# **FEDERAL RESERVE statistical release**



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**October 17, 2024** 

#### G.17 (419)

#### INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Industrial production (IP) decreased 0.3 percent in September after advancing 0.3 percent in August. A strike at a major producer of civilian aircraft held down total IP growth by an estimated 0.3 percent in September, and the effects of two hurricanes subtracted an estimated 0.3 percent. For the third quarter as a whole, industrial

(over)

#### **Industrial Production and Capacity Utilization: Summary**

Seasonally adjusted

			2017=	100						Percent	t change		
	2024						2024						Sept. '23 to
Industrial production	Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug."	Sept. <sup>p</sup>	Apr."	May <sup>r</sup>	June	July <sup>r</sup>	Aug."	Sept. <sup>p</sup>	Sept. '24
Total index	102.4	103.1	103.2	102.6	102.9	102.6	2	.7	.2	6	.3	3	6
Previous estimates	102.4	103.2	103.3	102.3	103.1	10210	1	.7	.1	9	.8	10	10
Major market groups	100 (	100.0	101.1	100.5	101.0	100.4		2	2		~	6	-
Final Products	100.6	100.8	101.1	100.5	101.0	100.4	0.	.2	.3	6	.5	6	7
Consumer goods	101.7	101.9	102.4	101.6	102.1	102.3	.2	.3	.4	8	.6	.2	.2
Business equipment	94.2	94.4	94.1	94.0	94.2	90.9	7	.3	4	1	.2	-3.5	-4.2
Nonindustrial supplies	100.3	101.2	101.8	101.4	101.3	101.5	5	.9	.5	3	2	.2	.3
Construction	99.6	100.3	100.6	100.4	100.9	100.8	-1.7	.8	.3	2	.4	1	2
Materials	104.5	105.6	105.5	104.8	105.2	105.0	2	1.0	1	7	.4	2	9
Major industry groups													
Manufacturing (see note below)	98.8	99.5	99.5	99.0	99.5	99.1	7	.7	1	5	.5	4	5
Previous estimates	98.9	99.6	99.4	98.7	99.6	,,,,,	6	.8	2	7	.9	• •	10
Mining	119.5	118.7	119.1	118.0	118.9	118.2	1	7	.2	9	.7	6	-2.2
Utilities	104.7	107.0	108.6	107.4	106.0	106.8	3.6	2.2	1.5	-1.1	-1.3	.0	.6
ounies	104.7	107.0	100.0	107.4	100.0	100.0	5.0	2.2	1.5	-1.1	-1.5	.7	.0
					D		•.						Capacity
		1000	1000	100.4	Perce	ent of cap	acity						growth
	Average	1988-	1990-	1994-									a
~	1972-	89	91	95	2009	2023	2024						Sept. '23 to
Capacity utilization	2023	high	low	high	low	Sept.	Apr. <sup>r</sup>	May <sup>r</sup>	June	July <sup>r</sup>	Aug."	Sept. <sup>p</sup>	Sept. '24
Total industry	79.7	85.2	78.7	84.8	66.6	78.9	77.7	78.1	78.2	77.6	77.8	77.5	1.2
Previous estimates		00.2	/ 01/	0.110	00.0		77.7	78.2	78.2	77.4	78.0	1110	
1 revious estimates							,,,	70.2	70.2	,,	/0.0		
Manufacturing (see note below)	78.3	85.5	77.1	84.4	63.5	78.1	76.9	77.4	77.2	76.8	77.1	76.7	1.3
Previous estimates	70.5	05.5	//.1	07.7	05.5	/0.1	76.9	77.5	77.2	76.6	77.2	/0./	1.5
Mining	86.5	86.3	84.3	88.6	78.9	90.1	89.3	88.8	89.1	88.4	89.1	88.7	7
Utilities	80.5	93.2	84.7	93.2	78.9	73.3	70.8	72.2	73.1	72.0	70.9	71.2	3.5
Oundes	84.5	93.2	84.7	95.2	/8.1	/3.3	/0.8	12.2	/3.1	72.0	/0.9	/1.2	3.3
Stage-of-process groups													
Crude	85.6	87.9	84.9	90.0	77.0	88.1	86.6	87.0	87.5	86.6	87.1	86.8	4
Primary and semifinished	80.2	86.5	77.6	87.5	63.7	77.6	76.2	76.9	76.9	76.4	76.3	76.4	1.6
Finished	76.8	83.3	77.6	80.4	66.2	76.8	75.7	75.8	75.7	75.2	75.6	74.7	1.8
r Revised n Preliminary		1	1	1	1	1	1						L

r Revised. p Preliminary.

Note. The statistics in this release cover output, capacity, and capacity utilization in the U.S. industrial sector, which is defined by the Federal Reserve to comprise manufacturing, mining, and electric and gas utilities. Mining is defined as all industries in sector 21 of the North American Industry Classification System (NAICS); electric and gas utilities are those in NAICS sectors 2211 and 2212. Manufacturing comprises NAICS manufacturing industries (sector 31-33) plus the logging industry and the newspaper, periodical, book, and directory publishing industries. Logging and publishing are classified elsewhere in NAICS (under agriculture and information, respectively), but historically they were considered to be manufacturing and were included in the industrial sector under the Standard Industrial Classification (SIC) system. In December 2002 the Federal Reserve reclassified all its industrial output data from the SIC system to NAICS.

production declined at an annual rate of 0.6 percent. Manufacturing output moved down 0.4 percent in September, and the index for mining fell 0.6 percent. The index for utilities gained 0.7 percent. At 102.6 percent of its 2017 average, total industrial production in September was 0.6 percent below its year-earlier level. Capacity utilization edged down to 77.5 percent in September, a rate that is 2.2 percentage points below its long-run (1972–2023) average.

#### Market Groups

The major market groups posted mixed results in September. Among consumer goods, the production of durables decreased 0.7 percent. In contrast, the index for nondurables increased 0.5 percent, boosted by a 1.7 percent increase in energy goods. The output of business equipment declined 3.5 percent in September, weighed down by a sharp drop of 14.2 percent in the production of transit equipment largely due to the work stoppage in civilian aircraft. Business supplies posted a gain in September, while the index of construction supplies edged down. The production of non-energy materials edged down 0.1 percent in September, as a 0.3 percent decline in the durable non-energy component more than offset a 0.1 percent increase in the nondurable non-energy component. The output of energy materials declined 0.3 percent.

#### Industry Groups

Manufacturing output declined 0.4 percent in September and was 0.5 percent below its year-earlier level. The production of durable goods industries fell 1 percent, with declines widespread among its components. In addition to a drop of 8.3 percent in the output of aerospace and miscellaneous transportation equipment, declines of 1 percent or more were recorded for furniture and related products, for motor vehicles and parts, and for electrical equipment, appliances, and components. The production of nondurable goods increased 0.2 percent, as gains in the indexes of chemicals and of petroleum and coal products outweighed declines in the indexes of textile and product mills and of apparel and leather.

Mining output decreased 0.6 percent in September, as the effects of two hurricanes on oil and gas extraction more than offset gains elsewhere. The output of utilities increased 0.7 percent in September, as both electric and natural gas utilities moved up.

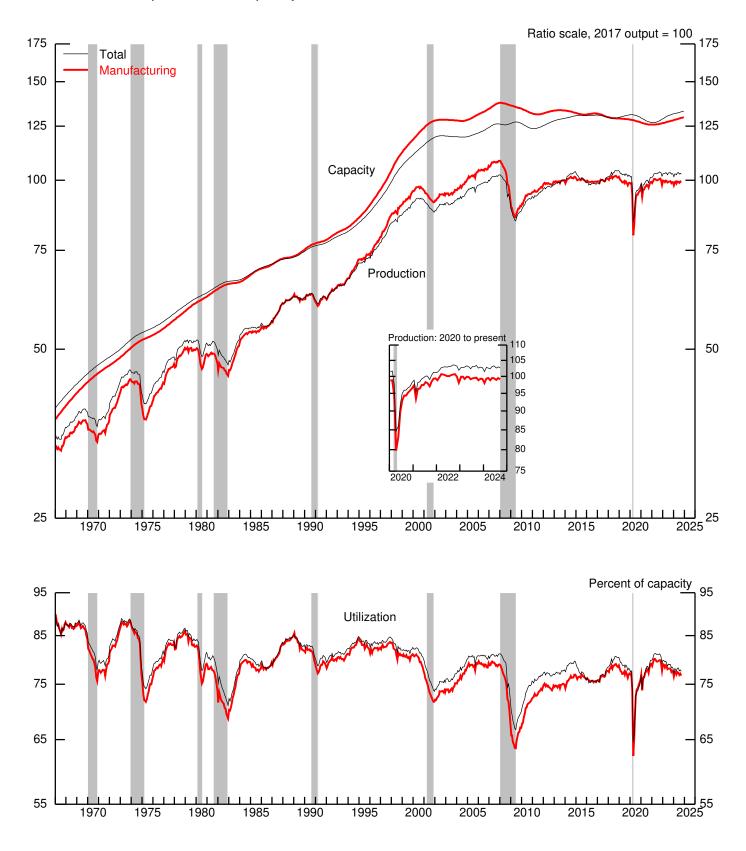
Capacity utilization for manufacturing decreased 0.4 percentage point in September to 76.7 percent, a rate that is 1.6 percentage points below its long-run average. The operating rate for mining fell 0.4 percentage point to 88.7 percent, while the operating rate for utilities rose 0.3 percentage point to 71.2 percent. The rate for mining was 2.2 percentage points above its long-run average, while the rate for utilities remained substantially below its long-run average.

#### Tables

- 1. Industrial Production: Market and Industry Group Summary; percent change
- 2. Industrial Production: Special Aggregates and Selected Detail; percent change
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- 4. Industrial Production: Market and Industry Group Summary; indexes
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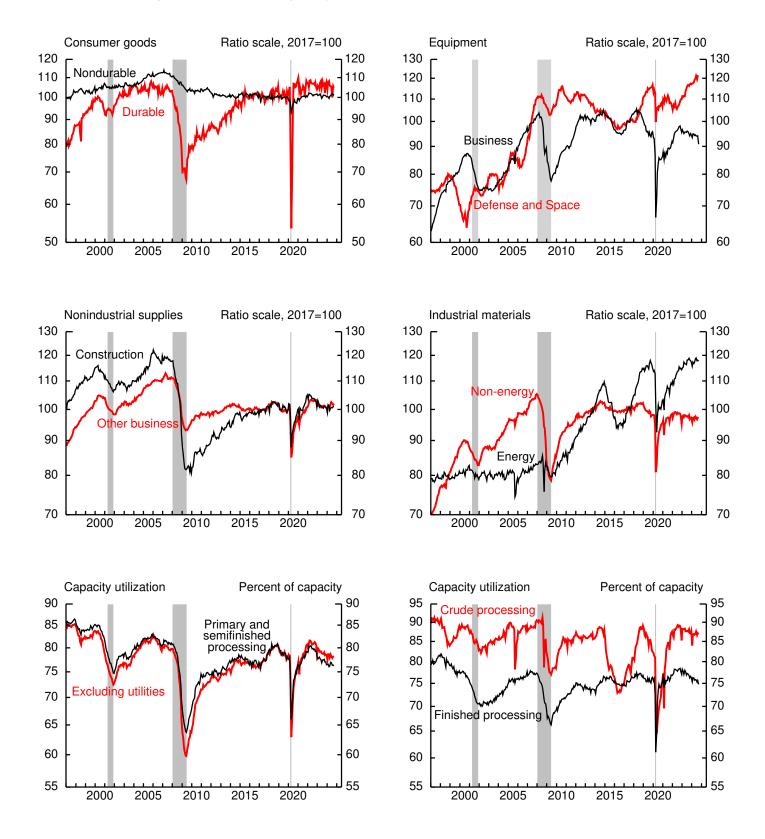
Further detail is available on the Board's website (www.federalreserve.gov/releases/G17/).

1. Industrial production, capacity, and utilization



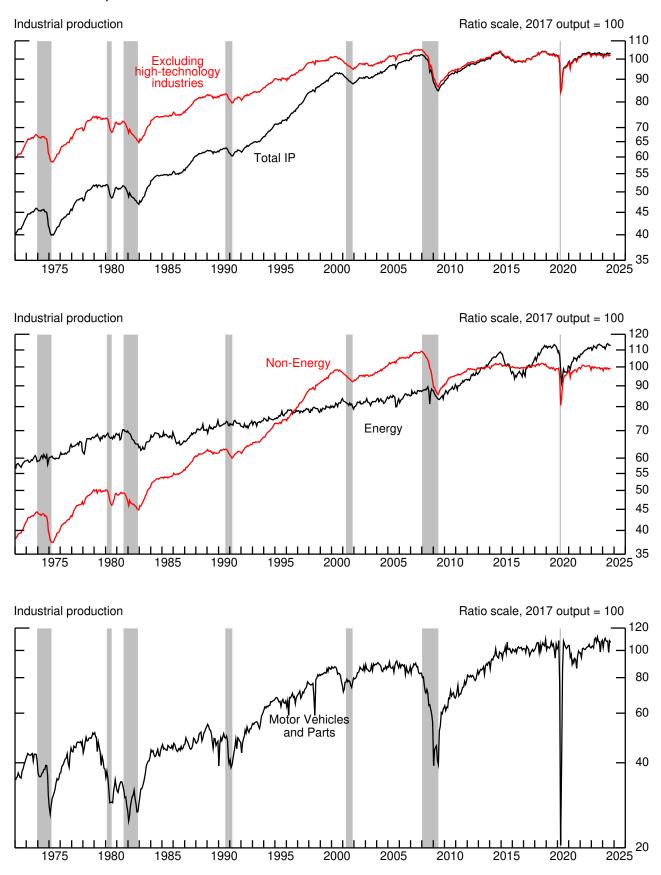
Note: The shaded areas are periods of business recession as defined by the National Bureau of Economic Research (NBER).

#### 2. Industrial production and capacity utilization



Note: The shaded areas are periods of business recession as defined by the National Bureau of Economic Research (NBER).

#### 3. Industrial production of selected industries



Notes: High-technology industries are defined as semiconductors and related electronic components (NAICS 3344), computers (NAICS 3341), and communications equipment (NAICS 3342). The shaded areas represent periods of business recession as defined by the NBER.

