.4	471.5	555.3	643.9	705.3	731.7	743.6	722.3	711.0	650.9	550.5
1965	648.5	477.4	455.5	496.6	574.3	675.9	739.3	755.0	788.5	760.8	752.7	703.4	602.3
1966	673.5	519.3	486.5	534.9	634.1	697.2	775.8	802.0	801.7	778.9	761.6	695.4	594.2
1967	666.1	533.8	521.8	539.7	613.6	673.9	739.9	776.4	787.3	768.5	744.1	694.0	600.7
1968	688.3	488.0	519.3	557.1	646.0	725.9	767.9	798.4	809.5	796.8	783.0	720.0	647.6
Office workers													
1947	42	35	37	40	39	40	42	44	45	44	46	45	45
1948	46	41	40	41	42	44	65	19	47	48	49	50	49
1949	47	54	44	41	46	46	47	48	49	49	49	49	46
1950	49	42	41	42	45	46	50	52	55	53	55	56	54
1951	54.6	48.3	49.5	50.1	53.7	59.3	55.9	57.8	57.6	56.2	57.5	57.2	57.4
1952	57.8	64.6	55.5	56.5	59.1	57.7	58.1	60.2	59.8	61.0	60.1	57.8	43.5
1953	53.4	53.6	53.9	53.7	55.4	55.3	53.6	52.5	52.9	53.1	42.1	51.5	43.2
1954	52.3	52.1	52.8	53.7	52.5	51.6	53.4	52.5	53.4	51.5	50.5	53.4	49.9
1955	54.1	52.1	51.0	51.0	51.7	53.3	52.4	55.1	54.9	54.1	55.9	59.3	58.9
1956	63.3	56.6	58.2	59.6	62.0	64.1	67.7	67.4	63.4	67.2	67.1	63.0	63.4
1957	63.1	61.6	60.2	61.2	61.7	63.1	76.1	63.0	62.6	63.2	65.6	66.8	66.5
1958	66.5	67.4	65.9	64.4	65.0	64.5	70.2	67.2	67.6	68.0	67.3	67.9	66.6
1959	69.7	66.8	67.1	67.2	69.4	69.7	75.8	71.0	71.7	70.2	70.9	71.4	70.8
1960	74.2	69.7	70.2	71.1	72.3	72.7	75.8	77.0	77.3	77.8	76.2	75.5	74.9
1961	77.6	73.3	74.1	74.1	76.4	70.5	78.6	80.2	80.2	79.9	79.2	78.1	78.2
1962	78.3	77.1	74.5	77.1	78.2	79.0	79.7	78.6	81.8	79.5	78.7	77.4	76.3
1963	76.7	75.3	74.2	74.4	76.6	76.8	86.5	81.0	87.4	76.0	77.3	77.5	78.6
1964	84.3	79.7	81.0	82.7	83.7	86.8	90.0	98.4	87.4	86.1	85.3	82.2	84.4
1965	88.4	84.1	82.5	84.9	87.2	87.7	94.5	89.6	91.7	91.2	91.5	80.3	89.5
1966	93.1	88.5	89.1	90.7	91.2	92.3	95.4	95.4	95.9	95.2	97.1	94.7	91.9
1967	93.7	91.8	91.9	91.6	93.0	94.7	98.2	98.9	86.3	94.4	92.7	91.9	91.9
1968	95.8	99.8	90.8	92.8	95.0	96.1	97.0	97.5	98.6	98.8	99.1	97.1	97.0
Construction workers													
1947	321	229	227	238	282	324	366	381	397	391	374	340	300
1948	343	268	236	253	302	349	385	400	414	410	398	374	329
1949	354	278	264	283	327	371	394	410	425	422	400	370	306
1950	370	262	249	263	317	368	413	436	461	456	448	419	347
1951	407.0	309.6	296.9	318.4	379.6	426.3	457.2	472.7	486.2	474.3	465.3	419.4	377.5
1952	423.6	319.5	324.3	327.7	382.1	431.6	468.7	482.0	510.0	504.1	491.5	449.3	392.1
1953	426.7	334.7	336.6	344.2	388.1	430.0	462.0	477.6	504.2	500.1	496.1	453.0	394.2
