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GRADUATE COLLEGE

AN EXAMINATION OF UNION MEMBERSHIP IN ARKANSAS, LOUISIANA, AND OKLAHOMA

A DISSERTATION

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BY

WILLIAM EUGENE CULLISON

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1967

AN EXAMINATION OF UNION MEMBERSHIP IN

ARKANSAS, LOUISIANA, AND OKLAHOMA

A DISSERTATION

APPROVED FOR THE DEPARTMENT OF ECONOMICS

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AN EXAMINATION OF UNION MEMBERSHIP IN ARKANSAS, LOUISIANA, AND OKLAHOMA, 1960-1963

CHAPTER 1

INTRODUCTION

"Whenever an economic argument is being made, or an inference is derived from comparing statistics of different economic activities, the matter of the accuracy of these data arises."[1] This statement is taken from a book by Oscar Morgenstern, On the Accuracy of Economic Observations. In this book, Morgenstern quite aptly points out sources of bias in economic data and at the same time provides some important methodological bases for further economic study. In the final Chapter of his work, he comments that:

> The final remark is that nothing in our study should give comfort to those who would prefer to insist on an a priori character of economic theory, who believe that this science is independent of the facts as observed, that it is somehow capable of deriving theorems of practical significance by pure thought. There is no way of making statements about the economic (or any other) world without some observation of reality, or what we take it to be, no matter how coarse and rudimentary our observations.[2]

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[1]Oscar Morgenstern, On the Accuracy of Economic Observations, 2nd rev. ed. (Princeton: Princeton University Press, 1963), p. 6.

[2]Ibid., p. 302.

Lest Morgenstern's comment be taken out of context, it must be stressed that he certainly does not advocate the position that the facts "speak for themselves." Indeed, he would more likely take the position that data without relevance for some theoretical construction are virtually meaningless. Morgenstern considers economics to be an empirical science which, at the risk of some misrepresentation, might be interpreted to mean that theories and facts interact in at least two ways. First, theories may be devised to explain certain aspects of the real world (albeit in simplified and therefore unrealistic form), and secondly, the facts provide a means of testing the relevance of the theory.

Morgenstern emphasizes the point that the accuracy of the data is only important insofar as it is related to the use to which the theory is to be put. In certain theoretical contexts, data may be useful even though they include large error terms. Perhaps the Consumer Price Index will serve as an example of a useful though legendarily inaccurate economic statistic.

The purpose of this discourse, however, is that if economics is to be an empirical science, the basic data should be in such a form that they will provide useful tests of theoretical constructions. In other words, they should be relevant to economic theory, and they should be as accurate as possible. Furthermore, the data should if possible contain specified error terms, or if that is not possible, should at least adequately discuss the probable biases in the data.

This dissertation has, as one of its main objects, an examination of the accuracy of a body of economic data--the data on union membership. Moreover, the dissertation contains an evaluation of a new

method of determining union membership based upon data contained in the reports of local unions to the Bureau of Labor-Management and Welfare-Pension Reports, and it also provides new information relating to union membership in Arkansas, Louisiana, and Oklahoma for the time period from 1960 to 1963. The study is limited to the three state region in order to provide a manageable pilot study, but the methods used are such that they could be made applicable to union estimation throughout the United States.

Although the method of deriving union membership estimates is not original to this study, the accuracy of the method is examined in relation to the responses of a sample of local unions for the first time in the paper, and, to the author's knowledge, no other state estimates of union membership have been prepared using the newer method.

The mere provision of new (and hopefully more accurate) data, however, is not in itself useful for economics as an empirical science unless the data are useful in some theoretical construction. Union membership has been so measured for at least four decades, primarily because of the theoretical controversies in the discipline relating to the effect of unions on the wage structure. The problem has been debated extensively throughout the economic literature, both deductively and (to some extent) empirically, but the relationship between unions and wage rates remains undetermined. One of the more likely reasons for non-resolution of the problem is that adequate union membership data have been unavailable in useable form.

Any effective econometric study of the problem would seem to need reasonably accurate cross-sectional data on union membership to

relate to wage rates in corresponding areas. As the data become available in useable forms, it should become possible to develop testable systems of structural equations relating wage rates to union membership.

The development of the systems of equations--in fact, the whole controversy about the effect of unions upon wage rates--has, however, been studiously avoided in the dissertation. The adequate exploration of these lines would provide a dissertation in its own right. But the data which shall be provided will hopefully provide the basis for a further econometric study, which may partially resolve the theoretical controversies which involve the relationship of unions to wage rates. At least, attention is shown to providing data in such a form that it will be useful for future economic study.

Chapter 2 contains an examination and evaluation of the existing union membership data--principally those estimations performed by Leo Wolman, Irving Bernstein, Leo Troy, the Bureau of Labor Statistics, and the State of California's Department of Industrial Relations. The limitations of these data are discussed at length, and particular attention is given to additional limitations imposed upon membership data when they are compiled by state.

Chapter 3 provides the basic procedures used in deriving the new estimates of union membership from Labor-Management and Welfare-Pension Reports as well as the total union membership estimates for the states of Arkansas, Louisiana and Oklahoma. In addition, it contains a detailed analysis of the problems encountered in the compilation of the estimates. After an analysis of the various problems encountered, the

new estimates are compared to the existing membership data for the three states, and the results of a membership questionnaire sent to local union officials are compared to the membership of each local as derived from the L-M Reports.

Chapter 4 provides basic data on union membership in the three state area by city and county, whereas Chapter 5 provides the basic data on union membership by union in the three states. These two chapters are not, however, solely composed of detailed breakdowns of the data. After the data are presented, some experimental procedures are followed using elementary statistical techniques in order to try to find relationships between union membership and (more or less) obviously relevant variables. In particular, regressions were run in Chapter 4 in order to determine the relationship between union membership and (1) city population, (2) city civilian labor force, (3) county covered employment, and (4) "adjusted" civilian labor force.

The experimental procedures followed in Chapter 5 have as their basic purpose the determination of what, if any, structural variables were significantly related to union membership in the three state area. Finally, Chapter 5 includes an analysis of the size distribution of unions in the area in comparison to the findings of Phelps Brown and Hart, which relate to the size distributions of unions in Great Britain.

Chapter 6 uses the findings of Chapters 4 and 5 as well as Benjamin Solomon's statistical definition of union potential in combination with a large amount of deductive reasoning to try to assess the

union membership growth prospects in the three-state area during the next decade.

Finally, Chapter 7 contains a summary of the principal findings of the study and a statement of the conclusions which may be drawn from it.

CHAPTER 2

A REVIEW OF MAJOR MEMBERSHIP STUDIES

This study is designed to examine union membership in Arkansas, Louisiana, and Oklahoma from 1960 to 1963. The first task is to review critically the major studies of union membership. Any examination of the history of data collection for union membership should, for all practical purposes, begin with a review of Leo Wolman's pioneer study in 1924.[3] Although two earlier investigations had been carried out, one by Wolman himself and the other by George E. Barnett,[4] Wolman's 1924 estimates go beyond these and stand as the beginning point for an examination of union membership statistics.

Major Studies Which Include Members From the Tri-State Area

Wolman's membership estimates.--Wolman estimated that from 1897 to 1923, the total membership of American trade unions increased from

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[3]Leo Wolman, Growth of American Trade Unions, 1880-1923 (New York: National Bureau of Economic Research, Inc., 1924).

[4]Wolman, Ibid., citing George Barnett, "Growth of Labor Organization in the United States, 1897-1914," Quarterly Journal of Economics, XXX (August 1916) and "The Present Position of American Trade Unionism," American Economic Review, XII (March 1922); and Wolman, "The Extent of Labor Organization in the United States in 1910," Quarterly Journal of Economics, XXX (May 1916).

447,000 to 3,780,000 members, reaching a peak membership of 5,110,800 members in 1920. He also extended the estimates by collecting membership data both by industry group and by selected labor union. Wolman's findings are useful, and for quite some time they were the most reliable estimates of union membership. However, his study suffers from the fact that the sources of data available to him were rather inadequate.

First, the primary source was the response by national unions to a survey that he conducted for The National Bureau of Economic Research, but in those cases where the union failed to respond, or where the response seemed unrealistic, Wolman obtained the data from an examination of the voting strength of the union in question at the American Federation of Labor conventions.

The AFL computes the voting strength of each union on the basis of the per capita tax payments made to the Federation by the national union, and the votes are determined so that each national union has one vote for each one hundred members.[5] Wolman comments on the reliability of this estimation technique as follows:

> In the main, figures so described are reliable and useful. Occasionally, however, a union will pay to the federation the per capita tax on a fixed membership, either for the purpose of concealing its real strength, to save money, or as a matter of convenience alone. For these reasons the statistics were obtained, whenever possible, from the records of the unions.[6]

This criticism of using the "voting strength" method of estimating membership of national unions is perhaps equally applicable to the

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[5]See Wolman, op. cit., pp. 24-28.

[6]Ibid., p. 26.

reports of the locals to the national. In many instances, the national unions must compute their total membership on the basis of the per capita taxes collected from the local unions. Locals may pay a tax on a fixed membership for the same reasons as the national unions. In fact, only those national unions which manage pension trust or other benefit funds have good information on membership.

Second, some of the unions queried by Wolman openly refused to disclose their membership, and still others had no adequate records of membership or were not members of the American Federation of Labor. Consequently, Wolman was forced to exclude some very important unions from his estimates. Some of these were The Tapestry Carpet Workers, The Mechanical Workers Union of Amsterdam, N. Y., The Industrial Workers of the World, and the Amalgamated Textile Workers Union.

Despite the shortcomings of the statistics compiled by Dr. Wolman, the data filled a serious gap in economic statistics and provided a foundation for further research. They remain in 1965 the basis of historical membership statistics. As Wesley C. Mitchell, then Director of the Research Staff of the National Bureau of Economic Research, said in his "Foreword" to Wolman's book:

> In our present volume we /the National Bureau of Economic Research/ are making a fresh reconnaissance of ground most of which has already been traversed by others; but even our survey makes no claim to precision. The figures it gives are approximations rather than accurate determinations. That is all that figures can be in this territory now; for the statistics of membership in trade unions...are defective.[7]

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[7] Ibid., p. 7.

Wolman even attempted to collect statistics on the geographical distribution of union membership and was aware of the importance of those estimates. He stated that "the essential character of the American labor movement cannot be properly appreciated until its sectional distribution is accurately and fully measured."[8] But he was forced to conclude that these data were impossible to obtain at that time:

> Many attempts were made to collect raw materials for such a study. They did not, however, meet with success. Some unions did not keep their records in such a form as to permit the geographical classification of their membership. Others, which had adequate records, were unable because of the strategic significance of figures, to publish them. Trial computation of the membership of local unions, based upon their voting strength in the conventions, disclosed serious discrepancies and inconsistencies and forced the rejection of such estimates. To a greater degree the statistics of membership of state federations of labor and of central labor councils proved fragmentary and unsatisfactory.[9]

In 1936 the National Bureau published a subsequent study, The Ebb and Flow of Trade Unionism,[10] in which Wolman revised his earlier membership statistics and carried them up to 1934. Although his methods of collecting data were the same in both studies, the data were refined somewhat in the later study.

Bernstein's estimates.--Wolman's membership data have been used extensively since his study because they are internally consistent and are complete for a long time span. Professor Irvin Bernstein used them for these very reasons in his 1954 article, "The Growth of American

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[8]Ibid., p. 25.

[9]Ibid.

[10]Leo Wolman, The Ebb and Flow of Trade Unionism (New York: National Bureau of Economic Research, Inc., 1936).

Unions."[11] In this study Bernstein calculated estimated union membership up to 1953, making use of Wolman's previously unpublished data for the period 1935 to 1948 and then projecting estimated membership for the remainder of the over-all period. The projection technique that he employed made use of data acquired from the AFL in order to evaluate the yearly percentage changes in membership for the 1948-1953 period. The purpose underlying this latter procedure was to use the annual percentage changes to indicate deviations from the trend of membership taken from Wolman's estimates. Chart I depicts and compares the results of Bernstein's procedure.

The membership data for the AFL, however, differs considerably from the total union estimates. For example, according to the data used by Bernstein, the total union membership in 1953 was 17,010,033 while the AFL membership was 8,654,921.[12] Accordingly, Bernstein's estimates of total union membership for the period 1948-1953 must be used with a great deal of care for two reasons. First, they are based upon the perhaps tenuous assumption that changes in AFL membership do not differ significantly from changes in total union membership. Second, the basic estimates, before any adjustment due to changes in AFL membership had been made, were not obtained from primary sources, but were calculated by extending the trend of Wolman's estimates.

Wolman's estimates, taken from The Ebb and Flow of Trade Unionism for the period from 1897 to 1934, along with Bernstein's

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[11]Irving Bernstein, "The Growth of American Unions," American Economic Review, XLIV (June 1954), pp. 301-18.

[12]Ibid., p. 304.

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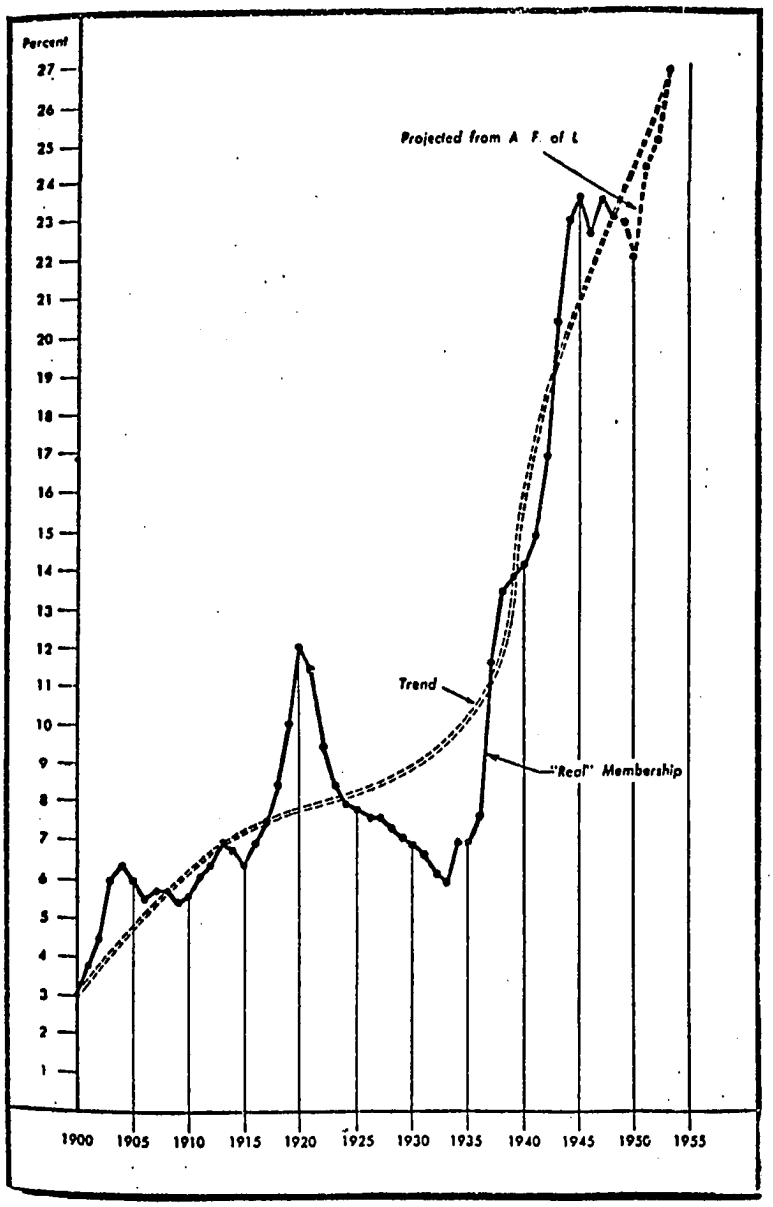
[11]Irving Bernstein, "The Growth of American Unions," American Economic Review, XLIV (June 1954), pp. 301-18.

[12]Ibid., p. 304.

Chart 1
Union Membership as Percent of Civilian
Labor Force, 1900-1953



Source: Irving Bernstein, "The Growth of American Unions," American Economic Review, XLIV (June 1954), p. 306.

estimates for the remaining years up to 1953 are presented in Table 1. Table 1 also shows the percentage change in union membership and the union membership as a percent of the civilian labor force.

Estimates made by the Bureau of Labor Statistics.--The estimates of union membership discussed thus far, however, are not the only estimates. The Bureau of Labor Statistics has prepared bienniel membership data since 1948. The Bureau's estimates are published in the Directory of National and International Unions[13] and reprinted in the Monthly Labor Review.[14] Since the Bureau began publishing its estimates only in 1948, and since they are not strictly comparable to the estimates discussed above, its statistics are inferior to Wolman's from the historical point of view.

Another source of inferiority of the Bureau's estimates is that they rely primarily upon data from the AFL from 1948 to 1952, making use of the AFL per capita tax records. As already noted, per capita tax records provide a rather inadequate source of data. The Bureau, of course, was well aware of this inadequacy; and it pointed out that in the 1948, 1950, and 1953 Directories that the membership estimates were "...in no case to be construed as verified Government statistics."[15]

With the publication of the 1955 Directory, however, the emphasis changed and after an evaluation of the difficulties involved in

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[13]U. S. Bureau of Labor Statistics, Directory of National and International Unions (8 issues, Bulletins No. 1395, 1320, 1267, 1222, 1185, 1127, 980, 937; Washington, D. C.: U. S. Government Printing Office, 1964, 1963, 1959, 1957, 1955, 1953, 1950 and 1948).

[14]U. S. Bureau of Labor Statistics, Monthly Labor Review, various issues.

[15]U. S. Bureau of Labor Statistics, op. cit. (1953), p. 2.

TABLE 1

BERNSTEIN'S AND WOLMAN'S ESTIMATES
OF UNION MEMBERSHIP, 1897-1953

Year	Actual Membership[a]		Adjusted Membership[b]	
	Number	Percent Change from Preceding Year	Union Membership as Percent of Civilian Labor Force	Percent Change from Preceding Year
1897	447,000	--	--	--
1898	500,700	+12.0	--	--
1899	611,000	+22.0	--	--
1900	868,500	+42.1	3.0	--
1901	1,124,700	+29.5	3.8	+26.7
1902	1,375,900	+22.3	4.5	+18.4
1903	1,913,900	+39.1	6.0	+33.3
1904	2,072,700	+ 8.3	6.4	+ 6.7
1905	2,022,300	- 2.4	6.0	- 6.2
1906	1,907,300	- 5.7	5.5	- 8.3
1907	2,080,400	+ 9.1	5.8	+ 5.5
1908	2,130,600	+ 2.4	5.8	0
1909	2,005,600	- 5.9	5.4	- 6.9
1910	2,140,500	+ 6.7	5.6	+ 3.7
1911	2,343,400	+ 9.5	6.1	+ 8.9
1912	2,452,400	+ 4.7	6.3	+ 3.3
1913	2,716,300	+10.8	6.9	+ 9.5
1914	2,687,100	- 1.1	6.8	- 1.4
1915	2,582,600	- 3.9	6.4	- 5.9
1916	2,772,700	+ 7.4	6.9	+ 7.8
1917	3,061,400	+10.4	7.5	+ 8.7
1918	3,467,300	+13.3	8.4	+12.0
1919	4,125,200	+19.0	10.0	+19.0
1920	5,047,800	+22.4	12.0	+20.0
1921	4,781,300	- 5.3	11.3	- 5.8
1922	4,027,400	-15.8	9.4	-16.8
1923	3,622,000	-10.1	8.3	-11.7
1924	3,536,100	- 2.4	7.9	- 4.8
1925	3,519,400	- 0.5	7.8	- 1.3
1926	3,502,400	- 0.5	7.6	- 2.6
1927	3,546,500	+ 1.3	7.6	0
1928	3,479,800	- 1.9	7.3	- 3.9
1929	3,422,600	- 1.1	7.0	- 4.1
1930	3,392,800	- 1.4	6.8	- 2.9
1931	3,358,100	- 1.0	6.7	- 1.5

TABLE 1--CONTINUED

Year	Actual Membership[a]		Adjusted Membership[b]	
	Number	Percent Change from Preceding Year	Union Membership as Percent of Civilian Labor Force	Percent Change from Preceding Year
1932	3,144,300	- 6.4	6.2	- 7.5
1933	2,973,000	- 5.4	5.8	- 6.5
1934	3,608,600	+21.4	6.9	+19.0
1935	3,659,300	+ 1.4	6.9	0
1936	4,075,100	+11.4	7.6	+10.1
1937	6,334,300	+55.4	11.7	+53.9
1938	7,342,000	+15.9	13.4	+14.5
1939	7,734,900	+ 5.4	14.0	+ 4.5
1940	8,100,900	+ 4.7	14.6	+ 4.3
1941	8,614,000	+ 6.3	15.4	+ 5.5
1942	9,523,000	+10.6	16.9	+ 9.7
1943	11,320,400	+18.9	20.4	+20.7
1944	12,538,900	+10.8	23.0	+12.7
1945	12,724,700	+ 1.5	23.6	+ 2.6
1946	12,980,800	+ 2.0	22.6	- 4.2
1947	14,119,100	+ 8.8	23.5	+ 4.0
1948	14,186,400	+ 0.5	23.1	- 1.7
1949	14,228,959	+ 0.3	22.9	- 0.8
1950	14,029,754	- 1.4	22.1	- 3.4
1951	15,418,700	+ 9.9	24.4	+10.6
1952	15,912,098	+ 3.2	25.2	+ 3.2
1953	17,010,033	+ 6.9	26.8	+ 6.2
Average yearly change		+ 7.4		+ 4.8

a. 1897-1934: Leo Wolman, Ebb and Flow in Trade Unionism.
1935-1948: Leo Wolman, by correspondence.
1949-1953: Projected from A. F. of L. membership.

b. 1900-1928: National Industrial Conference Board, gainful workers.
1929-1948: Department of Labor and Bureau of the Census, civilian labor force.
1949-1953: Projected from A. F. of L. membership.

the collection of the membership estimates, the Bureau concluded that:

> It is believed that the aggregate figures derived from the survey represent a reasonable approximation of the total membership strength of national and international unions.[16]

The major reason for this change in view was that the method of collecting data had been altered, showing some improvement over the earlier, crude method. With the 1955 Directory, the Bureau began publishing the results of a questionnaire sent to both national and international unions. There were quite reasonable grounds for relying more heavily on the questionnaire than on the earlier estimates, which contained possible inaccuracies due to biased estimates both from the reports of the local union to the national (or international) union and the reports from the national (or international) union to the AFL.

In 1959 the Bureau expanded the membership questionnaire to include state AFL-CIO bodies.[17] From the results of these questionnaires, they estimated AFL-CIO membership on a state-by-state basis. Since then, these estimates have been published biennially. They are, however, subject to serious reservations if they are to be used as an estimate of total state union membership. In particular, some AFL-CIO unions do not belong to state organizations and some unions are not affiliated with the AFL-CIO; both of these will obviously be excluded from the Bureau's state membership estimates. Furthermore, since state officials must base their membership estimates on the same source as the national AFL-CIO, (that is,

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[16] Ibid. (1955), p. 8.

[17] The AFL and CIO merged in 1954.

the per capita tax reports of the local unions), the state estimates suffer to some extent from the same biases as the national membership estimates.

In January of 1966 the BLS published a Preliminary Report of their 1964 state union membership estimates. For the first time the BLS estimated total membership by state. They estimated the membership of independents on the basis of a prior study and estimated the membership of affiliated unions by asking all national or international unions to classify their membership by state. For all unions which were not able to provide a state breakdown, moreover, they allocated the unions membership on the basis of per capita tax receipts from the local to the national union. This new method should provide significantly better state union membership estimates than have been made previously. Whether this expectation is justified on the basis of the actual 1964 estimates, however, will be discussed at length in Chapter 3, below.

The Bureau's estimates of union membership, on the other hand, provide the only primary source of data for total membership for the period 1948-1962, as well as the only information on state membership from 1959-1962. These findings and the 1964 data are presented in Tables 2 and 3.

A careful examination of the data summarized in Table 3 shows that the Bureau's membership estimates for 1948, 1950, and 1952 were quite imperfect. The Bureau actually estimated total membership of trade unions in the United States in 1949 to be between 14 and 16 million persons, with approximately 700,000 of these persons working and residing in Canada. The estimate contained in Table 2 was derived by

TABLE 2

BIENNIAL LABOR UNION MEMBERSHIP IN THE UNITED STATES BY NUMBER OF MEMBERS AND AS A PERCENTAGE OF THE TOTAL AND NON-AGRARIAN LABOR FORCE, 1948-1962*

Year	Total Union Members, Excl. Canada (data in thousands)	Total Labor Force (data in thousands)	Membership as a Percent of Total Labor Force	Membership as a Percent of Non-Agrarian Labor Force
1948	14,300	62,898	22.7	27.9
1950	14,325	64,749	22.1	27.4
1952	16,000	66,560	24.0	29.6
1954	17,067	67,818	25.1	35.1
1956	17,490	70,386	24.8	33.4
1958	17,029	71,284	23.9	33.1
1960	17,049	73,126	23.3	31.4
1962	16,586	74,681	22.2	29.7
1964	17,188	--	--	29.5

*Source: Data from 1962 to 1956 taken from Bureau of Labor Statistics, Directory of National and International Labor Unions, 1963, Bulletin Number 1395 (Washington, D. C.: U. S. Government Printing Office, 1964). The data for union membership in 1954, 1952, 1950 and 1948 were taken from Bureau of Labor Statistics, Directory of National and International Labor Unions, 1955, 1953, 1951 and 1949, Bulletins No. 1185, 1127, 980 and 937 (Washington, D. C.: U. S. Government Printing Office, 1955, 1953 and 1949). The 1964 membership datum was taken from the Bureau of Labor Statistics, "Union Membership by State," News from the U. S. Department of Labor, USDL - 6979 (January, 1966), p. 2. The labor force data were taken from Department of Labor estimates reprinted in U. S. Congress, Joint Economic Committee, 1964 Supplement to Economic Indicators (Washington, D. C.: U. S. Government Printing Office, 1964), p. 33.

TABLE 3

BIENNIAL STATE UNION MEMBERSHIP ESTIMATES, 1958-1962*

State	Membership (in 000's) 1958	1960	1962	1964
Alabama	185	185	185	151
Alaska	n.a.	22	20	21
Arizona	40	80	76	81
Arkansas	72	72	72	112
California	1,600	1,350	1,400	1,888
Colorado	114	990	108	124
Connecticut	155	200	185	244
Delaware	29	28	16	36
Florida	160	150	150	201
Georgia	115	115	120	150
Idaho	17	20	14	32
Illinois	1,200	1,200	1,250	1,394
Indiana	323	350	350	552
Iowa	130	135	100	150
Kansas	150	100	85	109
Kentucky	140	132	135	187
Louisiana	150	130	130	147
Maine	61	68	58	57
Maryland-D. C.	300	300	275	352
Massachusetts	400	600	525	572
Michigan	800	700	750	962
Minnesota	250	250	300	339
Mississippi	50	45	45	53
Missouri	500	450	400	546
Montana	45	50	30	63
Nebraska	70	65	50	78
Nevada	10	16	18	49
New Hampshire	45	50	50	44
New Jersey	575	500	500	814
New Mexico	30	17	35	34
New York	2,000	2,000	2,000	2,507
North Carolina	80	80	80	89
North Dakota	7	18	15	21
Ohio	1,250	1,000	1,000	1,148
Oklahoma	82	50	65	86
Oregon	200	160	130	198
Pennsylvania	600[a]	1,500	1,250	1,450
Rhode Island	50	50	60	89
South Carolina	35	35	40	52
South Dakota	15	17	15	14
Tennessee	175	140	150	184

TABLE 3--CONTINUED

State	Membership (in 000's) 1958	1960	1962	1964
Texas	375	375	350	370
Utah	60	45	45	58
Vermont	10	8	9	22
Virginia	95	95	100	179
Washington	100	350	250	367
West Virginia	70	70	95	192
Wisconsin	301	400	264	400
Wyoming	18	15	17	19

n.a.: Not available.

a. Pennsylvania returns for 1958 were incomplete.

*Source: United States Department of Labor, Bureau of Labor Statistics, Directory of National and International Labor Unions in the United States, 1963, Bulletin No. 1395 (Washington, D. C.: U. S. Government Printing Office, 1964), p. 55; Directory of National and International Labor Unions, 1961, Bulletin No. 1320 (Washington, D. C.: Government Printing Office, 1962), p. 53; Directory of National and International Labor Unions, 1959, Bulletin No. 1267 (Washington, D. C.: Government Printing Office, 1959), p. 14; and U. S. Dept. of Labor, Bureau of Labor Statistics, "Union Membership by State," News from the U. S. Department of Labor, USDL - 6979 (January, 1966), pp. 2-3.

subtracting 700,000 from 15,000,000 persons to obtain one summary figure. The 1950 estimates showed little improvement over the 1948 estimates, but the 1952 data, on the other hand, seemed to show slight improvement in that the range of union membership was narrowed. For that year, unions were estimated to have been 16 1/2 and 17 million members, including 796,000 Canadian workers.

So far as state membership is concerned, a simple examination of the totals in Table 3 shows that the data leave much to be desired. For example, the data in Table 3 reveal that New York had 2 million union

members in each of the years 1958, 1960, and 1962; and Arkansas was reported to have had 72,000 members for each of the three years. It appears to be quite unlikely that union membership in any one state would remain constant for four consecutive years. North Carolina and Alabama exhibited this same constancy, and the data for many of the other states, e.g., Illinois, Maryland, Minnesota, Texas, and Ohio, reveal a constancy of data for two of the reported years and a change in the remaining year.

Troy's membership estimates.--The only other state-by-state estimates of union membership are those prepared by Leo Troy for the National Bureau.[18] In his study Troy defined union membership as "...those individuals for whom the national or international union has either received or paid a membership fee over a calendar or fiscal year."[19] The sources of his data were for the most part the financial records of the national or international union, but whenever the records of payments made to the national or international union were unavailable, "...figures were obtained from reports of officers, by correspondence with unions, or were estimated on the basis of voting representation at conventions."[20]

Although the Troy estimates have some significant limitations--the most important of which is the exclusion of many local independent unions from the membership totals--they appear to be reasonably accurate membership data. They are summarized in Table 4.

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[18]Leo Troy, Distribution of Union Membership Among the States, Occasional Paper 56 (New York: National Bureau of Economic Research, Inc., 1956).

[19]Ibid., p. 28.

[20]Ibid.

TABLE 4

MEMBERSHIP OF AMERICAN UNIONS BY STATE, 1939 AND 1953*
(in thousands, except rank)

Rank 1939	Rank 1953	State	1939	1953
1	1	New York	959.8	2,051.8
2	2	Pennsylvania	738.6	1,540.7
5	3	California	424.0	1,392.5
3	4	Illinois	590.7	1,358.7
4	5	Ohio	429.3	1,162.6
6	6	Michigan	269.1	1,062.0
8	7	New Jersey	200.6	645.4
11	8	Indiana	176.7	569.6
7	9	Massachusetts	208.9	546.1
10	10	Missouri	180.0	510.5
9	11	Wisconsin	193.9	418.7
12	12	Washington	175.3	393.6
15	13	Texas	110.5	374.8
14	14	Minnesota	133.5	327.6
23	15	Connecticut	62.3	232.1
13	16	West Virginia	153.5	223.9
24	17	Maryland	58.5	203.6
17	18	Oregon	77.4	201.5
20	19	Tennessee	71.0	187.3
22	20	Alabama	63.9	168.3
18	21	Iowa	73.9	159.2
21	22	Virginia	68.4	156.1
16	23	Kentucky	84.7	155.1
25	24	Florida	43.6	135.9
30	25	Georgia	35.7	135.8
29	26	Louisiana	37.8	135.8
28	27	Kansas	39.3	130.8
26	28	Colorado	40.2	114.2
19	29	District of Columbia	71.1	107.8
31	30	Oklahoma	33.7	86.7
33	31	North Carolina	25.7	83.8
35	32	Rhode Island	24.7	82.8
27	33	Montana	39.8	82.2
32	34	Nebraska	27.1	68.6
34	35	Arkansas	25.0	67.9
38	36	Maine	15.2	58.9
36	37	Utah	21.3	56.9
37	38	Arizona	15.6	55.7
40	39	Mississippi	13.0	50.0
41	40	South Carolina	12.2	49.7

TABLE 4--CONTINUED

Rank 1939	Rank 1953	State	1939	1953
43	41	New Hampshire	10.6	43.1
42	42	Idaho	11.5	29.1
49	43	Delaware	5.8	25.8
44	44	New Mexico	8.8	25.0
39	45	Wyoming	14.4	24.2
47	46	Nevada	6.3	21.8
45	47	Vermont	8.5	19.6
48	48	South Dakota	6.1	17.4
46	49	North Dakota	7.9	17.3
United States of America			6,517.7	16,217.3

*Source: Leo Troy, Distribution of Union Membership Among the States, Occasional Paper 56, (New York: National Bureau of Economic Research, 1957), pp. 4-5.

In another study, Trade Union Membership, 1897-1962,[21] Troy made use of Wolman's estimates for the period 1897-1934, but used his own procedure for the years 1934-1962. For these latter years Troy used data obtained from financial reports of unions. The Bureau, it will be recalled, obtains its data from a questionnaire sent out to the unions. Thus, Troy's estimates have been made independently of the BLS.

Troy uses the method of dividing the yearly per capita tax paid from the local unions to the national unions by the amount of tax paid yearly per person, to be called hereafter "the dues rate." This method of estimating membership is, of course, not new--it was used by Wolman, among others--but new data have become available recently which make the financial records available to the public for the first time.

[21]Leo Troy, Trade Union Membership, 1897-1962, Occasional Paper 92 (New York: National Bureau of Economic Research, 1965).

The Labor-Management Reporting and Disclosure Act of 1959, commonly known as the Landrum-Griffin Act, requires unions to submit annual financial reports to the Federal Government and allows these reports to become available to the public for research purposes. Furthermore, unions had been required to file financial reports under the Taft-Hartley Act of 1947 if they wished to avail themselves of the National Labor Relations Board. But as Troy puts it:

> ...these /the financial reports required by the Taft-Hartly Act/ were kept confidential by order of successive Secretaries of Labor. However, after passage of the Labor-Management Reporting and Disclosure Act in 1959, the Secretary of Labor opened these files to the public, and we were able to revise and improve many of our figures back to 1948.[22]

Troy's data are important primarily because of the method used in estimating them, and since they are the most internally consistent data available, they will be utilized later in this study. Troy's method of estimation enabled him to estimate membership by average annual full-time journeyman-equivalent dues-paying member which, although imperfect, is at least a consistent definition of union membership and more rigorous than the definition of membership which he used in his earlier study.

Analysis of Limitations of Membership Data

Definitional problems.--Most of the attempts to measure the union membership have resulted in including only dues-paying members. Troy, as mentioned earlier, chose to define union membership in terms of the average annual full-time journeyman-equivalent dues-paying member.

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[22] Ibid., p. 17.

The Bureau of Labor Statistics has consistently used the criterion that union strength should be based upon the number of dues-paying members. For example, as stated in the 1955 Directory, "The Bureau requested that union membership reports be based on the annual average number of dues-paying members."[23] It seems that they chose this definition as the most objective definition of a union member available to them.

Although the Bureau's definition is quite useful from an operational standpoint, it is limited by the fact that it lacks uniformity. There are obviously several meanings of the term "dues-paying member." Unions make their own rules concerning what constitutes a dues-paying member. Some, for example, eliminate completely the dues-paying requirement in the event of economic hardship of a member.

> ...to a union, total membership may include those paying regular dues, both those in arrears and those up to date in their payments: the unemployed, whether or not they pay any dues; those on strike, honorary members, persons in the armed forces, retired persons, and sick, disabled, or inactive individuals.[24]

Others permit members with a hardship to pay less than 100 percent of the full journeyman dues, while still others require full dues from members in a few of the hardship categories. Usually even though the dues-paying requirement is waived or modified, the affected members retain full membership rights, so that, as the Bureau puts it, "...from a particular union's viewpoint, a distinction between 'dues-paying' members and those in 'good standing' may be considered as arbitrary."[25]

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[23]U. S. Bureau of Labor Statistics, loc. cit., p. 6.

[24]Troy, loc. cit., p. 10.

[25]U. S. Bureau of Labor Statistics, loc. cit., p. 77.

There is merit to the union viewpoint. If the goal of the estimation is to measure union political strength, it is obvious that non-dues-paying members should be included for they would be just as likely to support the union's philosophy as would the dues-paying member. On the other hand, the fact that one supports the philosophy of the union is no reason to include him as a member of the union.

From a theoretical point of view, there are some grounds for excluding the retired person, the member in the armed forces, and perhaps even the unemployed and dues-delinquent member, since they are usually inactive participants in the union. This is particularly true if the economic impact of the union is to be evaluated. Members who are on strike or are apprentices, on the other hand, should probably be included in an evaluation of either the economic or the political impact of the union. According to a questionnaire prepared by the BLS in order to determine how unions count their members:

> ...membership reports are much more likely to include the unemployed, members involved in work stoppages, and apprentices. The retired are likely to be excluded and members in the Armed Forces have a roughly even chance of being excluded from the union reports.[26]

At any rate, the results of the questionnaires sent by the BLS to the unions seem to show that the various unions' criteria for defining a dues-paying member is considerably less than uniform.

