

Metalworking Machinery: 2006

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Summary

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Current Industrial Reports

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For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Rachel Horwitz, 301-763-2834.

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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

Table 1. Value of Shipments, Including Exports of Metalworking Machinery by Class of Product: 2006 and 2005
[Thousands of dollars]

| Product code | Product description | 2006 | 2005 |
|--------------|---|-----------|-----------|
| | Metalworking machinery..... | 3,094,478 | 2,800,272 |
| | Metal cutting type 1/ 2/ 3/..... | 2,293,813 | 2,079,874 |
| 333512A1 | Boring and drilling machines..... | 178,487 | 110,971 |
| 33351211 | Gear cutting machines 1/..... | (D) | (D) |
| 33351221 | Grinding and polishing machines (except gear-tooth grinding, lapping, polishing, and buffing machines)..... | 259,063 | 265,035 |
| 33351231 | Lathes 2/ 3/ 4/..... | 295,651 | 248,240 |
| 33351241 | Milling machines 2/ 5/..... | 56,082 | 53,582 |
| 33351271 | Machining centers (multifunction numerically controlled machines) | 703,045 | 619,563 |
| 33351281 | Station type machines..... | 79,153 | 104,481 |
| 33351291 | Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, etc.)..... | 464,779 | 431,962 |
| 3335126111 | Remanufactured metal cutting machine tools..... | 90,172 | 93,404 |
| | Metal forming type 6/7/..... | 800,665 | 720,398 |
| 33351311 pt. | Punching and shearing machines..... | 130,126 | 125,808 |
| 33351311 pt. | Bending and forming machines..... | 273,235 | 218,465 |
| 33351331 | Presses (except forging) 6/..... | 128,599 | 139,924 |
| 33351351 | Other metal forming type machines 6/7/..... | 228,880 | 206,547 |
| 3335137121 | Remanufactured metal forming machine tools 7/..... | 15,081 | (D) |

D Withheld to avoid disclosing data for individual companies. pt. Part.

1/Data for "Gear cutting machines" are included in total for "Metal cutting type."

2/Data for "All lathes (turning machines) valued under \$3,025 each" and "All milling machines valued under \$3,025 each" are included in total for "Metal cutting type."

3/Data for product code 3335123126, "Vertical NC turning machines" are included in total for "Metal cutting type," but excluded from product code 33351231.

4/For 2006, product code 33351231, "Lathes," excludes the values for product code 3335123131, "All lathes (turning machines) valued under \$3,025 each."

5/Product code 33351241, "Milling machines," excludes the value for product code 3335124101, "All milling machines valued under \$3,025 each."

6/For 2006, data for product codes 3335133101, "All presses valued under \$3,025 each" and 3335135101, "All other metal forming type machine tools valued under \$3,025 each," are included in total for "Metal forming type," but excluded from product codes 33351331 and 33351351 respectively.

7/For 2005, product code 3335137121 was included in product class 33351351 to avoid disclosing data for individual companies.

