# The economy of southeastern Wisconsin. no. 10 December 1972

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TECHNICAL REPORT NUMBER 10



# THE ECONOMY OF SOUTHEASTERN WISCONSIN

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TECHNICAL REPORT

NUMBER 10

# THE ECONOMY OF SOUTHEASTERN WISCONSIN

Prepared by the
Southeastern Wisconsin Regional Planning Commission
Continuing Regional Land Use-Transportation Study

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## STATEMENT OF THE EXECUTIVE DIRECTOR

In any planning effort, forecasts are required of all future events and conditions which are considered to lie outside the scope of the plans to be prepared, but which affect plan design or plan implementation. The probable future demand for land, transportation and utility services, and natural resources will depend to a considerable extent upon the size of the future resident population of the Region; and, in turn, the size of that population will depend to a considerable extent upon economic activity levels within the Region. The probable future demand for land, transportation and utility services, and natural resources will also depend to some extent upon future personal income levels within the Region.

Control of changes in economic activity levels and in personal income levels, however, lies largely outside the scope of governmental activity at the regional and local levels and certainly outside the scope of the physical planning process. Future population and economic activity levels must, therefore, be forecast and, once forecast, become important inputs to the plan preparation process. Accordingly, the Regional Planning Commission must carry out economic studies pertinent to the proper performance of its primary statutory responsibility to make and adopt an advisory plan for the physical development of the Region.

As an integral part of its initial work program undertaken in 1961, the Regional Planning Commission completed analyses of the economic base and structure of the Region, together with forecasts of probable future levels of economic activity within the Region to the year 1990. As a part of its continuing regional planning activities, the Commission has monitored these analyses and forecasts on an annual basis.

In 1971, in preparation for a major reevaluation and update of the adopted regional land use and transportation plans, a new economic base and structure study was undertaken and new forecasts of economic activity levels within the Region to the year 2000 prepared. This report documents the findings of these extensive economic studies and, as such, supersedes the information contained in SEWRPC Planning Report No. 3, The Economy of Southeastern Wisconsin, published in June 1963.

The methods used in the development of the new economic forecasts presented in this report are the same as those used in the preparation of the initial economic forecasts in 1961. These methods were originally developed specifically for the Commission and have proved to be so satisfactory in terms of the accuracies of the economic forecasts produced that, after careful consideration, it was decided to apply these same methods in the preparation of the new economic forecasts presented herein.

It must, however, be recognized that all forecasts, however made, involve uncertainty and, therefore, must always be used with great caution. Forecasts cannot take into account events that are unpredictable but which may have major effects upon future conditions. For this reason, forecasting, like planning, must be a continuing process. As otherwise unforeseeable events unfold, forecasts must be revised; and the plans which are based on such forecasts must, in turn, be reviewed and revised accordingly.

Although the economic forecasts presented herein were prepared specifically to meet the requirements of regional plan preparation, these forecasts may be of use in certain private planning efforts, as well as in public planning efforts at the county and local levels. To this end, potential users are urged to contact the Commission staff for assistance in both exploring the potential applicability of the regional economic forecasts to the user's needs and for such assistance as the Commission staff can render in the actual adaptation and application of the forecasts to such needs.

Respectfully submitted,

K. W. Bauer
Executive Director

TABLE OF CONTENTS


| Chapter | | Page |
|---|---|---|
| I | INTRODUCTION | 1 |
| | Review of Previous Work | 1 |
| | Scope of This Report | 2 |
| II | GENERAL ECONOMIC BACKGROUND | 5 |
| | Introduction | 5 |
| | Economic History | 5 |
| | Transportation Facilities | 6 |
| | Railway Transportation Facilities | 6 |
| | Highway Transportation Facilities | 6 |
| | Air Transportation Facilities | 7 |
| | Water Transportation Facilities | 7 |
| | Measures of Economic Activity | 7 |
| | Labor Force Size and Composition | 7 |
| | Work Force Size and Composition | 8 |
| | Number of Available Jobs | 9 |
| | Changes in Distribution of Economic Activity | 10 |
| | Income | 14 |
| | Summary and Conclusions | 16 |
| III | STRUCTURE OF THE ECONOMY | 19 |
| | Introduction | 19 |
| | Dominant and Subdominant Industries | 20 |
| | Nonelectrical Machinery Industry | 20 |
| | Electrical Machinery and Equipment Industry | 24 |
| | Transportation Equipment Industry | 28 |
| | Primary Metals Industry | 31 |
| | Fabricated Metals Industry | 34 |
| | Food and Beverage Industry | 38 |
| | Printing and Publishing Industry | 41 |
| | Retail Trade Industry | 44 |
| | Wholesale Trade Industry | 46 |
| | Medical and Other Professional Services | 48 |
| | Educational Services | 48 |
| | Construction Industry | 50 |
| | Finance, Insurance, and Real Estate Services | 51 |
| | Government Services | 51 |
| | Summary | 52 |
| IV | PROJECTIONS AND FORECASTS OF ECONOMIC ACTIVITY | 55 |
| | Introduction | 55 |
| | Forecasting Approach | 57 |
| | Employment Forecasts to 2000 | 57 |
| | Nonelectrical Machinery Industry | 60 |
| | Electrical Machinery and Equipment Industry | 60 |
| | Retail Trade Industry | 61 |
| | Medical and Other Professional Services | 61 |
| | Educational Services | 62 |
| | Wholesale Trade Industry | 63 |
| | Finance, Insurance, and Real Estate Services | 64 |
| | Fabricated Metals Industry | 64 |

Chapter Page

Primary Metals Industry . . . . . 64
Transportation Equipment Industry . . . . . 65
Food and Beverage Industry . . . . . 66
Printing and Publishing Industry . . . . . 66
Government Services . . . . . 67
Construction Industry . . . . . 68
Relation to Demographic Studies . . . . . 68
Summary . . . . . 68

V SUMMARY AND CONCLUSIONS . . . . . 71

## LIST OF APPENDICES

Appendix Page

A Socioeconomic Subcommittee of the Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning . . . . . 77

B Detailed Labor Force, Income, and Industry Data . . . . . 79

Table B-1 Labor Force Levels in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970 . . . . . 79
Table B-2 Employment and Unemployment Levels in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970 . . . . . 79
Table B-3 Employment Levels for Selected Industries in the United States: 1950, 1960, and 1970. . . . . 80
Table B-4 Employment Levels for Selected Industries in Wisconsin: 1950, 1960, and 1970 . . . . . 80
Table B-5 Employment Levels for Selected Industries in the Region: 1950, 1960, and 1970 . . . . . 81
Table B-6 Distribution of Employment by Occupation in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 82
Table B-7 Labor Force Composition in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970 . . . . . 83
Table B-8 Number of Females in the Labor Force in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970. . . . . 83
Table B-9 Population and Total Personal Income Distribution in the United States by Geographic Region: 1960 and 1970. . . . . 83
Table B-10 Per Capita Income Levels in the United States by Geographic Region: 1960 and 1970 . . . . . 84
Table B-11 Distribution of Families by Income Range in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970. . . . . 84
Table B-12 Percentage Distribution of Value Added by Manufacture for Selected Industries in the United States by Geographic Region: 1949 . . 85
Table B-13 Percentage Distribution of Value Added by Manufacture for Selected Industries in the United States by Geographic Region: 1959 . . 85
Table B-14 Percentage Distribution of Value Added by Manufacture for Selected Industries in the United States by Geographic Region: 1969 . . 85
Table B-15 Value Added by Manufacture in Selected Manufacturing Industries in the United States: 1950-1970 . . . . . 86
Table B-16 Average Hourly Earnings for Selected Manufacturing Industries in the United States: 1960-1970 . . . . . 86

Appendix Page

Table B-17 Average Hourly Earnings for Selected Manufacturing Industries in Wisconsin: 1960-1970 . . . . . 86
Table B-18 Average Hourly Earnings for Selected Manufacturing Industries in the Region: 1960-1970 . . . . . 86
Table B-19 Index of Industrial Production for Selected Industries in the United States: 1950, 1960, and 1970 . . . . . 87
Table B-20 New Capital Expenditures for Selected Industries in the United States by Geographic Region: 1960 and 1970 . . . . . 87

C Questionnaire Survey of Leading Industrial Firms in the Region . . . . . 89

## LIST OF TABLES

Table Chapter I Page

1 Comparative Differences Between Actual and Forecast Levels of Employment in the Region: 1970 . . . . . 3

Chapter II

2 Comparative Labor Force Size in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 8
3 Labor Force Composition in the Region: 1950, 1960, and 1970 . . . . . 8
4 Comparative Work Force Size in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 9
5 Comparative Labor Force and Job Totals in the Region by County: 1950, 1960, and 1970 . . . . . 11
6 Commercial and Industrial Land Use Changes in the Region by Subarea: 1963-1970 . . . 12
7 Comparative Aggregate and Per Capita Dollar Income Levels in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 14
8 Aggregate Dollar Income Levels in the Region by County in Millions of Dollars: 1950, 1960, and 1970 . . . . . 16
9 Per Capita Income Levels in the Region by County: 1950, 1960, and 1970 . . . . . 16
10 Percent Distribution of Families by Income Range in the United States, Wisconsin, and the Region by County: 1950, 1960, and 1970 . . . . . 16

Chapter III

11 Change in the Dominant and Subdominant Status of Industries in the Region: 1960 and 1970 . . . . . 19
12 Distribution of Employment in the Nonelectrical Machinery Industry in the United States and the Region: 1967 . . . . . 20
13 Major Employers in the Nonelectrical Machinery Industry in the Region: 1970 . . . . . 21
14 Changes in the Amount and Distribution of Value Added by Manufacture in the Nonelectrical Machinery Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 21
15 Ten Top Ranking States in Value Added by Manufacture in the Nonelectrical Machinery Industry: 1959 . . . . . 22
16 Employment Levels in the Nonelectrical Machinery Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 23
17 Average Hourly Earnings in the Nonelectrical Machinery Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 23

| Table | | Page |
|---|---|---|
| 18 | Index of Industrial Production in the Nonelectrical Machinery Industry in the United States: 1950, 1960, and 1970 | 24 |
| 19 | Distribution of Employment in the Electrical Machinery and Equipment Industry in the United States and the Region: 1967 | 24 |
| 20 | Major Employers in the Electrical Machinery and Equipment Industry in the Region: 1970 | 25 |
| 21 | Changes in the Amount and Distribution of Value Added by Manufacture in the Electrical Machinery and Equipment Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 25 |
| 22 | Ten Top Ranking States in Value Added by Manufacture in the Electrical Machinery and Equipment Industry: 1969 | 26 |
| 23 | Employment Levels in the Electrical Machinery and Equipment Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 27 |
| 24 | Average Hourly Earnings in the Electrical Machinery and Equipment Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 27 |
| 25 | Index of Industrial Production in the Electrical Machinery and Equipment Industry in the United States: 1950, 1960, and 1970 | 28 |
| 26 | Distribution of Employment in the Transportation Equipment Industry in the United States and the Region: 1967 | 28 |
| 27 | Changes in the Amount and Distribution of Value Added by Manufacture in the Transportation Equipment Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 28 |
| 28 | Ten Top Ranking States in Value Added by Manufacture in the Transportation Equipment Industry: 1969 | 29 |
| 29 | Employment Levels in the Transportation Equipment Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 30 |
| 30 | Average Hourly Earnings in the Transportation Equipment Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 30 |
| 31 | Index of Industrial Production in the Transportation Equipment Industry in the United States: 1950, 1960, and 1970 | 31 |
| 32 | Distribution of Employment in the Primary Metals Industry in the United States and the Region: 1967 | 31 |
| 33 | Major Employers in the Primary Metals Industry in the Region: 1970 | 31 |
| 34 | Changes in the Amount and Distribution of Value Added by Manufacture in the Primary Metals Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 33 |
| 35 | Ten Top Ranking States in Value Added by Manufacture in the Primary Metals Industry: 1969 | 33 |
| 36 | Employment Levels in the Primary Metals Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 34 |
| 37 | Average Hourly Earnings in the Primary Metals Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 34 |
| 38 | Index of Industrial Production in the Primary Metals Industry in the United States: 1950, 1960, and 1970 | 34 |
| 39 | Distribution of Employment in the Fabricated Metals Industry in the United States and the Region: 1967 | 35 |
| 40 | Major Employers in the Fabricated Metals Industry in the Region: 1970 | 35 |
| 41 | Changes in the Amount and Distribution of Value Added by Manufacture in the Fabricated Metals Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 35 |
| 42 | Ten Top Ranking States in Value Added by Manufacture in the Fabricated Metals Industry: 1969 | 37 |

| Table | | Page |
|---|---|---|
| 43 | Employment Levels in the Fabricated Metals Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 37 |
| 44 | Average Hourly Earnings in the Fabricated Metals Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 38 |
| 45 | Index of Industrial Production in the Fabricated Metals Industry in the United States: 1950, 1960, and 1970 | 38 |
| 46 | Distribution of Employment in the Food and Beverage Industry in the United States and the Region: 1967 | 38 |
| 47 | Major Employers in the Food and Beverage Industry in the Region: 1970 | 38 |
| 48 | Changes in the Amount and Distribution of Value Added by Manufacture in the Food and Beverage Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 40 |
| 49 | Ten Top Ranking States in Value Added by Manufacture in the Food and Beverage Industry: 1969 | 40 |
| 50 | Employment Levels in the Food and Beverage Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 40 |
| 51 | Average Hourly Earnings in the Food and Beverage Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 41 |
| 52 | Index of Industrial Production in the Food and Beverage Industry in the United States: 1950, 1960, and 1970 | 41 |
| 53 | Distribution of Employment in the Printing and Publishing Industry in the United States and the Region: 1967 | 42 |
| 54 | Major Employers in the Printing and Publishing Industry in the Region: 1970 | 42 |
| 55 | Changes in the Amount and Distribution of Value Added by Manufacture in the Printing and Publishing Industry in the United States by Geographic Region: 1949, 1959, and 1969 | 42 |
| 56 | Ten Top Ranking States in Value Added by Manufacture in the Printing and Publishing Industry: 1969 | 43 |
| 57 | Employment Levels in the Printing and Publishing Industry in the United States, East North Central States, Wisconsin, and the Region: 1950, 1960, and 1970 | 44 |
| 58 | Average Hourly Earnings in the Printing and Publishing Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 44 |
| 59 | Index of Industrial Production in the Printing and Publishing Industry in the United States: 1950, 1960, and 1970 | 44 |
| 60 | Employment Levels in the Retail Trade Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 45 |
| 61 | Number of Retail Sales Establishments in the United States, Wisconsin, and the Region: 1954, 1958, 1963, and 1967 | 45 |
| 62 | Retail Sales Volume in the United States, Wisconsin, and the Region: 1954, 1958, 1963, and 1967 | 45 |
| 63 | Retail Sales Volume in the Region by County: 1954, 1958, 1963, and 1967 | 46 |
| 64 | Employment Levels in the Wholesale Trade Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 47 |
| 65 | Wholesale Sales Volume in the United States, Wisconsin, and the Region: 1954, 1958, 1963, and 1967 | 47 |
| 66 | Number of Wholesale Sales Establishments in the United States, Wisconsin, and the Region: 1954, 1958, 1963, and 1967 | 47 |
| 67 | Wholesale Sales Volume in the Region by County: 1954, 1958, 1963, and 1967 | 48 |
| 68 | Employment Levels in the Medical and Other Professional Services Group in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 49 |
| 69 | Employment Levels in the Educational Services Group in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 | 49 |
| 70 | Expenditures for Public Education by Local Governments in the Region by County: 1957 and 1967 | 50 |

Table Page

71 Employment Levels in the Construction Industry in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 50
72 Employment Levels in the Finance, Insurance, and Real Estate Services Group in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 51
73 Employment Levels in the Government Services Group in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 . . . . . 52
74 Full Value Property Tax Base by Category in the Region: 1940, 1960, and 1970 . . . . . 52
75 Property Tax, Shared Tax, and State Aid Revenues for the Region: 1940, 1960, and 1970 . . . . . 52
76 Initial Land Use-Transportation Study Employment Forecasts by Simulation Model and Conventional Techniques for the Region: 1970, 1980, and 1990 . . . . . 55
77 Comparison of 1970 Simulation Model and Conventional Employment Forecasts With Actual Estimates of Employment for the Region: Thousands of Employees . . . . . 56
78 Employment Projections for the Region by Industry Group for the Year 2000: Thousands of Employees . . . . . 58
79 Actual and Forecast Levels of Employment in the Region by County: 1970, 1980, 1990, and 2000 . . . . . 59
80 Actual and Forecast Levels of Employment in the Region by Industry Group: 1970, 1980, 1990, and 2000 . . . . . 59

## LIST OF FIGURES

### Chapter I

Figure Page

1 Comparison of Initial SEWRPC Employment Forecast and Current Employment Estimate for the Region: 1960-1990 . . . . . 3

### Chapter II

2 Relative Job Growth in the Region, Wisconsin, and the United States: 1950-1970 . . . . 9
3 Aggregate and Per Capita Dollar Income Levels in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 (In Constant 1967 Dollars) . . . . . 15
4 Percent Distribution of Families by Income Range in the United States, Wisconsin, and the Region: 1950, 1960, and 1970 (In Constant 1967 Dollars) . . . . . 17

### Chapter III

5 Distribution of Value Added by Manufacture in the Nonelectrical Machinery Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 22
6 Distribution of Value Added by Manufacture in the Electrical Machinery and Equipment Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 26
7 Distribution of Value Added by Manufacture in the Transportation Equipment Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 29
8 Distribution of Value Added by Manufacture in the Primary Metals Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 32
9 Distribution of Value Added by Manufacture in the Fabricated Metals Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 36
10 Distribution of Value Added by Manufacture in the Food and Beverage Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 39
11 Distribution of Value Added by Manufacture in the Printing and Publishing Industry in the United States by Geographic Region: 1949, 1959, and 1969 . . . . . 43

Figure | Chapter IV | Page

12 Employment Forecast for the Nonelectrical Machinery Industry in the Region: 1980, 1990, and 2000 . . . . . 60
13 Employment Forecast for the Electrical Machinery and Equipment Industry in the Region: 1980, 1990, and 2000 . . . . . 61
14 Employment Forecast for the Retail Trade Industry in the Region: 1980, 1990, and 2000 . . . . . 62
15 Employment Forecast for the Medical and Other Professional Services Group in the Region: 1980, 1990, and 2000 . . . . . 62
16 Employment Forecast for the Educational Services Group in the Region: 1980, 1990, and 2000 . . . . . 63
17 Employment Forecast for the Wholesale Trade Industry in the Region: 1980, 1990, and 2000 . . . . . 63
18 Employment Forecast for the Finance, Insurance, and Real Estate Services Group in the Region: 1980, 1990, and 2000 . . . . . 65
19 Employment Forecast for the Fabricated Metals Industry in the Region: 1980, 1990, and 2000 . . . . . 65
20 Employment Forecast for the Primary Metals Industry in the Region: 1980, 1990, and 2000 . . . . . 65
21 Employment Forecast for the Transportation Equipment Industry in the Region: 1980, 1990, and 2000 . . . . . 66
22 Employment Forecast for the Food and Beverage Industry in the Region: 1980, 1990, and 2000 . . . . . 66
23 Employment Forecast for the Printing and Publishing Industry in the Region: 1980, 1990, and 2000 . . . . . 67
24 Employment Forecast for the Government Services Group in the Region: 1980, 1990, and 2000 . . . . . 67
25 Employment Forecast for the Construction Industry in the Region: 1980, 1990, and 2000 . . . . . 68

## LIST OF MAPS

Map | Chapter II | Page

1 Commercial and Industrial Land Use Changes in the Region by Subarea: 1963-1970 . . . 13

# Chapter I

# INTRODUCTION

## REVIEW OF PREVIOUS WORK

In September 1962, the Southeastern Wisconsin Regional Planning Commission engaged the services of the State Planning Division of the Wisconsin Department of Resource Development to prepare an economic base and structure[1] study of the Southeastern Wisconsin Region. This study was done as part of the Commission's initial work program and was one of a series of studies performed under Urban Planning Grant No. Wis. P-6(G) from the U. S. Housing and Home Finance Agency. In June 1963 the results of that study were published in SEWRPC Planning Report No. 3, The Economy of Southeastern Wisconsin.

The basic concept of the system of economic analysis used in that study was that an understanding of an area's economy can best be gained by an in-depth analysis over time of that area's largest industries.[2] These large important industries were defined as dominant or subdominant depending on their individual share of total regional employment. Industrial "dominants" which were selected were those industries which in 1960 accounted for 4 percent or more of total regional employment. Industrial "subdominants" which were selected were those industries which in 1960 accounted for 2 to 3.9 percent of total regional employment. These industrial dominants and subdominants were identified according to the Standard Industrial Classification System (SIC) established by the U. S. Bureau of the Budget, now known as the Office of Management and Budget (OMB). This system breaks down the manufacturing industry division, for example, into many specialized groups such as food processing, labeled by the OMB as "Food and Kindred Products," and assigns a two-digit identification number, which in this example is 20. Subclassification of the food and kindred products industry group is then achieved by expanding the number of digits. A meat products subclassification, for example, has three digits, 201, which is further broken down to a four-digit industry level—meat packing plants, 2,011—and so on to a highly specialized level of seven digits representing individual firms or establishments.

On this basis, the economic study identified 15 dominant and subdominant industry groups in 1962. Regional trends in each of these groups were analyzed in depth, principally at the two-digit SIC level, and compared to national and state industry trends. In addition, four other significant manufacturing industries of less than subdominant status were analyzed to provide further understanding of the regional economy. These were selected on the basis of potential growth or decline, and included the paper products, chemical products, leather products, and instrument products industries. The in-depth analysis included structured interviews with the chief executives of major firms in the Region representing each group to determine local problems, opportunities, and outlooks for the future. Based on these comprehensive analyses and personal interviews, employment projections were made for each industry to the year 1985. A total regional employment projection was then made by converting the aggregate dominant, subdominant, and other selected industry projections to a regional employment projection to the year 1985. By relating the employment projection to the number of people which the employment level was at that time actually supporting, an estimate of the probable future regional population level was also obtained and was

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[1] *The economic base of an area may be defined as those activities which provide the basic employment and income on which the rest of the area's economy depends. The economic structure of an area may be defined as the manner in which this employment is distributed among the major industrial sectors of the area's economy.*

[2] *The system of economic analysis discussed in this chapter was developed in 1962 by Prof. Richard B. Andrews of the University of Wisconsin for the Wisconsin State Planning Program. A detailed description of this system is contained in the August 1961 and May 1963 issues of the Journal of Land Economics.*

used as a check on population projections derived from purely demographic analyses. These two conversions were made by observing trends in the relationship between population and employment and subsequently estimating their probable future magnitude. The result of this work indicated an estimated 1985 employment level in the Region of between 762,000 and 819,000 persons.

In 1966, during the course of the Commission's initial land use-transportation study, the projections prepared in the initial Commission work programs were updated and projected to the year 1990. Additional projections were also made which utilized regression techniques and a dynamic input-output economic simulation model.[3] As a result of this work, a 1990 employment forecast for the Region was established at approximately 984,000 persons. The results of these additional economic analyses were published in SEWRPC Planning Report No. 7, Volumes 2 and 3, dated June 1966 and November 1966, respectively.

Under the first continuing regional land use-transportation study begun in August 1967, employment estimates were made annually and compared with employment forecasts prepared under the initial land use-transportation study. These estimates were used to monitor the continued validity of the regional employment forecasts and were published in the annual reports of the Commission. The 1970 estimate indicated that the forecast employment level in the Region of 706,000 persons was slightly less than both the actual 1970 census place of residence regional employment level and the actual 1970 place of work regional employment level, due in part to an increase in the number of females in the labor force and in part to an upward revision of the Wisconsin Department of Industry, Labor, and Human Relations historical employment series. In general, however, the forecast employment levels were found to be remarkably accurate. As shown in Table 1, the forecast regional levels of employment differed from actual levels by only 1 to 5 percent in 1970. More important is the similarity in the trends of forecast and actual employment levels for the Region from 1960 to 1970. As shown in Figure 1, the trend in actual regional employment levels closely approximates that of the forecast levels, although absolute values differ somewhat due to the relative strength of the regional economy throughout most of the 1960s.

In light of these similarities and due to the relatively close conformance of the actual and forecast regional employment levels in 1970, a reevaluation of changes in the regional economic base and structure as well as an updating of the Commission's regional employment forecasts to the year 2000 will be based upon the same dominant/subdominant industry analysis methodology used in the initial economic studies program conducted in 1962.

## SCOPE OF THIS REPORT

Under the second continuing regional land use-transportation study begun in January 1970, employment estimates were maintained current on an annual basis. In addition, a major review of national and regional economic activity patterns was undertaken in order to assess the impact of any changes in such patterns on the economy of southeastern Wisconsin, and new forecasts of economic activity within the Region were prepared. The objective of this report is to present the results of the reexamination and updating of economic data contained in SEWRPC Planning Reports No. 3 and No. 7, and to present new forecasts of regional and county employment levels to the year 2000. The findings set forth in this report are intended to provide one base upon which all adopted regional plan elements, primarily the adopted regional land use and transportation plans, may be reappraised and updated to the year 2000. The study is also intended to assist local units of government and industrial development corporations within the Region in the undertaking of economic studies and the making of decisions related to economic development.

This report is divided into three major chapters. The first major chapter provides a general overview of the historical trends in the Region's economy during the last 20 years, with emphasis on the results of analyses of changes in the size, composition, and distribution of the Region's labor and work forces, as well as analyses of changing industrial locational patterns and income levels within the Region. The second

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[3] *The details of this model are presented in SEWRPC Technical Report No. 5, A Regional Economic Simulation Model.*

Table I

COMPARATIVE DIFFERENCES BETWEEN ACTUAL AND FORECAST LEVELS OF EMPLOYMENT IN THE REGION: 1970

| CATEGORY | EMPLOYMENT LEVELS (1970) | | DIFFERENCE BETWEEN ACTUAL AND FORECAST EMPLOYMENT LEVELS | |
|---|---|---|---|---|
| | ACTUAL | FORECAST[c] | NUMBER | PERCENT |
| PLACE OF RESIDENCE[a] EMPLOYED PERSONS.... | 716,400 | 706,000 | -10,400 | -1.4 |
| PLACE OF WORK[b] JOBS..... | 741,600 | 706,000 | -35,600 | -4.8 |

[a]THE PLACE OF RESIDENCE CATEGORY REFERS TO THE NUMBER OF PERSONS IN THE REGION WHO ARE EMPLOYED AND ARE ENUMERATED AT THEIR PLACE OF RESIDENCE REGARDLESS OF THEIR PLACE OF WORK AS PART OF THE DECENNIAL CENSUS OF POPULATION.

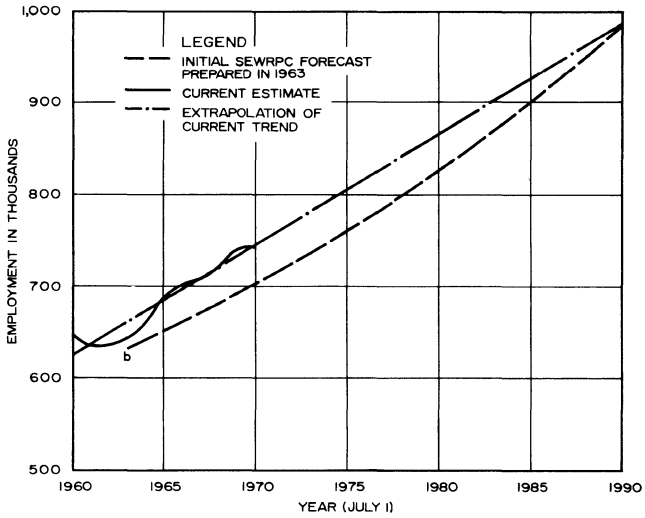
[b]THE PLACE OF WORK CATEGORY REFERS TO THE NUMBER OF PERSONS WHO ARE WORKING WITHIN THE REGION ENUMERATED AT THEIR PLACE OF WORK REGARDLESS OF THEIR PLACE OF RESIDENCE AS PART OF AN INDUSTRY REPORTING PROGRAM COORDINATED THROUGH THE WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS. THESE TABULATIONS WILL DOUBLE-COUNT PERSONS HOLDING MORE THAN ONE JOB.

[c]THE FORECAST EMPLOYMENT LEVEL REFERS TO THE 1970 STAGE OF THE SEWRPC REGIONAL EMPLOYMENT FORECAST PREPARED IN 1963 AS PART OF THE INITIAL LAND USE-TRANSPORTATION STUDY.

SOURCE- U.S. BUREAU OF THE CENSUS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Figure I

COMPARISON OF INITIAL SEWRPC EMPLOYMENT FORECAST AND CURRENT EMPLOYMENT ESTIMATE FOR THE REGION: 1960-1990




[a] THE CURRENT EMPLOYMENT ESTIMATES REPRESENT EMPLOYMENT BY PLACE OF WORK. ESTIMATES ARE ANNUAL AVERAGES AND ARE PLOTTED AS OF JULY 1 OF EACH YEAR.

[b] DIFFERENCE BETWEEN 1963 EMPLOYMENT LEVEL AND POINT OF BEGINNING OF FORECAST DUE TO SUBSEQUENT UPWARD REVISION BY THE WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS OF EMPLOYMENT DATA.

*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

major chapter presents the results of analyses of the Region's dominant and subdominant industries. The criteria used in determining an industry's dominance or subdominance are the same as those used in the Commission's initial work programs. Industrial dominants are those industrial groups within the Region which in 1970 as a group accounted for 4 percent or more of total regional employment. Industrial subdominants are those industrial groups which in 1970 as a group accounted for 2 to 3.9 percent of total regional employment. The third major chapter reexamines the Commission's past employment forecasts in light of changes in economic activity which have taken place since the original forecasts were made in 1963. It also presents revised employment projections to the year 2000.

The employment projection series presented in this report will be the basis upon which the selection of a regional employment forecast will be made with the assistance of the Socioeconomic Subcommittee of the Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning. The complete subcommittee membership is set forth in Appendix A. In addition, these projections will be used in the preparation of revised population projections for the Region, and particularly as guides to the making of assumptions concerning migration and the projected levels of the working age population. The revised population projections incorporating the results of the economic analyses and projections set forth in this report will be presented in a forthcoming technical report.

Chapter II

# GENERAL ECONOMIC BACKGROUND

## INTRODUCTION

This chapter presents, in addition to a summary of the economic history of the Region since its settlement by Europeans, an analysis of the historical trends in economic activity in the Southeastern Wisconsin Region during the past 20 years. For the purpose of this report, changes in the levels and distribution of economic activity are measured in terms of changes in the regional labor force and work force size, composition, and distribution; income levels and distribution; and the changes in industrial location patterns. This analysis of the changes in the levels of economic activity, in turn, provides the background for economic analyses of the dominant and subdominant industries and the employment projections presented in subsequent chapters of this report.

## ECONOMIC HISTORY

The modern history of the Region dates from 1743 when the Milwaukee Indians, a group of renegades from neighboring tribes, used a spot near Milwaukee as a trading center. Most other cities in the Region similarly trace their origin to trading posts established during the early 1800s. The first permanent white settlement was established in Milwaukee by Jacques Vieau in 1795.

The movement of settlers into the Region was well underway by the mid-1830s. A wagon road from Chicago was opened in 1835 as far as Milwaukee, and from there another road was cut through the timber westward toward the Rock River. From Milwaukee northward, a trail extended along the lakeshore as far as Sauk Creek, affording access to the good agricultural lands in Ozaukee County. An important event in the history of the lakeshore counties which led to their rapid growth was the sale of government lands in Milwaukee in 1839. Rapid settlement, primarily by New Englanders interested in farming, followed. The early settlers were soon followed in large numbers by the Irish, Scandinavians, Hollanders, Bohemians, and Austrians, but from 1844 to 1878 German immigration outnumbered immigration by all other nationalities. During the latter part of this period Polish immigration began to increase. Each of these groups exercised its influence on the overall development of the Region.

Until 1850, the best trade route linking Milwaukee to the rest of the United States was through the Great Lakes. The city hoped for commercial prosperity to develop by means of trade during this time, and depended on its rich agricultural hinterland for the products which were to be exported. From 1841 to 1875, wheat was the principal export crop. This trade eventually won for Milwaukee the distinction of being the greatest primary wheat market in the world at that time.

The lead mining area of southwestern Wisconsin, which at that time had a larger population than Milwaukee, presented a considerable market for agricultural produce from Milwaukee. The citizens of Milwaukee also saw the significance of the Rock River Valley as an outlet for further trade with southwestern Wisconsin, and devised plans to build a canal from Milwaukee to the Rock River.[1] These plans failed to materialize, but they nevertheless influenced the settlement of the southeastern counties.

As in the rest of the settled areas of Wisconsin, farmers began to turn to dairying and diversified farming when exclusive wheat cultivation exhausted the soil, and the ravages of rust, chinch bugs, and weevils, as well as low prices, made raising wheat unprofitable. Dairying operations began in the 1870s, and a large number of cheese factories and creameries were built within the Region. In addition, rye, oats, and

[1] See SEWRPC Technical Record, Volume 1, No. 5, p. ii.

barley were grown in large quantities to supply the breweries which developed in Milwaukee. The raising of sheep and purebred livestock, wool production, and the growing of fruit, particularly apples, were the major agricultural activities in the late 1800s. During the late 1800s the City of Milwaukee developed into a major urban center. The German immigrants more than any other group which settled in the city shaped Milwaukee's future. They were skilled artisans, mechanics, and brewers, and were particularly skillful in metalworking. Nearly all of the city's major industrial plants can trace their beginning to the small backyard shops of these immigrants.

Many of the rapidly expanding manufacturing enterprises in Milwaukee had their foundation in the raw materials supplied by the nearby farms and forests. This was especially true of flour milling, meat packing, tanning, and brewing, and was also true of the iron and steel industry, which relied upon a supply of iron mined in the Lake Superior area. The Region also had a favorable location for serving growing eastern and midwestern markets.

## TRANSPORTATION FACILITIES

### Railway Transportation Facilities

A great step forward in industrial development within the Region occurred with the provision of railway transportation.[2] In 1855 the Chicago & Milwaukee Railroad was completed, connecting these two cities. This line later became part of the Chicago & North Western railway system. The railroad has played an important part in the progress of the Region, and has aided in its industrial and commercial growth. The Region today is served by three major railroads: The Chicago, Milwaukee, St. Paul and Pacific Railroad Company (Milwaukee Road); the Chicago & North Western Railway Company; and the Soo Line Railroad Company. Railroad car ferry service is available across Lake Michigan from the Chesapeake & Ohio Railway Company. In addition, the Village of East Troy operates a short railway line to provide rail service to industries within the village, connecting these industries to the trunk line railroads serving the Region. Railroad freight service within the Region is provided over about 440 miles of main rail line by the above-mentioned railroad companies and the Village of East Troy.

Railroad passenger service within the Region is provided over about 97 route miles of rail line by two privately owned railroads—The Chicago & North Western Railway Company and the Milwaukee Road—and by the quasi-public National Railroad Passenger Corporation (Amtrak). Rail passenger service within the Region is primarily oriented to and from the Milwaukee urbanized area, although daily service in each direction from the Cities of Kenosha and Lake Geneva and the Village of Walworth to Chicago provides Chicago-oriented commuter service. Amtrak operates trains over Milwaukee Road trackage within the Region, and since 1970 has assumed responsibility for operating nearly all intercity railroad passenger service within the United States. Within the Region, Amtrak has replaced former privately operated passenger service between the Cities of Chicago and Minneapolis with stops in the City of Milwaukee.

### Highway Transportation Facilities

The Region is also served by a good highway transportation system whose development in modern form began in the early 1920s.[3] The backbone of the highway system north from Milwaukee, the hub of the Region's economic activity, is USH 41, which connects Milwaukee with the upper Fox River Valley and northern Wisconsin. To the south, IH 94 connects Chicago and Milwaukee and provides northbound Chicago traffic ready access to northern Wisconsin. To the west, IH 94 connects Milwaukee with Madison and western Wisconsin. Other major highway routes connecting the Region to other areas of Wisconsin and adjoining states include USH 141, the lakeshore route to the north; STH 15 to the southwest, partially upgraded to freeway status and anticipated to connect Milwaukee to southwestern Wisconsin and northern Illinois; and USH 16 to the west, serving the western part of the Region and committed to be upgraded to

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[2] *See SEWRPC Technical Record, Volume 2, No. 2, p. ii.*

[3] *See SEWRPC Technical Record, Volume 2, No. 5, p. 39; and Volume 3, No. 1, p. 29.*

freeway status. At present there are nearly 10,000 miles of streets and highways in the Region, including approximately 3,000 miles of arterial streets and highways, of which 308 miles, or 10 percent, are freeways and expressways. The freeway system has become the backbone of the arterial street and highway system within the Region in terms of the proportion of total vehicle miles of travel carried. In 1963, freeways and expressways carried only 11 percent of the total vehicle miles of travel within the Region. By 1970 this had increased to nearly 32 percent. Thus, the freeway system, comprising only 10 percent of total arterial street and highway system mileage within the Region, now carries nearly one-third of the total vehicle miles of travel.

### Air Transportation Facilities

The Region is also served by good air transportation facilities, the development of which began in the 1920s.[4] Today, air transportation within the Region is provided by 46 airports, including 27 general aviation public use airports and 19 private use airports. Of the 27 public use airports, eight are owned and operated by local units of government, including General Mitchell Field, which is located in Milwaukee and is the largest commercial air passenger carrier in the Region. Air transportation service to and from Mitchell Field is provided by five major commercial airlines: Northwest Orient Airlines, United Airlines, North Central Airlines, Ozark Airlines, and Eastern Airlines. Airports adequate to serve business jets within the Region are located in Kenosha, Racine, Waukesha, and West Bend.

### Water Transportation Facilities

Major harbor facilities, dockage, and heavy cargo handling equipment are concentrated in the Port of Milwaukee. Facilities of a lesser scale are available in the Ports of Racine and Kenosha. Port Washington in Ozaukee County is principally a port for fishing and pleasure craft, but petroleum products and coal are also delivered there for local and utility use.

## MEASURES OF ECONOMIC ACTIVITY

### Labor Force Size and Composition

The labor force is the segment of the population which can be most closely related to the economy. By definition, the labor force of an area consists of all of its residents who are 14 years of age or older and are either employed at one or more jobs or are temporarily unemployed. Historical changes in the size, composition, and distribution of an area's labor force can reflect changes in the area's economy; population growth or decline, especially in the working age groups; and population movement from one area to another, providing insight into the migration habits and mobility of the population. Table 2 shows the changes that have occurred in the labor force size in the United States, Wisconsin, and the Region during the 20-year period from 1950 to 1970.

As shown in Table 2, the labor force in the Region increased from 540,100 persons in 1950 to 744,500 persons in 1970, an overall increase of 204,400 persons, or 38 percent. The rate of increase from 1960 to 1970 was slightly lower than it was from 1950 to 1960, with growth rates of about 17 percent and 18 percent respectively. The regional labor force growth rate was lower in the past decade than comparable state and national growth rates, whereas from 1950 to 1960 the regional labor force increased at a more rapid rate than that of the state or nation. These labor force trends indicate that the Region has in recent years experienced difficulty in competing for economic growth with other parts of the United States and to a lesser extent with other areas of the State of Wisconsin.

The increasing participation of females in the labor force is reflected in changes in the composition of the Region's labor force. The labor force composition from 1950 to 1970 is shown in Table 3, and indicates that female participation in the labor force is increasing rapidly in relation to male participation. The number of females in the labor force increased 39 percent from 1960 to 1970, while the number of males

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[4] See SEWRPC Technical Record, Volume 3, No. 4, pp. 1-28 and 35-42.

Table 2

COMPARATIVE LABOR FORCE SIZE IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| LABOR FORCE | YEAR 1950 | 1960 | 1970 | PERCENT CHANGE 1950-1960 | 1960-1970 |
|---|---|---|---|---|---|
| UNITED STATES | 59,304,000 | 68,144,000 | 82,897,000 | 14.9 | 21.6 |
| WISCONSIN | 1,396,400 | 1,533,000 | 1,799,300 | 11.0 | 17.4 |
| SOUTHEASTERN WISCONSIN REGION | 540,100 | 638,700 | 744,500 | 18.3 | 16.6 |

SOURCE- U.S. BUREAU OF THE CENSUS AND SEWRPC.

Table 3

LABOR FORCE COMPOSITION IN THE REGION: 1950, 1960, AND 1970

| LABOR FORCE COMPOSITION | YEAR 1950 | 1960 | 1970 | PERCENT CHANGE 1950-1960 | 1960-1970 |
|---|---|---|---|---|---|
| TOTAL LABOR FORCE | 540,057 | 638,733 | 744,514 | 18.3 | 16.6 |
| MALES IN LABOR FORCE | 384,946 | 432,433 | 456,918 | 12.3 | 5.7 |
| FEMALES IN LABOR FORCE | 155,111 | 206,300 | 287,596 | 33.0 | 39.4 |

| LABOR FORCE COMPOSITION | YEAR 1950 | 1960 | 1970 | POINT CHANGE 1950-1960 | 1960-1970 |
|---|---|---|---|---|---|
| PERCENT LABOR FORCE MALES | 71.3 | 67.7 | 61.4 | -3.6 | -6.3 |
| PERCENT LABOR FORCE FEMALES | 28.7 | 32.3 | 38.6 | 3.6 | 6.3 |
| PERCENT LABOR FORCE OF TOTAL POPULATION | 43.5 | 40.6 | 42.4 | -2.9 | 1.8 |
| PERCENT LABOR FORCE OF POPULATION 14 AND OVER | 56.7 | 58.0 | 59.2 | 1.3 | 1.2 |

SOURCE- U.S. BUREAU OF THE CENSUS AND SEWRPC.

increased only 6 percent. In addition, the number of females in the Region's labor force has increased at a progressively faster rate during this 20-year period while the number of males has increased at a progressively slower rate. Consequently, the female share of the labor force increased nearly 10 percent during the past two decades, from 29 to 39 percent, while the male share declined from 71 to 61 percent. This increase in female participation may be attributed in part to the number of wives who are working to supplement the family income, accelerated growth in retailing and service jobs, emphasis on equal employment opportunities for females, and the decision by increasing numbers of females to more actively pursue full- or part-time employment.

It can also be seen from Table 3 that the percentage of the total population of the Region which made up the labor force declined from 1950 to 1960 and increased from 1960 to 1970. This ratio is called the "participation rate." The current participation rate is primarily the result of an increase in female labor force participation and the rapidly declining birth rate in the Region during the 1960s. The trend toward smaller families, the decision by young married adults to have families at a later age, the desire of older married women to help meet family financial needs or simply return to work, and the increasing numbers of women who choose to pursue a career are among the reasons for this increase in female labor force participation. The need for more education and earlier retirements have been contributing factors to the slow growth rate in male labor force participation.

## Work Force Size and Composition

Another important measure of economic activity in the Region is the size and composition of the Region's work force, which is defined as employed workers 14 years of age and older enumerated at their place of work, together with persons counted as unemployed residents of the Region. Work force tabulations reflect changes in the number of jobs available to residents of the Region. It should be noted that work force tabulations will double count persons holding more than one job and will include those persons living outside the Region but working within the Region, while excluding those persons living inside the Region but working outside the Region. In contrast, labor force tabulations include all persons of working age within the Region regardless of their place of work. Work force data are tabulated monthly by the Wisconsin Department of Industry, Labor, and Human Relations. Work force trends closely parallel labor force trends, but absolute values differ because of the different means of enumeration. Because of the frequency of data tabulation, work force data provide a convenient basis for annual monitoring of changes in employment, in contrast to labor force data which are enumerated every 10 years as part of the U. S. Census of Population.

Changes in the size of the work force in the United States, Wisconsin, and the Region from 1950 to 1970 are shown in Table 4. The regional work force increased 18 percent from 1950 to 1960, a more rapid rate of increase than that experienced by the nation or state during this period. From 1960 to 1970, however, the national and state rates of increase in the work force exceeded the regional increase. These trends are consistent with the labor force trends previously discussed, indicating once again that the Region has been experiencing increasing difficulty in competing for industrial development with other areas of the country, and that other areas of the state have experienced more rapid economic growth than the Region in the recent past.

