

Michigan

1997

Issued December 1999

EC97T22A-MI

1997 Economic Census

Utilities

Geographic Area Series



U S C E N S U S B U R E A U

Helping You Make Informed Decisions

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU



ACKNOWLEDGMENTS

Many persons participated in the various activities of the 1997 Economic Census for the Utilities sector.

Service Sector Statistics Division prepared this report. **Bobby E. Russell**, Assistant Chief for Census Programs, was responsible for the overall planning, management, and coordination. Planning and implementation were under the direction of **Steven M. Roman**, Chief, Utilities and Financial Census Branch, assisted by **Pamela J. Palmer**. Primary staff assistance was provided by **Diane M. Carodiskey-Beeson**, **Sandra K. Creech**, **Carrie A. Hill**, **Amy R. Houtz**, **Lori E. Inman**, **Debra G. Karrels** and **Douglas A. Smyly**.

Mathematical and statistical techniques as well as the coverage operations were provided by **Carl A. Konschnik**, Assistant Chief for Research and Methodology, assisted by **Carol S. King**, Chief, Statistical Methods Branch, and **Jock R. Black**, Chief, Program Research and Development Branch, with staff assistance from **Maria C. Cruz** and **David L. Kinyon**.

The Economic Planning and Coordination Division provided overall planning and review of many operations and the computer processing procedures. **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, was responsible for edit procedures and designing the interactive analytical software. Design and specifications were prepared under the supervision of **Dennis L. Shoemaker**, Chief, Census Processing Branch, assisted by **John D. Ward**. Primary staff assistance was provided by **Sonya P. Curcio**, **Richard W. Graham**, and **Cheryl E. Merkle**. The Economic Product Team, with primary contributions from **Andrew W. Hait** and **Jennifer E. Lins**, was responsible for the development of the system to disseminate 1997 Economic Census reports.

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, and data entry.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, was responsible for design and implementation of the computer systems. **Robert S. Jewett** and **Barbara L. Lambert** provided special computer programming. **William C. Wester**, Chief, Services Branch, assisted by **Robert A. Hill**, **Dennis P. Kelly**, and **Jeffrey S. Rosen**, supervised the preparation of the computer programs. Additional programming assistance was provided by **Donell D. Barnes**, **Daniel C. Collier**, **Gilbert J. Flodine**, **David Hiller**, **Leatrice D. Hines**, **William D. McClain**, **Jay L. Norris**, **Sarah J. Presley**, and **Michael A. Sendelbach**.

Computer Services Division, **Debra D. Williams**, Chief, performed the computer processing.

Kim D. Ottenstein and **Margaret A. Smith** of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, provided publications and printing management, graphics design and composition, and editorial review for print and electronic media. General direction and production management were provided by **Michael G. Garland**, Assistant Division Chief, and **Gary J. Lauffer**, Chief, Publications Services Branch.

Special acknowledgment is also due the many businesses whose cooperation has contributed to the publication of these data.

Michigan 1997

Issued December 1999

EC97T22A-MI

1997 Economic Census

Utilities

Geographic Area Series



U.S. Department of Commerce

William M. Daley,

Secretary

Robert L. Mallett,

Deputy Secretary

Economics

and Statistics

Administration

Robert J. Shapiro,

Under Secretary for

Economic Affairs

U.S. CENSUS BUREAU

Kenneth Prewitt,

Director



**Economics
and Statistics
Administration**

Robert J. Shapiro,
Under Secretary
for Economic Affairs



U.S. CENSUS BUREAU

Kenneth Prewitt,
Director

William G. Barron,
Deputy Director

Paula J. Schneider,
Principal Associate Director
for Programs

Frederick T. Knickerbocker,
Associate Director
for Economic Programs

Thomas L. Mesenbourg,
Assistant Director
for Economic Programs

Carole A. Ambler,
Chief, Service Sector
Statistics Division

CONTENTS

| | |
|--|-----|
| Introduction to the Economic Census | 1 |
| Utilities | 5 |
| TABLES | |
| 1. Summary Statistics for the State: 1997 | 7 |
| 2. Summary Statistics for Metropolitan Areas: 1997 | 7 |
| APPENDIXES | |
| A. Explanation of Terms | A-1 |
| B. NAICS Codes, Titles, and Descriptions | B-1 |
| C. Coverage and Methodology | C-1 |
| D. Geographic Notes | D-1 |
| E. Metropolitan Areas | E-1 |

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

| | |
|-------|--------------------------------|
| 21 | Mining |
| 22 | Utilities |
| 23 | Construction |
| 31-33 | Manufacturing |
| 42 | Wholesale Trade |
| 44-45 | Retail Trade |
| 48-49 | Transportation and Warehousing |
| 51 | Information |

| | |
|----|--|
| 52 | Finance and Insurance |
| 53 | Real Estate and Rental and Leasing |
| 54 | Professional, Scientific, and Technical Services |
| 55 | Management of Companies and Enterprises |
| 56 | Administrative and Support and Waste Management and Remediation Services |
| 61 | Educational Services |
| 62 | Health Care and Social Assistance |
| 71 | Arts, Entertainment, and Recreation |
| 72 | Accommodation and Foodservices |
| 81 | Other Services (except Public Administration) |