Table 2. Total Shipments and Unfilled Orders
 [Quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2006 | | | 2005 | | |
|--------------|---|-------------|-----------------|-----------|-------------------------|-----------------|-----------|-------------------------|
| | | | Total shipments | | Unfilled orders (value) | Total shipments | | Unfilled orders (value) |
| | | | Quantity | Value | | Quantity | Value | |
| | Metalworking machinery..... | (X) | 129,114 | 3,094,478 | 1,233,717 | 131,488 | 2,800,272 | 1,096,652 |
| | Total metal cutting type machine tools..... | (X) | 83,784 | 2,293,813 | 891,893 | 82,955 | 2,079,874 | 745,421 |
| | Total metal forming type machine tools..... | (X) | 45,330 | 800,665 | 341,824 | 48,533 | 720,398 | 351,231 |
| | Metal cutting type machine tools valued at \$3,025 each or more 1/ 2/ 3/ 4/..... | (X) | 30,747 | 2,162,048 | 845,112 | 31,587 | 1,948,673 | 710,795 |
| | Metal cutting type machine tools valued under \$3,025 5/ 6/ 7/ 8/..... | (X) | 52,154 | 41,593 | 498 | 50,800 | 37,797 | 632 |
| 333512A1 | Boring and drilling machines 5/..... | 32 | 8,709 | 178,487 | 48,288 | 7,200 | 110,971 | 54,593 |
| | Boring machines valued at \$3,025 each or more: | | | | | | | |
| 333512A103 | Horizontal boring, drilling, and milling machines, including floor, table, rail mounted, and all other nonprecision boring machines (except boring lathes)..... | 7 | (D) | (D) | (D) | (D) | (D) | (D) |
| 333512A105 | Precision and jig boring machines, including horizontal and vertical machines..... | 2 | (D) | (D) | (D) | (D) | (D) | (D) |
| 333512A111 | All drilling machines valued under \$3,025 each 5/..... | 8 | 6,354 | 7,494 | 83 | 5,371 | 5,725 | (D) |
| | Drilling machines valued at \$3,025 each or more: | | | | | | | |
| 333512A113 | Vertical upright drilling machines, including plain upright and heavy duty..... | 2 | (D) | (D) | (D) | (D) | (D) | 115 |
| 333512A117 | Deep hole drilling machines..... | 5 | (D) | (D) | (D) | c/ 141 | c/ 34,418 | (D) |
| 333512A120 | Multiple spindle drilling machines..... | 7 | c/ 262 | b/ 12,348 | (D) | (D) | (D) | c/ 11,331 |
| 333512A123 | All other drilling machines..... | 4 | (D) | (D) | (X) | (D) | (D) | (X) |
| 3335121200 | Gear cutting machines, including gear hobbors, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines 1/..... | 3 | (D) | (D) | 69,489 | (D) | (D) | (D) |
| 33351221 | Grinding, polishing, buffing, honing, and lapping machines 6/..... | 56 | 30,879 | 259,063 | 133,434 | 29,261 | 265,035 | 121,206 |
| 3335122101 | All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each 6/.... | 13 | 28,248 | a/ 17,359 | c/ 130 | 26,464 | 13,599 | (D) |
| | All grinding, polishing, buffing, honing, and lapping machines valued at \$3,025 each or more: | | | | | | | |
| 3335122110 | External cylindrical grinding machines..... | 10 | b/ 686 | 73,108 | 35,538 | c/ 792 | 69,110 | 48,194 |
| 3335122120 | Internal cylindrical grinding machines..... | 2 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335122122 | Surface grinding machines..... | 6 | b/ 502 | b/ 12,051 | (D) | b/ 564 | c/ 14,361 | c/ 5,283 |
| 3335122136 | All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders..... | 3 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335122142 | Tool, cutter, and drill point grinding machines..... | 11 | 381 | 66,646 | (D) | 305 | 57,372 | (D) |
| 3335122151 | All other grinding machines, including planer type, and thread grinding machines..... | 9 | 373 | 25,104 | a/ 11,810 | 371 | 40,240 | a/ 9,649 |
| 3335122156 | Honing and lapping machines (except flat surface lapping machines), internal, including combination bore, hone, and external..... | 5 | (D) | (D) | (D) | 348 | 50,933 | (D) |
| 3335122161 | Flat surface lapping machines (except gear lapping)..... | 3 | (D) | (D) | (D) | (D) | (D) | c/ 276 |
| 3335122166 | Polishing and buffing machines, including speed lathes and multistation type..... | 10 | (D) | (D) | 18,529 | b/ 210 | a/ 14,187 | (D) |
| 33351231 | Lathes 2/ 4/ 7/..... | (X) | 5,769 | 295,651 | 50,185 | 4,852 | 248,240 | 43,822 |
| | Numerically controlled: | | | | | | | |
| | Horizontal..... | 7 | 5,088 | 288,195 | 49,355 | 4,169 | 235,865 | 42,500 |
| | Single spindle NC turning machines: | | | | | | | |
| 3335123107 | Chuck sizes less than 10 inches..... | 5 | 3,103 | 135,307 | 16,143 | 2,594 | 121,118 | 19,227 |
| 3335123116 | Chuck sizes from 10 inches but less than 15 inches..... | 5 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335123127 | Chuck sizes 15 inches and over and multiple spindle NC turning machines..... | 3 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335123126 | Vertical NC turning machines 2/..... | 4 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335123131 | All lathes (turning machines) valued under \$3,025 each 7/..... | 2 | (D) | (D) | (X) | (D) | (D) | (X) |
| 3335123134 | All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more 4/..... | 7 | c/ 681 | b/ 7,456 | (D) | c/ 683 | c/ 12,375 | b/ 1,322 |
| 33351241 | Milling machines 4/ 7/..... | 9 | a/ 1,388 | a/ 56,082 | (D) | 1,607 | 53,582 | 45,019 |
| 3335124101 | All milling machines valued under \$3,025 each 7/..... | 1 | (D) | (D) | (X) | (D) | (D) | (X) |
| 3335124125 | All milling machines valued at \$3,025 or more 4/..... | 8 | 1,388 | a/ 56,082 | (D) | b/ 1,607 | a/ 53,582 | 45,019 |