Table 4

COMPARATIVE WORK FORCE SIZE IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA AND WORK FORCE | YEAR | | | PERCENT CHANGE | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1950-1960 | 1960-1970 |
| UNITED STATES | | | | | |
| WORK FORCE..... | 62,208,000 | 69,628,000 | 82,715,000 | 11.9 | 18.8 |
| PERCENT UNEMPLOYED.... | 5.3 | 5.5 | 4.9 | -- | -- |
| EMPLOYED..... | 58,911,000 | 65,798,500 | 78,662,000 | 11.7 | 19.5 |
| WISCONSIN | | | | | |
| WORK FORCE..... | 1,401,400 | 1,647,000 | 1,932,100 | 17.5 | 17.3 |
| PERCENT UNEMPLOYED.... | 3.8 | 3.9 | 4.6 | -- | -- |
| EMPLOYED..... | 1,348,100 | 1,582,800 | 1,842,400 | 17.6 | 16.4 |
| SOUTHEASTERN WISCONSIN REGION | | | | | |
| WORK FORCE..... | 572,200 | 673,200 | 776,200 | 17.6 | 15.3 |
| PERCENT UNEMPLOYED.... | 3.4 | 3.8 | 4.5 | -- | -- |
| EMPLOYED..... | 552,700 | 647,900 | 741,600 | 17.2 | 14.5 |

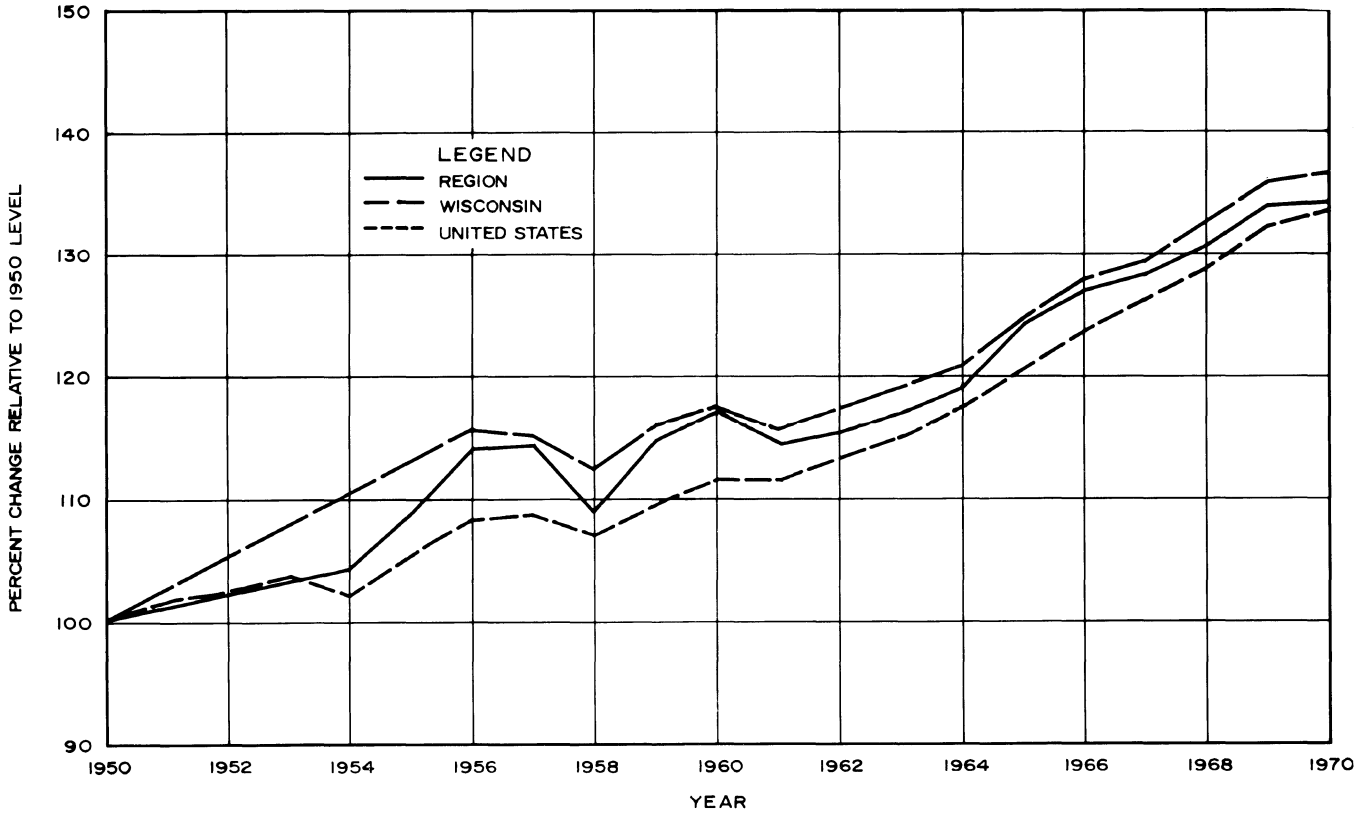
SOURCE- WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; U. S. DEPARTMENT OF LABOR; AND SEWRPC.

## Number of Available Jobs

Another measure of economic activity which is closely related to the work force is the number of jobs available to residents of the Region. The number of jobs within the Region consists, by definition, of the employed component of the work force and includes all employed persons 14 years of age and older enumerated at their place of work. Table 4 and Figure 2 show the absolute and relative changes in the number of job opportunities within the Region, the State of Wisconsin, and the United States from 1950 to 1970.

Figure 2

RELATIVE JOB GROWTH IN THE REGION, WISCONSIN, AND THE UNITED STATES: 1950-1970




*Source: Wisconsin Department of Industry, Labor, and Human Relations; U. S. Department of Labor; and SEWRPC.*

As shown, the amount of economic activity in the Region as measured by the number of available jobs has changed at varying rates in recent years. From 1950 to 1957, there was a rapid increase in the number of jobs available in the Region, followed in 1958 by a sharp decline which corresponded to a national economic recession. From 1958 to 1960 there was another rapid increase in the number of jobs available, followed by another sharp decline in 1961 which again corresponded to a national economic recession. During the rest of the 1960s, job growth within the Region proceeded at a steady rate except for a slight economic slowdown from 1966 to 1967 and the recent recession of 1970.

The recent trend in regional economic activity has paralleled the trend in national economic activity. Fluctuations in periods of expansion and recession are much greater for the Region, however, than for the nation, due to the high concentration of regional economic activity in the production of capital goods. This production, as a derived demand, is highly responsive to lesser fluctuations in general consumer demand for goods and services. In addition, the growing divergence in the rates of growth in economic activity in the Region and the nation as measured by jobs reflects to a certain extent the increasing difficulty of the Region in competing for industrial development with other regions of the United States.

As further shown in Table 4, unemployment in the Region ranged from 3 percent of the work force in 1950 to nearly 4 percent in 1960. The regional unemployment rate in 1970 averaged 4 percent of the work force and reflects the 1970-71 recession in the U. S. economy. The 4 percent of the work force unemployed in the Region in 1970 was almost as high as the U. S. average, in contrast to the 1950 and 1960 rates which were considerably below the national average. The current regional unemployment rate reflects not only the capital goods orientation of the regional economy but also reflects recent decisions of some larger southeastern Wisconsin firms to locate or relocate some operations in other areas of the state or nation.

Changes in Distribution of Economic Activity

Significant changes in the distribution of economic activity within the Region have occurred in the past 20 years. These changes are indicated in Table 5 in terms of comparative labor force and job trends during the past two decades. The number of jobs in the Region increased 34 percent, from 552,700 in 1950 to 741,600 in 1970. The largest increase in the number of regional jobs occurred from 1950 to 1960 when the number of jobs increased 17 percent. The counties which experienced the largest relative job growth rates during the 1950s were Kenosha, Ozaukee, Walworth, Washington, and Waukesha Counties. The growth rates in these counties, which were greater than the regional average, indicate a general shift in economic activity toward the suburban and rural counties of the Region. The exception to this type of shift can be seen in Kenosha County, where job growth was directly related to prosperity in the transportation equipment industry in that county. Conversely, Milwaukee and Racine Counties both experienced job growth from 1950 to 1960 at a lower rate than the regional average, indicating a shift of economic activity out of these areas.

The number of jobs in the Region increased 14 percent from 1960 to 1970. During this period, the largest relative job growth occurred in Czaukee, Racine, Walworth, Washington, and Waukesha Counties, indicating a further shift in economic activity toward the suburban and rural areas of the Region and away from the urban areas. These shifts are a continuation of the economic activity location trends identified in the initial economic studies of the Commission.[5]

Table 5 also shows the labor force level in each county in the Region during the past 20 years. Since the labor force is enumerated at place of residence, the labor force changes generally parallel population changes. The greatest labor force increases during both decades were in suburban Waukesha, Ozaukee, and Washington Counties, with lesser increases in urban Milwaukee, Kenosha, and Racine Counties. This trend in economic activity parallels 1950 to 1970 regional population trends, and 1970 marks the first time

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[5] *The results of this work were published in SEWRPC Planning Report No. 3, The Economy of Southeastern Wisconsin, June 1963; and Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990, June 1966.*

Table 5

COMPARATIVE LABOR FORCE AND JOB TOTALS IN THE REGION BY COUNTY: 1950, 1960, AND 1970

| COUNTY | YEAR | | | | | | PERCENT CHANGE | |
|---|---|---|---|---|---|---|---|---|
| | 1950 | | 1960 | | 1970 | | | |
| | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF TOTAL | 1950-1960 | 1960-1970 |
| KENOSHA | | | | | | | | |
| LABOR FORCE | 32,600 | 6.0 | 39,800 | 6.2 | 47,700 | 6.4 | 22.1 | 19.8 |
| JOBS | 27,700 | 5.0 | 40,100 | 6.2 | 39,200 | 5.3 | 44.8 | - 2.2 |
| MILWAUKEE | | | | | | | | |
| LABOR FORCE | 386,500 | 71.6 | 433,100 | 67.8 | 458,600 | 61.6 | 12.1 | 5.9 |
| JOBS | 438,100 | 79.3 | 486,400 | 75.1 | 510,900 | 68.9 | 11.0 | 5.0 |
| OZAUKEE | | | | | | | | |
| LABOR FORCE | 9,600 | 1.8 | 14,400 | 2.3 | 22,400 | 3.0 | 50.0 | 55.6 |
| JOBS | 6,200 | 1.1 | 9,700 | 1.5 | 17,900 | 2.4 | 56.4 | 84.5 |
| RACINE | | | | | | | | |
| LABOR FORCE | 46,800 | 8.7 | 55,000 | 8.6 | 69,300 | 9.3 | 17.5 | 26.0 |
| JOBS | 43,200 | 7.8 | 49,500 | 7.6 | 61,900 | 8.3 | 14.6 | 25.0 |
| WALWORTH | | | | | | | | |
| LABOR FORCE | 16,500 | 3.0 | 20,500 | 3.2 | 26,800 | 3.6 | 24.2 | 30.7 |
| JOBS | 12,300 | 2.2 | 19,000 | 2.9 | 24,200 | 3.3 | 54.5 | 27.4 |
| WASHINGTON | | | | | | | | |
| LABOR FORCE | 14,300 | 2.6 | 17,400 | 2.7 | 26,100 | 3.5 | 21.7 | 50.0 |
| JOBS | 9,700 | 1.8 | 12,400 | 1.9 | 20,300 | 2.7 | 27.8 | 63.7 |
| WAUKESHA | | | | | | | | |
| LABOR FORCE | 33,800 | 6.3 | 58,500 | 9.2 | 93,600 | 12.6 | 72.2 | 60.0 |
| JOBS | 15,500 | 2.8 | 30,800 | 4.8 | 67,200 | 9.1 | 98.7 | 118.2 |
| REGION TOTAL | | | | | | | | |
| LABOR FORCE | 540,100 | 100.0 | 638,700 | 100.0 | 744,500 | 100.0 | 18.3 | 16.6 |
| JOBS | 552,700 | 100.0 | 647,900 | 100.0 | 741,600 | 100.0 | 17.2 | 14.5 |

SOURCE- U.S. BUREAU OF THE CENSUS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

since 1950 that the Region had a larger labor force living within its boundaries than there were jobs available. This is a result of the relatively high unemployment rate in 1970, as well as the availability of jobs within commuting distance outside the Region. It can also be seen that in 1970 all counties except Milwaukee County had a larger labor force residing within their boundaries than jobs available, indicating that although economic activity is decentralizing in the Region, Milwaukee County is still a major supplier of jobs to residents of the Region. The 1970 Census of Population indicates that 51 percent of the workers living in Waukesha County, 56 percent of the workers living in Ozaukee County, and 65 percent of the workers living in Washington County work in their county of residence. Travel origin and destination surveys now being conducted by the Commission for transportation plan reevaluation will identify in more detail the pattern of job location compared to worker residence in the Region, and will permit detailed comparisons with data from 1963 origin and destination surveys. Detailed economic data upon which this report is based are included in Appendix B.

Table 6 and Map 1 show the changes in commercial and industrial land use that have resulted from the previously discussed changes in the location of economic activity in the Region. From Table 6 it can be seen that about 3,000 acres of land within the Region were converted to commercial and industrial use between 1963 and 1970. More than half of this development occurred in Waukesha and Milwaukee Counties although Milwaukee County's proportion of the Region's commercial and industrial land has diminished since 1963. The greatest net increase in commercial and industrial land use over the 1963 to 1970 period occurred in Waukesha County. Milwaukee County experienced the second greatest increase in these uses. Over 75 percent of the increases in these land uses in Milwaukee County, however, occurred outside of the central city. This pattern of commercial and industrial growth is consistent with trends in job growth

Table 6

COMMERCIAL AND INDUSTRIAL LAND USE CHANGES IN THE REGION BY SUBAREA: 1963-1970

| COUNTY SUBAREA[a] | COMMERCIAL LAND USE[b] | | | | | | INDUSTRIAL LAND USE[c] | | | | | | TOTAL COMMERCIAL AND INDUSTRIAL LAND USE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1963 | | 1970 | | CHANGE 1963-1970 | | 1963 | | 1970 | | CHANGE 1963-1970 | | 1963 | | 1970 | | CHANGE 1963-1970 | |
| | ACRES | PERCENT OF TOTAL | ACRES | PERCENT OF TOTAL | NUMBER | PERCENT | ACRES | PERCENT OF TOTAL | ACRES | PERCENT OF TOTAL | NUMBER | PERCENT | ACRES | PERCENT OF TOTAL | ACRES | PERCENT OF TOTAL | NUMBER | PERCENT |
| KENOSHA | 452.93 | 8.2 | 504.08 | 7.7 | 51.15 | 11.3 | 684.97 | 8.6 | 811.02 | 8.1 | 126.05 | 18.4 | 1,137.90 | 8.4 | 1,315.10 | 7.9 | 177.20 | 15.6 |
| 29 | 251.39 | 4.5 | 281.87 | 4.3 | 30.48 | 12.1 | 559.96 | 7.0 | 614.73 | 6.2 | 54.77 | 9.8 | 811.35 | 6.0 | 896.60 | 5.4 | 85.25 | 10.5 |
| 30 | 102.66 | 1.9 | 122.46 | 1.9 | 19.80 | 19.3 | 90.54 | 1.2 | 122.80 | 1.2 | 32.26 | 35.6 | 193.20 | 1.4 | 245.26 | 1.5 | 52.06 | 26.9 |
| 31 | 98.88 | 1.8 | 99.75 | 1.5 | 0.87 | 0.9 | 34.47 | 0.4 | 73.49 | 0.7 | 39.02 | 113.2 | 133.35 | 1.0 | 173.24 | 1.0 | 39.89 | 29.9 |
| MILWAUKEE | 2,589.76 | 46.7 | 2,874.71 | 44.1 | 284.95 | 11.0 | 4,368.36 | 54.7 | 4,898.68 | 48.8 | 530.32 | 12.1 | 6,958.12 | 51.4 | 7,773.39 | 47.0 | 815.27 | 11.7 |
| 9 | 163.92 | 2.9 | 196.09 | 3.0 | 32.17 | 19.6 | 309.12 | 3.9 | 319.03 | 3.2 | 9.91 | 3.2 | 473.04 | 3.5 | 515.12 | 3.1 | 42.08 | 8.9 |
| 10 | 874.54 | 15.7 | 898.56 | 13.8 | 24.02 | 2.7 | 1,126.82 | 14.1 | 1,170.78 | 11.7 | 43.96 | 3.9 | 2,001.36 | 14.8 | 2,069.34 | 12.5 | 67.98 | 3.4 |
| 11 | 70.54 | 1.3 | 140.38 | 2.2 | 69.84 | 99.0 | 161.39 | 2.0 | 387.07 | 3.8 | 225.68 | 139.8 | 231.93 | 1.7 | 527.45 | 3.2 | 295.52 | 127.4 |
| 12 | 458.50 | 8.3 | 506.99 | 7.8 | 48.49 | 10.6 | 963.53 | 12.1 | 1,038.43 | 10.3 | 74.90 | 7.8 | 1,422.03 | 10.5 | 1,545.42 | 9.3 | 123.39 | 8.7 |
| 13 | 170.40 | 3.1 | 180.34 | 2.8 | 9.94 | 5.8 | 383.69 | 4.8 | 417.91 | 4.2 | 34.22 | 8.9 | 554.09 | 4.1 | 598.25 | 3.6 | 44.16 | 8.0 |
| 14 | 81.97 | 1.5 | 107.71 | 1.6 | 25.74 | 31.4 | 397.72 | 5.0 | 414.77 | 4.1 | 17.05 | 4.3 | 479.69 | 3.6 | 522.48 | 3.2 | 42.79 | 8.9 |
| 15 | 204.85 | 3.7 | 230.66 | 3.5 | 25.81 | 12.6 | 57.25 | 0.7 | 99.99 | 1.0 | 42.74 | 74.6 | 262.10 | 1.9 | 330.65 | 2.0 | 68.55 | 26.2 |
| 16 | 565.04 | 10.2 | 613.98 | 9.4 | 48.94 | 8.7 | 968.84 | 12.1 | 1,050.70 | 10.5 | 81.86 | 8.4 | 1,533.88 | 11.3 | 1,664.68 | 10.1 | 130.80 | 8.5 |
| OZAUKEE | 289.40 | 5.2 | 330.50 | 5.1 | 41.10 | 14.2 | 304.40 | 3.8 | 444.42 | 4.4 | 140.02 | 46.0 | 593.80 | 4.4 | 774.92 | 4.7 | 181.12 | 30.5 |
| 1 | 46.09 | 0.8 | 51.78 | 0.8 | 5.69 | 12.3 | 69.67 | 0.9 | 108.68 | 1.1 | 39.01 | 56.0 | 115.76 | 0.8 | 160.46 | 1.0 | 44.70 | 38.6 |
| 2 | 31.68 | 0.6 | 41.84 | 0.7 | 10.16 | 32.1 | 76.13 | 0.9 | 81.20 | 0.8 | 5.07 | 6.6 | 107.81 | 0.8 | 123.04 | 0.7 | 15.23 | 14.1 |
| 3 | 85.44 | 1.5 | 97.63 | 1.5 | 12.19 | 14.3 | 128.54 | 1.6 | 176.67 | 1.7 | 48.13 | 37.4 | 213.98 | 1.6 | 274.30 | 1.7 | 60.32 | 28.2 |
| 4 | 126.19 | 2.3 | 139.25 | 2.1 | 13.06 | 10.3 | 30.06 | 0.4 | 77.87 | 0.8 | 47.81 | 159.0 | 156.25 | 1.2 | 217.12 | 1.3 | 60.87 | 39.0 |
| RACINE | 486.49 | 8.8 | 574.80 | 8.8 | 88.31 | 18.2 | 632.34 | 7.9 | 1,098.05 | 10.9 | 466.16 | 73.7 | 1,118.83 | 8.3 | 1,673.30 | 10.1 | 554.47 | 49.6 |
| 25 | 268.76 | 4.9 | 294.87 | 4.5 | 26.11 | 9.7 | 372.81 | 4.7 | 499.38 | 5.0 | 126.57 | 34.0 | 641.57 | 4.8 | 794.25 | 4.8 | 152.68 | 23.8 |
| 26 | 49.29 | 0.9 | 70.87 | 1.1 | 21.58 | 43.8 | 102.39 | 1.3 | 302.64 | 3.0 | 200.25 | 195.6 | 151.68 | 1.1 | 373.51 | 2.2 | 221.83 | 146.2 |
| 27 | 84.27 | 1.5 | 113.59 | 1.7 | 29.32 | 34.8 | 84.60 | 1.0 | 163.21 | 1.6 | 78.61 | 92.9 | 168.87 | 1.2 | 276.80 | 1.7 | 107.93 | 63.9 |
| 28 | 84.17 | 1.5 | 95.47 | 1.5 | 11.30 | 13.4 | 72.54 | 0.9 | 133.27 | 1.3 | 60.73 | 83.7 | 156.71 | 1.2 | 228.74 | 1.4 | 72.03 | 46.0 |
| WALWORTH | 522.70 | 9.4 | 593.02 | 9.1 | 70.32 | 13.4 | 729.73 | 9.1 | 827.20 | 8.3 | 97.47 | 100.0 | 1,252.43 | 9.2 | 1,420.22 | 8.6 | 167.79 | 13.4 |
| 32 | 31.85 | 0.6 | 33.69 | 0.5 | 1.84 | 5.8 | 43.24 | 0.5 | 52.56 | 0.5 | 9.32 | 9.6 | 75.09 | 0.6 | 86.25 | 0.5 | 11.16 | 14.9 |
| 33 | 63.73 | 1.2 | 66.01 | 1.0 | 2.28 | 3.6 | 71.67 | 0.9 | 90.69 | 0.9 | 19.02 | 19.5 | 135.40 | 1.0 | 156.70 | 1.0 | 21.30 | 15.7 |
| 34 | 52.03 | 0.9 | 55.28 | 0.9 | 3.25 | 6.2 | 77.24 | 1.0 | 93.51 | 1.0 | 16.27 | 16.7 | 129.27 | 0.9 | 148.79 | 0.9 | 19.52 | 15.1 |
| 35 | 268.08 | 4.8 | 320.19 | 4.9 | 52.11 | 19.4 | 481.97 | 6.0 | 495.15 | 4.9 | 13.18 | 13.5 | 750.05 | 5.5 | 815.34 | 4.9 | 65.29 | 8.7 |
| 36 | 107.01 | 1.9 | 117.85 | 1.8 | 10.84 | 10.1 | 55.61 | 0.7 | 95.29 | 1.0 | 39.68 | 40.7 | 162.62 | 1.2 | 213.14 | 1.3 | 50.52 | 31.1 |
| WASHINGTON | 240.80 | 4.3 | 299.00 | 4.6 | 58.20 | 24.2 | 314.61 | 3.9 | 433.70 | 4.3 | 119.09 | 37.8 | 555.41 | 4.1 | 732.70 | 4.4 | 177.29 | 31.9 |
| 5 | 33.52 | 0.6 | 37.87 | 0.6 | 4.35 | 13.0 | 56.03 | 0.7 | 72.42 | 0.7 | 16.39 | 29.2 | 89.55 | 0.7 | 110.29 | 0.7 | 20.74 | 23.2 |
| 6 | 87.86 | 1.6 | 108.04 | 1.7 | 20.18 | 23.0 | 133.14 | 1.6 | 193.82 | 1.9 | 60.68 | 45.6 | 221.00 | 1.6 | 301.86 | 1.8 | 80.86 | 36.6 |
| 7 | 90.42 | 1.6 | 124.09 | 1.9 | 33.67 | 37.2 | 102.61 | 1.3 | 144.63 | 1.5 | 42.02 | 41.0 | 193.03 | 1.4 | 268.72 | 1.6 | 75.69 | 39.2 |
| 8 | 29.00 | 0.5 | 29.00 | 0.4 | 0.00 | 0.0 | 22.83 | 0.3 | 22.83 | 0.2 | 0.00 | 0.0 | 51.83 | 0.4 | 51.83 | 0.3 | 0.00 | 0.0 |
| WAUKESHA | 964.92 | 17.4 | 1,340.74 | 20.6 | 375.82 | 38.9 | 957.48 | 12.0 | 1,525.09 | 15.2 | 567.61 | 59.3 | 1,922.40 | 14.2 | 2,865.83 | 17.3 | 943.43 | 49.1 |
| 17 | 196.57 | 3.5 | 252.34 | 3.9 | 55.77 | 28.4 | 204.48 | 2.6 | 310.02 | 3.1 | 105.54 | 51.6 | 401.05 | 3.0 | 562.36 | 3.4 | 161.31 | 40.2 |
| 18 | 215.33 | 3.9 | 272.19 | 4.2 | 56.86 | 26.4 | 63.80 | 0.8 | 112.33 | 1.1 | 48.53 | 76.1 | 279.13 | 2.1 | 384.52 | 2.3 | 105.39 | 37.8 |
| 19 | 94.55 | 1.7 | 144.76 | 2.2 | 50.21 | 53.1 | 31.65 | 0.4 | 215.04 | 2.2 | 183.39 | 579.4 | 126.20 | 0.9 | 359.80 | 2.2 | 233.60 | 185.1 |
| 20 | 27.15 | 0.5 | 39.31 | 0.6 | 12.16 | 44.8 | 16.65 | 0.2 | 24.44 | 0.2 | 7.79 | 46.8 | 43.80 | 0.3 | 63.75 | 0.4 | 19.95 | 45.5 |
| 21 | 138.77 | 2.5 | 160.50 | 2.5 | 21.73 | 15.6 | 81.79 | 1.0 | 154.54 | 1.5 | 72.75 | 88.9 | 220.56 | 1.6 | 315.04 | 1.9 | 94.48 | 42.8 |
| 22 | 81.30 | 1.5 | 125.23 | 1.9 | 43.93 | 54.0 | 51.43 | 0.6 | 67.41 | 0.7 | 15.98 | 31.1 | 132.73 | 1.0 | 192.64 | 1.1 | 59.91 | 45.1 |
| 23 | 137.00 | 2.5 | 224.36 | 3.4 | 87.36 | 63.8 | 295.13 | 3.7 | 383.84 | 3.8 | 88.71 | 30.0 | 432.13 | 3.2 | 608.20 | 3.7 | 176.07 | 40.7 |
| 24 | 74.25 | 1.3 | 122.05 | 1.9 | 47.80 | 64.4 | 212.55 | 2.7 | 257.47 | 2.6 | 44.92 | 21.1 | 286.80 | 2.1 | 379.52 | 2.3 | 92.72 | 32.3 |
| REGION TOTAL | 5,547.00 | 100.0 | 6,516.85 | 100.0 | 969.85 | 17.5 | 7,991.89 | 100.0 | 10,038.61 | 100.0 | 2,046.72 | 25.6 | 13,538.89 | 100.0 | 16,555.46 | 100.0 | 3,016.57 | 22.3 |

[a]SEE MAP 1 FOR SUBAREA LOCATION WITHIN THE REGION.

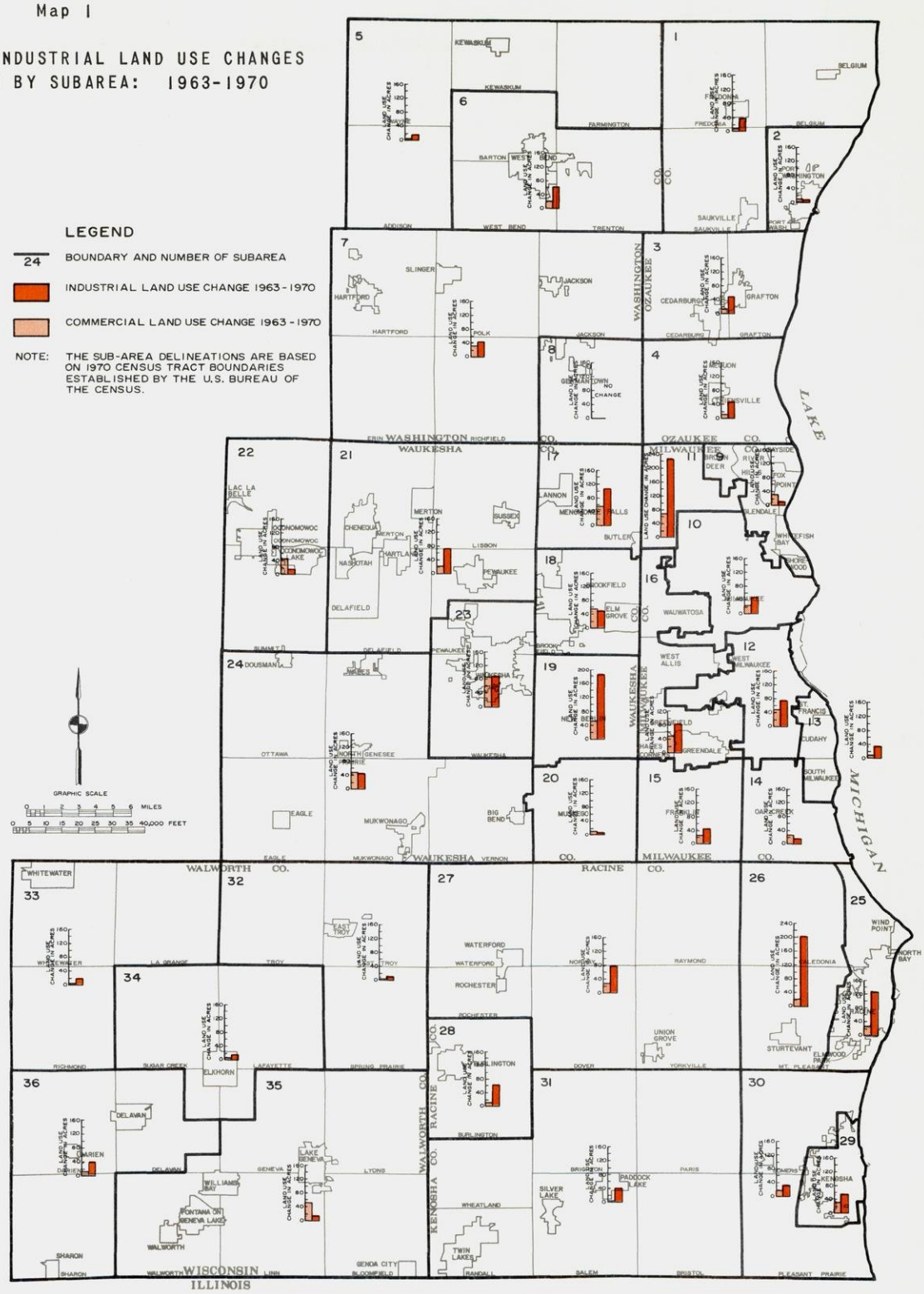
[b]COMMERCIAL LAND USE AS REFERRED TO HEREIN INCLUDES LAND DEVOTED TO LOCAL AND REGIONAL RETAIL AND SERVICE OPERATIONS, EXCLUSIVE OF OFF-STREET PARKING AREAS.

[c]INDUSTRIAL LAND USE AS REFERRED TO HEREIN INCLUDES LAND DEVOTED TO MANUFACTURING AND OPEN OR ENCLOSED WHOLESALE STORAGE OPERATIONS, EXCLUSIVE OF OFF-STREET PARKING AREAS.

SOURCE- SEWRPC.

Map 1

## COMMERCIAL AND INDUSTRIAL LAND USE CHANGES IN THE REGION BY SUBAREA: 1963-1970




Between 1963 and 1970, about 3,000 acres of land within the Region were converted to commercial and industrial use. The general location of these land use changes during this period is shown on this map. Rapid commercial and industrial development is evident in the suburban and rural areas of the Region, particularly in suburban Milwaukee County and in Waukesha County. The increased commercial and industrial activity in these areas has been generally manifested in the development of large new suburban shopping centers and industrial parks.

*Source: SEWRPC 1963 and 1970 Land Use Inventories.*

in these counties as shown in Table 5, and again indicates a general decentralization of economic activity. Map 1 graphically indicates the location of the commercial and industrial land use changes within the Region over the 1963 to 1970 period. The growth in commercial and industrial development in the suburban and rural areas of the Region, especially in suburban Milwaukee County and all of Waukesha County, is evident. The increased commercial and industrial activity in these areas has been generally manifested in large suburban shopping centers and industrial parks.

Table 7

COMPARATIVE AGGREGATE AND PER CAPITA DOLLAR INCOME LEVELS IN THE UNITED STATES, WISCONSIN, AND THE REGION IN MILLIONS OF DOLLARS: 1950, 1960, AND 1970

| GEOGRAPHIC AREA AND INCOME LEVEL | YEAR | | | PERCENT CHANGE | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1950-1960 | 1960-1970 |
| UNITED STATES | | | | | |
| TOTAL INCOME (IN MILLIONS) | | | | | |
| ACTUAL | $165,063 | $331,700 | $635,563 | 101.0 | 91.6 |
| CONSTANT (1967 DOLLARS) | 228,612 | 374,390 | 546,966 | 63.8 | 46.1 |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,070 | 1,849 | 3,128 | 72.8 | 69.2 |
| CONSTANT (1967 DOLLARS) | 1,481 | 2,087 | 2,692 | 40.9 | 29.0 |
| WISCONSIN | | | | | |
| TOTAL INCOME (IN MILLIONS) | | | | | |
| ACTUAL | $ 3,581 | $ 7,287 | $ 13,457 | 103.5 | 84.7 |
| CONSTANT (1967 DOLLARS) | 4,960 | 8,225 | 11,581 | 65.8 | 40.8 |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,043 | 1,844 | 3,046 | 76.8 | 65.2 |
| CONSTANT (1967 DOLLARS) | 1,445 | 2,081 | 2,621 | 44.0 | 25.9 |
| REGION | | | | | |
| TOTAL INCOME (IN MILLIONS) | | | | | |
| ACTUAL | $ 1,660 | $ 3,492 | $ 6,029 | 110.4 | 72.7 |
| CONSTANT (1967 DOLLARS) | 2,299 | 3,941 | 5,189 | 71.4 | 31.7 |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,338 | 2,219 | 3,433 | 65.8 | 54.7 |
| CONSTANT (1967 DOLLARS) | 1,853 | 2,505 | 2,954 | 35.2 | 17.9 |

SOURCE- U.S. BUREAU OF THE CENSUS AND SEWRPC.

Income[6]

Another indicator of the general trend in the economy of the Southeastern Wisconsin Region is income. Income levels in the United States, Wisconsin, and the Region from 1950 to 1970 are shown in Table 7. As shown in Table 7 and Figure 3, total regional income increased nearly 73 percent from 1960 to 1970. This rate of increase, however, was less than the national and state increases during this period and less than the regional rate of increase of 110 percent from 1950 to 1960, which was greater than the national and state increases during the same period. A comparison of income increases from 1950 to 1970 measured in constant 1967 dollars[7] also shows lesser income increases in the Region from 1960 to 1970 than national and state increases. This again reflects the general slowdown of economic activity in the Region in the recent past.

The rates of increase in per capita income have also been slightly less in the Region than in the state or nation during the 1960s. As shown in Table 7, the regional increase in actual per capita income levels from 1960 to 1970 was 55 percent, compared to the Wisconsin and national average increases of 65 and 69 percent respectively. Per capita income increases as measured in constant 1967 dollars show the same trend as that indicated by actual dollar figures. The level of per capita income in the Region is, however, still substantially higher than the state and national averages. In 1970, the average income per person in the Region was approximately $3,430 in actual dollars and $2,950 in constant dollars, compared to the U. S. average of $3,130 in actual dollars and $2,695 in constant dollars and the Wisconsin average of $3,050 in actual dollars and $2,620 in constant dollars. The average per capita income level in the Region has been consistently higher than the national and state averages since 1950 both in actual and in constant dollars.

As shown in Table 8, income growth has not been uniform among the individual counties in the Region during the last 20 years, but has been greatest in the suburban counties, particularly in Waukesha and Ozaukee Counties. Income growth has generally been the least during these 20 years in the more developed Milwaukee, Racine, and Kenosha Counties. As shown in Table 9, Milwaukee, Ozaukee, and Waukesha Counties had the highest per capita income levels in the Region in 1970. Ozaukee County had the highest per capita income level, $3,710, followed by Waukesha and Milwaukee Counties with per capita income levels of $3,634 and $3,490 respectively. The remaining four counties had lower per capita income levels, ranging from $2,932 in Walworth County to $3,260 in Racine County.

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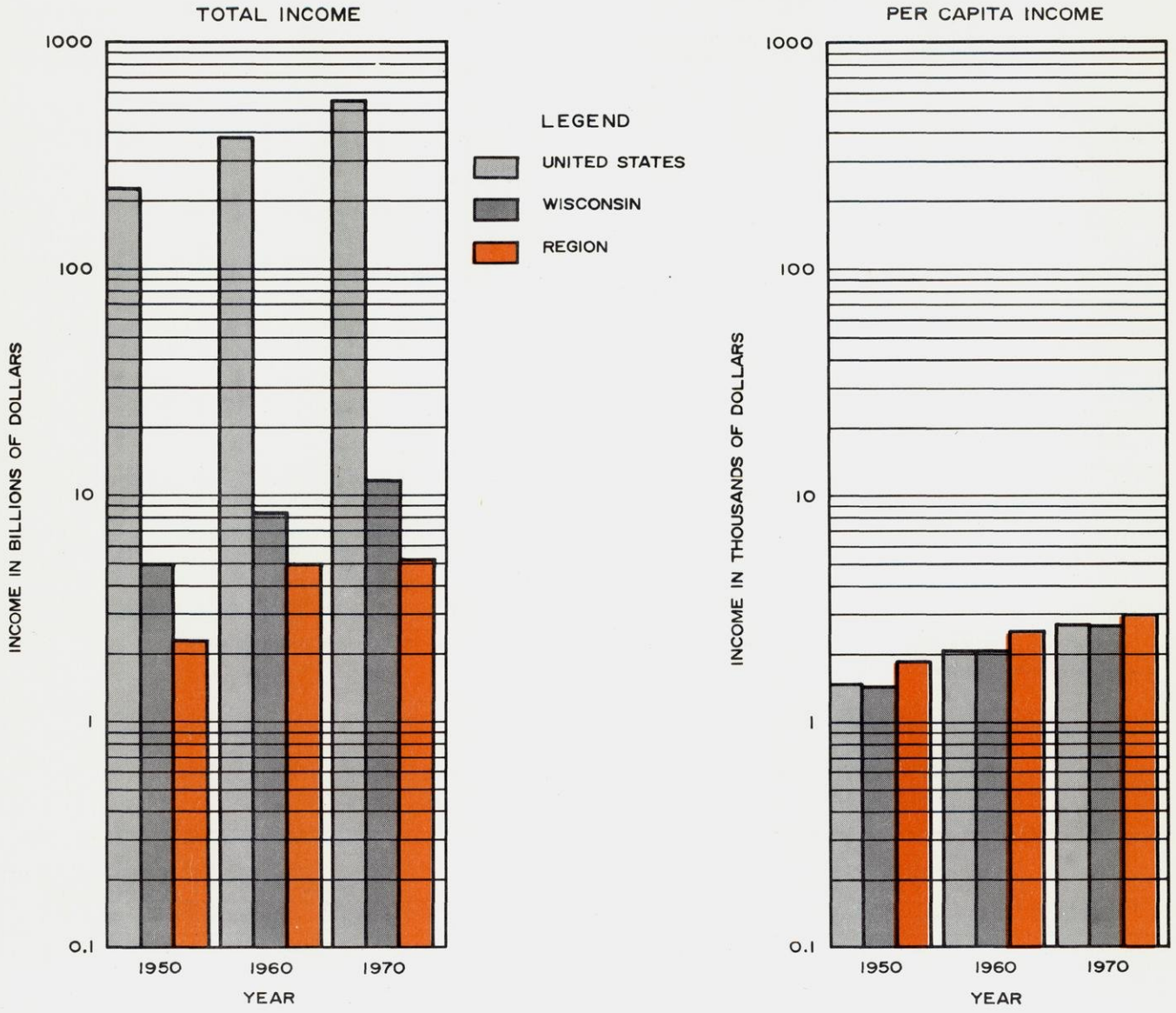
[6] *Income levels in this discussion are referenced to the base census years of 1950, 1960, and 1970. It should be understood, however, that the income reported in the census represents the previous year's income; i.e., 1949, 1959, and 1969.*

[7] *The 1967 = 100 Consumer Price Index was used to adjust actual dollar figures to constant dollars. Constant dollar figures allow comparison free of price distortion.*

Figure 3

AGGREGATE AND PER CAPITA DOLLAR INCOME LEVELS IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970 (IN CONSTANT 1967 DOLLARS)




*Source: U. S. Bureau of the Census and SEWRPC.*

The distribution of families in the Region among the five ranges of income is shown in Table 10. The high per capita incomes previously described for Ozaukee and Waukesha Counties are the result of a high percentage of families earning $10,000 or more per year. More than 70 percent of the families in Ozaukee and Waukesha Counties in 1970 were in this income category. The counties with lower per capita incomes in 1970 contained from 10 to 25 percent fewer families than Waukesha and Ozaukee Counties in the $10,000 or more income category. In general, the distribution of family income as measured in constant 1967 dollars is more favorable in the Region than in the rest of the state or the nation, as shown in Figure 4. There are a greater proportion of families in the $10,000 and over category and a lesser proportion of families in the lower income categories in the Region than in the state and nation. Only Walworth County approximates the state and national income distributions, indicating that the full impact of urbanization is still to be felt by this rural county.

