

**BEFORE THE OHIO TAX CREDIT AUTHORITY,
DEVELOPMENT SERVICES AGENCY**

***In re* General Motors Lordstown
Tax-Credit Certificate Refund**

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**AMICUS CURIAE BRIEF BY THE OHIO ATTORNEY GENERAL DAVID A. YOST,
ON BEHALF OF THE CITIZENS OF THE STATE OF OHIO**

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INTRODUCTION

Profit, it has long been said, is not a dirty word in Ohio. But a broken promise is.

General Motors (“GM”) promised to employ 3,700 workers at its Lordstown plant until 2040 in exchange for \$60 million in tax-credit certificates from Ohio—a contract. GM got its tax credits, but it did not fulfill its side of the contract, and then closed the Lordstown plant in 2019.

We want our money back, and the Ohio Tax Credit Authority has the authority to start that process.

GM complains that consumer preferences changed, and that the small cars manufactured at the plant were less popular—that gutting the manufacturing base of the Mahoning Valley by closing Lordstown was just business. But Ohio never assumed GM’s business risk.

Government, it is often said, should run more like a business. Does any rational person believe that, if the shoe were on the other foot, GM would shrug and walk away from \$60 million it paid under a contract when the other party chose not to deliver? Ohio welcomes its long and continuing relationship with GM, but we want our money back. It’s just business.

Tax incentives can be a powerful job creator. But, for them to fully function, businesses that come nowhere near to meeting their promises, like GM’s failure by thousands of jobs and decades of employment, must be held to account. GM is one of America’s largest corporations, valued at over \$50 billion when it shuttered Lordstown. GM simply has no valid excuse or argument.

For the reasons set forth in this amicus brief, on behalf of the citizens of the State of Ohio, I respectfully urge the Ohio Tax Credit Authority (“Authority”) to seek a full, one-hundred percent refund from GM on the Lordstown tax-credit certificates. For perspective, this refund amounts to

1% of GM's first-year's claimed savings from the closure, *less* than 1% of GM's net profits for FY 2019, and less than five one-hundredths of a percent (0.05%) of its FY 2019 revenues.¹

STATEMENT OF INTEREST OF AMICUS CURIAE

Ohio Attorney General Dave Yost submits this brief as *parens patriae* on behalf of the citizens of Ohio to make the case for their right to a full, one-hundred percent refund of the tax-credit certificates issued to GM. *Alfred L. Snapp & Son v. Puerto Rico*, 458 U.S. 592, 604 (1982).

Without this brief of the Attorney General, the Authority otherwise may only have before it the picture that GM wants to paint. This amicus brief provides a photograph of the effect of GM's failure at Lordstown in an effort to assist the Authority in making an objective decision that is good and just for Ohio, Ohioans, and the integrity of the program that the Authority administers.

As the chief law officer of the State of Ohio, the Attorney General is directly interested in the welfare of Ohio citizens and the equitable return on their investment in Ohio's economic incentive programs. R.C. 109.02. Additionally, the Ohio Attorney General's Office is charged with reporting on the compliance of economic development award recipients granted by the Ohio Development Services Agency ("Agency"). R.C. 125.112(G).² As such, the Ohio Attorney General perfectly represents the overarching interests of the citizens of the State of Ohio.

The objective of the economic development awards is to encourage growth in business, in capital investments, and in workforce retention and creation. The Attorney General's Office has the responsibility to ensure that taxpayer dollars used to support these awards are used wisely and according to applicable laws. As the source and beneficiary of these awards, the citizens of Ohio

¹ *General Motors*, Fortune 500 (accessed on June 25, 2020) <https://fortune.com/company/general-motors/fortune500/>.

² The Ohio Attorney General notified the Authority of GM's breach and the need for this refund in 2019.

are entitled to a full refund of the tax-credit certificates because GM grossly breached binding contractual agreements with the Authority.

STATEMENT OF CASE AND FACTS

GM has long been an economic goliath. Founded in 1908, GM manufactures and markets automobiles, automotive systems, engines, heavy-duty automatic transmissions, component parts, and locomotives worldwide (to say nothing of its role in the finance marketplace.) GM Retention Agreement, Second Amended Exhibit I; GM Creation Agreement, Second Amended Exhibit I.

When GM shuttered the Lordstown plant, its market capitalization was over \$50,000,000,000. *See* Jonathan Garber, *Ford is once again more valuable than Tesla*, Business Insider (Apr. 26, 2019) <https://markets.businessinsider.com/news/stocks/ford-motor-company-passes-tesla-market-value-2019-4-1028143794>. It was America's 12th largest company. *See General Motors*, Fortune 500 (2019) <https://fortune.com/fortune500/2019/general-motors/>. In 2019, GM made a \$6.732 billion profit on over \$137 billion of gross revenues. *See General Motors*, Fortune 500 (accessed on June 25, 2020) <https://fortune.com/company/general-motors/fortune500/>. In fact, despite the current pandemic, GM has managed to turn a first-quarter profit. *See* Matthew Debord, *GM manages a Q1 profit as the coronavirus pandemic hurts the automaker's global business*, Business Insider (May 6, 2020) <https://www.businessinsider.com/gm-q1-profit-positive-despite-coronavirus-pandemic-2020-5>.

Since 1966, Lordstown, Ohio has been the home to one of GM's fifteen worldwide assembly facilities. *See* David Welch, *GM Sells Shuttered Ohio Assembly Plant to Electric Vehicle Startup*, Bloomberg (Nov. 7, 2019) <https://www.bloomberg.com/news/articles/2019-11-07/gm-sells-lordstown-plant-to-ev-startup-ending-an-era-in-ohio>.

The people of Trumbull and Mahoning County have long been the reliable backbone of the steel and motor vehicle manufacturing industry. For GM, the employees at Lordstown have

rolled off tens of millions of cars and vans from their production line during that time. *See* Dan Kaufman, *The End of the Line*, New York Times (May 1, 2019)

<https://www.nytimes.com/interactive/2019/05/01/magazine/lordstown-general-motors-plant.html>.

GM, like every other vehicle manufacturing company, suffered from the automotive industry crisis of 2008 and 2009. But GM emerged from that crisis through serious government support, including a hefty \$50 billion bailout from American taxpayers in 2009. *See* Eric Beech, *U.S. government says it lost \$11.2 billion on GM bailout*, Reuters (April 30, 2014) <https://www.reuters.com/article/us-autos-gm-treasury/u-s-government-says-it-lost-11-2-billion-on-gm-bailout-idUSBREA3T0MR20140430>. The State of Ohio also supported GM through its reemergence.

In 2008, GM applied for two tax-credit certificate programs, administered by the Authority, for Lordstown operations. R.C. 122.17(C)(1); R.C. 122.171(C).³ GM represented that these credits would go towards “renovating . . . and purchasing machinery and equipment” that would allow Lordstown to produce the next-generation of fuel-efficient vehicles. GM Retention Agreement, Second Amended Exhibit I; GM Creation Agreement, Second Amended Exhibit I. The Ohio Job Retention Tax Credit program (“Retention Program”) seeks to retain employees in the State of Ohio (R. C. 122.171) and the Ohio Job Creation Tax Credit program (“Creation Program”) fosters job creation in Ohio. R.C. 122.17. Both programs utilize tax-credit certificates in order to secure specific retention and creation metrics at a facility.

³ GM also participates in and receives tax-credit certificates from the State of Ohio for two other facilities in Ohio. In 2007, GM and the Authority entered into a 15-year job retention tax agreement for GM to maintain 1,000 employees in Toledo, Ohio. Also, in 2010, GM and the Authority entered into a 10-year job retention agreement for GM to maintain 1,000 employees and receive a 50% income tax revenue credit in Defiance, Ohio.

Within both of these applications, GM had to prove that their proposal was economically sound and that GM “ha[d] the ability to maintain operations at the project site for [the term].” R.C. 122.17(C)(2); R.C. 122.171(D); Retention Agreement, Recitals; Creation Agreement, Recitals. GM’s proposals and promises were thoroughly reviewed by the Authority. R.C. 122.17(C)(1); R.C. 122.171(B). And, in regard to the Retention Program, GM’s application was even more strenuously reviewed—by the director of budget and management, the tax commissioner, and the director of development services. R.C. 122.171(C). Relying on GM’s attestations, the Authority approved both applications.

In January 2009, GM began to receive significant tax-credit certificates from the State of Ohio for Lordstown operations. The Authority and GM entered into two, separate but similar, tax credit agreements—one for job retention tax-credit certificates (“Retention Agreement”) and the other for job creation tax-credit certificates (“Creation Agreement”) (collectively referred to herein as “the Agreements”). According to the Retention Agreement, GM promised to maintain its operations in Lordstown for eighteen years (with the active term from 2011-2028), to retain 3,700 jobs, and report continued retention through 2040. Retention Agreement, p. 3, ¶ 10; Second Amended Exhibit I. In return, the Agency agreed to disburse tax-credit certificates for fifteen years. Retention Agreement, p. 2, ¶ 1.

Prior to GM’s closure of Lordstown, GM received \$46,100,388-worth of tax-credit certificates under the Retention Agreement.

According to the Creation Agreement, GM promised to maintain operations in Lordstown for thirty years, to create 200 new jobs and retain the already-filled 3,700 jobs, and report continued renovation and maintenance of the facility through 2037. Creation Agreement, p. 4, ¶ 11. GM also committed to hiring from both disadvantaged and minority communities. Creation

Agreement, p. 2, ¶ 2. In return, the Agency agreed to disburse tax-credit certificates for fifteen years.

GM received \$14,223,433-worth of tax-credit certificates as a result of this Creation Agreement.

The Agreements reveal that the tax-credit certificates were major factors in GM's decision to expand in Ohio. GM conceded that Ohio's tax-credit certificates were a significant factor in helping to build the best possible business case for GM. Agreements, Second Amended Exhibit I.

With such sizeable financial stimulation, GM selected Lordstown to begin manufacturing the Chevrolet Cruze. The Lordstown facility continued to manufacture only the Chevrolet Cruze from 2010 to 2019. GM Lordstown's employment and profits were booming, "making near-record-breaking profits." GM Response, p. 2; *see also* Dan Kaufman, *The End of the Line*, New York Times (May 1, 2019)

<https://www.nytimes.com/interactive/2019/05/01/magazine/lordstown-general-motors-plant.html>.

But in January 2017, GM chose to cut the entire third shift of employees at Lordstown—eliminating 1,200 jobs and bringing GM's total employment at Lordstown to approximately 3,000 jobs. *GM cutting third shift at Lordstown*, 21 WFMJ (Nov. 16, 2016)

<https://www.wfmj.com/story/33669331/gm-cutting-third-shift-at-lordstown>.

Less than one-third of the way into the Agreements, GM had broken its promise Ohio and its people, the beginning of a pattern. By April 2018, GM chose to cut the entire second shift of employees at Lordstown—eliminating another 1,500 jobs and bringing GM's total employment at Lordstown down to just 1,500 jobs. *GM Lordstown production to cut one shift*, 21 WFMJ (Apr. 20, 2018) <https://www.wfmj.com/story/37952752/gm-lordstown-production-to-cut-one->

shift. Citing smaller sales of the Cruze, GM terminated the first shift shortly thereafter, choosing to close the Lordstown plant on March 6, 2019. *See* Phil LeBeau, *GM's Lordstown factory goes dark as automaker idles underused plants*, CNBC (Mar. 6, 2019)

<https://www.cnbc.com/2019/03/06/gms-lordstown-factory-goes-dark-as-automaker-closes-underused-plants.html>.