### Table 1 INDUSTRIAL PRODUCTION: MARKET AND INDUSTRY GROUP SUMMARY

			1	rth quart 1rth quai			nnual rat	te			Month	nly rate			Sept. '2
Item		2023 proportion <sup>1</sup>	2021	2022	2023	2024 Q1	Q2 <sup>r</sup>	Q3 <sup>p</sup>	2024 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>	to Sept. '2
Total IP		100.00	3.8	1.8	1	-1.8	2.5	6	2	.7	.2	6	.3	3	6
MARKET GROUPS		5 A 57	2.2	1.0	1.0	0	1.6		1				2	4	
Final products and nonindustrial supplie	S	54.57	3.3	1.9	-1.0	9	1.6	4	1	.4	.4	6	.3	4	4
Consumer goods		27.65	1.6	.6	6	-1.2	1.7	.2	.2	.3	.4	8	.6	.2	.2
Durable		6.08	2	-1.3	.2	3.6	-3.3	-8.1	-1.9	6	.0	-5.1	5.4	7	-1.9
Automotive products		3.35	-5.1	.6	1.6	3.4	1	-11.1	-2.5	7	.4	-8.9	11.0	-2.2	-1.8
Home electronics		.14 .91	9.4	4 -9.0	20.1 -4.6	8.5 -1.0	2.7 -18.1	-2.1 .0	7 -1.0	.9 -2.4	-1.9 .9	5 -1.2	.1	2.7	6.0 -3.9
Appliances, furniture, carpeting		1.69	9.1			-1.0			-1.3		-1.2		.6 -1.7	3.1	
Miscellaneous goods Nondurable		21.57	9.1	-1.0 1.2	-1.3	-2.5	-1.6 3.2	-6.6 2.6	-1.5	.6 .5		.1 .4	-1.7	1 .5	-1.6
		16.08	1.3	.6	8 3	-2.5	5.2 .5	3.3	.9 6	.5	.6 .4	.4	7		.0
Non-energy		9.74	2		-1.4	-4.2	5	-3.1		.3				.1	-1.9
Foods and tobacco		.17	5.2	4 7	-10.0	-4.2	3 6.2	-11.9	6 2.2	.5	.4 2.1	8 -2.1	4 -2.5	3 -2.5	-1.9
Clothing Chamical products		4.99	3.8	7	-10.0	-13.1	4.1	19.8	6	1.0	.8	-2.1	-2.5	-2.3	-9.5
Chemical products Paper products		4.99	.1	-4.2	-6.0	1	-7.3	-8.0	-1.3	.2	-1.0	-1.3	3	.2	-5.2
		5.49	6.2	-4.2		-7.3	-7.5		-1.5	.2	-1.0	-1.5	5	.2	-5.2
Energy		5.49	0.2	2.3	-2.0	-7.5	11.8	.4	5.4		1.0	.0	-2.1	1./	
Business equipment		8.77	5.9	6.8	-2.4	6	7	-5.1	7	.3	4	1	.2	-3.5	-4.2
Transit		1.75	-3.1	19.1	-2.4	0	1.0	-19.6	-1.9	-1.2	2.3	-5.2	5.8	-14.2	-13.9
Information processing		1.75	9.5	-1.0	4	2.1	2.3	-19.0	-1.9	-1.2	1	-3.2	-1.2	-14.2	2.9
Industrial and other		5.25	7.2	6.1	-4.1	-1.7	-2.2	-3.4	.0 6	.7	-1.4	.9	-1.2	9	-3.3
Defense and space equipment		1.74	.2	1.7	6.8	2.2	-2.2	-3.4	1.1	.7	-1.4	-1.3	1.3	9	4.1
		1./ +	.2	1./	0.0	2.2	0.0	1.0	1.1		1.1	1.5	1.5	.1	7.1
Construction supplies Business supplies		5.19 10.55	5.4 3.9	-1.7 2.2	-1.4 -1.6	2 8	-1.4 4.5	2.1 .5	-1.7 .1	.8 1.0	.3 .7	2 4	.4 5	1 .4	2 .6
Materials		45.43	4.4	1.8	1.0	-2.8	3.7	9	2	1.0	1	7	.4	2	9
Non-energy		27.35	3.1	9	1	-1.9	2.1	7	6	.9	4	6	.5	1	9
Durable		16.83	2.8	1.5	4	-1.3	1.3	-2.8	3	.9	-1.2	5	.5	3	-1.6
Consumer parts		2.93	-5.6	3.6	3.9	-1.5	.2	-9.5	6	.3	-1.2	-4.9	4.2	.3	-2.0
Equipment parts		4.64	6.9	3.2	1	-2.3	9.1	5.7	1.4	1.2	5	1.3	.5	8	3.0
Other		9.26	3.6	.1	-1.9	-2.3	-2.0	-4.9	-1.1	.9	-1.7	.1	6	8	-3.7
Nondurable		10.53	3.5	-4.4	.4	-2.9	3.4	2.8	-1.0	1.1	.9	7	0	.1	.1
Textile		.30	1.7	-7.9	-6.9	1.8	14.1	16.7	-1.0	2.5	1.1	2.4	2.0	-4.0	3.7
Paper		1.47	.1	-4.7	-5.2	6.6	2.9	5.1	8	-1.0	.6	1.2	.1	-4.0	2.8
Chemical		5.44	6.5	-6.3	-3.2	-8.2	7.6	3.1	-1.4	2.5	1.1	-1.7	1.0	2	6
Energy		18.08	7.3	5.3	2.7	-4.2	6.0	-1.3	.5	1.1	.3	9	.2	3	9
INDUSTRY GROUPS															
Manufacturing		75.05	3.4	.5	4	9	1.4	4	7	.7	1	5	.5	4	5
Manufacturing (NAICS)	31–33	73.46	3.5	.6	3	9	1.5	2	7	.7	1	4	.5	4	4
Durable manufacturing		37.33	3.3	2.3	4	.0	.6	-2.6	6	.6	5	-1.0	1.2	-1.0	-1.3
Wood products	321	1.63	.4	-4.5	-1.4	-2.8	8	-2.7	-1.7	2.3	6	-1.4	2	1.4	-2.2
Nonmetallic mineral products	327	2.35	2.6	4.4	-3.0	-12.8	-2.7	4.3	1	7	1.6	.5	2	5	-3.8
Primary metals	331	2.74	5.9	-5.2	1.9	-2.7	-1.6	-1.5	-2.1	3.5	-4.6	1.2	.5	.5	-2.8
Fabricated metal products	332	6.10	6.1	1.9	-1.8	2.4	-1.1	-4.0	6	1.1	8	4	7	1	-1.3
Machinery	333	5.67	8.3	3.4	-3.6	-1.2	-2.8	.9	5	.5	-1.2	1.4	8	1	-2.1
Computer and electronic products	334	4.40	5.8	.6	2.9	2.2	6.8	5.5	1.3	.7	6	1.7	4	.3	5.2
Electrical equip., appliances,		_ · · -						<u> </u>		-		-			
and components	335	2.13	1 27					9.5	-1.3	.9	1.6	2	2.3	-1.4	3.7
M. (	2261 2	E 10	3.7	2.7	-1.2	-1.8	2.7				~	0.7	0.0	1 7	
Motor vehicles and parts	3361–3	5.49	-5.1	5.8	-1.2 1.6	-1.8 8.3	3.5	-12.3	-2.0	5	.2	-8.7	9.9	-1.5	6
Aerospace and miscellaneous			-5.1	5.8	1.6	8.3	3.5	-12.3	-2.0	5					6
Aerospace and miscellaneous transportation equipment	3364–9	3.15	-5.1 -1.4	5.8 9.7	1.6 3.0	8.3	3.5 6.7	-12.3	-2.0 1.2	5 .5	1.0	-1.0	1.9	-8.3	6 -5.8
Aerospace and miscellaneous transportation equipment Furniture and related products	3364–9 337	3.15 1.01	-5.1 -1.4 2.7	5.8 9.7 -3.5	1.6 3.0 -10.5	8.3 -3.1 -5.2	3.5 6.7 1.2	-12.3 -6.6 -3.8	-2.0 1.2 1.1	5 .5 -1.8	1.0 1.6	-1.0 -1.0	1.9 .2	-8.3 -1.5	6 -5.8 -5.2
Aerospace and miscellaneous transportation equipment	3364–9	3.15	-5.1 -1.4	5.8 9.7	1.6 3.0	8.3	3.5 6.7	-12.3	-2.0 1.2	5 .5	1.0	-1.0	1.9	-8.3	6 -5.8
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous	3364–9 337	3.15 1.01 2.65	-5.1 -1.4 2.7 7.7	5.8 9.7 -3.5 3.6	1.6 3.0 -10.5 .7	8.3 -3.1 -5.2 6	3.5 6.7 1.2 -7.2	-12.3 -6.6 -3.8 -9.1	-2.0 1.2 1.1 -1.2	5 .5 -1.8 9	1.0 1.6 -1.9	-1.0 -1.0 .6	1.9 .2 -2.5	-8.3 -1.5 .7	6 -5.8 -5.2 -5.5
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing	3364–9 337 339	3.15 1.01 2.65 36.14	-5.1 -1.4 2.7 7.7 3.8	5.8 9.7 -3.5 3.6 -1.1	1.6 3.0 -10.5 .7 1	8.3 -3.1 -5.2 6 -1.7	3.5 6.7 1.2 -7.2 2.5	-12.3 -6.6 -3.8 -9.1 2.3	-2.0 1.2 1.1 -1.2 8	5 .5 -1.8 9	1.0 1.6 -1.9 .4	-1.0 -1.0 .6	1.9 .2 -2.5 2	-8.3 -1.5 .7	6 -5.8 -5.2 -5.5 .5
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products	3364-9 337 339 311,2	3.15 1.01 2.65 36.14 12.17	-5.1 -1.4 2.7 7.7 3.8 1	5.8 9.7 -3.5 3.6 -1.1 .0	1.6 3.0 -10.5 .7 1 -1.4	8.3 -3.1 -5.2 6 -1.7 -3.7	3.5 6.7 1.2 -7.2 2.5 6	-12.3 -6.6 -3.8 -9.1 2.3 -3.0	-2.0 1.2 1.1 -1.2 8 7	5 .5 -1.8 9 .9 .5	1.0 1.6 -1.9 .4 .3	-1.0 -1.0 .6 .1 8	1.9 .2 -2.5 2 5	-8.3 -1.5 .7 .2 1	6 -5.8 -5.2 -5.5 .5 -1.6
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills	3364–9 337 339 311,2 313,4	3.15 1.01 2.65 36.14 12.17 .53	-5.1 -1.4 2.7 7.7 3.8 1 3.6	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6	1.6 3.0 -10.5 .7 1 14 -6.5	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1	3.5 6.7 1.2 -7.2 2.5 6 7.4	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0	-2.0 1.2 1.1 -1.2 8 7 6	5 .5 -1.8 9 .9 .5 2.5	1.0 1.6 -1.9 .4 .3 .4	-1.0 -1.0 .6 .1 8 6	1.9 .2 -2.5 2 5 1.0	-8.3 -1.5 .7 .2 1 -4.2	6 -5.8 -5.2 -5.5 .5 -1.6 -4.5
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather	3364-9 337 339 311,2 313,4 315,6	3.15 1.01 2.65 36.14 12.17 .53 .19	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3	-2.0 1.2 1.1 -1.2 8 7 6 1.8	5 .5 -1.8 9 .9 .5 2.5 .4	1.0 1.6 -1.9 .4 .3 .4 2.5	-1.0 -1.0 .6 .1 8 6 -2.1	1.9 .2 -2.5 5 1.0 -2.3	-8.3 -1.5 .7 .2 1 -4.2 -2.6	6 -5.8 -5.2 -5.5 .5 -1.6 -4.5 -8.5
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper	3364–9 337 339 311,2 313,4 315,6 322	3.15 1.01 2.65 36.14 12.17 .53 .19 2.19	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 -1.0	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0	5 .5 -1.8 9 .5 2.5 .4 4	1.0 1.6 -1.9 .4 .3 .4 2.5 .0	-1.0 -1.0 .6 .1 8 6 -2.1 1.1	1.9 .2 -2.5 2 5 1.0 -2.3 .2	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support	3364–9 337 339 311,2 313,4 315,6 322 323	3.15 1.01 2.65 36.14 12.17 .53 .19 2.19 1.30	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 -1.0 3.5	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0	5 .5 -1.8 9 .5 2.5 .4 4 5	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6	1.9 .2 -2.5 2 5 1.0 -2.3 .2 1	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 1.0	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 6.7
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products	3364–9 337 339 311,2 313,4 315,6 322 323 324	3.151.012.6536.1412.17.53.192.191.304.00	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 -1.0 3.5 17.8	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2 -2.6	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2 3.9	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0 -3.9	5 .5 -1.8 9 .5 2.5 2.5 .4 4 5 2.9	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6 .4	1.9 .2 -2.5 5 1.0 -2.3 .2 1 -1.0	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 1.0 1.8	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 6.7 2.3
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products Chemicals	3364–9 337 339 311,2 313,4 315,6 322 323 324 324 325	3.151.012.6536.1412.17.53.192.191.304.0012.01	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 -1.0 3.5 17.8 5.7	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2 -2.6 -1.3	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2 3.9 2.1	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2 -1.6	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3 7.3	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0 9.2	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0 -3.9 5	5 .5 -1.8 9 .5 2.5 .4 4 5 2.9 1.5	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8 .9	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6 .4 .9	1.9 .2 -2.5 5 1.0 -2.3 .2 1 -1.0 .2	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 1.0 1.8 .3	6 5.8 5.2 5.5 1.6 4.5 8.5 1.0 6.7 2.3 3.0
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products Chemicals Plastics and rubber products	3364-9 337 339 311,2 313,4 315,6 322 323 324 325 326	$\begin{array}{r} 3.15\\ 1.01\\ 2.65\\ 36.14\\ 12.17\\ .53\\ .19\\ 2.19\\ 1.30\\ 4.00\\ 12.01\\ 3.73\\ \end{array}$	-5.1 -1.4 2.7 7.7 3.8 -1 3.6 5.8 -1.0 3.5 17.8 5.7 3.0	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 -2 -6.0 1.2 -2.6 -1.3 .2	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2 3.9 2.1 .3	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2 -1.6 -2.9	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3 7.3 .9	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0 9.2 -4.5	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0 -3.9 5 .2	5 .5 -1.8 9 .5 2.5 2.5 .4 4 5 2.9 1.5 3	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8 .9 2	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6 .4 .9 4	1.9 .2 -2.5 2 5 1.0 -2.3 .2 1 -1.0 .2 7	-8.3 -1.5 .7 -1 -4.2 -2.6 -6 -6 1.0 1.8 .3 1	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 6.7 2.3 3.0 -3.1
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products Chemicals Plastics and rubber products Other manufacturing (non-NAICS)	3364–9 337 339 311,2 313,4 315,6 322 323 324 325 326 <b>1133,5111</b>	$\begin{array}{r} 3.15\\ 1.01\\ 2.65\\ 36.14\\ 12.17\\ .53\\ .19\\ 2.19\\ 1.30\\ 4.00\\ 12.01\\ 3.73\\ 1.59\\ \end{array}$	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 10 3.5 17.8 5.7 3.0 3	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2 -2.6 -1.3 .2 -1.6	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2 3.9 2.1 .3 -8.1	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2 -1.6 -2.9 -1.6	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3 7.3 .9 -5.6	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0 9.2 -4.5 -6.9	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0 -3.9 5 .2 -1.4	5 .5 -1.8 9 .9 .5 2.5 .4 4 5 2.9 1.5 3 .6	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8 .9 2 3	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6 .4 .9 4 -2.4	1.9 .2 -2.5 5 1.0 -2.3 .2 1 -1.0 .2 7 .8	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 6 6 1.0 1.8 .3 1 .3	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 0.6.7 2.3 3.0 -3.1 -5.4
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products Chemicals Plastics and rubber products Other manufacturing (non-NAICS) Mining	3364–9 337 339 311,2 313,4 315,6 322 323 324 325 326 <b>1133,5111</b> 21	$\begin{array}{c} 3.15\\ 1.01\\ 2.65\\ 36.14\\ 12.17\\ .53\\ .19\\ 2.19\\ 1.30\\ 4.00\\ 12.01\\ 3.73\\ 1.59\\ 14.22\\ \end{array}$	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 10 3.5 17.8 5.7 3.0 3 10.4	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2 -2.6 -1.3 .2 -1.6 6.2	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.3 3.9 2.1 .3 -8.1 2.6	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2 -1.6 -2.9 -1.6 -5.5	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3 7.3 .9 -5.6 2.4	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0 9.2 -4.5 -6.9 -2.5	-2.0 1.2 1.1 -1.2 8 7 6 1.8 7 6 1.8 0 0 1.0 3.9 5 .2 -1.4 1.4 1.4	5 .5 -1.8 9 .9 .5 2.5 .4 4 5 2.9 1.5 3 .6 7	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8 .9 2 3 .3	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 1.1 .6 .4 .9 4 -2.4 -2.4 9	1.9 .2 -2.5 -2 -5 1.0 -2.3 .2 1 -1.0 .2 1 -1.0 .2 7 .8 .7	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 1.0 1.8 .3 1 .3 6	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 6.7 2.3 3.0 -3.1 -5.4 -2.2
Aerospace and miscellaneous transportation equipment Furniture and related products Miscellaneous Nondurable manufacturing Food, beverage, and tobacco products Textile and product mills Apparel and leather Paper Printing and support Petroleum and coal products Chemicals Plastics and rubber products Other manufacturing (non-NAICS)	3364–9 337 339 311,2 313,4 315,6 322 323 324 325 326 <b>1133,5111</b>	$\begin{array}{r} 3.15\\ 1.01\\ 2.65\\ 36.14\\ 12.17\\ .53\\ .19\\ 2.19\\ 1.30\\ 4.00\\ 12.01\\ 3.73\\ 1.59\\ \end{array}$	-5.1 -1.4 2.7 7.7 3.8 1 3.6 5.8 10 3.5 17.8 5.7 3.0 3	5.8 9.7 -3.5 3.6 -1.1 .0 -9.6 .2 -6.0 1.2 -2.6 -1.3 .2 -1.6	1.6 3.0 -10.5 .7 1 -1.4 -6.5 -8.8 -3.3 -10.2 3.9 2.1 .3 -8.1	8.3 -3.1 -5.2 6 -1.7 -3.7 -3.1 -12.4 1.9 10.4 .2 -1.6 -2.9 -1.6	3.5 6.7 1.2 -7.2 2.5 6 7.4 6.2 .5 9.7 -2.3 7.3 .9 -5.6	-12.3 -6.6 -3.8 -9.1 2.3 -3.0 -1.0 -10.3 3.7 7.6 3.0 9.2 -4.5 -6.9	-2.0 1.2 1.1 -1.2 8 7 6 1.8 .0 1.0 -3.9 5 .2 -1.4	5 .5 -1.8 9 .9 .5 2.5 .4 4 5 2.9 1.5 3 .6	1.0 1.6 -1.9 .4 .3 .4 2.5 .0 1.7 8 .9 2 3	-1.0 -1.0 .6 .1 8 6 -2.1 1.1 .6 .4 .9 4 -2.4	1.9 .2 -2.5 5 1.0 -2.3 .2 1 -1.0 .2 7 .8	-8.3 -1.5 .7 .2 1 -4.2 -2.6 6 6 6 1.0 1.8 .3 1 .3	6 -5.8 -5.2 -5.5 -1.6 -4.5 -8.5 1.0 0.6.7 2.3 3.0 -3.1 -5.4

r Revised. p Preliminary.

1. The proportion data are the relative weights for the rates of change for each series in the computation of the change in total industrial production in the following year.

Note. Under the industry groups, the figures to the right of the series descriptions are 2017 North American Industry Classification System (NAICS) codes. The abbreviation pt denotes part of a NAICS code. Additional industry detail is available on the Board's website (www.federalreserve.gov/releases/G17/20241017/default\_sup.htm). Under market groups, in the products category, miscellaneous consumer nondurables, oil and gas well drilling, and manufactured homes are not shown separately; in the nondurable materials category, containers and miscellaneous nondurable materials are not shown separately.