Table 8

AGGREGATE DOLLAR INCOME LEVELS IN THE REGION BY COUNTY IN MILLIONS OF DOLLARS: 1950, 1960, AND 1970

| COUNTY AND INCOME LEVEL | YEAR | | | PERCENT CHANGE | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1950-1960 | 1960-1970 |
| KENOSHA | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | $ 94 | $ 220 | $ 362 | 134.0 | 64.5 |
| CONSTANT (1967 DOLLARS) | 130 | 248 | 312 | 90.8 | 25.8 |
| MILWAUKEE | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 1,209 | 2,371 | 3,680 | 96.1 | 55.2 |
| CONSTANT (1967 DOLLARS) | 1,674 | 2,676 | 3,167 | 59.9 | 18.3 |
| OZAUKEE | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 28 | 82 | 202 | 192.8 | 146.3 |
| CONSTANT (1967 DOLLARS) | 39 | 93 | 174 | 138.5 | 87.1 |
| RACINE | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 147 | 296 | 557 | 101.4 | 88.2 |
| CONSTANT (1967 DOLLARS) | 204 | 334 | 479 | 63.7 | 43.4 |
| WALWORTH | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 44 | 93 | 186 | 111.4 | 100.0 |
| CONSTANT (1967 DOLLARS) | 61 | 105 | 160 | 72.1 | 52.4 |
| WASHINGTON | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 35 | 86 | 201 | 145.7 | 133.7 |
| CONSTANT (1967 DOLLARS) | 48 | 97 | 173 | 102.1 | 78.4 |
| WAUKESHA | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | 103 | 344 | 841 | 234.0 | 144.5 |
| CONSTANT (1967 DOLLARS) | 143 | 388 | 724 | 171.3 | 86.6 |
| REGION | | | | | |
| TOTAL INCOME | | | | | |
| ACTUAL | $1,660 | $3,492 | $6,029 | 110.4 | 72.7 |
| CONSTANT (1967 DOLLARS) | 2,299 | 3,941 | 5,189 | 71.4 | 31.7 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table 9

PER CAPITA INCOME LEVELS IN THE REGION BY COUNTY: 1950, 1960, AND 1970

| COUNTY AND INCOME LEVEL | YEAR | | | PERCENT CHANGE | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1950-1960 | 1960-1970 |
| KENOSHA | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | $1,249 | $2,187 | $3,072 | 75.1 | 40.5 |
| CONSTANT (1967 DOLLARS) | 1,730 | 2,468 | 2,643 | 42.7 | 7.1 |
| MILWAUKEE | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,388 | 2,288 | 3,490 | 64.8 | 52.5 |
| CONSTANT (1967 DOLLARS) | 1,922 | 2,582 | 3,003 | 34.3 | 16.3 |
| OZAUKEE | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,198 | 2,133 | 3,710 | 78.0 | 73.9 |
| CONSTANT (1967 DOLLARS) | 1,659 | 2,408 | 3,193 | 45.1 | 32.6 |
| RACINE | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,341 | 2,088 | 3,260 | 55.7 | 56.1 |
| CONSTANT (1967 DOLLARS) | 1,857 | 2,357 | 2,806 | 26.9 | 19.0 |
| WALWORTH | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,058 | 1,776 | 2,932 | 67.9 | 65.1 |
| CONSTANT (1967 DOLLARS) | 1,465 | 2,005 | 2,532 | 36.9 | 26.3 |
| WASHINGTON | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,032 | 1,865 | 3,145 | 80.7 | 68.6 |
| CONSTANT (1967 DOLLARS) | 1,429 | 2,105 | 2,707 | 47.3 | 28.6 |
| WAUKESHA | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | 1,199 | 2,174 | 3,634 | 81.3 | 67.2 |
| CONSTANT (1967 DOLLARS) | 1,661 | 2,454 | 3,127 | 47.7 | 27.4 |
| REGION | | | | | |
| PER CAPITA INCOME | | | | | |
| ACTUAL | $1,338 | $2,219 | $3,433 | 65.8 | 54.7 |
| CONSTANT (1967 DOLLARS) | 1,853 | 2,505 | 2,954 | 35.2 | 17.9 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table 10

PERCENT DISTRIBUTION OF FAMILIES BY INCOME RANGE IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INCOME RANGE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $0-$2,999 | | | $3,000-$4,999 | | | $5,000-$7,999 | | | $8,000-$9,999 | | | $10,000 OR MORE | | |
| | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 |
| UNITED STATES | 48.4 | 21.3 | 10.3 | 31.5 | 20.4 | 10.0 | 13.7 | 29.7 | 18.6 | 3.2 | 13.3 | 13.9 | 3.2 | 15.3 | 47.2 |
| WISCONSIN | 43.6 | 17.4 | 8.2 | 36.0 | 19.7 | 8.7 | 14.3 | 33.8 | 16.9 | 3.2 | 14.7 | 15.7 | 2.9 | 14.4 | 50.5 |
| SOUTHEASTERN WISCONSIN REGION | 27.8 | 10.2 | 6.0 | 43.6 | 13.3 | 6.6 | 20.0 | 40.0 | 13.1 | 4.6 | 16.3 | 14.8 | 4.0 | 20.2 | 59.5 |
| KENOSHA COUNTY | 29.9 | 10.3 | 6.1 | 44.9 | 12.1 | 7.6 | 17.6 | 41.9 | 16.6 | 4.4 | 15.6 | 16.5 | 3.2 | 20.1 | 53.2 |
| MILWAUKEE COUNTY | 25.8 | 9.8 | 6.6 | 44.2 | 13.0 | 6.9 | 20.9 | 40.1 | 13.6 | 4.9 | 16.8 | 15.1 | 4.2 | 20.3 | 57.8 |
| OZAUKEE COUNTY | 33.3 | 8.8 | 3.7 | 41.8 | 13.5 | 4.0 | 16.9 | 38.7 | 9.1 | 4.0 | 17.1 | 12.4 | 4.0 | 21.9 | 70.8 |
| RACINE COUNTY | 25.7 | 10.7 | 5.7 | 44.4 | 13.9 | 6.6 | 21.1 | 41.0 | 14.1 | 5.0 | 16.2 | 15.4 | 3.8 | 18.2 | 58.2 |
| WALWORTH COUNTY | 47.8 | 19.2 | 8.9 | 31.6 | 21.2 | 9.9 | 14.8 | 35.2 | 17.6 | 2.8 | 11.4 | 16.0 | 3.0 | 13.0 | 47.6 |
| WASHINGTON COUNTY | 42.7 | 13.3 | 5.2 | 38.3 | 18.3 | 6.3 | 13.9 | 39.7 | 11.8 | 2.4 | 13.6 | 16.3 | 2.7 | 15.1 | 60.4 |
| WAUKESHA COUNTY | 32.3 | 8.7 | 3.5 | 42.8 | 11.2 | 4.1 | 17.7 | 40.5 | 8.4 | 3.5 | 16.9 | 12.0 | 3.7 | 22.7 | 72.0 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

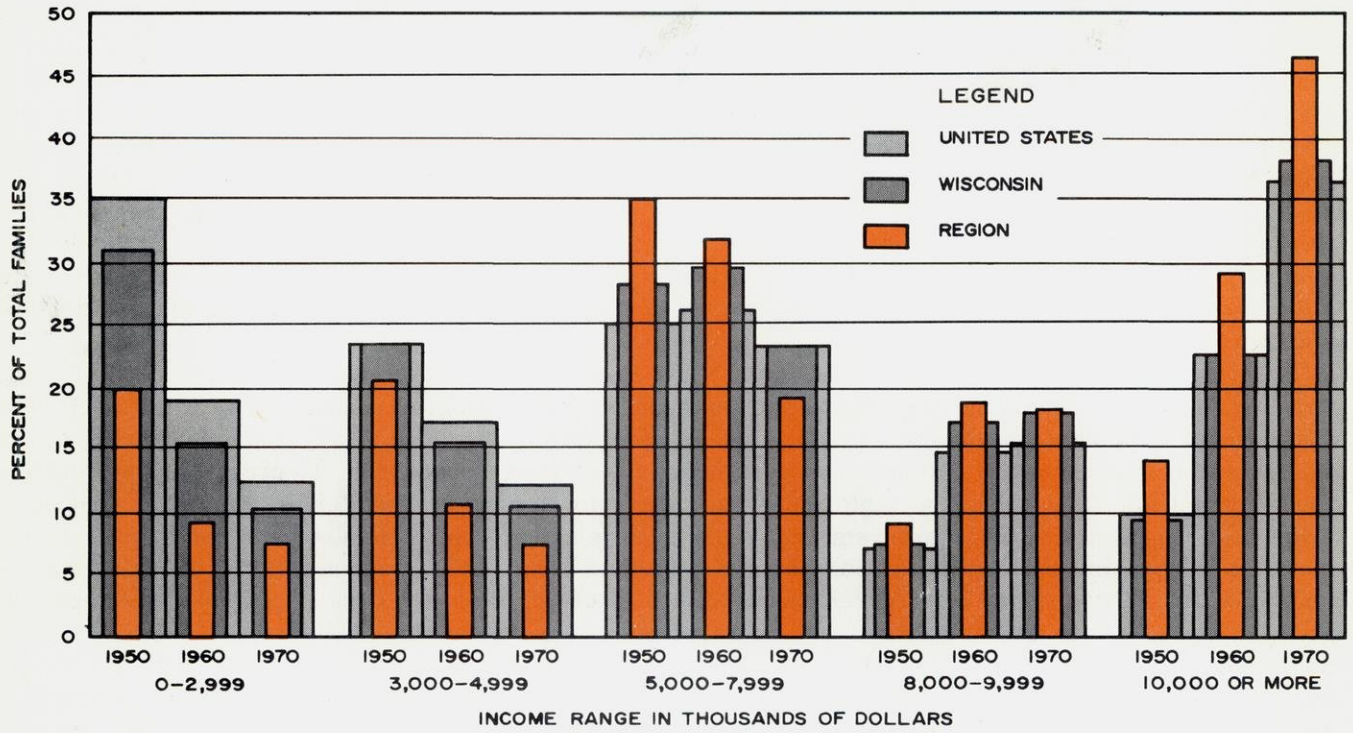
Income trends also indicate the general slowdown in the rate of economic growth in the Region. The residents of the Region, however, continue to enjoy a higher standard of living than residents of the state and nation. The most rapid income growth and the highest average incomes are being enjoyed by suburban residents, particularly in Waukesha and Ozaukee Counties.

## SUMMARY AND CONCLUSIONS

A general overview of the regional economy indicates a recent decline in the rate of economic growth within the Region compared to the state and nation during the past two decades. The regional labor force

Figure 4

PERCENT DISTRIBUTION OF FAMILIES BY INCOME RANGE IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970 (IN CONSTANT 1967 DOLLARS)




*Source: U. S. Bureau of the Census and SEWRPC.*

increased at a lesser rate in the past decade than did the state and national labor forces, whereas from 1950 to 1960 it increased at a more rapid rate than that of the state and nation. Increases in the rate of growth in the Region's work force and the number of jobs available to residents of the Region paralleled labor force trends, that is, the Region experienced a lesser rate of growth from 1960 to 1970 than the state or nation, and a higher rate of growth than the state or nation from 1950 to 1960. Although total regional income increased substantially from 1960 to 1970, the regional rate of increase was less than the rate of increase for the state and nation during the same period, and was less than the regional rate of increase in the previous decade, which was greater than the state and national increases.

In addition to a decline in the rate of economic growth within the Region, there is evidence to indicate a general decentralization of economic activity from the established urban centers to suburban areas of the Region. From 1960 to 1970, the largest increases in the number of jobs within the Region occurred in Ozaukee, Washington, and Waukesha Counties, while the smallest increases occurred in Kenosha and Milwaukee Counties. Changes in the county distribution of regional jobs from 1950 to 1970 strongly favored the suburban counties of the Region. Although Milwaukee County contained 69 percent of all regional jobs in 1970, this total represented a 10 percent decline from 1950 in the county's share of regional jobs. Waukesha, Ozaukee, and Washington Counties, on the other hand, experienced the largest relative gains in the share of regional jobs during this 20-year period. Commercial and industrial land use changes from 1963 to 1970 also point to a decentralization of economic activity in the Region. The largest net increase in these land uses during this period occurred in Waukesha County. This growth in commercial and industrial land uses has generally taken place in large suburban shopping centers and in the outlying planned industrial parks.

Although the rate of economic growth is declining and decentralizing from established urban centers, the residents of the Region continue to enjoy a higher standard of living than the residents of Wisconsin as a whole and the United States. Regional per capita incomes have been higher than state and national aver-

ages since 1950. Within the Region, the suburban counties of Waukesha and Ozaukee enjoy the highest per capita incomes. This is due primarily to the fact that more than 70 percent of the families in these counties earned $10,000 or more in 1970.

The study on which this report is based included a questionnaire survey of the management of leading industrial firms within the Region (see Appendix C). The results of that survey indicate that management attributes the declining rate of economic activity and the decentralization of economic activity within the Region to several factors. The decline in the rate of economic development within the Region was attributed primarily to the comparative labor cost and tax advantages currently enjoyed by other regions of the United States, as well as to the lack of an active industrial development program within the Region and the state. The decentralization of economic activities within the Region was attributed primarily to the inability of existing firms to readily expand operations on their present sites and to the availability of relatively low-cost land in planned industrial parks in the suburban areas of the Region. High tax rates in the established urban centers of the Region were also cited by some respondents as a factor contributing to decentralization.

Although there is evidence that the rate of economic decline is slowing, any continued decline in this rate would result in an absolute decline, the erosion of the regional economic base, and the altering of the regional economic structure through the permanent loss of jobs and income. To prevent such economic decline within the Region and the state, it is necessary to develop and implement a positive industrial development program. Such a program should include the active recruitment of selected industries, the provision of investment incentives, the alleviation of the present tax burden, and the creation of a more positive attitude by state and local governments toward industry. Perhaps most important in this respect, however, would be a regional approach which supplemented and complemented local industrial development efforts, an approach based upon sound regional economic development principals. Such a program should be aimed at the recruitment of those firms and industries which would contribute to a more balanced economic base and structure within the Region and from which positive economic and environmental benefits would accrue to residents of the Region.

Chapter III

# STRUCTURE OF THE ECONOMY

## INTRODUCTION

This chapter presents a comprehensive analysis of each of the dominant and subdominant industry groups identified within the Region. Fourteen such industries have been identified as dominant or subdominant in the southeastern Wisconsin regional economy in 1970. Seven of these industries, each accounting for 4 percent or more of total regional employment, have been identified as dominant. These include the nonelectrical machinery, electrical machinery and equipment, retail trade, and wholesale trade industries; medical and other professional services; educational services; and finance, insurance, and real estate services. Seven industries, each accounting for 2 to 3.9 percent of total employment, have been identified as subdominant in the regional economy. These include the transportation equipment, primary metals, fabricated metals, food and beverage, construction, and printing and publishing industries; and government services.

In the analysis of the dominant and subdominant manufacturing industries, general background information is presented; geographic locational patterns of each industry in the United States are discussed in terms of value added by manufacture[1] in 1949, 1959, and 1969; employment levels for 1950, 1960, and 1970 for the United States, East North Central States, Wisconsin, and the Region are presented; national, state, and regional average hourly earnings are analyzed; and national output levels are reviewed for 1950, 1960, and 1970. In the nonmanufacturing dominant and subdominant industries, national, state, and regional employment levels over the past decade are analyzed. These basic employment analyses are supplemented by analyses of sales, number of establishments, and revenue data where available.

Table 11 presents a comparison of the status of the dominant and subdominant industries in the Region based on the findings of the 1960 and 1970 economic analyses. As shown in Table 11, there have been some significant changes in the relative status of these industries over the past decade. Two industry groups—wholesale trade, and finance, insurance, and real estate services—have advanced from subdominant to dominant status since 1960. Two other industry groups—transportation equipment manufacturing and construction—have declined from dominant to subdominant status over this period. The remaining 10 industry groups have maintained their 1960 dominant or subdominant status. It should be noted that the agriculture industry group was classified as subdominant in 1960, but due to declining

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[1] *Value added by manufacture is considered the best available measure for comparing the relative economic importance of manufacturing activity among industries and geographic areas. It is derived by subtracting the cost of raw materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured, and then adding receipts for services rendered.*

Table 11

CHANGE IN THE DOMINANT AND SUBDOMINANT STATUS OF INDUSTRIES IN THE REGION: 1960 AND 1970

| SIC° CODE NUMBER | DOMINANT INDUSTRIES | PERCENT OF REGIONAL EMPLOYMENT 1960 | PERCENT OF REGIONAL EMPLOYMENT 1970 | SIC° CODE NUMBER | SUBDOMINANT INDUSTRIES | PERCENT OF REGIONAL EMPLOYMENT 1960 | PERCENT OF REGIONAL EMPLOYMENT 1970 |
|---|---|---|---|---|---|---|---|
| 35 | NONELECTRICAL MACHINERY | 9.6 | 9.5 | 34 | FABRICATED METALS | 3.0 | 3.4 |
| 36 | ELECTRICAL EQUIPMENT | 6.7 | 4.9 | 37 | TRANSPORTATION EQUIPMENT | 5.5 | 3.3 |
| 52-59 | RETAIL TRADE | 13.1 | 15.1 | 33 | PRIMARY METALS | 3.2 | 3.0 |
| 80 | MEDICAL & OTHER PROFESSIONAL SERVICE | 6.0 | 10.0 | 20 | FOOD & BEVERAGE | 3.5 | 2.4 |
| 82 | EDUCATIONAL SERVICES | 4.0 | 7.0 | 27 | PRINTING & PUBLISHING | 2.2 | 2.2 |
| 60-67 | FINANCE, INSURANCE, REAL ESTATE | 3.9 | 4.2 | 91-97 | GOVERNMENT SERVICES | 3.7 | 3.5 |
| 50-51 | WHOLESALE TRADE | 3.1 | 4.3 | 15-17 | CONSTRUCTION | 4.0 | 3.2 |

°SIC REFERS TO THE TERM STANDARD INDUSTRIAL CLASSIFICATION.

SOURCE- SEWRPC.

employment levels since then, this industry no longer accounts for at least 2 percent of total regional employment. In addition, four industries—leather and leather products, chemicals and allied products, paper and allied products, and instruments and related products—which were neither dominant nor subdominant in status in 1960 but were considered significant to the Region's export base, have declined to levels below their 1960 levels of employment and thus have been omitted from the present analysis.

It is evident from the data presented in Table 11 that a general structural shift in regional employment from manufacturing and agricultural activities to trade and service-oriented activities took place in the 1960s. This basic trend was identified in earlier Commission studies of the regional economy and is consistent with the general trend in the national economy. This change, however, took place at a faster rate than had been previously estimated. Following is a discussion of the dominant and subdominant industries identified in the Region.

## DOMINANT AND SUBDOMINANT INDUSTRIES

### Nonelectrical Machinery Industry

The nonelectrical machinery industry is the largest manufacturing dominant in the Region, a position it has held for many years. In 1970, it accounted for approximately 9.5 percent of total regional employment, down slightly from its 9.6 percent share in 1960. In 1970, approximately 68,000 persons were employed in this industry in the Region. Nationally, the nonelectrical machinery industry employed 1,977,000 persons in 1970 and also ranked as the nation's number one manufacturing employer, with about 10 percent of total U. S. manufacturing employment.

As shown in Table 12, this industry includes activities such as the manufacture of engines and turbines, farm machinery, construction machinery, machine tools, office and computing machines, and a wide variety of other industrial and service industry machinery. Nationally, the most important activities in this industry group, as measured by employment, are the manufacture of metalworking machinery, general industrial machinery such as pumps and compressors, and construction machinery. In the Region, the most important activity is the manufacture of engines and turbines, which accounts for 25 percent of the nonelectrical machinery employment in the Region. The manufacture of construction equipment, farm machinery, general industrial machinery, and metalworking machines follows in importance, accounting for between 10 and 20 percent of industry group employment.

Table 12

DISTRIBUTION OF EMPLOYMENT IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN NONELECTRICAL MACHINERY INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 351 | ENGINES AND TURBINES | 5.3 | 25.6 |
| 352 | FARM MACHINERY | 7.3 | 15.0 |
| 353 | CONSTRUCTION EQUIPMENT | 14.6 | 20.7 |
| 354 | METALWORKING | 18.1 | 10.3 |
| 355 | SPECIAL INDUSTRIAL MACHINERY | 11.1 | 5.3 |
| 356 | GENERAL INDUSTRIAL MACHINERY | 15.0 | 15.9 |
| 357 | OFFICE AND COMPUTING | 10.2 | -- |
| 358 | SERVICE INDUSTRY | 7.3 | 2.2 |
| 359 | MISCELLANEOUS | 10.9 | 4.9 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS; AND SEWRPC.

It should be noted that one activity which is important nationally in this industry but is not important in the Region is the production of office and computing equipment. Nationally, nearly 200,000 persons are employed in this activity, representing about 10 percent of total nonelectrical machinery industry employment, while regional employment in the production of office and computing equipment represents only a fraction of 1 percent of total nonelectrical industry employment. The manufacture of office machines and computers has been one of the outstanding growth industries in the United States in the past two decades, but the Southeastern Wisconsin Region has not to date shared in that growth.

There are many large companies represented in this industry in the Region. The major employers are Allis-Chalmers Corporation; Briggs & Stratton Corporation; Evinrude Motors, Division of Outboard Marine Corporation; Continental Motors Corp.; J. I. Case Company; George J. Meyer Mfg. Co., Div.

A. T. O., Inc.; Rex Chainbelt Inc.; Bucyrus-Erie Company; Harnischfeger Corporation; Kearney & Trecker Corporation; and the Falk Corporation Subsidiary of Sundstrand Corporation. The companies in this industry in the Region which employ 300 or more persons are listed in Table 13. These 39 companies account for nearly 90 percent of total nonelectrical machinery industry employment in the Region.

Table 13

MAJOR EMPLOYERS IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE REGION: 1970

| COMPANY NAME | |
|---|---|
| ALLIS-CHALMERS CORPORATION | JACOBSEN MANUFACTURING COMPANY |
| AQUA-CHEM, INC. | KEARNEY & TRECKER CORPORATION |
| AUTOMATIC SPRINKLER CORP. | KOEHRING COMPANY |
| BANGOR PUNTA | MCGRAW-EDISON POWER SYSTEMS DIVISION OF MCGRAW-EDISON CO. |
| BRIGGS & STRATTON CORPORATION | GEORGE J. MEYER MFG. CO., DIV. A.T.O., INC. |
| BRUNSWICK CORP. | MILWAUKEE ELECTRIC TOOL CORPORATION |
| BUCYRUS-ERIE COMPANY | MILWAUKEE GEAR COMPANY |
| J.I.CASE COMPANY | NORDBERG-DIVISION OF REX CHAINBELT INC. |
| CATERPILLAR TRACTOR CO. | THE OILGEAR COMPANY |
| CHRYSLER OUTBOARD CORPORATION | PERFEX DIVISION-MCQUAY-PERFEX INC. |
| CLIMATROL INDUSTRIES, INC.° | THE PERLICK CO., INC. |
| CONTINENTAL MOTORS CORP. | REX CHAINBELT INC. |
| EATON, YALE, & TOWNE, INC. | SIMPLICITY MANUFACTURING COMPANY, INC. |
| EVINRUDE MOTORS, DIVISION OF OUTBOARD MARINE CORPORATION | A.O.SMITH CORPORATION |
| F.M.C. CORP. | SMITH ESSICH INC. |
| THE FALK CORPORATION SUBSIDIARY OF SUNDSTRAND CORPORATION | STA-RITE INDUSTRIES, INC. |
| GEHL COMPANY | TWIN DISC INCORPORATED |
| GORTON MACHINE CORPORATION SUBSIDIARY OF KEARNEY & TRECKER CORPORATION | UNIT CRANE & SHOVEL CORP. |
| HARNISCHFEGER CORPORATION | VILTER MANUFACTURING CORPORATION |
| HEIN-WERNER CORPORATION | |

°CLIMATROL INDUSTRIES CEASED MANUFACTURING OPERATIONS WITHIN THE SOUTHEASTERN WISCONSIN REGION AS OF DECEMBER 31, 1971.

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973, AND SEWRPC.

Nationally, the nonelectrical machinery industry is concentrated in the Mid-Atlantic and East North Central States. As shown in Table 14 and Figure 5, more than 60 percent of the value added by manufacture in this industry was accounted for by these two areas of the country. During the past decade, however, the share of value added by manufacture for these two areas and the New England States has decreased, due to the fact that growth in value added has been less for these areas of the country than it has for the nation. In all other regions of the United States, the growth in value added by manufacture has been greater than national industry growth rates, with the highest rates of growth being experienced by the West North Central, South Atlantic, and East South Central States during the 1959 to 1969 period.

It should be noted that of the three areas of the country which have experienced a decrease in their share of value added, one of these—the East North Central States—lost about 4 percent of its share of value added from 1959 to 1969, compared to a loss of almost 5 percent from 1949 to 1959. This is an indication that recently felt locational and labor cost disadvantages in this area may have begun to diminish.

Table 14

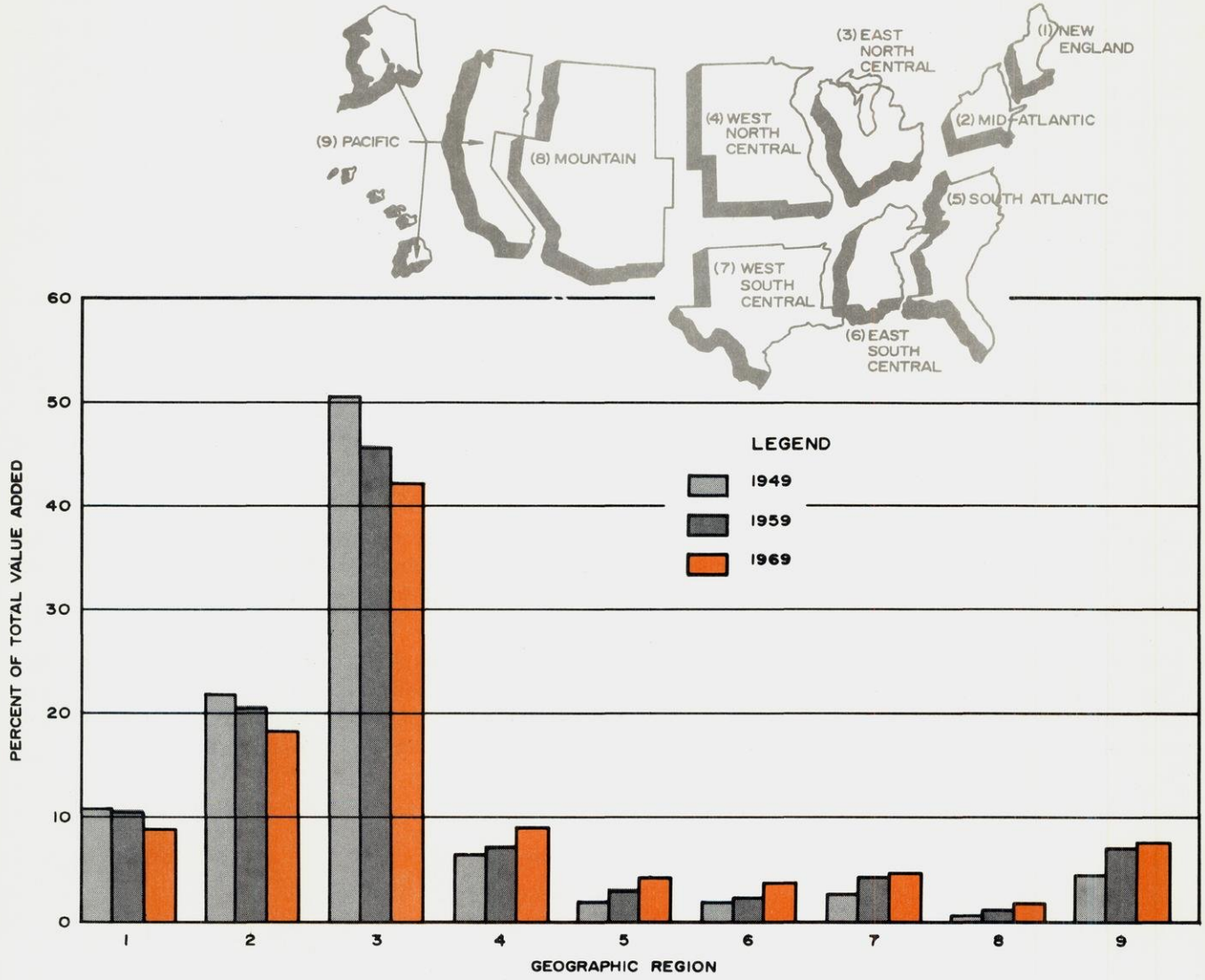
CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PERCENT CHANGE | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 818 | $ 1,481 | $ 2,797 | 241.9 | 10.6 | 10.2 | 8.7 | -0.4 | -1.5 |
| MID-ATLANTIC..... | 1,685 | 2,953 | 5,912 | 250.8 | 21.9 | 20.3 | 18.5 | -1.6 | -1.8 |
| EAST NORTH CENTRAL... | 3,889 | 6,695 | 13,472 | 246.4 | 50.6 | 45.8 | 42.1 | -4.8 | -3.7 |
| WEST NORTH CENTRAL... | 485 | 1,024 | 2,868 | 591.3 | 6.3 | 7.0 | 9.0 | 0.7 | 2.0 |
| SOUTH ATLANTIC..... | 137 | 437 | 1,403 | 924.1 | 1.8 | 2.9 | 4.4 | 1.1 | 1.5 |
| EAST SOUTH CENTRAL... | 134 | 295 | 1,124 | 738.8 | 1.7 | 2.0 | 3.5 | 0.3 | 1.5 |
| WEST SOUTH CENTRAL... | 188 | 589 | 1,409 | 649.5 | 2.5 | 4.0 | 4.4 | 1.5 | 0.4 |
| MOUNTAIN..... | 32 | 126 | 522 | 1,531.2 | 0.4 | 0.9 | 1.6 | 0.5 | 0.7 |
| PACIFIC..... | 321 | 1,009 | 2,505 | 680.4 | 4.2 | 6.9 | 7.8 | 2.7 | 0.9 |
| UNITED STATES..... | $7,689 | $14,609 | $32,012 | 316.3 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Figure 5

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




*Source:* *Annual Survey of Manufactures* and *SEWRPC*.

As shown in Table 15, the State of Wisconsin ranks seventh in value added by manufacture in the production of nonelectrical machinery, a rank it has maintained for the past 10 to 15 years. Similarly, industry growth in the 10 top ranking states has been relatively equal over the last 10 years, with slightly faster growth in the States of California and Texas due to the concentration of the production of office and computing equipment in these two states.

Overall, the growth in the nonelectrical machinery industry over the last 20 years in the United States has favored the less mature industrial economies,

Table 15

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY: 1959

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN THE NONELECTRICAL MACHINERY INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-69 |
| ILLINOIS..... | 1 | $3,758 | 92.0 |
| OHIO..... | 2 | 3,608 | 111.0 |
| MICHIGAN..... | 3 | 3,112 | 97.0 |
| NEW YORK..... | 4 | 2,484 | 93.0 |
| PENNSYLVANIA.. | 5 | 2,240 | 106.0 |
| CALIFORNIA.... | 6 | 2,210 | 142.0 |
| WISCONSIN..... | 7 | 1,795 | 108.0 |
| INDIANA..... | 8 | 1,198 | 106.0 |
| NEW JERSEY.... | 9 | 1,187 | 105.0 |
| TEXAS..... | 10 | 995 | 126.0 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

especially in the southern and western regions of the United States, at the expense of the more mature industrial economies of the East North Central, Mid-Atlantic, and New England States.

Employment levels in the nonelectrical machinery industry in the United States, East North Central States, Wisconsin, and the Southeastern Wisconsin Region are shown in Table 16. As shown in Table 16, the nonelectrical machinery industry nationally increased faster in employment from 1960 to 1970 than from 1950 to 1960. This pattern of employment change was also true for the East North Central States, Wisconsin, and the Region over these two decades. National industry growth has, however, occurred at a faster average rate than growth in the East North Central States, Wisconsin, or the Region. In the last 10 years, national industry employment increased by approximately 34 percent, compared to 25 percent in the East North Central States and Wisconsin and only 19 percent in the Southeastern Wisconsin Region.

The slower-than-national-average employment growth in the nonelectrical machinery industry in the Region has resulted in nearly a 2 percent loss in its share of national industry employment in the past 20 years. Over the period, the regional industry has also shown nearly a 16 percent loss in its share of

Table 16

EMPLOYMENT LEVELS IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN NONELECTRICAL MACHINERY INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 1,250.0 | 1,479.0 | 1,977.0 | 18.3 | 33.7 | 58.2 |
| EAST NORTH CENTRAL STATES | 602.4 | 634.9 | 793.4 | 5.4 | 25.0 | 31.7 |
| WISCONSIN | 79.6 | 86.5 | 108.4 | 8.7 | 25.3 | 36.2 |
| SOUTHEASTERN WISCONSIN REGION | 62.5 | 57.1 | 68.1 | - 8.6 | 19.3 | 9.0 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 5.0 | 3.9 | 3.4 | - 1.1 | - 0.5 | - 1.6 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 78.5 | 66.0 | 62.8 | -12.5 | - 3.2 | -15.7 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Wisconsin employment. This again indicates that this industry in the Region has been experiencing difficulty in competing with other areas of the nation and to a degree with other areas of the state. However, it should be noted that this loss in its share of national and state employment within the Region has lessened over the past decade.

Table 17 shows the average hourly earnings in the nonelectrical machinery industry in the United States, Wisconsin, and the Region. As shown in Table 17, industry hourly earnings nationally increased nearly 136 percent between 1950 and 1970, from $1.60 to $3.77 per hour. Hourly earnings in

Table 17

AVERAGE HOURLY EARNINGS IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN NONELECTRICAL MACHINERY INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | $1.60 | $2.55 | $3.77 | 59.4 | 47.8 | 135.6 |
| WISCONSIN | NA° | 2.60 | 3.91 | -- | 50.4 | -- |
| SOUTHEASTERN WISCONSIN REGION | NA° | 2.65 | 4.05 | -- | 52.8 | -- |

°AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

the past 10 years increased 48 percent compared to an increase of 59 percent for the previous 10 years. As also shown, state and regional hourly earnings are higher than the national average, and have been increasing at a faster rate during the past decade. Firms in the Region generally believe this to be one of the major disadvantages of this industry in the Region in its competition nationally for growth.[2]

Table 18 shows production levels in the nonelectrical machinery industry over the past 20 years for the United States. As shown in Table 18, national production volume increased 144 percent between 1950 and 1970, with output increasing faster from 1960 to 1970 than from 1950 to 1960.

In summary, the nonelectrical machinery industry is of primary importance to the Region's economy, accounting for approximately 9 percent of the total regional employment. Nationally, the nonelectrical machinery industry has demonstrated a general long-term growth over the past two decades with slightly faster growth in the last 10 years. Industry growth has favored the southern and western states at the expense of the Mid-Atlantic, New England, and East North Central States, but recent trends indicate this shifting of industry location is diminishing. Over the past 10 years, industry output has increased by approximately 70 percent, with employment and productivity contributing about equally to the growth.

Regionally, a general industry decline in the 1950s was followed by recovery in the 1960s. Regional industry growth has occurred at about half the rate of national industry growth during the last 10 years. Average hourly earnings are about 8 percent higher than the national average. The Region lacks a rapidly growing activity in this industry, which is the manufacture of office machines and computers.

## Electrical Machinery and Equipment Industry

The electrical machinery and equipment industry is the second largest manufacturing industry employer in the Southeastern Wisconsin Region, employing approximately 36,500 persons in 1970. This industry is dominant in the southeastern Wisconsin regional economy, accounting for 5 percent of total regional employment. Nationally this industry was also the number two manufacturing employer in 1970, employing 1,923,000 persons, or nearly 10 percent of total U. S. manufacturing employment.

As shown in Table 19, this industry includes activities such as the manufacture of power and electrical industrial apparatus; household appliances; lighting and wiring; and radio, television, and communication equipment. (Computer manufacture is classified in the nonelectrical machinery industry.) The regional electrical machinery and equipment industry is heavily concentrated in the industrial apparatus segment, with lesser concentration in testing and distribution equipment manufacture. These two segments repre-

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[2]*Bureau of Business Research and Service, "Importance of Locational Decision Factors as Seen by Southeastern Wisconsin Industry," Wisconsin Economy Studies No. 7, April 1972.*

Table 18

INDEX OF INDUSTRIAL PRODUCTION IN THE NONELECTRICAL MACHINERY INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN NONELECTRICAL MACHINERY INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES... | 41.2 | 59.3 | 100.5 | 43.9 | 69.5 | 143.9 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 19

DISTRIBUTION OF EMPLOYMENT IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 361 | TESTING AND DISTRIBUTION EQUIPMENT..... | 9.4 | 17.2 |
| 362 | ELECTRICAL INDUSTRIAL APPARATUS..... | 11.0 | 54.5 |
| 363 | HOUSEHOLD APPLIANCES..... | 9.0 | 7.4 |
| 364 | LIGHTING AND WIRING..... | 8.4 | 1.4 |
| 365 | RADIO AND TELEVISION..... | 6.9 | 1.9 |
| 366 | COMMUNICATION EQUIPMENT.. | 28.0 | 3.2 |
| 367 | ELECTRONIC COMPONENTS.... | 21.5 | 12.3 |
| 369 | MISCELLANEOUS..... | 5.7 | 2.0 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

sent more than 70 percent of total industry employment in the Region. Nationally, the largest segments of the industry in terms of employment are the manufacture of communication equipment and electronic components.

As in the nonelectrical machinery industry, there are a small number of large companies dominating this industry in the Region. Included are companies such as Allis-Chalmers Corporation; Allen-Bradley Company; Cutler-Hammer, Inc.; Globe-Union Inc.; The Louis Allis Company; Oster Corporation; Square D Company; General Electric Company, Medical Systems Div. and the Dishwasher & Disposal Products Department, Milwaukee Manufacturing Plant; Delco Electronics Division—Milwaukee Operations, General Motors Corporation; and McGraw-Edison Power Systems Division of McGraw-Edison Co. The largest employers in this industry in the Region are listed in Table 20. Together, they account for about 90 percent of total employment in the electrical machinery and equipment industry, with each company employing 300 or more persons.

The locational patterns of the electrical machinery and equipment industry in the United States have changed significantly over the last 20 years. As shown in Table 21 and Figure 6, this industry was heavily concentrated in the Mid-Atlantic and East North Central States from 1949 to 1969. It is apparent, however, that during this period the industry has been decentralizing to other areas of the United States, most notably the southern and western states. The traditional areas of electrical machinery and equipment manufacturing in the United States accounted for more than 77 percent of the industry's value added by manufacture in 1949, compared to only 55 percent in 1969. Large losses in the share of value added were experienced by the Mid-Atlantic States from 1949 to 1959, followed by large losses in the East North Central States from 1959 to 1969. In contrast, the areas of the United States that have experienced the largest industry growth over this period are the Pacific, South Atlantic, and West South Central States.

Table 20

MAJOR EMPLOYERS IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE REGION: 1970

| COMPANY NAME | |
|---|---|
| ALLEN-BRADLEY COMPANY | GLOBE-UNION INC. |
| ALLIS-CHALMERS CORPORATION | MAMCO CORPORATION |
| THE LOUIS ALLIS COMPANY | MCGRAW-EDISON POWER SYSTEMS DIVISION OF MCGRAW-EDISON CO. |
| AUTOMATIC ELECTRIC CO. | OAK MANUFACTURING CO. |
| CUTLER-HAMMER, INC. | OSTER CORPORATION |
| DELCO ELECTRONICS DIVISION-MILWAUKEE OPERATIONS, GENERAL MOTORS CORPORATION | RTE CORPORATION |
| EMMERSON ELECTRIC CO. | SOLA BASIC INDUSTRIES |
| GENERAL ELECTRIC COMPANY, DISHWASHER & DISPOSAL PRODUCTS DEPARTMENT, MILWAUKEE MANUFACTURING PLANT | SORGEL ELECTRIC CORP. |
| GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS DIV. | SPRAGUE ELECTRIC COMPANY--WISCONSIN OPERATIONS |
| | SQUARE D COMPANY |
| | WEBSTER ELECTRIC COMPANY, INC. SUBSIDIARY OF STA-RITE INDUSTRIES, INC. |

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973; AND SEWRPC.

Table 21

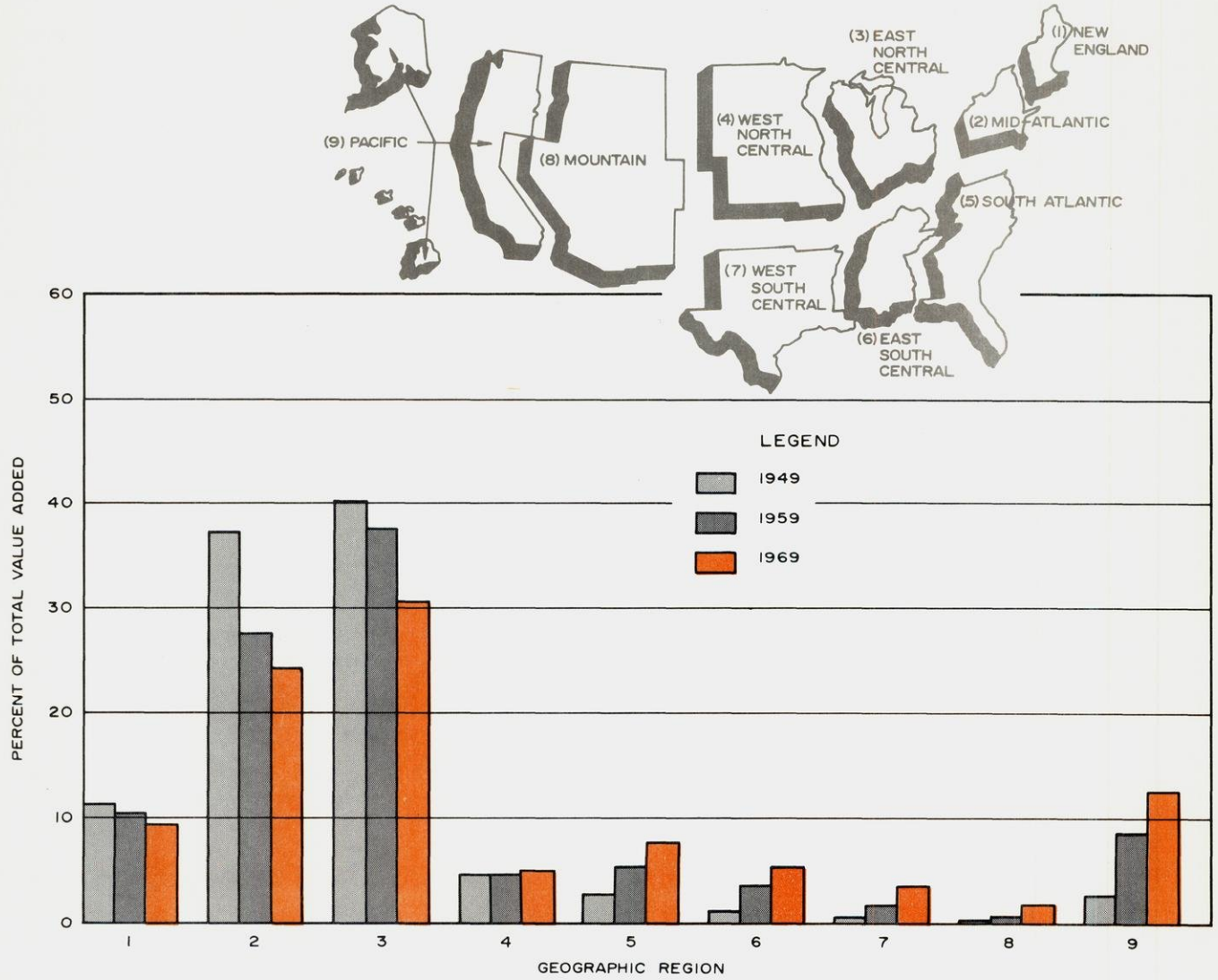
CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PERCENT CHANGE | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 433 | $ 1,317 | $ 2,641 | 509.9 | 11.2 | 10.4 | 9.3 | - 0.8 | -1.1 |
| MID-ATLANTIC..... | 1,455 | 3,518 | 6,883 | 373.1 | 37.4 | 27.8 | 24.4 | - 9.6 | -3.4 |
| EAST NORTH CENTRAL... | 1,567 | 4,769 | 8,712 | 455.9 | 40.1 | 37.7 | 30.8 | - 2.4 | -6.9 |
| WEST NORTH CENTRAL... | 183 | 578 | 1,394 | 661.7 | 4.6 | 4.6 | 4.9 | 0.0 | 0.3 |
| SOUTH ATLANTIC..... | 102 | 659 | 2,181 | 203.8 | 2.6 | 5.2 | 7.7 | 2.6 | 2.5 |
| EAST SOUTH CENTRAL... | 40 | 464 | 1,442 | 350.5 | 1.0 | 3.6 | 5.2 | 2.6 | 1.6 |
| WEST SOUTH CENTRAL... | 17 | 209 | 936 | 540.6 | 0.4 | 1.6 | 3.3 | 1.2 | 1.7 |
| MOUNTAIN..... | 2 | 61 | 488 | 243.0 | 0.1 | 0.5 | 1.7 | 0.4 | 1.2 |
| PACIFIC..... | 104 | 1,093 | 3,603 | 3,364.4 | 2.6 | 8.6 | 12.7 | 6.0 | 4.1 |
| UNITED STATES..... | $3,903 | $12,668 | $28,280 | 624.6 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Figure 6

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




Source: *Annual Survey of Manufactures* and SEWRPC.

Table 22 shows the relative rank of the top 10 states in value added by manufacture in the electrical machinery and equipment industry. As shown in Table 22, Wisconsin ranks ninth in this industry in its national share of value added. California ranks first, a position formerly held by the State of Illinois. From 1959 to 1969, California experienced a 229 percent increase in its share of value added, while the Illinois share increased by only 76 percent. Wisconsin's share of total value added in the nation increased by only 62 percent from 1959 to 1969, a slower rate of growth than all of the other top ranking states with the exception of New Jersey. The

Table 22

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-1969 |
| CALIFORNIA... | 1 | $3,405 | 229 |
| ILLINOIS..... | 2 | 3,005 | 76 |
| NEW YORK..... | 3 | 2,979 | 109 |
| OHIO..... | 4 | 2,508 | 81 |
| PENNSYLVANIA. | 5 | 2,231 | 112 |
| INDIANA..... | 6 | 1,786 | 114 |
| NEW JERSEY... | 7 | 1,672 | 61 |
| MASSACHUSETTS | 8 | 1,468 | 80 |
| WISCONSIN.... | 9 | 745 | 62 |
| CONNECTICUT.. | 10 | 705 | 93 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Mid-Atlantic and East North Central States have had difficulty in competing for growth in this industry, but Wisconsin has had particular difficulty in competing for this growth. Market orientation and per unit labor costs have been among the major disadvantages in this industry in Wisconsin and the Southeastern Wisconsin Region.

Employment levels in this industry in the Region showed a rapid increase in the 1950s followed by a decline in the 1960s. As shown in Table 23, there was a 115 percent increase in employment in this industry within the Region from 1950 to 1960, followed by a sharp decline of about 16 percent from 1960 to 1970. Over this 20-year period the U. S. electrical machinery and equipment industry showed persistent growth. Employment in the East North Central States also showed overall growth but at a slower pace than the U. S. industry averages. General cutbacks in aerospace spending have affected this industry in the Region, and locational disadvantages have caused some larger firms to curtail employment here and expand elsewhere. It should be noted, however, that even with larger employment losses in the past decade, the electrical machinery and equipment industry in the Region has still declined only one-tenth of one percent in its share of the national employment total over the entire 20-year period. Firms

Table 23

EMPLOYMENT LEVELS IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 991.0 | 1,467.1 | 1,923.0 | 48.0 | 31.1 | 94.0 |
| EAST NORTH CENTRAL STATES | 408.6 | 475.6 | 558.6 | 16.4 | 17.4 | 36.7 |
| WISCONSIN | 35.5 | 54.9 | 48.8 | 54.6 | -11.1 | 37.5 |
| SOUTHEASTERN WISCONSIN REGION | 20.1 | 43.2 | 36.5 | 114.9 | -15.5 | 81.6 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 2.0 | 2.9 | 1.9 | 0.9 | - 1.0 | - 0.1 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 56.6 | 78.7 | 74.8 | 22.1 | - 3.9 | 18.2 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

in the industry in Wisconsin outside the Southeastern Wisconsin Region have fared slightly better than those in the Region, whose share of Wisconsin industry employment declined 4 percent from 1960 to 1970.

