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TEMPORARY NATIONAL ECONOMIC COMMITTEE

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MONOGRAPH No. 14

HOURLY EARNINGS OF EMPLOYEES IN LARGE AND SMALL ENTERPRISES

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HOURLY EARNINGS OF EMPLOYEES IN LARGE AND SMALL ENTERPRISES

JACOB PERLMAN

II

ACKNOWLEDGMENT

This monograph was written by

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The Temporary National Economic Committee is greatly indebted to the author for this contribution to the literature of the subject under review.

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(Signed) JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

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LETTER OF TRANSMITTAL

AUGUST 15, 1940.

Hon. JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee;
United States Senate, Washington, D. C.

SIR: I have the honor to transmit this report on Hourly Earnings of Employees in Large and Small Enterprises, prepared by the Bureau of Labor Statistics for the Temporary National Economic Committee. This study is illustrative, not comprehensive, but it indicates that in many industries concentration of ownership in a few companies is accompanied by higher hourly earnings for workers and suggests the value of continuing studies along this general line.

The consequences of "bigness" in American industry to our economic well-being have been approached from various angles by the Temporary National Economic Committee. This volume analyzes the importance of size to the earnings of workers. The basic comparisons are between the average hourly earnings of employees of the largest companies and those of the smaller companies in each of 16 industries whose wage structures have been surveyed in detail by the Bureau of Labor Statistics. It is clear, from this limited analysis, that workers in the plants of big companies have higher earnings than those in small companies, in industries in which concentration of ownership centers control of a large share of the industry in a few companies. Differentials in earnings do not appear clearly in industries in which ownership is more diffused.

Earnings differences between employees in establishments (or plants) of different sizes are also discussed. A brief appendix summarizes a limited inquiry into the comparative stability of employment provided by large and small companies, indicating no clear difference between the two groups in the same industry.

The wage structure of American industry is complex. Each industry has its own pattern, in most cases an intricate one. Average hourly earnings may differ in accordance with the region and the size of the community in which they are located, the size of the company which owns them, and the size of the plant itself. In some instances, differences apparently attributable to one of these factors merely reflect the influence of the others. Thus, in many industries size of establishment appears to be the basis for differences in average hourly earnings, only to disappear when allowance is made for levels of earnings in the region and size of community in which the plants are located. In other cases these differences are explained by the composition of the working force in each plant as between workers of different skills, or sexes, or races; but generally the differences hold good for workers of the same sex and race doing the same job.

Workers at the same job in the meat-packing, iron and steel, and electrical-goods industries and in the manufacture of radio sets, explo-

sives, soap, fertilizers, and chewing and smoking tobacco and snuff had higher hourly earnings when employed by one of the biggest concerns in their industry than when working for a smaller company. This difference was not a function of region, size of community, or size of establishment, and could not be explained by unionization.

On the other hand, there was no relation between the size of average hourly earnings and the size of company in the shoe, leather, cotton goods, woolen and worsted goods, hosiery, knitted underwear and outerwear, radio parts and tubes, and furniture industries. Thus, size of company appears to be a significant factor only in those industries in which a substantial share of the total business is done by a few companies, not in the industries in which ownership is more widely diffused.

In very few of these industries were there clear differences between the average hourly earnings of employe in plants of different sizes. An exception appears to be provided by bituminous coal mines.

This report has been written by Jacob Perlman, Chief of the Division of Wage and Hour Statistics of the Bureau of Labor Statistics, with the assistance of Edwin M. Martin, of the Temporary National Economic Committee Studies Section of the Bureau of Labor Statistics, under the general direction of Aryness Joy. Mr. Perlman has drawn largely upon materials assembled in his Division over a period of years and has been assisted in this study by E. B. Morris and other members of his staff. The data on average hourly earnings by size of establishment in chapter III were compiled for this report by Edwin M. Martin, Marshall Spaulding, Manuel Cambouri, and Harry Brenner, of the Temporary National Economic Committee Studies Section.

There follows for the convenience of the committee, a brief summary of the contents of this report.

Respectfully submitted.

ISADOR LUBIN,
Commissioner of Labor Statistics.

SUMMARY

Considerable discussion has been devoted in recent years to the role played by large corporations in the economic life of the Nation. The rapid progress of integration in industry, which has resulted in the gradual elimination of small business in many industries, has received wide attention. For the most part, however, this attention has been directed toward the effect of concentration upon financial control and upon price and market controls in relation to the functioning of the economy. One important question has rarely been raised: Is the growth of "big business" beneficial to workers, as measured by earnings?

In order to answer this question, the Bureau of Labor Statistics has undertaken this inquiry for the Temporary National Economic Committee, with particular regard to the earnings of workers in relation to the size of the company and of the plant in which they are employed. In the course of this inquiry, information available from previously conducted studies of wages and hours has been assembled and analyzed. One important conclusion reached as a result of this analysis is that in some industries in which ownership is concentrated to a high degree in a small group of large companies, higher earnings are generally found in the plants of the larger companies than in those of their smaller competitors. In other industries in which ownership is more diffused and no large companies dominate the field, there appears to be no clear relationship between earnings and size of company or size of establishment.

In 8 of the 16 different industries whose wage structures the Bureau of Labor Statistics has analyzed by size, earnings varied by size of company, with differences in favor of the larger firms. These 8 industries include 3 of the largest employers of labor—meat packing, iron and steel, and electrical goods, as well as those engaged in the manufacture of radio sets, explosives, soap, fertilizers, and cigarettes and chewing and smoking tobacco. In each of these industries, there is a high degree of concentration in a few large companies. A group of 8 other industries, in which there was no clear relation between hourly earnings and size of enterprise, included shoes, leather, radio parts and tubes, furniture, hosiery (full-fashioned and seamless), knitted underwear and outerwear, cotton goods, and woolens and worsteds.[1]

In the eight industries in which the large companies in general showed higher earnings than smaller enterprises, it was rarely true that the same level prevailed in all of the establishments of a corporation. Quite frequently, a large company adapted its wage level to local conditions, with higher hourly earnings in its northern than in its southern plants and in large communities than in small towns. In each industry, however, employees of the large concerns received con-

[1] A number of other industries have also been surveyed, but in most of them the number of establishments or the number of workers covered was not large enough to permit a sufficiently detailed classification of the data to determine whether size of enterprise was an independent factor influencing the wage structure, or whether other factors were more important.

siderably higher hourly pay than those of the other group of small or middle-sized companies in the same locality.

The reasons for these differences in favor of large companies are beyond the scope of this report; to determine them would require a much more detailed inquiry, with considerable emphasis upon finance, location, technology, research, and engineering, which the Bureau has not been equipped to undertake. However, it is quite often true that higher rates of pay are justified by the executives of large companies on the ground that they make it possible to obtain the best employees in the labor market. This is more readily possible, of course, in an industry where labor costs are a fairly low percentage of total costs of production and have little effect on the margin of profit. Said an executive of a large soap company: "The labor cost involved in a cake of soap is so small that we can afford to pay high wages and command the best there is in the labor market." It is also sometimes stated that higher rates are paid because of the desire on the part of officials to maintain a good morale in the labor force. The relatively high hourly earnings of employees of the large companies are often the result of piece work and production bonus or incentive plans which are designed to encourage efficiency among the workers and thereby to reduce labor costs by sharing with them the savings resulting from greater output.

In addition to any conscious desire to pay higher wages, the ability of the large companies to follow this policy must also be considered. Good and efficient management was given by the president of a large international union as the reason why workers in a certain corporation were able to earn considerably more per hour than those in other companies in the industry. Good management, however, is the result of many factors. There are certain economies that can only be achieved by placing numerous establishments under a single ownership. These economies may emanate from the control or advantageous purchase of raw materials, from the ability to maintain large research organizations to improve technical processes and machines and to replace old machines and production processes with new ones, from the possibility of salvaging and manufacturing certain byproducts (which in raw or semifinished form could be sold only at scrap prices), from the reduction of the cost of distribution by large-scale advertising and better utilization of sales organizations. Finally, there is also the element of market control, which results from the advantages of controlling patents on machines and processes, as well as the ability to exercise a degree of control over prices which might otherwise force a lower wage level.

In the course of this inquiry, the influence of size of establishment as distinguished from size of company on the level of hourly earnings was also analyzed to determine whether any possible economies of operation and management associated with the size of the individual operation, regardless of the size of the ownership unit, contribute to higher earnings in large plants than in small ones. There is no clear evidence that this is the case, with a few exceptions such as bituminous-coal mines. Available Nation-wide statistics on average hourly earnings for groups of single plants of various size (regardless of ownership) appeared at first to indicate that there is a definite relationship. On more detailed analysis—by location, size of company, type of product, and composition of labor force—for a few industries for

which such analysis is possible, it appeared that these other factors are more important than size of plant.

In any study of workers' earnings, it is important to be fully aware of the many variations which exist. These variations are associated not only with size of company, but with differences in the location of industrial plants in different parts of the country and in communities of different size, in the nature of the product and the composition of the labor force with reference to skill, race, sex, in the occupations in the industry, and, by no means least, in the ability of management.

The numerous differences in the wage structure and the patterns which it presents are the subject of chapter I of this report. Chapter II presents a summary of differences in workers' earnings which are associated with size of company. Chapter III analyzes existing information on wage differences associated with size of plant. Appendixes A to E present in detail the information collected by the Bureau of Labor Statistics on variations in wages and hours by size of company or of establishment in a number of selected industries.

CHAPTER I

VARIATIONS IN THE WAGE STRUCTURE IN GENERAL

INTRODUCTION

One of the outstanding characteristics of the American wage structure is the multiplicity of rates of pay and of hourly earnings. Wide variations exist not only throughout industry in general but also within a single industry, a single plant, and even a single occupation in the same plant.

During the past 2 years, the Bureau of Labor Statistics has found average hourly earnings as low as 4 cents, paid to a group of young colored laborers filling small containers with various materials in a fertilizer plant in South Carolina, and as high as $4.45, paid to a "hot roller" in the iron and steel industry working in a strip mill in Indiana.[1] Even among common laborers in 20 different industries the hourly rates paid to men beginning on the job ranged from 10 cents to $1.14 in July 1939. The lowest rate was reported for a Negro working in a fertilizer plant in Georgia and for a Mexican in a brickyard in Texas. The highest rate was paid to an employee in the building industry in New York City. Among these 20 industries, common-labor rates per hour averaged from 36 cents in the fertilizer industry to 64 cents in petroleum refining. Taking the workers in manufacturing industries for the country as a whole in October 1939, there was a spread in average hourly earnings from 29 cents for all workers in cottonseed processing (the making of oil, cake, and meal) to $1.01 in the printing and publishing of newspapers and periodicals.

In a single industry—the full-fashioned hosiery industry—hourly earnings in September 1938 ranged from 5 cents for a learner in Mississippi to $2.50 for a working foreman in Tennessee, with average hourly pay of 66 cents for all wage earners in the industry. Taking the individual factories separately, the lowest average was 24 cents for a Georgia establishment, in contrast with 97 cents for one in New Jersey. In a Pennsylvania plant, where hourly earnings averaged 63 cents, the range was from 25 cents for a learner to $1.43 for a footer knitter. The hourly earnings in the most important single occupation in this plant—legger-knitters—varied from 67 cents to $1.18, with an average of 91 cents for all legger knitters.

Quite often, similarly situated plants will show considerable variation in hourly earnings. For example, two establishments, making the same products in a given industry, located side by side in the same city, and resembling each other in many other respects, have been found to have radically different levels of earnings.

[1] The latter worked on a tonnage basis, in addition to which he received a substantial monthly bonus. His annual earnings for 1937 amounted to $9,053.

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WHAT IS THE WAGE STRUCTURE?

These examples are, of course, extremes. Nevertheless, the records of many industries reveal wide variety in the hourly earnings of American workers, both between occupations and between workers doing the same job in the same or different plants. Are these variations random or do they follow definite patterns based on characteristics which can be identified? Undoubtedly there is a pattern in most instances, and the studies made by the Bureau of Labor Statistics have made it possible to describe in some detail the structure of workers' earnings in many industries.

Although the figures given above have all represented average hourly earnings, it is more usual to speak of the pattern of earnings as the "wage" structure. It should be obvious that it would be impossible in most industries to use differences in wage rates as a basis for describing a "wage" structure, since comparisons between the level of hourly wage rates and piece rates are not possible. Moreover, wage rates as such have little economic significance. They are the terms of the contract of employment, but they do not necessarily represent either the amount received by workers for a given quantity of work or the labor cost to employers of a given quantity of product. Consequently, it has been the general practice to discuss differences in the compensation of workers in terms of their earnings, hourly, weekly, or annual. In the present report, as in others prepared by the Bureau of Labor Statistics, the phrase "wage structure" is frequently used as synonymous with the hourly earnings structure of worker incomes.

It is customary to analyze the wage structure from two points of view—differences between occupations and differences between plants. In every plant earnings vary with differences in skill. This characteristic of the wage structure is familiar to everyone, although the principle followed in establishing occupational differentials, and the variations in the differentials which prevail in different plants are still little understood. However, the present report is not primarily concerned with this aspect of the wage structure.

The present inquiry is concerned with the second aspect of the wage structure; the differences in the average hourly earnings of workers in the same occupation but employed in different plants, particularly as these differences may be related to variations in the size of the company owning the plants. Essentially the question to be answered is this: Do large companies pay higher or lower wages on the average than small companies for the same work?

Enough is known about this "interplant" wage structure to make it clear that a valid answer to this question must take account of several factors. In the first place, it is known that each major industry tends to have its own wage structure. The causes for these differences are obscure but may be related to differences in type of operations, in traditional practices, etc. For this reason it is necessary to analyze the wage structure of each major industry separately. In many cases the boundary lines between industries may not be clear, nor is it always possible to know how detailed a classification of industry, on the basis of differences in its products, is desirable.

In the second place, it is known that in many industries pay for the same job varies from plant to plant in accordance with such factors

as the region and size of community in which the plant is located, and, in some rare cases, by the size of the plant. Differences in earnings by size of company which are merely reflections of these other known relationships would have little significance. Hence it is necessary to find out whether large companies pay higher or lower wages than small companies in the same industry for the same job in the same region and size of community. In some industries it is necessary to extend this analysis to cover the comparison of wages also in the same sized plant.

In the third place, it is difficult if not impossible to insure that "the same job" is in fact an identical operation. Similar occupational designations do not necessarily represent an identical input of skill and energy by the worker. It is impossible to avoid this difficulty entirely. A break-down of the major industries into industrial subgroups in accordance with the product produced is of some assistance since the responsibilities of workers with similar job titles will often vary when they are making different products. To an indeterminate extent the higher earnings on the average of workers in plants with production bonus systems is a reflection of greater worker input rather than a difference in the rate of earnings for the same job.

Unfortunately, existing information on earnings in such detail is not available, and a precise analysis of the kind suggested here cannot be made for many industries. In the present study, which places principal reliance on field studies of the Bureau of Labor Statistics for the industries in which quite detailed data were obtained, it has not been possible to make interplant comparisons for identical occupations, and reliance has been placed on comparisons of the average hourly earnings of all employees in each plant. Wherever possible, in order to present the most careful comparisons, the percentage distribution of employees by skilled, semiskilled, and unskilled and by sex is given in addition to the other information.

Finally, it cannot be too strongly emphasized that the pattern of the interplant wage structure is primarily a description of a set of relationships and tells nothing about the causes or reasons of the differences which are described, though it may provide some leads. In the present report only one factor—unionization—which can correctly be described as a cause of interplant differences in the rate of pay for the same job has been discussed. If the employees of large companies have higher earnings than those of smaller companies for the same job, and its employees are more generally unionized, that would appear as a cause for the difference, though not necessarily the only one. Unions are a force making for higher earnings. This factor is to be distinguished from size of community which is not in itself a reason for wage differentials, although it is a fact that workers in large cities in general have larger earnings for the same job than those in small cities. More information is needed about differences in cost of living and in the labor supply before conclusions can be drawn about the reason for the wage differentials between communities of different sizes.

MEASUREMENT OF EARNINGS

In order to make effective comparisons of the wage structure in different industries, in different parts of the country, and in different occupations, some common measure is necessary. The only practical

way to measure differences in the wage structure on a broad scale is in terms of average hourly earnings. Wage rates must be reduced to the common denominator of average hourly earnings in order to compare the pay of piece workers, time workers, and production bonus workers. Rates may be easily obtained for workers paid on a straight-time basis, but there is a large proportion of the employees in industry who are engaged on straight piece work or are paid under various production bonus plans, for whom the basic or guaranteed rates are no indication of earnings. Hourly earnings may be obtained for each of these individuals by dividing the total hours actually worked into total earnings for a given pay-roll period. Hourly earnings are also to be preferred to weekly and annual earnings in measuring the existing variations in the wage structure. Weekly earnings reflect not only hourly earnings but also the number of hours worked during the week, while annual earnings are affected by both the number of hours worked during the week and the number of weeks of employment in the year. Hence, average hourly earnings have been used throughout this study

INDUSTRY APPROACH TO THE WAGE STRUCTURE

In studying the Nation's wage structure, the most common approach has been from the standpoint of a single industry, so-called. This was done under the codes of the N. R. A., and the same procedure is now being followed in connection with the Public Contracts and Fair Labor Standards Acts. Thus, it is assumed that each industry has its own wage structure, which may be distinguished from those of other industries.

There is no doubt that in numerous instances it is possible to talk of an industry wage structure as indicated by the similarity of the occupational wage structures of the various plants in the industry. This may be indicative of a degree of competition both for labor and for sales, plus a close similarity in production methods, which has produced similarities among the wage structures of the various establishments in the industry. Such an industry—and they are rare—usually is fairly well concentrated geographically or is affected by widespread union contracts. Moreover, it is usually one in which the labor cost per unit of output is an important element in the total cost of the product.

It is more often true that the border lines of an industry are hard to define, and the distribution of plant averages in such an industry covers a wide range, with no well-defined concentration, but is widely scattered on a regional basis. It may be said to have a locality-determined wage structure, in which wages in a given plant are largely the result of competition from establishments of other industries in the same locality. Competition from other plants in the same industry located elsewhere plays a fairly minor role.

This is true partly because occupations cut across industry lines. Common labor is used in many industries; certain types of skilled workers, as for example machinists, are in demand in many factories; and certain more or less routine semiskilled jobs require the same type of ability regardless of the industry. Thus, there is a certain degree of interchangeability of workers among industries at all levels of skill. Thus it appears that for purposes of wage regulation, our concept of what an industry is needs reexamination. It is clear, also,

that broad interindustry comparisons have little meaning, and that for comparisons of the wage structure the field needs to be narrowed, not broadened. This is especially important because many industries make a number of products, each of which constitutes practically a separate industry, and is represented by its own wage structure. A good illustration is found in the hosiery industry, which is often treated by various Government agencies as a single entity. As a matter of fact, it consists of two distinct branches, one covering full-fashioned and the other seamless hosiery. They differ from each other in many ways—in their manufacturing processes, in the composition of their labor force, in their locations, in the size of their establishments, and in the degree of unionization. A recent survey of the industry by the Bureau of Labor Statistics showed that each branch had a widely different level of average hourly earnings, amounting to 65.8 cents an hour for full-fashioned and 35.1 cents for seamless hosiery workers.

Another illustration is the electrical manufacturing industry, which, as defined by the Census of Manufactures, covers an enormous variety of products. In a recent survey of this industry, it was necessary to divide it into 14 separate divisions, each of which had a more or less distinctive wage structure. The average hourly earnings of all employees among the various branches ranged from 49.5 cents for fuses, wiring devices, and specialty transformers to 86.2 cents for transformers and switchgear. These differences were due partly to variations in the composition of the labor force, as to sex and skill of the workers. Thus, the lowest-paid divisions were those that operated on a mass-production basis and had a relatively large proportion of semiskilled and women workers, while the highest-paid branches had a relatively large proportion of skilled men.

EARNINGS AND METHODS OF WAGE PAYMENT

Another factor associated with differences in hourly earnings among workers in the same plant, as well as among various establishments in a given industry, is the method of wage payment used, such as straight time rates, straight piece rates, and various production bonus plans.

The range of hourly earnings is especially wide in industries in which a large proportion of the labor force is paid on a straight piece-rate basis. This is true of employees of the same sex and in the same occupation. In a certain shoe factory, for example, it was found that the earnings of 26 men machine shoe cutters varied from 42.3 to 81.1 cents an hour, with the average amounting to 64.3 cents. In the same plant, the hourly earnings of 43 women fancy stitchers ranged from 30 to 53.4 cents, the average being 35.9 cents. This wide dispersion reflects to a large extent differences in the productive capacity of individual workers.

Similarly, there is considerable variation in hourly earnings among workers paid under production bonus plans. For the most part, such methods of wage payment are found in plants belonging to the large industrial corporations, and to a certain degree this accounts for the difference in hourly earnings in favor of the large as against the small companies, discussed later in this report. In other words, the workers in the large companies are stimulated by these plans to do

more work in an hour than workers in smaller companies paid on a straight hourly basis, and the higher earnings of large company employees are not for the same work but for more work. Moreover, production bonuses are often responsible for the relatively high hourly earnings of individual semiskilled and unskilled workers in certain industries.

Methods of wage payment based on measured production generally result in higher hourly earnings than straight time rates. With few exceptions, this was true of workers in the set-up and folding paper-box industries in 1935. In the set-up paper-box industry, for example, the average hourly earnings of women operating automatic wrapping machines in the northern region amounted to 39.6 cents under straight time rates, 41.9 cents under straight piece rates, and 44 cents under production bonus systems. In the folding paper-box industry, the average hourly earnings of men press feeders in the northern area amounted respectively to 49.3, 55.3, and 53.5 cents.

GEOGRAPHICAL DIFFERENCES

Of the various factors that play an important part in the wage structure, the geographical location of industry has received great attention during recent years. In Government regulation, regional variations in wages were recognized in the codes of the N. R. A., which generally set separate minima for the Northern and Southern States. Likewise, geographical differences are now taken into consideration in part in setting minimum rates under the provisions of the Public Contracts Act.

In discussing geographical differences in hourly earnings, it is important to remember that relatively few States constitute homogeneous wage areas, although comparisons are most frequently made by States. Often they have two or more contrasting wage levels. For example, in the State of Indiana, hourly earnings in the northern part are on the whole considerably higher than those in the southern section. The same is true of Pennsylvania, with highest hourly earnings in the Pittsburgh territory, a fairly high level in the metropolitan area of Philadelphia, and a much lower level in the small towns of the southeastern part of the State. Hence, any true regional classification of hourly earnings must be made across State lines.

In industries that are widely distributed geographically, hourly earnings are generally lower in the southern than in the northern States.[2] There is a wide range of hourly earnings in both areas. While the average earnings of workers in most of the plants in the South is lower than the average in most plants in the North, the average earnings of the higher-wage southern plants exceeds that of many of the lower-paid plants in the North. There is a whole range of hourly earnings at the lower level of the wage scale in the South, which is not widely duplicated anywhere in the North. The most important reason for these lower hourly earnings is the fact that the South has been comparatively undeveloped industrially, and there is a larger supply of labor available there, with comparatively little training. The low-money income which agriculture in that area can

[2] References are made throughout this report to the North and the South, and to "the Northern region" and "the Southern region." These regions are defined differently for different industries, as indicated in the appendices, in which details for each of several industries are discussed.

offer to many of these employees, and the consequent abundance of labor means that many southern plants have been able to get a labor force with much lower wages than typical northern plants. There are, of course, exceptions in both the northern and southern areas. Other factors, which are associated with the large supply of labor, contribute to the lower average earnings in the South, such as lack of widespread union organization, a somewhat lower cost for certain items in the standard of living, in part associated with the warmer climate, cheaper housing, etc.

Taking the Northern States as a group, northern New England, in general, has lower hourly earnings than southern New England. Hourly earnings in southern Pennsylvania, Maryland, and Delaware are considerably below those in New York, New Jersey, and northern Pennsylvania. They are high, on the whole, in the Middle Western States of Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, and the urban areas of Missouri, and considerably lower throughout the agricultural belt comprising the Dakotas, Nebraska, Kansas, and Iowa. On the other hand, hourly earnings are almost as high in most of the Mountain States as in the Eastern States, and one of the highest levels of all is found on the Pacific coast.

In the Southern States, hourly earnings are on the whole relatively higher among those States on the periphery of the South, including Virginia, North Carolina, Kentucky, Tennessee, Oklahoma, and Texas; and are lowest in the States of the deep South, which include South Carolina, Georgia, Florida, Alabama, Mississippi, Arkansas, and Louisiana.

VARIATIONS BY SIZE OF COMMUNITY

Some attention has also been given in recent years to differences in hourly earnings by size of community.[3] Recent wage studies indicate that these differences are more important than they have hitherto been considered.

The extent to which hourly earnings vary by size of community may be illustrated by the meat-packing industry in 1937. In the northern wage district,[4] the average pay of all workers increased gradually with the size of community in towns above 25,000 population, from 61.8 cents an hour for places between 25,000 and 50,000 to 69.9 cents for metropolitan areas of 1,000,000 and over. A relatively high average in smaller communities, below 25,000, was due for the most part to the high level of hourly earnings in one large and exceptional establishment. In the southern wage district, the same general variation was evident. Average hourly earnings were considerably higher in metropolitan areas between 100,000 and 500,000 population than in places under 100,000. The differences by size of community hold when still other factors in the wage structure, such as size of company, are taken into account.

Another illustration is found in the boot and shoe industry, for which records are available for 1939. In this industry, the average hourly earnings of all workers in the country as a whole varied directly

[3] By size of community is meant here the population of the metropolitan area, which includes a central city and the suburban districts, as defined by the Bureau of the Census. It should be pointed out that considerable confusion will result in the analysis if it is based on size of city, including merely the population within the political boundaries, rather than size of community.

[4] See appendix D for a description of this district.

with size of community, without exception. In rural territory (communities of less than 2,500), the average pay amounted to 37.3 cents an hour, as compared with 56.5 cents in metropolitan areas with a population of 1,000,000—a difference of over 19 cents. There was very little difference in hourly earnings between places of 2,500 and under 5,000 and those of 5,000 and less than 10,000, in both of which hourly earnings averaged about 41 cents. Each succeeding class of community showed an increase in the average over the preceding one. Here again, the differences in hourly earnings by size of community seem to persist when allowance is made for the degree of unionization, differences in the price of shoes, and other important factors influencing the wage structure.