1954	418.7	322.8	327.2	346.8	396.0	444.3	470.2	483.2	491.8	479.8	464.4	432.3	366.1
1955	429.7	311.8	303.2	324.3	382.6	440.0	482.4	507.5	517.2	521.1	503.3	465.1	397.4
1956	493.4	343.3	343.1	372.2	437.9	524.0	596.4	580.3	596.7	585.0	565.5	520.7	456.0
1957	512.9	388.0	382.3	398.9	460.8	537.8	583.7	600.5	617.3	609.2	590.7	529.9	455.7
1958	498.1	390.0	335.0	368.0	438.0	516.3	559.2	579.2	602.8	609.4	592.7	544.4	442.3
1959	516.8	371.9	349.1	391.5	482.4	555.9	606.1	626.4	638.4	612.8	586.7	531.2	449.1
1960	511.5	370.2	364.9	354.1	453.5	545.0	596.6	621.0	635.8	617.7	608.9	543.5	427.0
1961	505.7	374.4	348.9	380.7	450.1	521.7	589.6	607.3	619.8	615.0	598.8	535.2	427.0
1962	514.8	353.4	354.8	378.2	466.0	552.4	580.2	634.8	645.0	629.0	610.3	541.1	431.8
1963	522.5	368.9	342.3	371.4	470.3	557.0	611.3	636.9	653.5	641.8	622.2	546.8	448.0
1964	529.6	353.1	367.4	388.8	471.5	557.1	618.8	645.0	656.2	636.2	625.7	568.7	466.1
1965	560.1	393.3	373.0	411.7	487.1	588.2	649.3	665.4	696.8	669.6	661.2	613.1	512.8
1966	580.4	430.8	397.4	444.2	542.9	604.9	681.3	706.6	705.8	683.7	664.5	600.7	502.3
1967	572.4	442.0	429.9	448.1	520.6	579.2	641.7	679.5	691.0	674.1	651.4	602.1	508.8
1968	592.5	398.2	428.5	464.3	551.0	629.8	670.9	700.9	710.9	698.0	683.9	622.9	550.6
Women													
1964	21.0	19.5	19.9	19.9	20.6	20.9	21.2	21.7	22.2	22.1	21.7	21.2	21.1
1965	22.0	20.2	20.3	20.9	21.1	21.3	22.2	23.0	23.4	23.1	23.2	22.8	22.5
1966	24.0	22.6	22.3	22.4	23.2	23.7	24.5	25.2	25.3	24.8	25.0	24.8	23.6
1967	24.7	23.7	23.7	23.2	23.9	24.1	25.3	25.7	26.0	25.4	25.2	25.2	24.5
1968	26.4	24.4	24.4	24.4	25.3	26.3	27.2	27.1	27.7	27.6	27.7	27.8	27.4
Men													
1964	613.9	413.3	435.2	451.6	534.7	623.0	684.1	710.0	721.4	700.2	689.3	629.7	529.4
1965	592.9	457.2	464.2	475.7	553.2	654.6	717.1	732.0	765.1	737.7	729.5	680.6	579.9
1966	626.5	496.7	498.1	514.0	610.9	673.5	751.3	776.8	776.4	754.1	736.6	670.6	570.4
1967	649.5	510.1	494.9	516.5	589.7	649.8	714.6	749.7	761.3	743.1	718.9	668.8	576.2
1968	426.9	463.6	494.9	532.7	620.7	699.6	740.7	771.3	781.8	769.2	755.3	692.2	620.2

Table B-4. Special trades contractors (SIC 17), average employment by occupational group and sex, 1947-68

Year	(Workers in thousands)												
	Annual average	January	February	March	April	May	June	July	August	September	October	November	December
<b>All employees</b>													
1947	857	754	750	774	812	837	883	895	921	926	925	913	899