# Table 2 INDUSTRIAL PRODUCTION: SPECIAL AGGREGATES AND SELECTED DETAIL Percent change, seasonally adjusted

rcent change, seasonally adjusted		2022		rth quart urth quar			nnual rat	e	2024		Month	nly rate			Sept. '23
Item		2023 proportion	2021	2022	2023	2024 Q1	Q2 <sup>r</sup>	Q3 <sup>p</sup>	2024 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>	to Sept. '24
Total industry		100.00	3.8	1.8	1	-1.8	2.5	6	2	.7	.2	6	.3	3	6
Energy		26.94	7.7	5.1	1.3	-4.4	6.8	5	1.4	1.0	.6	7	4	.3	4
Consumer products		5.49	6.2	2.5	-2.0	-7.3	11.8	.4	5.4	.5	1.0	.0	-2.1	1.7	.5
Commercial products		2.76	6.1	6.3	.4	.6	7.3	3.2	1.3	1.5	1.9	-1.0	5	1.2	2.9
Oil and gas well drilling	213111	.61	59.2	21.4	-7.9	-9.1	-15.6	3	-3.5	-2.0	.6	3	.3	.9	-8.2
Converted fuel Primary energy		5.15 12.93	4.1 8.7	3.3 6.0	2.4 2.9	.2 -6.0	4.5 6.7	-2.3 9	.5 .4	4.0 .0	8 .8	-1.4 7	2 .3	.6 6	3 -1.2
Non-energy		73.06	2.8	.5	6	8	1.0	7	7	.6	.0	6	.6	5	7
Selected high-technology industries	22.41	1.89	5.1	6.5	7.8	2.3	15.6	6.9	3.1	1.0	-1.3	.9	1.3	1.5	10.0
Computers and peripheral equipment	3341	.23	18.4	8.2	6.9	-2.3	8.2	8.6	5	2.0	-1.7	.6	.7	4.5	5.9
Communications equipment Semiconductors and related	3342	.40	18.0	10.4	14.3	10.7	4.8	4.2			.3	.7	.0	.2	8.9
electronic components	3344	1.26	5	5.0	5.9	.4	20.8	7.5	4.8	1.0	-1.7	1.0	1.8	1.4	11.1
Excluding selected high-technology industries		71.17	2.7	.3	8	9	.6	9	8	.6	.0	6	.6	6	-1.0
Motor vehicles and parts	3361-3	5.49	-5.1	5.8	1.6	8.3	3.5	-12.3	-2.0	5	.2	-8.7	9.9	-1.5	6
Motor vehicles	3361	2.62	-10.1	11.0	1.3	16.3	.8	-14.6	-3.8	-1.3	1.0	-12.7	16.8	-3.5	.2
Motor vehicle parts	3363	2.31	-4.1	7.3	2.7	7.7	5.3	-9.2	5	.2	1	-5.3	4.6	.1	.5
Excluding motor vehicles and parts		65.69	3.5	1	-1.0	-1.6	.4	.1	7	.7	.0	.1	1	5	-1.1
Consumer goods		19.27	2.0	1	6	5	5	1.9	7	.3	.5	.2	3	.2	.3
Business equipment		7.49	5.2	6.0	-3.0	-2.6	-2.3	-4.6	4	.4	-1.0	1.2	8	-3.9	-5.3
Construction supplies		5.18	5.4 3.4	-1.8	-1.5	2 -1.6	-1.4	2.1	-1.7	.8 .7	.3	2	.4	1	2
Business supplies Materials		7.41 24.59	4.1	.7 -1.9	-2.8 6	-2.8	2.9 1.1	9 1	5 8	1.0	.3 3	3 1	6 .1	.0 2	8 -1.5
Measures excluding selected high-technology industries															
Total industry		98.11	3.8	1.7	3	-1.9	2.3	8	2	.7	.2	6	.3	3	9
Manufacturing <sup>1</sup>		73.17	3.4	.4	6	-1.0	1.0	5	8	.7	1	5	.5	4	8
Durable		35.58	3.1	2.0	9	3	2	-3.2	8	.5	5	-1.1	1.2	-1.1	-2.0
Measures excluding motor vehicles and parts															
Total industry		94.51	4.5	1.6	2	-2.3	2.5	.1	.0	.8	.1	1	2	2	6
Manufacturing <sup>1</sup>		69.57	4.2	.1	6	-1.6	1.2	.7	6	.8	1	.2	2	3	5
Durable		31.98	4.9	1.7	8	-1.5	.1	9	3	.7	6	.3	2	9	-1.5
Measures excluding selected high-technology industries															
and motor vehicles and parts															
Total industry		92.63	4.5	1.5	3	-2.4	2.2	1	1	.8	.2	2	2	2	9
Manufacturing <sup>1</sup>		67.68	4.2	1	8	-1.7	.8	.5	7	.8	1	.2	2	3	8
Stage of process components															
Stage-of-process components of non-energy materials,															
of non-energy materials, measures of the input to						-	<i>~ .</i>		-		2		. /	-	
of non-energy materials,		9.34 18.02	1.7 3.9	1.5	.1	.2	5.4	1.0	.5	.6 1.1	3	6 5	1.6	5	1.4

r Revised. p Preliminary. 1. The composition of manufacturing is specified in a note for the summary table.

## Table 3 MOTOR VEHICLE ASSEMBLIES

Millions of units, seasonally adjusted annual rate

	2023	2023	2024			2024					
Item	average	Q4	Q1	Q2	Q3	Apr.	May	June	July	Aug.	Sept.
								10.0-			
Total	10.64	10.42	10.92	10.90	10.43	10.91	10.82	10.97	9.40	11.07	10.82
Autos	1.74	1.70	1.57	1.40	1.45	1.32	1.44	1.44	1.40	1.50	1.43
Trucks	8.90	8.72	9.34	9.50	8.98	9.59	9.38	9.52	8.00	9.56	9.39
Light	8.57	8.40	8.98	9.15	8.68	9.25	9.07	9.13	7.67	9.26	9.11
Medium and heavy	.33	.32	.36	.35	.30	.34	.31	.39	.33	.30	.28
Memo											
Autos and light trucks	10.31	10.10	10.56	10.55	10.13	10.57	10.51	10.58	9.07	10.77	10.55
Autos and fight flucks	10.51	10.10	10.30	10.55	10.13	10.57	10.31	10.38	9.07	10.//	

Note. Seasonal factors and underlying data for auto, light truck, and medium and heavy truck production are available on the Board's website, www.federalreserve.gov/releases/G17/mvsf.htm

# Table 4 INDUSTRIAL PRODUCTION INDEXES: MARKET AND INDUSTRY GROUP SUMMARY 2017 = 100, seasonally adjusted

017 = 100, seasonally adjusted											
Item		2023 proportion	2024 Jan.	Feb.	Mar.	Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>
Total IP		100.00	101.5	102.7	102.5	102.4	103.1	103.2	102.6	102.9	102.6
Manyar Choung											
MARKET GROUPS		54.57	99.9	101.0	100.6	100.5	100.9	101.3	100.7	101.0	100.7
Final products and nonindustrial supplies Consumer goods		27.65	101.3	101.0	100.6	100.5	100.9	101.5	100.7	101.0	100.7
Durable		6.08	101.5	101.9	101.4	101.7	101.9	102.4	101.0	102.1	102.3
Automotive products		3.35	103.5	110.0	112.1	109.3	108.5	109.0	99.3	110.2	107.8
Home electronics		.14	195.2	194.6	198.9	197.6	199.5	195.7	194.6	194.9	200.1
Appliances, furniture, carpeting		.91	85.1	87.8	83.0	82.2	80.2	81.0	80.0	80.5	83.0
Miscellaneous goods		1.69	107.6	108.8	109.7	108.3	108.9	107.6	107.7	105.9	105.7
Nondurable		21.57	100.5	100.4	99.6	100.4	100.9	101.5	101.9	101.2	101.7
Non-energy		16.08	100.1	101.1	101.0	100.4	100.9	101.3	101.8	101.5	101.6
Foods and tobacco		9.74	97.6	98.0	98.0	97.4	97.7	98.1	97.3	96.9	96.7
Clothing		.17	80.4	79.3	78.1	79.8	80.0	81.6	79.9	77.9	76.0
Chemical products		4.99	109.8	112.4	112.3	111.6	112.7	113.6	117.5	117.6	118.4
Paper products		.78 5.49	78.2	78.2 97.6	77.7 94.7	76.8 99.8	76.9 100.4	76.1 101.4	75.1 101.4	74.9 99.4	75.0 101.1
Energy		5.49	100.9	97.0	94.7	99.0	100.4	101.4	101.4	<del>99.4</del>	101.1
Business equipment		8.77	93.4	94.9	94.9	94.2	94.4	94.1	94.0	94.2	90.9
Transit		1.75	70.9	73.1	74.5	73.0	72.2	73.8	69.9	74.0	63.5
Information processing		1.77	110.0	110.1	110.4	110.4	111.0	110.9	113.3	111.9	111.6
Industrial and other Defense and space equipment		5.25 1.74	100.2	101.8 117.5	101.0 118.0	100.5 119.3	101.1 119.9	99.7 121.2	100.6 119.5	99.5 121.1	98.6 121.0
Detense and space equipment		1.74	117.4	117.3	110.0	119.3	119.9	121.2	119.3	121.1	121.0
Construction supplies		5.19	98.8	101.5	101.3	99.6	100.3	100.6	100.4	100.9	100.8
Business supplies		10.55	100.0	101.0	100.7	100.8	101.8	102.4	102.0	101.5	101.9
Materials		45.43	103.3	104.8	104.7	104.5	105.6	105.5	104.8	105.2	105.0
Non-energy		27.35	95.7	97.0	97.3	96.7	97.6	97.2	96.7	97.2	97.1
Durable		16.83	96.8	97.7	98.0	97.6	98.5	97.3	96.9	97.4	97.1
Consumer parts		2.93	92.8	93.5	94.0	93.5	93.8	93.2	88.6	92.3	92.6
Equipment parts		4.64	104.0	103.7	104.2	105.6	106.8	106.3	107.7	108.2	107.3
Other		9.26	94.6	96.2	96.3	95.2	96.0	94.4	94.5	93.9	93.7
Nondurable		10.53	94.0	96.0	96.2	95.2	96.3	97.1	96.5	97.0	97.1
Textile		.30	75.3	76.4	78.3	77.7	79.6	80.5	82.4	84.0	80.7
Paper		1.47	81.4	82.9	83.2	83.5	82.7	83.2	84.1	84.2	84.0
Chemical Energy		5.44 18.08	94.6 115.7	97.5 117.3	97.7 116.7	96.4 117.2	98.8 118.6	99.9 118.9	98.3 117.9	99.3 118.0	99.9 117.7
Lifeigy		10.00	115.7	117.5	110.7	117.2	110.0	110.9	117.9	116.0	11/./
INDUSTRY GROUPS											
Manufacturing		75.05	97.9	99.3	99.5	98.8	99.5	99.5	99.0	99.5	99.1
Manufacturing (NAICS)	31–33	73.46	98.4	99.8	100.1	99.4	100.1	100.0	99.6	100.1	99.7
Durable manufacturing Wood products	321	37.33 1.63	99.4 92.2	100.9 95.0	101.0 93.8	100.3 92.2	100.9 94.3	100.4 93.8	99.4 92.5	100.6 92.3	99.7 93.7
Nonmetallic mineral products	321	2.35	92.2	101.6	95.8	92.2	94.3	100.9	92.3	92.5	93.7 100.7
Primary metals	331	2.33	92.9	93.6	94.6	92.6	95.9	91.4	92.5	93.0	93.4
Fabricated metal products	332	6.10	99.4	100.0	99.5	98.9	100.0	99.2	98.9	98.2	98.1
Machinery	333	5.67	98.1	100.1	98.8	98.3	98.9	97.7	99.1	98.3	98.2
Computer and electronic products	334	4.40	116.6	116.4	116.8	118.3	119.1	118.4	120.3	119.9	120.3
Electrical equip., appliances,											
and components	335	2.13	103.4	102.6	104.2	102.9	103.8	105.5	105.3	107.8	106.2
Motor vehicles and parts	3361-3	5.49	102.3	108.2	110.4	108.2	107.6	107.8	98.5	108.2	106.5
Aerospace and miscellaneous	2264.6		00.0	00.1	00.0	00.0	00 7	00.5	00.0	01.7	62.0
transportation equipment	3364-9	3.15	89.0	88.1	88.3	89.3	89.7	90.6	89.8	91.5	83.9
Furniture and related products Miscellaneous	337 339	1.01 2.65	76.6	77.6 109.2	77.0 109.1	77.8 107.8	76.4 106.8	77.7 104.8	76.9 105.5	77.0 102.9	75.8 103.6
	100										
Nondurable manufacturing		36.14	97.6	98.9	99.2	98.4	99.3	99.7	99.8	99.6	99.8
Food, beverage, and tobacco products	311,2	12.17	99.1	99.5	99.5	98.8	99.3	99.6	98.8	98.4	98.2
Textile and product mills	313,4	.53	77.4	78.7	78.7	78.3	80.2	80.5	80.1	80.8	77.5
Apparel and leather Paper	315,6 322	.19 2.19	82.3 85.8	81.3 87.0	80.2 86.9	81.6 86.9	82.0 86.5	84.0 86.5	82.3 87.5	80.4 87.7	78.3 87.2
Printing and support	322	1.30	83.8	87.0	86.9	86.9	86.5 84.0	86.5	87.5	87.7	87.2
Petroleum and coal products	323	4.00	91.6	92.7	94.6	90.9	93.6	92.9	93.2	92.3	93.9
Chemicals	325	12.01	101.2	103.8	104.0	103.5	105.1	106.0	106.9	107.2	107.5
Plastics and rubber products	326	3.73	101.9	102.3	102.6	102.8	102.5	102.3	101.9	101.2	101.1
Other MAIOS	1133,5111	1.59	80.0	80.3	79.7	78.6	79.1	78.9	77.0	77.6	77.8
Other manufacturing (non-NAICS)							110 5	110.1	110.0	110.0	118.2
	21	14.22	1153	120.3	110.6	1105					
Mining	21 2211,2	14.22 10.73	115.3 107.5	120.3 103.6	119.6 101.0	119.5 104.7	118.7 107.0	119.1 108.6	118.0 107.4	118.9 106.0	
	<b>21</b> <b>2211,2</b> 2211	14.22 10.73 9.35	115.3 107.5 107.1	120.3 103.6 103.8	119.6 101.0 101.7	119.5 104.7 104.7	118.7 107.0 107.8	108.6 108.3	107.4 106.9	106.0 105.6	106.8 106.2

r Revised. p Preliminary. Note. Refer to the notes for table 1.

## Table 5 INDUSTRIAL PRODUCTION INDEXES: SPECIAL AGGREGATES 2017 = 100, seasonally adjusted

2023 2024 July Sept.<sup>p</sup> Item proportion Jan. Feb. Mar. Apr.<sup>r</sup> May<sup>r</sup> June Aug." **Total industry** 100.00 101.5 102.7 102.5 102.4 103.1 103.2 102.6 102.9 102.6 26.94 111 5 113.1 Energy 1118 110.6 112.2 1133 11401132 112.8 Consumer products 5.49 100.9 97.6 94.7 99.8 100.4 101.4 101.4 99.4 101.1 Commercial products 2.76 109.5 110.0 107.9 109.3 110.9 113.0 111.9 111.3 112.7 104.7 Oil and gas well drilling 213111 .61 108.5 108.1 109.1 105.3 103.1 103.8 103.5 103.7 110.2 Converted fuel 5.15 115.2 110.1109.6 114.7113.7112.2 111.9 112.6 Primary energy 12.93 115.2 119.7 119.1 119.6 119.6 120.6 119.7 120.0 119.3 73.06 97.8 99.4 99.5 98.8 99.3 99.3 98.7 99.3 98.8 Non-energy 153.2 Selected high-technology industries 1 89 148.1 147 6 148 5 1547 152.7 154.1 156.0 158.4 3341 1557 156.1 159.6 160.6 160.1 1593 162.4 161.7 169.0 Computers and peripheral equipment 23 Communications equipment 3342 .40 192.3 193.2 194.4 195.0 195.6 196.2 197.5 197.4 197.9 Semiconductors and related electronic components 3344 1.26 134.7 133.8 134.1 140.5 142.0 139.6 140.9 143.5 145.5 Excluding selected high-technology industries 71.17 96.6 98.2 98.3 97.4 98.0 98.0 97.4 98.0 97.4 Motor vehicles and parts 3361-3 5.49 102.3 108.2 110.4 108.2 107.6 107.8 98.5 108.2 106.5 104.0 Motor vehicles 3361 2.62111.2120.4124.1119.4117.9119.1 121.5 117.23363 Motor vehicle parts 2.31 98.3 101.6 102.5 102.0 102.2 102.1 96.7 101.1 101.2Excluding motor vehicles and parts 65.69 96.2 97.4 97.3 96.6 97.3 97.3 97.3 97.2 96.7 19.27 99.9 100.9 100.9 101.1 100.8 101.0 Consumer goods 101.1 100.1100.47 4 9 89.8 90.5 89.9 90.0 Business equipment 89.6 89.1 90.2 894 859 Construction supplies 5.18 98.6 101.4 101.1 99.4 100.1 100.4 100.2 100.7 100.6 Business supplies 7.41 95.2 96.5 96.8 96.2 96.9 97.3 97.0 96.4 96.4 95.0 24.59 93.9 95.1 95.2 94.5 95.4 95.1 95.1 94.9 Materials Measures excluding selected high-technology industries Total industry 98.11 100.6 101.9 101.7 101.4 102.1 102.3 101.6 102.0 101.6 Manufacturing 73.17 96.7 98.1 98.3 97.5 98.2 98.2 97.7 98.1 977 Durable 35.58 96.9 98.4 98.5 97.7 98.2 97.8 96.7 97.9 96.8 Measures excluding motor vehicles and parts 94.51 101.5 102.5 102.1 102.1 102.9 103.0 102.9 102.7 102.5 Total industry Manufacturing 69.57 97.7 98.7 98.7 98.1 99.0 98.9 99.0 98.9 98.6 Durable 31.98 98.8 99.6 99.4 99.0 99.8 99.1 99.5 99.3 98.5 Measures excluding selected high-technology industries and motor vehicles and parts 100.6 101.2 101.9 102.0101.9 101.7 101.4 92.63 101.6 101.1 Total industry Manufacturing 67.68 96.3 97.4 97.4 96.7 97.5 97.5 97.6 97.4 97.1 Stage-of-process components of non-energy materials, measures of the input to Finished processors 9.34 95.5 95 9 96.4 96.9 97.5 97.2 96.6 98.1 97.6 97.0 Primary and semifinished processors 18.02 97.9 97.8 97.4 96.9 96.9 95.9 97.8 96.7

r Revised. p Preliminary.