DIFFERENCES BETWEEN UNION AND NONUNION PLANTS[5]

The single factor discussed in this report which may be termed a "reason" for differences in hourly earnings in certain industries is unionization. This is especially true in industries in which both union and nonunion plants are numerous, since it is obvious that in either a highly organized or an almost wholly unorganized industry there would be no substantial differences in wage levels due to this factor. In most cases, hourly earnings in union plants exceed those in nonunion plants, although there are exceptions. For example, considerable variation in hourly earnings between union and nonunion establishments was found in several branches of the furniture industry in 1937. In the manufacture of wood household furniture of various types, the differences in favor of union plants were 13.1 cents for the country as a whole, 9.6 cents for the northern district, and 4.5 cents for the southern area. Similar differences appeared in the northern district in communities of different size. In the manufacture of upholstered furniture in the North, the difference in favor of union plants amounted to 15.3 cents; in novelty furniture, 6.7 cents; and in kitchen furniture, 13.8 cents. In the manufacture of wood office furniture, the union plants in the North paid 8.6 cents more per hour, on the average, than other plants. On the other hand, in the manufacture of metal office furniture in the North, the average hourly earnings were higher in nonunion (67.7 cents) than in union plants (65.3 cents).

The small companies in the meat-packing industry located in the North offer another example. Pay in unionized plants in 1937 averaged 6.1 cents per hour higher for all workers than in nonunion establishments, a difference of more than 10 percent. A similar difference was found in communities of similar sizes, although it was considerably less pronounced in the metropolitan areas of 1,000,000 and over than in other places.

Another illustration is found in the shoe industry. In 1939, the average hourly earnings of all workers whose earning records were studied by the Bureau of Labor Statistics amounted to 54 cents in union plants, as compared with 46.4 cents in nonunion establishments, a difference of 7.6 cents. Similar variations were found in the averages when the wage earners were classified by sex and skill, and, generally speaking, when they were classified by the size of com-

[5] In the illustrations used here, a union plant has been defined as one where a majority of the workers belong to occupations that are covered by either oral or written agreements with a union.

munity in which the plants were located, and by the price of shoe manufactured.

These examples could be multiplied many times. As already indicated, examples of the opposite situation can also be cited, although they were not so numerous in the industries in which the Bureau of Labor Statistics has made studies of the wage structure in recent years.

THE OCCUPATIONAL WAGE STRUCTURE

Occupational differentials constitute the core of the wage structure in any single establishment. These differentials reflect variations in occupational skill. They constitute an intraplant wage structure of an entirely different sort from the interplant structure which has been under discussion in the preceding pages. In the case of straight-time workers, the wage ladder usually starts with the common-labor entrance rate as the lowest rung, leading up to the highest wage paid for the most skilled jobs in the plant. The same is true for employees on piece work or under some production bonus plan, for which the rates are set in a manner to reward differences in skill among the several occupations.

Generally speaking, the occupational differences found in the individual establishments are reflected in the average hourly earnings by occupation for the industry as a whole. In some cases, however, the picture of the industry's occupational wage ladder is somewhat confused by the fact that the occupations in the various plants are not always strictly comparable.

In general, the relationships among the average hourly earnings of groups of skilled, semiskilled, and unskilled employees are fairly well defined, although within each group there are always exceptions. Among men workers, the difference between the average hourly earnings of skilled and semiskilled workers is often approximately twice as large as that between semiskilled and unskilled employees. Taken as a whole, the proportion of skilled women employees is very small, but the average pay of semiskilled women employees is quite often not much higher than that of unskilled men workers.

The question has often been raised as to whether women doing the same work as men in a plant receive the same rate of pay. Uniformity of pay was required by many of the codes under the N. R. A., and it is also insisted upon by trade unions. Moreover, it is probably in accordance with the principles of good personnel policy, unless the higher rate for men may be justified on the ground that they are required to perform certain tasks in addition to the regular duties of the job, such as lifting heavy loads. However, a difference is frequently found, where average hourly earnings of women are lower than those of men for the same occupation.[6] These figures for entire industries may reflect in part the fact that women are employed in the lower-wage establishments.

There are also differences in hourly earnings between white and Negro employees. On the whole Negroes earn less, because they are more generally engaged in semiskilled and unskilled occupations. In the Northern States, white and colored employees doing identical jobs in a given plant are often paid the same rates, and in some cases,

[6] In the case of piece or production bonus workers, this may be due to lower productivity among women than men.

they are assigned to fairly skilled jobs. In the Southern States, the tendency is for white and Negro workers to be assigned to quite different occupations in the same establishments, with the less skilled work going to the Negroes.

These illustrations indicate the many factors which play a part in the wage structure. Each of these factors must be considered in connection with the interplant variations in earnings levels which are associated with size of company, and which form the subject of the next chapter.

CHAPTER II

VARIATIONS IN EARNINGS BY SIZE OF COMPANY

This chapter considers the question: Is the presence of a dominant company, or a group of dominant companies, in an industry in any way reflected in differences of earnings? Do large organizations, operating more than one factory, for example, generally offer their employees an opportunity to earn more money per hour than their smaller competitors in the same industry? The answer, as already indicated, appears to be that they do in a number of industries, whether their plants are found in the North or the South, in small or large towns; and whether their employees are skilled or unskilled, men or women, whites or Negroes. This is by no means universally true for all industries. Within industries in which there are certain large, dominant companies, there may also be some small independent companies and plants which pay higher wages and offer better earning opportunities than their larger competitors. In many of the industries in which there are no dominant companies, there appears to be little differentiation in earnings associated with the size of enterprise. These are the industries in which, typically, there are many concerns of intermediate or small size, such as the furniture industry, bituminous-coal mining, etc.

Although the existence of higher wages in large companies in a number of industries seems fairly clear, a positive generalization cannot be made for all industries, since information on earnings is available on a company basis for only a limited number of industries. The Census of Manufactures and the Bureau of Labor Statistics, the principal comprehensive sources of data on employment, pay rolls, and man-hours worked in factories present their reports by size of individual plant (or "establishment") and not by company.[1] The only reports which are sufficiently detailed to permit analysis of company size as well as other factors influencing hourly earnings are those derived from the special field surveys of the Division of Wage and Hour Statistics of the Bureau of Labor Statistics, referred to in the preceding chapter. Since 1934 this Division has made a succession of studies of wages and hours in a number of industries, which throw considerable light on the relation between hourly earnings and size of company.

This chapter presents a summary of the wage structure in a group of light industries included in this series of studies in which higher earnings characteristically appear in large companies. Five of the industries—radio sets, explosives, soap, meat packing, and fertilizers—are discussed in detail in appendices A to E. The iron and steel and electrical-goods industries have not been analyzed further, because of the difficulty in treating size of company in connection with other factors without revealing company identity. The original report on the cigarette and chewing and smoking tobacco industry did not deal extensively with size of company.

[1] For a discussion of these data on wage differences by size of establishment, see ch. III.

EXTENT OF DIFFERENCES IN HOURLY EARNINGS BY SIZE OF COMPANY

In three of the industries considered here, the difference in hourly earnings was essentially between two types of companies, a few relatively large ones and numerous intermediate and small concerns. For example, among the firms making radio sets, the difference in wage levels was striking—average hourly earnings amounting to 73 cents for the two largest producers, as compared with 53 cents for the remainder of the industry. In the explosives industry, the averages were 82 cents for the Big Three and 65 cents for the other companies. The hourly earnings in the manufacture of soap averaged 76 cents for the four largest concerns, as against 58 cents for the other companies.

In four other industries there were three general levels of hourly earnings, one covering a few relatively large firms, another a group of intermediate size, and the third a number of small companies. The differences in earnings were substantial, particularly between the largest and smallest companies. Among the firms engaged in the manufacture of electrical goods the average hourly earnings were 82 cents for the Big Three, as against 67 cents for the intermediate size and 59 cents for the small concerns. In the meat-packing industry the averages were 70 cents for the Big Four, 64 cents for the intermediate, and 56 cents for the small packers. In the fertilizer industry the hourly earnings averaged 37 cents for the Big Seven, compared with 34 cents for the intermediate and 27 cents for the small companies. In the making of cigarettes and chewing and smoking tobacco there were substantial variations in hourly pay in 1935, particularly in the southern wage district, where the Big Three averaged 43 cents, the Second Six 41 cents, and the relatively unimportant small concerns 33 cents.

In the iron and steel industry, differences in hourly earnings are substantial between large and small companies, with certain exceptions.

Differences in hourly earnings, as indicated in the previous chapter, may be associated not only with size of company but also with other factors, such as geographical distribution, size of community, unionization, composition of labor force, nature of product, etc. Hence, before any conclusions may be reached as to whether size of company is in itself important, it is necessary to determine the part played by the other factors in the wage structure.

RELATION OF GEOGRAPHICAL LOCATION TO VARIATIONS IN HOURLY EARNINGS BY SIZE OF COMPANY

Hourly earnings are substantially higher in the northern than in the southern region, and, generally speaking, the plants of the larger companies are more frequently found in the North than in the South. It is thus appropriate to question whether the higher hourly earnings in the larger concerns are due primarily to geographical location rather than to size of enterprise.

In the manufacture of radio sets, electrical goods, and soap, most establishments are located in the northern region, and it is clear that the existing differences in hourly earnings by size of company in these

industries cannot be affected by location to any appreciable degree. Furthermore, a detailed examination of the data indicates that even within the northern area geographical distribution did not play any significant role in the wage structure of each of these industries.

In the explosives industry there are some plants in the Southern States, but those of the "Big Three" and other companies are both widely distributed on a regional basis. Here the differences in hourly earnings between the two groups of concerns persisted in all parts of the country.

In contrast, a number of plants in the meat-packing industry and most of the plants in the fertilizer and tobacco industries are located in the Southern States. An analysis of the figures for each of these industries, however, shows that hourly earnings varied by size of company, with higher pay in the larger companies in both the northern and southern regions, with the exception of some small tobacco factories.

In the meat-packing industry the average hourly earnings of all wage earners in the northern wage district amounted to 72 cents for the "Big Four", 64 cents for the intermediate, and 60 cents for the small concerns. In the southern wage district hourly earnings in the "Big Four" averaged 58 cents, as against 42 cents for the other companies.[2] Within each region, moreover, the dominant position occupied by the "Big Four" in the industry's wage structure is emphasized by the fact that the highest hourly earnings in the industry were usually found in the States where the large packers are heavily represented.

TABLE 1.—*Average hourly earnings of workers in meat-packing industry, by wage district, type of company, sex, and skill, December 1937*

Wage district and type of company	Total workers	Males				Females
		All	Skilled	Semi-skilled	Unskilled	
Northern wage district	$0.667	$0.689	$0.820	$0.670	$0.607	$0.511
Big Four	.715	.739	.887	.717	.649	.550
Intermediate	.636	.659	.781	.650	.599	.492
Small	.597	.615	.733	.590	.525	.439
Southern wage district	.497	.512	.638	.493	.430	.368
Big Four	.580	.598	.761	.578	.501	.422
Other [1]	.418	.430	.541	.405	.360	.317

[1] Includes 1 plant belonging to an intermediate company in the southern wage district.

Source: U. S. Bureau of Labor Statistics.

Likewise, in the fertilizer industry, notable differences in hourly earnings by size of company appear within each of the three wage districts. In the northern region, the averages of all workers amounted to 57 cents for the "Big Seven," 50 cents for the intermediate size companies, and 44 cents for the one-establishment concerns. Hourly earnings were generally lower as one goes South, and in the upper southern wage district average hourly earnings of 39, 36, and 32 cents, respectively, were reported. In the lower southern region, the averages amounted to 28 cents for the "Big Seven," 24 cents for the intermediate, and 21 cents for the one-establishment companies.[3]

[2] See table 1. Due to the fact that only 1 establishment of an intermediate-size concern was included in the southern area, no distinction was made here between the intermediate and small companies.

[3] See table 2.

As mentioned before, in the manufacture of cigarettes and other tobacco products (except cigars) in the southern wage district, where by far the largest part of the industry is located, the average hourly earnings of all workers in 1935 amounted to 43 cents for the "Big Three," 41 cents for the "Second Six," and 33 cents for the small companies. The chief factors responsible for the minor variation between the "Big Three" and the "Second Six" concerns are differences in the composition of the labor force and the degree of unionization discussed below. In contrast, in the relatively small part of the industry found in the northern wage district, average hourly earnings were slightly higher in the small companies than in the large and intermediate size concerns—46 cents as compared with 45 cents an hour.

TABLE 2.—*Average hourly earnings of workers in fertilizer industry, by region, size of community, and size of company, during spring months of 1938*

Region and size of community	"Big Seven" companies	Intermediate companies	One-establishment companies
Northern wage district	$0.574	$0.503	$0.438
Under 10,000 population	(1)	.407	.366
10,000 and under 100,000 population	(1)	.431	.390
100,000 and under 500,000 population	.438	.465	.472
500,000 population and over	.600	.557	.507
Upper southern wage district	.392	.355	.316
Under 10,000 population	(1)	(1)	.255
10,000 and under 100,000 population		(1)	(1)
100,000 and under 500,000 population	.409	.399	.369
500,000 population and over	(1)		(1)
Lower southern wage district	.276	.241	.208
Under 10,000 population	.209	.170	.178
10,000 and under 100,000 population	.273	.237	.226
100,000 and under 500,000 population	.298	.300	.268
500,000 population and over			

[1] Less than 3 plants; no average computed.

Source: U. S. Bureau of Labor Statistics.

In both the meat-packing and fertilizer industries, employees in companies of the same size had higher average hourly earnings in the North than in the South. In the meat-packing industry, the difference in favor of the Northern as against the Southern States amounted to 14 cents for the "Big Four" and 20 cents for the other companies. In the fertilizer industry, the "Big Seven" averaged 18 cents higher in the northern than in the upper southern wage district, where the average, in turn, exceeded that in the lower southern region by 12 cents. For firms of intermediate size, the variations were 15 cents between the northern and upper southern wage districts, and 11 cents between the upper and lower southern regions, with slightly smaller differences of 12 cents and 11 cents between the two areas for the one-establishment companies.

In the iron and steel industry, hourly earnings in the South were generally lower than in the North, and a difference existed in hourly earnings between plants of most of the large integrated companies and the smaller nonintegrated plants (having under 1,000 employees), whose hourly earnings were the lowest in each region. Separate figures cannot be presented for this industry by regions, because there are only one or two large concerns in certain areas, outside the principal area of concentration (the Pittsburgh and Great Lakes area).

Thus, for these industries, it appears that geography alone cannot account for differences in wage levels associated with size of company.

RELATION OF SIZE OF COMMUNITY TO DIFFERENCES IN HOURLY EARNINGS BY SIZE OF COMPANY [4]

Hourly earnings usually increase with size of community. Due to this fact, there has been in recent years an important tendency for plants to shift toward the less populous centers, in order to take advantage of lower wage levels. There is no indication that this tendency has been greater among the larger than among the smaller concerns. Nevertheless, it is important to discover whether size of community is, in fact, a hidden factor, which affects the apparent relation between hourly earnings and size of company.

In the manufacture of both radio sets and electrical goods, a substantial part of the industry is located in the larger metropolitan areas, with relatively few establishments found in the smaller towns. Thus, size of community could not affect the wage structure in these industries to any important degree. Curiously enough, in the case of radio sets, the only metropolitan district with uniformly low wages was that of New York City. On analysis, this appears to be due to the fact that practically all of the plants located there belonged to small companies.

In both the meat-packing and fertilizer industries, hourly earnings varied directly with size of community. However, for each group of communities, hourly earnings were higher in the larger companies than in the smaller companies.

In the meat-packing industry, there is a strong tendency toward concentration in the larger metropolitan areas. The coverage of the study, however, was sufficiently large to permit a simultaneous breakdown of the figures by size of community and size of concern only in the northern wage district. In this area, according to table 3, the average hourly earnings of all workers for each size of community were highest in the plants of the "Big Four" packers, next highest in the intermediate-size concerns, and lowest in the small companies, with two minor exceptions. For the "Big Four" and small packers, the averages varied directly with size of community. This tendency was not evident in the intermediate companies, for which a comparatively small number of plants was studied. In general, it appears that the differences in average hourly earnings were more pronounced by size of concern than by size of community.

TABLE 3.—*Average hourly earnings of workers in meat-packing industry in northern wage district, by size of community and type of company, December 1937*

Size of community	Big Four companies	Intermediate companies	Small companies
All communities	$0.715	$0.636	$0.597
Under 50,000	.649	.682	.540
50,000 and under 100,000	.688	.614	.540
100,000 and under 500,000	.711	.642	.565
500,000 and under 1,000,000	.720	.597	.557
1,000,000 and over	.734	.628	.653

Source: U. S. Bureau of Labor Statistics.

[4] This analysis covers 4 industries only. In the explosives and soap industries, too few plants were studied to permit an analysis of the hourly earnings by size of community, and in tobacco factories no significant differences appeared in the South, where most plants are in small or middle-sized communities.

In the fertilizer industry, there is a strong tendency for the "Big Seven" and the intermediate companies to concentrate their plants in the larger metropolitan areas, while the one-establishment concerns are found mostly in the smaller communities. There were, on the whole, differences in average hourly earnings in favor of the "Big Seven" over the intermediate companies, as well as in favor of the latter over the one-establishment concerns, for each size of community, as indicated by table 2, which presents a simultaneous break-down of the data for all wage earners, by region, size of community, and size of company. Unlike those in the meat-packing industry, however, the variations in average hourly earnings in the fertilizer industry were more important by size of community than by size of concern.

RELATION OF COMPOSITION OF LABOR FORCE TO VARIATIONS IN HOURLY EARNINGS BY SIZE OF COMPANY

Thus far, the analysis has been confined to all workers in an industry, indicating that for plants in the same general location hourly earnings are considerably higher for employees of the larger companies. There is, however, the further question whether the nature of the occupations and the composition of the labor force with respect to skill, sex, race, etc., accounts to any extent for these differences in wage levels in companies of different size. It appears that in these industries similar variations in hourly earnings by size of company hold for each of these groups of workers, and that the differences in hourly earnings by size of concern cannot be attributed to variations in the composition of the labor force with respect to sex and skill.[5]

[5] See table 4.

TABLE 4.—*Average hourly earnings in selected industries, by size of company, sex, and skill*

Industry and size of company	Year of survey	Total				Males				Females			
		All workers	Skilled	Semi-skilled [1]	Unskilled	All workers	Skilled	Semi-skilled	Unskilled	All workers	Skilled	Semi-skilled	Unskilled
Radio sets	1937	$0.609	$0.752	$0.581	$0.531	$0.696	$0.784	$0.677	$0.577	$0.504	$0.523	$0.510	$0.473
Two largest producers		.731	.890	.696	.656	.800	.902	.782	.666	.610	.659	.607	.628
Other companies		.531	.666	.502	.469	.610	.700	.577	.506	.457	.499	.458	.437
Electrical goods	1937	.710	1.012	.728	.565	.767	1.012	.755	.609	.508		[1] .541	.499
"Big Three" companies		.824	1.112	.815	.644	.897	1.112	.864	.700	.571		[1] .575	.569
Intermediate companies		.669	.883	.702	.562	.719	.883	.723	.616	.486		[1] .506	.481
Small companies		.586	.867	.621	.491	.627	.867	.635	.526	.437		[1] .473	.431
Explosives [2]	1937	.771	.852	.711	.620								
"Big Three" companies		.819	.910	.759	.649								
Other companies		.653	.712	.605	.527								
Soap	1938	.688	.903	.696	.598	.722	.903	.718	.638	.478		[1] .504	.467
Large companies		.762	.932	.771	.669	.784	.932	.786	.693	.557		[1] .577	.548
Other companies		.575	.825	.586	.507	.616	.825	.609	.551	.422		[1] .450	.411
Meat packing [3]	1937	.649				.669	.798	.651	.587	.497			
"Big Four" companies		.701				.724	.874	.702	.633	.539			
Intermediate companies		.636				.659	.781	.650	.599	.492			
Small companies		.562				.579	.697	.554	.491	.415			
Fertilizer [4]	1938	.326	.576	.364	.287	.326	.576	.364	.287				
"Big Seven" companies		.370	.606	.401	.327	.370	.606	.401	.327				
Intermediate companies		.339	.614	.388	.289	.339	.614	.388	.289				
One-establishment companies		.269	.469	.295	.248	.269	.469	.295	.248				

[1] Includes a few skilled workers.
[2] As only a few females were covered in the survey, the averages were computed only for all workers.
[3] No break-down was made by skill for female employees.
[4] The survey covered only male workers.

Source: U. S. Bureau of Labor Statistics.

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A comparison was made of hourly earnings on an occupational basis between the large companies and other companies in the manufacture of radio sets and soap, and in practically every instance the average in the large companies exceeded that of the small companies, for the same types of work. The occupational variations in both industries ranged from 4 to over 30 cents, depending on the type of work. Table 5 shows the differences in average hourly earnings for selected occupations in these industries.

There is some difference in the composition of the labor force by sex and skill between the large and small firms. Such differences are often attributed to the degree of mechanization, which means considerable specialization and mass production in the larger companies and which makes possible the employment of a large proportion of semiskilled workers and of women. A close examination of the records, however, indicates that there is no general uniformity with respect to the composition of the labor force either with regard to skill or sex of employees in the industries under consideration.

TABLE 5.—*Average hourly earnings of selected occupations in radio sets and soap industries, by size of company*

Industry and occupation	Large companies	Other companies	Difference
Radio sets: [1]			
Assemblers, chassis, female	$0.590	$0.460	−$0.130
Assemblers, coils, female	.646	.488	−.158
Assemblers, final, sets, male	.760	.532	−.228
Inspectors, chassis assembly, male	.818	.599	−.219
Material handlers, male	.687	.528	−.159
Repairers, sets, male	.814	.636	−.178
Solderers, female	.597	.461	−.136
Testers, set circuits, male	.862	.568	−.294
Soap: [2]			
Drier operators, male	.768	.555	−.213
Framers and strippers, male	.805	.591	−.214
Mill and plodder operators, male	.796	.512	−.284
Packers, shipping, female	.543	.424	−.119
Slabbers and cutters, male	.819	.572	−.247
Soap makers, male	1.052	.947	−.105

[1] Based on survey made in 1937.
[2] Based on survey made in 1938.

Source: U. S. Bureau of Labor Statistics.

Another factor to be considered in connection with the composition of the labor force is the color or race of employees. In the meat-packing industry, for example, there is considerable difference in the make-up of the labor force in this respect between the "Big Four" and other packers. The average hourly earnings of Negroes exceeded those of whites in the northern wage district. On examination, this proved to be due to the fact that the former constituted a larger proportion of the labor force in the "Big Four," which had a higher wage level. On the other hand, when the comparison was made separately for each type of company, hourly earnings of Negroes and whites were about the same.[6] In the southern wage district, the average hourly earnings of whites exceeded those of Negroes. Here,

[6] The same situation was found in connection with the Mexican or other workers. In the northern wage district, the average hourly earnings were generally higher for Mexicans and others than for whites, which was due to the fact that most of the former were employed by the "Big Four" companies. On the other hand, the average hourly earnings in the southern wage district were higher for whites than for Mexicans or others in nearly all cases, owing largely to the fact that the majority of the latter were employed by other than "Big Four" concerns.

the fact that the big companies hire a larger proportion of white workers tends to accentuate the difference in the average hourly earnings in favor of white workers.

In the manufacture of cigarettes and chewing and smoking tobacco, differences in the composition of the working force are very important. In the South, the "Big Three" employed 54 percent colored workers as compared with 21 percent for the "Second Six," thus reducing the average hourly earnings of employees in the "Big Three" taken as a whole and increasing the figures for the "Second Six." The small variation in wage level between the "Big Three" and the "Second Six" was confined largely to colored employees. White workers in the larger companies, on the other hand, earned substantially more than in the middle-size firms. In addition, there was considerable difference in hourly earnings for each group of wage earners in the "Second Six" over the small companies.

RELATION OF PRODUCT TO DIFFERENCES IN HOURLY EARNINGS BY SIZE OF COMPANY

Related also to differences of occupation and skill are the variations in the products manufactured in companies of different size in the same industry. Where the same product is considered, hourly earnings were generally higher for larger concerns.

In the manufacture of electrical goods, for example, separate figures on hourly earnings were compiled for as many as 14 product groups. The averages for all workers ranged from 49.5 cents in the manufacture of fuses, wiring devices and specialty transformers to 86.2 cents in transformers and switch gear. To a considerable extent, these variations were due to differences in the composition of the labor force by sex and skill. No information by size of company can be published for each of these product groups, as it would disclose information relating to individual concerns, but it may be stated that hourly earnings were higher for the larger companies for each type of product. This is substantiated by the fact that the average hourly earnings differed considerably by size of concern for each skill-sex group.

In the explosives industry, hourly earnings were different for the two branches—black powder and dynamite—but in each case pay in the plants of the "Big Three" was considerably more than in the other companies. In plants making black powder, the respective average hourly earnings were 77 and 67 cents. The average earnings in the manufacture of dynamite amounted to 83 cents for the "Big Three" and 64 cents for the other concerns.

In the fertilizer industry, hourly earnings differed according to the degree of integration in plants, being highest in acid-making, next highest in superphosphate, and lowest in dry-mixing establishments.[7] The degree of integration here tends to vary directly with the size of company. However, for each type of plant according to the degree of integration, the "Big Seven" generally had higher average hourly earnings than the intermediate-size companies, while the latter without any exception paid more than the one-establishment concerns. Moreover, the differences were greater by size of company than by

[7] This may be explained by the varying composition of the labor force, the proportion of skilled and semiskilled wage earners being highest in acid making and lowest in dry-mixing establishments.

the degree of integration. This is shown by table 6, which presents a simultaneous break-down of the data by type of plant according to the degree of integration and the type of concern.

TABLE 6.—*Average hourly earnings of workers in fertilizer industry, by region, type of plant, and size of company, during spring months of 1938*

Region and type of plant	"Big Seven" companies	Intermediate companies	1-establishment companies
Northern wage district	$0.574	$0.503	$0.438
Acid-making plants	.605	.543	(1)
Superphosphate plants	.538	.548	.474
Dry-mixing plants	.487	.442	.419
Upper southern wage district	.392	.355	.316
Acid-making plants	.394	(1)	(1)
Superphosphate plants	(1)	(1)	(1)
Dry-mixing plants	(1)	.331	.294
Lower southern wage district	.276	.241	.208
Acid-making plants	.288	.339	.244
Superphosphate plants	.271	.246	.222
Dry-mixing plants	.268	.204	.196

[1] Less than 3 plants; no average computed.

Source: U. S. Bureau of Labor Statistics.

UNIONIZATION IN RELATION TO VARIATIONS IN HOURLY EARNINGS BY SIZE OF COMPANY

Concerns having union agreements usually show higher hourly earnings than nonunion firms in the same industry. If, as it is sometimes alleged, the larger companies maintain high wage levels to keep out unions, the differences in wage levels associated with unionization may obscure the importance of size of company differences. Some examples in particular industries are given below.