Average hourly earnings in the electrical machinery and equipment industry are shown in Table 24. Average hourly earnings nationally rose from $1.47 in 1950 to $3.29 in 1970, an increase of approximately 124 percent. Comparable increases were experienced in the state and Region from 1960 to 1970; however, rates in the Region were nearly 18 percent higher than the national average. As shown in Table 25, production levels in the electrical machinery and equipment industry rose 169 percent between 1950 and 1970.

Table 24

AVERAGE HOURLY EARNINGS IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | $1.47 | $2.28 | $3.29 | 55.1 | 44.3 | 123.8 |
| WISCONSIN | NA° | 2.44 | 3.52 | -- | 44.3 | -- |
| SOUTHEASTERN WISCONSIN REGION | NA° | 2.71 | 3.88 | -- | 43.2 | -- |

°AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

In summary, this industry in the Region has experienced a growth pattern opposite that of the nonelectrical machinery industry. While the electrical machinery and equipment industry grew significantly in the 1950s and declined in the 1960s, the reverse was true for the nonelectrical machinery industry. Despite declines in regional employment, national employment levels rose, and growth took place in the southern and western states.

Transportation Equipment Industry

The transportation equipment industry was identified as a subdominant industrial activity in the Region in 1970. In 1960, this industry was a dominant employer, accounting for 5 percent of total regional employment. However, during the past 10 years employment in this industry declined from approximately 33,000 to 22,000, and currently accounts for about 3 percent of total employment. Nationally, this industry accounts for approximately 10 percent of total manufacturing employment and 2 percent of total employment.

As shown in Table 26, this industry includes activities such as the manufacture of automobiles, aircraft, railroad equipment, ships, motorcycles, and other miscellaneous transportation equipment. Nationally, the leading activity in terms of employment is aircraft manufacturing. In the Region, the manufacture of automobiles, automotive parts and equipment, and motorcycles is the primary activity. American Motors Corporation; A. O. Smith Corporation; The Heil Co.; Harley-Davidson Motor Co., Inc.; and Young Radiator Company are the major companies in this industry in the Region, accounting for more than 80 percent of the total regional employment in the industry.

The transportation equipment industry is heavily concentrated in the East North Central States, due primarily to the automobile industry concentration in the State of Michigan. As shown in Table 27 and Figure 7, more than 40 percent of the value added by manufacture was accounted for by the East North Central States in 1969. Industry growth in these states since 1949, however, has been less rapid than in other

Table 25

INDEX OF INDUSTRIAL PRODUCTION IN THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES... | 37.2 | 62.0 | 100.1 | 66.7 | 61.4 | 169.1 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 26

DISTRIBUTION OF EMPLOYMENT IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN TRANSPORTATION EQUIPMENT INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 371 | MOTOR VEHICLES..... | 40.3 | 89.9 |
| 372 | AIRCRAFT..... | 43.7 | 0.1 |
| 373 | SHIPS..... | 9.2 | 0.4 |
| 374 | RAILROADS..... | 3.1 | 0.5 |
| 375 | MOTORCYCLES, BIKES.. | 0.6 | 8.2 |
| 379 | MISCELLANEOUS..... | 3.0 | 0.9 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Table 27

CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

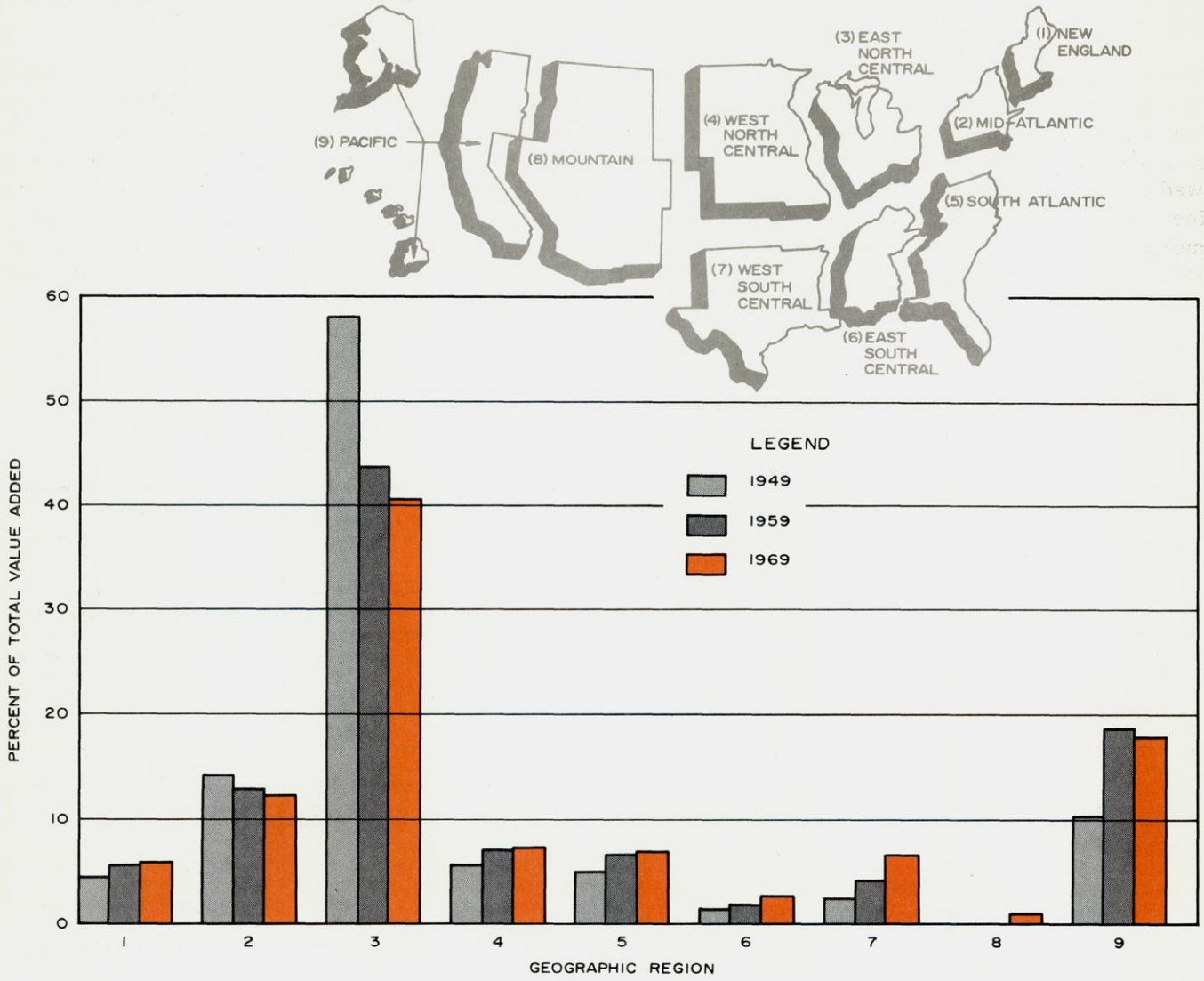
| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE TRANSPORTATION EQUIPMENT INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE TRANSPORTATION EQUIPMENT INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | PERCENT CHANGE 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 298 | $ 979 | $ 1,929 | 547.3 | 4.2 | 5.5 | 5.7 | 1.3 | 0.2 |
| MID-ATLANTIC..... | 994 | 2,285 | 4,155 | 318.0 | 14.1 | 12.9 | 12.2 | - 1.2 | -0.7 |
| EAST NORTH CENTRAL... | 4,095 | 7,756 | 13,861 | 238.5 | 58.1 | 43.8 | 40.7 | -14.3 | -3.1 |
| WEST NORTH CENTRAL... | 390 | 1,238 | 2,450 | 528.2 | 5.5 | 7.0 | 7.2 | 1.5 | 0.2 |
| SOUTH ATLANTIC..... | 340 | 1,144 | 2,297 | 575.6 | 4.8 | 6.5 | 6.7 | 1.7 | 0.2 |
| EAST SOUTH CENTRAL... | 74 | 279 | 864 | 1,067.5 | 1.1 | 1.6 | 2.5 | 0.5 | 0.9 |
| WEST SOUTH CENTRAL... | 150 | 708 | 2,163 | 1,342.0 | 2.1 | 4.0 | 6.4 | 1.9 | 2.4 |
| MOUNTAIN..... | NA[a] | NA[a] | 223 | -- | -- | -- | 0.7 | -- | -- |
| PACIFIC..... | 712 | 3,305 | 6,110 | 758.1 | 10.1 | 18.7 | 17.9 | 8.6 | -0.8 |
| UNITED STATES..... | $7,053 | $17,694 | $34,052 | 382.7 | 100.0 | 100.0 | 100.0 | -- | -- |

[a]THE AMOUNT OF VALUE ADDED BY MANUFACTURE FOR THE MOUNTAIN REGION IN 1949 AND 1959 IS NOT AVAILABLE.

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Figure 7

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




*Source:* *Annual Survey of Manufactures* and SEWRPC.

areas of the United States. From 1949 to 1969, the East North Central States' share of value added has declined by more than 17 percent, with most of the decline occurring from 1949 to 1959. The southern and western states, on the other hand, have shown the most rapid growth in their share of value added by manufacture in this industry, primarily due to growth in the aerospace industry in these areas.

The State of Wisconsin ranks 15th in its share of value added in this industry, while the neighboring State of Michigan ranks first as shown in Table 28. Table 28 further shows that of the 10 states rank-

Table 28

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE TRANSPORTATION EQUIPMENT INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN TRANSPORTATION EQUIPMENT INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-1969 |
| MICHIGAN..... | 1 | $7,379 | 107 |
| CALIFORNIA... | 2 | 3,993 | 53 |
| OHIO..... | 3 | 3,302 | 58 |
| NEW YORK..... | 4 | 1,968 | 82 |
| WASHINGTON... | 5 | 1,961 | 200 |
| TEXAS..... | 6 | 1,754 | 199 |
| INDIANA..... | 7 | 1,613 | 55 |
| CONNECTICUT.. | 8 | 1,571 | 136 |
| MISSOURI..... | 9 | 1,474 | 107 |
| PENNSYLVANIA. | 10 | 1,462 | 150 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

ing highest in the production of transportation equipment, the fastest rates of growth in value added for this industry from 1959 to 1969 were experienced by the States of Washington, Texas, Pennsylvania, and Connecticut. California, Indiana, and Ohio experienced the slowest rates of growth during the same period.

Table 29 shows employment levels in the transportation equipment industry in the United States, East North Central States, Wisconsin, and the Region. As shown in Table 29, U. S. employment in this industry has increased significantly during each of the last two decades but at slightly decreasing rates. The Wisconsin and regional patterns, on the other hand, were quite different. A rapid growth in the 1950s was followed by a substantial decline in the 1960s. During this 20-year period, this industry in the Region declined in employment by 11 percent and therefore lost 25 percent of its share of national employment and more than 10 percent of its share of Wisconsin employment. The regional employment level in this industry has been greatly affected by employment fluctuations at the American Motors plants in the Region.

Table 29

EMPLOYMENT LEVELS IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN TRANSPORTATION EQUIPMENT INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 1,265.0 | 1,568.9 | 1,807.0 | 24.0 | 15.2 | 42.8 |
| EAST NORTH CENTRAL STATES | 563.5 | 637.3 | 679.7 | 13.1 | 6.6 | 20.6 |
| WISCONSIN | 36.5 | 48.4 | 36.1 | 32.6 | -25.4 | - 1.1 |
| SOUTHEASTERN WISCONSIN REGION | 24.8 | 35.3 | 22.0 | 42.3 | -37.7 | -11.3 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 2.0 | 2.2 | 1.5 | 0.2 | - 0.7 | - 0.5 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 67.9 | 72.9 | 60.9 | 5.0 | -12.0 | - 7.0 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table 30 shows average hourly earnings in the transportation equipment industry for the United States, Wisconsin, and the Region. Average hourly earnings in this industry are the highest of any manufacturing industry group and currently average more than $4.00 per hour nationally. The regional average hourly earnings are more than 10 percent greater than the national average and have increased slightly faster than both the state and national averages. As shown in Table 30, regional average hourly earnings in 1970 for the transportation equipment industry group were $4.43 per hour, up 52 percent from the 1960 level.

Table 30

AVERAGE HOURLY EARNINGS IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN TRANSPORTATION EQUIPMENT INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | $1.72 | $2.74 | $4.07 | 59.3 | 48.5 | 136.6 |
| WISCONSIN | NA° | 2.78 | 4.11 | -- | 47.8 | -- |
| SOUTHEASTERN WISCONSIN REGION | NA° | 2.92 | 4.43 | -- | 51.7 | -- |

°AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table 31 shows production levels in the transportation equipment industry nationally. Production increased more rapidly from 1950 to 1960 than from 1960 to 1970, and during the 20-year period, it increased at an overall annual average of approximately 8 percent.

In summary, the transportation equipment industry in the Region has reversed its upward trend of the 1950s. A recession in the United States economy has been partly responsible for this decline, together with strong foreign and domestic competition. The industry nationally shows less decentralization from the East North Central States than other manufacturing industries, significant production increases, and the highest average hourly earnings of any major manufacturing industry group.

## Primary Metals Industry

The primary metals industry, identified as a subdominant industrial activity in the Region, in 1970 accounted for 3 percent of total regional employment, down slightly from 1960 when it represented just over 3 percent of the total. In 1970, approximately 22,500 persons were employed in the industry in the Region, compared to about 20,000 in 1960. Nationally, this industry employs approximately 1.3 million persons, or about 2 percent of total U. S. employment and 8 percent of national manufacturing employment.

This industry group includes establishments which smelt and refine ferrous and nonferrous metals from ore, pig iron, or scrap; which roll, draw, and alloy ferrous and nonferrous metals; and which manufacture castings, forgings, and other basic products from these metals. As shown in Table 32, the primary activity nationally is basic steel production, which represents nearly 50 percent of total primary metals industry employment. In the Region, the primary activity is iron casting, which accounts for nearly 40 percent of total industry employment. Nonferrous casting and steel forging are also important activities in the Region, together accounting for an additional 45 percent of industry employment in the Region.

The larger employers in this industry in the Region include Ladish Co., Anaconda American Brass Company, Belle City Malleable Iron Company, and The Babcock & Wilcox Company. Table 33 shows a list of companies in this industry each employing approximately 300 or more persons. These 22 companies account for about 75 percent of total regional employment in this industry.

Table 31

INDEX OF INDUSTRIAL PRODUCTION IN THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN TRANSPORTATION EQUIPMENT INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES... | 33.8 | 65.2 | 90.4 | 92.9 | 38.6 | 167.4 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 32

DISTRIBUTION OF EMPLOYMENT IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN PRIMARY METALS INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 331 | BASIC STEEL PRODUCTION... | 48.18 | 9.8 |
| 332 | FOUNDRIES..... | 18.1 | 38.9 |
| 333 | NONFERROUS PRIMARY..... | 4.2 | 0.0 |
| 334 | NONFERROUS SECONDARY..... | 1.3 | 0.3 |
| 335 | NONFERROUS ROLLING AND DRAWING..... | 15.2 | 5.0 |
| 336 | NONFERROUS FOUNDRIES..... | 7.0 | 17.1 |
| 339 | MISCELLANEOUS..... | 5.9 | 28.8 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Table 33

MAJOR EMPLOYERS IN THE PRIMARY METALS INDUSTRY IN THE REGION: 1970

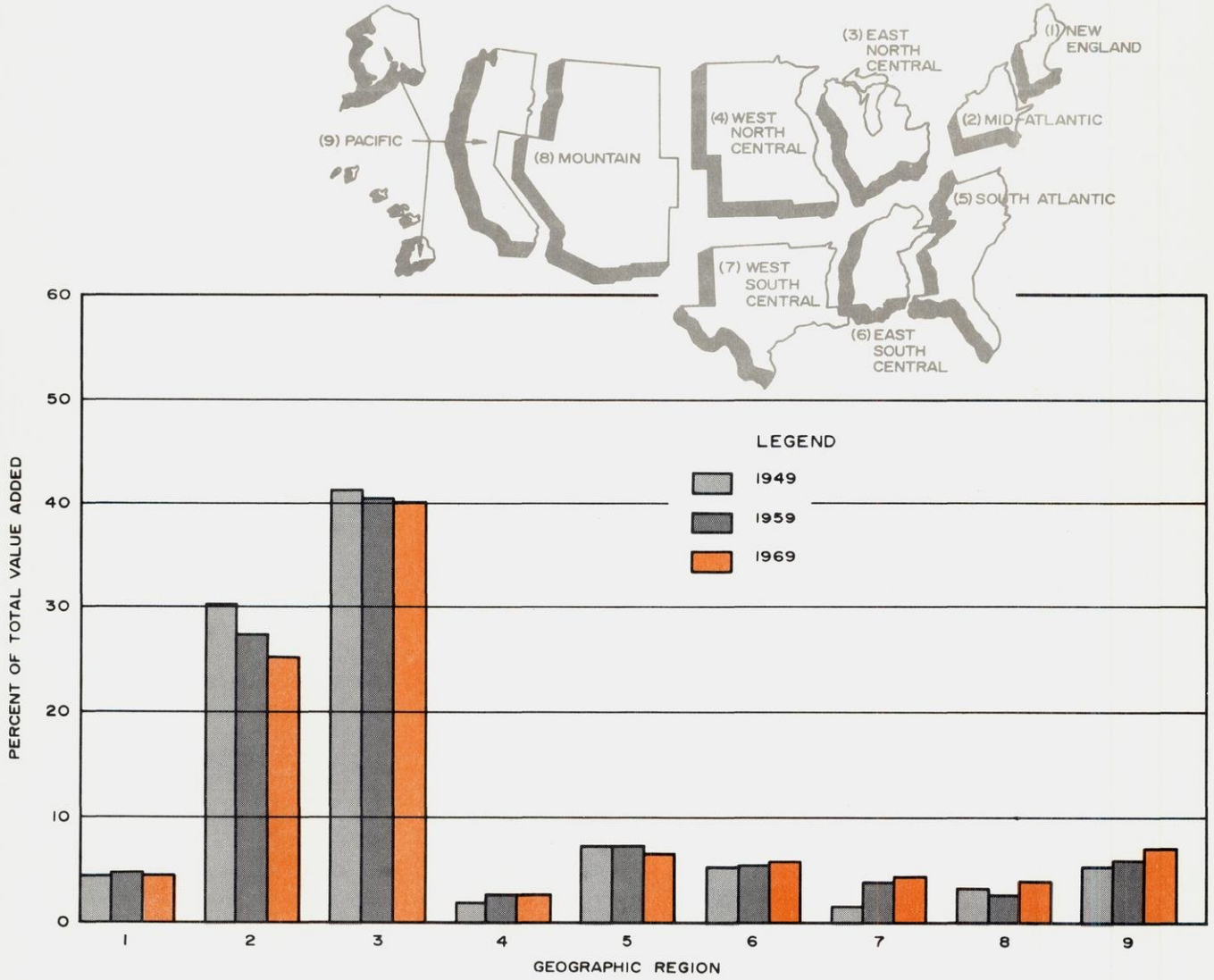
| COMPANY NAME | |
|---|---|
| ANACONDA AMERICAN BRASS COMPANY | MAYNARD ELECTRIC STEEL CASTING COMPANY, INC. |
| APPLETON ELECTRIC CO. FDRY. DIV. | MOTOR CASTINGS COMPANY |
| THE BABCOCK & WILCOX COMPANY | PELTON STEEL CASTING CO., INC. |
| BELLE CITY MALLEABLE IRON COMPANY | SIVYER STEEL CASTING COMPANY |
| EATON, YALE, & TOWNE, INC. | A.O.SMITH CORPORATION |
| GENERAL CASTING CORPORATION | STANDARD DUCTILE & GRAY IRON FOUNDRY, INC. |
| GREDE FOUNDRIES, INC. | TRENT TUBE DIVISION, COLT INDUSTRIES |
| HOWMET CORPORATION, CRUCIBLE STEEL CASTING DIVISION | WAUKESHA FOUNDRY CO., INC. |
| INTERNATIONAL HARVESTER COMPANY | WEHR CORPORATION |
| INTERSTATE DROP FORGE COMPANY | WISCONSIN CENTRIFUGAL, INC. |
| LADISH CO. | |
| MACWHYTE WIRE ROPE COMPANY | |

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973; AND SEWRPC.

The primary metals industry is concentrated mainly in the steel belt from Pittsburgh to Chicago in the East North Central and Mid-Atlantic States. As shown in Figure 8 and Table 34, the East North Central and Mid-Atlantic States accounted for slightly over 65 percent of the industry's value added by manufacture in 1969. The distribution of activity in this industry as measured by value added has remained relatively stable throughout the United States during the past two decades. The largest loss in the share of value added from 1949 to 1969 occurred in the Mid-Atlantic States, which showed a decrease of 5 percent. Conversely, the largest gain in the share of value added occurred in the West South Central States, which showed an increase of nearly 3 percent.

Figure 8

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




Source: *Annual Survey of Manufactures* and SEWRPC.

Table 34

CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE PRIMARY METALS INDUSTRY (MILLIONS OF DOLLARS) | | | PERCENT CHANGE | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRIMARY METALS INDUSTRY | | | POINT CHANGE | |
|---|---|---|---|---|---|---|---|---|---|
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 241 | $ 642 | $ 996 | 313.3 | 4.2 | 4.6 | 4.4 | 0.4 | -0.2 |
| MID-ATLANTIC..... | 1,741 | 3,766 | 5,731 | 229.2 | 30.4 | 27.5 | 25.2 | -2.9 | -2.3 |
| EAST NORTH CENTRAL. | 2,380 | 5,607 | 9,135 | 283.8 | 41.6 | 40.8 | 40.3 | -0.8 | -0.5 |
| WEST NORTH CENTRAL. | 104 | 341 | 578 | 455.8 | 1.8 | 2.5 | 2.5 | 0.7 | 0.0 |
| SOUTH ATLANTIC..... | 405 | 983 | 1,483 | 266.2 | 7.2 | 7.2 | 6.5 | 0.0 | -0.7 |
| EAST SOUTH CENTRAL. | 293 | 719 | 1,351 | 361.1 | 5.1 | 5.2 | 5.9 | 0.1 | 0.7 |
| WEST SOUTH CENTRAL. | 87 | 513 | 978 | 1,024.1 | 1.5 | 3.7 | 4.3 | 2.2 | 0.6 |
| MOUNTAIN..... | 172 | 358 | 885 | 414.5 | 3.1 | 2.6 | 3.9 | -0.5 | 1.3 |
| PACIFIC..... | 289 | 821 | 1,593 | 451.2 | 5.1 | 5.9 | 7.0 | 0.8 | 1.1 |
| UNITED STATES..... | $5,712 | $13,750 | $22,730 | 297.9 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Table 35 shows the 10 top ranking states in primary metals production expressed in terms of value added in 1969. As shown in Table 35, increases in value added for these states have been relatively equal. The exceptions have been a slow rate of growth in the State of New York and relatively large increases in the States of California and Texas. Pennsylvania ranks number one in terms of value added by manufacture, followed by the East North Central States of Ohio, Indiana, Michigan, and Illinois. The State of Wisconsin ranks 14th in its share of value added, with an increase equal to the national average from 1959 to 1969.

Table 35

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE PRIMARY METALS INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN PRIMARY METALS INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-69 |
| PENNSYLVANIA..... | 1 | $4,020 | 57 |
| OHIO..... | 2 | 3,297 | 53 |
| INDIANA..... | 3 | 1,811 | 64 |
| MICHIGAN..... | 4 | 1,785 | 73 |
| ILLINOIS..... | 5 | 1,784 | 71 |
| NEW YORK..... | 6 | 1,086 | 33 |
| CALIFORNIA..... | 7 | 1,050 | 87 |
| ALABAMA..... | 8 | 787 | 72 |
| TEXAS..... | 9 | 734 | 110 |
| NEW JERSEY..... | 10 | 624 | 60 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Employment levels in the primary metals industry in the United States, East North Central States, Wisconsin, and the Region are shown in Table 36. Employment in this industry in the United States and the East North Central States declined in the 1950 to 1960 decade, and increased from 1960 to 1970. State and regional primary metals industry employment grew during the two decades, with the Region growing at a slightly faster pace than the state. Regional employment in the primary metals industry accounted for about 75 percent of total state employment in this industry in 1970, compared to 67 percent in 1950. The regional share of total employment in the United States in the primary metals industry increased from 1.3 percent in 1950 to 1.7 percent in 1970.

Average hourly earnings in this industry in the United States increased by 139 percent from 1950 to 1970. As shown in Table 37, the increase was less from 1960 to 1970 than from 1950 to 1960. State and regional data for 1960 to 1970 indicate a greater increase in average hourly earnings than the national average for this industry. In the Region, average hourly earnings in 1970 were approximately $4.16, an increase of more than 50 percent from the 1960 level of $2.75.

As shown in Table 38, the production level in 1970 in the primary metals industry rose only 40 percent above the 1950 level. This accounts for the slow growth nationally in employment. As indicated earlier, the national industry levels are heavily influenced by the steel industry, which is characterized by wide swings in production and employment.

Table 36

EMPLOYMENT LEVELS IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN PRIMARY METALS INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 1,247.0 | 1,231.2 | 1,315.0 | - 1.3 | 6.8 | 5.4 |
| EAST NORTH CENTRAL STATES | 497.1 | 480.8 | 526.9 | - 3.3 | 9.6 | 6.0 |
| WISCONSIN | 24.2 | 24.6 | 30.0 | 1.6 | 22.0 | 24.0 |
| SOUTHEASTERN WISCONSIN REGION | 16.3 | 20.2 | 22.5 | 23.9 | 11.4 | 38.0 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 1.3 | 1.6 | 1.7 | 0.3 | 0.1 | 0.4 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 67.4 | 82.1 | 75.0 | 14.7 | - 7.1 | 7.6 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table 37

AVERAGE HOURLY EARNINGS IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN PRIMARY METALS INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | $1.65 | $2.81 | $3.94 | 70.3 | 40.2 | 138.8 |
| WISCONSIN | NA° | 2.63 | 3.93 | -- | 49.4 | -- |
| SOUTHEASTERN WISCONSIN REGION | NA° | 2.75 | 4.16 | -- | 51.3 | -- |

°AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table 38

INDEX OF INDUSTRIAL PRODUCTION IN THE PRIMARY METALS INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN PRIMARY METALS INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 75.5 | 76.2 | 106.9 | 0.9 | 40.3 | 41.6 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

In summary, this industry has shown growth potential over the past 20 years in the Region. Employment growth has been slow but relatively steady. Nationally, this industry, which is heavily influenced by basic steel production, has not changed greatly since 1950. Employment is up only slightly, the industry has not decentralized from the traditional steel belt in the last decade, and production has increased less than in the machinery and equipment industries. Average hourly earnings are up significantly from 1950 but are slowing in their rate of increase.

## Fabricated Metals Industry

The fabricated metals industry was identified as a subdominant industrial activity in the Region in 1970. Approximately 24,600 persons were employed in this industry in southeastern Wisconsin, representing just over 3 percent of total regional employment. In 1960, this industry represented 3 percent of regional employment, employing about 18,500 persons. The fabricated metals industry nationally employs about 1,400,000 persons, which is about 2 percent of total U. S. employment and 7 percent of total U. S. manufacturing employment.

The major activities within this industry are the production of metal cans, cutlery, plumbing and heating equipment, structural metal products, screw machine products, metal stampings, and metal wire products. As shown in Table 39, the distribution of employment in these activities in the Region closely parallels that of the United States. There is, however, some concentration in the production of fabricated sheet metal, metal stampings, and metal cans in the regional industry.

The largest employers in this industry in the Region include American Can Company; Continental Can Company, Inc.; The West Bend Company, A Division of Dart Industries Inc.; Regal Ware, Inc.; Master Lock Company; and Inland-Ryerson Construction Products Company. Table 40 lists the major employers in this industry in the Region which employ approximately 300 or more persons. The 21 companies which are listed account for about 60 percent of the total industry employment in the Region.

As shown in Table 41 and Figure 9, the fabricated metals industry is concentrated in the East North Central and Mid-Atlantic States. In 1969, these regions accounted for over 60 percent of the value added by manufacture for this industry in the United States. The general locational trend in this industry does not, however, parallel that of the other metal-based industries in the United States. Growth in value added in the East North Central States decreased from 1949 to 1959. This trend was reversed from 1959 to 1969, when the share of value added in these states increased by more than 2 percent, resulting in an increase of the area's share in this industry. The Mid-Atlantic and New England States have generally experienced

Table 39

DISTRIBUTION OF EMPLOYMENT IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN FABRICATED METALS INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 341 | METAL CANS..... | 4.5 | 10.06 |
| 342 | CUTLERY..... | 11.6 | 9.11 |
| 343 | PLUMBING AND HEATING.. | 4.8 | 6.2 |
| 344 | FABRICATED SHEET METAL | 28.9 | 25.9 |
| 345 | SCREW MACHINE..... | 8.6 | 6.8 |
| 346 | METAL STAMPINGS..... | 16.8 | 24.9 |
| 347 | METAL SERVICES..... | 6.0 | 5.4 |
| 348 | WIRE PRODUCTS..... | 4.5 | 2.23 |
| 349 | MISCELLANEOUS..... | 14.1 | 9.3 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Table 40

MAJOR EMPLOYERS IN THE FABRICATED METALS INDUSTRY IN THE REGION: 1970

| COMPANY NAME | |
|---|---|
| AMERICAN CAN COMPANY | MODINE MANUFACTURING COMPANY |
| AQUA-CHEM, INC. | PENN CONTROLS, INC., BASO PRODUCTS DIVISION |
| CARNATION COMPANY | PRESSED STEEL TANK CO. |
| CLEAVER BROOKS COMPANY | REGAL WARE, INC. |
| CONTINENTAL CAN COMPANY, INC. | SNAP-ON TOOLS CORPORATION |
| FROST CO. | STOLPER INDUSTRIES, INC. |
| GEUDER, PAESCHKE & FREY CO. | E. R. WAGNER MANUFACTURING COMPANY |
| INLAND-RYERSON CONSTRUCTION PRODUCTS COMPANY | THE WEST BEND COMPANY, A DIVISION OF DART INDUSTRIES INC. |
| LADISH CO. | WESTERN INDUSTRIES, INC. |
| MASTER LOCK COMPANY | WROUGHT WASHER MFG. COMPANY |
| MILWAUKEE VALVE COMPANY, INC. | |

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973; AND SEWRPC.

Table 41

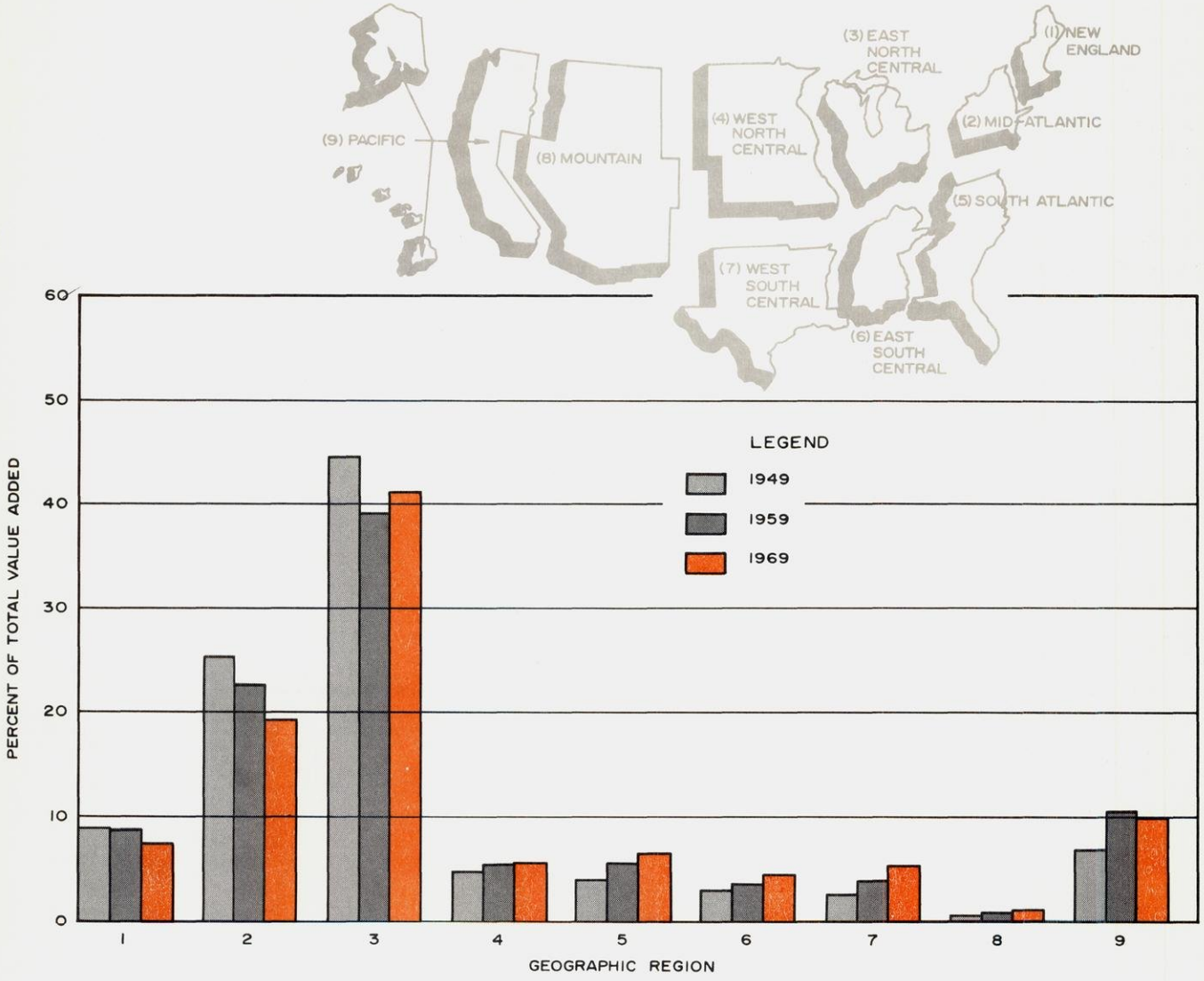
CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE FABRICATED METALS INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FABRICATED METALS INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PERCENT CHANGE | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 423 | $ 902 | $ 1,523 | 260.0 | 8.8 | 8.6 | 7.3 | -0.2 | -1.3 |
| MID-ATLANTIC..... | 1,217 | 2,365 | 3,962 | 225.5 | 25.3 | 22.7 | 19.1 | -2.6 | -3.6 |
| EAST NORTH CENTRAL.. | 2,168 | 4,074 | 8,561 | 294.9 | 44.8 | 39.2 | 41.3 | -5.6 | 2.1 |
| WEST NORTH CENTRAL.. | 225 | 563 | 1,144 | 408.4 | 4.6 | 5.4 | 5.5 | 0.8 | 0.1 |
| SOUTH ATLANTIC..... | 193 | 571 | 1,318 | 582.9 | 3.9 | 5.5 | 6.4 | 1.6 | 0.9 |
| EAST SOUTH CENTRAL.. | 133 | 350 | 903 | 578.9 | 2.7 | 3.4 | 4.4 | 0.7 | 1.0 |
| WEST SOUTH CENTRAL.. | 123 | 408 | 1,083 | 780.5 | 2.5 | 3.9 | 5.2 | 1.4 | 1.3 |
| MOUNTAIN..... | 22 | 86 | 212 | 863.6 | 0.5 | 0.8 | 1.0 | 0.3 | 0.2 |
| PACIFIC..... | 332 | 1,096 | 2,033 | 512.3 | 6.9 | 10.5 | 9.8 | 3.6 | -0.7 |
| UNITED STATES..... | $4,836 | $10,415 | $20,739 | 328.8 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Figure 9

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




*Source:* *Annual Survey of Manufactures* and SEWRPC.

slower-than-national-average growth from 1949 to 1969, while the southern and western states have generally experienced faster-than-national-average growth in value added over this period. Thus, while decentralization in this industry has occurred during the last 20 years in favor of the southern and western states, it has not been at the expense of the East North Central States.

Table 42 shows the 10 top ranking states in share of value added in the fabricated metals industry in the United States. As shown in Table 42, the State of Ohio is ranked number one in terms of value added, while the State of Wisconsin is ranked number 10. All of the East North Central States, with the exception of Illinois, more than doubled their value added in the production of fabricated metal products between 1959 and 1969. The remaining six states experienced below-national-average growth in value added during this same period.

Employment levels in the fabricated metals industry nationally, in the East North Central States, Wisconsin, and the Region from 1950 to 1970 are shown in Table 43. As indicated in Table 43, regional employment from 1950 to 1970 increased about 40 percent, which parallels the national rate of increase. In the 10 years from 1960 to 1970, employment levels in the fabricated metals industry in Wisconsin and the Region increased 29 and 34 percent respectively, representing more rapid rates of increase than those of the United States and East North Central States, which were 22 and 17 percent. The regional share of Wisconsin employment in the fabricated metals industry over this 20-year period increased from approximately 49 to 56 percent, while the regional share of U. S. employment remained about 2 percent.

Table 42

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE FABRICATED METALS INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN FABRICATED METALS INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-69 |
| OHIO | 1 | $2,528 | 118 |
| ILLINOIS | 2 | 2,283 | 71 |
| MICHIGAN | 3 | 2,199 | 161 |
| CALIFORNIA | 4 | 1,798 | 86 |
| PENNSYLVANIA | 5 | 1,651 | 63 |
| NEW YORK | 6 | 1,361 | 73 |
| NEW JERSEY | 7 | 951 | 70 |
| INDIANA | 8 | 853 | 118 |
| CONNECTICUT | 9 | 706 | 76 |
| WISCONSIN | 10 | 696 | 102 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Average hourly earnings in this industry nationally increased 132 percent from 1950 to 1970. As shown in Table 44, the 60 percent increase from 1950 to 1960 was greater than the 45 percent increase from 1960 to 1970. Regional average hourly earnings paralleled the national increase of 45 percent from 1960 to 1970, but were at a higher absolute level, $3.68, in 1970, compared to $3.53 nationally. The state average increase was slightly higher than the U. S. and regional averages between 1960 and 1970.

Production levels in the fabricated metals industry nationally are shown in Table 45. Production rose 108 percent from 1950 to 1970, and increased more rapidly during the 1960s than the 1950s.

In summary, employment in this industry in the Region has been increasing significantly in the past decade and parallels the national industry employment trend. The fabricated metals industry, like the other metal-based industries, is concentrated in the East North Central States, which have not lost this concentration in recent years. Production in this industry had an average annual growth rate of 4 percent

Table 43

EMPLOYMENT LEVELS IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN FABRICATED METALS INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 982.0 | 1,135.3 | 1,380.0 | 15.6 | 21.6 | 40.5 |
| EAST NORTH CENTRAL STATES | 430.8 | 447.9 | 524.1 | 4.0 | 17.0 | 21.7 |
| WISCONSIN | 36.0 | 33.8 | 43.7 | - 6.1 | 29.3 | 21.4 |
| SOUTHEASTERN WISCONSIN REGION | 17.6 | 18.4 | 24.6 | 4.5 | 33.7 | 39.8 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 1.8 | 1.6 | 1.8 | - 0.2 | 0.2 | 0.0 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 48.9 | 54.4 | 56.3 | 5.5 | 1.9 | 7.4 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

from 1950 to 1970. Average hourly earnings rose approximately 132 percent from 1950 to 1970, representing an annual average increase of 7 percent. This indicates that wage increases rose at a substantially faster rate nationally than production increases.

Food and Beverage Industry

The food and beverage industry was identified as a subdominant activity in the Region in 1970, accounting for approximately 3 percent of total regional employment. Approximately 19,000 persons were employed in the industry in the Region in 1970, compared to 23,500 persons in 1960 when the industry accounted for 3 percent of total regional employment. Nationally the food and beverage industry employs approximately 1,800,000 persons, and accounts for 2 percent of total U. S. employment and 9 percent of total U. S. manufacturing employment. As shown in Table 46, the major activities in this industry are the manufacture of meat products, dairy products, canned and frozen foods, grain mill products, bakery products, sugar, confectionery, and beverages. The regional industry is concentrated in the manufacture of beverages, especially beer, which accounts for over 40 percent of total regional industry employment.

The largest employers in the Region in the food and beverage industry are the Jos. Schlitz Brewing Company, Miller Brewing Co., Pabst Brewing Company, and Patrick Cudahy Incorporated. Together, these four companies account for almost half of the industry employment. Table 47 includes a list of the companies in the industry in the Region which employ approximately 300 or more persons. These companies account for about 65 percent of total regional food and beverage industry employment.

Figure 10 and Table 48 show the distribution of value added by manufacture for the food and beverage industry among geographic regions of the United States from 1949 to 1969. As shown in Table 48, this industry is concentrated in the populous East North Central and Mid-Atlantic States. The largest single industry concentration in terms of value added is in the East North Central States, which have maintained

Table 44

AVERAGE HOURLY EARNINGS IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN FABRICATED METALS INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | $1.52 | $2.43 | $3.53 | 59.9 | 45.3 | 132.2 |
| WISCONSIN..... | NA° | 2.29 | 3.53 | -- | 54.1 | -- |
| SOUTHEASTERN WISCONSIN REGION. | NA° | 2.53 | 3.68 | -- | 45.5 | -- |

°AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table 45

INDEX OF INDUSTRIAL PRODUCTION IN THE FABRICATED METALS INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN FABRICATED METALS INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES... | 52.5 | 66.7 | 109.4 | 27.0 | 64.0 | 108.4 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 46

DISTRIBUTION OF EMPLOYMENT IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN FOOD AND BEVERAGE INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 201 | MEAT PRODUCTS..... | 18.8 | 17.5 |
| 202 | DAIRY PRODUCTS..... | 14.0 | 11.0 |
| 203 | CANNED AND FROZEN FOODS. | 15.7 | 5.2 |
| 204 | GRAIN MILL PRODUCTS..... | 6.8 | 2.8 |
| 205 | BAKERY..... | 16.0 | 12.4 |
| 206 | SUGAR..... | 1.9 | 0.0 |
| 207 | CONFECTIONERY..... | 5.0 | 4.6 |
| 208 | BEVERAGES..... | 13.3 | 41.5 |
| 209 | MISCELLANEOUS..... | 8.3 | 5.0 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Table 47

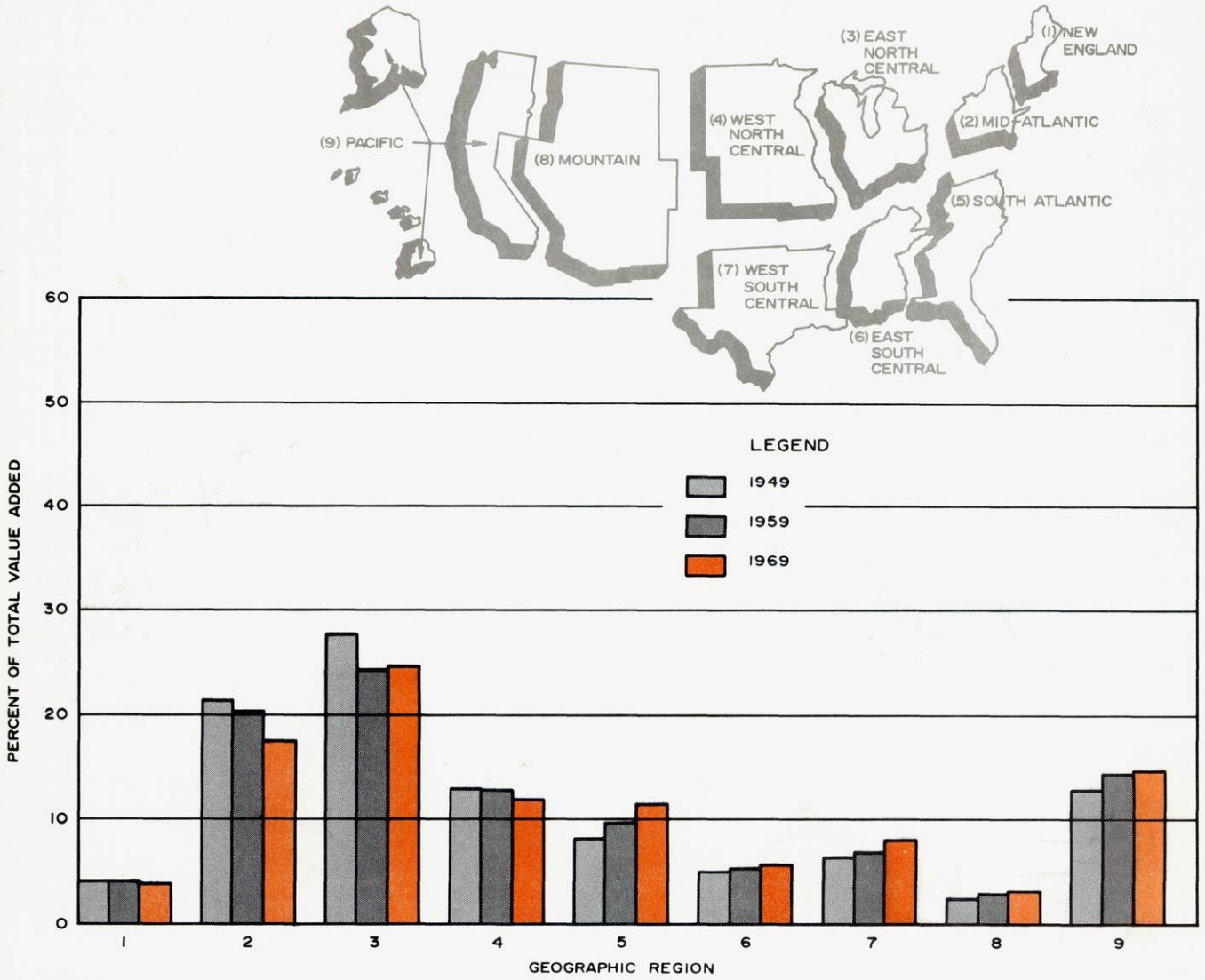
MAJOR EMPLOYERS IN THE FOOD AND BEVERAGE INDUSTRY IN THE REGION: 1970

| COMPANY NAME | |
|---|---|
| BEATRICE FOODS CO. | OSWALD JAEGER BAKING CO. |
| BORDEN, INC.--WISCONSIN MILK AND ICE CREAM REGION | KRAUSE MILLING COMPANY |
| CARNATION COMPANY | MILLER BREWING CO. |
| CONTINENTAL BAKING CO. | THE NESTLE COMPANY, INC. |
| PATRICK CUDAHY INCORPORATED | PABST BREWING COMPANY |
| GRAF'S BEVERAGES, INC. | JOS. SCHLITZ BREWING COMPANY |
| INTERSTATE BAKERIES CORPORATION | UNIVERSAL FOODS CORPORATION |

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973; AND SEWRPC.

