THE UNIVERSITY OF CHICAGO

ECONOMIC IMPACT OF COLLECTIVE BARGAINING UPON THE RUBBER TIRE INDUSTRY

A DISSERTATION SUBMITTED TO THE FACULTY OF THE DIVISION OF THE SOCIAL SCIENCES IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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BY

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PREFACE

This study was undertaken in order to develop the economic impact of the United Rubber Workers of America upon the Tire Industry. Related studies have attempted to evaluate the impact of other unions upon other basic industries and this study represents another attempt to shed light through specific industry analysis upon the general effects of unionism.

My interest in this particular problem dates back to the 1935-1936 period, when as a resident of Akron, I saw the early beginnings of the union and the tremendous changes which came into the community as a by-product of unionization. Later on as a teacher in the Labor field at Ohio State, Northwestern and Washington Universities, and as a labor arbitrator in the Rubber Industry the specific nature of my interest became more apparent. My interest in the problem was further stimulated by Professor Fred Harbison of the University of Chicago under whose guidance this study was made. Professor Harbison's criticism, comments and advice have been invaluable throughout the preparation of this work. I am equally indebted to Professor Gregg Lewis and Professor Albert Rees who read the successive drafts of this manuscript and offered pertinent advice and criticism. My appreciation is also extended to Professor Werner Hochwald, Chairman of the Department of Economics at Washington University, for his many helpful comments.
I am also indebted to many others in the Rubber Industry, both management and union, for their general interest in this study and for their assistance in enabling me to gain access to confidential information which otherwise would not have been available. Due to the confidential nature of much of this information they will have to remain unidentified.

Whenever errors or faults of analysis occur they are attributable to the author and not to those who assisted.
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INTRODUCTION

THE PROBLEM

Within the past fifteen years trade unionism has organized many new areas in American industry. This numerical growth has intensified controversy as to the effect of trade unionism upon the specific industry whose labor force changes from an unorganized to an organized base.

The industry chosen to study the effects of unionism is the Rubber Tire Industry. It became one of the first of the important mass production industries to encounter trade unionism when the URWA\(^1\) (United Rubber Workers of America) emerged as the first major CIO union to win strikes and establish collective bargaining.

Economists have long postulated many potential effects of trade unionism upon the allocation of resources in industries where trade unions have emerged and between these and other industries. By applying these general postulations, wherever applicable, to the tire industry, a plausible framework of reference, for studying the impact of collective bargaining upon the industry exists.

One important assertion about trade unionism is that union imposed wage differentials cause organized firms or areas to suffer

\(^1\)Now known as the United Rubber, Cork, Plastic and Linoleum Workers of America.
at the expense of the unorganized areas. This position is stated for example by Professor Lindblom.

Where wage increases result in unemployment union policy as the examples have shown often cause serious dislocation of industry, movement of firms from one area to another and shifts in business from some firms to others. Competition may exercise an eventual check through weakening the competitive portion of high wage firms or areas, by even destroying them. But it is a check not without misallocation and waste of resources.\(^1\)

Studies in the hosiery and plate glass industries have been cited as proving that high union wage rates have destroyed the unionized areas and caused shifts to non-union areas.\(^2\)

Other contentions resolve around a reverse situation; namely that the union's internal logic dictates that it organize the entire industry and establish common money wage rates. The resultant prevalence of common rates is held to be detrimental to new areas to which the industry might move if wage rates were lower. Henry Simons strongly supports this argument.

Southern workers may be intrigued by the wage expectations held out by organizers from northern unions and by the F. L. S. A. They may in a few cases get such wages but if they get much employment at such wages it will be in spite of the intentions of the northern unions.\(^3\)

These general statements concerning the effects of trade unionism upon the location of firms can be specifically applied to the tire industry. Simultaneously with collective bargaining

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the industry has experienced a very substantial and rapid migration from the highly unionized Ohio area to the initially non-unionized outside areas. Since the union did ultimately organize the outside areas, the contention that trade union policy impedes the development of newly established areas must also be analyzed. The first major segment of this study concerns itself with the effect of trade unionism upon decentralization. Was this very rapid resource shift the consequence of unionism?\(^1\)

Another important assertion has been made about the ability of smaller or weaker firms to survive under trade unionism. It is argued that collective bargaining by applying common money wage rates, which are based on the ability to pay of the stronger firms, makes it difficult for weaker or smaller firms to survive. J. V. Van Sickle comes to this conclusion.

If the well established firm has to deal with a strong union whereas the small business firm is operating in an area where the cost of living and wages are relatively lower advantages accrue to the smaller enterprise. Organization of the union on an industry wide basis would eliminate this competitive factor in favor of the well established firm.\(^2\)

At another point in his discussion he argues,

No workable wage structure can be built on the earnings of an industry. If the union succeeded in getting wages up as high

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\(^1\)Assertions made specifically about the rubber industry, in which decentralization is considered the result of unionism, come from many sources. A moderate statement of this nature is made by Gaffey. "The growth of unionism in the industry has reacted to the disadvantage of Akron." George E. Gaffey, Productivity of Labor in the Rubber Tire Industry (New York: Columbia University Press, 1940), p. 120.

as the strongest could take the mortality in the rest of the industry would be terrific.\(^1\)

Related concepts about the effect of trade unionism state that the function of the trade union is to raise wages above a competitive level. Professor Leo Wolman of Columbus University, an authority of long standing in the labor field stated, "Once they achieve control national unions become next to the government the most effective price raising instrument of modern times."\(^2\)

These gains, by increasing the supply cost of the commodity, result in making the size of the industry smaller than it otherwise would be. They cause either a loss of employment to union members or, if the industry is expanding, reduce the number of employees that would eventually be required full time in the industry.\(^3\)

The impact of unionism upon either small or weak firms or upon the size of the industry is important, since both of these factors are related to the concentration problem. Any industry can become more concentrated either by the elimination of small or weak firms or by a diminution in its size providing that this reduction in size is not evenly distributed among all firms in the industry. The specific industry studied, the tire industry, was highly concentrated before trade unionism and this already high degree of concentration has increased since collective bargaining. Two relatively small firms which failed specifically blamed URWA wage policies for their demise. Was the effect of

\(^1\)Ibid., p. 3.


\(^3\)Lindblom, op. cit., p. 96.
trade unionism to increase concentration in the tire industry?

It is sometimes argued that if union imposed wage rates cause loss of employment, the union must attempt to minimize the severity of these losses, in order to prevent dissention and too rapid a decline in membership. This it achieves by attempting to shorten hours to spread or share the work, and even by deliberate restriction of output to make the work last longer. Professor Marshall cogently stated this position when he asserted,\(^1\)

> It is quite true that if plasterers or shoemakers could exclude external competition they would have a fair chance of raising their wages whether by a diminution of the amount of work done by each, whether by shortening the hours of labor or by any other device.\(^2\)

Trade unions, may therefore, cause more workers to remain attached to an industry than that industry can employ full time at the union imposed wage rates. The existence of these excess workers is made less apparent by the attempt to spread work, lower hours, or restrict output.

All of these techniques, work sharing, shorter hours, and restriction of output exist in the Rubber Tire industry. Are they the result of the unions' wage policy and would the absence of collective bargaining have resulted in a numerically smaller and more fully utilized work force?

\(^1\)Although Marshall is referring to the techniques which the union would employ to obtain a higher than competitive wage rate the statement is not used out of context. Given an initial rise in wage rates above a competitive level, it follows that the union would have to employ the techniques cited by Marshall in order to maintain this higher wage rate and prevent the industry from reducing the number of union workers attached to it.

Another effect often attributed to trade unionism is that collective bargaining contributes to wage rigidity. It is contended that union contracts are fixed for certain periods and that unions resist wage changes in a downward direction even when these downward adjustments are necessary in a period of declining business activity.\(^1\) A proponent of trade unionism, Professor Morton of Wisconsin, argues that wage rigidity also exists during periods of expanding business activity when strong inflationary pressures prevail. He contends that, since wage contracts are fixed for specified periods, they prevent wage rates from changing as rapidly as they would under more competitive conditions when employers would be continually bidding up the price of labor, either to increase or maintain their work force.\(^2\)

Two major general contentions in regard to the effect of collective bargaining upon wage rates have been asserted. Although related they must be separated analytically. The contention that trade unionism causes wage rate rigidity must be evaluated in the light of the relative movement of wage rates in the tire industry, both prior to and subsequent to collective bargaining.

It is also frequently asserted that collective bargaining makes wages higher than they otherwise would be. A comparison of wage movements in different industries with different degrees of organization may shed some light on this subject. Did there exist

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\(^1\)This statement disregards the Keynesian contention that wage rigidity is desirable.

specific conditions in the tire industry which would suggest that the union was able to increase wage costs over either the entire industry or specific areas?

Any answers however tentative in these areas of analysis should furnish some insight into the effect of trade unionism upon the Rubber Tire Industry. This study could contribute one sample of evidence concerning the general impact of trade unionism upon the economy.
CHAPTER I

LOCATION OF PRODUCING UNITS, DECENTRALIZATION

Coincident with trade unionism and collective bargaining there has been rapid geographical decentralization in the tire industry since 1935. Since collective bargaining, especially in the Akron area, and the movement out of Akron took place simultaneously, decentralization has been cited as a consequence of trade union organization. In fact, industry spokesmen have stated that had it not been for trade unionism they would not have located plants outside the Akron area. Their position is that union imposed wage differentials were so great relative to the unorganized areas that the tire companies were forced to transfer output out of the Akron area.

In order that the validity of this contention may be tested, certain questions must be answered. Was centralization in Akron the result of comparative advantages or was it merely due to the head start enjoyed by the three successful Akron firms? If there had been any previous advantages in locating in Akron, were the resultant union wage differentials sufficient to offset these advantages? Did the new locations have certain advantages over Akron which were sufficient by themselves to have caused decentralization to these areas?

1Statement by Mr. J. G. Graham, Vice President, Goodrich Tire and Rubber Company, Akron Beacon Journal, March 15, 1938, p. 1.
Akron firms early established themselves as leaders in the tire industry. When the small automobile industry started, the equally small Akron rubber firms mainly producing bicycle tires were very anxious to acquire the new tire business. Bicycle tires had been the only item in which the Akron firms had been able to secure a foothold, for the more lucrative rubber boot and shoes, and mechanical goods business had been preempted by the U. S. Rubber Company.¹ U. S. Rubber did not think the new product sufficiently important to warrant development. The transportation revolution was so rapid that by the time other firms and U. S. Rubber became interested in tires, the Akron companies had large original equipment orders, well differentiated brand names, and had built up a large sales volume. Profits were spectacularly high and these profits encouraged further investment and furnished funds for the most modern and efficient technology.² The main Akron factories led the industry in mass production methods and were able to attain and maintain advantages in efficiency.³ While the successful Akron firms were expanding, mortality of new firms outside Akron was high. Akron companies as a group had the lowest average unit costs and earned the greatest profits.⁴ All during the 1920's the large Akron firms continued to expand their existing plants in the Akron area. By small adaptations in plant and equip-

¹Industry spokesmen state that U. S. Rubber had 80 per cent of total sales in the rubber industry in 1903.
²Profits frequently aggregated 100 per cent of original investment per year.
³Gaffey, op. cit., p. 154.
⁴Ibid., p. 155.
ment, by the introduction of heavier and larger equipment, and by
the use of time and motion study, output within the existing plants
expanded significantly. At the same time new units and wings were
added to the three large Akron plants. The net result of these
changes was that output in Ohio doubled while that in outside
areas declined 11 per cent.\(^1\) The number of firms manufacturing
tires was nearly cut in half during this period. As a result,
centralization of the industry took place in Ohio, and, since
three-fourths of the Ohio output was located in Akron, much of
this centralization was in Akron. Mortality of outside firms in-
creased during the early 1930's, while the three large Akron firms
emerged intact. This slightly increased the degree of concentra-
tion in the Akron area. By 1935, 68.4 per cent of total wage
earners and 75 per cent of net value added by manufacture was in
the Ohio area.\(^2\) Approximately 52.9 per cent of the total wage
earners, and 58 to 60 per cent of value added nationally was in
the Akron area.\(^3\)

There was, however, one exception to increasing centrali-
zation in the Ohio area. Akron firms in the 1920's built branch
plants in the Pacific Coast area to take advantage of lower trans-
portation costs. By the end of a decade, the percentage of total
output produced in the Pacific Coast area had increased from 1 to
10 per cent. However, this increase was mainly during the period
in which Ohio was increasing its share of total output, before
the emergence of trade unionism in the industry. The proportion

\(^1\)Ibid., p. 166. \(^2\)Ibid., p. 167. \(^3\)Ibid.
of total output produced on the West Coast roughly parallels the percentage of auto registrations in the same area, and therefore, the decentralization to the West Coast is based mainly on transportation cost disadvantages of shipping tires into this area.