Table 2. Total Shipments and Unfilled Orders
 [Quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2006 | | | 2005 | | |
|--------------|---|-------------|-----------------|-----------|-------------------------|-----------------|-----------|-------------------------|
| | | | Total shipments | | Unfilled orders (value) | Total shipments | | Unfilled orders (value) |
| | | | Quantity | Value | | Quantity | Value | |
| 33351271 | Machining centers..... | 12 | 10,767 | 703,045 | 283,390 | 12,747 | 619,563 | 154,365 |
| | Drill, mill, and bore, vertical (automatic tool change): | | | | | | | |
| 3335127101 | Y-axis travel less than 20 inches..... | 4 | (D) | (D) | (D) | (D) | (D) | 22,379 |
| 3335127106 | Y-axis travel 20 inches through 26 inches..... | 7 | 3,894 | 287,304 | 43,393 | 3,300 | 251,112 | 45,501 |
| 3335127111 | Y-axis travel over 26 inches..... | 5 a/ | 959 a/ | 104,869 | 43,900 | 669 | 74,138 | 19,093 |
| | Drill, mill, and bore, horizontal (automatic tool change): | | | | | | | |
| 3335127112 | Under 500mm pallet and smaller..... | 4 a/ | 212 a/ | 26,492 | (D) | a/ 284 a/ | 39,134 | 10,909 |
| 3335127113 | 500mm to 800mm pallet..... | 4 | (D) | (D) | 14,601 | (D) | (D) | 7,761 |
| 3335127114 | Over 800mm pallet..... | 4 | (D) | (D) | a/ 43,457 | (D) | (D) | (D) |
| 3335127146 | All other machining centers, including special machining, special adapting of standard machining and machining centers with indexing turret..... | 3 | (D) | (D) | (D) | 3,649 | 59,138 | (D) |
| 33351281 | Station type machines 3/..... | 7 | 71 | 79,153 | (D) | 90 | 104,481 | 93,395 |
| 3335128101 | Dial or rotary, trunnion, and center column..... | 4 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335128106 | Transfer..... | 4 | (D) | (D) | 22,656 | (D) | (D) | 52,966 |
| 3335128111 | Other station type..... | 1 | (D) | (D) | (D) | (D) | (D) | (D) |
| 33351291 | Other metal cutting machine tools 8/..... | 51 | 23,218 | 464,779 | 97,353 | 24,518 | 431,962 | 93,896 |
| 3335129101 | Other metal cutting machine tools, valued under \$3,025 8/..... | 12 b/ | 15,711 b/ | 15,425 | (D) | b/ 17,121 b/ | 17,149 | 214 |
| | Other metal cutting machine tools, valued at \$3,025 each or more: | | | | | | | |
| 3335129106 | Broaching machines..... | 6 b/ | 49 a/ | 7,727 c/ | 3,851 c/ | 53 b/ | 8,456 a/ | 3,412 |
| | Sawing and cutoff machines: | | | | | | | |
| | Band saws: | | | | | | | |
| 3335129122 | Horizontal..... | 7 | 1,126 | 17,603 | (D) | 1,540 | 28,346 | (D) |
| 3335129123 | Vertical..... | 5 | 1,232 | 21,515 | (D) | 1,263 | 21,681 | (D) |
| 3335129126 | All other sawing and cutoff machines..... | 10 | 617 | 22,820 b/ | 4,690 | 613 | 18,358 | 4,397 |
| 3335129131 | Spark erosion, ultrasonic, and electrolytic machines, all types..... | 1 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335129136 | Miscellaneous metal cutting machine tools..... | 24 | (D) | (D) | 75,588 | (D) | (D) | 73,044 |
| 3335126111 | Remanufactured metal cutting machine tools..... | 16 c/ | 883 b/ | 90,172 b/ | 46,283 | 568 | 93,404 | 33,994 |
| | Metal forming type machine tools valued at \$3,025 or more..... | (X) | 13,332 | 756,124 | 336,671 | 12,426 | 685,675 | 345,320 |
| | Metal forming type machine tools valued under \$3,025 9/..... | (X) | 31,903 | 29,460 | 424 | 36,107 | 34,723 | 650 |
| 33351311 | Punching, shearing, bending, and forming machines..... | 59 | 12,330 | 403,361 | 152,847 | 12,911 | 344,273 | 159,461 |
| 3335131101 | All punching and shearing machines valued under \$3,025 each..... | 8 a/ | 1,249 | 1,439 | 104 | b/ 1,963 a/ | 1,835 | 148 |
| | All punching and shearing machines valued at \$3,025 each or more: | | | | | | | |
| | Power operated only: | | | | | | | |
| 3335131106 | Punches, including combination punching and shearing machines..... | 15 a/ | 3,783 a/ | 44,840 | 2,559 | b/ 3,492 b/ | 39,533 b/ | 3,163 |
| 3335131111 | Punching machines fixed position and two axes positioning table..... | 3 | 201 | 53,637 | 9,574 | (D) | (D) | (D) |
| | Plate shearing machines: | | | | | | | |
| 3335131116 | Mechanical..... | 3 | (D) | (D) | (D) | c/ 97 b/ | 3,249 c/ | 2,868 |
| 3335131121 | Hydraulic..... | 9 | 966 | 17,356 | 6,254 | 853 | 15,367 | 4,236 |
| 3335131126 | Other power operated punching and shearing machines..... | 4 | (D) | (D) | (D) | (D) | (D) | (D) |
| 3335131131 | All bending and forming machines, power operated valued at under \$3,025 each..... | 6 | 1,635 | 3,277 | 141 | 2,144 | 3,234 | 124 |
| | All bending and forming machines, power operated valued at \$3,025 each or more: | | | | | | | |
| 3335131136 | Press brakes, all types..... | 7 | 674 | 67,295 | 19,803 | 584 | 54,919 | 11,430 |
| 3335131145 | Roll bending machines including sheet, plate, angles, bars, shapes and tubes, and rotary bending and forming machines, including rotary head..... | 15 b/ | 915 | 96,990 | 72,763 | a/ 742 | 74,122 | 63,734 |
| 3335131161 | Other bending and forming machines, including folders and slide bending machines..... | 16 a/ | 2,543 | 105,673 | 39,211 | a/ 2,098 a/ | 86,190 | 60,676 |
| 33351331 | Presses (except forging) 9/..... | 31 b/ | 1,876 | 128,599 | 78,153 | 1,811 | 139,924 | 104,872 |
| 3335133101 | All presses valued under \$3,025 each 9/..... | 6 | (D) | (D) | (D) | (D) | (D) | (D) |
| | All presses valued at \$3,025 each or more: | | | | | | | |
| 3335133109 | Mechanical presses: Gap or C-frame..... | 4 | (D) | (D) | 109 | (D) | (D) | (D) |
| 3335133136 | Automatic presses, strip or coil fed..... | 6 a/ | 179 | 64,653 | 17,358 | (D) | (D) | 33,344 |
| 3335133143 | Vertical, automatic, and all other mechanical presses..... | 4 | (D) | (D) | (D) | c/ 64 b/ | 33,003 | (D) |
| | Hydraulic presses: | | | | | | | |
| | Vertical single action, all tonnages: | | | | | | | |
| 3335133146 | Housing or straight side type..... | 3 | (D) | (D) | (D) | (D) | (D) | 5,244 |
| 3335133151 | Column type (open rod)..... | 5 | (D) | (D) | (D) | (D) | (D) | 14,784 |

