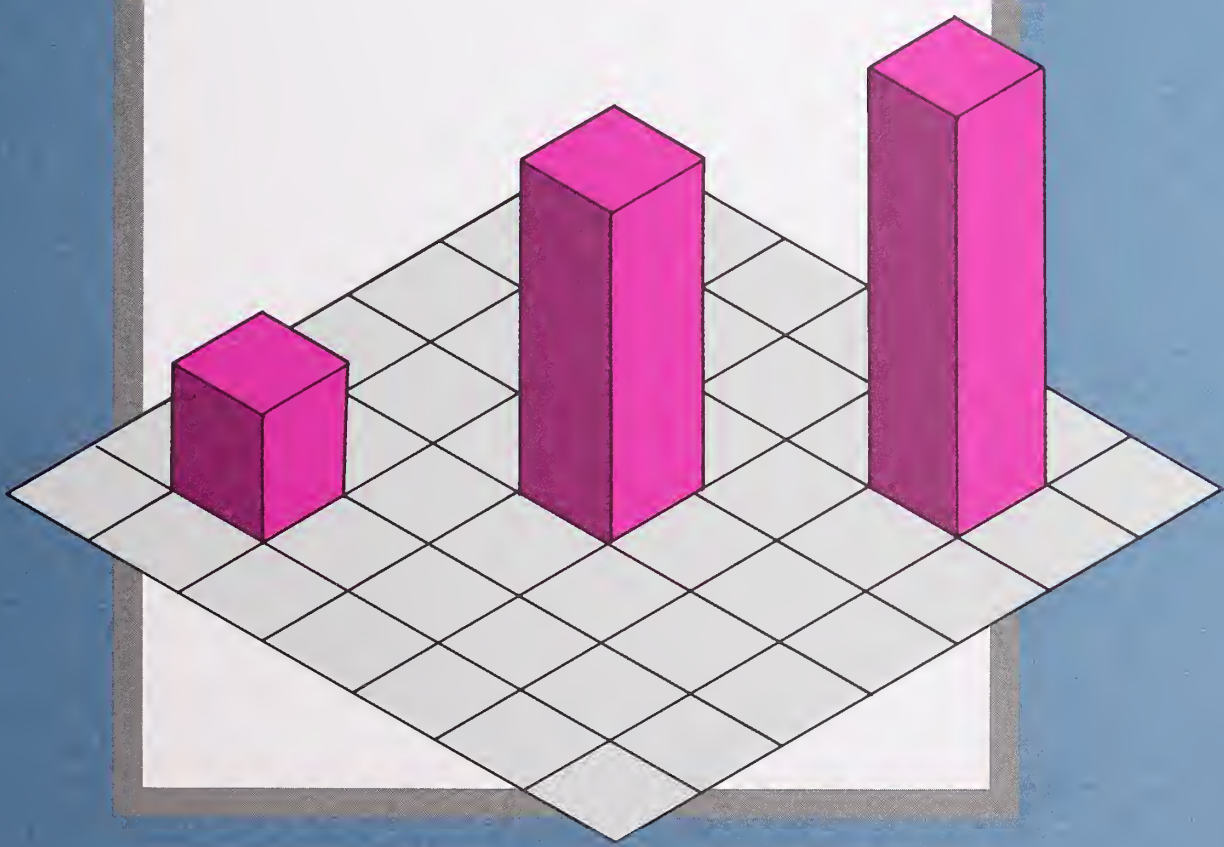


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Using the Census of Manufacturers



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CAHNERS PUBLISHING ECONOMIC CENSUS ANALYSIS

For over two decades, Cahners Publishing Company has published information to help marketers understand the Census of Manufacturers data. The booklets produced by Cahners not only explain the Standard Industrial Classification (SIC) system used by the government, but also include detailed and comprehensive information on actual data from the Census of Manufacturers. Cahners compiles separate industry reports and provides analysis and graphics to help marketers understand the government statistics. The series of booklets produced by Cahners includes:

Using SICs for Profit

A primer for those not familiar with the SIC system. This booklet contains concise, easy-to-understand explanation of the SIC classification system as well as a complete listing of 2, 3, and 4-digit listings for manufacturing, construction and service industry groups.

Measuring the Manufacturing Market

A complete tabulation of the growth of the manufacturing industry. Compiled from preliminary reports of the 1987 Census of Manufacturers, this booklet features trend data for all 458 manufacturing industries about total plants, value of shipments, cost of materials consumed and capital expenditures.

Using the Census of Manufacturers

A useful hands-on booklet for identifying where the buying power in a particular market originates. This booklet highlights manufacturing by plant size, focusing on total manufacturing, OEM (Original Equipment Manufacturing), and process industries. Another unique benefit — this booklet includes a detailed table of plant-size information for four variables (value added by manufacture, cost of materials consumed, value of shipments, capital expenditures) for the two-digit SICs in manufacturing.

Documenting the Manufacturing Industry Universe

All the information gathered in one place! This book contains complete industry information for all four-digit SICs in manufacturing. Cahners Publishing Company has computer-tabulated over 80 separate industry reports to produce this quick, easy and comprehensive reference to the 1987 Census of Manufacturers data.

These booklets are a unique benefit from Cahners, and we are pleased to, once again, provide our customers with valuable marketing data based on the Census information.

TABLE OF CONTENTS

How the Census Information Can Help You	1
What is Manufacturing?	2
What is a Standard Industrial Classification	3
A Definition of “Process” and “OEM” Manufacturing	3
Process Industries	4
Original Equipment Manufacturing Industries	4
Plant Size	5
Value Added by Manufacture	6
Cost of Materials Consumed	8
Value of Shipments	10
Capital Expenditures	12
Complete Listing of 4-Digit SIC Product Codes	14
Detailed Industry Information	21
Economic Summary of the U.S. Manufacturing Industries (Fold-out)	22

HOW THE CENSUS INFORMATION CAN HELP YOU

This booklet, prepared by Cahners Publishing Company from information contained in the 1987 Census of Manufacturers, will provide you with valuable marketing assistance. The Census of Manufacturers documents industries by plant size. In condensing this information, our booklet will help you to determine the minimum number of plants that need to be included in your marketing efforts to reach maximum market penetration.

If, for example, your company markets a product that could be used in every manufacturing plant in the country, your universe would be the 359,075 plants across the U.S. If, however, your company produces a product that would be purchased in proportion to plant size (like most products), you could cover 78% of the manufacturing universe by marketing to the 35,000 manufacturing plants that employ 100 or more persons. (This example took cost of materials purchased as an indicator of market penetration. See page 8.)

To gain just 9% further market penetration, you would need to add to your marketing efforts an additional 28,292 plants in the 50-99 employment class size.

Use this booklet to examine your markets and see where the buying power originates. You may find that the U.S. Census of Manufacturers provides the best market information you have ever had.

WHAT IS MANUFACTURING?

The best definition of manufacturing comes from the U.S. Government itself:

Manufacturing...includes establishments engaged in the mechanical or chemical transformation of materials or substances into new products. These establishments are usually described as plants, factories, or mills, and characteristically use power-driven machines and materials handling equipment.

Establishments engaged in assembling component parts of manufactured products are also considered manufacturing if the new product is neither a structure or other fixed improvement. Also included is the blending of materials such as lubricating oils, plastics, resins, or liquors. The materials processed by manufacturing establishments include products of agriculture, forestry, mining, and quarrying, as well as products of other manufacturing establishments.

The definition of manufacturing, however, is but a first step. Within manufacturing, the government has compiled 20 major "Standard Industrial Classification" groups—or, if you will, 20 major industries. They are:

SIC	DESCRIPTION
20	Food and kindred products
21	Tobacco manufactures
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
24	Lumber and wood products, except furniture
25	Furniture and fixtures
26	Paper and allied products
27	Printing, publishing, and allied industries
28	Chemicals and allied products
29	Petroleum refining and related industries
30	Rubber and miscellaneous plastics products
31	Leather and leather products
32	Stone, clay, glass, and concrete products
33	Primary metal industries
34	Fabricated metal products, except machinery and transportation equipment
35	Machinery, except electrical
36	Electrical and electronic machinery, equipment, and supplies
37	Transportation equipment
38	Measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks
39	Miscellaneous manufacturing industries

WHAT IS A STANDARD INDUSTRIAL CLASSIFICATION?

The Standard Industrial Classification, or SIC for short, is the Government's basic definition of Industry.

"The SIC was developed," according to the official statistical standards, "for use in the classification of establishments by type of activity in which engaged...and for promoting uniformity and comparability in the presentation of statistical data collected by various agencies of the United States Government, state agencies, trade associations, and private research organizations."

Establishments are classified on several levels. The most basic, defined by the first two digits of the SIC, indicates the industry in which the establishment is classified. For example, a manufacturer of aircraft engines is classified first under SIC 37 - "Transportation Equipment." Next the establishment is broken down into product type and given a third SIC digit. To continue with the example, the aircraft engine maker is classified as 372 - "Aircraft and Parts." Finally, the government assigns a fourth digit, which describes the specific product group. In our example, it is 3722 - "Aircraft Engines and Engine Parts." (Actually, the process is carried out further to six and seven digits—individual product codes. However, this breakout becomes too complex for our discussion here.) Thus, every U.S. company is assigned to a four-digit SIC group. A complete listing of all "four-digit" industry groups appears on page 15 in this booklet.

A DEFINITION OF "PROCESS" AND "OEM" MANUFACTURING

Cahners Publishing Company believes that one final distinction can be made which can greatly help one's understanding of manufacturing. As a publisher of numerous business magazines and special publications serving manufacturing, Cahners has found that distinguishing between "Process" industries and "Original Equipment Manufacturing" industries can provide valuable insight.

It is important to distinguish between process and OEM manufacturing because the two have different manufacturing processes and purchasing patterns. Because of these differences, each group purchases separate classes of goods. As a result, many manufacturers will sell only to OEM (or process) industries, and can largely ignore the other in their marketing efforts.

An easy way to distinguish between OEM and process industries is to think of OEM industries as those dominated by conveyor belts, and process industries as those dominated

by pipes. Process industries (petroleum, paper, plastics, rubber, etc.) involve fewer inputs into the manufacturing process. As a result, these industries buy fewer materials, at longer intervals, but in significantly larger quantities.

OEM industries (largely machinery and equipment) involve the purchase of more diverse products, more frequently, but in smaller quantities at a given time.