Figure 10

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




*Source:* *Annual Survey of Manufactures* and *SEWRPC*.

a dominant share of the value added by manufacture since 1949. In recent years, however, the share has decreased from 28 percent of the market in 1949 to 24 percent in 1969. The share of value added in the Mid-Atlantic States has similarly decreased, dropping from 21 percent in 1949 to 18 percent in 1969. The location of this industry is more closely related to population growth and concentration than are the metal-based industries previously discussed. Consequently, the areas of rapid growth in this industry are the southern and western states, which have also experienced the largest gain in population in recent years.

As shown in Table 49, the State of California ranks first in the share of value added for this industry from 1959 to 1969. The State of Wisconsin ranks eighth in the share of value added during the same period. Except for relatively slow growth in the State of New York and relatively rapid growth in the State of Texas, growth in value added for the 10 top ranking states in this industry has been relatively uniform during the last decade.

Table 48

CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE FOOD AND BEVERAGE INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE FOOD AND BEVERAGE INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PERCENT CHANGE | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND..... | $ 370 | $ 748 | $ 1,096 | 196.2 | 3.9 | 3.9 | 3.6 | 0.0 | -0.3 |
| MID-ATLANTIC..... | 2,008 | 3,807 | 5,221 | 160.0 | 21.3 | 20.3 | 17.5 | -1.0 | -2.8 |
| EAST NORTH CENTRAL.. | 2,621 | 4,555 | 7,307 | 178.8 | 27.8 | 24.3 | 24.5 | -3.5 | 0.2 |
| WEST NORTH CENTRAL.. | 1,217 | 2,403 | 3,548 | 191.5 | 12.9 | 12.8 | 11.8 | -0.1 | -1.0 |
| SOUTH ATLANTIC..... | 758 | 1,815 | 3,410 | 349.8 | 8.0 | 9.7 | 11.4 | 1.7 | 1.7 |
| EAST SOUTH CENTRAL.. | 459 | 958 | 1,690 | 268.2 | 4.9 | 5.1 | 5.6 | 0.2 | 0.5 |
| WEST SOUTH CENTRAL.. | 583 | 1,280 | 2,361 | 305.0 | 6.2 | 6.8 | 7.9 | 0.6 | 1.1 |
| MOUNTAIN..... | 206 | 510 | 902 | 337.9 | 2.2 | 2.7 | 3.0 | 0.5 | 0.3 |
| PACIFIC..... | 1,204 | 2,700 | 4,398 | 265.3 | 12.8 | 14.4 | 14.7 | 1.6 | 0.3 |
| UNITED STATES..... | $9,426 | $18,776 | $29,933 | 217.6 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Employment levels from 1950 to 1970 for the United States, East North Central States, Wisconsin, and the Region are shown in Table 50. In general, national employment in the food and beverage industry has remained relatively unchanged over the period. As shown in Table 50, national employment levels have declined less than 1 percent from 1950 to 1970. Employment levels in the East North Central States, Wisconsin, and the Region, on the other hand, have shown a greater rate of decline. From 1950 to 1970, employment for these three areas was down 14, 10, and 14 percent, respectively. As a result the regional share of total U. S. food and beverage employment dropped from just over 1 to 1 percent.

Table 49

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE FOOD AND BEVERAGE INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN FOOD AND BEVERAGE INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-69 |
| CALIFORNIA..... | 1 | $3,320 | 63 |
| ILLINOIS..... | 2 | 2,845 | 68 |
| NEW YORK..... | 3 | 2,179 | 20 |
| PENNSYLVANIA..... | 4 | 1,734 | 52 |
| OHIO..... | 5 | 1,484 | 57 |
| TEXAS..... | 6 | 1,371 | 84 |
| NEW JERSEY..... | 7 | 1,307 | 55 |
| WISCONSIN..... | 8 | 1,088 | 69 |
| MICHIGAN..... | 9 | 1,079 | 56 |
| IOWA..... | 10 | 911 | 46 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

Table 50

EMPLOYMENT LEVELS IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN FOOD AND BEVERAGE INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | 1,790.0 | 1,790.0 | 1,782.0 | 0.0 | - 0.4 | - 0.4 |
| EAST NORTH CENTRAL STATES..... | 426.9 | 389.5 | 369.1 | -8.8 | - 5.2 | -13.5 |
| WISCONSIN..... | 64.2 | 62.1 | 57.5 | -3.4 | - 7.4 | -10.4 |
| SOUTHEASTERN WISCONSIN REGION. | 21.9 | 23.7 | 18.9 | 8.2 | -20.2 | -13.7 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL..... | 1.2 | 1.3 | 1.0 | 0.1 | - 0.3 | - 0.2 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL..... | 34.1 | 38.2 | 32.9 | 4.1 | - 5.3 | - 1.2 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Average U. S. hourly earnings in the food and beverage industry increased more than 137 percent from 1950 to 1970, with the 1960 to 1970 increase of 50 percent slightly less than the 1950 to 1960 increase of 59 percent. As shown in Table 51, average hourly earnings for the state and Region increased slightly more than the U. S. average between 1960 and 1970, and were at much higher levels. The regional average of $4.20 in 1970 was over 30 percent higher than the U. S. average of $3.16, and almost 20 percent higher than the state average of $3.57.

Table 52 shows production levels in the food and beverage industry in the United States from 1950 to 1970. As shown, output increases between 1960 and 1970 were approximately the same, which is consistent with the stability in employment in this industry. This output level can be attributed to increased automation of processes, modernization of processing facilities, and mergers, particularly in the malt liquor industry.

In summary, this industry in the Region is declining in employment, although nationally employment is stable. The industry is also market oriented with respect to location.

Printing and Publishing Industry

The printing and publishing industry in the Southeastern Wisconsin Region is classified as a subdominant industry accounting for 2 percent of total regional employment. In 1970 approximately 14,900 persons were employed in the industry, compared to 13,800 persons in 1960, which represented 2 percent and just over 2 percent respectively of total regional employment in those years. Nationally, the printing and publishing industry employs approximately 1,100,000 persons, and accounts for 1 percent of total U. S. employment and 6 percent of total U. S. manufacturing employment.

As shown in Table 53, this industry includes activities such as the publishing of newspapers, periodicals, and books; commercial printing; production of business forms and greeting cards; bookbinding; and other printing services. The distribution of employment among these activities in the Region is similar to the distribution in the United States. There is, however, some concentration in the publication of newspapers and in commercial printing and a void in the production of greeting cards.

The largest employers in this industry in the Region include The Journal Company; Western Publishing Company, Inc.; Milprint Inc.; and W. A. Krueger Co. Table 54 lists all companies in this industry in the Region employing approximately 300 or more persons. Together they account for approximately 60 percent of total printing and publishing employment in the Region.

Table 55 and Figure 11 show the distribution of value added by manufacture for the printing and publishing industry among geographic regions of the United States from 1949 to 1969. As shown in Table 55, this industry is concentrated in the Mid-Atlantic and East North Central States, where nearly 60 percent of the industry's value added was concentrated in 1969. Each of these regions has, however, declined in its

Table 51

AVERAGE HOURLY EARNINGS IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN FOOD AND BEVERAGE INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | $1.33 | $2.11 | $3.16 | 58.6 | 49.8 | 137.6 |
| WISCONSIN..... | NA[a] | 2.23 | 3.57 | -- | 60.1 | -- |
| SOUTHEASTERN WISCONSIN REGION.... | NA[a] | 2.67 | 4.20 | -- | 57.3 | -- |

[a]AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table 52

INDEX OF INDUSTRIAL PRODUCTION IN THE FOOD AND BEVERAGE INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN FOOD AND BEVERAGE INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES... | 62.6 | 80.7 | 110.9 | 28.9 | 37.4 | 77.2 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 53

DISTRIBUTION OF EMPLOYMENT IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES AND THE REGION: 1967

| SIC CODE NUMBER | ACTIVITY | PERCENT DISTRIBUTION OF EMPLOYMENT IN PRINTING AND PUBLISHING INDUSTRY | |
|---|---|---|---|
| | | UNITED STATES | REGION |
| 271 | NEWSPAPERS | 32.6 | 30.4 |
| 272 | PERIODICALS | 7.7 | 3.4 |
| 273 | BOOKS | 9.3 | 16.5 |
| 274 | MISCELLANEOUS PUBLISHING | 3.0 | 1.7 |
| 275 | COMMERCIAL PRINTING | 32.1 | 39.8 |
| 276 | BUSINESS FORMS | 3.3 | 1.5 |
| 277 | GREETING CARD PUBLISHING | 2.7 | 0.0 |
| 278 | BLANKBOOKS AND BOOKBINDING | 5.2 | 4.7 |
| 279 | PRINTING SERVICES | 4.1 | 2.1 |

SOURCE- 1967 CENSUS OF MANUFACTURES; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS; AND SEWRPC.

Table 54

MAJOR EMPLOYERS IN THE PRINTING AND PUBLISHING INDUSTRY IN THE REGION: 1970

| COMPANY NAME | |
|---|---|
| COLUMBIAN INDUSTRIES, INC. | MUELLER COLOR PLATE COMPANY |
| THE JOURNAL COMPANY | TEMPO COMMUNICATIONS INC., (THE GUGLER LITHOGRAPHIC DIVISION) |
| JOURNAL-TIMES COMPANY | WESTERN PUBLISHING COMPANY, INC. |
| W. A. KRUEGER CO. | WISCONSIN CUNEO PRESS, INC. |
| MILPRINT INC. | |

SOURCE- CLASSIFIED DIRECTORY OF WISCONSIN MANUFACTURERS, 1973; AND SEWRPC.

Table 55

CHANGES IN THE AMOUNT AND DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969

| GEOGRAPHIC REGION | VALUE ADDED BY MANUFACTURE IN THE PRINTING AND PUBLISHING INDUSTRY (MILLIONS OF DOLLARS) | | | | PERCENT DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRINTING AND PUBLISHING INDUSTRY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PERCENT CHANGE | | | | POINT CHANGE | |
| | 1949 | 1959 | 1969 | 1949-69 | 1949 | 1959 | 1969 | 1949-59 | 1959-69 |
| NEW ENGLAND | $ 294 | $ 553 | $ 1,081 | 267.7 | 6.3 | 6.4 | 6.4 | 0.1 | 0.0 |
| MID-ATLANTIC | 1,669 | 3,067 | 5,538 | 331.8 | 35.8 | 35.2 | 32.9 | -0.6 | -2.3 |
| EAST NORTH CENTRAL | 1,370 | 2,212 | 4,114 | 200.3 | 29.4 | 25.4 | 24.5 | -4.0 | -0.9 |
| WEST NORTH CENTRAL | 380 | 639 | 1,324 | 248.4 | 8.1 | 7.3 | 7.9 | -0.8 | 0.6 |
| SOUTH ATLANTIC | 265 | 663 | 1,472 | 455.5 | 5.7 | 7.6 | 8.8 | 1.9 | 1.2 |
| EAST SOUTH CENTRAL | 109 | 236 | 556 | 410.1 | 2.3 | 2.7 | 3.3 | 0.4 | 0.6 |
| WEST SOUTH CENTRAL | 174 | 354 | 753 | 332.8 | 3.7 | 4.1 | 4.5 | 0.4 | 0.4 |
| MOUNTAIN | 60 | 162 | 338 | 463.3 | 1.3 | 1.9 | 2.1 | 0.6 | 0.2 |
| PACIFIC | 345 | 816 | 1,619 | 369.3 | 7.4 | 9.4 | 9.6 | 2.0 | 0.2 |
| UNITED STATES | $4,666 | $ 8,702 | $16,795 | 259.9 | 100.0 | 100.0 | 100.0 | -- | -- |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

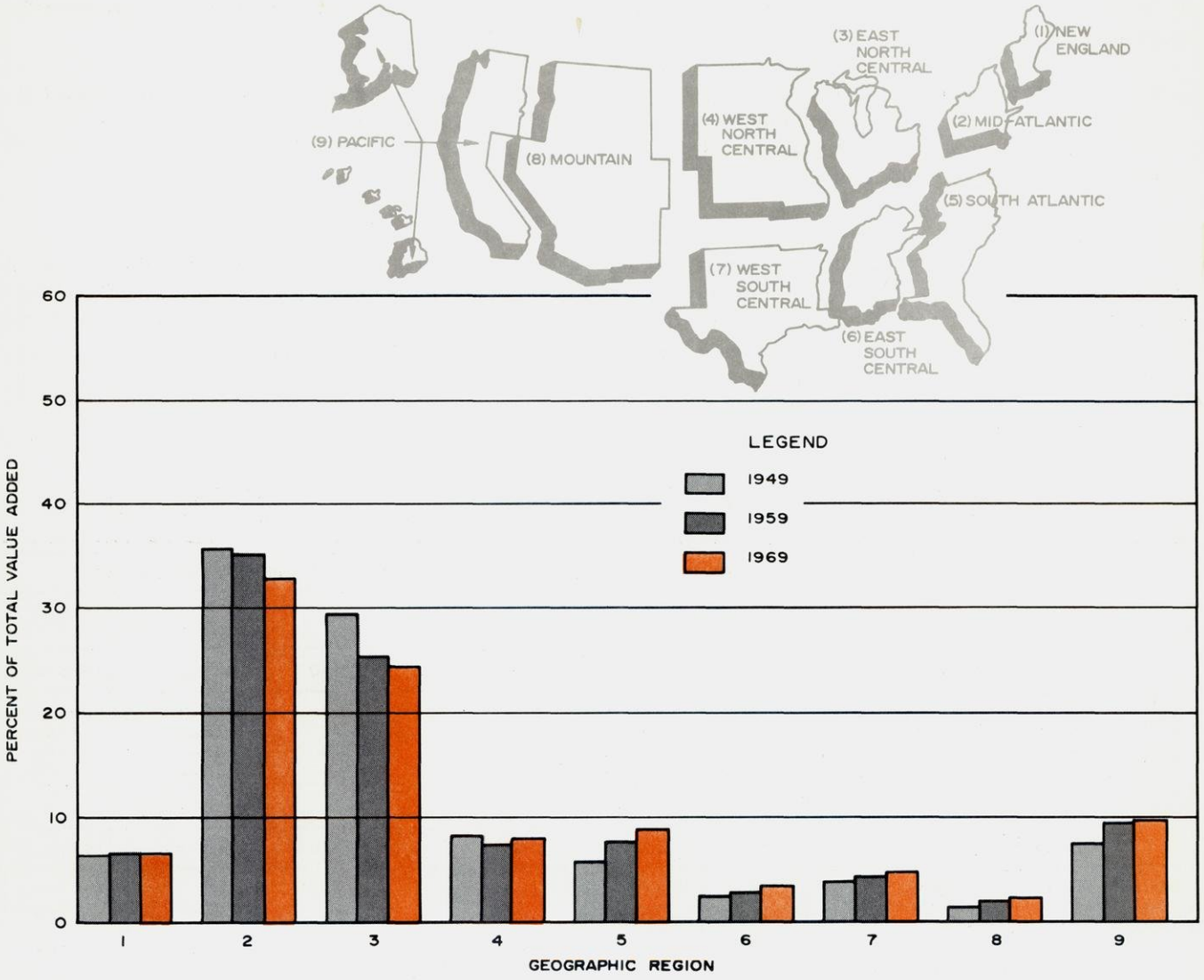
share of value added since 1949, with the largest relative decline, 5 percent, occurring in the East North Central States from 1949 to 1969. The Mid-Atlantic States have also lost in their share of value added during this period, with a decline of 3 percent. The South Atlantic and Pacific States, on the other hand, have increased their share of value added for this industry during the 1949 to 1969 period. The South Atlantic States experienced gains of 3 percent and the Pacific States, 2 percent.

Table 56 shows the relative rank of the 10 top states in the share of value added by manufacture for this industry in 1969. The State of New York ranks number one in the share of value added by manufacture. The State of Illinois ranks second in its share of value added, and registered the largest relative increase in value added from 1959 to 1969. The State of Wisconsin ranks eleventh in the nation with a growth rate equal to that of the nation. Three other states among the top 10—Indiana, Texas, and California—experienced growth rates in value added which were greater than the national average.

Employment levels in the printing and publishing industry in the United States, East North Central States, Wisconsin, and the Region from 1950 to 1970 are shown in Table 57. Employment levels in the United States, East North Central States, and Wisconsin increased steadily from 1950 to 1970, with increases in the East North Central States and Wisconsin slightly behind those of the United States and Region.

Figure 11

DISTRIBUTION OF VALUE ADDED BY MANUFACTURE IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949, 1959, AND 1969




Source: *Annual Survey of Manufactures* and SEWRPC.

Regional employment increased rapidly from 1950 to 1960, but only slightly from 1960 to 1970. Overall, the Region has not lost in its share of total employment in this industry in the United States and in Wisconsin, and currently accounts for 1 percent of U. S. employment and 59 percent of Wisconsin employment in this industry.

Average hourly earnings in this industry nationally have increased by 114 percent from 1950 to 1970. The national increases from 1950 to 1960 and from 1960 to 1970 were about 46 percent each. Wisconsin and regional increases from 1960 to 1970 were slightly ahead of the U. S. average,

Table 56

TEN TOP RANKING STATES IN VALUE ADDED BY MANUFACTURE IN THE PRINTING AND PUBLISHING INDUSTRY: 1969

| STATE | RANK | VALUE ADDED BY MANUFACTURE IN PRINTING AND PUBLISHING INDUSTRY | |
|---|---|---|---|
| | | AMOUNT (MILLIONS OF DOLLARS) | PERCENT CHANGE 1959-69 |
| NEW YORK | 1 | $3,984 | 83 |
| ILLINOIS | 2 | 2,749 | 179 |
| CALIFORNIA | 3 | 1,359 | 103 |
| OHIO | 4 | 982 | 70 |
| PENNSYLVANIA | 5 | 948 | 64 |
| MASSACHUSETTS | 6 | 638 | 90 |
| NEW JERSEY | 7 | 606 | 94 |
| MICHIGAN | 8 | 547 | 94 |
| TEXAS | 9 | 464 | 105 |
| INDIANA | 10 | 397 | 126 |

SOURCE- ANNUAL SURVEY OF MANUFACTURES AND SEWRPC.

and as shown in Table 58, were at higher absolute levels in 1970. Regional average hourly earnings were approximately $4.24 in 1970, or 8 percent above the U. S. average of $3.92.

Production levels in printing and publishing in the United States from 1950 to 1970 are shown in Table 59. As shown, production has been increasing during this period, resulting in the employment increases discussed previously.

In summary, the printing and publishing industry in the Region is growing but at a slower rate. Nationally, employment, earnings, and production levels have been consistently increasing at steady rates. Except for some shifts from the Mid-Atlantic to the South Atlantic States, the industry has also been very stable with respect to general location throughout the United States.

Retail Trade Industry

Retail trade is a dominant industry in the Southeastern Wisconsin Region. As shown in Table 60, there were approximately 11,100,000 persons employed in this industry in the United States in 1970, which represented 16 percent of total U. S. employment. This represents an increase over the 1950 and 1960 levels, when employment in this industry represented 15 and nearly 16 percent respectively of total U. S. employment.

Table 57

EMPLOYMENT LEVELS IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES, EAST NORTH CENTRAL STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE PRINTING AND PUBLISHING INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 748.0 | 911.3 | 1,107.0 | 21.8 | 21.5 | 48.0 |
| EAST NORTH CENTRAL STATES | 203.2 | 231.8 | 275.1 | 14.1 | 18.7 | 35.4 |
| WISCONSIN | 18.5 | 21.8 | 25.3 | 17.8 | 16.1 | 36.8 |
| SOUTHEASTERN WISCONSIN REGION | 9.9 | 14.3 | 14.9 | 44.4 | 4.2 | 50.5 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 1.3 | 1.6 | 1.3 | 0.3 | - 0.3 | 0.0 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 53.5 | 65.6 | 58.9 | 12.1 | - 6.7 | 5.4 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table 58

AVERAGE HOURLY EARNINGS IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | AVERAGE HOURLY EARNINGS IN PRINTING AND PUBLISHING INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | $1.83 | $2.68 | $3.92 | 46.4 | 46.3 | 114.2 |
| WISCONSIN | NA[a] | 2.67 | 4.06 | -- | 52.1 | -- |
| SOUTHEASTERN WISCONSIN REGION | NA[a] | 2.76 | 4.24 | -- | 53.6 | -- |

[a]AVERAGE HOURLY EARNINGS FOR WISCONSIN AND THE REGION IN 1950 ARE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table 59

INDEX OF INDUSTRIAL PRODUCTION IN THE PRINTING AND PUBLISHING INDUSTRY IN THE UNITED STATES: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | INDUSTRIAL PRODUCTION INDEX IN PRINTING AND PUBLISHING INDUSTRY (1967=100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 53.8 | 74.9 | 104.1 | 39.2 | 39.0 | 93.5 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE BOARD AND SEWRPC.

Table 60

EMPLOYMENT LEVELS IN THE RETAIL TRADE INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE RETAIL TRADE INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 6,868.0 | 8,388.0 | 11,100.0 | 22.1 | 32.3 | 61.6 |
| WISCONSIN | 161.9 | 190.2 | 262.8 | 17.5 | 38.2 | 62.3 |
| SOUTHEASTERN WISCONSIN REGION | 74.0 | 84.6 | 111.2 | 14.3 | 31.4 | 50.3 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 1.1 | 1.0 | 1.0 | -0.1 | 0.0 | -0.1 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 45.7 | 44.5 | 42.3 | -1.2 | -2.2 | -3.4 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

As also shown in Table 60, regional retail trade employment has generally paralleled overall growth in U. S. and Wisconsin retail trade employment. Increases in regional retail trade employment from 1950 to 1970, however, have been slightly below those of the nation and the state, with the state employment level increasing at a faster rate than that of the Region and the nation. The Region has accounted for about 1 percent of the total U. S. retail employment since 1950, indicating the relative stability of this industry in the Region.

Tables 61 and 62 show the number of retail sales establishments and the volume of retail sales in the Region, Wisconsin, and the United States.

Table 61

NUMBER OF RETAIL SALES ESTABLISHMENTS IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1954, 1958, 1963, AND 1967

| GEOGRAPHIC AREA | RETAIL SALES ESTABLISHMENTS | | | | |
|---|---|---|---|---|---|
| | NUMBER (IN THOUSANDS) | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| UNITED STATES | 1,721.7 | 1,788.3 | 1,707.9 | 1,763.3 | 2.4 |
| WISCONSIN | 47.9 | 47.9 | 44.3 | 45.1 | -5.8 |
| SOUTHEASTERN WISCONSIN REGION | 15.8 | 15.8 | 14.3 | 14.4 | -8.9 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

Table 62

RETAIL SALES VOLUME IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1954, 1958, 1963, AND 1967

| GEOGRAPHIC AREA | RETAIL SALES VOLUME | | | | |
|---|---|---|---|---|---|
| | AMOUNT (MILLIONS OF DOLLARS) | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| UNITED STATES | $ 169,968 | $ 199,646 | $ 244,202 | $ 310,214 | 82.5 |
| WISCONSIN | 3,924 | 4,455 | 5,185 | 6,634 | 69.1 |
| SOUTHEASTERN WISCONSIN REGION | 1,588 | 1,825 | 2,161 | 2,679 | 68.7 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

As indicated in Table 61, the actual number of establishments has been declining faster in the Region and state than nationally. The decline in the Region from 1954 to 1967 was 9 percent, compared to a state decline of 6 percent and a national increase of 2 percent. While the number of retail sales establishments in the United States increased in 1958, the number of such establishments in the state and Region remained the same. In 1963 the number decreased in all three areas, increasing again slightly in 1967. This reflects the general trend toward larger retail outlets and the elimination of smaller, less profitable operations.

As shown in Table 62, retail sales from 1954 to 1967 increased faster in the United States and the State of Wisconsin than in the Region, reflecting the overall slowdown in economic growth in the Region in the 1960s compared to that in the United States and Wisconsin.

Retail sales nationally and regionally have increased at a slower rate than income. As shown in Table 7, U. S. and regional total income increased 92 percent and 73 percent respectively from 1960 to 1970, compared to retail sales increases of 58 and 46 percent respectively. This reflects the trend toward the spending of more discretionary income on services rather than on products from retail outlets, with medical, educational, and recreational services attracting more and more dollars each year. These trends are forecasted to continue into the 1970s.

Retail trade sales by county within the Region from 1954 to 1967 are shown in Table 63. Ozaukee, Racine, and Waukesha Counties have shown the most rapid rates of growth, with a 200 percent increase in Waukesha County from 1954 to 1967. This reflects the development of large shopping centers such as Brookfield Square in the suburban areas of the Region. With the exception of Ozaukee County, all the counties as well as the Region as a whole had greater increases in retail sales in the 1960s than in the 1950s.

In summary, the regional retail trade industry has grown in terms of employment at levels slightly below the national and state average rates. Faster-than-national-average decline in the number of establishments and a decreasing rate of increase in retail sales also characterize this industry in the Region.

Table 63

RETAIL SALES VOLUME IN THE REGION BY COUNTY: 1954, 1958, 1963, AND 1967

| COUNTY | RETAIL SALES VOLUME | | | | |
|---|---|---|---|---|---|
| | AMOUNT (MILLIONS OF DOLLARS) | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| KENOSHA | $ 88 | $ 98 | $ 131 | $ 152 | 72.7 |
| MILWAUKEE | 1,147 | 1,292 | 1,474 | 1,759 | 53.4 |
| OZAUKEE | 28 | 37 | 48 | 61 | 117.8 |
| RACINE | 130 | 160 | 187 | 242 | 86.2 |
| WALWORTH | 59 | 65 | 84 | 102 | 72.9 |
| WASHINGTON | 39 | 43 | 52 | 72 | 84.6 |
| WAUKESHA | 97 | 130 | 185 | 291 | 200.0 |
| REGION TOTAL | $1,588 | $1,825 | $2,161 | $2,679 | 68.7 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

Wholesale Trade Industry

Wholesale trade is a dominant industry in the Region. In 1970, approximately 32,000 persons, or 4 percent of the total number of persons employed in the Region, were employed in this activity. In 1960, wholesale trade had only a subdominant status, accounting for less than 4 percent of total regional employment. This industry group includes establishments selling merchandise to retailers; industrial, commercial, and institutional users; and persons acting as agents in the buying and selling of merchandise to these markets.

As shown in Table 64, wholesale trade employment increased 23 percent in the Region between 1960 and 1970, compared with an increase of 14 percent between 1950 and 1960. Nationally and statewide the employment increases in this activity were slightly greater from 1960 to 1970 than from 1950 to 1960. The significant employment increases in the Region and the state reflect the establishment of major distribution facilities in the Region and the state.

Tables 65 and 66 further illustrate the growth of this industry in the Region. As shown in Table 65, wholesale industry growth in the Region parallels that which occurred nationally. Wholesale sales rose 96 percent in the United States and 111 percent in the Region from 1954 to 1967, and as shown in Table 66, the number of wholesale establishments increased 24 percent nationally and 22 percent in the Region during the same period.

Table 64

EMPLOYMENT LEVELS IN THE WHOLESALE TRADE INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE WHOLESALE TRADE INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | 2,518.0 | 3,004.0 | 3,824.0 | 19.3 | 22.3 | 51.9 |
| WISCONSIN..... | 45.7 | 53.7 | 68.6 | 17.5 | 27.7 | 50.1 |
| SOUTHEASTERN WISCONSIN REGION..... | 22.8 | 26.0 | 32.0 | 14.0 | 23.1 | 40.4 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL.. | 0.9 | 0.9 | 0.8 | 0.0 | -0.1 | -0.1 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL..... | 49.9 | 48.4 | 46.6 | -1.5 | -1.8 | -3.3 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table 65

WHOLESALE SALES VOLUME IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1954, 1958, 1963, AND 1967

| GEOGRAPHIC AREA | WHOLESALE SALES VOLUME | | | | |
|---|---|---|---|---|---|
| | AMOUNT (MILLIONS OF DOLLARS) | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| UNITED STATES... | $ 234,650 | $ 285,727 | $ 358,386 | $ 459,476 | 95.8 |
| WISCONSIN..... | 3,569 | 4,536 | 5,502 | 7,300 | 104.5 |
| SOUTHEASTERN WISCONSIN REGION..... | 2,022 | 2,687 | 3,142 | 4,263 | 110.8 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

Table 66

NUMBER OF WHOLESALE SALES ESTABLISHMENTS IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1954, 1958, 1963, AND 1967

| GEOGRAPHIC AREA | WHOLESALE SALES ESTABLISHMENTS | | | | |
|---|---|---|---|---|---|
| | NUMBER | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| UNITED STATES... | 250,322 | 287,043 | 308,177 | 311,464 | 24.4 |
| WISCONSIN..... | 5,609 | 6,323 | 6,740 | 6,627 | 18.1 |
| SOUTHEASTERN WISCONSIN REGION..... | 2,168 | 2,522 | 2,733 | 2,643 | 21.9 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

Table 67 shows wholesale sales volume by county in the Region between 1954 and 1967. Within the Region, Waukesha, Ozaukee, and Washington Counties were the fastest growing counties in terms of the dollar volume of wholesale sales. Waukesha had particularly significant growth, with wholesale sales increasing sevenfold between 1954 and 1967.

In general, the wholesale trade industry has been a growth industry in the Region paralleling similar growth in the nation, with the most significant growth occurring in suburban areas.

Medical and Other Professional Services

Medical and other professional services are a rapidly growing dominant activity in the Southeastern Wisconsin Region. In 1960 this group of services accounted for 6 percent of total regional employment, and by 1970 it accounted for 9 percent. In 1970, approximately 70,500 persons in the Region were engaged in this activity, including personnel in hospitals, clinics, dental offices, legal firms, and charitable institutions, as well as architects, engineers, and social workers.

Medical services, which have been one of the fastest growing areas of employment in the United States as well as the Region in the past 20 years, account for approximately 60 percent of the total employment in this activity group.

As shown in Table 68, employment in the Region has increased 82 percent in the past 10 years, compared with a 52 percent increase from 1950 to 1960. The rate of increase in employment in this activity in the Region has been greater than the U. S. average but slightly less than the Wisconsin average. Medical and other professional employment levels in the United States increased 52 percent from 1950 to 1960, and 48 percent from 1960 to 1970. Increases for the State of Wisconsin were 52 percent and 86 percent respectively for these two 10-year periods. With the exception of educational services, this group of services has grown the fastest in the Region during the past 20 years.

Educational Services

The educational services group was identified as a dominant activity in the Region in 1960 and 1970. In 1960 it accounted for 4 percent of total employment, and by 1970, for 7 percent.

The educational services group has been the fastest growing activity in the Southeastern Wisconsin Region during the 1960 to 1970 decade. As shown in Table 69, employment in educational services increased more than 104 percent in the Region between 1960 and 1970. The rate of increase in employment in this industry was greater in the Region than it was nationally or in the state. The U. S. increase from 1960 to

Table 67

WHOLESALE SALES VOLUME IN THE REGION BY COUNTY: 1954, 1958, 1963, AND 1967

| COUNTY | WHOLESALE SALES VOLUME | | | | |
|---|---|---|---|---|---|
| | AMOUNT (THOUSANDS OF DOLLARS) | | | | PERCENT CHANGE |
| | 1954 | 1958 | 1963 | 1967 | 1954-67 |
| KENOSHA | $ 31,726 | $ 53,070 | $ 53,002 | $ 49,380 | 55.6 |
| MILWAUKEE | 1,853,692 | 2,439,132 | 2,813,265 | 3,665,228 | 97.7 |
| OZAUKEE | 4,872 | 10,102 | 20,031 | 24,637 | 405.7 |
| RACINE | 62,336 | 82,763 | 89,217 | 131,787 | 111.4 |
| WALWORTH | 23,893 | 25,478 | 24,059 | 35,312 | 47.8 |
| WASHINGTON | 5,826 | 14,987 | 19,108 | 24,141 | 314.4 |
| WAUKESHA | 39,264 | 61,348 | 123,059 | 332,949 | 748.0 |
| REGION TOTAL | $2,021,609 | $2,686,880 | $3,141,741 | $4,263,434 | 110.9 |

SOURCE- U. S. CENSUS OF BUSINESS, 1954, 1958, 1963, AND 1967; AND SEWRPC.

Table 68

EMPLOYMENT LEVELS IN THE MEDICAL AND OTHER PROFESSIONAL SERVICES GROUP IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE MEDICAL AND OTHER PROFESSIONAL SERVICES GROUP | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 2,747.8 | 4,183.9 | 6,200.0 | 52.3 | 48.2 | 125.6 |
| WISCONSIN | 59.4 | 90.6 | 168.1 | 52.5 | 85.5 | 183.0 |
| SOUTHEASTERN WISCONSIN REGION | 25.4 | 38.7 | 70.5 | 52.4 | 82.2 | 177.6 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 0.9 | 0.9 | 1.1 | 0.0 | 0.2 | 0.2 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 42.8 | 42.7 | 41.9 | -0.1 | -0.8 | -0.9 |

SOURCE- U. S. BUREAU OF THE CENSUS, 1950, 1960, AND 1970 CENSUS OF POPULATION; AND SEWRPC.

Table 69

EMPLOYMENT LEVELS IN THE EDUCATIONAL SERVICES GROUP IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE EDUCATIONAL SERVICES GROUP | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 2,078.7 | 3,393.9 | 6,147.8 | 63.3 | 81.1 | 195.8 |
| WISCONSIN | 48.3 | 72.6 | 143.1 | 50.3 | 97.1 | 196.3 |
| SOUTHEASTERN WISCONSIN REGION | 15.4 | 25.4 | 51.7 | 64.3 | 104.4 | 235.7 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 0.7 | 0.7 | 0.8 | 0.0 | 0.1 | 0.1 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 31.7 | 34.8 | 36.1 | 3.3 | 1.1 | 4.4 |

SOURCE- U. S. BUREAU OF TH CENSUS, 1950, 1960, AND 1970 CENSUS OF POPULATION; AND SEWRPC.

1970 was only 81 percent, while the state increase was 97 percent. During the 1950s the regional increase in this industry was approximately 64 percent, compared to the national increase of 63 percent and the state increase of 50 percent.

As shown in Table 70, expenditures by local governments for public education in the Southeastern Wisconsin Region have also been increasing in recent years. According to the U. S. Census of Governments, expenditures by local governments for public education in the Region increased by 160 percent, and per capita expenditures increased 132 percent, from $62 in 1957 to $144 in 1967. Among the counties in the Region, Walworth County expenditures increased at the fastest rate, followed by Kenosha, Washington, and Waukesha Counties, while Milwaukee County expenditures increased at the slowest rate.

Construction Industry

The construction industry was identified as a dominant employment activity in the Region in 1960, accounting for 4 percent of total regional employment. In 1970, it was reclassified as a subdominant industry since it accounted for only 3 percent of total regional employment. This change in status is the result of a relatively stable employment trend in construction in the Region during the past decade and the cyclical downturn in the economy in 1970.

The construction industry includes the construction of buildings, roadways, bridges, and sewers, as well as the painting, plumbing, electrical, carpentry, plastering, and masonry trades.

As shown in Table 71, employment in the construction industry increased 26 percent in the Region from 1950 to 1960, compared to an 8 percent decrease from 1960 to 1970. Nationally and in the State of Wisconsin, employment in the construction industry has increased in both decades. During the 1960s the

Table 70

EXPENDITURES FOR PUBLIC EDUCATION BY LOCAL GOVERNMENTS IN THE REGION BY COUNTY: 1957 AND 1967

| COUNTY | LOCAL GOVERNMENT EXPENDITURES FOR PUBLIC EDUCATION | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT (1957) | | AMOUNT (1967) | | PERCENT CHANGE (1957-67) | |
| | TOTAL | PER CAPITA | TOTAL | PER CAPITA | TOTAL | PER CAPITA |
| KENOSHA..... | $ 5,371,000 | $58 | $ 17,259,000 | $153 | 221.3 | 163.8 |
| MILWAUKEE..... | 62,636,000 | 64 | 144,206,000 | 137 | 130.2 | 114.1 |
| OZAUKEE..... | 2,244,000 | 66 | 6,613,000 | 133 | 194.7 | 101.5 |
| RACINE..... | 8,927,000 | 68 | 25,289,000 | 156 | 183.3 | 129.4 |
| WALWORTH..... | 2,201,000 | 45 | 12,063,000 | 201 | 448.1 | 346.7 |
| WASHINGTON..... | 2,497,000 | 59 | 7,740,000 | 132 | 210.0 | 123.7 |
| WAUKESHA..... | 10,154,000 | 74 | 30,937,000 | 148 | 204.7 | 100.0 |
| REGION TOTAL | $94,030,000 | $62 | $244,107,000 | $144 | 159.6 | 132.2 |

SOURCE- UNITED STATES CENSUS OF GOVERNMENTS, 1957 AND 1967; AND SEWRPC.

Table 71

EMPLOYMENT LEVELS IN THE CONSTRUCTION INDUSTRY IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT LEVELS IN THE CONSTRUCTION INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | 2,333.0 | 2,885.0 | 3,500.0 | 23.7 | 21.3 | 50.0 |
| WISCONSIN..... | 49.1 | 56.0 | 61.9 | 14.1 | 10.5 | 26.1 |
| SOUTHEASTERN WISCONSIN REGION..... | 20.6 | 26.0 | 24.0 | 26.2 | -7.7 | 16.5 |
| GEOGRAPHIC AREA | YEAR | | | POINT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL.. | 0.9 | 0.9 | 0.7 | 0.0 | -0.2 | -0.2 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL..... | 42.0 | 46.4 | 38.8 | 4.4 | -7.6 | -3.2 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

United States increase was 21 percent, while during the 1950s, employment rose at a slightly faster rate of 24 percent. This trend was also evident in the State of Wisconsin, where employment in this industry rose more rapidly from 1950 to 1960 than from 1960 to 1970, reflecting the higher levels of construction activity in other areas of the state and nation as well as a general slowing of construction activity from 1960 to 1970.

Finance, Insurance, and Real Estate Services

The finance, insurance, and real estate services group is a dominant activity in the regional economy, accounting for 4 percent of total regional employment in 1970. This is a change in economic status since 1960, when it was a subdominant activity representing just under 4 percent of total regional employment.

Table 72 shows the employment levels in this group from 1950 to 1970. As indicated, employment in this industry group in the Region increased by about 24 percent from 1960 to 1970, compared with a growth rate of 16 percent from 1950 to 1960. This industry group grew more slowly in the Region than in the state and nation during both decades, however, with the United States and Wisconsin maintaining higher levels of growth than the Region.

Government Services

Government services were identified as a subdominant economic activity in the Region in 1960 and 1970, accounting for 4 percent of total regional employment in 1970 and 3 percent in 1960.

As shown in Table 73, local, state, and federal levels of government in the Region employed approximately 27,000 persons in 1970, excluding local government medical and educational personnel. Employment in government services in the Region increased 19 percent during the past decade, compared to a 26 percent increase during the 1950s. In the Region, government employment levels parallel those of the state and nation. In the United States, government employment increased 27 percent from 1950 to 1960 and 31 percent from 1960 to 1970. The regional increase in government employment during the past decade occurred at a slightly slower rate than the state average increase, due to rapid growth in the number of jobs in state government.

Supporting this increase in government employment in the Region have been increases in regional property values, property taxes, shared taxes, and aid from the state. As shown in Table 74, real property values

Table 72

EMPLOYMENT LEVELS IN THE FINANCE, INSURANCE, AND REAL ESTATE SERVICES GROUP IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| | EMPLOYMENT LEVELS IN THE FINANCE, INSURANCE, AND REAL ESTATE INDUSTRY | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES..... | 1,919.0 | 2,669.0 | 3,675.0 | 39.1 | 37.7 | 91.5 |
| WISCONSIN..... | 32.9 | 45.2 | 61.1 | 37.4 | 35.2 | 85.7 |
| SOUTHEASTERN WISCONSIN REGION..... | 21.6 | 25.0 | 31.2 | 15.7 | 24.3 | 44.4 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL.. | 1.1 | 0.9 | 0.8 | -0.2 | -0.1 | -0.3 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL..... | 65.6 | 55.3 | 51.1 | -10.3 | -4.2 | -14.5 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

in the Region increased 66 percent from 1960 to 1970. The largest increases in real value were experienced in the mercantile and agriculture categories, which increased 96 and 73 percent respectively, while the residential and manufacturing categories increased in value by 60 and 53 percent respectively. The large relative increase in the mercantile category reflects the regional trend of rapid growth in trade and service activities.

Property taxes, shared taxes, and state aids also increased substantially between 1960 and 1970. As shown in Table 75, property tax collections increased 107 percent; shared taxes, 91 percent; and state aids, 322 percent from 1960 to 1970. Local property taxes remain the major source of revenue used especially for school purposes by local governments in the Region. However, recent legislative changes and proposals indicate a further shift in the tax burden from local sources of revenue to shared taxes and state aids and perhaps to the federal government.

## SUMMARY

The analysis of the dominant and subdominant industries in the Southeastern Wisconsin Region indicates that these 14 industry groups have increased in employment by 19 percent from 1960 to 1970, the same rate of increase that occurred between 1950 and 1960. These increases compare with a 17 percent

Table 73

EMPLOYMENT LEVELS IN THE GOVERNMENT SERVICES GROUP IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| | EMPLOYMENT LEVELS IN THE GOVERNMENT SERVICES GROUP | | | | | |
|---|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | PERCENT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| UNITED STATES | 2,514.5 | 3,202.9 | 4,201.7 | 27.4 | 31.2 | 67.1 |
| WISCONSIN | 40.9 | 51.8 | 64.8 | 26.6 | 25.1 | 58.4 |
| SOUTHEASTERN WISCONSIN REGION | 18.0 | 22.7 | 27.0 | 26.1 | 18.9 | 50.0 |
| | YEAR | | | POINT CHANGE | | |
| GEOGRAPHIC AREA | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| REGION TOTAL AS PERCENT OF UNITED STATES TOTAL | 0.7 | 0.7 | 0.6 | 0.0 | -0.1 | -0.1 |
| REGION TOTAL AS PERCENT OF WISCONSIN TOTAL | 44.0 | 43.8 | 41.7 | -0.2 | -2.1 | -2.3 |

SOURCE- U. S. BUREAU OF THE CENSUS, 1950, 1960, AND 1970 CENSUS OF POPULATION; AND SEWRPC.

Table 74

FULL VALUE PROPERTY TAX BASE BY CATEGORY IN THE REGION: 1940, 1960, AND 1970

| | FULL VALUE PROPERTY TAX BASE | | | | | |
|---|---|---|---|---|---|---|
| | AMOUNT (MILLIONS OF DOLLARS) | | | PERCENT CHANGE | | |
| CATEGORY | 1940 | 1960 | 1970 | 1940-60 | 1960-70 | 1940-70 |
| RESIDENTIAL | $ 920 | $4,900 | $ 7,861 | 432.6 | 60.4 | 754.4 |
| MERCANTILE | 336 | 1,131 | 2,219 | 236.6 | 96.2 | 560.4 |
| MANUFACTURING | 176 | 1,035 | 1,585 | 488.1 | 53.1 | 800.6 |
| AGRICULTURE* | 152 | 361 | 625 | 137.5 | 73.1 | 311.2 |
| TOTAL | $1,584 | $7,427 | $12,290 | 368.9 | 65.5 | 675.9 |

*THIS CATEGORY INCLUDES SWAMPLANDS, WASTELANDS, AND TIMBER.