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

| | | | |
|---|--|------|--|
| A | Standard error of 100 percent or more. | V | Represents less than 50 vehicles or .05 percent. |
| D | Withheld to avoid disclosing data of individual companies; data are included in higher level totals. | X | Not applicable. |
| F | Exceeds 100 percent because data include establishments with payroll exceeding revenue. | Y | Disclosure withheld because of insufficient coverage of merchandise lines. |
| N | Not available or not comparable. | Z | Less than half the unit shown. |
| Q | Revenue not collected at this level of detail for multiestablishment firms. | a | 0 to 19 employees. |
| S | Withheld because estimates did not meet publication standards. | b | 20 to 99 employees. |
| | | c | 100 to 249 employees. |
| | | e | 250 to 499 employees. |
| | | f | 500 to 999 employees. |
| | | g | 1,000 to 2,499 employees. |
| | | h | 2,500 to 4,999 employees. |
| | | i | 5,000 to 9,999 employees. |
| | | j | 10,000 to 24,999 employees. |
| | | k | 25,000 to 49,999 employees. |
| | | l | 50,000 to 99,999 employees. |
| | | m | 100,000 employees or more. |
| | | p | 10 to 19 percent estimated. |
| | | q | 20 to 29 percent estimated. |
| | | r | Revised. |
| | | s | Sampling error exceeds 40 percent. |
| | | nec | Not elsewhere classified. |
| | | nsk | Not specified by kind. |
| | | – | Represents zero (page image/print only). |
| | | (CC) | Consolidated city. |
| | | (IC) | Independent city. |

This page is intentionally blank.

Utilities

SCOPE

The Utilities sector (sector 22) comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities.

Excluded from this sector are establishments primarily engaged in waste management services classified in Sub-sector 562, Waste Management and Remediation Services. These establishments also collect, treat, and dispose of waste materials; however, they do not use sewer systems or sewage treatment facilities.

GENERAL

A list of reports that provide statistics on sector 22 follows.

Geographic area report. There is a separate report for each state, the District of Columbia, and the United States. Each state report presents general statistics on number of establishments, revenue, payroll, and establishments with employment by kind of business for the state and metropolitan areas (MAs). Greater kind-of-business detail is shown for larger areas. The United States report presents data for the United States as a whole.

Sources of revenue report. This report presents sources of revenue data for establishments by kind of business. Data are presented for the United States.

Establishment and firm size (including legal form of organization) report. This report presents revenue, payroll, and employment data for the United States by revenue size, by employment size, and by legal form of organization for establishments with paid employees; and by revenue size (including concentration by largest firms), by employment size, and by number of establishments operated (single units and multiunits) for firms with paid employees.

Miscellaneous subjects report. This report presents data for establishments with paid employees for a variety

of industry-specific questions. Presentation of data varies by kind of business.

GEOGRAPHIC AREAS COVERED

The level of geographic detail varies by report. Data may be presented for:

1. The United States as a whole.
2. States and the District of Columbia.
3. Consolidated metropolitan statistical areas (CMSAs) and primary metropolitan statistical areas (PMSAs) defined by the Office of Management and Budget (OMB) as of June 30, 1997. A CMSA is an area used to facilitate the presentation and analysis of data for large concentrations of metropolitan populations. It includes two or more contiguous PMSAs which have a population of at least 1,000,000 (according to the 1990 Census of Population or subsequent special census) and which meet specific criteria of urban character and of social and economic integration.
4. Metropolitan statistical areas (MSAs) defined by the OMB as of June 30, 1997. An MSA is an integrated economic and social unit with a population nucleus of at least 50,000 inhabitants (according to the 1990 Census of Population or subsequent special census). Each MSA consists of one or more counties meeting standards of metropolitan character. In New England, cities and towns rather than counties are the component geographic units.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The 1997 Economic Census is the first census to present data based on the new North American Industry Classification System (NAICS). Previous census data were presented according to the Standard Industrial Classification (SIC) system developed some 60 years ago. Due to this change, comparability between census years may be limited. Comparative statistics will be included as part of the Core Business Statistics Reports.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are

published that would disclose the operations of an individual establishment or business. However, the number of establishments in a kind-of-business classification is not considered a disclosure; therefore, this information may be released even though other information is withheld.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau's County Business Patterns program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

Table 1. Summary Statistics for the State: 1997

[Includes only establishments with payroll. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