Troy's membership estimates, it will be recalled, were based upon defining union membership in terms of the average annual full-time journeyman equivalent dues-paying member. Although this sort of definition of union membership is rigorous and consistent, it suffers,

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[26] Ibid.

theoretically, from the fact that there is little justification for considering apprentices or members on strike to be less than full members of the union.

Inflated or deflated membership claims.--Another source of inaccuracy of union membership estimates, particularly relevent to the BLS estimates of membership, is that unions may inflate or deflate their membership claims. According to the BLS,

> Inflated membership claims by some unions pose an additional problem in measuring union membership. This practice, which is reflected not only in reports to the Bureau but in published statements of these unions, may spring from rivalry among unions seeking greater prestige, or may be rooted in the internal politics of the labor movement, or may be intended to strengthen the union's bargaining position with employers. Conversely, unions may understate their membership.[27]

The criticism of union membership claims is essentially the same as that taken by Wolman in his 1934 study. Notice that he first defended the use of union financial data as a source of union membership estimates and then strongly criticises the estimates derived from union claims.

> The most readily available source of membership statistics is naturally the record of the union itself....Like private concerns, unions have their financial offices and staffs, and keep the requisite accounts subject to periodic, independent audit. Where these accounts are published in sufficient detail, they are the most reliable source of information on membership. But where they are not issued in satisfactory detail, the investigator must rely for his data on the statements of the union officers with whom he is in communication. Since labor unions are among other things political and propaganda organizations which depend for their position in part on the prestige they inspire, the reported figures of membership are often quite other than prevailing conditions and general knowledge would lead one to expect.[28]

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[27] Ibid.

[28] Wolman, loc. cit., pp. 4-5.

But even though Wolman concludes accurately that the best membership estimates are made from the financial records of the union, there are certain shortcomings to this method. As the Bureau of Labor Statistics points out, unions often pay per capita taxes on a fixed number of members, or the membership may be inflated or deflated according to the union's desire for prestige. For example, if a local union votes in the national or international union convention in proportion to the per capita tax that it pays, it may well inflate the payment in order to get more votes. If a union cares little for this sort of prestige, it may well deflate the per capita tax payments in order to retain the funds. For either reason, the financial records of national or international unions may yield erroneous estimates of membership. This bias may be compounded whenever membership is estimated from AFL-CIO records of per capita tax payments, since these payments are quite often made from local to national to AFL-CIO. Accordingly, they may include the biased estimates emanating from both the local and the national or international union.

Therefore, Troy's estimates of union membership by state for 1939 and 1953, as well as his most recent estimates, might well contain some bias since they were compiled from an analysis of the financial reports of the national or international union. However, the possibility of compounded bias is smaller, since the AFL-CIO is not included.

Additional limitations of state membership data.--Although Troy's studies improved the quality of union membership estimates, state membership estimates since 1953 remain extremely crude.[29] As was

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[29]With the possible exception of the 1964 BLS estimates, which are in a special category and will be discussed at length in Chapter 3.

mentioned previously, the Bureau of Labor Statistics first began publishing biennial estimates of union membership in 1958. The source of the Bureau's estimates was the result of a survey of state AFL-CIO organizations, which unfortunately must exclude all local unions which were not affiliated with the AFL-CIO as well as all AFL-CIO locals which were not members of the state organization. The number of union members excluded in this manner from the state estimates is not inconsequential, so this source of membership data is quite restrictive.

Furthermore, the Bureau's state estimates suffer from the same general bias problems that affect their national estimates--state organizations also may well wish to inflate or deflate their membership for political or economic reasons. Troy concludes that the BLS state membership estimates are inadequate:

> Subsequently, the BLS began issuing estimates of AFL-CIO membership by state. However, these figures are the unverified claims of state AFL-CIO bodies and, of course, do not include membership of the independents (reported at 3,045,000 by the BLS for 1960). In the absence of a complete and reliable series on union membership by state...[30]

Troy's study of state membership in 1939 and 1953 used the better procedure and therefore should be considered to be the more valid study, but his estimates of state membership leave something to be desired. He was forced to exclude local independent unions, and whenever financial reports were unavailable for locals of national unions, he had to derive the figures from voting representation at a convention or from reports of referenda on some internal issue or election. It is for this reason that he concludes:

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[30]Troy, loc. cit., p. 20.

> Figures derived from representation at conventions presented the most difficulties. Not all locals attend the national convention, but generally only the smaller ones or those in arrears in per capita dues are absent. Uneven and large class intervals for delegate entitlement, the guarantees of minimum representation, and limitations on the size of delegations also had to be taken into account in estimating the distribution of membership.[31]

The State of California's Membership Estimates

California has collected data on union membership since 1900. The Division of Labor Statistics and Research performs these duties, and as a result of considerable time and effort, the state has had quite good membership statistics since 1950. Their present method of estimating was begun in that year and the Division has published their statistics annually in Union Labor in California.[32]

The state uses the questionnaire method of collecting statistics, which is subject to the over-reporting or under-reporting limitation mentioned above, but they try to question all of the local unions. At the time of sending out the questionnaires, they send out letters to the central labor councils which stress the importance of responding and at the same time publicize in the newspaper the importance of good union membership statistics. Several follow-up letters are subsequently sent to locals who have failed to respond, and as a result, according to Helen Nelson of the Division,

> Last year we mailed questionnaires to more than 3,400 union locals and received replies from 94 per cent....We received replies from about 50 percent of the locals of the first request; 30 per cent

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[31]Troy, Occasional Paper 56, op. cit., pp. 28-29.

[32]State of California Department of Industrial Relations, Division of Labor Statistics and Research, Union Labor in California (San Francisco: California Office of State Printing, 1900--.)

> on the second request; and 10 per cent on the third. By telephone calls and letters to international and regional representatives, we were able to obtain replies for an additional four per cent, leaving the membership of only 200 locals to be estimated.[33]

The method used by California is certainly more reasonable than that used by the Bureau of Labor Statistics, but it is considerably more costly. Although the Bureau uses a questionnaire, it sends the questionnaire to state AFL-CIO bodies, which is subject to much error, as noted above.

The California estimates, on the other hand, may be equally as good as the state-by-state estimates in Troy's study. The comparison of these two studies, however, is not within the province of this study, particularly since the only other detailed state membership estimates are those made by the state of Massachusetts and this study covers the states of Arkansas, Louisiana and Oklahoma.

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[33]Helen Nelson, "Estimating Union Membership in California," Statistics of Labor-Management Relations, the Procedings of a Conference Held at Asilomar, Pacific Grove, California (Asilomar, Calif., 1955), p. 11.

CHAPTER 3

TOTAL MEMBERSHIP ESTIMATES: PROBLEMS AND PROCEDURES

The only sources of membership information for the three-state area are the Bureau of Labor Statistics' biennial reports and Troy's study.[34] The BLS data have been shown to be inadequate, whereas Troy's study covers only 1939 and 1953. Furthermore there is no breakdown on union membership for geographical subdivisions within state boundaries. The first and the most important step in an evaluation of the impact of unionism in Arkansas, Louisiana and Oklahoma is to estimate the union membership in each state and city within the state. Since unions have recently been required to file detailed financial reports, membership can be derived from these reports. The use of these financial data should minimize or eliminate any bias due to inflated or deflated membership claims. The definitional problems are more serious, since the study will estimate the average annual journeyman-equivalent dues-paying members. This is the same statistic that was used by Troy in his estimations, and the membership figures will, therefore, have to be limited by the same theoretical objection (that is, there is little justification

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[34]Leo Troy, Distribution of Union Membership among the States, Occasional Paper 56 (New York: National Bureau of Economic Research, Inc., 1956).

for considering apprentices or members on strike to be less than full members of the union), but this objection is imposed by the primary data and it seems that it cannot be circumvented.

Basic Procedures

The Labor-Management Reporting and Disclosure Act of 1959 requires virtually all labor unions[35] to file yearly financial reports with the Secretary of Labor. If a union fails to file one of these reports and this action is "willful," the officers of the union are subject to a maximum penalty of a fine of $10,000, a one year prison term, or both. The Act, furthermore, specifies that the documents should be made available to the public for research use. The Secretary of Labor, in order to comply with the directives of the Act, created the Bureau of Reports, later called The Labor-Management Services Administration, and at present, known as the Office of Labor-Management and Welfare-Pension Reports. In 1959 the bureau began to assemble union reports and to compile a Register of Reporting Labor Organizations[36] in which labor unions are classified by state and by national union affiliation. They also list by city so that a researcher has at his disposal a complete listing of local unions in any state, as well as any national or international union with headquarters in that state. The Register provides the key to the files since it contains the file number of each local.

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[35]Labor organizations which do not collect dues and organizations of government employees are exempted from the Act.

[36]United States Department of Labor, Labor-Management Services Administration, Office of Labor-Management and Welfare-Pension Reports, Register of Reporting Labor Organizations (Washington: U. S. Government Printing Office, 1959, 1960, 1961, 1962, 1963, 1964).

In 1959, the Bureau asked all covered labor unions to submit to them a "Labor Organization Report," The LM-1 form, which asked unions to report, among other things, the "regular dues or fees required to remain a member of the reporting labor organizations."[37] The LM-1 form also required the reporting organization to report the maximum and minimum dues paid "if more than one rate applied."[38] The LM-1 form accompanies the initial yearly labor organization report of a union, which is either the LM-2 or LM-3 form. The latter contains an Item (number 15 on both) in which unions are asked to report any changes in the LM-1 form. Thus, the dues to be paid by each member of a local union may be determined for any time period from 1960 to 1963.

The LM-2 and LM-3 forms also contain information concerning the union's receipts and disbursements during the year. On the LM-3 form, for example, the receipts listed are: (1) the total dues collected; (2) all fees, fines, assessments and work permits; and (3) all other receipts. The disbursements listed on the LM-3 form are reported in the following categories: (1) affiliation payments (per capita tax, etc.); (2) payments to officers; (3) payments to employees; (4) office and administrative expense and loans made by the organization; (5) payments for benefits; and (6) other disbursements.[39]

A union having over $30,000 per year in total receipts must file the longer and more detailed LM-2 form. This form requires the union to list the following receipts categories: (1) dues; (2) per capita tax;

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[37]See the LM-1 form in the Appendix.

[38]Ibid.

[39]See the LM-3 form in the Appendix.

(3) fees; (4) fines; (5) assessments; (6) work permits; (7) money on behalf of affiliates for transmittal to them; (8) sale of supplies; (9) interest; (10) dividends; (11) rents; (12) loans obtained; (13) sale of investments and fixed assets; (14) repayment of loans made; (15) receipts from members for disbursement on their behalf; and (16) from other sources, with the source specified.[40]

For each reporting labor organization, the Office of Labor-Management and Welfare-Pension Reports maintains a file which contains the LM-1 form, the union's constitution, and the LM-2 or LM-3 forms for each year since 1959.[41] However, the Bureau usually lags approximately six months behind in transferring the most current data to the files. It seems then to be theoretically possible to compute the number of union members by dividing the total yearly dues rate into the total dues for each union, thus finding the number of members in each local union. The total membership in any one area can then be found simply by adding all of the members of all the locals in the area.

In this study, the membership of each local in Arkansas, Louisiana and Oklahoma was estimated by examining its file at the Office of Labor-Management and Welfare-Pension Reports and taking from it data on the dues rate charged and the total dues paid during each year from 1959 to 1963. After this information was gathered for the roughly 1,750 local unions in the three-state area, the dues rate per

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[40]See the LM-2 form shown in the Appendix.

[41]This does not imply that the data are complete for these years. The data for 1959 are incomplete since the reporting program was just beginning, and a report for one year or another is often missing. Some files for 1964 were beginning to be assembled, but they were incomplete.

year was divided into the total dues paid in order to determine the average-annual journeyman-equivalent dues-paying member for each local. These data were then summed by state and by city in the state and by national union for each major national union in the state.

Total Membership Estimates

According to this study of labor union membership, the total union members in the three-state area range from 271,212 members in 1960 to 276,701 members in 1963. In 1963, 59,398 of the union members were in Arkansas, 143,511 were in Louisiana, and 73,630 were in Oklahoma. These membership estimates are presented in detail in Table 5.

TABLE 5

TOTAL UNION MEMBERSHIP IN ARKANSAS, LOUISIANA AND OKLAHOMA, 1960-1963*

State	1960	1961	1962	1963
Arkansas	54,562	57,186	57,582	59,398
Louisiana	145,462	139,196	141,056	143,511
Oklahoma	71,198	70,457	70,915	73,630
Total	271,212	266,839	269,553	276,539

*Sources: Derived from an analysis of the Labor-Management Reports filed with the Office of Labor-Management and Welfare-Pension Reports; The Typographical Journal, July 1965, pp. 34s-41s; and The International Brotherhood of Electrical Workers, Proceedings of the 27th Convention (Montreal, Quebec, Canada, September, 1962), pp. 428-99; Letter from R. A. Lorant, Secretary-Treasurer, Window Glass Cutters League of America, December 6, 1965.

Problems Encountered

Although the method of estimating union members from local union reports suffers from the least theoretical objections of the various methods available, rather substantial difficulties are encountered when the actual estimate is made.

Dues based upon a percentage of earnings.--One of the first obstacles encountered in the present study was the fact that some labor unions require their members to pay dues based upon a percentage of their total wages. Others require that members pay a certain stipulated amount per month plus a percentage of wages earned. It was thus impossible to compute the total union members by dividing the dues rate into the total dues paid for these unions. Unions which used the percentage of earnings method include The International Typographical Union, most of the locals of The United Glass and Ceramic Workers League of North America, The Window Glass Cutters League of America, and some of the locals of the International Longshoremen's Association.

The locals of The International Typographical Union collect one-half of one percent of the total monthly wages earned. Since the financial data from the labor-management reports are therefore useless, the membership was estimated from another source--the July 1965 issue of the International Typographical Journal.[42] In this issue, a table was printed showing both the financial condition of the locals and their membership. This union's membership was assumed to have remained

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[42]International Typographical Union, "Table 8--The Receipts From, Benefits to, and Condition of Local Unions," The Typographical Journal (Colorado Springs: International Typographical Union, July 1965), pp. 34s-41s.

constant from 1960 to 1964 at the number stated in the Journal. Although the estimates of members of the Typographical Union may suffer from many of the methodological defects mentioned in Chapter 1, they are derived by the only feasible procedure.

Another method was tried in order to use financial data to estimate the membership of the Typographical Union. Each local must report the amount of payments which it makes to its national union affiliate. The union filing a LM-2 form must list specifically the amount of per capita tax that it pays (per capita tax is the term used to designate the payment to the national union), while the union filing a LM-3 form lumps all affiliation payments together. It should be theoretically possible to estimate the membership of otherwise inestimable unions by dividing the yearly per capita tax disbursements by the yearly per capita tax rate, so long as the local receives a total of over $30,000 per year.

This method failed for the International Typographical Union, for the international requires the local to pay $1.00 in per capita tax per month plus a percentage assessment. Unfortunately, the locals do not distinguish between the assessment and the per capita tax in their reports. As an extreme example, if the yearly per capita tax rate were $12.00, and if this figure were used to derive the union membership for Local 92 of the Typographical Union in Little Rock, Arkansas, the local would be estimated to have 5,086 members in 1963. The Typographical Journal listed the number of members to be 244--quite obviously the more reasonable figure.

The International Longshoremens' Association was a somewhat easier problem in the sense that most of the locals charge a constant

dues rate. Locals 854, 1683, and 1833, in Louisiana, however, charged dues rates based upon a stipulated amount plus a percentage of wages earned. The membership of these locals was impossible to estimate, so they were excluded from the membership totals.

The Glass Workers' unions were also impossible to estimate from the financial reports. It was impossible to estimate their membership at all, since they have a policy of keeping membership information secret.[43] The Window Glass Cutters League, however, responded to a membership query and stated the number of members in 1964.[44] Unfortunately, the membership from 1960 to 1963 was again unavailable, so the window glass cutters were assumed to be constant in number for the period. The American Flint Glass Workers did not respond to the membership query, so they were also excluded from the membership estimates.

Several dues rates.--Another significant obstacle to membership estimation from Labor-Management Reports is that some unions have more than one classification of dues-paying member. The International Brotherhood of Electrical Workers, for instance, has two categories of members--the "A" member and the "BA" member. Since members in these two categories pay different monthly dues and since these dues are not reported separately by class of worker, the total number of members cannot be accurately estimated from the financial data. This is most unfortunate; for Troy, in his 1965 study estimates the IBEW to have been the

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[43]Letter from H. Wayne Yarman, First Vice President in charge of Research and Education, United Glass and Cement Workers of North America, A.F.L.-C.I.O.-C.L.C., Columbus, Ohio, December 6, 1965.

[44]Letter from R. A. Lorant, Sr., Secretary-Treasurer of the Window Glass Cutters League of America, A.F.L.-C.I.O., Columbus, Ohio, December 6, 1965.

fourth largest union in the United States in 1962.[45] The only source of membership information for the IBEW is the Proceedings of their national convention in 1962 in the Proceedings of the 27th Convention.[46] Since the union allows every representative delegation from a local to have one vote for each member, both "A" and "BA", every local's membership was listed in order to determine its voting strength.

Several of the locals of the IBEW in the three-state area did not attend the national convention, but it seems reasonable to assume that these were the smaller locals who could not afford to send a representative. Out of twenty Arkansas locals, twelve failed to send a representative; out of seventeen Louisiana locals, three failed to send a representative; and out of twelve Oklahoma locals, only one failed to send a representative. Since financial reports, however, were available for the non-represented IBEW locals, a decision was finally made to estimate the average dues rate of these locals from those for which membership information was available. The average dues rate turned out to be $66.12 per member per year.

This dues rate was divided into the total dues paid for each year from 1960 to 1963 for the locals which did not attend the national convention, in order to estimate their membership. Thirteen of the sixteen locals which did not attend the national convention were estimated in this manner, but three could not be estimated by any means whatsoever.

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[45]Leo Troy, Trade Union Membership, 1897-1962, Occasional Paper 92 (New York: National Bureau of Economic Research, Inc., 1965), p. 19.

[46]International Brotherhood of Electrical Workers, Proceedings of the 27th Convention (Montreal, Quebec, Canada, 1962), pp. 428-99.

These were located in Camden and El Dorado, Arkansas, and Baton Rouge, Louisiana. These three locals were only recently chartered and have probably a rather small membership.

The use of this technique to estimate the union dues rate is based upon the assumption that the relationship of "A" to "BA" members is approximately the same for locals which were not represented at the national convention as for those which were represented at the national convention. This technique, furthermore, would not provide valid data if there were changes in dues rates for diverse locals. Fortunately this latter possible shortcoming could be investigated, and there were no such changes.

The IBEW presented another problem. The years covered in this study are 1960-1963, and the Proceedings only provided estimates for membership in 1962. The estimates for the remaining years, therefore, have to be derived from existing data. They were derived by finding the percentage change in dues collected in 1962 and each of the other years. It was then assumed that the actual membership changed in the same proportion as the dues receipts. This seemed to be a realistic assumption, since there was no change in the dues rate during the time period and since the amount paid by the "A" and "BA" worker was a constant amount per month. This method would be quite unrealistic, of course, if the union had used a percentage of earnings approach to dues collection as did the International Typographical Union, for earnings could change over the time period.

As noted in Chapter 1, most unions, perhaps all, require less dues from their apprentices than from their journeymen members. The

only answer to this problem is to stress that the estimates of union membership represent the average journeyman-equivalent membership in each local and not the total members.

Location problems.--There are also problems connected with the geographical location of the locals. The union members are assumed to be residing wherever the local union's headquarters is located. This is, of course, the only feasible method by which union membership by geographical subdivision may be estimated from the L-M Reports, for there is no information on the number of persons residing in areas outside the headquarters city, but it does cause some significant problems. The cities of Texarkana and West Memphis, Arkansas, for example, are located on the border of the state of Arkansas.

There is no reason to believe, particularly in the case of West Memphis, that locals whose headquarters are located in West Memphis would include even a bare majority of Arkansas residents, for the appropriate economic area is more reasonably the metropolitan Memphis area. Memphis itself is of course much larger than West Memphis. According to the 1960 census, out of 516,898 persons living in the Memphis area, 19,374 (or approximately 0.4 percent) lived in West Memphis.[47]

On the other hand, there is equally no basis for assuming that persons residing in West Memphis could not work and belong to a local union located in Memphis. For these reasons, but particularly for the reason that West Memphis seems to be in an economic area which is

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[47]U. S. Bureau of the Census, U. S. Census of the Population: 1960, Volume 1, Characteristics of the Population, Parts 5, Arkansas, and 44, Tennessee (U. S. Government Printing Office, Washington, D. C., 1963), pp. 5-28 and 44-18.

primarily Tennessee, unions located in West Memphis were excluded from the study and total union membership for Arkansas, as a consequence, excludes all West Memphis union members.

Texarkana, although conceptually in the same category as West Memphis, was treated differently, due to the fact that the economic base of Texarkana seemed to be located more in Arkansas than that of West Memphis. For example, the 1960 Census shows that in 1960, out of a total population of 50,006 persons, 19,788 (or approximately 40 percent) lived in Arkansas.[48] In view of the large percentage difference, between 0.4 and 40 percent, it seemed more reasonable to assume that members of locals headquartered in Texarkana, Arkansas, were composed for the most part of members residing in Arkansas.

These location problems are also particularly relevant in the case of the railroad operating brotherhoods. Although they may not be important whenever the total state membership is to be studied, they become important whenever regional or city membership totals are compiled. The railroad operating employee, after all, lives in a particular city or economic area and provides services for a much larger area. The conceptual location problem arises whenever the question is raised whether it is more relevant to study where a union member resides or where he works. In this study, such questions were answered in the only method which the data would allow, that the union membership would be estimated at the place of residence of the member.

The state of California'a Department of Industrial Relations has studied these location problems at some length. California, as

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[48] Ibid., Parts 5, Arkansas, and 45, Texas, pp. 5-28 and 45-59.

noted in Chapter 1 above, compiles rather detailed state membership estimates. As Helen Nelson of their Department of Industrial Relations states:

> ...(T) here is much variation among locals in their geographic areas of jurisdiction. Some unions, such as the Post Office Clerks, have a local in almost every city or town in the state. Other unions have a local in each large town, county, or county group. Some have one local for all members in northern California and another in southern California. This situation makes it difficult to estimate the total number of union members in any given area of the state, even if the membership of each local in the state is known.[49]

California began in 1954 to ask each local to report within which of ten areas of the state it had jurisdiction. It was found that 12 percent of the state's union members belonged to locals with considerably wider jurisdiction than any one of the ten areas.[50]

Thus, the locational problem is rather serious in California, for many parts of the state are quite densely populated, particularly along the coast, where the towns and cities are practically contiguous. The correspondence between city and economic area in a state such as California, then, would be considerably less than in less densely populated states such as Arkansas or Oklahoma. This would mean that the situs problem would be greater in California than in the states to be studied. As a matter of fact, the only area of the three-state area which even approximates the California problem is that in Louisiana along the Mississippi River from New Orleans to Baton Rouge. An effort

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[49]Helen Nelson, "Estimating Union Membership in California," Statistics of Labor-Management Relations, the Proceedings of a Conference Held at Asilomar, Pacific Grove, California (Asilomar, Calif., 1955), p. 12.

[50]Ibid.

was made in the study to include all towns which might be considered to be suburban areas of a larger city in the city membership estimates. For example, Chalmette, Marrero, Westwego, Arabi, Harvey, Gretna, Algiers, Meraux, Belle Chasse, Harahan, Bridgedale, Kenner, Waggeman, and Metarie were considered to be in New Orleans for the purposes of union membership estimates. Port Allen, Denham Springs, Fountain Place, Brusly, and Lobdell were considered to be in Baton Rouge; Midwest City, Del City, The Village, and Bethany were considered to be in Oklahoma City, etc.

By trying to include the metropolitan area in city estimates, it is hoped that the estimates will not suffer to such a great extent from locational problems, but on the other hand, the fact that some locals have jurisdiction over more than their particular area does remain a significant limitation of the membership estimates.

Missing reports.--The data also suffer from the fact that in several instances the report from the local union for an isolated year was missing from the file at the Bureau of Labor-Management and Welfare-Pension Reports. This missing report might be explained by misfiling, or that the union simply failed to report for the year. Many instances of misfiling were found in the course of examining the reports, but of course the failure to report is equally likely.

This study covers the time period 1960-1963. The unions were required to begin filing in 1959 after the passage of the Act. The program was just under way in 1959, however, so the data are fragmentary and much less complete than in later years. If, however, a union filed a report in 1959, missed 1960, and filed again in 1961, it was an easy matter to estimate the union membership for 1960 by simply averaging the

1959 and 1961 membership. This same procedure was followed whenever a union failed to file in a given year if the preceeding and following year's reports were available. The same method was employed whenever two middle years were missing.

The method of treating a missing file in either a beginning or an ending year was a much more difficult empirical decision. Unions are required by law to file a terminal report if they become inactive, so that conceptually a union which failed to file in 1963, for example, and which has filed no terminal report should be considered to be still active. On the other hand, from a more practical standpoint the union which becomes defunct may forget to file a terminal report and all of the ex-members may wish to become disassociated from all obligations as union members. The Bureau might well take some time to enforce the filing of a missing report, terminal or otherwise. A decision must be made, therefore, in every case in order to answer the dual question of whether the local union is still in existence, and if so, how many members must be estimated to belong to it.

Whenever the 1963 report was missing but the 1962 report was available and no terminal report had been filed, the union was assumed to remain in existence. The membership was then estimated by finding the percentage change from the preceding year and assuming that the union membership changed from 1962 to 1963 by the same percent and in the same direction. This procedure was not used in several cases in which the percentage change seemed to be unreasonably large. In these few cases the membership was estimated more conservatively and was assumed to have remained constant from 1962 to 1963. If a union failed

to file for two consecutive ending years, however, and still had not filed a terminal report, the standard procedure was to assume that the local had become defunct or had merged with another union.

If the financial reports happened to be missing in beginning years, the estimating procedure was somewhat different. In the first place, the reports for 1959 were occasionally available, which converted the estimation problem from a beginning year into a middle year problem. In the second place, the Bureau had published the Directory of Reporting Labor Organizations[51] yearly since 1959, so that if a local was listed in the 1960 Directory, it was assumed to be active, even though the 1960 and 1961 reports might be missing. Membership of these locals was calculated in the same manner as that of locals whose report was missing for an ending year. The corrections made in union membership due to the missing report are shown in summary form in Table 6. Based upon the data presented, it can be readily shown that out of a total of 276,539 union members in 1963, 4.3 percent were estimated by the methods mentioned above; in 1962, 3.0 percent were estimated; in 1961, 1.4 percent; whereas in 1960, the figure was 2.3 percent.

In a few instances, the rule of not counting locals who had failed to file a report was violated, for there were indications that the local was still in existence. The total number of members estimated in this manner is shown in Table 7.

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[51]U. S. Department of Labor, Labor-Management Services Administration, Office of Labor-Management and Welfare-Pension Reports, Register of Reporting Labor Organizations (Washington: U. S. Government Printing Office, 1959, 1960, 1961, 1962, 1963, 1964).

TABLE 6

CORRECTIONS IN UNION MEMBERSHIP ESTIMATES IN THE THREE STATE AREA DUE TO MISSING REPORTS (Number and percent of members, 1960-1963)

State	1960		1961		1962		1963	
	Total Corrections	Percent of Total	Total Corrections	Percent of Total	Total Corrections	Percent of Total	Total Corrections	Percent of Total
Arkansas	2,625	4.8	1,699	3.0	1,147	1.9	2,008	3.4
Oklahoma	1,021	1.4	596	0.8	1,383	1.9	2,788	3.8
Louisiana	2,594	1.8	1,498	1.1	5,503	3.9	7,064	4.0
Total	6,240	2.3	3,793	1.4	8,033	3.0	11,860	4.3

Source: Derived from an examination of union membership reports and Table 5.

TABLE 7

CORRECTIONS IN NUMBERS OF MEMBERS BY STATE WHOSE LOCALS FAILED TO FILE REPORTS IN THE TWO TERMINAL YEARS, 1962 and 1963

State	Number of Members	
	1962	1963
Arkansas	395	404
Oklahoma	79	79
Louisiana	180	188

Source: Derived from an examination of union membership estimates compiled from LM reports.

Year-end problems.--Another difficulty was caused by the fact that the reporting period of the unions varied. Some closed their books on December 31, some on June 30, and some in March. The union would report yearly dues collected for the year preceding the closing date of the books. This problem was handled by considering all locals who closed the books before June 1 to be reporting on membership in the preceding year, and all unions who reported on the year ending after June 1 were assumed to be reporting on the membership in that year.

Non-reporting of dues rate changes.--William J. Stober, in his doctoral dissertation, The Estimation of Labor Union Membership from Reports filed under the Labor-Management Reporting and Disclosure Act of 1959,[52] found some indications that locals did not report dues rate changes to the extent to which they were required by law. This is fortunately not a serious shortcoming, since it is not widespread.

An equally important problem arises whenever the union fails to report the date of the dues change. The average dues rate for the year can be derived whenever the date of the dues change is known, but if it is not known, there is no method of deriving accurately the dues rate for the year. A union is not required to report the date of the change, but in the three-state area the union did, for the most part. Whenever the date was not reported on the L-M form, it was usually reported in the union constitution, in the amendments to the constitution, or in the minutes of the last convention. It was rarely necessary, therefore, to

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[52]William Stober, "The Estimation of Labor Union Membership from Reports Filed under the Labor-Management Reporting and Disclosure Act of 1959" (unpublished Ph.D. dissertation, Dept. of Economics, Duke University, 1965), pp. 78-82.

estimate the date of the dues rate change. In those few cases, the dues rate change was assumed to come in the middle of the reporting year, unless evidence to the contrary was shown.

Comparison of Estimates

Leo Troy and the 1960-1962 BLS data.--According to the Bureau of Labor Statistics, there were 72,000 union members in Arkansas in 1960 and 1962, whereas this study found that there were 54,652 members in 1960 and 57,582 in 1962.[53] Unions in Oklahoma were estimated by the BLS to have 50,000 members in 1960 and 65,000 in 1962, but the entries in Table 5 show that there were 71,198 members in 1960 and 70,915 in 1962. And Louisiana, according to the BLS, had 130,000 members in each of the two years, but the new estimates show that there were 145,562 members in 1960 and 141,056 in 1962.

It appears from a brief examination of these estimates that the 1960 Oklahoma figures have the largest discrepancy. In 1958, the BLS stated that unions in Oklahoma had 82,000 members, but this membership decreased by 33,000 from 1958 to 1960 and proceeded to increase by 15,000 members from 1960 to 1962. This large variation in union membership does not show at all in the estimates of membership made from financial data, which seemed to show that labor union membership remained relatively constant from 1960 to 1962 at approximately 71,000 members.

Interestingly enough, Leo Troy's estimates of state membership for 1953 put Oklahoma at 86,700 members. This figure compares favorably

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[53]See Table 5, above.

with the BLS' 1958 estimates, and, for that matter, with the newly made estimates. As a matter of fact, there is a difference of only 4,700 members between the 1958 estimates and those made by Troy in 1953. It is enlightening to compare this variation in union membership over a five year period to an average biennial variation in the BLS' estimates for the period, 1958-1962, of approximately 23,500. One might conclude, based upon the seemingly erratic variation in membership, that the BLS' estimate for Oklahoma in 1960 is quite questionable.

In no case were the membership estimates made in the new study even reasonably close to those made by the BLS. As shown in Table 8, the smallest percentage discrepancy was 9 percent (the 1962 Oklahoma membership estimates). Furthermore, the differences between the new estimates and those made by the BLS show no consistency. For example, the differences in the data for Arkansas are in the opposite direction from those of Louisiana and Oklahoma. It must be noted, however, that the Bureau of Labor Statistics includes only members of state AFL-CIO bodies in its estimates and the membership definition relies upon the union's evaluation for the most part, so the two different methods of estimation are not directly comparable.

The 1964 BLS data.--The recently published estimates of union membership by the BLS for 1964 exhibit such significant problems that they must be examined separately. As shown in Table 9, the BLS estimated union membership in 1964 for Arkansas, Louisiana, and Oklahoma to be 112,000, 147,000, and 86,000 persons, respectively. Moreover, these data are estimates of total union membership by state rather than of only those unions which are affiliated with state AFL-CIO bodies.

TABLE 8

PERCENTAGE DISCREPANCY BETWEEN THE ESTIMATES MADE BY THE BUREAU OF LABOR STATISTICS AND THE NEW ESTIMATES FOR THE THREE STATE AREA, 1960 AND 1962

State	1960			1962		
	New Membership Estimates	BLS Membership Estimates	Percent Difference	New Membership Estimates	BLS Membership Estimates	Percent Difference
Arkansas	54.7	72	+24.0	57.6	72	+20.0
Oklahoma	71.2	50	-42.4	70.9	65	- 7.8
Louisiana	145.5	130	-12.4	142.2	130	- 9.4
Total	271.2	252	- 8.1	270.5	267	- 1.3

Source: Derived from Table 5 and Table 7 (Chapter 1) in the following manner: The BLS estimates less the new estimates were divided by the BLS figures.

TABLE 9

THE BLS' 1964 UNION MEMBERSHIP
ESTIMATES BY STATE

State	Total Membership	Membership as a Percent of Employees in Nonagricultural Establishments
All States	17,187,700	29.5
Alabama	151,000	18.0
Alaska	21,000	32.2
Arizona	81,000	20.8
Arkansas	112,000	26.2
California	1,888,000	33.8
Colorado	124,000	21.6
Connecticut	244,000	24.6
Delaware	36,000	21.5
Florida	201,000	13.1
Georgia	150,000	12.7
Hawaii	50,000	24.2
Idaho	32,000	19.2
Illinois	1,394,000	37.9
Indiana	522,000	34.1
Iowa	150,000	20.8
Kansas	109,000	18.8
Kentucky	187,000	25.7
Louisiana	147,000	17.1
Maine	57,000	20.3
Maryland - District of Columbia	352,000	21.8
Massachusetts	572,000	29.1
Michigan	962,000	38.9
Minnesota	339,000	33.0
Mississippi	53,000	11.6
Missouri	546,000	38.8
Montana	63,000	36.2
Nebraska	78,000	19.3
Nevada	49,000	32.8
New Hampshire	44,000	20.9
New Jersey	814,000	37.7
New Mexico	34,000	13.4
New York	2,507,000	39.4
North Carolina	89,000	6.7
North Dakota	21,000	14.8
Ohio	1,148,000	35.7

TABLE 9 (CONTINUED)

State	Total Membership	Membership as a Percent of Employees in Nonagricultural Establishments
Oklahoma	86,000	13.7
Oregon	198,000	34.8
Pennsylvania	1,450,000	38.4
Rhode Island	89,000	29.6
South Carolina	52,000	7.9
South Dakota	14,000	9.5
Tennessee	184,000	17.6
Texas	370,000	13.3
Utah	58,000	19.7
Vermont	22,000	19.3
Virginia	179,000	15.5
Washington	367,000	43.1
West Virginia	192,000	42.0
Wisconsin	400,000	31.5
Wyoming	19,000	19.2
Membership not Classifiable	181,000	--

Source: U. S. Department of Labor, Bureau of Labor Statistics, "Union Membership by State," News from the U. S. Department of Labor, USDL-6979, (January, 1966), pp. 2-3.

Although the BLS followed its usual procedure in evaluating the results of questionnaires, the membership by state was allocated on the basis of per capita tax payments from the local to the national union for all unions which were unable to provide a state-by-state breakdown of their membership.

The membership estimates for Oklahoma and particularly for Arkansas were substantially different from the estimates derived from the L-M Reports for 1963 (86 versus 74 thousand for Oklahoma and 112

versus 59 thousand for Arkansas) although the two estimates appeared to be reasonably comparable for Louisiana (147 versus 144 thousand).

The figures for Arkansas are particularly bothersome since the BLS estimated Arkansas to have approximately twice as many members in 1964 as the data from the L-M Reports showed for 1963. It seems highly improbable that union membership in Arkansas could have increased by 53 thousand in one year. For that matter, the BLS itself seems to show quite a discrepancy in its own data for Arkansas between 1964 and 1962. Table 8 indicates that the BLS had estimated Arkansas to have 72,000 members in 1962, and the discrepancy between the 1962 and the 1964 estimates was 40,000 members. The data for 1962 were not estimates of total union membership, but only of total AFL-CIO union members. The 1964 data included only 7,550 members of non-affiliated unions, leaving a discrepancy of 32,450 in the BLS figures. It seems unlikely that union membership in Arkansas would increase by 32,450 persons in two years. A yearly growth rate of approximately 20 percent is quite substantial, especially since the national union membership was declining during the same time period.