What were the advantages Akron enjoyed over other potential tire producing areas? One major advantage was proximity to Detroit and to the major consuming units in the country.¹ By 1930, 54 per cent of total auto registration was within a five hundred mile radius of Akron.² Many services highly specialized in tire production were located within the Akron area and these became external economies to the Akron firms. These were specialized engineering, chemical, managerial, and brokerage services.³ The fact that Akron was regarded as synonymous with good quality tires also constituted another advantage. Although advanced technology is not an advantage of this type, the fact that three very large competitive firms were located in a small area made successful innovation very hard to conceal and caused more rapid adoption of improved techniques in the Akron area.

¹Twenty-five to 30 per cent of total output is original equipment on new autos.

²Gaffey, op. cit., p. 55.

³There existed in Akron a large number of engineering and chemical companies who specialized in either specific rubber chemicals or in designing and improving rubber equipment or rubber processes. The local municipal university gave specialized degree courses in both rubber chemistry and rubber engineering and as a byproduct did significant research in these areas. The major scrap and crude rubber brokers had headquarters in Akron. The Akron-Barberton area was the site of the largest rubber reclaim company, Midwest Rubber, and up to the development of synthetic Rubber 25-50 per cent of rubber used in a tire was reclaim. For a fuller description of the facilities available see Rubber Red Book (New York: Rubber Age, 1925, 1930, 1935), passim.
The Akron labor supply also was a contributory factor. Akron became known as the source of a labor supply exceptionally well skilled in tire manufacturing. Because of the greater degree of mechanization, and the use of more rapid and automatic machinery, the labor requirements of the Akron plants were much more rigorous than in the outside area tire plants. Workers were, therefore, more skilled and had to be much stronger and more durable to stand the more rapid pace of the Akron plants. Strength requirements were so severe that men weighing under 130 pounds were not hired by the Akron firms. During the first World War these stronger workers had to be recruited in many outside areas, especially in the South; but after 1920 the supply of these stronger workers was sufficient.

Two different technologies existed in the rubber tire industry. One was the highly mechanized, highly automatic technology employed by the Akron-Detroit firms, while the other was less mechanized and employed much smaller and less automatic machinery. The difference might also be stated in terms of different capital-man ratios as well as difference in the size, complexity, and speed of the machinery.

One statement frequently made is that Akron's advantages were due to the fact that the largest mass production plants were located there. In other words, the internal economies resulting from increased scale were considered an Akron advantage. Since these same economies of scale could be realized in any equally large plant, the presence of internal economies cannot be considered an advantage of the type previously described. To indi-
cate the existence of external economies and advantages unique to the Akron area it must be remembered that after its 1927 modernization the U. S. Rubber plant in Detroit was as large as the average Akron plant. Nevertheless, up to 1935, Akron companies were able to undersell U. S. Rubber in the Detroit area. In spite of the fact that both U. S. Rubber and General Motors were part of the DuPont industrial empire, Akron rubber companies on a competitive bidding basis secured the largest share of the General Motor original equipment orders. After 1935, U. S. Rubber secured the lion's share of this same business.

A combination of these external economies of the Akron area and the superior labor supply in the Akron area resulted in wage differentials in the industry. In 1923 the following comparative wage patterns existed in the tire industry.

<table>
<thead>
<tr>
<th>Area</th>
<th>Wage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akron-Detroit</td>
<td>100</td>
</tr>
<tr>
<td>Other Ohio</td>
<td>84.7</td>
</tr>
<tr>
<td>Indiana and Wisconsin</td>
<td>78.2</td>
</tr>
<tr>
<td>New Jersey and Pennsylvania</td>
<td>73.9</td>
</tr>
</tbody>
</table>


Part of these differentials was attributable to higher costs necessary to overcome the preference of workers for smaller communities and plants. These average differentials continued to be substantially the same until the emergence of active trade unionism in the Akron-Detroit area. Despite this differential,
averaging about 25 per cent, Akron plants had lower labor costs until 1933. This may be interpreted to mean that these wage rates were near equilibrium rates which reflected external economies which could be realized in the Akron area and the qualitative superiority of the Akron labor supply over that of the outside areas. Greater internal economies within the large plants caused Akron unit costs to be the lowest in the industry until 1933, when the union entered the Akron scene. However, the difference in labor costs between Akron and the outside area, was narrowing between 1929-1933. The degree of centralization in Akron slowed down appreciably after 1929. Thus it could be argued that in the 1929-1933 period that these varying area wage rates certainly approached the equilibrium level.

The reversal of this cost advantage and the emergence of decentralization coincided with the coming of trade unionism. Were wage differentials which reflected trade union influence in the Ohio area sufficient by themselves to have caused this change? In the following tabulation (Table 2) the relative wage rates in Ohio and outside areas are compared.

An analysis of these figures indicates that wage differentials under trade unionism increased significantly over the pre-union level. Although the May 1936 wage rates were the first to be directly determined by collective bargaining, all of the post 1933 increases in wage differentials were the direct result of trade unionism. The Akron rubber firms granted four wage raises

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1 Gaffey, op. cit., p. 157.
2 Ibid., p. 166.
3 Ibid., p. 154.
### TABLE 2

AVERAGE HOURLY EARNINGS BETWEEN OHIO-MICHIGAN AND OUTSIDE AREAS 1935-1938a

<table>
<thead>
<tr>
<th>Date</th>
<th>Average Hourly Earningsb Cents per Hour Ohio and Michigan</th>
<th>Outside Areac</th>
<th>Ohio Michigan Differential</th>
<th>Percentage Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan., 1936</td>
<td>83</td>
<td>62</td>
<td>21</td>
<td>34</td>
</tr>
<tr>
<td>Feb., 1936</td>
<td>89</td>
<td>62</td>
<td>27</td>
<td>43</td>
</tr>
<tr>
<td>Mar., 1936</td>
<td>89</td>
<td>63</td>
<td>26</td>
<td>41</td>
</tr>
<tr>
<td>May, 1936</td>
<td>95</td>
<td>63</td>
<td>32</td>
<td>51</td>
</tr>
<tr>
<td>Jan., 1937</td>
<td>96</td>
<td>67</td>
<td>29</td>
<td>43</td>
</tr>
<tr>
<td>Mar., 1937</td>
<td>104</td>
<td>69</td>
<td>31</td>
<td>51</td>
</tr>
<tr>
<td>Feb., 1938</td>
<td>104</td>
<td>74</td>
<td>30</td>
<td>42</td>
</tr>
</tbody>
</table>

aSource: Gaffey, op. cit., p. 172.

bAkron rates are 6 cents above the Ohio-Michigan average, and therefore the Akron-outside area differential is approximately 6 per cent higher.

c"Outside area" includes all other states having tire plants.

between 1933 and 1936, in a vain attempt to prove to their employees that trade unions were unnecessary.1 Since the union had mainly centered its early organizing drives in the concentrated Akron-Detroit areas, these wage increases were mainly granted in Akron and Detroit. Not only were wage differentials increased substantially as a result of trade unionism, but the Akron companies were unable later to narrow these differentials. The union won its first major strike in March 1936 when it refused to accept a wage reduction of 12 cents in the Akron Goodyear plant. Later on in

1Jochelblom, op. cit., p. 112.
1938 the union was able to prevent an attempted wage reduction of 18\(\frac{1}{2}\) cents in the Goodrich plant. Thus the result of collective bargaining was to increase the proportionate wage differentials by 50 to 67 per cent.

Prior to trade unionism, wage differentials approximating 25 per cent had existed. These differentials are explained by external economies and the superior Akron work force. They had been more than offset by productivity differences between Akron and outside Akron plants. The result of union activity was to increase these differentials. If the 25 per cent average differentials for a decade represented differing area equilibrium wage rates based on existing advantages, it is evident that the new Akron wage rates were well above equilibrium levels; that is, unless an equally proportionate improvement in the superiority of the Akron work force took place at the same time.

The result of trade unionism was not only to increase Akron wage differentials, but also to reverse the previous man-hour productivity differentials which had been previously in favor of the Akron workers. In other words, it removed the manifestations of the previous superiority of the work force which had been the basic cause on the supply side of these differentials.

The tire industry had been typified by very substantial productivity increases, increases which were far above national averages, and which the B. L. S. characterized as the highest in the economy. A B. L. S. survey indicated that the tire industry had a 292 per cent increase in man hour productivity between 1914-1927; with the automobile industry registering the next highest
increase of 178 per cent. If anything this 1914-1927 increase was accelerated during the 1929-1933 period. The emergence of trade union organization, the subsequent turmoil, and the resultant strikes all during the 1933-1936 period coincided with a decided drop in the rate of productivity increase. The following information best summarizes this development.

**TABLE 3**

**TREND OF PRODUCTIVITY INCREASES SINCE 1923 IN TERMS OF POUNDS OF CRUDE RUBBER CONSUMED PER MAN HOUR**

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Increase</th>
<th>Average Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1923-1928</td>
<td>53</td>
<td>7.6</td>
</tr>
<tr>
<td>1929-1932</td>
<td>72</td>
<td>14.4</td>
</tr>
<tr>
<td>1933-1936</td>
<td>17</td>
<td>3.4</td>
</tr>
</tbody>
</table>

*aSource: Gaffey, op. cit., p. 113.

*bFigures given are percentages.

This substantial dropping off in the rate of productivity increase had a decided influence upon decentralization, for management attributed the decline to tension within the plants, frequent sitdowns, and deliberate restriction of output.

After 1936, productivity not only failed to increase, but decreased between 1936-1938. A Goodrich executive stated that its unionized Akron plant had suffered a 6 per cent decrease in pro-

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ductivity within the two year union period.\(^1\) Certainly this feeling by tire executives that the Akron labor situation was out of hand and that favorable Akron productivity differentials no longer existed were important factors in the decision making processes which led to decentralization.\(^2\)

The substantial productivity increases prior to 1933 were achieved by techniques which caused workers to raise the cry of "speed-up." One survey commented in this fashion, "The increased speed of production has been achieved largely by the progressive raising of standard output requirements on individual jobs as a result of time and motion analysis rather than by mechanical controls of output."\(^3\) This method employed by the companies led workers to believe that they were sped up; for rates were set, and once bettered by workers, were again reset with higher standards. As a result remembering these experiences and resentful because of them, workers once unionized tried to prevent continuance of what they considered a "speed-up" by restricting output. Since Akron firms had taken the lead in time and motion study and in incentive systems, these antipathies and resulting pressures were greatest in the Akron area. Gaffey in his study commented, "As a consequence local unions, mainly the Akron locals, which were the


\(^2\)One Akron plant had 58 sitdowns lasting from a period of an hour to one to three days. These sitdowns, generally in key departments, were sufficient to bottleneck the entire plant.

first organized, have adopted restrictions to prevent further speeding up of production. Union leaders admit that they have been unduly restrictive in some cases.\textsuperscript{1} This restrictive pattern has continued since 1937, when decentralization reduced the number of jobs in Akron. It has continued, according to the union policy, as a method of preventing even greater Akron loss of jobs by making work last longer and also as a technique of bringing piece rate standards down.\textsuperscript{2} In the long run these restrictive techniques cause a much greater loss of jobs to Akron since they increase the Akron outside area cost disadvantage. These work restrictions generally are maintained by the union members passing the work along as to the rate of output they desire to maintain. Pressure among the workers generally is sufficient to enforce the particular rate of output desired. Work restriction patterns are far stronger in the Akron plants where older workers, protected by seniority, hold some of the important union positions. These workers, veterans of the pre-union period, have not entirely changed their attitudes. Newer plants with younger and less resentful workers and officials, have less reason to restrict output since all of the previous company tactics which led to the

\textsuperscript{1}Gaffey, \textit{op. cit.}, p. 117.