In the manufacture of both radio sets and electrical goods, unionization was quite prevalent. At the time of the Bureau's recent surveys, however, establishments having agreements with unions were found in both large and small companies, so that the extent of unionism was not sufficiently different in the two groups of companies to explain differences in hourly earnings by size of concern. In fact, the firms making radio sets in New York City, which were generally small and had a fairly low wage level, for the most part had union agreements.

In the manufacture of cigarettes and other tobacco products (except cigars), unionization affects the wage levels in companies of different size. For example, in 1935, in the South, where most of the plants are located, some of the establishments of the "Second Six" companies were unionized, while practically none of the other concerns were organized. In the North, as already indicated, the small plants in New York City were unionized to a considerable degree, and this had a tendency to raise the average hourly earnings for that area.

In the explosives, soap, and fertilizer industries, on the other hand, there was relatively little unionization at the time of the Bureau's surveys, and this factor did not play any significant role in the wage structure. In the meat-packing industry a lack of complete information made it impossible to classify plants of the "Big Four" and the intermediate companies on the basis of unionization

OTHER DIFFERENCES BY SIZE OF COMPANY

Another reason why larger concerns have higher hourly earnings than the smaller companies is the fact that the former to a greater extent than the latter use straight piece-work or production-bonus methods of wage payment. This is true of 3 of the 6 industries considered here. In the meat-packing industry, 24 percent of the total labor force worked under production-bonus systems, but these were confined to 40 plants, nearly all of which belonged to the larger concerns. In the manufacture of soap, however, the proportion of workers paid under production-bonus plans did not differ materially between the large and small companies. A similar situation existed in the radio-sets and electrical-goods industries. In explosives and fertilizers the nature of the work was such that practically all of the wage earners were paid straight-time rates.

At the time of the survey in each of these industries the proportion of establishments that paid extra rates for overtime work was considerably higher in the larger than in the smaller companies. This may be seen from the data in table 7. It should be pointed out, however, that under the Fair Labor Standards Act at the present time, all plants manufacturing goods for interstate commerce are required to pay time and one-half for all overtime in excess of 42 hours, so that any differences previously existing on this score are less likely to be important currently.

TABLE 7.—*Number of plants paying extra rates for overtime work in selected industries, by size of company*

Industry and size of company	Year of survey	Number of plants	
		Total covered in survey	Number paying extra rates for overtime work
Radio sets	1937	24	16
Two largest producers		2	2
Other companies		22	14
Electrical goods	1937	233	144
"Big Three" companies		22	21
Intermediate companies		32	27
Small companies		179	96
Explosives	1937	51	30
"Big Three" companies		28	25
Other companies		23	5
Soap	1938	72	28
Large companies		13	13
Other companies		59	15
Meat packing	1937	258	120
"Big Four" companies		59	55
Intermediate companies		17	11
Small companies		182	54
Fertilizer	1938	283	51
"Big Seven" companies		60	20
Intermediate companies		72	13
1-establishment companies		151	18

Source: U. S. Bureau of Labor Statistics.

Not only do larger concerns have higher hourly earnings than the smaller ones, but in the past they have also reported shorter working hours. In the explosives industry in 1937, for example, the average weekly hours actually worked by all wage earners amounted to 40 for the "Big Three," as against 44 for the other companies. The averages in 1938 in establishments making soap were 39 hours for the large and 40 hours for the other concerns. In the meat-packing industry, the weekly schedule averaged 41 hours for the "Big Four," 44 for the intermediate, and 45 for the small companies. Hence, the difference was considerably larger between the "Big Four" and intermediate than between the latter and the small concerns. The Fair Labor Standards Act, of course, will have a tendency to narrow these differences.

As a result, the differences in weekly earnings by size of company were not as pronounced as were hourly earnings. Nevertheless, these variations were fairly substantial. For example, in the explosives industry, the average weekly earnings of all workers amounted to $32.97 for the "Big Three," as against $28.79 for the other concerns. The averages in plants producing soap were $29.56 for the large and $23.16 for the other companies. In the meat-packing industry, the average weekly earnings amounted to $28.56 for the "Big Four," $28.13 for the intermediate, and $25.25 for the small concerns.

DIFFERENCES IN HOURLY EARNINGS BY SIZE OF COMPANY IN THE IRON AND STEEL INDUSTRY

The iron and steel industry presents a rather peculiar situation that warrants special consideration. It is clear, as already indicated, that there is a difference here in hourly earnings in favor of employees of the large companies, with few exceptions. However, no adequate analysis can be made without disclosing the identity of individual companies, and for that reason statistics cannot be presented.

In this industry there are a number of large integrated companies engaged in all processes that cover the converting of iron ore into rolling-mill products, each of which employs over 10,000 workers, with plants scattered rather widely. Among the large companies, one concern plays a dominant role, and its practices are followed to a considerable degree by other companies in the industry. There are also numerous smaller concerns, which range in size from a few hundred to several thousand employees. Those employing over 2,500 workers are partially or fully integrated, that is, operating steel works and rolling mills, as are some of the companies employing 1,000 to 2,500 employees. The smaller companies with less than 1,000 workers are for the most part engaged in the manufacture of rolling-mill products only. Thus, it is difficult to compare earnings in the different groups, because of differences in processes and products.

According to the Bureau's survey of the iron and steel industry in 1938, there was very little difference in average hourly earnings for the country as a whole among the groups of companies with 1,000 workers and over, while the concerns employing less than 1,000 workers had a considerably lower wage level. For all employees, hourly earnings in the companies with 1,000 and more averaged at least 84 cents, but the average of those with less than 1,000 workers

amounted to 73 cents. The same differences appeared for employees of each grade of skill. Thus, the concerns with less than 1,000 workers averaged 86 cents for skilled workers, 67 cents for semiskilled, and 60 cents for unskilled employees, compared with at least $1, 80 cents, and 70 cents, respectively, for the companies with 1,000 or more workers. With regard to common laborers, the average hourly pay amounted to 52 cents for concerns with under 1,000 employees, as against at least 60 cents for those with 1,000 workers and over.

In addition to size of company, geographical distribution is an important factor in the industry's wage structure. Unfortunately, in all except the main territory in which the industry is located, there are only one or two large concerns, thus making it impossible to present separate figures. A detailed analysis of the data, however, indicates that the smallest companies had the lowest wage level in each region. Moreover, in the Pittsburgh and Great Lakes area, which contains most of the industry, the average hourly earnings were similar to those presented for the country as a whole.

Other factors that play a part in the industry's wage structure are the nature of the product and the extent of unionization. The differences in hourly earnings by product are not very pronounced, but even for the same product the smallest companies showed the lowest wage level. In this industry, unionization is found primarily among the largest concerns. While it may explain differences in hourly earnings among the latter, it does not account for the higher wage level of the group as a whole as compared with that of the smallest companies.

GENERAL CHARACTERISTICS OF INDUSTRIES IN WHICH HOURLY EARNINGS VARY BY SIZE OF COMPANY

From the preceding analysis, it is fairly clear that hourly earnings differ by size of concern in each of the eight industries presented in detail, irrespective, to a large degree, of the other factors in the wage structure. What are the general characteristics of these industries? Under what conditions of industrial organization is it likely that hourly earnings will be found to vary by size of company?

First, the industries considered here differ considerably in size. In terms of the number of wage earners, they range from less than 10,000 in explosives to over 500,000 in the iron and steel industry, according to table 8, which is based on the Census of Manufactures of 1937. They cover an enormous range of products, manufactured from widely different raw materials, with various technological processes and distributed in a variety of markets. Moreover, as pointed out previously, the industries vary with respect to location by region and size of community, with respect to composition of labor force as to sex, skill, and color, and with respect to the degree of unionization.

On the other hand, these industries have one characteristic in common, namely the important position occupied by a few large well-known companies. Tables made for the National Resources Committee and presented in the Structure of the American Economy indicate that in 1935 the four largest companies had over 90 percent of the persons engaged in the manufacture of cigarettes, 81 percent in explosives, 63 percent in soap, 46 percent in iron and steel, nearly

40 percent in meat-packing, electrical machinery, and the radio industry, and 31 percent in fertilizers. The eight largest concerns show further concentration of working forces—99 percent for cigarettes, 91 percent for the explosives industry, 72 percent for soap, 59 percent for steel, and about 45 percent for the other four industries.[8]

TABLE 8.—*Degree of concentration in selected industries in 1935*

Industry	Number of establishments [1]	Number of wage earners [1]	Percent of persons employed in 1935 [2]		Percent of value of product in 1935 [2]	
			In 4 largest concerns	In 8 largest concerns	In 4 largest concerns	In 8 largest concerns
Radios, radio tubes, and phonographs [3]	162	48,343	37.6	45.3	27.0	38.6
Electrical machinery, apparatus, and supplies	1,435	257,660	39.7	46.5	44.4	52.3
Explosives	77	5,406	80.6	90.7	82.0	93.1
Soap	232	14,008	63.3	72.5	73.5	83.1
Meat packing, wholesale	1,160	127,477	38.7	47.3	55.6	63.5
Fertilizers	743	[4] 20,893	31.3	45.1	25.9	41.6
Blast-furnace products and steel-works and rolling-mills products	497	502,417	[5] 46.0	[5] 58.7	[5] 49.3	[5] 63.8
Cigarettes and chewing and smoking tobacco and snuff	159	36,279	[6] 90.3	[6] 99.2	[6] 89.7	[6] 99.4

[1] Based on Census of Manufactures, 1937
[2] See National Resources Committee, Structure of the American Economy. Appendix 7, table I, pp. 239–247.
[3] No separate figures are available for radio sets, but it is estimated that plants making such products represent about one-half of the total industry in terms of wage earners.
[4] Due to extreme seasonality, this figure is not indicative of the size of the industry, which reported as many as 36,782 wage earners at the height of the season in April 1937.
[5] The figures cover cigarettes only.
[6] These figures cover steel-works and rolling-mills products only.

Owing to a higher degree of mechanization, however, the largest concerns represented a considerably larger share of total output than is indicated by the number of persons employed. This is illustrated by the fact that the proportion which the value of their products represented in 1937 is almost uniformly higher for both the four and the eight largest concerns than the proportion of the number of their employees. For example, in the meat-packing industry, the four largest packing companies had nearly 40 percent of the total number of employees and over 55 percent of the total value of product.[9]

Practically all of these large companies are multiple-establishment concerns, with plants scattered throughout various parts of the country. In addition, many of them own establishments or are affiliated with firms in other industries, and they enjoy advantages in the production and distribution of their products, due largely to the economies of large-scale, integrated organizations. The intermediate size companies in meat packing and in the manufacture of electrical goods and fertilizers share some of these characteristics of the larger companies. For example, many of the intermediate concerns have two or more establishments in various localities, some have affiliations in other industries, and they distribute their products fairly widely. Most of the small concerns in these three industries, on the other hand,

[8] See table 8.
[9] In assembling the materials upon which this analysis is based, the Bureau of Labor Statistics has taken particular care to include a proper proportion of the plants of each company in its surveys. In the explosives industry the survey covered all plants, but in the other industries the sample varied from about 25 percent in the manufacture of electrical goods to 50 percent in the manufacture of radio sets and of soap.

have only one establishment. Many of them also cater largely to a local market, although some distribute their products widely and compete freely with the larger companies. Furthermore, they are often relatively little mechanized, and sometimes they may be highly specialized in the making of certain products. The small companies are quite numerous, and as a result they occupy an important position in each industry.

INDUSTRIES IN WHICH HOURLY EARNINGS DID NOT VARY BY SIZE OF COMPANY

The Bureau of Labor Statistics in recent years has also studied the wage structure in a number of other industries in which no differences in wage levels are apparent by size of company. For the most part, these industries do not have any small group of dominant companies, such as the eight industries discussed above. Among the industries recently studied in which no variation by size of company (or size of establishment) appeared are furniture, the radio parts and radio tubes branches of the radio industry, the hosiery industry, the knitted-goods industry (both outerwear and underwear), the boot and shoe industry, and the leather industry.

In the shoe industry, only 25 percent of the value of product was manufactured in 1935 in the four largest concerns and 31 percent in the eight largest.[10] A detailed study of the industry showed a very wide range in average hourly earnings, associated primarily with other factors in the industry than the size of company, such as geographical location, size of community, price lines, and type of shoes manufactured. Thus, although there are numerous companies with more than one plant in this industry, some of them fairly large, no single group predominates and no wage pattern in terms of size of company is apparent.

[10] National Resources Committee, Structure of the American Economy, Appendix 7, table 1, pp. 240–241.

CHAPTER III

VARIATIONS IN WAGES BY SIZE OF ESTABLISHMENT [1]

The preceding chapter has summarized the information available on the role of size of company in the wage structure of a number of manufacturing industries, in some of which a few companies dominate the industry and pay, in general, higher wages than their smaller competitors. In the other industries, in which no such dominant role is played by a few firms, differences in average hourly earnings are not apparently associated to the same degree with size of company. The economies of operation possible for a large company, and particularly an integrated company with widespread facilities for obtaining raw materials, for shipping, and for selling, as well as for manufacturing in any one of a number of plants, are of a different order from those associated solely with the size of the operations in a single plant. Is there any advantage to employees in having manufacturing operations concentrated under one roof rather than in a number of associated smaller plants? Is there, in other words, any difference in wages associated with the size of the establishment as distinct from the size of the company? [2] In particular, are the average hourly earnings of employees in the large establishments of an industry higher than those of employees in smaller establishments? To answer this question, average hourly earnings for many manufacturing industries were assembled by size of establishment from three sources—a special compilation of the monthly reports of manufacturers to the Bureau of Labor Statistics for 89 industries in August 1937; reports to the 1937 and 1935 Census of Manufactures for a different group of 105 and 59 industries, respectively; and a study of 6 industries by the National Industrial Conference Board. In addition, the group of detailed field studies conducted by the Bureau of Labor Statistics in six industries, are discussed in the present chapter. It appeared, on first examination of the comprehensive industry-wide data covering many industries, that differences did exist in average hourly earnings of employees in favor of factories of large size. Larger average hourly earnings were associated with larger operating units in a majority of industries for which considerable information was available. On closer examination of detailed information for particular industries, for which it was possible to segregate other factors influencing wages, such as location, unionization, etc., however, it became clear that these industry-wide

[1] The contents of this chapter, and in particular the special study of variations in average hourly earnings by size of establishment, based on data collected by the Bureau of Labor Statistics, were prepared by Edwin M. Martin, Marshall Spaulding, Manuel Cambouri, and Harry Brenner, of the Temporary National Economic Committee Studies Section of the Bureau of Labor Statistics.

[2] For the purposes of this chapter the terms "plant," "operation," and "establishment" are used interchangeably. The term "establishment" is used in the sense ordinarily employed by the Bureau of Labor Statistics and the Bureau of the Census, that is, to mean a single plant or factory. However, as indicated by the Bureau of the Census in the Biennial Census of Manufactures, 1935, this definition is qualified by the statement that, "In some cases, however, it refers to 2 or more plants operated under a common ownership and located in the same city, or in the same county, but in different municipalities or unincorporated places having fewer than 10,000 inhabitants. On the other hand, separate reports are occasionally obtained for different lines of manufacturing carried on in the same plant, in which event a single plant is counted as 2 or more establishments" (U. S. Bureau of the Census, Biennial Census of Manufactures, 1935, p. 5).

data could not be accepted without further analysis. After analyzing in detail the information for 6 industries discussed below, it was concluded that there was no clear relationship between size of plant and the level of average hourly earnings, except in bituminous coal mining. For example, larger establishments, it often appeared, paid higher average hourly earnings because they were located more frequently than the smaller establishments in the North and in the larger cities, or because they were more often owned by large companies which enjoyed certain advantages beyond those associated with size of plant—all circumstances which usually make for higher average earnings. Moreover, a large plant, if it belongs to a large company, may have advantages arising out of corporate connections which permit the payment of higher wages than those paid in small or middle-sized plants. Thus, in any tabulation of data merely by plant size, plants of large companies with high wage levels would be classified with similarly sized single establishments, and would considerably confuse the picture.

There are still other factors associated with any industrywide study of earnings by size of plant which confuse the picture. Some quite small plants, for instance, have higher average hourly earnings than large plants classified in the same broad industry because they are shops making essentially a different product of a higher grade at a higher price, requiring a considerable degree of skill and enabling the payment of higher wages. Examples are women's dress shops, fine jewelry manufacturers, and furniture upholstery firms. In establishments with less than 100 employees, field studies indicate that quite frequently the inclusion or exclusion of one or more highly skilled workers may considerably affect the wage structure. If this highly skilled work is performed by the proprietor himself, and no skilled workers are hired, average hourly earnings are apt to be fairly low. On the other hand, if the proprietor hires a few highly skilled workers, the average will be much higher.

It has been possible to assemble information on earnings by size of plant in combination with other important factors influencing the level of wages for only six industries, which is presented in detail below. As already stated, in these industries there is no evidence of clear-cut differences in wages by size of plant, except in bituminous coal. However, the data from these special industry studies are presented, as they were first analyzed, in order that other students of the problem of the influence of size of operations on the wage level may have them at hand as a basis for future studies.

SPECIAL FIELD STUDIES OF INDUSTRIES, SHOWING RELATIONSHIP OF AVERAGE HOURLY EARNINGS AND SIZE OF ESTABLISHMENT

The following sections summarize the detailed analysis of the influence of size of plant upon the level of wages in the furniture industry, the manufacture of radio parts and tubes, the manufacture of hosiery, knit goods, shoes, and bituminous coal as indicated by field studies by the Bureau of Labor Statistics. Most of the companies in each of these industries are single-unit concerns.

In neither radio parts nor radio tubes, each of which is more or less distinct from the radio-sets industry, did hourly earnings vary by size

of establishment to any degree, as shown by an analysis of plant averages. As in the case of radio sets, neither geographical location nor unionization appeared to play any part in the wage structure of these branches of the industry, though the number of plants covered was too small to make definite conclusions possible. Likewise, although the plant averages depended considerably upon the composition of the labor force as to sex and skill, the separate figures for each sex-skill group failed to show any relation between hourly earnings and size of establishment.

In most branches of the furniture industry there were no indications that average hourly earnings varied directly with size of plant. This was true of the wood household-furniture branch as a whole, for which data are presented in table 9. Moreover, differences in hourly earnings among establishments of the same size group existed when allowance was made for the variations between the northern and southern regions. Wage levels in this industry differed by product, such as case goods, upholstered furniture, novelty furniture, and kitchen furniture, but the averages did not vary by size of plant when the figures for each region were analyzed on a product basis. One reason why there was no increase in hourly earnings by size of establishment was the fact that the majority of the unionized plants employed less than 250 workers, and the union establishments generally also had the highest averages. However, even when the union and nonunion plants were treated separately, neither showed any relation between hourly earnings and size of establishment. Lastly, there was no increase in average hourly earnings by size of plant when the data were analyzed on the basis of individual communities. A similar analysis indicates that hourly earnings did not vary by size of establishment in the wood office-furniture and public-seating branches of the industry.

TABLE 9.—*Distribution of individual plants in wood household branch of furniture industry, by average hourly earnings and size of plant, October 1937*

Average hourly earnings	Total	Size of plant in terms of number of employees						
		6 to 20	21 to 50	51 to 100	101 to 250	251 to 500	501 to 1,000	1,001 to 2,500
15.0 and under 20.0 cents	1	.....	1	.....	.....	.....	.....	.....
20.0 and under 25.0 cents	1	.....	1	.....	.....	.....	.....	.....
25.0 and under 30.0 cents	7	.....	1	2	1	2	1	.....
30.0 and under 35.0 cents	32	1	4	7	11	7	2	.....
35.0 and under 40.0 cents	46	1	5	13	18	8	.....	1
40.0 and under 45.0 cents	39	2	8	7	17	3	2	.....
45.0 and under 50.0 cents	46	4	9	13	12	5	2	1
50.0 and under 55.0 cents	37	2	8	13	10	2	1	1
55.0 and under 60.0 cents	25	1	8	5	9	2	.....	.....
60.0 and under 65.0 cents	22	.....	6	7	6	2	.....	1
65.0 and under 70.0 cents	11	.....	1	1	4	2	2	1
70.0 and under 75.0 cents	10	.....	4	3	1	.....	2	.....
75.0 and under 80.0 cents	7	.....	2	2	1	1	.....	1
80.0 and under 85.0 cents	4	.....	1	1	1	.....	1	.....
85.0 and under 90.0 cents	3	.....	3	.....	.....	.....	.....	.....
90.0 and under 95.0 cents	3	1	.....	2	.....	.....	.....	.....
95.0 and under 100.0 cents	2	.....	2	.....	.....	.....	.....	.....
100.0 and under 105.0 cents	1	.....	.....	.....	1	.....	.....	.....
105.0 and under 110.0 cents	1	.....	1	.....	.....	.....	.....	.....
Total	298	12	65	76	92	34	13	6

Source: U. S. Bureau of Labor Statistics.

The only branch of the furniture industry that showed some tendency for average hourly earnings to differ by size of plant was metal office furniture, as one may see from table 10. It should be pointed out, however, that the coverage here is too thin to justify any definite conclusions, although none of the other factors, such as geographical distribution, unionization, and size of community, appear to have played any significant role in the wage structure.

TABLE 10.—*Distribution of individual plants in metal office furniture branch of furniture industry, by average hourly earnings and size of plant, October 1937*

Size of plant in terms of number of employees	Total	Average hourly earnings							
		45 and under 50 cents	50 and under 55 cents	55 and under 60 cents	60 and under 65 cents	65 and under 70 cents	70 and under 75 cents	75 and under 80 cents	80 and under 85 cents
6 to 100 employees	4	2	1			1			
101 to 250 employees	3		2			1			
251 to 500 employees	5			2	2	1			
501 employees and over	7				1	3	2		1
Total	19	2	3	2	3	6	2		1

Source: U. S. Bureau of Labor Statistics.

According to table 11, the average hourly earnings in full-fashioned hosiery did not indicate any tendency to increase with size of establishment in the northern States, whether for union or nonunion plants. This was also true when the independent finishing establishments, which had a lower wage level as compared with the integrated plants, were excluded from each group of establishments. Size of community appears not to have played any part in the wage structure of this branch, due to the fact that most of the plants are located in the largest metropolitan areas. On the other hand, there was some tendency for the averages in the southern wage district to increase by size of establishment. The coverage in this region, however, is not sufficiently large to draw definite conclusions, especially since size of community appears to have played some role in the wage structure. A similar analysis failed to disclose any relation between hourly earnings and size of plant in the seamless branch of the industry, which was surveyed by the Bureau at the same time.

An analysis of hourly earnings in the knitted outer ear industry, by size of establishment, based on a survey by the Bureau in 1938, failed to reveal any significant relationship between the two factors.[3]

[3] Along with knitted outerwear, the Bureau also surveyed knitted underwear, cloth, and gloves and mittens, but in none of these branches was the coverage sufficiently large to analyze the hourly earnings by size of plant.

TABLE 11.—*Distribution of individual plants according to average hourly earnings in full-fashioned hosiery branch of hosiery industry, by region, size of plant, and unionization, 1938*

Average hourly earnings	Northern wage district																				Southern wage district, all plants [1]				
	Union plants									Nonunion plants															
	10 to 20 employees	21 to 50 employees	51 to 100 employees	101 to 250 employees	251 to 500 employees	501 to 1,000 employees	1,001 to 2,500 employees	2,501 employees and over		10 to 20 employees	21 to 50 employees	51 to 100 employees	101 to 250 employees	251 to 500 employees	501 to 1,000 employees	1,001 to 2,500 employees	2,501 employees and over				51 to 100 employees	101 to 250 employees	251 to 500 employees	501 to 1,000 employees	1,001 to 2,500 employees
Under 35.0 cents																					3				
35.0 and under 40.0 cents												1									1	1			
40.0 and under 45.0 cents													1		1							2	1		
45.0 and under 50.0 cents											3	1	2									1	1		
50.0 and under 55.0 cents		1	3		1					1		1		2								2	2		
55.0 and under 60.0 cents		1		3	1		1					2			1							1		1	
60.0 and under 65.0 cents	1	1	2	1		1						1	1									1	2	4	
65.0 and under 70.0 cents	1	1		2		1						1	2				1						1		1
70.0 and under 75.0 cents			1	3		3	1						1			1						1	1	
75.0 and under 80.0 cents		1		3		1	1	2				1			1										
80.0 and under 85.0 cents			3	3	1	2																			
85.0 and under 90.0 cents				1		1	1																		
90.0 cents and over				1							1														
Total	2	5	9	17	3	9	4	2		1	1	7	9	3	3	2	1				4	8	8	6	1

[1] Includes 1 trade-union integrated and 2 independent finishing plants.

Source: U. S. Bureau of Labor Statistics.

Neither did hourly earnings vary by size of company in the boot and shoe industry. This may be seen from an examination of table 12, which indicates that establishments belonging to each size group covered a fairly wide range of average hourly earnings. This conclusion holds true even when account is taken of the other factors in the industry's wage structure, such as geographical distribution, size of community, unionization, retail price of shoes, type of shoe construction, kind of shoes, etc. Likewise, hourly earnings did not differ by size of company in the boot and shoe cut stock and findings industry, which was surveyed by the Bureau at the same time.

Although these industries differ from each other as to size, product, and other respects, they have several characteristics in common. As mentioned previously, very few companies in the furniture, hosiery, and knit-goods industries have more than one establishment, and in none of these industries is there a small group of companies that occupy a dominant position, in terms of either number of employees or volume of product manufactured. In the boot and shoe industry, there are numerous companies with more than one plant, and some of these are fairly large, but no single group predominates in the industry. Lastly, each of these industries is characterized by keen competition in the distribution of its products.

TABLE 12.—*Distribution of individual plants according to average hourly earnings in boot and shoe industry, by size of company, 1939*

Average hourly earnings	Total	Plants belonging to companies with—					
		Under 200 workers	200 and under 500 workers	500 and under 1,000 workers	1,000 and under 2,000 workers	2,000 and under 5,000 workers	5,000 workers and over
Under 30.0 cents	3				2		1
30.0 and under 35.0 cents	11	3	3	2	2	1	
35.0 and under 40.0 cents	44	17	7	5	6	4	5
40.0 and under 45.0 cents	56	14	13	5	8	6	10
45.0 and under 50.0 cents	48	11	9	2	9	8	9
50.0 and under 55.0 cents	52	19	10	6	5	6	6
55.0 and under 60.0 cents	30	9	4	4	3	5	5
60.0 and under 65.0 cents	20	6	4	3	1	4	2
65.0 and under 70.0 cents	12	3	1	1	1	5	1
70.0 and under 75.0 cents	5	2	1			2	
75.0 cents and over	3	2	1				
Total	284	86	53	28	37	41	39

Source: U. S. Bureau of Labor Statistics.