1. The composition of manufacturing is specified in a note for the summary table.

#### Table 6 DIFFUSION INDEXES OF INDUSTRIAL PRODUCTION

Percent												
Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
One month earlier												
2022	41.8	65.7	60.6	52.5	43.8	51.5	56.6	42.8	57.9	49.2	43.4	33.0
2023	68.7	46.5	42.4	57.2	52.9	41.8	53.5	52.2	52.9	46.5	47.1	49.2
2024	38.4	62.0	60.3	43.4	63.0	46.5	48.8	55.7				
Three months earlier												
2022	53.9	56.5	63.6	64.0	55.2	49.5	51.2	50.5	56.2	52.9	49.5	32.0
2023	45.5	48.1	53.2	48.8	51.9	50.2	52.2	46.8	53.5	46.1	45.8	48.8
2024	41.1	50.8	56.6	56.9	55.2	50.5	52.5	52.2				
Six months earlier												
2022	62.0	67.3	67.7	63.3	59.9	56.1	62.6	50.8	51.2	50.2	47.5	41.4
2023	42.8	43.4	40.4	46.1	48.1	51.5	46.8	47.5	53.2	46.1	42.4	47.8
2024	35.7	49.5	50.2	50.5	56.2	54.5	55.2	55.9				
	1											

Note. The diffusion indexes are calculated as the percentage of series that increased over the indicated span (one, three, or six months) plus one-half the percentage that were unchanged.

1 57 5 5			1972-	1994-										
Item		2023	2023	95	2009	2024			2024					
		proportion	ave.	high	low	Q1	Q2 <sup>r</sup>	Q3 <sup>p</sup>	Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>
								-						Ŷ
Total industry		100.00	79.7	84.8	66.6	77.7	78.0	77.6	77.7	78.1	78.2	77.6	77.8	77.5
Manufacturing <sup>1</sup>		75.87	78.3	84.4	63.5	77.1	77.2	76.8	76.9	77.4	77.2	76.8	77.1	76.7
Manufacturing (NAICS)	31–33	74.31	78.2	84.6	63.4	77.1	77.1	76.8	76.8	77.3	77.2	76.7	77.0	76.6
Durable manufacturing		38.31	76.9	83.5	58.3	75.8	75.6	74.8	75.6	75.9	75.4	74.5	75.3	74.5
Wood products	321	1.70	76.7	86.5	48.5	75.8	75.5	74.9	74.5	76.2	75.7	74.6	74.5	75.5
Nonmetallic mineral products	327	2.23	73.7	82.4	43.9	78.2	77.7	78.6	77.6	70.2	78.4	78.9	74.5	78.4
Primary metals	331	3.10	77.5	95.0	49.5	70.2	69.6	69.0	69.2	71.6	68.1	68.8	69.0	69.2
Fabricated metal products	332	6.22	78.4	83.3	64.4	76.9	76.7	76.0	76.4	77.2	76.6	76.4	75.9	75.8
Machinery	333	5.31	77.8	83.3	58.6	81.6	80.9	80.8	81.0	81.3	80.3	81.4	80.6	80.5
Computer and electronic products	334	4.57	77.4	83.7	69.7	75.4	75.5	75.3	75.7	75.8	75.0	75.8	75.1	75.0
Electrical equip., appliances,	554	4.37	//.4	03.7	09.7	75.4	15.5	75.5	15.1	75.0	75.0	75.0	75.1	75.0
and components	335	2.07	81.9	92.3	66.4	79.6	79.9	81.5	79.0	79.7	80.9	80.7	82.5	81.2
	3361-3	5.91	75.0		33.1	79.0	79.9	70.3	79.0	72.9	72.9			
Motor vehicles and parts Aerospace and miscellaneous	3301-3	5.91	/5.0	87.3	33.1	12.8	/3.0	70.3	/3.4	72.9	72.9	66.4	72.8	71.6
transportation equipment	3364-9	3.58	73.8	72.1	72.0	70.0	71.1	69.9	70.7	71.0	71.7	71.0	72.3	66.3
Furniture and related products	337	1.11	77.4	82.7	52.3	69.0	69.8	69.8	70.1	69.0	70.3	69.8	70.1	69.3
Miscellaneous	339	2.51	77.1	80.9	68.1	80.7	78.1	75.1	79.5	78.3	76.5	76.6	74.3	74.5
Nondurable manufacturing		36.00	80.1	86.1	68.9	78.4	78.7	78.9	78.2	78.8	79.0	79.0	78.8	78.8
Food, beverage, and tobacco products	311,2	11.81	80.3	85.3	75.3	79.8	79.8	79.2	79.4	79.8	80.1	79.5	79.1	79.0
Textile and product mills	313,4	.61	78.1	91.5	54.1	68.1	69.9	70.3	68.5	70.4	70.9	70.7	71.6	68.8
Apparel and leather	315,6	.21	75.5	87.3	58.6	63.5	64.6	63.1	63.8	64.2	65.8	64.5	63.2	61.6
Paper	322	2.16	86.5	92.7	72.8	82.0	82.2	83.0	82.4	82.1	82.1	83.0	83.2	82.7
Printing and support	323	1.35	79.2	85.3	58.6	73.9	75.4	76.6	75.3	74.9	76.1	76.5	76.3	77.0
Petroleum and coal products	324	3.65	85.4	91.1	75.9	90.4	89.8	90.7	88.3	90.9	90.3	90.7	89.8	91.5
Chemicals	325	12.42	77.0	82.4	65.4	75.2	75.9	76.9	75.1	76.1	76.5	77.0	76.9	77.0
Plastics and rubber products	326	3.79	81.9	93.1	56.8	75.7	75.2	73.8	75.6	75.2	74.9	74.4	73.7	73.4
Other manufacturing (non-NAICS)	1133,5111	1.56	78.4	82.1	63.7	80.2	80.0	79.5	79.4	80.2	80.3	78.7	79.6	80.1
Mining	21	12.46	86.5	88.6	78.9	88.3	89.1	88.7	89.3	88.8	89.1	88.4	89.1	88.7
Utilities	2211,2	11.67	84.5	93.2	78.1	70.8	72.0	71.4	70.8	72.2	73.1	72.0	70.9	71.2
Selected high-technology industries	22.14	1.89	77.5	85.3	70.7	78.8	79.4	78.5	80.0	80.0	78.2	78.2	78.4	78.9
Computers and peripheral equipment	3341	.25	76.5	84.2	80.3	75.4	76.5	77.9	76.1	77.5	76.0	76.4	76.9	80.3
Communications equipment	3342	.45	75.3	85.1	76.7	74.7	73.4	72.1	73.9	73.5	73.0	72.8	72.1	71.6
Semiconductors and related				0- 0	<i></i>	00.0	04.0	00.5	0.5 -	o	0.0.5	00 -	0.0 -	
electronic components	3344	1.19	79.3	92.8	63.2	80.8	81.9	80.6	82.7	82.7	80.3	80.2	80.7	81.0
Measures excluding selected high-technology industries														
Total industry		98.11	79.8	84.8	66.4	77.7	77.9	77.6	77.6	78.1	78.2	77.6	77.8	77.5
Manufacturing <sup>1</sup>		73.99	78.3	84.3	63.0	77.1	77.1	76.8	76.8	77.3	77.2	76.7	77.0	76.6
STAGE-OF-PROCESS GROUPS														
		16.48	856	90.0	77.0	950	971	86.9	86.6	87.0	875	86.6	071	06 0
Crude			85.6			85.8	87.1		86.6	87.0	87.5 76.9		87.1	86.8
Primary and semifinished Finished		46.64 36.89	80.2 76.8	87.5 80.4	63.7 66.2	76.4	76.6 75.7	76.4 75.2	76.2	76.9 75.8	76.9	76.4 75.2	76.3 75.6	76.4 74.7

# Table 7 CAPACITY UTILIZATION Percent of capacity, seasonally adjusted

r Revised. p Preliminary. 1. The composition of manufacturing is specified in a note for the summary table.

#### Table 8 INDUSTRIAL CAPACITY Percent change

	Average ai	nnual rate		Fourth	quarter to	o fourth q	uarter		Annual	l rate		Monthly rate
1972-	1980-	1989-	1995-					2023	2024			2024
79	88	94	2024	2021	2022	2023	2024	Q4	Q1	Q2	Q3	Sept.
3.1	1.9	2.3	1.6	-2.1	1.0	2.3	1.2	1.6	1.2	1.0	1.2	.1
3.3	2.2	2.6	1.4	-1.0	.4	1.2	1.3	1.2	1.3	1.3	1.3	.1
.7	.1	7	1.0	-9.8	3.5	3.4	8	.8	4	-1.1	-1.1	1
4.4	2.2	1.8	1.8	1.3	2.3	3.6	3.6	3.5	3.4	3.5	3.6	.3
18.6	16.6	16.2	15.6	1	4.4	9.8	12.0	11.4	11 9	12.1	12.1	.9
2.6	1.2	1.7	.4	-1.1	.3	1.0	1.0	1.0	1.0	1.0	1.0	.1
1.5	.5	5	.8	-8.1	2.5	2.7	5	.6	3	8	7	.0
3.0	1.3	2.6	1.6	-1.0	.6	1.7	1.6	1.6	1.6	1.5	1.5	.1
3.9	3.2	2.8	1.4	.1	.9	1.6	1.8	1.7	1.7	1.8	1.9	.2
	1972- 79           3.1           3.3           .7           4.4           18.6           2.6           1.5           3.0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	79       88       94         3.1       1.9       2.3         3.3       2.2       2.6         .7       .1      7         4.4       2.2       1.8         18.6       16.6       16.2         2.6       1.2       1.7         1.5       .5      5         3.0       1.3       2.6	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								

1. The composition of manufacturing is specified in a note for the summary table.

# Table 9 GROSS VALUE OF FINAL PRODUCTS AND NONINDUSTRIAL SUPPLIES Billions of 2012 dollars at annual rate, seasonally adjusted 2024

Dimons of 2012 uonars at annual rate, seasona	ing adjusted										
			2024			2024					
Item	2017	2023	Q1	Q2 <sup>r</sup>	Q3 <sup>p</sup>	Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>
Final products and nonindustrial supplies	3,942.6	3,985.8	3,970.1	3,989.1	3,974.6	3,971.9	3,992.7	4,002.8	3,961.9	3,987.1	3,974.7
Final products	2,946.4	2,973.3	2,958.5	2,969.9	2,952.0	2,963.3	2,971.3	2,975.0	2,938.4	2,966.9	2,950.6
Consumer goods	2,153.2	2,187.4	2,176.3	2,186.4	2,178.0	2,181.1	2,187.9	2,190.2	2,161.8	2,183.4	2,188.7
Durable	530.6	569.5	568.5	562.8	550.7	564.7	562.5	561.2	526.8	566.6	558.8
Automotive products	375.2	413.2	410.3	408.1	397.1	409.1	407.8	407.5	371.8	415.0	404.5
Other durable goods	155.5	157.6	159.2	155.9	154.5	156.8	155.9	155.1	154.7	153.4	155.4
Nondurable	1,622.6	1,619.4	1,609.8	1,624.9	1,627.6	1,618.0	1,626.6	1,630.0	1,633.5	1,618.6	1,630.8
Equipment, total	793.2	791.5	787.7	788.8	778.9	787.6	788.6	790.2	782.0	788.9	765.8
Business and defense	770.0	766.4	763.9	765.8	755.7	764.3	765.8	767.4	759.0	765.8	742.4
Business	651.2	629.9	624.0	623.3	613.0	622.7	623.5	623.8	617.3	622.1	599.6
Defense and space	118.8	136.1	140.2	143.2	143.8	142.2	143.0	144.4	142.4	144.6	144.5
Nonindustrial supplies	996.2	1,012.8	1,011.8	1,019.4	1,022.5	1,008.9	1,021.5	1,027.8	1,023.3	1,020.3	1,024.0
Construction supplies	276.8	279.6	278.8	278.1	279.8	275.4	278.9	279.9	279.2	280.2	280.1
Business supplies	719.4	733.6	733.6	742.3	743.5	734.4	743.5	748.9	745.1	740.7	744.8
Commercial energy products	240.5	258.3	263.2	267.9	270.1	263.3	267.9	272.4	270.1	268.4	271.9

r Revised. p Preliminary.

## Table 10 GROSS-VALUE-WEIGHTED INDUSTRIAL PRODUCTION: STAGE-OF-PROCESS GROUPS

			rth quart urth quar		A	Annual r	ate			Mont	hly rate			Sept. '23
Item	2023		1		2024			2024			<b>,</b>			to
	gross value1	2021	2022	2023	Q1	Q2 <sup>r</sup>	Q3 <sup>p</sup>	Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>r</sup>	Aug. <sup>r</sup>	Sept. <sup>p</sup>	Sept. '24
Finished	2,533.9	1.2	3.2	2	2	.0	-2.8	9	.2	1	-1.3	1.5	-1.2	-1.4
Semifinished	1,980.2	2.6	1.7	-1.0	1.6	4.0	4	.5	1.0	.2	8	.5	1	.8
Primary	1,456.8	7.4	7	.3	-3.0	2.3	1	5	1.7	.0	4	8	1.3	3
Crude	745.3	6.0	.2	2.5	-6.7	5.2	5	8	.8	.6	-1.1	.6	3	-1.5

r Revised. p Preliminary.