| NAICS code | Kind of business | Establishments (number) | Revenue (\$1,000) | Annual payroll (\$1,000) | First-quarter payroll (\$1,000) | Paid employees for pay period including March 12 (number) | Percent of revenue— | |
|-----------------|--|-------------------------|-------------------|--------------------------|---------------------------------|---|--|------------------------|
| | | | | | | | From administrative records ¹ | Estimated ² |
| MICHIGAN | | | | | | | | |
| 22 | Utilities | 385 | 15 044 220 | 1 486 094 | 372 718 | 25 464 | — | .5 |
| 221 | Utilities | 385 | 15 044 220 | 1 486 094 | 372 718 | 25 464 | — | .5 |
| 2211 | Electric power generation, transmission, & distribution | 274 | 9 315 464 | 1 243 949 | 304 178 | 21 284 | — | .8 |
| 22111 | Electric power generation | 43 | 1 400 766 | 125 843 | 30 210 | 2 122 | — | 1.4 |
| 221111 | Hydroelectric power generation | 16 | 84 120 | 26 290 | 3 775 | 324 | — | 10.0 |
| 2211111 | Electric services (hydroelectric power generation) | 15 | D | D | D | e | D | D |
| 221112 | Fossil fuel electric power generation | 16 | 1 253 991 | 93 935 | 24 890 | 1 660 | — | — |
| 2211121 | Electric services (fossil fuel power generation) | 16 | 1 253 991 | 93 935 | 24 890 | 1 660 | — | — |
| 221119 | Other electric power generation | 11 | 62 655 | 5 618 | 1 545 | 138 | — | 18.5 |
| 2211191 | Electric services (other electric power generation) | 11 | 62 655 | 5 618 | 1 545 | 138 | — | 18.5 |
| 22112 | Electric power transmission, control, & distribution | 231 | 7 914 698 | 1 118 106 | 273 968 | 19 162 | — | .7 |
| 221122 | Electric power distribution | 226 | D | D | D | j | D | D |
| 2211221 | Electric services (electric power distribution) | 126 | D | D | D | i | D | D |
| 2211222 | Electric & other services combined (electric power distribution) | 100 | D | D | D | i | D | D |
| 2212 | Natural gas distribution | 89 | 5 722 961 | 240 685 | 68 261 | 4 090 | — | — |
| 22121 | Natural gas distribution | 89 | 5 722 961 | 240 685 | 68 261 | 4 090 | — | — |
| 221210 | Natural gas distribution | 89 | 5 722 961 | 240 685 | 68 261 | 4 090 | — | — |
| 2212101 | Natural gas transmission & distribution (distribution) | 58 | D | D | D | h | D | D |
| 2212102 | Natural gas distribution | 27 | D | D | D | e | D | D |
| 2213 | Water, sewage, & other systems | 22 | 5 795 | 1 460 | 279 | 90 | 21.8 | 8.4 |
| 22131 | Water supply & irrigation systems | 12 | 4 137 | 844 | 152 | 66 | 20.4 | .2 |
| 221310 | Water supply & irrigation systems | 12 | 4 137 | 844 | 152 | 66 | 20.4 | .2 |
| 2213101 | Water supply | 12 | 4 137 | 844 | 152 | 66 | 20.4 | .2 |
| 22132 | Sewage treatment facilities | 10 | 1 658 | 616 | 127 | 24 | 25.4 | 28.8 |
| 221320 | Sewage treatment facilities | 10 | 1 658 | 616 | 127 | 24 | 25.4 | 28.8 |

¹Includes revenue information obtained from administrative records of other Federal agencies.

²Includes revenue information which was imputed based on historic company ratios or administrative records, or on industry averages.

Table 2. Summary Statistics for Metropolitan Areas: 1997

[Includes only establishments with payroll. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A. For definitions of metropolitan areas (CMSAs, MSAs, and PMSAs), see Appendix E]

| NAICS code | Geographic area and kind of business | Establishments (number) | Revenue (\$1,000) | Annual payroll (\$1,000) | First-quarter payroll (\$1,000) | Paid employees for pay period including March 12 (number) | Percent of revenue— | |
|---|--|-------------------------|-------------------|--------------------------|---------------------------------|---|--|------------------------|
| | | | | | | | From administrative records ¹ | Estimated ² |
| BENTON HARBOR, MI MSA | | | | | | | | |
| 22 | Utilities | 10 | D | D | D | g | D | D |
| 221 | Utilities | 10 | D | D | D | g | D | D |
| DETROIT-ANN ARBOR-FLINT, MI CMSA | | | | | | | | |
| 22 | Utilities | 157 | 7 154 897 | 832 228 | 206 394 | 13 466 | — | .7 |
| 221 | Utilities | 157 | 7 154 897 | 832 228 | 206 394 | 13 466 | — | .7 |
| 2211 | Electric power generation, transmission, & distribution | 112 | D | D | D | j | D | D |
| 22112 | Electric power transmission, control, & distribution | 109 | D | D | D | j | D | D |
| 221122 | Electric power distribution | 108 | D | D | D | j | D | D |
| 2211221 | Electric services (electric power distribution) | 88 | D | D | D | i | D | D |
| 2211222 | Electric & other services combined (electric power distribution) | 20 | D | D | D | g | D | D |
| 2212 | Natural gas distribution | 40 | D | D | D | h | D | D |
| 22121 | Natural gas distribution | 40 | D | D | D | h | D | D |
| 221210 | Natural gas distribution | 40 | D | D | D | h | D | D |
| 2212101 | Natural gas transmission & distribution (distribution) | 28 | D | D | D | g | D | D |
| 2212102 | Natural gas distribution | 11 | D | D | D | e | D | D |
| Ann Arbor, MI PMSA | | | | | | | | |
| 22 | Utilities | 22 | D | D | D | f | D | D |
| 221 | Utilities | 22 | D | D | D | f | D | D |
| 2211 | Electric power generation, transmission, & distribution | 15 | D | D | D | e | D | D |
| 22112 | Electric power transmission, control, & distribution | 13 | 212 497 | 29 781 | 7 104 | 448 | — | 12.6 |
| 221122 | Electric power distribution | 13 | 212 497 | 29 781 | 7 104 | 448 | — | 12.6 |

See footnotes at end of table.

Table 2. Summary Statistics for Metropolitan Areas: 1997—Con.