1948	944	865	819	850	890	931	975	1,000	1,011	1,012	1,002	994	977
1949	955	925	890	888	906	933	953	979	1,007	1,015	1,015	995	952
1950	1,039	905	883	902	956	1,005	1,059	1,106	1,136	1,139	1,151	1,131	1,094
1951	1,149.6	1,058.1	1,051.7	1,074.5	1,109.6	1,142.4	1,164.0	1,195.0	1,218.7	1,210.4	1,214.1	1,193.3	1,162.8
1952	1,168.8	1,099.5	1,087.9	1,080.0	1,115.9	1,144.4	1,192.4	1,218.9	1,240.0	1,244.2	1,220.2	1,207.6	1,174.0
1953	1,174.0	1,102.6	1,090.4	1,096.4	1,128.5	1,153.0	1,185.8	1,210.8	1,225.3	1,238.2	1,243.1	1,226.9	1,187.1
1954	1,203.5	1,094.3	1,093.8	1,108.0	1,150.5	1,175.8	1,218.8	1,250.2	1,282.8	1,286.8	1,276.1	1,269.7	1,234.8
1955	1,320.8	1,171.6	1,156.3	1,197.9	1,272.0	1,340.8	1,386.5	1,410.1	1,428.4	1,432.2	1,400.9	1,352.1	1,300.2
1956	1,367.6	1,235.6	1,231.3	1,245.1	1,299.7	1,359.1	1,433.7	1,437.7	1,475.0	1,469.3	1,450.1	1,418.5	1,356.6
1957	1,360.6	1,219.4	1,232.8	1,270.1	1,312.7	1,360.4	1,428.0	1,422.1	1,452.8	1,460.4	1,445.5	1,393.9	1,328.5
1958	1,320.2	1,233.2	1,145.1	1,192.7	1,246.2	1,293.5	1,341.4	1,383.5	1,422.2	1,422.3	1,426.6	1,405.2	1,330.5
1959	1,414.1	1,284.3	1,237.9	1,269.9	1,360.3	1,417.3	1,475.1	1,505.5	1,539.2	1,519.7	1,492.1	1,457.7	1,409.7
1960	1,390.7	1,312.0	1,278.7	1,246.1	1,348.9	1,404.5	1,446.5	1,483.4	1,499.7	1,483.1	1,469.8	1,409.2	1,306.4
1961	1,357.9	1,285.4	1,188.3	1,236.7	1,292.6	1,338.6	1,414.5	1,440.5	1,474.8	1,457.9	1,452.7	1,413.1	1,346.1
1962	1,426.6	1,288.5	1,228.8	1,258.1	1,367.4	1,435.7	1,483.5	1,539.0	1,569.6	1,555.0	1,542.6	1,498.8	1,401.7
1963	1,449.3	1,327.5	1,277.2	1,299.6	1,388.8	1,450.6	1,501.4	1,551.5	1,579.6	1,557.4	1,539.4	1,494.2	1,424.2
1964	1,487.0	1,307.3	1,332.6	1,366.3	1,426.3	1,479.4	1,546.5	1,585.9	1,611.2	1,578.8	1,577.6	1,546.4	1,485.8
1965	1,543.4	1,411.9	1,383.5	1,418.9	1,470.8	1,539.7	1,600.3	1,623.5	1,657.4	1,636.7	1,626.5	1,598.0	1,523.1
1966	1,570.6	1,466.9	1,425.8	1,493.4	1,526.1	1,561.1	1,645.9	1,689.7	1,697.4	1,645.6	1,606.5	1,564.5	1,523.8
1967	1,559.5	1,450.5	1,410.8	1,437.6	1,507.4	1,538.3	1,595.9	1,661.4	1,674.1	1,641.1	1,626.9	1,605.9	1,561.1
1968	1,602.9	1,430.1	1,480.6	1,530.1	1,570.5	1,587.1	1,633.7	1,677.0	1,700.7	1,689.5	1,686.5	1,655.1	1,621.0
<b>Construction workers</b>													
1947	749	654	649	672	709	732	775	786	808	814	811	799	785
1948	825	749	708	735	778	813	855	878	889	889	880	870	853
1949	834	801	769	768	792	815	836	860	884	892	891	870	831