PROCESS INDUSTRIES

The Process industries are those primarily engaged in converting raw materials to finished and semi-finished products. This group includes both "pipe" goods and other finished goods. Pipe goods include paper, chemicals and allied products, petroleum, rubber, glass and primary metals. Other consumer-oriented goods (such as food, tobacco, textiles, apparel, furniture and leather) are also included among the process industries. The two-digit SICs that comprise the process industries are:

SIC	DESCRIPTION
20	Food and kindred products
21	Tobacco manufactures
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
24	Lumber and wood products, except furniture
25	Furniture and fixtures
26	Paper and allied products
27	Printing, publishing, and allied industries
28	Chemicals and allied products
29	Petroleum refining and related industries
30	Rubber and miscellaneous plastics products
31	Leather and leather products
32	Stone, clay, glass, and concrete products
33	Primary metal industries

ORIGINAL EQUIPMENT MANUFACTURING INDUSTRIES

The Original Equipment Manufacturing (or OEM) industries represent a diverse market, ranging from batteries to bulldozers. Some OEM manufacturers further refine the definition of their market, such as the electronics segment of OEM (EOEM), which includes parts of SICs 35, 36, and 38. The industries that are included in the total OEM market are listed on the following page:

SIC	DESCRIPTION
34	Fabricated metal products, except machinery and transportation equipment
35	Machinery, except electrical
36	Electrical and electronic machinery, equipment, and supplies
37	Transportation equipment
38	Measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks
39	Miscellaneous manufacturing industries

PLANT SIZE

The most basic data available from the Census of Manufacturers are the counts of all manufacturing plants. Counts are broken down by establishments with:

- 1 to 4 employees
- 5 to 9 employees
- 10 to 19 employees
- 20 to 49 employees
- 50 to 99 employees
- 100 to 249 employees
- 250 to 499 employees
- 500 to 999 employees
- 1,000 to 2,499 employees
- 2,500 and more employees

Furthermore, these data are provided by two- and four-digit SIC industry group.

By looking at the number of plants and payroll, an important observation can be made. Just 9.7% of U.S. manufacturing plants employ 100 or more employees. However, these plants—there are 35,000 of them—account for 75.9% of the total payroll in manufacturing.

Taking the OEM industries, one finds that 9.3% of manufacturing plants employ 100 or more people but these plants account for 81.0% of the payroll. In process industries, 100+ person plants constitute 10% of the total, and have 71.2% of the payroll.

As a result of this analysis, many people have come to learn the “10/80” rule of thumb. In short, it states that the large plants, about 10% of the total number of plants, account for 80% of the payroll and, as we shall see, about 80% of most other consumption and output measures.

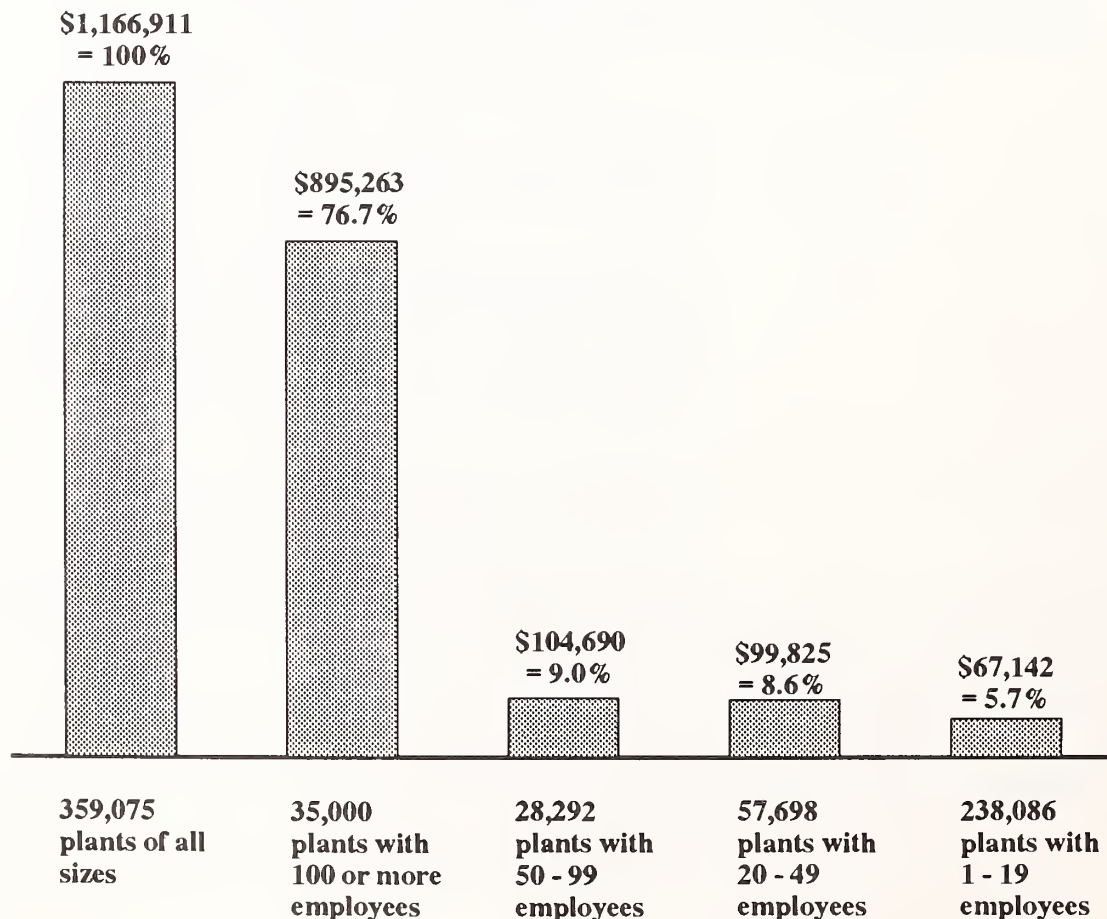
VALUE ADDED BY MANUFACTURE

As the name implies, Value Added by Manufacture is the net, new “contribution” made by a manufacturer to the finished product. Looking at it another way, it is derived by subtracting the “cost of materials” from the “value of shipments.” (It should be noted, however, that this equation does not exactly equal the Total Value Added. This is because of adjustments made by the Bureau of the Census to account for inventories and work still in progress.)

As with payroll, the majority of the Value Added comes from big plants. Those establishments employing over 100 people contribute 76.7% of the total Value Added.

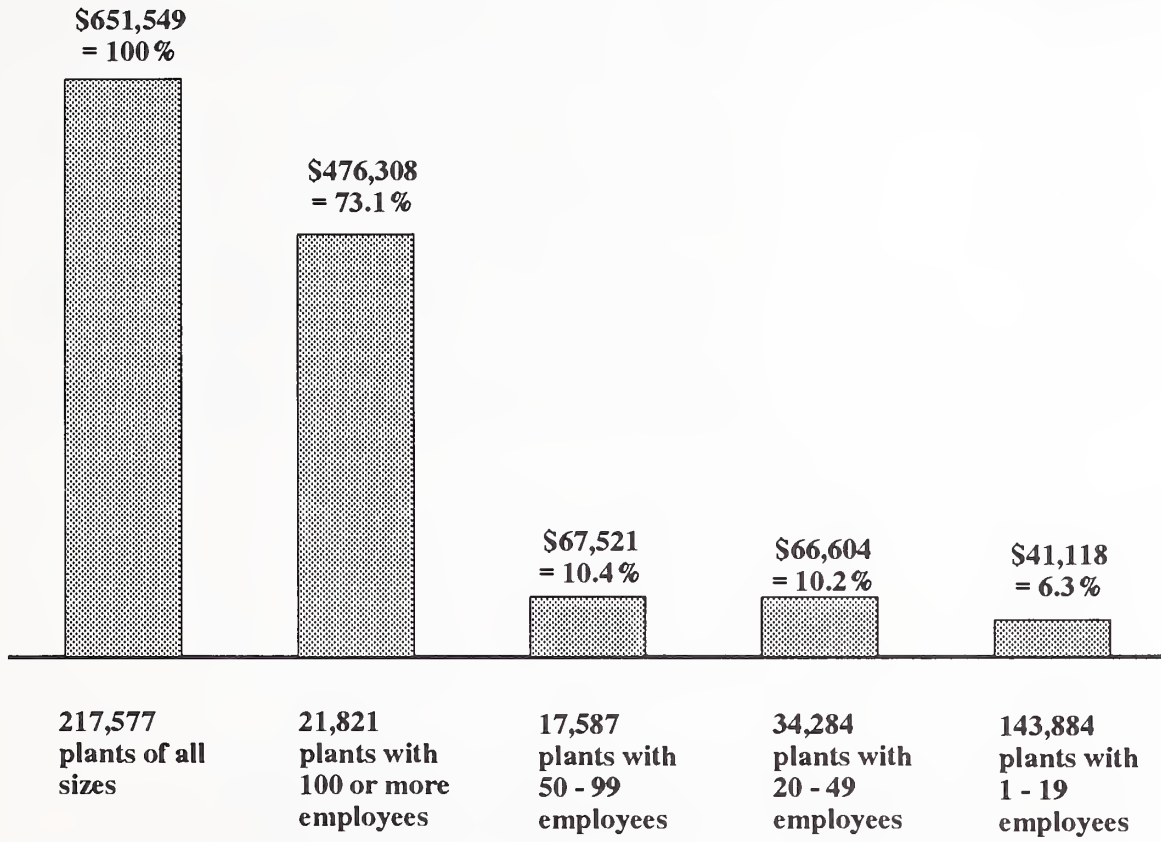
In the OEM division, 100+ person plants contribute 81.3% of Value Added. In the process industries, those large plants account for 73.1% of Value Added.