SOURCE- WISCONSIN DEPARTMENT OF REVENUE, BUREAU OF PROPERTY TAXATION; AND SEWRPC.

Table 75

PROPERTY TAX, SHARED TAX, AND STATE AID REVENUES FOR THE REGION: 1940, 1960, AND 1970

| | TAX AND AID REVENUE | | | | |
|---|---|---|---|---|---|
| | AMOUNT (THOUSANDS OF DOLLARS) | | | PERCENT CHANGE | |
| CATEGORY | 1940 | 1960 | 1970 | 1940-1960 | 1960-1970 |
| PROPERTY TAX | $50,762 | $239,380 | $494,693 | 371.6 | 106.7 |
| SHARED TAX | 8,704 | 62,777 | 119,691 | 621.2 | 90.7 |
| STATE AIDS | 8,735 | 35,424 | 149,417 | 305.5 | 321.8 |
| TOTAL | $68,201 | $337,581 | $763,801 | 395.0 | 126.2 |

SOURCE- WISCONSIN DEPARTMENT OF REVENUE AND SEWRPC.

increase in total employment from 1950 to 1960 and a 14 percent increase from 1960 to 1970, indicating the more rapid employment growth in these industries, especially from 1960 to 1970, than in other smaller industry groups in the Region.

In total, the dominant and subdominant manufacturing industries have shown little, if any, employment growth in the past decade. The shift of manufacturing firms out of the East North Central States is slowing but is still persisting, and is affecting employment growth in the Region. In addition, there is a more recent trend toward faster growth in manufacturing in other areas of Wisconsin, notably the Fox River Valley.

During the 1960s the major manufacturing employers in the Region—the nonelectrical machinery, electrical machinery and equipment, and transportation equipment industries—all reversed their employment trends of the 1950s. A 9 percent decline in nonelectrical machinery industry employment in the 1950s reversed and increased 19 percent in the 1960s, a rapid increase of 115 percent in electrical machinery industry employment from 1950 to 1960 was followed by a 16 percent loss from 1960 to 1970, and a 42 percent employment increase in the transportation equipment industry in the 1950s was followed by a 38 percent decline in the 1960s. Two other manufacturing industry groups in the Region—primary metals and printing and publishing—showed slow employment growth. Their increases from 1960 to 1970 were 11 percent and 4 percent respectively, compared to 1950 and 1960 increases of 24 percent and 44 percent. The food and beverage industry in the Region shows a long-term decline in employment, with a 1960 to 1970 decline of 20 percent. The last industry group, fabricated metals, is the only dominant or subdominant manufacturing activity in the Region with a pattern of growth over the past two decades. Employment increases in the fabricated metals industry averaged 5 percent between 1950 and 1960 and 33 percent between 1960 and 1970.

On the other hand, with the exception of construction, the trade and service activities in the Region have shown accelerated growth in employment in the past decade. Educational services employment has increased at the fastest rate, 104 percent, from 1960 to 1970, followed by medical and other professional services, 52 percent; retail trade, 31 percent; finance, insurance, and real estate services, 25 percent; wholesale trade, 23 percent; and government services, 19 percent. Construction employment was down 8 percent over the 10-year period due primarily to cyclical fluctuations in the economy. Employment increases in these seven service and trade industries have accounted for all of the employment growth in the Region during the past decade.

The employment structure of the Southeastern Wisconsin Region continues to change. As the result of significant productivity advances and competition from other parts of the state and nation, manufacturing employment in the Region remains essentially stable. As a result of significant increases in income in the Region and only slight, if any, productivity advances in trade and service activities, trade service employment in the Region has grown significantly. The continuing shift in the economy from industrial to service orientation is clearly evident in the Southeastern Wisconsin Region. The implications of this shift will be examined in more detail under a separate Commission work effort directed at an update of the SEWRPC regional economic simulation model. This effort will examine in more detail the probable long-term effects of recent changes in the relationship between basic and nonbasic employment.

Chapter IV

# PROJECTIONS AND FORECASTS OF ECONOMIC ACTIVITY

## INTRODUCTION

A major element of this report is the updating and reexamination of the employment projections and forecasts made under the Commission's initial work program and land use-transportation study in the period from 1961 to 1964. In those initial work programs two employment projections were developed, one utilizing a regional economic activity simulation model developed by the Commission and one utilizing more conventional, nonmodel techniques. These two independently prepared projections were then combined to produce a forecast of economic activity levels within the Region to the year 1990.

In general, the simulation model approach took national forecasts of consumer spending, government purchases, and exports and converted them to estimates of industry output and employment in the Region, utilizing national and regional input-output coefficients and mathematical equations which simulated private and public investment decision making. The conventional techniques combined forecasts of national output and employment; dominant and subdominant industry analyses at the national, regional, and state levels; and opinions of regional firms about future growth, problems, and opportunities obtained through personal interviews with the management of those firms, to estimate future levels of employment within the Region.

Those two series of projections and the resulting forecast, as described in SEWRPC Planning Report No. 7, Volume 2, June 1966, are summarized in Table 76. As shown, total regional employment pro-

Table 76

INITIAL LAND USE-TRANSPORTATION STUDY EMPLOYMENT FORECASTS BY SIMULATION MODEL AND CONVENTIONAL TECHNIQUES FOR THE REGION: 1970, 1980, AND 1990

| FORECAST CATEGORY | EMPLOYMENT FORECASTS (THOUSANDS OF EMPLOYEES) | | | | | |
|---|---|---|---|---|---|---|
| | 1970 | | 1980 | | 1990 | |
| | MODEL | CONVENTIONAL | MODEL | CONVENTIONAL | MODEL | CONVENTIONAL |
| AGRICULTURE[a] | 10.6 | 10.6 | 9.1 | 9.1 | 7.9 | 7.9 |
| CONSTRUCTION AND MINING | 38.9 | 32.5 | 43.9 | 35.8 | 49.8 | 39.5 |
| MANUFACTURING | 288.2 | 274.6 | 327.5 | 299.0 | 370.2 | 326.5 |
| FOOD AND RELATED PRODUCTS | 24.8 | 20.3 | 327.9 | 19.3 | 31.3 | 18.3 |
| TEXTILE, APPAREL PRODUCTS | 18.2 | 14.2 | 20.6 | 14.2 | 23.2 | 14.2 |
| PAPER AND WOOD PRODUCTS | 15.7 | 9.9 | 17.8 | 10.2 | 20.0 | 10.7 |
| PRINTING AND PUBLISHING | 17.9 | 18.5 | 20.2 | 20.9 | 22.8 | 23.7 |
| CHEMICAL AND RELATED PRODUCTS | 5.7 | 4.5 | 6.5 | 5.3 | 7.3 | 5.8 |
| PRIMARY METAL PRODUCTS | 22.7 | 20.9 | 25.7 | 22.5 | 29.1 | 24.3 |
| FABRICATED METAL PRODUCTS | 20.0 | 19.2 | 22.7 | 20.2 | 25.8 | 21.3 |
| MACHINERY | 60.4 | 62.4 | 70.4 | 65.6 | 81.1 | 69.0 |
| ELECTRICAL EQUIPMENT | 44.3 | 47.5 | 50.9 | 57.9 | 57.8 | 70.6 |
| TRANSPORTATION EQUIPMENT | 40.3 | 36.9 | 45.5 | 40.8 | 51.2 | 45.0 |
| INSTRUMENTS AND RELATED PRODUCTS | 3.6 | 3.8 | 4.1 | 4.4 | 4.7 | 4.9 |
| MISCELLANEOUS MANUFACTURING PRODUCTS | 14.6 | 16.5 | 15.2 | 17.7 | 15.9 | 18.7 |
| TRADE | 127.4 | 132.7 | 143.8 | 146.6 | 162.1 | 162.0 |
| TRANSPORTATION, COMMUNICATION, AND UTILITIES | 43.8 | 38.4 | 49.5 | 42.5 | 55.9 | 46.0 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 21.5 | 28.7 | 24.3 | 35.9 | 29.4 | 44.8 |
| PRIVATE AND PUBLIC SERVICES | 200.1 | 188.5 | 236.7 | 259.1 | 282.6 | 356.4 |
| TOTAL | 730.5 | 706.0 | 834.8 | 828.0 | 957.9 | 984.0 |

[a]AGRICULTURE EMPLOYMENT WAS NOT FORECAST BY THE MODEL.

SOURCE- SEWRPC.

jections by conventional techniques were slightly higher than the model projections for 1990 but slightly lower for 1970 and 1980. The major difference between the two sets of projections were higher manufacturing, construction, and utilities projections for the model compared to higher service employment projections for the nonmodel approach. This resulted from the fact that productivity assumptions made in the model were lower for manufacturing industries and higher for service industries than nonmodel assumptions. Overall assumptions concerning increases in productivity of approximately 2.5 percent per year were implicit in both sets of projections.

Table 77 compares the model and conventional employment projections for 1970 with estimates of the actual employment levels in the Region in 1970. As shown, both the model and conventional projections are somewhat lower than the actual total employment level with the model forecasts most closely approximating the actual levels. In analyzing the general composition of these total projections, however, it is apparent that high manufacturing, construction, and utilities employment projections were offset by low trade and service employment projections in both approaches. The rapidity with which the regional, as well as national, economy is becoming dominated by trade and service employment—as opposed to basic manufacturing employment—was underestimated in both approaches. Some of the underforecast in manufacturing and construction employment is, of course, due to the general economic downturn in the national economy in the 1970 to 1971 period. Neither the model nor conventional forecasts assumed the ability to predict these short-term business cycles.

If adjustments are allowed for this cyclical movement, it is reasonable to conclude that the conventional projections in the manufacturing and construction industries closely approximate long-term trends. Trade and service employment projections prepared by the conventional methods, however, do not appear to approximate the long-term trends as well, since the employment levels in these industries are less affected by changes in the general business cycles.

Table 77

COMPARISON OF 1970 SIMULATION MODEL AND CONVENTIONAL EMPLOYMENT FORECASTS WITH ACTUAL ESTIMATES OF EMPLOYMENT FOR THE REGION: THOUSANDS OF EMPLOYEES

| FORECAST CATEGORY | MODEL FORECAST 1970 | CONVENTIONAL FORECAST 1970 | ACTUAL 1970 ESTIMATE |
|---|---|---|---|
| AGRICULTURE | 10.6 | 10.6 | 10.6[a] |
| CONSTRUCTION AND MINING | 38.9 | 32.5 | 24.1 |
| MANUFACTURING | 288.2 | 274.6 | 251.0 |
| FOOD AND RELATED PRODUCTS | 24.8 | 20.3 | 18.9 |
| TEXTILE, APPAREL PRODUCTS | 18.2 | 14.2 | 10.5 |
| PAPER AND WOOD PRODUCTS | 15.7 | 9.9 | 7.5 |
| PRINTING AND PUBLISHING | 17.9 | 18.5 | 14.9 |
| CHEMICAL AND RELATED PRODUCTS | 5.7 | 4.5 | 5.7 |
| PRIMARY METAL PRODUCTS | 22.7 | 20.9 | 22.5 |
| FABRICATED METAL PRODUCTS | 20.0 | 19.2 | 24.6 |
| MACHINERY | 60.4 | 62.4 | 68.1 |
| ELECTRICAL EQUIPMENT | 44.3 | 47.5 | 36.5 |
| TRANSPORTATION EQUIPMENT | 40.3 | 36.9 | 22.0 |
| INSTRUMENTS AND RELATED PRODUCTS | 3.6 | 3.8 | 5.1 |
| MISCELLANEOUS MANUFACTURING PRODUCTS | 14.6 | 16.5 | 14.7 |
| TRADE | 127.4 | 132.7 | 143.2 |
| TRANSPORTATION, COMMUNICATION, AND UTILITIES | 43.8 | 38.4 | 35.0 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 21.5 | 28.7 | 31.2 |
| PRIVATE AND PUBLIC SERVICES | 200.1 | 188.5 | 245.6 |
| TOTAL | 730.5 | 706.0 | 739.7 |

[a]THE 1970 U.S. CENSUS OF POPULATION ESTIMATE WAS USED TO BE CONSISTENT WITH THE FORECAST BASE.

SOURCE- WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS AND SEWRPC.

It should be noted that within the manufacturing industry division two industry groups show significant variance from the projected levels: the electrical and transportation equipment manufacturing industries. The conventional projections indicated that employment in these industries would grow significantly over the 25-year projection period, when in fact such employment has declined at least in the short term in the electrical equipment manufacturing industry. This decline has been caused in part by a number of large firms closing operations in the Region and expanding elsewhere. From a recent study by the University of Wisconsin Bureau of Business Research and Service, it appears this is being caused by high operating costs in the Region, particularly per unit labor costs, and some disadvantages with regard to proximity to markets. The decline in the transportation equipment manufacturing industry is largely due to reductions in employment from high early 1960 levels by the largest employer in this industry—American Motors Corporation.

## FORECASTING APPROACH

The forecasting approach which was selected for use in this study is essentially the same approach used by the Commission in its initial work program. That is, projections are made of each of the dominant and subdominant industry groups within the Region, and subsequently a projection is made of the remaining employment total in order to arrive at a total employment projection for the Region.

For each dominant and subdominant industry group, a range of employment was projected for the year 2000. These projected employment ranges were developed from a series of inputs which included:

1. An analysis of historical trends of selected characteristics of each industry group as presented in Chapter III of this report.

2. An extrapolation of the employment trend in each industry group in the Region from 1950 to 1970.

3. A multiple-regression analysis of national, East North Central States, Wisconsin, and Southeastern Wisconsin Region employment in each industry group from 1950 to 1970.

4. A questionnaire survey of 165 manufacturing firms in the Region.

5. Industry outlooks to 1980 as published by the U. S. Department of Commerce.

6. Unpublished forecasts to the year 2000 of U. S. and East North Central States employment by industry group prepared by the National Planning Association.

7. Recent studies of regional firm attitudes published by the Bureau of Business Research of the University of Wisconsin.

8. Work Force Industry Projections to 1980, published cooperatively by State of Wisconsin government agencies in September 1972.

From the range of projections a final forecast was selected with the assistance of the Commission advisory committee structure (see Appendix A). It should be emphasized that the forecasts reflect the use of certain data, certain assumptions, and certain judgments. As new data reveal new trends, revisions will undoubtedly have to be made to the forecasts in order to maintain their usefulness. Further, the forecasts presented do not take into account variations caused by short-term business cycles or any unpredictable catastrophies such as a major war.

## EMPLOYMENT FORECASTS TO 2000

A summary of the regional employment projections for the year 2000 is shown in Table 78. As indicated, employment in the Region in 2000 is projected to range from approximately 994,500 to 1,101,400 persons. Assuming the middle of this range to be the most likely level, employment would be forecast to approximate 1,048,000 in that year.

Table 78

EMPLOYMENT PROJECTIONS FOR THE REGION BY INDUSTRY GROUP
FOR THE YEAR 2000: THOUSANDS OF EMPLOYEES

| INDUSTRY GROUP | 1970 ESTIMATE | ESTIMATED ANNUAL GROWTH RATES | PROJECTIONS FOR 2000 | | |
|---|---|---|---|---|---|
| | | | LOW | MEDIUM | HIGH |
| DOMINANT | | | | | |
| NONELECTRICAL MACHINERY | 68.1 | 3/4 TO 1 1/4 | 85.1 | 91.9 | 98.7 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 36.5 | 1/4 TO 3/4 | 39.6 | 42.6 | 45.6 |
| RETAIL TRADE | 111.2 | 1 1/8 TO 1 1/4 | 155.4 | 158.2 | 161.0 |
| MEDICAL AND OTHER PROFESSIONAL SERVICES | 70.5 | 2 TO 2 1/2 | 127.6 | 137.8 | 148.0 |
| EDUCATIONAL SERVICES | 51.7 | 2 1/2 TO 3 | 108.6 | 117.7 | 126.8 |
| WHOLESALE TRADE | 32.0 | 1 1/4 TO 1 1/2 | 46.4 | 48.2 | 49.9 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 31.2 | 1 TO 1 1/2 | 43.9 | 47.2 | 50.4 |
| SUBTOTAL | 401.2 | -- | 606.6 | 643.6 | 680.4 |
| SUBDOMINANT | | | | | |
| FABRICATED METALS | 24.6 | 1 1/2 TO 2 | 38.4 | 41.4 | 44.5 |
| PRIMARY METALS | 22.5 | 1 TO 1 1/2 | 29.7 | 32.4 | 35.1 |
| TRANSPORTATION EQUIPMENT | 22.0 | 1/2 TO 1 | 25.5 | 27.6 | 29.7 |
| FOOD AND BEVERAGE | 18.9 | -1/2 TO 0 | 16.3 | 17.6 | 18.9 |
| PRINTING AND PUBLISHING | 14.9 | 1 1/4 TO 1 3/4 | 21.6 | 23.3 | 25.0 |
| GOVERNMENT SERVICES | 27.0 | 1 1/2 TO 2 | 42.1 | 45.5 | 48.9 |
| CONSTRUCTION | 24.0 | 1/2 TO 1 | 27.8 | 30.1 | 32.4 |
| SUBTOTAL | 153.9 | -- | 201.4 | 217.9 | 234.5 |
| TOTAL | 555.1 | -- | 808.0 | 861.5 | 914.9 |
| OTHER EMPLOYMENT | 186.5 | -- | 186.5 | 186.5 | 186.5 |
| REGION TOTAL | 741.6 | -- | 994.5 | 1,048.0 | 1,101.4 |

SOURCE- SEWRPC.

As further shown, dominant employment is projected to increase by approximately 200,000 to 280,000 over 1970 levels, with the largest increases in trade and service dominants. Subdominant employment is projected to increase by approximately 50,000 to 80,000 with major increases in fabricated metal manufacturing and government employment, excluding education.

The remaining nondominant or nonsubdominant employment was assumed to remain constant over the forecast period. This assumption is based on the trend from 1950 to 1970, which shows no change in this employment total over that entire 20-year period. This forecast, of course, could change significantly if the Region develops any new manufacturing or service activity outside the current dominant and subdominant industry groups. This has not occurred during the past three decades and no new growth activities are apparent at this time.

The distribution and staging of the regional employment forecast for each of the seven counties for the years 1980, 1990, and 2000 are shown in Table 79. This distribution and staging are based on the extrapolation of trends in employment for each county from 1950 to 1970. As shown, regional employment is expected to increase to 843,700 by 1980; to 945,800 by 1990; and to the forecast level of 1,048,000 by the year 2000. Of these incremental increases, Waukesha County's proportion of total regional employment is expected to increase the most, while Kenosha and Milwaukee Counties' proportions of total regional employment are expected to decline over this period.

The distribution and staging of the regional employment forecast within the dominant and subdominant industry groups for the years 1980, 1990, and 2000 are shown in Table 80. This distribution is based on the extrapolation of employment trends in each major industry from 1950 to 1970. As shown, dominant

Table 79

ACTUAL AND FORECAST LEVELS OF EMPLOYMENT IN THE REGION BY COUNTY: 1970, 1980, 1990, AND 2000

| COUNTY | LEVELS OF EMPLOYMENT (IN THOUSANDS) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | ACTUAL | | FORECAST | | | | | |
| | 1970 | | 1980 | | 1990 | | 2000 | |
| | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF TOTAL |
| KENOSHA | 39.2 | 5.3 | 41.3 | 4.9 | 43.5 | 4.6 | 45.1 | 4.3 |
| MILWAUKEE | 510.9 | 68.9 | 547.6 | 64.9 | 580.7 | 61.4 | 614.1 | 58.6 |
| OZAUKEE | 17.9 | 2.4 | 24.5 | 2.9 | 32.1 | 3.4 | 39.8 | 3.8 |
| RACINE | 61.9 | 8.3 | 75.1 | 8.9 | 87.0 | 9.2 | 99.6 | 9.5 |
| WALWORTH | 24.2 | 3.3 | 32.0 | 3.8 | 38.8 | 4.1 | 46.1 | 4.4 |
| WASHINGTON | 20.3 | 2.7 | 26.2 | 3.1 | 32.2 | 3.4 | 37.7 | 3.6 |
| WAUKESHA | 67.2 | 9.1 | 97.0 | 11.5 | 131.5 | 13.9 | 165.6 | 15.8 |
| REGION TOTAL | 741.6 | 100.0 | 843.7 | 100.0 | 945.8 | 100.0 | 1,048.0 | 100.0 |

SOURCE- SEWRPC.

Table 80

ACTUAL AND FORECAST LEVELS OF EMPLOYMENT IN THE REGION BY INDUSTRY GROUP: 1970, 1980, 1990, AND 2000

| INDUSTRY GROUP | LEVELS OF EMPLOYMENT (IN THOUSANDS) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | ACTUAL | | FORECAST | | | | | |
| | 1970 | | 1980 | | 1990 | | 2000 | |
| | NUMBER | PERCENT OF REGIONAL EMPLOYMENT | NUMBER | PERCENT OF REGIONAL EMPLOYMENT | NUMBER | PERCENT OF REGIONAL EMPLOYMENT | NUMBER | PERCENT OF REGIONAL EMPLOYMENT |
| DOMINANT | | | | | | | | |
| NONELECTRICAL MACHINERY | 68.1 | 9.2 | 76.0 | 9.0 | 83.9 | 8.9 | 91.9 | 8.8 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 36.5 | 4.9 | 38.5 | 4.6 | 40.5 | 4.3 | 42.6 | 4.1 |
| RETAIL TRADE | 111.2 | 15.0 | 126.9 | 15.1 | 142.6 | 15.1 | 158.2 | 15.1 |
| MEDICAL AND OTHER PROFESSIONAL SERVICES | 70.5 | 9.5 | 92.9 | 11.0 | 115.3 | 12.2 | 137.8 | 13.1 |
| EDUCATIONAL SERVICES | 51.7 | 7.0 | 73.7 | 8.7 | 95.7 | 10.1 | 117.7 | 11.2 |
| WHOLESALE TRADE | 32.0 | 4.3 | 37.4 | 4.4 | 42.8 | 4.5 | 48.2 | 4.6 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 31.2 | 4.2 | 36.5 | 4.3 | 41.8 | 4.4 | 47.2 | 4.5 |
| SUBTOTAL | 401.2 | 54.1 | 481.9 | 57.1 | 562.6 | 59.5 | 643.6 | 61.4 |
| SUBDOMINANT | | | | | | | | |
| FABRICATED METALS | 24.6 | 3.3 | 30.2 | 3.6 | 35.8 | 3.8 | 41.4 | 4.0 |
| PRIMARY METALS | 22.5 | 3.1 | 25.8 | 3.1 | 29.1 | 3.1 | 32.4 | 3.1 |
| TRANSPORTATION EQUIPMENT | 22.0 | 3.0 | 23.9 | 2.8 | 25.8 | 2.7 | 27.6 | 2.6 |
| FOOD AND BEVERAGE | 18.9 | 2.5 | 18.5 | 2.2 | 18.1 | 1.9 | 17.6 | 1.7 |
| PRINTING AND PUBLISHING | 14.9 | 2.0 | 17.7 | 2.1 | 20.5 | 2.2 | 23.3 | 2.2 |
| GOVERNMENT SERVICES | 27.0 | 3.7 | 33.2 | 3.9 | 39.4 | 4.1 | 45.5 | 4.3 |
| CONSTRUCTION | 24.0 | 3.2 | 26.0 | 3.1 | 28.0 | 3.0 | 30.1 | 2.9 |
| SUBTOTAL | 153.9 | 20.8 | 175.3 | 20.8 | 196.7 | 20.8 | 217.9 | 20.8 |
| TOTAL | 555.1 | 74.9 | 657.2 | 77.9 | 759.3 | 80.3 | 861.5 | 82.2 |
| OTHER EMPLOYMENT | 186.5 | 25.1 | 186.5 | 22.1 | 186.5 | 19.7 | 186.5 | 17.8 |
| REGION TOTAL | 741.6 | 100.0 | 843.7 | 100.0 | 945.8 | 100.0 | 1,048.0 | 100.0 |

SOURCE- SEWRPC.

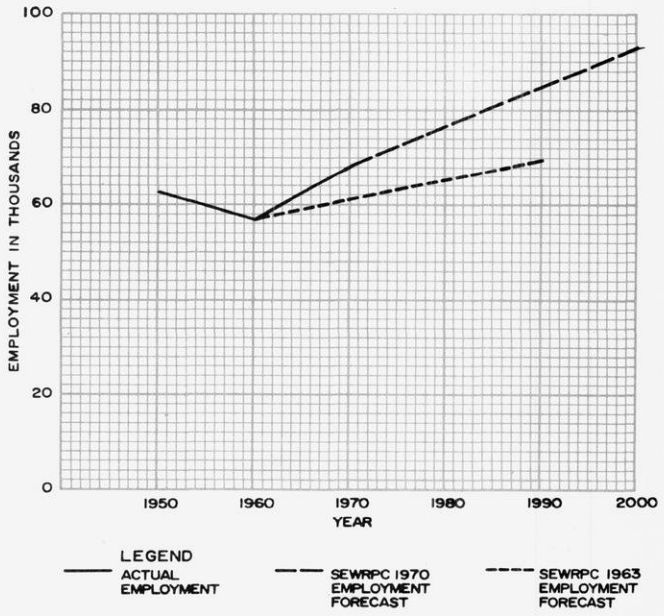
industry employment within the Region is expected to increase to 481,900 by 1980; to 562,600 by 1990; and to the forecast level of 643,600 by the year 2000. The largest increases in "dominant" employment are expected in the medical and other professional services group and in educational services activities over the 30-year forecast period, while the nonelectrical machinery and electrical machinery and equipment industries' proportions of total regional employment are expected to decline slightly over this period. Subdominant industry employment within the Region is expected to increase to 175,300 by 1980; to 196,700 by 1990; and to the forecast level of 217,900 by the year 2000. The largest proportional increases in "subdominant" employment are expected in the fabricated metals industry and government service activity, excluding education, while proportional declines in their share of total regional employment are expected in the transportation equipment, food and beverage, and construction industries over this period.

Nonelectrical Machinery Industry

In terms of individual dominant and subdominant industry groups, the nonelectrical machinery group is forecast to increase in employment from its 1970 level of 68,100 to between 85,000 and 99,000 by the year 2000. National forecasts indicate a growth in industry output of from 5 to 6 percent annually to 1980, with productivity advances of about 3 percent per year. Industry employment nationally is projected to increase approximately 1.5 percent a year to the year 2000 in response to increased capital goods demand. This industry has some locational disadvantages in the Region and does not participate in the rapidly growing computer industry. A sample of regional firms anticipates net employment increases over the next five years of approximately 5 percent.

Figure 12

EMPLOYMENT FORECAST FOR THE NONELECTRICAL MACHINERY INDUSTRY IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Based on these outlooks, trend extrapolations, and multiple regression analyses of national, East North Central States, and Wisconsin employment with regional employment, nonelectrical machinery industry employment in the Region was forecast to grow from 0.75 to 1.25 percent per year and reach a level of from 85,000 to 99,000 employees in the year 2000. This new forecast of the average annual rate of growth in the nonelectrical machinery industry is 0.5 percent greater than the original annual growth forecasts for this industry made by the Commission nearly a decade ago (see Figure 12).

Electrical Machinery and Equipment Industry

The electrical machinery and equipment industry, which is second only to the nonelectrical machinery industry group in employment size, is forecast to increase only slightly to 40,000 to 45,000 by the year 2000. Over the past two decades, the regional employment trend in this industry has been counter to that of the nonelectrical industry, that is, growth in the 1950s followed by a decline trend in the 1960s. Nationally, this industry group has demonstrated relatively steady growth in output, productivity, and employment over the 20-year period.

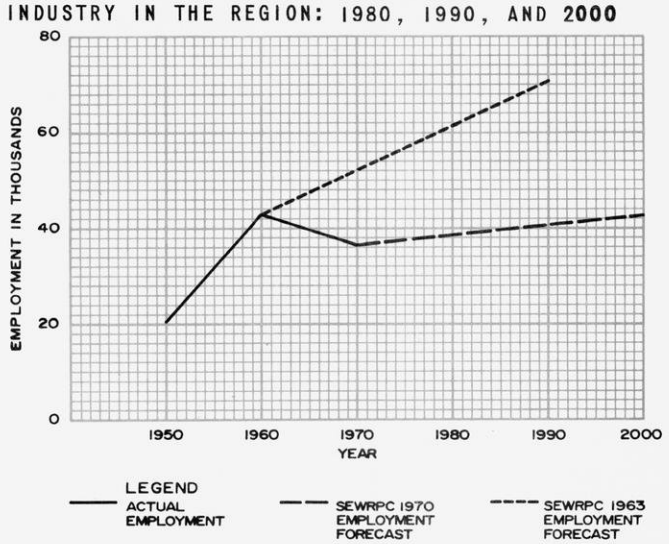
Recent U. S. Customs Court decisions regarding the overseas production of fabricated electronic parts may adversely affect overseas investment and thereby enhance domestic production and investment in the electrical machinery industry by U. S. electronic component manufacturers. Since most of the employment in the manufacture of electronic components, however, is concentrated in areas outside the State of

Wisconsin, the potential effects of these court decisions on the State of Wisconsin or the Southeastern Wisconsin Region are not expected to be significant. National forecasts indicate that the segments of the electrical equipment industry represented in the Region will increase output at the rate of 6 to 10 percent per year. National employment forecasts show an anticipated annual increase to the year 2000 of approximately 1.5 percent. The results of the survey of representative firms in this industry in the Region indicate an anticipated net increase in employment over the next five years of only 1 to 2 percent.

On the basis of employment trend extrapolation, multiple regression analyses, and firm outlooks, there is little likelihood of any significant employment growth in this industry group in the Region over the forecast period. On the basis of the long-term growth prospects for this industry nationally, however, and on the basis of the assumption that the state and Region will be working to alleviate controllable location disadvantages to industry in general, employment is forecast to increase slowly at rates of from 0.25 to 0.75 percent per year. This new forecast of the average annual rate of growth in this industry is 1.5 percent lower than the original growth forecast made by the Commission nearly a decade ago (see Figure 13).

Figure 13

EMPLOYMENT FORECAST FOR THE ELECTRICAL MACHINERY AND EQUIPMENT INDUSTRY IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Retail Trade Industry

Retail trade, the largest dominant industry group in the Region in terms of employment, is forecast to increase by 55,000 to 60,000 employees over the forecast period. National employment growth and regional employment growth have been rapid over the past decade. Employment growth has been increasing more rapidly than total industry man-hours and the total volume of retail sales adjusted for price increases, which reflects the part-time employment and low productivity characteristics of this industry.

Assuming a continued growth in demand for consumer products as incomes increase and new households are formed, and no revolutionary innovations in retailing to markedly increase productivity, and taking into account trend extrapolation and multiple regression analyses, retail trade employment in the Region is forecast to increase from 1.12 to 1.25 percent per year to 2000 and reach a level of from 155,400 to 161,000 employees. This new forecast of the average annual rate of growth in this industry is approximately 0.2 percent greater than the original annual growth forecasts for this industry made by the Commission nearly a decade ago (see Figure 14).

Medical and Other Professional Services

Medical and other professional services are the third largest dominant industry group in the Region in terms of employment, employing only a few thousand less than the nonelectrical machinery group. Employment in this service group has increased at the rate of 5 to 6 percent annually over the past two decades, and as in the retail trade group, regional employment trends have paralleled national trends.

Over the next 10 years expenditures for medical and health services, which account for 60 percent of the employment in this group, are forecast to increase at the rate of approximately 8 percent per year. Assuming continued price increases (4 percent per year from 1960 to 1970) and some increases in productivity, employment in this industry is still likely to grow significantly in the coming decades. National industry group employment is projected to grow 2.5 to 2.75 percent per year to 2000.

Taking into account past trends, correlations between national, east north central, and regional employment and national forecasts, employment in this industry group in the Region is projected to increase from 2 to 2.5 percent annually. This new forecast of the average annual rate of growth in this industry is consistent with the original annual growth forecast for this industry made by the Commission nearly a decade ago (see Figure 15).

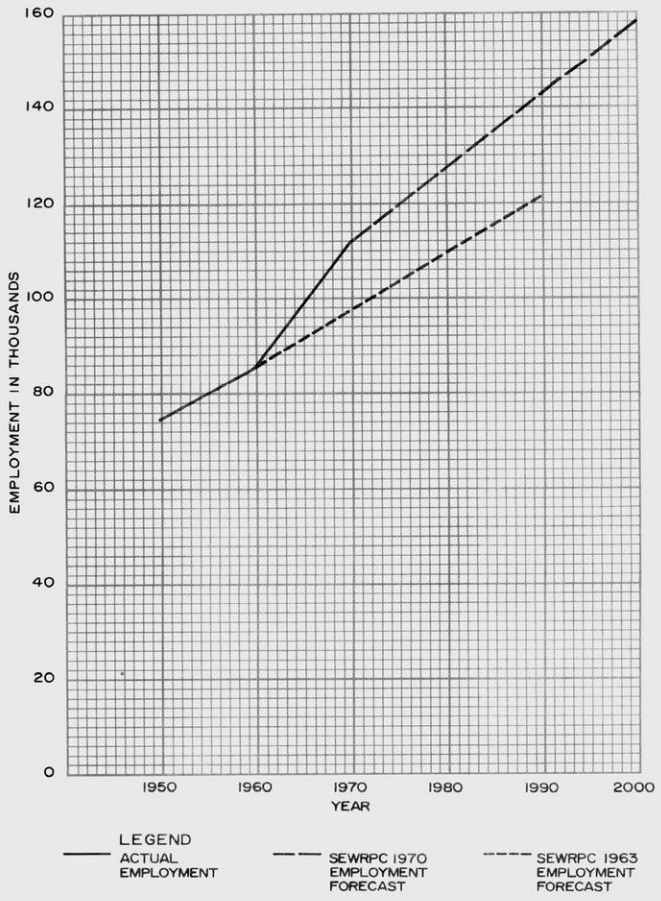
Educational Services

Educational services is the third largest locally oriented dominant industry group in the Region. It has been the fastest growing activity in terms of employment in the Region in the past decade. Educational service employment in the Region more than doubled in the last decade to its 1970 estimated total of approximately 51,700. Regional employment has increased faster than U. S. or State of Wisconsin employment in this industry group, reflecting growth in educational needs at all levels—vocational, secondary, and elementary.

National projections show enrollments and expenditures to continue their upward pattern in the 1970s at around 5 percent annually. Because of falling birth rates in the 1960s, enrollment in elementary schools will begin to decline but total enrollments will continue upward because of higher high school and college enrollments resulting from the high birth rates in the 1950s. With record numbers of teachers graduating

Figure 14

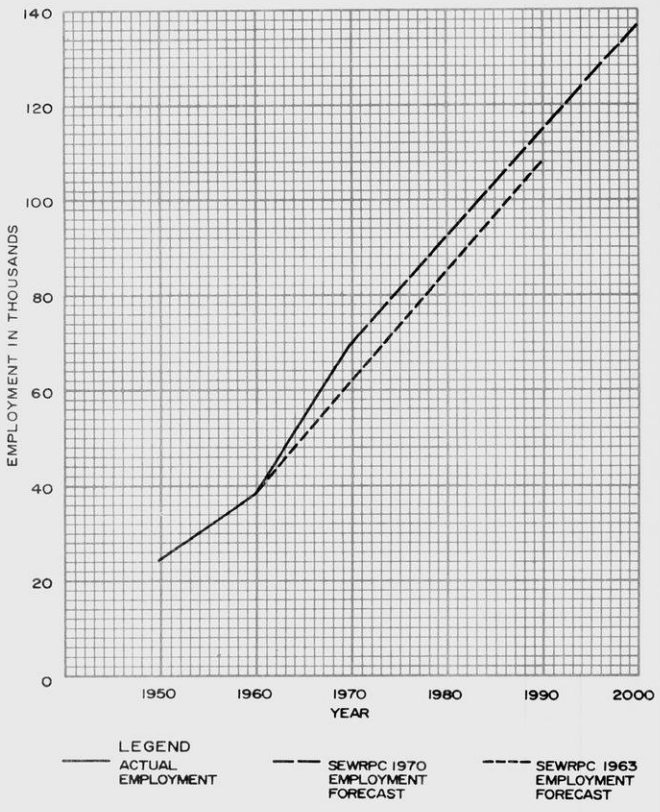
EMPLOYMENT FORECAST FOR THE RETAIL TRADE INDUSTRY IN THE REGION: 1980, 1990, AND 2000




Source: *Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Figure 15

EMPLOYMENT FORECAST FOR THE MEDICAL AND OTHER PROFESSIONAL SERVICES GROUP IN THE REGION: 1980, 1990, AND 2000




Source: *Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

from college, there was an oversupply of teachers in 1970 for the first time in many years. However, the demand for teachers is now probably more a function of limitations of available funding than it is a function of teacher "needs" to provide quality education for both youngsters and adults.

Based on national employment projections for educational services, regional trends, multiple correlation analyses, and changing demographic trends, educational service employment is projected to increase at slower-than-past rates, with average growth at the rate of 2.5 to 3 percent annually to 2000, reaching a level of 109,000 to 127,000 employees. This new forecast of the average annual rate of growth in this industry is consistent with the original annual growth forecast for this industry made by the Commission nearly a decade ago (see Figure 16).

Wholesale Trade Industry

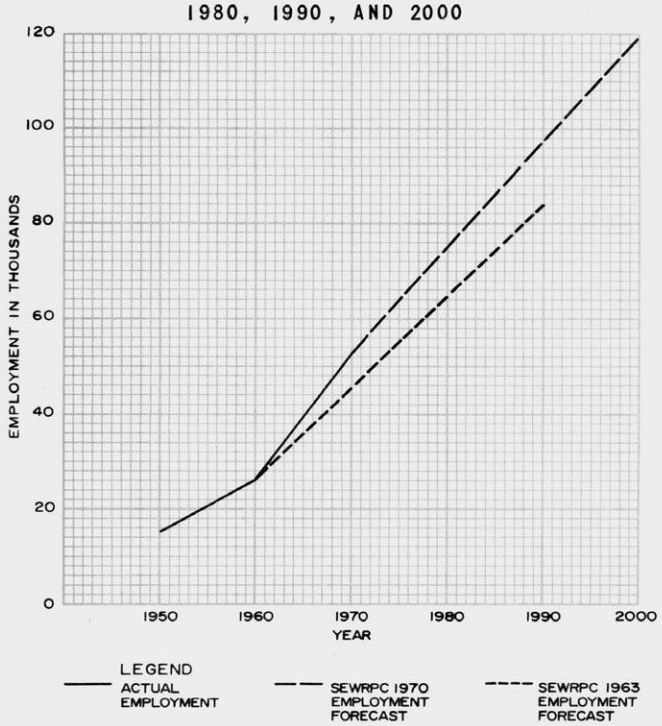
Wholesale trade is a rapidly growing locally oriented dominant industry group. It changed from subdominant to dominant status over the past decade, increasing in employment by 23 percent compared to a total regional employment gain of 14 percent. Employment in 1970 was approximately 32,000. Wholesale trade employment in the Region grew at approximately the same rate as the U. S. average from 1960 to 1970.

National projections call for wholesale trade sales increases of from 6 to 7 percent per year in the 1970s, which is up slightly from the 5 to 6 percent annual increases of the 1960s. However, with wage rates in wholesale trade now on a par with manufacturing and the potential for automated handling and computerization, it is not likely that average annual employment increases of the 1960s will be maintained.

On the basis of national forecasts, southeastern Wisconsin regional trends, and correlations between national, east north central, state, and regional wholesale trade activity, employment in wholesale trade in the Region is forecast to increase at an average annual rate of from 1.25 to 1.5 percent, reaching a level of 46,000 to 49,000 by the year 2000 (see Figure 17).

Figure 16

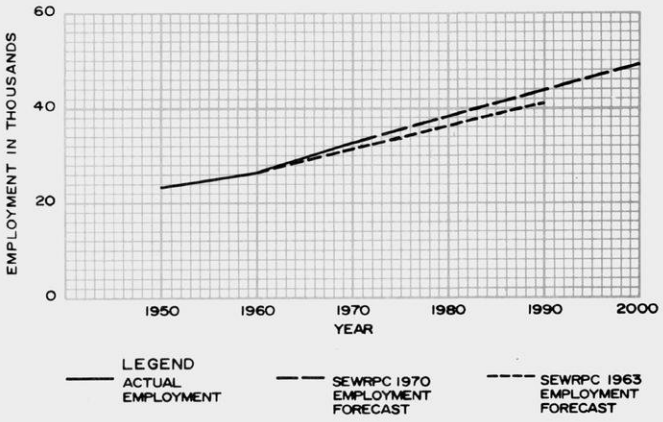
EMPLOYMENT FORECAST FOR THE EDUCATIONAL SERVICES GROUP IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Figure 17

EMPLOYMENT FORECAST FOR THE WHOLESALE TRADE INDUSTRY IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Finance, Insurance, and Real Estate Services

The finance, insurance, and real estate services group is a locally oriented dominant in the regional economy employing 31,200 persons and accounting for approximately 4 percent of total employment. Like wholesale trade, finance, insurance, and real estate increased from subdominant to dominant status in the 1960s, increasing in employment by 25 percent. The rate of increase was slower than the national average of 38 percent.

As the population in the young adult age groups increases significantly in the upcoming decades, demands for financial, insurance, and real estate services should grow. Much computerization has been introduced into this industry group in the past 10 to 20 years but employment has increased steadily nonetheless. It is likely, therefore, that continued increases in employment will be realized in the future.

Based on national forecasts, regional employment trends over the past 20 years and correlations between national, east north central, state, and regional employment in the past, employment in finance, insurance, and real estate is forecast to increase at an average annual rate of from 1 to 1.5 percent over the projection period, reaching a level of 44,000 to 50,000 in 2000. This new forecast of the average annual rate of growth in this industry's employment is consistent with the annual growth forecast made by the Commission nearly a decade ago (see Figure 18).

Fabricated Metals Industry

The fabricated metals industry, along with the nonelectrical machinery and primary metals industry, has shown a growth trend in employment in the last decade. During this period it increased in employment faster than the national industry average rate.

This industry is also a basic employer, and markets over 90 percent of its output outside the Region. It produces a wide variety of products including metal cans, cookware, locks, tanks, and environmental pollution control products. Employment growth in this industry group in the Region averaged 2.5 percent annually compared to 2 percent nationally. Value-added trends indicate that from 1959 to 1969, the East North Central States' share of total value added in the industry increased, whereas its share decreased in the earlier 10-year period from 1949 to 1959, indicating this industry is competitive in locational aspects with other areas of the United States.

The outlook for growth in this industry in the future appears good. National forecasts project metal can production to increase 5 percent annually during the 1970s. Productivity has increased at slightly over 2 percent over the past 20 years. The rapid formation of new households in the next decade and the emphasis on pollution control also favor growth prospects. Regional firms anticipate a net employment increase of about 5 percent over the next five years.

Based on these national and regional trends and forecasts, multiple regression analyses, and national, east north central, and state industry projections, employment in the fabricated metals industry in the Region is forecast to increase at the rate of 1.5 to 2 percent annually and reach a level of from 38,000 to 44,000 employees by the year 2000. This new forecast of the average annual rate of growth in this industry's employment is 1.2 percent greater than the original annual growth forecasts made by the Commission nearly a decade ago (see Figure 19).

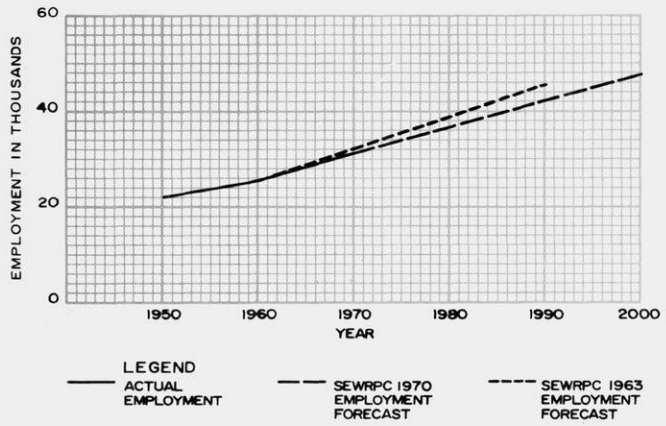
Primary Metals Industry

The primary metals industry is a basic industry in the Region, employing approximately 22,500 persons in 1970. The industry markets about 90 percent of its output outside the Region with the balance going to regional manufacturers. It is generally a founding and forging industry in the Region of both ferrous and nonferrous materials. Nationally, steel manufacture is the predominant activity.