\textsuperscript{2}Restriction of output is a device to increase wage rates by getting work standards down. A piece rate is set which the union frequently tests by restricting output to a rate very far below that necessary to even make the flat hourly rate. The union protests and asks for negotiation since it argues the standard is too high. The company "losing money" on the rate is willing to set a lower standard rather than continue at a rate far below the lower flat rate. After it secures a lower standard, the men cannot invite suspicion by making too much, so output is restricted, generally to no more than 20 per cent above the new standard.
the charge of "speed-up" have been abandoned. Pressure to make work last longer in order to combat even greater amounts of unemployment and the desire to maintain favorable wage differentials also are other reasons cited by the union as explaining greater restriction of output in the Akron area. There are no exact statistics available, but both trade union and management personnel indicate that the percentage productivity disadvantages between Akron and outside plants varies from 5 to 25 per cent and averages about 10 per cent.\(^1\)

The absence of statistical evidence makes proof of the above statements highly difficult. However, virtually all management personnel believe that productivity in the Akron area is lower than in the outside areas and base their decisions on this belief. Thus the fact that it is believed that productivity is lower in the Ohio plants is a sufficient basis for explaining continued decentralization and greater than proportional cutbacks in the Akron area.

Another factor disadvantageous to Akron is the six-hour day. Instituted by the tire companies as a work-sharing device during the early thirties it has remained a focal point of union policy. In fact the union cited Goodyear's attempt to abandon

\(^1\)These assertions are based on private informal comments by both union and management personnel. Both groups refuse to be quoted and refuse to reveal statistical information to support these statements. However, one illustration indicates the nature of the productivity differential. A worker in the Akron plant of one of the larger companies produces 120 units in a six hour shift while a worker in one of the southern plants of the same company produces 220 units in an eight hour shift. This is a productivity differential of over 25 per cent and is representative of the differences between the two areas.
the policy as its reason for the 1935 strike. As decentralization has continued in the Akron area the union has refused to abandon the policy and instead has tried to apply it to the newer areas. The union has been generally unsuccessful and outside Akron areas are on an eight hour shift basis. The six hour day and thirty-six hour week adds pressure on the Akron wage rate because Akron workers attempt to get the same total weekly wages for less work, than their counterparts outside Akron. Since Akron firms will add new employees rather than pay overtime, another result of the six hour day is to cause additional training costs.\textsuperscript{1} Union leadership although aware of the added disadvantage to Akron resulting from the six hour day, has not stopped the practice because of fear of creating additional unemployment and additional political pressures which might drive the existing leadership out of office.\textsuperscript{2}

Two waves of decentralization have taken place in the industry since the emergence of trade unionism. The statistics shown in Table 4 indicate that since 1935 decentralization has taken place at a fairly rapid pace. These figures underestimate the 1935-1937 Akron decentralization since much of the decentralization had its greatest impact toward the end of 1937. Related figures indicate that the percentage of man hours in Akron were 52.9 per cent of national total in 1935, 46.4 per cent in 1936,

\textsuperscript{1}Every union convention lists the six hour day as one of the major demands.

\textsuperscript{2}The union leadership has held office by very small majorities and the political rivalries in the union are quite intense.
### Table 4

**Percentage of Workers and Value Added, Ohio and U. S.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of Workers</th>
<th>Percentage Value Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921</td>
<td>52.3</td>
<td>53.2</td>
</tr>
<tr>
<td>1923</td>
<td>57.4</td>
<td>62.4</td>
</tr>
<tr>
<td>1925</td>
<td>61.7</td>
<td>63.4</td>
</tr>
<tr>
<td>1927</td>
<td>66.2</td>
<td>67.2</td>
</tr>
<tr>
<td>1929</td>
<td>66.4</td>
<td>67.4</td>
</tr>
<tr>
<td>1931</td>
<td>65.5</td>
<td>64.6</td>
</tr>
<tr>
<td>1933</td>
<td>67.2</td>
<td>67.9</td>
</tr>
<tr>
<td>1935</td>
<td>68.4</td>
<td>75.8</td>
</tr>
<tr>
<td>1937</td>
<td>61.2</td>
<td>61.0</td>
</tr>
<tr>
<td>1939</td>
<td>55.3</td>
<td>52.6</td>
</tr>
<tr>
<td>1947</td>
<td>41.6</td>
<td>35.9</td>
</tr>
</tbody>
</table>


and 35.2 per cent early in 1938. The industry suffered a sharp recession late in 1937 and all during 1938, and the production cutbacks were most severe in the Akron area. Akron employment dropped 13,800 in 1938, while the outside Akron decline was only 4,400. This first period of decentralization was one in which the Akron-Detroit area was highly organized, while the newer areas were unorganized. The second period of decentralization, 1944-

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2. Ibid., p. 5.

3. Not all of the decreases in Akron's proportion of total
1946, was different in that the union had organized the entire industry, was bargaining on a company wide basis, and employers expected that any new plant would be immediately organized by the U. R. W. A.

The first wave of decentralization is a consequence of trade unionism and the response of the Akron companies to the new organization. The emergence of trade unionism reversed the superiority of the Akron work force and offset the Akron external economies. While Akron labor and total costs were the lowest in the industry in 1933, by 1937 they had become the highest. An article published in 1938 stated: "Goodyear estimated that it has saved 30 cents a tire by producing in its Southern plants. About 20 cents would come from lower wage costs."\(^1\) Since the wholesale value of a passenger tire was about $6.00 with 40 per cent being selling expenses and markup, the unit cost of production per tire was $3.60, and the wage cost differential therefore constituted 6 per cent of total producing cost. This cost differential was sufficient to induce Akron employers to decentralize even though they were not assured of ultimately being able to prevent unionization.\(^2\)

---

\(^1\)Business Week, April 18, 1938, p. 13.

\(^2\)Companies violently resisted union organization attempts
The emergence of trade unionism in other areas, however, did not prevent continued decentralization. Although the union wage differentials have considerably narrowed, some differentials do exist. The Ohio outside area differential is about 9 per cent. Since Akron rates are still 2 to 3 per cent above the Ohio level, the Akron differential is about 12 per cent.¹ Part of the narrowing of wage differentials is related to the newer technology which emerged in the industry after 1935, and which has been adopted by the Akron plants. The new technology, which uses more individualized and smaller machinery, requires less skill and much less strength. As a consequence this part of the higher supply costs of Akron-Detroit workers has been removed.

Although the existence of the union in the outside Akron plants is no longer an issue the union has been the major influence in the second wave of decentralization.² The Akron labor scene is still regarded by management as more hostile to productivity and labor efficiency than other producing areas. Thus as long as pressures inherent in the Akron union situation cause a belief that continued unfavorable productivity differentials will exist, de-

¹ Census of Manufacturers, 1947, p. 469. Figures were obtained by dividing average income by average number of hours worked in the areas under comparison. This is the first year in which hourly information was available in this form. Area figures are Ohio $1.76, Michigan and California $1.75, Pennsylvania $1.60, New England $1.52 and the South $1.45.

² "Furthermore the tire manufacturers are reconciled to unionism and realize that labor management relations are essential irrespective of plant location" (Rubber Age, April 1945, p. 12).
centralization will continue. The impact of decentralization is even greater when the industry is contracting output. Production cutbacks are more severe in the Akron area. The industry naturally would shut down its high cost areas and concentrate production in the lower cost ones. Varying elasticities of supply could explain the same observed fact.

Proponents of trade unionism argue that decentralization would have taken place even in the absence of collective bargaining. The argument is based on two strands of reasoning: namely, that other areas had potential comparative advantage in producing tires; and that technological changes since 1930 have been in the direction of smaller plants. Since Akron plants were large, these technological changes would have reacted to the disadvantage of Akron.

What are these advantages which other areas might have had over Akron? Some of them stem from certain conditions in Akron. Akron is far removed from its two major raw materials, rubber and cotton. Therefore raw material shipping costs are higher to the Akron area. The cost of shipping one hundred pounds of rubber to Akron is $1.15 as opposed to 50 to 60 cents to Southern and Southwestern plants using New Orleans or Galveston as ports of entry. Synthetic rubber plants are also generally located in the South and Southwest. Since tires require 20 to 25 pounds of rubber these areas possess a 10 cent cost advantage over Akron. Freight costs have been increasing more quickly than the price of tires. They have thus become more unfavorable to the Akron area since the percentage increases have been less in
Southern areas due to the 1942 Supreme Court Decision. These relative changes in shipping costs can be interpreted to indicate that transportation factors are of greater significance in the second period of decentralization than in the first. However, they are still of minor consequence in explaining continued decentralization since the estimated 20 per cent higher Akron labor costs causes Akron to operate under a 45 to 50 cents per tire disadvantage.

Taxes are higher in the Akron area, industrial water supplies scarce and therefore more costly. Although Akron is served by two railroads, the Erie and the Baltimore and Ohio, its terminal and unloading facilities had long been inadequate. Another advantage which is cited is that newer markets developing in other areas were now large enough to move production facilities nearby.

Plausible as these arguments may seem they are not tenable as explanations for causing decentralization. These Akron disadvantages and potential outside area advantages had been in ex-

---

1 COMPARATIVE COSTS OF SHIPPING 100 POUNDS OF PNEUMATIC TIRES*

<table>
<thead>
<tr>
<th>Years</th>
<th>Gasden Alabama to Dallas Texas</th>
<th>Akron Ohio to Dallas Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>1.28</td>
<td>1.52</td>
</tr>
<tr>
<td>1935</td>
<td>1.01</td>
<td>1.52</td>
</tr>
<tr>
<td>1940-1945</td>
<td>1.11</td>
<td>1.60</td>
</tr>
<tr>
<td>1950</td>
<td>1.03</td>
<td>1.79</td>
</tr>
</tbody>
</table>

*Source: Letter from William F. Bollman, Assistant Freight Traffic Manager, Baltimore and Ohio, April 27, 1951.
istence during the entire 1920 period in which concentration was increasing markedly in the Akron area. Akron advantages, already discussed were sufficient prior to 1933 to offset these disadvantages since Akron plants had the lowest unit costs in the industry at that time. An analysis of these cost disadvantages indicates that they had not changed proportionately between 1925 and 1937.\(^1\) If these costs were sufficient to cause decentralization why did they not cause the movement in the 1920's when they were proportionately as favorable to the outside area? The new market argument must also be disregarded, for the following statistics indi-

<table>
<thead>
<tr>
<th>State</th>
<th>Basis for Taxation</th>
<th>Tax Rate(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>60 per cent</td>
<td>.0065</td>
</tr>
<tr>
<td>Ohio</td>
<td>75-100 per cent</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>near latter figure</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>50-100 per cent</td>
<td>.01</td>
</tr>
<tr>
<td>Texas</td>
<td>40-60 per cent</td>
<td>.01</td>
</tr>
<tr>
<td>Tennessee</td>
<td>40-100 per cent</td>
<td>indeterminate</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>50 per cent</td>
<td>indeterminate</td>
</tr>
<tr>
<td>Connecticut</td>
<td>80-90 per cent</td>
<td>indeterminate</td>
</tr>
</tbody>
</table>

\(^a\)Source: Commerce Clearing House Tax Guide.

\(^b\)These rates existed between 1925 and 1940. After 1940 some of these states amended their tax code. In many cases these tax rates are not representative since some communities offered tax remission for from 10 to 25 years in order to induce rubber firms to move.

The level of power rates cannot be accurately ascertained from the available data, since the figures given are not comparable. Because the rate varies with the average amount of kilowatt hours employed, it is impossible to determine power costs without having information on the amount of power used. Akron is situated at the summit of two watersheds, the Lake Erie and the Ohio River. The lack of adequate water for much greater expansion of an industry that needs as much water as rubber has been recognized since 1920. Business Week, April 1936, p. 16.
cate that the percentage of total auto registration has changed little since 1925 (Table 5).