The 1964 BLS estimate shows Arkansas to have 26.2 percent of its nonagricultural employees organized. This figure indicates that Arkansas is a much more highly organized state than either Louisiana (17.1 percent) or Oklahoma (13.7 percent). As a matter of fact, if the BLS is correct, Arkansas is only slightly below the national average (29.5 percent) and ranks with such states as Iowa (20.8), Connecticut (24.6), Kentucky (25.7), and Hawaii (24.2). Furthermore, the percentage of non-agricultural employees organized in Arkansas is only slightly below such states as Massachusetts (29.1) and Rhode Island (29.6).

It appears, therefore, that the BLS' 1964 estimates may be questioned on several grounds. It seems to be rather illogical that Arkansas, which is the only right-to-work state in the three-state area, would have a much higher percentage of its non-agricultural workers organized. This is especially true since Arkansas is not as highly industrialized, nor does it have such large industry, as the states which have a comparable percentage of organized non-agricultural employees.

Furthermore, the 1963 L-M Reports estimates and the BLS' data are substantially different. If the L-M data are correct, then the BLS data are obviously incorrect. At this stage of the study, however, the grounds for rejecting the BLS' estimates on the basis of the L-M Reports are insufficient. This is especially true since the two methods provide different coverage; and it is even possible that the L-M method is faulty.

One major difference in coverage is the fact that the unions of government employees are not required to report to the Bureau of Labor-Management Reports, but they are included in the BLS' estimates. Unfortunately, the BLS can not provide detailed breakdowns of their data since they promise in their questionnaire that all union reports will be kept confidential. For this reason, it is impossible to determine how many government union members live in Arkansas according to the BLS. The BLS did, however, provide a list of the unions having members in Arkansas (see Table 10). As might be expected, governmental unions are the only unions which are not included in the data from the L-M Reports. But it is unlikely that the unions of governmental employees would

TABLE 10

UNIONS IN ARKANSAS

AFL-CIO

Clothing Workers, Amalgamated
Government Employees
Glass, Flint
Engineers, Technical
Transit
Aluminum Workers
Brewery
Barbers
Locomotive Firemen
Bricklayers
Maintenance of Way
Painters
Railroad Signalmen
Railway and Steamship Clerks
Railroad Trainmen
Coopers
Carpenters
Cement
Communication Workers
Glass Bottle
Hotel and Restaurant
Firefighters
Machinists
Stage
Electrical
Chemical
Garment, Ladies
Printing Pressmen
Stereotypers
Elevator
Woodworkers
Lithographers and Photoengravers
Marine Engineers
Marble
Letter Carriers
Office
Plumbing
Pulp, Sulphite
Retail Clerks
Roofers
Railway Patrolmen
Railway Supervisors
Stone and Allied
State, County
Autoworkers
Brick and Clay
Glass and Ceramic
Upholsterers
Papermakers and Paperworkers
Rubber
Shoe, United
Glass Cutters
Lathers
Actors
Bakery
Musicians
Industrial, Allied
Railway Carmen
Iron Workers
Shoe, Boot
Transportation-Communication
Laborers
Firemen and Oilers
Molders
Typographical
Engineers, Operating
Meatcutters
Oil, Chemical
Plasterers
Railroad Yardmasters
Sheet Metal
Switchmen
Train Dispatchers
Furniture
Garment, United
Steelworkers

Independent

ASCS Employees
Mailers
Government Employees
Internal Revenue

TABLE 10 (CONTINUED)

Independent

Postal Alliance
Postal Supervisors
Postmasters Association
Postmasters League
Postal Union, National
Post Office and General Service
Letter Carriers, Rural
Teamsters
Locomotive Engineers
Railway Conductors
Mine Workers
Mine Workers, District 50

Source: Unpublished data from the U. S. Department of Labor, Bureau of Labor Statistics.

account for the wide discrepancy in membership statistics, for most of these unions are not affiliated with the AFL-CIO, and the total of all non-affiliates was only 7,550 members. The only affiliated governmental unions were the State, County Workers, the Letter Carriers, and the Firefighters' union.

Another major difference in coverage in the two estimates stems from the exclusion of West Memphis from the L-M estimates as well as the treatment of Texarkana, both of which are discussed above. But the total civilian labor force in West Memphis in 1960 was 2,332, so this exclusion should not account for the difference.[54]

The most important point for consideration, however, is that the L-M method may be faulty. Specifically, the local union's

[54]U. S. Bureau of the Census, U. S. Census of the Population: 1960, General Social and Economic Characteristics, Arkansas, (Washington: U. S. Government Printing Office, 1961), p. 5-182.

membership derived from financial data does not provide an accurate measure of the local's membership. It is imperative, therefore, to investigate this proposition before making any conclusion relating to the relative merits of the different estimates. This investigation was performed by sending a questionnaire to locals throughout the three-state area.

The Questionnaire

Membership information.--The most accurate method of evaluating the accuracy of the L-M Reports data seemed to be to ask the various locals in the three-state area how many members they had in 1960, 1961, 1962, and 1963. Although, as discussed above, some reasons for inflating their answers might remain, the possibility of bias due to the data traveling from local to national is eliminated. Furthermore, the locals were assured that their specific response would be kept confidential. It was hoped that keeping their responses confidential would decrease bias, for local officials would not think that they would have to inflate their responses in order to protect their locals power position.

The addresses of the officers of the local unions were available from the L-M Reports, and the complete listing of the locals is available in the Register of Reporting Labor Organizations.[55] Thus, the location of local officers provided no problem, and the problem of obtaining a random sample of the locals was easily solved. A ten percent sample of the local unions in the three-state area was to be taken, and

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[55]U. S. Department of Labor, loc. cit.

every tenth local listed in the Register was queried about its membership.

The locals were sent a letter explaining the purpose of the study and a self-addressed post card which contained the following questions:

1. To the best of your recollection, how many members did your local have during the following years? (The years listed were 1960, 1961, 1962, and 1963, and the respondees were asked to break down the membership into members and apprentices.)
2. How large is the geographical jurisdiction of your local (what counties are included)?
3. Approximately what percentage of your local's members live in the town in which your local is headquartered?
4. Do you wish for this information to be kept confidential?

Unfortunately, the response to the query was incomplete. After a follow-up letter was sent, the total response to the questionnaire was only 40 percent of the locals in the sample. In other words, instead of a ten percent random sample of the locals in the area, the questionnaire resulted in a four percent sample in which the degree of randomness was open to question. After a careful examination of the responses and non-responses to the questionnaire, however, it appears that, at least in relation to the sizes of the locals, the responses provide a random sample.

The total union membership in 1963, for the three-state area, for example, was estimated to be 276,701 as shown in Table 5, but the total membership of the responding locals (estimated by the L-M method) was 10,726. The exact percentage of the total locals responding to the query was 4.07 percent, which, when multiplied by the total estimated membership, is equal to 11,142.7. The difference between these figures, 10,726 and 11,142.3, which is approximately 300 persons, would seem to

indicate that the responses came from only slightly smaller locals than the average in the three-state area.

The reason for the responding local being slightly smaller on average than the other locals in the area, furthermore, may be at least partially explained. The Longshoremens' Union (ILA) was estimated to have rather large locals from the L-M Reports data, but none of its locals responded to the questionnaire. Moreover, it is quite unlikely that the locals of the ILA will respond to further letters, since they were written on numerous other occasions for information and did not respond. Apparently they are disinterested in divulging membership information.

Several of the IBEW locals, on the other hand, noted in their response that they were not allowed by the national union to give out membership information unless specifically authorized. One or two of the locals responded anyway, but it was subsequently decided to exclude their response from the sample since the IBEW membership was not estimated by the L-M method.[56] The IBEW also characteristically has large locals, so that the combination of non-responses from the ILA and the IBEW locals should account in part for the fact that the locals sampled were approximately 5 persons per local smaller on the average than the average size of all locals in the three-state area.

The results of the membership query in comparison to the membership estimated by the L-M Reports are shown in Table 11. The differences between the totals are smaller in 1962 and 1963 than in 1960 and 1961, but this is not particularly surprising, for the memory of the

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[56]See p. 9, above.

TABLE 11

A COMPARISON OF THE RESPONSES TO THE QUESTIONNAIRE AND THE UNION MEMBERSHIP ESTIMATED BY THE L-M METHOD FOR THE TIME PERIOD, 1960-1963, AND FOR THE THREE-STATE AREA

Membership Responses				Membership Estimated by the Use of the L-M Reports			
1960	1961	1962	1963	1960	1961	1962	1963
34	34	35	32	31	44	38	43
542	497	460	440	734	665	615	572
5	5	5	5	7	7	7	7
109	108	107	106	102	93	97	86
20	35	52	45	0	13	49	46
145	130	179	191	244	218	179	192
28	28	31	30	25	35	27	28
15	15	15	15	16	20	21	22
140	150	159	170	186	212	174	195
137	137	135	135	13	23	20	16
25	25	24	24	13	14	21	23
14	13	13	12	10	11	11	11
60	60	52	65	42	39	52	40
40	40	39	42	51	47	39	40
10	10	10	10	5	5	4	6
57	60	53	60	52	51	49	50
153	156	156	159	118	142	167	152
409	443	446	458	290	336	399	444
350	345	338	330	368	357	350	345
101	212	192	148	130	131	199	154
160	167	161	162	182	182	139	136
260	260	260	260	146	135	223	216
51	47	42	38	42	40	38	36
49	49	49	35	63	24	87	77
25	25	20	15	24	25	25	25
240	240	240	240	225	234	236	204
32	38	43	46	29	30	25	29
350	375	400	450	298	366	446	360
55	81	78	80	41	59	103	108
17	16	17	17	26	28	25	28
35	35	31	30	35	41	31	29
275	285	283	265	118	212	226	224
20	34	30	28	20	28	29	30
900	905	874	880	954	933	901	901
339	330	461	574	148	317	455	547
20	18	18	16	15	13	13	13

TABLE 11 (CONTINUED)

Membership Responses				Membership Estimated by the Use of the L-M Reports			
1960	1961	1962	1963	1960	1961	1962	1963
34	35	29	27	13	12	12	11
33	42	51	51	30	30	35	43
1,000	1,250	900	1,025	1,081	944	964	847
125	125	125	125	146	146	152	155
140	140	140	140	135	155	148	153
182	182	182	182	167	183	181	177
75	75	30	30	70	41	23	21
55	53	48	48	58	49	49	41
75	79	75	77	0	0	69	0
9	9	9	9	10	10	10	10
71	71	69	61	51	73	95	116
18	18	20	20	21	21	21	21
7	7	7	7	5	5	6	9
650	650	650	650	584	583	576	762
1,300	1,320	1,332	1,370	1,502	1,289	1,368	1,413
35	35	35	35	21	19	29	18
450	350	400	450	260	280	414	541
70	20	15	15	13	17	22	8
160	148	128	100	124	104	136	106
82	82	80	78	80	90	98	98
125	125	120	120	86	88	81	78
500	550	550	550	615	570	561	557
22	22	22	22	15	40	52	46
54	54	52	52	58	56	58	60
10,494	10,846	10,577	10,857	9,949	9,935	10,680	10,726

Sources: The membership response data were taken from the cards sent in reply to the four percent sample of the three-state area, and the estimated membership data were derived from the L-M Reports data.

respondee is likely to become less accurate as the span of recall increases. The validity of the L-M Reports method should therefore be judged by the more current years of the four year period rather than the earlier years.

The difference in the estimates taken by the two methods amounted to only one percent of the total reported membership in 1962 and approximately 1.5 percent in 1963. These differences are remarkably small in view of the difficulties involved in collecting data from the L-M Reports mentioned earlier (e.g., differing dues rates for apprentices as well as members on strike).

But the totals do not provide sufficient information in themselves to verify the use of the L-M Reports as a method of determining union membership. The differences in the reported membership (R_m) and the estimated membership (E_m) were calculated for each local, and the mean, standard deviation and standard error of the mean[57] were calculated for the distribution of differences (R_m-E_m). The results of these calculations are shown in Table 12.

If there were no difference between the reported and the estimated membership, the mean of the population of differences should be zero. It seemed proper, therefore, to assume that the population mean (m) was zero and to test whether there was a statistically significant difference between "m" and the mean of the sample distribution of differences ($\bar{X}$). One such standard test is the "t" test, in which $t = \frac{\bar{X} - m}{S_{\bar{X}}}$.[58] For this sample, there are 59 degrees of freedom so that

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[57]The standard error of the mean was corrected for a small population and was derived by the formula, $S_{\bar{X}} = \frac{S}{n} \cdot 1 - \frac{n}{N}$, where "S" is the sample standard deviation, "n" represents the sample size, and "N" is the population size.

[58]Although a complete response to the questionnaire was not obtained and the randomness of the sample cannot therefore be assured,

TABLE 12

THE MEAN, STANDARD DEVIATION, STANDARD ERROR OF THE MEAN, AND THE "t" VALUES FOR A DISTRIBUTION OF THE DIFFERENCES BETWEEN THE ESTIMATED AND REPORTED UNION MEMBERSHIP TAKEN FROM THE FOUR PERCENT SAMPLE OF THE THREE-STATE AREA FOR THE TIME PERIOD, 1960-1963

Year	$\bar{X}$	S	$S_{\bar{X}}$	t
1960	9.13	67.7	8.56	1.07
1961	15.27	45.0	5.69	2.68
1962	-1.70	33.68	4.26	-0.40
1963	2.18	45.10	5.70	0.38

Sources: Derived from responses to questionnaires and the L-M Reports membership estimates.

the standard "z" distribution would suffice equally well. The "z" distribution represents areas under the normal curve for different values of "z" as does the "t" distribution for values of "t" over approximately 30 degrees of freedom.

The null hypothesis would state that the only differences between $\bar{X}$ and m are caused by random disturbances. Using a 10 percent

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the sample will be assumed to be random for purposes of this analysis. This assumption is at least partly justified by the fact that the responding locals were only slightly smaller on the average than the average size of locals in the three-state area. Moreover, the "t" test is based upon a normally distributed population, and the population of differences (R_m-E_m) is not known to be normally distributed. Fortunately this is not a serious shortcoming, for the "t" test is used here for a distribution of sample means and the sample size is large enough (over 30) so that the distribution of sample means will approach normality even if the population distribution is skewed. See Paul G. Hoel, Elementary Statistics (New York: John Wiley and Sons, Inc., 1960), pp. 77-78, for a discussion of this point.

significance level, it is found that if "t" is greater than 1.64 or less than -1.64, the null hypothesis should be rejected. As may be seen from Table 12, the hypothesis may be accepted for the years, 1960, 1962, and 1963; but it must be rejected for 1961.

In other words, the conclusion has been reached that there is no significant difference between the estimated and the reported union membership for 1960, 1962, and 1963, but that there is a significant difference in the membership derived from the two methods in 1961. As was noted above, however, if the 1962 and 1963 estimates by the L-M Reports method seem to be validated, it would be reasonable to accept them in total, for the responses from the earlier years are likely to be affected by memory factors on the part of the respondee. Moreover, it was obvious from the responses that some of the respondees were providing educated guesses of their membership in the various years. An outstanding example of this fact is that two different locals which responded to the first letter of inquiry were inadvertantly included in the mailing list of the follow-up letter. The local officials responded to both letters and mailed both reply cards, but for both locals the membership data were not the same on the second card as they were on the first card!

If the questionnaire responses constitute a random sample, it may be concluded that the financial reports method does provide reasonably accurate membership data for locals within the three-state area. The proposition stated above--that the local union's membership derived from financial data shown in the L-M Reports does not provide an accurate measure of the membership of the local--may be rejected and it may be

concluded that the reason for the discrepancy between the BLS' data and the L-M Reports data is not due to faulty estimates of local union membership by the latter method.

The results of the questionnaire relating to location problems.--Each local official questioned was asked to state the geographical jurisdiction and the percentage of persons who lived in the town in which the local was headquartered. The results of this question are not important to the problem of the discrepancy between the L-M and the BLS' membership estimates, but they are quite important in determining the extent to which the stated local location in the L-M Reports is an adequate measure of the union membership in that geographical area. Since this is significant for subsequent chapters, a slight digression on the response to the location query is appropriate at this point.

The results of the sample relating to the percentage of members living in the city or town in which the local is headquartered were modified by multiplying the reported membership by the percentage living in the headquarters city in order to estimate the number of members living in that city. The results were then summed, and Table 13 shows these totals in comparison to the total reported membership.

It should be noted that the total reported membership in Table 13 differs from that in Table 11, but the difference is explained by the fact that the IBEW locals which were excluded from Table 11 are included in Table 13.[59]

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[59]The justification of the exclusion of IBEW locals from Table 11 is discussed above.

TABLE 13

NUMBER OF UNION MEMBERS FROM THE SAMPLED LOCALS LIVING IN THE CITY IN WHICH THEIR UNION IS HEADQUARTERED, NUMBER OF MEMBERS OF THE LOCALS, AND THE PERCENTAGE OF TOTAL MEMBERSHIP LIVING IN THE CITY OF HEADQUARTERS, FOR THE YEARS, 1960, 1961, 1962 AND 1963

Year	Union Members Living in City of Headquarters	Total Reported Membership	Percent of Total
1960	8,805	12,610	69.8
1961	9,307	13,081	71.1
1962	9,324	13,252	70.4
1963	10,010	14,007	71.5

Source: Derived from responses to the questionnaire.

The results of the sample with respect to location problems are not encouraging. Since Table 13 shows that only approximately 70 percent of the total sample membership lived in the city in which the local was headquartered, any use of city union membership data must be significantly qualified.

Conclusions

It has been suggested that the L-M Reports method of estimating the membership of local unions in the three-state area appears to be reasonably accurate. Thus the time and expense involved in sending questionnaires to all of the locals in the area in order to approach complete accuracy is not justified by the marginal addition to accuracy. On the other hand, the substantial discrepancy between the L-M Reports

data for 1963 and the BLS' 1964 estimate for Arkansas remains unreconciled.

The discrepancy may be explained by one or more of the following:

1. The Directory of Reporting Labor Organizations may not provide a complete listing of all locals in the area.
2. Union members may belong to locals headquartered in other states.
3. Unions of government employees do not have to file the L-M reports.
4. Border cities such as West Memphis and Texarkana lead to an underestimate of union membership in the state of Arkansas.
5. The Bureau of Labor Statistics erred in their 1964 Arkansas estimate.

It is doubtful, though possible, that a substantial number of local unions do not make financial reports to the Bureau of Labor-Management Reports. It is especially doubtful that they have never made any report at all to the Bureau, for if they had, they would be included in the data from the L-M Reports for at least one year. Moreover, the penalties for failure to report would seem to greatly outweigh any possible reason for failing to file.

It is unfortunately a limitation of the L-M Report method that if a person belongs to a local which is headquartered in another state, he is counted as a union member in that state. This problem is particularly relevant for Arkansas, since two of the state's larger cities, West Memphis and Texarkana, are located on the state border. Indeed, West Memphis was excluded entirely from the L-M Reports data on the ground that it would be impossible to distinguish which members lived in Arkansas and which lived in Tennessee.

And it is also true that government unions are excluded from reporting to the Bureau of Labor-Management Reports by the coverage of

the Landrum-Griffin Act. This fact would also lead to an understatement of union members as derived from the Reports, but it was pointed out that the governmental employees unions are principally independents and that the total of all independent unions in Arkansas was only 7,550 persons in 1964, as calculated by the BLS. This total of independent unions, moreover, includes such large unions as the Teamsters and the Mine Workers.

The problem caused by the discrepancy between the BLS' estimates and the L-M Reports estimates, therefore, is not one of direction. It is to be expected that the L-M data will understate the Arkansas membership to some extent, but the magnitude of the discrepancy is startling.

Because of this large discrepancy, and based upon the facts that it seems to be unlikely on a priori grounds that Arkansas should have 26.2 percent of its nonagricultural labor force organized and that the results of the sample of locals seem to verify the estimates of local membership taken from the L-M Reports, it should be permissable to conclude that the Bureau of Labor Statistics has committed a substantial error in making its estimate of Arkansas union membership in 1964.

On the other hand, the membership estimates for Louisiana and Oklahoma appear to be within the realm of reason. In Louisiana, the discrepancy of 3,500 out of 145,000 total members could easily be explained by natural growth from 1963 to 1964. In Oklahoma, the discrepancy of approximately 8,300 out of 74,000 total members is more significant. It is perhaps likely, however, that union membership grew substantially during the 1964 right-to-work campaign, so an increase of

8,300 persons may not be implausible. Finally, in view of the admitted probability of some understatement in the estimates taken from the L-M Reports, there seems to be little ground for the contention that the BLS erred in its 1964 Oklahoma union membership estimate.

Perhaps the state membership figures which are most comparable to the L-M Reports estimates are those prepared by Leo Troy in his 1953 study. These estimates are at least the most comparable in estimation procedure and membership definition, and they do appear to correspond more closely to the new estimates than those made by the BLS. For example, Troy stated that in 1953, Arkansas had 67,900 union members, Louisiana had 135,000, and Oklahoma had 86,700; whereas according to the new L-M data for 1960, Arkansas had 54,652, Louisiana 146,616, and Oklahoma had 71,198. Given the differences in time--seven years--the differences in membership estimates between the two studies appear to be at least plausible.

Finally, it was found that any estimates of union membership by city would have to be limited by the fact that only approximately 70 percent of the union members in the sample lived in the town or city in which their local union was headquartered.

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CHAPTER 4

A DESCRIPTION OF UNION MEMBERSHIP IN THE THREE-STATE AREA BY GEOGRAPHICAL SUB-DIVISION

In this chapter the state-by-state union membership estimates presented in Chapter 3 are disaggregated and shown by city and county. The city statistics are presented in the first section of the chapter,[60] and the second section will include some analysis of them. But this analysis will be restricted to finding the relationship of union membership by city to city population in 1960 and union membership by city to "adjusted" civilian labor force in 1960. The third section of the chapter contains county membership figures and an analysis of the relationship of unionization to covered employment for each year of the four year time period.

Union Membership by City

City union membership in Arkansas.--Table 14 shows union membership by city for the largest twenty-one cities in Arkansas. It also summarizes membership data for the remaining cities. Detailed membership figures for these cities are shown in Appendix II. For reasons

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[60]It should be recalled at the outset that union membership data by city actually include all of those members who belong to a local union which is headquartered in that city. The sample results discussed in Chapter 3, moreover, indicate that only approximately 70 percent of the membership live in the city of headquarters.

TABLE 14

UNION MEMBERSHIP BY CITY, 1960-1963, FOR SELECTED CITIES AND OTHER CITIES, POPULATION IN 1960 AND PERCENT OF POPULATION BELONGING TO UNIONS IN ARKANSAS, LOUISIANA AND OKLAHOMA

City	Union Membership				Population in 1960	Percent of Population Belonging to Unions in 1960
	1960	1961	1962	1963		
			(Arkansas, 21 Cities)			
Little Rock-North Little Rock	16,822	18,627	17,380	16,801	165,845	9.1
Ft. Smith	8,289	8,729	9,311	10,493	59,743	15.6
Pine Bluff	4,078	4,141	4,143	4,418	46,716	9.3
Hot Springs	1,337	1,339	1,228	1,268	28,337	4.7
El Dorado	3,366	3,409	3,376	3,271	25,292	13.3
Jonesboro	2,204	2,157	2,221	2,073	21,418	10.3
Blytheville	355	384	501	621	20,797	1.7
Fayetteville	182	210	319	409	20,274	0.9
Helena-West Helena	957	975	1,028	903	19,885	4.8
Camden	1,928	1,980	1,985	1,963	15,823	12.2
Jacksonville	353	378	498	515	14,488	2.4
Magnolia	70	68	72	82	10,651	0.7
Benton	2,107	1,858	1,877	1,938	10,399	20.3
Springdale	30	30	35	43	10,076	0.3
Paragould	343	342	315	283	9,947	3.4
Malvern	485	445	453	383	9,566	5.1
Russelville	497	483	600	619	8,921	5.6
Stuttgart	53	49	47	47	9,661	0.5
Arkadelphia	41	202	241	194	8,069	0.5
Newport	539	518	525	487	7,007	7.7
Crossett	1,874	2,091	2,009	2,819	5,625	--

TABLE 14 (CONTINUED)

City	Union Membership 1960	1961	1962	1963	Population in 1960	Percent of Population Belonging to Unions in 1960
Other cities (smaller)[a]	7,799	7,724	8,324	8,118	--	--
			(Louisiana, 24 Cities)			
New Orleans	68,292	61,624	61,995	59,805	845,237	8.1
Shreveport	14,833	15,000	15,088	15,143	208,583	7.2
Baton Rouge	16,712	16,288	16,598	18,499	193,485	8.7
Lake Charles	11,182	11,779	13,170	10,814	89,115	12.5
Monroe	5,496	5,762	5,382	5,382	80,546	7.1
Lafayette	3,260	3,476	3,668	2,816	40,400	8.4
Alexandria	5,313	5,034	4,558	3,781	40,279	13.2
New Iberia	370	324	284	279	29,062	1.3
Houma	447	497	452	492	22,561	2.0
Bogalusa	3,077	3,030	2,792	3,657	21,423	14.4
Opelousas	481	440	383	378	17,417	2.8
Crowley	69	61	50	42	15,617	0.4
Bastrop	1,582	1,634	1,810	1,852	15,193	10.4
Ruston	247	222	224	186	13,991	1.8
Natchitoches	140	111	128	158	13,924	1.0
Morgan City	284	252	231	229	13,540	2.1
	463	384	692	1,125	12,785	3.6
Eunice	45	37	27	25	11,326	0.4
Sulphur	23	26	25	25	11,429	0.2
Hammond	110	114	107	94	10,563	1.0

TABLE 14 (CONTINUED)

City	Union Membership 1960	1961	1962	1963	Population in 1960	Percent of Population Belonging to Unions in 1960
Hodge, North Hodge, Jonesboro	1,588	1,668	1,813	2,050	5,406	--
Winnfield	230	234	184	169	7,022	--
Dequincy	341	326	382	277	3,928	--
Springhill	1,085	1,156	1,194	1,263	6,437	--
Other cities[a]	9,815	9,656	9,562	9,851	--	--
			(Oklahoma, 23 Cities)			
Oklahoma City[b]	17,226	17,854	17,410	17,972	397,705	4.3
Tulsa	29,657	28,676	29,558	31,056	261,685	9.9
Lawton	843	1,073	1,004	1,097	61,697	1.4
Muskogee	3,455	3,715	3,776	3,466	38,059	9.1
Enid	953	1,231	1,238	1,258	38,859	2.3
Norman	871	570	529	492	33,412	2.6
Bartlesville	1,326	1,299	1,579	2,289	27,803	4.8
Ponca City	1,728	2,118	2,392	2,275	24,411	7.1
Shawnee	1,109	1,022	981	979	24,326	4.6
Stillwater	220	226	284	328	23,965	0.9
Altus	149	238	274	126	21,225	0.7
Ardmore	125	126	112	112	20,184	0.6
Duncan	860	882	953	804	20,009	4.3
McAlister	157	138	155	218	17,419	0.9
Okmulgee	404	354	393	312	15,951	2.5
Sapulpa	559	430	441	492	14,282	3.9
Chickasha	149	155	135	147	14,866	1.0

TABLE 14 (CONTINUED)

City	Union Membership				Population in 1960	Percent of Population Belonging to Unions in 1960
	1960	1961	1962	1963		
Ada	315	311	313	316	14,347	2.2
Miami	1,677	1,533	1,717	1,861	12,869	13.0
Seminole	192	192	191	194	11,464	1.7
El Reno	1,477	772	818	778	11,015	13.4
Durant	71	74	77	79	10,467	0.7
Blackwell	1,254	1,426	1,073	1,048	9,588	13.1
Other towns and cities[a]	6,422	6,042	5,512	5,939	--	--

[a]For a breakdown of other cities, see Appendix II.

[b]Includes Midwest City, Del City, the Village and Bethany.

Source: Derived from Labor-Management Reports.

cited in Chapter 3 the table excludes West Memphis due to its proximity to Memphis, Tennessee. Furthermore, cities such as Little Rock and North Little Rock, Helena and West Helena, and Crossett, West Crossett and North Crossett were combined due to their geographical proximity.

Table 14 also shows the population of each of these cities according to the 1960 Census of the Population, as well as the percentage of union members. The highest percentage of persons belonging to unions is found in Benton (twenty percent) and the lowest in Springdale (three-tenths of one percent). In general, the larger cities have a higher percentage of union members than the smaller. However, only nine percent of the Little Rock-North Little Rock residents belong to unions while 15.6 percent of the Fort Smith residents are union members.

City union membership in Louisiana.--The membership data for the twenty-four largest cities in Louisiana and summary data for all other towns in the state are included in Table 14.[61]

Due to their geographical proximity, the following cities were grouped for Table 14--New Orleans, Metaire, Gretna, Arabi, Marrero, Belle Chase, Chalmette, Kenner, Westwego, and Harahan; Shreveport and Bossier City; Baton Rouge, Port Allen and Denham; Lake Charles, Westlake and Maplewood; and Hodge, North Hodge, and Jonesboro.

The Louisiana city having the highest percentage of union members is Bogalusa (fourteen percent), and the city having the lowest is Sulphur (two-tenths of one percent).

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[61]As in the case of Arkansas, a detailed breakdown on all of the other cities in Louisiana having at least one union member is shown in Appendix II.

City union membership in Oklahoma.--Membership data for Oklahoma cities are also presented in Table 14.[62] Due to geographical proximity, again, Oklahoma City, Midwest City, Del City, The Village, Bethany and Nichols Hills are combined.

Table 14 includes the union membership in twenty-three larger cities in Oklahoma. Of these twenty-three cities El Reno has the greatest percentage of union members (13.4 percent) and Ardmore has the least (0.6 percent).

An Analysis of Union Membership by City

Union membership compared to size of city.--As might be expected, there is a significant relationship between union members and size of city. A regression analysis was made to determine whether these two variables were related in 1960, and the results of this regression are shown in Table 15.

It was found that the regression line which best fit the data for town and cities in Arkansas listed in Table 14 and Appendix II was $U_1 = -201.83 + 0.122P_1$ where U_1 = Union members in Arkansas by city or town and P_1 = population of cities and towns in Arkansas. The standard error of the estimate of this regression was 0.003 and the coefficient of determination (R^2) was 0.93. This coefficient of determination means that the degree of association between the two variables, population and union membership, was such that differences in city population could account for 93 percent of the variation in union membership.

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[62]As in the case of Arkansas and Louisiana, a detailed breakdown of all of the other cities in Oklahoma having at least one union member is shown in Appendix II.

TABLE 15

REGRESSION RESULTS FOR ARKANSAS, LOUISIANA, AND OKLAHOMA, WHERE U = a + b P, U = UNION MEMBERSHIP IN 1960 BY CITY HAVING UNION MEMBERS, AND P = POPULATION IN THAT CITY IN 1960

State	"a" Coefficient	"b" Coefficient	Coefficient of Determination (R^2)	Standard Error of the Estimate
Arkansas	-201.83	0.1022	0.93	0.003
Louisiana	-141.03	0.0811	0.99	0.001
Oklahoma	-138.69	0.0634	0.77	0.0042
Oklahoma--(without Oklahoma City)	-564.43	0.1056	0.92	0.0038

Source: Derived from Table 14 and Appendix II.

An estimate of the relationship between the two variables in Louisiana was also made and the regression equation was found to be $U_2 = -141.03 + 0.0811P_2$. This regression equation has a standard error of the estimate of 0.001 and a coefficient of determination of 0.99, which again may be interpreted to mean that differences in city population in Louisiana could account for 99 percent of the differences in union membership by city.

The association between Oklahoma union membership and city population can be shown by the regression equation, $U_3 = -138.7 + 0.063P_3$, which had a coefficient of determination of 0.77 and a standard error of the estimate of 0.0036. Due to the fact that the coefficient of determination in Oklahoma was considerably lower than that of either

Arkansas or Louisiana--0.77 as opposed to over 0.90, the basic figures used for the Oklahoma regression were re-examined. It was found that if Oklahoma City were excluded from the regression analysis, the coefficient of determination would increase from 0.77 to 0.92, a significant jump. This increase was due to the fact that Oklahoma City had a relatively small percentage unionized but was weighted heavily in the regression analysis due to its large size.

As mentioned before, it is to be expected that the number of union members and population would be closely correlated. It might be more interesting to test the hypothesis that there is a significant relationship between the <u>percentage</u> of union members in a city and the size of the city. If this hypothesis can be accepted, it should follow that there is some intrinsic difference (or differences) in cities due to size which might help to explain differences in union membership per capita. In other words, there might be some intrinsic difference in industrial composition of larger and smaller cities which would explain the differences in percentage of persons unionized. It is quite plausible to assume, for example, that larger cities have a greater percentage of industrial employees than smaller cities. If, on the other hand, the hypothesis cannot be accepted, it cannot be concluded that there is an intrinsic difference (such as industrial composition) in the size of cities which leads to a difference in the number of union members in the city.

After regressions were performed for Arkansas, Louisiana and Oklahoma to measure the degree of association between the percentage of the city population belonging to unions (U/P) and the city population

(P), it was found that the coefficients of determination were 0.0036, 0.001, and 0.005 for Arkansas, Louisiana and Oklahoma respectively. These coefficients are not significantly different from zero, thus population differences explain practically none of the differences in percentage of unionization. It could be expected that random disturbances would explain equally as much change in the percentage of union membership by city. Therefore, the hypothesis that there is a significant relationship between the percentage of union members in a city and the size of the city must be rejected.

The number of union members in relation to the size of city, however, does seem to differ from state to state. Using the test described in Steel and Torre, Principles and Procedures of Statistics,[63] an "F" test was performed in order to determine whether the regression coefficients (b values) were significantly different. When Arkansas was compared to Louisiana, the test yielded an "F" of 11.025 with one degree of freedom in the numerator and 146 in the denominator. It can therefore be concluded that there is a significant difference between Arkansas and Louisiana in the relationship of city population to union membership.

The tests between Arkansas and Oklahoma and Louisiana and Oklahoma yielded "F" values of 22.3 and 23.7, respectively. Both of these values are so high that the probability that the differences between the regression coefficients were due to chance is considerably less than 0.0001. Thus it may be concluded that the relationship of

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[63]Steel and Torrie, Principles and Procedures of Statistics (New York: McGraw-Hill Book Company, Inc., 1960), pp. 319-20. See Appendix III for a discussion of this test.

city population to union membership in Oklahoma is significantly different from that in either Arkansas or Louisiana.

As noted before, excluding Oklahoma City from the regression analysis increases the coefficient of determination from 0.82 to 0.92. The regression equation which resulted from this exclusion is $U = -564.4 + 0.1056P$ and the standard error of the estimate is 0.004. Using the same test for significant difference of the "b" values, the "F" value for the test of the regression coefficients in Oklahoma with and without Oklahoma City is 40.5, which indicates that the difference between the two coefficients is significant. In other words, after accounting for population differences between cities, there is something about union membership in Oklahoma City which is different from that in other towns of the state. As a matter of fact, after Oklahoma City was excluded from the data and the "F" test was performed for Oklahoma versus Arkansas, the "F" value was 7.95 as opposed to 22.3 when Oklahoma City was included.

After taking into account the appropriate degrees of freedom for the "F" test, the probability of achieving an "F" of 6.85 or larger is 0.01, and the probability of achieving an "F" of 8.18 or larger is 0.005. Whether it might be concluded that the difference in "b" values for Oklahoma and Arkansas is significant depends upon the level of significance that one chose before the test, and it is true that the null hypothesis would be rejected at the one percent level of significance. The exclusion of Oklahoma City from the Oklahoma data, however, substantially increases the probability that the Arkansas and Oklahoma "b" coefficients are not significantly different.

Union membership compared to the "Adjusted Civilian Labor Force.--The preceding analysis of union membership versus city population included all the cities listed in Table 1, as well as those cities relegated to Appendix II. However, there were some cities in each state having no locals, and these cities were not included in the analysis. It might be more meaningful to find the relationship between all cities and some more relevant independent variable than total city population.