Employment in this industry in the nation has been quite stable over the past two decades with short-term increases and decreases associated with national business cycles. Regional employment on the other hand has shown a slow long-term growth trend reaching its highest level in 1966.

Figure 18

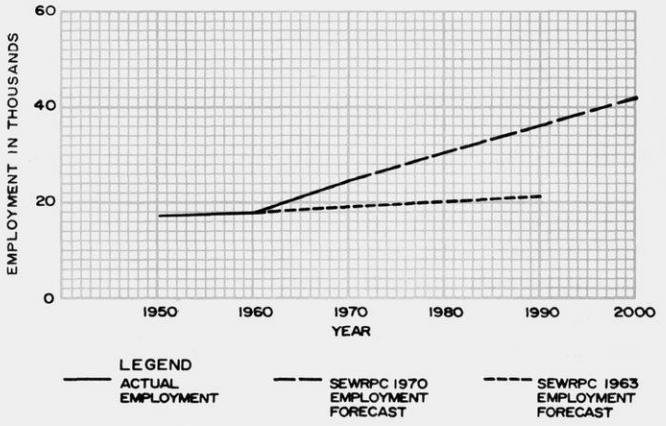
EMPLOYMENT FORECAST FOR THE FINANCE, INSURANCE, AND REAL ESTATE SERVICES GROUP IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Figure 19

EMPLOYMENT FORECAST FOR THE FABRICATED METALS INDUSTRY IN THE REGION: 1980, 1990, AND 2000



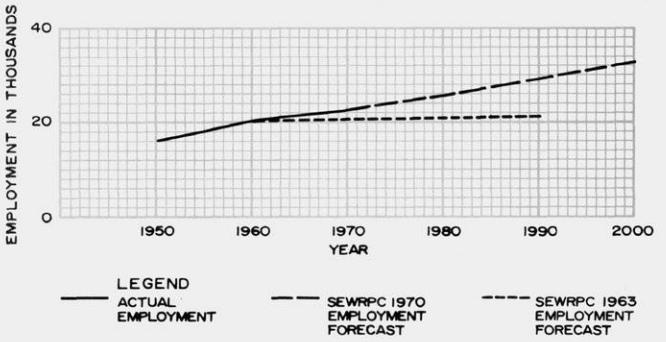

*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Nationally, output of the major products in this industry in the Region, namely ferrous castings, is projected to increase by 3 percent annually in the 1970s. Industry productivity has averaged approximately 2 percent per year over the past two decades. Employment outlooks by regional firms indicate a net increase of approximately 5 percent over the next five years.

Based on these factors, multiple regression analyses, and national industry employment forecasts, regional employment in the primary metals industry is forecast to increase at the rate of 1 to 1.5 percent per year, reaching 30,000 to 35,000 in the year 2000. This new forecast of the average annual rate of growth in this industry is 0.5 percent greater than the original annual growth forecast made by the Commission nearly a decade ago (see Figure 20).

Figure 20

EMPLOYMENT FORECAST FOR THE PRIMARY METALS INDUSTRY IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Transportation Equipment Industry

The transportation equipment industry until the mid-1960s ranked as the third most important basic manufacturing industry in the Region. Since then, however, employment declines have put it at about an equal rank with the primary and fabricated metal industries. This industry in the Region is concentrated in the production of motor vehicles and motor vehicle components along with lesser employment in the manufacture of motorcycles. National trends indicate that employment has been increasing in the 1960s compared to the regional decline. Both domestic and foreign competition have been major factors in these divergent employment trends.

National forecasts call for future output growth of about 3 percent annually, and local firm employment outlooks are optimistic, calling for an increase of about 10 percent in the next five years. National employment is forecast to increase at the rate of 1.5 percent annually to the year 2000.

Based on all these factors and the multiple regression analyses, transportation equipment industry employment in the Region is forecast to increase slowly at the rate of 0.5 to 1 percent per year, reaching a level of 25,000 to 30,000 in the year 2000. This forecast, like the electrical equipment industry employment forecast, is well below the forecasts prepared by the Commission a decade ago. It is worth noting that the nature of this industry in the Region, with only a few large firms in a highly competitive market, makes long-term forecasts subject to a wide range of error (see Figure 21).

Food and Beverage Industry

The food and beverage industry is the larger of the two major nondurable goods manufacturing industries in the Region. It is a basic industry to the regional economy, marketing about 70 percent of its products outside the Region. The major product of this industry is beer, but a wide variety of food and other beverage products are also produced.

The employment trend in this industry in the Region has been slowly but steadily decreasing over the past two decades. The national trend over the period can at best be described as stable. Nationally, output has increased approximately 3 percent per year as has productivity. Output nationally is projected to continue to increase at past rates or at slightly higher rates. Productivity increases of like magnitudes are also likely as the industry continues to automate its processes. Area firms anticipate a slight net employment increase of 1 to 2 percent over the next five years.

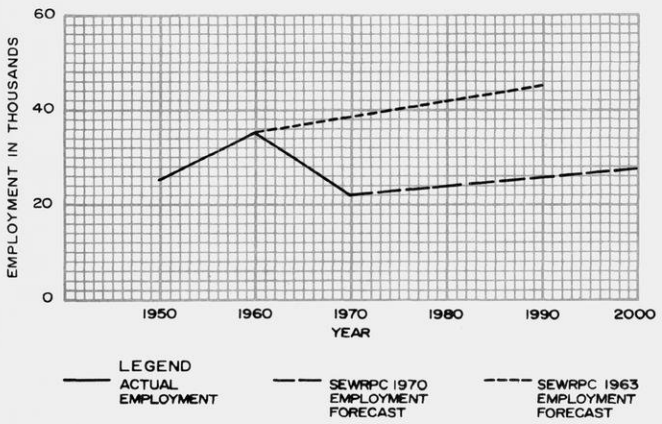
On the basis of these national and southeastern Wisconsin regional trends and a national employment decline forecast throughout, employment in the food and beverage industry is forecast to remain stable at its 1970 level of approximately 19,000 employees, although it may decline slowly at a rate of 0.5 percent per year over the forecast period. The latter reflects the bottom range of the initial study forecasts (see Figure 22).

Printing and Publishing Industry

The printing and publishing industry is the smaller of the two major nondurable industries in the Region and as basic to the economy as the food and beverage products industry. Approximately 70 percent of its output is marketed outside the Region. The output that is locally marketed goes primarily to households in the form of newspapers.

Figure 21

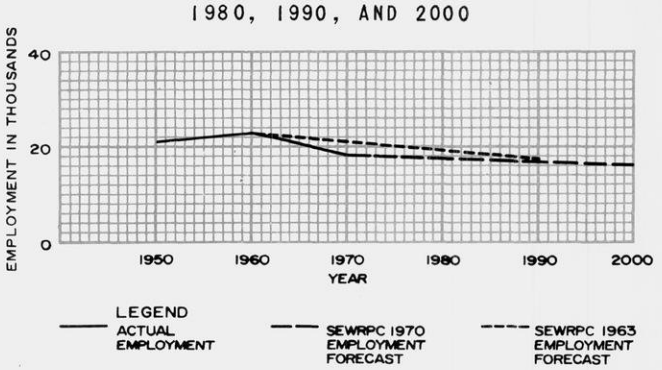
EMPLOYMENT FORECAST FOR THE TRANSPORTATION EQUIPMENT INDUSTRY IN THE REGION: 1980, 1990, AND 2000




Source: *Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Figure 22

EMPLOYMENT FORECAST FOR THE FOOD AND BEVERAGE INDUSTRY IN THE REGION: 1980, 1990, AND 2000




Source: *Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Regional employment in the industry has shown a long-term growth trend with faster growth in the 1950s than in the 1960s. National employment has increased at a steady pace over the 20-year period. The overall increase from 1950 to 1970 in the Region and nation has been approximately the same at 50 percent. National output from 1950 to 1970 increased at the rate of 3.5 percent per year and productivity increases averaged 2 percent over the period.

National forecasts for the printing and publishing industry indicate projected annual rates of growth in shipments for newspapers at 4 to 5 percent; periodicals, 7 percent; book publishing, 7 percent; book and business form printing, 10 percent; and typesetting, 6 percent. Growth in the industry will be spurred by general population and household formation increases, advancing educational attainment levels of the population, and demands of the business sector. A small sample of regional firms in this industry anticipates little to no change in their employment levels over the next five years.

Based on these national and southeastern Wisconsin regional trends and forecasts, and multiple regression analyses results, employment in this industry is projected to increase at the rate of 1.5 to 1.75 percent per year and reach a level of 22,000 to 25,000 by 2000. This new forecast of the average annual rate of growth is consistent with the original annual growth forecast made by the Commission in 1963 (see Figure 23).

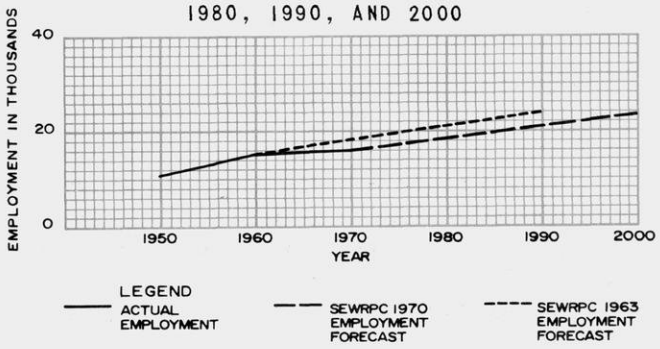
Government Services

Government employment excluding public employment in medical and educational services is a locally oriented subdominant industry group in the Region employing approximately 27,000 persons in 1970 and accounting for 3.7 percent of total employment. Employment in this activity in the Region has been increasing by approximately 2 percent per year over the past 20 years, which is comparable to the national and state growth averages.

Pressures to slow down rapid increases in taxes at all levels of government and attempts to consolidate and to increase the efficiency of public services indicate that employment increases in this activity at the national, state, and regional levels will probably be moderate. Based on these trends, national employment forecasts, and multiple regression analyses results, employment in government is forecast to increase at the rate of 1.5 to 2 percent per year reaching a level of 42,000 to 49,000 by the year 2000. This forecast of the average annual rate of growth is slightly higher than the original annual growth forecast made by the Commission nearly a decade ago (see Figure 24).

Figure 23

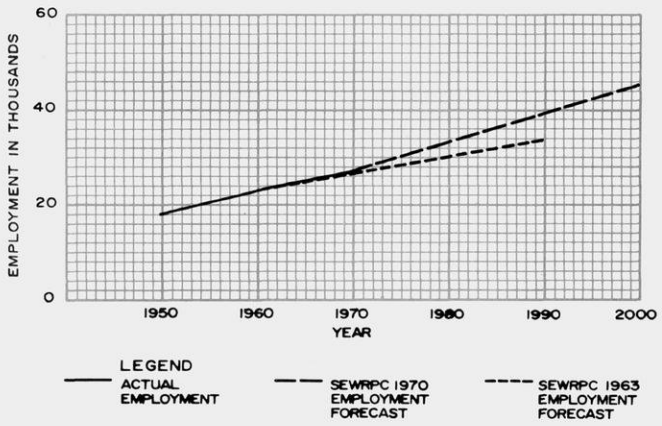
EMPLOYMENT FORECAST FOR THE PRINTING AND PUBLISHING INDUSTRY IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Figure 24

EMPLOYMENT FORECAST FOR THE GOVERNMENT SERVICES GROUP IN THE REGION: 1980, 1990, AND 2000




*Source: Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Construction Industry

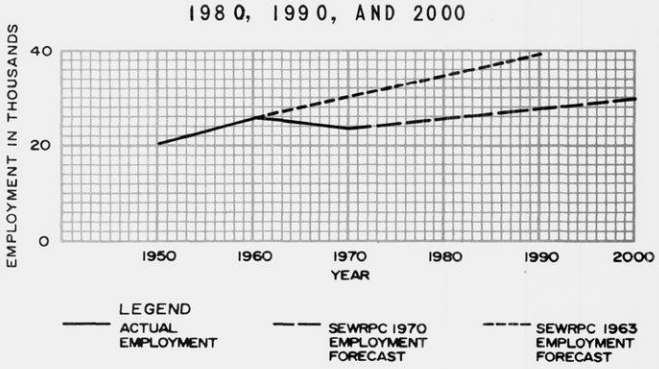
Construction is a locally oriented subdominant service activity in the Region employing approximately 24,000 persons in 1970 and accounting for 3 percent of total employment. The employment trend in this industry group in the Region has been one of long-term stability with short-term fluctuations corresponding to business cycles. National employment trends have shown long-term growth trends increasing at an average annual rate of about 2 percent.

National construction forecasts are favorable. Forecasts of rapidly rising household formations and continued growth in real income indicate a substantial expansion in home and apartment building with housing starts projected up by 6 percent per year in the 1970s. Forecasts of rising trade and service demands and manufacturing and utilities output also portend substantial increases in nonresidential construction. Total new construction put in place is forecast up nearly 10 percent per year to 1980. National construction employment is forecast up at approximately 1.25 percent annually to the year 2000.

Based on these strong national growth trends in construction and the overall growth likely in the regional economy, the relatively stable construction employment in the Region is forecast to increase slowly by 0.5 to 1 percent annually reaching a level of 28,000 to 32,000 in 2000. This new forecast of the average annual rate of growth is slightly below the original annual growth forecasts made by the Commission nearly a decade ago (see Figure 25).

Figure 25

EMPLOYMENT FORECAST FOR THE CONSTRUCTION INDUSTRY IN THE REGION: 1980, 1990, AND 2000




Source: *Wisconsin Department of Industry, Labor, and Human Relations and SEWRPC.*

Relation to Demographic Studies

In the Commission's initial work program and land use-transportation study, an independent population projection was derived from the employment forecasts developed in those studies. The population projection was made by analyzing and projecting the relationship between the level of employment and total population, assuming that the ratio of the number of people to number of employees within the Region would decline slowly as it had been doing in the past. Sharply declining birth rates and accelerated female participation in the labor force in the 1960s, however, resulted in a reversal of this trend, and the number of persons per employee within the Region actually decreased from 1960 to 1970. As a result, population forecasts utilizing this approach were higher than actual results.

Because demographic variables such as birth rates and labor force participation significantly affect this population-employment relationship, an independent population projection was not to be made under this study. Rather, the employment forecasts presented in this study will be used as guides in evaluating migration assumptions and working age population projections made in a separate demographic study which will update Commission past population forecasts to the year 2000.

SUMMARY

The regional employment projections presented in this report were derived by using the same approach as that used by the Commission in its initial work program, that is, a range of projections was determined for each of the dominant and subdominant industry groups within the Region as well as the remaining employment total in order to arrive at a total regional employment projection to the year 2000. This projected range of employment was developed from a series of inputs which included an analysis of historical employment trends, an extrapolation of trends in regional employment from 1950 to 1970, a multiple regression analysis based on 1950 to 1970 employment levels for selected areas of the United States, a questionnaire survey of the leading manufacturing firms within the Region, and recent published and unpublished industry outlooks and employment projections.

The probable future range of employment in the Region is projected to be from approximately 994,500 to 1,101,400 persons in the year 2000, with the middle of that range, 1,048,000 employees, being the most likely level in that year.

Dominant industry employment in the year 2000 is projected to increase from 200,000 to 280,000 over the 1970 employment levels, with the largest increases projected in the trade and service dominants. Subdominant industry employment in the year 2000 is projected to increase from 50,000 to 80,000 over the 1970 levels with the largest increases projected in the fabricated metals manufacturing and government employment (excluding education) levels. In addition, the remaining nondominant or nonsubdominant industry employment levels are assumed to remain constant over the projection period. This assumption is based on the trend in employment from 1950 to 1970 which shows no change in this employment total over that entire 20-year period.

These employment forecasts presented in this report are to be used in evaluating migration assumptions and working age population projections made in a separate demographic study which will update the Commission's past population forecasts to the year 2000.

Chapter V

# SUMMARY AND CONCLUSIONS

In September 1962, as part of the Commission's initial work program, a study of the economic base and structure of the Southeastern Wisconsin Region was undertaken in order to assess the trends in the levels of economic activity within the Region and in order to provide the economic projections required for comprehensive regional planning to the year 1985. In June 1963, the results of that study were published in SEWRPC Planning Report No. 3, The Economy of Southeastern Wisconsin.

The basic concept of the system of economic analysis used in that study was that an understanding of an area's economy can best be gained by an in-depth analysis over time of that area's largest industries. These large, important industries were defined as dominant or subdominant depending on their individual share of total regional employment. Industrial dominants which were selected were those industries which in 1960 accounted for 4 percent or more of total regional employment. Industrial subdominants which were selected were those industries which in 1960 accounted for 2 to 3.9 percent of total regional employment.

On this basis the economic study identified 15 dominant and subdominant industry groups in 1962. Regional trends in each of these groups were analyzed in depth, principally at the two-digit SIC level, and compared to national and state industry trends. The in-depth analysis included structured interviews with the chief executives of major firms in the Region representing each group to determine local problems, opportunities, and outlooks for the future. Based on these comprehensive analyses and personal interviews, employment projections were made for each industry to the year 1985.

In 1966, during the course of the Commission's initial land use-transportation study, the projections prepared in the initial Commission work programs were updated and projected to the year 1990. As a result of this work, a 1990 employment forecast for the Region was established at approximately 984,000 persons. The results of these additional economic analyses as well as the forecast of regional employment to the year 1990 were published in SEWRPC Planning Report No. 7, Volumes 2 and 3, dated June 1966 and November 1966, respectively.

Employment estimates made annually by the Commission since 1966 were compared with the employment forecasts prepared under the initial land use-transportation study and the results reported in the Commission Annual Reports. In general, the forecast employment levels were found to be remarkably accurate when compared to the annual estimates. The forecast regional levels of employment differed from actual levels by only about 1 percent in 1970. More important, however, is the similarity in the trends of forecast and actual employment levels for the Region from 1960 to 1970. The trend in actual regional employment levels closely approximates that of the forecast levels, although absolute values differ somewhat due to the relative strength of the regional economy throughout most of the 1960s.

In light of these similarities and due to the relatively close conformance of the actual and forecast regional employment levels in 1970, it was decided that a reevaluation of the changes in the regional economic base and structure as well as an updating of the Commission's regional employment forecasts to the year 2000 should be based upon the same dominant/subdominant industry analysis methodology used in the initial economic studies program conducted in 1962. In January 1970, a major review of national and regional economic activity patterns was undertaken in order to assess the impact of any changes in such patterns on the economy of southeastern Wisconsin, and new forecasts of economic activity within the Region to the year 2000 were prepared.

The objective of this report is to present the results of the reexamination and updating of economic data contained in SEWRPC Planning Reports Nos. 3 and 7, and to present new forecasts of regional and county employment levels to the year 2000. The findings set forth in this report are intended to provide one base upon which all adopted regional plan elements may be reappraised and updated to the year 2000. In addition, the employment projections series presented in this report will be the basis upon which a selection of a regional employment forecast will be made.

A general overview of the regional economy since 1950 indicates a recent decline in the rate of economic growth within the Region compared to the state and nation during the past two decades. The regional labor force and work force increased at a lesser rate in the past decade than did those in the state and nation, whereas from 1950 to 1960, labor force and work force increases within the Region were at a more rapid rate than those of the state and nation. In addition, income increases within the Region showed the same relative trend as the labor force and work force. Although total regional income increased substantially from 1960 to 1970, the regional rate of increase was less than the regional rate of increase in the previous decade.

There is also evidence to indicate a general decentralization of economic activity from the established urban centers to suburban areas of the Region. During the last decade the largest increases in the number of jobs within the Region occurred in Ozaukee, Washington, and Waukesha Counties while the smallest increases occurred in Kenosha and Milwaukee Counties. In addition, changes in the county distribution of regional jobs from 1950 to 1970 strongly favored the suburban counties of the Region. Milwaukee County experienced a 10 percent decline in its share of regional jobs while Waukesha, Ozaukee, and Washington Counties experienced the largest relative gains in the share of regional jobs during this 20-year period. In addition, the largest net increases in commercial and industrial land use during this period occurred in Waukesha County. This growth has generally taken place in large suburban shopping centers and in the outlying planned industrial parks within the Region.

Although the rate of economic growth within the Region is declining, the residents of the Region continue to enjoy a higher standard of living than the residents of Wisconsin as a whole and the United States. The suburban counties of Waukesha and Ozaukee enjoy the highest per capita incomes within the Region due primarily to the fact that more than 70 percent of the families within these counties earned $10,000 or more in 1970.

This study also identified a total of 14 dominant and subdominant industry groups within the Region in 1970. Analysis of these industries indicates that they have increased in employment by 19 percent from 1960 to 1970, the same rate of increase that occurred between 1950 and 1960. These increases were greater than increases in total employment during both the 1950 to 1960 and the 1960 to 1970 periods, indicating a larger rate of growth in these industries than in the other smaller industry groups in the Region over this period.

During the 1960s, two of the major manufacturing employers in the Region—the electrical machinery and equipment and transportation equipment industries—reversed their employment trends in employment established during the 1950s. Employment in these industries during the 1960s actually declined substantially over the levels of the 1950s. Only one manufacturing industry, fabricated metals, experienced an increasing rate of growth over both of the past two decades. Two other manufacturing industry groups in the Region—primary metals and publishing—showed positive but declining rates of employment growth.

Unlike the manufacturing industry groups, the trade and service activities in the Region have shown accelerated growth in employment in the past decade. In fact, employment increases in the seven service and trade industries have accounted for all of the employment growth in the Region in the past decade. This pattern of a shift in the regional economy from industrial to service orientation is becoming more evident than ever before.

Through the analysis of historical employment trends, the extrapolation of trends in regional employment from 1950 to 1970, a multiple regression analysis based on 1950 to 1970 employment levels for selected areas of the United States, a questionnaire survey of leading manufacturing firms within the Region, and recent published and unpublished industry outlooks and employment projections, a probable future range

of employment was projected for each of the dominant and subdominant industry groups within the Region as well as the remaining employment total in order to arrive at a total regional employment forecast to the year 2000. The probable future range of employment in the Region is projected to be from approximately 994,500 to 1,101,400 persons in the year 2000, with the middle of that range, 1,048,000 employees, being the most likely and therefore the forecast level for that year.

Dominant industry employment in the Region to the year 2000 is projected to increase by 200,000 to 280,000 over the 1970 employment levels. The largest increases in the dominant industry group are projected in the trade and service dominants. Subdominant industry employment for the year 2000 is projected to increase 50,000 to 80,000 over the 1970 levels of employment in those industries. The largest increases in the subdominant industry group are projected in the fabricated metals manufacturing and government employment levels. The remaining industries within the Region each containing less than 2 percent of total regional employment are assumed to remain constant over the projection period. This assumption is based on the trend in employment from 1950 to 1970 which shows no change in this employment total over that entire 20-year period.

The economic activity projections series presented in this report will be used in the preparation of revised population projections for the Region to the year 2000, and particularly as guides to the making of assumptions concerning migration and projected levels of the working age population. In addition, the economic activity forecasts presented herein will provide important inputs to regional plan reevaluation and updating.

The general decline in the rate of economic growth within the Region has been attributed primarily to the comparative labor cost and tax advantages currently enjoyed by other areas of the United States, as well as the lack of an active industrial development program within the state. The decentralization of economic activities within the Region has been attributed primarily to the inability of existing firms to readily expand operations on their present sites and to the availability of relatively low-cost land in planned industrial parks in the suburban areas of the Region. High tax rates in the established urban centers of the Region have also been cited as a factor contributing to decentralization. To prevent further declines in the rate of economic growth within the Region and the state, it is necessary to develop and implement a positive regional and local industrial development program aimed not only at the active recruitment of selected industries within the Region but also at maintaining our current industrial base.

# APPENDICES

Appendix A

## SOCIOECONOMIC SUBCOMMITTEE OF THE TECHNICAL COORDINATING AND ADVISORY COMMITTEE ON REGIONAL LAND USE-TRANSPORTATION PLANNING

| | |
|---|---|
| Paul B. Juhnke<br>Chairman | Manager, Urban Research and Development, Metropolitan Milwaukee Association of Commerce |
| Michael J. Keidel<br>Secretary | Chief of Planning Research, SEWRPC |
| Kurt W. Bauer | Executive Director, SEWRPC |
| Eugene M. Cox | Executive Director, Comprehensive Health Planning Agency of Southeastern Wisconsin, Inc., Milwaukee |
| Gerald M. Elliott | Director of Business Research, Wisconsin Telephone Company, Milwaukee |
| Norman N. Gill | Executive Director, Citizens Governmental Research Bureau, Milwaukee |
| Douglas F. Haist | Director of Policy Planning, Division of Planning, Wisconsin Department of Transportation, Madison |
| Edward J. Hayes | Commissioner, Department of City Development, City of Milwaukee |
| Sebastian J. Helfer | Director, Campus Planning and Construction, Marquette University, Milwaukee |
| Bill R. Hippenmeyer | Director of Planning, City of Oak Creek |
| John E. Kane | Area Director, Milwaukee Area Office, U. S. Department of Housing and Urban Development |
| Ray D. Leary | Chief Engineer and General Manager, Milwaukee-Metropolitan Sewerage Commissions |
| Elwin G. Leet | County Agricultural Agent, Racine County |
| Russell H. Leitch | Trade Specialist, U. S. Department of Commerce Field Services, Milwaukee |
| George Meade | Marketing Research Manager, The Milwaukee Journal, Milwaukee |
| Kirk R. Petshek | Professor, School of Business Administration, University of Wisconsin-Milwaukee |
| John B. Prince | Manager of System Planning, Wisconsin Electric Power Company, Milwaukee |
| Richard E. Repert | Associate for United Community Services Planning, United Community Services of Greater Milwaukee |
| Gordon Rozmus | Associate Planner, City of Wauwatosa |
| Eric Schenker | Professor, Department of Economics, University of Wisconsin-Milwaukee |
| Roger L. Schrantz | Deputy Director, Bureau of Planning and Budget, Wisconsin Department of Administration, Madison |
| Harvey Shebesta | District Engineer, District 9, Division of Highways, Wisconsin Department of Transportation, Milwaukee |
| Philip A. Sundal | Research Director, Wisconsin Department of Business Development, Madison |
| Hampton Waring | Engineer of Plant Extensions, Wisconsin Telephone Company, Milwaukee |
| Lloyd O. Wadleigh | Chairman, Department of Economics, Carroll College, Waukesha |
| Thomas N. Wright | Director of Planning, City of Racine |

Appendix B

# DETAILED LABOR FORCE, INCOME, AND INDUSTRY DATA

Table B-1

LABOR FORCE LEVELS IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | LABOR FORCE LEVELS | | | CHANGE 1950-70 | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | NUMBER | PERCENT |
| UNITED STATES | 59,303,720 | 68,144,079 | 82,897,433 | 23,593,713 | 39.8 |
| WISCONSIN | 1,396,383 | 1,532,961 | 1,799,280 | 402,897 | 28.8 |
| SOUTHEASTERN WISCONSIN REGION | | | | | |
| KENOSHA COUNTY | 32,594 | 39,824 | 47,787 | 15,193 | 46.6 |
| MILWAUKEE COUNTY | 386,456 | 433,101 | 458,586 | 72,130 | 18.7 |
| OZAUKEE COUNTY | 9,655 | 14,449 | 22,385 | 12,730 | 131.8 |
| RACINE COUNTY | 46,803 | 54,991 | 69,269 | 22,466 | 48.0 |
| WALWORTH COUNTY | 16,455 | 20,464 | 26,853 | 10,398 | 63.2 |
| WASHINGTON COUNTY | 14,258 | 17,392 | 26,046 | 11,788 | 82.7 |
| WAUKESHA COUNTY | 33,836 | 58,512 | 93,588 | 59,752 | 176.6 |
| REGION TOTAL | 540,057 | 638,733 | 744,514 | 204,457 | 37.8 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-2

EMPLOYMENT AND UNEMPLOYMENT LEVELS IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | EMPLOYMENT AND UNEMPLOYMENT LEVELS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1950[a] | | | 1960[a] | | | 1970[a] | | |
| | EMPLOYED | UNEMPLOYED | PERCENT UNEMPLOYED | EMPLOYED | UNEMPLOYED | PERCENT UNEMPLOYED | EMPLOYED | UNEMPLOYED | PERCENT UNEMPLOYED |
| UNITED STATES | 56,225,340 | 2,698,816 | 4.6 | 64,639,256 | 3,504,827 | 5.1 | 77,308,792 | 3,589,553 | 4.4 |
| WISCONSIN | 1,355,283 | 41,100 | 2.9 | 1,468,631 | 59,091 | 3.9 | 1,726,814 | 72,466 | 4.0 |
| SOUTHEASTERN WISCONSIN REGION | | | | | | | | | |
| KENOSHA COUNTY | 31,859 | 676 | 2.1 | 38,498 | 1,228 | 3.1 | 45,705 | 2,082 | 4.4 |
| MILWAUKEE COUNTY | 374,755 | 10,506 | 2.7 | 414,230 | 17,514 | 4.0 | 441,322 | 17,264 | 3.8 |
| OZAUKEE COUNTY | 9,504 | 141 | 1.5 | 14,146 | 292 | 2.0 | 21,865 | 520 | 2.3 |
| RACINE COUNTY | 45,180 | 1,591 | 3.4 | 52,558 | 2,389 | 4.3 | 65,998 | 3,271 | 4.7 |
| WALWORTH COUNTY | 16,071 | 377 | 2.3 | 19,734 | 710 | 3.5 | 25,522 | 1,331 | 5.0 |
| WASHINGTON COUNTY | 14,022 | 233 | 1.6 | 16,971 | 413 | 2.4 | 25,424 | 622 | 2.4 |
| WAUKESHA COUNTY | 33,162 | 639 | 1.9 | 56,586 | 1,630 | 2.8 | 90,585 | 3,003 | 3.2 |
| REGION TOTAL | 524,553 | 14,163 | 2.6 | 612,723 | 24,176 | 3.8 | 716,421 | 28,093 | 3.8 |

[a]THE SUM OF EMPLOYED AND UNEMPLOYED WORKERS DOES NOT EQUAL THE LABOR FORCE TOTAL, BUT INSTEAD EQUALS THE CIVILIAN LABOR FORCE TOTAL. LABOR FORCE DIFFERS FROM CIVILIAN LABOR FORCE IN THAT THE LABOR FORCE TALLY INCLUDES MEMBERS OF THE ARMED FORCES.

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-3

EMPLOYMENT LEVELS FOR SELECTED INDUSTRIES IN THE UNITED STATES:
1950, 1960, AND 1970

| INDUSTRY GROUP | EMPLOYMENT LEVELS | | | | |
|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | CHANGE 1950-70 | |
| | 1950 | 1960 | 1970 | NUMBER | PERCENT |
| AGRICULTURE | 7,033.6 | 4,349.9 | 2,840.5 | - 4,193.1 | - 59.6 |
| CONTRACT CONSTRUCTION | 3,458.0 | 3,815.9 | 4,572.2 | 1,114.2 | 32.2 |
| PRIMARY METALS | 1,185.0 | 1,224.9 | 1,211.9 | 26.9 | 2.3 |
| FABRICATED METALS | 847.2 | 1,291.7 | 1,463.5 | 616.3 | 72.7 |
| NONELECTRICAL MACHINERY | 1,253.5 | 1,568.0 | 1,991.0 | 737.5 | 58.8 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 861.3 | 1,487.4 | 1,904.9 | 1,043.6 | 121.2 |
| TRANSPORTATION EQUIPMENT | 1,343.2 | 1,818.7 | 2,138.9 | 795.7 | 59.2 |
| FOOD AND RELATED PRODUCTS | 1,481.3 | 1,822.5 | 1,390.3 | - 91.0 | - 6.1 |
| PRINTING AND PUBLISHING | 862.9 | 1,141.2 | 1,191.6 | 328.7 | 38.1 |
| CHEMICALS AND RELATED PRODUCTS | 637.3 | 864.6 | 987.7 | 350.4 | 55.0 |
| WHOLESALE TRADE | 1,965.0 | 2,213.0 | 3,133.4 | 1,168.4 | 59.5 |
| RETAIL TRADE | 8,542.3 | 9,579.7 | 12,239.5 | 3,697.2 | 43.3 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 1,919.6 | 2,694.6 | 3,838.4 | 1,918.8 | 100.0 |
| EDUCATIONAL SERVICES | 2,078.7 | 3,393.9 | 6,147.8 | 4,069.1 | 195.8 |
| MEDICAL AND OTHER PROFESSIONAL SERVICES | 2,747.8 | 4,183.9 | 6,200.0 | 3,452.2 | 125.6 |
| GOVERNMENT SERVICES | 2,514.5 | 3,202.9 | 4,201.7 | 1,687.2 | 67.1 |
| TOTAL | 38,731.2 | 44,652.8 | 55,453.3 | 16,722.1 | 43.2 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-4

EMPLOYMENT LEVELS FOR SELECTED INDUSTRIES IN WISCONSIN:
1950, 1960, AND 1970

| INDUSTRY GROUP | EMPLOYMENT LEVELS | | | | |
|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | CHANGE 1950-70 | |
| | 1950 | 1960 | 1970 | NUMBER | PERCENT |
| AGRICULTURE | 251.7 | 167.2 | 110.0 | -141.7 | - 56.3 |
| CONTRACT CONSTRUCTION | 49.1 | 56.0 | 61.9 | 12.8 | 26.1 |
| PRIMARY METALS | 24.2 | 24.6 | 30.0 | 5.8 | 24.0 |
| FABRICATED METALS | 36.0 | 33.8 | 43.7 | 7.7 | 21.4 |
| NONELECTRICAL MACHINERY | 79.6 | 86.5 | 108.4 | 28.8 | 36.2 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 35.5 | 54.9 | 48.8 | 13.3 | 37.5 |
| TRANSPORTATION EQUIPMENT | 36.5 | 48.4 | 36.1 | - 0.4 | - 1.1 |
| FOOD AND RELATED PRODUCTS | 64.2 | 62.1 | 57.5 | - 6.7 | - 10.4 |
| PRINTING AND PUBLISHING | 18.5 | 21.8 | 25.3 | 6.8 | 36.8 |
| CHEMICALS AND RELATED PRODUCTS | 6.0 | 8.0 | 11.5 | 5.5 | 91.7 |
| WHOLESALE TRADE | 45.7 | 53.7 | 68.6 | 22.9 | 50.1 |
| RETAIL TRADE | 161.9 | 190.2 | 262.8 | 100.9 | 62.3 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 32.9 | 45.2 | 61.1 | 28.2 | 85.7 |
| EDUCATIONAL SERVICES | 48.3 | 72.6 | 143.1 | 94.8 | 196.3 |
| MEDICAL AND OTHER PROFESSIONAL SERVICES | 59.4 | 90.6 | 168.1 | 108.7 | 183.0 |
| GOVERNMENT SERVICES | 40.9 | 51.8 | 64.8 | 23.9 | 58.4 |
| TOTAL | 990.4 | 1,067.4 | 1,301.7 | 311.3 | 31.4 |

SOURCE- U. S. BUREAU OF THE CENSUS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table B-5

EMPLOYMENT LEVELS FOR SELECTED INDUSTRIES IN THE REGION:
1950, 1960, AND 1970

| INDUSTRY GROUP | EMPLOYMENT LEVELS | | | | |
|---|---|---|---|---|---|
| | NUMBER OF EMPLOYEES (IN THOUSANDS) | | | CHANGE 1950-70 | |
| | 1950 | 1960 | 1970 | NUMBER | PERCENT |
| NONELECTRICAL MACHINERY | 62.5 | 57.1 | 68.1 | 5.6 | 9.0 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 20.1 | 43.2 | 36.5 | 16.4 | 81.6 |
| RETAIL TRADE | 74.0 | 84.6 | 111.2 | 37.2 | 50.3 |
| MEDICAL AND OTHER PROFESSIONAL SERVICES | 25.4 | 38.7 | 70.5 | 45.1 | 177.6 |
| EDUCATIONAL SERVICES | 15.4 | 25.4 | 51.7 | 36.3 | 235.7 |
| WHOLESALE TRADE | 22.8 | 26.0 | 32.0 | 9.2 | 40.4 |
| FINANCE, INSURANCE, AND REAL ESTATE SERVICES | 21.6 | 25.0 | 31.2 | 9.6 | 44.4 |
| FABRICATED METALS | 17.6 | 18.4 | 24.6 | 7.0 | 39.8 |
| TRANSPORTATION EQUIPMENT | 24.8 | 35.3 | 22.0 | - 2.8 | - 11.3 |
| PRIMARY METALS | 16.3 | 20.2 | 22.5 | 6.2 | 38.0 |
| FOOD AND BEVERAGE | 21.9 | 23.7 | 18.9 | - 3.0 | - 13.7 |
| PRINTING AND PUBLISHING | 9.9 | 14.3 | 14.9 | 5.0 | 50.5 |
| GOVERNMENT SERVICES | 18.0 | 22.7 | 27.0 | 9.0 | 50.0 |
| CONSTRUCTION | 20.6 | 26.0 | 24.0 | 3.4 | 16.5 |
| LEATHER AND LEATHER PRODUCTS | 11.0 | 7.6 | 5.7 | - 5.3 | - 48.2 |
| PAPER AND RELATED PRODUCTS | 5.1 | 4.6 | 7.5 | 2.4 | 47.0 |
| CHEMICALS AND RELATED PRODUCTS | 4.0 | 4.0 | 5.7 | 1.7 | 42.5 |
| INSTRUMENTS AND RELATED PRODUCTS | 3.1 | 3.4 | 5.1 | 2.0 | 64.5 |
| TOTAL | 394.1 | 480.2 | 579.1 | 185.0 | 46.9 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; WISCONSIN DEPARTMENT OF INDUSTRY, LABOR, AND HUMAN RELATIONS, STATE EMPLOYMENT SERVICE; AND SEWRPC.

Table B-6

DISTRIBUTION OF EMPLOYMENT BY OCCUPATION IN THE UNITED STATES, WISCONSIN, AND THE REGION: 1950, 1960, AND 1970

| OCCUPATION | DISTRIBUTION OF EMPLOYMENT FOR 1950 | | | | | |
|---|---|---|---|---|---|---|
| | UNITED STATES | | WISCONSIN | | REGION | |
| | NUMBER | PERCENT OF U. S. TOTAL | NUMBER | PERCENT OF WISCONSIN TOTAL | NUMBER | PERCENT OF REGION TOTAL |
| PROFESSIONAL AND TECHNICAL.. | 4,909,241 | 8.7 | 107,844 | 8.0 | 48,072 | 9.2 |
| FARMERS..... | 4,306,253 | 7.7 | 154,434 | 11.4 | 11,889 | 2.3 |
| MANAGERS AND OFFICIALS..... | 5,017,465 | 8.9 | 107,258 | 7.9 | 44,597 | 8.5 |
| CLERICAL AND SALES..... | 10,820,884 | 19.2 | 235,272 | 17.4 | 114,708 | 21.8 |
| CRAFTSMEN AND FOREMEN..... | 7,772,560 | 13.8 | 186,252 | 13.7 | 91,688 | 17.5 |
| OPERATIVES (SEMI-SKILLED)... | 11,146,220 | 19.9 | 271,256 | 20.0 | 126,436 | 24.1 |
| PRIVATE AND SERVICE WORKERS. | 5,695,169 | 10.1 | 114,260 | 8.4 | 46,309 | 8.8 |
| FARM LABOR..... | 2,399,794 | 4.3 | 94,466 | 7.0 | 8,264 | 1.6 |
| LABOR (UNSKILLED)..... | 3,417,232 | 6.1 | 67,866 | 5.0 | 27,550 | 5.2 |
| NO REPORT ON OCCUPATION..... | 740,522 | 1.3 | 16,375 | 1.2 | 5,040 | 1.0 |
| TOTAL | 56,225,340 | 100.0 | 1,355,283 | 100.0 | 524,553 | 100.0 |

| OCCUPATION | DISTRIBUTION OF EMPLOYMENT FOR 1960 | | | | | |
|---|---|---|---|---|---|---|
| | UNITED STATES | | WISCONSIN | | REGION | |
| | NUMBER | PERCENT OF U. S. TOTAL | NUMBER | PERCENT OF WISCONSIN TOTAL | NUMBER | PERCENT OF REGION TOTAL |
| PROFESSIONAL AND TECHNICAL.. | 7,232,410 | 11.2 | 146,786 | 10.0 | 67,085 | 11.1 |
| FARMERS..... | 2,505,684 | 3.9 | 109,915 | 7.5 | 7,566 | 1.2 |
| MANAGERS AND OFFICIALS..... | 5,409,543 | 8.4 | 105,463 | 7.2 | 44,692 | 7.3 |
| CLERICAL AND SALES..... | 13,945,881 | 21.6 | 291,308 | 19.8 | 143,022 | 23.3 |
| CRAFTSMEN AND FOREMEN..... | 8,741,292 | 13.5 | 200,660 | 13.7 | 97,309 | 15.9 |
| OPERATIVES (SEMI-SKILLED)... | 11,897,601 | 18.4 | 299,610 | 20.4 | 137,543 | 22.4 |
| PRIVATE AND SERVICE WORKERS. | 7,170,788 | 11.1 | 147,217 | 10.0 | 58,438 | 9.5 |
| FARM LABOR..... | 1,444,807 | 2.2 | 52,519 | 3.6 | 4,203 | 0.7 |
| LABOR (UNSKILLED)..... | 3,107,531 | 4.8 | 60,759 | 4.1 | 25,221 | 4.1 |
| NO REPORT ON OCCUPATION..... | 3,183,719 | 4.9 | 54,374 | 3.7 | 27,644 | 4.5 |
| TOTAL | 64,639,256 | 100.0 | 1,468,611 | 100.0 | 612,723 | 100.0 |

| OCCUPATION | DISTRIBUTION OF EMPLOYMENT FOR 1970 | | | | | |
|---|---|---|---|---|---|---|
| | UNITED STATES | | WISCONSIN | | REGION | |
| | NUMBER | PERCENT OF U. S. TOTAL | NUMBER | PERCENT OF WISCONSIN TOTAL | NUMBER | PERCENT OF REGION TOTAL |
| PROFESSIONAL AND TECHNICAL.. | 10,830,693 | 14.0 | 226,030 | 13.1 | 100,506 | 14.0 |
| FARMERS..... | 1,343,094 | 1.7 | 70,943 | 4.1 | 4,604 | 0.6 |
| MANAGERS AND OFFICIALS..... | 6,139,377 | 7.9 | 122,577 | 7.1 | 49,365 | 6.9 |
| CLERICAL AND SALES..... | 18,302,138 | 23.8 | 366,605 | 21.2 | 174,738 | 24.4 |
| CRAFTSMEN AND FOREMEN..... | 9,996,459 | 12.9 | 218,338 | 12.6 | 94,591 | 13.2 |
| OPERATIVES (SEMI-SKILLED)... | 12,582,342 | 16.3 | 318,662 | 18.5 | 136,081 | 19.0 |
| PRIVATE AND SERVICE WORKERS. | 9,157,294 | 11.8 | 217,402 | 12.6 | 85,112 | 12.0 |
| FARM LABOR..... | 923,866 | 1.2 | 31,847 | 1.8 | 3,223 | 0.4 |
| LABOR (UNSKILLED)..... | 3,213,154 | 4.2 | 68,626 | 4.0 | 27,177 | 3.8 |
| NO REPORT ON OCCUPATION..... | 4,820,375 | 6.2 | 85,784 | 5.0 | 41,024 | 5.7 |
| TOTAL | 77,308,792 | 100.0 | 1,726,814 | 100.0 | 716,421 | 100.0 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-7