GM made no attempt to manufacture any other vehicle or vehicle parts at Lordstown— “[T]here were no products to allocate to Lordstown.” *See* David Welch, *GM Squeezed \$118 Million From Its Ohio Workers, Then Shut The Plant*, Bloomberg (Mar. 29, 2019)

<https://www.bloomberg.com/news/articles/2019-03-29/gm-brushed-off-union-concessions-before-idling-ohio-car-plant>.

The Authority assured, however, that the State of Ohio would not be left defenseless in the face of such a goliath. In the Agreements, Paragraph 11 states that if GM failed to maintain operations at Lordstown, then the Authority may require GM to refund the State of Ohio one-hundred percent of the tax-credit certificates issued. R.C. 122.171(J); R.C. 122.17(K). To initiate this refund process, the Authority issued GM a notice of noncompliance regarding both agreements on March 3, 2020. GM responded to the Authority on April 3, 2020 in an attempt to exculpate itself (“GM Response”). Shockingly, despite completing only nine years of thirty-year contract terms, GM wants to keep *all* of the tax-credit certificates it received to date.

On behalf of the people of Ohio, the Attorney General urges the Authority to invoke Paragraph 11 and demand repayment in full. Should GM refuse to honor a demand by this Authority, the Attorney General is prepared to enforce the matter to in court.

ARGUMENT

The Authority's duty is to promote and protect Ohio's economic well-being through the Job Retention Program and the Job Creation Program. That duty demands that the Authority seek to recoup one-hundred percent of the job retention and job creation tax-credit certificates for the following reasons: 1) Ohio and Lordstown did not receive the benefit of its bargain; 2) GM's argument of changed market conditions is unsupported under the terms of the Agreements; 3) GM's mitigation is inapplicable and largely illusory; 4) GM's other presence in Ohio is important, but not exculpatory, and benefits from other incentives independent of the Agreements at issue here; 5) the COVID-19 pandemic is irrelevant and, in any event, a post-facto rationalization for deliberate decisions made by GM more than a year prior; and 6) this Authority's precedent support a full, one-hundred percent refund of GM's tax-credit certificates.

Finally, the Authority would create a moral hazard⁴ if it does not require full repayment. This case will be watched closely. Should the Authority accept GM's argument that its unilateral business decision relieves it of its obligations, then the Authority will have no legitimate basis to claw back any other incentive, *ever*. GM will have carte blanche to walk away from its other Ohio tax-incentivized operations. And so will every other business. The State's agreements to retain and create jobs will be mere fiction, excused by the slightest inconvenience. Ohio may as well give its money away.

I. The people of Lordstown did not receive their benefit of the bargain.

Since 1966, Lordstown revolved around the GM Lordstown facility. *See* Dan Kaufman, *The End of the Line*, New York Times (May 1, 2019)

⁴ "Moral hazard" is defined as "a situation in which people or organizations do not suffer from the results of their bad decisions, so may increase the risks they take." *Moral hazard*, Cambridge Dictionary (*accessed on June 25, 2020*) <https://dictionary.cambridge.org/us/dictionary/english/moral-hazard>.

<https://www.nytimes.com/interactive/2019/05/01/magazine/lordstown-general-motors-plant.html>. Entire generations of hardworking people in the Trumbull and Mahoning Counties have dedicated their lives to the difficult work of manufacturing GM vehicles. Everyone who drives through the Mahoning Valley knows the hulking 6.2-million-square-foot plant—and the presence of GM Lordstown is felt far outside the Valley.

Premised on the traditional assembly-line manufacturing model, in 2008, GM sought to reinvent the Lordstown plant and make it the future of fuel-efficient, global small cars. Agreements, Second Amended Exhibits I. Relying on GM’s long-time relationship and its forward-looking proposals, Ohio provided the necessary investment—because it was an investment in the people of Ohio. But only eight years later, the employees of GM Lordstown were left without vehicles to manufacture, without jobs, and without GM.

In 2009, with the aid of Ohio’s tax-credit certificates, Lordstown and its manufacturing of the Cruze helped lift GM out of bankruptcy. *See* Dan Kaufman, *The End of the Line*, New York Times (May 1, 2019) <https://www.nytimes.com/interactive/2019/05/01/magazine/lordstown-general-motors-plant.html>. From 2009 to 2018, the Cruze “remained one of the company’s biggest sellers.” *Id.* Yet, at the beginning of 2017, GM began its strategic plan to shift away from small car manufacturing, and restructure its company to manufacture trucks, SUVs, and electric and autonomous vehicles. *See GM cutting third shift at Lordstown*, 21 WFMJ (Nov. 16, 2016) <https://www.wfmj.com/story/33669331/gm-cutting-third-shift-at-lordstown>; *see also* Mark Gillispie and Tom Krisher, *‘It’s gut-wrenching’: In Lordstown, last Chevy Cruze rolls off assembly line as GM plant set to close*, Chicago Tribune (Mar. 6, 2019) <https://www.chicagotribune.com/business/ct-biz-gm-lordstown-ohio-plant-closing-20190306-story.html>. GM claimed that the Lordstown plant could only facilitate the manufacturing of

small, compact cars. See David Welch, *GM Squeezed \$118 Million From Its Ohio Workers, Then Shut The Plant*, Bloomberg (Mar. 29, 2019)

<https://www.bloomberg.com/news/articles/2019-03-29/gm-brushed-off-union-concessions-before-idling-ohio-car-plant>. Thus, GM justified its departure from Lordstown, beginning in 2017, as the only way to restructure its company to focus on more profitable vehicles.

GM is entitled to make its business decisions. It must also bear the costs of those decisions. If the Authority chooses to abandon the rights of Ohio taxpayers to the refund, then the Authority is committing the moral hazard of saddling Ohio taxpayers with GM's business risk. Doing so is particularly abhorrent when GM has the ability to pay the refund (one percent of its first-year cost savings from the closure, and less than 5 basis points of its annual revenues⁵) and GM continues to benefit from tax incentives for other Ohio plants. Does the Authority want to send the message that GM and others like it can walk away from their commitments to Ohioans at any time with impunity? Demanding any less than a full refund sends this exact message—loud and clear.

GM's decision came only ten years after beginning to receive the necessary stimulation to “renovate” and “grow” that plant. Agreements, Second Amended Exhibit I. GM's business decisions forced Lordstown employees to move outside of Ohio to retain employment, move into family members' basements due to inability to afford housing, or to apply for unemployment.

See Dan Kaufman, *The End of the Line*, New York Times (May 1, 2019)

<https://www.nytimes.com/interactive/2019/05/01/magazine/lordstown-general-motors-plant.html>.

The Lordstown employees did not characterize GM's offers to relocate to other plants as gracious; instead, employees fearfully referred to them as “involuntary job offers” that would force

⁵ \$60 million / \$137 billion = 0.000438.

them to relocate to a specific plant or lose their benefits. *Id.* A 2019 study by the Center for Economic Development at Cleveland State University estimated that GM’s closure of the Lordstown facility ultimately caused the loss of nearly 8,000 jobs and more than \$8 billion in economic activity in the regional economy. Iryna Lendel, Merissa Piazza, and Matthew Ellerbrock, “Lordstown GM Plant Closure Economic Impact Study” (2019) (*accessible at* https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2594&context=urban_facpub).

GM’s closure had even more significant, lasting impacts though. The local school district relied on the Lordstown facility for about \$800,000 in property taxes per year—reflecting ten percent of its overall budget. *See Devastation ripples from Lordstown closure*, Toledo Blade (May 2, 2019) <https://www.toledoblade.com/opinion/editorials/2019/05/02/devastation-ripples-outward-lordstown-general-motors-ohio-mary-barra/stories/20190430156>. And companies throughout Ohio that relied on GM were also forced to close. *Id.*; *see also* John Funk, *Hundreds of Ohio companies will feel ripple effect of Lordstown idling Cruze*, The Plain Dealer (Dec. 9, 2018) <https://www.cleveland.com/business/2018/12/chevy-cruze-parts-made-in-ohio-total-impact-of-ending-lordstown-production-hard-to-measure-right-now.html>. GM cast Lordstown and its faithful employees aside—all while benefiting from their taxpayer dollars.

II. GM did not provide the Authority with the statistics required to support changed market conditions.

Changed market conditions is not a catch-all term to describe *any* change in the market. By their very nature, markets change daily. The Agreements set out the kind of evidence the parties contemplated in their contract. Paragraph 11 in the Agreements defines “Market Conditions” as follows:

- Two consecutive quarters of decline in manufacturing employment in the State of Ohio as a whole or when possible by relevant manufacturing sector. Employment figures will be those reported by the Ohio Bureau of Employment Services.
- A decline, as a whole or by relevant sector, in twelve (12) of the last thirty-six (36) months as detailed in the Federal Reserve’s national industrial production index.
- The performance of the relevant sector as reported in Standard & Poor’s “Industry Surveys” or the “U.S. Industry & Trade Outlook.”⁶

Agreements, p. 4, ¶ 11. between the Authority requested that GM provide specific statistics to demonstrate how market conditions negatively impacted its ability to maintain operations at Lordstown. Even explaining its noncompliance, GM did not comply. Never once did GM cite to any of these resources as supporting its retention of the tax-credit certificates. Deducing the reason for GM’s failure to cite these statistics is simple—because these resources do not support its retention.

GM’s choice to eliminate 4000+ Lordstown jobs diverges from national trends. First, as reported by the Ohio Bureau of Labor Statistics from January 2018 (including at least two quarters prior to GM’s decision to close Lordstown), Motor Vehicle Manufacturing employed 20,200 Ohio citizens. Exhibit A, attached. This amount *increased* by January 2019 to 22,100. *Id.* Similarly, in January 2018, Vehicle Parts Manufacturing employed 76,400 individuals. *Id.* And by January 2019, Vehicle Parts Manufacturing decreased only slightly to employ 76,300 Ohio citizens. *Id.* Even the statistics for the two quarters prior to GM’s first instance of noncompliance in 2017 does not reflect “two consecutive quarters of decline.” *See* Exhibit B, attached. Rather, these statistics

⁶ Standard & Poor’s Industry Surveys were discontinued in 2012. Business Reference Services, *Standard & Poor’s Industry Surveys*, The Library of Congress (Apr. 12, 2018) https://www.loc.gov/rr/business/company/industry_surveys.html. Without relevant data to provide, this resource does not support retention or refund of the tax-credit certificates.

reflect a steady ebb and flow of increasing and decreasing employment in Motor Vehicle Manufacturing and a steady *increase* in Vehicle Parts Manufacturing. *Id.*

Second, the requested Federal Reserve national statistics are consistent with Ohio's. Annually, the Federal Reserve analyzes and releases the industrial production and capacity utilization for the Motor Vehicle Assembly industry. The Federal Reserve's data throughout 2018 does not reflect a decline in the motor vehicle assembly industry—rather, it indicates a slight decline and significant uptick, maintaining nearly the same employment statistics by the end of 2018. *See* Exhibit C, Table 3, attached. Throughout 2015 and leading up to GM's first instance of non-compliance in 2017, the Motor Vehicle Assembly industry experienced the same ebb and flow with significant increases and minor decreases—netting only a minimal decline by the end of 2015. *See* Exhibit D, Table 3, attached.

Because these resources negate the negative impact of "Market Conditions" on GM, the Attorney General strongly urges the Authority to hold GM accountable to the Agreements in all respects, reject GM's claimed "Market Conditions," and request a full, one-hundred percent refund of the Ohio taxpayers' money.

III. GM's alleged mitigating factors should not be considered.

The Authority properly afforded GM an opportunity to explain its noncompliance. In a mere five pages, GM argued that the Authority should not require *any* refund of the tax-credit certificates, citing several mitigating factors. These mitigating factors are unpersuasive. GM's elective departure from Lordstown manufacturing should not come at the cost of Ohio taxpayers.