The 1960 Census of the Population lists the civilian labor force for all cities and towns having over 2,500 persons. Table 16

TABLE 16

UNION MEMBERSHIP, NUMBER IN THE CIVILIAN LABOR FORCE, THOSE EMPLOYED IN AGRICULTURE, FORESTRY, FISHERIES, AND PRIVATE HOUSEHOLDS AND THE NET TOTAL FOR ALL TOWNS HAVING 2,500 OR MORE PERSONS IN ARKANSAS, LOUISIANA AND OKLAHOMA IN 1960

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry and Fisheries	Private Households	Net Total
		(Arkansas, 60 Towns)			
Arkadelphia	41	3,058	72	203	2,783
Ashdown	36	946	40	78	828
Batesville	281	2,300	56	88	2,156
Bentonville	0	1,465	39	40	1,386
Booneville	46	934	46	10	478
Brinkley	13	1,711	145	222	1,344
Clarksville	43	1,483	36	50	1,397
Conway	346	3,830	69	133	3,628
Crossett	1,874	2,148	31	178	1,939
DeQueen	0	1,136	5	30	1,101
Dermott	0	1,205	134	82	989
DeWitt	0	1,239	77	115	1,047
Dumas	0	1,285	173	141	971
England	0	770	112	37	621

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry and Fisheries	Private Households	Net Total
		(Arkansas, 60 Towns)			
Eudora	0	949	133	95	721
Fordyce	362	1,378	26	93	1,259
Hamburg	0	1,039	35	95	909
Harrison	569	2,554	36	48	2,470
Hope	0	3,225	154	276	2,795
Lake Village	39	1,204	92	96	1,016
McGehee	349	1,639	92	108	1,439
Malvern	485	3,678	20	218	3,440
Marianna	0	2,015	203	247	1,565
Marked Tree	0	1,106	77	71	958
Mena	44	1,703	28	36	1,639
Monticello	281	1,653	56	92	1,505
Morrilton	72	2,206	80	85	2,041
Newport	568	2,832	128	222	2,682
Osceola	0	2,406	161	234	2,011
Paragould	343	4,029	109	143	3,777
Paris	71	1,033	58	26	949
Piggott	356	1,062	67	55	940
Pocahontas	267	1,298	35	35	1,228
Prescott	10	1,368	39	128	1,201
Rogers	0	2,262	59	76	2,127
Russellville	497	3,503	89	137	3,277
Searcy	395	3,036	52	111	2,873
Siloam Springs	0	1,435	27	36	1,372
Stamps	51	898	12	125	761
Stuttgart	53	3,838	307	236	3,295
Trumann	0	1,829	94	17	1,718
Walnut Ridge	0	1,254	50	42	1,162
Warren	966	2,484	39	141	2,304
Wynne	0	1,998	138	184	1,676
Nashville	--	1,246	62	39	1,145
Benton	2,107	3,873	13	130	3,730
Blytheville	355	6,819	309	561	5,949
Camden	1,928	5,939	56	571	5,312
El Dorado	3,366	10,302	64	1,016	9,222
Fayetteville	182	7,874	153	261	7,460
Forrest City	--	3,754	226	410	3,118

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry and Fisheries	Private Households	Net Total
Ft. Smith	8,289	20,652	160	966	21,909
Helena (West H.)	957	7,643	203	801	6,639
Hot Springs	1,337	10,544	107	360	10,077
Jacksonville	353	2,087	18	115	1,954
Jonesboro	2,204	8,674	227	486	7,961
Little Rock (North Little Rock)	16,822	68,032	328	3,234	64,470
Magnolia	70	4,588	111	362	4,115
Pine Bluff	4,078	17,549	212	1,471	15,866
Springdale	30	3,948	220	109	3,619
	(Louisiana, 78 Towns)				
Abbeville	0	3,574	84	267	3,223
Bastrop	1,582	4,890	94	408	4,388
Baton Rouge	16,772	59,018	334	3,689	54,995
Bogalusa	3,077	7,265	170	559	6,536
Eunice	45	3,597	78	261	3,258
Jennings	0	4,024	77	278	3,669
Minden	463	4,804	75	501	4,228
Natchitoches	140	4,883	170	485	4,228
New Orleans	68,629	237,064	1,048	10,727	225,289
Opelousas	481	5,905	66	567	5,272
Sulphur	23	3,881	41	128	3,712
Thibodaux	0	4,491	28	315	4,148
Amite City	71	1,213	20	108	1,085
Arcadia	0	901	17	90	794
Baker	17	1,496	--	29	1,467
Bunkie	0	1,625	83	138	1,404
Buras-Triumph	0	1,630	164	25	1,441
Church Point	19	1,160	68	102	990
Covington	0	2,456	52	239	2,165
Delhi	0	835	25	80	730
DeQuincy	341	1,313	14	65	1,234
De Ridder	146	2,186	22	95	2,069
Donaldsonville	58	1,901	53	183	1,665
Farmerville	0	879	13	105	761
Ferriday	0	1,542	21	183	1,338
Franklin	172	2,918	47	186	2,685
Franklinton	0	1,077	--	89	988
Golden Meadow	0	938	62	--	876

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry, and Fisheries	Private Households	Net Total
Gonzales	19	1,033	4	80	949
Harahan	0	3,235	15	24	3,196
Haynesville	0	1,144	21	108	1,015
Homer	0	1,635	41	189	1,405
Jonesboro	951	1,550	19	140	1,391
Kaplan	0	1,845	93	197	1,555
Kentwood	0	840	27	89	724
Lake Arthur	0	1,155	95	97	963
Lake Providence	0	1,778	125	204	1,449
La Place	103	1,052	80	59	913
La Rose	0	892	34	20	838
Leesville	57	1,310	37	83	1,190
Lutcher	221	930	15	43	872
Mamou	0	847	43	65	739
Mansfield	0	2,197	57	189	1,951
Many	0	1,155	35	124	996
Marksville	0	1,289	76	136	1,077
New Roads	0	1,198	22	113	1,063
Norco	954	1,450	--	59	1,391
Oakdale	457	2,062	28	133	1,901
Plaquemines	43	2,562	20	129	2,413
Port Sulphur	0	1,005	13	36	956
Raceland	357	1,198	93	28	1,077
Rayville	0	1,280	88	105	1,087
Reserve	616	1,650	59	76	1,515
Samtown	0	1,176	34	251	891
Slidell	0	2,275	9	126	2,140
Spring Hill	1,085	2,390	4	155	2,231
Tallulah	221	2,938	145	257	2,536
Vidalia	203	1,373	19	79	1,275
Ville Platte	166	2,273	31	151	2,091
Vinton	0	912	51	51	810
Vivian	0	868	5	26	837
Welsh	0	1,128	48	79	1,001
Winnfield	0	2,302	37	160	2,105
Winnsboro	230	1,618	59	153	1,406
Zachary	33	1,120	13	136	971
New Orleans (total)	68,629	--	--	--	252,253
Urbanized area		--	--	--	299,077

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry, and Fisheries	Private Households	Net Total
Baton Rouge (total)	16,772	--	--	--	58,500
Urbanized area		--	--	--	67,590
Shreveport	15,060	--	--	--	69,666
Urbanized area		--	--	--	70,482
Alexandria	5,313	--	--	--	17,848
Lake Charles	11,182	--	--	--	26,317
Urbanized area		--	--	--	27,716
Monroe	5,734	--	--	--	22,433
Lafayette	3,384	--	--	--	16,985
Hammond-Ponchatoula	110	--	--	--	4,617
Houma-Bayon Cave-Daigleville	447	--	--	--	9,768
Crowly-Rayne	69	--	--	--	6,846
New Iberia-St. Martinsville-Jeanerette	370	--	--	--	12,450
Patterson-Berwick-Morgan City	306	--	--	--	6,170
Ruston-Grambling	247	--	--	--	5,506
	(Oklahoma, 81 Towns)				
Ada	315	5,447	45	207	5,195
Altus	149	5,108	239	293	4,576
Ardmore	125	7,704	120	374	7,210
Bartlesville	1,326	10,914	64	349	10,501
Chickasha	149	5,608	230	263	5,115
Duncan	860	7,845	83	398	7,364
Durant	71	4,000	105	135	3,760
El Reno	1,477	4,006	88	139	3,779
Enid	953	14,640	216	375	14,049
Lawton	843	16,584	171	622	15,791
McAlister	157	5,762	80	275	5,407
Miami	1,677	4,687	56	128	4,503
Muskogee	3,455	14,147	170	654	13,323
Norman	871	12,431	166	274	11,991
Okmulgee	404	5,312	70	199	5,043
Ponca City	1,728	9,305	125	200	8,980
Sapulpa	559	5,258	33	124	5,101
Seminole	192	4,012	44	61	3,907

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture Forestry, and Fisheries	Private Households	Net Total
Shawnee	1,109	9,150	98	259	8,793
Stillwater	220	8,673	303	186	8,184
Tulsa	29,657	108,618	493	3,280	104,845
Alva	5	2,637	219	59	2,359
Anadarko	0	2,402	153	61	2,188
Atoka	0	891	38	29	824
Blackwell	1,254	3,751	64	119	3,568
Bristow	0	1,725	36	41	1,648
Broken Arrow	0	2,092	37	14	2,041
Chandler	0	1,049	38	45	966
Checotah	0	753	21	19	713
Claremore	19	2,456	24	33	2,399
Cleveland	0	778	4	21	753
Clinton	97	3,780	166	145	3,469
Collinsville	0	928	9	14	905
Cushing	1,145	3,027	30	81	2,916
Dewey	267	1,470	10	28	1,432
Drumright	190	1,393	4	32	1,357
Edmond	0	3,666	32	61	3,573
Elk City	0	3,189	166	97	3,096
Frederick	0	2,103	221	74	1,808
Guthrie	157	3,572	107	89	3,376
Guymon	20	2,361	100	27	2,234
Healdton	98	1,054	8	24	1,022
Henryetta	326	2,146	12	46	2,088
Hobart	10	1,927	140	52	1,725
Holdenville	0	1,977	42	70	1,865
Hollis	0	1,069	148	25	896
Hominy	0	954	27	22	905
Hugo	361	2,213	73	84	2,056
Idabel	0	1,555	42	92	1,421
Kingfisher	0	1,333	106	66	1,161
Lindsay	0	1,514	20	24	1,470
Madill	0	1,222	22	37	1,163
Mangum	117	1,582	112	48	1,422
Marlow	31	1,295	32	43	1,220
New Cordell	0	1,090	62	20	1,008
Nowata	0	1,485	52	50	1,383
Okemah	0	899	30	23	846

TABLE 16 (CONTINUED)

	Union Membership	Civilian Labor Force	Employment in Agriculture, Forestry, and Fisheries	Private Households	Net Total
Pauls Valley	0	2,647	46	75	2,526
Pawhuska	0	2,085	31	66	1,988
Perry	0	1,833	38	57	1,738
Picher	0	667	9	12	646
Poteau	23	1,451	67	86	1,298
Pratville	0	966	0	8	958
Pryor Creek	226	2,373	21	25	2,327
Purcell	0	1,276	8	18	1,250
Sallisaw	66	1,063	27	35	1,001
Sand Spring	76	3,232	17	44	3,171
Sayre	0	1,046	34	18	994
Skiatook	119	931	19	22	890
Sulphur	0	1,499	45	49	1,405
Talequah	0	1,870	40	27	1,803
Tecumseh	0	850	16	14	821
Vinita	253	2,303	52	60	2,191
Wagoner	0	1,352	40	9	1,303
Walters	0	915	34	22	859
Watonga	0	1,157	90	32	1,035
Weatherford	0	1,755	116	43	1,596
Wewoka	0	2,052	8	75	1,969
Woodward	49	3,037	109	83	2,845
Wynnewood	0	848	37	27	784
Yukon	0	1,050	13	8	1,029
Tonkawa	0	1,252	35	28	1,189
Oklahoma City	17,226	--	--	--	158,615
Urbanized area		--	--	--	--

Sources: Union membership derived from L-M reports, labor force data are from U. S. Bureau of the Census, U. S. Census of the Population, 1960. General Social and Economic Characteristics (Washington: U. S. Government Printing Office, 1961) pp. 5-173 to 5-114, 5-177 to 5-178, 5-186 to 5-195, 20-155 to 20-158, 20-163 to 20-166, 20-181 to 20-187, 38-182 to 38-184, 38-188 to 38-190, 38-200 to 38-204.

presents these census data and the membership figures for all of the towns having over 2,500 persons in the tri-state area. It also shows the number of persons employed in Agriculture, Forestries, and Fisheries on the one hand, and Private Households on the other. Since those persons employed in these two occupational groups are almost completely unorganized, they were deducted from the Civilian Labor Force. The resulting total will be referred to as "the Adjusted Civilian Labor Force." Data on the "Adjusted Civilian Labor Force" are also shown in Table 16 for all cities and towns in the tri-state area having more than 2,500 persons in 1960.

Regression analyses which attempted to establish the relationship between union membership by city and the "Adjusted Civilian Labor Force" were performed for each of the three states. The results of these analyses are presented in Table 17.

The coefficients of determination (R^2) for Arkansas, Louisiana, and Oklahoma are 0.94, 0.99, and 0.78 respectively. Again, when union membership data for Oklahoma City is excluded from the regression analysis for Oklahoma, the coefficient of determination increases significantly--in this latter instance it becomes 0.96. Furthermore, the regression coefficients ("b" values) for Arkansas, Louisiana and Oklahoma are quite similar (0.2738, 0.2702, and 0.2758). Charts 2, 3, 4 and 5 show the regression lines of Table 17 as well as a scatter diagram of points representing union membership by city and "Adjusted Civilian Labor Force."

Using the test for significance that is outlined in Steel and Torrie's Principles and Procedures of Statistics, an "F" of 0.03 was

TABLE 17

REGRESSION RESULTS FOR U = a + b L, WHERE U = LABOR UNION MEMBERSHIP BY CITY OVER 2,500 IN POPULATION AND L = CIVILIAN LABOR FORCE LESS THOSE PERSONS EMPLOYED IN PRIVATE HOUSEHOLDS, AGRICULTURE, FORESTRY AND FISHERIES IN TOWNS OVER 2,500

State	"a" Coefficient	"b" Coefficient	Coefficient of Determination (R^2)	Standard Error of the Estimate
Arkansas	-279.83	0.27379	0.94	0.00933
Louisiana	-387.5	0.2702	0.988	0.0035
Oklahoma (with Oklahoma City)	-180.64	0.1615	0.78	0.0093
Oklahoma (without Oklahoma City)	-573.2	0.2758	0.96	0.0062

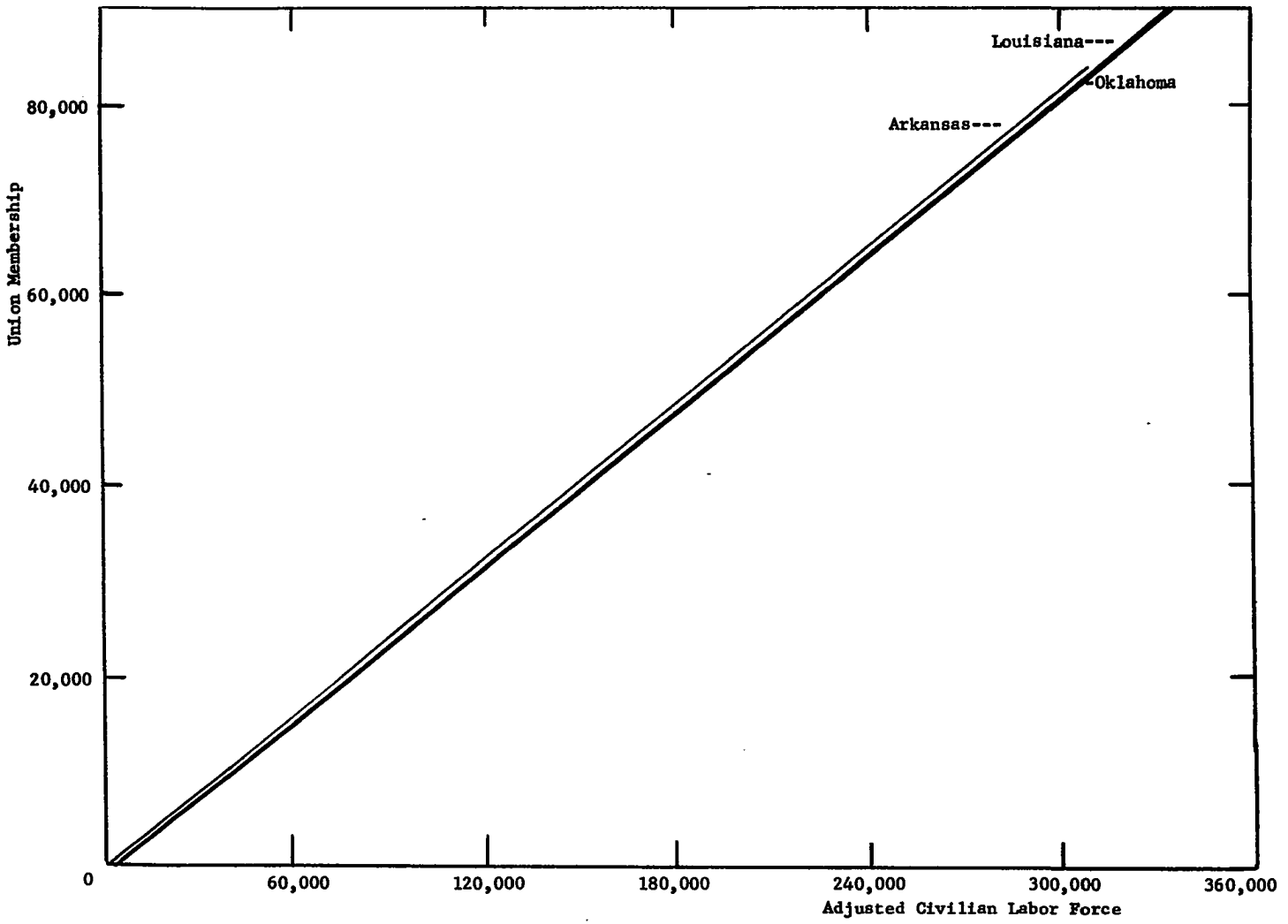
Source: Derived from Table 16.

found between Arkansas and Oklahoma, 0.26 between Oklahoma and Louisiana, and 0.3 between Louisiana and Arkansas. Using these "F" values and the proper number of degrees of freedom, it could be concluded that there were no significant differences between the "b" values of the regression equations in any of the three states. In other words, whether a town of 3,000 persons was in Arkansas, Louisiana, or Oklahoma, another town in the same state having 3,100 persons should have approximately 27 more union members.

This similarity of regression coefficients ("b" values) for the three states holds so long as Oklahoma City data are excluded. When

CHART 2

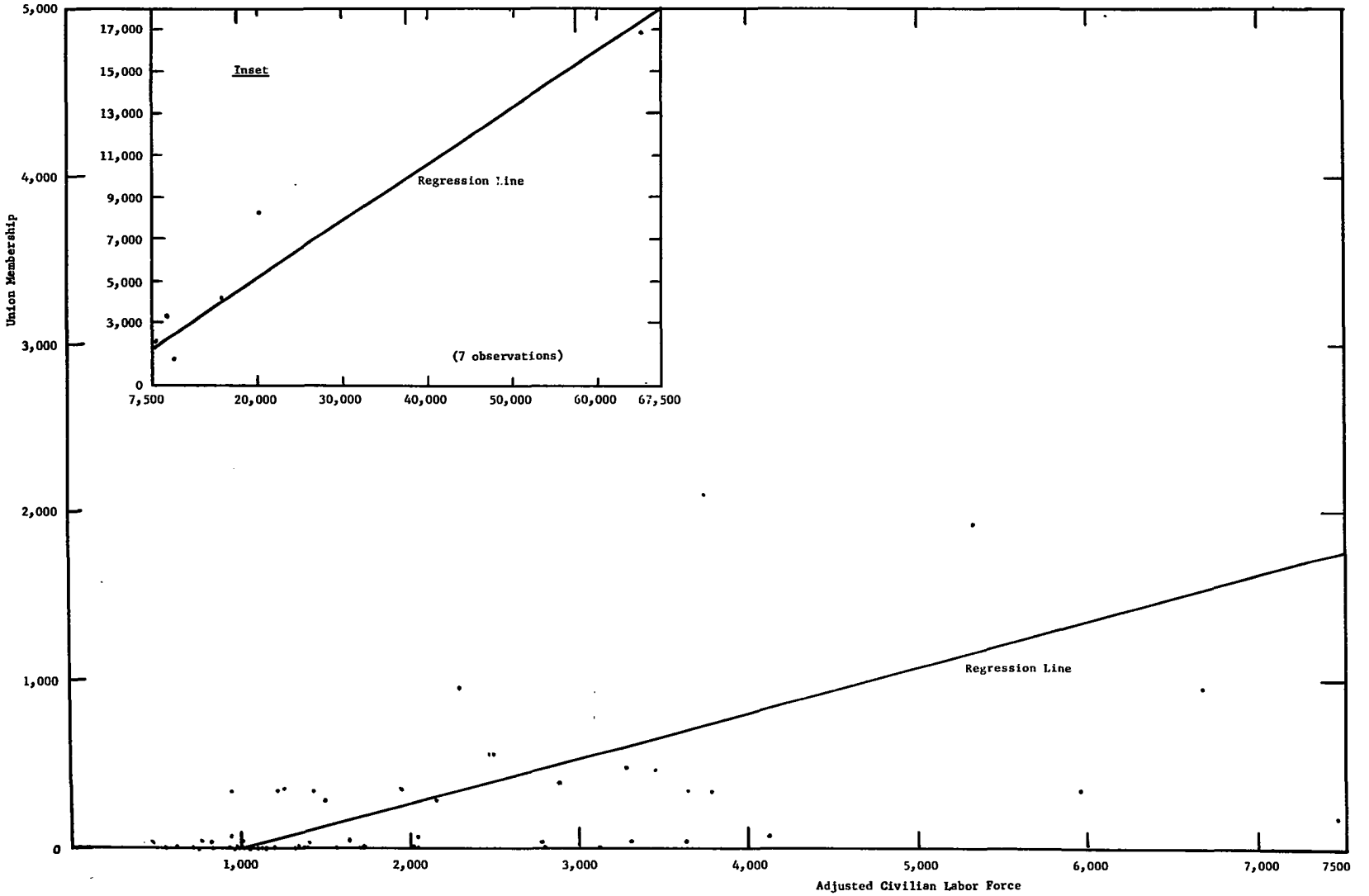
Regression Lines for Arkansas, Louisiana, and Oklahoma Which Relate Union Membership and Adjusted Civilian Labor Force in 1960



Source: Derived from Table 17.

CHART 3

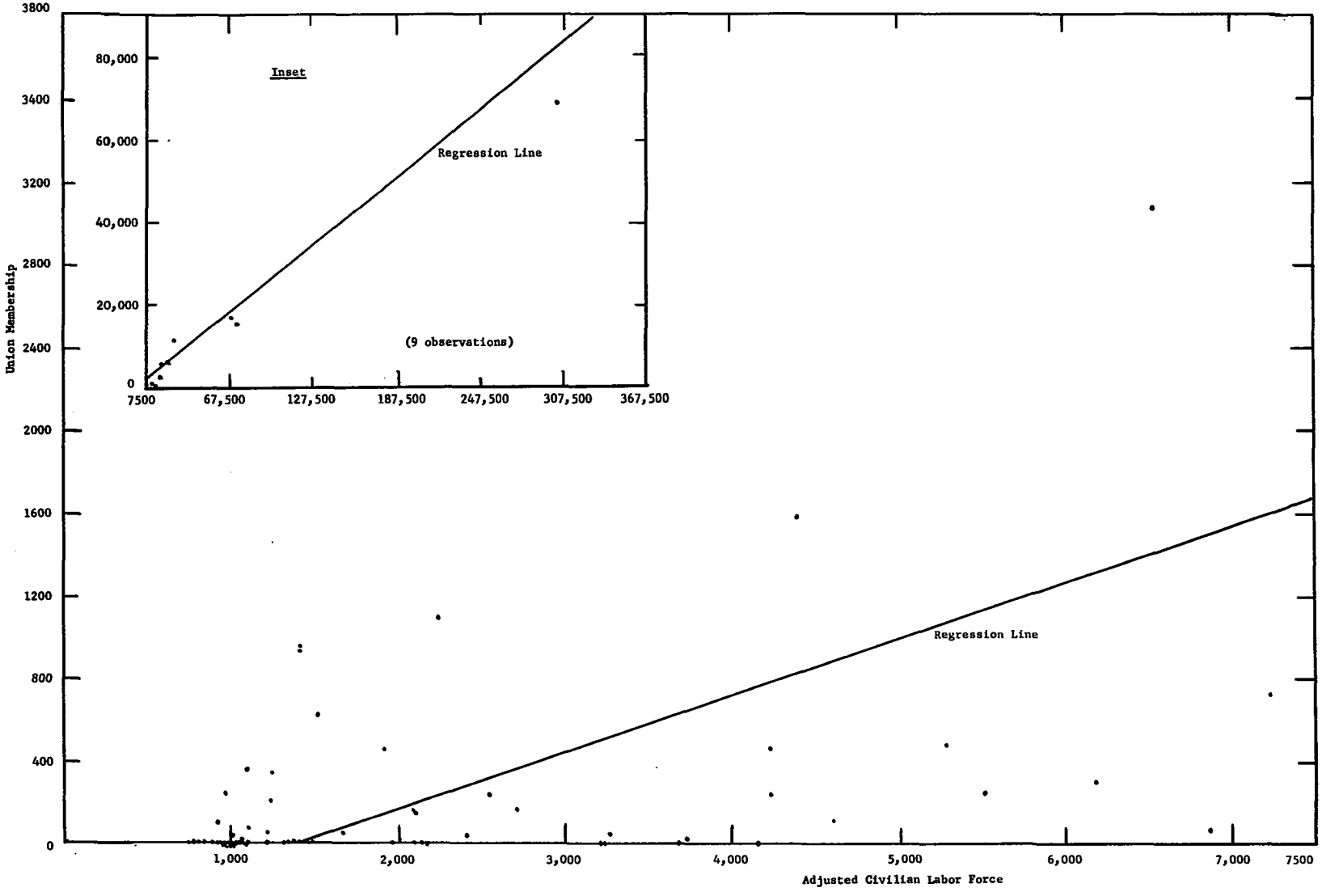
Union Membership and Adjusted Civilian Labor Force in 1960 for Towns in Arkansas Having a Population of over 2,500 Persons



Source: Derived from Table 17.

CHART 4

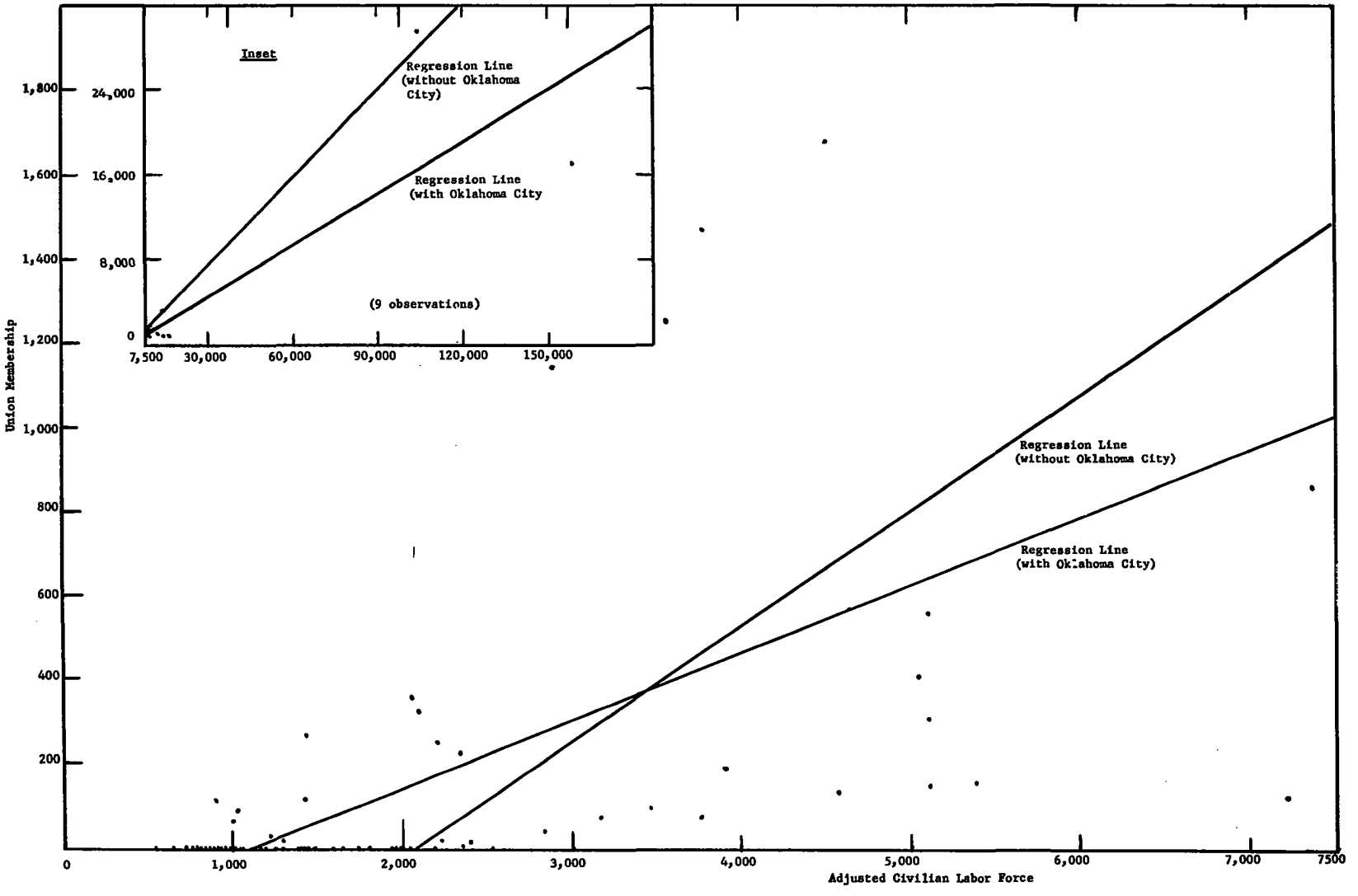
Union Membership and Adjusted Civilian Labor Force in 1960 for Towns in Louisiana Having a Population of over 2,500 Persons.



Source: Derived from Table 17.

CHART 5

Union Membership and Adjusted Civilian Labor Force in 1960 for Towns in Oklahoma having a Population of over 2,500 Persons



Source: Derived from Table 17.

Oklahoma City membership data are included, the resulting regression coefficient ("b" value) turns out to be significantly different from that of either Arkansas or Louisiana. Based upon this analysis, it must be concluded that Oklahoma City union membership must be related to the "Adjusted Civilian Labor Force" in a different manner than it is related in any other city or town of the three-state area.

Interim Summary of Major Findings

Excluding Oklahoma City, union membership and "Adjusted Civilian Labor Force" by city (2500 or more persons) were found to be similarly related in Arkansas, Louisiana and Oklahoma. The fact that the "b" values of the regression equations are so similar indicates that much of the difference between Arkansas, Louisiana and Oklahoma which showed up in the regressions relating city population to union membership has been explained by the use of the "Adjusted Civilian Labor Force." The "Adjusted Civilian Labor Force" is, of course, composed of occupational groups which one might expect to be unionized, but it is, nevertheless, rather surprising that there is little basic difference in unionization among the three states which cannot be explained by differences in the "Adjusted Civilian Labor Force."

Oklahoma City presents an entirely different problem. It was found that unionization in Oklahoma City differs from unionization in other cities of the area. It does have, in fact, a low per capita unionization in comparison to other area cities. Subsequent analysis will endeavor to explain why Oklahoma City is unique--at least to the extent of examining other relevant economic variables.

Union Membership by County

The city union membership estimates were transformed into county membership estimates by finding in which counties the cities were located. These county membership estimates are particularly useful since city labor force data for non-census years are quite limited. The state Employment Security Commissions, however, publish annual and quarterly estimates of the average number of persons in "covered employment"[64] by county as well as information on annual average weekly earnings. These data on membership, covered employment, and weekly earnings are presented in Table 18 for each of the three states and for the time period, 1960-1963.

TABLE 18

UNION MEMBERSHIP AND COVERED EMPLOYMENT BY COUNTY IN ARKANSAS, LOUISIANA AND OKLAHOMA FOR 1960, 1961, 1962 AND 1963

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
	Arkansas (75 Counties)							
Arkansas	53	49	47	47	3,894	4,079	4,080	4,443
Ashley	1,874	2,091	2,009	2,819	4,526	4,407	4,588	5,102
Baxter	314	289	365	356	940	1,299	1,497	1,771
Benton	0	--	--	--	6,042	6,688	7,229	7,552
Boone	604	539	548	502	2,908	2,834	3,164	3,432
Bradley	966	933	901	901	2,859	2,644	2,772	2,844

[64]Covered employment is defined for each of the three states to include all categories of workers excepting: agricultural workers; government employees; religious, charitable and nonprofit organizations; interstate railroad workers; unpaid family workers; the self-employed; and generally those employing fewer than four workers.