Although some regions have gained, the relative increases are comparatively small and in no way are related to the large proportion of capacity which has been moved from the Ohio area. The East South Central and West South Central have gained the largest proportion of output yet, the percentage of auto registrations in these areas has not expanded greatly. In fact, the number of tire units sold declined during much of the decentralization period.¹

The presence of certain Akron disadvantages and outside are advantages, which had existed continuously for many years cannot be employed to explain the sudden shift which took place. The basic conditions which were reversed were those which related to the attitude and superiority of the Akron work force.

Technological explanations are advanced as another cause of decentralization. Since 1929, technological changes in the direction of more individualized units of equipment, have given small plants advantages over larger plants.² Both officials within the industry and outside authorities were cognizant of the fact that smaller units than those in operation in Akron had lower unit costs. In an article on the Rubber industry, Lloyd Reynolds stated, "Akron plants are beyond optimum sizes although optimum

²Although auto registrations were increasing during the entire period, these increases were offset by improvement in tire life. As a result the number of tires sold in 1949 just equalled the number sold in 1928. In most of the years the number of units sold was below the 1925-1928 level.

²Caffey, op. cit., p. 17.
<table>
<thead>
<tr>
<th>Year</th>
<th>East North Central</th>
<th>East South Central</th>
<th>West South Central</th>
<th>Pacific Coast</th>
<th>New England</th>
<th>Middle Atlantic</th>
<th>West North Central</th>
<th>South Atlantic</th>
<th>Mountain States</th>
<th>Total U. S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>24.0</td>
<td>3.3</td>
<td>3.4</td>
<td>9.5</td>
<td>6.2</td>
<td>15.9</td>
<td>19.2</td>
<td>8.7</td>
<td>4.0</td>
<td>100</td>
</tr>
<tr>
<td>1925</td>
<td>24.6</td>
<td>4.4</td>
<td>9.0</td>
<td>10.0</td>
<td>6.4</td>
<td>17.7</td>
<td>14.7</td>
<td>9.6</td>
<td>3.4</td>
<td>100</td>
</tr>
<tr>
<td>1930</td>
<td>24.0</td>
<td>4.6</td>
<td>9.0</td>
<td>10.3</td>
<td>6.4</td>
<td>16.2</td>
<td>13.2</td>
<td>9.5</td>
<td>3.6</td>
<td>100</td>
</tr>
<tr>
<td>1935</td>
<td>23.2</td>
<td>4.3</td>
<td>9.0</td>
<td>11.0</td>
<td>6.4</td>
<td>18.9</td>
<td>13.3</td>
<td>10.1</td>
<td>3.7</td>
<td>100</td>
</tr>
<tr>
<td>1940</td>
<td>22.8</td>
<td>4.7</td>
<td>9.0</td>
<td>11.6</td>
<td>6.3</td>
<td>18.6</td>
<td>12.4</td>
<td>10.6</td>
<td>3.9</td>
<td>100</td>
</tr>
<tr>
<td>1945</td>
<td>22.5</td>
<td>4.9</td>
<td>9.0</td>
<td>12.6</td>
<td>6.4</td>
<td>17.3</td>
<td>11.9</td>
<td>11.3</td>
<td>3.9</td>
<td>100</td>
</tr>
<tr>
<td>1950</td>
<td>21.9</td>
<td>5.4</td>
<td>8.6</td>
<td>12.5</td>
<td>6.0</td>
<td>17.3</td>
<td>11.5</td>
<td>11.7</td>
<td>4.1</td>
<td>100</td>
</tr>
</tbody>
</table>

is hard to determine. Advantages of machine production can be realized with a relatively small plant which specializes in one or a few sizes.\textsuperscript{1} A plant of five to ten thousand units per day can have advantages in machine alignment, continuous flow of materials, and mass production which allow it to compete successfully with larger plants. Modern continuous one-storey plants were superior to their obsolete two-storey Akron counterparts. A further statement to this effect comes from Mr. Paul Litchfield, President of Goodyear Tire and Rubber Company.

A 5,000 unit tire plant operating on a standardized line of units is efficient and economical whereas certain losses of efficiency and managerial diseconomies are encountered in 20,000 to 40,000 tire plants where there are seasonal ups and downs and widely diversified lines of tires.\textsuperscript{2}

The cooperation of major tire companies in drastically reducing the number of tire sizes also made small plants more feasible.\textsuperscript{3} This reduction in number of sizes meant that sufficient production volume could be maintained in each of the fewer sizes to warrant opening and building plants specifically designed for one or two sizes. These new plants, consequently, had additional advantages over the larger Akron plants which produced a great variety of sizes.

Important as this technological change may be, it cannot explain decentralization. Even the fact that building and land


\textsuperscript{2}Rubber Age, April 1937, p. 43.

\textsuperscript{3}Auto manufacturers and the Government Bureau of Standards assisted in the process.
acquisition costs were higher in Akron does not suffice.\(^1\) Building and land costs were also substantially higher in the Akron area during the 1920's, yet the Akron companies added new wings and units to their Akron plants.\(^2\) It is true that movement was made more feasible by the fact that smaller plants were technologically justified. This fact meant that employers could move small proportions of their output to new areas without having to build large plants in these areas. However, smaller plants of optimal size could have been located in Akron. Akron plants later did adopt the new technology by splitting the large plants into smaller units. If Akron's original advantages both in external economies and in the labor force had continued, smaller Akron plants would still have advantages over plants of the same size in other areas. Akron's original advantages were not due to the internal economies of its large plants, because these internal economies could have been realized in large plants in any area. Thus the contention that decentralization can be explained by changes in the optimal size plant, must be contradicted.\(^3\)

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\(^1\)1929 construction costs in the Cleveland area were 111.5 per cent of the national average as compared with 96.3 per cent in the Birmingham area. In 1936 the Cleveland figure was 101.7 per cent as compared with 84.2 per cent in the Birmingham area. The index is based on 1926-1929 average construction costs. Engineering News Record (New York: McGraw Hill, May 27, 1948).

\(^2\)Building trade costs have tended to become less favorable to the South and Southwest since 1940. Yet decentralization still continues to these areas. This fact and related facts indicate that building costs are of negligible importance in determining plant location since the eventual cost per unit of output is so small over a 20 to 40 year period that it does not enter into determination of plant location.

\(^3\)A similar conclusion comes from Gaffey. "The shifting of plant locations because of technological factors is somewhat haz-
The emergence of trade unionism in the Akron area, and its resultant effect on wage differentials and upon the Akron labor force, remains the only tenable explanation for decentralization. The technique employed by the union in adjusting to the change, namely the six-hour day, work sharing, and restriction of output intensified the problem and made continued decentralization inevitable. Were it not for World War II and the increase in post war demand resulting from the inability to produce sufficient tires during the war and the present rearmament period, the Akron picture would indeed be bleak. Its long run position, barring a complete reversal of union policy, is uncertain. If anything, wage differentials would have to become adverse to Akron if further decentralization is to be halted. From a union policy standpoint the political pressures, which make it impossible for the union to adjust its Akron wage, shift, and output policy, constitute another possible area of investigation.

ardous because of the narrow margin of advantage to be gained in most cases." He further contends that these small margins resulting from the newer plants, were not sufficient to have caused a desire to build more plants at a time when excess capacity existed in the industry. Gaffey, op. cit., p. 171.
CHAPTER II

STRUCTURE OF THE INDUSTRY: CONCENTRATION

The rubber tire industry has long been characterized as highly concentrated. The tendency towards concentration has been continuous both from the standpoint of a steady decrease in the number of firms producing tires and in the steady increase in the share of total output produced by the four largest producers. These four, which are known as the Big Four, are Goodyear, Firestone, U. S. Rubber, and Goodrich. During the entire period in which the industry was steadily becoming more concentrated there were no restrictions of entry of new firms.

In 1921 the industry consisted of 172 firms. At this time 60 per cent of total output was already produced by the Big Four. In spite of the increase in sales volume during the 1920's the number of firms decreased to 91 by 1929. The depression accelerated the trend and by 1935 the number of firms producing tires was reduced to 42. By 1929 the largest four firms were producing 67 to 70 per cent of total output. This reduction took place in spite of the more than doubling of tire output (from

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1This is a minimum estimate. Statements by veterans in the industry indicate that in 1914 there were an estimated 200 to 250 firms in the industry.

2These are estimates from industry sources, since no exact statistics are available.
32 million units to 68 million units)\(^1\) between 1920 and 1929. Even the prosperity of the 1927, 1928, and 1929 period was insufficient to halt this tendency, for during these three years the number of firms declined from 109 to 91.\(^2\) By 1935 proportion of total output produced by the Big Four increased to 75 per cent. Although the number of firms has risen from 42 in 1935 to 46 in 1937, to 53 in 1939 and 63 in 1947, the numerical gains are meaningless in terms of offsetting the overall movement, since the share of the four largest producers has increased to an approximate 80 per cent of total sales with the next two producers combined accounting for 8 to 10 per cent.\(^3\)

The increase in number of firms is easily explained. In the first place the data list all tire producers whether they produce buggy tires, hard rubber tires, toy tires, or bicycle tires. Many of these additions to the industry are rubber sundry firms who may possess tire molds used either for recapping or for producing orders for certain specialized customers.\(^4\) Figures since 1937 indicate a continuance of the trend towards reduction

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\(^1\) Statistics on tire output are from the "Rubber Manufacturers Association, Yearly Summaries of Tire Production" (Rubber Manufacturers Association, New York, 1914-1919). ( Mimeographed.)


\(^3\) The percentage of total sales and output by the Big Four varies about 2 per cent annually.

\(^4\) Goldblatt, Macy's and other department stores obtain their unbranded low price tires on this basis. Department stores have been cutting these tires for many years and their sales have never exceeded .15 per cent of total sales. Warren W. Leigh, Automotive Tire Sales by Distributor Channels (Akron: University of Akron, 1948), p. 4.
in the number of tire producers who employ over 250 employees.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1937</td>
<td>24</td>
</tr>
<tr>
<td>1939</td>
<td>25</td>
</tr>
<tr>
<td>1941</td>
<td>26</td>
</tr>
<tr>
<td>1943</td>
<td>22</td>
</tr>
<tr>
<td>1945</td>
<td>23</td>
</tr>
<tr>
<td>1947</td>
<td>22</td>
</tr>
<tr>
<td>1949</td>
<td>19</td>
</tr>
</tbody>
</table>

\[\text{Source: Rubber Red Book, 1937-1949.}\]

\[\text{1949 figures include two firms which are nominally independent but which are actual subsidiaries. The actual number of firms is 17.}\]

The tendency towards elimination of firms since 1937 has continued. Fewer firms have been eliminated through failure, than through consolidation of stock purchases. Three firms which were nominally independent in 1937 were incorporated into the U. S. Rubber framework.\[1\] Two firms, Pennsylvania and Mansfield Rubber, while maintaining their nominal identity are actually controlled by General. Two other firms, Pharos and Norwalk, failed, and their executives attributed their demise to the U. R. W. A.

Although the rubber tire industry was highly concentrated

\[1\] What is designated as a merger through stock purchases may merely be a purchase of stock at liquidation value.
before the emergence of trade unionism, there are many who argue that the continuance of the trend in the face of excellent business conditions since 1940 indicates that trade union wage policy has contributed to concentration by making it impossible for small firms to operate successfully. The argument is that union wage policy, which is based on the larger firms' ability to pay, makes it impossible for small firms to compete, since their one advantage would be lower wages. This is the basic position taken by the management of both the Pharis and Norwalk companies, which failed in the 1948-1949 period. Another general contention is that increased supply costs as a result of unionism reduce the number of units sold and increases concentration by causing a smaller sized industry.¹

The latter charge against trade unionism, has never been specifically alleged in the rubber tire industry. This effect of trade unionism upon the size of the industry would necessarily depend on the elasticity of demand for tires as well as the relative increase in supply costs. Since no definite knowledge of demand elasticity exists the effect of the union upon the size of the industry cannot be determined.²

Does collective bargaining impose disadvantages on small firms? It could do so by discriminating against small firms.