TOTAL MANUFACTURING INDUSTRIES Value Added by Manufacture by Plant Size (Millions of \$)



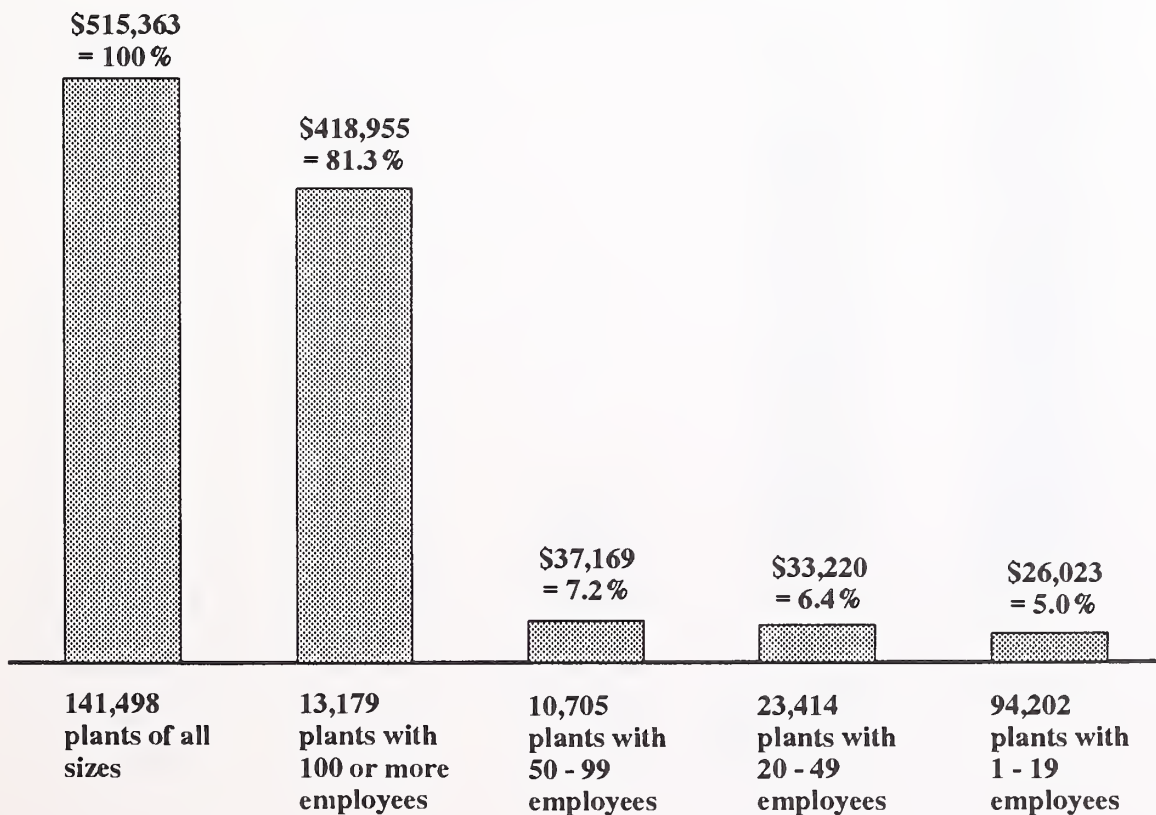
PROCESS INDUSTRIES

Value Added by Manufacture by Plant Size (Millions of \$)



OEM INDUSTRIES

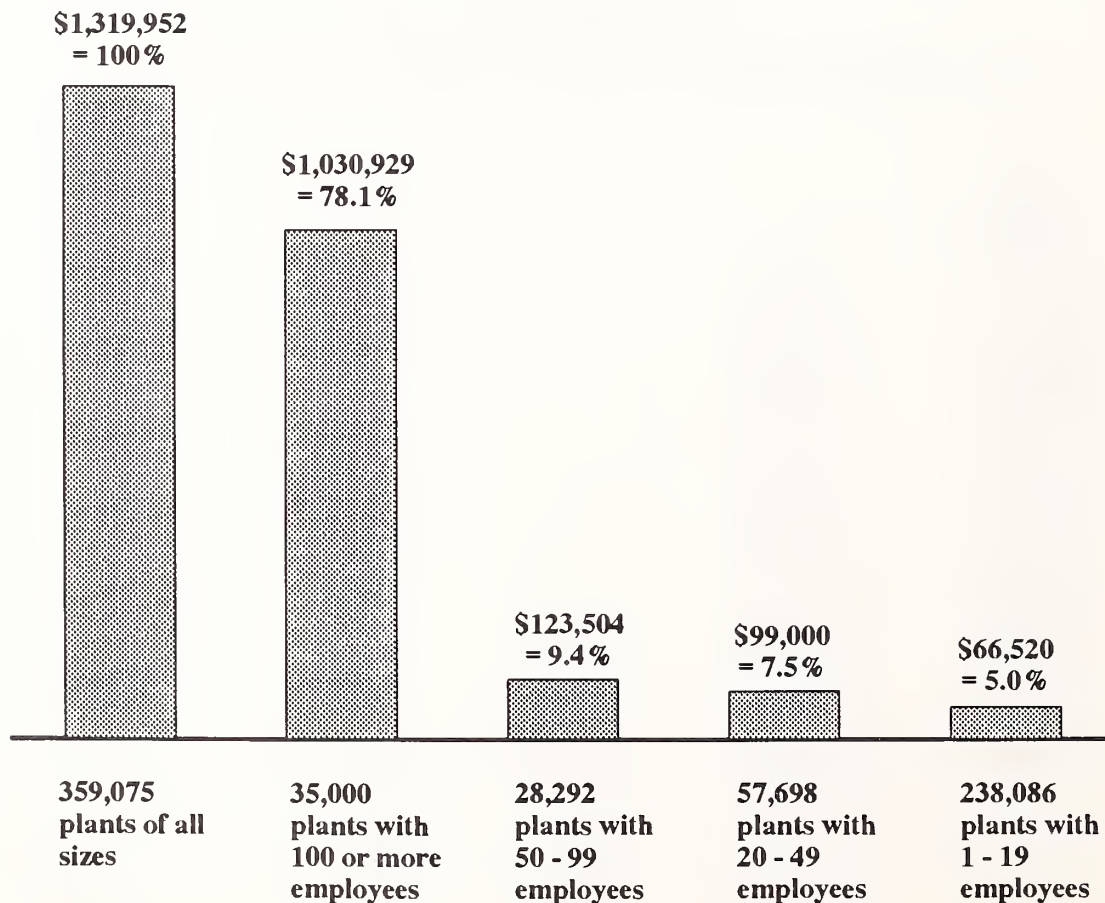
Value Added by Manufacture by Plant Size (Millions of \$)



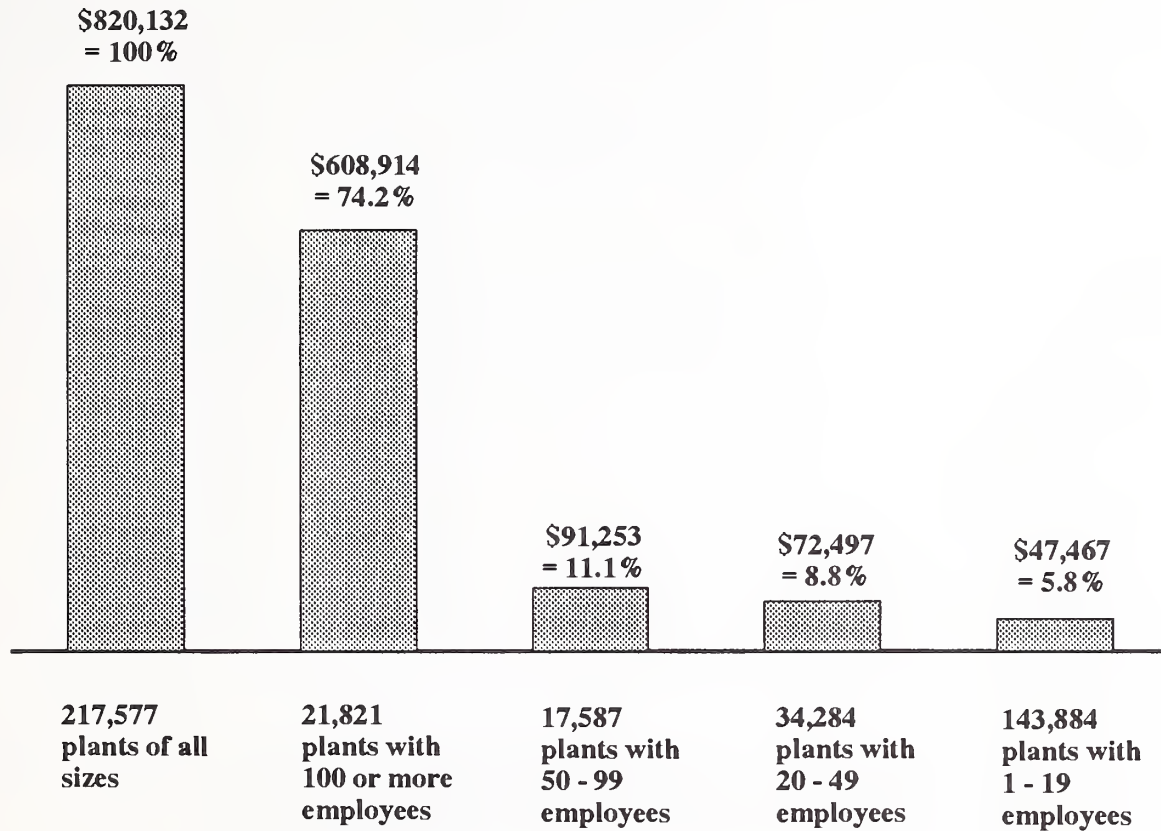
COST OF MATERIALS CONSUMED

The cost of materials consumed is a particularly important measure for business to business marketers to consider, since it measures the total dollar amount of products consumed by manufacturers. A plant's purchase of materials, supplies, products, semi-finished goods, fuels, and electric energy fall under this category. Included are such items as parts, components, containers, scrap, and other materials that are consumed or put into the production of an end product. Excluded are costs of services such as advertising, telephone, insurance, consulting, and research and development. Also excluded are rent, depreciation charges, and capital expenditures. Large plants consume 78.1% of all materials in U.S. manufacturing. In the OEM sector, these 100+ person plants account for 84.4%, and in the Process industries, they account for 74.2% of the cost of materials.

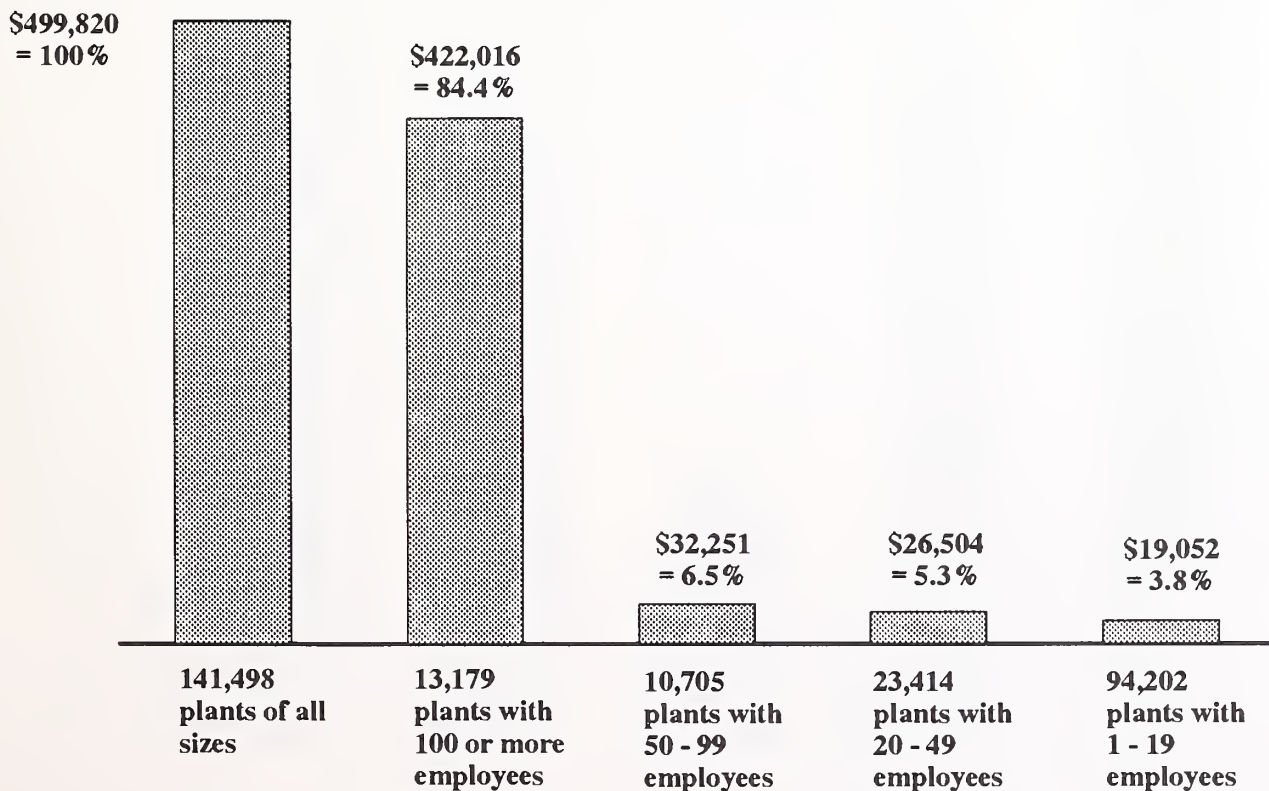
TOTAL MANUFACTURING INDUSTRIES Cost of Materials Consumed by Plant Size (Millions of \$)