TABLE 18 (CONTINUED)

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
Calhoun	0	--	--	--	285	289	336	323
Carroll	0	--	--	--	1,647	1,942	2,226	2,231
Chicot	39	31	27	30	1,495	1,525	1,727	1,864
Clark	48	216	326	271	2,834	2,727	2,939	3,096
Clay	356	303	303	243	1,910	2,025	2,066	2,252
Cleburne	24	86	90	89	1,000	1,091	1,187	1,299
Cleveland	88	90	112	147	402	373	341	350
Columbia	70	68	72	82	4,198	4,005	4,098	4,014
Conway	72	67	77	57	1,969	2,212	1,978	2,201
Craighead	2,345	2,313	2,386	2,262	6,960	7,358	7,642	8,122
Crawford	0	--	--	--	1,568	1,748	1,881	1,864
Crittenden	0	--	--	--	3,820	3,866	4,151	4,471
Cross	0	--	7	12	1,356	1,430	1,595	1,740
Dallas	367	461	543	562	1,809	1,888	1,938	1,950
Desha	349	407	391	351	1,661	1,739	1,838	1,985
Drew	281	270	540	247	1,649	1,612	1,642	1,845
Faulkner	392	403	450	436	2,944	3,759	3,818	3,840
Franklin	4	8	8	8	942	984	1,034	985
Fulton	0	--	--	--	474	474	437	477
Garland	1,337	1,339	1,228	1,268	9,445	9,975	10,838	11,619
Grant	74	--	--	--	1,079	963	948	981
Greene	343	342	315	283	3,367	3,294	3,307	3,332
Hempstead	96	99	103	177	2,595	2,531	2,411	2,335
Hot Spring	485	445	453	383	3,974	3,588	3,839	4,149
Howard	139	162	156	137	1,955	1,927	2,063	2,253
Independence	281	255	279	309	2,523	2,679	2,988	3,302
Izard	0	--	--	--	486	454	483	485
Jackson	691	634	716	692	2,837	3,087	3,270	3,241
Jefferson	1,442	1,425	1,294	1,310	12,997	12,808	13,358	13,900
Johnson	51	42	44	43	1,337	1,337	1,119	1,346
Lafayette	51	47	45	44	1,075	1,109	1,128	1,074
Lawrence	55	55	53	62	1,322	1,424	1,436	1,552
Lee	0	--	--	--	1,008	1,102	1,191	1,338
Lincoln	0	--	--	--	1,197	1,161	1,082	1,099
Little River	36	44	26	--	692	692	731	1,043
Logan	117	54	53	49	1,209	1,357	1,455	1,635
Lonoke	84	94	104	102	1,261	1,294	1,355	1,535
Madison	0	--	--	--	425	443	430	434
Marion	0	--	--	--	230	220	246	324
Miller	520	442	415	446	4,044	4,009	4,149	4,365
Mississippi	355	384	501	621	7,671	8,097	9,020	9,330
Monroe	13	13	7	--	1,514	1,594	1,782	2,036

TABLE 18 (CONTINUED)

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
Montgomery	0	--	--	--	539	531	554	584
Nevada	10	15	23	30	992	1,044	1,118	1,105
Newton	0	--	--	--	125	90	127	139
Quachita	1,928	1,980	2,010	2,026	5,996	5,680	6,108	6,442
Perry	124	78	84	71	151	145	163	172
Phillips	957	975	1,028	903	5,789	5,211	5,318	5,343
Pike	0	--	--	--	858	799	859	944
Poinsett	0	--	--	--	3,848	3,717	3,886	4,136
Polk	44	44	53	51	1,778	1,712	1,971	1,663
Pope	497	483	600	619	3,509	3,685	3,923	4,144
Prairie	0	--	--	--	647	669	766	836
Pulaski	17,175	19,005	17,878	17,316	59,071	59,674	62,316	68,668
Randolph	267	314	379	431	1,249	1,284	1,399	1,411
St. Francis	--	--	--	--	3,065	3,138	3,405	3,642
Saline	2,107	1,858	1,877	1,939	4,597	4,592	4,610	5,337
Scott	--	--	--	--	834	919	1,101	1,049
Searcy	--	--	--	--	435	404	447	421
Sebastian	8,313	8,742	9,323	10,499	18,623	19,681	23,409	24,661
Sevier	--	--	--	--	1,278	1,346	1,437	1,485
Sharp	--	--	--	--	280	344	466	605
Stone	--	--	--	--	225	202	227	267
Union	3,618	3,628	3,655	3,603	11,060	11,126	10,979	11,209
Van Buren	--	--	--	--	459	491	466	559
Washington	216	247	359	458	12,545	10,987	11,631	12,545
White	519	650	633	511	4,142	4,799	4,550	4,407
Woodruff	246	265	270	286	731	677	725	1,002
Yell	18	114	125	151	1,008	1,408	1,729	1,925
				Louisiana (61 Counties)				
Acadia	88	77	69	61	5,102	5,021	4,732	4,519
Allen	457	477	467	437	2,809	2,720	2,661	2,883
Ascension	77	88	77	80	2,500	2,505	2,722	3,066
Assumption	--	0	--	--	1,655	1,733	1,615	1,641
Avoyelles	--	--	--	--	2,042	1,830	1,992	2,177
Beauregard	146	109	90	73	2,271	2,155	2,255	2,192
Bienville	--	--	--	--	1,287	1,248	1,271	1,277
Bossier-Caddo	15,060	15,256	15,345	15,397	53,273	52,545	52,359	51,813
Calcasieu	11,546	12,131	13,577	11,116	24,639	23,445	23,245	22,588
Caldwell	--	--	--	--	322	358	450	411
Cameron	--	--	--	--	1,476	1,283	1,338	1,477

TABLE 18 (CONTINUED

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
Catahoula	--	--	--	--	544	533	612	638
Claibourne	--	--	--	--	1,887	1,862	1,992	1,869
Concordia	228	231	216	201	1,984	1,877	1,803	1,749
DeSoto	--	--	54	155	2,302	2,213	2,175	2,205
E. Baton Rouge	16,822	16,412	16,727	18,649	49,577	47,588	47,717	48,275
East Carroll	--	--	--	--	899	733	884	888
East Feliciana	--	--	--	22	652	533	712	670
Evangeline	185	184	164	154	1,646	1,611	1,567	1,620
Franklin	--	--	--	--	1,547	1,513	1,533	1,661
Grant	--	--	--	--	606	449	473	404
Iberia-Vermillion	927	946	877	868	11,535	11,121	11,249	11,592
Iberville	43	51	49	46	2,910	2,429	2,925	3,235
Jackson	1,588	1,668	1,813	2,050	2,565	2,411	2,504	2,469
Jefferson	--	--	--	--	32,351	33,308	34,774	37,455
Jefferson Davis	--	--	--	--	3,413	3,194	3,049	2,962
Lafayette	3,384	3,612	3,801	3,944	14,671	14,099	14,769	15,747
Lafourche	567	584	545	621	7,662	7,504	7,626	7,912
LaSalle	--	--	--	--	1,754	1,631	1,571	1,630
Lincoln	368	375	329	259	2,571	2,668	2,842	2,801
Livingston	--	--	--	--	1,069	1,020	1,160	1,186
Madison	221	250	250	224	1,262	1,197	1,252	1,266
Morehouse	1,582	1,634	1,810	1,852	3,884	3,788	3,939	4,080
Natchitoches	140	11	128	158	2,024	1,935	2,123	2,222
Orleans	68,629	62,038	62,451	64,304	175,334	170,343	170,761	178,584
Quachita	5,734	6,043	5,761	5,626	18,402	18,546	18,463	18,584
Plaquemines	--	--	--	--	5,251	5,203	4,977	5,283
Pointe Coupee	--	--	--	--	996	939	881	922
Rapides	5,395	5,107	4,596	3,781	13,217	12,633	13,234	13,667
Red River	--	--	--	--	491	484	417	381
Richland	--	--	--	--	1,545	1,595	1,643	1,765
Sabine	--	--	--	--	1,372	1,345	1,636	1,763
St. Bernard	--	--	--	--	5,413	5,309	5,800	6,111
St. Charles	954	--	--	--	3,709	--	--	--
St. Helena	--	--	--	--	--	--	--	--
St. James	478	458	425	437	1,781	1,677	1,749	1,837
St. John the Baptist	719	632	707	746	1,444	1,387	1,281	1,554
St. Landry-St. Martin	--	--	--	--	--	--	--	--

TABLE 18 (CONTINUED)

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
St. Mary	473	454	426	424	8,983	8,975	9,294	10,188
St. Tammany	--	--	--	286	3,314	3,569	4,128	4,249
Tangipahoa	101	201	215	257	6,253	6,054	6,240	6,289
Tensas	--	--	--	--	413	425	451	486
Terrabonne	447	497	452	492	9,441	9,376	9,828	10,629
Union	--	--	--	--	1,261	1,195	1,189	1,273
Vernon	57	48	53	53	872	855	1,113	1,154
Washington	3,662	3,571	3,322	4,225	6,953	5,853	5,912	6,581
Webster	1,867	1,931	2,006	2,122	6,279	6,280	7,573	8,760
W. Baton Rouge	200	134	109	128	1,046	1,069	1,077	1,286
W. Carroll	--	--	--	--	531	513	544	636
W. Feliciana	185	238	207	217	1,130	1,274	1,269	1,266
Winn	230	234	184	169	1,901	1,974	2,048	2,097
			Oklahoma (75 Counties)					
Adair	--	--	--	--	542	645	566	559
Alfalfa	--	--	--	--	447	428	425	413
Atoka	--	--	--	--	497	531	525	490
Beaver	--	--	--	--	537	599	629	568
Beckham	--	--	--	--	2,051	2,057	1,955	2,015
Blaine	99	97	302	290	996	998	1,008	1,017
Bryan	74	71	77	79	1,901	1,926	1,908	1,931
Caddo	139	141	144	147	1,992	1,948	1,966	2,050
Canadian	1,477	772	818	778	1,882	1,873	1,946	2,017
Carter	223	223	200	194	5,919	5,866	6,172	6,441
Cherokee	--	--	--	--	692	893	909	846
Choctaw	361	310	339	327	1,235	1,276	1,195	1,222
Cimarron	--	--	--	--	289	327	297	304
Cleveland	871	570	529	492	3,342	3,668	4,204	4,478
Coal	34	10	22	32	248	288	303	280
Comanche	843	1,073	1,004	1,097	7,989	8,263	8,655	9,220
Cotton	--	--	--	--	772	750	752	821
Craig	253	--	159	145	1,337	1,306	1,297	1,342
Creek-Payne	2,263	2,180	2,076	2,015	9,240	9,098	9,006	9,117
Custer	97	95	84	74	2,404	2,367	2,364	2,328
Delaware	--	--	--	--	338	315	383	405
Dewey	--	--	--	--	216	242	340	278
Ellis	--	--	--	--	295	340	294	238
Garfield	1,033	1,321	1,336	1,356	8,113	8,648	8,920	9,129
Garvin	226	227	--	--	3,464	3,481	3,615	3,664

TABLE 18 (CONTINUED)

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
Grady	149	155	135	147	3,024	3,061	3,171	3,047
Grant	--	--	--	--	408	464	481	439
Greer	117	107	99	97	566	652	791	553
Harmon	--	--	--	--	367	387	426	353
Harper	--	--	--	--	508	542	449	469
Haskell	40	23	26	26	483	565	492	480
Hughes	--	--	--	--	1,164	1,123	1,092	1,111
Jackson	149	238	274	126	2,446	3,524	4,097	2,818
Jefferson	--	--	--	--	385	372	344	367
Johnston	14	15	14	13	210	203	193	213
Kay	2,982	3,544	3,465	3,323	9,947	9,888	9,635	9,424
Kingfisher	--	--	--	--	877	1,218	1,290	1,222
Kiowa	9	--	--	--	1,153	1,298	1,400	1,204
Latimer	--	--	--	--	182	281	348	391
Le Flore	538	448	412	451	1,590	1,587	1,524	1,490
Lincoln	--	--	--	--	1,471	1,458	1,523	1,504
Logan	157	130	134	195	1,687	1,664	1,621	1,612
Love	--	--	--	--	280	372	366	482
McClain	267	267	253	263	716	638	618	797
McCurtain	--	--	--	--	1,827	1,857	1,931	1,983
McIntosh	--	--	--	--	775	1,474	1,233	1,042
Major	--	--	--	--	449	501	529	524
Marshall	--	--	--	--	885	807	752	713
Mayes	226	228	228	256	1,689	1,829	2,059	2,298
Murray	--	--	--	--	751	768	755	868
Muskogee	3,455	3,715	3,776	3,466	8,573	8,749	8,564	8,383
Noble	--	--	--	--	1,024	1,143	1,141	1,128
Nowata	--	--	--	--	1,121	995	961	872
Okfuskee	--	--	--	--	683	692	650	674
Oklahoma	17,226	17,854	17,410	17,972	102,447	103,540	108,579	112,823
Okmulgee	730	651	685	626	5,553	5,155	5,167	5,212
Osage-Washington	1,972	1,946	2,071	2,709	13,436	13,476	13,394	13,782
Ottawa	1,924	1,752	1,953	2,116	4,106	4,407	4,816	4,997
Pawnee	--	--	--	--	635	670	670	670
Pittsburg	460	446	435	515	3,343	3,228	3,550	3,785
Pontotoc	315	311	313	316	4,087	4,049	4,335	4,140
Pottawatomie	1,109	1,022	981	979	5,535	5,443	5,131	4,806
Pushmataha	--	--	--	--	329	341	305	344
Roger Mills	--	--	--	--	96	98	75	116
Rogers	19	20	13	13	1,813	1,363	1,528	1,347

TABLE 18 (CONTINUED)

	Union Membership				Covered Employment			
	1960	1961	1962	1963	1960	1961	1962	1963
Seminole	192	192	191	194	3,359	3,353	3,442	3,263
Sequoyah	66	70	56	66	729	833	772	838
Stephens	891	882	953	804	7,025	6,914	7,003	6,724
Texas	58	53	35	37	1,637	1,651	1,628	1,595
Tillman	--	--	--	--	1,203	1,442	1,448	1,368
Tulsa	29,733	28,740	29,646	31,129	96,982	93,074	95,944	97,372
Wagoner	--	--	--	--	606	455	422	407
Washita	--	--	--	--	917	686	667	727
Woods	88	64	51	39	950	1,034	1,067	1,104
Woodward	49	84	107	108	1,508	1,511	1,692	1,716

Sources: Membership data derived from Labor-Management Reports. Employment data for Arkansas: State of Arkansas Department of Labor, Employment Security Division, Arkansas Average Weekly Earnings in Covered Employment, 1960, 1961, 1962, and 1963 (Little Rock: Reports and Analysis Section, 1961, 1962, 1963, and 1964) pp. 4-6. Employment data for Louisiana: Louisiana State Department of Labor, Division of Employment Security, Average Weekly Earnings in Covered Employment, 1960, 1961, 1962, and 1963 (Baton Rouge: Reports and Analysis Unit, 1961, 1962, 1963, and 1964). Employment data for Oklahoma: Oklahoma Employment Security Commission, Oklahoma State Employment Service, County Employment Data, 1960 and 1961 and County Employment Data, 1962 and 1963 (Oklahoma City: Research and Planning Division, 1962 and 1964) pp. 6-14 in both.

As may be seen from Table 18, the county membership figures leave much to be desired. In Arkansas, 22 counties had no union members at all in any of the four years; 23 parishes (counties) in Louisiana had no union members, and 36 of the 77 Oklahoma counties had no union members. These were the smaller counties in the area--those having the fewer number of persons employed in covered occupations--but it seems unlikely that this many counties would have no members at all in them. Undoubtedly the estimates are biased due to the fact that the membership

is calculated at the location of the local headquarters. Whenever there are not enough members of a particular union to make a local practical in their home city, they will belong to a local in another town. The area membership statistics thus contain some bias which causes more members to be allocated to the larger towns and cities and counties than actually live and work there. The bias undoubtedly affects the data, but the small number employed in covered occupations in those counties having no union members seems to indicate that the location problem is not important enough to completely invalidate the county and city membership statistics. It is assumed in this study that the estimates are adequate enough that they may be used to measure the relationship between union membership and covered employment.

Thus, regression analyses were run to determine the relationship between union membership and covered employment in each county and for each year of the time period, 1960-1963. The results of the analyses are shown in Table 19.

Relationship of union membership to covered employment in Arkansas.--As shown in Table 19, there was a high coefficient of determination between union membership and covered employment in Arkansas for each of the four years (approximately 0.90) and the regression equations were $U_0 = -352.03 + 0.29\ E_0$; $U_1 = -428.3 + 0.316\ E_1$; $U_2 = -381.46 + 0.288\ E_2$ and $U_3 = -335.17 + 0.262\ E_3$ for the years 1960, 1961, 1962, and 1963, respectively; and where U_i = union membership in the ith year and E_i = covered employment in the same year.

Crittenden county was excluded from Arkansas regression analyses since it includes the city of West Memphis. The regressions were

TABLE 19

REGRESSION RESULTS FOR $U_i = \underline{a} + \underline{b}\ E_i$ WHERE U_i = COUNTY UNION MEMBERSHIP IN THE YEAR i AND E_i = COVERED EMPLOYMENT IN THE SAME YEAR

Year	a Coefficient	b Coefficient	Coefficient of Determination (R^2)	Standard Error of the Estimate
		Arkansas (without Miller County)		
1960	-352.03	0.2904	0.90	0.011
1961	-428.3	0.3165	0.91	0.011
1962	-381.46	0.2881	0.91	0.011
1963	-335.17	0.2621	0.89	0.011
		Arkansas (with Miller County)		
1960	-355.92	0.2903	0.90	0.011
1961	-433.55	0.3165	0.91	0.011
1962	-386.75	0.288	0.91	0.011
1963	-340.00	0.2621	0.89	0.011
		Louisiana		
1960	-567.77	0.3303	0.99	0.005
1961	-396.04	0.3074	0.98	0.005
1962	-416.70	0.3073	0.98	0.005
1963	-336.29	0.2853	0.98	0.006
		Oklahoma (with Oklahoma County)		
1960	-174.82	0.2346	0.91	0.009
1961	-190.01	0.2348	0.91	0.009
1962	-174.2	0.2269	0.89	0.009
1963	-171.02	0.229	0.88	0.01
		Oklahoma (without Oklahoma County)		
1960	-326.75	0.3044	0.98	0.005
1961	-355.17	0.3072	0.98	0.005
1962	-363.0	0.3073	0.98	0.0052
1963	-381.19	0.3178	0.98	0.005

Source: Derived from Table 18.

also run excluding Miller county (since it includes Texarkana), but it was found that its exclusion or inclusion did not appreciably affect the results. The a coefficient for the regression including Miller County is different by five, at the most, from the regression excluding Miller County. This is less than 2 percent of the average a value. The b coefficient is different by no more than 0.0001, which is less than 0.1 percent of the average b value.

The b values of the Arkansas regressions are not significantly different from one another over the relevant time period with the possible exception of the 1963 coefficient. Using the test for significance mentioned earlier[65] to determine whether the b coefficients for 1960, 1961, 1962, and 1963 were different from one another, it was found that the "F" coefficient was 4.08 with 3 degrees of freedom in the numerator and 285 in the denominator.

There is a probability of 0.01 of getting an "F" value larger than 3.78 when there is no significant difference in the b coefficients for the Arkansas data due to time differences.[66] There would be a probability of 0.005 of getting an "F" value larger than 4.28 when differences in b coefficients are due solely to chance. At any rate, for this test, one could probably conclude that the differences in the b coefficients could not be explained on the basis of chance.

It seemed, however, that most of the difference in the b coefficients was due to the spread between the 1961 and the 1963 values,

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[65] Steel and Torrie, op. cit.

[66] Ibid., pp. 436-440.

so the "F" test was run excluding the latter year. The resulting "F" value was 1.94. For 2 degrees of freedom in the numerator and 214 in the denominator, there is greater than a 10 percent chance that the differences in the b values are due to chance variations (assuming random sampling from one population) if the "F" value is less than 2.35. At any rate, the hypothesis that there is no significant difference between the b coefficients for the years, 1960, 1961, and 1962 may be accepted.

Since the b coefficients for three of the four years were not found to be significantly different from one another, no general drift of the coefficients is indicated. It can be concluded, however, that the difference between the 1963 coefficient and the other coefficients was probably not due to chance. Although one cannot conclude that there is significant change through time in the regression coefficients, a trend might show up with observations from more years. It seems, in fact, that the b coefficients are declining through time in Arkansas, but as shown earlier the differences can be explained through chance variation.

Relationship of union membership to covered employment in Louisiana.--In the state of Louisiana, the coefficients of determination are substantially higher than those for Arkansas. As shown in Table 19, the coefficients of determination are approximately 0.98 for each year of the time period, 1960 to 1963, but the same coefficients for Arkansas are approximately 0.90. The regression equations for Louisiana are also shown in Table 19 where $U_i = a + bE_i$, and "i" is equal to the last digit of the year involved.

The b values for the Louisiana regression equations show a consistent decline--from 0.3303 in 1960 to 0.2853 in 1963. This would seem to indicate that a time trend was operative over the four year period. If a time trend were operative in the direction indicated by the regression coefficients, the regression lines would be shifting yearly to a less steep slope. In other words, the relationship between additional union members and additional covered employees per county would be declining over time. There is, however, always the possibility that the differences in regression coefficients are due to chance variations. The test outlined in Steel and Torrie was therefore run again to find out if the differences in the b values of the regression coefficients are due to chance. The resultant "F" value was 11.8, and the probability is much less than 0.001 that the differences are due to chance[67] (the "F" value is 5.42 at the 0.001 level). The hypothesis that there is a significant difference between the b values may therefore be accepted. Unfortunately, the time span of the annual data is not sufficient to establish a trend in the regression coefficients. One might suspect that a trend toward declining "b" values is operative in Louisiana, but until more data become available this possibility cannot be tested statistically.

Relationship of union membership to covered employment in Oklahoma.--The coefficients of determination for the Oklahoma regressions are substantially lower than those for the Louisiana regressions as can be seen from Table 19, but when regressions were run for

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[67] Ibid.

Oklahoma excluding Oklahoma County (which includes Oklahoma City), the coefficients of determination increased significantly, from around 0.90 to 0.98. Furthermore, when Oklahoma County was excluded, the b values increased from approximately 0.23 to 0.31. The approximate b value of 0.31 compares more favorably to Arkansas (around 0.28) and Louisiana (around 0.31) than the b value for Oklahoma including Oklahoma County. As a matter of fact, once Oklahoma County data are excluded the regression equations, coefficients of determination and standard errors of the estimate for Oklahoma and Louisiana become remarkably similar.

This similarity must be qualified, however, by the fact that no significant difference in the b values over time can be seen from the Oklahoma regressions. The b values for these regressions remained quite constant over the period regardless of the treatment of Oklahoma County, so that the Oklahoma regressions are different from the Louisiana regressions in this respect.

Summary of Major Findings on County Data and Comparison to Earlier Findings

It was found that there was no basis for accepting the hypothesis that there was any significant difference in the regression coefficients over the four year time period for Arkansas and Oklahoma, but that there seemed to be a significant decline in the coefficients for Louisiana. According to the regression equations, a Louisiana county having 100,000 covered employees should have 32,462 union members in 1960 and 28,194 in 1963, a decrease of 13.2 percent. The general conclusion may be made, however, that union membership varies at a marginal rate of roughly 30 percent of the covered employees in the

three-state area for the four year period, so long as Oklahoma County is excluded from the data.

The coefficients of determination for the county regressions were higher than those found for the regressions of union membership by city versus the "adjusted civilian labor force" for Oklahoma, about the same for Louisiana and lower for the state of Arkansas. These differences can be explained, however, due to the differences in the definition of the labor force data. It seems that "covered employment" in each state excludes agricultural workers, government employees, interstate railroad workers, unpaid family workers, the self-employed, those employed in a firm having fewer than four workers, those employed by religious, charitable and nonprofit organizations, and the unemployed; whereas the "adjusted civilian labor force" is the total civilian labor force less those employed in agriculture, forestry and fisheries and private households.

The fact that "covered employment" is defined to exclude barbers and interstate railroad employees (which are included in the "Adjusted Civilian Labor Force") should have the effect of lessening the coefficients of determination in the regressions using "covered employment" data in comparison to regressions using "Adjusted Civilian Labor Force" data since these persons are probably unionized. On the other hand, the fact that the "Adjusted Civilian Labor Force" is defined to include certain workers which are unlikely to become organized, but which are excluded from "covered employment" data, such as the self-employed, those employed by firms having fewer than four workers, and the unemployed, should have the effect of decreasing the coefficients

of determination of the regressions using "Adjusted Civilian Labor Force" data in comparison to those using "covered employment" data.[68]

The differences in data coverages, therefore, can be expected to have opposite effects on the coefficients of determination depending upon how union membership is structured within the three states. The fact that the coefficients of determination for Arkansas, for example, are significantly lower at the 5 percent significance level, for the county covered employment regressions than for the city adjusted labor force regressions can be partially explained by the fact that in Arkansas a higher percentage of union members belong to railroad unions than in the other two states.[69]

Despite the difference in data coverages, it might be noted that the coefficients of determination were highly significant for each regression and that while there was a 30 percent marginal rate of unionization of the covered employees in each county, a 27 percent marginal rate of unionization of the adjusted civilian labor force in cities having over 2,500 persons was found.

Since no significant difference over time could be found for either Arkansas or Oklahoma from the county covered employment data, the tentative conclusion may be made that the relationships found for 1960 city data and union membership will hold true for each year of the four

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[68]Even if the unemployed are on the membership rolls of a union they are not likely to be dues-paying members since their dues are often waived.

[69]See Chapter 5, Table 20. The significance test was performed using the format outlined in Croxton and Cowden, Applied General Statistics, 2nd ed. (New York: Prentice-Hall, Inc., 1955), pp. 724-725. The $\frac{x}{\sigma}$ value was found to be 1.976.

year period. The application of the 1960 Louisiana regressions to relationships in the other three years, on the other hand, may be invalid since there did seem to be significant differences in the b values over time in that state.

Another conclusion may be stated, Oklahoma City's unique characteristics found for 1960 continue to hold true for each year of the four year period. The exclusion of Oklahoma City data has consistently raised the b coefficients of the regression equations and has made them more comparable to the b coefficients obtained from Arkansas and Louisiana data, which indicates that Oklahoma City has a lower union membership for its labor force than other large cities in the three-state area.

CHAPTER 5

THE STRUCTURE OF UNION MEMBERSHIP IN THE THREE-STATE AREA

The purpose of this chapter is to examine in detail the extent of unionization by occupation and industry group, as well as the size distribution of unions in comparison to that of business firms. The chapter is divided into three major sections--Trade Union Membership by Union, Union Membership by Industry Group, and The Size Distribution of Union Membership.

Trade Union Membership by Union

State membership data derived from the L-M Reports are shown in Table 20, for 1960, 1961, 1962, and 1963. The entries in Table 20 exclude all unions having less than 200 members.

The five largest unions in Arkansas in 1963 were, in descending order, the Carpenters Union, the International Brotherhood of Electrical Workers, the Meat Cutters' Union, The Teamsters Union, and the Pulp, Sulfite, and Paper Mill Workers' Union. Three of these five unions, the Teamsters, Carpenters and the IBEW, are among the five largest national unions according to Leo Troy's 1965 study (Troy's listings for the ten largest unions in the United States are shown in Table 21).

TABLE 20

UNION MEMBERSHIP IN ARKANSAS, LOUISIANA AND OKLAHOMA
FOR UNIONS HAVING OVER 200 MEMBERS,
1960, 1961, 1962 AND 1963

	1960	1961	1962	1963
	Arkansas			
Aluminum workers	311	300	229	240
Asbestos workers	34	27	37	63
Auto workers	1,748	1,848	2,018	2,371
Bakery and Confectionary workers	341	350	348	346
Barbers	236	252	273	271
Boilermakers	98	94	98	98
Brewery workers	58	54	63	73
Brick and Clay workers	189	192	205	176
Bricklayers	455	475	452	432
Carpenters	3,941	4,222	4,518	4,706
Cement workers	231	267	267	278
Clothing workers	601	362	441	386
Communications workers	960	974	996	868
Electrical workers (IBEW)	3,655	3,650	3,748	3,742
Electrical workers (IUE)	561	530	608	658
Engineers, Operating	1,656	1,681	1,555	1,507
Firemen and oilers	912	998	1,115	797
Furniture workers	2,462	2,351	2,279	2,388
Hod carriers	1,077	1,873	1,008	958
Industrial workers, Allied	--	--	89	749
Iron workers	182	369	494	591
Locomotive engineers	472	453	408	411
Locomotive engineers	2,468	2,505	2,542	2,381
Machinists	2,478	2,343	2,564	2,378
Maintenance of way employees	1,811	1,707	1,542	1,367
Meat cutters	2,770	3,042	3,186	3,409
Molders	95	100	100	237
Musicians	166	295	315	278
Oil, chemical and atomic workers	1,012	1,141	1,163	1,225
Painters	762	861	738	811
Papermakers and paper workers	1,423	1,546	1,647	2,639
Plasterers	141	217	231	269

TABLE 20 (CONTINUED)

	1960	1961	1962	1963
Plumbers	1,466	1,184	1,568	1,657
Pulp, Sulfite and paper mill workers	2,464	2,754	2,890	2,817
Railroad trainmen	2,101	2,203	1,327	1,180
Railway carmen	697	661	615	659
Railway conductors	269	337	308	278
Railway and steamship clerks	955	978	966	969
Retail clerks	606	857	692	853
Rubber workers	385	457	533	466
Sheet metal workers	283	319	332	381
Shoe workers	1,947	1,977	2,343	2,334
Shoe workers, boot and	464	473	464	483
Steel workers	1,628	1,438	1,585	1,853
Street motor coach employees	285	309	270	280
Teamsters	2,538	2,677	2,830	2,956
Textile workers	244	227	394	294
Typographical workers	323	323	323	323
Woodworkers	2,549	2,584	2,437	2,342
	Louisiana			
Aluminum workers	2,289	2,344	2,443	2,137
Asbestos workers	487	495	570	599
Auto workers	132	130	125	105
Bakery and Confectionary workers	801	743	740	692
Bakery employees, and	2,143	2,369	2,075	1,370
Barbers	1,606	1,751	1,838	2,021
Boilermakers	1,429	1,778	2,401	1,738
Brewery workers	1,442	1,382	1,514	1,633
Bricklayers	1,744	1,656	1,488	1,482
Building service employees	555	571	529	500
Carpenters	10,494	9,586	9,072	7,490
Cement workers	316	288	226	396
Chemical workers	1,929	2,016	2,034	2,510
Clothing workers	920	860	776	779
Communications workers	2,931	2,617	3,057	2,904
District 50, United Mine workers	2,646	2,253	2,081	2,116
Electrical workers (IBEW)	3,498	3,467	3,542	3,280
Engineers, operating	5,195	5,722	6,065	6,190
Firemen and oilers	940	788	438	413

TABLE 20 (CONTINUED)

	1960	1961	1962	1963
Hod Carriers	7,201	6,871	7,095	7,320
Hotel and restaurant employees	367	484	466	463
Iron workers	1,571	2,160	1,751	1,958
Laundry and dry cleaning employees	508	694	767	754
Locomotive engineers	763	575	792	820
Locomotive firemen	3,226	3,024	2,940	3,138
Longshoremen	12,846	12,917	12,249	7,451
Machinists	8,984	3,021	6,187	11,074
Maintenance of way employees	1,804	1,554	1,436	1,484
Marine and shipbuilding workers	980	856	761	910
Masters, mates and pilots	658	742	754	873
Meat Cutter	699	944	929	992
Molders	361	419	670	550
Musicians	1,965	2,478	2,481	2,687
Office Employees	447	426	391	389
Oil, chemical and atomic workers	4,876	5,106	4,351	4,687
Packinghouse, food and allied workers	3,789	3,532	3,268	3,294
Painters	3,432	3,103	3,013	2,864
Papermakers and paper-workers	4,533	4,871	4,976	5,704
Plasterers	649	633	588	638
Plumbers	2,326	2,382	2,707	2,681
Potters	627	637	784	184
Printing Pressmen	176	202	198	207
Pulp, Sulfite and paper mill workers	5,210	5,221	5,469	5,883
Railroad telegraphers	576	567	504	473
Railroad trainmen	3,334	3,112	3,389	3,365
Railway carmen	1,040	1,140	1,045	1,053
Railway conductors	430	389	389	384
Railway empl. Trainmen and firemen (IND)	242	265	242	230
Railway patrolmen	45	44	36	28
Railway and steamship clerks	2,676	2,617	2,525	2,523
Retail clerks	1,123	1,056	1,226	1,425
Retail wholesale	307	258	256	236

TABLE 20 (CONTINUED)

	1960	1961	1962	1963
Retail wholesale	307	258	256	236
Roofers	1,886	1,836	1,345	1,508
Sheet metal workers	760	780	1,076	1,232
Stage, moving picture operators	394	350	353	340
Steelworkers	902	819	680	966
Stereotypers and electrotypers	51	80	123	112
Street motor coach employees	1,229	1,430	1,335	1,295
Switchmen	161	260	267	297
Teamsters	7,062	7,230	6,716	7,713
Telegraphers, commercial	334	320	301	288
Textile workers, TWU	144	141	146	184
Transport workers	187	182	197	202
Typographical workers	563	559	556	556
Upholsterers	219	217	246	280
Woodworkers	1,032	952	924	860
	Oklahoma			
Asbestos workers	133	179	269	278
Automobile workers	3,075	2,024	2,292	2,349
Bakery and Confectionary workers	555	555	617	767
Barbers	1,612	1,672	1,756	1,801
Boilermakers	952	2,040	1,503	1,574
Bricklayers	863	868	645	672
Building service employees	438	--	--	--
Carpenters	4,729	4,735	4,925	4,993
Cement workers	460	447	330	253
Communications workers	1,702	1,796	1,700	1,609
Electrical workers (IBEW)	3,347	3,809	4,205	5,600
Engineers, operating	2,459	2,421	2,505	2,693
Engineers, process and control	200	170	143	120
Firemen and oilers	216	190	201	201
Garment workers united	213	281	391	500
Glass Bottle blowers	551	445	518	484
Grain millers	395	403	391	402
Hod carriers	4,613	4,389	4,021	3,917
Hotel and restaurant employees	214	216	195	195
Iron workers	1,193	1,356	1,717	1,784
Locomotive engineers	240	230	311	260
Locomotive firemen	3,000	2,636	2,661	2,649

TABLE 20 (CONTINUED)

	1960	1961	1962	1963
Machinists	2,200	1,974	2,050	1,969
Maintenance of way employees	1,119	938	948	901
Marble polishers	241	163	184	169
Meat cutters	294	670	559	573
Mine workers, united	334	256	210	216
Molders	195	292	315	299
Musicians	2,113	2,247	1,455	1,499
Oil, chemical and atomic workers	3,848	3,847	3,930	4,525
Painters	1,240	1,277	1,119	1,152
Papermakers and paperworkers	339	380	394	415
Plasterers	457	371	461	496
Plumbers	4,131	4,461	4,585	4,413
Printing pressmen	257	263	240	226
Railroad signalmen	345	316	329	354
Railroad trainmen	1,529	1,396	1,303	1,415
Railway carmen	478	428	408	410
Railway conductors	154	164	153	144
Railway and steamship clerks	916	833	817	783
Retail clerks	528	603	695	838
Roofers	221	254	246	302
Rubber workers	1,645	1,413	1,471	1,547
Sheet metal workers	964	920	872	824
Stage, Moving picture operators	679	484	677	647
Steelworkers	1,140	1,164	1,312	1,260
Street motor coach employees	350	422	437	410
Switchmen	127	161	182	210
Teamsters	6,063	6,552	6,818	7,233
Telegraphers commercial	307	296	279	264
Transport workers	3,081	1,764	2,434	3,053
Typographical workers	591	570	566	568
Industrial oil workers (IND)	766	903	1,118	1,055
Directly affiliated union (Zinc smelter employees)	1,194	1,343	967	930

Source: Derived from L-M Reports.

TABLE 21

MEMBERSHIP OF THE TEN LARGEST UNIONS IN THE UNITED STATES, 1960 AND 1962

Union	Membership	
	1960	1962
Teamsters	1,480.6	1,366.6
Automobile Workers	1,136.1	1,073.6
Steelworkers	944.7	878.5
Carpenters	756.6	633.8
Electrical Workers (IBEW)	690.0	710.2
Machinists	686.8	666.3
Hod Carriers	442.5	421.3
Hotel, Restaurant Employees and Bartenders' Union	434.2	437.3
Mine Workers, United, and District 50	405.5	352.9
Garment Workers, Ladies	393.1	394.8

Source: Leo Troy, Trade Union Membership, 1897-1962, Occasional Paper 92 (New York: National Bureau of Economic Research, 1965) p. 6.

Nationally, two of the three unions, the Teamsters and the Carpenters, showed a decline in membership from 1960 to 1962, but in Arkansas, these unions showed an increase in membership. The third union, the IBEW, increased its membership in both Arkansas and the nation. Only six of the 49 Arkansas unions shown in Table 20 showed a decline in membership from 1960 to 1963 of over 10 percent, although 20

increased their membership by ten percent or more. These comparisons appear to be plausible, since union membership in Arkansas increased during the time period according to the present study, although Troy found that national union membership decreased from 1960 to 1962.

The five largest Louisiana unions were the International Association of Machinists, the Teamsters, the Carpenters, the Longshoremen, and the Hod Carriers. Troy stated that with the single exception of the Longshoremen's Union, these unions were among the seven largest unions in the nation. From 1960 to 1962 the membership of these unions decreased in Louisiana, as it did nationwide.

The five largest Oklahoma unions were the Teamsters, the Carpenters, the IBEW, the Oil, Chemical and Atomic Workers, and the Plumbers. Three of these five unions, the Teamsters, Carpenters, and the IBEW were among the five largest national unions. Membership in all three increased in Oklahoma, but only the IBEW showed increased membership from 1960 to 1963 on a national basis.

If membership figures by industry group could be studied over time, the resulting statistics could lend insight into the relationship between union growth and changes in the industrial structure of the area. The major difficulty encountered in such an examination, however, is that many unions have jurisdictions which cross industry lines. This is particularly true of craft unions which are quite difficult to classify by industry. Some industrial unions likewise present classification problems. District 50 of the United Mine Workers, for example, has expanded into the chemical industry, and the United Auto Workers have

expanded into fields which are at best remotely related to the automotive industry.

An attempt has been made to relate union membership to its appropriate industry group in those cases in which the union is clearly within one industry group. Table 22 shows the results of this attempt for the time period from 1960 to 1963.

It is obvious that for certain industry divisions the percentage unionization figure shown in Table 22 does not indicate the total percentage of employees unionized in the industry. For example, the only union listed under Lumber and Wood Products is the Woodworkers Union, but the United Brotherhood of Carpenters and Joiners also organize this industry. The Carpenter's Union, however, had to be excluded from all industrial classifications since its jurisdiction crosses industry lines.