GM did not "thoughtfully consider opportunities to mitigate the impact in the Mahoning Valley." GM Response, p. 1. GM failed to comply with its obligations and made minimal, unrelated efforts to aid the Lordstown facility. The Attorney General requests that this Authority

consider what GM has done to mitigate its chosen noncompliance. Such consideration also supports a full refund.

Leading up to GM's Lordstown closure, GM chose to periodically eliminate both the third and second shift of employees. Instead of utilizing Lordstown for production other than on the Cruze, GM chose to have the Lordstown assembly lines sitting idle for sixteen hours per day. *See* Phil LeBeau, *GM's Lordstown factory goes dark as automaker idles underused plants*, CNBC (Mar. 6, 2019) <https://www.cnbc.com/2019/03/06/gms-lordstown-factory-goes-dark-as-automaker-closes-underused-plants.html>. Reports confirm that GM's capacity utilization rate was amongst the worst of vehicle manufacturers in North America. *Id.* GM could have renovated Lordstown as it promised, allocating *any other* vehicle or manufacturing vehicle parts, but it did not. Instead, GM offered buyouts, retirement packages, or transfers to other GM facilities across the country. *See* Dan O'Brien, *GM Lordstown Suspends 2nd Shift; Buyouts Offered*, Business Journal Daily (Apr. 13, 2018) <https://businessjournaldaily.com/gm-lordstown-workers-react-to-end-of-2nd-shift/>. As discussed above, these minimal efforts were not welcomed or helpful to the Lordstown employees. Those who could not accept these offers were left without anything—and Ohio, which had bargained for long-term, good-paying manufacturing jobs, was left with nothing.

GM provided that this was a calculated decision to bolster itself. GM reported that its decision to shutter the Lordstown plant would save GM \$6 billion by the end of 2019, including \$4.5 billion in recurring annual costs, and a \$1.5 billion reduction in capital spending. *See* Tom Krisher and Rob Gillies, *GM to slash 14,700 jobs in North America; Lordstown plant will close*, The Columbus Dispatch (Nov. 26, 2018) <https://www.dispatch.com/business/20181126/gm-to-slash-14700-jobs-in-north-america-lordstown-plant-will-close>. GM made a business decision to breach.

It is important to note that repaying the tax-credit certificates will be at a cost to GM of one percent of its 2019 *savings* from closing the facility. This small charge is *de minimus* to GM and could never be construed as punitive.

In an effort to mitigate the devastating impact of its decision, GM now suggests that it “announced a new joint venture with LG Chem to mass produce battery cells for battery-electric vehicles” in Lordstown—but not at the Lordstown plant. GM Response, p. 4. Even this “charitable” endeavor came at the cost of Ohio taxpayers—GM received yet another tax abatement -- this time, a 75% tax abatement that will extend over fifteen years to allow the company to move forward with this new plant. *See GM gets tax break for new Lordstown factory it closed*, The Detroit News (Feb. 19, 2020) <https://www.detroitnews.com/story/business/autos/general-motors/2020/02/19/general-motors-gets-tax-break-new-lordstown-plant/4811966002/>. As it is subject to its own abatement, that facility is not mitigating this breach.

The Lordstown facility itself, GM abandoned. GM admits that it sold off the Lordstown facility to Lordstown Motors. Response, p. 4. Lordstown Motors has picked up the pieces and has begun to do what GM plainly refused to do. *See Kevin Miller, In Ohio, a Glimpse of Hope Among Heartbreak*, Bloomberg (June 24, 2020) <https://www.bloomberg.com/news/articles/2020-06-24/in-blue-collar-car-country-a-glimpse-of-hope-among-heartbreak>. GM claims that “there were no products to allocate to Lordstown” and that Lordstown was unable to produce anything but small cars. *See David Welch, GM Squeezed \$118 Million From Its Ohio Workers, Then Shut The Plant*, Bloomberg (Mar. 29, 2019) <https://www.bloomberg.com/news/articles/2019-03-29/gm-brushed-off-union-concessions-before-idling-ohio-car-plant>.

Lordstown Motors has proved that untrue. Lordstown Motors purchased the Lordstown facility, has employed 700 employees and 100 contractors (with plans to hire as many as 600 line

workers for production in 2021), and retooled the assembly lines GM left behind. *See* Kevin Miller, *In Ohio, a Glimpse of Hope Among Heartbreak*, Bloomberg (June 24, 2020) <https://www.bloomberg.com/news/articles/2020-06-24/in-blue-collar-car-country-a-glimpse-of-hope-among-heartbreak>. Moreover, Lordstown Motors is manufacturing pickups, instead of small cars—a feat GM claimed was impossible. *Id.* Lordstown Motors is mitigating the impact to Lordstown—not GM. GM should not receive any benefit of Lordstown Motors’ breath of hope into the Mahoning Valley. And, in fact, Lordstown Motors’ impact, which comes with significantly less Ohio taxpayer dollars, *supports* a full refund because Lordstown Motors is accomplishing what GM apparently refused to do at Lordstown.

IV. GM’s other presence in Ohio is important, but not exculpatory.

The Authority should also consider GM’s presence throughout Ohio, although GM has received tax benefits for those facilities as well. This presents a novel and truly innovative argument: that because the State of Ohio has given tax incentives to other plants that GM has not closed, the State should do nothing about the huge plant that it did close.

GM employs fewer of our people in those other facilities than it did in Lordstown. GM Response, p. 3. These facilities, while important, are not located in hard-hit Northeast Ohio. GM’s fractional remaining locations do not bear the entire weight of GM’s request to retain *all* of the tax-credit certificates.

GM is required by contract to maintain those abated facilities. If the Authority fails to enforce the terms of this agreement, should GM feel any obligation to fulfill its other contracts with Ohio?

GM's presence in Ohio is welcome -- we have spent substantial resources to make that clear. But we do insist on the benefit of our bargain. It's just sound business.

V. Unforeseeable factors: COVID-19

Paragraph 11 of the agreements also allows the Authority to consider factors beyond the control of GM that were not reasonably foreseeable at the time of the execution of this Agreement. To this end, GM encourages the Authority to consider its steps to lessen the impact of the novel COVID-19 pandemic. GM's argument does not support retention.

The Authority should not consider GM's pandemic efforts as they are irrelevant to GM's continued noncompliance from 2017 to present. GM's actions to combat the coronavirus are separate in both time and meaning from this Authority's consideration of a refund request. Paragraph 11 calls for is a consideration of unforeseeable factors "at the time of the execution of this Agreement" that caused GM to be unable to comply. Agreements, ¶ 11. This is, in essence, a force majeure clause. The pandemic was not in existence at the time of the execution of the Agreements, nor was it a contributing factor to GM's decision to close the Lordstown plant.

The unforeseeable pandemic did not prevent GM from compliance with the agreements and thus should not be considered by this Authority with regard to its refund request.

VI. A full refund request is consistent with the Authority's precedent.

To date, as reflected by the Authority's minutes, the Authority has never had to consider such substantial noncompliance. GM's Retention Agreement and Creation Agreement provide for a higher percentage of tax-credit certificates, over a longer period of time, for a much, much larger number of employees than any other agreement previously considered by the Authority. This means one thing—GM's noncompliance has created the most egregious devastation that either the Retention Program or the Creation Program has ever experienced. Only a one-hundred percent refund equitably compensates the taxpayers of Ohio.

While no other noncompliance consideration by this Authority gives it an exact landscape for the refund amount here, the Authority's request for a full refund of GM's tax-credit certificates is consistent with the Authority's precedent in similar, albeit smaller-scale, matters.

As part of its duties in administering and monitoring the Retention Program and Creation Program, the Authority consistently requests refunds from taxpayers that fail to maintain operations as required by their respective agreements. In past experience and depending on the circumstances, the Authority has reduced the recommended refund amount if the taxpayer presents compelling market conditions to explain the closure of a plant, and further reduced the amount if the taxpayer has continuing operations in Ohio.

In recent years, the Authority has only twice considered a taxpayer who entirely ceased operations during the term of their agreement. In May 2019, this Authority considered the ceased operations of Legacy Measurement which received a job creation tax-credit certificate. In 2013, the Authority began disbursing a 55% over 7-year tax-credit certificate in exchange for Legacy Measurement creating 150 jobs. Legacy created 85 jobs and received a total of \$189,055.31-worth of tax-credit certificates, but ceased operations during the term of the agreement. The Authority voted to require a 100% repayment of the credits issued. Even this instance, however, pales in comparison to the extent and impact of GM's noncompliance here.

Also in May 2019, this Authority considered the failure of AdvancePierre Foods, Inc. to maintain operations for the active term of its agreement with the Authority. There, AdvancePierre began receiving a 55% tax-credit certificate in 2014 for an active term of seven years, in order to create 43 jobs and retain 59 jobs at its project location. Although entitled to request a full refund, the Authority reduced its request to a 68% request based on AdvancePierre's other operations in Ohio. In this case AdvancePierre received a lesser percentage of tax-credit, served a greater

percentage of the required term, and only minimally, negatively impacted the local economy because the total number of jobs created or retained were a small fraction of GM's requirements here.

As such, on behalf of Ohio taxpayers, the Attorney General urges the Authority to remain consistent with its precedent and request a full, one-hundred percent refund of GM's tax-credit certificates.

CONCLUSION

Ohio never assumed GM's business risks, and was denied its benefit of the bargain. Repaying the credit is more than fair to GM considering its claimed savings from the closure. For the reasons set forth in the foregoing brief of amicus curiae, the Authority should certify one-hundred percent as the amount to be refunded from GM to the Tax Commissioner.

Respectfully submitted,

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Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2019	January	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,100						
Ohio	2019	January	Vehicle Parts Manufacturing	Not Adj.	76,300						
Ohio	2019	February	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,700						
Ohio	2019	February	Vehicle Parts Manufacturing	Not Adj.	76,500						
Ohio	2019	March	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,500						
Ohio	2019	March	Vehicle Parts Manufacturing	Not Adj.	75,700						
Ohio	2019	April	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,900						
Ohio	2019	April	Vehicle Parts Manufacturing	Not Adj.	75,400						
Ohio	2019	May	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,100						
Ohio	2019	May	Vehicle Parts Manufacturing	Not Adj.	75,500						
Ohio	2019	June	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,500						
Ohio	2019	June	Vehicle Parts Manufacturing	Not Adj.	75,900						
Ohio	2019	July	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,700						
Ohio	2019	July	Vehicle Parts Manufacturing	Not Adj.	75,400						
Ohio	2019	August	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,700						
Ohio	2019	August	Vehicle Parts Manufacturing	Not Adj.	75,700						
Ohio	2019	Septem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,500						
Ohio	2019	Septem..	Vehicle Parts Manufacturing	Not Adj.	75,100						
Ohio	2019	October	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,500						
Ohio	2019	October	Vehicle Parts Manufacturing	Not Adj.	73,300						
Ohio	2019	Novem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,300						
Ohio	2019	Novem..	Vehicle Parts Manufacturing	Not Adj.	75,100						

Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2019	Decemb..	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,800						
Ohio	2019	Decemb..	Vehicle Parts Manufacturing	Not Adj.	75,900						
Ohio	2018	January	31336100 - Motor Vehicle Manufacturing	Not Adj.	20,200						
Ohio	2018	January	Vehicle Parts Manufacturing	Not Adj.	76,400						
Ohio	2018	February	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,600						
Ohio	2018	February	Vehicle Parts Manufacturing	Not Adj.	77,300						
Ohio	2018	March	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,100						
Ohio	2018	March	Vehicle Parts Manufacturing	Not Adj.	76,800						
Ohio	2018	April	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,800						
Ohio	2018	April	Vehicle Parts Manufacturing	Not Adj.	76,500						
Ohio	2018	May	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,000						
Ohio	2018	May	Vehicle Parts Manufacturing	Not Adj.	76,100						
Ohio	2018	June	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,400						
Ohio	2018	June	Vehicle Parts Manufacturing	Not Adj.	75,900						
Ohio	2018	July	31336100 - Motor Vehicle Manufacturing	Not Adj.	20,900						
Ohio	2018	July	Vehicle Parts Manufacturing	Not Adj.	74,800						
Ohio	2018	August	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,800						
Ohio	2018	August	Vehicle Parts Manufacturing	Not Adj.	75,000						
Ohio	2018	Septem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,800						
Ohio	2018	Septem..	Vehicle Parts Manufacturing	Not Adj.	74,400						
Ohio	2018	October	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,900						
Ohio	2018	October	Vehicle Parts Manufacturing	Not Adj.	75,000						

Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2018	Novem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,300						
Ohio	2018	Novem..	Vehicle Parts Manufacturing	Not Adj.	75,800						
Ohio	2018	Decemb..	31336100 - Motor Vehicle Manufacturing	Not Adj.	22,900						
Ohio	2018	Decemb..	Vehicle Parts Manufacturing	Not Adj.	76,600						

Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2017	January	31336100 - Motor Vehicle Manufacturing	Not Adj.	20,900						
Ohio	2017	January	Vehicle Parts Manufacturing	Not Adj.	76,000						
Ohio	2017	February	31336100 - Motor Vehicle Manufacturing	Not Adj.	19,700						
Ohio	2017	February	Vehicle Parts Manufacturing	Not Adj.	75,500						
Ohio	2017	March	31336100 - Motor Vehicle Manufacturing	Not Adj.	20,100						
Ohio	2017	March	Vehicle Parts Manufacturing	Not Adj.	75,500						
Ohio	2017	April	31336100 - Motor Vehicle Manufacturing	Not Adj.	18,400						
Ohio	2017	April	Vehicle Parts Manufacturing	Not Adj.	75,500						
Ohio	2017	May	31336100 - Motor Vehicle Manufacturing	Not Adj.	18,400						
Ohio	2017	May	Vehicle Parts Manufacturing	Not Adj.	75,300						
Ohio	2017	June	31336100 - Motor Vehicle Manufacturing	Not Adj.	18,900						
Ohio	2017	June	Vehicle Parts Manufacturing	Not Adj.	75,500						
Ohio	2017	July	31336100 - Motor Vehicle Manufacturing	Not Adj.	15,700						
Ohio	2017	July	Vehicle Parts Manufacturing	Not Adj.	73,900						
Ohio	2017	August	31336100 - Motor Vehicle Manufacturing	Not Adj.	18,800						
Ohio	2017	August	Vehicle Parts Manufacturing	Not Adj.	75,700						
Ohio	2017	Septem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	17,200						
Ohio	2017	Septem..	Vehicle Parts Manufacturing	Not Adj.	75,000						
Ohio	2017	October	31336100 - Motor Vehicle Manufacturing	Not Adj.	20,700						
Ohio	2017	October	Vehicle Parts Manufacturing	Not Adj.	76,400						
Ohio	2017	Novem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,700						
Ohio	2017	Novem..	Vehicle Parts Manufacturing	Not Adj.	77,600						

Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2017	Decemb..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,400						
Ohio	2017	Decemb..	Vehicle Parts Manufacturing	Not Adj.	77,800						
Ohio	2016	January	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,500						
Ohio	2016	January	Vehicle Parts Manufacturing	Not Adj.	75,100						
Ohio	2016	February	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,900						
Ohio	2016	February	Vehicle Parts Manufacturing	Not Adj.	75,200						
Ohio	2016	March	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,600						
Ohio	2016	March	Vehicle Parts Manufacturing	Not Adj.	74,900						
Ohio	2016	April	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,700						
Ohio	2016	April	Vehicle Parts Manufacturing	Not Adj.	75,000						
Ohio	2016	May	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,800						
Ohio	2016	May	Vehicle Parts Manufacturing	Not Adj.	74,800						
Ohio	2016	June	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,900						
Ohio	2016	June	Vehicle Parts Manufacturing	Not Adj.	75,200						
Ohio	2016	July	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,000						
Ohio	2016	July	Vehicle Parts Manufacturing	Not Adj.	75,200						
Ohio	2016	August	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,700						
Ohio	2016	August	Vehicle Parts Manufacturing	Not Adj.	75,300						
Ohio	2016	Septem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,500						
Ohio	2016	Septem..	Vehicle Parts Manufacturing	Not Adj.	75,300						
Ohio	2016	October	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,400						
Ohio	2016	October	Vehicle Parts Manufacturing	Not Adj.	75,400						

Current Employment Statistics - CES

Area	Year	Period	Industry	Adjustment	Employ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..	Avg. Weekly ..	Avg. Weekly ..	Avg. Hourly ..
Ohio	2016	Novem..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,700						
Ohio	2016	Novem..	Vehicle Parts Manufacturing	Not Adj.	75,900						
Ohio	2016	Decemb..	31336100 - Motor Vehicle Manufacturing	Not Adj.	21,100						
Ohio	2016	Decemb..	Vehicle Parts Manufacturing	Not Adj.	76,200						

FEDERAL RESERVE statistical release



G.17 (419)

For release at 9:15 a.m. (EST)
January 18, 2019

INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Industrial production increased 0.3 percent in December after rising 0.4 percent in November. For the fourth quarter as a whole, total industrial production moved up at an annual rate of 3.8 percent. In December, manufacturing output increased 1.1 percent, its largest gain since February 2018. The output of mines rose

(over)

Industrial Production and Capacity Utilization: Summary

Seasonally adjusted

Industrial production	2012=100						Percent change						Dec. '17 to Dec. '18
	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Total index	107.9	108.8	108.9	109.1	109.6	109.9	.4	.8	.1	.2	.4	.3	4.0
<i>Previous estimates</i>	107.9	108.8	108.9	108.7	109.4		.4	.8	.1	-.2	.6		
Major market groups													
Final Products	102.4	103.2	103.7	104.3	103.9	104.1	.2	.7	.5	.6	-.3	.2	2.6
Consumer goods	105.5	106.0	106.2	107.0	106.3	106.3	.3	.4	.3	.7	-.6	.0	1.0
Business equipment	99.7	101.2	102.3	102.6	102.9	103.4	.2	1.6	1.1	.3	.2	.5	5.0
Nonindustrial supplies	107.0	107.0	106.7	107.0	107.0	107.3	-.2	.0	-.3	.3	.0	.3	.7
Construction	114.1	114.4	113.7	113.3	113.5	115.3	-.1	.3	-.7	-.4	.2	1.6	2.1
Materials	112.6	113.9	113.9	113.7	115.0	115.5	.8	1.1	.0	-.1	1.1	.5	6.1
Major industry groups													
Manufacturing (see note below)	104.4	104.9	105.1	105.0	105.0	106.2	.4	.5	.2	-.2	.1	1.1	3.2
<i>Previous estimates</i>	104.3	104.8	105.0	104.9	104.9		.3	.5	.2	-.1	.0		
Mining	123.8	126.6	127.3	127.1	128.5	130.5	.8	2.3	.6	-.2	1.1	1.5	13.4
Utilities	104.2	105.4	104.1	107.5	108.9	102.0	.2	1.1	-1.3	3.3	1.3	-6.3	-4.3
Capacity utilization													
	Percent of capacity												Capacity growth
	Average 1972-2017	1988-89 high	1990-91 low	1994-95 high	2009 low	2017 Dec.	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	Dec. '17 to Dec. '18
Total industry	79.8	85.2	78.8	85.0	66.7	77.3	78.0	78.5	78.4	78.4	78.6	78.7	2.1
<i>Previous estimates</i>							78.0	78.5	78.4	78.1	78.5		
Manufacturing (see note below)	78.3	85.6	77.3	84.6	63.7	75.2	75.7	76.0	76.1	75.9	75.8	76.5	1.4
<i>Previous estimates</i>							75.7	76.0	76.0	75.8	75.7		
Mining	87.0	86.3	84.3	88.6	78.2	88.6	92.3	93.9	93.9	93.3	93.9	94.8	6.0
Utilities	85.3	92.9	84.4	92.9	78.3	79.9	77.3	78.0	76.9	79.3	80.2	75.0	2.0
Stage-of-process groups													
Crude	86.0	87.8	84.7	90.0	76.4	86.9	90.6	91.9	91.9	91.4	92.1	92.8	4.3
Primary and semifinished	80.4	86.5	78.1	87.7	63.8	76.4	75.9	76.3	75.9	76.3	76.6	76.0	1.5
Finished	76.9	83.4	77.3	80.7	66.6	74.3	75.0	75.3	75.7	75.5	75.2	76.0	1.3

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.

1.5 percent, but the index for utilities fell 6.3 percent, as warmer-than-usual temperatures lowered the demand for heating. At 109.9 percent of its 2012 average, total industrial production was 4.0 percent higher in December than it was a year earlier. Capacity utilization for the industrial sector rose 0.1 percentage point in December to 78.7 percent, a rate that is 1.1 percentage points below its long-run (1972–2017) average.

Market Groups

The major market groups posted broad-based gains in December, though consumer energy products, business supplies, and energy materials all recorded decreases because of the drop in the output of utilities.

Durable consumer goods posted the largest gain among the major non-energy market groups, nearly 2¾ percent, followed by a gain of about 2¼ percent for defense and space equipment and an increase of almost 1½ percent for construction supplies. The indexes for non-energy materials and for non-energy nondurable consumer goods rose nearly 1 percent, while the index for business equipment moved up ½ percent.

Industry Groups

Manufacturing output advanced 1.1 percent in December and increased at an annual rate of 2.3 percent in the fourth quarter; the index rose 2.5 percent between the fourth quarter of 2017 and the fourth quarter of 2018. Within durable manufacturing, motor vehicles and parts posted a gain of 4.7 percent in December, and nonmetallic mineral products recorded an increase of nearly 3 percent; the indexes for several other durable goods industries advanced more than 1 percent. Among nondurables, the index for petroleum and coal products jumped 3½ percent. Most other major categories of nondurables posted gains of less than 1 percent. The output of other manufacturing (publishing and logging) increased 0.2 percent.

Mining output rose 1.5 percent in December, with gains in oil and gas extraction, coal mining, and support activities for mining (mainly oil and gas well drilling); the index for mining was 13.4 percent above its level from a year earlier. The output of utilities fell 6.3 percent in December, with both electric and gas utilities posting sharp declines.

Capacity utilization for manufacturing jumped 0.7 percentage point in December to 76.5 percent, about 2 percentage points below its long-run average. The utilization rate for mining increased to 94.8 percent and remained well above its long-run average of 87.0 percent. The operating rate for utilities fell to 75.0 percent, a rate that is about 10 percentage points below its long-run average.

100 Years of the Industrial Production Index

With this release, the index of industrial production comprises a full 100 years of monthly data, from January 1919 to December 2018. A brief history of the index is available on the Board's website at https://www.federalreserve.gov/releases/g17/100_years_of_ip_data.htm.