1. Billions of 2012 dollars.

Seasonally adjusted		-							~ ~							~ ~ ~	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent																	
change) <sup>1</sup>	_		_	_			_			-	_	-					-
2002 2003	.7	.0	.8 3	.5 6	.4	.8 .1	.0 .5	1 2	.1 .6	3 .1	.5 .7	6 .1	2.9 2.5	6.3 -2.9	2.5 2.7	2 3.9	.3 1.3
2003	.0	.1	3 4	0	.0	8	.3	2	.0	.1	.7	.1	2.3	2.3	2.7	5.8	2.7
2005	.4	.7	1	.2	.1	.4	3	.3	-1.9	1.2	1.1	.5	5.7	2.3	-1.7	3.7	3.4
2006	.2	.0	.2	.3	.0	.3	1	.4	2	1	.0	1.0	3.9	2.4	1.6	1.0	2.3
2007		1.0	2	-		0	2	2	2	2			4.1	4.7		1.2	2.6
2007 2008	4 1	1.0 4	.2 3	.7 7	.1 6	.0 3	2 5	.2	.2 -4.4	3 1.0	.6 -1.3	.1	4.1	4.7 -5.9	.4 -12.6	1.3 -16.0	2.6 -3.5
2008	-2.5	4	-1.6	7	-1.0	3	1.2	1.1	.9	.2	-1.5	.3	-20.7	-10.6	6.9	6.4	-11.4
2010	1.1	.4	.7	.4	1.4	.2	.4	.4	.3	3	.1	1.0	7.9	8.0	5.4	1.7	5.6
2011	2	4	1.0	3	.1	.3	.5	.6	1	.7	.0	.5	2.2	1.6	4.5	4.2	3.1
2012	.6	.3	5	.7	.2	.0	.2	4	1	.3	.4	.3	4.0	2.5	.0	2.0	3.0
2012	0. 0.	.5	3	1	.2	.0	3	4	1	.5 1	.4	.3	3.1	1.8	.0 1.6	2.0	2.0
2014	4	.8	1.0	.1	.4	.3	.2	2	.3	.0	.6	.0	2.7	5.6	2.3	2.4	3.0
2015	8	6	3	6	5	3	.6	2	3	5	7	5	-4.4	-5.4	.2	-5.3	-1.4
2016	.5	5	8	.3	2	.5	.1	1	1	.1	4	.7	-2.7	-1.4	1.1	2	-2.1
2017	2	4	.6	1.0	.1	.2	2	5	.1	1.2	.3	.2	.3	5.8	-1.4	5.8	1.3
2017	.0	.2	.5	1.1	9	.2	.1	.7	.0	2	.1	.0	2.2	4.7	3.4	.6	3.2
2019	7	5	.0	5	.1	.1	5	.8	3	9	.6	2	-3.7	-2.3	.0	-2.0	7
2020	6	.3	-4.0	-13.2	1.6	6.6	3.6	1.0	.0	.7	.4	1.3	-6.5	-42.0	42.8	6.9	-7.1
2021	.6	-3.3	2.8	.1	.9	.5	.4	.0	-1.0	1.4	.9	1	1.1	6.5	2.6	5.1	4.4
2022	.0	.6	.8	.2	.1	1	.2	.1	.4	1	3	-1.2	3.9	3.9	1.4	-1.8	3.4
2023	.9	.1	.0	.4	2	6	.7	.0	.2	7	.3	2	.0	.3	1.2	-1.8	.2
2024	-1.1	1.2	2	2	.7	.2	6	.3	3				-1.8	2.5	6		
<b>IP</b> (2017=100)																	
2022	101.2	101.8	102.7	102.9	103.0	102.8	103.1	103.2	103.5	103.4	103.1	101.8	101.9	102.9	103.3	102.8	102.7
2023	102.7	102.8	102.8	103.2	103.0	102.4	103.1	103.1	103.3	102.6	102.9	102.6	102.8	102.9	103.2	102.7	102.9
2024	101.5	102.7	102.5	102.4	103.1	103.2	102.6	102.9	102.6				102.2	102.9	102.7		
Capacity																	
(percent of																	
2017 output)	126.0	10/ 5	126.0	126.0	12(0)	127.0	107.0	105.4	105.5	127.0	120.2	120 5	126.0	1260	105.1	120.2	105.0
2022 2023	126.8 128.8	126.7 129.1	126.8 129.4	126.8 129.7	126.9 130.0	127.0 130.3	127.2 130.5	127.4 130.7	127.7 130.9	127.9 131.1	128.2 131.2	128.5 131.3	126.8 129.1	126.9 130.0	127.4 130.7	128.2 131.2	127.3 130.3
2023	120.0	131.6	129.4	131.8	130.0	132.0	132.2	132.3	132.5	151.1	131.2	151.5	131.6	131.9	132.3	131.2	150.5
Utilization																	
(percent) 2002	74.0	73.9	74.4	74.7	74.9	75.5	75.5	75.4	75.5	75.3	75.7	75.3	74.1	75.1	75.4	75.4	75.0
2002	76.0	76.1	74.4	75.5	74.9	75.6	75.5	75.9	75.5	75.5	77.0	75.5	76.0	75.5	76.1	76.9	75.0
2004	77.2	77.7	77.4	77.7	78.3	77.7	78.3	78.4	78.5	79.1	79.3	79.9	77.4	77.9	78.4	79.4	78.3
2005	80.1	80.6	80.4	80.5	80.5	80.7	80.4	80.5	78.8	79.7	80.4	80.7	80.4	80.6	79.9	80.3	80.3
2006	80.7	80.6	80.7	80.8	80.7	80.8	80.6	80.8	80.5	80.2	80.0	80.6	80.7	80.8	80.6	80.3	80.6
2007	80.1	80.7	80.7	81.0	80.9	80.8	80.6	80.7	80.8	80.6	81.0	81.1	80.5	80.9	80.7	80.9	80.8
2007	81.1	80.8	80.7	80.2	79.7	79.5	79.2	77.9	74.4	75.0	74.0	71.8	80.9	79.8	77.1	73.6	77.8
2009	69.9	69.4	68.2	67.6	66.9	66.6	67.4	68.2	68.9	69.1	69.5	69.8	69.2	67.0	68.2	69.5	68.5
2010	70.7	71.1	71.8	72.2	73.3	73.6	74.1	74.5	74.8	74.7	74.8	75.6	71.2	73.1	74.5	75.0	73.4
2011	75.5	75.2	76.0	75.7	75.7	75.9	76.2	76.6	76.4	76.8	76.7	76.9	75.6	75.8	76.4	76.8	76.1
2012	77.2	77.3	76.8	77.2	77.2	77.1	77.1	76.7	76.5	76.7	76.8	77.0	77.1	77.2	76.8	76.8	77.0
2013	76.8	77.1	77.3	77.2	77.2	77.2	76.9	77.3	77.7	77.5	77.7	77.8	77.1	77.2	77.3	77.7	77.3
2014	77.5	78.0	78.7	78.7	79.0	79.1	79.2	79.0	79.2	79.1	79.6	79.5	78.0	78.9	79.2	79.4	78.9
2015	78.8	78.3	78.0	77.5 75.5	77.2	76.9 75.6	77.4	77.3	77.1	76.8 75.5	76.2	75.8 75.8	78.4	77.2	77.3	76.3	77.3 75.6
2016	76.2	75.8	75.2	75.5	75.3	75.6	75.7	75.6	75.5	75.5	75.2	75.8	75.8	75.5	75.6	75.5	75.6
2017	75.6	75.3	75.8	76.6	76.8	77.0	76.9	76.6	76.8	77.8	78.1	78.4	75.6	76.8	76.8	78.1	76.8
2018	78.5	78.7	79.1	80.0	79.3	80.0	80.1	80.6	80.6	80.4	80.4	80.4	78.8	79.8	80.4	80.4	79.8
2019	79.8	79.3	79.2	78.7	78.7	78.8	78.3	78.8	78.5	77.7	78.1	77.9	79.4	78.7	78.5	77.9	78.6
2020 2021	77.4 76.5	77.7 74.1	74.6 76.3	64.7 76.6	65.7 77.4	70.1 78.0	72.8 78.4	73.6 78.5	73.7 77.8	74.3 79.0	74.7 79.8	75.9 79.8	76.5	66.9 77.3	73.3 78.3	75.0 79.5	72.9 77.7
-5-1	,0.5	, 7.1	,0.5	, 0.0	, ,	, 0.0	, 0.7	,0.5	, 7.0	, ).0	, 7.0	, ).0	, 5.0	11.5	,0.5	17.5	, , /
2022	79.8	80.4	81.0	81.1	81.1	80.9	81.0	81.0	81.1	80.9	80.4	79.2	80.4	81.1	81.0	80.2	80.7
2023	79.8	79.6	79.4	79.6	79.2	78.6	79.0	78.9	78.9	78.3	78.4	78.1	79.6	79.1	78.9	78.3	79.0
2024	77.2	78.1	77.8	77.7	78.1	78.2	77.6	77.8	77.5				77.7	78.0	77.6		

## Table 11 HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Total Industry Seasonally adjusted Seasonally adjusted

1. Quarterly percentage changes are at annual rates. Annual percentage changes are calculated from annual averages.

Seasonally adjusted																	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>IP</b> (percent																	
$change)^2$																	
2002	.7	.0	.7	.3	.5	1.0	1	.1	.1	3	.5	6	3.6	5.8	3.2	5	.5
2003	.8	1	.1	8	.0	.5	.3	5	.8	.1	.9	1	2.1	-2.2	2.5	4.4	1.4
2004	1	.8	.0	.3	.7	7	.9	.5	.0	.9	.0	.8	2.7	3.3	4.0	5.5	3.1
2005	.6	.9	5	.4	.3	.2	3	.5	-1.1	1.4	.9	.1	6.4	2.6	6	6.1	4.1
2006	.8	3	.0	.3	2	.3	3	.7	.1	5	.1	1.5	3.9	.7	1.1	1.7	2.6
2007	4	.3	.8	.6	1	.3	1	3	.3	2	.5	.2	4.7	5.5	.1	1.3	2.8
2007	2	7	4	-1.0	6	7	-1.1	-1.3	-3.4	6	-2.5	-3.4	-2.0	-8.4	-14.1	-22.0	-4.8
2009	-3.2	1	-1.8	7	-1.0	2	1.6	1.1	1.0	.1	1.0	1	-24.7	-10.3	9.1	7.2	-13.8
2010	1.0	1	1.3	.8	1.3	.0	.5	.1	.1	.1	.1	.5	6.7	10.4	4.3	1.6	6.0
2011	.0	.2	.6	5	.0	.1	.6	.4	.3	.5	2	.7	3.0	2	4.2	3.8	2.9
2012	0	4	5	5	2	2	2	1	2	2	(	7	5.4	5	1.0	1.1	26
2012 2013	.8 3	.4 .4	5 1	.5 3	3 .3	.3 .2	2 8	1 .9	2 .1	2 .1	.6 .0	.7 2	5.4 2.7	.5 .2	-1.2 .2	1.1 1.7	2.6 .9
2013	-1.1	.4	1	.0	.3	.2	8	6	.0	1	.0	2	-1.1	4.7	1.4	.3	1.1
2015	6	8	.4	.0	.0	4	.7	3	3	1	2	3	-3.4	6	.8	-2.6	5
2016	.4	3	1	1	1	.2	.1	4	.2	.1	1	.0	6	-1.1	.0	.5	8
2017	.2	1	4	1.1	2	.1	4	2	0.	1.1	.1	2	.0	3.1	-2.2	4.1	.6
2018 2019	3 9	.8 5	1 2	.7 7	8 .1	.7 .5	.0 7	.3 .7	.0 7	5 9	3 .9	.3 .1	.4 -4.7	2.3 -3.1	1.6 8	-1.7 -2.1	1.3 -2.0
2019	9	3	-4.6	-15.4	4.4	7.8	3.5	1.5	.0	9	.9	.1	-4.7	-43.7	8	-2.1	-2.0
2020	.9	-4.0	3.1	.0	1.1	.1	.8	3	9	1.4	.0	.1	4	5.8	3.0	5.3	4.9
2022	6	.9	.9	.0	2	3	.1	.2	.2	.1	7	-1.8	2.7	2.5	.0	-3.0	2.7
2023	1.8	1	6	.7	1	6	.3	.1	.1	7	.5	1	.3	2	4	-1.4	5
2024	-1.3	1.4	.2	7	.7	1	5	.5	4				9	1.4	4		
<b>IP</b> (2017=100)																	
2022	98.8	99.7	100.6	100.6	100.4	100.0	100.1	100.3	100.6	100.7	99.9	98.1	99.7	100.3	100.3	99.6	100.0
2022	99.9	99.8	99.2	99.9	99.8	99.2	99.4	99.5	99.6	98.9	99.3	99.2	99.7	99.6	99.5	99.1	99.5
2024	97.9	99.3	99.5	98.8	99.5	99.5	99.0	99.5	99.1				98.9	99.3	99.2		
Capacity (percent of 2017 output)	105 7	105 7	105 7	105 7	125.0	125.0	125.0	126.0	126.1	126.2	10( )	106.4	105 7	125 0	126.0	126.2	125.0
2022 2023	125.7 126.5	125.7 126.6	125.7 126.8	125.7 126.9	125.8 127.0	125.8 127.2	125.9 127.3	126.0 127.4	126.1 127.6	126.2 127.7	126.3 127.8	126.4 128.0	125.7 126.6	125.8 127.0	126.0 127.4	126.3 127.8	125.9 127.2
2023	120.5	120.0	120.8	120.9	127.0	127.2	127.5	127.4	127.0	127.7	127.0	126.0	128.2	127.0	127.4	127.0	127.2
2021	12011	12012	12011	120.0	12010	12010	12017	12/11	12/12				120.2	12010	12/11		
Utilization																	
(percent)																	
2002	72.1	72.0	72.4	72.6	73.0	73.7	73.6	73.6	73.7	73.4	73.8	73.4	72.2	73.1	73.6	73.6	73.1
2003 2004	74.0 75.1	73.9 75.7	74.0 75.7	73.4 76.0	73.5 76.6	73.8 76.1	74.1 76.8	73.8 77.1	74.4 77.1	74.5 77.7	75.2 77.7	75.2 78.2	74.0 75.5	73.6 76.2	74.1 77.0	75.0 77.9	74.1 76.6
2004	78.6	79.1	78.6	78.8	78.9	78.9	78.4	78.7	77.7	78.6	79.2	79.1	78.8	78.9	78.3	78.9	78.7
2006	79.5	79.2	79.0	79.2	78.9	78.9	78.5	78.9	78.8	78.3	78.2	79.2	79.3	79.0	78.8	78.6	78.9
2007	78.7	78.8	79.2	79.5	79.2	79.3	79.1	78.7	78.8	78.5	78.8	78.9	78.9	79.3	78.8	78.7	79.0
2008	78.7	78.2	77.9	77.1	76.7	76.2	75.5	74.6	72.1	71.8	70.1	67.8	78.3	76.7	74.1	69.9	74.7
2009 2010	65.7 67.8	65.7 67.8	64.6 68.8	64.2 69.5	63.6 70.5	63.5 70.6	64.6 71.1	65.4 71.3	66.2 71.5	66.3 71.7	67.0 71.8	67.0 72.3	65.3 68.2	63.8 70.2	65.4 71.3	66.8 71.9	65.3 70.4
2010	72.4	72.6	73.1	72.8	70.3	70.8	73.3	73.6	73.8	74.1	73.9	74.3	72.7	70.2	73.6	74.1	73.3
2011	, 2.1	, 2.0	, 5.1	, 2.0	, 2.0	. 2.)	, 5.5	10.0	, 5.0	, 1.1	.5.7	, 110	, 2.,	, 2.0	1010	,	, 5.5
2012	710		746		715	747	744	74.3	74.0	73.8	74.2	74.7	74.8	74.7	74.2	<b>- ( )</b>	74.5
2013	74.9	75.1	74.6	74.9	74.5	74.7	74.4	74.5						,,	74.2	74.3	
	74.5	74.7	74.6	74.4	74.6	74.8	74.2	74.8	74.9	75.0	75.0	74.9	74.6	74.6	74.6	75.0	74.7
2014	74.5 74.2	74.7 74.9	74.6 75.6	74.4 75.6	74.6 75.9	74.8 76.2	74.2 76.6	74.8 76.2	74.9 76.3	75.0 76.3	75.0 76.9	74.9 76.8	74.6 74.9	74.6 75.9	74.6 76.4	75.0 76.7	76.0
2014 2015	74.5 74.2 76.5	74.7 74.9 76.0	74.6 75.6 76.3	74.4 75.6 76.4	74.6 75.9 76.5	74.8 76.2 76.2	74.2 76.6 76.9	74.8 76.2 76.6	74.9 76.3 76.4	75.0 76.3 76.3	75.0 76.9 76.1	74.9 76.8 75.9	74.6 74.9 76.3	74.6 75.9 76.4	74.6 76.4 76.6	75.0 76.7 76.1	76.0 76.4
2014	74.5 74.2	74.7 74.9	74.6 75.6	74.4 75.6	74.6 75.9	74.8 76.2	74.2 76.6	74.8 76.2	74.9 76.3	75.0 76.3	75.0 76.9	74.9 76.8	74.6 74.9	74.6 75.9	74.6 76.4	75.0 76.7	76.0
2014 2015 2016	74.5 74.2 76.5 76.2	74.7 74.9 76.0 75.9	74.6 75.6 76.3 75.8	74.4 75.6 76.4 75.6	74.6 75.9 76.5 75.5	74.8 76.2 76.2 75.7	74.2 76.6 76.9 75.7	74.8 76.2 76.6 75.4	74.9 76.3 76.4 75.5	75.0 76.3 76.3 75.6	75.0 76.9 76.1 75.6	74.9 76.8 75.9 75.6	74.6 74.9 76.3 75.9	74.6 75.9 76.4 75.6	74.6 76.4 76.6 75.5	75.0 76.7 76.1 75.6	76.0 76.4 75.7
2014 2015 2016 2017	74.5 74.2 76.5	74.7 74.9 76.0 75.9 75.8	74.6 75.6 76.3 75.8 75.6	74.4 75.6 76.4 75.6 76.5	74.6 75.9 76.5 75.5 76.5	74.8 76.2 76.2 75.7 76.6	74.2 76.6 76.9 75.7 76.5	74.8 76.2 76.6 75.4 76.4	74.9 76.3 76.4	75.0 76.3 76.3	75.0 76.9 76.1 75.6 77.6	74.9 76.8 75.9 75.6 77.5	74.6 74.9 76.3	74.6 75.9 76.4 75.6 76.6	74.6 76.4 76.6 75.5 76.5	75.0 76.7 76.1 75.6 77.5	76.0 76.4 75.7 76.6
2014 2015 2016	74.5 74.2 76.5 76.2 75.8	74.7 74.9 76.0 75.9	74.6 75.6 76.3 75.8	74.4 75.6 76.4 75.6	74.6 75.9 76.5 75.5	74.8 76.2 76.2 75.7	74.2 76.6 76.9 75.7	74.8 76.2 76.6 75.4	74.9 76.3 76.4 75.5 76.5	75.0 76.3 76.3 75.6 77.4	75.0 76.9 76.1 75.6	74.9 76.8 75.9 75.6	74.6 74.9 76.3 75.9 75.7	74.6 75.9 76.4 75.6	74.6 76.4 76.6 75.5	75.0 76.7 76.1 75.6	76.0 76.4 75.7
2014 2015 2016 2017 2018 2019 2020	74.5 74.2 76.5 76.2 75.8 77.4 78.0 76.9	74.7 74.9 76.0 75.9 75.8 78.1 77.6 77.1	74.6 75.6 76.3 75.8 75.6 78.1 77.4 73.6	74.4 75.6 76.4 75.6 76.5 78.7 77.0 62.3	74.6 75.9 76.5 75.5 76.5 78.1 77.0 65.1	74.8 76.2 76.2 75.7 76.6 78.6 77.4 70.2	74.2 76.6 76.9 75.7 76.5 78.7 76.9 72.8	74.8 76.2 76.6 75.4 76.4 78.9 77.4 74.0	74.9 76.3 76.4 75.5 76.5 79.0	75.0 76.3 76.3 75.6 77.4 78.6 76.3 74.8	75.0 76.9 76.1 75.6 77.6 78.4 76.9 75.4	74.9 76.8 75.9 75.6 77.5 78.7 77.1 76.0	74.6 74.9 76.3 75.9 75.7 77.9 77.7 75.9	74.6 75.9 76.4 75.6 76.6 78.5 77.1 65.9	74.6 76.4 76.6 75.5 76.5 78.9 77.1 73.6	75.0 76.7 76.1 75.6 77.5 78.6 76.8 75.4	76.0 76.4 75.7 76.6 78.4 77.2 72.7
2014 2015 2016 2017 2018 2019	74.5 74.2 76.5 76.2 75.8 77.4 78.0	74.7 74.9 76.0 75.9 75.8 78.1 77.6	74.6 75.6 76.3 75.8 75.6 78.1 77.4	74.4 75.6 76.4 75.6 76.5 78.7 77.0	74.6 75.9 76.5 75.5 76.5 78.1 77.0	74.8 76.2 75.7 76.6 78.6 77.4	74.2 76.6 76.9 75.7 76.5 78.7 76.9	74.8 76.2 76.6 75.4 76.4 78.9 77.4	74.9 76.3 76.4 75.5 76.5 79.0 76.9	75.0 76.3 76.3 75.6 77.4 78.6 76.3	75.0 76.9 76.1 75.6 77.6 78.4 76.9	74.9 76.8 75.9 75.6 77.5 78.7 77.1	74.6 74.9 76.3 75.9 75.7 77.9 77.7	74.6 75.9 76.4 75.6 76.6 78.5 77.1	74.6 76.4 76.6 75.5 76.5 78.9 77.1	75.0 76.7 76.1 75.6 77.5 78.6 76.8	76.0 76.4 75.7 76.6 78.4 77.2
2014 2015 2016 2017 2018 2019 2020 2021	74.5 74.2 76.5 76.2 75.8 77.4 78.0 76.9 76.8	74.7 74.9 76.0 75.9 75.8 78.1 77.6 77.1 73.8	74.6 75.6 76.3 75.8 75.6 78.1 77.4 73.6 76.2	74.4 75.6 76.4 75.6 76.5 78.7 77.0 62.3 76.3	74.6 75.9 76.5 75.5 76.5 78.1 77.0 65.1 77.2	74.8 76.2 75.7 76.6 78.6 77.4 70.2 77.3	74.2 76.6 76.9 75.7 76.5 78.7 76.9 72.8 78.0	74.8 76.2 76.6 75.4 76.4 78.9 77.4 74.0 77.8	74.9 76.3 76.4 75.5 76.5 79.0 76.9 74.1 77.1	75.0 76.3 76.3 75.6 77.4 78.6 76.3 74.8 78.3	75.0 76.9 76.1 75.6 77.6 78.4 76.9 75.4 79.0	74.9 76.8 75.9 75.6 77.5 78.7 77.1 76.0 79.1	74.6 74.9 76.3 75.9 75.7 77.9 77.7 75.9 75.6	74.6 75.9 76.4 75.6 76.6 78.5 77.1 65.9 76.9	74.6 76.4 76.6 75.5 76.5 78.9 77.1 73.6 77.7	75.0 76.7 76.1 75.6 77.5 78.6 76.8 75.4 78.8	76.0 76.4 75.7 76.6 78.4 77.2 72.7 77.2
2014 2015 2016 2017 2018 2019 2020 2021 2022	74.5 74.2 76.5 76.2 75.8 77.4 78.0 76.9 76.8 78.6	74.7 74.9 76.0 75.9 75.8 78.1 77.6 77.1 73.8 79.3	74.6 75.6 76.3 75.8 75.6 78.1 77.4 73.6 76.2 80.1	74.4 75.6 76.4 75.6 76.5 78.7 77.0 62.3 76.3 80.0	74.6 75.9 76.5 75.5 76.5 78.1 77.0 65.1 77.2 79.8	74.8 76.2 75.7 76.6 78.6 77.4 70.2 77.3 79.5	74.2 76.6 76.9 75.7 76.5 78.7 76.9 72.8 78.0 79.5	74.8 76.2 76.6 75.4 76.4 78.9 77.4 74.0 77.8 79.6	74.9 76.3 76.4 75.5 76.5 79.0 76.9 74.1 77.1 79.8	75.0 76.3 76.3 75.6 77.4 78.6 76.3 74.8 78.3 79.8	75.0 76.9 76.1 75.6 77.6 78.4 76.9 75.4 79.0 79.1	74.9 76.8 75.9 75.6 77.5 78.7 77.1 76.0 79.1 77.6	74.6 74.9 76.3 75.9 75.7 77.9 77.7 75.9 75.6 79.3	74.6 75.9 76.4 75.6 76.6 78.5 77.1 65.9 76.9 76.9	74.6 76.4 76.6 75.5 76.5 78.9 77.1 73.6 77.7 79.6	75.0 76.7 76.1 75.6 77.5 78.6 76.8 75.4 78.8 78.8	76.0 76.4 75.7 76.6 78.4 77.2 72.7 77.2 79.4
2014 2015 2016 2017 2018 2019 2020 2021 2022 2022 2023	74.5 74.2 76.5 76.2 75.8 77.4 78.0 76.9 76.8 78.6 78.6 79.0	74.7 74.9 76.0 75.9 75.8 78.1 77.6 77.1 73.8 79.3 78.8	74.6 75.6 76.3 75.8 75.6 78.1 77.4 73.6 76.2 80.1 78.3	74.4 75.6 76.4 75.6 76.5 78.7 77.0 62.3 76.3 80.0 78.7	74.6 75.9 76.5 75.5 76.5 78.1 77.0 65.1 77.2 79.8 78.5	74.8 76.2 75.7 76.6 78.6 77.4 70.2 77.3 79.5 78.0	74.2 76.6 76.9 75.7 76.5 78.7 76.9 72.8 78.0 79.5 78.1	74.8 76.2 76.6 75.4 76.4 78.9 77.4 74.0 77.8 79.6 78.1	74.9 76.3 76.4 75.5 76.5 79.0 76.9 74.1 77.1 79.8 78.1	75.0 76.3 76.3 75.6 77.4 78.6 76.3 74.8 78.3	75.0 76.9 76.1 75.6 77.6 78.4 76.9 75.4 79.0	74.9 76.8 75.9 75.6 77.5 78.7 77.1 76.0 79.1	74.6 74.9 76.3 75.9 75.7 77.9 77.7 75.9 75.6 79.3 78.7	74.6 75.9 76.4 75.6 76.6 78.5 77.1 65.9 76.9 76.9 79.8 78.4	74.6 76.4 76.6 75.5 76.5 78.9 77.1 73.6 77.7 79.6 78.1	75.0 76.7 76.1 75.6 77.5 78.6 76.8 75.4 78.8	76.0 76.4 75.7 76.6 78.4 77.2 72.7 77.2
2014 2015 2016 2017 2018 2019 2020 2021 2022	74.5 74.2 76.5 76.2 75.8 77.4 78.0 76.9 76.8 78.6	74.7 74.9 76.0 75.9 75.8 78.1 77.6 77.1 73.8 79.3	74.6 75.6 76.3 75.8 75.6 78.1 77.4 73.6 76.2 80.1	74.4 75.6 76.4 75.6 76.5 78.7 77.0 62.3 76.3 80.0	74.6 75.9 76.5 75.5 76.5 78.1 77.0 65.1 77.2 79.8	74.8 76.2 75.7 76.6 78.6 77.4 70.2 77.3 79.5	74.2 76.6 76.9 75.7 76.5 78.7 76.9 72.8 78.0 79.5	74.8 76.2 76.6 75.4 76.4 78.9 77.4 74.0 77.8 79.6	74.9 76.3 76.4 75.5 76.5 79.0 76.9 74.1 77.1 79.8	75.0 76.3 76.3 75.6 77.4 78.6 76.3 74.8 78.3 79.8	75.0 76.9 76.1 75.6 77.6 78.4 76.9 75.4 79.0 79.1	74.9 76.8 75.9 75.6 77.5 78.7 77.1 76.0 79.1 77.6	74.6 74.9 76.3 75.9 75.7 77.9 77.7 75.9 75.6 79.3	74.6 75.9 76.4 75.6 76.6 78.5 77.1 65.9 76.9 76.9	74.6 76.4 76.6 75.5 76.5 78.9 77.1 73.6 77.7 79.6	75.0 76.7 76.1 75.6 77.5 78.6 76.8 75.4 78.8 78.8	76.0 76.4 75.7 76.6 78.4 77.2 72.7 77.2 79.4