Several of the industry groups were combined in order to better facilitate the comparisons of union membership. The workers employed in Petroleum Refining and Related Products, Chemicals and Allied Products, and Mining were combined for that reason, as were those employed in industries relating to Metals and Machinery. The percentages unionized for these two industries as well as the percentages unionized in Paper and Allied Products, Printing and Publishing, Food and Kindred Products, Stone, Clay and Glass Products, and Rubber and Miscellaneous Plastics Products may well reflect the total percent of union members who are employed in these industries. This generalization must be qualified, however, since firms in these industries often hire craftsmen who

TABLE 22

TOTAL UNION MEMBERS AND PERCENTAGE UNIONIZED BY INDUSTRY GROUP AND RELATED UNION FOR 1960, 1961, 1962, AND 1963 IN ARKANSAS, LOUISIANA AND OKLAHOMA

Industry Group (Related Union)	1960		1961		1962		1963	
	Total	Percent Unionized	Total	Percent Unionized	Total	Percent Unionized	Total	Percent Unionized
	(Arkansas)							
Food and Kindred Products	17,722	17.9	18,795	18.3	19,206	18.7	19,900	19.2
Bakery and Confectionary Workers	341	--	350	--	348	--	346	--
Brewery Workers	58	--	54	--	63	--	73	--
Meat Cutters	2,770	--	3,042	--	3,186	--	3,409	--
Textile Mill Products	2,026	12.0	2,044	11.1	2,034	19.4	2,096	14.0
Textile Workers Union	244	--	227	--	394	--	294	--
Apparel and Apparel Products	8,776	6.8	9,285	3.9	10,577	4.2	11,000	3.5
Clothing Workers	601	--	362	--	441	--	386	--
Lumber and Wood Products	24,107	10.6	22,526	11.5	22,899	10.6	23,399	10.0
Furniture Workers	2,549	--	2,584	--	2,437	--	2,342	--
Paper and Allied Products	6,498	59.8	6,322	68.0	6,465	70.2	6,457	84.5
United Papermakers and Paperworkers	1,423	--	1,546	--	1,647	--	2,639	--
Pulp, Sulfite, and Paper Mill Workers	2,464	--	2,754	--	2,890	--	2,817	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Printing and Publishing	3,419	13.3	3,594	12.6	4,236	11.0	4,669	10.8
Lithographers	93	--	89	--	102	--	115	--
Stereotypers and Electrotypers	39	--	41	--	43	--	64	--
Typographical Workers	323	--	323	--	323	--	323	--
Rubber and Misc. Plastics Products	903	42.6	963	47.5	1,457	36.6	1,587	29.4
United Rubber Workers	385	--	457	--	533	--	466	--
Leather and Leather Products	4,942	48.8	5,723	42.8	6,345	44.2	6,498	43.3
Shoe Workers	1,947	--	1,977	--	2,343	--	2,334	--
Boot and Shoe Workers	464	--	473	--	464	--	483	--
Stone, Clay and Glass Products	3,615	7.7	3,566	7.6	3,612	7.9	3,816	6.4
Brick and Clay Workers	189	--	192	--	205	--	176	--
Glass Cutters	22	--	19	--	17	--	15	--
Glass Workers (Flint)	68	--	59	--	63	--	55	--
Petroleum Refining and Related Industries, Chemicals and Allied Products, Crude Petroleum and Natural Gas Mining, and Other Mining	11,160	10.0	10,938	11.3	10,551	11.8	10,435	12.5
District 50, United Mine Workers	20	--	28	--	29	--	30	--
Oil, Chemical and Atomic Workers	1,012	--	1,141	--	1,163	--	1,225	--
United Mine Workers	80	--	64	--	57	--	50	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Primary and Fabricated Metals Products, including Machinery (except electrical and Transportation Equipment)	12,391	43.1	9,266	48.2	10,732	45.2	12,910	44.7
Aluminum Workers International	311	--	300	--	229	--	240	--
United Automobile Workers	1,748	--	1,848	--	2,018	--	2,371	--
Boilermakers	98	--	94	--	98	--	98	--
Iron Workers	182	--	369	--	494	--	591	--
Molders	95	--	100	--	100	--	237	--
Sheet Metal Workers	283	--	319	--	332	--	381	--
United Steel Workers	1,628	--	1,438	--	1,585	--	1,853	--
	(Louisiana)							
Food and Allied Products	32,567	28.8	31,216	31.5	30,798	32.1	30,948	27.5
Bakery and Confectionery Workers	399	--	367	--	374	--	334	--
Bakery and Confectionery Workers (Independent)	801	--	743	--	740	--	692	--
Bakery Employees (Independent)	2,143	--	2,369	--	2,075	--	1,370	--
Brewery Workers	1,442	--	1,778	--	2,401	--	1,738	--
Grain Millers	92	--	101	--	106	--	95	--
Meat Cutters	699	--	944	--	929	--	992	--
Packinghouse, Food and Allied Workers	3,789	--	3,532	--	3,268	--	3,294	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Textile Mill Products	481	29.9	442	31.9	419	34.8	361	51.0
Textile Workers Union	144	--	141	--	146	--	184	--
Apparel and other Finished Products made from Fabrics	6,125	16.8	5,815	16.7	6,055	15.0	5,661	16.3
Clothing Workers	920	--	860	--	776	--	779	--
Garment Workers	109	--	109	--	130	--	145	--
Lumber and Wood Products, excl. Furniture	18,321	5.6	16,583	5.7	16,588	5.6	16,113	5.3
Woodworkers	1,032	--	952	--	924	--	860	--
Paper and Allied Products	16,627	59.5	15,150	67.6	14,626	72.2	15,145	77.7
Papermakers and Paperworkers	4,533	--	4,871	--	4,976	--	5,704	--
Pulp, Sulfite and Paper Mill Workers	5,210	--	5,221	--	5,469	--	5,883	--
Pulp and Paper Independent Union	157	--	153	--	112	--	174	--
Printing, Publishing, and Allied Products	5,130	19.6	5,061	21.1	5,125	21.6	5,285	21.0
Bookbinders	104	--	110	--	106	--	108	--
Lithographers	28	--	57	--	63	--	66	--
Photo Engravers	84	--	62	--	59	--	57	--
Printing Pressmen	176	--	202	--	198	--	207	--
Typographical Workers	563	--	559	--	556	--	556	--
Stereotypers and Electrotypers	51	--	80	--	123	--	112	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Petroleum Refining, Chemicals and Allied Products, Crude Petroleum and Natural Gas Production, and Non-Metallic Mining	73,747	17.1	72,541	17.4	71,574	16.9	70,753	17.5
Chemical Workers	1,929	--	2,016	--	2,034	--	2,510	--
District 50, United Mine Workers	2,646	--	2,253	--	2,081	--	2,116	--
Oil, Chemical and Atomic Workers	4,876	--	5,106	--	4,351	--	4,687	--
Oil and Chemical Workers (Independent)	954	--	849	--	841	--	422	--
Humble Oil and Refining Company Employees' Federation (Independent)	779	--	780	--	760	--	745	--
Refinery Employees' Union (Independent)	1,079	--	1,229	--	1,653	--	1,585	--
Stone, Clay, and Glass Products	6,570	14.5	6,507	14.8	6,697	17.2	6,598	8.7
Glass Bottle Blowers	140	--	137	--	136	--	152	--
Marble Polishers	114	--	118	--	167	--	162	--
Potters	627	--	637	--	784	--	184	--
Stone Workers	72	--	73	--	68	--	79	--
Primary and Fabricated Metals including Machinery and Transportation Equipment	20,271	36.7	20,265	41.6	22,863	40.0	24,510	35.4
Aluminum Workers	2,289	--	2,344	--	2,443	--	2,137	--
Boilermakers	1,429	--	1,778	--	2,401	--	1,738	--
Iron Workers	1,571	--	2,160	--	1,751	--	1,958	--
Molders	361	--	419	--	670	--	550	--
Automobile Workers	132	--	130	--	125	--	105	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Sheet Metal Workers	760	--	780	--	1,076	--	1,232	--
United Steel Workers	902	--	819	--	680	--	966	--
Communications	12,103	27.0	11,461	25.6	11,244	29.9	11,321	28.2
Communications Workers	2,931	--	2,617	--	3,057	--	2,904	--
Telegraphers (Commercial)	334	--	320	--	301	--	288	--
Retail Eating and Drinking Places	21,017	1.7	20,381	2.4	20,672	2.2	21,185	2.2
Hotel and Restaurant Employees	367	--	484	--	466	--	463	--
	(Oklahoma)							
Food and Kindred Products	15,814	8.4	15,577	10.9	15,937	10.3	15,272	12.0
Bakery and Confectionery Workers	555	--	555	--	617	--	767	--
Grain Millers	395	--	403	--	391	--	402	--
Meat Cutters	294	--	670	--	559	--	573	--
Packinghouse, Food and Allied Workers	79	--	74	--	78	--	85	--
Apparel and Apparel Products	4,028	5.3	3,806	7.4	4,511	8.7	4,981	8.2
Garment Workers, United	213	--	281	--	391	--	402	--
Paper and Allied Products	n.a.	--	n.a.	--	n.a.	--	n.a.	--
Papermakers and Paperworkers	339	--	380	--	394	--	415	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Furniture and Fixtures	1,282	12.2	1,123	11.5	1,128	11.9	1,076	18.1
Furniture Workers	157	--	129	--	134	--	195	--
Printing and Publishing	5,583	20.5	5,658	19.9	5,734	20.0	5,769	20.0
Bookbinders	97	--	107	--	126	--	155	--
Lithographers	41	--	47	--	43	--	45	--
Photoengravers	47	--	51	--	45	--	54	--
Printing Pressmen	257	--	263	--	240	--	226	--
Stereotypers and Electrotypers	110	--	88	--	121	--	108	--
Typographical Workers	591	--	570	--	566	--	568	--
Rubber and Misc. Plastics	n.a.	--	n.a.	--	n.a.	--	n.a.	--
United Rubber Workers	1,645	--	1,413	--	1,471	--	1,547	--
Stone, Clay and Glass Workers	7,099	11.2	7,048	8.6	7,502	9.4	7,527	--
Marble Polishers	241	--	163	--	184	--	169	--
Glass Bottle Blowers	551	--	445	--	518	--	484	--
Petroleum Refining and Coal Products, Chemicals and Allied Products, and Mining	54,462	9.4	52,555	9.9	51,906	10.0	50,245	12.0
Chemical Workers	31	--	32	--	41	--	43	--
District 50, United Mine Workers	74	--	76	--	86	--	104	--
Industrial Oil Workers (Independent)	766	--	903	--	1,118	--	1,055	--
Mine Workers, United	334	--	256	--	210	--	216	--

TABLE 22 (CONTINUED)

Industry Group (Related Union)	1960 Total	1960 Percent Unionized	1961 Total	1961 Percent Unionized	1962 Total	1962 Percent Unionized	1963 Total	1963 Percent Unionized
Oil, Chemical, and Atomic Workers	3,848	--	3,847	--	3,930	--	4,525	--
Pipe Line Guild-Standish (Independent)	51	--	47	--	39	--	40	--
Sun Oil Company Employees' Association (Independent)	37	--	37	--	30	--	27	--
Primary and Fabricated Metals and Machinery	24,598	35.4	25,536	35.8	28,356	31.7	28,836	31.3
Automobile Workers, United	3,075	--	2,024	--	2,292	--	2,349	--
Boilermakers	952	--	2,040	--	1,503	--	1,574	--
Iron Workers	1,193	--	1,356	--	1,717	--	1,784	--
Molders	195	--	292	--	315	--	299	--
Sheet Metal Workers	964	--	920	--	872	--	824	--
Steel Workers, United	1,140	--	1,164	--	1,312	--	1,260	--
Zinc Smelter Employees (AFL-CIO)	1,194	--	1,343	--	967	--	930	--

Sources: Union membership derived from L-M Reports, employment data by industry derived from state Employment Security Commission data: Arkansas Employment Security Division, "Average Weekly Earnings in Covered Employment by County and Industry, 1960, 1961, 1962 and 1963 (Little Rock: Department of Labor, 1961, 1962, 1963 and 1964), Table 3; Louisiana Division of Employment Security, Average Weekly Wages in Covered Employment by Parish and by Industry, 1960, 1961, 1962 and 1963 (Baton Rouge: Louisiana State Department of Labor, 1960, 1961, 1962, and 1963), Table 3 and Oklahoma Employment Security Commission, Annual Report to the Governor, 1960, 1961, 1962, and 1963 (Oklahoma City: Oklahoma State Employment Service), p. 29 (1960), p. 35 (1961), p. 37 (1962), p. 38 (1963).

belong to craft unions. The number of persons belonging to craft unions, however, is probably relatively small in these industries.

At any rate, for the purposes of comparing percentage differentials over time and differences in percentage unionization by state, the data in Table 22 should suffice.

In both Arkansas and Louisiana, the Paper and Allied Products group shows the highest percentages unionized. In Oklahoma, the data on persons employed in this category were not available due to the fact that the Employment Security Commission cannot divulge information if it relates to only one firm. But Oklahoma appeared to be most highly unionized in the Metals and Machinery industry group. A three-state comparison of the Metals and Machinery group, however, shows that Arkansas had the highest percentage unionized, Louisiana second, and Oklahoma third. The fact that Arkansas had the highest percentage can probably be explained by the substantial steel industry in Benton, which would cause the percentage of persons employed in the primary metals industries in Arkansas to be higher than in Louisiana or Oklahoma.

In general, and it is a rather surprising result, it seems from an analysis of Table 22 that the percentages of union membership by industry group in Arkansas and Louisiana are quite similar, but that the Oklahoma percentages are generally lower.

The unionization percentages by industry over time appear to be relatively constant for Arkansas and Louisiana. The Oklahoma percentages show some variation, since most of the figures except Primary and Fabricated Metals and Machinery increase from 1960 to 1963.

The Paper and Allied Products Group in both Arkansas and Louisiana shows the greatest increase in unionization over the time period, whereas in Oklahoma, the Furniture and Fixtures Group showed the greatest increase.

Union membership by county and broad industry group in the three-state area.--Union membership by county in comparison to the number of persons employed in Manufacturing, Construction, Transportation, Mining and Communications is shown in Table 23. The data are for 1960 alone, since industry group statistics by county are not available for all of the three states for noncensus years.

TABLE 23

UNION MEMBERSHIP, TOTAL EMPLOYMENT, MANUFACTURING EMPLOYMENT, CONSTRUCTION EMPLOYMENT, TRANSPORTATION EMPLOYMENT, MINING EMPLOYMENT, AND COMMUNICATIONS EMPLOYMENT BY COUNTY FOR ARKANSAS, LOUISIANA, AND OKLAHOMA, 1960

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
			Arkansas (75 Counties)				
Arkansas	53	8397	1261	444	198	4	81
Ashley	1874	7323	2819	277	229	4	8
Baxter	314	2764	253	335	141	--	38
Benton	0	12704	2725	919	325	21	102
Boone	604	5543	1188	535	175	10	64
Bradley	966	4321	1914	162	120	4	31
Calhoun	0	1771	597	150	48	17	4
Carroll	0	4026	880	283	49	8	16
Chicot	39	5082	374	276	101	--	18
Clark	48	6530	1813	300	299	18	48
Clay	356	6564	947	344	156	8	8
Cleburne	24	2508	320	549	88	8	--
Cleveland	88	1923	734	108	43	8	17

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Columbia	70	9059	2176	491	238	32	62
Conway	72	4545	1076	358	127	14	25
Craighead	2345	15893	3060	818	401	8	154
Crawford	0	6422	1930	519	384	31	50
Crittenden	0	13289	1278	825	572	4	101
Cross	0	5875	341	397	273	5	39
Dallas	367	3126	1158	159	101	12	40
Desha	349	5853	491	283	447	12	60
Drew	281	4573	1265	270	101	65	4
Faulkner	392	8275	1721	781	266	12	50
Franklin	4	2924	604	256	82	14	10
Fulton	0	1992	275	106	76	4	5
Garland	1337	15367	2276	1141	402	64	170
Grant	74	2317	1024	147	111	33	18
Greene	343	8249	1740	443	228	19	79
Hempstead	96	6525	1401	399	191	27	46
Hot Spring	485	6899	2462	390	203	361	40
Howard	139	3369	1141	192	132	7	33
Independence	281	6055	1186	455	180	109	25
Izard	0	1874	369	94	64	65	9
Jackson	691	7262	937	364	183	12	57
Jefferson	1442	25027	5395	1335	1649	63	203
Johnson	51	3250	839	188	118	102	12
Lafayette	51	3060	697	178	123	106	25
Lawrence	55	4872	699	232	188	16	43
Lee	0	5819	348	203	62	--	8
Lincoln	0	3314	716	145	44	8	8
Little River	36	2697	592	129	135	53	20
Logan	117	4712	638	330	162	174	29
Lonoke	84	7205	870	487	199	4	27
Madison	0	3385	592	198	63	15	6
Marion	0	1840	169	140	76	20	7
Miller	520	10227	1636	770	622	81	95
Mississippi	355	19041	2136	1099	338	17	156
Monroe	13	4634	627	178	139	--	34
Montgomery	0	1737	488	144	40	4	--
Nevada	10	3436	902	260	166	51	24
Newton	0	1442	454	64	40	3	8
Ouachita	1928	9919	3658	488	199	317	66
Perry	124	1361	266	198	72	--	27
Phillips	957	12895	2293	801	366	4	74

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Pike	0	2215	842	185	97	4	--
Poinsett	0	9234	1862	343	109	4	43
Polk	44	3950	1447	224	91	26	34
Pope	497	7068	1810	689	166	56	76
Prairie	0	3065	273	206	67	4	3
Pulaski	17175	88221	14671	6611	5504	177	1465
Randolph	267	3791	773	257	88	4	8
St. Francis	0	9000	992	393	159	20	43
Saline	2107	8160	2675	605	238	575	59
Scott	0	2338	808	129	72	--	8
Searcy	0	2532	537	91	31	--	16
Sebastian	8313	22991	5573	1318	949	248	297
Sevier	0	3169	940	208	198	8	21
Sharp	0	1881	283	196	51	11	--
Stone	0	1718	334	123	63	19	--
Union	3618	16861	4428	936	868	920	155
Van Buren	0	2018	452	106	45	--	13
Washington	216	20036	3806	1393	707	23	176
White	519	10433	2017	864	342	21	98
Woodruff	246	3731	314	125	63	8	9
Yell	18	3737	925	325	144	9	12
			Louisiana (61 Counties)				
Acadia	88	14336	1214	1330	425	900	224
Allen	457	5368	1412	421	264	164	72
Assumption	--	4529	836	403	74	118	--
Avoyelles	--	10132	749	1094	233	106	55
Beauregard	146	5012	1010	390	225	120	60
Bienville	--	4564	1110	430	167	72	15
Bossier-Caddo	14833	94272	11271	7238	4438	3498	1511
Calcasieu	11546	42607	8738	3873	2387	1750	545
Caldwell	--	2152	368	197	102	23	13
Cameron	--	1887	138	198	84	429	8
Catahoula	--	2639	238	215	130	150	--
Claibourne	--	5795	937	394	236	565	78
Concordia	228	5588	848	412	315	371	30
De Soto	--	6726	1406	476	176	142	78
E. Baton Rouge	16712	78567	15628	7245	2170	453	1070
E. Carroll	--	3781	164	198	105	8	35
E. Feliciana	--	4453	451	281	99	82	28

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Evangeline	185	8063	638	708	217	352	32
Franklin	--	6920	370	522	134	92	51
Grant	--	3225	492	370	171	72	--
Iberia-Vermillion	927	27613	2689	2281	1122	2870	209
Iberville	43	7776	1086	804	228	355	55
Jackson	1588	4997	2053	306	143	12	25
Jefferson	--	69322	14587	6322	6123	2956	1170
Jefferson Davis	--	8931	673	768	277	920	159
Lafayette	3260	28281	2203	2240	1294	2094	395
Lafourche	567	16598	2148	1604	1371	2322	153
La Salle	--	3641	801	209	163	637	25
Lincoln	368	9118	1040	770	196	166	113
Livingston	--	6985	1685	1090	234	46	91
Madison	221	4234	632	190	112	14	43
Morehouse	1582	9147	2743	477	225	16	104
Natchitoches	140	9302	926	712	232	37	64
Orleans	68629	233471	30472	13189	20580	2464	2931
Ouachita	5496	33594	5664	2940	1339	444	447
Plaquemines	--	6662	1102	584	640	1627	28
Pointe Coupee	--	5170	591	689	113	21	3
Ascension	77	7432	1490	849	362	306	76
Rapides	5395	31645	3491	2393	1466	104	399
Red River	--	2552	252	270	75	56	12
Richland	--	6151	393	533	126	200	30
Sabine	--	4984	1347	329	184	169	42
St. Bernard	--	9692	2731	854	864	138	215
St. Charles	954	5725	2046	541	416	247	8
St. Helena	--	2315	344	260	69	15	11
St. James	478	4314	1311	229	105	20	--
St. John the Baptist	719	4719	1769	382	81	58	25
St. Landry-St. Martin	675	29185	2862	2257	949	1238	193
St. Mary	473	14638	1995	1062	1246	1855	127
St. Tammany	--	11480	1954	1335	538	217	254
Tangipahoa	101	17781	2989	1721	446	242	212
Tensas	--	2908	202	123	37	109	--
Terribonne	447	17365	2128	1617	1258	3515	181
Union	--	4832	1326	505	206	130	8
Vernon	57	4247	558	462	271	30	42

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Washington	3662	13465	4462	781	421	105	98
Webster	1867	12417	3317	1296	490	409	97
W. Baton Rouge	200	3976	723	488	283	22	19
W. Carroll	--	3656	213	266	73	12	20
W. Feliciana	185	2255	415	127	36	20	23
Winn	230	4314	1108	397	239	169	17
			Oklahoma (75 Counties)				
Adair	--	2760	448	205	93	3	12
Alfalfa	--	2969	50	181	78	61	47
Atoka	--	2471	205	228	84	23	5
Beaver	--	2670	62	229	61	127	4
Beckham	--	6159	386	514	132	115	110
Blaine	99	4167	501	278	60	42	25
Bryan	74	7772	754	590	225	71	78
Caddo	139	8734	330	666	265	438	51
Canadian	1477	8139	709	479	924	35	74
Carter	223	12774	967	994	424	1881	220
Cherokee	--	4571	194	615	127	8	26
Choctaw	361	4264	635	319	171	29	64
Cimarron	--	1642	40	112	49	21	4
Cleveland	871	16851	1001	1291	321	413	169
Coal	34	1516	121	154	30	20	--
Comanche	843	19733	1153	1796	603	114	294
Cotton	--	2487	169	245	32	95	13
Craig	253	4937	497	412	145	35	58
Creek-Payne	2263	28169	4084	1946	1265	2046	354
Custer	97	8006	440	733	162	43	100
Delaware	--	3435	336	436	64	--	20
Dewey	--	2309	82	133	36	44	26
Ellis	--	2061	36	137	86	92	38
Garfield	1033	18178	2419	1166	831	239	224
Garvin	226	9103	508	673	475	1578	102
Grady	149	10048	1030	689	328	472	133
Grant	--	3028	102	136	64	66	38
Greer	117	2995	133	190	82	32	44
Harmon	--	2004	80	120	39	10	9
Harper	--	2340	83	192	95	286	24
Haskell	40	2316	172	186	40	132	12

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Hughes	--	4478	424	341	185	290	60
Jackson	149	7378	365	547	245	43	74
Jefferson	--	2458	127	241	128	206	25
Johnston	14	2362	189	197	95	83	20
Kay	2982	18492	5822	924	501	325	180
Kingfisher	--	4226	203	220	55	60	83
Kiowa	9	4875	212	415	113	137	66
Latimer	--	1864	135	188	40	86	--
Le Flore	538	7500	1212	654	394	219	55
Lincoln	--	5889	379	502	206	522	94
Logan	157	6637	750	530	205	290	52
Love	--	1837	172	130	66	73	4
McClain	267	3969	164	311	266	206	62
McCurtain	--	6478	1774	434	161	36	74
McIntosh	--	2987	211	311	91	29	29
Major	--	2796	201	203	118	28	9
Marshall	--	2352	224	324	85	131	35
Mayes	226	5757	1066	684	168	17	39
Murray	--	3257	146	254	106	273	27
Muskogee	3455	19912	2957	1402	897	194	226
Noble	--	3467	221	387	154	261	31
Nowata	--	3261	304	350	87	532	37
Okfuskee	--	2807	163	203	93	222	28
Oklahoma	17226	171838	20809	11848	6187	3946	2757
Okmulgee	730	10819	2741	597	316	449	101
Osage-Washington	1972	26698	3838	1564	763	5558	303
Ottawa	1924	8797	2175	599	442	185	98
Pawnee	--	3197	225	348	81	331	54
Pittsburg	460	10030	1283	639	252	358	109
Pontotoc	315	9328	1239	824	271	557	100
Pottawatomie	1109	13884	1726	1056	556	641	212
Pushmataha	--	2237	269	250	22	16	12
Roger Mills	--	2045	8	133	36	4	--
Rogers	19	6633	957	823	325	404	57
Seminole	192	8640	850	628	309	1440	105
Sequoyah	66	4197	1067	279	166	75	37
Stephens	891	13177	2719	792	455	1689	138
Texas	58	5360	244	379	156	354	73
Tillman	--	4670	381	376	198	18	20

TABLE 23 (CONTINUED)

County	Union Membership	Total Employment	Manufacturing Employment	Construction Employment	Transportation Employment	Mining Employment	Communications Employment
Tulsa	29733	132121	27418	8310	9110	5848	1827
Wagoner	--	4329	619	445	135	95	16
Washita	--	4616	70	365	105	16	47
Woodward	49	5056	201	345	136	281	71
Woods	88	4629	147	294	379	30	74

Source: Union membership derived from L-M Reports. The remainder of the Table is from U. S. Bureau of the Census, U. S. Census of the Population: 1960. Vol. I, 5-209 to 5-213, 20-205 to 20-210, 38-223 to 38-228.

The entries in Table 23 are analyzed by the regression method, and the results are shown in Table 24. The regression equations are estimated in the form $U = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$, where U = Union membership, X_1 = Manufacturing employment, X_2 = Construction employment, X_3 = Transportation employment, X_4 = Mining employment, and X_5 = Communication employment.

Although the coefficients of determination were large for the regressions--0.99 for Oklahoma and Louisiana and 0.93 for Arkansas, some of the regression coefficients were unsatisfactory. In particular, a few of the "b" values were either negative or greater than one. A negative "b" value would indicate that the more persons employed in a county in that particular industry, the fewer persons would be unionized in that county. A "b" value greater than one would indicate that an increase of X persons employed in that industry for a county would

result in an increase of greater than X persons unionized in the county.

TABLE 24

THE RESULTS OF A REGRESSION ANALYSIS RELATING UNION MEMBERSHIP TO PERSONS EMPLOYED IN MANUFACTURING (X_1), CONSTRUCTION (X_2), TRANSPORTATION (X_3), MINING (X_4), AND COMMUNICATION (X_5), 1960

State	a	b_1	b_2	b_3	b_4	b_5	R^2
Arkansas	247.40	0.83	-2.13	0.83	1.27	12.64	0.93
("t" value)[a]	--	4.50	-3.87	1.46	1.97	4.49	--
Louisiana	-871.27	0.84	-0.07	0.88	-0.48	2.84	0.99
("t" value)	--	6.39	-0.19	6.05	-2.54	1.87	--
Oklahoma	-245.09	0.44	-0.60	2.57	-0.17	0.07	0.99
("t" value)	--	7.44	-2.20	14.87	-2.85	0.06	--
Oklahoma (without Oklahoma County)	-252.57	0.44	-0.61	2.51	-0.19	0.58	0.99
("t" value)	--	7.22	-2.22	10.57	-2.73	0.35	--

[a]See Appendix III for an explanation of the "t" test.

Source: Derived from Table 23.

There is a possible, although rather tenuous, explanation for these unsatisfactory regression coefficients. The negative coefficients might be explained by the fact that a relatively small number of unorganized workers may lead to less organization in related fields. Union members may refuse to work with non-union co-workers.

On the other hand, a regression coefficient greater than one might be justified by the fact that large employments in highly unionized industries might cause a spread of unionism into related industries.

It is, however, quite difficult, if not impossible, to justify (as in the case of Arkansas) that an increase in Communications employment would result in a twelve-fold increase in union membership.

Perhaps a more likely explanation of the unsatisfactory coefficients is that the independent variables in the regression may be correlated to each other. The technical name for this phenomenon is multicollinearity. Table 25 shows the simple correlation coefficients for each of the independent variables of Table 24 in relation to the dependent variable, union membership. These coefficients are all positive, which would indicate that the "b" values for the simple regressions would also be positive.

TABLE 25

SIMPLE CORRELATION COEFFICIENTS SHOWING THE RELATIONSHIP BETWEEN UNION MEMBERSHIP AND PERSONS EMPLOYED IN MANUFACTURING (r_{12}), CONSTRUCTION (r_{13}), TRANSPORTATION (r_{14}), MINING (r_{15}), AND COMMUNICATION (r_{16}) FOR ARKANSAS, LOUISIANA, AND OKLAHOMA, 1960

State	r_{12}	r_{13}	r_{14}	r_{15}	r_{16}
Arkansas	0.94	0.91	0.93	0.35	0.93
Louisiana	0.99	0.97	0.98	0.66	0.98
Oklahoma	0.98	0.89	0.99	0.75	0.88
Oklahoma (without Oklahoma County)	0.98	0.95	0.99	0.69	0.97

Source: Derived from Table 23.

After consideration of the fact that the simple "b" values are positive, whereas some of the "b" values in the multiple regression are

negative, it seems reasonable to conclude that due most probably to multicollinearity, the specific effects of the independent variables in the multiple regression analysis should not be examined.

One of the more interesting results of the regressions is that the coefficients of multiple determination are approximately the same regardless of whether Oklahoma County is excluded from the data. In Chapter 4, it was found that the exclusion of Oklahoma County data from the regression analysis significantly raised the coefficient of determination. Furthermore, although multicollinearity may influence the "b" coefficients, the "b" values for the regression equations remain approximately the same except for the X_5 (communication) coefficient, which is not significantly different from zero anyway according to the "t" test. It appears, then, that the relative numbers of persons employed in the four remaining employments explain the differences between the number of persons belonging to unions in Oklahoma County and those in other large counties in Oklahoma.

Due to the fact that a few of the regression coefficients were unsatisfactory, the regressions were run again excluding the unsatisfactory variables with the expectation that some of the multicollinearity might be avoided. Since it seemed that the more appropriate variables for all of the three states were the X_1 (manufacturing) and the X_3 (transportation) variables, the regressions were run using only those as the independent variables and union membership as the dependent variable.

Unfortunately, this approach did not remedy the intercorrelation problem. The evidence of multicollinearity is easily seen in three

variable regressions, since the simple correlation coefficient showing the association between the independent variables provide a measure of the total intercorrelation between the independent variables in the model. In the three variable regression analyses, the correlation coefficient between the two "independent" variables was not lower than 0.96 for any of the three states. Such a great degree of association between the independent variables is evidence of a serious multicollinearity problem.

One possible reason for the intercorrelation of the independent variables might be that all of them are related to the total employment in the county. The regressions were run, therefore, for percent of persons employed in manufacturing, construction, transportation and mining versus percent unionized by county. The results of these regressions were also rather unsatisfactory; perhaps for the reason that counties having large populations were not weighted and were therefore considered to be no more important than the smaller counties. The lumping together of all counties, therefore, might well have biased the results of the regressions toward the peculiarities of the more numerous smaller counties.

The regressions were run again, therefore, using the percentage data weighted by size of county, which led to more satisfactory results. Since the weighted regressions were made in the attempt to reduce the bias resulting from variable county size, the weighting was performed by adding an extra observation in the basic data for each 5,000 persons employed in the county. For example, every county having 18,000 persons employed would be counted as three observations in the

percentage analysis, which would give the percentages employed in larger counties more weight in the regression results. These results are shown in Table 26.

TABLE 26

THE RESULTS OF A REGRESSION ANALYSIS WHERE Y = AN ANALYSIS OF PERCENT OF LABOR UNION MEMBERSHIP, VERSUS X_1 = PERCENT OF PERSONS EMPLOYED IN MANUFACTURING, X_2 = CONSTRUCTION, X_3 = TRANSPORTATION, AND X_4 = MINING FOR ARKANSAS, LOUISIANA AND OKLAHOMA IN 1960

State	"a"	"b_1"	"b_2"	"b_3"	"b_4"	R^2
Arkansas	-3.97	0.198	-0.158	2.113	1.356	0.32
("t" value)	--	2.02	-0.47	5.47	2.51	--
Louisiana	7.95	0.405	-1.047	1.826	-0.834	0.59
("t" value)	--	4.522	-3.795	8.610	-6.532	--
Oklahoma	-0.993	0.514	-0.847	2.303	-0.120	0.78
("t" values)	--	8.88	-3.90	10.54	-1.54	--
Oklahoma (without Oklahoma City)	-3.42	0.517	-0.696	2.404	-0.056	0.80
("t" value)	--	8.59	-3.02	10.49	-0.67	--

Source: Derived from Table 23.

The regressions of Table 26 appear to show less evidence of multicollinearity than those of Table 24. The matrices of simple correlation coefficients for each of the regressions in Table 26 are shown in Table 27 in order to show the extent of association between any two variables in the regressions. Although there does appear to be some association among the independent variables--the simple correlation coefficient between manufacturing and transportation in Oklahoma is 0.44

TABLE 27

SIMPLE CORRELATION COEFFICIENTS FOR THE REGRESSIONS OF TABLE 26 FOR ARKANSAS, LOUISIANA, AND OKLAHOMA, 1960

	r_{1_j}	r_{2_j}	r_{3_j}	r_{4_j}	r_{5_j}
			(Arkansas)		
r_{i1}	1.0	--	--	--	--
r_{i2}	0.23	1.0	--	--	--
r_{i3}	-0.05	-0.17	1.0	--	--
r_{i4}	0.44	-0.08	0.08	1.0	--
r_{i5}	0.27	0.34	-0.07	-0.04	1.0
			(Louisiana)		
r_{i1}	1.0	--	--	--	--
r_{i2}	0.11	1.0	--	--	--
r_{i3}	-0.41	0.10	1.0	--	--
r_{i4}	0.56	-0.07	-0.44	1.0	--
r_{i5}	-0.47	-0.21	0.05	0.01	1.0
			(Oklahoma)		
r_{i1}	1.0	--	--	--	--
r_{i2}	0.72	1.0	--	--	--
r_{i3}	-0.48	-0.36	1.0	--	--
r_{i4}	0.75	0.44	-0.29	1.0	--
r_{i5}	-0.04	0.02	-0.04	0.03	1.0

Source: Derived from Table 23.

and the simple correlation coefficient between manufacturing and transportation in Arkansas is 0.34--the intercorrelation may not be great enough to seriously affect the regression "b" values in the percentage analysis.

Another encouraging result of this analysis is that whenever a negative "b" value was found, the simple correlation coefficient between that variable and the percentage unionized was also negative. Moreover, those variables having negative regression coefficients seem to represent the least unionized industry groups, whereas positive coefficients represent the more highly organized industry groups.

Table 22 (above) does show that the percentage of persons unionized in mining (which has a negative coefficient) in the three states is considerably smaller than the percentage in manufacturing. Moreover, it seems likely that the transportation industry, which is traditionally well organized, would have a larger percentage unionized than mining. Finally, it is probable that the construction industry in Arkansas, Louisiana and Oklahoma is not nearly so well organized as either manufacturing or transportation. Unfortunately, the data in Table 22 are not extensive enough to support these contentions, but they do seem to be consistent with a general knowledge of the union movement. At any rate, if these contentions are valid, the regression coefficients for percent of persons employed in construction and mining would be expected to be smaller than the coefficients for transportation and manufacturing.

Regression coefficients which are negative or greater than one, however, appear to be quite difficult to justify. The only plausible

explanation appears to be that unionism as well as anti-unionism tends to spread throughout a particular area. This explanation is discussed above, and the conclusion is stated that it is, at best, a rather tenuous explanation of the results. Until further information becomes available, it can only be concluded that regression coefficients which are negative or greater than one are illogical results, which may be caused by inadequacies of the statistical techniques or by inadequacies in the basic data.

Some interim conclusions.--It is not at all surprising that manufacturing and transportation employment were important variables in explaining the extent of unionization in the three-state area. These results confirm basic a priori expectations about the relationships between these variables and union membership. There has been one rather unexpected finding from these analyses--that there were differences in the regression coefficients among the states for comparable variables.

With respect to this unexpected finding, certain implications may be indicated. Since the regression coefficients for the structural analyses of union membership did seem to differ on a state-by-state basis, one might infer that the differences in union membership by state cannot be explained solely on the basis of structural differences within each state. Furthermore, the sizes of the coefficients of multiple determination for the percentage analysis show that much variation in union membership remains unexplained.

The Size Distribution of Union Membership in the Three-State Area

E. H. Phelps Brown and P. E. Hart published an article entitled "The Sizes of Trade Unions: A Study in the Laws of

Aggregation"[70] in which they argued that British Labor Unions as well as British firms tended to be distributed by size in accordance with the log-normal distribution. Specifically, they tried to extend an earlier analysis of concentration in business firms in order to determine whether union membership was concentrated in several large unions in the same manner that British employment seemed to be concentrated in several large firms.

If unions (or business firms) were classified by size and arranged in a frequency distribution, the resulting distribution would be skewed to the right (positively skewed). Phelps Brown and Hart, however, showed that if the class intervals on the horizontal axis were formed on a logarithmic basis, the resulting distribution of unions would approximate the normal curve. It is, of course, quite often the case that positively skewed distributions lose their skewness when changed to the logarithmic form.[71]

Table 28 shows the distributions of British trade union membership found by Phelps Brown and Hart. They used the technique of requiring the upper boundary of each class to be double the lower boundary, so that the class intervals would be equal on a logarithmic scale, and found that the actual distributions, although not exactly normal, were approximately log-normal. As they put it in one of the conclusions of their analysis, "Unions resemble firms in Britain in the

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[70]E. H. Phelps Brown and P. E. Hart, "The Sizes of Trade Unions: A Study in the Laws of Aggregation," Economic Journal, LXVII (March 1957), pp. 1-15.

[71]See Croxton and Cowden, Applied General Statistics, 2nd ed., (New York: Prentice-Hall, Inc., 1955), pp. 613-14.

TABLE 28

SIZE DISTRIBUTION OF BRITISH TRADE UNIONS, 1906-54
FROM DATA SUPPLIED BY THE MINISTRY OF LABOUR

Class	Upper Limit No. of Members	1906	1914	1924	1932	1940	1948	1954
A	3	--	--	3	3	1	--	--
B	5	1	--	5	3	4	--	--
C	10	4	4	23	27	17	1	3
D	20	32	25	37	43	28	11	11
E	40	96	79	88	89	88	41	41
F	80	182	147	137	137	129	68	60
G	160	237	215	154	147	119	85	68
H	320	159	188	151	121	114	95	73
K	640	115	141	158	124	120	83	86
L	1,280	119	147	109	95	93	81	68
M	2,560	68	109	96	90	73	66	73
N	5,120	64	55	82	74	74	75	66
O	10,240	35	67	57	58	61	37	39
P	20,960	21	36	40	33	28	34	35
Q	40,960	9	20	20	15	23	22	19
R	81,920	5	11	14	13	11	13	16
S	163,840	3	8	9	6	13	10	10
T	327,680	--	1	3	3	1	5	4
U	655,360	--	--	2	1	3	2	2
V	1,310,720	--	--	--	--	1	3	4
W	2,621,440	--	--	--	--	--	1	--
Total no. of unions:		1,150	1,253	1,188	1,082	1,001	733	678

Source: Phelps Brown and Hart, "The Sizes of Trade Unions," Economic Journal, March, 1957, p. 3.

last fifty years in that the sizes of both are approximately distributed log-normally."[72] Although some factors which could explain the

[72]Phelps Brown and Hart, op. cit., p. 14.

distribution of union membership might be inferred from the preceding statement (eg., that the distribution of business firms caused the log-normality of the distribution of labor unions), Phelps Brown and Hart did not explicitly attribute the log-normality of the size distribution of trade unions to that of business firms. They stated, rather, that:

> If the mathematicians' argument means what it says, the concentration of great numbers of members within a handful of unions, so to speak, will have come about...by a multitude of independent factors, each tending to make unions grow or shrink by some proportion of their momentary size. This alone is enough.[73]

And they stated further that:

> But the fact that the actual distribution of sizes of the unions agrees as closely as it does with the log-normal form provides indirect evidence that no one characteristic nor group of characteristics has been decisive, and that the actual influences on growth have been many and various.[74]

The conclusion that the size distribution of union members was caused by many things is quite probably true, but it does not provide a particularly satisfactory explanation of the fact that there does seem to be a similarity between the distribution of business firms and the distribution of labor unions in Britain.