[Includes only establishments with payroll. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A. For definitions of metropolitan areas (CMSAs, MSAs, and PMSAs), see Appendix E]

| NAICS code | Geographic area and kind of business | Establishments (number) | Revenue (\$1,000) | Annual payroll (\$1,000) | First-quarter payroll (\$1,000) | Paid employees for pay period including March 12 (number) | Percent of revenue— | |
|---|--|-------------------------|-------------------|--------------------------|---------------------------------|---|--|------------------------|
| | | | | | | | From administrative records ¹ | Estimated ² |
| DETROIT—ANN ARBOR—FLINT, MI CMSA—Con. | | | | | | | | |
| Detroit, MI PMSA | | | | | | | | |
| 22 | Utilities | 131 | 6 676 978 | 765 881 | 189 664 | 12 328 | — | .1 |
| 221 | Utilities | 131 | 6 676 978 | 765 881 | 189 664 | 12 328 | — | .1 |
| 2211 | Electric power generation, transmission, & distribution | 94 | D | D | D | i | D | D |
| 22112 | Electric power transmission, control, & distribution | 93 | D | D | D | i | D | D |
| 221122 | Electric power distribution | 92 | D | D | D | i | D | D |
| 2211221 | Electric services (electric power distribution) | 78 | D | D | D | i | D | D |
| 2211222 | Electric & other services combined (electric power distribution) | 14 | D | D | D | g | D | D |
| 2212 | Natural gas distribution | 35 | D | D | D | g | D | D |
| 22121 | Natural gas distribution | 35 | D | D | D | g | D | D |
| 221210 | Natural gas distribution | 35 | D | D | D | g | D | D |
| 2212101 | Natural gas transmission & distribution (distribution) | 25 | D | D | D | g | D | D |
| Flint, MI PMSA | | | | | | | | |
| 22 | Utilities | 4 | D | D | D | e | D | D |
| 221 | Utilities | 4 | D | D | D | e | D | D |
| GRAND RAPIDS—MUSKEGON—HOLLAND, MI MSA | | | | | | | | |
| 22 | Utilities | 25 | 818 507 | 94 119 | 25 177 | 1 838 | .1 | — |
| 221 | Utilities | 25 | 818 507 | 94 119 | 25 177 | 1 838 | .1 | — |
| 2211 | Electric power generation, transmission, & distribution | 14 | D | D | D | g | D | D |
| 22112 | Electric power transmission, control, & distribution | 13 | D | D | D | g | D | D |
| 221122 | Electric power distribution | 13 | D | D | D | g | D | D |
| JACKSON, MI MSA | | | | | | | | |
| 22 | Utilities | 13 | D | D | D | g | D | D |
| 221 | Utilities | 13 | D | D | D | g | D | D |
| 2211 | Electric power generation, transmission, & distribution | 11 | D | D | D | g | D | D |
| 22112 | Electric power transmission, control, & distribution | 11 | D | D | D | g | D | D |
| 221122 | Electric power distribution | 11 | D | D | D | g | D | D |
| 2211222 | Electric & other services combined (electric power distribution) | 11 | D | D | D | g | D | D |
| KALAMAZOO—BATTLE CREEK, MI MSA | | | | | | | | |
| 22 | Utilities | 14 | D | D | D | g | D | D |
| 221 | Utilities | 14 | D | D | D | g | D | D |
| LANSING—EAST LANSING, MI MSA | | | | | | | | |
| 22 | Utilities | 10 | D | D | D | f | D | D |
| 221 | Utilities | 10 | D | D | D | f | D | D |
| SAGINAW—BAY CITY—MIDLAND, MI MSA | | | | | | | | |
| 22 | Utilities | 11 | D | D | D | g | D | D |
| 221 | Utilities | 11 | D | D | D | g | D | D |
| AREA OUTSIDE MICHIGAN METROPOLITAN AREAS | | | | | | | | |
| 22 | Utilities | 145 | 2 876 943 | 187 397 | 45 793 | 3 585 | — | .7 |
| 221 | Utilities | 145 | 2 876 943 | 187 397 | 45 793 | 3 585 | — | .7 |
| 2211 | Electric power generation, transmission, & distribution | 103 | 1 040 434 | 149 650 | 35 910 | 2 898 | — | 2.0 |
| 22111 | Electric power generation | 30 | D | D | D | f | D | D |
| 221111 | Hydroelectric power generation | 11 | 48 845 | 7 428 | 1 631 | 137 | — | — |
| 22112 | Electric power transmission, control, & distribution | 73 | D | D | D | g | D | D |
| 221122 | Electric power distribution | 71 | D | D | D | g | D | D |
| 2211221 | Electric services (electric power distribution) | 31 | D | D | D | f | D | D |
| 2211222 | Electric & other services combined (electric power distribution) | 40 | 549 235 | 75 982 | 19 310 | 1 394 | — | .3 |
| 2212 | Natural gas distribution | 32 | 1 833 403 | 37 171 | 9 772 | 631 | — | — |
| 22121 | Natural gas distribution | 32 | 1 833 403 | 37 171 | 9 772 | 631 | — | — |
| 221210 | Natural gas distribution | 32 | 1 833 403 | 37 171 | 9 772 | 631 | — | — |
| 2212101 | Natural gas transmission & distribution (distribution) | 21 | D | D | D | e | D | D |

¹Includes revenue information obtained from administrative records of other Federal agencies.

²Includes revenue information which was imputed based on historic company ratios or administrative records, or on industry averages.

Appendix A.