For the bituminous-coal industry the Bureau's analysis based on a field survey in 1936 took particular account of average hourly earnings in union and nonunion mines, of the region in which the mines were located (since there is a recognized geographical difference in wage levels), and also of whether the mines were "captive" mines, that is, were owned by a railroad, steel, automobile or other company so that their wage policy of rate of operations might be affected by policies outside the coal industry.

Significant differences must be analyzed in terms of size of mine in relation to these other factors. In the 23 captive union underground mines [4] in the northern Appalachian region earnings were progressively higher as the size of the mine increased, and in the southern Appalachian region for mines employing 250–500 miners, as compared with smaller mines, but not for larger mines with more than 500 workers. In the larger group of noncaptive union underground mines, there was an almost uniform and marked increase in earnings as the size of the mines increased. (See table 13.)

[4] Strip mines were eliminated because of the great difference in method of operations and possible earnings.

TABLE 13.—*Average hourly earnings in bituminous coal industry, by size of establishment, 1936*

A. CAPTIVE UNION UNDERGROUND MINES[1]

Size of establishment	Northern Appalachian region			Southern Appalachian region			Middle West region		
	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings
1 to 50 employees	(2)	(2)	(2)						
51 to 100 employees	(2)	(2)	(2)						
101 to 250 employees	6	1,134	$0.725	3	513	$0.736			
251 to 500 employees	4	1,064	.803	3	1,269	.751	(2)	(2)	(2)
Over 500 employees	9	4,823	.900	7	3,812	.673	(3)	(3)	(3)
Total	23	7,177	.854	13	5,594	.696	4	1,806	$0.912

Size of establishment	Southern Interstate region			Rocky Mountain region			All regions		
							(2)	(2)	(2)
1 to 50 employees							(2)	(2)	(2)
51 to 100 employees									
101 to 250 employees	(2)	(2)	(2)	3	403	$0.892	13	2,205	$0.753
251 to 500 employees	(2)	(2)	(2)	4	674	.885	13	3,638	.819
Over 500 employees							19	10,109	.808
Total	(2)	(2)	(2)	7	1,077	.888	49	16,108	.803

B. NONCAPTIVE UNION UNDERGROUND MINES

	Northern Appalachian region			Southern Appalachian region			Middle West region		
1 to 50 employees	18	419	$0.710	6	140	$0.530	13	339	$0.661
51 to 100 employees	38	3,766	.778	22	1,702	.698	17	1,224	.788
101 to 250 employees	50	7,321	.761	47	7,588	.722	22	3,095	.767
251 to 500 employees	32	10,228	.789	27	7,878	.741	16	4,493	.791
Over 500 employees	22	10,122	.797	9	4,444	.809	4	949	.820
Total	160	31,856	.777	111	21,752	.744	72	10,100	.786

	Southern Interstate region			Rocky Mountain region			All regions		
1 to 50 employees	9	242	$0.603	3	111	$0.858	49	1,251	$0.671
51 to 100 employees	11	788	.639	9	672	.787	97	8,152	.721
101 to 250 employees	6	710	.689	10	1,179	.885	135	19,893	.752
251 to 500 employees				4	680	.910	79	23,279	.778
Over 500 employees							35	15,515	.803
Total	26	1,740	.656	26	2,642	.864	395	68,090	.769

[1] Captive mines are defined as those owned and operated by large consumers of coal who use the majority of their output, selling in the open market only incidentally.

[2] Less than 3 establishments. Not shown in order to prevent disclosure of data for individual establishments.

[3] Not shown in order to prevent disclosure of data for individual establishments.

TABLE 13.—*Average hourly earnings in bituminous coal industry, by size of establishment, 1936*—Continued

C. NONCAPTIVE NONUNION UNDERGROUND MINES

Size of establishment	Northern Appalachian region			Southern Appalachian region			Middle West region		
	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings
1 to 50 employees	6	111	$0.513	9	54	$0.420	(1)	(1)	(1)
51 to 100 employees				(1)	(1)	(1)	3	198	$0.722
101 to 250 employees				8	1,139	.644	5	864	.655
251 to 500 employees				(1)	(1)	(1)	(1)	(1)	(1)
Over 500 employees				(1)	(1)	(1)			
Total	6	111	.513	17	2,654	.675	11	1,469	.655

Size of establishment	Southern Interstate region			Rocky Mountain region			All regions		
	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings	Number of establishments	Number of employees	Average hourly earnings
1 to 50 employees	5	113	$0.493	(1)	(1)	(1)	17	312	$0.512
51 to 100 employees	3	171	.401	(1)	(1)	(1)	10	684	.590
101 to 250 employees							13	2,003	.649
251 to 500 employees							3	845	.625
Over 500 employees							(1)	(1)	(1)
Total	8	284	.432	3	197	$0.655	45	4,715	.650

[1] Less than 3 establishments. Not shown in order to prevent disclosure of data for individual establishments.

Source: U. S. Bureau of Labor Statistics.

It has been suggested that this relationship between size of mine and average hourly earnings in the bituminous-coal industry may be explained in part by the fact that in the larger mines it is both physically and financially possible to mechanize operations more completely than in the smaller mines. The result is an increase in the hourly earnings of the machine operators who are paid on a tonnage basis at rates fixed, within certain limits, by union contracts. It was impossible to take into consideration two other factors which bear on wage differentials—the size of the company owning the mine and the size of the community in or near which the mine was located. Although one may hazard the guess that both of these factors may be of less importance in coal mining than in many other industries, it is possible that they might alter the picture presented here if they could be taken into account.

In addition to coal mining, there are a few other branches of industry in which enough is known about these possible sources of difference to conclude that the mere size of the individual operation (the "plant" or "establishment") offers some advantages in organization for production, selling, or financing which makes possible higher hourly earnings. An example is the wood household branch of the furniture industry. The furniture industry as a whole seems to show a close relationship between size of plant and average hourly earnings, but the many other factors include differences in product and cannot be analyzed from existing data except for limited sectors of the industry.

INDUSTRY-WIDE STATISTICS ON AVERAGE HOURLY EARNINGS BY SIZE OF ESTABLISHMENT

In the following sections three sets of statistics on average hourly earnings by size of establishment are presented in order—the special compilation of average hourly earnings for selected factories reporting to the Bureau of Labor Statistics in August 1937, the man-hour data reported by the Census of Manufactures and tabulated by the Bureau of Labor Statistics, and the study of six industries by the National Industrial Conference Board.

Average hourly earnings in factories reporting to the Bureau of Labor Statistics, by size, August 1937

Special tabulations have been made of the reports received from manufacturers by the Bureau of Labor Statistics on employment, pay roll, and man-hours which show average hourly earnings by size of establishment, in August 1937, for 89 industries.[5]

Average hourly earnings increased as size of establishment increased in about two-thirds of these 89 industries.[6] The record for each of these industries, showing average hourly earnings, in cents per hour, for each size group, is given in table 14, in which the industries are grouped in 7 sections according to the consistency with which earnings increase with size.

[5] These data are collected and tabulated by the Division of Employment Statistics of the Bureau of Labor Statistics, under the direction of Lewis E. Talbert, in cooperation with State agencies in 14 States which act jointly with the Bureau in collecting monthly reports.

[6] The establishments were at first classified into 9 groups: 1 to 20 employees, 21 to 50 employees, 51 to 100 employees, 101 to 200 employees, 201 to 300 employees, 301 to 400 employees, 401 to 500 employees, 501 to 1,000 employees, 1,001 employees and over. Although this classification showed a decided tendency for average hourly earnings to increase as size of establishment increased, the size intervals were so small for establishments with less than 500 employees that the relationship was quite irregular. Moreover, in many instances there were either no establishments or such a small number in many of these size groups that comparison of the relationship between size and average hourly earning was hazardous. For this reason, the establishments were reclassified into 4 size groups—those employing 1 to 100 wage earners, 101 to 500, 501 to 1,000, and over 1,000. The averages for the establishments in each size group were computed by dividing the total pay roll for all the establishments in the size group by the total number of man-hours worked by the employees of all establishments in the size group.

The measure of size which had to be used is not entirely satisfactory. Establishments were classified on the basis of the number of wage earners employed during the particular pay-roll period, usually 1 or 2 weeks, for which the data were reported to the Bureau of Labor Statistics. In relation to more desirable measures, such as practical capacity in terms of physical volume or maximum number of employees required at any one time to operate the establishment at full capacity, the basis used may have put certain large establishments operating with 2 or 3 shifts in unduly large size groups. This procedure may introduce a fairly important error since there is considerable evidence that even in periods of peak activity there are at any one time wide short-run variations in the level of operations in different establishments of the same industry.

TABLE 14.—*Average hourly earnings in manufacturing industries reporting to the Bureau of Labor Statistics, by size of establishment, August 1937*

Industry	Number of establishments reporting	Number of employees reported	Average hourly earnings	Average hourly earnings by size of establishment							
				Establishments with 1-100 employees		Establishments with 101-500 employees		Establishments with 501-1,000 employees		Establishments with over 1,000 employees	
				Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings
A. Consistently increasing earnings with increasing plant size:											
Agricultural implements	72	30,222	$0.719	31	$0.489	25	$0.625	8	$0.672	8	$0.774
Aluminum manufactures	37	11,878	.672	18	.604	14	.666	(1)	(1)	3	.673
Automobiles	319	384,876	.908	154	.603	74	.729	31	.810	60	.932
Baking	801	62,214	.605	613	.575	178	.611	8	.628	(1)	(1)
Beverages	458	36,882	.835	362	.709	85	.884	9	.914	(1)	(1)
Blast furnaces, steel works and rolling mills	253	433,521	.856	40	.617	88	.722	39	.783	86	.871
Bolts, nuts, washers, and rivets	50	11,808	.672	21	.628	21	.637	6	.678	(1)	(1)
Boxes, paper	642	36,411	.528	553	.488	86	.558	3	.621		
Brass, bronze, and copper products	271	50,269	.732	195	.655	52	.685	12	.712	12	.784
Cement	140	23,833	.672	34	.644	102	.664	4	.743		
Chemicals	161	40,737	.765	99	.659	33	.719	20	.772	9	.807
Cigars and cigarettes	148	44,416	.445	75	.403	44	.413	17	.430	12	.481
Confectionery	225	27,786	.485	160	.432	50	.437	11	.466	4	.634
Cotton small wares	94	10,675	.497	64	.430	27	.505	3	.555		
Electrical machinery, apparatus, and supplies	429	194,933	.722	219	.573	132	.602	37	.679	41	.773
Engines, turbines, tractors, and water wheels	80	51,267	.802	39	.627	21	.688	8	.765	12	.729
Forgings, iron and steel	71	9,247	.728	48	.692	19	.731	4	.744		
Foundry and machine-shop products	1,744	230,443	.696	1,240	.647	409	.673	65	.725	30	.745
Glass	140	57,068	.687	42	.577	65	.629	19	.672	14	.737
Knit goods	481	126,052	.514	209	.451	210	.464	41	.524	21	.580
Leather	154	30,349	.625	69	.602	69	.602	14	.657	(1)	(1)
Lighting equipment	76	8,951	.657	59	.593	12	.665	4	.687	(1)	(1)
Lumber, sawmills	510	98,850	.544	247	.427	217	.528	37	.532	9	.713
Machine tools	157	39,520	.708	82	.643	49	.695	21	.700	5	.758
Petroleum refining	110	60,328	.973	39	.783	37	.954	17	.975	17	.987
Pottery	87	14,708	.605	45	.533	35	.607	6	.612	(1)	(1)
Railroad repair shops, steam railroad	459	108,939	.711	248	.679	155	.682	35	.699	21	.752
Rubber goods, other than boots, shoes, tires, and inner tubes	167	34,766	.604	87	.558	64	.563	13	.625	3	.685
Rubber tires and inner tubes	31	39,123	.925	3	.572	9	.684	8	.812	11	.967
Silverware and plated ware	37	9,386	.650	23	.603	9	.660	3	.694	(1)	(1)
Slaughtering and meat packing	254	84,036	.696	137	.596	73	.658	20	.712	24	.720
Stamped and enameled ware	204	29,885	.606	127	.571	62	.596	14	.627	(1)	(1)
Stoves	188	30,875	.640	113	.626	63	.630	5	.642	7	.662

Textile machinery and parts	104	17,727	.666	84	.594	13	.667	(1)	(1)	5	.682
Wirework	101	15,837	.682	70	.572	24	.622	5	.681	(1)	(1)
Woolen and worsted goods	414	125,863	.589	145	.561	220	.580	28	.586	21	.608
B. Increasing earnings with increasing plant size, except smallest plants:											
Canning and preserving	526	97,298	.447	299	.413	173	.388	38	.476	16	.504
Cars, electric and steam railroad	49	29,126	.731	16	.708	14	.683	8	.717	11	.746
Cast-iron pipe	54	13,708	.569	14	.576	35	.545	4	.632	(1)	(1)
Cotton goods	540	294,722	.425	72	.420	269	.384	123	.424	76	.446
Clothing, men's	721	93,152	.609	503	.572	179	.545	27	.593	12	.762
Furniture	561	76,119	.485	354	.543	176	.464	24	.543	7	.617
Lumber, millwork	505	31,580	.531	426	.546	74	.514	4	.567	(1)	(1)
Radios and phonographs	55	46,005	.600	20	.542	15	.486	8	.559	12	.623
Rayon and allied products	21	39,691	.634	(1)	(1)	3	.634	4	.557	13	.640
Silk and rayon goods	174	42,338	.458	75	.442	77	.429	16	.470	6	.514
Steam and hot-water heating apparatus	84	28,507	.689	34	.651	37	.641	8	.645	5	.740
C. Increasing earnings with increasing plant size, except largest plants:											
Aircraft	34	28,202	.693	13	.624	8	.651	4	.742	9	.692
Brick, tile, and terra cotta	376	28,594	.529	298	.478	74	.573	4	.507		
Cash registers, adding machines, and calculating machines	21	15,895	.789	10	.565	4	.611	5	.668	(1)	(1)
Chewing and smoking tobacco and snuff	40	9,726	.507	20	.435	15	.524	3	.453	(1)	(1)
Dyeing and finishing textiles	156	38,738	.565	64	.546	70	.560	15	.574	7	.570
Paper and pulp	357	114,858	.623	94	.557	190	.611	52	.656	21	.613
Printing and publishing, newspapers, periodicals	558	39,024	.949	467	.874	80	1.008	8	1.028	3	.873
Shipbuilding	102	41,648	.811	63	.703	23	.775	6	.831	10	.821
Structural and ornamental metal work	260	26,257	.707	204	.631	46	.636	6	.853	4	.806
Tin cans and other tinware	84	22,376	.588	31	.513	41	.590	8	.600	4	.590
D. Increasing earnings with increasing plant size, except next to largest plants:											
Hardware	120	28,261	.590	67	.551	40	.587	6	.583	7	.601
Soap	81	15,709	.719	54	.577	19	.719	3	.592	5	.771
E. Increasing earnings with decreasing size: Clothing, women's	586	41,212	.604	494	.780	85	.488	4	.550	3	.417
F. No relationship between earnings and plant size:											
Boots and shoes	242	88,467	.501	49	.483	150	.496	34	.469	9	.623
Carpets and rugs	34	28,289	.644	9	.494	13	.680	6	.552	6	.656
Plumbers' supplies	79	19,179	.650	36	.527	37	.667	3	.649	3	.657
Printing and publishing, book and job	1,142	66,880	.767	1,310	.764	116	.753	13	.816	3	.757
Shirts and collars	131	27,510	.389	60	.412	59	.379	10	.396	(1)	(1)
Smelting and refining, copper, lead and zinc	38	24,358	.699	3	.675	18	.701	10	.669	7	.716
Tools (not including edge tools, machine tools, files, and saws)	102	10,450	.619	78	.612	18	.626	6	.618		
G. Inadequate data:											
Butter	232	3,993	.465	228	.454	4	.525				
Clocks, watches, and time recording devices	21	18,774	.561	9	.576	4	.526	(1)	(1)	7	.566
Corsets and allied garments	40	7,181	.475	18	.457	20	.474	(1)	(1)		
Cottonseed, oil, cake, and meal	103	3,390	.253	96	.236	7	.309				
Cutlery (not including silver and plated cutlery and edge tools)	97	9,562	.604	72	.604	21	.561	(1)	(1)	(1)	(1)
Druggists' preparations	51	5,754	.574	40	.529	9	.529	(1)	(1)	(1)	(1)

[1] Less than 3 establishments. Not shown in order to prevent disclosure of data for individual establishments.

TABLE 14.—*Average hourly earnings in manufacturing industries reporting to the Bureau of Labor Statistics, by size of establishment, August 1937*—Continued

Industry	Number of establishments reporting	Number of employees reported	Average hourly earnings	Average hourly earnings by size of establishment							
				Establishments with 1–100 employees		Establishments with 101–500 employees		Establishments with 501–1,000 employees		Establishments with over 1,000 employees	
				Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings	Number of establishments	Average hourly earnings
G. Inadequate data—Continued.											
Explosives	28	3,891	$0.801	18	$0.710	8	$0.828	(1)	(1)		
Fertilizers	290	11,242	.458	268	.395	21	.516	(1)	(1)		
Flour	295	12,741	.579	259	.502	36	.668				
Hats, fur-felt	30	5,680	.751	20	.551	8	.667	(1)	(1)	(1)	(1)
Ice cream	186	6,640	.521	171	.492	15	.570				
Jewelry	172	10,209	.579	148	.681	23	.540	(1)	(1)		
Locomotives	6	5,540	.695			4	.623			(1)	(1)
Marble, granite, slate, and other products	192	5,184	.679	185	.697	7	.613				
Men's furnishings	48	4,822	.378	33	.423	14	.360	(1)	(1)		
Millinery	71	2,758	.615	668	.602	3	.671				
Paints and varnishes	468	22,403	.701	425	.640	39	.728	(1)	(1)	(1)	(1)
Railroad repair shops, electric railroad	148	9,556	.675	125	.616	21	.653	(1)	(1)	(1)	(1)
Rubber boots and shoes	10	15,127	.592			(1)	(1)	3	$0.505	5	$0.618
Sugar beet	48	5,047	.648	36	.707	11	.612			(1)	(1)
Sugar refining, cane	12	7,024	.672	(1)	(1)	3	.385	5	.680	(1)	(1)
Typewriters and supplies	13	15,483	.636	4	.496	(1)	(1)	(1)	(1)	7	.640

[1] Less than 3 establishments. Not shown in order to prevent disclosure of data for individual establishments.

Source: U. S. Bureau of Labor Statistics.

In 36 industries average hourly earnings increased with each increase in establishment size.[7] In 11 industries, employees of establishments in the smallest size group earned more than those of establishments in the next largest size group, but with this exception earnings increased with each increase in size of establishment.[8] For another 10 industries it was the earnings in the largest establishments which were out of line, being below those paid by the next to the largest group of establishments.[9] In hardware and soap industries the single exception was the next to the largest size group.[10]

The industries in which earnings increased consistently as size of establishment increased, or those in which only one group constituted an exception to this rule, include a number of the important durable-goods industries—steel, automobiles, aluminum, electrical machinery, textile machinery, and agricultural implements—as well as chemicals, soap, cigars and cigarettes, petroleum refining, radios, rubber tires, and meat packing, in which, in general, plants are larger and earnings higher than in the non-durable-goods industries.[11] All of these industries are characterized by large-scale operations and by presence of a few large companies which have a dominant position. The analysis in the preceding chapter indicates that for steel, meat packing, and the manufacture of cigarettes and soap, at least, size of company rather than size of plant is the size factor associated with wage differences. For automobiles, the differentials are affected by the high-wage manufacturing and assembly plants of the large companies and the lower wages paid in the smaller plants manufacturing parts, essentially a different industry.

TABLE 15.—*Average hourly earnings in durable- and non-durable-goods industries by size of establishment, August 1937*

Industry group	All establishments	Establishments with—			
		1 to 100 employees	101 to 500 employees	501 to 1,000 employees	Over 1,000 employees
All manufacturing	$0.674	$0.593	$0.590	$0.624	$0.763
Durable goods	.736	.595	.622	.683	.820
Nondurable goods	.590	.592	.560	.572	.634

Source: U. S. Bureau of Labor Statistics.

In this group of industries in which earnings increase with size, on the other hand, there are also some industries in which there are many small companies and small plants and in which the large companies in the industry do not occupy such a dominant position. Among these are beverages, confectionery, canning and preserving, paper boxes, knit goods, cotton and woolen and silk and rayon goods, leather, sawmills, millwork, furniture, and foundries. Other information, however, casts doubt on inferences which might be drawn from reports for these industries. In the paper-box industry, for example, some of the set-up paper-box plants are affiliated with large companies operating in other industries, which take their products and give

[7] See table 14 (A).
[8] See table 14 (B).
[9] See table 14 (C).
[10] See table 14 (D).
[11] See table 15.

them a marketing advantage. In cotton textiles and in the lumber industries it is known that there are wide geographical differentials in wages between the North and the South. In the lumber industry, the largest operations are in the North, so that apparent differences are not necessarily conclusive. In furniture, as already indicated, a careful analysis requires classification by product—which runs the entire scale from simple wooden furniture to upholstered furniture—and by region. When these allowances are made the apparent differences in earnings by size of establishment largely disappear.

The analysis of Bureau of Labor Statistics data showed only one industry, women's clothing, in which there was an inverse relationship, average hourly earnings declining as size of establishment increased.[12] In this industry, as in men's clothing and in certain industries in group B of table 14 in which the smallest establishments paid more wages than the next largest size establishments, the smaller establishments are unionized and pay higher wages. Some are engaged in producing quality merchandise of a more or less custom-made character, which requires more highly skilled workmen than would be used in a large establishment operating on a mass production basis. Thus, the inverse relationship is perhaps to be explained by the skill composition of the working force.

In 7 industries there appeared to be no relationship between average hourly earnings and establishment size,[13] and, in addition, there were 22 industries for which no conclusions could be drawn because of the small number of reporting firms. Of these, 7 industries had establishments in only 1 or 2 of the size groups, and 15 had 3 or more establishments in only 2 size groups.[14] These industries are presented in section G of table 14. It may be observed that for this group in which numbers reporting were too small to make conclusions possible, there were only a few industries in which average hourly earnings increased as size of establishment increased. In most of these industries there was no apparent relationship between the 2; in fact, in 3 industries—beet sugar, clocks and watches, and jewelry—average hourly earnings declined as size of establishment increased. The situation in the clock and watch and jewelry industries is perhaps similar to that suggested as characterizing the women's clothing industry. In the explosives industry and the fertilizer industry it has already been indicated in the preceding chapter that higher hourly earnings are associated with size of company, not size of establishment.

As a further test of conclusions, before some of the reasons for diversity in earnings listed above were apparent and to avoid complications caused by small number of reports, a representative group of 13 of the industries reporting to the Bureau of Labor Statistics was selected for further analysis. In each of these industries, the reports included a large number of establishments in each of the four size groups and represented a large proportion of the industry. They included both durable and nondurable goods industries. In each of these industries, there was a close relationship for the country as a whole between the level of average hourly earnings and the size of establishment. In 9 of them—automobiles, steel works, electrical

[12] See table 14 (E).
[13] See table 14 (F).
[14] Average hourly earnings could not be shown in those cases in which there were fewer than 3 establishments.

machinery, foundries, machine tools, cement, glass, knit goods, and woolen goods—earnings increased with each increase in size. In others, such as cotton goods, dyeing and finishing of textiles, paper and pulp and paper boxes, there was at least 1 exception to the general rule. The textile industries, in general, showed smaller differentials between small and large plants than the other industries.[15]

TABLE 16.—*Average hourly earnings in 13 selected industries,* [1] *by size of establishment, August 1937*

Industry	Number of establishments reporting	Number of employees reported	Establishments with—			
			1 to 100 employees	101 to 500 employees	501 to 1,000 employees	Over 1,000 employees
A. Consistently increasing earnings with increasing plant size:						
Automobiles	319	384,876	$0.603	$0.729	$0.810	$0.932
Steel works and rolling mills	253	433,521	.617	.722	.783	.870
Cement	140	23,833	.644	.664	.743	(2)
Electrical machinery, apparatus and supplies	429	194,933	.573	.602	.679	.773
Foundry and machine shop products	1,744	230,443	.647	.673	.725	.745
Glass	140	57,068	.577	.629	.672	.737
Machine tools	157	39,520	.643	.695	.700	.758
Woolen and worsted goods	414	125,863	.561	.580	.586	.608
Knit goods	481	126,052	.451	.464	.524	.580
B. Increasing earnings with increasing plant size, except one size group:						
Cotton goods	540	294,722	.420	.384	.424	.446
Dyeing and finishing	156	38,738	.546	.560	.574	.570
Paper and pulp	357	114,858	.557	.611	.656	.613
Paper boxes	642	36,411	.488	.558	.543	.621

[1] Selected as industries with the largest number of establishments in the various size groups and with the largest samples reporting to the Bureau of Labor Statistics.
[2] Insufficient number of reports.

Source: U. S. Bureau of Labor Statistics.

In addition to computing the average hourly earnings of all employees of the plants in each size group, the average hourly earnings of each plant in each industry were arrayed by size groups. On this basis it appeared that in most industries in which there was a pronounced tendency for average hourly earnings to increase as size of establishment increased, this was due, not so much to the fact that the larger establishments paid higher wages on the average than any of the small establishments, but to the fact that few of the large establishments paid as low wages as most of the smaller establishments. In other words, there were, in nearly every case, small establishments which paid as high wages on the average to their employees as any of the large establishments, but there were also many small establishments which had much lower average hourly earnings than even the lowest of the large establishments.

Thus, taking the analysis as a whole, the diversity of these industries with respect to location in high or low wage areas, the degree of skill required, the dominance of certain companies, or other aspects of organization are so great that no generalizations can safely be drawn, in view of the fact that these factors are known to be so important in influencing wage levels in addition to any importance size might assume. There is the further complication, already suggested, of

[15] See table 16.

diversity of products included under so-called "industries." In only a few of these 89 "industries" do all plants manufacture the same lines of products. Thus, as indicated in the preceding chapter, the explosives industry makes two quite different products—black powder and dynamite—and might more truly be defined as two industries; the radio industry has three distinct branches—sets, parts, and tubes. The difference in the products of the specialized machinery industries, of furniture, etc., is too well known to require elaboration.

Thus, taking into account all of these well-grounded doubts and the further fact that reports to the Bureau of Labor Statistics are not numerous enough to permit generalizations about size in many industries as a factor in wage levels, it is clear that no sweeping conclusions can be drawn from these or other similar data.