¹This would be the result unless the reduction in sales would be spread evenly over the entire industry.

²Economists both within the industry and outside of it contend that demand elasticity is low. Their contention is based upon the derived nature of demand for tires and the fact that the cost of tires is only 10 per cent or less of the total cost, excluding depreciation, or operating an automobile.
That is, it could bargain for and obtain greater wage increases from small firms, than it obtained from larger firms. Or it could ask for equal wage increases and by so doing narrow the percentage differentials between small and large firms. This possibility is based on the assumption that prior to trade unionism wage differentials in favor of small firms existed. Since union bargaining has generally been of a pattern setting nature the narrowing of percentage differentials between small and large firms would constitute the method of imposing disadvantages upon small or weak firms. Or has the union been willing to grant wage concessions to marginal firms sufficient to maintain their proportionate differentials?

Specific wage differentials between large and small firms have never existed in the industry. Generally smaller firms paid the particular area wage rate. For example General, Mohawk, Seiberling, and even Pharis paid virtually the same wage rates as the larger Akron firms. Smaller firms outside the Ohio-Detroit area generally paid their particular area wage rate. Some firms, notably General and Seiberling, bettered their positions while paying the high Akron rates. Pharis shut down its plant under the same conditions in 1948, even though it had paid Akron rates for years. It is difficult to assess union impact upon particular company wage rates because wage rates paid by specific firms have generally never been revealed.

Although wage changes, when they conform to the general pattern, are announced, they generally are not disclosed when they are less than the pattern. The following information indicates
that the union is willing to make concessions which reflect significant deviations from its pattern increases. Although the labor market area is not disclosed, it can be easily inferred from the area characteristics. New Haven, Connecticut is the only possibility. Since Norwalk Tire and Rubber Company is located in New Haven, it must be one of the firms cited. The data indicate that the union received only 65 per cent of the national pattern increases from Norwalk. ¹

<table>
<thead>
<tr>
<th>TABLE 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL WAGE INCREASES BY COMPANIES UNDER CONTRACT WITH UNITED RUBBER WORKERS 1946-1948*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Union and Company United Rubber Workers</th>
<th>1946</th>
<th>1947</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>National pattern</td>
<td>16½</td>
<td>11½</td>
<td>11</td>
</tr>
<tr>
<td>Company A</td>
<td>18</td>
<td>11½</td>
<td>11</td>
</tr>
<tr>
<td>Company B</td>
<td>11</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Company C</td>
<td>10</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Company D</td>
<td>16½</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>


It is known that in 1947, the union did not obtain the

¹From a description of the timing of wage increases it must be concluded that Norwalk Tire and Rubber Company is Company D. The 3½ cents second increase in 1947 is not included in the pattern, which finally aggregated 15 cents during this year. The Norwalk rate was about 4 to 5 cents lower than the area average hourly rate before the period under examination.
second three and one-half cents from several firms including Norwalk.\footnote{The union originally signed for 11\textperthousand\, cents. The Steel-Auto pattern which was established later, aggregated 15\, cents. The large tire companies later granted 31\, cents under the wage reopening clause.} By 1949 these concessions would have meant a Norwalk rate 20 to 24 cents below the area rate. Since the area rate was itself 10 cents below the Akron average, the Norwalk rate would have been about 20 to 21 per cent below that which existed in Akron. The Eastern rate in 1942 when the area was being organized was 80.9 per cent of the Akron average.\footnote{B. L. S. Bulletin 737, p. 19.} Thus although Norwalk was liquidated in 1949, it was not because the union had caused a percentage wage disadvantage.

The Pharis wage rate had generally conformed to the Akron pattern. The union agreed to accept a wage reduction of 11 cents, and, since in the interim a general 11 cents wage increase was granted, this would have meant a wage rate 6 to 7 per cent below the Akron level. Management also conceded that man-hour productivity was higher than in the Akron area. The union did not create a percentage cost differential unfavorable to Pharis.

Increases granted by smaller companies who have not been among the weaker firms have generally conformed to the pattern, and the percentage differential in favor of smaller firms has been reduced. However, the 1940-1947 period was one of labor shortages and inflationary pressures. It was a period in which lower paying firms would have narrowed differentials, even in the absence of unionism, in order to attract workers or to maintain their existing
work force. The 1940-1942 era is indicative of this fact. The Akron-Detroit and Far West areas were unionized, while the rest of the areas were only partially organized at best. The cost differentials in favor of the lower paying partially unionized areas, narrowed considerably.\(^1\) The following figures indicate the narrowing of differentials.

### TABLE 8

**COMPARISON OF RELATIVE WAGE RATES IN RUBBER TIRE PRODUCTION BY AREAS, 1940-1942**

<table>
<thead>
<tr>
<th>Per Cent of Akron-Detroit Wage Level, May 1940</th>
<th>Per Cent of Akron-Detroit Wage Level, May 1942</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akron-Detroit</td>
<td>Akron-Detroit</td>
</tr>
<tr>
<td>Other Midwest</td>
<td>Other Midwest</td>
</tr>
<tr>
<td>California</td>
<td>Far West</td>
</tr>
<tr>
<td>East</td>
<td>East</td>
</tr>
<tr>
<td>South</td>
<td>South</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>73.1</td>
<td>33</td>
</tr>
<tr>
<td>87.9</td>
<td>85.9</td>
</tr>
<tr>
<td>73.1</td>
<td>80.9</td>
</tr>
<tr>
<td>57.1</td>
<td>63.7</td>
</tr>
</tbody>
</table>

*Source: B. L. S. Bulletin 737, p. 18.*

Akron-Detroit wages increased by 11.6 per cent while wages increased 20 per cent or more in the only partially organized South, East, and Midwest.\(^2\) It must also be noted that since the large firms were in the Akron-Detroit area, while many of the smaller firms were in other areas, the differentials previously

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\(^1\) Many proponents of trade unionism contend that the above increases were caused by the threat of organization in the unorganized areas.

\(^2\) B. L. S. Bulletin 737, p. 19.
in favor of small firms narrowed considerably. In all probability percentage differentials between larger and smaller firms would have narrowed whether trade unionism existed or not.

The trend toward concentration was established long before trade unionism. If anything the increase in degree of concentration has slowed down somewhat since the advent of trade unionism. Between 1920 and 1935, the increase in concentration in favor of the Big Four was 15 per cent while during the fifteen year trade union period the rate of increase was only 5 per cent. Unlike decentralization, which reversed a previous trend towards centralization, the tendency toward concentration has been continuous. Trade unionism is not an explanation for its continuance.
CHAPTER III

UNION IMPACT UPON WAGE MOVEMENTS: WAGE RIGIDITY

One important area of discussion concerning the effect of trade unionism has been the general question of wage rigidity under collective bargaining. It has been contended that trade unionism makes wage rates rigid when economic movements are downward. Recently it has been suggested that during inflationary periods, collective bargaining, because of fixed term contracts, prevents wages from rising as quickly as they would rise in its absence. Since the tire industry has been characterized by cyclical change, comparison of wage rate changes both before and after trade unionism, might throw some light on these assertions. The period studied encompasses two world wars, two post-war periods of rapid expansion and inflationary pressures, two periods of post-war contraction, and two periods of depression or recession. Since each of these related periods consists of one example prior to trade unionism and one example during its existence, some basis for comparison exists (Table 9).

The two war and post-war periods have certain similarities. During both periods there was a rapid increase in employment, especially in the two post-war phases. A comparison of the two periods 1914-1920 and 1939-1947 indicates that the relative increases during the first World War and the subsequent post-war period far exceed those in the unionized second war counterpart.
<table>
<thead>
<tr>
<th>Year</th>
<th>Average Hourly Wage</th>
<th>Average Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>0.69</td>
<td>75,000b</td>
</tr>
<tr>
<td>1921</td>
<td>0.59</td>
<td>55,496</td>
</tr>
<tr>
<td>1922</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td>1923</td>
<td>0.65</td>
<td>73,963</td>
</tr>
<tr>
<td>1924</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>1925</td>
<td>0.66</td>
<td>81,640</td>
</tr>
<tr>
<td>1926</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>1927</td>
<td>0.68</td>
<td>78,256</td>
</tr>
<tr>
<td>1928</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>1929</td>
<td>0.69</td>
<td>83,263</td>
</tr>
<tr>
<td>1930</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>1931</td>
<td>0.65</td>
<td>49,159</td>
</tr>
<tr>
<td>1932</td>
<td>0.625</td>
<td></td>
</tr>
<tr>
<td>1933</td>
<td>0.642</td>
<td>52,976</td>
</tr>
<tr>
<td>1934</td>
<td>0.779</td>
<td></td>
</tr>
<tr>
<td>1935</td>
<td>0.842</td>
<td>57,128</td>
</tr>
<tr>
<td>1936</td>
<td>0.873</td>
<td></td>
</tr>
<tr>
<td>1937</td>
<td>0.950</td>
<td>63,290</td>
</tr>
<tr>
<td>1938</td>
<td>0.948</td>
<td></td>
</tr>
<tr>
<td>1939</td>
<td>0.957</td>
<td>54,115</td>
</tr>
<tr>
<td>1940</td>
<td>0.967</td>
<td></td>
</tr>
<tr>
<td>1941</td>
<td>1.024</td>
<td></td>
</tr>
<tr>
<td>1942</td>
<td>1.103</td>
<td></td>
</tr>
<tr>
<td>1943</td>
<td>1.185</td>
<td></td>
</tr>
<tr>
<td>1944</td>
<td>1.257</td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>1.276</td>
<td></td>
</tr>
<tr>
<td>1946</td>
<td>1.430</td>
<td></td>
</tr>
<tr>
<td>1947</td>
<td>1.603</td>
<td>93,916</td>
</tr>
<tr>
<td>1948</td>
<td>1.671</td>
<td></td>
</tr>
<tr>
<td>1949</td>
<td>1.738</td>
<td>81,300b</td>
</tr>
</tbody>
</table>

aSources: Number of Employees from Census of Manufacturers, 1921-1932. Wage Data are from Gaffey, op. cit., p. 140. 1932-1936 are from 1937 Statistical Abstract, pp. 562-569. 1937-1949 wage data is from Monthly Labor Review of the B. L. S.

bBoth employment figures are from industry sources. The 1920 figure represents a midyear figure before the decline in rubber output set in.
Wages increased 155 per cent during the first period and only 67 per cent during the longer comparable second period. However, the 1914-1920 period was characterized by a five-fold increase in automobile tire sales, which was a much greater rate of increase than that prevailing in the 1939-1947 period.\(^1\) There are no authoritative post World War II wage figures, but a comparison of the two periods indicate that the proportionate wage increase between 1913-1919 exceeded that obtained in the comparable 1945-1947 period. Both were periods in which the industry was attempting to meet substantial deferred demands for tires. Both of these periods were also characterized by rapid increases in employment. In the first post-war era the wage rate increased 10 per cent or more, three times between 1913 and 1919 and two times in the first six months of 1920.\(^2\) Wages increased between 65 per cent to 75 per cent during these two years. The industry, confronted with labor shortages at the existing wage rates, was forced to recruit labor in Southern states; and, since each firm had its own recruiters bidding against the others for the same labor supply, the net result was to bid wage rates up. These higher wage rates were also granted to all workers in the industry. During the second post-war period of expansion there were two wage negotiations and general increases of 13½ cents and 15 cents. One dissimilarity between the two periods is the fact that rubber companies did not

\(^{1}\)Rubber Manufacturers Association, op. cit.

\(^{2}\)Since no published information covers these two years, these estimates emanate from rubber executives who were in the industry during these periods. Some very fragmentary wage records also were consulted.
have formally to recruit workers during the latter period.

The comparative wage increases granted during the two war
and post-war periods must be compared in real terms. This is due
to the fact that the general degree of inflation was different
during the two periods and it is conceivable that the higher de-
gree of increase during the first post-war period merely reflected
the greater degree of inflation during this period. However, when
both periods are compared in terms of increase in real hourly
wages, the relative increases during the first war period still
are substantially greater. (Table 10.)