It seems that there is some need to explore the hypothesis that union membership is related to the size of the firm and the attendant hypothesis that an increase in union membership is caused by an increase in the size of business firms.

For purposes of simplification, the distribution of union members in Arkansas, Louisiana, and Oklahoma were put into a slightly different log form than the one used by Phelps Brown and Hart. The

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[73] Ibid., pp. 5-6.

[74] Ibid., p. 12.

classes were based upon the distribution of class midpoints of $\log_2 X$, and were chosen so that the midpoints of the classes would be integers and equi-distant from one another. The resulting distributions are shown in Table 29.

TABLE 29

A FREQUENCY DISTRIBUTION OF UNIONS CLASSIFIED BY MEMBERSHIP IN WHICH THE CLASSES WERE CHOSEN SUCH THAT THE LOGARITHMS TO THE BASE 2 OF THE MIDPOINTS OF THE CLASSES WOULD BE IN INTEGERS AND EQUIDISTANT FROM ONE ANOTHER, FOR THE STATES OF ARKANSAS, OKLAHOMA AND LOUISIANA AND FOR THE YEAR 1963

Class Intervals	Class Midpoints 2^X	Frequency of Unions		
		Arkansas	Louisiana	Oklahoma
1-3	1	0	1	0
3-5	2	0	0	2
6-10	3	0	2	1
11-21	4	8	4	3
22-42	5	5	7	4
43-85	6	12	3	7
86-170	7	4	13	6
171-341	8	13	13	13
342-682	9	11	11	12
683-1,365	10	9	12	8
1,366-2,730	11	11	16	11
2,731-5,461	12	5	7	6
5,462-10,922	13	0	7	1
10,923-21,845	14	0	1	0

Source: Derived from L-M Reports.

These distributions are not particularly close to the log-normal. The B_1 and B_2 coefficients were computed to measure the amount of skewness and kurtosis of the distributions. A perfectly normal distribution will have a B_1 value of zero (measuring skewness) and a B_2 value of three (measuring kurtosis). The B_1 and B_2 coefficients for

the Arkansas distribution were 0.0247 and 1.928, respectively, indicating that the Arkansas distribution differed from the log-normal primarily in that it was flatter and wider, although it seemed to be nearly symmetrical. The Louisiana B_1 and B_2 coefficients, on the other hand, were 0.164 and 2.62, which would indicate that the Louisiana distribution is less symmetrical than the Arkansas distribution (more skewed) but also less platykurtic. The Oklahoma distribution, finally, had B_1 and B_2 values of 0.2487 and 2.753, which indicate that the distribution is more skewed than either of the other distributions, but less platikurtic.

If the hypothesis were made that these distributions were samples from a larger population of log-normally distributed labor unions (the United States, for example), the B values could be tested to find whether they are significantly different from the normal distribution in the population. It could be concluded then that the Louisiana distribution, with 97 observations is not significantly different from the normal at the 1 percent significance level, but that it is significantly skewed at the 5 percent level. The Arkansas distribution, on the other hand, with 78 observations, would be significantly different from the normal in that it would be wider and flatter, while the Oklahoma distribution with 74 observations would be more skewed than the normal and significantly so at the 5 percent level, but not at the 1 percent level. This test for significance, however, is not valid on theoretical grounds, for if the population is assumed to be the whole United States, the distribution of labor unions for the states studied is probably not a representative sample. One might expect the

distribution of labor unions to be different in the more highly industrialized states than in the three-state area.

It can only be concluded, therefore, that since each distribution is a population having B_1 and B_2 values other than zero and three, the population distributions are not log-normal.

The more interesting contention of Phelps Brown and Hart's analysis, however, was that the distribution of union sizes closely followed the size distribution of business firms in Great Britain. Unfortunately, data on the size distributions of business firms in the three-state area are not provided in a form which lends itself to changing into a comparable distribution and are, furthermore, not current.[75]

It is possible, however, to examine the degree of association between union membership by county and the size of manufacturing establishment. The preliminary report of the 1963 Census of Manufactures, Area Series, shows the total number of manufacturing establishments and the total number of manufacturing employees by county. From these data the average number of manufacturing employees per establishment per county may be derived. By using the multiple regression technique with the average size of manufacturing establishment as one independent variable, one should be able to see whether the size of the manufacturing establishment in particular counties affects the extent of unionization. If the regression coefficient is significant,

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[75]Some minimal data on the size distribution of manufacturing firms is available in the 1958 Census of Manufactures, and will presumably be available in the 1963 Census of Manufactures, whenever that is published, but these data are quite insufficient for making the necessary comparisons.

the average size of the establishment will be a significant determinant of unionization. Therefore, the average size of manufacturing establishment was added to the data used for Table 26 as a fifth independent variable. The results of these regressions based upon percentage data by county are summarized in Table 30.

The percentage analysis, however, has the same potential bias which was mentioned earlier in the chapter, since a straight percentage analysis is not weighted by county size. The regressions were weighted in the same manner, therefore, by duplicating each observation in terms of one duplication for each 5,000 employees in the county. A problem inherent in these regressions is that the percentage figures derived from Table 23 relate to the census year, 1960, and the data for average size of manufacturing firm relate to the year, 1963. In using these regression results, the differences between the average sizes of firm by county must be assumed to have remained constant from 1960 to 1963.

As shown in Table 30, the fact that the average size of manufacturing establishment was significant for all three states at the 5 percent level seems to indicate that the average size of manufacturing establishment does affect union membership by county.

The inclusion of average size of manufacturing firm in the regression produced an unexpected result in its effect on the b_1 (percent manufacturing) coefficient. Although the inclusion of the new variable increased the Coefficients of Multiple Determination for Arkansas and Louisiana from 0.32 and 0.59 to 0.52 and 0.82 respectively, (see Tables 26 and 30), the "b_1" value for Arkansas increased from 0.198 to 0.273 and <u>decreased</u> for Louisiana from 0.405 to -0.461.

TABLE 30

A REGRESSION ANALYSIS OF ARKANSAS, OKLAHOMA, AND LOUISIANA WHERE U_1 (THE PERCENTAGE OF UNION MEMBERS = $a + b_1X_1$ (PERCENT MANUFACTURING) + b_2X_2 (PERCENT CONSTRUCTION) + b_3X_3 (PERCENT TRANSPORTATION) + b_4X_4 (PERCENT MINING) + b_5X_5 (AVERAGE SIZE OF MANUFACTURING FIRM)

State	a	b_1	b_2	b_3	b_4	b_5	R^2
Arkansas	-0.1334	0.273	0.037	1.607	0.930	0.228	0.52
("t" values)	--	2.78	0.10	4.17	1.83	5.32	--
Louisiana	0.0353	-0.461	-0.0083	1.757	-0.761	0.231	0.82
("t" values)	--	-4.60	-0.387	11.33	-8.10	11.02	--
Oklahoma	0.0066	0.209	-1.060	3.044	-0.308	0.066	0.82
("t" values)	--	2.25	-2.52	11.73	-2.57	2.54	--
Oklahoma (without Oklahoma City	-0.0474	0.351	-0.769	3.158	-0.121	0.044	0.84
("t" values)	--	2.82	-1.54	10.47	-0.75	1.39	--

Source: Derived from Table 24 and U. S. Bureau of the Census, 1963 Census of Manufactures, Area Series, Arkansas, Preliminary Report, (Washington: Bureau of the Census), p. 5, U. S. Bureau of the Census, 1963 Census of Manufactures, Area Series, Oklahoma, Preliminary Report (Washington: Bureau of the Census, 1965), p. 51 and U. S. Bureau of the Census, 1963 Census of Manufactures, Area Series, Louisiana, Preliminary Report (Washington: Bureau of the Census, 1965), p. 5.

Furthermore, the absolute "t" value increased in each case, indicating that percent manufacturing became more, not less, significant.

Based upon previous findings, the change in the "b_1" value for Arkansas could have been expected, but not the change for Louisiana. However, there is evidence of multicollinearity in the Louisiana regression. The simple correlation coefficient relating size of manufacturing establishment to percent employed in manufacturing is 0.51 for Louisiana, but only -0.03 for Arkansas.

At any rate, the analyses seem to show that the size of manufacturing establishment is an important variable in explaining the extent of unionization by county.

Before concluding with Phelps Brown and Hart that <u>many</u> things influenced the log-normal distribution of labor union membership in Great Britain, one might wish to find the extent to which size of firm influenced their findings. Since the distribution of business firms in Britain had already been shown to be log-normal, it is possible that the correlation of union membership and size of firm might have caused the log-normal union membership distribution.

CHAPTER 6

THE POTENTIAL GROWTH OF UNIONS IN THE THREE-STATE AREA

The purpose of this Chapter is to evaluate the growth prospects of unionism in Arkansas, Louisiana, and Oklahoma for the next ten years. At the outset, however, it is necessary to lay some theoretical background for the analysis by reviewing studies of union growth prospects from other areas. The Chapter will therefore be divided into two principal parts--a review of studies of union growth potential and the application of these findings to the three-state area.

A Review of Past Assessments of Union Growth Potential

Professor Benjamin Solomon has attempted to assess the union potential for the whole United States.[76] It seems that there was substantial concern in 1956 among labor leaders, labor economists, and other interested parties relating to whether the union movement would continue to grow in the future as it had in the past. This concern is, of course, likely to continue into the future, but it was particularly relevant in 1956 for union membership had begun to decline from its 1953 peak, and the merger of the AFL and CIO had led to diverse predictions

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[76]Benjamin Solomon, "Dimensions of Union Growth," Industrial and Labor Relations Review, IX (July, 1956), 544-61.

of the future membership trend. Solomon was among the majority of labor researchers, however, when he stated:

> In the past few years, many signs have appeared to support the persuasive thesis that an era of stabilization is naturally following upon the great, long surge of union growth which commenced with the depression years.[77]

Since 1956 it has become quite clear that at the very least an "era of stabilization" in union membership has materialized. According to Leo Troy's recent membership estimates, the total union membership has declined from 17.3 million persons in 1956 to 15.9 million persons in 1962.[78] During this same time period the labor force has grown, not declined, so that the relative importance of the union as a percentage of the labor force has decreased even more than the decline in total membership would indicate. To the extent that Troy's figures are correct and to the extent that union size is an adequate measure of union influence, it can be concluded that unions are less powerful than they were in 1956.

The decline in union membership has been attributed to various factors ranging from automation and the resulting changes in the composition of the labor force to legislation which was not "favorable" to organized labor. Most observers would also seem to agree that the structure of the labor force has been changing to include a larger and larger percentage of white-collar workers, and that this trend is not conducive to union growth. White-collar workers have been difficult to

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[77] Ibid, p. 544.

[78] Leo Troy, "Trade Union Membership, 1897-1962," Occasional Paper 92 (New York: National Bureau of Economic Research, 1965), p. 8.

organize for several reasons. The most important reason is probably that white-collar workers seem to have some sort of professional self-conceptualization which leads them to identify more strongly with the management than the worker interest.

Professor Solomon, recognizing these areas of concern to the labor movement provided "...some statistical guides to past growth and some information on the current scene that will improve...our perspective with regard to /the issue of potential union growth/."[79] One of Solomon's most important contributions to the analysis of union prospects was the development of a union potential statistic which could be readily derived from Census data.

Solomon rightfully took the position that union membership as a percentage of the civilian labor force was misleading when compared to similar data over time or space. As he puts it:

> The reason is that the potential available for organization at different times has varied greatly with two factors: (1) changes in the size of the work force; (2) changes in the numerical importance within the work force of those wage and salary groups which are the objectives of unionism.[80]

In order to obtain a more adequate measure of the union potential than the civilian labor force, he subtracted certain non-organizable groups from the labor force. These groups were:

> Farmers and farm managers; farm laborers and foremen; managers, officials, and proprietors, except farm (except railroad conductors and postmasters); private household workers; among professional, technical and kindred workers--physicians and surgeons, lawyers and judges, clergymen, dentists, funeral directors, therapists and healers (n.e.c.), optometrists,

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[79]Solomon, op. cit., p. 544.

[80]Ibid., p. 545.

> chiropractors, veterinarians, and osteopaths; among service workers, except private household--boarding and lodging housekeepers, housekeepers and stewards, real estate agents and brokers, hucksters and peddlers, auctioneers. There were also deducted from the included occupations, the self-employed and unpaid family workers (except for the self-employed male craftsmen and kindred workers and male barbers, beauticians, and manicurists).[81]

Solomon's goal in the union potential statistic was to deduct the groups which were least likely to be organized from the civilian labor force but to retain the wage-earners and white-collar workers which could conceivably become organized into unions in the near future. One might question some of his assumptions in deriving the statistic, such as the inclusion of engineers, college presidents and professors, and insurance agents. But his estimate is doubtless close enough to the ideal union potential to be of significant benefit for purposes of evaluating union growth over time or space.

Table 31 shows some of the results of Solomon's analysis in percentage form. Column 1 of the table was derived from Solomon's data and is shown in comparison to Column 2 in order to highlight the differences between the percentages of persons unionized in the civilian labor force and the percentages of persons unionized of the union potential. The union membership estimates used in Table 31 were the same as those used by Solomon and were compiled by Wolman and Bernstein.[82] The data are, of course, limited to census years because of the lack of data on the detailed occupational structure of the civilian labor force in non-census years.

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[81] Ibid., p. 546.

[82] See Chapter 2, above, for a discussion of the Wolman-Bernstein estimates. They were the best historical union membership estimates available in 1956.

TABLE 31

UNION MEMBERSHIP IN THE UNITED STATES AS A PERCENTAGE OF THE "POTENTIAL" AND THE ACTUAL CIVILIAN LABOR FORCE FOR CENSUS YEARS, 1900-1950

Year	Union Membership as a Percentage of the "Potential" Labor Force	Union Membership as a Percentage of the Actual Civilian Labor Force
1900	6.1	3.0
1910	9.9	5.4
1920	18.8	11.7
1930	10.2	6.6
1940	23.4	15.2
1950	31.1	22.5

Source: Derived from Benjamin Solomon, "Dimensions of Union Growth, 1900-1950, Industrial and Labor Relations Review, IX, (July 1956), 546.

Solomon showed that the union potential as a percentage of the civilian labor force had increased over the time period from 1900 to 1950 from 49.0 percent to 72.5 percent.[83] The major reason for this change was the declining relative importance of agriculture in the United States over that time period. He concluded, however, that "...the union potential is already so large that it is not likely to grow much larger...Over the next few decades then, the union potential probably will not reach higher than 80 percent of the work force.[84]

[83]Solomon, op. cit., p. 548.

[84]Ibid., p. 559.

Solomon concluded, as have most observers, that one of the major determinates of future union growth will be the ability of unions to organize the white-collar workers. They compose the larger portion of the non-organized union potential and seem to be growing more rapidly than other occupational groups.

In another study investigating union membership potential, E. J. Dvorak concluded that the prospects for future growth of unions at the historical growth rate were rather slim.[85] He studied the prospects for white-collar organization by limiting his study to a particular group, the professional engineers, and concluded that if the other white-collar workers were similar to the engineers, the ethic of professionalization was too strong to be conducive to unionization.

It is probably true that engineers are not likely to become unionized to any large extent in the forseeable future, but it is debatable whether this finding may be generalized to all white-collar workers. As a matter of fact, excluding managers, executives, doctors, dentists, lawyers, and judges from the white-collar workers, it would seem that the professional engineers would be the least likely of any white-collar group to become union members. On the one hand, the demand for engineers has been high enough for the past two decades that they have been in a relatively favorable bargaining position and have been able to command high salaries through individual bargaining. On the other hand, engineers have been part of the middle management group

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[85]E. J. Dvorak, "Effects of Changes in the Labor-Force Structure Upon Union Growth" (unpublished Ph.D. dissertation, Department of Economics, University of Washington, 1962).

and have adopted the management philosophy. It is correct, however, as Dvorak contends, that the professional engineers are more likely to be union potential at present, since most of them are employees of large firms, than in the past when they were largely self-employed.

Based upon his analysis of the white-collar workers and the contention that the percentage of persons employed in blue-collar occupations is not likely to increase in the near future, Dvorak concludes that the number of persons who belong to unions in the clerical and sales occupations will have to increase substantially if union membership is to show any sizeable increase in the United States. This is particularly true since he notes that the professional and technical occupations are likely to be the most rapidly growing in the United States and predicts that union membership will decline rather than increase in that group. This latter prediction is based upon the finding that in the past the professional engineers who joined the union seemed to do so because they were apprehensive about being subsumed into a union of production workers.

But the great majority of students of the contemporary union movement conclude that union membership will not increase as a percentage of the union potential, unless there is a sizeable increase in the numbers of organized white-collar workers. Furthermore, as Dvorak has shown, the potential union membership of the white-collar workers should be limited to clerical and sales personnel. Dvorak's contention is an over-generalization, for other of the professional and technical workers (teachers, nurses, and some government employees) may well

become unionized in the next decade, but his analysis may be accepted in that he would certainly exclude the professional engineers from the white-collar union potential.

The prospects for union growth in the United States, therefore, do not seem to be exceedingly bright, and the union movement has in fact been losing members since 1953. On the other hand, the inauspicious prospects for unions in the United States as a whole may not hold true for specific geographical areas.

F. Ray Marshall has written an article on the "Impediments to Labor Union Organization in the South"[86] in which he analyzes some causes of the lack of union organization in the South. For classificatory purposes he divides these into three main categories--social factors, political factors, and economic factors--although he recognizes the interrelationships between the three.

Among the social factors, Marshall cites the small Southern, ruralistic town. It seems that such a community has a tradition of paternalism and is characterized by rather close personal relationships which, as he puts it, "...are likely to make an organizer seem an 'outsider' of alien attitudes."[87] Furthermore, the management of the community industry is likely to be in control of the law-enforcement machinery as well as the local communications and the meeting-halls. Include with these observations the fact that the small Southern town is not likely to have enough members of any particular trade to support

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[86]F. Ray Marshall, "Impediments to Labor Union Organization in the South," South Atlantic Quarterly, LVII (Autumn, 1958), 408-18.

[87]Ibid., p. 410.

a local or to make organization worthwhile, and Marshall has provided a succinct explanation of the organizational difficulties in these communities. Moreover, these generalizations could most probably be broadened to include the great majority of small towns throughout the nation, for it is a commonplace that workers in urban centers are more highly organized than workers living in other areas.

But the South has another problem which is, more or less, peculiar to the region--the racial problem. Racial animosity has been a significant deterrant to union growth in at least three major ways. In the first place, in spite of the fact that most of the national union leaders are strongly integrationist, the Southern local has remained segregated, which directly affects the union growth potential in the area. Furthermore, any conflict between the national and the local union cannot but reduce any "fraternal" feelings between them. As Marshall points out, "The heightened emotion in the ranks of Southern unions /after the 1954 Supreme Court decision/ actually led to an abortive attempt to secede from the AFL-CIO and found a Southern federation of labor.[88]

In the second place, the large numbers of reserve unskilled workers which seem to be provided by the racial segregation in the South has made it quite difficult for employed unskilled workers to organize if the employer decides to resist. Sub-standard factory wages are usually preferrable to agricultural wages, and this provides

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[88]Ibid., p. 412.

a readily available supply of strikebreakers, which makes those workers employed in factories reluctant to jeopardize their jobs by joining unions.

Finally Marshall points out that employers have played upon white workers' fears of integration by emphasizing the integrationist nature of the national unions. An employer might argue, for example, that unionization would lead to integration of the work-place (including Negro supervisors) and therefore to social integration.

Under political factors, Marshall states that the Southern press and the Southern legislatures are predominantly anti-union. The evidence of anti-union political activity can be readily inferred from the number of Southern states which have passed "right-to-work" laws. Marshall believes that the quest for economic development of the Southern region is the major reason for this anti-union bias.

> Anything that interferes with potential industrialization is to be deprecated, and Southerners believe, as the press has frequently demonstrated, that strikes and unions will repel many industries.[89]

Finally, the economic obstacles to union growth in the South may be put into two general categories--the labor surplus and the type of industry. The labor surplus has been discussed previously and provides a quite obvious obstacle to union growth, but the type of industry predominant in the South is also relevant. Marshall states that many of the principal industries in the South are quite competitive, pay low wages in the North and South, and employ many women, who seem to be more difficult to organize than men. Examples of these

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[89] Ibid., p. 413.

industries include the textiles and apparel industries, the wood products industries and the furniture industries. Furthermore, as industry in the South expands, jobs become available for Southern agricultural workers who can greatly benefit themselves in a factory job even though factory wages are lower in the South than in the North.

All of these factors, the social, political, and economic, tend to militate against expansion of unionization in the South, and provide an explanation of why the South is less organized than the rest of the nation.

But the larger purpose of this Chapter is to try to assess the growth potential of unionization in Arkansas, Louisiana, and Oklahoma. In the latter part of the Chapter, the preceding analyses of union potential for the United States as a whole and some of the findings of earlier Chapters will be used to assess the potential unionization of the three-state area.

The Union Potential in Arkansas, Louisiana, and Oklahoma

In order to have some statistical comparison of union membership over time and space, Solomon's union potential was calculated for the years 1950 and 1960 for the United States and for each of the three states. The results of these calculations are shown in Table 32. The 1950 data were derived wherever possible from the data shown in the 1960 Census, since the 1950 Census has evidently been revised since its publication. For example, the experienced civilian labor force is listed in the 1950 Census at 58,999,000 persons, but the 1960 Census shows the experienced civilian labor force in 1950 to be 59,229,500

TABLE 32

UNION POTENTIAL AND EXPERIENCED CIVILIAN LABOR FORCE IN ARKANSAS, LOUISIANA, OKLAHOMA, AND THE UNITED STATES, 1950 AND 1960

Area	1950		1960	
	Experienced Civilian Labor Force	Union Potential	Experienced Civilian Labor Force	Union Potential
Arkansas	646,042	334,631	559,931	406,714
Louisiana	917,546	604,257	1,070,075	789,037
Oklahoma	782,723	492,187	820,374	597,688
United States	59,229,531	43,037,592	67,990,073	52,816,468

Sources: U. S. Bureau of the Census, U. S. Census of Population: 1960, Detailed Characteristics (Washington: U. S. Government Printing Office, 1962) pp. 20-360 to 20-365, 20-378 to 20-380, 5-330 to 5-334, 5-341 to 5-343, 38-377 to 38-382, 38-395 to 38-397, 1-522 to 1-527, and 1-547 to 1-549; and U. S. Bureau of the Census, U. S. Census of the Population: 1950, Detailed Characteristics (Washington: U. S. Government Printing Office, 1953), pp. 1-276 to 1-278, 18-204 to 18-206, 4-183 to 4-185, 36-203 to 36-205.

persons. This change in Census data represents approximately 230,000 persons and certainly should be accounted for in the difference between the original Solomon union potential and the newly derived statistic. Solomon's 1950 union potential was 42,783,000 persons[90] and the new estimate is 43,037,592, leaving a difference of 254,592. After subtracting the labor force discrepancy, the remaining difference is approximately 24,000 persons. The most probable explanations for this remainder are definitional changes in the detailed occupations of

[90]Solomon, op. cit., p. 546.

persons in the civilian labor force and/or the fact that the basic data were improved over time.

The first series of calculations involved the deduction of the number of persons in certain occupational groups from the civilian labor force, which follows directly from the definition of the union potential. The second series of calculations, which involves the deduction of previously included classes of self-employed workers and unpaid family workers, is subject to some interpretive difficulties. Solomon deducted from the "...included occupations, the self-employed male craftsmen and kindred workers (except for the self-employed male craftsmen and kindred workers who were male barbers, beauticians, and manicurists)."[91] Unfortunately, the published Census data show the class of worker by occupation, but not by detailed occupation. It was therefore impossible to distinguish which persons were the self-employed or unpaid family workers. The following example might provide clarity.

Veterinarians, who are largely self-employed, were deducted from the experienced civilian labor force in the first series of calculations, but the number of veterinarians is not shown separately by class of worker, so one cannot deduct the number of self-employed veterinarians from the total of self-employed workers. Indeed, self-employed veterinarians cause a double-deduction error in the final calculations of this paper. This same inaccuracy is true for self-employed funeral directors, male therapists and healers, optometrists,

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[91] Ibid.

chiropractors, osteopaths, female dentists, female real estate agents, and two probably empty classes--railroad conductors and postmasters.

At any rate, since the same procedures were used to derive all of the union potentials shown in Table 32, the figures may be used for comparison purposes and are consistent with one another. The data are also reasonably consistent with Solomon's estimates, for the 24,000 person difference in the 1950 estimates is quite small in comparison to the total union potential of 43 million persons (slightly over 0.05 percent).

The 1953 union membership data as well as the 1960 national membership shown in Table 33 were compiled by Leo Troy. His estimates are used because they may be more easily compared to the state estimates derived from the L-M Reports,[92] and these estimates are shown by total and percentage of the union potential for 1953 and 1960. The exact figures were not available for 1953, since it is a non-census year, but they were derived by extrapolation for purposes of the Table.

It can be readily seen that the percentage of the union potential organized in the United States is considerably larger than the percentage unionized in any of the three states. It is also apparent that from 1953 to 1960 the percentages of union potential organized declined in each area--the United States declined by 6.3 percentage points, Arkansas by 5.6, Louisiana by 2.0, and Oklahoma by 4.6. In no case did the percentage of the union potential organized in the three states decline by so many percentage points as it did in the United States.

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[92]See the discussion in Chapter 2, above.

TABLE 33

ESTIMATED UNION POTENTIAL IN 1953, UNION POTENTIAL IN 1960, UNION MEMBERSHIP AND PERCENTAGES OF POTENTIAL ORGANIZED IN ARKANSAS, LOUISIANA, OKLAHOMA AND THE UNITED STATES FOR THE TIME PERIOD, 1953 TO 1960

Area	1953			1960		
	Union Membership	Union Potential	Percent Organized	Union Membership	Union Potential	Percent Organized
Arkansas	67,900	356,255	19.06	54,565	406,714	13.42
Louisiana	135,800	659,691	20.60	146,616	789,037	18.58
Oklahoma	86,700	523,837	16.55	71,198	597,688	11.91
United States	16,403,600	45,971,255	35.73	15,538,800	52,816,468	29.4

Sources: State union membership in 1953 from Leo Troy, "Distribution of Union Membership among the States, 1939 and 1953", Occasional Paper 56 (New York: National Bureau of Economic Research, 1957), p. 5; Union membership in 1960 derived from L-M Reports, union potentials were derived from Table 32 (the 1953 data were estimated by extrapolation), and union membership for the United States from Leo Troy, "Trade Union Membership, 1897-1962," Occasional Paper 92, (New York: National Bureau of Economic Research, 1965), p. 8.

This is particularly interesting in light of the different methods used in collecting union membership data for 1953 and 1960. It is likely that Troy's 1953 data will be larger than the figures derived from the L-M Reports. If the 1953 and 1960 union membership data by state had been more comparable, the percentage of union potential organized in each state would have shown an even smaller decline.

The percent of union potential organized in the three states is substantially lower than in the United States, but the lower percentage

may be partially explained by the composition of the labor force in the different areas. It was shown in Chapter 5 that two important determinates of union organization in the three states were the average size of manufacturing firm and percent of manufacturing employment. In the United States, for 1960, the percent of the experienced civilian labor force in manufacturing was 27.3, but in Arkansas, Louisiana, and Oklahoma it was 20.2, 15.6, and 13.4 percent, respectively.[93] Moreover, the United States had 25.8 percent of the experienced civilian labor force employed in manufacturing in 1950, but Arkansas, Louisiana, and Oklahoma had only 13.8, 15.2, and 9.9 percent employed in manufacturing.[94] It is obvious, therefore, that the percentage of persons in the manufacturing sector was substantially larger in the United States than in any of the three states.

The average size of manufacturing firm, on the other hand, was 55.7 persons per firm for the United States in 1963, but it was 40.1, 43.8, and 38.2 persons per firm for Arkansas, Louisiana, and Oklahoma.[95]

The differences in the percentage of manufacturing data and the average size of firm between the United States and the three states may explain in part the different percentages of the union potential

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[93]U. S. Bureau of the Census, U. S. Census of the Population: 1960, Detailed Characteristics (Washington: U. S. Government Printing Office, 1963), pp. 1-563, 5-358, 20-429, and 38-446.

[94]Ibid.

[95]U. S. Bureau of the Census, U. S. Census of Manufactures: 1963, Preliminary Report, General Summary Statistics for States (Washington: U. S. Government Printing Office, 1966), pp. 4, 6, 24, and 47.

organized, but it is doubtless also due to factors which may be only tangentially related to the industry mix.

As noted earlier, F. Ray Marshall has cited some factors peculiar to the Southern region of the United States which tend to militate against union growth. Some of these may be relevant to the three-state area. Louisiana is usually considered to be part of the "deep South", Arkansas is occasionally included in the South, although it is often classified as a "border" state, and Oklahoma is usually considered to be a "border" state. These classifications may be debatable, since they reflect Eastern parlance, are quite subjective, and often depend upon definitions of the "Southern" region which are not purely geographical in nature.

For the three-state area as a whole, the factors cited by Marshall which may be more or less relevant are: (1) the segregation issue as it relates to unions, (2) the great concern with economic development and the belief that unions impede economic development, (3) the small rural town, and (4) the type of industry which dominates a particular region. These factors will be discussed in turn.

The first factor, the segregation issue, has provided a significant deterrant to union growth in all three states in the past, perhaps to a lesser extent in Oklahoma than in the other two states. The non-white population of the three states is a substantial minority of the total population (18.5 percent of the civilian labor force in Arkansas, 29.4 percent in Louisiana, and 7.3 percent in Oklahoma), a total of 485,517 persons in the experienced civilian labor

force.[96] For occupational reasons many nonwhite workers would not be considered to be within Solomon's union potential. But a strong case can be made for the argument that the nonwhite worker is potentially organizable regardless of occupation.

The nonwhite, particularly the Negro, has achieved substantial progress during the past decade through organization. As racial barriers to entry into Southern locals break down, the nonwhite worker will probably be amenable to union membership as a means of achieving higher wages. Civil rights organizations in Northern states are extending attention to the economic progress of the Negro. It is possible, as a matter of fact, that civil rights organizations will have to be classified, with more traditional labor organizations, as unions in the near future. These organizations have been using the traditional tools of unionism (picketing and certain types of boycotts) for some time and have engaged in a certain type of collective bargaining. If collective bargaining is extended from the political arena into the local economic situation, the civil rights organizations should be, under any definition of a union, included as bona fide unions. It must be recognized, of course, that the civil rights organization will be much broader based than the traditional United States union and will likely be more centralized and politically oriented.

In the South, where nonwhites have been discriminated against in union membership, it seems probable that union membership should increase in the next decade at a faster rate than for the nation as a

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[96]U. S. Bureau of the Census, U. S. Census of the Population: 1960, op. cit., pp. 5-341, 5-343, 20-378, 20-380, 38-393, and 38-397.

whole due either to the influx of nonwhite workers into hitherto exclusive locals or to ethnic organizations undertaking a union function, ceteris paribus.

To the extent that Marshall is correct in his analysis that anti-union bias in the South is due to a desire on the part of local businessmen to promote regional economic development, the anti-union bias is not likely to subside until the region has developed economically. Moreover, it is likely that the South will remain less economically developed than the North Atlantic and West Coast regions for at least a decade, so it is likely that this form of anti-union bias will not subside in the near future.

The small semi-rural town, on the other hand, is rapidly decreasing in importance as agriculture declines, as legislatures become re-apportioned, and as the population continues to grow in urban centers. Thus, the small town obstacle to union growth should become less prevalent in the South

Finally, the types of industry dominating the South, which are according to Marshall, relatively competitive, low-wage, cost-conscious industries such as the textile and furniture industries, are more prevalent in other Southern states than they are in the three-state area. Arkansas had only 0.4 percent of its experienced civilian labor force employed in textiles in 1960 and only 1.2 percent employed in furniture and fixtures; while Louisiana had 0.08 and 0.2 percent; and Oklahoma had 0.2 and 0.3 percent.[97] The textiles and furniture

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[97] Ibid., pp. 5-357, 20-427, and 38-447.

industries cited by Marshall were, of course, only examples of low-wage industries in the South, but it appears that the three states are not dominated by such industries.

Conclusions

The prospects for union growth in the three-state area appear to rest upon the extent of industrialization of the area and the nonwhite worker. If the size of firm and the percent of manufacturing in the three-state area increase more rapidly than the United States, it can be expected that the union membership in the three-state area will increase more rapidly than in the United States as a whole. As a matter of fact, from 1960 to 1963, using consistent data from the L-M Reports, union membership in each of the three states increased, but national union membership declined from 1960 to 1962.[98]

On the other hand, union organization in the three states is doubtless hampered by the same problems which hamper national union growth--the growth of white-collar class and the relatively diminishing importance of the blue-collar worker. There appear to be some indications that school teachers may organize in Oklahoma either by joining the American Federation of Teachers or, which is more likely, by changing the role of the NEA so that it may be defined as a union. Other white-collar workers, however, appear to remain resistant to unionization.

To the extent that locals in the three-state area have excluded the nonwhite sector of the population from union membership,

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[98]See Leo Troy, Occasional Paper 92, op. cit., p. 8.

the nonwhite sector appears to be the most fruitful area of concentration for future union growth. Unfortunately, union membership data by race are completely nonexistant, so the extent of nonwhite exclusion cannot be determined, but one may state with reasonable certainty that nonwhites have been excluded from union membership in parts of the three-state area and that nonwhites continue to provide a potential for union membership. Such potential indicates a brighter prospect for union growth in the area than in the United States as a whole, ceteris paribus.

CHAPTER 7

SUMMARY AND CONCLUSIONS

Methods currently being used in the collection of state union membership data were evaluated in Chapter 2 and were found to be generally unsatisfactory. In particular, the methods used by the BLS (sampling state AFL-CIO bodies to determine the union membership) were shown to be questionable, although that used for their 1964 estimates appears to be theoretically more valid than those of earlier BLS studies. Leo Troy's methodology probably yielded the most satisfactory membership estimates to date, but it may be concluded that there is no adequate state union membership series, except for those estimates made by the states of California and Massachusetts.

Chapter Three presented the results of a membership study which was based upon the estimation of union membership using information in the reports filed with the Office of Labor-Management and Welfare-Pension Reports. The study covered the states of Arkansas, Louisiana and Oklahoma for the time period, 1960 to 1963. This new technique appears to be superior to other methods of estimating union membership by state. The accuracy of the new technique was tested by comparing its results to those obtained from a membership questionnaire answered by sixty locals in the area. It could be concluded that the

sample results were not significantly different from the membership estimates prepared from the L-M Reports.

The estimated membership totals were compared to the results of the other union membership studies, and it was found that there were several discrepancies. The largest of these was the difference between the new data and the 1964 BLS membership estimate for Arkansas. This discrepancy was particularly serious since the BLS began using an improved method of collecting data in 1964.

Arkansas was shown by the BLS to have approximately twice the number of members in 1964 as it was estimated to have had in 1963 by the L-M Reports method. After a careful examination of the two conflicting totals, however, it was concluded that the BLS erred in making its 1964 estimate.

Chapter 3 was not limited to the comparison of diverse union membership findings, for it also included a general evaluation of the problems encountered in estimating union membership from the L-M Reports.

Chapter 4 presents membership data classified by city and county for 1960, 1961, 1962, and 1963. Simple regression analyses were run relating these data to city population and, subsequently, to county "covered" employment. The regressions disclosed that there was a strong relationship between city union membership and city population, on the one hand, and county union membership and "covered" employment on the other hand. It was also found that Oklahoma City (and Oklahoma County) had less unionization for its population than other large cities in the three-state area.

Since county data were available for each of the four years, the county regressions could be tested to see whether they changed significantly over time. It was found that there was no basis for rejecting the hypothesis that there was no significant difference in the "b" coefficients over the four year period for Arkansas and Oklahoma. However, the Louisiana coefficients did show a significant difference over time. But it could be generally concluded that there was a marginal rate of unionization of roughly 30 percent of the "covered" employees in the three-state area over the four year period, so long as Oklahoma County was excluded.

Chapter 5 continues the breakdown of the data, and contains the union membership by occupation and industry group as well as the size distribution of union membership in the three-state area. The data for occupational and industry group are also shown by county for each of the three states. These figures are shown in comparison to 1960 county employment in manufacturing, construction, transportation, mining, and communications; and regression analyses were run in order to determine the impact of the number of persons employed in each of these categories on union membership.

The results were rather unsatisfactory. It was found that the problem of intercorrelation of the independent variables was so widespread that the effect of each independent variable on total union membership could not be isolated. The intercorrelation problem was moderated by the use of weighted percentage data in the regressions, although several of the regression coefficients continued to be unsatisfactory.