Explanation of Terms

ANNUAL PAYROLL

Payroll includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation allowances, sick-leave pay, and employee contributions to qualified pension plans paid during the year to all employees. For corporations, payroll includes amounts paid to officers and executives; for unincorporated businesses, it does not include profit or other compensation of proprietors or partners. Payroll is reported before deductions for social security, income tax insurance, union dues, etc. This definition of payroll is the same as that used by the Internal Revenue Service (IRS) on form 941.

FIRST-QUARTER PAYROLL (\$1,000)

Represents payroll paid to persons employed at any time during the quarter January to March 1997.

NUMBER OF EMPLOYEES

Paid employees consist of the full-time and part-time employees, including salaried officers and executives of corporations. Included are employees on paid sick leave, paid holidays, and paid vacations; not included are proprietors and partners of unincorporated businesses. The definition of paid employees is the same as that is used on IRS form 941.

Includes all employees who were on the payroll during the pay period including March 12.

NUMBER OF ESTABLISHMENTS

An establishment is a single physical location at which business is conducted. It is not necessarily identical with a company or enterprise, which may consist of one establishment or more. Economic census figures represent a summary of reports for individual establishments rather than companies. For cases where a census report was received, separate information was obtained for each location where business was conducted. When administrative

records of other Federal agencies were used instead of a census report, no information was available on the number of locations operated. Each economic census establishment was tabulated according to the physical location at which the business was conducted. The count of establishments represents those in business at any time during 1997.

When two or more activities were carried on at a single location under a single ownership, all activities generally were grouped together as a single establishment. The entire establishment was classified on the basis of its major activity and all data for it were included in that classification. However, when distinct and separate economic activities (for which different industry classification codes were appropriate) were conducted at a single location under a single ownership, separate establishments reports for each of the different activities were obtained in the census.

REVENUE

Includes revenue from all business activities whether or not payment was received in the census year. Revenue does not include sales and other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency.

SALES, RECEIPTS, OR REVENUE ESTIMATED (PERCENT)

Percent of total sales/receipts/revenue that was imputed based on historic company ratios or administrative records, or on industry averages.

SALES, RECEIPTS, OR REVENUE FROM ADMINISTRATIVE RECORDS (PERCENT)

Percent of total sales/receipts/revenue obtained from administrative records of other Federal agencies.

Appendix B.

NAICS Codes, Titles, and Descriptions

22 UTILITIES

The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities.

Excluded from this sector are establishments primarily engaged in waste management services classified in Subsector 562, Waste Management and Remediation Services, which also collect, treat, and dispose of waste materials; however, they do not use sewer systems or sewage treatment facilities.

221 Utilities

Industries in the Utilities subsector provide electric power, natural gas, steam supply, water supply, and sewage removal through a permanent infrastructure of lines, mains, and pipes. Establishments are grouped together based on the utility service provided and the particular system or facilities required to perform the service.

2211 Electric Power Generation, Transmission and Distribution

This industry group comprises establishments primarily engaged in generating, transmitting, and/or distributing electric power. Establishments in this industry group may perform one or more of the following activities: (1) operate generation facilities that produce electric energy; (2) operate transmission systems that convey the electricity from the generation facility to the distribution system; and (3) operate distribution systems that convey electric power received from the generation facility or the transmission system to the final consumer.

22111 Electric Power Generation

This industry comprises establishments primarily engaged in operating electric power generation facilities. These facilities convert other forms of energy, such as water power (i.e., hydroelectric), fossil fuels, nuclear

power, and solar power, into electrical energy. The establishments in this industry produce electric energy and provide electricity to transmission systems or to electric power distribution systems.

221111 Hydroelectric Power Generation

This U.S. industry comprises establishments primarily engaged in operating hydroelectric power generation facilities. These facilities use water power to drive a turbine and produce electric energy. The electric energy produced in these establishment is provided to electric power transmission systems or to electric power distribution systems.

The data published with NAICS code 221111 are comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (hydroelectric power generation)
- 4931 (pt) Electric and other services combined (hydroelectric power generation)
- 4939 (pt) Combination utilities nec (hydroelectric power generation)

2211111 Electric Services (Hydroelectric Power Generation)

Establishments primarily engaged in generating electricity using hydroelectric process. Included are establishments that combine pump storage generation processes.

2211112 Electric and Other Services Combined (Hydroelectric Power Generation)

Establishments primarily engaged in providing hydroelectric power generation in combination with other services, with hydroelectric power generation being the major part though less than 95 percent of the total.

2211113 Other Combination Utilities (Hydroelectric Power Generation)

Establishments primarily engaged in providing combinations of services with hydroelectric power generation predominating.

221112 Fossil Fuel Electric Power Generation

This U.S. industry comprises establishments primarily engaged in operating fossil fuel powered electric power generation facilities.

These facilities use fossil fuels, such as coal, oil, or gas, in internal combustion or combustion turbine conventional steam process to produce electric energy. The electric energy produced in these establishments are provided to electric power transmission systems or to electric power distribution systems.

The data published with NAICS code 221112 is comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (electric power generation by fossil fuels)
- 4931 (pt) Electric and other services combined (electric power generation by fossil fuels)
- 4939 (pt) Combination utilities nec (electric power generation by fossil fuels)

2211121 Electric Services (Fossil Fuel Power Generation)

Establishments primarily engaged in generating electricity using fossil fuels, such as coal, gas, or oil in internal combustion or combustion turbine conventional steam processes.