Tables

1. Industrial Production: Market and Industry Group Summary; percent change
2. Industrial Production: Special Aggregates and Selected Detail; percent change
3. Motor Vehicle Assemblies
4. Industrial Production: Market and Industry Group Summary; indexes
5. Industrial Production: Special Aggregates and Selected Detail; indexes
6. Diffusion Indexes of Industrial Production
7. Capacity Utilization
8. Industrial Capacity
9. Gross Value of Final Products and Nonindustrial Supplies
10. Gross-Value-Weighted Industrial Production: Stage-of-Process Groups
11. Historical Statistics: Total Industry
12. Historical Statistics: Manufacturing
13. Historical Statistics: Total Industry Excluding Selected High-Technology Industries
14. Historical Statistics: Manufacturing Excluding Selected High-Technology Industries
15. Industrial Production: Reliability Estimates

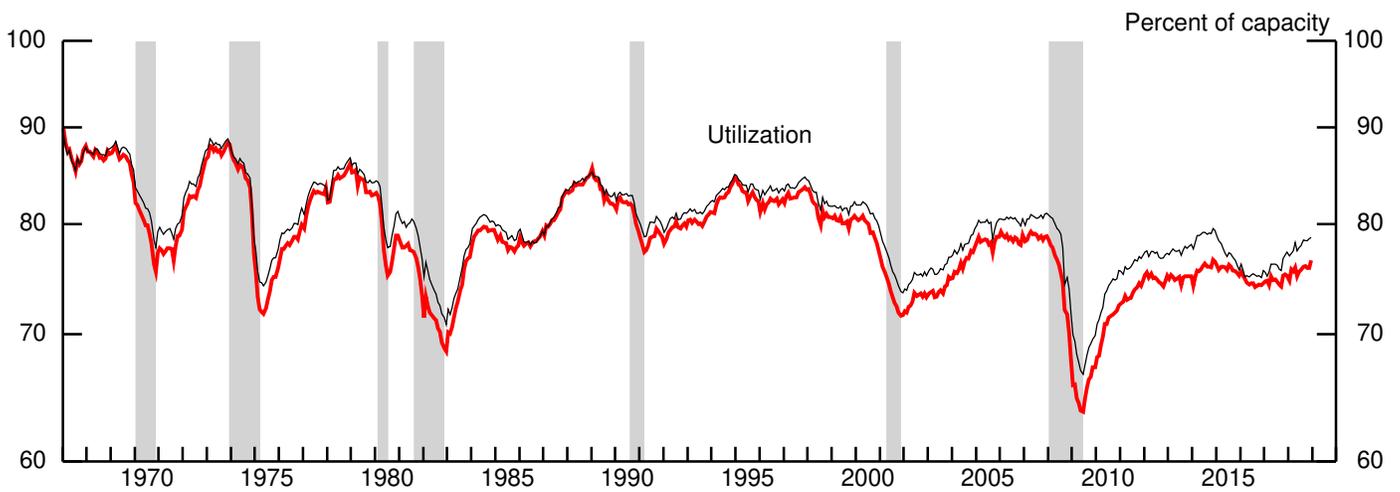
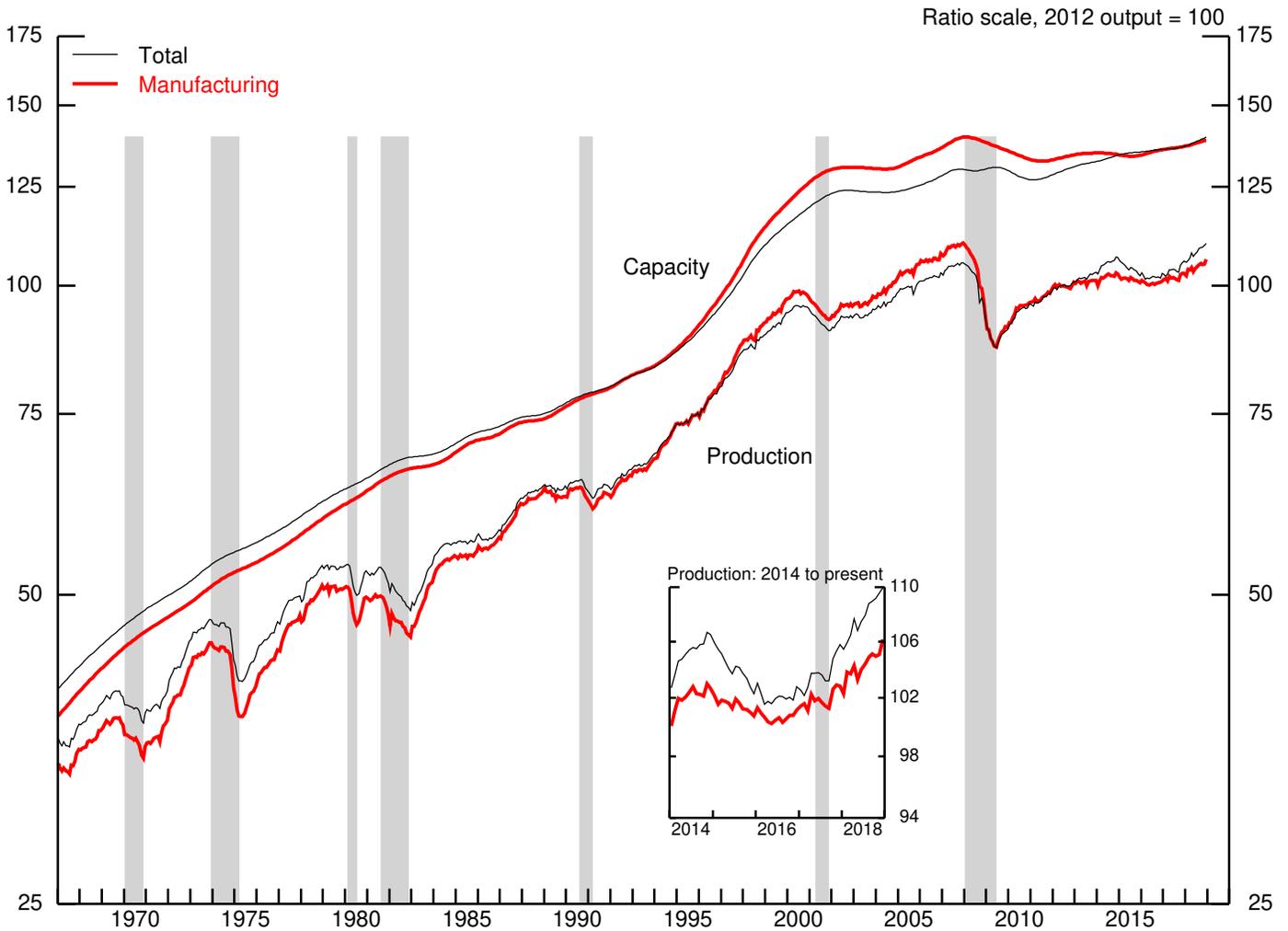
Further detail is available on the Board's website (www.federalreserve.gov/releases/G17/).

Revision of Industrial Production and Capacity Utilization

The Federal Reserve Board plans to issue its annual revision to the index of industrial production (IP) and the related measures of capacity utilization around the end of the first quarter of 2019. The Economic Census for 2017 will not be available from the U.S. Census Bureau by early 2019, so no new annual benchmark data will be included for manufacturing. Other annual data, including information on the mining of metallic and nonmetallic minerals (except fuels), will be incorporated. The updated IP indexes will include revisions to the monthly indicator (either product data or input data) and to seasonal factors for each industry. In addition, the estimation methods for some series may be changed. Any modifications to the methods for estimating the output of an industry will affect the index from 1972 to the present.

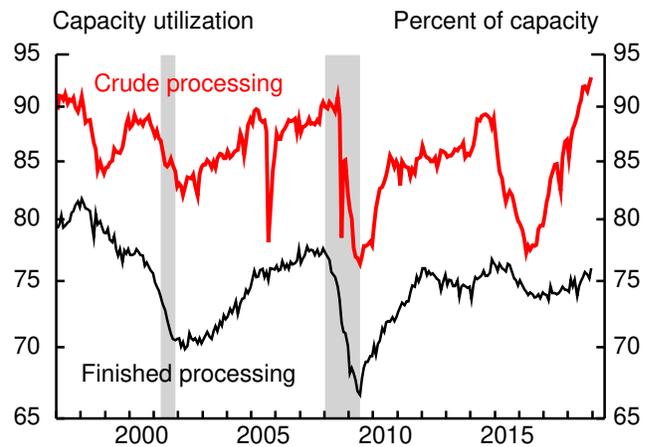
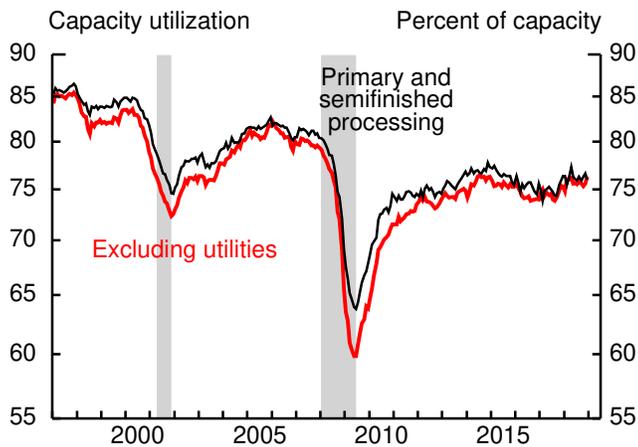
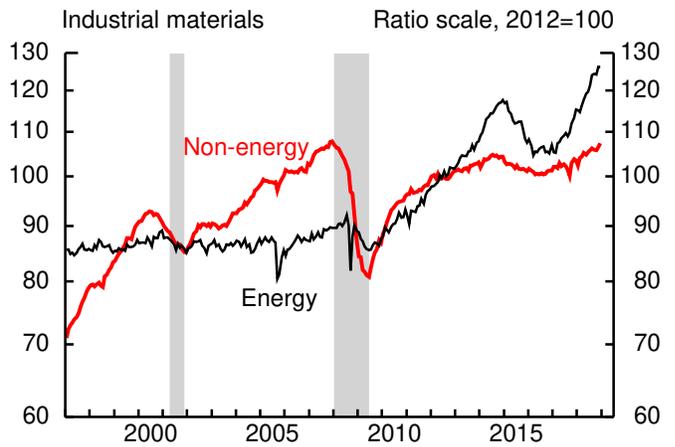
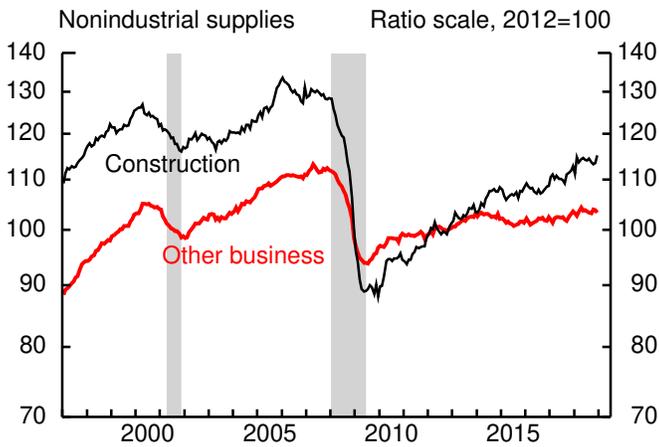
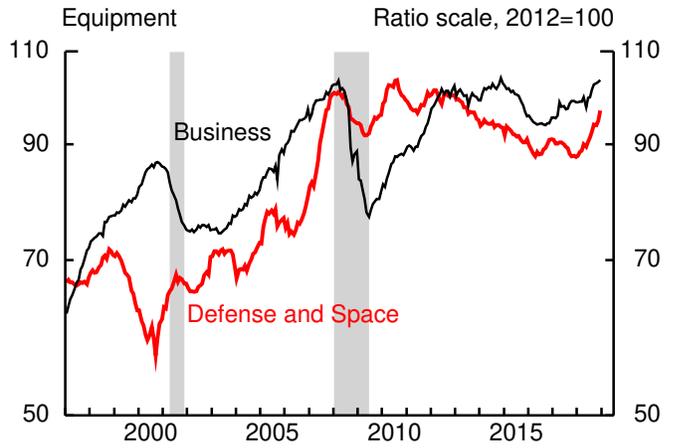
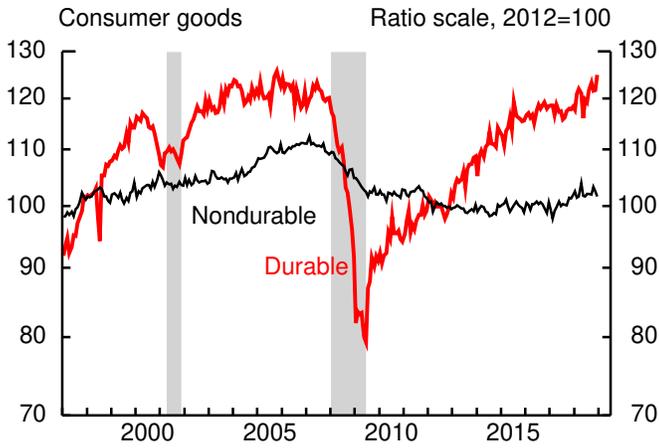
Capacity and capacity utilization will be revised to incorporate data through the fourth quarter of 2018 from the U.S. Census Bureau's Quarterly Survey of Plant Capacity Utilization along with new data on capacity from the U.S. Geological Survey, the U.S. Department of Energy, and other organizations.