Table 2. Total Shipments and Unfilled Orders
 [Quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2006 | | | 2005 | | | Unfilled orders (value) |
|--------------|---|-------------|-----------------|------------|-------------------------|-----------------|-----------|-------------------------|-------------------------|
| | | | Total shipments | | Unfilled orders (value) | Total shipments | | Unfilled orders (value) | |
| | | | Quantity | Value | | Quantity | Value | | |
| 3335133156 | Gap or C-frame: 15 tons and under..... | 5 | 224 | 4,045 | 129 | 240 | 4,446 | 780 | |
| 3335133161 | 16 tons to 35 tons..... | 4 | 62 | 2,947 | (D) | 65 | 2,903 | 1,169 | |
| 3335133166 | Over 35 tons..... | 5 | 68 | 4,626 | c/ 1,021 | 50 | 3,029 | c/ 3,684 | |
| 3335133171 | Other hydraulic and pneumatic presses, including horizontal..... | 8 | c/ 1,147 | b/ 22,741 | 8,490 | c/ 918 | b/ 16,704 | 11,038 | |
| 33351351 | All other metal forming type machine tools 9/10/..... | 31 | 2,010 | a/ 228,880 | b/ 105,916 | 1,811 | 206,547 | 81,259 | |
| 3335135101 | All other metal forming type machine tools valued under \$3,025 each 9/..... | 5 | (D) | (D) | (D) | (D) | (D) | (D) | |
| 3335135118 | All other metal forming type machine tools valued at \$3,025 each or more: Forging machines, including forging presses and die stamping presses, and die casting machines, all types..... | 6 | (D) | (D) | (D) | (D) | (D) | (D) | |
| 3335135121 | Riveting machines..... | 5 | (D) | (D) | (D) | 486 | 10,654 | (D) | |
| 3335135126 | All other metal forming type machine tools..... | 18 | (D) | (D) | 79,308 | (D) | (D) | 80,127 | |
| 3335137121 | Remanufactured metal forming machine tools 10/..... | 8 | a/ 95 | b/ 15,081 | b/ 4,729 | (D) | (D) | 5,261 | |

D Withheld to avoid disclosing data for individual companies. X Not applicable

1/Product code 3335121200 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more."

2/Product code 3335123126 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more," but excluded from product class 33351231.

3/For 2006, "Unfilled orders (value)" for product class 33351281 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more" to avoid disclosing data for individual companies.

4/For 2006, "Unfilled orders (value)" for product codes 3335123134 and 3335124125 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more," but excluded from product classes 33351231 and 33351241 respectively.

5/For 2006, "Unfilled orders (value)" for product code 333512A111 is included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 333512A1.

6/For 2005, "Unfilled orders (value)" for product code 3335122101 is included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 33351221.

7/Product codes 3335123131 and 3335124101 are included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 33351231 and 33351241, respectively.

8/For 2006, "Unfilled orders (value)" for product code 3335129101 is included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 33351291.

9/Product codes 3335133101 and 3335135101 are included in the total for "Metal forming type machine tools valued under \$3,025," but excluded from product classes 33351331 and 33351351, respectively.

10/For 2005, product code 3335137121 shipments were included in product class 33351351 to avoid disclosing data for individual companies.

Note: This report includes complete machines only. Percent of estimation of each item is indicated as follows: a/16 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments of Numerically Controlled Machines and Exports: 2006 and 2005
 [Quantity in units. Value in thousands of dollars]

| Product description | 2006 | | | 2005 | | |
|--|--|-----------|-----------------------------|--|-----------|-----------------------------|
| | Shipments of numerically controlled machines | | Export shipments (value) 1/ | Shipments of numerically controlled machines | | Export shipments (value) 1/ |
| | Quantity | Value | | Quantity | Value | |
| Metalworking machinery..... | 22,328 | 1,996,636 | 783,601 | 22,690 | 1,746,266 | 680,209 |
| Metal cutting type machine tools 2/ 3/..... | 21,518 | 1,789,350 | 580,151 | 21,924 | 1,562,709 | 522,280 |
| Boring and drilling machines 2/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Gear cutting machines 2/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Grinding, polishing, buffing, and lapping machines..... | 585 | 125,115 | 42,903 | 506 | 115,008 | 62,119 |
| Valued under \$3,025 each, external cylindrical grinding machines (plain and universal), and surface grinding machines, all types..... | (D) | (D) | (D) | (D) | (D) | 53,919 |
| Honing, lapping, polishing and buffing machines..... | (D) | (D) | (D) | (D) | (D) | 8,200 |
| Horizontal NC turning machines, valued at \$3,025 or each or more..... | 5,088 | 288,195 | 87,322 | 4,169 | 235,865 | 72,516 |
| Single spindle NC turning machines: | | | | | | |
| Chuck sizes less than 10 inches..... | 3,103 | 135,307 | (D) | 2,594 | 121,118 | (D) |
| Chuck sizes over 10 inches but less than 15 inches..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Chuck sizes 15 inches and over and multiple spindle..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Vertical NC turning machines, valued at \$3,025 each or more 2/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Nonnumerically controlled turning machines, valued at \$3,025 or more 2/..... | (X) | (X) | (D) | (X) | (X) | 1,151 |
| Milling machines 2/..... | 1,363 | 55,351 | (D) | 1,406 | 49,624 | (D) |
| Machining centers 3/4/..... | 10,767 | 703,045 | (D) | 12,747 | 619,563 | 179,531 |
| Drill, mill and bore, vertical (automatic tool change) 3/4/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Y-axis travel less than 20 inches 3/4/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Y-axis travel 20 inches through 26 inches..... | 3,894 | 287,304 | 83,463 | 3,300 | 251,112 | 65,505 |
| Y-axis travel over 26 inches 3/..... | 959 | 104,869 | (D) | 669 | 74,138 | (D) |
| Drill, mill and bore, horizontal (automatic tool change) 3/4/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Under 500mm pallet 3/..... | 284 | 34,960 | (D) | 284 | 39,134 | (D) |
| 500mm-800mm pallet 3/4/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Over 800mm pallet 3/4/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| All other machining centers 4/..... | (D) | (D) | (X) | 3,649 | 59,138 | (X) |
| Station type machines, and other metal cutting machine tools..... | 1,762 | 320,734 | 108,667 | 2,032 | 309,302 | 100,493 |
| Remanufactured metal cutting machines 2/..... | (D) | (D) | (D) | 444 | 50,876 | (D) |
| Metal forming type machine tools 5/..... | 810 | 207,286 | 203,450 | 766 | 183,557 | 157,929 |
| Punching, shearing, bending, and forming machines..... | 655 | 128,249 | 77,225 | 600 | 103,683 | 65,412 |
| Punching and shearing machines..... | 224 | 56,266 | 24,210 | 249 | 57,191 | 24,270 |
| All bending and forming machines, power operated..... | 431 | 71,983 | 53,015 | 351 | 46,492 | 41,142 |
| Presses (except forgings) 5/..... | (D) | (D) | (D) | (D) | (D) | 23,521 |
| All other metal forming type machine tools 5/..... | (D) | (D) | (D) | (D) | (D) | (D) |
| Remanufactured metal forming machines 5/..... | (D) | (D) | (D) | (D) | (D) | (D) |