The differential in rate of increase during inflationary periods in which the labor supply was tight indicates that wage
rates climb more rapidly under non union conditions than they do
under collective bargaining.

Each of these periods was followed by a period of post-war
contraction. The first period of rapid contraction between the
middle of 1920 and early 1923 saw wage rates drop 16 per cent from
69 cents to 58 cents. The most severe contraction was between
1920 and 1921 when hourly wages declined 14.5 per cent. The sec-
ond period of contraction 1947-1949; in which tire output and em-
ployment fell about 15 per cent, was one in which wages increased
8 per cent. The two periods however, are different in several
respects. The 1920 to 1923 period was one of severe deflation
while inflationary pressures continued during much of the 1947 to
1949 period. The 1920 contraction was very severe since the major
rubber companies had substantial inventories of unsold tires, and
were in grave financial distress. Employment decreased from 75,000
<table>
<thead>
<tr>
<th>Year</th>
<th>Hourly Tire Wages</th>
<th>Real Wages&lt;sup&gt;a&lt;/sup&gt; Hourly</th>
<th>Tire Wages as A Percentage of 25 Selected Industries&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1914</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1920</td>
<td>255.5</td>
<td>128.0</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1939&lt;sup&gt;c&lt;/sup&gt;</td>
<td>100.0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1947</td>
<td>167.5</td>
<td>104.5</td>
<td>77.7</td>
</tr>
</tbody>
</table>

<sup>a</sup>“Consumer Price Index for Moderate Income Families” (B. L. S. Monthly Labor Review) was used to deflate hourly tire wages.


<sup>c</sup>1939-1947 wage data obtained from B. L. S. Monthly Labor Review.

in the middle of 1920 to 20,000 at the end of the year. Prices were slashed 25 per cent or better. ¹ The 1947-1949 cutbacks were

¹The historical information concerning the 1920-1923 period is drawn from Howard Wolf and Ralph Wolf, Rubber, A Story of Glory and Greed (New York: Covici-Friede, 1936), passim.
more gradual; the companies did not have large inventories, had no financial problems, and because of diversification in non-tire rubber items, operated profitably during the entire period.

Further support to the view that wages are more rigid under collective bargaining, can be obtained from two other related periods. These are the 1929-1932 decline in output and the similar decline in the latter half of 1937 to early 1939. Although wage rates were comparatively rigid in the 1929-1932 period, they did decline 9.4 per cent. Only 2 per cent of the fall was registered before 1931. Output dropped 40 per cent during the period. However, productivity increased 14.4 per cent annually and wage costs per unit of output fell approximately 65 per cent.\(^1\) The comparable period under collective bargaining in 1937 and 1938 in which output declined 25 per cent resulted in no wage decreases and no substantial productivity increases. Under non-unionized conditions wage rates probably would have dropped in the tire industry. In 1938, Goodrich attempted to cut wage rates about 10\(\frac{1}{2}\) cents per hour, but was forestalled by the threat of a strike. Although the large magnitude of the attempted decrease was partially for bargaining purposes, it did reflect the desire of Goodrich to reduce wage rates. It also reflected the feeling that wage rates in tires were out of line compared to those in other industries. Under previous non-union conditions wages had been reduced by the companies' raising piece-work standards or by unilaterally cutting the base rate. Had Goodrich succeeded in cutting wage rates,

\(^{1}\)The combination of a 57 per cent productivity increase and a 9.4 per cent drop in wage rates reduced per unit wage costs approximately 65 per cent.
other companies would have followed suit.

Wage rates in general were more rigid in the 1937-1939 period. Wage rates in the all manufacturing classification did not change between 1937 and 1938. However, unionism was concentrated in the manufacturing sectors of the economy. The wage rates of textile workers, mainly non-unionized, declined from 51.1 cents to 48.2 cents or about 6 per cent between 1938 and 1939; and although they recovered to 49.7 cents by 1949 were still 3 per cent below the 1937 level. Wage rates of largely non-unionized retail food clerks declined from .548 to .528, or approximately 4 per cent during the period. The differences between the two periods and between the unionized and non-unionized segments support the position that wage rates are not flexible downward when they are determined through collective bargaining.

Although these related periods show certain dissimilarities, the general movements of hourly rates both prior to and after trade unionism, indicate that wage rates determined through collective bargaining are more rigid. This statement must be qualified because tire wage rates in the pre-union 1929-1933 period showed considerable rigidity. However, under collective bargaining wage rates are even more rigid.

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1 Textile figures are from 1941 Statistical Abstract, pp. 368-369.

2 Wage data are from the B. L. S. Monthly Labor Review. During the same period the organized auto and steel workers received slight increases.
CHAPTER IV

UNION INFLUENCE UPON THE LEVEL OF WAGE COSTS IN THE TIRE INDUSTRY

Union organizers frequently claim that the union is able to obtain higher wages for workers once the firm, plant, or industry is organized. Frequently this point constitutes one of their most important organizational devices. Opponents of trade unionism often concede the issue by stating that one of the most telling arguments against trade unions is that these organizations raise wages above a level that would have been established under non-union conditions. Union gains are allegedly achieved at the expense of the consumer or of non-union workers. Despite these general assertions the question of the impact of the union on the level of wage costs in the tire industry must be analyzed. Has the U. R. W. A. been able to raise labor costs above a level that would have existed in its absence? (Table II.)

A comparison of tire wage rate movements with those in other industries may furnish some information concerning the effect of collective bargaining upon tire wage rates. The industries whose wage movements are compared range from the highly organized rubber, steel and auto-workers to the 40 per cent organized textile workers, and to the less than 20 per cent organized wholesale trade and confectionary workers. The wage comparison also include the coal miners, who were organized long before the rubber workers.
<table>
<thead>
<tr>
<th>Industry</th>
<th>Hourly Wages</th>
<th>Index of Hourly Wage Rates 1929 = 100</th>
<th>Relative Decline 1929 to Low Wage of Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1929&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1935&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1939</td>
</tr>
<tr>
<td>All manufacturing</td>
<td>.566</td>
<td>.568</td>
<td>.644</td>
</tr>
<tr>
<td>Automobiles</td>
<td>.699</td>
<td>.735</td>
<td>.929</td>
</tr>
<tr>
<td>Bituminous coal&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.583</td>
<td>.745</td>
<td>.886</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>.639</td>
<td>.611</td>
<td>.772</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>.634</td>
<td>.648</td>
<td>.715</td>
</tr>
<tr>
<td>Rubber tires</td>
<td>.690</td>
<td>.842</td>
<td>.957</td>
</tr>
<tr>
<td>Textiles</td>
<td>.412</td>
<td>.471</td>
<td>.497</td>
</tr>
<tr>
<td>Confectionary products</td>
<td>.385</td>
<td>.436</td>
<td>.492</td>
</tr>
<tr>
<td>Industry</td>
<td>(1935 = 100)</td>
<td>(1939 = 100)</td>
<td>(1946)</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------</td>
</tr>
<tr>
<td>All manufacturing</td>
<td>100</td>
<td>113</td>
<td>202</td>
</tr>
<tr>
<td>Automobiles</td>
<td>100</td>
<td>126</td>
<td>190</td>
</tr>
<tr>
<td>Bituminous coal</td>
<td>100</td>
<td>119</td>
<td>215</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>100</td>
<td>126</td>
<td>203</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>100</td>
<td>110</td>
<td>175</td>
</tr>
<tr>
<td>Rubber tires</td>
<td>100</td>
<td>114</td>
<td>170</td>
</tr>
<tr>
<td>Textiles</td>
<td>100</td>
<td>106</td>
<td>204</td>
</tr>
<tr>
<td>Confectionary products</td>
<td>100</td>
<td>113</td>
<td>195</td>
</tr>
</tbody>
</table>

\(^{a}\)1929 wage figures were obtained by dividing average hours worked, obtained from National Industrial Conference Board, (Beney), into average weekly wages from B. L. S.

\(^{b}\)1935 and 1949 figures are from Monthly Labor Review, B. L. S.

\(^{c}\)1946 and 1949 coal figures adjusted for portal to portal pay, but not adjusted for union welfare fund.

\(^{d}\)Iowa generally took place in 1932 except for Automobiles and Iron and Steel. The
TABLE 11—Continued

Latter two industries reached their lowest wage rates in the first quarter of 1933.

1929 coal wage figure from B. L. S. Bulletin 515, April 1930.
The average wage rates for all manufacturing industries are also included. An analysis of these wage rates indicates that the percentage increases for the highly unionized workers since 1939 were less than for the partially organized textile workers and wholesale trade workers, also less than the rate of increase for all manufacturing workers. However, one exception, the coal miners, must be noted. If 1935 is selected as a base period, the same relationship prevails. Highly organized industries, with the exception of coal, showed smaller proportionate increases than did less completely organized segments.

In order to evaluate the impact of the U. R. W. A. upon wage rates, wage movements before the emergence of unionism must be considered. The period since 1935, except for 1937 and 1938, has been one of rising levels of output and employment. It was preceded by a severe deflationary period, especially between late 1929 and the middle of 1933. Although percentage increases since 1935 in the highly unionized tire industry have been of lesser magnitude than in industries showing lesser degrees of unionization, this fact does not necessarily prove that the union had no influence upon wage rates. It must be remembered that hourly wages in the tire industry declined less during the deflationary period. One might expect that different industries would manifest varying patterns of wage movements. Thus wage rates in one industry might show considerable flexibility, declining more than the average during deflationary periods, and increasing more substantially during periods of rising output, prices, and employment. Wages in other industries might manifest less flexibility, declining less
percentage-wise during deflationary periods, and also increasing less during inflationary periods. Thus the lower percentage increase since 1935 in the rubber tire industry does not in itself indicate that the union was unable to increase wage rates. Conceivably, over a long run period which includes both deflationary and inflationary movements these differences in rates of change should offset each other. Thus one possible measure of the union's influence upon wage rates would be whether, over a long run period such as 1929-1949, the percentage increases in tire wages were greater than in industries whose wage rates showed more flexibility.

Although the relative increases in tire wages were less than those in textiles and coal, they were higher than the average in all manufacturing and also greater than in the more prosperous automobile, and iron and steel industries. Despite the fact that those figures are inconclusive, they do suggest the possibility that the union's influence was somewhat to increase wage rates. This statement is even more tenative because the union did not exist until late in 1933.

The 1943-1949 wage negotiations indicate that the union is able to raise the level of wages above that which would have existed in its absence. By 1948 the industry had completed its post-war expansion and in both 1948 and 1949 tire output and employment declined substantially. Tire output declined from 95 million units in 1947 to 81 million units in 1948 and 76 million units in 1949. The number of production workers declined from 104,000 to 81,300, while average weekly hours of work declined

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Rubber Manufacturers Association, op. cit.
from 39.5 to 36.5.\(^\text{1}\) The price of first line tires declined from $16.50 to $13.50 and even the latter price was frequently "shaded" or "cut" by tire dealers. Second line tires and price warfare had returned to the industry. Yet in these years the rubber workers received the same increases as those obtained in the automobile and steel industries, which were expanding during most of the 1948-1949 period.

Since the period was one of inflationary pressures, some wage increases would have been granted, in spite of the declines in output, prices, and employment. Under non-union conditions the industry would have had to grant some wage increases in order to maintain its labor supply. Yet a considerable excess labor supply existed. In 1949, Ohio Unemployment Compensation payments compensated for 120,000 weeks of unemployment to rubber-workers.\(^\text{2}\) If the average number of weeks of unemployment in the Akron area prevailed, the resulting number of unemployed rubber workers in Ohio would have been 9,000.\(^\text{3}\) This would have constituted an approximately 12 per cent rate of unemployment during the year.\(^\text{4}\) Under unorganized conditions, it is reasonable to assume that, despite inflationary pressures in other segments of the economy, wages would neither have risen so quickly nor to the same extent

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\(^{1}\) *Rubber Age*, March 1950, p. 724.

\(^{2}\) Ohio Bureau of Unemployment Compensation, Division of Research and Statistics, Columbus, Ohio, April 4, 1950, Table 2 RS-217.