1. Industrial production, capacity, and utilization



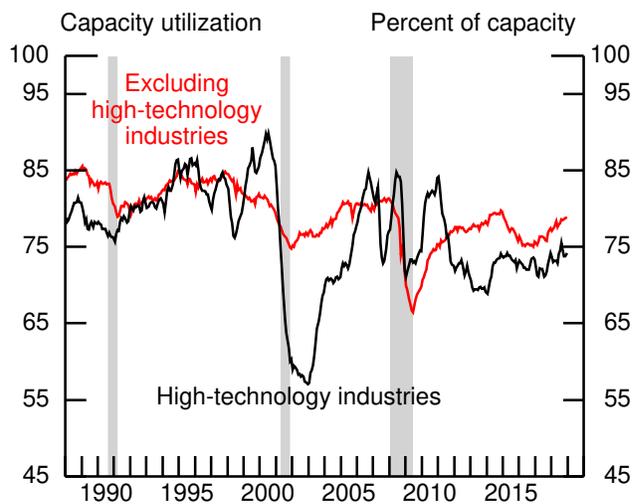
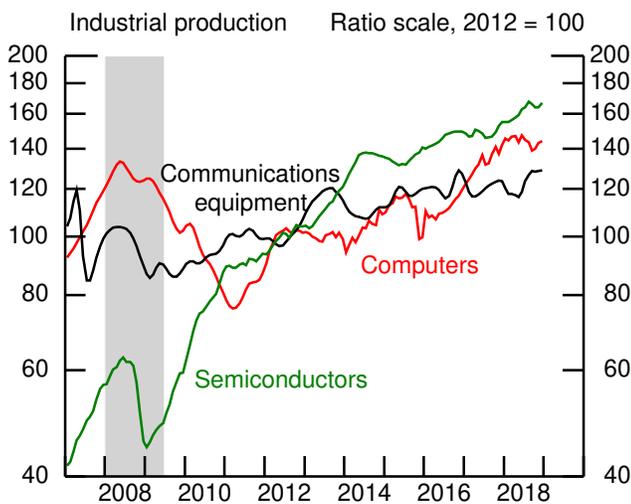
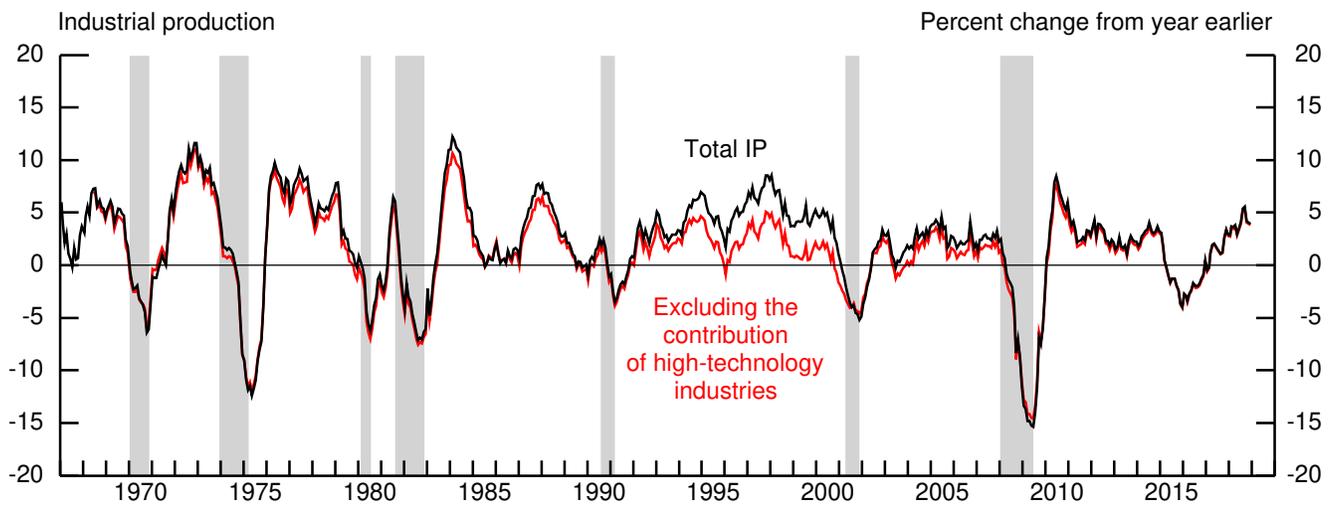
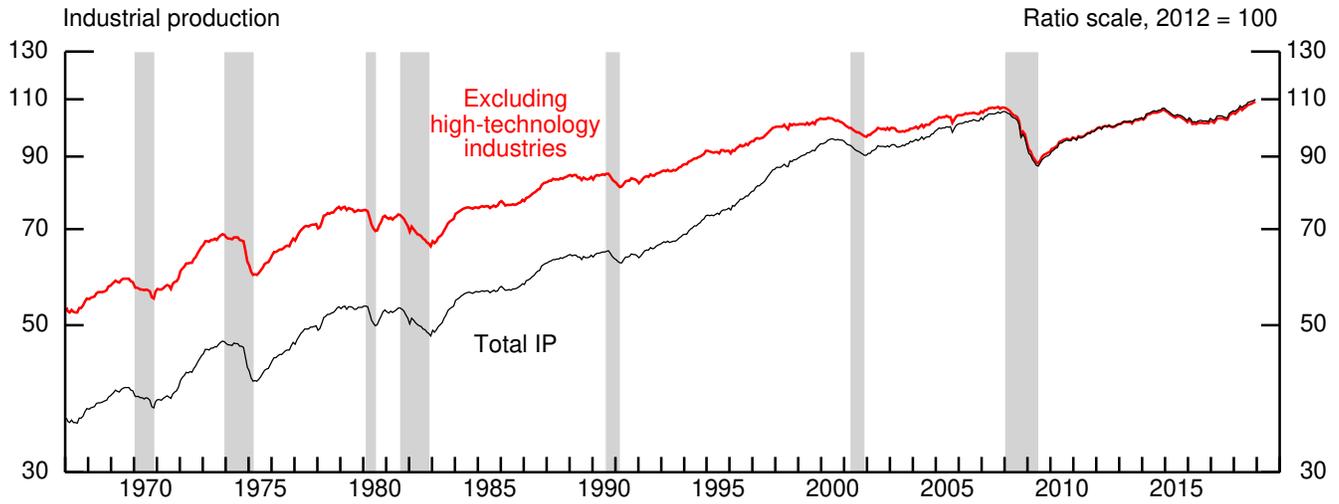
Note: The shaded areas are periods of business recession as defined by the National Bureau of Economic Research (NBER).

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 and capacity utilization, high-technology 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 are periods of business recession as defined by the NBER.