PROCESS INDUSTRIES
Cost of Materials Consumed by Plant Size (Millions of \$)



OEM INDUSTRIES
Cost of Materials Consumed by Plant Size (Millions of \$)

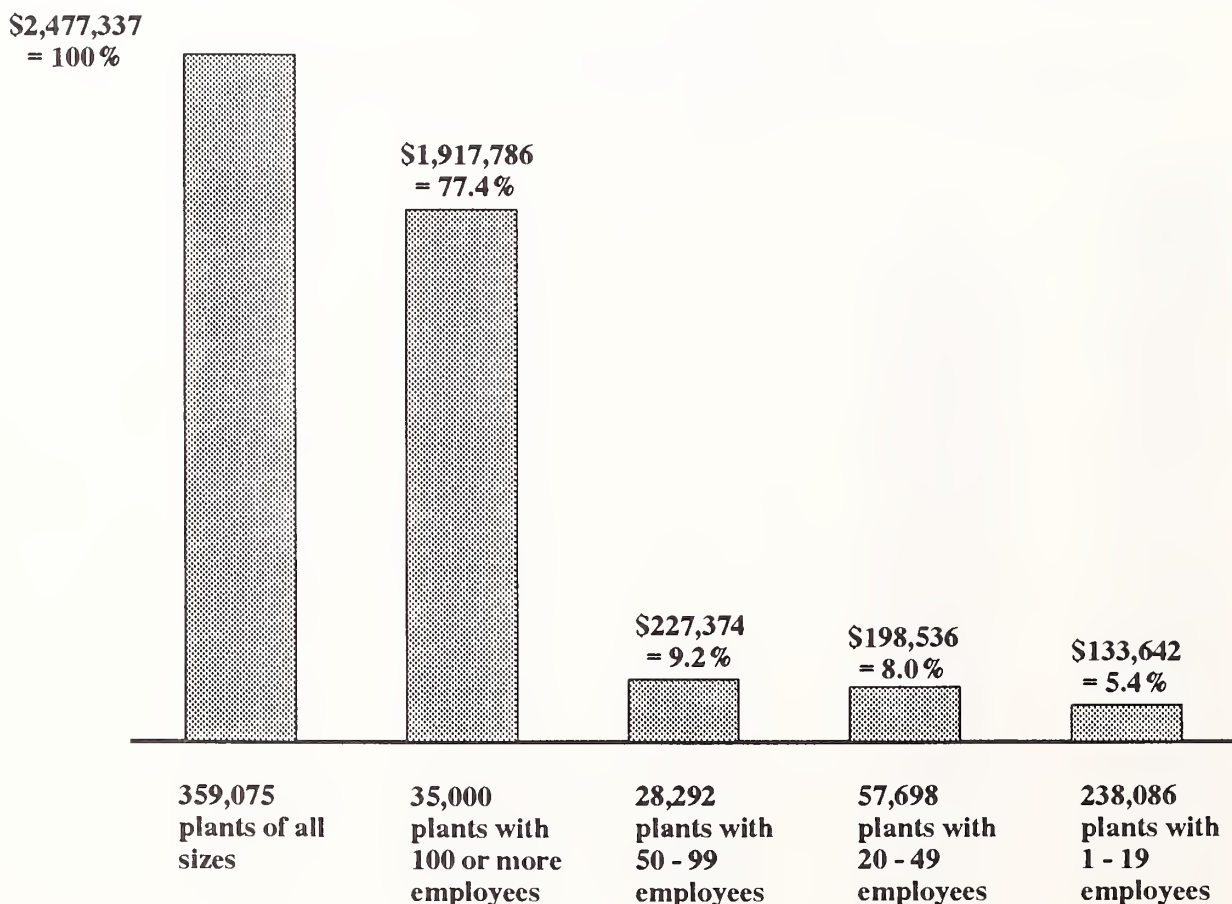


VALUE OF SHIPMENTS

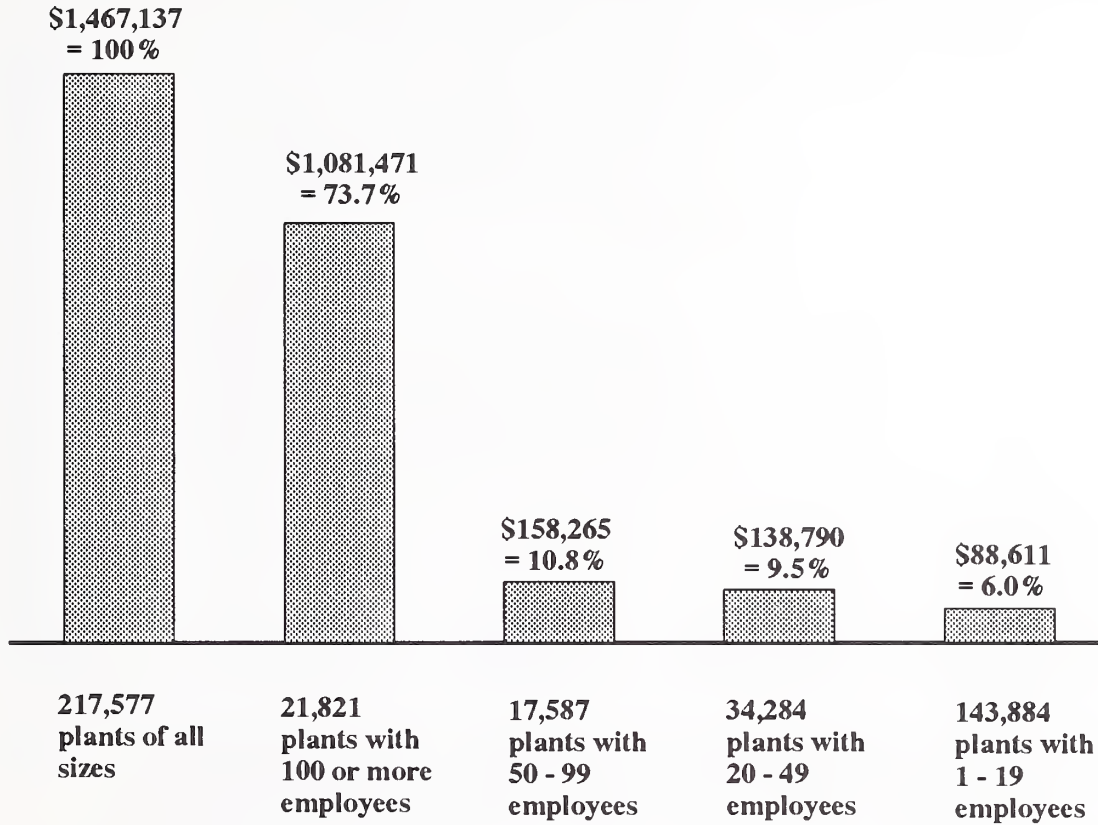
Simply put, Value of Shipments is the dollar measure of sales volume. It is the cost of shipments from a plant, excluding freight charges and excise taxes. Included in Value of Shipments are products made within an establishment and those made elsewhere under contract from materials owned by the establishment. In short, Value of Shipments is the best measure of the volume of output from a given plant. It is therefore a good measure to use in determining the relative size of different industries.

Plants with 100 or more employees account for 77.4% of all Value of Shipments. In OEM industries, these plants total 82.8%. In the Process industries, they are responsible for 73.7% of the Value of Shipments.

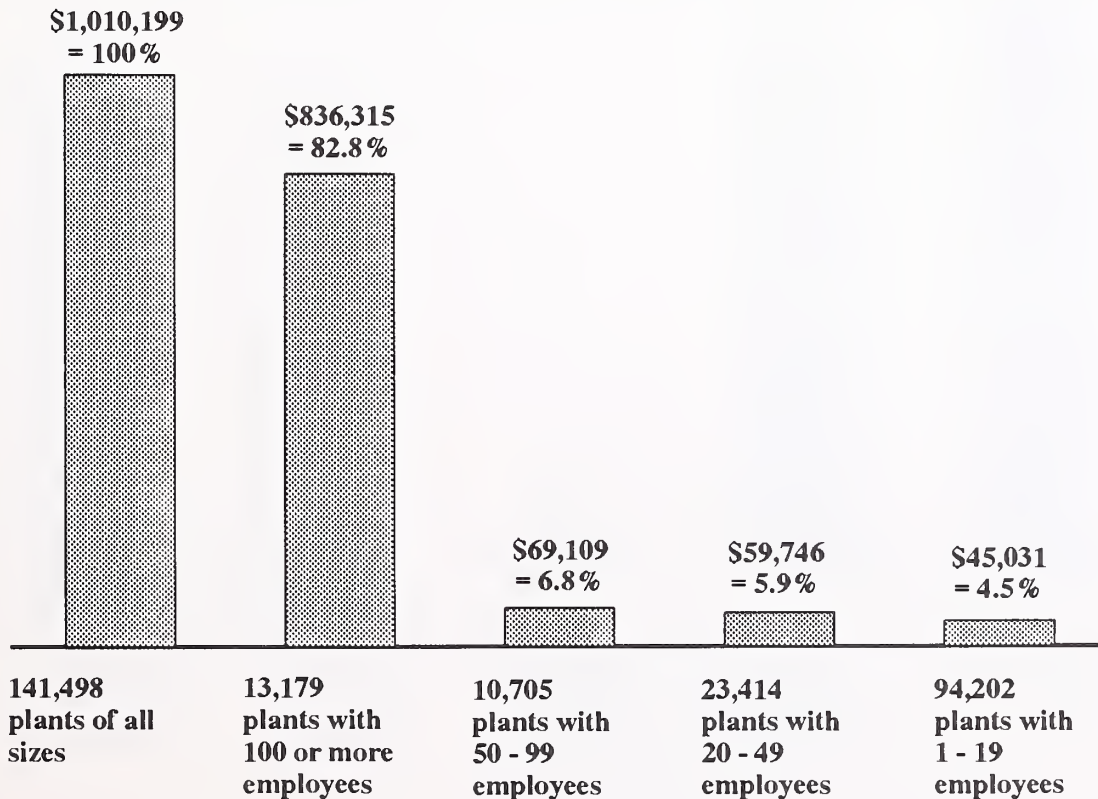
TOTAL MANUFACTURING INDUSTRIES Value of Shipments by Plant Size (Millions of \$)