ESTABLISHMENT REPORTS TO THE CENSUS OF MANUFACTURES

In cooperation with the Bureau of the Census, the Bureau of Labor Statistics has compiled the average hourly earnings by size of establishment, in 1933, 1935, and 1937, of employees in a large number of the manufacturing industries for which the Census of Manufactures has collected information on man-hours worked.[16] These reports cover a limited section of the industrial field, with 49 percent of the manufacturing wage earners represented in the reports in 1937. The 109 "industries", so-called, represent in many cases subdivisions of the broader groups classified as "industries" by the Bureau of Labor Statistics, and are not, therefore, directly comparable.[17] Thus, for example, this tabulation shows separately the following "industries" which the Bureau groups under cotton textiles—cotton yarn and thread, cotton woven goods, cotton narrow fabrics; and the following which the Bureau groups under silk and rayon manufactures—rayon throwing and spinning (commission only), rayon yarn and thread (processed for sale), "commission" branch of rayon broad woven goods, rayon narrow fabrics, silk narrow fabrics, silk throwing and spinning (commission only), silk yarn and thread (made for sale), silk broad woven goods (18 inches wide and over) separately for the commission branch and the regular branch. This finer classification removes, to some extent, one of the factors of doubt in analysis of broader classifications—namely, differences in product. Thus, the smaller and more homogeneous the classification, the more reliable the conclusions—if other factors can be satisfactorily analyzed.

In these reports, as in those made direct to the Bureau of Labor Statistics, there is the same general tendency for average hourly earnings to increase as size of establishment increases in the majority of cases. In about 65 of the 101 census "industries" for which average hourly earnings by size of plant were compiled for 1937, average hourly earnings increased as size of establishment increased.[18] Of the 38 industries for which no such relationship existed, 28 were textile and apparel industries, although only about 50 percent of the industries included in the reports were in the textile and apparel fields.[19] On the

[16] See Man-Hour Statistics for 105 Selected Industries, Census of Manufactures, 1937: Published jointly by the Bureau of the Census and the Bureau of Labor Statistics. These statistics are compiled under the direction of Dr. Arthur F. Beal.

[17] These tabulations include as "industries" separate figures in several industries for establishments doing regular work and those doing contract work.

[18] See table 17, section A.

[19] See table 17, section B.

other hand, there was a direct relationship between size and earnings in all but 2 of the 21 industries included in the group "Iron and steel and their products, including machinery." The exceptions were "cast-iron pipe and fittings" and "radios, radio tubes, and phonographs." In the latter industry, a special study of the Bureau of Labor Statistics shows that in the radio-sets branch of the industry earnings vary with size of company, so that the conclusion from industry-wide data is not valid.

TABLE 17.—*Average hourly earnings in manufacturing industries, by size of establishment, 1937*

SECTION A. INDUSTRIES IN WHICH AVERAGE HOURLY EARNINGS DID NOT INCREASE WITH SIZE OF ESTABLISHMENT

(All establishments in these industries in the United States reporting fully to 1937 Census of Manufactures)

Food and tobacco industries:
1. Cereal preparations.
2. Distilled liquors.
3. Tobacco (chewing and smoking) and snuff.

Textile mills:
4. Cotton yarn and thread.
5. Cotton woven goods (over 12 inches in width).
6. Cotton narrow fabrics.
7. Dyeing and finishing of cotton yarn.
8. Cotton fabric dyeing and finishing.
9. Batting, padding, and wadding; upholstery filling.
10. Processed cotton waste.
11. Worsted woven goods.
12. Recovered wool fiber.
13. Felt goods, except woven felts.
14. Rayon throwing and spinning—commission only.
15. Rayon yarn and thread—processed for sale.
16. "Commission" branch of rayon broad woven goods (18 inches wide and over).
17. "Regular" branch of rayon broad woven goods (18 inches wide and over).
18. Rayon narrow fabrics.
19. Dyeing and finishing of rayon (and silk) yarn.
20. Silk narrow fabrics.
21. Knitted cloth.

Clothing industries:
22. Knitted outerwear—contract factories.
23. Knitted outerwear—regular factories.
24. Knitted underwear.
25. Work clothing (including work shirts) and sport garments, except leather.
26. Trousers (semidress), wash suits, and washable service apparel.
27. Leather and sheep-lined clothing.
28. Shirts (except work shirts), collars, and nightwear—contract factories.
29. Shirts (except work shirts), collars, and nightwear—regular factories.
30. Men's underwear—regular factories.
31. Furnishing goods, men's, not elsewhere classified—regular factories.

Miscellaneous industries:
32. Insecticides and fungicides, and industrial and household chemical compounds, not elsewhere classified.
33. Blackings, stains, and dressings.
34. Lime.

Metal industries:
35. Zinc smelting and refining.
36. Sheet-metal work, not specifically classified.
37. Cast-iron pipe and fittings.
38. Radios, radio tubes, and phonographs.

TABLE 17.—*Average hourly earnings in manufacturing industries, by size of establishment, 1937*—Continued

SECTION B. INDUSTRIES IN WHICH AVERAGE HOURLY EARNINGS INCREASED WITH SIZE OF ESTABLISHMENT

(All establishments in these industries in the United States reporting fully to 1937 Census of Manufactures)

Food and tobacco industries:
1. Flour and other grain-mill products.
2. Feeds, prepared, for animals and fowls.
3. Meat packing, wholesale.
4. Malt liquors.
5. Cigars.
6. Cigarettes.

Textile mills and apparel:
7. Woolen yarn.
8. Worsted yarn.
9. Woolen woven goods, including woven felts.
10. Woolen and worsted dyeing and finishing.
11. Woolen and worsted carpet yarn, jointly with wool carpets and rugs (other than rag).
12. Paper-fiber and grass carpets and rugs.
13. Dyeing and finishing of rayon and silk fabric.
14. Silk throwing and spinning—commission only.
15. Silk yarn and thread—made for sale.
16. "Commission" branch of silk broad-woven goods (18 inches wide and over).
17. "Regular" branch of silk broad-woven goods (18 inches wide and over).
18. Hosiery.
19. Men's, youths', and boys' clothing, not elsewhere classified—contract factories.
20. Men's, youths', and boys' clothing, not elsewhere classified—regular factories.

Chemical industries:
21. Paper.
22. Pulp (wood and other fiber).
23. Rayon and allied products.
24. Drugs and medicines.
25. Perfumes, cosmetics, and other toilet preparations.
26. Soap.
27. Cleaning and polishing preparations.
28. Petroleum refining.
29. Leather (tanned, curried, and finished)—contract factories.
30. Leather (tanned, curried, and finished)—regular factories.
31. Rubber boots and shoes.
32. Rubber tires and inner tubes.
33. Rubber goods other than tires, inner tubes, and boots and shoes.

Stone, clay, and glass industries:
34. Cement.
35. Clay products, other than pottery.
36. Pottery, including porcelain ware.
37. Nonclay refractories.
38. Glass.

Nonferrous metal industries:
39. Aluminum products.
40. Copper smelting and refining, jointly with lead smelting and refining.
41. Smelting and refining of nonferrous metals other than gold, silver, platinum, not from the ore.
42. Nonferrous-metal alloys, nonferrous-metal products, except aluminum, not elsewhere classified.

Iron and steel and their products, including machinery:
43. Blast-furnace products.
44. Steel-works and rolling-mill products.
45. Wrought pipe, welded and heavy riveted, made in plants not operated in connection with rolling mills.
46. Plumbers' supplies, not including pipe or vitreous-china sanitary ware.
47. Steel barrels, kegs, and drums.

TABLE 17.—*Average hourly earnings in manufacturing industries, by size of establishment, 1937*—Continued

SECTION B. INDUSTRIES IN WHICH AVERAGE HOURLY EARNINGS INCREASED WITH SIZE OF ESTABLISHMENT—continued

Iron and steel and their products, including machinery—Continued.
48. Tin cans and other tinware not elsewhere classified.
49. Stamped and pressed metal products; enameling, japanning, and lacquering.
50. Wire drawn from purchased rods.
51. Wirework, not elsewhere classified.
52. Electrical machinery, apparatus, and supplies.
53. Machine tools.
54. Machine-tool accessories and machinists' precision tools.
55. Machinery not elsewhere classified.
56. Machine-shop products.
57. Machine repair shops.
58. Engines, turbines, water wheels, and windmills.
59. Refrigerators and refrigerating and ice-making apparatus.
60. Motor-vehicle bodies.
61. Motor-vehicle parts and accessories.
62. Motor-vehicle trailers.
63. Motor vehicles, not including motorcycles.

Source: Man-Hour Statistics for 105 Selected Industries.

Although it is difficult to compare these more comprehensive figures with those compiled from reports to the Bureau of Labor Statistics due not only to differences in the detail of the industrial classification and to the size groups used, there are some limited comparisons which can be made. Both sets of reports show a relationship between size of establishment and average hourly earnings for 8 of the 13 industries selected from the Bureau of Labor Statistics list for special study because of the relatively large sample covered.[20] The Bureau of Labor Statistics data indicated that, with one exception, earnings increased with size of establishment in the "cotton goods," "dyeing and finishing," and "knit goods" industries. The census figures show each of these industries in several subgroups, but the subgroups taken together do not cover all of the important branches of the industries which the Bureau of Labor Statistics covers, because of lack of reports to the Census of Manufactures. In the subgroups shown by the census, however, there is no tendency for earnings to increase with size of establishment in any of these industries, and doubt is cast upon the significance of the Bureau's reports.

The "woolen and worsted goods" industry, in which there is also a relation between earnings and size of plant shown in the Bureau of Labor Statistics figures, is broken down in the census compilation into the "woolen woven goods (including felts)" and the "worsted woven goods" industries. In the woolen industry earnings increase with size of establishment, but in the worsted industry they do not

Figures on average hourly earnings by size of establishment were also compiled from the Census of Manufactures reports for the year 1935 for 59 industries and show similar information to that for 1937. In more than half of the "industries" reported for 1935 average hourly earnings showed a tendency to increase as size of establishment increased. Again, most of the industries in which there was no such relationship were in the textile and apparel groups. This lack of relationship between size of establishment and earnings in many industries is not conclusive, on the other hand, as it may well result

[20] See table 16.

from the geographical distribution of the plants, particularly since textile and apparel plants are known to be distributed widely in the South as well as in the North and in small as well as in large communities.

These cases illustrate again the complexity of analysis of this subject and the necessity for much more detailed information. And so, as in the case of data from the Bureau of Labor Statistics, it must again be noted that these census figures, since they represent all establishments in the country in each industry, do not provide any evidence on the independent character of the relation between size of establishment and average hourly earnings. In fact, the same report of the Census of Manufactures and the Bureau of Labor Statistics provides regional and size of community figures which strongly suggest that the higher earnings in the larger establishments may well be due in whole or part to the tendency for such plants to be concentrated in the northern region and the larger communities.

NATIONAL INDUSTRIAL CONFERENCE BOARD STUDY

A more limited study of the relationship between size of establishment and average hourly earnings in manufacturing industries was made on the basis of September 1937 data by the National Industrial Conference Board.[21] Reports were received on a voluntary basis from six industries: Cotton textiles, printing, foundries and machine shops, lumber, and paper and pulp. The average hourly earnings data were compiled by size of establishment, region, and sex of the employees. In general these figures also showed a tendency for average hourly earnings to increase as size of establishment increases. This information is subject to some of the same limitations as appear in the reports on size of establishment from the Bureau of Labor Statistics and the Census of Manufactures, with the further limitation that the number of reports is smaller in each industry and the results somewhat less conclusive.

[21] M. Ada Benay, "Differentials in Industrial Wages and Hours in the United States," National Industrial Conference Board studies, No. 238, New York City, 1938. Although the conclusion of this study is stated as "on the whole, large companies pay higher wages than smaller business concerns" (ibid, p. 23), no data are presented on earnings by size of company. For the most part the terms "company," "establishment," and "plant" are used interchangeably throughout the discussion, but it is clear from examination that the data presented relate solely to single operating units corresponding roughly to those termed in this analysis "establishments."

APPENDIX A

THE RADIO MANUFACTURING INDUSTRY

DESCRIPTION OF THE INDUSTRY

In the manufacture of radio sets—which, for the most part, is done in medium-sized plants—employees of the two largest producers receive markedly higher average hourly earnings than workers in the other firms. This differential amounted to 20 cents an hour on the average in 1937 (73 cents an hour compared with 53 cents), and held, in general, for both skilled and unskilled workers, and for men and women.

The manufacture of radios may be termed a medium-sized industry. According to the Census of Manufacturers, it had 56,095 wage earners in August 1937,[1] which is the month covered by the Bureau's wage survey.[2] The latter included plants engaged in making receiving sets, receiving-set parts (except cabinets), and radio-receiving tubes. This coverage corresponds very closely to that used by the Census of Manufactures, which designated the industry as "radios, radio tubes, and phonographs."

The Bureau's survey was made on a sample basis, and included 59 plants and approximately 50 percent of the total number of wage earners. In analyzing the data, however, it was observed that different wage levels existed in the several branches of the industry. This necessitated the presentation of separate figures for establishments making radio sets and those manufacturing radio parts only.

RADIO SETS BRANCH

In 1937 practically all of the companies engaged in the manufacture of radio sets had only one establishment in this industry. In fact, the survey did not include more than one plant for any firm in each of the three branches of the industry, so that in effect each establishment represents a different company. On the other hand, a number of plants [3] are affiliated with large companies in other industries.

In spite of the fact that there are some large firms in this industry, one of its outstanding characteristics is the presence of numerous small and medium-sized companies. Since the single-unit firm prevails in this industry, the distribution of companies by size is virtually identical with the classification of plants according to number of wage earners, and any relationship between size of company and average hourly earnings holds equally well for size of establishment.

[1] U. S. Department of Commerce, Bureau of Census, Biennial Census of Manufacturers, 1937, pt. I, p. 1157.

[2] For a detailed description of the wage structure in this industry, as determined by the survey, see the following: Mimeographed report on "Average Hourly Earnings in the Radio Manufacturing Industry, August 1937," which was issued on May 15, 1938; and the article on "Hourly Earnings in Radio Manufacturing, August 1937," which appeared in the Monthly Labor Review, August 1938, pp. 363-377.

[3] Some of these establishments also manufacture products classified by the census under other industries, but the survey included only their departments primarily engaged in the making of radio sets, parts, and tubes.

Thus although it is not possible to determine definitely whether average hourly earnings may be related to size of plant or size of company, the evidence generally indicates the greater importance of size of company. However, the fact that several of the companies with but a single plant in the radio-sets industry are in fact giant concerns with huge investments in related industries may tend to invalidate the conclusions drawn. Regardless of the size of the plants which they own in this industry, their plants possess many of the characteristics of large companies, such as large financial resources, leadership in markets, advantages in national advertising, etc.

Although the two largest producers are important in the industry, their combined position is by no means a predominant one. In 1937 they accounted for approximately 40 percent of the total number of wage earners engaged in the manufacture of radio sets. One of these producers also had an establishment making radio tubes, but neither of them was represented in the parts branch of the industry.

In the manufacture of radio sets, the average hourly earnings of all wage earners in August 1937 were 60.9 cents. In analyzing the wide range of averages in different plants it was found that the hourly earnings in the establishments of the two largest producers occupied by far the highest rung in the industry's wage ladder. Thus, the average of the two largest producers combined was 73.1 cents, while no other establishment in the industry averaged more than 61.0 cents, and as a group the average hourly earnings of their employees was 53.1. Outside of the two largest producers, however, there was very little evidence that hourly earnings varied directly with size of company.[4]

TABLE 18.—*Average hourly earnings of workers in sets branch of radio manufacturing industry, by sex, skill, and size of company, August 1937*

Sex and skill	All	Plants of 2 largest companies	Plants of other companies
All workers:			
Skilled	$0.752	$0.890	$0.666
Semiskilled	.581	.696	.502
Unskilled	.531	.656	.469
Total	.609	.731	.531
Males:			
Skilled	.784	.902	.700
Semiskilled	.677	.782	.577
Unskilled	.577	.666	.506
Total	.696	.800	.610
Females:			
Skilled	.523	.659	.499
Semiskilled	.510	.607	.458
Unskilled	.473	.628	.437
Total	.504	.610	.457

Source: U. S. Bureau of Labor Statistics.

The extent to which plants of the two big companies paid higher hourly earnings than the smaller companies is also shown by the distribution of the average hourly earnings of individual employees. While for all practical purposes 47.5 cents an hour was the effective

[4] See table 18.

minimum in large company plants, 43 percent of the employees of the smaller companies received less than that. On the other hand, over 45 percent earned 72.5 cents or more an hour in establishments of the two largest producers, as compared with 9 percent in plants of the smaller companies.[5]

TABLE 19.—*Percentage distribution of all workers in sets branch of radio manufacturing industry according to average hourly earnings, by type of company and skill, August 1937*

Average hourly earnings	Plants of 2 largest companies				Plants of other companies			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
22.5 and under 27.5 cents					0.7		1.2	0.2
27.5 and under 32.5 cents					.9	0.1	.8	2.0
32.5 and under 37.5 cents					11.6	3.3	11.5	20.2
37.5 and under 42.5 cents					11.1	4.1	12.6	13.5
42.5 and under 47.5 cents	0.1		0.1		18.7	5.3	20.6	25.8
47.5 and under 52.5 cents	4.7	0.1	5.6	7.0	21.0	9.8	26.5	14.1
52.5 and under 57.5 cents	9.7	1.0	12.5	8.6	10.8	14.4	9.4	11.4
57.5 and under 62.5 cents	15.0	.9	18.3	18.4	6.4	9.6	5.1	7.2
62.5 and under 67.5 cents	17.1	2.5	17.1	38.2	5.0	9.5	4.2	3.0
67.5 and under 72.5 cents	8.0	3.0	8.7	11.5	4.6	11.5	3.3	1.0
72.5 and under 77.5 cents	11.6	7.5	13.7	7.2	2.7	7.5	2.0	.4
77.5 and under 82.5 cents	9.4	12.7	9.1	6.3	1.9	6.6	1.1	.1
82.5 and under 87.5 cents	7.6	21.7	4.8	9.9	1.5	5.5	.7	.1
87.5 and under 92.5 cents	6.0	20.2	2.9	.8	1.0	4.3	.3	
92.5 and under 100.0 cents	5.1	14.8	3.2	.8	.9	3.7	.3	.1
100.0 and under 110.0 cents	4.1	9.0	3.5	.3	.8	3.6	.2	
110.0 and under 120.0 cents	1.3	5.2	.4		.3	.9	.2	
120.0 cents and over	.3	1.4	.1		.1	.3	(1)	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 percent.

Source: U. S. Bureau of Labor Statistics.

The number of firms covered by the survey was too small to determine whether or not the relationship between hourly earnings and size of company was influenced by the region or size of community in which the plants of the two largest producers and those of other companies were located.

Only a small part of the difference in earnings between the two groups of companies appears to be attributable to differences in the composition of the labor force. Both the large and small produers had the same proportion of skilled workers—about 19 percent; and the larger producers had only slightly more semiskilled employees than the balance of the industry.[6] Thus, the wage advantage of skilled labor could not have been an important influence on the differential. This conclusion is further demonstrated by the large differentials shown in table 18 between earnings of workers with the same degree of skill in the two groups of companies. Moreover, data on average hourly earnings in specific occupations show a substantial differential between employees of the large companies and those of the smaller companies.[7] For example, the differences for unskilled male workers amounted to 22 cents for watchmen, 11.3 cents for common laborers, 11.6 cents for cleaners and sweepers, and 15.9 cents for material handlers. The differences for unskilled women

[5] See table 19.
[6] See table 20.
[7] See table 21.

were 13.3 cents for leads preparers and 15.8 cents for coil assemblers. This is conclusive evidence that the two largest producers pay more for similar types of work.

TABLE 20.—*Percentage distribution of all workers in sets branch of radio manufacturing industry, by size of company, sex, and skill, August 1937*

Sex and size of company	Total	Skilled	Semiskilled	Unskilled
All workers	100.0	19.4	63.4	17.2
Two largest companies	100.0	19.4	66.7	13.9
Other companies	100.0	19.4	61.2	19.4
Males	91.0	16.9	25.5	8.6
Two largest companies	60.9	18.4	32.6	9.9
Other companies	44.5	15.9	20.8	7.8
Females	49.0	2.5	37.9	8.6
Two largest companies	39.1	1.0	34.1	4.0
Other companies	55.5	3.5	40.4	11.6

Source: U. S. Bureau of Labor Statistics.

TABLE 21.—*Average hourly earnings of all workers in sets branch of radio manufacturing industry, by skill, occupation, sex, and size of company, August 1937*

Skill, occupation, and sex	Plants of 2 largest companies		Plants of other companies	
	Number of employees	Average hourly earnings	Number of employees	Average hourly earnings
All occupations:				
Males	3,461	$0.800	3,864	$0.610
Females	2,224	.610	4,811	.457
Total	5,685	.731	8,675	.531
SKILLED				
Adjusters, parts:				
Males	37	.877	11	(1)
Females	12	.651	9	(1)
Aligners, sets:				
Males	33	1.049	104	.708
Females	7	(1)	8	(1)
Cabinet refinishers: Males	83	.866	40	.654
Inspectors, final and cabinet finish:				
Males	68	.817	55	.676
Females			3	(1)
Inspectors, chassis assembly:				
Males	62	.818	248	.599
Females	1	(1)	83	.510
Machine set-up and maintenance employees:				
Males	64	.898	69	.823
Females	1	(1)		
Machinists: Males	100	.942	32	.891
Plant maintenance employees: Males	116	.910	82	.765
Supervisors, working:				
Males	68	.882	174	.761
Females	25	.676	94	.543
Test equipment set-up and maintenance employees:				
Males	36	.844	16	(1)
Testers, final:				
Males	130	.884	169	.662
Females			23	(1)
Testers, set circuits:				
Males	56	.862	172	.568
Females	2	(1)	62	.457
Tool and die makers: Males	85	1.070	99	.931
Trouble shooters: Males	36	.942	83	.749
Winders, transformer coils:				
Males	34	.758	24	(1)
Females	10	.636	19	(1)
Miscellaneous skilled employees: Males	39	.940	7	(1)

[1] Not a sufficient number of workers to justify the presentation of data.

TABLE 21.—*Average hourly earnings of all workers in sets branch of radio manufacturing industry, by skill, occupation, sex, and size of company, August 1937*—Continued.

Skill, occupation, and sex	Plants of 2 largest companies		Plants of other companies	
	Number of employees	Average hourly earnings	Number of employees	Average hourly earnings
SEMISKILLED				
Apprentices and learners: Males	14	$0.694	56	$0.537
Assemblers, chassis:				
Males	127	.767	183	.478
Females	113	.590	1,406	.460
Assemblers, electrolytic and paper capacitors:				
Males	8	(1)		
Females	63	.593	1	(1)
Assemblers, final, sets:				
Males	82	.760	200	.532
Females	15	.577	38	.444
Assemblers, mica capacitors:				
Males	26	.613		
Females	73	.611	39	.388
Assemblers, other parts:				
Males	19	.752	45	.522
Females	13	.599	201	.468
Assemblers, speakers:				
Males	14	.806	26	(1)
Females	37	.633	31	(1)
Assemblers, transformers:				
Males	31	.651	11	(1)
Females	50	.566	73	.436
Assemblers, unassignable:				
Males	96	.794	51	.617
Females	130	.627	162	.451
Assemblers, variable condensers:				
Males	25	.781	35	.498
Females	11	.619	40	.383
Drill press operators:				
Males	66	.903	32	.618
Females	9	(1)	13	(1)
Factory clerks:				
Males	67	.657	21	(1)
Females	28	.528	18	(1)
Helpers, plant maintenance: Males	47	.712	37	.651
Inspectors, incoming materials:				
Males	29	.759	51	.703
Females	19	.581	76	.475
Inspectors, parts:				
Males	199	.813	85	.599
Females	71	.623	69	.489
Laminators, transformer:				
Males	1	(1)	2	(1)
Females	28	.565	17	(1)
Miscellaneous machine operators:				
Males	40	.859	86	.860
Females	10	.651	12	(1)
Packers and wrappers:				
Males	94	.684	160	.532
Females	50	.579	17	(1)
Paint sprayers:				
Males	35	.829	18	(1)
Females	1	(1)		
Plating employees:				
Males	43	.934	35	.707
Females			8	(1)
Punch press operators:				
Males	183	.907	83	.603
Females	33	.668	27	(1)
Repairers, parts:				
Males	38	.765	13	(1)
Females	25	.559	12	(1)
Repairers, sets:				
Males	119	.814	99	.633
Females			43	.516
Riveters, eyeletters, etc.:				
Males	6	(1)	89	.484
Females	114	.621	89	.484

[1] Not a sufficient number of workers to justify the presentation of data.

TABLE 21.—*Average hourly earnings of all workers in sets branch of radio manufacturing industry, by skill, occupation, sex, and size of company, August 1937*—Continued

Skill, occupation, and sex	Plants of 2 largest companies		Plants of other companies	
	Number of employees	Average hourly earnings	Number of employees	Average hourly earnings
SEMISKILLED—continued				
Shipping employees:				
Males	73	$0.738	77	$0.601
Females	12	.608	3	(1)
Solderers:				
Males	4	(1)	23	(1)
Females	404	.597	396	.461
Storekeepers:				
Males	96	.760	46	.672
Females	1	(1)		
Testers, parts:				
Males	146	.797	48	.565
Females	46	.582	113	.467
Winders, capacitors:				
Males	2	(1)		
Females	39	.682	13	(1)
Winders, flat coils:				
Males	1	(1)	4	(1)
Females	53	.652	265	.439
Winders, other coils:				
Females	114	.623	33	.484
Wirers, parts:				
Males	2	(1)		
Females	20	.621	73	.366
Wirers, sets:				
Males	11	.751	118	.484
Females	313	.603	212	.421
Miscellaneous semiskilled employees:				
Males	109	.731	64	.619
Females	44	.631	5	(1)
Unskilled				
Assemblers, coils:				
Males			15	(1)
Females	69	.646	283	.488
Cleaners and sweepers:				
Males	83	.605	45	.489
Females	19	.522	9	(1)
Gluing and taping employees:				
Males	12	.766		
Females	22	.658	25	(1)
Laborers:				
Males	39	.644	167	.541
Females			1	(1)
Leads preparers:				
Males	8	(1)	6	(1)
Females	73	.637	64	.504
Material handlers:				
Males	327	.687	226	.528
Females	16	.597	7	(1)
Starters:				
Males			165	.424
Females			609	.399
Watchmen: Males	74	.624	46	.582
Miscellaneous unskilled employees:				
Males	18	.704	11	(1)
Females	28	.627	7	(1)

[1] Not a sufficient number of workers to justify the presentation of data.