Table 1
INDUSTRIAL PRODUCTION: MARKET AND INDUSTRY GROUP SUMMARY

Percent change, seasonally adjusted

Item	2017 proportion ¹	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '17 to Dec. '18
		2016	2017	2018	2018 Q2	Q3 ^r	Q4 ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Total IP	100.00	-.5	3.0	4.1	5.2	4.7	3.8	.4	.8	.1	.2	.4	.3	4.0
MARKET GROUPS														
Final products and nonindustrial supplies	54.37	-.1	2.1	2.3	2.3	1.7	3.2	.1	.6	.3	.5	-.2	.2	2.1
Consumer goods	28.03	.8	1.3	1.6	1.0	.6	2.3	.3	.4	.3	.7	-.6	.0	1.0
Durable	6.35	2.5	-.4	3.9	-4.1	8.5	4.3	-.5	2.1	1.3	-1.4	.0	2.7	5.5
Automotive products	3.31	4.2	-.6	4.4	-8.6	11.0	6.3	-2.1	4.4	1.6	-2.6	.2	4.8	7.0
Home electronics	.14	2.1	5.0	3.6	-6.3	17.1	16.8	3.5	-.4	.5	2.7	1.3	.5	6.1
Appliances, furniture, carpeting	.88	.3	-2.1	.9	-1.4	3.2	3.7	1.8	-1.7	.8	.3	.9	.4	1.6
Miscellaneous goods	2.02	.8	.2	4.5	2.8	6.3	.8	.9	.4	.9	-.3	-.6	.3	4.6
Nondurable	21.68	.2	1.8	.9	2.6	-1.6	1.8	.5	-.1	.0	1.3	-.8	-.8	-.2
Non-energy	16.70	-.8	1.6	.4	-.7	1.9	-2.0	1.2	-.5	.2	-.1	-.9	.8	.7
Foods and tobacco	9.65	.2	3.2	.7	.7	1.7	-4.3	1.4	-1.1	.2	-.5	-1.1	.9	.9
Clothing	.20	-2.7	-9.9	-4.2	-.9	-5.4	-17.4	4.1	-3.1	-1.8	-1.6	-1.5	.4	-5.4
Chemical products	5.29	-1.9	.8	.7	-.9	4.4	.1	1.2	-.1	-.1	.1	-.3	.6	.7
Paper products	1.12	-3.9	-4.3	-2.4	-12.8	-5.6	12.2	-.2	2.3	2.0	1.5	-1.1	.4	.4
Energy	4.98	4.4	2.5	2.5	13.3	-11.8	14.1	-1.8	1.4	-.7	5.8	-.6	-5.6	-3.3
Business equipment	9.51	-2.2	4.4	4.3	.9	9.4	7.7	.2	1.6	1.1	.3	.2	.5	5.0
Transit	2.46	-6.0	.7	4.1	-3.9	12.9	6.8	-.9	1.1	2.8	-1.9	.6	2.9	7.3
Information processing	2.13	3.3	3.1	4.8	4.3	6.1	1.9	1.6	-.5	.2	-.2	.4	1.3	6.1
Industrial and other	4.92	-2.4	7.0	4.2	2.0	9.1	10.9	.1	2.7	.7	1.6	.0	-1.0	3.4
Defense and space equipment	2.12	.0	-3.3	8.5	7.8	12.0	11.2	1.0	1.3	1.5	-.1	.9	2.3	10.6
Construction supplies	5.12	.5	3.4	1.7	4.3	-1.2	-.2	-.1	.3	-.7	-.4	.2	1.6	2.1
Business supplies	8.98	.5	1.1	.6	3.1	-2.1	1.3	-.3	-.2	-.1	.7	-.1	-.5	-.2
Materials	45.63	-1.1	4.1	6.1	8.7	8.2	4.5	.8	1.1	.0	-.1	1.1	.5	6.1
Non-energy	27.58	-.2	2.2	3.0	6.0	3.2	2.1	.3	.4	-.2	-.2	.7	.9	3.7
Durable	16.31	-.8	2.2	3.5	2.8	2.7	4.3	.0	.6	.3	-.3	.9	1.1	4.4
Consumer parts	2.99	-.2	.6	3.7	-3.5	.5	8.2	-1.4	2.0	.3	-.6	1.8	1.7	4.7
Equipment parts	4.79	.3	.8	5.4	5.4	9.1	3.2	.7	1.5	-.1	-.2	.5	.8	5.6
Other	8.53	-1.6	3.6	2.3	3.6	.1	3.7	.2	-.5	.5	-.2	.9	1.0	3.6
Nondurable	11.27	.7	2.2	2.2	10.8	3.9	-1.0	.7	.2	-1.0	-.1	.3	.7	2.7
Textile	.35	.5	-3.1	5.7	-.7	2.7	13.6	-1.2	3.6	-2.6	4.3	.3	-1.7	4.1
Paper	1.88	.1	-3.5	-.7	-.9	1.5	-3.6	2.2	-2.1	.4	.1	-.3	-.9	-2.2
Chemical	5.78	.2	4.1	4.3	21.3	6.0	.3	.1	1.1	-1.5	-.3	1.0	1.2	6.0
Energy	18.05	-2.7	7.3	10.7	12.6	15.5	7.8	1.5	2.1	.2	.0	1.6	-.1	9.5
INDUSTRY GROUPS														
Manufacturing	75.52	-.1	1.9	2.5	2.3	3.7	2.3	.4	.5	.2	-.2	.1	1.1	3.2
Manufacturing (NAICS)	31-33	73.44	.1	2.1	2.8	2.6	4.2	2.3	.4	.5	.2	-.2	.1	3.4
Durable manufacturing		37.57	-.3	1.9	4.4	2.0	5.8	5.7	-.1	1.4	.5	-.2	.5	5.3
Wood products	321	1.42	4.2	3.8	.0	-2.5	.7	-4.8	-.9	1.7	.2	-2.3	-.3	1.8
Nonmetallic mineral products	327	2.20	-.4	5.2	1.9	5.3	-4.8	.2	.2	-.2	-1.5	.8	-.9	2.8
Primary metals	331	2.63	-4.0	4.5	6.3	1.2	1.2	19.8	-.7	1.8	.9	.9	3.4	8.4
Fabricated metal products	332	5.45	-1.8	3.1	4.9	4.2	3.8	2.8	-.3	.7	.1	.2	.2	4.8
Machinery	333	5.30	-2.3	9.1	6.0	5.1	11.7	10.6	.4	3.0	.5	.7	1.0	-6
Computer and electronic products	334	4.88	4.5	2.5	5.7	6.2	9.3	1.9	1.5	.2	.0	-.3	.4	6.5
Electrical equip., appliances, and components	335	1.82	-.1	.5	3.4	5.7	5.7	-1.6	.9	-.2	.1	-.6	.3	.1
Motor vehicles and parts	3361-3	5.62	2.2	-1.3	4.8	-9.6	9.5	6.1	-2.5	3.7	2.2	-2.8	.2	4.7
Aerospace and miscellaneous transportation equipment	3364-9	4.32	-3.1	-2.4	4.3	3.7	8.3	9.9	.5	1.1	.9	.1	1.2	1.7
Furniture and related products	337	1.19	-.7	-3.4	2.4	2.3	2.5	6.9	.6	-.7	1.6	1.0	-.2	2.4
Miscellaneous	339	2.74	-1.8	-3.4	1.1	5.3	-.5	3.1	.0	.4	-.3	1.6	-1.1	1.7
Nondurable manufacturing		35.87	.6	2.4	1.1	3.3	2.6	-1.2	.9	-.4	-.1	-.2	-.3	.9
Food, beverage, and tobacco products	311,2	11.70	.7	3.5	.9	1.4	2.1	-4.5	1.4	-1.0	.2	-.5	-1.1	.9
Textile and product mills	313,4	.65	.2	-1.7	2.7	-1.5	1.8	4.0	-.3	1.8	-1.9	2.3	-.6	1.7
Apparel and leather	315,6	.21	-2.5	-9.4	-4.4	-1.5	-5.9	-16.6	3.9	-3.1	-1.7	-1.5	-.5	-5.5
Paper	322	2.50	1.0	-2.3	-.2	.5	.4	-1.2	1.8	-1.2	-.2	.7	-.5	-2
Printing and support	323	1.41	1.1	-2.0	-1.8	.5	-1.7	-5.4	.3	-2.4	1.6	-1.0	-1.0	-.1
Petroleum and coal products	324	3.41	3.8	2.6	-.6	3.2	.3	-2.9	-1.0	.8	-.5	-.2	-2.4	3.5
Chemicals	325	12.38	-.6	3.3	2.7	9.3	4.6	1.5	.9	.1	-.6	.0	.8	.5
Plastics and rubber products	326	3.60	1.6	2.0	.0	-6.7	3.3	3.7	1.6	-.8	.6	-.1	1.0	.5
Other manufacturing (non-NAICS)	1133,5111	2.07	-5.1	-7.0	-6.6	-10.5	-15.3	3.4	-1.0	.0	1.3	.7	-1.1	.2
Mining	21	14.12	-6.2	10.7	13.4	16.4	17.4	9.2	.8	2.3	.6	-.2	1.1	1.5
Utilities	2211,2	10.36	2.3	2.2	1.8	11.4	-5.7	6.2	.2	1.1	-1.3	3.3	1.3	-6.3
Electric	2211	9.00	2.2	1.1	.9	10.1	-1.7	-1.9	-.1	1.4	-1.8	.9	1.2	-4.2
Natural gas	2212	1.37	3.6	9.7	7.2	20.1	-27.4	72.2	1.7	-.8	2.2	19.2	1.3	-17.5

r Revised, p Preliminary.

NOTE. Under the industry groups, the figures to the right of the series descriptions are 2012 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). Under market groups, in the products category, miscellaneous consumer nondurables, oil and gas drilling, and manufactured homes are not shown separately; in the nondurable materials category, containers and miscellaneous nondurable materials are not shown separately.

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.

Table 2
INDUSTRIAL PRODUCTION: SPECIAL AGGREGATES AND SELECTED DETAIL

Percent change, seasonally adjusted

Item	2017 proportion	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '17 to Dec. '18	
		2016	2017	2018	2018 Q2	Q3 ^r	Q4 ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p		
Total industry	100.00	-.5	3.0	4.1	5.2	4.7	3.8	.4	.8	.1	.2	.4	.3	4.0	
Energy	25.92	-1.5	6.3	8.5	12.8	7.7	8.6	.5	1.9	-.2	1.3	1.0	-1.4	6.2	
Consumer products	4.98	4.4	2.5	2.5	13.3	-11.8	14.1	-1.8	1.4	-.7	5.8	-.6	-5.6	-3.3	
Commercial products	2.37	2.4	1.8	2.6	4.8	-3.3	5.8	-1.1	1.5	-2.2	3.3	.1	-2.8	-1.3	
Oil and gas well drilling	213111	.52	-26.6	36.4	18.1	56.6	-8.0	1.8	-4.3	-.5	-1.4	1.6	.1	-3	18.2
Converted fuel	4.63	.7	1.0	4.3	8.9	10.8	.7	4.2	.6	.3	.0	.8	-2.3	-.1	
Primary energy	13.42	-4.2	9.8	12.8	13.9	17.1	10.1	.6	2.6	.2	-.1	1.9	.6	12.8	
Non-energy	74.08	-.3	1.9	2.4	2.5	3.6	1.9	.4	.4	.2	-.2	.1	1.0	3.1	
Selected high-technology industries	2.07	8.5	3.2	6.1	6.1	14.8	.5	1.1	1.8	-.7	-.6	.5	1.0	5.6	
Computers and peripheral equipment	3341	.35	13.2	19.4	1.6	1.0	-9.0	-.2	-1.6	-1.0	-3.1	.7	2.2	.8	1.5
Communications equipment	3342	.51	7.1	-3.0	3.9	-3.9	33.6	7.3	4.1	2.6	1.3	-.1	.1	.2	4.0
Semiconductors and related electronic components	3344	1.21	7.9	1.9	8.3	12.0	15.6	-2.0	.7	2.2	-.9	-1.2	.1	1.5	7.5
Excluding selected high-technology industries	72.01	-.6	1.9	2.3	2.4	3.3	2.0	.4	.4	.3	-.2	.1	1.0	3.0	
Motor vehicles and parts	3361-3	5.62	2.2	-1.3	4.8	-9.6	9.5	6.1	-2.5	3.7	2.2	-2.8	.2	4.7	7.8
Motor vehicles	3361	2.72	1.5	-5.2	8.6	-14.0	18.3	10.4	-3.9	5.5	4.3	-4.9	.7	7.5	13.6
Motor vehicle parts	3363	2.44	3.7	1.4	3.5	-3.3	.7	6.3	-2.2	2.9	.6	-.9	.5	2.3	4.6
Excluding motor vehicles and parts	66.39	-.8	2.2	2.1	3.5	2.8	1.6	.6	.1	.1	.0	.1	.7	2.6	
Consumer goods	20.11	-.7	1.4	1.1	-.1	2.8	-1.0	1.2	-.4	.3	-.1	-.7	.7	1.4	
Business equipment	8.00	-2.5	5.0	3.4	2.5	7.0	8.1	.2	1.7	.7	.8	.3	-.1	3.7	
Construction supplies	5.10	.5	3.5	1.7	4.3	-1.3	-.2	-.2	.3	-.7	-.4	.2	1.6	2.1	
Business supplies	6.30	-.9	.6	-.5	1.8	-2.4	-.3	.0	-.9	.7	-.3	-.1	.4	-.1	
Materials	24.73	-.7	2.4	2.8	6.8	3.0	1.9	.5	.1	-.3	-.1	.7	.8	3.5	
Measures excluding selected high-technology industries															
Total industry	97.93	-.8	3.0	4.0	5.2	4.5	3.9	.4	.8	.2	.2	.4	.3	3.9	
Manufacturing ¹	73.45	-.3	1.8	2.4	2.2	3.4	2.3	.3	.4	.3	-.1	.1	1.1	3.2	
Durable	35.66	-.9	1.8	4.2	1.8	5.2	5.9	-.2	1.4	.6	-.2	.5	1.3	5.2	
Measures excluding motor vehicles and parts															
Total industry	94.38	-.7	3.3	4.0	6.2	4.5	3.7	.6	.7	.0	.4	.4	.1	3.7	
Manufacturing ¹	69.89	-.3	2.1	2.3	3.3	3.2	2.0	.6	.2	.1	.1	.1	.8	2.9	
Durable	32.11	-.8	2.4	4.3	4.2	5.1	5.5	.3	1.0	.2	.3	.5	.7	4.8	
Measures excluding selected high-technology industries and motor vehicles and parts															
Total industry	92.31	-1.0	3.3	4.0	6.2	4.2	3.7	.6	.6	.0	.4	.4	.1	3.7	
Manufacturing ¹	67.83	-.6	2.1	2.2	3.2	2.9	2.0	.6	.2	.1	.1	.1	.7	2.8	
Stage-of-process components of non-energy materials, measures of the input to															
Finished processors	10.01	.1	-.2	3.8	1.2	4.8	3.7	.3	1.0	.0	-.1	.7	.7	3.8	
Primary and semifinished processors	17.57	-.4	3.6	2.5	8.7	2.3	1.2	.3	.1	-.4	-.3	.6	1.1	3.6	

^r Revised. ^p Preliminary.