\(^{3}\) *Ibid.*, July 20, 1950, Chart II A-730. The average number of weeks compensated was 13.5

\(^{4}\) *Ibid.*, July 27, 1950, Table RS 203.1. Monthly average number of workers was 74,000.
in an industry which had a comparatively large excess labor supply. The behavior of wages during the 1948 and 1949 period strongly supports the contention that comparable wage increases would not have been obtained under non-union conditions.

An analysis of the Akron-Detroit wage rates also indicates that the union is able to raise wage costs within specific areas of the industry. The ability to raise wage costs in certain areas is related to the problem of decentralization and has already been discussed in that context. The continued existence of these higher area costs indicates that the process of adjustment is still not complete and explains why decentralization is still continuing.

The union has been strong enough to retain the six hour day and thirty-six hour week in the Akron-Detroit areas. Wage rates in these areas are about 10 per cent higher than in other areas of the industry.¹ This represents the attempt by workers in these highly organized centers to obtain the same base weekly wages as those operating on forty hour schedules. In other words, the union is sufficiently strong through its threat of the strike sanction to force the industry to compensate workers in these areas for four additional hours of leisure. Had productivity differentials been favorable to these areas, these wage differentials would not have by themselves created additional wage costs. However, productivity in these areas, which were the first organized, is about 10 per cent below that obtaining in the outside areas. Thus the union through its ability to maintain the six hour day and

¹Ohio-Detroit rates are $1.77 against an outside average of $1.61. Akron rates are 5 cents to 6 cents higher than the Ohio-Detroit rate. 1947 Census of Manufacturers, op. cit., p. 469.
favorable wage differentials, in spite of adverse productivity differentials, has increased labor costs approximately 20 per cent in these two areas. Since firms in the industry attempted to terminate the six hour day and also attempted to reduce Akron rates in 1938, the existence of these additional costs would not have continued unless the union were strong enough to prevent their termination. Thus the result of U. R. W. A. policy has been to raise labor costs in the Akron-Detroit area.

One factor which contributes to the union's ability to bargain effectively is the increasing degree of diversification in non-tire items. The larger rubber companies, which establish tire wage patterns, are also diversified non-tire producers. These non-tire items are highly profitable. Goodrich, the most diversified, made more money in 1949 than the other producers, even though Goodrich sales were only 364 million dollars, as compared with 518 million for U. S. Rubber, 579 million for Firestone, and 633 million for Goodyear.\(^1\) The relatively high profits in non-tire items make the Big Four unwilling to risk strikes over tire wages. The union encompasses all rubber workers and bargains on a company wide basis. The ability and willingness of the union to press its demands by imposing sanctions upon any firm in every phase and area of operations contributes to the ability of the union to increase labor costs in the tire industry.

\(^1\)Goodrich 1949 profits were $25,935,000 as opposed to $22,935,000 for Firestone, $24,190,667 for Goodyear, and $15,000,000 for U. S. Rubber. Non-diversified Seiberling and Dayton lost money. Profit figures are from Moody's (New York: Moody's Investors Service, 1950).
CHAPTER V

TRADE UNIONISM AND ITS EFFECT UPON THE LABOR SUPPLY IN THE TIRE INDUSTRY

Economic theory has long been aware of the dichotomy between wages as income and wages as allocators of the labor supply. The trade union is interested in wage rates from the income standpoint. As a consequence economic theorists have frequently asserted that trade unions cause the labor supply to be utilized less efficiently. Collective bargaining causes wage differentials which may keep more workers in an industry or area than can be employed fully at that particular wage rate. As a consequence trade unions have to spread work in order to prevent unemployment of union members.

One possible measure of the efficient utilization of the labor supply is whether workers in any given industry work the normal number of hours. The following statistical information indicates that underemployment has been a continuous problem since the emergence of trade unionism (Table 12). Related figures which originate from the 1940 U. S. Census confirm the underemployment of the Ohio work force. (Table 13.) These statements indicate that over 56 per cent of the Ohio Work Force was employed less than forty hours while the median worker in the other states was working forty or more hours. The problem is especially acute in periods of declining business activity when outside Ohio areas are
### TABLE 12

**AVERAGE WEEKLY EARNINGS AND HOURS WORKED IN THE TIRE AND TUBE INDUSTRY**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Weekly Earnings</th>
<th>Hours Worked Per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ohio</td>
<td>Outside Area</td>
</tr>
<tr>
<td>1935</td>
<td>29.71</td>
<td>23.31</td>
</tr>
<tr>
<td>1937</td>
<td>31.44</td>
<td>29.14</td>
</tr>
<tr>
<td>1939</td>
<td>34.01</td>
<td>32.14</td>
</tr>
<tr>
<td>1947</td>
<td>62.38</td>
<td>68.70</td>
</tr>
</tbody>
</table>

*Sources: Average Weekly Earnings were obtained by taking one fiftieth of the yearly area average wage payments divided by yearly average number of Wage Earners. Raw data obtained from Census of Manufacturers.

1937-1939 number of hours determined by dividing Average Weekly Earnings with Average Hourly Earnings obtained from Gaffey, op. cit., p. 172.*

Employed full time while Ohio workers work thirty hours or less.¹ Even in the record year of 1947, when Akron output expanded more than proportionately, Ohio tire workers were working 20 per cent fewer hours. If Southern figures had been available for all the periods under comparison, the degree of underemployment in the Akron area would have appeared comparatively greater, since Southern tire workers worked 43.7 hours per week in 1947. By 1949 the national average had dropped to 36.5 hours per week as compared

¹1929 Census figures indicate that Ohio workers worked about the same number of hours as the outside Ohio workers.
### TABLE 13

PERCENTAGE DISTRIBUTION OF HOURS WORKED BY RUBBER OPERATIVES IN SELECTED STATES DURING MARCH, 1940*

<table>
<thead>
<tr>
<th>State</th>
<th>Under 14</th>
<th>14-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40</th>
<th>41-44</th>
<th>45-47</th>
<th>48</th>
<th>49-50</th>
<th>60-69</th>
<th>Over 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>1.0</td>
<td>15.4</td>
<td>21.2</td>
<td>13.8</td>
<td>22.4</td>
<td>6.3</td>
<td>1.0</td>
<td>2.6</td>
<td>1.2</td>
<td>.46</td>
<td>.015</td>
</tr>
<tr>
<td>Ala.</td>
<td>.3</td>
<td>1.9</td>
<td>.61</td>
<td>2.9</td>
<td>62.7</td>
<td>6.3</td>
<td>4.5</td>
<td>13.0</td>
<td>2.1</td>
<td>1.4</td>
<td>.54</td>
</tr>
<tr>
<td>Penn.</td>
<td>1.0</td>
<td>6.3</td>
<td>11.0</td>
<td>4.1</td>
<td>46.2</td>
<td>12.0</td>
<td>1.4</td>
<td>4.7</td>
<td>3.0</td>
<td>1.8</td>
<td>.7</td>
</tr>
<tr>
<td>Texas</td>
<td>.17</td>
<td>.7</td>
<td>.7</td>
<td>5.4</td>
<td>20.2</td>
<td>18.2</td>
<td>3.9</td>
<td>17.0</td>
<td>11.7</td>
<td>10.0</td>
<td>5.9</td>
</tr>
</tbody>
</table>

with 39.5 hours in 1947. The 1948-1949 production cutback was more severe in the Akron area, and as a result the average Akron work week was about 30 hours.¹ During several months of these two years Akron workers were sharing work down to 24 hours weekly, while Southern plants were fully employed and in several cases working overtime.² Underemployment and decentralization are closely connected and are both the result of trade union wage and output policy. In spite of their 10 to 12 per cent higher average hourly earnings, Ohio tire workers earned 9 per cent less on an annual basis than their outside area brethren. This difference in annual wages probably increased in 1948 and 1949.³

The degree of underemployment of the labor supply has meant that the number of tire workers in the Akron area is much larger than it would otherwise be if the Akron labor market were free of trade union influence. An average of 53,000 workers were engaged in producing rubber products in the Akron area in 1949.⁴ Of these approximately 32,000 were engaged in tire production. If Akron workers were 20 to 25 per cent underemployed, as the estimates would suggest, then trade union policy has kept 6,400 to

¹Since there are no published 1949 Census of Manufacturers figures, this statement is based on information from both union and management officials.

²The statements, which refer to Ohio pertain to Akron, since three-fourths of the Ohio tire workers are in Akron. However, available statistics generally refer to Ohio.

³Ohio workers earned $3,144 in 1947 as compared with $3,435 in outside areas. Census of Manufacturers, 1947, p. 469.

⁴Ohio Bureau of Unemployment Compensation, August 30, 1950, Table RS 203-77. About 60 per cent of the Akron area workers are engaged in tire production.
3,000 more workers attached to the industry than can be employed full time.

Contributing to the continuance of underemployment and the resultant excess labor supply has been the union policy of the six-hour day and work-sharing. The six-hour day and thirty-six hour week put a virtual ceiling on the Akron work week; for, once this limit is exceeded, Akron firms have to hire and train new workers. The same firms prefer to pay overtime in their outside Akron plants. This is due to the fact that Akron employees work six days a week and therefore, are available for overtime only one six-hour shift, generally on Sunday. Plants on a forty-hour basis have two days in which overtime can be worked and these overtime shifts are eight hours in duration rather than six. Because of the existing condition of manning machines, most overtime must be worked in additional shifts rather than by remaining a few extra hours on the same shift. The outside Akron plants as a result have greater flexibility.

Work sharing is also a contributory factor since employers are prevented from reducing the work force in order to assure full employment to the remaining workers. Work is shared until the average number of hours worked drops to twenty-four, when layoffs begin. If workers are employed twenty-four hours per week or less for over one month, layoffs on the basis of seniority take place until average hours of work equal thirty.¹ This policy maintains

¹The Goodyear-U. R. W. A. contract specifies "When the average hours of work in any rotational group is reduced because of curtailed production to twenty-four hours per week or less for a period of four consecutive weeks those employees with the least continuous service will be sent to the labor department for dispo-
on a part time basis a large number of workers and as a result makes the numerical adjustment of the labor force more difficult. The high hourly wages and seniority keep other workers attached to the industry even though unemployed because these workers hope to regain their jobs at these comparatively higher wage rates and thus by this process ultimately attain enough seniority to be relatively secure in their jobs.

1940 Census figures indicate that the degree of unemployment in Akron was greater than in the remainder of the state. Of the Akron work force, 79.8 percent was employed compared with 84.2 per cent of the Ohio work force.\(^1\) Not only was there a greater degree of unemployment in the Akron area, but the duration of unemployment of Ohio Rubber-Workers was much higher than for rubber-workers in other states. The fact that 40 per cent of the unemployed rubber-workers in Ohio were unemployed over one year indicates that many unemployed Ohio rubber workers remain attached to the industry for long periods. (Table 14.) An indication of the continuance of this tendency is the fact that duration of unemployment benefit payments during 1949 in Akron was 22 per cent higher than in the rest of the state and the highest for any of the industrialized localities in Ohio.\(^2\) Since 50 per cent of the Akron work force is engaged in rubber production, this statement indicates

\(^{1}\)Census of the U. S., 1940, Vol. III, "Population, The Work Force," 9.4 per cent of Akron workers were employed on Federal Emergency projects compared with 5.7 per cent in the remainder of the state.