# Table 12 HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing<sup>1</sup> Seasonally adjusted

I. The composition of manufacturing is specified in a note for the summary table.
 Quarterly percentage changes are at annual rates. Annual percentage changes are calculated from annual averages.

Seasonally adjusted									<u> </u>	0.1			01			0.1	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>IP</b> (percent																	
change) <sup>2</sup> 2002	.8	2	.8	.5	.4	.8	1	2	.1	3	.5	6	2.7	6.0	1.9	8	.3
2003	.8	.0	4	8	2	.0	.3	4	.6	.0	.6	.0	1.5	-4.7	.8	2.6	.2
2004 2005	.0	.6 .6	4 2	.4	.7 .0	8 .4	.8 4	.0	.0 -2.2	.9 1.2	.2	.7 .4	1.9 4.7	2.2	2.0 -2.9	5.4 2.5	1.8 2.6
2005	.1	.0	.2	.3	1	.3	1	.2	3	2	1	1.0	3.3	1.8	.8	.2	1.4
2007	4	.9	.0	.5	.1	.1	2	.1	.1	5	.4	1	3.3	3.8	.3	4	1.8
2008	2	5	5	8	7	3	4	-1.6	-4.5	1.3	-1.1	-2.7	-2.3	-6.9	-12.5	-14.9	-4.3
2009 2010	-2.5 1.0	7 .2	-1.7 .6	9 .3	-1.1 1.4	4 .2	1.2 .3	1.1 .3	.8 .3	.2 3	.3 .0	.3 .9	-20.6 6.7	-11.5 7.3	6.7 5.1	5.8 1.1	-11.4 4.9
2010	3	4	1.1	3	.1	.2	.5	.6	1	3	.0	.5	1.6	1.6	4.5	4.2	2.8
2012	.6	.3	6	.7	.2	.0	.2	4	1	.3	.4	.3	3.6	2.1	2	1.7	2.8
2013	1	.5	.4	2	.1	.2	4	.6	.5	2	.2	.2	2.9	1.5	1.2	2.5	1.7
2014 2015	4	.7 7	1.0 4	.1 6	.4 5	.3 3	.2 .7	2 2	.3 3	.0 5	.6 7	.0 5	2.6 -4.5	5.3 -5.7	2.1	2.3 -5.5	2.8 -1.5
2015	.5	5	8	.3	3	.5	.1	1	1	.0	4	.7	-2.9	-1.6	.8	6	-2.4
2017	2	4	.6	1.0	.1	.2	2	5	.1	1.2	.2	.2	.3	5.6	-1.4	5.6	1.1
2018	.0	.3	.5	1.1	-1.0	.8	.1	.7	.1	2	.1	.0	2.1	4.7	3.1	.7	3.0
2019 2020	7 6	6 .4	.0	6 -13.5	.1 1.6	.1 6.7	5 3.7	.8 1.0	3 1	9 .6	.5 .4	2 1.3	-4.0 -6.6	-2.4 -42.6	1 43.7	-2.1 6.5	8 -7.3
2021	.6	-3.4	2.8	.1	.9	.5	.5	.0	-1.1	1.4	.9	1	1.0	6.4	3.0	4.9	4.3
2022	.0	.6	.8	.2	.0	2	.2	.1	.3	1	3	-1.2	3.8	3.9	1.2	-1.8	3.4
2023	.9	.0	.0	.4	3	6	.7	.0	.2	8	.3	3	0.	.0	1.0	-2.0	.1
2024	-1.1	1.3	2	2	.7	.2	6	.3	3				-1.9	2.3	8		
<b>IP</b> (2017=100)	100 (	101.2	102.0	102.2	102.2	102.2	102.4	100 5	102.0	102.0	102.4	101.2	101.2	102.2	102 (	102.1	102.1
2022 2023	100.6	101.2 102.1	102.0 102.1	102.3 102.5	102.3 102.2	102.2 101.6	102.4 102.3	102.5 102.3	102.8 102.5	102.8 101.8	102.4 102.0	101.2 101.8	101.3 102.1	102.3 102.1	102.6 102.4	102.1 101.9	102.1 102.1
2024	100.6	101.9	101.7	101.4	102.1	102.3	101.6	102.0	101.6				101.4	102.0	101.8		
<b>Capacity</b> (percent of																	
2017 output)																	
2022 2023	126.1 128.0	126.0 128.3	126.0 128.6	126.1 128.9	126.2 129.1	126.3 129.4	126.5 129.6	126.7 129.8	126.9 129.9	127.2 130.1	127.4 130.2	127.7 130.3	126.0 128.3	126.2 129.1	126.7 129.8	127.4 130.2	126.6 129.4
2023	130.4	130.5	130.6	130.7	130.8	130.9	131.0	131.1	131.2	150.1	150.2	150.5	130.5	130.8	131.1	150.2	129.4
Utilization																	
(percent)																	
2002 2003	75.4	75.2 77.3	75.7 77.1	76.1 76.5	76.4 76.5	77.0 76.5	76.9 76.8	76.8 76.5	76.8 77.0	76.7 77.0	77.1 77.5	76.7 77.6	75.4 77.2	76.5 76.5	76.8 76.8	76.8 77.4	76.4 77.0
2004	77.6	78.1	77.8	78.2	78.8	78.2	78.8	78.9	79.0	79.7	79.9	80.5	77.9	78.4	78.9	80.0	78.8
2005 2006	80.7 80.9	81.2 80.8	81.0 80.8	81.0 80.9	81.0 80.7	81.3 80.8	80.8 80.6	80.9 80.8	79.1 80.4	79.9 80.1	80.7 79.9	80.9 80.6	80.9 80.8	81.1 80.8	80.3 80.6	80.5 80.2	80.7 80.6
2007 2008	80.2 81.4	80.8 81.0	80.7 80.7	81.1 80.1	81.1 79.6	81.2 79.3	81.1 79.0	81.2 77.6	81.4 74.0	81.0 74.8	81.4 73.9	81.4 71.8	80.6 81.0	81.2 79.7	81.2 76.9	81.3 73.5	81.1 77.8
2009	69.8	69.3	68.0	67.4	66.6	66.4	67.2	68.0	68.7	68.9	69.3	69.6	69.1	66.8	68.0	69.3	68.3
2010 2011	70.5	70.8 74.9	71.5 75.8	71.9 75.5	73.0 75.6	73.4 75.8	73.8 76.1	74.2 76.5	74.5 76.4	74.4 76.9	74.5 76.8	75.3 77.1	70.9 75.3	72.8 75.6	74.2 76.3	74.8 76.9	73.2 76.0
2012 2013	77.4	77.5 77.4	76.9 77.6	77.4 77.5	77.4 77.4	77.3 77.5	77.3 77.2	76.9 77.6	76.7 78.0	76.8 77.8	77.1 78.0	77.2 78.1	77.3 77.4	77.3 77.5	77.0 77.6	77.0 78.0	77.2 77.6
2014	77.7	78.3	79.0	79.0	79.2	79.4	79.5	79.2	79.4	79.3	79.8	79.7	78.3	79.2	79.4	79.6	79.1
2015	79.0 76.4	78.5 76.0	78.2 75.4	77.7 75.6	77.3 75.4	77.1 75.8	77.6 75.9	77.5 75.8	77.3 75.6	76.9 75.6	76.4 75.3	76.0 75.9	78.5 75.9	77.3 75.6	77.4 75.8	76.4 75.6	77.4
2016				75.6	75.4			13.8						75.6	75.8	75.6	75.7
2017 2018	75.7 78.4	75.4 78.7	75.9 79.1	76.7 80.1	76.8 79.3	77.0 80.0	76.9 80.0	76.6 80.6	76.8 80.6	77.8 80.4	78.1 80.5	78.3 80.4	75.7 78.7	76.8 79.8	76.8 80.4	78.1 80.4	76.9 79.8
2018 2019	79.8	79.3	79.1	80.1 78.7	79.3 78.8	80.0 78.8	80.0 78.3	80.6 78.8	80.6 78.5	80.4 77.8	80.5 78.2	80.4 77.9	79.5	79.8 78.8	80.4 78.5	80.4 78.0	79.8 78.7
2020	77.4	77.7	74.6	64.5	65.6	70.1	72.8	73.6	73.6	74.2	74.7	75.8	76.6	66.7	73.3	74.9	72.9
2021	76.5	74.0	76.3	76.5	77.4	77.9	78.4	78.6	77.8	79.0	79.8	79.8	75.6	77.3	78.3	79.5	77.7
2022	79.8	80.3	81.0	81.1	81.1	80.9	81.0	80.9	81.0	80.8	80.4	79.2	80.4	81.0	81.0	80.1	80.6
2023 2024	79.8	79.6 78.0	79.4 77.8	79.5 77.6	79.2 78.1	78.5 78.2	78.9 77.6	78.8 77.8	78.9 77.5	78.2	78.4	78.1	79.6 77.7	79.1 77.9	78.9 77.6	78.2	78.9

# Table 13<br/>HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Total Industry Excluding SelectedHigh-Technology Industries!<br/>Seasonally adjustedVarIanLanFebMar.Apr.MayJuneJuneJulyAug.Sept.Oct.Nov.Dec.Q1Q2Q3Q4Annual

Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.
 Quarterly percentage changes are at annual rates. Annual percentage changes are calculated from annual averages.