D Withheld to avoid disclosing data for individual companies. X Not applicable.

1/Data includes the value of all types of machines exported, as reported by MQ333W survey panel.

2/Data were included in total "Metal cutting type machine tools."

3/Export (value) data were included in "Metal cutting type machine tools."

4/Data were included in total "Machining centers."

5/Data were included in total "Metal forming type machine tools."

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2006 and 2005
 [Quantity in units. Value in thousands of dollars]

| Product description | Manufacturers' shipments | | Exports of domestic merchandise 1/2/ | | Imports for consumption 1/3/ | |
|---|--------------------------|---------|--------------------------------------|---------------|------------------------------|-----------|
| | Quantity | Value | Quantity | Value at port | Quantity | Value 4/ |
| 2006 | | | | | | |
| Boring and drilling machines, excluding multifunction NC machines, machining centers: | | | | | | |
| Boring machines valued at \$3,025 each or more..... | (D) | (D) | 453 | 23,546 | 1,194 | 104,730 |
| Drilling machines: | | | | | | |
| Valued under \$3,025 each..... | 6,354 | 7,494 | 10,527 | 8,613 | 167,447 | 21,674 |
| Valued at \$3,025 each or more..... | (D) | (D) | 980 | 28,941 | 1,564 | 134,221 |
| Gear cutting machines..... | (D) | (D) | 70,359 | 63,503 | 393 | 123,183 |
| Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines): | | | | | | |
| Valued under \$3,025 each..... | 28,248 | 17,359 | 75,222 | 14,301 | 858,575 | 29,831 |
| Valued at \$3,025 each or more..... | 2,631 | 241,704 | 2,298 | 94,830 | 5,823 | 376,012 |
| Lathes (turning machines) under \$3,025..... | (D) | (D) | 3,284 | 4,021 | 17,578 | 14,032 |
| Horizontal NC turning machines..... | 5,088 | 288,195 | 704 | 77,230 | 7,909 | 886,625 |
| Vertical NC turning machines..... | (D) | (D) | 213 | 29,941 | 489 | 113,640 |
| Nonnumerically controlled turning machines..... | 681 | 7,456 | 2,101 | 64,654 | 4,351 | 75,913 |
| Milling machines: | | | | | | |
| Valued under \$3,025 each..... | (D) | (D) | 4,954 | 7,973 | 11,820 | 8,862 |
| Valued at \$3,025 each or more..... | 1,388 | 56,082 | 1,840 | 50,271 | 4,983 | 148,349 |
| Machining centers (multifunction NC machines)..... | 10,767 | 703,045 | 2,193 | 261,303 | 5,964 | 1,013,414 |
| Drill, mill, and bore, vertical (automatic tool change): | | | | | | |
| Y-axis travel less than 20 inches and 20 inches through 26 inches..... | (D) | (D) | 1,615 | 189,068 | 3,294 | 311,060 |
| Y-axis travel 26 inches and over..... | 959 | 104,869 | 256 | 31,348 | 678 | 128,593 |
| Drill, mill, and bore, horizontal (automatic tool change)..... | (D) | (D) | - | - | 1,782 | 502,357 |
| Other machining centers..... | (D) | (D) | 322 | 40,887 | 210 | 71,404 |
| Station type machines..... | 71 | 79,153 | 121 | 34,217 | 921 | 194,747 |
| Other metal cutting machine tools: | | | | | | |
| Valued under \$3,025 each..... | 15,711 | 15,425 | (NA) | (NA) | (NA) | (NA) |
| Valued at \$3,025 each or more..... | 7,507 | 449,354 | 15,156 | 513,804 | 8,405 | 509,335 |
| Punching and shearing machines: | | | | | | |
| Valued under \$3,025 each..... | 1,249 | 1,439 | 67,357 | 11,323 | 12,205 | 4,599 |
| Valued at \$3,025 each or more..... | (D) | (D) | 1,742 | 69,743 | 2,359 | 148,922 |
| Bending and forming machines: | | | | | | |
| Valued under \$3,025 each..... | 1,635 | 3,277 | 16,548 | 12,953 | 96,106 | 14,476 |
| Valued at \$3,025 each or more..... | 4,132 | 269,958 | 6,142 | 167,356 | 11,242 | 354,844 |
| Presses (except forging presses)..... | 1,876 | 128,599 | 22,346 | 94,109 | 14,480 | 156,627 |
| All other metal forming type machine tools: | | | | | | |
| Valued under \$3,025 each..... | (D) | (D) | (NA) | (NA) | (NA) | (NA) |
| Machines valued at \$3,025 each or more: | | | | | | |
| Forging machines, including forging presses and die stamping presses, and die casting machines, all types..... | (D) | (D) | 1,280 | 84,503 | 24,421 | 242,349 |
| Other metal forming machines..... | (D) | (D) | (NA) | (NA) | (NA) | (NA) |
| 2005 | | | | | | |
| Boring and drilling machines, excluding multifunction NC machines, machining centers: | | | | | | |
| Boring machines valued at \$3,025 each or more..... | (D) | (D) | 387 | 15,433 | 894 | 71,107 |
| Drilling machines: | | | | | | |
| Valued under \$3,025 each..... | 5,371 | 5,725 | 11,836 | 7,978 | 187,953 | 22,873 |
| Valued at \$3,025 each or more..... | (D) | (D) | 1,088 | 33,679 | 1,051 | 77,390 |
| Gear cutting machines..... | (D) | (D) | 24,959 | 54,114 | 790 | 124,998 |