1950	908	785	765	781	836	878	929	971	998	1,002	1,010	991	955
1951	1,005.2	917.4	910.8	931.6	969.8	998.5	1,020.8	1,050.4	1,071.2	1,063.9	1,066.0	1,045.3	1,016.3
1952	1,018.2	954.4	943.2	935.3	968.6	995.6	1,041.0	1,064.1	1,085.0	1,091.2	1,066.5	1,053.0	1,020.2
1953	1,015.2	947.1	934.5	940.7	972.8	996.2	1,028.1	1,051.0	1,061.1	1,077.2	1,081.5	1,066.2	1,025.7
1954	1,030.5	931.2	931.9	946.2	984.8	1,006.5	1,046.9	1,072.7	1,103.2	1,106.6	1,094.9	1,088.1	1,053.3
1955	1,130.1	986.5	973.6	1,013.4	1,083.7	1,150.4	1,191.0	1,215.5	1,234.1	1,238.9	1,206.2	1,160.1	1,107.8
1956	1,168.8	1,041.6	1,038.0	1,052.1	1,107.4	1,163.4	1,230.1	1,233.5	1,272.9	1,266.5	1,247.1	1,215.7	1,157.2
1957	1,158.2	1,024.3	1,036.8	1,072.0	1,114.5	1,160.4	1,220.9	1,215.9	1,245.0	1,255.5	1,238.8	1,189.0	1,125.2
1958	1,110.3	1,030.0	944.0	993.4	1,045.9	1,090.4	1,133.4	1,171.6	1,207.9	1,205.8	1,208.6	1,184.3	1,108.5
1959	1,186.9	1,063.2	1,017.4	1,048.2	1,136.9	1,192.1	1,245.7	1,274.6	1,308.8	1,289.9	1,260.5	1,226.7	1,178.7
1960	1,162.3	1,082.9	1,051.2	1,017.7	1,118.3	1,175.1	1,216.4	1,252.4	1,272.5	1,255.7	1,242.4	1,181.1	1,081.7
1961	1,131.3	1,016.8	967.8	1,015.3	1,068.4	1,113.0	1,186.7	1,210.4	1,244.8	1,227.0	1,224.0	1,184.2	1,117.3
1962	1,191.8	1,010.6	1,001.5	1,030.3	1,135.7	1,199.1	1,245.2	1,298.9	1,329.1	1,316.2	1,304.8	1,262.7	1,167.3
1963	1,213.9	1,093.5	1,044.1	1,066.5	1,152.9	1,214.0	1,262.0	1,312.6	1,339.1	1,320.6	1,306.8	1,262.1	1,191.6
1964	1,260.2	1,078.2	1,101.7	1,133.9	1,191.7	1,241.2	1,306.4	1,344.3	1,371.1	1,340.8	1,338.8	1,306.8	1,248.0
1965	1,297.2	1,174.4	1,146.0	1,179.1	1,227.4	1,294.9	1,352.1	1,373.7	1,407.9	1,387.9	1,374.9	1,345.3	1,303.1
1966	1,315.2	1,218.2	1,176.0	1,243.4	1,276.3	1,308.2	1,388.3	1,430.9	1,438.0	1,385.9	1,348.6	1,304.5	1,263.7
1967	1,296.9	1,190.8	1,154.4	1,178.7	1,244.2	1,276.3	1,332.9	1,394.2	1,407.9	1,378.3	1,363.3	1,343.0	1,298.8
1968	1,335.1	1,168.7	1,215.7	1,238.4	1,305.4	1,324.1	1,364.9	1,406.6	1,430.0	1,420.1	1,417.3	1,383.4	1,349.1
<b>Office workers</b>													
1947	108	100	101	102	103	105	108	109	113	112	114	114	114
1948	119	116	111	115	112	118	120	122	122	123	122	124	124
1949	121	120	121	120	114	118	117	119	123	123	124	125	121
1950	131	120	118	121	120	127	130	135	138	137	141	140	139
1951	144.4	140.7	140.9	142.9	139.8	143.9	143.2	144.6	147.5	146.5	148.1	148.0	146.5