2211122 Electric and Other Services Combined (Fossil Fuel Power Generation)

Establishments primarily engaged in providing power generation by fossil fuels in combination with other services, with fossil fuel power generation being the major part though less than 95 percent of the total.

2211123 Other Combination Utilities (Fossil Fuel Power Generation)

Establishments primarily engaged in providing combinations of services with fossil fuel power generation predominating.

221113 Nuclear Electric Power Generation

This U.S. industry comprises establishments primarily engaged in operating nuclear electric power generation facilities. These facilities use nuclear power to produce electric energy. The electric energy produced in these establishments are provided to electric power transmission systems or to electric power distribution systems.

The data published with NAICS code 221113 are comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (electric power generation by nuclear fuels)
- 4931 (pt) Electric and other services combined (electric power generation by nuclear fuels)
- 4939 (pt) Combination utilities nec (electric power generation by nuclear fuels)

2211131 Electric Services (Nuclear Power Generation)

Establishments primarily engaged in generating electricity using nuclear fuels.

2211132 Electric and Other Services Combined (Nuclear Power Generation)

Establishments primarily engaged in providing power generation by nuclear fuels in combination with other services, with nuclear fuel power generation being the major part though less than 95 percent of the total.

2211133 Other Combination Utilities (Nuclear Power Generation)

Establishments primarily engaged in providing combinations of services with nuclear power generation predominating.

221119 Other Electric Power Generation

This U.S. industry comprises establishments primarily engaged in operating electric power generation facilities (except hydroelectric, fossil fuel, nuclear). These facilities convert other forms of energy, such as solar, wind, or tidal power, into electrical energy. The electric energy produced in these establishment is provided to electric power transmission systems or to electric power distribution systems.

The data published with NAICS code 221119 are comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (other electric power generation)
- 4931 (pt) Electric and other services combined (other electric power generation)
- 4939 (pt) Combination utilities nec (other electric power generation)

2211191 Electric Services (Other Electric Power Generation)

Establishments primarily engaged in the generation of electric energy, not elsewhere classified.

2211192 Electric and Other Services Combined (Other Electric Power Generation)

Establishments primarily engaged in providing power generation, other than by hydro, nuclear, or fossil fuels, in combination with other services, with other power generation being the major part though less than 95 percent of the total.

2211193 Other Combination Utilities (Other Electric Power Generation)

Establishments primarily engaged in providing combinations of services with power generation by fuels other than hydro, nuclear, or fossil predominating.

22112 Electric Power Transmission, Control, and Distribution

This industry comprises establishments primarily engaged in operating electric power transmission systems, controlling (i.e., regulating voltage) the transmission of electricity, and/or distributing electricity. The transmission system includes lines and transformer stations. These establishments arrange, facilitate, or coordinate the transmission of electricity from the generating source to the distribution centers, other electric utilities, or final consumers. The distribution system consists of lines, poles, meters, and wiring that deliver the electricity to final consumers.

221121 Electric Bulk Power Transmission and Control

This U.S. industry comprises establishments primarily engaged in operating electric power transmission systems and/or controlling (i.e., regulating voltage) the transmission of electricity from the generating source to distribution centers or other electric utilities. The transmission system includes lines and transformer stations.

The data published with NAICS code 221121 are comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (electric power transmission and control)
- 4931 (pt) Electric and other services combined (electric power transmission)
- 4939 (pt) Combination utilities nec (electric power transmission)

2211211 ELECTRIC SERVICES (ELECTRIC POWER TRANSMISSION AND CONTROL)

Establishments primarily engaged in the transmission of electric power from the generating source to the distribution centers. Included are establishments that control the transmission of electric power among electric utilities.

2211212 Electric and Other Services Combined (Electric Power Transmission and Control)

Establishments primarily engaged in providing electric power transmission in combination with other services, with transmission being the major part though less than 95 percent of the total.

2211213 Other Combination Utilities (Electric Power Transmission and Control)

Establishments primarily engaged in providing combinations of services with electric power transmission predominating.

221122 Electric Power Distribution

This U.S. industry comprises electric power establishments primarily engaged in (1) operating electric power distribution systems (i.e., consisting of lines, poles,

meters, and wiring) or (2) operating as electric power brokers or agents that arrange the sale of electricity via power distribution systems operated by others.

The data published with NAICS code 221122 are comprised of these parts of the following SIC industries:

- 4911 (pt) Electric services (electric power distribution)
- 4931 (pt) Electric and other services combined (electric power distribution)
- 4939 (pt) Combination utilities nec (electric power distribution)

2211221 Electric Services (Electric Power Distribution)

Establishments engaged in the distribution of electric power to the final consumer. Included are establishments which both generate and distribute electricity.

2211222 Electric and Other Services Combined (Electric Power Distribution)

Establishments primarily engaged in providing electric power distribution in combination with other services, with electric distribution being the major part though less than 95 percent of the total.

2211223 Other Combination Utilities (Electric Power Distribution)

Establishments primarily engaged in providing combinations of services with electric power distribution predominating.

2212 Natural Gas Distribution

This industry group comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers.

22121 Natural Gas Distribution

This industry comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers.

221210 Natural Gas Distribution

This U.S. industry comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers.