PROCESS INDUSTRIES
Value of Shipments by Plant Size (Millions of \$)



OEM INDUSTRIES
Value of Shipments by Plant Size (Millions of \$)

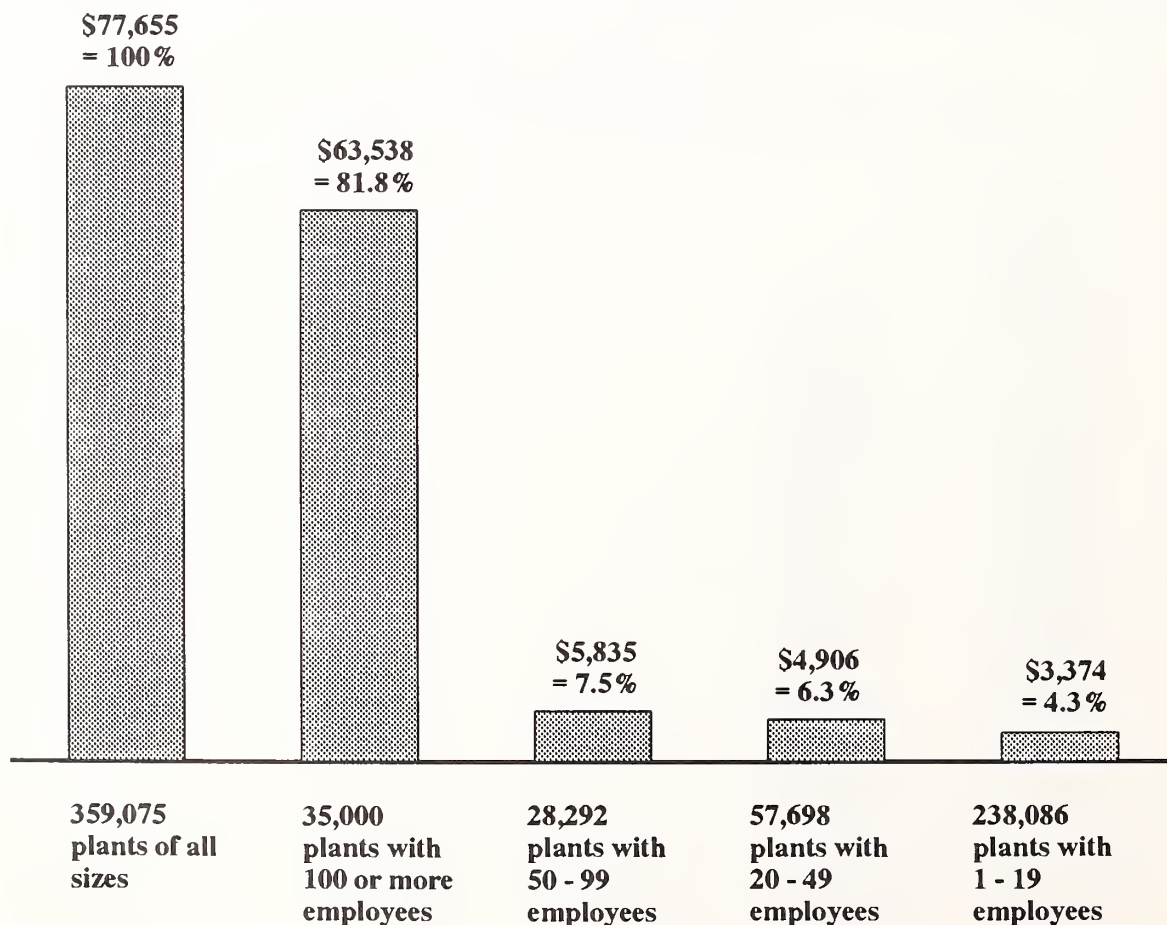


CAPITAL EXPENDITURES

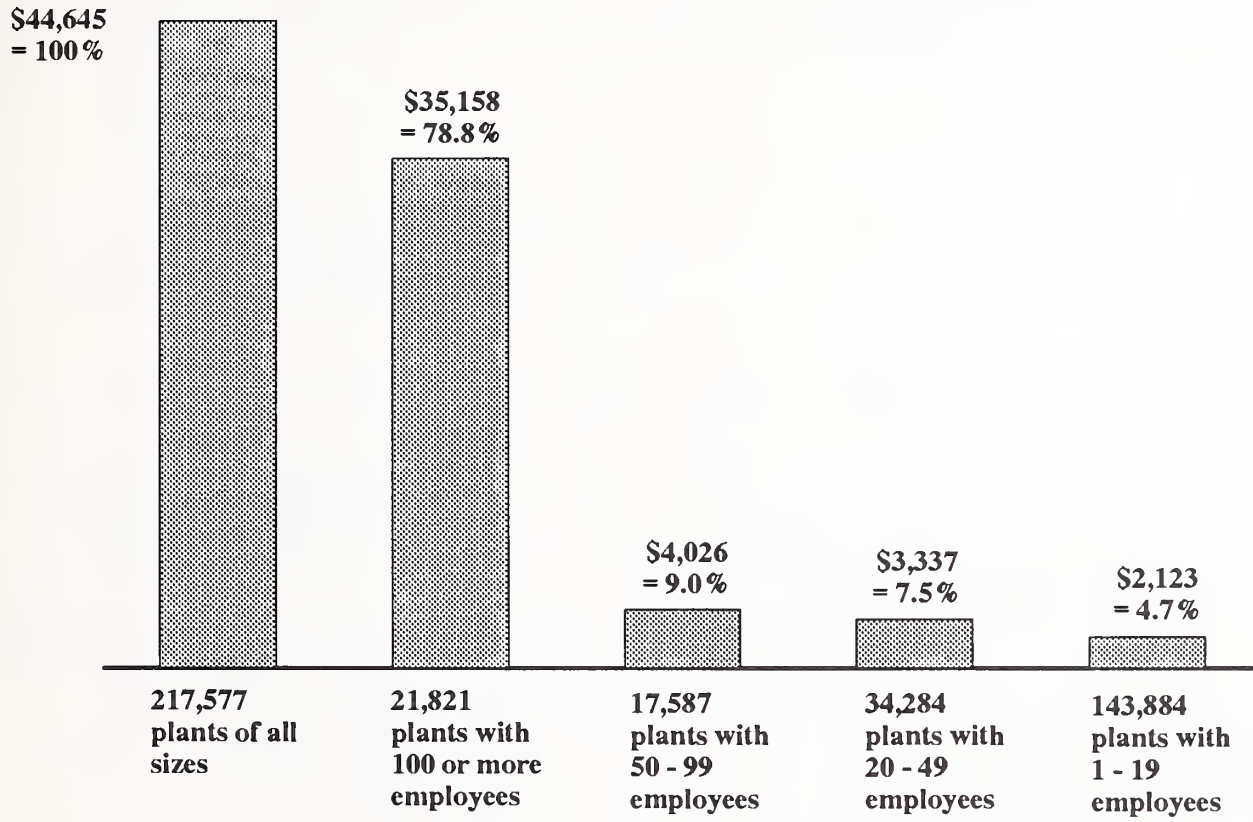
Capital Expenditures are payments for plant and equipment, both new and used. "Plant expenditures" account for permanent additions and major alterations made to the physical facilities. "Expenditures for machinery and equipment" include those items purchased for replacement as well as those purchased for added capacity purposes. Excluded from this category are leased plant and equipment expenditures and maintenance and repairs, which are considered current operating expenses. This is the best measure to use if you market machinery and equipment to the manufacturing sector.

Some 81.8% of all Capital Expenditures are made by plants with 100 or more employees. In the OEM sector, 86% of Capital Expenditures are made by large plants. In the Process industries, 78.8% of Capital Expenditures are made by plants with 100 or more employees.

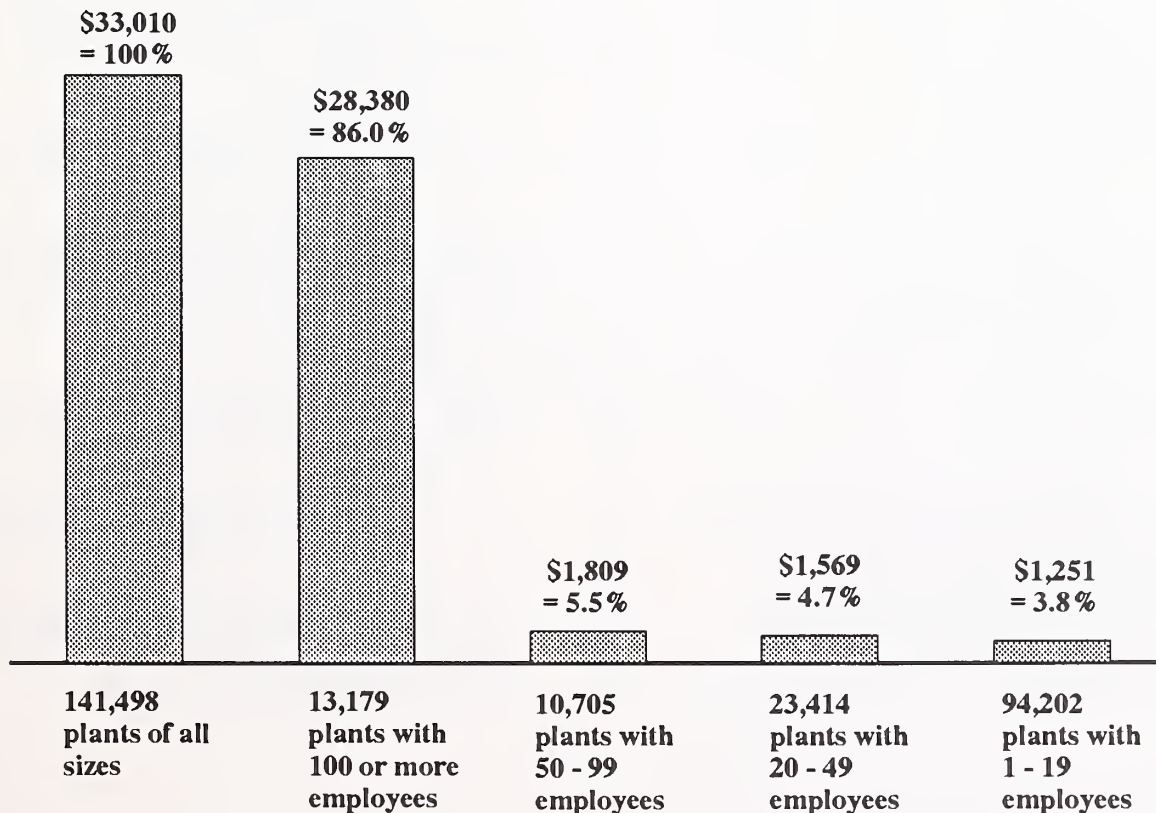
TOTAL MANUFACTURING INDUSTRIES Capital Expenditures by Plant Size (Millions of \$)