Seasonally adjusted																	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>IP</b> (percent																	
change) <sup>3</sup>																	
2002	.8	2	.7	.2	.5	1.0	2	.0	.0	4	.4	7	3.3	5.4	2.6	-1.1	.4
2003	.7	3	.0	9	1	.3	.1	7	.7	1	.8	2	.8	-4.2	.2	2.7	.0
2004	2	.7	1	.4	.7	7	.9	.4	1	.9	1	.7	1.5	3.2	3.8	4.9	2.0
2005 2006	.5	.8 4	6 1	.3 .3	.2 4	.1 .2	5 4	.4	-1.4 1	1.4 5	.9 .1	.0 1.5	5.1 3.2	1.4 2	-2.1	4.7	3.1
2000	.0	4	1	.5	4	.2	4	.0	1	5	.1	1.5	3.2	2	.0	.6	1.5
2007	4	.2	.6	.4	.0	.5	1	4	.1	4	.3	.0	3.7	4.4	.1	-1.0	1.8
2008	3	9	6	-1.2	7	8	-1.0	-1.3	-3.5	4	-2.3	-3.2	-3.9	-9.9	-14.1	-20.8	-5.9
2009	-3.3	1	-2.0	8	-1.1	3	1.6	1.1	1.0	.0	.9	2	-24.8	-11.5	8.8	6.5	-13.9
2010	.9	3	1.2	.8	1.3	.0	.5	.1	.0	.0	.0	.4	5.1	9.6	3.8	.9	5.1
2011	.0	.1	.7	6	.0	.1	.6	.4	.3	.6	2	.6	2.2	3	4.1	3.9	2.5
2012	.8	.3	6	.4	4	.2	2	1	3	3	.6	.7	4.9	1	-1.5	.6	2.3
2013	3	.4	1	4	.3	.2	9	.9	.1	.1	.0	2	2.5	4	4	1.4	.5
2014	-1.1	.9	.8	1	.2	.3	.4	6	.0	1	.7	2	-1.4	4.3	1.2	.2	.8
2015	6	8	.4	1	.0	4	.8	3	3	2	2	3	-3.6	8	.8	-2.8	7
2016	.4	4	1	2	1	.2	.0	4	.1	.1	1	.0	9	-1.4	4	1	-1.0
2017	.2	1	4	1.1	2	.1	4	2	.0	1.1	.0	3	.0	2.7	-2.2	3.8	.3
2018	4	.9	1	.7	9	.6	.0	.2	.0	5	2	.3	.2	2.2	1.2	-1.7	1.1
2019	-1.0	6	3	7	.1	.5	8	.7	7	9	.8	.1	-5.1	-3.3	9	-2.2	-2.2
2020	3	.2	-4.8	-15.8	4.6	8.0	3.6	1.6	0.	.8	.6	.7	-5.4	-44.5	55.6	7.9	-6.8
2021	1.0	-4.1	3.2	.0	1.1	.1	.9	3	-1.0	1.4	.9	.0	7	5.6	3.5	5.1	4.8
2022	6	.9	1.0	.0	3	4	.0	.2	.2	.1	7	-1.8	2.5	2.4	3	-3.0	2.6
2023	1.9	1	7	.6	1	6	.2	.1	.1	8	.5	1	.4	6	6	-1.7	7
2024	-1.3	1.4	.2	8	.7	1	5	.5	4				-1.0	1.0	5		
<b>IP</b> (2017=100)																	
2022	98.0	98.8	99.8	99.7	99.5	99.1	99.1	99.4	99.6	99.7	99.0	97.2	98.9	99.5	99.4	98.6	99.1
2022	99.0	98.9	98.2	98.9	98.7	98.1	98.3	98.4	98.5	97.7	98.2	98.0	98.7	98.5	98.4	98.0	98.4
2024	96.7	98.1	98.3	97.5	98.2	98.2	97.7	98.1	97.7				97.7	98.0	97.8		
Capacity																	
(percent of																	
	124.7	124.7	124.7	124.8	124.8	124.8	124.9	124.9	125.0	125.1	125.2	125.3	124.7	124.8	124.9	125.2	124.9
(percent of 2017 output) 2022 2023	125.4	125.5	125.6	125.7	125.8	125.9	126.0	126.1	126.2	125.1 126.4	125.2 126.5	125.3 126.6	125.5	125.8	126.1	125.2 126.5	124.9 126.0
(percent of 2017 output) 2022																	
(percent of 2017 output) 2022 2023 2024	125.4	125.5	125.6	125.7	125.8	125.9	126.0	126.1	126.2				125.5	125.8	126.1		
(percent of 2017 output) 2022 2023 2024 Utilization	125.4	125.5	125.6	125.7	125.8	125.9	126.0	126.1	126.2				125.5	125.8	126.1		
(percent of 2017 output) 2022 2023 2024	125.4	125.5	125.6	125.7	125.8	125.9	126.0	126.1	126.2				125.5	125.8	126.1		
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003	125.4 126.7 73.5 75.4	125.5 126.8 73.3 75.2	125.6 126.9 73.8 75.2	125.7 127.0	125.8 127.1 74.4 74.5	125.9 127.2	126.0 127.3 75.1 74.9	126.1 127.4 75.1 74.4	126.2 127.5	126.4	126.5 75.3 75.7	126.6 74.8 75.6	125.5 126.8 73.5 75.3	125.8 127.1	126.1 127.4 75.1 74.8	126.5 75.0 75.4	126.0 74.5 75.0
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004	125.4 126.7 73.5 75.4 75.5	125.5 126.8 73.3 75.2 76.1	125.6 126.9 73.8 75.2 76.1	125.7 127.0 74.0 74.6 76.4	125.8 127.1 74.4 74.5 77.0	125.9 127.2 75.2 74.7 76.5	126.0 127.3 75.1 74.9 77.3	126.1 127.4 75.1 74.4 77.6	126.2 127.5 75.1 75.0 77.6	126.4 74.9 75.0 78.3	126.5 75.3 75.7 78.3	126.6 74.8 75.6 78.8	125.5 126.8 73.5 75.3 75.9	125.8 127.1 74.5 74.6 76.7	126.1 127.4 75.1 74.8 77.5	126.5 75.0 75.4 78.5	126.0 74.5 75.0 77.1
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005	125.4 126.7 73.5 75.4 75.5 79.2	125.5 126.8 73.3 75.2 76.1 79.7	125.6 126.9 73.8 75.2 76.1 79.2	125.7 127.0 74.0 74.6 76.4 79.3	125.8 127.1 74.4 74.5 77.0 79.4	125.9 127.2 75.2 74.7 76.5 79.4	126.0 127.3 75.1 74.9 77.3 78.9	126.1 127.4 75.1 74.4 77.6 79.1	126.2 127.5 75.1 75.0 77.6 77.9	74.9 75.0 78.3 78.8	75.3 75.7 78.3 79.4	74.8 75.6 78.8 79.2	125.5 126.8 73.5 75.3 75.9 79.3	125.8 127.1 74.5 74.6 76.7 79.4	126.1 127.4 75.1 74.8 77.5 78.6	75.0 75.4 78.5 79.1	74.5 75.0 77.1 79.1
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004	125.4 126.7 73.5 75.4 75.5	125.5 126.8 73.3 75.2 76.1	125.6 126.9 73.8 75.2 76.1	125.7 127.0 74.0 74.6 76.4	125.8 127.1 74.4 74.5 77.0	125.9 127.2 75.2 74.7 76.5	126.0 127.3 75.1 74.9 77.3	126.1 127.4 75.1 74.4 77.6	126.2 127.5 75.1 75.0 77.6	126.4 74.9 75.0 78.3	126.5 75.3 75.7 78.3	126.6 74.8 75.6 78.8	125.5 126.8 73.5 75.3 75.9	125.8 127.1 74.5 74.6 76.7	126.1 127.4 75.1 74.8 77.5	126.5 75.0 75.4 78.5	126.0 74.5 75.0 77.1
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005	125.4 126.7 73.5 75.4 75.5 79.2	125.5 126.8 73.3 75.2 76.1 79.7	125.6 126.9 73.8 75.2 76.1 79.2	125.7 127.0 74.0 74.6 76.4 79.3	125.8 127.1 74.4 74.5 77.0 79.4	125.9 127.2 75.2 74.7 76.5 79.4	126.0 127.3 75.1 74.9 77.3 78.9	126.1 127.4 75.1 74.4 77.6 79.1	126.2 127.5 75.1 75.0 77.6 77.9	74.9 75.0 78.3 78.8	75.3 75.7 78.3 79.4	74.8 75.6 78.8 79.2	125.5 126.8 73.5 75.3 75.9 79.3	125.8 127.1 74.5 74.6 76.7 79.4	126.1 127.4 75.1 74.8 77.5 78.6	75.0 75.4 78.5 79.1	74.5 75.0 77.1 79.1
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3	125.9 127.2 74.7 76.5 79.4 78.8 79.7 75.8	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5	74.9 75.0 78.3 78.8 78.1 78.9 71.3	75.3 75.7 78.3 79.4 78.1 79.2 69.7	74.8 75.6 78.8 79.2 79.1 79.1 67.6	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6	75.0 75.4 78.5 79.1 78.4 79.1 69.5	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.8 78.2 65.4	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9	75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7	74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.9 78.3 65.0	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0	75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.8 78.2 65.4 67.3	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4	74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7 71.8	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.8 78.2 65.4	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9	75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7	74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.9 78.3 65.0	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0	75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.8 78.2 65.4 67.3	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4	74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7 71.8	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2011 2012 2013	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4 73.9 74.4 75.3	74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7 71.8 74.4 74.9 75.2	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.9 78.9 78.3 65.0 67.7 72.2 74.9 74.9	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.4 74.9	75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.4 75.3	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2011 2012 2013 2014	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 73.4 74.4 75.1 76.4	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4 73.9 74.4 75.3 77.1	126.6 74.8 75.6 78.8 79.2 79.1 67.6 66.7 71.8 74.4 74.9 75.2 77.0	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.1 74.4 75.3 76.8	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2011 2012 2013 2014 2015	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8 76.5	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 76.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 76.8	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6	126.4 74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5 76.5	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4 73.9 74.4 75.3 77.1 76.4	126.6 74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7 71.8 74.4 74.9 75.2 77.0 76.1	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.4 75.3 76.8 76.3	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2011 2012 2013 2014	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 73.4 74.4 75.1 76.4	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4 73.9 74.4 75.3 77.1	126.6 74.8 75.6 78.8 79.2 79.1 67.6 66.7 71.8 74.4 74.9 75.2 77.0	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.1 74.4 75.3 76.8	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2011 2012 2013 2014 2015	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8 76.5	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 76.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 76.8	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6	126.4 74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5 76.5	126.5 75.3 75.7 78.3 79.4 78.1 79.2 69.7 66.7 71.4 73.9 74.4 75.3 77.1 76.4	126.6 74.8 75.6 78.8 79.2 79.1 79.1 67.6 66.7 71.8 74.4 74.9 75.2 77.0 76.1	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.4 75.3 76.8 76.3	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2010 2011 2012 2013 2014 2015 2016	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6 76.4	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1 76.1	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8 76.5 76.0	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 76.4 75.9	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 76.8 75.6	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5 76.5 75.7	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           73.9           74.4           75.3           77.1           76.4           75.7	126.6           74.8           75.6           78.8           79.2           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 75.1 76.4 76.1	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8 75.7	75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.1 74.4 75.3 76.8 76.3 75.7	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5 75.8
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6 76.4 75.9 77.3 78.0	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1 76.1 76.1 75.9 78.1 77.6	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8 76.5 76.0 75.7 78.1 77.4	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.6 78.7 77.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 75.9 76.4 75.9 76.7 78.6 77.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 75.6 76.4 78.9 77.4	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 78.9 76.9	126.4           74.9           75.0           78.3           78.8           78.1           78.9           71.3           65.9           71.2           74.1           74.0           75.3           76.5           75.7           77.4           78.6           76.3	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           73.9           74.4           75.3           77.1           76.4           75.7           77.6           78.4           77.0	126.6           74.8           75.6           78.8           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.5           78.8           77.1	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8 75.7 76.5 78.8 77.1	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.1 74.4 75.3 76.8 76.3 75.7 77.5 78.6 76.8	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5 75.8 76.6 78.4 77.2
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.9 74.7 74.9 74.7 74.9 74.7 75.6 76.6 76.4 75.9 77.3 78.0 77.0	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 75.0 75.2 76.1 76.1 76.1 75.9 78.1 77.6 77.2	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.7 74.7 74.7 74.5 76.5 76.0 75.7 78.1 77.4 73.6	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.6 75.8 76.6 78.7 77.0 62.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0 64.9	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.7 75.8 63.0 70.7 75.6 74.8 75.0 76.7 78.6 77.4 76.7 78.6 77.4 70.2	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9 72.8	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 75.6 76.4 78.9 77.4 74.0	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 78.9 76.9 74.1	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5 76.5 76.5 75.7 77.4 78.6 76.3 74.8	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           75.3           74.4           75.7           76.4           75.7           77.6           78.4           77.0           75.3	126.6           74.8           75.6           78.8           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.5           78.8           77.1           76.0	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7 75.9	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1 65.7	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.4 74.9 76.5 78.8 75.7 76.5 78.8 77.1 73.7	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.4 75.3 76.3 75.7 77.5 78.6 76.8 75.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.5 75.8 76.5 75.8 76.6 78.4 77.2 72.7
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6 76.4 75.9 77.3 78.0	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1 76.1 76.1 75.9 78.1 77.6	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.9 75.8 76.5 76.0 75.7 78.1 77.4	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.6 78.7 77.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 75.9 76.4 75.9 76.7 78.6 77.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 75.6 76.4 78.9 77.4	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 78.9 76.9	126.4           74.9           75.0           78.3           78.8           78.1           78.9           71.3           65.9           71.2           74.1           74.0           75.3           76.5           75.7           77.4           78.6           76.3	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           73.9           74.4           75.3           77.1           76.4           75.7           77.6           78.4           77.0	126.6           74.8           75.6           78.8           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.5           78.8           77.1	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8 75.7 76.5 78.8 77.1	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.1 74.4 75.3 76.8 76.3 75.7 77.5 78.6 76.8	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5 75.8 76.6 78.4 77.2
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2020 2021	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6 76.4 75.9 77.3 78.0 77.0 76.8	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 76.1 75.2 76.1 75.2 76.1 75.2 76.1 75.2 75.0 75.2 76.1 75.2 75.0 75.2 75.0 75.2 75.0 75.2 75.0 75.2 75.0 75.2 75.0 75.2 75.0 75.2 75.2 76.1 79.7 79.3	125.6           126.9           73.8           75.2           76.1           79.2           77.7           64.2           68.3           72.7           74.7           74.9           75.8           76.0           75.7           78.1           77.4           73.6	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.5 75.8 76.6 78.7 77.0 62.0 76.1	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0 64.9 77.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 76.4 76.4 76.4 75.9 76.7 78.6 77.4 70.2 77.2	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9 72.8 78.0	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 76.8 75.6 76.4 75.6 76.4 78.9 77.4 74.0 77.8	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 76.6 75.7 76.9 74.1 77.1	74.9         75.0         78.3         78.8         78.1         78.9         71.3         65.9         71.2         74.1         74.0         75.3         76.5         76.5         75.7         77.4         78.6         76.3         74.8         78.2	126.5         75.3         75.7         78.3         79.4         78.1         79.2         69.7         66.7         71.4         73.9         74.4         75.3         77.1         76.4         75.7         77.6         78.4         77.0         75.3         79.0	126.6           74.8           75.6           78.8           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.1           76.8           77.1           75.8           77.1           76.0           79.0	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7 75.9 75.5	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1 65.7 76.8	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8 75.7 76.5 78.8 77.1 73.7 77.6	126.5           75.0           75.4           78.5           79.1           78.4           79.1           69.5           66.4           71.4           74.1           74.3           76.8           76.3           75.7           77.5           78.6           76.8           75.4           75.7           76.8           76.8           76.8           76.8           75.7           78.6           76.8           75.7           78.7	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5 75.8 76.6 75.8 76.6 78.4 77.2 72.7 77.2
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.9 74.7 74.9 74.7 74.9 74.7 75.6 76.6 76.4 75.9 77.3 78.0 77.0	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 75.0 75.2 76.1 76.1 76.1 75.9 78.1 77.6 77.2	125.6 126.9 73.8 75.2 76.1 79.2 79.1 79.2 77.7 64.2 68.3 72.7 74.7 74.7 74.7 74.7 74.5 76.5 76.0 75.7 78.1 77.4 73.6	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.6 75.8 76.6 78.7 77.0 62.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0 64.9	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.7 75.8 63.0 70.7 75.6 74.8 75.0 76.7 78.6 77.4 76.7 78.6 77.4 70.2	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9 72.8	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 75.6 76.4 78.9 77.4 74.0	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 78.9 76.9 74.1	74.9 75.0 78.3 78.8 78.1 78.9 71.3 65.9 71.3 65.9 71.2 74.1 74.0 75.3 76.5 76.5 76.5 75.7 77.4 78.6 76.3 74.8	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           75.3           74.4           75.7           76.4           75.7           77.6           78.4           77.0           75.3	126.6           74.8           75.6           78.8           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.5           78.8           77.1           76.0	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7 75.9	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1 65.7	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.4 74.9 76.5 78.8 75.7 76.5 78.8 77.1 73.7	126.5 75.0 75.4 78.5 79.1 78.4 79.1 69.5 66.4 71.4 74.1 74.4 75.3 76.3 75.7 77.5 78.6 76.8 75.4	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.5 75.8 76.5 75.8 76.6 78.4 77.2 72.7
(percent of 2017 output) 2022 2023 2024 Utilization (percent) 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022	125.4 126.7 73.5 75.4 75.5 79.2 79.7 78.7 78.9 65.4 67.4 71.9 74.9 74.7 74.4 76.6 76.4 75.9 77.3 78.0 77.0 76.8 78.5	125.5 126.8 73.3 75.2 76.1 79.7 79.3 78.8 78.2 65.4 67.3 72.1 75.2 75.0 75.2 75.0 75.2 76.1 76.1 76.1 75.9 78.1 77.6 77.2 73.7 79.2	125.6           126.9           73.8           75.2           76.1           79.2           77.7           64.2           68.3           72.7           74.7           74.9           75.8           76.0           75.7           78.1           77.4           73.6           76.1           80.0	125.7 127.0 74.0 74.6 76.4 79.3 79.2 79.5 76.8 63.7 69.0 72.4 75.0 74.6 75.9 76.5 75.8 76.5 75.8 76.6 78.7 77.0 62.0 76.1 80.0	125.8 127.1 74.4 74.5 77.0 79.4 78.8 79.4 76.3 63.1 70.0 72.5 74.6 74.9 76.1 76.6 75.7 76.5 78.0 77.0 64.9 77.0 64.9 77.0	125.9 127.2 75.2 74.7 76.5 79.4 78.8 79.7 75.8 63.0 70.1 72.6 74.8 75.0 76.4 75.9 76.4 75.9 76.7 78.6 77.4 70.2 77.2 79.4	126.0 127.3 75.1 74.9 77.3 78.9 78.4 79.6 75.0 64.2 70.6 73.1 74.5 74.4 76.8 77.0 75.9 76.5 78.6 76.9 72.8 78.0 79.4	126.1 127.4 75.1 74.4 77.6 79.1 78.8 79.2 74.1 65.0 70.8 73.4 74.4 75.1 76.4 75.6 76.4 75.6 76.4 78.9 77.4 74.0 77.8 79.5	126.2 127.5 75.1 75.0 77.6 77.9 78.6 79.3 71.5 65.8 71.0 73.6 74.2 75.2 76.5 76.6 75.7 76.5 76.6 75.7 76.5 78.9 76.9 74.1 77.1 79.7	126.4           74.9           75.0           78.3           78.8           78.1           78.9           71.3           65.9           71.2           74.1           74.0           75.3           76.5           75.7           77.4           78.6           76.3           74.8           78.2           79.7	126.5           75.3           75.7           78.3           79.4           78.1           79.2           69.7           66.7           71.4           73.9           74.4           75.3           77.1           76.4           75.7           77.6           78.4           77.0           75.3           79.0           79.1	126.6           74.8           75.6           78.8           79.2           79.1           67.6           66.7           71.8           74.4           74.9           75.2           77.0           76.1           75.8           77.5           78.8           77.1           76.0           79.0           77.6	125.5 126.8 73.5 75.3 75.9 79.3 79.4 78.9 78.9 78.9 78.3 65.0 67.7 72.2 74.9 74.9 74.9 74.9 74.9 75.1 76.4 76.1 75.9 77.8 77.7 75.9 75.5 79.3	125.8 127.1 74.5 74.6 76.7 79.4 78.9 79.5 76.3 63.3 69.7 72.5 74.8 74.9 76.1 76.5 75.8 76.6 78.4 77.1 65.7 76.8 79.7	126.1 127.4 75.1 74.8 77.5 78.6 78.6 78.6 78.6 79.4 73.6 65.0 70.8 73.4 74.4 74.9 76.6 76.8 75.7 76.5 78.8 77.1 73.7 77.6 79.5	126.5           75.0           75.4           78.5           79.1           78.4           79.1           69.5           66.4           71.4           74.1           74.4           75.3           76.8           76.3           75.7           77.5           78.6           75.4           78.7           78.8	126.0 74.5 75.0 77.1 79.1 78.8 79.2 74.4 64.9 69.9 73.1 74.6 75.0 76.2 76.5 75.8 76.6 78.4 77.2 72.7 77.2 79.3

# Table 14 HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing' Excluding Selected High-Technology Industries<sup>2</sup> Seasonally adjusted

The composition of manufacturing is specified in a note for the summary table.
 Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.
 Quarterly percentage changes are at annual rates. Annual percentage changes are calculated from annual averages.