Source: U. S. Bureau of Labor Statistics.

The large producers employed a larger percentage of men than the smaller companies—61 percent, as compared with 45 percent. In general, women earn smaller wages in the same occupation than men, and this factor might account in whole or part for the size of company differential. Wage differentials for men and women workers vary in this industry from 10 cents an hour for unskilled workers up to as much as 26 cents an hour for skilled workers. Although the larger percentage of men employed by the two largest producers was undoubtedly responsible for part of the differential between large and small companies, there is still a substantial difference between companies with respect to earnings of men and women considered separately. Men employed by the large companies averaged 19 cents per hour more than those of the smaller companies; women averaged 15 cents per hour more.[8]

The distributions of individual average hourly earnings, by sex and skill groups, in tables 22 and 23, confirm the general conclusions reached that the two largest producers in the radio-sets branch of the radio industry pay more on the average to men and women workers in the same skill group than the smaller companies in the industry. Although the range of earnings appears to be similar in both organized and unorganized plants, information is not available to indicate the degree of influence which unionization may have had on the general level of rates in the industry.

TABLE 22.—*Percentage distribution of male workers in sets branch of radio manufacturing industry according to average hourly earnings, by size of company and skill, August 1937*

Average hourly earnings	Plants of 2 largest companies				Plants of other companies			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
22.5 and under 27.5 cents	.....	.....	.....	.....	0.7	.....	1.2	0.6
27.5 and under 32.5 cents	.....	.....	.....	.....	.5	.....	.9	.4
32.5 and under 37.5 cents	.....	.....	.....	.....	4.3	1.7	2.7	13.7
37.5 and under 42.5 cents	.....	.....	.....	.....	4.5	3.2	3.3	10.6
42.5 and under 47.5 cents	0.1	.....	0.1	.....	11.7	2.4	16.2	18.5
47.5 and under 52.5 cents	1.9	.....	2.0	5.3	14.1	6.2	21.0	12.3
52.5 and under 57.5 cents	2.7	0.2	2.4	8.2	13.7	13.1	12.5	17.9
57.5 and under 62.5 cents	5.3	.4	4.1	18.7	10.6	9.9	9.8	11.0
62.5 and under 67.5 cents	9.8	.8	7.9	32.9	9.7	10.9	10.0	6.8
67.5 and under 72.5 cents	9.5	2.4	12.6	12.7	9.6	13.6	8.6	4.0
72.5 and under 77.5 cents	16.1	6.9	23.1	9.8	6.0	8.8	5.8	.7
77.5 and under 82.5 cents	14.8	13.2	17.6	8.6	4.3	7.9	3.1	.1
82.5 and under 87.5 cents	12.2	22.9	9.4	1.2	3.4	6.7	2.1	.3
87.5 and under 92.5 cents	9.8	21.3	5.9	1.1	2.2	5.2	.8	.....
92.5 and under 100.0 cents	8.4	15.5	6.6	1.1	2.0	4.5	.8	.1
100.0 and under 110.0 cents	6.8	9.5	7.2	.4	1.8	4.3	.5	.....
110.0 and under 120.0 cents	2.1	5.4	.9	.....	.7	1.2	.6	.....
120.0 cents and over	.5	1.5	.2	.....	.2	.4	.1	.....
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Bureau of Labor Statistics.

[8] See table 18.

TABLE 23.—*Percentage distribution of female workers in sets branch of radio manufacturing industry according to average hourly earnings, by size of company and skill, August 1937*

Average hourly earnings	Plants of 2 largest companies				Plants of other companies			
	All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
22.5 and under 27.5 cents					0.8		1.1	
27.5 and under 32.5 cents					1.2	0.3	.7	3.1
32.5 and under 37.5 cents					17.5	10.6	16.0	24.6
37.5 and under 42.5 cents					16.4	8.3	17.4	15.5
42.5 and under 47.5 cents	0.1		0.1		24.3	18.9	22.8	30.8
47.5 and under 52.5 cents	9.1	1.7	9.1	11.0	26.4	26.6	29.6	15.2
52.5 and under 57.5 cents	20.6	15.5	22.1	9.7	8.5	19.6	7.9	7.1
57.5 and under 62.5 cents	30.0	10.3	31.9	17.6	3.0	8.3	2.7	2.6
62.5 and under 67.5 cents	28.6	34.6	25.8	51.1	1.2	3.3	1.2	.5
67.5 and under 72.5 cents	5.6	13.8	5.0	8.8	.6	1.7	.6	.5
72.5 and under 77.5 cents	4.7	19.0	4.7	.9	.1	1.7		.1
77.5 and under 82.5 cents	.9	3.4	.9	.9	(1)	.7		
82.5 cents and over	.4	1.7	.4					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

Source: U. S. Bureau of Labor Statistics.

RADIO PARTS AND RADIO TUBES

In these two branches of the radio manufacturing industry, there is no clear-cut distinction between earnings of employees in large as compared with small companies or in large as compared with small plants. There are only a small number of companies which manufacture radio tubes, and in the manufacture of radio parts the wage situation is confused by differences in manufacturing processes. For those who may be interested, however, the data collected by the Bureau are briefly described below.

The manufacture of radio parts is to a considerable degree a separate and distinct branch of the industry, with numerous plants making only either original parts for the producers of sets or replacement parts for general distribution. Even the largest companies manufacturing radio sets buy some parts from other firms. In fact, it is generally known that in certain cases such parts manufacturers contract to sell either an important share or all of their output at a given price to the large plants producing sets. In general, the smaller the establishment making sets, the greater is the number of parts bought from outside firms, and some of the very small establishments in this branch of the industry act largely as assembly plants. Moreover, while most of the large producers of sets make their own replacement parts, the latter are also supplied to the market by separate parts manufacturers.

An examination of the company averages for hourly earnings indicates that size of company is related only in a moderate degree to variation in hourly earnings. Average hourly earnings in each of the 3 companies with more than 1,000 employees exceeded 45 cents an hour, while average hourly earnings in each of the 4 companies with less than 100 employees were lower than 45 cents. On the other hand, there was considerable variation in the company averages of each of the remaining size groups. Of the 13 establishments having

between 100 and 500 employees, 4 averaged 35 and less than 40 cents; 4, 40 and less than 45; 2, 45 and less than 50; 2, 50 and less than 55; and 1, over 60 cents. Likewise, of the 7 plants reporting from 500 to 1,000 employees, 1 averaged between 35 and 40 cents, 4 between 45 and 50, and 2 between 50 and 55 cents.

The manufacture of radio-receiving tubes is concentrated largely in comparatively few large establishments. The sample of eight plants covered in the survey is too small to permit any conclusions as to variations attributable to size of company.

APPENDIX B

THE EXPLOSIVES INDUSTRY

DESCRIPTION OF THE INDUSTRY

A survey of the explosives industry by the Bureau of Labor Statistics in October 1937 indicated that there was a substantial difference between the wages paid by the larger and smaller companies. Although a relatively small industry, the manufacture of explosives is dominated by three large firms, whose wages were considerably higher on the average than those paid by the smaller companies.

The Bureau's survey was restricted to establishments reporting 5 or more workers and included 51 plants.[1] These plants employed 3,814 wage earners engaged on work falling within the scope of the survey.[2] The wage data were obtained for a pay-roll period during October 1937.

The explosives industry is composed of two branches—dynamite and black powder. These branches differ considerably with respect to raw materials used, manufacturing processes, and final products and their uses. Usually, a plant specializes in the making of either one or the other of these products. However, 3 of the establishments manufacture both products, each plant being classified in accordance with the predominant product made. Of the 51 plants surveyed, 32 plants, with 3,058 wage earners, manufactured dynamite and 19, with 756 wage earners, made black powder. The differences in the wage structure of the 2 branches of the industry were not sufficient to require a separate presentation of the reported earnings, and they are given in combination in the tables which follow.

In view of the hazardous nature of the work, factories making explosives are generally not very large. Of the 51 plants, only 13 had over 100 workers and none over 500.

On the other hand, there is considerable concentration of ownership in the industry. The 51 plants were owned by 19 companies. One concern owned 12 establishments, another 9, and a third, 7. The 3 leading firms, hereafter referred to as the "Big Three," controlled 28 establishments, with 2,781 wage earners. The other companies owned 23 plants, with 1,033 workers. The "Big Three" had a more dominant position in the dynamite than in the black powder branch of the industry.

[1] For a detailed description of the wage structure in this industry, as determined by the survey, see the following: Mimeographed report on "Earnings and Hours in the Explosives Industry, October 1937," which was issued on March 10, 1938; and the article on "Earnings and Hours in the Explosives Industry, October 1937," which appeared in the Monthly Labor Review, August 1938, pp. 378–392.

[2] The total employment in these plants, including workers engaged in the production of products outside of the definition of the industry, was 4,524 wage earners.

DIFFERENCES IN AVERAGE HOURLY EARNINGS BY SIZE OF COMPANY

The average hourly earnings of employees of the "Big Three" companies were 81.9 cents, over 25 percent higher than the 65.3 cents received on the average by the workers of the smaller companies. The average for the industry as a whole was 77.1 cents.

The distribution of average hourly earnings by plants, given in table 24, confirms this substantial differential between the large and small companies, although the range of average hourly earnings is large for both groups of plants, and there is a substantial amount of overlapping. Thirteen of the 28 "Big Three" plants reported an average of at least 80 cents an hour, while all of the plants of the other companies fell below 80 cents.

TABLE 24.—*Distribution of plants in explosives industry according to average hourly earnings, by type of plant, October 1937*

Average hourly earnings	All plants	Number of plants belonging to—	
		"Big Three"	Other companies
Under 60 cents	4		4
60 and under 65 cents	8	1	7
65 and under 70 cents	6	1	5
70 and under 75 cents	13	8	5
75 and under 80 cents	7	5	2
80 and under 85 cents	5	5	
85 and under 90 cents	2	2	
90 cents and over	6	6	
Total	51	28	23

Source: U. S. Bureau of Labor Statistics.

The distribution of individual average hourly earnings by size of company again supports the general conclusion: namely, the "Big Three" not only pay higher wages to their employees on the average, but a smaller percentage of their employees are in the low-wage brackets, a higher percentage are in the top brackets, and their modal earning range is above that of the smaller companies.[3] Thus, only 2.4 percent of all employees of the "Big Three" companies earned less than 52.5 cents an hour, as compared with 14 percent of the employees of the other companies. At the other end of the scale, the "Big Three" paid 24.3 percent of their employees 92.5 cents or over an hour, but only 4.6 percent of the employees of the smaller companies received that much.

[3] See table 25.

TABLE 25.—*Percentage distribution of workers in explosives industry according to average hourly earnings, by type of plant and skill, October 1937*

Average hourly earnings	Total	Big Three				Other companies			
		All	Skilled	Semi-skilled	Un-skilled	All	Skilled	Semi-skilled	Un-skilled
Under 37.5 cents	0.8	(1)			0.2	2.8	1.4	2.3	8.9
37.5 and under 42.5 cents	.9	0.4	0.3	0.1	.9	2.2	.2	4.3	5.0
42.5 and under 47.5 cents	1.2	.5	.2	1.0	.6	3.4	1.2	1.3	15.2
47.5 and under 52.5 cents	2.7	1.5	.2	.7	6.6	5.6	1.4	6.7	18.4
52.5 and under 57.5 cents	5.8	3.8	.2	1.1	17.5	11.5	7.8	16.2	15.2
57.5 and under 62.5 cents	8.8	6.6	1.4	5.9	21.9	14.9	11.2	20.9	16.4
62.5 and under 67.5 cents	11.2	8.7	3.7	14.5	15.1	17.6	17.7	21.0	10.8
67.5 and under 72.5 cents	10.8	9.2	3.8	13.8	17.6	15.3	17.2	15.2	8.8
72.5 and under 77.5 cents	9.9	10.3	6.0	19.4	9.0	8.9	12.7	6.1	.7
77.5 and under 82.5 cents	9.8	11.4	11.4	15.5	5.5	5.2	8.5	1.6	.6
82.5 and under 87.5 cents	12.1	14.8	17.8	17.5	2.6	5.0	6.9	3.9	
87.5 and under 92.5 cents	7.0	8.5	12.9	4.8	1.4	3.0	5.3	.3	
92.5 and under 97.5 cents	6.2	7.9	12.8	3.3	.5	1.6	3.0		
97.5 and under 102.5 cents	4.4	5.5	9.4	1.6	.4	1.5	2.7		
102.5 and under 107.5 cents	2.9	3.5	6.5	.3		1.0	1.9		
107.5 and under 112.5 cents	3.0	4.1	7.2	.5	.2	.2	.4		
112.5 and under 125.0 cents	1.8	2.5	4.7			.1	.1		
125.0 cents and over	.7	.8	1.5			.2	.4		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 percent.

Source: U. S. Bureau of Labor Statistics.

This differential in favor of the large companies overshadows the differential associated with type of product, as is indicated by the fact that for the "Big Three" plants, average hourly earnings amounted to 72.1 cents in the black-powder branch of the industry and 78.4 cents in the dynamite branch, while for the other companies the corresponding averages were 67.0 and 64.3 cents.

Detailed examination of the average hourly earnings for individual plants does not reveal any pattern in earnings explainable in terms of the region or size of community in which the plants were located, and for that reason no figures are shown for the "Big Three" and the other companies which take account of these factors.

Similarly, size of establishment does not appear to be of great importance in relation to average hourly earnings, although there is a definite tendency for the employees of the "Big Three" companies in large establishments to have higher average hourly earnings than those in the small establishments. However, in plants of the sizes owned by both large and small companies, those with 26 to 50 and 51 to 150 employees, the "Big Three" employees receive much higher earnings on the average than employees of the smaller companies.

The differences between the average hourly earnings of "Big Three" employees and employees of the other companies are not to be explained in terms of differences in the composition of the working force. Although the "Big Three" had a slightly smaller proportion of skilled and semiskilled employees than the smaller companies, the average hourly earning differentials were about the same in percentage terms for each skill class as they were for all employees.[4] The same holds true for the distribution of individual average hourly earnings in the various classes of skill.[5] Although no data were available for individual occupations, it is clear that the differentials for the broad classes of skill are so great that they must reflect substantial differentials between earnings in individual occupations.

[4] See tables 26 and 27.
[5] See table 25.

These occupational differentials in earnings between large and small companies are apparently not the consequence of differences in the race or sex of employees or the degree of unionization. Nearly all workers in the industry were white men. Union contracts were in effect in an almost negligible number of plants.

TABLE 26.—*Average hourly earnings in explosives industry by skill and size of company, October 1937*

Size of company	Skilled	Semi-skilled	Unskilled
"Big Three" companies	$0.910	$0.759	$0.649
Other companies	.712	.605	.527
Percent difference	27.8	25.5	23.1

Source: U. S. Bureau of Labor Statistics.

TABLE 27.—*Percentage distribution of workers in explosives industry, by skill and size of company, October 1937*

Size of company	Skilled	Semi-skilled	Unskilled
"Big Three" companies	53.6	27.4	19.0
Other companies	54.7	30.0	15.3

Source: U. S. Bureau of Labor Statistics.

Thus, it is clear that the three large companies which dominate the explosives industry pay their employees substantially more for similar types of work than the smaller companies with which they compete. None of the available statistical data throw any light on the factors responsible for this situation.

OTHER DIFFERENCES BY SIZE OF COMPANY

Not only did employees of the "Big Three" companies have higher earnings than those of the smaller companies, but they also worked shorter hours in October 1937. In terms of full-time hours, two of the "Big Three" plants operated less than 40 per week, while the others had a 40-hour schedule. The 40-hour week also predominated among the establishments belonging to the other companies, but a substantial number of them (7 out of 23) operated on a schedule in excess of 40 hours. The average weekly hours actually worked by all employees amounted to 40.2 for the "Big Three" plants and 44.1 for the establishments of the remaining firms.

As a result, the differences in weekly earnings between the "Big Three" and other companies were not so pronounced as in the case of hourly earnings. Nevertheless, these differences were fairly substantial. This is indicated by the fact that the average weekly earnings of all workers amounted to $32.97 for employees of the "Big Three" companies, as against $28.79 for workers in the other companies, a difference of $4.18.

On the whole, the "Big Three" companies were more liberal with respect to overtime rates in the autumn of 1937. Thus, of the 30 establishments that paid overtime rates of time and one-half, 25 belonged to the "Big Three" and 5 to the other companies. In contrast, of the 21 plants that compensated overtime on a prorata basis, only 3 belonged to the "Big Three" and 18 to the other group.

APPENDIX C

THE SOAP INDUSTRY

DESCRIPTION OF THE INDUSTRY

In the manufacture of soap, employees of four large companies, which produce at least three-fourths of all the soap manufactured in the United States, had distinctly higher hourly earnings than employees of the smaller-size firms. Average earnings in the large companies were 76 cents an hour as compared with 58 cents for the medium-size and 55.5 cents for small companies in the industry.

The manufacture of soap is a relatively small industry, with an average of 14,008 wage earners during the year 1937.[1] The Bureau of Labor Statistics, in its survey, excluded all plants with 5 or less workers and selected 72 representative establishments with approximately half of the wage earners in the industry. The wage data obtained covered a pay-roll period during January 1938.[2] On the basis of corporate affiliation, these 72 plants may be divided into 3 distinct groups. The most important group includes 13 plants belonging to companies that employed 1,000 or more workers. Each of these companies had 2 or more plants represented in the sample, the majority of which were relatively large in size.[3] The other two groups represented companies which had only one plant in the sample. The second group consisted of 16 middle-sized companies which employed from approximately 100 to 700 workers. The third included 43 small companies, with 6 to 60 employees. Of the total number of workers covered in the sample, 4,375 (61.2 percent) were employed by the large companies: 2,228 (31.2 percent) by the medium-sized companies; and 540 (7.6 percent) by the small companies.

Both the large and medium-sized companies make various types of soap, specializing for the most part in widely advertised brands. The small companies, on the other hand, tend toward specialization in certain types of product which are usually manufactured for a local market. They also engage to a considerable extent in making up special lots of soap in accordance with the specifications of customers, such as jobbers, drug store chains, 5-and-10-cent stores, and large department stores. Both the large and medium-sized companies are highly mechanized, while the small companies usually have limited amounts of equipment, mostly of an older type.

[1] U. S. Department of Commerce, Bureau of the Census, Biennial Census of Manufactures, 1937, pt. I, p. 748.

[2] For a detailed description of the wage structure in this industry, as determined by the survey, see the following: Mimeographed report on "Earnings and Hours in the Soap Industry, January 1938," which was issued on June 15, 1938; and the article on "Earnings and Hours in the Soap Industry, January 1938," the Monthly Labor Review, June 1938, pp. 1423-1432.

[3] The survey included practically all establishments belonging to the larger companies. In order to prevent the latter from overweighting the sample, however, only 50 percent of the workers were covered in each of the plants with 400 employees and over. These workers were selected to yield a carefully balanced cross-section of the labor force in each establishment from the standpoint of department, occupation, sex, etc. The remaining companies were selected on the basis of the representativeness of their plants with respect to the various size-classes found in the industry.

DIFFERENCES IN AVERAGE HOURLY EARNINGS BY SIZE OF COMPANY

The average hourly earnings of all employees in plants belonging to the large companies were 76.2 cents, compared with 58.0 cents in the medium-sized and 55.6 cents in the small companies.[4] Since all of the plants included in this survey were located in the northern region, it is evident that regional differentials are not a factor in average hourly earnings in this industry. The significance of size of community in the wage structure of the soap industry could not be determined from existing reports. From all available evidence, however, it would appear that there is a substantial differential in average hourly earnings between the employees of the large companies which dominate the industry, and those of all other companies, even after allowance for these other factors.

TABLE 28.—*Average hourly earnings of workers in soap industry, by size of company, sex, and skill, January 1938*

Size of company and sex of workers	Total	Skilled	Semi-skilled [1]	Unskilled
All companies:				
Males	$0.722	$0.903	$0.718	$0.638
Females	.478		.504	.467
Total	.688	.903	.696	.598
Large companies:				
Males	.784	.932	.786	.693
Females	.557		.577	.548
Total	.762	.932	.771	.669
Other companies:				
Males	.616	.825	.609	.551
Females	.422		.450	.411
Total	.575	.825	.586	.507
Medium companies:				
Males	.626	.831	.616	.570
Females	.427		.453	.417
Total	.580	.831	.592	.516
Small companies:				
Males	.580	.812	.577	.495
Females	.385		[2]	.361
Total	.556	.812	.559	.474

[1] Includes 24 forelaidies who were classed as skilled workers.
[2] Not enough employees to justify an average.

Source: U. S. Bureau of Labor Statistics.

The difference in the wage level between the large and the smaller companies is shown further by the distribution of average hourly earnings of individual plants. Hourly earnings in only 1 of the 13 plants operated by the large companies averaged less than 60 cents an hour, while those in the other 12 averaged 65 cents or over. In contrast, in 43 of the 59 plants owned by the smaller companies, average hourly earnings were less than 65 cents. Earnings in only 3 of the establishments belonging to the smaller companies averaged

[4] See table 28.

75 cents and over, as compared with 7 of the 13 plants owned by the large companies. On the basis of these plant averages there was little difference between the medium-sized and the small companies.[5]

TABLE 29.—*Distribution of plants in soap industry according to average hourly earnings of all workers, by size of company, January 1938*

Average hourly earnings	All plants	Plants of large companies	Plants of other companies		
			Total	Medium-sized companies	Small companies
Under 35.0 cents	1		1		1
35.0 and under 40.0 cents	3		3	1	2
40.0 and under 45.0 cents	6		6	1	5
45.0 and under 50.0 cents	7		7	1	6
50.0 and under 55.0 cents	8		8	2	6
55.0 and under 60.0 cents	12	1	11	4	7
60.0 and under 65.0 cents	7		7	2	5
65.0 and under 70.0 cents	9	3	6	3	3
70.0 and under 75.0 cents	9	2	7	2	5
75.0 and under 80.0 cents	3	2	1		1
80.0 and under 85.0 cents	4	2	2		2
85.0 cents and over	3	3			
Total	72	13	59	16	43

Source: U. S. Bureau of Labor Statistics.

The distribution of individual average hourly earnings presents a similar picture.[6] Although only 17.3 percent of all workers employed by the large companies received less than 62.5 cents an hour, 63.4 percent of the employees in the other companies received less than this amount. On the other hand, 16.1 percent of the large company workers were paid 92.5 cents or over, but only 4.1 percent of the employees of the smaller companies received as much.

TABLE 30.—*Percentage distribution of workers in soap industry according to average hourly earnings, by size of company, January 1938*

Average hourly earnings	Large companies	Other companies	Average hourly earnings	Large companies	Other companies
Under 27.5 cents		0.5	82.5 and under 87.5 cents	8.0	1.7
27.5 and under 32.5 cents		2.3	87.5 and under 92.5 cents	7.7	1.8
32.5 and under 37.5 cents		6.3	92.5 and under 97.5 cents	4.6	1.5
37.5 and under 42.5 cents	0.5	14.1	97.5 and under 102.5 cents	4.5	.7
42.5 and under 47.5 cents	1.8	10.9	102.5 and under 107.5 cents	2.6	.4
47.5 and under 52.5 cents	5.8	12.2	107.5 and under 112.5 cents	2.1	.4
52.5 and under 57.5 cents	4.7	11.3	112.5 and under 117.5 cents	1.1	.4
57.5 and under 62.5 cents	4.5	5.8	117.5 and under 125.0 cents	.7	.1
62.5 and under 67.5 cents	12.0	7.7	125.0 cents and over	.5	.6
67.5 and under 72.5 cents	12.6	8.6			
72.5 and under 77.5 cents	14.8	8.1	Total	100.0	100.0
77.5 and under 82.5 cents	11.5	4.6			

Source: U. S. Bureau of Labor Statistics.

To some extent, the differences in the average earnings among the three types of companies are due to variations in the composition of the labor force.[7] Skilled employees constituted 19.6 percent of the

[5] See table 29.
[6] See table 30.
[7] See table 31.

working force in the plants of large companies, as against 15 per cent in the small companies and only 9.6 percent in the medium-sized companies. For semiskilled employees, the proportions were 41.5 percent in the medium-sized, 39.2 percent in the large, and 33.9 percent in the small companies. Undoubtedly, the higher average earnings of employees of the large companies may be attributed in part to the fact that these companies employ more skilled workers than the small companies. Nevertheless, a differential remains for each group of workers, as may be seen in table 28, in which the average hourly earnings of employees of each size company in each skill group are compared. Skilled employees of the larger companies, for example, receive nearly 11 cents an hour more on the average than those of the smaller companies. The difference is even greater for semiskilled and unskilled employees. The medium-sized companies paid only slightly more to their skilled and semiskilled employees than did the small companies; but the differential amounted to 7.5 cents for the unskilled. The distributions of individual averages by skill groups suggest a similar conclusion.

TABLE 31.—*Percentage distribution of workers in soap industry, by sex and skill of workers and size of company, January 1938*

Size of company	Total	Males				Females		
		Total	Skilled	Semi-skilled	Un-skilled	Total	Semi-skilled	Un-skilled
Large companies	100.0	89.8	19.6	36.2	34.0	10.2	3.0	7.2
Medium-sized companies	100.0	76.0	9.6	35.3	31.1	24.0	6.2	17.8
Small companies	100.0	85.8	15.0	29.3	41.5	14.2	4.6	9.6
All companies	100.0	85.2	16.1	35.5	33.6	14.8	4.1	10.7

Source: U. S. Bureau of Labor Statistics.

Variations between the large and small companies in the proportions of different occupations in each skill group are not responsible to any great extent for the differentials between large and small companies shown for each skill group. Nor can the occupational differentials between large and small companies be explained in terms of different proportions of men and women, as indicated by the average earnings for men and women in each occupation. Average hourly earnings in plants belonging to the large companies exceeded those in the remainder of the industry in every occupation for which a comparison is possible.[8] The differences varied from 4.3 cents for male wrapping-machine operators to 33 cents for male loaders. Soap makers, who were the highest-paid employees in both groups of companies, earned 10.5 cents more, on the average, in the establishments of the large companies than in the other plants. The difference for men working as general laborers, who constituted the largest single occupation in each group of companies, amounted to 15.5 cents.

[8] See table 32. Due to the limited number of workers found in the small companies, as well as the relatively small difference in the wage level between the medium-sized and small companies, all further comparisons are limited to the plants belonging to the large companies and the remaining establishments of the industry.