PROCESS INDUSTRIES
Capital Expenditures by Plant Size (Millions of \$)



OEM INDUSTRIES
Capital Expenditures by Plant Size (Millions of \$)



COMPLETE LISTING OF 2, 3 & 4-DIGIT SIC MANUFACTURING INDUSTRY GROUPS

MANUFACTURING

20 FOOD AND KINDRED PRODUCTS

201 MEAT PRODUCTS

- 2011 Meat packing plants
- 2013 Sausages and other prepared meats
- 2015 Poultry slaughtering and processing

202 DAIRY PRODUCTS

- 2021 Creamery Butter
- 2022 Cheese, natural and processed
- 2023 Dry, condensed evaporated products
- 2024 Ice cream and frozen desserts
- 2026 Fluid milk

203 PRESERVED FRUITS AND VEGETABLES

- 2032 Canned specialties
- 2033 Canned fruits and vegetables
- 2034 Dehydrated fruits, vegetables, soups
- 2035 Pickles, sauces and salad dressings
- 2037 Frozen fruits and vegetables
- 2038 Frozen specialties, nec

204 GRAIN MILL PRODUCTS

- 2041 Flour and other grain mill products
- 2043 Cereal breakfast foods
- 2044 Rice milling
- 2045 Prepared flour mixes and doughs
- 2046 Wet corn milling
- 2047 Dog and cat food
- 2048 Prepared foods, nec

205 BAKERY PRODUCTS

- 2051 Bread, cake and related products
- 2052 Cookies and crackers
- 2053 Frozen bakery products except bread

206 SUGAR AND CONFECTIONERY PRODUCTS

- 2061 Raw cane sugar
- 2062 Cane sugar refining
- 2063 Beet sugar
- 2064 Candy and other confectionery products
- 2066 Chocolate and cocoa products
- 2067 Chewing gum
- 2068 Salted and roasted nuts and seeds

207 FATS AND OILS

- 2074 Cottonseed oil mills
- 2075 Soybean oil mills
- 2076 Vegetable oil mills
- 2077 Animal and marine fats and oils
- 2079 Edible fats and oils, nec

208 BEVERAGES

- 2082 Malt beverages
- 2083 Malt
- 2084 Wines, brandy, and brandy spirits
- 2085 Distilled and blended liquors
- 2086 Bottled and canned soft drinks
- 2087 Flavoring extracts, and syrups, nec

209 MISC. FOOD AND KINDRED PRODUCTS

- 2091 Canned and cured fish and seafoods
- 2092 Fresh or frozen prepared fish
- 2095 Roasted coffee
- 2096 Potato chips and similar snacks
- 2097 Manufactured ice
- 2098 Macaroni and spaghetti
- 2099 Food preparations, nec

21 TOBACCO PRODUCTS

211 CIGARETTES

- 2111 Cigarettes

212 CIGARS

- 2121 Cigars

213 CHEWING AND SMOKING TOBACCO

- 2131 Chewing and smoking tobacco

214 TOBACCO STEMMING AND REDRYING

- 2141 Tobacco stemming and redrying

22 TEXTILE MILL PRODUCTS

221 BROADWOVEN FABRIC MILLS, COTTON

- 2211 Broadwoven fabric mills, cotton

222 BROADWOVEN FABRIC MILLS, MANMADE

- 2221 Broadwoven fabric mills, manmade

223 BROADWOVEN FABRIC MILLS, WOOL

- 2231 Broadwoven fabric mills, wool

224 NARROW FABRIC MILLS

- 2241 Narrow fabric mills
- 225 **KNITTING MILLS**
 - 2251 Women's hosiery except socks
 - 2252 Hosiery, nec
 - 2253 Knit outerwear mills
 - 2254 Knit underwear mills
 - 2257 Weft knit fabric mills
 - 2258 Lace and warp knit fabric mills
 - 2259 Knitting mills, nec
- 226 **TEXTILE FINISHING, EXCEPT WOOL**
 - 2261 Finishing plants, cotton
 - 2262 Finishing plants, manmade
 - 2269 Finishing plants, nec
- 227 **CARPETS AND RUGS**
 - 2273 Carpets and rugs
- 228 **YARN AND THREAD MILLS**
 - 2281 Yarn spinning mills
 - 2282 Throwing and winding mills
 - 2284 Thread mills
- 229 **MISCELLANEOUS TEXTILE GOODS**
 - 2295 Coated fabrics not rubberized
 - 2296 Tire cord and fabrics
 - 2297 Non-woven fabrics
 - 2298 Cordage and twine
 - 2299 Textile goods, nec
- 23 APPAREL AND OTHER TEXTILE PRODUCTS**
 - 231 **MEN'S AND BOY'S SUITS AND COATS**
 - 2311 Men's and boy's suits and coats
 - 232 **MEN'S AND BOY'S FURNISHINGS**
 - 2321 Men's and Boy's shirts
 - 2322 Men's and boy's underwear and nightwear
 - 2323 Men's and boy's neckwear
 - 2325 Men's and boy's trousers and slacks
 - 2326 Men's and boy's work clothes
 - 2329 Men's and boy's clothing, nec
 - 233 **WOMEN'S AND MISSES' OUTERWEAR**
 - 2331 Women's and misses' blouses and shirts
 - 2335 Women's, juniors, and misses' dresses
 - 2337 Women's and misses' outerwear, nec
 - 234 **WOMEN'S AND CHILDREN'S UNDERGARMENTS**
 - 2341 Women's and children's underwear
 - 2342 Bras, girdles, and allied garments
 - 235 **HATS, CAPS, AND MILLINERY**
 - 2353 Hats, caps, and millinery
 - 236 **GIRL'S AND CHILDREN'S OUTERWEAR**
 - 2361 Girl's and children's dresses, blouses
 - 2369 Girl's and children's outerwear, nec

- 237 **FUR GOODS**
 - 2371 Fur goods
- 238 **MISC. APPAREL AND ACCESSORIES**
 - 2381 Fabric dress and work gloves
 - 2384 Robes and dressing gowns
 - 2385 Waterproof outerwear
 - 2386 Leather and sheep-lined clothing
 - 2387 Apparel belts
 - 2389 Apparel and accessories, nec
- 239 **MISC. FABRICATED TEXTILE PRODUCTS**
 - 2391 Curtains and draperies
 - 2392 Housefurnishings, nec
 - 2393 Textile bags
 - 2394 Canvas and related products
 - 2395 Pleating and stitching
 - 2396 Automotive and apparel trimming
 - 2397 Schiffli machine embroideries
 - 2399 Fabricated textile products, nec

24 LUMBER AND WOOD PRODUCTS

- 241 **LOGGING**
 - 2411 Logging
- 242 **SAW MILLS AND PLANNING MILLS**
 - 2421 Sawmills and planning mills, general
 - 2426 Hardwood dimension and flooring mills
 - 2429 Special product sawmills, nec
- 243 **MILLWORK**
 - 2431 Wood kitchen cabinets
 - 2435 Hardwood veneer and plywood
 - 2439 Structural wood members, nec
- 244 **WOOD CONTAINERS**
 - 2441 Nailed wood boxes and shooK
 - 2448 Wood pallets and skids
 - 2449 Wood containers, nec
- 245 **WOOD BUILDINGS AND MOBILE HOMES**
 - 2451 Mobile homes
 - 2452 Prefabricated wood buildings
- 249 **MISCELLANEOUS WOOD PRODUCTS**
 - 2491 Wood preserving
 - 2493 Reconstituted wood products
 - 2499 Wood products, nec

25 FURNITURE AND FIXTURES

- 251 **HOUSEHOLD FURNITURE**
 - 2511 Wood household furniture
 - 2512 Upholstered household furniture
 - 2514 Metal household furniture
 - 2515 Mattresses and bedsprings
 - 2517 Wood TV and radio cabinets

- 2519 Household furniture, nec
- 252 OFFICE FURNITURE
 - 2521 Wood office furniture
 - 2522 Office furniture, except wood
- 253 PUBLIC BUILDING AND RELATED FURNITURE
 - 2531 Public building and related furniture
- 254 PARTITIONS AND FIXTURES
 - 2541 Wood partitions and fixtures
 - 2542 Partitions and fixtures except wood
- 259 MISCELLANEOUS FURNITURE AND FIXTURES
 - 2591 Drapery hardware and blinds and shades
 - 2599 Furniture and fixtures, nec
- 26 PAPER AND ALLIED PRODUCTS**
 - 261 PULP MILLS
 - 2611 Pulp mills
 - 262 PAPER MILLS
 - 2621 Paper mills
 - 263 PAPERBOARD MILLS
 - 2631 Paperboard mills
 - 265 PAPERBOARD CONTAINERS AND BOXES
 - 2652 Setup paperboard boxes
 - 2653 Corrugated and solid fiber boxes
 - 2655 Fiber cans, drums and similar products
 - 2656 Sanitary food containers
 - 2657 Folding paperboard boxes
 - 267 MISC. CONVERTED PAPER PRODUCTS
 - 2671 Paper coated and laminated, packaging
 - 2672 Paper coated and laminated, nec
 - 2673 Bags; plastics, laminated, and coated
 - 2674 Bags; uncoated paper and multi-wall
 - 2675 Die-cut paper and board
 - 2676 Sanitary paper products
 - 2677 Envelopes
 - 2678 Stationery products
 - 2679 Converted paper products, nec
- 27 PRINTING AND PUBLISHING**
 - 271 NEWSPAPERS
 - 2711 Newspapers
 - 272 PERIODICALS
 - 2721 Periodicals
 - 273 BOOKS
 - 2731 Books
 - 274 MISCELLANEOUS PUBLISHING
 - 2741 Miscellaneous Publishing