## Table 15 INDUSTRIAL PRODUCTION: RELIABILITY ESTIMATES Seasonally adjusted

Annualized change 2017=100 Percent change 2024 2024 2024 Q2 Q3 Item May June July Aug. Sept. May June July Aug. Sept. Apr. Apr. Total index 85th percentile 2.75 .37 102.36 103.13 103.34 102.78 103.28 103.03 -.16 .25 -.46 .64 .03 .75 2.53 .70 Current estimate 102.36 103.07 103.23 102.59 102.93 102.64 -.16 .15 -.62 .34 -.28 -.64 15th percentile 2.32 1.55 102.36 103.02 103.12 102.41 102.65 102.21 .05 -.74 .09 -.66 -.16 .64 Manufacturing (SIC) 85th percentile 1.66 .60 98.81 99.60 99.58 99.17 99.74 99.47 -.70 .81 .01 -.36 .69 -.10 Current estimate 1.39 98.81 99.54 99.45 98.97 99.47 99.09 -.70 -.49 .50 -.38 .74 -.09 -.36 1.17 1.45 99.48 98.57 .69 15th percentile 98.81 99.33 98.75 99.17 -.70 -.20 -.63 .32 -.73 Mining 85th percentile 2.97 .92 119.53 118.84 119.41 118.54 120.18 119.77 -.58 -.48 1.68 .38 -.06 .60 2.40 119.53 118 70 119.08 118.00 118 87 118.20 - 06 - 70 - 91 -.57 Current estimate -2.49 33 74 15th percentile 1.92 117.60 .00 -5.66 119.53 118.53 118.71 117.44 116.48 .06 -.84 .04 -1.28-1.56 Electric and gas utilities 85th percentile 11.12 4.44 104.67 107.00 108.68 107.94 107.89 108.80 3.60 2.22 1.59 2.63 -.56 .50 Current estimate 104.67 107.37 10.92 106.98 108.60 105.99 106.77 3.60 2.21 1.51 -1.14 -1.29 .74 -.16 10.80 104.67 106.97 108.52 105.50 3.60 -1.03 15th percentile -2.53 107.14 104.73 2.20 1.42 -1.37 -2.81

Note. The reliability measures show the likely range of values for the IP indexes after their fifth and final monthly revision. The 15th (85th) percentile estimate is equal to the current estimate plus an amount such that the equivalent measure revised by a lower (higher) amount for only 15 percent of the months since 2008. More information is available at https://www.federalreserve.gov/releases/g17/g17\_technical\_qa.htm#reliability

#### EXPLANATORY NOTE

The **Industrial Production and Capacity Utilization** statistical release, which is published around the middle of the month, reports measures of output, capacity, and capacity utilization in manufacturing, mining, and the electric and gas utilities industries. More detailed descriptions of industrial production and capacity utilization are available on the Board's website at **www.federalreserve.gov/releases/G17**. In addition, files containing data shown in the release, more detailed series that were published in the G.17 prior to December 2000, and historical data are available from the Data Download Program on the Board's website. Instructions for searching for and downloading specific series are provided as well.

#### INDUSTRIAL PRODUCTION

Coverage. The industrial production (IP) index measures the real output of the manufacturing, mining, and electric and gas utilities industries; the reference period for the index is 2017. Manufacturing consists of those industries included in the North American Industry Classification System, or NAICS, definition of manufacturing plus those industries-logging and newspaper, periodical, book, and directory publishing-that have traditionally been considered to be manufacturing and included in the industrial sector. For the period since 2012, the total IP index has been constructed from 296 individual series based on the 2017 NAICS codes. These individual series are classified in two ways: (1) market groups, and (2) industry groups. Market groups consist of products and materials. Total products are the aggregate of final products, such as consumer goods and equipment, and nonindustrial supplies (which are inputs to nonindustrial sectors). Materials are inputs in the manufacture of products. Major industry groups include three-digit NAICS industries and aggregates of these industries-for example, durable and nondurable manufacturing, mining, and utilities. A complete description of the market and industry structures, including details regarding series classification, relative importance weights, and data sources, is available on the Board's website at www.federalreserve.gov/releases/G17/About.htm.

Source Data. On a monthly basis, the individual indexes of industrial production are constructed from two main types of source data: (1) output measured in physical units and (2) data on inputs to the production process, from which output is inferred. Data on physical products, such as tons of steel or barrels of oil, are typically obtained from private trade associations and from government agencies; data of this type are used to estimate monthly IP wherever possible and appropriate. Production indexes for a few industries are derived by dividing estimated nominal output (calculated using unit production and unit values or sales) by a corresponding Fisher price index; the most notable of these fall within the high-technology grouping and include semiconductors. When suitable data on physical product are not available, estimates of output are based on production-worker hours by industry. Data on hours worked by production workers are collected in the monthly establishment survey conducted by the Bureau of Labor Statistics. The factors used to convert inputs into estimates of production are based on historical relationships between the inputs and the comprehensive annual data used to benchmark the IP indexes; these factors also may be influenced by technological or cyclical developments. The annual data used in benchmarking the individual IP indexes are constructed from a variety of source data, such as the quinquennial Censuses of Manufactures and Mineral Industries and the Annual Survey of Manufactures, prepared by the Bureau of the Census; the Minerals Yearbook, prepared by the U.S. Geological Survey of the Department of the Interior; and publications of the Department of Energy.

Aggregation Methodology and Weights. The aggregation method for the IP index is a version of the Fisher-ideal index formula. (For a detailed discussion of the aggregation method, see the *Federal Reserve Bulletin* February 1997 and March 2001.) In the IP index, series that measure the output of an individual industry are combined using weights derived from their proportion in the total value-added output of all industries. The IP index, which extends back to 1919, is built as a chain-type index since 1972. The current formula for the growth in monthly IP (or any of the sub-aggregates) since 1972 is the geometric mean of the change in output (*I*), and, as can be seen below, is computed using the unit value added estimate for the current month  $(p_m)$  and the estimate for previous month:

$$\frac{I_m^A}{I_{m-1}^A} = \sqrt{\frac{\sum I_m p_{m-1}}{\sum I_{m-1} p_{m-1}}} \times \frac{\sum I_m p_m}{\sum I_{m-1} p_m}$$

The IP proportions (typically shown in the first column of the relevant tables in the monthly G.17 release) are estimates of the industries' relative contributions to overall growth in the following year. For example, the relative importance weight of the motor vehicles and parts industry is about 5 percent. If output in this industry increased 10 percent in a month, then this gain would boost growth in total IP by 5/10 percentage point (0.05 x 10% = 0.5%). To assist users with calculations, the Federal Reserve's website provides supplemental monthly statistics that represent the exact proportionate contribution of a monthly change in a component index to the monthly change in the total index (**www.federalreserve.gov/releases/G17/ipdisk/ipweightssa.txt**).

**Timing.** The first estimate of output for a month is published around the 15th of the following month. The estimate is preliminary (denoted by the superscript "p" in tables) and subject to revision in each of the subsequent five months as new source data become available. (Revised estimates are denoted by the superscript "r" in tables.) For the first estimate of output for a given month, about 77 percent of the source data (in value-added terms) are available; the fraction of available source data increases to 85 percent for estimates in the second month that the estimate is published, 94 percent in the third month, 98 percent in the fourth month, 99 percent in the fifth month, and 99 percent in the sixth month. Data availability by data type in 2023 is summarized in the table below:

Availability of Monthly IP Data in Publication Window (Percent of value added in 2023; the numbers may not sum because of rounding.)

Touriding.)											
	Month of estimate										
Type of data	1st	2nd	3rd	4th	5th	6th					
Physical product	33	41	51	54	55	55					
Production-worker hours	44	44	44	44	44	44					
IP data received	77	85	94	98	99	99					
IP data estimated	23	15	6	2	1	1					

The physical product group includes series based on either monthly or quarterly data. As can be seen in the first row of the table, in the first month, a physical product indicator is available for more than one-half of the series (in terms of value added) that ultimately are based on physical product data (33 percent out of a total of 55 percent). Of the 33 percent, about two-thirds (23 percent of total IP) include series that are derived from weekly physical product data and for which actual monthly data may lag up to several months. On average, quarterly product data are received for the fourth estimate of industrial production. Specifically, quarterly data are available for the third estimate of the last month of a quarter, the fourth estimate of the second month of a quarter, and the fifth estimate of the first month of a quarter.

Seasonal Adjustment. Individual series are seasonally adjusted using Census X-13 ARIMA. For series based on production-worker hours, the current seasonal factors were estimated with data through March 2024; for other series, the factors were estimated with data through March 2024, where available. Series are pre-adjusted for the effects of holidays or the business cycle when appropriate. For the data since 1972, all seasonally adjusted aggregate indexes are calculated by aggregating the seasonally adjusted indexes of the individual series. Additional documentation and X-13 specifications can be found on the Board's website at www.federalreserve.gov/releases/G17/About.htm.

**Reliability.** The average revision to the *level* of the total IP index, without regard to sign, between the first and the fourth estimates was

0.30 percent during the 1987–2023 period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.24 percentage point during the 1987-2023 period. In most cases (about 85 percent), the direction of the change in output indicated by the first estimate for a given month is the same as that shown by the fourth estimate.

**Rounding.** The published percent changes are calculated from unrounded indexes, and may not be the same as percent changes calculated from the rounded indexes shown in the release.

#### CAPACITY UTILIZATION

Overview. The Federal Reserve Board constructs estimates of capacity and capacity utilization for industries in manufacturing, mining, and electric and gas utilities. For a given industry, the capacity utilization rate is equal to an output index (seasonally adjusted) divided by a capacity index. The Federal Reserve Board's capacity indexes attempt to capture the concept of sustainable maximum output-the greatest level of output a plant can maintain within the framework of a realistic work schedule, after factoring in normal downtime and assuming sufficient availability of inputs to operate the capital in place.

Coverage. Capacity indexes are constructed for 89 detailed industries (71 in manufacturing, 16 in mining, and 2 in utilities), which mostly correspond to industries at the three- and four-digit North American Industry Classification System, or NAICS, level. Estimates of capacity and utilization are available for a variety of groups, including durable and nondurable manufacturing, total manufacturing, mining, utilities, and total industry. Manufacturing consists of those industries included in the NAICS definition of manufacturing plus those industries-logging and newspaper, periodical, book, and directory publishing-that have traditionally been considered to be manufacturing and included in the industrial sector. Also, special aggregates are available, such as high-technology industries and manufacturing excluding high-technology industries.

Source Data. The monthly rates of capacity utilization are designed to be consistent with both the monthly data on production and the periodically available data on capacity and utilization. Because there is no direct monthly information on overall industrial capacity or utilization rates, the Federal Reserve first estimates annual capacity indexes from the source data. Capacity data reported in physical units from government sources (primarily from the U.S. Geological Survey and the Department of Energy's Energy Information Administration) and trade sources are available for portions of several industries in manufacturing (for example, paper, industrial chemicals, petroleum refining, motor vehicles), as well as for electric utilities and mining; these industries represent about 26 percent of total industrial capacity. When physical product data are unavailable for manufacturing industries, capacity indexes are based on responses to the Bureau of the Census's Quarterly Survey of Plant Capacity (QSPC); these industries account for about 64 percent of total industry capacity. In the absence of utilization data for a few mining and petroleum series, capacity is based on trends through peaks in production (roughly 10 percent of total industry capacity). A detailed description of the methodology used to construct the capacity indexes is available on the Board's website (www.federalreserve.gov/releases/G17/Meth/MethCap.htm).

Aggregation Methodology. Monthly capacity aggregates are calculated in three steps: (1) utilization aggregates are calculated on an annual basis through the most recent full year as capacity-weighted aggregates of individual utilization rates; (2) the annual aggregate capacity is derived from the corresponding production and utilization aggregates; (3) the monthly capacity aggregate is obtained by interpolating with a Fisher index of its constituent monthly capacity series. Utilization rates for the individual series and aggregates are calculated by dividing the pertinent monthly production index by the related capacity index.

Consistency. A major aim is that the Federal Reserve utilization rates be consistent over time so that, for example, a rate of 85 percent means about the same degree of tightness that it meant in the past. A major task for the Federal Reserve in developing reasonable and consistent time series of capacity and utilization is dealing with

inconsistencies between the movements of the industrial production index and the survey-based utilization rates. The McGraw-Hill/DRI Survey, now discontinued, was the primary source of manufacturing utilization rates for many years. This survey of large companies reported, on average, higher utilization rates than those reported by establishments covered by the annual Survey of Plant Capacity (the primary source of factory operating rates through 2006, after which it was discontinued) for the fourteen years they overlapped. Adjustments have been made to keep the industry utilization rates currently reported by the Federal Reserve (now based on the QSPC) roughly in line with rates formerly reported by McGraw-Hill. As a consequence, the rates reported by the Federal Reserve tend to be higher than the rates reported in the Census utilization surveys.

Perspective. Over the 1972–2023 period, the average total industry utilization rate was 79.7 percent; for manufacturing, the average factory operating rate was 78.3 percent. Industrial plants usually operate at capacity utilization rates that are well below 100 percent: none of the broad aggregates has ever reached 100 percent. For total manufacturing, utilization rates have exceeded 90 percent only in wartime. The highs and lows in capacity utilization are specific to each series and do not all occur in the same month.

#### **REFERENCES AND RELEASE DATES**

**References.** The release for the annual revision that was published on June 28, 2024, is available on the Board's website (www.federal reserve.gov/releases/g17/revisions/Current/DefaultRev.htm). A summary of the annual revision that incorporated back to 1972 production and capacity indexes reclassified according to the North American Industry Classification System is available in an article in the Federal Reserve Bulletin, vol. 89 (April 2003), pp. 151-176. A description of the aggregation methods for industrial production and capacity utilization is included in an article in the Federal Reserve Bulletin, vol. 83 (February 1997), pp. 67–92. The Federal Reserve methodology for constructing industry-level measures of capital is detailed in "Capital Stock Estimates for Manufacturing Industries: Methods and Data" by Mike Mohr and Charles Gilbert (1996), which can be obtained at www.federalreserve.gov/releases/g17/CapitalStockDocLatest.pdf.

Industrial Production-1986 Edition contains a more detailed description of the other methods used to compile the industrial production index, plus a history of its development, a glossary of terms, and a bibliography. The major revisions to the IP indexes and capacity utilization since 1990 have been described in the Federal Reserve Bulletin (April 1990, June 1990, June 1993, March 1994, January 1995, January 1996, February 1997, February 1998, January 1999, March 2000, March 2001, March 2002, April 2003, Winter 2004, Winter 2005, March 2006, May 2007, August 2008, August 2009) or in online staff studies

(www.federalreserve.gov/releases/g17/articles/rev2010/industrial10.pdf, www.federalreserve.gov/releases/g17/articles/rev2012/industrial12.pdf, www.federalreserve.gov/releases/g17/articles/rev2013/industrial13.pdf).

#### **Release Schedule**

The G.17 release on Industrial Production and Capacity Utilization will be issued on the following dates. The monthly releases are issued at 9:15 a.m. The annual revision is issued at noon.

2024: January 17, February 15, March 15, April 16, May 16, June 18, June 28 (annual revision), July 17, August 15, September 17, October 17, November 15, December 17.

2025: January 17, February 14, March 18, April 16, May 15, June 17, July 16, August 15, September 16, October 17, November 18, and December 16.

This release schedule is available on the Board's website at **http://www.federalreserve.gov/releases/g17**.