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2006 and 2005
 [Quantity in units. Value in thousands of dollars]

| Product description | Manufacturers' shipments | | Exports of domestic merchandise 1/2/ | | Imports for consumption 1/3/ | |
|---|--------------------------|---------|--------------------------------------|---------------|------------------------------|----------|
| | Quantity | Value | Quantity | Value at port | Quantity | Value 4/ |
| Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines): | | | | | | |
| Valued under \$3,025 each..... | 26,464 | 13,599 | 98,997 | 11,752 | 816,681 | 28,481 |
| Valued at \$3,025 each or more..... | 2,797 | 251,436 | 1,988 | 75,648 | 5,160 | 326,776 |
| Lathes (turning machines) under \$3,025..... | (D) | (D) | 2,588 | 3,765 | 26,054 | 17,147 |
| Horizontal NC turning machines..... | 4,169 | 235,865 | 490 | 50,013 | 6,689 | 753,014 |
| Vertical NC turning machines..... | (D) | (D) | 86 | 17,378 | 395 | 85,049 |
| Nonnumerically controlled turning machines..... | 683 | 12,375 | 1,632 | 35,408 | 4,014 | 67,290 |
| Milling machines: | | | | | | |
| Valued under \$3,025 each..... | (D) | (D) | 3,662 | 5,632 | 13,686 | 9,237 |
| Valued at \$3,025 each or more..... | 1,607 | 53,582 | 1,156 | 39,741 | 4,934 | 115,623 |
| Machining centers (multifunction NC machines)..... | 12,747 | 619,563 | 1,417 | 187,616 | 5,703 | 948,266 |
| Drill, mill, and bore, vertical (automatic tool change): | | | | | | |
| Y-axis travel less than 20 inches and 20 inches through 26 inches..... | (D) | (D) | 1,088 | 155,107 | 3,313 | 349,231 |
| Y-axis travel 26 inches and over..... | 669 | 74,138 | 62 | 9,382 | 566 | 82,346 |
| Drill, mill, and bore, horizontal (automatic tool change)..... | (D) | (D) | - | - | 1,720 | 476,597 |
| Other machining centers..... | 3,649 | 59,138 | 267 | 23,127 | 104 | 40,092 |
| Station type machines..... | 90 | 104,481 | 62 | 15,236 | 287 | 186,305 |
| Other metal cutting machine tools: | | | | | | |
| Valued under \$3,025 each..... | 17,121 | 17,149 | (NA) | (NA) | (NA) | (NA) |
| Valued at \$3,025 each or more..... | 7,397 | 414,813 | 13,727 | 420,841 | 8,600 | 443,723 |
| Punching and shearing machines: | | | | | | |
| Valued under \$3,025 each..... | 1,963 | 1,835 | 12,289 | 5,977 | 13,151 | 4,461 |
| Valued at \$3,025 each or more..... | (D) | (D) | 2,388 | 86,722 | 2,239 | 134,641 |
| Bending and forming machines: | | | | | | |
| Valued under \$3,025 each..... | 2,144 | 3,234 | 28,100 | 11,368 | 107,643 | 13,945 |
| Valued at \$3,025 each or more..... | 3,424 | 215,231 | 3,058 | 110,256 | 10,362 | 284,839 |
| Presses (except forging presses)..... | 1,811 | 139,924 | 7,038 | 80,883 | 15,693 | 203,122 |
| All other metal forming type machine tools: | | | | | | |
| Valued under \$3,025 each..... | (D) | (D) | (NA) | (NA) | (NA) | (NA) |
| Machines valued at \$3,025 each or more: | | | | | | |
| Forging machines, including forging presses and die stamping presses, and die casting machines, all types..... | (D) | (D) | 1,087 | 70,979 | 6,235 | 199,437 |
| Other metal forming machines..... | (D) | (D) | (NA) | (NA) | (NA) | (NA) |

- Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available.

1/For a comparison of North American Industry Classification System (NAICS)-based product codes, Schedule B export codes, and HTSUSA import codes, see Table 5.

2/Source: Census Bureau report EM 545, U.S. Exports.

3/Source: Census Bureau report IM 145, U.S. General Imports for Consumption.

4/Dollar value represents the c.i.f. (cost, insurance, and freight) value at first port of entry in the United States plus import duties.