In the latter portion of the chapter, which was devoted to the study of Phelps Brown and Hart's finding that union membership tended to follow the log-normal distribution, the average size of manufacturing establishment was included as another variable in the weighted percentage regressions. The results of these regressions seemed to show that the average size of manufacturing establishment and union membership by county were significantly associated in each of the three states, although there was some evidence of intercorrelation between the percentage employed in manufacturing and the average size of manufacturing establishments. But despite the intercorrelation, it seemed that the average size of manufacturing establishment was related to the percentage of persons unionized.

On the other hand, the study of union membership by industrial group showed that Oklahoma City has a smaller percentage of persons employed in manufacturing and a smaller average size of manufacturing firm than cities of roughly comparable size in the three-state area, which seems to explain the unique characteristics of Oklahoma City data found in earlier chapters.

The potential growth of union membership in the three-state area was analyzed in Chapter 6. It was found that the percent of "union potential" organized in the area had declined from 1953 to 1960, but by fewer percentage points than that of the United States as a whole.

It was argued that the future organization of the three states rested with two major factors:

1. The degree to which the area would become industrialized.

2. The future attitudes taken by the labor movement toward the non-white worker, and *vice versa*.

It has been fairly well established in Chapter 5 that as the states became industrialized, the membership should increase. This is at least true insofar as past relationships continue to hold true in the future. It was also held that if union segregation practices are discontinued, union membership will increase in previously segregated unions. Moreover, as civil rights organizations begin to enter the economic realm, it is conceivable that these organizations might become classifiable as unions. If so, the civil rights membership would substantially increase union growth in the area.

It was therefore generally concluded that the prospects for union growth in the three-state area during the next decade should be greater than the prospects for the entire United States.

APPENDICES

APPENDIX I

L-M REPORT FORMS

Form LM-3
(JANUARY 1960)
FILE 2 COPIES

U.S. DEPARTMENT OF LABOR
BUREAU OF LABOR-MANAGEMENT REPORTS
WASHINGTON 25, D.C.

Form approved
Bureau of the Budget No. 44-1133.

SHORT FORM
LABOR ORGANIZATION FINANCIAL REPORT
FOR FISCAL YEAR ENDING December 31, 1960
SUBMITTED PURSUANT TO PUBLIC LAW 86-257

USE THIS FORM ONLY IF your organization meets the following conditions. Check box if it does, and complete the form. If any one of the conditions is not met, use Form LM-2.

[x] The reporting labor organization (1) had gross annual receipts during the above year of less than $20,000; (2) is free of any trusteeship; and (3) because of its size cannot furnish a detailed report without adding substantially to operating expenses or to the burdens of officers holding other regular jobs.

1. FULL NAME OF REPORTING LABOR ORGANIZATION *(Include local number and affiliation, if any)* AND MAILING ADDRESS *(Street and number, city, Zone, State).*

Local 23
Amalgamated Nutmeg Makers
P. O. Box 77
Old Haven, Connecticut

2. LABOR DEPARTMENT FILE NO. *(Enter the File No. appearing on the Department's acknowledgment of the receipt of Form LM-1)*

084000

3. ADDRESS OF PRINCIPAL OFFICE, IF DIFFERENT FROM ADDRESS IN ITEM 1

316 Grosnover Street, Old Haven, Connecticut

4. WHO KEEPS THE RECORDS NECESSARY TO VERIFY THIS REPORT AND AT WHAT ADDRESS:

Thomas Green, 316 Grosnover Street, Old Haven, Connecticut

5. HAVE THERE BEEN ANY CHANGES IN THE INFORMATION CONTAINED IN THE LABOR ORGANIZATION INFORMATION REPORT FORM LM-1 SINCE YOUR LAST FILING? [x] YES. [ ] NO. IF "YES," COMPLETE TWO COPIES OF FORM LM-1A ENTITLED "AMENDMENTS TO LABOR ORGANIZATION INFORMATION REPORT, FORM LM-1" SIGNED BY THE APPROPRIATE OFFICIALS AND SUBMIT WITH THIS LABOR ORGANIZATION FINANCIAL REPORT.

6. WAS THERE ANY TRUST OR OTHER FUND OR ORGANIZATION IN EXISTENCE DURING THE ABOVE YEAR WHICH WAS (1) ESTABLISHED BY OR HAS ANY TRUSTEES OR GOVERNING BODY MEMBERS SELECTED OR APPOINTED BY YOUR ORGANIZATION, AND (2) WHICH HAS AS A PRIMARY PURPOSE THE PROVIDING OF BENEFITS TO MEMBERS OF YOUR ORGANIZATION OR THEIR BENEFICIARIES? [x] YES [ ] NO. *(IF YES, LIST UNDER ITEM 12, THE NAMES AND ADDRESSES OF ANY SUCH TRUSTS, ETC.)*

7. DURING THE ABOVE YEAR, WERE LOANS MADE TO ANY OFFICER, EMPLOYEE, OR MEMBER EITHER DIRECTLY OR INDIRECTLY WHICH TOTALED MORE THAN $250 FOR THE YEAR? CHECK PROPER BOX:
[ ] YES [x] NO. (IF YES, LIST UNDER ITEM 12, THE NAME OF EACH SUCH PERSON, THE AMOUNT OF EACH LOAN MADE TO HIM, WHAT ITS PURPOSE WAS, WHAT SECURITY WAS TAKEN, IF ANY, AND WHAT ARRANGEMENTS FOR REPAYMENT HAVE BEEN MADE.)

8. DURING THE ABOVE YEAR, WERE ANY LOANS MADE EITHER DIRECTLY OR INDIRECTLY BY YOUR ORGANIZATION TO ANY BUSINESS ENTERPRISE? CHECK PROPER BOX:
[ ] YES [x] NO. (IF YES, LIST UNDER ITEM 12, THE NAME OF EACH BUSINESS TO WHICH A LOAN WAS MADE, THE AMOUNT OF EACH LOAN TO IT, WHAT THE PURPOSE WAS, WHAT SECURITY WAS TAKEN, IF ANY, AND WHAT ARRANGEMENTS FOR REPAYMENT HAVE BEEN MADE.)

9. HAVE ANY ASSETS OF YOUR ORGANIZATION BEEN PLEDGED OR ENCUMBERED IN ANY WAY DURING THE ABOVE YEAR?
[ ] YES [x] NO. (IF YES, EXPLAIN FULLY UNDER ITEM 12)

10. WERE THERE ANY EMPLOYEES OF YOUR ORGANIZATION WHO, DURING THE ABOVE YEAR, RECEIVED A TOTAL OF MORE THAN $10,000 IN SALARY, ALLOWANCES, AND OTHER DIRECT OR INDIRECT DISBURSEMENTS (INCLUDING REIMBURSED EXPENSES) FROM (A) YOUR ORGANIZATION ALONE OR (B) FROM YOUR ORGANIZATION TOGETHER WITH YOUR NATIONAL OR INTERNATIONAL ORGANIZATION OR A LABOR ORGANIZATION AFFILIATED WITH IT? CHECK PROPER BOX:
[x] YES [ ] NO. (IF YES, REPORT UNDER ITEM 11, EACH SUCH EMPLOYEE)

11. LIST SALARIES, ALLOWANCES, EXPENSES (INCLUDING REIMBURSED EXPENSES) AND OTHER DIRECT OR INDIRECT DISBURSEMENTS TO EACH OFFICER OF YOUR ORGANIZATION AND TO EACH EMPLOYEE TO WHICH A "YES" ANSWER UNDER ITEM 10 APPLIES.

NAME (A)	TITLE OR UNION OCCUPATION (B)	SALARY (C)	ALLOWANCES (D)	EXPENSES, INCLUDING REIMBURSED EXPENSES (E)	OTHER DISBURSEMENTS (F)
John Jones 1/					
A. Amal. Nutmeg Makers	Organizer	$2000	none	$790	none
B. George Smith	President	none	$312	none	none
C. Albert Brown	Vice-President	none	none	$340	none
D. Thomas Green	Sec.-Treasurer	none	$275	$390	TV Set 1/
	(Continue list under Item 12, if necessary)				(value $150)

12. ADDITIONAL INFORMATION, IF ANY, ON ABOVE ITEMS:

ITEM NO.	STATEMENT OF REQUIRED INFORMATION
6.	Local 23, Death Benefit Fund, Inc., 316 Grosnover Street, Old Haven, Conn.
6.	Health Benefit Fund, Corncob National Bank, Old Haven, Conn. (Joint union-employer fund with Bank as trustee. Benefits paid directly to members by the Bank.)
1/	See attached supplemental sheet for explanation of these entries.

(OVER)

(If more space is needed, attach additional sheet with further statement)

STATEMENT OF ASSETS OWNED AND OUTSTANDING DEBTS (LIABILITIES)

LINE NO.		START OF FISCAL YEAR: January 1, 1960	END OF FISCAL YEAR: December 31, 1960
	ASSETS OWNED BY YOUR ORGANIZATION		
1.	Cash on hand	$ 32	$ 43
2.	Cash in banks, etc	6,186	5,185
3.	Loans and notes receivable		
4.	Government bonds	550	550
5.	Other investments	500	500
6.	Land and buildings	9,300	9,000
7.	Other assets	420	400
8.	TOTAL ASSETS (Add lines 1 through 7)	$ 16,988	$ 15,678
	DEBTS OWED BY YOUR ORGANIZATION (LIABILITIES)		
9.	Accounts and bills payable	$ 720	$ 835
10.	Loans and notes payable		
11.	Mortgages payable	2,500	2,000
12.	Other debts		15
13.	TOTAL OUTSTANDING DEBTS (Add lines 9 through 12)	$ 3,220	$ 2,850
14.	NET ASSETS (Line 8 less line 13)	$ 13,768	$ 12,828

STATEMENT OF RECEIPTS AND DISBURSEMENTS

LINE NO.		
1.	CASH BALANCE AT START OF FISCAL YEAR	$ 6,218
	RECEIPTS DURING THE FISCAL YEAR	
2.	Dues	7,118
3.	Fees	110
4.	Fines	
5.	Assessments	710
6.	Work permits	
7.	Other receipts	632
8.	TOTAL RECEIPTS FOR FISCAL YEAR (Add lines 2 through 7)	$ 8,570
9.	TOTAL CASH TO BE ACCOUNTED FOR THE FISCAL YEAR (Add lines 1 and 8)	$ 14,788
	DISBURSEMENTS DURING THE FISCAL YEAR	
10.	Disbursements to labor organizations (per capita tax, fees, assessments, etc.)	$ 3,100
11.	Disbursements to officers	1,467
12.	Disbursements to employees	2,730
13.	Loans made by organization	
14.	Office and administrative expense	248
15.	Benefit payments	1,200
16.	Other disbursements	815
17.	TOTAL DISBURSEMENTS DURING FISCAL YEAR (Add lines 10 through 16)	$ 9,560
18.	CASH BALANCE AT END OF FISCAL YEAR (Line 9 less line 17)	$ 5,228

SIGNATURE AND VERIFICATION. (Persons signing should read the information on responsibilities of officers, record-keeping requirements, and penalties contoined in the accompanying instructions.)

Each of the undersigned, duly authorized officials of the above labor organization, declares under the applicable penalties of law,* that all of the information submitted herewith (including the information contained in any accompanying documents) has been examined by him and is to the best of his knowledge and belief, true, correct, and complete.

Signed at Old Haven, Connecticut (City and State)

this 15 day of March, 19 61

George Smith (Signature)

George Smith

President

(Title—President (or corresponding principal officer if there is no president))

Signed at Old Haven, Connecticut (City and State)

this 15 day of March, 19 61

Thomas Green (Signature)

Thomas Green

Secretary-Treasurer

(Title—Treasurer (or corresponding principal officer if there is no treasurer))

*SEE SECTION ON "PENALTIES" IN ACCOMPANYING INSTRUCTIONS.

U.S. DEPARTMENT OF LABOR
Office of Labor-Management and Welfare-Pension Reports
Washington, D.C. 20210

LABOR ORGANIZATION ANNUAL REPORT

FORM LM-2 (Revised)

Form approved by Bureau of the Budget No. 44-R1132.1

READ INSTRUCTIONS CAREFULLY BEFORE PREPARING REPORT

1. NAME OF LABOR ORGANIZATION (Include local number and affiliation, if any.)

2. PERIOD COVERED BY THIS REPORT — From: / To:

Month	Day	Year

3. BLMR FILE NO.

4. MAILING ADDRESS (Where official mail should be sent to the union.)

Number & Street:

City	County	State	Zip code

THE ADDRESS GIVEN IN *ITEM 4* IS:

	Yes	No
5. The principal office of your organization	☐	☐
6. Where the records to verify this report are kept	☐	☐
7. A residence (If checked "Yes," enter below the name and title of person whose address it is.)	☐	☐

DURING THE REPORTING PERIOD DID YOUR ORGANIZATION DIRECTLY OR INDIRECTLY:

	Yes	No
8. Have any accounts in banks or other financial institutions held in a name other than that of your organization?	☐	☐
9. Liquidate or reduce any liabilities without disbursement of cash?	☐	☐
10. *Create or participate* in the administration of any business enterprises or other organizations which met the definition of a "subsidiary organization" as that term is defined in the instructions on page 2?	☐	☐
11. Acquire any goods or property in any manner other than by purchase or dispose of such property in any manner other than by sale?	☐	☐
12. *Create or participate in the administration of a trust or other fund or organization*, a primary purpose of which is to provide benefits for members or their beneficiaries as defined by Section 3(l) of the Act?	☐	☐

INDICATE BELOW ANY CHANGES IN THE LABOR *ORGANIZATION INFORMATION REPORT (LM-1)* WHICH HAVE NOT BEEN PREVIOUSLY REPORTED

	Yes	No
13. Does the address in Item 4 represent a change?	☐	☐
14. Has there been a change in officers?	☐	☐
15. Have there been any other changes?	☐	☐

AS OF THE END OF THE REPORTING PERIOD:

16. Were any assets pledged as security or encumbered in any other way?	☐	☐
17. Did your organization have any contingent liabilities?	☐	☐

(If the answer to any of the above questions, other than 13 and 14, is "Yes," details must be provided in Item 18 below. See specific instructions for items which have been answered "Yes.")

Item No.	18. ADDITIONAL INFORMATION

(If more space is needed, attach additional sheets with further statement, properly identified.)

Each of the undersigned officers of the above labor organization declares that he is the officer required to sign this report and that the information contained in this report and any accompanying documents, is to the best of his knowledge and belief, true, correct, and complete.

71. SIGNED: _____, PRESIDENT (If other title, cross out and write in correct title above.)

at: _____ (City) _____ (State) on: _____ (Date)

72. SIGNED: _____, TREASURER (If other title, cross out and write in correct title above.)

at: _____ (City) _____ (State) on: _____ (Date)

STATEMENT OF ASSETS AND LIABILITIES

Item — ASSETS	Sch.	(Start of Reporting Period) (A)	(End of Reporting Period) (B)
19. Cash on Hand		$	$
20. Cash in Banks			
21. Accounts Receivable			
22. Loans Receivable	1		
23. U.S. Treasury Securities			
24. Mortgage Investments			
25. Other Investments	2		
26. Fixed Assets	5		
27. Other Assets	3		
28. TOTAL ASSETS		$	$

Item — LIABILITIES	Sch.	(Start of Reporting Period) (C)	(End of Reporting Period) (D)
29. Accounts Payable		$	$
30. Loans Payable	6		
31. Mortgages Payable			
32. Other Liabilities	4		
33. TOTAL LIABILITIES		$	$
NET ASSETS			
34. Net Assets (Item 28 less Item 33)		$	$

STATEMENT OF RECEIPTS AND DISBURSEMENTS

Item — RECEIPTS	Sch.	(A)
35. Dues		$
36. Per Capita Tax		
37. Fees		
38. Fines		
39. Assessments		
40. Work Permits		
41. On Behalf of Affiliates for Transmittal to Them		
42. Sale of Supplies		
43. Interest		
44. Dividends		
45. Rents		
46. Loans Obtained	6	
47. Sale of Investments and Fixed Assets	7	
48. Repayment of Loans Made	1	
49. From Members for Disbursement on Their Behalf		
50. From Other Sources:		
(a)		
(b)		
(c)		
(d)		
(e)		
(f)		
(g)		
(h)		
(i)		
(j)		
(k)		
(l)		
(m)		
(n)		
51. TOTAL RECEIPTS (Items 35 through 50)		$

Item — DISBURSEMENTS	Sch.	(B)
52. Per Capita Tax		$
53. Fees, Fines, Assessments, etc.		
54. To Affiliates of Funds Collected on Their Behalf		
55. For Account of Affiliates		
56. To Officers:	8	
(a) Gross $		
(b) Less Deductions		
57. To Employees:	9	
(a) Gross $		
(b) Less Deductions		
58. Office and Administrative Expense		
59. Educational and Publicity Expense		
60. Professional Fees		
61. Benefits	11	
62. Loans Made	1	
63. Contributions, Gifts and Grants	12	
64. Supplies for Resale		
65. Purchase of Investments and Fixed Assets	10	
66. Taxes		
67. On Behalf of Individual Members		
68. Repayment of Loans Obtained	6	
69. For Other Purposes:		
(a)		
(b)		
(c)		
(d)		
(e)		
(f)		
(g)		
(h)		
70. TOTAL DISBURSEMENTS (Items 52 through 69)		$

SCHEDULE 1—LOANS RECEIVABLE

Name of Officer, Employee, Member or Business Enterprise (A)	Purpose of Loan, Security, if any, and Arrangement for Repayment (B)	Loans Made During Period (C)	Repayments Received During Period (D)	Balance at End of Period (E)
1.		$	$	$
2.				
3.				
4.				
5.				
6. Total Additional Listings, if any				
7. Total Loans not Listed Above				
8. Totals of lines 1 through 7		$	$	$

(Enter the totals of columns (C), (D), and (E) in Items on page 2 as shown) .....62.....48.....22

SCHEDULE 2—OTHER INVESTMENTS (See Instructions, Item 25)

Description (A)	Amount (B)
Marketable Securities:	
1. Total Cost	$
2. Total Book Value	
3. Itemize each Marketable Security holding over $1,000 where book value exceeds 20% of the total on line 2 above.	
(a)	
(b)	
(c)	
(d)	
Other Investments:	
4. Total Cost	
5. Total Book Value	
6. Itemize each Other Investment holding over $1,000 where book value exceeds 20% of the total on line 5 above.	
(a)	
(b)	
(c)	
(d)	
7. Total of lines 2 and 5	$

(Enter the total in Item on page 2 as shown) 25

SCHEDULE 3—OTHER ASSETS (See Instructions, Item 27)

Description (A)	Book Value (B)
1.	$
2.	
3.	
4.	
5.	
6. Total of lines 1 through 5	$

(Enter the total in Item on page 2 as shown) 27

SCHEDULE 4—OTHER LIABILITIES (See Instructions, Item 32)

Description (A)	Amount at End of Period (B)
1.	$
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9. Total of lines 1 through 8	$

(Enter the total in Item on page 2 as shown) 32

SCHEDULE 5—FIXED ASSETS (See Instructions, Item 26)

Description (A)	Cost or Other Basis (B)	Total Depreciation (if any) (C)	Book Value (D)
1. Land (Give Location):	$		$
2. Buildings (Give Location):		$	
3. Automotive Equipment			
4. Office Furniture and Equipment			
5. Other Fixed Assets			
6. Totals of lines 1 through 5	$	$	$

(Enter the total of column (D) in Item on page 2 as shown) 26

SCHEDULE 6—LOANS PAYABLE

Source (A)	Arrangements For Repayment (B)	Loans Obtained During Period (C)	Repayment of Loans During Period (D)	Balance at End of Period (E)
1.		$	$	$
2.				
3.				
4.				
5. Total from Additional Listings, if any				
6. Totals of lines 1 through 5		$	$	$

(Enter the totals of columns (C), (D), and (E) in Items on page 2 as shown).....46.....68.....30

SCHEDULE 7—SALE OF INVESTMENTS AND FIXED ASSETS (See Instructions, Item 47)

Description of Assets Sold (If Land or Building, Give Location) (A)	Cost (B)	Book Value (C)	Gross Sales Price (D)	Amount Received (E)
1.	$	$	$	$
2.				
3.				
4.				
5. Totals of lines 1 through 4	$	$	$	$

(Enter the total of column (E) in Item on page 2 as shown) 47

SCHEDULE 8—DISBURSEMENTS TO OFFICERS (See Instructions, Item 56)

Name (A)	Title (B)	Status (C)	Gross Salary (before taxes and other deductions) (D)	Allowances (E)	Other Direct and Indirect Disbursements: Expenses Including Reimbursed Expenses (F)	Other Direct and Indirect Disbursements: Other Disbursements (G)	Total (H)
1.			$	$	$	$	$
2.							
3.							
4.							
5.							
6.							
7.							
8. Total from Additional Listings, if any							
9. Totals of lines 1 through 8			$	$	$	$	$

(Enter the total of column (H) in Item on page 2 as shown) ..... 56(a)

SCHEDULE 9—DISBURSEMENTS TO EMPLOYEES (See Instructions, Item 57)

Name (A)	Position (B)	Name of Affiliated Organization (if applicable) (C)	Gross Salary (before taxes and other deductions) (D)	Allowances (E)	Other Direct and Indirect Disbursements: Expenses Including Reimbursed Expenses (F)	Other Direct and Indirect Disbursements: Other Disbursements (G)	Total (H)
1.			$	$	$	$	$
2.							
3.							
4.							
5. Total from Additional Listings, if any							
6. Total for all employees who, during the reporting period, received $10,000 or less gross salary, allowances, and other direct and indirect disbursements							
7. Totals of lines 1 through 6			$	$	$	$	$

(Enter the total of column (H) in Item on page 2 as shown) ..... 57(a)

SCHEDULE 10—PURCHASE OF INVESTMENTS AND FIXED ASSETS (See Instructions, Item 65)

Description of Assets (if land or buildings, give location) (A)	Book Value (B)	Amount Paid (C)
1.	$	$
2.		
3.		
4.		
5.		
6. Totals of lines 1 through 5	$	$

(Enter the total of column (C) in Item on page 2 as shown) 65

SCHEDULE 11—BENEFITS (See Instructions, Item 61)

Type of Benefit (A)	To Whom Paid (B)	Amount (C)
1.		$
2.		
3.		
4.		
5. Total of lines 1 through 4		$

(Enter the total in Item on page 2 as shown) 61

SCHEDULE 12—CONTRIBUTIONS, GIFTS AND GRANTS (See Instructions, Item 63)

Type (A)	Amount (B)
1.	$
2.	
3.	
4.	
5. Total of lines 1 through 4	$

(Enter the total in Item on page 2 as shown) 63

U. S. GOVERNMENT PRINTING OFFICE : 1965 O—761–412

APPENDIX II

DETAILED BREAKDOWN OF "OTHER TOWNS" IN ARKANSAS, LOUISIANA AND OKLAHOMA, 1960-1963, AND POPULATION IN 1960

City	Members				Population in 1960
	1960	1961	1962	1963	
Oklahoma (54 Cities)					
Cushing	1,145	1,090	890	885	8,619
Henryetta	326	297	292	314	6,551
Clinton	97	95	84	74	9,617
Ripley	149	238	274	126	263
Woodward	49	84	107	108	7,747
Marlow	31	0	0	0	4,027
Dewey	267	215	114	28	3,994
Sallisaw	66	70	56	66	3,351
Pryor	226	228	228	256	6,476
Webb City	124	143	133	122	233
Velma	45	36	41	352	--
Guthrie	157	130	134	195	9,502
Quapaw	111	104	119	136	850
Mill Creek	14	15	14	13	287
Sand Springs	76	64	88	73	7,754
Weleetka	--	--	--	--	1,231
Alva	5	6	5	4	6,258
Okeene	27	20	227	208	1,164
Skiatook	119	155	109	133	2,503
Vinita	253	--	159	145	6,027
Panama	--	--	--	--	937
Cameron	108	78	52	56	211
Claremore	19	20	13	13	6,639
Stigler	19	7	14	13	1,923
Bokoshe	56	64	60	43	431
Howe	--	--	--	--	390
Poteau	23	21	20	19	4,428
McCurtain	21	16	13	13	528
Krebs	115	117	90	107	1,342
Spiro	36	27	34	32	1,450
Nowata	--	--	--	--	4,163
Covington	80	90	98	98	687
Cyril	139	141	144	147	1,284
Barnsdall	136	134	136	137	1,663
Healdton	98	97	88	82	2,898
Maysville	226	227	0	0	1,530
Yukon	0	0	0	0	3,076

APPENDIX II (CONTINUED)

City	Members				Population in 1960
	1960	1961	1962	1963	
Mangum	117	107	99	97	3,950
Heavener	315	258	246	301	1,891
Drumright	190	196	187	184	4,190
Edmond	--	--	--	--	8,577
Hugo	361	310	339	327	6,287
Hartshorne	122	125	127	126	1,903
Wayne	267	267	253	263	517
Hooker	38	36	35	37	1,684
Geary	72	77	75	82	1,416
Waynoka	83	58	46	35	1,794
Tupelo	34	10	22	32	261
Haileyville	66	66	63	64	922
Dale	30	27	26	27	--
Canton	0	0	0	0	887
Guymon	20	17	0	0	5,768
Fairland	136	115	117	119	646
Snyder	9	0	0	0	1,663
	Arkansas (71 Cities)				
McGhee	349	407	391	351	4,448
Conway	346	350	397	400	9,791
Harrison	569	500	508	448	6,580
Batesville	281	255	279	309	6,207
Cotter	314	289	365	356	683
Everton	35	39	40	54	118
Brinkley	13	13	7	0	4,636
Clarksville	43	35	38	37	3,919
Cotton Plant	246	265	270	286	1,704
Gurdon	7	14	85	77	2,166
Fouke	520	442	415	446	394
Charleston	4	8	8	8	1,036
Searcy	395	481	494	385	7,272
Mineral Spring	8	9	15	0	616
Lincoln	4	7	5	6	820
Rector	0	6	9	0	1,757
Ward	26	40	41	29	470
Russell	124	169	139	126	8,921
Morrillton	72	67	77	57	5,997
Wayne	--	--	--	--	4,922
Curtis	113	124	111	103	--
Booneville	46	54	53	49	2,690

APPENDIX II (CONTINUED)

City	Members				Population in 1960
	1960	1961	1962	1963	
Mayflower	46	53	49	36	355
Redfield	105	86	66	42	242
Lake Village	39	31	27	30	2,998
Lexa	123	95	54	59	--
Hartman	--	--	--	--	299
Moreland	7	--	--	--	--
Hartford	24	13	12	6	531
Coal Hill	8	7	6	6	704
Sheridan	74	0	0	0	1,938
Bearden	0	0	25	63	1,268
Washington	96	99	103	177	321
Prescott	10	15	23	30	3,533
Huttig	252	219	279	332	936
Fordyce	362	456	538	557	3,890
Sparkman	5	5	5	5	787
Heber Springs	24	86	90	89	2,265
Saratoga	131	153	141	137	62
Foreman	78	94	110	126	--
Perry	124	78	84	71	224
Johnson	170	84	77	58	--
Aubrey	53	44	35	26	--
New Edinburg	9	17	25	26	--
Cherry Valley	--	--	7	12	455
Stamps	51	47	45	44	2,591
Waterloo	51	48	47	55	--
Carlisle	58	54	63	73	1,514
Rogers	--	--	--	--	5,700
Winslow	--	--	--	--	183
Mena	44	53	53	51	4,388
Wilmar	--	--	--	--	718
Lake City	141	156	165	189	850
Amagon	64	109	157	169	234
Danville	18	114	125	151	955
Hoxie	55	55	53	62	1,886
Warren	966	933	901	901	6,752
Rison	88	90	112	147	889
Piggott	356	297	294	243	2,776
Pocahontas	267	314	379	431	3,665
Monticello	281	270	540	247	4,412
Mt. Vernon	51	23	--	--	--
Sebastian	24	20	0	27	--
Newport	29	30	34	36	7,007
Wynne	--	--	--	--	4,922

APPENDIX II (CONTINUED)

City	Members 1960	1961	1962	1963	Population in 1960
Altus	--	--	--	--	392
Tuckerman	59	17	0	0	1,539
Ashdown	36	44	26	0	2,725
Paris	71	--	--	--	3,007
Midland	0	--	--	--	261
Greenwood	87	85	87	105	1,558
	Louisiana (54 Cities)				
Cullen	344	330	348	363	2,194
Slidell	--	--	--	286	6,356
Oakdale	457	477	467	437	6,618
Sterlington	543	483	450	462	--
Vidalia	203	204	193	177	4,313
St. Francisville	185	238	207	217	1,661
Raceland	375	398	398	393	3,666
Angie	585	541	530	568	254
De Ridder	146	109	90	73	7,188
Ville Platte	166	165	150	142	7,512
Franklin	172	178	172	168	8,673
Baker	17	26	27	28	4,823
Logansport	--	--	--	111	1,371
Destrehan	501	590	631	781	--
Princeton	78	69	65	64	--
Geismar	109	109	130	145	--
Mansfield	--	--	54	44	5,839
Vacherie	--	--	--	15	--
Plaquemines	43	51	49	46	7,689
Dubach	121	153	105	73	1,013
Gonzales	19	13	15	11	3,252
Cheneyville	--	--	--	--	1,037
Arnaudville	87	78	78	83	1,184
Melville	18	17	15	16	1,939
Amite	71	87	108	163	3,316
Berwick	22	24	23	27	3,880
Woodworth	--	--	--	--	320
Leesville	57	48	53	53	4,689
Fairbanks	50	47	100	47	--
Avery Island	161	208	193	190	--
Weeks	306	328	319	319	1,138
St. Landry	44	48	43	40	--
Basile	19	19	14	12	1,932
Church Point	19	16	19	19	3,606

APPENDIX II (CONTINUED)

City	Members				Population in 1960
	1960	1961	1962	1963	
Delcambre	90	86	81	80	1,857
Donaldsonville	58	75	62	69	6,082
Jackson	--	--	--	22	1,824
Reserve	616	551	646	696	5,297
Labadieville	242	265	249	257	--
Brusly	37	37	37	37	544
Sarepta	438	445	464	496	737
Zachary	33	33	35	55	3,268
Lutcher	221	194	196	218	3,274
Blanchard	2	2	2	2	--
Clayton	25	27	23	24	882
Tallulah	221	250	250	224	9,413
Castor	91	72	80	80	142
Grammercy	478	458	425	437	2,094
Lockport	192	186	147	228	2,221
La Place	103	81	61	50	3,541
Galliano	779	780	760	745	--
Norco	954	849	841	422	4,682
Addis	163	97	72	91	590
Boyce	82	73	38	0	1,094

Sources: Union membership derived from Labor-Management Reports, 1960 population data from U. S. Bureau of the Census, U. S. Census of the Population: 1960. Vol. I, 5-19 to 5-20, 20-15 to 20-16, 38-19 to 38-22.

APPENDIX III

STATISTICAL APPENDIX

In Chapter 4, the "F" test used follows the procedure outlined in Steel and Torrie, Principles and Procedures of Statistics. This test was designed for a completely random experimental design. As Steel and Torrie state,

> "...the usual assumption of homogeneity of the regression coefficients can be posed as a null hypothesis and tested by an appropriate "F" test in an analysis of covariance. (For other designs, we are not aware of methods presently available for testing homogeneity of regression coefficients.)"[1]

The restriction to random design is probably not a serious hindrance to the use of the test in Chapter 4, however. Although the experimental design in Chapter 4 may not be completely random, it is certainly nearer to a random than to a non-random design in which, according to Steel and Torrie, "it is possible to group experimental units so that variation among units within groups is less than that among units in different groups."[2]

The "t" tests used in Chapters 4 and 5 were taken from Johnston, Econometric Methods,[3] and were derived from the formula $t = \frac{\hat{b}_i - b_i}{\sqrt{\frac{\sum e_i^2}{n-k}} \cdot \sqrt{a_{ii}}}$ where "$\hat{b}$" represents the "b" value found in the regression equation. The "b_i" value is equal

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[1]Steel and Torrie, Principles and Procedures of Statistics, (New York: McGraw-Hill Book Company, Inc., 1960), p. 319.

[2]Ibid., p. 100.

[3]J. Johnston, Econometric Methods, (New York: McGraw-Hill Book Company, Inc., 1963), pp. 118 and 135.

to zero, since the tests are used to determine whether the regression "b" values are significantly different from zero. Σe_i^2 represents the sum of the squared residuals, n-k represents the number of degrees of freedom, and a_{ii} represents the ith diagonal element of the $(X'X)^{-1}$ matrix, (where X represents a matrix in the matrix representation of the regression, $Y = Xb + U$).

In Chapter 5, the B_1 (skewness) and B_2 (kurtosis) coefficients were tested to find whether they differed significantly from the values of 0.0 and 3.0 which represent the normal distribution. The procedure outlined in Croxton and Cowden, Applied General Statistics,[4] was used for this test.

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[4]F. E. Croxton and D. J. Cowden, Applied General Statistics, 2nd. ed. (New York: Prentice-Hall, Inc., 1955), p. 720.

BIBLIOGRAPHY

BIBLIOGRAPHY

Public Documents

Arkansas Employment Security Division. Average Weekly Earnings in Covered Employment by County and Industry: 1960, 1961, 1962 and 1963. Little Rock: State of Arkansas, 1961, 1962, 1963, and 1964.

California Department of Industrial Relations, Division of Labor Statistics and Research. Union Labor in California. San Francisco: California Office of State Printing, 1950-1960.

Louisiana Division of Employment Security. Average Weekly Wages in Covered Employment by Parish and by Industry: 1960, 1961, 1962, and 1963. Baton Rouge: Louisiana State Department of Labor, 1960, 1961, 1962, and 1963.

Oklahoma Employment Security Commission, Annual Report to the Governor: 1960, 1961, 1962, and 1963. Oklahoma City: Oklahoma State Employment Service, 1960, 1961, 1962, and 1963.

U. S. Bureau of the Census. 1963 Census of Manufactures, Area Series, Preliminary Report. Washington: By the Bureau of the Census, 1965.

U. S. Bureau of the Census. U. S. Census of Manufactures; 1963, General Summary Statistics for States, Preliminary Report. Washington: U. S. Government Printing Office, 1966.

U. S. Bureau of the Census. U. S. Census of the Population: 1960. Characteristics of the Population, Vol. I.

U. S. Bureau of the Census. U. S. Census of the Population: 1960. Detailed Characteristics, Vol. III.

U. S. Bureau of the Census. U. S. Census of the Population: 1950. Detailed Characteristics, Vol. III.

U. S. Department of Labor, Bureau of Labor Statistics. "Union Membership by State," News from the U. S. Department of Labor, USDL-6979 (January, 1966), 2-3.

U. S. Department of Labor, Labor-Management Services Administration, Office of Labor-Management and Welfare-Pension Reports. Directory of Reporting Labor Organizations. Washington: U. S. Government Printing Office, 1959, 1960, 1961, 1962, 1963, 1964.

U. S. Department of Labor, Labor-Management Services Administration, Office of Labor-Management and Welfare-Pension Reports. Unpublished reports filed with the Office by reporting labor organizations. Washington, 1960, 1961, 1962, and 1963.

Books

Croxton and Cowden, Applied General Statistics, New York: Prentice-Hall, Inc., 1955.

Steel and Torrie. Principles and Procedures of Statistics. New York: McGraw-Hill Book Company, Inc., 1960.

Troy, Leo. Trade Union Membership, 1897-1962, Occasional Paper 92. New York: National Bureau of Economic Research, Inc., 1965.

Troy, Leo. Distribution of Union Membership among the States: Occasional Paper 56. New York: National Bureau of Economic Research, Inc., 1956.

Wolman, Leo. The Ebb and Flow of Trade Unionism. New York: National Bureau of Economic Research, Inc., 1936.

Wolman, Leo. Growth of American Trade Unions, 1880-1923. New York: National Bureau of Economic Research, Inc., 1924.

Articles and Periodicals

Bernstein, Irving. "The Growth of American Unions," American Economic Review, XLIV (June, 1954), 308-18.

International Typographical Union, The Typographical Journal. Colorado Springs: By the International Typographical Union, July, 1965.

Marshall, F. Ray. "Impediments to Labor Union Organization in the South," South Atlantic Quarterly, LVII (Autumn, 1958), 408-418.

Phelps Brown, E. H. and Hart, P. E. "The Sizes of Trade Unions: A Study in the Laws of Aggregation," Economic Journal, LXVII (March, 1957), 1-15.

Solomon, Benjamin, "Dimensions of Union Growth," Industrial and Labor Relations Review, IX (July, 1956), 544-561.

Reports

International Brotherhood of Electrical Workers. Proceedings of the 27th Convention. Montreal: By the IBEW, September, 1962.

Nelson, Helen. "Estimating Union Membership in California," Statistics of Labor-Management Relations, The Proceedings of a Conference Held at Asilomar, Pacific Grove, California. Asilomar: By the Conference, 1955.

Unpublished Material

Dvorak, E. J. "Effects of Changes in the Labor-Force Structure Upon Union Growth." Unpublished Ph.D. dissertation, University of Washington, 1962.

Stober, William. "The Estimation of Labor Union Membership from Reports Filed under the Labor-Management Reporting and Disclosure Act of 1959." Unpublished Ph.D. dissertation, Duke University, 1965.