<table>
<thead>
<tr>
<th>State</th>
<th>Less than 1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4-5</th>
<th>6-8</th>
<th>9-11</th>
<th>12-23</th>
<th>24-59</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>3.5</td>
<td>11.2</td>
<td>6.4</td>
<td>6.5</td>
<td>10.6</td>
<td>8.1</td>
<td>5.8</td>
<td>15.8</td>
<td>18.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Ala.</td>
<td>1.3</td>
<td>2.0</td>
<td>5.3</td>
<td>14.6</td>
<td>4.4</td>
<td>10.9</td>
<td>4.0</td>
<td>4.0</td>
<td>6.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Penn.</td>
<td>3.3</td>
<td>10.9</td>
<td>7.6</td>
<td>10.5</td>
<td>13.5</td>
<td>10.3</td>
<td>9.0</td>
<td>12.0</td>
<td>10.3</td>
<td>4.8</td>
</tr>
<tr>
<td>Texas</td>
<td>5.0</td>
<td>10.0</td>
<td>15.0</td>
<td>10.0</td>
<td>25.0</td>
<td>15.0</td>
<td>15.0</td>
<td>5.0</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

that rubber-workers are unemployed longer; yet still remain attached to the locality.\footnote{Ibid., August 30, 1950, Table RS 203 1-77.}

This relative immobility was prevalent during the 1948 period when contraction in the Akron area was serious. Six to eight thousand workers were laid off and many others were working reduced hours.\footnote{Although no records as to proportion exhausting benefits were kept as between localities, estimates from Bureau of Unemployment Compensation officials indicate that the Akron rate of benefit exhaustion was also the highest in the state.} At the same time steel plants in nearby communities were begging for workers while many employed steel workers were working overtime. Severe labor shortages existed in Canton and Massillon, twenty miles away; Youngstown, forty-eight miles distant; and Cleveland, thirty miles away. The existence of high wage rates, work sharing, and the opportunity to maintain or ultimately regain seniority all were contributory factors to reduced mobility. Had the industry under non-union conditions been able permanently to lay off these workers, many might have moved to the expanding steel industry nearby.

\begin{itemize}
\item It is undoubtedly erroneous to attribute all the responsibility for the poor utilization of the labor supply to the union.
\item Because of its highly cyclical nature, the industry always suffered from feast or famine, and the union was organized when the Akron labor supply was already excessive. However, by contributing to decentralization through its high wage policy in Akron, and by its maintenance and refusal to give up the six-hour day and work-sharing the union has made solution of the problem more diffi-}

}
cult. These policies have institutionalized a large part of this excess and underemployed labor supply in the Akron area. Seniority and the higher than average hourly wage rates has also made this labor supply more immobile than it would have otherwise been.

The maintenance of the six hour day can be attributed to the union. In 1936 Goodyear actually posted work schedules reinstating the eight hour day and forty hour week. This provoked the first successful strike which led to the actual beginning of collective bargaining. Had Goodyear been successful in returning to a forty hour schedule, the other companies would have undoubtedly followed suit.
CONCLUSION

THE ECONOMIC IMPACT OF TRADE UNIONISM UPON
THE RUBBER TIRE INDUSTRY

The effect of trade unionism has been one of the subjects in the forefront of recent discussions among economists. These discussions have centered about the impact of trade unionism upon the allocation of resources. Some of the effects often attributed to unions have become realities in the tire industry. Of these, some have been coincident with trade unionism, and some had taken place prior to collective bargaining but continued unabated after the emergence of trade unionism in the industry. The occurrence of these postulated effects does not by itself prove that trade union policy is responsible for the results but it does provide some basis for analysis and evaluation.

The decentralization of productive units in the rubber tire industry began with the advent of trade unionism and has continued during the entire period of collective bargaining. This change in location reversed a previous tendency towards centralization in Ohio which had been continuous since the beginning of the industry in the early 1900's.\(^1\) Because trade unionism was con-

\(^1\)Since 75 per cent of Ohio output has been concentrated in Akron these statements in regard to Ohio apply mainly to Akron. However, since the available statistics generally refer to Ohio, the statements must be made specifically in regard to the Ohio area, even though these statements virtually apply to Akron.
centrated in the areas which experienced the greatest losses of output and relative productive capacity, while the new locations were initially free of trade unionism, this basic change was attributed to trade unionism. Since proponents of trade unionism attribute the change to other causes, the relative importance of all factors, including trade unionism must be assessed.

What were the sudden changes brought about by trade unionism? One was a substantial increase in wage differentials between the Ohio area and the remainder of the industry. Although these differentials aggregated 25 per cent before trade unionism, they were based upon the existence of external economies in the Ohio area combined with a superior work force. These wage rate differentials were more than compensated by productivity advantages; and, as a result, prior to trade unionism the Ohio area was increasing its share of the total tire output. One important change which resulted from unionism was a channeling of worker's attitudes towards restriction of output which destroyed the effective superiority of the area work force. Trade unionism increased the original wage differentials, while at the same time removing the cause of these favorable wage rates. Although these wage rate differentials have narrowed to 10 per cent since the entire industry has been organized, they have not been removed. That continued existence of wage differentials favorable to the Ohio area when productivity differences, influenced by trade union attitude, have become unfavorable to the same area, is sufficient to explain the continuation of decentralization. Thus, changes which took place after trade unionism, both upon the original structure of
wage differentials and upon the superiority of the Ohio work force, are of sufficient magnitude to explain decentralization.

Other causes cannot explain decentralization. The existence of certain costs unfavorable to the Ohio area cannot explain the sudden shift in resources which took place. Since these costs had been disadvantageous to the Ohio area since the inception of the industry and during the period in which movement was in the direction of Ohio, their continued existence cannot explain the sudden shift. Neither can the change in technology which gave smaller plants some advantages over large plants. Had the previous Ohio advantages persisted, the newer small sized plants could have been located in the Ohio area. The fact that the Ohio scene was characterized by larger plants cannot be used as an explanation for decentralization after the advantages of larger plants were overcome. The internal economies originally realized in larger plants could have been attained anywhere. Thus the Ohio advantages were due to external economies and to the superiority of the tire labor supply. The removal of this superiority is the basic cause for decentralization.

Because decentralization is the result of trade unionism, the process of adjustment to the change deserves thorough analysis. Unwilling because of political pressures to remove whatever causes for decentralization were within its control, union leadership attempted to minimize the apparent severity of the change. The methods adopted, namely restriction of output, work-sharing, and attempted maintenance of income in Ohio by higher hourly wages, have only intensified the speed of decentralization. The recent
large scale migration of the tire industry supports those theorists who maintain that one plausible result of trade unionism is a shift of resources to new areas.

While the trend towards concentration in a relatively small area was reversed by trade unionism, the trend towards concentration of output in the four largest firms has continued. Although the industry's output was already three-quarters concentrated in these four large firms before trade unionism, this high degree of concentration subsequently has increased 5 per cent. Has trade unionism contributed to the continuance of this trend?

Conditions other than trade unionism must be used to explain the high degree of concentration which existed before collective bargaining. Nevertheless, it can be asked whether collective bargaining intensified the difficulty of weaker or marginal units. This explanation may apply if weaker firms had been able to survive, previous to unionization, through lower wage rates. Did trade wage policy remove this one potential competitive advantage?

Although the union has generally attempted to impose pattern increases, it has been willing to grant concessions to smaller or weaker firms. In the two specific failures examined, Norwalk and Pharis, trade union wage policy did not narrow or change the pre-union wage differentials. In actuality no specific differentials had existed based on size or strength of firm. Some smaller firms have become successful and have increased their share of total output while paying the high Akron and Chic rates; while other smaller firms, in other areas, have failed in spite of much
lower rates. Although wage differentials between firms have narrowed under trade unionism, they would have narrowed in the absence of trade unionism. A period of general inflationary pressures and labor shortages such as existed during the 1941-1947 era would have caused lower paying firms to raise wages in order to maintain their labor force, especially when alternative employment possibilities existed.

The existence of a high degree of concentration before trade unionism, and the subsequent slowing down in the rate of increase toward concentration also lend credence to the conclusion that the union did not influence the continued concentration in the rubber tire industry.

If collective bargaining has no direct effect upon concentration, it may still be of great importance in reducing the size of the industry. This fact, indirectly, would cause concentration since the remaining firms would be in a smaller sized industry which would therefore be more heavily concentrated. The impact of unionism upon the size of the industry cannot be assessed since demand elasticity for tires has not been measured.

The effect of collective bargaining upon wage rates must be analyzed in two related but, nevertheless, distinct contexts. One effect which has been attributed to trade unionism is wage rate rigidity. Although wage rates in the tire industry were relatively rigid before trade unionism, the impact of collective bargaining has been to make them even more rigid. The union has been able to prevent wages from dropping during periods of declining prices, sales, and employment. Not only are wage rates
determined by collective bargaining rigid in a downward direction, but they also are equally rigid in the opposite direction. Trade unionism can act as a retarding force during periods of very rapid expansion when labor shortages at the prevailing wage rates exist. The existence of fixed term contracts prevents upward adjustments during the contract period, and as a result the wage rate does not have to be adjusted upward as frequently as it would have to be in the absence of collective bargaining.

The other controversial effect of trade unionism upon wages is the degree to which collective bargaining results in increased wage costs. Has the union been able to raise labor costs in the entire industry? The ability of the union during the 1948-1949 period to obtain wage increases as large as those in the more prosperous segments of the economy is one sample of evidence which suggests that the union is able to increase labor costs. It must be conceded that inflationary pressures existed during part of the period and that some increases would have been granted. However, because of the existence in the industry of an unemployed labor supply, while other workers were working reduced hours, wage increases equal to those obtained in the more prosperous industries, would not have been secured. One result of collective bargaining is increased labor costs in the Ohio-Detroit area. The fact that wage rates are 10 per cent higher while productivity is approximately 10 per cent less in these areas, indicates that as a consequence of trade unionism wage costs are 20 per cent higher in these areas.

Another sample of evidence which indicates that the union
was able to increase wage costs in the industry is the fact that wage costs as a percentage of total costs, have been steadily rising. Wage costs were 13 per cent of total cost in 1933, and reached 25.3 per cent in 1949.¹ This ability to raise costs is due to the willingness of the union to enforce its demands by the strike sanction on a company wide or an industry wide basis. Since the large tire producing companies also produce a wide and highly profitable variety of rubber products, the strike sanction is a powerful weapon in an industry as highly organized as the rubber tire industry.

The importance of wages to the economic system lies, not only in the fact that wages and income are synonymous, but also in the fact that wage rates are the medium through which the labor supply is allocated. When the union enters the wage determining process to influence workers' income, it also influences the allocation of the labor supply. It has been contended that the general impact of trade union wage policy is to cause a less than optimal allocation of the labor supply.

One of the changes which has taken place since trade unionism has been the much shorter number of hours worked by Ohio tire-workers. It can thus be stated that the supply of tire-workers is much larger than is necessary if Ohio workers are to be fully utilized. In Akron alone the labor force could be reduced by 6,400 to 2,000. Underemployment has not been temporary, but has

¹"Ratio of Wages and Salaries to Value of Sales, Manufacturing Industries and Railroads, Conductors and Trainmens 40 Hour Week and Rules Case," Financial Conditions of Railroads, Appendix 15.
been continuous since trade unionism. Union policy has failed to
solve not only the problem itself but its methods of adjusting to
the situation, the six hour day, the maintenance of higher wage
rates in the Ohio-Detroit area, and work-sharing, have made ad-
justments in the size of the work force more difficult. These
methods have served to keep workers sufficiently satisfied to
prevent them from moving to other areas on other occupations.
Thus, one result of collective bargaining has been to "insti-
tutionalize" an excess labor supply in Ohio.

The economist in evaluating an institution with such di-
verse aims as a trade union, must constantly be made aware of the
limited scope of his evaluation. Whatever his judgment may ulti-
mately be, he must be reminded that his analysis is confined to
one limited area of activity. His criticism of the institution
can therefore be confined only to the limited area of economic
analysis and specifically to that of union impact upon the allo-
cative process. He cannot achieve any final judgment of the union
as an institution because such a judgment would encompass many
areas outside his sphere. Any appraisal, good or bad, which is
necessary for policy determination must be based on total and
not partial analysis. The economist, therefore, contributes only
one small part of the final answer. The trade union is a political
and sociological institution as well as an economic one and has
consequences in all these related fields. The belief that the
union has achieved basic industrial freedom and representation
for workers, and improved working conditions, is an important
consideration in arriving at a final judgment. Even the economic
effects of seniority must be measured against the abuses which took place in its absence in the rubber plants. But regardless of possible social gains, it must be recognized that no union can achieve its goals without having some impact upon the economic environment in which its members must survive.

Proof or disproof of the many assertions and counter assertions made in regard to trade unionism cannot be gained from one study. However, if U. R. W. A. policy is typical of trade union policy in general, then one additional sample of evidence has been contributed.
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