TABLE 32.—*Average hourly earnings, weekly hours, and weekly earnings of workers in soap industry, by size of company, sex, skill, and occupation, January 1938*

Sex, skill, and occupation	Large companies				Other companies			
	Number of employees	Average hourly earnings	Average weekly hours	Average weekly earnings	Number of employees	Average hourly earnings	Average weekly hours	Average weekly earnings
MALES								
Skilled:								
Carpenters	43	$0.954	39.6	$37.80	8	(1)	(1)	(1)
Electricians	42	.975	40.6	39.55	7	(1)	(1)	(1)
Engineers, power house	43	1.013	42.4	42.98	50	$0.798	45.1	$35.97
Foremen, working	128	.894	39.7	35.48	94	.831	42.9	35.60
Machine set-up men	70	.962	39.3	37.83	6	(1)	(1)	(1)
Machinists	90	.986	40.3	39.77	17	(1)	(1)	(1)
Millwrights	52	.896	39.9	35.74	5	(1)	(1)	(1)
Pipe fitters	80	.946	39.6	37.45	14	(1)	(1)	(1)
Soap makers	58	1.052	38.1	40.09	54	.947	41.9	39.64
Stillmen	51	.824	38.9	32.08	3	(1)	(1)	(1)
Miscellaneous skilled employees	199	.885	39.9	35.31	37	.680	43.6	29.68
Semiskilled:								
Checkers and weighers	67	.800	39.3	31.46	25	.694	40.6	28.18
Clerks, miscellaneous	56	.768	39.5	30.36	57	.660	42.4	28.00
Crutcher operators	80	.815	38.5	31.38	35	.577	42.2	24.33
Drier operators	86	.768	37.9	29.11	58	.555	44.0	24.40
Filling and packaging machine operators	100	.648	38.9	25.18	34	.558	40.9	22.84
Firemen, power house	59	.834	40.4	33.64	43	.617	47.2	29.12
Glycerine men	29	.808	38.4	31.06	25	.598	43.5	25.97
Loaders	67	.911	39.7	36.14	61	.581	41.9	24.33
Machine operators (miscellaneous machines)	75	.797	37.8	30.16	8	(1)	(1)	(1)
Machinists' helpers	40	.743	40.5	30.07	11	(1)	(1)	(1)
Mill and plodder operators	52	.796	37.5	29.84	86	.512	36.1	18.46
Grinding mill operators	23	.687	36.2	24.86	65	.617	38.7	23.83
Pipe fitters' helpers	45	.755	39.4	29.73	16	(1)	(1)	(1)
Press operators, hand or foot	3	(1)	(1)	(1)	50	.511	34.8	17.75
Press operators, machine	87	.795	38.7	30.76	30	.642	39.9	25.61
Pumpers	144	.794	38.9	30.86	57	.637	42.5	27.05
Slabbers and cutters	79	.819	38.0	31.08	59	.572	40.9	23.37
Soap makers' assistants	22	.851	37.0	31.54	44	.684	42.2	28.86
Tower operators	34	.797	39.7	31.62				
Tractor operators	47	.805	38.7	31.19	2	(1)	(1)	(1)
Truck drivers	36	.849	43.9	37.32	68	.665	44.1	29.33
Wrapping machine operators	67	.755	38.2	28.87	24	.712	39.9	28.41
Miscellaneous semiskilled employees	297	.781	39.1	30.50	86	.641	41.2	26.36
Unskilled:								
Bulk packers	40	.717	39.4	28.21	74	.551	43.1	23.73
Clean-up men and janitors	158	.730	38.4	28.01	42	.589	38.0	22.38
Conveyor line workers (catchers, feeders, and packers)	12	(1)	(1)	(1)	20	(1)	(1)	(1)
Elevator operators	34	.723	39.5	28.54	15	(1)	(1)	(1)
Framers and strippers	52	.805	39.5	31.76	113	.591	39.7	23.44
Laborers, general	658	.676	37.5	25.39	269	.521	39.2	20.44
Packers, shipping	162	.636	39.2	24.94	78	.556	38.7	21.54
Shippers' helpers	72	.709	39.1	27.70	46	.528	42.3	22.34
Truckers, hand	119	.786	38.6	30.35	160	.613	39.3	24.11
Watchmen	126	.686	42.4	29.20	71	.493	46.5	22.90
Miscellaneous unskilled employees	53	.614	39.5	25.43	29	.446	38.8	17.29
FEMALES								
Semiskilled:								
Inspectors	30	.568	34.5	19.58	11	(1)	(1)	(1)
Packaging machine operators	38	.565	36.7	20.73	32	.423	38.3	16.18
Press operators, machine	1	(1)	(1)	(1)	28	.445	39.7	17.68
Wrapping machine operators	36	.571	38.8	22.19	59	.470	39.8	18.73
Miscellaneous semiskilled employees	25	.611	39.1	23.88	34	.443	40.7	18.04
Unskilled:								
Conveyor line workers (catchers, feeders, and packers)	31	.522	34.1	17.79	73	.429	38.0	16.30
Packers, shipping	236	.543	37.4	20.28	192	.424	37.6	15.93
Wrappers, hand	34	.616	39.3	24.22	161	.394	36.8	14.50
Miscellaneous unskilled employees	13	(1)	(1)	(1)	19	(1)	(1)	(1)

[1] Not enough workers to justify an average.

Source: U. S. Bureau of Labor Statistics.

Since women usually earn less than men, these differences between large and small companies may be the result of different proportions of men and women employed by companies of varying size. The number of women was only 10.2 percent in the large companies, as compared with 14.2 percent in the small and 24 percent in the medium-sized companies.[9] When the comparison by size of company is made for men and women in each skill group, however, the difference in average hourly earnings between the large and medium-sized concerns is still substantial and is much greater than that between the medium-sized and small companies.[10] For skilled men workers the difference between the large and medium-sized companies amounted to 10.1 cents, as compared with a difference of only 1.9 cents between the medium-sized and small companies. The respective differences for semiskilled men were 17 and 3.9 cents, while for unskilled men they amounted to 12.3 and 7.5 cents.

The same contrast is shown by the distributions covering men employees by skills.[11] Skilled men earning under 77.5 cents an hour were only 10.8 percent of the skilled force in the large companies and 42.4 percent in the other establishments. Conversely, 38.5 percent of the skilled workers were paid 97.5 cents and over in the large companies, and 21.4 percent in other plants. The same general differences appear for semiskilled and unskilled workers.[12]

TABLE 33.—*Percentage distribution of male workers in soap industry according to average hourly earnings, by skill and size of company, January 1938*

Average hourly earnings	Skilled		Semiskilled		Unskilled	
	Large companies	Other companies	Large companies	Other companies	Large companies	Other companies
Under 32.5 cents				0.2		0.9
32.5 and under 37.5 cents				3.6		2.7
37.5 and under 42.5 cents		1.4		7.8	0.7	16.0
42.5 and under 47.5 cents		2.7	1.2	7.8	2.7	11.5
47.5 and under 52.5 cents		1.4	2.3	11.8	3.8	15.8
52.5 and under 57.5 cents	0.2	6.1	1.3	14.6	5.7	12.5
57.5 and under 62.5 cents	.5	6.4	3.2	8.7	4.8	4.7
62.5 and under 67.5 cents	1.8	5.8	7.3	8.1	22.8	11.9
67.5 and under 72.5 cents	2.0	7.8	11.7	11.5	21.8	11.6
72.5 and under 77.5 cents	6.3	10.8	19.3	11.4	19.1	9.2
77.5 and under 82.5 cents	11.0	5.4	19.4	9.1	6.5	2.6
82.5 and under 87.5 cents	14.1	8.6	10.5	1.8	4.2	.5
87.5 and under 92.5 cents	17.3	11.1	8.9	1.6	3.2	.1
92.5 and under 97.5 cents	8.3	11.1	6.5	1.0	1.9	
97.5 and under 102.5 cents	14.6	4.7	3.5	.6	1.1	
102.5 and under 107.5 cents	7.7	3.4	2.1	.1	.9	
107.5 and under 112.5 cents	6.8	3.1	1.6	.2	.5	
112.5 and under 117.5 cents	3.6	3.7	.8		.2	
117.5 and under 125.0 cents	3.2	1.4	.3		.1	
125.0 cents and over	2.6	5.1	.1	.1		
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source. U. S. Bureau of Labor Statistics.

Likewise, marked differences were found between the large companies and other companies in the distributions of hourly earnings of women employees.[13] Less than 2 percent of the women employed in semiskilled occupations in the large companies averaged less than 47.5

[9] See table 31.
[10] See table 28.
[11] See table 32.
[12] See table 33.
[13] See table 34.

cents an hour; in the other companies 61.7 percent of the women in similar occupations averaged less than this amount. Inversely, 46.1 percent of the semiskilled women had hourly earnings of 57.5 cents and over in the large companies, while only 5.4 percent of the women employed in similar occupations by the smaller companies were in that wage group. In the unskilled group 9.8 percent of those employed by the larger companies and 80.6 percent of those in the smaller companies received less than 47.5 cents per hour. Nearly one-half of the unskilled women in the large companies received 52.5 cents and over, but less than 9 percent of this group in the smaller companies were included in the higher wage group.

TABLE 34.—*Percentage distribution of female workers in soap industry according to average hourly earnings, by skill and size of company, January 1938*

Average hourly earnings	Semiskilled [1]		Unskilled	
	Large companies	Other companies	Large companies	Other companies
25.0 and under 27.5 cents				1.3
27.5 and under 32.5 cents		9.8		10.0
32.5 and under 37.5 cents		7.3		23.2
37.5 and under 42.5 cents		18.3	4.1	29.8
42.5 and under 47.5 cents	1.5	26.3	5.7	16.3
47.5 and under 52.5 cents	20.0	18.3	42.0	10.7
52.5 and under 57.5 cents	32.4	14.6	18.2	4.5
57.5 and under 62.5 cents	24.6	2.4	12.1	2.7
62.5 and under 67.5 cents	12.3	2.4	11.5	1.3
67.5 and under 72.5 cents	5.4		4.5	.2
72.5 cents and over	3.8	.6	1.9	
Total	100.0	100.0	100.0	100.0

[1] Includes 24 foreladies who were classed as skilled.

Source: U. S. Bureau of Labor Statistics.

DIFFERENCES IN WEEKLY EARNINGS AND OVERTIME RATES BETWEEN LARGE AND OTHER COMPANIES

Although the 40-hour week predominated in the soap industry in January 1938, the full-time hours differed among the 3 types of companies. Eleven of the plants operated by large companies reported a normal workweek of 40 hours, while the other 2 reported a 35-hour week. Forty hours constituted a normal workweek for 14 of the medium-sized companies, but 2 reported a workweek in excess of 40 hours. In contrast, only 2 plants of the small companies had a workweek of less than 40 hours, 23 plants had the 40-hour week, while in the remaining 18 establishments the scheduled hours exceeded 40.

As a result of these differences in the number of hours represented by a full workweek, the average number of hours worked per week was 38.8 in the large, 39.9 in the medium-sized, and 41.7 in the small companies.

The fact that the number of hours worked varied inversely with size of firm tended to reduce the differences in weekly earnings among employees of the three types of companies. In fact, the avergage weekly earnings of all wage earners in medium-sized and small companies were almost identical, although there was a difference of 4.3 percent in their average hourly earnings. The average weekly earnings of workers in plants belonging to the large companies

amounted to $29.56, or $6.40 above the figure for the remainder of the industry ($23.16).

The distributions of weekly earnings by size of company show that only 8.5 percent of all workers in the plants owned by large companies received less than $20 a week, while 38.8 percent of the workers in the other companies received less than $20 per week.[14] In contrast, the number earning $35 and over amounted to 22.6 and 8.8 percent, respectively.

TABLE 35.—*Percentage distribution of workers in soap industry according to weekly earnings, by size of company, January 1938*

Weekly earnings	Large companies	Other companies	Weekly earnings	Large companies	Other companies
Under $5	0.1	0.7	$40 and under $45	6.1	2.3
$5 and under $10	.3	3.0	$45 and under $50	1.5	.9
$10 and under $15	.9	10.9	$50 and under $55	.6	.5
$15 and under $20	7.2	24.2	$55 and under $60	.4	.2
$20 and under $25	16.6	22.1	$60 and over	.2	.1
$25 and under $30	28.0	19.5			
$30 and under $35	24.3	10.8	Total	100.0	100.0
$35 and under $40	13.8	4.8			

Source: U. S. Bureau of Labor Statistics.

The size of the company also played an important part in the soap industry with respect to the rates paid for overtime work. All of the large companies provided time and one-half for work beyond the regular scheduled time, which was usually 8 hours per day and 40 hours per week. Of the 16 medium-sized companies, however, only 6 paid time and one-half for overtime. One company paid time and one-fourth, but the majority of the remaining companies paid only the regular rate for such work. Only 7 of the 43 small companies paid time and one-half for overtime, one paid time and one-third, 29 paid straight time for such work, while 6 provided no compensation whatsoever for overtime.

[14] See table 35.

APPENDIX D

THE MEAT-PACKING INDUSTRY

DESCRIPTION OF THE INDUSTRY

Meat packing is one of the larger industries in the country. According to the Census of Manufactures, meat-packing establishments reported a total of 134,440 wage earners in December 1937, the month covered by the special survey on which this discussion is based.[1] The definition of the industry used by the Bureau of Labor Statistics was similar to that of the Census of Manufactures, the principal difference being that the Bureau's survey excluded all plants with less than 10 workers. The survey was made on a sample basis, and included 258 establishments [2] and 49,235 wage earners.

There are fairly distinct lines drawn between the three types of companies in this industry. The "Big Four" packers are well known in the industry. Each of them has a wide distribution of products, employs a considerable number of workers, and has a large number of plants scattered throughout the country. Secondly, there is a group of intermediate companies which are much smaller than the "Big Four." In general, however, they resemble the "Big Four" in that they have a fairly wide distribution of products, employ a large number of workers, and own more than one establishment. The small companies, on the other hand, usually have a restricted market, although in some cases it covers more than one State. Of the small companies, furthermore, few employed more than 500 workers, and most of them had only one plant. Plants included and workers covered by the Bureau's special survey of the industry were distributed as follows:

Size of company	Number of establishments	Percent of total wage earners covered		
		United States	North	South.[1]
"Big Four"	59	54	54	52
Intermediate	17	19	21	48
Small	182	27	25	

[1] Owing to the fact that only 1 establishment of an intermediate-sized company was included in the southern sample, no distinction was made here between the intermediate and small companies.

DIFFERENCES IN AVERAGE HOURLY EARNINGS BY SIZE OF COMPANY

The average hourly earnings of all workers in the meat-packing industry for the entire country amounted to 64.9 cents in December 1937. According to table 36, however, there were sharply contrasting wage levels among the three types of companies. For all workers in the United States, the average was 70.1 cents for the "Big Four",

[1] U. S. Department of Commerce, Bureau of Census, "Biennial Census of Manufactures, 1937, pt. I," p. 189.

[2] The study of meat packing included most of the larger plants in the industry. However, in order to give the latter the same weight in the coverage as they constituted in the total industry, only part of the wage earners were included in some of these establishments. These workers were selected to obtain a representative cross section of the labor force with respect to occupation, sex, color, and department. The procedure of sampling the employees of the larger plants instead of using a sample of these establishments has necessarily increased the total number of such plants in the coverage.

63.6 cents for the intermediate companies, and 56.2 cents for the small companies. A comparison of the distribution of earnings throughout the whole range, as shown in table 37, indicates the extent to which earnings of employees of the "Big Four" are consistently above those of the intermediate and smaller companies.

Since average hourly earnings paid by the "Big Four" are consistently higher than those paid by the other companies, the question arises whether the size of company in itself is a principal factor in the differentials in average hourly earnings or whether they are a reflection of other factors associated with size of company, such as size of establishment, region, and size of community in which the plants are located.

TABLE 36.—*Average hourly earnings of workers in meat-packing industry, by wage district, type of company, sex, and skill, December 1937*

Wage district and type of company	Number of plants	Total workers	Males				Females
			All	Skilled	Semi-skilled	Unskilled	
United States	258	$0.649	$0.669	$0.798	$0.651	$0.587	$0.497
"Big Four"	59	.701	.724	.874	.702	.633	.539
Intermediate [1]	16	.636	.659	.781	.650	.599	.492
Small [2]	183	.562	.579	.697	.554	.491	.415
Northern wage district	218	.667	.689	.820	.670	.607	.511
"Big Four"	51	.715	.739	.887	.717	.649	.550
Intermediate	16	.636	.659	.781	.650	.599	.492
Small	151	.597	.615	.733	.590	.525	.439
Southern wage district	40	.497	.512	.638	.493	.430	.368
"Big Four"	8	.580	.598	.761	.578	.501	.422
Other [2]	32	.418	.430	.541	.405	.360	.317

[1] Excludes 1 plant belonging to an intermediate company in the southern wage district.
[2] Includes 1 plant belonging to an intermediate company in the southern wage district.

Source: U. S. Bureau of Labor Statistics.

TABLE 37.—*Percentage distribution of workers according to average hourly earnings in meat-packing industry, by region and type of company, December 1937*

Average hourly earnings	United States				Northern wage district				Southern wage district		
	Total	"Big Four"	Intermediate [1]	Small [2]	Total	"Big Four"	Intermediate	Small	Total	"Big Four"	Other [2]
Under 17.5 cents	0.1	------	------	0.5	(3)	------	------	(3)	1.2	------	2.5
17.5 and under 22.5 cents	.4	(3)	------	1.2	(3)	------	------	0.2	2.8	0.3	5.3
22.5 and under 27.5 cents	.5	0.2	------	1.5	0.1	------	------	.4	3.8	1.6	6.3
27.5 and under 32.5 cents	1.2	.2	0.2	3.6	.3	------	0.2	1.2	7.7	2.2	13.5
32.5 and under 37.5 cents	1.6	.2	.9	5.1	1.0	(3)	.9	3.1	7.4	1.8	13.5
37.5 and under 42.5 cents	3.4	1.1	2.0	8.8	2.3	0.1	2.0	7.7	11.1	9.3	13.2
42.5 and under 47.5 cents	3.7	1.4	2.8	8.8	3.0	.2	2.8	9.2	9.2	11.0	7.3
47.5 and under 52.5 cents	9.6	6.4	11.8	14.3	9.2	6.5	11.8	12.7	12.6	5.6	20.3
52.5 and under 57.5 cents	7.1	5.3	6.8	10.7	6.3	3.6	6.8	11.7	13.1	19.6	6.1
57.5 and under 62.5 cents	15.4	13.7	26.0	11.6	16.3	13.8	26.0	13.6	8.3	12.9	3.3
62.5 and under 67.5 cents	18.1	20.7	20.3	11.6	19.4	21.6	20.3	13.7	7.6	12.5	2.3
67.5 and under 72.5 cents	11.4	14.5	9.6	6.6	12.3	15.2	9.6	7.9	4.8	7.7	1.7
72.5 and under 77.5 cents	8.9	11.6	6.4	5.2	9.6	12.5	6.4	6.1	3.0	4.4	1.4
77.5 and under 82.5 cents	5.8	7.8	4.3	2.9	6.3	8.3	4.3	3.5	2.1	3.3	.8
82.5 and under 87.5 cents	4.0	5.2	3.2	2.2	4.3	5.5	3.2	2.6	1.8	2.8	.8
87.5 and under 92.5 cents	2.5	3.3	1.6	1.6	2.7	3.6	1.6	1.8	1.1	1.4	.8
92.5 and under 100.0 cents	2.5	3.5	1.6	1.2	2.7	3.8	1.6	1.4	.8	1.2	.3
100.0 and under 110.0 cents	2.0	2.6	1.2	1.4	2.2	2.8	1.2	1.7	.7	1.0	.3
110.0 and under 120.0 cents	1.0	1.3	.5	.7	1.1	1.4	.5	.9	.4	.7	.1
120.0 cents and over	.8	1.0	.8	.5	.9	1.1	.8	.6	.5	.7	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	49,235	26,670	9,055	13,510	43,717	23,810	9,055	10,852	5,518	2,860	2,658

[1] Excludes 1 plant belonging to an intermediate company in the southern wage district.
[2] Includes 1 plant belonging to an intermediate company in the southern wage district.
[3] Less than one-tenth of 1 percent.

Source: U. S. Bureau of Labor Statistics.

TABLE 38.—*Average hourly earnings of workers in meat-packing industry in northern wage district, by size of community and type of company, December 1937*

Type of company	All communities			Under 50,000			50,000 and under 100,000		
	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings
"Big Four"	51	23,810	$0.715	4	2,006	$0.649	4	2,062	$0.688
Intermediate	16	9,055	.636	4	3,012	.682	3	1,928	.614
Small	151	10,852	.597	32	1,807	.540	10	664	.540
	100,000 and under 500,000			500,000 and under 1,000,000			1,000,000 and over		
"Big Four"	15	4,279	$0.711	10	5,255	$0.720	18	10,208	$0.734
Intermediate	3	1,096	.642	3	1,482	.597	3	1,537	.628
Small	36	2,780	.565	17	781	.557	56	4,820	.653

Source: U. S. Bureau of Labor Statistics.

In the case of the meat-packing industry, region and size of community have an important relationship to average hourly earnings, while size of establishment apparently does not. The distribution of average hourly earnings of workers in the northern wage district, by size of community and type of plant, is given in table 38. This shows that the larger companies generally pay higher wages than smaller companies in the same community. There are, however, some important exceptions. In towns of under 50,000 average hourly earnings in companies of intermediate size are 68.2 cents, while in the "Big Four" they are only 64.9 cents. At the other extreme, in cities of over 1,000,000 population, employees of small companies earn slightly more than those of the intermediate companies, although much less than those of the "Big Four." In the other three city-size groups, average hourly earnings increase with each increase in the size of company. In the northern region as a whole the "Big Four" companies pay 8 cents more on the average than the intermediate companies, while the intermediate pay only 4 cents more than the small companies.

Data are not available for a sufficient number of plants to permit a similar analysis for the southern region.

The question remains as to whether there is a differential in the wage rate paid by large and small companies for the same skill. The distribution of average hourly earnings for men, by wage district, type of company, and skill is shown in table 36. The rates paid by large companies were higher for each skill group than those paid by smaller companies. However, these differentials varied considerably when studied according to either degree of skill or wage district.

The racial factor must also be considered in analyzing differences between the average hourly earnings of each skill group in large and small companies in the meat-packing industry, since it employs a substantial number of Negroes and Mexicans. In the North, where Negro and white workers are paid at the same rate for the same job, their presence in the industry does not affect the difference between large and small companies. In the southern region the "Big Four" employed relatively fewer Negroes than the small companies, but this did not account to any great extent for the differential in aver-

age earnings, since they also paid substantially higher wages to each race than the smaller companies.

The influence of size of community is not discussed in detail here, since it could not be fully eliminated, but available evidence indicates that the conclusion that higher earnings are made in large companies would not have been affected appreciably.

In this industry unionization is also of some importance in the wage structure, but it was not possible to determine the relationship between unionization and the differences between large and small companies in average hourly earnings. For small companies, employees in union plants were paid more than those in nonunion plants, but the plants of the large companies could not be classified into union and nonunion groups. Thus it was not possible to determine the extent to which the higher earnings of large company employees might be attributable to the extent of their unionization.

OTHER DIFFERENCES BY SIZE OF COMPANY

As a general rule, differences in hourly schedules are not so pronounced as those for wages. At the time of the survey, the full-time hours were somewhat shorter for the "Big Four" than for the other companies. Forty-eight of the fifty-nine "Big Four" plants reported a 40-hour week, while 52 of the 199 other establishments normally worked 40 hours.

In December 1937, the average actual hours worked by all wage earners in the country as a whole amounted to 42.5 per week. By size of company, the averages were 40.7 hours for employees in the "Big Four", 44.2 [4] hours in the intermediate companies, and 44.9 [5] hours in the small companies. Hence, while the differential between the intermediate and small companies was not very large, the average actual weekly hours were considerably lower in the "Big Four" as compared with the remainder of the industry.

Due to the fact that the employees of the intermediate and small companies worked on the average longer hours per week than those of the "Big Four", the differences in average weekly earnings among the three types of companies are relatively smaller than the ones shown in connection with average hourly earnings. In the northern wage district, the average weekly earnings amounted to $29.25 for the "Big Four", $28.13 for the intermediate, and $26.87 for the small companies. In the southern wage district, the average earnings per week were $22.80 for the "Big Four" and $18.63 for the other companies.[6]

[4] Excludes 1 intermediate plant in the southern wage district.
[5] Includes 1 intermediate plant in the southern wage district.
[6] See table 39.

TABLE 39.—*Average weekly earnings of workers in meat-packing industry, by wage district, size of company, sex, and skill, December 1937*

Wage district and size of company	Total workers	Males				Females
		All	Skilled	Semi-skilled	Unskilled	
United States	$27.57	$28.69	$34.41	$28.07	$24.80	$19.91
"Big Four"	28.56	29.61	35.77	29.11	25.28	21.26
Intermediate [1]	28.13	29.27	34.97	28.80	26.64	21.03
Small [2]	25.25	26.19	32.00	25.36	22.32	16.27
Northern wage district	28.13	29.59	35.29	28.92	25.80	20.58
"Big Four"	29.25	30.31	36.13	29.79	26.10	21.82
Intermediate	28.13	29.27	34.97	28.80	26.64	21.03
Small	26.87	28.19	33.15	27.00	24.22	17.27
Southern wage district	20.79	21.69	27.73	21.19	17.37	13.97
"Big Four"	22.80	23.67	30.17	23.15	19.02	15.78
Other [2]	18.03	19.52	25.41	18.58	15.52	12.24

[1] Excludes 1 plant belonging to an intermediate company in the southern wage district.
[2] Includes 1 plant belonging to an intermediate company in the southern wage district.

Source: U. S. Bureau of Labor Statistics.

In practically all of the establishments belonging to the "Big Four" companies, workers received time and one-half for overtime, which applied in most cases after 10 hours per day. Of the other plants in the industry, over one-fourth paid time and one-half and a few granted time and one-third or time and one-fourth, usually after 10 hours per day. In more than one-half of these plants, however, the regular rate applied to overtime.

Approximately 24.3 percent of all workers in the industry were paid under production bonus plans. These employees were found in 40 plants, nearly all of which belonged to the larger companies.

APPENDIX E

THE FERTILIZER INDUSTRY

DESCRIPTION OF THE INDUSTRY

According to the Census of Manufactures, the average number of wage earners employed in the fertilizer industry was 20,893 in 1937. In view of the extreme seasonality in the making of fertilizers, however, this figure is not entirely indicative of the size of the industry, which reported 36,782 wage earners in April 1937, the month of the highest activity during the year.[1]

According to the Bureau of Labor Statistics' survey,[2] covering wage data for the spring months of 1938, employees of large firms receive higher hourly earnings than do the employees of the smaller firms. Average hourly earnings paid the "Big Seven" were 37.0 cents, as compared with the 33.0 cents paid by the medium-sized companies and the 26.9 cents paid by the single-establishment companies.