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2006

| Product code | Product description | Export code 1/ | Import code 2/ |
|--------------|---|--|--|
| | Boring machines, excluding multifunction NC machines, machining centers: Machines valued at \$3,025 each or more: | | |
| 333512A103 | Horizontal boring, drilling, and milling machines, including floor, table and rail mounted, and all other boring machines (except boring lathes)..... | 8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080 | 8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080 |
| 333512A105 | Precision and jig boring machines, including horizontal, vertical, and all other precision boring machines..... | 8459.10.0000 | 8459.10.0000 |
| | Drilling machines, excluding machining centers: All drilling machines valued under \$3,025 each..... | 8459.29.0020 | 8459.29.0020 |
| 333512A113 | Machines valued at \$3,025 each or more: Vertical, upright drilling machines, including plain upright and heavy duty..... | 8459.29.0070 | 8459.29.0070 |
| 333512A120 | Multiple spindle drilling machines (cluster of spindles driven from one central power unit)..... | 8459.29.0040 | 8459.29.0040 |
| 333512A117 | Deep hole drilling machines..... | 8459.21.0080 | 8459.21.0080 |
| 333512A123 | All other drilling machines, including bench type sensitive vertical and radial..... | 8459.29.0050 8459.29.0090 | 8459.29.0050 8459.29.0090 |
| 3335121200 | Gear cutting machines, including gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines..... | 8461.40.1050 8461.40.1070 8461.40.1090 8461.40.5040 8461.40.5060 | 8461.40.1020 8461.40.1030 8461.40.1040 8461.40.1060 8461.40.5040 8461.40.5050 8461.40.5070 |
| | Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines): | | |
| 3335122101 | All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each..... | 8460.39.0020 8460.40.0020 8460.90.0020 | 8460.39.0020 8460.40.8020 8460.90.8020 |
| | Machines valued at \$3,025 each or more: | | |
| 3335122110 | External cylindrical grinding machines AND | | |
| 3335122120 | Internal cylindrical grinding machines AND | | |
| 3335122136 | All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders AND | | |
| 3335122151 | All other grinding machines, including planer type, thread grinding, and deburring machines..... | 8460.21.0080 8460.29.0010 8460.29.0030 8460.29.0050 | 8460.21.0080 8460.29.0010 8460.29.0030 8460.29.0050 |

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2006

| Product code | Product description | Export code 1/ | Import code 2/ |
|--------------|--|--|--|
| 3335122122 | Surface grinding machines..... | 8460.11.0080 8460.19.0010 8460.19.0050 | 8460.11.0080 8460.19.0010 8460.19.0050 |
| 3335122142 | Tool, cutter, and drill point grinding machines, including universal and special..... | 8460.31.0080 | 8460.31.0080 |
| 3335122156 | Honing and lapping machines (except gear honing and lapping): Internal, including combination bore, hone, and external (except flat surface lapping machines) AND | | |
| 3335122161 | Flat surface lapping machines (except gear lapping) AND | | |
| 3335122166 | Polishing and buffing machines (including speed lathes and multistation type)..... | 8460.40.0060 8460.40.0080 8460.90.0060 8460.90.0080 | 8460.40.4060 8460.40.8080 8460.90.4060 8460.90.8080 |
| 3335123131 | Lathes (turning machines): All lathes valued under \$3,025 each..... | 8458.19.0020 8458.99.5060 | 8458.19.0020 8458.99.5060 |
| | Machines valued at \$3,025 each or more: Horizontal spindle: Single spindle NC turning machine: | | |
| 3335123107 | Chuck sizes less than 10"..... | 8458.11.0050 | 8458.11.0050 |
| 3335123116 | Chuck sizes from 10" but less than 15"..... | 8458.11.0090 | 8458.11.0090 |
| 3335123127 | Chuck sizes 15" and over, and multiple spindle NC turning machines..... | 8458.11.0010 | 8458.11.0010 |
| 3335123126 | Vertical spindle..... | 8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070 | 8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070 |
| 3335123134 | Nonnumerically controlled turning machines valued at \$3,025 each or more..... | 8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090 | 8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090 |
| 3335124101 | Milling machines, excluding machining centers: All milling machines valued under \$3,025 each..... | 8459.59.0020 8459.69.0020 | 8459.59.0020 8459.69.0020 |
| 3335124125 | All milling machines valued at \$3,025 each or more..... | 8459.51.0080 8459.59.0030 8459.61.0080 8459.69.0050 8459.69.0070 8459.69.0090 | 8459.51.0080 8459.59.0030 8459.61.0080 8459.69.0050 8459.69.0070 8459.69.0090 |
| 3335127101 | Machining centers (multifunctions NC machines): Drill, mill, and bore, vertical (automatic tool change): Y-axis travel less than 20" AND | | |
| 3335127106 | Y-axis travel 20" through 26" AND | | |
| 3335127111 | Y-axis travel over 26"..... | 8457.10.0015 8457.10.0025 | 8457.10.0015 8457.10.0025 |