LABOR FORCE COMPOSITION IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | LABOR FORCE COMPOSITION | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1950 | | | | 1960 | | | | 1970 | | | |
| | NUMBER OF FEMALES IN LABOR FORCE | NUMBER OF MALES IN LABOR FORCE | TOTAL LABOR FORCE | PERCENT LABOR FORCE TO TOTAL POPULATION | NUMBER OF FEMALES IN LABOR FORCE | NUMBER OF MALES IN LABOR FORCE | TOTAL LABOR FORCE | PERCENT LABOR FORCE TO TOTAL POPULATION | NUMBER OF FEMALES IN LABOR FORCE | NUMBER OF MALES IN LABOR FORCE | TOTAL LABOR FORCE | PERCENT LABOR FORCE TO TOTAL POPULATION |
| UNITED STATES | 16,551,990 | 42,751,730 | 59,303,720 | 39.2 | 22,308,329 | 45,835,750 | 68,144,079 | 38.0 | 30,820,770 | 52,076,663 | 82,897,433 | 40.8 |
| WISCONSIN | 369,182 | 1,027,201 | 1,396,383 | 40.6 | 476,214 | 1,056,747 | 1,532,961 | 38.8 | 668,036 | 1,131,244 | 1,799,280 | 40.7 |
| SOUTHEASTERN WISCONSIN REGION | | | | | | | | | | | | |
| KENOSHA COUNTY..... | 7,963 | 24,631 | 32,594 | 43.3 | 11,334 | 28,490 | 39,824 | 39.6 | 17,633 | 30,154 | 47,787 | 40.5 |
| MILWAUKEE COUNTY... | 116,643 | 269,813 | 386,456 | 44.4 | 145,594 | 287,107 | 433,101 | 41.8 | 183,921 | 274,665 | 458,586 | 43.5 |
| OZAUKEE COUNTY..... | 2,334 | 7,321 | 9,655 | 41.3 | 4,117 | 10,332 | 14,449 | 37.6 | 7,901 | 14,484 | 22,385 | 41.1 |
| RACINE COUNTY..... | 12,371 | 34,432 | 46,803 | 42.7 | 17,431 | 37,560 | 54,991 | 38.8 | 25,502 | 43,767 | 69,269 | 40.5 |
| WALWORTH COUNTY.... | 4,012 | 12,443 | 16,455 | 39.6 | 6,454 | 14,010 | 20,464 | 39.1 | 10,487 | 16,366 | 26,853 | 42.3 |
| WASHINGTON COUNTY.. | 3,637 | 10,621 | 14,258 | 42.0 | 4,947 | 12,445 | 17,392 | 37.7 | 9,576 | 16,470 | 26,046 | 40.8 |
| WAUKESHA COUNTY.... | 8,151 | 25,685 | 33,836 | 39.4 | 16,023 | 42,489 | 58,512 | 37.0 | 32,576 | 61,012 | 93,588 | 40.4 |
| REGION TOTAL..... | 155,111 | 384,946 | 540,057 | 43.5 | 206,300 | 432,433 | 638,733 | 40.6 | 287,596 | 456,918 | 744,514 | 42.4 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-8

NUMBER OF FEMALES IN THE LABOR FORCE IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950, 1960, AND 1970

| GEOGRAPHIC AREA | FEMALES IN LABOR FORCE | | | | | |
|---|---|---|---|---|---|---|
| | 1950 | | 1960 | | 1970 | |
| | NUMBER | PERCENT OF LABOR FORCE | NUMBER | PERCENT OF LABOR FORCE | NUMBER | PERCENT OF LABOR FORCE |
| UNITED STATES | 16,551,990 | 27.9 | 22,308,329 | 32.7 | 30,820,770 | 37.2 |
| WISCONSIN | 369,182 | 26.4 | 476,214 | 31.1 | 668,036 | 37.1 |
| SOUTHEASTERN WISCONSIN REGION | | | | | | |
| KENOSHA COUNTY..... | 7,963 | 24.4 | 11,334 | 28.5 | 17,633 | 36.9 |
| MILWAUKEE COUNTY..... | 116,643 | 30.2 | 145,994 | 33.7 | 183,921 | 40.1 |
| OZAUKEE COUNTY..... | 2,334 | 24.2 | 4,117 | 28.5 | 7,901 | 35.3 |
| RACINE COUNTY..... | 12,371 | 26.4 | 17,431 | 31.7 | 25,502 | 36.8 |
| WALWORTH COUNTY..... | 4,012 | 24.4 | 6,454 | 31.5 | 10,487 | 39.0 |
| WASHINGTON COUNTY..... | 3,637 | 25.5 | 4,947 | 28.4 | 9,576 | 36.8 |
| WAUKESHA COUNTY..... | 8,151 | 24.1 | 16,023 | 27.4 | 32,576 | 34.8 |
| REGION TOTAL..... | 155,111 | 28.7 | 206,300 | 32.3 | 287,596 | 38.6 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-9

POPULATION AND TOTAL PERSONAL INCOME DISTRIBUTION IN THE UNITED STATES BY GEOGRAPHIC REGION: 1960 AND 1970

| GEOGRAPHIC REGION | POPULATION (IN MILLIONS) | | | | | | TOTAL PERSONAL INCOME (BILLIONS OF DOLLARS) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1960 | | 1970 | | CHANGE (1960-70) | | 1960 | | 1970 | | CHANGE (1960-70) | |
| | NUMBER | PERCENT OF U. S. TOTAL | NUMBER | PERCENT OF U. S. TOTAL | ABSOLUTE | PERCENT | NUMBER | PERCENT OF U. S. TOTAL | NUMBER | PERCENT OF U. S. TOTAL | ABSOLUTE | PERCENT |
| NEW ENGLAND..... | 10.5 | 5.8 | 11.8 | 5.8 | 1.3 | 12.4 | $ 21.2 | 6.4 | $ 40.3 | 6.3 | $ 19.1 | 90.1 |
| MID-ATLANTIC..... | 34.2 | 19.1 | 37.2 | 18.3 | 3.0 | 8.8 | 72.2 | 21.8 | 130.9 | 20.7 | 58.7 | 81.3 |
| EAST NORTH CENTRAL.. | 36.1 | 20.2 | 40.3 | 19.9 | 4.2 | 11.6 | 72.1 | 21.7 | 129.6 | 20.4 | 57.5 | 79.8 |
| WEST NORTH CENTRAL.. | 15.4 | 8.6 | 16.3 | 8.0 | 0.9 | 5.8 | 26.0 | 7.8 | 47.1 | 7.4 | 21.1 | 81.2 |
| SOUTH ATLANTIC..... | 26.0 | 14.5 | 30.7 | 15.1 | 4.7 | 18.1 | 40.2 | 12.1 | 88.5 | 13.9 | 48.3 | 120.1 |
| EAST SOUTH CENTRAL.. | 12.0 | 6.7 | 12.8 | 6.3 | 0.8 | 6.7 | 14.9 | 4.5 | 29.9 | 4.7 | 15.0 | 100.7 |
| WEST SOUTH CENTRAL.. | 17.0 | 9.5 | 19.3 | 9.5 | 2.3 | 13.5 | 25.8 | 7.8 | 51.1 | 8.0 | 25.3 | 98.1 |
| MOUNTAIN..... | 6.9 | 3.8 | 8.3 | 4.1 | 1.4 | 20.3 | 12.1 | 3.6 | 23.9 | 3.8 | 11.8 | 97.5 |
| PACIFIC..... | 21.2 | 11.8 | 26.5 | 13.0 | 5.3 | 25.0 | 47.2 | 14.2 | 94.3 | 14.8 | 47.1 | 99.8 |
| UNITED STATES | 179.3 | 100.0 | 203.2 | 100.0 | 23.9 | 13.3 | $331.7 | 100.0 | $635.6 | 100.0 | $303.9 | 91.6 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-10

## PER CAPITA INCOME LEVELS IN THE UNITED STATES BY GEOGRAPHIC REGION: 1960 AND 1970

| GEOGRAPHIC REGION AND INCOME LEVEL | YEAR | | CHANGE 1960-1970 | |
|---|---|---|---|---|
| | 1960 | 1970 | ABSOLUTE | PERCENT |
| NEW ENGLAND | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $2,020 | $3,402 | $1,382 | 68.4 |
| CONSTANT (1967 DOLLARS) | 2,280 | 2,928 | 648 | 28.4 |
| MID-ATLANTIC | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $2,114 | $3,519 | $1,405 | 66.5 |
| CONSTANT (1967 DOLLARS) | 2,386 | 3,028 | 642 | 26.9 |
| EAST NORTH CENTRAL | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,987 | $3,219 | $1,232 | 62.0 |
| CONSTANT (1967 DOLLARS) | 2,243 | 2,770 | 527 | 23.5 |
| WEST NORTH CENTRAL | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,685 | $2,888 | $1,203 | 71.4 |
| CONSTANT (1967 DOLLARS) | 1,902 | 2,485 | 583 | 30.6 |
| SOUTH ATLANTIC | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,549 | $2,885 | $1,336 | 86.2 |
| CONSTANT (1967 DOLLARS) | 1,748 | 2,483 | 735 | 42.0 |
| EAST SOUTH CENTRAL | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,236 | $2,332 | $1,096 | 88.7 |
| CONSTANT (1967 DOLLARS) | 1,395 | 2,007 | 612 | 43.9 |
| WEST SOUTH CENTRAL | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,521 | $2,646 | $1,125 | 74.0 |
| CONSTANT (1967 DOLLARS) | 1,717 | 2,277 | 560 | 32.6 |
| MOUNTAIN | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,771 | $2,890 | $1,119 | 63.2 |
| CONSTANT (1967 DOLLARS) | 1,999 | 2,487 | 488 | 24.4 |
| PACIFIC | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $2,227 | $3,555 | $1,328 | 59.6 |
| CONSTANT (1967 DOLLARS) | 2,514 | 3,059 | 545 | 21.7 |
| UNITED STATES | | | | |
| PER CAPITA INCOME | | | | |
| ACTUAL | $1,849 | $3,128 | $1,279 | 69.2 |
| CONSTANT (1967 DOLLARS) | 2,087 | 2,692 | 605 | 29.0 |

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-11

## DISTRIBUTION OF FAMILIES BY INCOME RANGE IN THE UNITED STATES, WISCONSIN, AND THE REGION BY COUNTY: 1950,[a] 1960, AND 1970

| GEOGRAPHIC AREA | INCOME RANGE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $0 - $2,999 | | | $3,000 - $4,999 | | | $5,000 - $7,999 | | | $8,000 - $9,999 | | | $10,000 AND OVER | | |
| | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 | 1950 | 1960 | 1970 |
| UNITED STATES | 17,625,120 | 9,650,239 | 4,623,000 | 11,482,010 | 9,240,479 | 5,403,000 | 4,992,428 | 13,407,819 | 9,426,000 | 1,186,967 | 6,035,480 | 7,042,000 | 1,143,450 | 6,794,381 | 25,506,000 |
| WISCONSIN | 367,220 | 171,743 | 88,391 | 303,040 | 194,625 | 93,612 | 120,645 | 333,755 | 181,804 | 26,930 | 145,074 | 169,363 | 23,290 | 141,398 | 544,305 |
| SOUTHEASTERN WISCONSIN REGION | | | | | | | | | | | | | | | |
| KENOSHA COUNTY | 5,830 | 2,654 | 1,806 | 8,800 | 3,113 | 2,248 | 3,386 | 10,781 | 4,881 | 764 | 4,009 | 4,880 | 590 | 5,193 | 15,700 |
| MILWAUKEE COUNTY | 56,955 | 25,827 | 17,396 | 97,400 | 34,445 | 18,135 | 46,040 | 106,105 | 35,819 | 10,830 | 44,380 | 39,716 | 9,330 | 54,107 | 151,478 |
| OZAUKEE COUNTY | 1,960 | 838 | 486 | 2,455 | 1,277 | 526 | 991 | 3,664 | 1,202 | 234 | 1,623 | 1,643 | 240 | 2,073 | 9,358 |
| RACINE COUNTY | 7,135 | 3,807 | 2,368 | 12,305 | 4,923 | 2,734 | 5,838 | 14,543 | 5,849 | 1,397 | 5,743 | 6,390 | 1,035 | 6,466 | 24,086 |
| WALWORTH COUNTY | 4,610 | 2,555 | 1,322 | 3,045 | 2,815 | 1,468 | 1,432 | 4,677 | 2,609 | 273 | 1,511 | 2,367 | 290 | 1,718 | 7,073 |
| WASHINGTON COUNTY | 3,510 | 1,509 | 773 | 3,145 | 2,077 | 945 | 1,140 | 4,505 | 1,766 | 200 | 1,543 | 2,439 | 220 | 1,703 | 9,061 |
| WAUKESHA COUNTY | 6,555 | 3,398 | 1,951 | 8,690 | 4,361 | 2,308 | 3,592 | 15,794 | 4,660 | 703 | 6,610 | 6,655 | 765 | 8,860 | 40,093 |
| REGION TOTAL | 86,555 | 40,588 | 26,102 | 135,840 | 53,011 | 28,364 | 62,419 | 160,069 | 56,786 | 14,401 | 65,419 | 64,090 | 12,470 | 80,120 | 256,849 |

[a]1950 DATA DOES NOT INCLUDE FAMILIES NOT REPORTING INCOME.

SOURCE- U. S. BUREAU OF THE CENSUS AND SEWRPC.

Table B-12

PERCENTAGE DISTRIBUTION OF VALUE ADDED BY MANUFACTURE FOR SELECTED INDUSTRIES IN THE UNITED STATES BY GEOGRAPHIC REGION: 1949

| INDUSTRY GROUP | VALUE ADDED BY MANUFACTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NEW ENGLAND | MID-ATLANTIC | EAST NORTH CENTRAL | WEST NORTH CENTRAL | SOUTH ATLANTIC | EAST SOUTH CENTRAL | WEST SOUTH CENTRAL | MOUNTAIN | PACIFIC | UNITED STATES |
| NONELECTRICAL MACHINERY..... | 10.6 | 21.9 | 50.6 | 6.3 | 1.8 | 1.8 | 2.4 | 0.4 | 4.2 | 100.0 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 11.1 | 37.3 | 40.2 | 4.7 | 2.6 | 1.0 | 0.4 | 0.1 | 2.6 | 100.0 |
| TRANSPORTATION EQUIPMENT..... | 4.2 | 14.1 | 58.0 | 5.5 | 4.8 | 1.0 | 2.1 | 0.2 | 10.1 | 100.0 |
| PRIMARY METALS..... | 4.2 | 30.5 | 41.8 | 1.8 | 7.1 | 5.1 | 1.5 | 3.0 | 5.0 | 100.0 |
| FABRICATED METALS..... | 8.8 | 25.2 | 44.8 | 4.6 | 4.0 | 2.8 | 2.6 | 0.3 | 6.9 | 100.0 |
| FOOD AND RELATED PRODUCTS..... | 3.9 | 21.3 | 27.8 | 12.9 | 8.0 | 4.9 | 6.2 | 2.2 | 12.8 | 100.0 |
| PRINTING AND PUBLISHING..... | 6.3 | 35.8 | 29.4 | 8.2 | 5.7 | 2.3 | 3.7 | 1.2 | 7.4 | 100.0 |
| LEATHER AND LEATHER PRODUCTS.. | 31.2 | 28.5 | 20.7 | 10.7 | 3.9 | 3.9 | 1.1 | 0.0 | 0.0 | 100.0 |
| PAPER AND RELATED PRODUCTS.... | 12.3 | 24.4 | 27.8 | 4.6 | 12.1 | 3.6 | 5.8 | 0.2 | 9.2 | 100.0 |
| CHEMICALS AND RELATED PRODUCTS | 3.6 | 29.6 | 24.0 | 6.3 | 14.8 | 5.9 | 9.0 | 0.8 | 6.0 | 100.0 |
| INSTRUMENTS AND RELATED PRODUCTS..... | 19.2 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 100.0 |

SOURCE- U. S. DEPARTMENT OF COMMERCE, ANNUAL SURVEY OF MANUFACTURES; AND SEWRPC.

Table B-13

PERCENTAGE DISTRIBUTION OF VALUE ADDED BY MANUFACTURE FOR SELECTED INDUSTRIES IN THE UNITED STATES BY GEOGRAPHIC REGION: 1959

| INDUSTRY GROUP | VALUE ADDED BY MANUFACTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NEW ENGLAND | MID-ATLANTIC | EAST NORTH CENTRAL | WEST NORTH CENTRAL | SOUTH ATLANTIC | EAST SOUTH CENTRAL | WEST SOUTH CENTRAL | MOUNTAIN | PACIFIC | UNITED STATES |
| NONELECTRICAL MACHINERY..... | 10.1 | 20.2 | 45.9 | 7.0 | 3.0 | 2.0 | 4.0 | 0.9 | 6.9 | 100.0 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 10.5 | 28.1 | 38.0 | 4.6 | 5.2 | 3.7 | 1.7 | 0.5 | 7.7 | 100.0 |
| TRANSPORTATION EQUIPMENT..... | 5.6 | 13.0 | 44.3 | 7.0 | 6.5 | 0.8 | 4.0 | 0.0 | 18.8 | 100.0 |
| PRIMARY METALS..... | 4.7 | 27.4 | 40.7 | 2.5 | 7.2 | 5.2 | 3.7 | 2.6 | 6.0 | 100.0 |
| FABRICATED METALS..... | 8.6 | 22.7 | 39.2 | 5.4 | 5.5 | 3.4 | 3.9 | 0.8 | 10.5 | 100.0 |
| FOOD AND RELATED PRODUCTS..... | 4.0 | 20.3 | 24.3 | 12.8 | 9.7 | 5.1 | 6.8 | 2.7 | 14.3 | 100.0 |
| PRINTING AND PUBLISHING..... | 6.4 | 35.3 | 25.4 | 7.3 | 7.6 | 2.7 | 4.1 | 1.8 | 9.4 | 100.0 |
| LEATHER AND LEATHER PRODUCTS.. | 31.2 | 28.6 | 18.3 | 11.4 | 4.1 | 5.4 | 0.0 | 1.0 | 0.0 | 100.0 |
| PAPER AND RELATED PRODUCTS.... | 11.1 | 20.8 | 24.7 | 5.2 | 14.3 | 5.8 | 6.3 | 0.5 | 11.3 | 100.0 |
| CHEMICALS AND RELATED PRODUCTS | 3.4 | 26.6 | 22.0 | 5.2 | 15.7 | 7.6 | 12.2 | 0.9 | 6.4 | 100.0 |
| INSTRUMENTS AND RELATED PRODUCTS..... | 14.6 | 53.4 | 22.6 | 6.6 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 100.0 |

SOURCE- U. S. DEPARTMENT OF COMMERCE, ANNUAL SURVEY OF MANUFACTURES; AND SEWRPC.

Table B-14

PERCENTAGE DISTRIBUTION OF VALUE ADDED BY MANUFACTURE FOR SELECTED INDUSTRIES IN THE UNITED STATES BY GEOGRAPHIC REGION: 1969

| INDUSTRY GROUP | VALUE ADDED BY MANUFACTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NEW ENGLAND | MID-ATLANTIC | EAST NORTH CENTRAL | WEST NORTH CENTRAL | SOUTH ATLANTIC | EAST SOUTH CENTRAL | WEST SOUTH CENTRAL | MOUNTAIN | PACIFIC | UNITED STATES |
| NONELECTRICAL MACHINERY..... | 8.4 | 18.7 | 40.2 | 8.7 | 5.3 | 3.8 | 4.8 | 1.7 | 8.4 | 100.0 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 9.2 | 24.5 | 29.3 | 5.0 | 8.3 | 5.4 | 3.9 | 1.8 | 12.6 | 100.0 |
| TRANSPORTATION EQUIPMENT..... | 6.4 | 13.0 | 38.4 | 7.5 | 7.0 | 3.3 | 7.8 | 0.8 | 15.8 | 100.0 |
| PRIMARY METALS..... | 4.2 | 24.5 | 40.1 | 2.7 | 7.3 | 5.8 | 4.3 | 4.4 | 6.7 | 100.0 |
| FABRICATED METALS..... | 7.1 | 19.6 | 39.8 | 5.7 | 6.7 | 4.2 | 6.2 | 1.3 | 9.4 | 100.0 |
| FOOD AND RELATED PRODUCTS..... | 3.6 | 17.4 | 24.3 | 11.8 | 11.7 | 5.6 | 8.2 | 3.1 | 14.3 | 100.0 |
| LEATHER AND LEATHER PRODUCTS.. | 36.4 | 34.0 | 21.1 | 0.0 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| PAPER AND RELATED PRODUCTS.... | 10.0 | 18.1 | 21.7 | 6.1 | 15.7 | 8.0 | 7.4 | 1.0 | 12.0 | 100.0 |
| CHEMICALS AND RELATED PRODUCTS | 3.5 | 25.0 | 21.4 | 5.3 | 16.2 | 8.4 | 13.0 | 1.1 | 6.1 | 100.0 |
| INSTRUMENTS AND RELATED PRODUCTS..... | 14.7 | 48.7 | 15.8 | 4.7 | 3.8 | 1.3 | 2.5 | 1.5 | 7.0 | 100.0 |
| PRINTING AND PUBLISHING..... | 6.7 | 31.3 | 24.1 | 8.7 | 9.1 | 3.7 | 4.5 | 2.0 | 9.9 | 100.0 |

SOURCE- U. S. DEPARTMENT OF COMMERCE, ANNUAL SURVEY OF MANUFACTURES; AND SEWRPC.

Table B-15

VALUE ADDED LEVELS IN SELECTED MANUFACTURING INDUSTRIES IN THE UNITED STATES: 1950-1970

| INDUSTRY GROUP | VALUE ADDED (BILLIONS OF DOLLARS) | | | | | | | | | | | | | | | | | | | | | PERCENT CHANGE 1950-70 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | |
| NONELECTRICAL MACHINERY..... | $ 8.8 | $11.2 | $12.8 | $13.4 | $12.2 | $13.8 | $16.1 | $16.0 | $12.4 | $14.6 | $14.4 | $14.2 | $16.1 | $17.3 | $20.3 | $22.8 | $27.0 | $27.8 | $28.8 | $32.0 | $31.8 | 261.4 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 4.8 | 5.7 | 6.9 | 7.9 | 7.3 | 8.0 | 9.1 | 9.6 | 10.6 | 12.7 | 13.5 | 14.4 | 16.4 | 17.0 | 17.8 | 20.2 | 23.5 | 24.5 | 26.4 | 28.3 | 27.8 | 479.2 |
| TRANSPORTATION EQUIPMENT..... | 8.5 | 9.8 | 12.0 | 14.5 | 13.4 | 17.1 | 16.6 | 18.5 | 15.3 | 17.7 | 18.4 | 17.4 | 20.9 | 22.8 | 23.8 | 27.5 | 29.3 | 28.2 | 33.0 | 34.1 | 28.9 | 240.0 |
| PRIMARY METALS..... | 8.0 | 9.8 | 9.1 | 11.0 | 9.4 | 13.0 | 13.8 | 13.3 | 11.5 | 13.7 | 13.3 | 12.8 | 13.7 | 15.3 | 16.7 | 18.9 | 20.9 | 20.0 | 21.0 | 22.7 | 21.4 | 167.5 |
| FABRICATED METALS..... | 6.2 | 7.1 | 7.2 | 8.1 | 7.7 | 8.8 | 9.2 | 9.5 | 9.4 | 10.4 | 10.3 | 10.3 | 11.1 | 11.8 | 12.7 | 14.2 | 15.8 | 18.0 | 19.5 | 20.7 | 20.7 | 233.9 |
| FOOD AND RELATED PRODUCTS..... | 10.1 | 10.6 | 11.3 | 11.9 | 13.8 | 14.8 | 16.0 | 16.3 | 17.7 | 18.8 | 19.8 | 20.1 | 20.8 | 21.8 | 23.1 | 23.5 | 24.9 | 26.6 | 28.2 | 29.9 | 31.9 | 215.8 |
| LEATHER AND LEATHER PRODUCTS... | 1.4 | 1.5 | 1.6 | 1.7 | 1.6 | 1.8 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.3 | 2.3 | 2.5 | 2.6 | 2.9 | 2.9 | 2.8 | 100.0 |
| PAPER AND RELATED PRODUCTS..... | 3.4 | 4.2 | 3.9 | 4.5 | 4.6 | 5.1 | 5.6 | 5.7 | 5.7 | 6.4 | 6.5 | 6.6 | 7.0 | 7.4 | 7.8 | 8.5 | 9.4 | 9.8 | 10.5 | 11.4 | 11.5 | 238.2 |
| CHEMICALS AND RELATED PRODUCTS. | 7.2 | 8.2 | 8.5 | 9.3 | 9.6 | 11.1 | 12.0 | 12.1 | 12.3 | 14.2 | 14.4 | 14.8 | 16.0 | 17.6 | 19.2 | 21.0 | 22.7 | 23.6 | 25.8 | 27.5 | 27.9 | 287.5 |
| INSTRUMENTS AND RELATED PRODUCTS..... | 1.4 | 1.6 | 2.0 | 2.2 | 2.1 | 2.4 | 2.7 | 2.8 | 2.8 | 3.5 | 3.6 | 3.6 | 3.7 | 4.0 | 4.3 | 5.0 | 5.8 | 6.4 | 7.0 | 7.5 | 7.9 | 464.3 |
| PRINTING AND PUBLISHING..... | 4.9 | 5.3 | 5.7 | 5.9 | 6.4 | 6.9 | 7.6 | 7.7 | 8.0 | 8.7 | 9.3 | 9.6 | 10.0 | 10.5 | 11.2 | 12.1 | 13.3 | 14.4 | 15.3 | 16.8 | 17.3 | 253.1 |

SOURCE- U. S. DEPARTMENT OF COMMERCE, ANNUAL SURVEY OF MANUFACTURES; AND SEWRPC.

Table B-16

AVERAGE HOURLY EARNINGS FOR SELECTED MANUFACTURING INDUSTRIES IN THE UNITED STATES: 1960-1970

| SELECTED MANUFACTURING INDUSTRIES | AVERAGE HOURLY EARNINGS | | | | | | | | | | | ABSOLUTE CHANGE 1960-70 | PERCENT CHANGE 1960-70 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | | |
| NONELECTRICAL MACHINERY..... | $2.55 | $2.62 | $2.71 | $2.78 | $2.87 | $2.96 | $3.09 | $3.19 | $3.36 | $3.58 | $3.77 | $1.22 | 47.8 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 2.28 | 2.35 | 2.40 | 2.46 | 2.51 | 2.58 | 2.65 | 2.77 | 2.93 | 3.09 | 3.29 | 1.01 | 44.3 |
| TRANSPORTATION EQUIPMENT..... | 2.74 | 2.80 | 2.91 | 3.01 | 3.09 | 3.21 | 3.33 | 3.44 | 3.69 | 3.90 | 4.07 | 1.33 | 48.5 |
| FOOD AND RELATED PRODUCTS..... | 2.11 | 2.17 | 2.24 | 2.30 | 2.37 | 2.43 | 2.52 | 2.64 | 2.80 | 2.96 | 3.16 | 1.05 | 49.8 |
| FABRICATED METALS..... | 2.43 | 2.49 | 2.55 | 2.61 | 2.68 | 2.76 | 2.88 | 2.98 | 3.16 | 3.34 | 3.53 | 1.10 | 45.3 |
| PRIMARY METALS..... | 2.81 | 2.90 | 2.98 | 3.04 | 3.11 | 3.18 | 3.28 | 3.34 | 3.55 | 3.79 | 3.94 | 1.13 | 40.2 |
| PRINTING AND PUBLISHING..... | 2.68 | 2.75 | 2.82 | 2.89 | 2.97 | 3.06 | 3.16 | 3.28 | 3.48 | 3.69 | 3.92 | 1.24 | 46.3 |
| TOTAL MANUFACTURING INDUSTRY | $2.26 | $2.32 | $2.39 | $2.46 | $2.53 | $2.61 | $2.72 | $2.83 | $3.01 | $3.19 | $3.41 | $1.15 | 50.9 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table B-17

AVERAGE HOURLY EARNINGS FOR SELECTED MANUFACTURING INDUSTRIES IN WISCONSIN: 1960-1970

| SELECTED MANUFACTURING INDUSTRIES | AVERAGE HOURLY EARNINGS | | | | | | | | | | | ABSOLUTE CHANGE 1960-70 | PERCENT CHANGE 1960-70 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | | |
| NONELECTRICAL MACHINERY..... | $2.60 | $2.66 | $2.76 | $2.85 | $2.96 | $3.03 | $3.17 | $3.27 | $3.46 | $3.71 | $3.91 | $1.31 | 50.4 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 2.44 | 2.50 | 2.57 | 2.63 | 2.70 | 2.77 | 2.86 | 2.99 | 3.13 | 3.31 | 3.52 | 1.08 | 44.3 |
| TRANSPORTATION EQUIPMENT..... | 2.78 | 2.79 | 2.97 | 3.03 | 3.09 | 3.16 | 3.30 | 3.43 | 3.67 | 3.90 | 4.11 | 1.33 | 47.8 |
| FOOD AND RELATED PRODUCTS..... | 2.23 | 2.27 | 2.35 | 2.41 | 2.55 | 2.63 | 2.75 | 2.91 | 3.10 | 3.29 | 3.57 | 1.34 | 60.1 |
| FABRICATED METALS..... | 2.29 | 2.34 | 2.40 | 2.51 | 2.60 | 2.69 | 2.82 | 2.91 | 3.11 | 3.33 | 3.53 | 1.24 | 54.1 |
| PRIMARY METALS..... | 2.63 | 2.72 | 2.79 | 2.86 | 2.95 | 3.08 | 3.25 | 3.32 | 3.52 | 3.74 | 3.93 | 1.30 | 49.2 |
| PRINTING AND PUBLISHING..... | 2.67 | 2.75 | 2.85 | 2.93 | 2.99 | 3.09 | 3.19 | 3.31 | 3.50 | 3.74 | 4.06 | 1.39 | 52.0 |
| TOTAL MANUFACTURING INDUSTRY | $2.37 | $2.41 | $2.51 | $2.58 | $2.66 | $2.75 | $2.87 | $2.99 | $3.18 | $3.40 | $3.61 | $1.24 | 52.3 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table B-18

AVERAGE HOURLY EARNINGS FOR SELECTED MANUFACTURING INDUSTRIES IN THE REGION: 1960-1970

| SELECTED MANUFACTURING INDUSTRIES | AVERAGE HOURLY EARNINGS | | | | | | | | | | | ABSOLUTE CHANGE 1960-70 | PERCENT CHANGE 1960-70 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | | |
| NONELECTRICAL MACHINERY..... | $2.65 | $2.73 | $2.80 | $2.92 | $3.06 | $3.15 | $3.30 | $3.40 | $3.55 | $3.90 | $4.05 | $1.40 | 52.8 |
| ELECTRICAL MACHINERY AND EQUIPMENT..... | 2.71 | 2.77 | 2.86 | 2.93 | 3.05 | 3.11 | 3.21 | 3.33 | 3.50 | 3.67 | 3.88 | 1.17 | 43.2 |
| TRANSPORTATION EQUIPMENT..... | 2.92 | 2.95 | 3.12 | 3.17 | 3.30 | 3.40 | 3.54 | 3.71 | 3.92 | 4.19 | 4.43 | 1.51 | 51.7 |
| FOOD AND RELATED PRODUCTS..... | 2.67 | 2.73 | 2.82 | 2.86 | 3.03 | 3.13 | 3.29 | 3.38 | 3.59 | 3.85 | 4.20 | 1.53 | 57.3 |
| FABRICATED METALS..... | 2.53 | 2.59 | 2.67 | 2.76 | 2.82 | 2.90 | 3.02 | 3.09 | 3.26 | 3.48 | 3.68 | 1.15 | 45.5 |
| PRIMARY METALS..... | 2.75 | 2.85 | 2.92 | 3.00 | 3.08 | 3.23 | 3.41 | 3.49 | 3.71 | 3.93 | 4.16 | 1.41 | 51.3 |
| PRINTING AND PUBLISHING..... | 2.76 | 2.87 | 2.98 | 3.06 | 3.15 | 3.26 | 3.39 | 3.50 | 3.68 | 3.92 | 4.24 | 1.48 | 53.6 |
| TOTAL MANUFACTURING INDUSTRY | $2.63 | $2.68 | $2.78 | $2.85 | $2.95 | $3.04 | $3.18 | $3.28 | $3.46 | $3.69 | $3.91 | $1.28 | 48.7 |

SOURCE- U. S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS; AND SEWRPC.

Table B-19

INDEX OF INDUSTRIAL PRODUCTION
FOR SELECTED INDUSTRIES
IN THE UNITED STATES:
1950, 1960, AND 1970

| INDUSTRY GROUP | INDUSTRIAL PRODUCTION INDEX (1967 = 100) | | | | | |
|---|---|---|---|---|---|---|
| | PERCENT | | | PERCENT CHANGE | | |
| | 1950 | 1960 | 1970 | 1950-60 | 1960-70 | 1950-70 |
| NONELECTRICAL MACHINERY | 41.2 | 59.3 | 100.5 | 43.9 | 69.5 | 143.9 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 37.2 | 62.0 | 100.1 | 66.7 | 61.4 | 169.1 |
| TRANSPORTATION EQUIPMENT | 33.8 | 65.2 | 90.4 | 92.9 | 38.6 | 167.4 |
| PRIMARY METALS | 75.5 | 76.2 | 106.9 | 0.9 | 40.3 | 41.6 |
| FABRICATED METALS | 52.5 | 66.7 | 109.4 | 27.0 | 64.0 | 108.4 |
| FOOD AND RELATED PRODUCTS | 62.6 | 80.7 | 110.9 | 28.9 | 37.4 | 77.2 |
| PRINTING AND PUBLISHING | 53.8 | 74.9 | 104.1 | 39.2 | 39.0 | 93.5 |

SOURCE- BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM AND SEWRPC.

Table B-20

NEW CAPITAL EXPENDITURES FOR SELECTED INDUSTRIES IN THE UNITED STATES BY GEOGRAPHIC REGION: 1960 AND 1970

| INDUSTRY GROUP | NEW CAPITAL EXPENDITURES (THOUSANDS OF DOLLARS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NEW ENGLAND | | MID-ATLANTIC | | EAST NORTH CENTRAL | | WEST NORTH CENTRAL | | SOUTH ATLANTIC | |
| | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 |
| NONELECTRICAL MACHINERY | $68,811 | $149,300 | $161,637 | $324,400 | $286,423 | $ 641,000 | $ 64,279 | $155,900 | $ 15,786 | $140,000 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 66,917 | 180,700 | 155,575 | 347,100 | 187,171 | 438,000 | 27,706 | 71,300 | 30,295 | 148,300 |
| TRANSPORTATION EQUIPMENT | 34,269 | 89,200 | 103,616 | 198,600 | 381,972 | 733,600 | 26,335 | 51,700 | 49,786 | 88,100 |
| PRIMARY METALS | 27,087 | 63,500 | 436,159 | 531,400 | 756,478 | 1,050,200 | 26,329 | 71,200 | 82,748 | 267,100 |
| FABRICATED METALS | 42,868 | 75,000 | 104,379 | 207,400 | 177,765 | 437,300 | 21,963 | 77,200 | 39,907 | 92,600 |
| FOOD AND RELATED PRODUCTS | 41,915 | 85,900 | 171,945 | 280,500 | 244,561 | 496,800 | 124,082 | 278,500 | 113,571 | 288,200 |
| LEATHER AND LEATHER PRODUCTS | 8,767 | 14,600 | 5,206 | 14,900 | 4,490 | NA[a] | 2,068 | NA[a] | 1,373 | 5,000 |
| PAPER AND RELATED PRODUCTS | 70,489 | 151,000 | 94,100 | 226,200 | 138,790 | 214,900 | 31,631 | 46,500 | 103,350 | 205,400 |
| CHEMICALS AND RELATED PRODUCTS | 2,239 | 73,200 | 293,239 | 459,400 | 203,267 | 579,800 | 40,395 | 137,400 | 221,341 | 598,900 |
| INSTRUMENTS AND RELATED PRODUCTS | 22,637 | 73,700 | 75,388 | 178,200 | 33,332 | NA[a] | 6,563 | 20,200 | NA[a] | 27,600 |
| PRINTING AND PUBLISHING | 2,090 | 43,900 | 95,879 | 218,100 | 128,463 | 206,800 | 28,580 | 73,300 | NA[a] | 93,200 |

| INDUSTRY GROUP | NEW CAPITAL EXPENDITURES (THOUSANDS OF DOLLARS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EAST SOUTH CENTRAL | | WEST SOUTH CENTRAL | | MOUNTAIN | | PACIFIC | | UNITED STATES | |
| | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 | 1960 | 1970 |
| NONELECTRICAL MACHINERY | $ 11,417 | $ 67,400 | $ 22,780 | $ 93,000 | $ NA[a] | $ 33,400 | $ 56,421 | $178,200 | $ 694,047 | $1,862,800 |
| ELECTRICAL MACHINERY AND EQUIPMENT | 19,159 | 70,500 | 31,212 | 122,700 | 7,935 | 52,600 | 94,151 | 197,900 | 618,528 | 1,655,000 |
| TRANSPORTATION EQUIPMENT | NA[a] | 47,700 | 16,124 | 60,600 | NA[a] | 6,200 | 85,566 | 204,200 | 722,300 | 1,499,100 |
| PRIMARY METALS | 104,054 | 153,000 | 26,920 | 179,400 | 27,768 | 122,700 | 61,166 | 85,600 | 1,548,603 | 2,606,000 |
| FABRICATED METALS | 16,699 | 59,000 | 19,039 | 64,400 | 3,673 | 17,600 | 51,888 | 89,200 | 478,124 | 1,117,700 |
| FOOD AND RELATED PRODUCTS | 61,811 | 87,500 | 67,244 | 188,500 | 48,710 | 78,000 | 145,488 | 309,300 | 1,018,357 | 2,143,200 |
| LEATHER AND LEATHER PRODUCTS | 1,294 | NA[a] | NA[a] | NA[a] | NA[a] | NA[a] | NA[a] | NA[a] | 34,009 | 62,000 |
| PAPER AND RELATED PRODUCTS | 45,818 | 133,600 | 44,988 | 177,300 | 5,369 | 9,800 | 78,594 | 159,100 | 614,728 | 1,313,000 |
| CHEMICALS AND RELATED PRODUCTS | 114,367 | 284,100 | 246,535 | 814,000 | 9,657 | 13,700 | 61,548 | 85,600 | 1,258,026 | 3,049,900 |
| INSTRUMENTS AND RELATED PRODUCTS | NA[a] | 6,600 | 2,638 | 3,500 | NA[a] | 42,500 | NA[a] | NA[a] | 163,063 | 435,300 |
| PRINTING AND PUBLISHING | NA[a] | 31,600 | NA[a] | 62,700 | NA[a] | 27,400 | 38,381 | 102,600 | 405,026 | 877,200 |

[a]NA INDICATES THAT NEW CAPITAL EXPENDITURES DATA FOR THE INDICATED YEARS WERE NOT AVAILABLE.

SOURCE- U. S. DEPARTMENT OF COMMERCE, ANNUAL SURVEY OF MANUFACTURES; AND SEWRPC.

# Appendix C

# QUESTIONNAIRE SURVEY OF MAJOR MANUFACTURING FIRMS IN THE REGION

SOUTHEASTERN WISCONSIN INDUSTRY SURVEY

**The following questions are for classification purposes.**

1. How many years has your company been operating in Wisconsin? (Please check appropriate category.)

   ____Not yet operating
   ____Less than one year
   ____1 to 5 years
   ____6 to 10 years
   ____11 to 25 years
   ____26 to 50 years
   ____More than 50 years

2. Is your company an autonomous unit or are you a division or part of a larger corporate unit?

   ____Autonomous unit
   ____Part of larger corporation
   ____Other (Please explain: _____)

3. Is your company family-owned, publicly-owned, or publicly-owned with a family retaining effective control?

   ____Family-owned
   ____Publicly-owned
   ____Publicly-owned with family control

4. Is the headquarters of your company located in Wisconsin? ____Yes ____No

5. Please assume that you are to make a location decision today regarding the manufacture of one of your major products or product lines. In selecting the best location, you undoubtedly would consider several factors of varying importance. In each of the following questions, you are given 100 points to allocate among possible location factors. Please use your judgment to allocate these 100 points according to the relative importance that each factor would play in your location decision.

   Please indicate the product or product line you are using as a basis for responding to this question: _____

   a. Please allocate 100 points among the following governmental factors according to their relative importance in your location decision.

      ____Personal tax structure and burden
      ____Business tax structure and burden
      ____Government attitude toward industry (as indicated by regulation, legislation, service, public posture, etc.)
      ____Quality of government services (local and state services such as education, highways and streets, fire and police protection, etc.)
      ____Other government factors (Please specify): _____
      ____ _____

      100 Points

5. (continued)

   b. Please allocate 100 points among the following community factors according to their relative importance in your location decision.

      ____"A good place to live" (community and area characteristics, such as size of city, climate, recreational and cultural opportunities, low crime rate, etc.)
      ____Loyalty to an area, family ties, and related personal preferences of corporate executives and their families
      ____Proximity of community to corporate headquarters
      ____Public's attitude toward industry and related community concessions, such as free land, tax concessions, etc.
      ____Other community factors (Please specify): _____
      ____ _____

      100 Points

   c. Please allocate 100 points among the following marketing and service factors according to their relative importance in your location decision.

      ____Proximity to major markets
      ____Availability and cost of needed distribution services, such as transportation, warehousing, distributors, etc.
      ____Availability and cost of financing
      ____Availability and cost of research and other business services (advertising agencies, consultants, etc.)
      ____Other marketing and service factors (Please specify): _____
      ____ _____

      100 Points

   d. Please allocate 100 points among the following labor factors according to their relative importance in your location decision.

      ____ Supply of "appropriate" labor ("appropriate" relative to desired skills)
      ____ Worker attitudes (appreciation of job, willingness to perform varied tasks, low turnover, absenteeism, etc.)
      ____ Per-unit cost of labor (as measured by wages relative to productivity)
      ____ Union management (or lack of unions)
      ____ Other labor factors (Please specify): _____
      ____ _____

      100 Points

5. (continued)

   e. Please allocate 100 points among the following other cost factors according to their relative importance in your location decision.

      ____ Availability and cost of raw materials and fabricating parts
      ____ Availability and cost of fuel and other utilities
      ____ Availability and cost of land
      ____ Cost of production facilities (such as construction costs)
      ____ Other cost factors (Please specify): _____
      ____ _____

      100 Points

6. Now, please estimate the relative importance of each major group of factors by allocating 100 points among them.

   ____ Government factors (personal taxes, business taxes, government attitude, quality of government services to individuals, other government factors)
   ____ Community factors ("a good place to live," loyalty to an area, proximity to corporate headquarters, public attitude, other community factors)
   ____ Marketing and service factors (proximity to markets, distribution services, financing, research and other business services, other marketing and service factors)
   ____ Labor factors (supply of appropriate labor, worker attitudes, per-unit cost of labor, union management, other labor factors)
   ____ Other cost factors (availability and cost of raw materials, fabricating parts, fuel and other utilities, land, production facilities, and other cost factors)

   100 Points

7. We would like to determine how you feel about Wisconsin as an industrial location relative to other states. A 5-point rating scale will be used.

   The points on the rating scale are defined as follows:

   1 = Wisconsin is among the best 20 percent of all states (ranks anywhere from 1st through 10th)
   2 = Wisconsin is among the second best 20 percent of all states (ranks 11th through 20th)
   3 = Wisconsin is among the middle 20 percent of all states (ranks 21st through 30th)
   4 = Wisconsin is among the second worst 20 percent of all states (ranks 31st through 40th)
   5 = Wisconsin is among the worst 20 percent of all states (ranks 41st through 50th)

7. (continued)

   Please evaluate Wisconsin relative to other states for each of the following location factors. Circle the number that best expresses your evaluation.

   Personal tax structure and burden

   Among the best 20 % 1-----2-----3-----4-----5 Among the worst 20%

   Business tax structure and burden

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Government attitude toward industry (as indicated by regulation, legislation, service, public posture, etc.)

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Quality of government services (local and state services, such as education, highways and streets, fire and police protection, etc.)

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   "A good place to live" (community and area characteristics, such as size of city, climate, recreational and cultural opportunities, low crime rate, etc.)

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Loyalty to an area, family ties, and related personal preference of corporate executives and their families

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Proximity to corporate headquarters

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Public's attitude toward industry and related community concessions, such as free land, tax concessions, etc.

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

   Proximity to major markets

   Among the best 20% 1-----2-----3-----4-----5 Among the worst 20%

8. In comparing business taxes in Wisconsin with those of other states, what has been the impact on your business? For each type of tax, please circle the rating that best expresses your evaluation. If you don't know, please check the space provided.

Key to Rating Scale

1 = provided us great competitive advantage, helped business substantially

2 = provided us some competitive advantage

3 = has not affected us competitively

4 = placed us at some competitive disadvantage

5 = placed us at great competitive disadvantage, hurt business substantially

| Type of Tax | Rating Scale | Don't Know |
|---|---|---|
| Real property tax | 1-----2-----3-----4-----5 | _____ |
| Inventory tax | 1-----2-----3-----4-----5 | _____ |
| Sales tax | 1-----2-----3-----4-----5 | _____ |
| Corporate or other business income taxes | 1-----2-----3-----4-----5 | _____ |
| Other business taxes (Please specify):_____ | 1-----2-----3-----4-----5 | _____ |

The following questions are to assist in forecasting future economic activity in southeastern Wisconsin.

9. In the next five years, would you expect your level of employment in the Southeastern Wisconsin Region (Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha Counties) to:

a) _____Increase (Approximate number of jobs) _____

b) _____Decrease (Approximate number of jobs) _____

c) _____Remain at about current levels.

10. Do you foresee any expansion of your facilities in the Southeastern Wisconsin Region in the next five years?

_____Yes _____No

11. If you foresee any expansion of your facilities in the Southeastern Wisconsin Region in the next five years, where would you likely expand?

a) _____On your present site(s)

b) _____On a new central city site

c) _____On a new suburban site

d) _____On a new rural site