The Bureau's survey did not cover any establishments with less than 10 workers. The group of plants studied were selected to be representative of the remaining plants in the industry and included 283 establishments employing 15,657 wage earners, or about two-fifths of the total working force in the industry.

From the standpoint of corporate affiliation, there are 3 kinds of companies in the industry. The "Big Seven" concerns are fairly well known, each of them having a large number of establishments scattered throughout the country. There is also a substantial number of concerns of intermediate size, each of which owns 2 or more plants in various localities. Lastly, there are a number of small companies, each having only one establishment. Of the plants covered in the sample, 60 belonged to the "Big Seven", 72 to the intermediate, and 151 to the 1-establishment companies. The proportion of all employees whose earnings were reported was 35 for the first group of large plants, 29 for the second group, and 36 percent for the third.

In terms of production the "Big Seven" concerns are vastly more important than is indicated by their relative number of wage earners. This is also true to a lesser degree of the intermediate companies. This is due to mechanization, which has affected principally the large and intermediate companies. In the small concerns, on the other hand, owing to the shortness of the production season and small volume of sales, the installation of certain types of machines is not always justified, and for this reason many hand workers are still employed.

[1] U. S. Department of Commerce, Bureau of Census, "Biennial Census of Manufactures, 1937, pt. I," p. 687.

[2] For a detailed description of the wage structure in this industry, as determined by the survey, see the following: Mimeographed report on "Average Hourly Earnings in the Fertilizer Industry, 1938," which was issued on January 7, 1939; and the article on "Wages and Hours in the Fertilizer Industry, 1938," which appeared in the Monthly Labor Review, March 1939, pp. 666–681.

From the standpoint of integration, there are 3 types of establishments in the fertilizer industry, namely, acid-making, superphosphate, and dry-mixing plants. Acid-making establishments are completely integrated, manufacturing their own sulfuric acid and superphosphates and mixing the various ingredients to make complete fertilizers. Superphosphates or wet-mixing plants, on the other hand, purchase their acid requirements, but they make their own superphosphates and mix them with the various ingredients. Dry-mixing establishments do not manufacture any of the fertilizer ingredients but are engaged entirely in mixing fertilizers from purchased materials. The degree of integration tends to vary directly with the concentration of ownership in the industry. Of the 206 dry-mixing plants in the sample, only 20 belonged to the "Big Seven." On the other hand, of the 35 acid-making establishments, 21 belonged to the "Big Seven" and only 7 to the one-plant concerns.[3]

A number of the large companies control the sources of their raw materials, such as phosphate rock and nitrates, and to a limited extent the organic nitrogen carriers, in addition to making their own superphosphates and in some cases their own acid. On the other hand, nearly all of the one-establishment concerns have to buy their superphosphates and other raw materials.

TABLE 40.—*Average hourly earnings of workers in fertilizer industry, by region, type of plant, and size of company, during the spring months of 1938*

Region and type of plant	"Big Seven" companies			Intermediate companies			One-establishment companies		
	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings
Northern wage district	14	1,418	$0.574	28	1,361	$0.503	36	1,233	$0.438
Acid-making plants	6	942	.605	3	507	.543	1	52	(1)
Superphosphate plants	4	194	.538	5	323	.548	5	349	.474
Dry-mixing plants	4	282	.487	20	531	.442	30	832	.419
Upper southern wage district	8	929	.392	9	786	.355	12	459	.316
Acid-making plants	4	595	.394	1	245	(1)	1	64	(1)
Superphosphate plants	2	156	(1)	2	87	(1)	1	85	(1)
Dry-mixing plants	2	178	(1)	6	454	.331	10	310	.294
Lower southern wage district	38	3,213	.276	35	2,377	.241	103	3,881	.208
Acid-making plants	11	1,205	.288	3	591	.339	5	636	.244
Superphosphate plants	13	1,030	.271	3	284	.246	7	575	.222
Dry-mixing plants	14	888	.268	29	1,502	.204	91	2,670	.196

[1] Less than 3 plants; no average computed.

Source: U. S. Bureau of Labor Statistics.

There is keen competition, however, between the large and small companies, especially with respect to certain local markets, where the one-plant concerns have a distinct advantage in being able to adapt their formulas to the more highly specialized needs resulting from the peculiarities of the local soil.

DIFFERENCES IN AVERAGE HOURLY EARNINGS BY SIZE OF COMPANY

In the spring of 1938, the average hourly earnings of the 15,657 wage earners covered in all of the 283 fertilizer plants, regardless of

[3] See table 40.

the process used or the degree of integration, amounted to 32.6 cents. Earnings in the plants owned by the "Big Seven" averaged 37.0 cents, 3.1 cents more than the 33.9 cents received by employees of intermediate-sized companies and 10.1 cents more than the 26.9 cents which single-establishment companies paid their workers. The distribution of the average hourly earnings in individual plants by the size of the company owning them also indicates that there was a close association between size of company and average hourly earnings for the country as a whole.

However, a more detailed analysis of the wage structure in the fertilizer industry reveals that average hourly earnings also vary with the region and the size of community in which the plants are located, but size of establishment is unimportant. In table 41, the distribution of average hourly earnings is shown by size of company, by region,[4] and by size of community. It is seen from this table that, within a particular district, each type of company increases its wage rates as the size of the community increases. However, substantial wage differentials are shown to exist between the districts. The lowest wage level paid by each type of company was in the lower southern wage district; higher rates were paid in the upper southern districts, while the highest rates were found in the northern district. Thus, while rates paid by each type of company in communities of less than 10,000 were the lowest in that wage district, the rate paid in a community of that size in the North was much higher than the rate paid in a community of the same size in the lower southern region.

TABLE 41.—*Average hourly earnings of workers in fertilizer industry, by region, size of community, and size of company, during the spring months of 1938*

Region and size of community	"Big Seven" companies			Intermediate companies			One-establishment companies		
	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings
Northern wage district	14	1,418	$0.574	28	1,361	$0.503	36	1,233	$0.438
Under 10,000	1	49	(1)	7	146	.407	17	407	.366
10,000 and under 100,000	1	43	(1)	7	170	.431	7	124	.390
100,000 and under 500,000	3	149	.438	7	313	.465	7	274	.472
500,000 and over	9	1,177	.600	7	732	.557	5	428	.507
Upper southern wage district	8	929	.392	9	786	.355	12	459	.316
Under 10,000	1	100	(1)	2	34	(1)	6	114	.255
10,000 and under 100,000				2	210	(1)	2	66	(1)
100,000 and under 500,000	6	588	.409	5	542	.399	3	244	.369
500,000 and over	1	241	(1)				1	35	(1)
Lower southern wage district	38	3,213	.276	35	2,377	.241	103	3,881	.208
Under 10,000	3	213	.209	15	509	.170	66	1,749	.178
10,000 and under 100,000	24	1,997	.273	14	1,153	.237	30	1,851	.226
100,000 and under 500,000	11	1,003	.298	6	715	.300	7	281	.268
500,000 and over									

[1] Less than 3 plants; no average computed.

Source: U. S. Bureau of Labor Statistics.

[4] The regions have been defined for this analysis as follows: The northern region includes Connecticut, Illinois, Indiana (except 1 plant in southern part), Maine, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and the western shore of Maryland and northern Delaware. The upper southern region includes the eastern shore of Maryland and southern Delaware, Indiana (1 plant in southern part only), Kentucky, Tennessee, and Virginia. The lower southern region includes Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas.

When these important geographical and size of community differentials are taken into account, the size of company differentials diminish substantially. The intermediate companies have higher average earnings in three of the six comparisons which are possible between the earnings of their employees and those of workers in the "Big Seven" companies. In only one instance, however, are earnings in single-establishment companies higher than those of either of the "Big Seven" or the intermediate companies. In that case—plants in cities of 100,000 and under 500,000 in the northern wage district—the one-establishment companies had higher average hourly earnings than either of the other two groups of companies, partly because the "Big Seven" do not own any acid-making plants, in which wages are higher. It would appear on the basis of these figures that there is relatively little difference between earnings in plants of the "Big Seven" companies and of the intermediate companies when allowance is made for their location.

The differences in degree of integration between companies in the different size groups suggests that the skill composition of the working force of the large and small companies may differ substantially and may affect materially the relationships between the earnings of employees of companies of different size. Analysis indicates that, although this is a factor, the differentials in earnings between large and small companies still persist. The importance of integration to earnings is indicated in part in table 40, in which earnings of employees of acid-making plants in each region are compared with those of employees in superphosphate and dry-mixing plants, by size of company. Although it was not possible wholly to eliminate the influence of size of community; the earnings of employees in acid-making plants are sufficiently higher that those of workers in superphosphate and dry-mixing plants to indicate that the skill composition of the working force is materially affected by the degree of integration, and that the more integrated plants employ a larger percentage of skilled workers. Nevertheless, the plants of the "Big Seven" companies in each region which engaged in the same types of production paid higher wages than the single-establishment companies in every case, and more than the intermediate companies in the majority of cases in which comparison was possible. In the lower southern region it was possible to allow for the influence of size of community on the earnings of employees in dry-mixing plants of the large and small companies.[5] In these plants the differential between earnings in large and small companies persists, and it may be concluded that skill composition is not primarily responsible for the higher earnings of employees of the larger companies. Unfortunately no data were available on the percentage composition by skill groups of the working forces of plants owned by companies of various sizes or on the average hourly earnings of employees in the different skill groups or in different occupations. Hence, the extent to which skill composition affected the size of company differential could not be tested directly.

[5] See table 42.

TABLE 42.—*Average hourly earnings in dry-mixing plants of fertilizer industry in lower southern wage district, by size of company and size of community, during spring months of 1938*

Size of company and size of community	Number of plants	Number of workers	Average hourly earnings
"Big Seven" companies	14	888	$0.268
Under 10,000 population	1	43	(1)
10,000 and under 100,000 population	9	533	.263
100,000 and under 500,000 population	4	312	.288
500,000 population and over			
Intermediate companies	29	1,503	.204
Under 10,000 population	15	509	.170
10,000 and under 100,000 population	12	862	.226
100,000 and under 500,000 population	2	131	(1)
500,000 population and over			
One-establishment companies	91	2,670	.196
Under 10,000 population	63	1,356	.166
10,000 and under 100,000 population	22	1,074	.217
100,000 and under 500,000 population	6	240	.258
500,000 population and over			

[1] Less than 3 plants; no average computed.

Source: U. S. Bureau of Labor Statistics.

Since there were very few unionized plants and practically no women are employed in the fertilizer industry, no special analysis has been made of the importance of these factors in the differential in average hourly earnings between employees of large and small companies doing similar work. Race may be of more importance, since a substantial number of Negroes were employed in the industry, particularly in the South; however, no data were available for this industry on average hourly earnings by race in plants owned by large and small companies.

APPENDIX F

CYCLICAL STABILITY OF EMPLOYMENT IN LARGE AND SMALL COMPANIES IN 10 INDUSTRIES[1]

In an attempt to test the relative stability of employment provided by large and small firms, special tabulations were made from reports to the Bureau of the Census showing cyclical changes in total employment and pay rolls for the 4 or 8 largest companies, separately from the other companies, in each of 10 manufacturing industries. The years covered were 1929, 1933, 1935, and 1937. The period thus includes the years marking the high point of business activity in the twenties, the depth of depression in 1933, and the subsequent early years of recovery. The industries include shoes, cement, flour, meat packing, steel, tin cans, and other tinware, paints and varnishes, paper, soap, and petroleum refining. For petroleum refining, tabulations cover the 8 largest companies, and in all other industries the 4 largest.

The degree of stability of employment and pay rolls shown was quite different in the different industries, and there is no conclusive evidence to indicate that size alone is a major factor in employment stability. The data assembled here relate only to manufacturing and cover only a very few industries. It is clear, from this limited record, however, that in some industries there are forces which in the past have prevented the largest concerns from providing as stable employment and earnings in times of depression as the smaller concerns taken as a group, even where their position is outstanding. In other industries the reverse is true. In considering the data presented here, it is important to note that the measure of stability for the group of companies exclusive of the 4 (or 8) largest concerns reflects the effects both of changes in employment and pay rolls in established concerns in operation throughout the period and of firms coming into and dropping out of the industry. Thus, many individual small companies may well have had a more favorable record than the large companies, while others had a less favorable one. All this is necessarily concealed by the summary form of the statistics.

In a majority of the 10 industries studied, the 4 (or 8, in the case of petroleum) largest companies cut their employment and wage payments more from 1929 to 1933 than the rest of the concerns in the same industry. These included the manufactures of soap, cement, flour, meat packing, and paint and varnish, and the companies engaged in petroleum refining. In the soap industry the small companies

[1] The contents of this chapter were prepared by Edwin M. Martin, Marshall Spaulding, Manuel Cambouri, and Harry Brenner, of the Temporary National Economic Committee Studies Section of the Bureau of Labor Statistics, with the cooperation of the Bureau of the Census, which generously arranged for special tabulations by companies, from its data by individual establishment.

This task could not have been undertaken without the guidance of the study, made by Mrs. Grace Knott, for the National Resources Committee, of the 4 largest companies in each industry, based on the 1935 Census of Manufactures. The list of the 4 largest companies used in the present tabulation is her ranking as of 1935 on the basis of the average number of employees during the year. Her lists of the establishments controlled by each of these companies in 1935 have also been invaluable.

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actually increased their employment by about 15 percent from 1929 to 1933, while employment in the 4 largest companies declined 10 percent. In the other industries the differences in the record of the large companies and the other companies in the industry were not great.

The four largest concerns decreased their employment from 1929 to 1933 by less than the smaller concerns in the shoe, paper, and steel industries. As compared to 1929, the four largest companies in the steel industry had reduced their employment by 1933 by only half as much as the other companies in the same industry.

These changes are summarized in two forms: In table 44 the percentage change in the total number of employees is given separately for the industries in which the four largest companies provided most sustained employment and for those in which the balance of the industry had the better record in three periods: 1929–33, 1929–35, and 1929–37. The level of employment for each of the 3 years 1933, 1935, and 1937 relative to 1929 is shown in table 43.

TABLE 43.—*Stability of employment in large and small concerns in 10 industries, 1929–37*

[Index—1929=100]

	1929	1933	1935	1937
Boots and shoes:				
(*a*) 4 largest companies	100.0	104.6	109.6	106.1
(*b*) All other companies	100.0	90.0	95.6	104.6
Cement:				
(*a*) 4 largest companies	100.0	42.6	53.0	60.6
(*b*) All other companies	100.0	50.3	67.4	90.3
Flour and other grain mill products:				
(*a*) 4 largest companies	100.0	80.5	89.3	81.6
(*b*) All other companies	100.0	87.5	100.7	102.7
Meat packing:				
(*a*) 4 largest companies	100.0	89.7	93.7	100.0
(*b*) All other companies	100.0	96.4	97.7	109.7
Paints and varnishes:				
(*a*) 4 largest companies	100.0	73.7	100.4	105.7
(*b*) All other companies	100.0	80.2	92.5	109.5
Paper:				
(*a*) 4 largest companies	100.0	87.2	107.0	115.5
(*b*) All other companies	100.0	84.0	99.0	106.0
Petroleum refining:				
(*a*) 8 largest companies	100.0	81.8	90.8	101.9
(*b*) All other companies	100.0	92.8	105.8	105.7
Soap:				
(*a*) 4 largest companies	100.0	90.9	94.8	104.2
(*b*) All other companies	100.0	116.7	100.9	84.4
Steel works and rolling mills:				
(*a*) 4 largest companies	100.0	78.4	92.7	119.1
(*b*) All other companies	100.0	55.6	78.9	108.3
Tin cans and other tinware:				
(*a*) 4 largest companies	100.0	73.5	87.9	99.4
(*b*) All other companies	100.0	75.4	85.8	118.1

On the recovery, as indicated in the second section of table 2, the industries were evenly divided between those in which the large companies had restored employment to a level more nearly approaching that of 1929 than the other firms in the industry, taken as a group. To the group in which large companies provided a relatively higher level of employment in 1933 (steel, shoes, and paper) were added paints and varnishes and the manufacture of tin cans and other tinware.

TABLE 44.— *Relative stability of employment provided by large and small concerns in 10 industries*

4 largest companies provide more stability				All other concerns provide more stability			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Industry	Percent change for 4 largest	Percent change for all other concerns	Difference in percent of change (3) − (2)	Industry	Percent change for all other concerns	Percent change for 4 largest	Difference in percent of change (7) − (6)
CHANGE, 1929–33				CHANGE, 1929–33			
Steel works and rolling mill products	−21.6	−44.4	22.8	Soap	+16.7	−9.1	25.8
Boots and shoes	+4.6	−10.0	14.6	Petroleum refining	−7.2	−18.2	11.0
Paper	−12.8	−16.0	3.2	Cement	−49.7	−57.4	7.7
				Flour and other grain mill products	−12.5	−19.5	7.0
				Meat packing	−3.6	−10.3	6.7
				Paints and varnishes	−19.8	−26.3	6.5
				Tin cans and other tinware	−24.6	−26.5	1.9
CHANGE, 1929–35				CHANGE, 1929–35			
Boots and shoes	+9.6	−4.4	14.0	Petroleum refining	+5.8	−9.2	15.0
Steel works and rolling mill products	−7.3	−21.1	13.8	Cement	−32.6	−47.0	14.4
Paper	+7.0	−1.0	8.0	Flour and other grain mill products	+.7	−10.7	11.4
Paints and varnishes	+.4	−7.5	7.9	Soap	+.9	−5.2	6.1
Tin cans and other tinware	−12.1	−14.2	2.1	Meat packing	−2.3	−6.3	4.0
CHANGE, 1929–37				CHANGE, 1929–37			
Soap	−4.2	−15.6	19.8	Cement	−9.7	−39.4	29.5
Steel works and rolling mill products	+19.1	+8.3	10.8	Flour and other grain mill products	+2.7	−18.4	21.1
Paper	+15.5	+6.0	9.5	Tin cans and other tinware	+18.1	−.6	18.7
Boots and shoes	+6.1	+4.6	1.5	Meat packing	+9.7	0	9.7
				Paints and varnishes	+9.5	+5.7	3.8
				Petroleum refining	+5.7	+1.9	3.8

In petroleum refining, cement, flour, soap, and meat packing, the reverse was true. By 1937, after another 2 years of recovery, much the same situation prevailed as in 1935, except that the other companies than the large ones in the tin-can industry had advanced employment much more than the large companies relative to 1929.

It is evident from this record that the stability of employment and earnings are not related either to the degree of concentration in the industry or the nature of the goods produced. In each category are industries making consumers' goods and industrial goods; and those characterized by many small- or moderate-sized companies as well as those in which a few large companies form a major portion of the industry.

The general story is much the same when total wage payments are used instead of employment as the criterion of stability from a period of high activity to depression, although the portion of the larger concerns may be slightly better. The only industry in which the relative position of the largest companies is changed is the manufacture of tin cans. In this case, although the four largest concerns did not maintain employment as well as the remainder of the industry from 1929 to 1933, their wage payments in 1933 were at a higher level

relative to 1929 than those of the remainder of the industry. Data for wage payments similar to those for employment are given in tables 45 and 46.

TABLE 45.—*Stability of wage payments in large and small concerns in 10 industries, 1929–37*

[Index—1929=100]

	1929	1933	1935	1937
Boots and shoes:				
(*a*) 4 largest companies	100.0	82.5	104.1	106.5
(*b*) All other concerns	100.0	60.0	72.0	82.0
Cement:				
(*a*) 4 largest companies	100.0	22.6	35.1	54.1
(*b*) All other concerns	100.0	31.5	46.9	78.1
Flour and other grain-mill products:				
(*a*) 4 largest companies	100.0	61.5	76.0	84.2
(*b*) All other concerns	100.0	65.4	77.7	86.9
Meat packing:				
(*a*) 4 largest companies	100.0	65.0	84.5	103.5
(*b*) All other concerns	100.0	71.8	80.6	103.1
Paints and varnishes:				
(*a*) 4 largest companies	100.0	51.7	83.9	106.4
(*b*) All other concerns	100.0	58.2	73.0	99.0
Paper:				
(*a*) 4 largest companies	100.0	61.2	86.3	110.1
(*b*) All other concerns	100.0	57.3	77.4	99.9
Petroleum refining:				
(*a*) 8 largest companies	100.0	65.1	80.9	108.1
(*b*) All other concerns	100.0	74.7	88.5	105.1
Soap:				
(*a*) 4 largest companies	100.0	68.3	81.2	110.5
(*b*) All other concerns	100.0	87.4	79.7	79.2
Steel works and rolling mills:				
(*a*) 4 largest companies	100.0	41.2	66.8	118.4
(*b*) All other concerns	100.0	34.6	61.4	108.9
Tin cans and other tinware:				
(*a*) 4 largest companies	100.0	60.9	74.2	94.8
(*b*) All other concerns	100.0	56.1	69.9	103.4

TABLE 46.—*Relative stability of wage payments provided by large and small concerns in 10 industries*

4 largest companies provide more stability				All other concerns provide more stability			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Industry	Percent change for 4 largest	Percent change for all other concerns	Difference in percent of change (3)−(2)	Industry	Percent change for all other concerns	Percent change for 4 largest	Difference in percent of change (7)−(6)
CHANGE, 1929–33				CHANGE, 1929–33			
Boots and shoes	−17.5	−40.0	22.5	Soap	−12.6	−31.7	19.1
Steel works and rolling mill products	−58.8	−65.4	6.6	Petroleum refining	−25.3	−34.9	9.6
Tin cans and other tinware	−39.1	−43.9	4.8	Cement	−68.5	−77.4	8.9
Paper	−38.8	−42.7	3.9	Meat packing	−28.2	−35.0	6.8
				Paints and varnishes	−41.8	−48.3	6.5
				Flour and other grain mill products	−34.6	−38.5	3.9
CHANGE, 1929–35				CHANGE, 1929–35			
Boots and shoes	+4.1	−28.0	32.1	Cement	−53.1	−64.9	11.8
Paints and varnishes	−16.1	−27.0	10.9	Petroleum refining	−11.5	−19.1	7.6
Paper	−13.7	−22.6	8.9	Flour and other grain mill products	−22.3	−24.0	1.7
Steel works and rolling mill products	−33.2	−38.6	5.4				
Tin cans and other tinware	−25.8	−30.1	4.3				
Meat packing	−15.5	−19.4	3.9				
Soap	−18.8	−20.3	1.5				

TABLE 46.—*Relative stability of wage payments provided by large and small concerns in 10 industries*—Continued

4 largest companies provide more stability				All other concerns provide more stability			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Industry	Percent change for 4 largest	Percent change for all other concerns	Difference in percent of change (3)−(2)	Industry	Percent change for all other concerns	Percent change for 4 largest	Difference in percent of change (7)−(6)
CHANGE, 1929–37				CHANGE, 1929–37			
Soap	+10.5	−20.8	31.3	Cement	−21.9	−45.9	24.0
Boots and shoes	+6.5	−18.0	24.5	Tin cans and other tinware	+3.4	−5.2	8.6
Paper	+10.1	−.1	10.2	Flour and other grain products	−13.1	−15.8	2.7
Steel works and rolling mill products	+18.4	+8.9	9.5				
Paints and varnishes	+6.1	−1.0	7.1				
Petroleum refining	+8.1	+5.1	3.0				
Meat packing	+3.5	+3.1	.4				

After the recovery of 1935 and 1937, however, the position of the four largest concerns in each industry was relatively better than that of the smaller concerns in more industries and by a larger margin when stability is measured by wage payments rather than by employment. Presumably this reflects the major conclusion of this study that for various reasons the largest companies in an industry pay higher wages on the average than the small companies.

This analysis has been directed solely at the problem of stability during a business cycle depression. It would also be of great interest to explore the effectiveness with which large concerns, as compared with small concerns, meet the problem of seasonal fluctuations in employment in each of a number of representative industries.

Technical Limitations of the Data.

The data on which these comparisons are based are not entirely satisfactory. The necessity of using figures for the entire year 1933, a year in which employment and earnings were somewhat abnormal in certain industries, due to the enactment of the National Industrial Recovery Act in June of that year, prevents placing too much reliance on them as an indicator of the record of large or small agencies in the cycle from prosperity to depression.

Furthermore, the figures may understate the stability of employment offered by the large concerns. Most of them are engaged in making a fairly wide range of products, and thus may be able to shift workers making products hard hit by depression to the production of goods with a more stable demand. Such a shift would be more difficult for the smaller companies. It would not be reflected in the figures presented here which represent only the workers of the four largest companies in each industry who are employed in establishments classified in that industry. They do not represent the total volume of employment provided by these companies.

In addition, there are certain technical difficulties arising out of the nature of census reports which, in brief, result in giving, in these tabulations, not the total employment of a corporation as a whole (e. g.,

General Motors), but the employment of those plants of a corporation which are engaged in a particular industry, as defined by the Census of Manufactures. Thus, the data are reported to the Census Bureau by establishments. To secure totals for each of the four largest companies it is necessary to add the figures for all establishments controlled directly or indirectly by each company, which are classified by the Census Bureau within the industry under analysis. For years prior to 1935 the figures given here include all establishments owned by one of the four largest companies in 1935, whether or not operated in that year, regardless of by whom owned or operated in prior years, except that establishments whose industrial classification has changed during the period due to a change in the proportion which different products were in the total output, have been eliminated in all years. But in one or two cases when it was known that a change in industrial classification represented a complete change in the character of output, the figures for years in which the plant was included in a covered industry have been included. For 1937 the list of establishments has included those establishments owned by the four largest concerns in 1935, regardless of whether owned by one of the four largest in 1937, plus those built by one of the four largest since 1937, but has excluded establishments purchased from a smaller concern by one of the four largest since 1935. The purpose of all these decisions has been to secure the fairest possible comparison of the stability of employment and wages provided by large and small concerns through the depression years, unaffected by changes in ownership between the two groups of companies.

The following table 47 gives the size of each group of companies, as measured by employment, in 1929.

TABLE 47.—*Average annual number of employees—1929*

Industry	4 largest companies	All other concerns	Percent, 4 largest of total
Boots and shoes	40,047	165,593	19.47
Cement	12,439	20,929	37.28
Flour and other grain mill products	6,296	20,732	23.29
Meat packing	64,278	57,082	52.96
Paints and varnishes	8,552	20,659	29.28
Paper	13,403	89,917	12.97
Petroleum refining (8 largest)	52,444	28,152	65.07
Soap	9,538	4,825	66.41
Steel works and rolling mills	179,422	245,152	42.26
Tin cans and other tinware	21,624	9,873	68.65

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