- 275 COMMERCIAL PRINTING
 - 2752 Commercial printing, lithographic
 - 2754 Commercial printing, gravure
 - 2759 Commercial printing, nec
- 276 MANIFOLD BUSINESS FORMS
 - 2761 Manifold business forms
- 277 GREETING CARDS
 - 2771 Greeting cards
- 278 BLANKBOOKS AND BOOKBINDING
 - 2782 Blankbooks and looseleaf binders
 - 2789 Bookbinding and related work
- 279 PRINTING TRADE SERVICES
 - 2791 Typesetting
 - 2796 Platemaking services

28 CHEMICALS AND ALLIED PRODUCTS

- 281 INDUSTRIAL INORGANIC CHEMICALS
 - 2812 Alkalines and chlorine
 - 2813 Industrial gases
 - 2816 Inorganic pigments
 - 2819 Industrial inorganic chemicals
- 282 PLASTICS MATERIALS AND SYNTHETICS
 - 2821 Plastics materials and resins
 - 2822 Synthetic rubber
 - 2823 Cellulosic manmade fibers
 - 2824 Organic fibers, noncellulosic
- 283 DRUGS
 - 2833 Medicinals and botanicals
 - 2834 Pharmaceutical preparations
 - 2835 Diagnostic substances
 - 2836 Biological products exc. diagnostic
- 284 SOAPS, CLEANERS AND TOILET GOODS
 - 2841 Soap and other detergents
 - 2842 Polishes and sanitation goods
 - 2843 Surface active agents
 - 2844 Toilet preparations
- 285 PAINTS AND ALLIED PRODUCTS
 - 2851 Paints and allied products
- 286 INDUSTRIAL ORGANIC CHEMICALS
 - 2861 Gum and wood chemicals
 - 2865 Cyclic crudes and intermediates
 - 2869 Industrial organic chemicals, nec
- 287 AGRICULTURAL CHEMICALS
 - 2873 Nitrogenous fertilizers
 - 2874 Phosphatic fertilizers
 - 2875 Fertilizers, mixing only
 - 2879 Agricultural chemicals, nec

- 289 MISCELLANEOUS CHEMICAL PRODUCTS
 - 2891 Adhesives and sealants
 - 2892 Explosives
 - 2893 Printing ink
 - 2895 Carbon black
 - 2899 Chemical preparations, nec
- 29 PETROLEUM AND COAL PRODUCTS**
 - 291 PETROLEUM REFINING
 - 2911 Petroleum refining
 - 295 ASPHALT PAVING AND ROOFING MATERIALS
 - 2951 Asphalt paving mixtures and blocks
 - 2952 Asphalt felts and coatings
 - 299 MISC. PETROLEUM AND COAL GOODS
 - 2992 Lubricating oils and greases
 - 2999 Petroleum and coal products, nec
- 30 RUBBER AND MISC. PLASTICS PRODUCTS**
 - 301 TIRES AND INNER TUBES
 - 3011 Tires and inner tubes
 - 302 RUBBER AND PLASTICS FOOTWEAR
 - 3021 Rubber and plastics footwear
 - 305 HOSE & BELTING & GASKETS & PACKING
 - 3052 Rubber and plastics hose & belting
 - 3053 Gaskets, packing and sealing devices
 - 306 FABRICATED RUBBER PRODUCTS
 - 3061 Mechanical rubber goods
 - 3069 Fabricated rubber products, nec
 - 308 MISCELLANEOUS PLASTICS PRODUCTS, NEC
 - 3081 Unsupported plastics film and sheet
 - 3082 Unsupported plastics profile shapes
 - 3083 Laminated plastics plate and sheet
 - 3084 Plastics pipe
 - 3085 Plastics bottles
 - 3086 Plastics foam products
 - 3087 Custom compound purchased resins
 - 3088 Plastics plumbing fixtures
 - 3089 Plastics products, nec
- 31 LEATHER AND LEATHER PRODUCTS**
 - 311 LEATHER TANNING AND FINISHING
 - 3111 Leather tanning and finishing
 - 313 FOOTWEAR CUT STOCK
 - 3131 Footwear cut stock
 - 314 FOOTWEAR, EXCEPT RUBBER
 - 3142 House slippers
 - 3143 Men's footwear, except athletic
 - 3144 Women's footwear, except athletic
 - 3149 Footwear, except rubber, nec
 - 315 LEATHER GLOVES AND MITTENS
 - 3151 Leather gloves and mittens
 - 316 LUGGAGE
 - 3161 Luggage
 - 317 HANDBAGS AND PERSONAL LEATHER GOODS
 - 3171 Women's handbags and purses
 - 3172 Personal leather goods, nec
 - 319 LEATHER GOODS, NEC
 - 3199 Leather goods, nec
- 32 STONE, CLAY, AND GLASS PRODUCTS**
 - 321 FLATGLASS
 - 3211 Flatglass
 - 322 GLASS AND GLASSWARE, PRESSED OR BLOWN
 - 3221 Glass containers
 - 3229 Pressed and blown glass, nec
 - 323 PRODUCTS OF PURCHASED GLASS
 - 3231 Products of purchased glass
 - 324 CEMENT, HYDRAULIC
 - 3241 Cement, hydraulic
 - 325 STRUCTURAL CLAY PRODUCTS
 - 3251 Brick and structural clay tile
 - 3253 Ceramic wall and floor tile
 - 3255 Clay refractories
 - 3259 Structural clay products, nec
 - 326 POTTERY AND RELATED PRODUCTS
 - 3261 Vitreous plumbing fixtures
 - 3262 Vitreous china table and kitchenware
 - 3263 Semivitreous table & kitchenware
 - 3264 Porcelain electrical supplies
 - 3269 Pottery products, nec
 - 327 CONCRETE, GYPSUM, AND PLASTER PRODUCTS
 - 3271 Concrete block and brick
 - 3272 Concrete products, nec
 - 3273 Ready mixed concrete
 - 3274 Lime
 - 3275 Gypsum products
 - 328 CUT STONE AND STONE PRODUCTS
 - 3281 Cut stone and stone products
 - 329 MISC. NONMETALLIC MINERAL PRODUCTS
 - 3291 Abrasive products
 - 3292 Asbestos products
 - 3295 Minerals, ground or treated
 - 3296 Mineral wool

- 3297 Non-clay refractories
- 3299 Nonmetallic mineral products

33 PRIMARY METAL INDUSTRIES

- 331 BLAST FURNACE AND BASIC STEEL PRODUCTS
 - 3312 Blast furnaces and steel mills
 - 3313 Electrometallurgical products
 - 3315 Steel wire and related products
 - 3316 Cold finishing of steel shapes
 - 3317 Steel pipe and tubes
- 332 IRON AND STEEL FOUNDRIES
 - 3321 Gray and ductile iron foundries
 - 3322 Malleable iron foundries
 - 3324 Steel investment foundries
 - 3325 Steel foundries, nec
- 333 PRIMARY NONFERROUS METALS
 - 3331 Primary copper
 - 3334 Primary aluminum
 - 3339 Primary nonferrous metals, nec
- 334 SECONDARY NONFERROUS METALS
 - 3341 Secondary nonferrous metals
- 335 NONFERROUS ROLLING AND DRAWING
 - 3351 Copper rolling and drawing
 - 3353 Aluminum sheet, plate, and foil
 - 3354 Aluminum extruded products
 - 3355 Aluminum rolling and drawing, nec
 - 3356 Nonferrous rolling and drawing, nec
 - 3357 Nonferrous wiredrawing and insulating
- 336 NONFERROUS FOUNDRIES (CASTINGS)
 - 3363 Aluminum die-castings
 - 3364 Nonferrous die-casting exc. aluminum
 - 3365 Aluminum foundries
 - 3366 Copper foundries
 - 3369 Nonferrous foundries, nec
- 339 MISCELLANEOUS PRIMARY METAL PRODUCTS
 - 3398 Metal heat treating
 - 3399 Primary metal products, nec

34 FABRICATED METAL PRODUCTS

- 341 METAL CANS AND SHIPPING CONTAINERS
 - 3411 Metal cans
 - 3412 Metal barrels, drums, and pails
- 342 CUTLERY, HANDTOOLS, AND HARDWARE
 - 3421 Cutlery
 - 3423 Hand and edge tools, nec
 - 3425 Saw blades and hand saws
 - 3429 Hardware, nec
- 343 PLUMBING AND HEATING, EXCEPT ELECTRIC
 - 3431 Metal sanitary ware

- 3432 Plumbing fixture fittings and trim
- 3433 Heating equipment, except electric

344 FABRICATED STRUCTURAL METAL PRODUCTS

- 3441 Fabricated structural metal
- 3442 Metal doors, sash, and trim
- 3443 Fabricated plate work (boiler shops)
- 3444 Sheet metal work
- 3446 Architectural metal work
- 3448 Prefabricated metal buildings
- 3449 Miscellaneous metal work

345 SCREW MACHINE PRODUCTS, BOLTS, ETC.

- 3451 Screw machine products
- 3452 Bolts, nuts, rivets, and washers

346 METAL FORGINGS AND STAMPINGS

- 3462 Iron and steel forgings
- 3463 Nonferrous forgings
- 3465 Automotive stampings
- 3466 Crowns and closures
- 3469 Metal stampings, nec

347 METAL SERVICES, NEC

- 3471 Plating and polishing
- 3479 Metal coating and allied services

348 ORDNANCE AND ACCESSORIES, NEC

- 3482 Small arms ammunition
- 3483 Ammunition, exc. for small arms, nec
- 3484 Small arms
- 3489 Ordnance and accessories, nec

349 MISC. FABRICATED METAL PRODUCTS

- 3491 Industrial valves
- 3492 Fluid power valves & hose fittings
- 3493 Steel springs, except wire
- 3494 Valves and pipe fittings, nec.
- 3495 Wire springs
- 3496 Misc. fabricated wire products
- 3497 Metal foil and leaf
- 3498 Fabricated pipe and fittings
- 3499 Fabricated metal products, nec

35 INDUSTRIAL MACHINERY AND EQUIPMENT

351 ENGINES AND TURBINES

- 3511 Turbines and turbine generator sets
- 3519 Internal combustion engines, nec

352 FARM AND GARDEN MACHINERY

- 3523 Farm machinery and equipment
- 3524 Lawn and garden equipment

353 CONSTRUCTION AND RELATED MACHINERY

- 3531 Construction machinery
- 3532 Mining machinery
- 3533 Oil and gas field machinery
- 3534 Elevators and moving stairways