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2006

| Product code | Product description | Export code 1/ | Import code 2/ |
|--------------|--|--|--|
| | Drill, mill, and bore, horizontal (automatic tool change): | | |
| 3335127112 | Under 500mm pallet AND | | |
| 3335127113 | 500mm-800mm pallet AND | | |
| 3335127114 | Over 800mm pallet..... | 8457.10.0036 8457.10.0039 | 8457.10.0055 8457.10.0060 8457.10.0065 8457.10.0070 |
| 3335127146 | All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret..... | 8457.10.0045 | 8457.10.0075 |
| | Station type machines: | | |
| 3335128101 | Dial or rotary, trunnion, and center column AND | | |
| 3335128106 | Transfer (free, palletized shuttle) AND | | |
| 3335128111 | Other station type..... | 8457.20.0010 8457.20.0090 8457.30.0010 8457.30.0090 | 8457.20.0010 8457.20.0090 8457.30.0010 8457.30.0090 |
| | Other metal cutting machine tools: | | |
| 3335129101 | Other metal cutting machine tools, valued under \$3,025..... | 8459.70.0060 8461.20.0070 8461.30.0040 8461.50.0020 8461.90.6020 8461.90.6050 | 8459.70.8060 8461.20.8070 8461.30.8040 8461.50.8020 8461.90.6020 8461.90.6050 |
| | Machines valued at \$3,025 each or more: | | |
| 3335129106 | Broaching machines, including internal surface and all other broaching machines..... | 8461.30.0060 8461.30.0080 | 8461.30.4060 8461.30.8080 |
| | Sawing and cutoff machines: | | |
| 3335129122 | Band saws - vertical AND | | |
| 3335129123 | Band saws - horizontal AND | | |
| 3335129126 | All other sawing and cutoff machines..... | 8461.50.0050 8461.50.0090 | 8461.50.4050 8461.50.8090 |
| 3335129131 | Spark erosion, ultrasonic and electrolytic machines all types..... | 8456.20.0000 8456.30.0000 8456.90.3000 | 8456.20.1010 8456.20.1050 8456.30.1020 8456.30.1050 8456.30.1070 8456.90.3000 |
| 3335129136 | Miscellaneous metal cutting machine tools, including rifling, centering, keyseating, pointing, chemfering, facing, shaving, grooving, countersinking, burring, reaming, screw and nut slotting machines, threading planers, and shapers..... | 8456.10.0002 8459.70.0020 8459.70.0080 8461.20.0010 8461.20.0090 8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090 | 8456.10.1010 8456.10.1020 8459.70.4000 8459.70.8080 8461.20.4000 8461.20.8090 8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090 |

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2006

| Product code | Product description | Export code 1/ | Import code 2/ |
|--------------|---|--|--|
| | Punching and shearing machines: | | |
| 3335131101 | All punching and shearing machines valued under \$3,025 each..... | 8462.39.0020 8462.49.0020 | 8462.39.0020 8462.49.0020 |
| | Machines valued at \$3,025 or more: | | |
| | Power operated only: | | |
| | Plate shearing machines (squaring, slitting, etc.): | | |
| 3335131106 | Punches, including combination punching and shearing machines AND | | |
| 3335131111 | Punching machines fixed position and two axes positioning table AND | | |
| 3335131116 | Mechanical AND | | |
| 3335131121 | Hydraulic AND | | |
| 3335131126 | Other power operated punching & shearing machines..... | 8462.39.0050 8462.41.0080 8462.49.0050 8462.31.0080 | 8462.39.0050 8462.41.0080 8462.49.0050 8462.31.0080 |
| | Bending and forming machines: | | |
| 3335131131 | All bending and forming machines valued under \$3,025..... | 8462.29.0020 | 8462.29.0020 |
| | Machines valued at \$3,025 each or more: | | |
| 3335131136 | Press brakes all types AND | | |
| 3335131145 | Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes, and rotary bending and forming machines, including rotary head AND | | |
| 3335131161 | Other bending and forming machines, including folders..... | 8462.29.0030 8462.29.0040 8462.29.0050 | 8462.29.0030 8462.29.0040 8462.29.0050 |
| | Presses except forging presses: | | |
| 3335133101 | All presses valued under \$3,025 each..... | 8462.99.0020 | 8462.99.8020 |
| | Machines valued at \$3,025 each or more: | | |
| 3335133109 | Mechanical presses: Gap or C-frame..... | 8462.99.0030 8462.99.0040 | 8462.99.4030 8462.99.8045 |
| 3335133136 | Automatic presses, strip or coil field AND | | |
| 3335133143 | Vertical, automatic, and other mechanical presses, including end wheel type bulldozer, double and triple action, and transfer fed presses, four point and knuckle joint, excluding automated lines of standard equipment..... | 8462.99.0060 | 8462.99.8060 |
| | Hydraulic presses (metalworking only) | | |
| | Vertical single action, all tonnages | | |
| 3335133146 | Housing or straight side type AND | | |
| 3335133151 | Column type (open rod) AND | | |
| | Gap or C-frame: | | |
| 3335133156 | 15 tons and under AND | | |
| 3335133161 | 16 tons to 35 tons AND | | |
| 3335133166 | Over 35 tons AND | | |
| 3335133171 | Other hydraulic and pneumatic presses, including horizontal..... | 8462.91.0060 8462.91.0090 | 8462.91.4060 8462.91.8090 |
| | All other metal forming type machine tools: | | |
| 3335135101 | All other metal forming type machine tools valued under \$3,025 each..... | 8463.20.0060 8463.90.0060 | 8463.20.0060 8463.90.0060 |

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2006

| Product code | Product description | Export code 1/ | Import code 2/ |
|--------------|---|----------------|----------------|
| | Machines valued at \$3,025 each or more: | | |
| 3335135118 | Forging machines, including forging presses and die stamping preses, and die casting machines all types AND | | |
| 3335135121 | Riveting machines (except hand held portable types) AND | | |
| 3335135126 | All other metal forming type machine tools..... | 8462.10.0030 | 8462.10.0030 |
| | | 8462.10.0035 | 8462.10.0035 |
| | | 8462.10.0055 | 8462.10.0055 |
| | | 8454.30.0010 | 8454.30.0010 |
| | | 8463.20.0080 | 8463.20.0080 |
| | | 8463.90.0080 | 8463.90.0080 |

1/Source: 2006 edition, Harmonized System-Based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2006).

Appendix.

General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the 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 Food Services
- 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).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Stocks. Total quantity of ending finished inventory.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on metalworking machinery have been collected by the Census Bureau since 1942. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.