1952	150.6	145.1	144.7	144.7	147.3	148.8	151.4	154.8	155.0	153.0	153.7	154.6	153.8
1953	158.8	155.5	155.9	155.7	156.7	156.8	157.4	159.5	164.2	161.0	161.6	160.6	161.4
1954	173.0	163.1	161.9	161.8	165.7	179.6	171.9	177.5	179.6	180.2	181.2	181.6	181.5
1955	190.7	185.1	182.7	184.5	188.3	190.4	195.5	194.6	194.3	194.7	194.7	192.0	192.4
1956	198.8	194.0	193.3	193.0	192.4	195.7	203.6	204.2	202.1	202.8	203.0	202.9	199.4
1957	202.4	195.1	196.0	198.1	198.2	200.0	207.1	206.2	207.8	204.5	206.7	204.9	203.3
1958	209.9	203.2	201.1	209.3	200.3	203.1	208.0	211.9	214.3	216.5	218.0	220.9	222.0
1959	229.2	221.1	220.5	221.7	223.4	225.2	229.4	231.0	230.4	229.8	231.5	231.0	231.0
1960	228.4	229.1	227.5	228.4	230.6	229.4	227.8	230.1	227.2	227.4	227.4	228.1	224.7
1961	226.6	222.6	222.5	224.4	224.2	225.6	227.8	230.1	230.0	230.9	228.7	228.9	228.8
1962	234.8	227.9	227.3	227.8	231.7	236.6	238.3	240.1	240.5	238.8	237.8	236.1	234.4
1963	235.4	234.0	233.1	232.7	235.0	236.6	239.4	238.9	240.5	238.8	232.6	229.1	232.6
1964	236.8	229.1	230.9	232.4	231.8	234.8	240.1	241.6	240.1	238.0	238.8	239.6	237.8
1965	246.2	237.5	237.5	239.8	242.9	248.2	248.2	249.8	249.5	248.8	251.6	252.7	250.0
1966	255.4	248.7	249.8	254.3	249.8	252.9	257.6	258.8	259.4	259.7	257.9	260.0	260.1
1967	262.6	259.7	256.4	258.9	263.2	262.0	266.0	267.2	266.2	262.8	263.6	262.9	262.3
1968	267.8	261.4	264.9	264.7	265.1	263.0	268.8	270.4	270.7	269.4	269.2	271.7	271.9
<b>Women</b>													
1947	82.4	82.0	83.4	84.4	83.9	83.0	82.3	81.5	81.8	82.1	82.1	81.6	82.1
1948	82.4	82.8	82.1	82.8	82.2	81.7	81.7	82.5	82.1	81.2	82.7	83.8	82.7
1949	84.3	82.0	82.1	82.6	83.2	82.8	84.8	85.8	85.5	85.1	86.2	86.0	85.6
1950	86.6	85.9	85.4	85.0	86.7	85.9	87.1	87.5	87.3	86.2	87.2	88.1	86.6
1951	88.3	86.8	87.7	87.5	87.0	88.8	89.3	89.4	88.6	87.7	88.6	88.5	89.1
<b>Men</b>													
1947	1,404.6	1,225.3	1,249.2	1,281.9	1,342.4	1,396.8	1,462.4	1,504.4	1,529.4	1,497.6	1,495.5	1,464.8	1,403.7
1948	1,461.0	1,329.1	1,301.4	1,336.7	1,388.6	1,458.0	1,518.6	1,541.0	1,575.3	1,554.6	1,543.8	1,514.2	1,470.4
1949	1,486.3	1,389.9	1,343.7	1,410.8	1,442.9	1,478.3	1,561.1	1,603.9	1,611.9	1,560.5	1,520.3	1,478.5	1,438.2
1950	1,472.9	1,364.6	1,328.7	1,388.6	1,420.7	1,452.4	1,511.8	1,573.9	1,586.8	1,554.9	1,539.7	1,517.8	1,474.5
1951	1,514.6	1,343.3	1,392.9	1,442.6	1,483.5	1,498.3	1,544.4	1,587.6	1,612.1	1,601.8	1,597.9	1,566.6	1,531.9

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