- 3535 Conveyors and conveying equipment
- 3536 Hoists, cranes, and monorails
- 3537 Industrial trucks and tractors
- 354 METAL WORKING MACHINERY
 - 3541 Machine tools, metal cutting types
 - 3542 Machine tools, metal forming type
 - 3543 Industrial patterns
 - 3544 Special dies, tools, jigs & fixtures
 - 3545 Machine tool accessories
 - 3546 Power driven hand tools
 - 3547 Rolling mill machinery
 - 3548 Welding apparatus
 - 3549 Metalworking Machinery
- 355 SPECIAL INDUSTRIAL MACHINERY
 - 3552 Textile machinery
 - 3553 Woodworking machinery
 - 3554 Paper industries machinery
 - 3555 Printing trades machinery
 - 3556 Food products machinery
 - 3559 Special industrial machinery
- 356 GENERAL INDUSTRIAL MACHINERY
 - 3561 Pumps and pumping equipment
 - 3562 Ball and roller bearings
 - 3563 Air and gas compressors
 - 3564 Blowers and fans
 - 3565 Packaging machinery
 - 3566 Speed changers, drives and gears
 - 3567 Industrial furnaces and ovens
 - 3568 Power transmission equipment, nec
 - 3569 General industrial machinery, nec
- 357 COMPUTER AND OFFICE EQUIPMENT
 - 3571 Electronic computers
 - 3572 Computer storage devices
 - 3575 Computer terminals
 - 3577 Computer peripheral equipment, nec
 - 3578 Calculating and accounting equipment
 - 3579 Office machines, nec
- 358 REFRIGERATION AND SERVICE MACHINERY
 - 3581 Automatic vending machines
 - 3582 Commercial laundry equipment
 - 3585 Refrigeration and heating equipment
 - 3586 Measuring and dispensing pumps
 - 3589 Service industry machinery, nec
- 359 INDUSTRIAL MACHINERY, NEC
 - 3592 Carburetors, pistons, rings, valves
 - 3593 Fluid power cylinders and actuators
 - 3594 Fluid power pumps and motors
 - 3596 Scales and balances, exc. laboratory
 - 3599 Industrial machinery, nec
- 36 ELECTRONIC AND OTHER ELECTRIC EQUIPMENT
 - 361 ELECTRIC DISTRIBUTION EQUIPMENT
 - 3612 Transformers, except electronic
 - 3613 Switchgear and switchboard apparatus
 - 362 ELECTRICAL INDUSTRIAL APPARATUS
 - 3621 Motors and generators
 - 3624 Carbon and graphite products
 - 3625 Relays and industrial controls
 - 3629 Electrical industrial apparatus, nec
 - 363 HOUSEHOLD APPLIANCES
 - 3631 Household cooking equipment
 - 3632 Household refrigerators and freezers
 - 3633 Household laundry equipment
 - 3634 Electric housewares and fans
 - 3635 Household vacuum cleaners
 - 3639 Household appliances
 - 364 ELECTRIC LIGHTING AND WIRING EQUIPMENT
 - 3641 Electric lamps
 - 3643 Current-carrying wiring devices
 - 3644 Non-current carrying wiring devices
 - 3645 Residential lighting fixtures
 - 3646 Commercial lighting fixtures
 - 3647 Vehicular lighting equipment
 - 3648 Lighting equipment, nec
 - 365 HOUSEHOLD AUDIO AND VIDEO EQUIPMENT
 - 3651 Household audio and video equipment
 - 3652 Prerecorded records and tapes
 - 366 COMMUNICATIONS EQUIPMENT
 - 3661 Telephone and telegraph apparatus
 - 3663 Radio & TV communications equipment
 - 3669 Communications equipment, nec
 - 367 ELECTRONIC COMPONENTS AND ACCESSORIES
 - 3671 Electron tubes
 - 3672 Printed circuit boards
 - 3674 Semiconductors and related devices
 - 3675 Electronic capacitors
 - 3676 Electronic resistors
 - 3677 Electronic coils and transformers
 - 3678 Electronic connectors
 - 3679 Electronic components, nec
 - 369 MISC. ELECTRICAL EQUIPMENT AND SUPPLIES
 - 3691 Storage batteries
 - 3692 Primary batteries, dry and wet
 - 3694 Engine electrical equipment
 - 3695 Magnetic and optical recording media
 - 3699 Electrical equipment and supplies, nec
- 37 TRANSPORTATION EQUIPMENT
 - 371 MOTOR VEHICLES AND EQUIPMENT
 - 3711 Motor vehicles and car bodies
 - 3713 Truck and bus bodies
 - 3714 Motor vehicles parts and accessories

- 3715 Truck trailers
- 3716 Motor homes
- 372 AIRCRAFT AND PARTS
 - 3721 Aircraft
 - 3724 Aircraft engines and engine parts
 - 3728 Aircraft parts and equipment, nec
- 373 SHIP AND BOAT BUILDING AND REPAIR
 - 3731 Ship building and repairing
 - 3732 Boat building and repairing
- 374 RAILROAD EQUIPMENT
 - 3743 Railroad equipment
- 375 MOTORCYCLES, BICYCLES AND PARTS
 - 3751 Motorcycles, bicycles, and parts
- 376 GUIDED MISSILES, SPACE VEHICLES, PARTS
 - 3761 Guided missiles and space vehicles
 - 3764 Space propulsion units and parts
- 379 MISC. TRANSPORTATION EQUIPMENT
 - 3792 Travel trailers and campers
 - 3795 Tanks and tank components
 - 3799 Transportation equipment, nec
- 38 INSTRUMENTS AND RELATED PRODUCTS**
- 381 SEARCH AND NAVIGATION EQUIPMENT
 - 3812 Search and navigation equipment
- 382 MEASURING AND CONTROLLING DEVICES
 - 3821 Laboratory apparatus and furniture
 - 3822 Environmental controls
 - 3823 Process control instruments
 - 3824 Fluid meters and counting devices
 - 3825 Instruments to measure electricity
 - 3826 Analytical instruments
 - 3827 Optical instruments and lenses
 - 3829 Measuring & controlling devices, nec
- 384 MEDICAL INSTRUMENTS AND SUPPLIES
 - 3841 Surgical and medical instruments
 - 3842 Surgical appliances and supplies
 - 3843 Dental equipment and supplies
 - 3844 X-ray apparatus and tubes
 - 3845 Electromedical equipment
- 385 OPHTHALMIC GOODS
 - 3851 Ophthalmic goods
- 386 PHOTOGRAPHIC EQUIPMENT AND SUPPLIES
 - 3861 Photographic equipment and supplies
- 387 WATCHES, CLOCKS, WATCHCASES & PARTS
 - 3873 Watches, clocks, watchcases & parts

- 39 MISCELLANEOUS MANUFACTURING INDUSTRIES**
- 391 JEWELRY, SILVERWARE, AND PLATED WARE
 - 3911 Jewelry, precious metal
 - 3914 Silverware and plated ware
 - 3915 Jewelers' materials and lapidary work
- 393 MUSICAL INSTRUMENTS
 - 3931 Musical instruments
- 394 TOYS AND SPORTING GOODS
 - 3942 Dolls and stuffed toys
 - 3944 Games, toys, and children's vehicles
 - 3949 Sporting and athletic goods, nec
- 395 PENS, PENCILS, OFFICE, & ART SUPPLIES
 - 3951 Pens and mechanical pencils
 - 3952 Lead pencils and art goods
 - 3953 Marking devices
 - 3955 Carbon paper and inked ribbons
- 396 COSTUME JEWELRY AND NOTIONS
 - 3961 Costume jewelry
 - 3965 Fasteners, buttons, needles, & pins
- 399 MISCELLANEOUS MANUFACTURES
 - 3991 Brooms and brushes
 - 3993 Signs and advertising specialties
 - 3995 Burial caskets
 - 3996 Hard surface floor coverings, nec
 - 3999 Manufacturing industries, nec

DETAILED INDUSTRY INFORMATION

Following is a fold-out chart. In addition to presenting the number of plants, it reflects information about Value Added, Value of Shipments, Capital Expenditures, and Cost of Materials. This information is broken down by plant size and industry for each of the two-digit manufacturing industries in the U.S. This chart provides significantly more industry detail than the preceding graphs.

For more detailed information (four-digit SICs for manufacturing), see the fourth booklet in our series, "Documenting the Manufacturing Industry Universe."

TOTAL U.S. MANUFACTURING

SIC DESCRIPTION	Number of Plants	Value Added (million \$)	Cost of Materials (million \$)	Value of Shipments (million \$)	Capital Expenditures (million \$)	Number of Plants
Process Industries						
20 Food & Kindred Products	20,576	121,780.9	208,196.0	329,358.2	7,200.2	10,8
21 Tobacco	137	14,263.8	6,490.6	20,757.0	464.3	
22 Textile Mill Products	6,088	25,610.0	37,562.9	62,755.2	2,028.1	2,6
23 Apparel	23,169	32,234.9	32,045.9	64,050.4	740.3	13,6
24 Lumber & Wood Products	33,982	28,664.7	41,200.2	69,688.1	1,823.8	26,6
25 Furniture & Fixtures	11,633	20,300.5		37,459.2	894.7	7,5
26 Paper & Allied Products				78,991.9	5,752.5	2,1
27 Chemical & Allied Products				16,103.5	4,907.4	49,0
				10,022.4	8,712.3	7,1
				1,443.9	2,341.0	1,4
				86,603.2	3,410.0	7,2
		4,377.9	4,754.9	9,082.4	100.8	1,2
Concrete	16,197	33,375.1	28,147.6	61,479.6	2,418.5	11,0
33 Primary Metal	6,661	46,135.8	74,771.1	120,342.7	3,850.8	2,9
Total, Process Industries	217,577	651,548.9	820,132.3	1,467,137.7	44,644.7	143,8
Original Equipment Manufacturing						
34 Fabricated Metal Products	36,098	75,011.1	72,687.6	147,438.2	4,819.5	22,2
35 Non-electrical Machinery	52,209	119,145.2	100,313.4	219,418.4	7,011.1	38,2
36 Electrical Machinery	15,921	95,803.3	76,189.8	171,269.5	6,874.4	8,3
37 Transportation Equipment	10,504	137,038.1	198,803.6	332,848.3	9,722.1	6,2
38 Instruments	10,193	70,955.7	37,204.8	107,299.0	3,872.1	6,1
39 Miscellaneous Manufacturing	16,573	17,409.3	14,621.3	31,925.9	711.1	12,8
Total OEM	141,498	515,362.7	499,820.5	1,010,199.3	33,010.3	94,2
Total Manufacturing	359,075	1,166,911.6	1,319,952.8	2,477,337.0	77,655.0	238,0

SOURCE: 1987 Census of Manufacturers, published by the U.S. Department of Commerce, Bureau of Census

Totals have been computer tabulated from "Industry Series Final Reports" by the Cahners Publishing Company Corporate Research Department

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