The data published with NAICS code 221210 are comprised of these parts of the following SIC industries:

- 4923 (pt) Natural gas transmission and distribution (distribution)
- 4924 Natural gas distribution
- 4925 Mixed, manufactured, or liquefied petroleum gas production and/or distribution
- 4931 (pt) Electric and other services combined (natural gas distribution)
- 4932 Gas and other services combined (natural gas distribution)
- 4939 (pt) Combination utilities, nec (natural gas distribution)

2212101 Natural Gas Transmission and Distribution (Distribution)

Establishments primarily engaged in the distribution of natural gas to the final consumer through a system of mains and secondarily providing gas transmission services.

2212102 Natural Gas Distribution

Establishments primarily engaged in the distribution of natural gas to the final consumer through a system of mains. Included are gas marketers or brokers who buy natural gas from producers and sell to final consumers.

2212103 Mixed, Manufactured, or Liquefied Petroleum Gas Production and/or Distribution (Natural Gas Distribution)

Establishments primarily engaged in the manufacture and/or distribution of mixed, manufactured, or liquified petroleum gas for sale, including mixtures of manufactured with natural gas.

2212104 Electric and Other Services Combined (Natural Gas Distribution)

Establishments primarily engaged in providing natural gas distribution in combination with electric services, with gas distribution being the major part though less than 95 percent of the total.

2212105 Gas and Other Services Combined (Natural Gas Distribution)

Establishments primarily engaged in providing natural gas distribution in combination with other services, with gas distribution being the major part though less than 95 percent of the total.

2212106 All Other Combination Utilities (Natural Gas Distribution)

Establishments primarily engaged in providing combinations of services with natural gas distribution predominating.

2213 Water, Sewage and Other Systems

This NAICS industry group includes establishments classified in the following NAICS industries: 22131, Water Supply and Irrigation Systems; 22132, Sewage Treatment Facilities; and 22133, Steam and Air-Conditioning Supply.

22131 Water Supply and Irrigation Systems

This industry comprises establishments primarily engaged in operating water treatment plants and/or operating water supply systems. The water supply system may include pumping stations, aqueducts, and/or distribution mains. The water may be used for drinking, irrigation, or other uses.

221310 Water Supply and Irrigation Systems

This U.S. industry comprises establishments primarily engaged in operating water treatment plants and/or operating water supply systems. The water supply system may include pumping stations, aqueducts, and/or distribution mains. The water may be used for drinking, irrigation, or other uses.

The data published with NAICS code 221310 are comprised of these parts of the following SIC industries:

- 4941 Water supply
- 4971 Irrigation systems

2213101 Water Supply (Except Irrigation)

Establishments primarily engaged in distributing water for sale for domestic, commercial, and industrial use.

2213102 Irrigation Systems

Establishments primarily engaged in operating water supply systems for the purpose of irrigation.

22132 Sewage Treatment Facilities

This industry comprises establishments primarily engaged in operating sewer systems or sewage treatment facilities that collect, treat, and dispose of waste.

221320 Sewage Treatment Facilities

This U.S. industry comprises establishments primarily engaged in operating sewer systems or sewage treatment facilities that collect, treat, and dispose of waste.

The data published with NAICS code 221320 are comprised of this part of the following SIC industry:

4952 Sewage treatment facilities

22133 Steam and Air-Conditioning Supply

This industry comprises establishments primarily engaged in providing steam, heated air, or cooled air. The steam distribution may be through mains.

221330 Steam and Air-Conditioning Supply

This U.S. industry comprises establishments primarily engaged in providing steam, heated air, or cooled air. The steam distribution may be through mains.

The data published with NAICS code 221330 are comprised of this part of the following SIC industry:

4961 Steam and air-conditioning supply

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

For this sector, large- and medium-size firms, plus all firms known to operate more than one establishment, were sent questionnaires to be completed and returned to the Census Bureau by mail. For most very small firms data from existing administrative records of other Federal agencies were used instead. These records provided basic information on location, kind of business, revenue, payroll, number of employees, and legal form of organization.

Firms in the 1997 Economic Census were divided into the mail universe and nonmail universe. The coverage of and the method of obtaining census information from each are described below:

1. The mail universe consisted of firms for which information was obtained by means of a mail canvass and included:
 - a. Large employers, i.e., all multiestablishment and all single-establishment employer firms with payroll above a specified cutoff. The term “employers” refers to firms with one or more paid employees at any time during 1997 as shown in the active administrative records of other Federal agencies.
 - b. A sample of small employers, i.e., single-establishment firms with payroll below a specified cutoff, in classifications for which specialized data precluded reliance solely on administrative records sources.
2. The nonmail universe consisted of firms that were not required to file a regular census return and included:
 - a. Selected small employers, i.e., single-establishment firms with payroll below a specified cutoff. Although the payroll cutoff varied by kind of business, small employers in the nonmail universe generally included firms with less than 10 employees and represented about 10 percent of total revenue of establishments covered in the census. Data on revenue, payroll, and employment for small employers in the nonmail universe were derived or estimated from administrative records of other Federal agencies.
 - b. All nonemployers, i.e., all firms subject to Federal income tax with no paid employees during 1997. Revenue information for these firms was obtained

from administrative records of other Federal agencies. Although consisting of many firms, nonemployers accounted for less than 10 percent of total revenue of all establishments covered in the census. The census included only those nonemployer firms which reported a revenue volume of \$1,000 or more during 1997. Data for nonemployers are not included in this report, but are released as part of the Core Business Statistics Series.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

The classifications for all establishments in this sector were assigned in accordance with the 1997 North American Industry Classification System (NAICS) Manual, United States. NAICS is a common classification system developed by the United States, Canada, and Mexico. This system replaces the 1987 Standard Industrial Classification (SIC) that was used in previous censuses. Appendix A of the 1997 NAICS manual provides information on the comparability between the 1987 SIC and the 1997 NAICS. More information on NAICS is available in the NAICS manual and at www.census.gov/naics.

The method of assigning classifications, and the level of detail at which establishments were classified, differed between the mail and nonmail universe as follows:

1. The mail universe.
 - a. Establishments in the mail universe that returned questionnaires were classified on the basis of their self-designation, sources of revenue, and other industry-specific inquiries.
 - b. Establishments in the mail universe that did not return questionnaires were classified on the basis of the most current census kind-of-business classification available from one of the Census Bureau’s current sample surveys, the 1992 census, or the administrative records of other Federal agencies.
2. The nonmail universe.
 - a. Employer establishments in the nonmail universe were classified on the basis of the most current census kind-of-business classification available from one of the Census Bureau’s current sample surveys, the 1992 census, or the administrative records of other Federal agencies. If the census or

administrative record classifications proved inadequate (none corresponded to a 1997 census classification in the detail required for employers), the firm was sent a brief inquiry requesting information necessary to assign a 1997 census kind-of-business code.

- b. Nonemployers were classified on the basis of information obtained from administrative records of other Federal agencies.

RELIABILITY OF DATA

All data compiled for this sector are subject to nonsampling errors. Nonsampling errors can be attributed to many sources: inability to identify all cases in the actual universe; definition and classification difficulties; differences in the interpretation of questions; errors in recording or coding the data obtained; and other errors of collection, response, coverage, processing, and estimation for missing or misreported data.

Data presented in the Miscellaneous Subjects and the Sources of Revenue reports for this sector are subject to sampling errors as well as nonsampling errors. Specifically, these data are estimated based on information obtained from census questionnaires mailed to all large employers and to a sample of small employers in the universe. Sampling errors affect these estimates insofar as they may differ from results that would be obtained from a complete enumeration.

The accuracy of these tabulated data is determined by the joint effects of the various nonsampling errors or by the joint effects of sampling and nonsampling errors. No direct measurement of these effects has been obtained except for estimation for missing or misreported data; however, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize the effects of nonsampling errors.

The Census Bureau obtains limited information extracted from administrative records of other Federal agencies. This information is used in conjunction with other information available to the Census Bureau to

develop estimates for nonemployers, small employers, and other establishments for which responses were not received in time for publication.

TREATMENT OF NONRESPONSE

Census report forms included two different types of inquiries, "basic" and "industry-specific." Data for the basic inquiries, which include location, kind of business or operation, revenue, payroll, number of employees, and legal form of organization, were available from a combination of sources for all establishments. Data for industry-specific inquiries, tailored to the particular kinds of business or operation covered by the report, were available only from the establishments in the mail universe that completed the appropriate inquiries on the questionnaire.

Two methods were used to account for nonresponse to industry-specific inquiries. For some inquiries, missing data were imputed for individual records based on responses from similar establishments. For other inquiries, the total of reported data were expanded to represent the mail and nonmail universe. Data for industry-specific inquiries based on a December 31 reference date were expanded in direct relationship to total annualized revenue of only those establishments in business at the end of the year. Unless otherwise noted in specific reports, data for other industry-specific inquiries were expanded in direct relationship to total revenue of all establishments included in the category. In a few cases, expansion on the basis of the revenue item was not appropriate, and another basic data item was used as the basis for expansion.

All reports in which data were expanded to account for nonmail employers and nonrespondents include a coverage indicator for each publication category, which shows the revenue of establishments responding to the inquiry as a percent of total revenue for all establishments for which data are shown. Coverage is usually determined by the ratio of total revenue of establishments responding to the inquiry to total revenue of all establishments in the category.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

MICHIGAN

Ann Arbor, MI PMSA

Lenawee County, MI
Livingston County, MI
Washtenaw County, MI

Benton Harbor, MI MSA

Berrien County, MI

Detroit, MI PMSA

Lapeer County, MI
Macomb County, MI
Monroe County, MI
Oakland County, MI
St. Clair County, MI
Wayne County, MI

Detroit—Ann Arbor—Flint, MI CMSA

Ann Arbor, MI PMSA
Lenawee County, MI
Livingston County, MI
Washtenaw County, MI

Detroit, MI PMSA
Lapeer County, MI
Macomb County, MI
Monroe County, MI
Oakland County, MI
St. Clair County, MI
Wayne County, MI

Detroit—Ann Arbor—Flint, MI CMSA—Con.

Flint, MI PMSA
Genesee County, MI

Flint, MI PMSA

Genesee County, MI

Grand Rapids—Muskegon—Holland, MI MSA

Allegan County, MI
Kent County, MI
Muskegon County, MI
Ottawa County, MI

Jackson, MI MSA

Jackson County, MI

Kalamazoo—Battle Creek, MI MSA

Calhoun County, MI
Kalamazoo County, MI
Van Buren County, MI

Lansing—East Lansing, MI MSA

Clinton County, MI
Eaton County, MI
Ingham County, MI

Saginaw—Bay City—Midland, MI MSA

Bay County, MI
Midland County, MI
Saginaw County, MI