¹ Refer to note on cover page.

Table 3
MOTOR VEHICLE ASSEMBLIES

Millions of units, seasonally adjusted annual rate

Item	2018 average	2018 Q1	Q2	Q3	Q4	2018 July	Aug.	Sept.	Oct.	Nov.	Dec.
Total	11.29	11.45	11.00	11.14	11.60	10.42	11.34	11.67	11.26	11.33	12.22
Autos	2.78	2.88	2.77	2.55	2.86	2.40	2.48	2.77	2.84	2.75	3.00
Trucks	8.52	8.57	8.22	8.59	8.74	8.02	8.86	8.89	8.42	8.58	9.22
Light	8.19	8.26	7.92	8.24	8.40	7.66	8.53	8.54	8.08	8.24	8.87
Medium and heavy	.33	.31	.30	.35	.35	.36	.33	.35	.35	.35	.35
Memo											
Autos and light trucks	10.97	11.14	10.69	10.80	11.26	10.06	11.01	11.31	10.92	10.99	11.87

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/mvsv.htm

Table 4
INDUSTRIAL PRODUCTION INDEXES: MARKET AND INDUSTRY GROUP SUMMARY

2012 = 100, seasonally adjusted

Item	2017 proportion	2018 Apr.	May	June	July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Total IP	100.00	107.7	106.8	107.4	107.9	108.8	108.9	109.1	109.6	109.9
MARKET GROUPS										
Final products and nonindustrial supplies	54.37	104.6	102.8	103.5	103.6	104.2	104.5	105.0	104.7	105.0
Consumer goods	28.03	107.4	104.6	105.3	105.5	106.0	106.2	107.0	106.3	106.3
Durable	6.35	121.0	116.0	119.8	119.2	121.7	123.3	121.6	121.6	124.9
Automotive products	3.31	135.5	125.2	133.0	130.2	135.8	138.1	134.5	134.7	141.2
Home electronics	.14	112.0	110.8	112.3	116.2	115.8	116.4	119.6	121.1	121.7
Appliances, furniture, carpeting	.88	107.8	106.9	107.1	109.0	107.2	108.0	108.3	109.2	109.6
Miscellaneous goods	2.02	108.2	108.3	108.3	109.3	109.7	110.7	110.5	109.8	110.1
Nondurable	21.68	103.9	101.7	101.6	102.1	102.0	102.0	103.3	102.4	101.6
Non-energy	16.70	100.7	99.8	99.6	100.8	100.3	100.5	100.3	99.5	100.2
Foods and tobacco	9.65	109.4	108.2	108.3	109.8	108.6	108.9	108.4	107.2	108.1
Clothing	.20	74.5	73.7	71.2	74.1	71.8	70.5	69.4	68.3	68.6
Chemical products	5.29	91.5	91.4	91.4	92.5	92.4	92.4	92.4	92.2	92.8
Paper products	1.12	84.7	82.5	79.5	79.3	81.1	82.7	83.9	83.0	83.3
Energy	4.98	114.4	107.7	107.7	105.8	107.2	106.5	112.7	111.9	105.7
Business equipment	9.51	99.6	97.5	99.5	99.7	101.2	102.3	102.6	102.9	103.4
Transit	2.46	111.6	105.1	112.1	111.1	112.3	115.5	113.3	114.0	117.2
Information processing	2.13	106.9	106.0	106.8	108.5	108.0	108.1	107.9	108.4	109.8
Industrial and other	4.92	91.9	91.0	91.4	91.5	94.1	94.7	96.2	96.2	95.2
Defense and space equipment	2.12	90.0	89.5	90.4	91.3	92.5	93.9	93.8	94.6	96.8
Construction supplies	5.12	114.3	114.7	114.2	114.1	114.4	113.7	113.3	113.5	115.3
Business supplies	8.98	104.3	103.6	103.8	103.5	103.3	103.2	103.9	103.8	103.3
Materials	45.63	110.9	111.2	111.7	112.6	113.9	113.9	113.7	115.0	115.5
Non-energy	27.58	105.2	104.7	105.4	105.7	106.1	105.9	105.7	106.4	107.4
Durable	16.31	106.7	105.8	106.5	106.6	107.1	107.4	107.1	108.1	109.3
Consumer parts	2.99	113.4	109.0	111.4	109.8	112.0	112.3	111.7	113.6	115.6
Equipment parts	4.79	105.5	105.4	106.2	107.0	108.6	108.5	108.2	108.8	109.6
Other	8.53	105.2	104.8	105.0	105.2	104.7	105.2	105.0	105.9	107.0
Nondurable	11.27	102.9	103.0	103.5	104.3	104.5	103.5	103.4	103.7	104.4
Textile	.35	94.0	93.4	94.1	93.0	96.4	93.9	97.9	98.2	96.5
Paper	1.88	93.0	93.0	92.3	94.4	92.3	92.7	92.8	92.5	91.6
Chemical	5.78	103.0	103.8	105.2	105.3	106.4	104.8	104.5	105.5	106.7
Energy	18.05	117.7	119.2	119.7	121.4	124.0	124.3	124.2	126.3	126.1
INDUSTRY GROUPS										
Manufacturing	75.52	104.3	103.3	104.0	104.4	104.9	105.1	105.0	105.0	106.2
Manufacturing (NAICS)	31-33	73.44	105.2	104.2	105.0	105.5	106.0	106.2	106.0	107.3
Durable manufacturing	37.57	106.3	104.7	106.1	106.0	107.5	108.1	107.9	108.4	109.8
Wood products	321	1.42	125.9	125.4	125.4	124.3	126.4	126.7	123.7	125.6
Nonmetallic mineral products	327	2.20	121.4	121.1	119.8	120.1	119.8	118.0	119.0	121.2
Primary metals	331	2.63	96.8	96.5	95.9	95.3	97.0	97.8	98.7	102.1
Fabricated metal products	332	5.45	102.0	101.7	103.0	102.7	103.4	103.5	103.7	104.1
Machinery	333	5.30	91.0	90.1	90.8	91.2	94.0	94.4	95.1	95.5
Computer and electronic products	334	4.88	118.8	118.4	119.7	121.5	121.7	121.3	121.8	123.4
Electrical equip., appliances, and components	335	1.82	103.7	103.6	104.6	105.5	105.3	105.4	104.7	105.2
Motor vehicles and parts	3361-3	5.62	130.0	118.9	127.4	124.3	128.9	131.7	128.0	134.3
Aerospace and miscellaneous transportation equipment	3364-9	4.32	97.5	97.2	98.0	98.5	99.6	100.5	100.6	101.7
Furniture and related products	337	1.19	103.5	104.2	103.9	104.5	103.7	105.3	106.4	106.3
Miscellaneous	339	2.74	95.7	96.9	95.8	95.8	96.3	96.0	97.5	96.4
Nondurable manufacturing	35.87	103.9	103.6	103.9	104.8	104.4	104.2	104.1	103.8	104.7
Food, beverage, and tobacco products	311,2	11.70	111.2	110.1	110.2	111.7	110.7	110.8	110.2	110.1
Textile and product mills	313,4	.65	99.2	98.1	98.9	98.6	100.4	98.5	100.7	99.6
Apparel and leather	315,6	.21	75.7	74.8	72.3	75.1	72.8	71.5	69.4	69.8
Paper	322	2.50	96.9	96.1	95.3	97.0	95.8	95.7	96.3	95.6
Printing and support	323	1.41	97.5	98.0	98.2	98.6	96.2	97.7	96.8	95.9
Petroleum and coal products	324	3.41	106.7	107.5	108.3	107.1	108.0	107.5	107.3	108.4
Chemicals	325	12.38	98.5	98.9	99.3	100.2	100.2	99.6	99.7	100.5
Plastics and rubber products	326	3.60	109.2	107.5	107.7	109.3	108.5	109.1	109.1	110.2
Other manufacturing (non-NAICS)	1133,5111	2.07	79.5	77.6	74.4	73.7	73.7	74.7	75.2	74.5
Mining	21	14.12	119.5	120.7	122.8	123.8	126.6	127.3	127.1	128.5
Utilities	2211,2	10.36	108.5	105.7	104.1	104.2	105.4	104.1	107.5	108.9
Electric	2211	9.00	103.6	106.3	103.9	103.8	105.3	103.4	104.2	101.1
Natural gas	2212	1.37	143.2	102.5	106.4	108.2	107.3	109.6	130.7	109.3

r Revised. p Preliminary.

NOTE. Refer to notes on table 1.

Table 5
INDUSTRIAL PRODUCTION INDEXES: SPECIAL AGGREGATES
2012 = 100, seasonally adjusted

Item	2017 proportion	2018 Apr.	May	June	July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Total industry	100.00	107.7	106.8	107.4	107.9	108.8	108.9	109.1	109.6	109.9
Energy	25.92	115.6	115.2	115.6	116.2	118.4	118.2	119.8	121.0	119.4
Consumer products	4.98	114.4	107.7	107.7	105.8	107.2	106.5	112.7	111.9	105.7
Commercial products	2.37	112.7	110.1	111.4	110.2	111.8	109.4	113.0	113.1	109.9
Oil and gas well drilling	213111	.52	75.3	78.2	80.5	77.0	76.6	75.6	76.8	76.6
Converted fuel	4.63	101.8	103.1	99.4	103.6	104.1	104.5	104.5	105.3	102.9
Primary energy	13.42	122.1	123.8	125.8	126.6	129.9	130.2	130.1	132.6	133.3
Non-energy	74.08	104.4	103.3	104.0	104.4	104.9	105.1	104.9	105.0	106.1
Selected high-technology industries	2.07	145.4	145.4	148.6	150.2	152.9	151.8	150.8	151.5	153.1
Computers and peripheral equipment	3341	.35	146.9	143.5	147.3	144.9	143.5	139.1	140.0	144.2
Communications equipment	3342	.51	117.2	116.5	118.8	123.6	126.9	128.5	128.4	128.8
Semiconductors and related electronic components	3344	1.21	157.9	159.2	162.7	163.9	167.5	166.1	164.0	166.7
Excluding selected high-technology industries	72.01	103.0	102.0	102.7	103.0	103.4	103.7	103.5	103.6	104.6
Motor vehicles and parts	3361-3	5.62	130.0	118.9	127.4	124.3	128.9	131.7	128.0	128.2
Motor vehicles	3361	2.72	129.6	112.3	126.9	121.9	128.7	134.1	127.6	128.5
Motor vehicle parts	3363	2.44	130.3	125.2	128.2	125.4	129.1	129.9	128.6	129.3
Excluding motor vehicles and parts	66.39	101.2	100.8	100.9	101.5	101.7	101.8	101.8	101.9	102.6
Consumer goods	20.11	101.9	101.1	101.0	102.2	101.8	102.1	102.0	101.3	102.0
Business equipment	8.00	95.9	95.1	95.7	96.0	97.6	98.2	99.0	99.3	99.1
Construction supplies	5.10	114.3	114.7	114.2	114.0	114.4	113.6	113.2	113.4	115.2
Business supplies	6.30	97.8	97.7	97.5	97.4	96.5	97.2	96.9	96.8	97.2
Materials	24.73	101.9	101.8	102.2	102.7	102.8	102.6	102.5	103.2	104.0
Measures excluding selected high-technology industries										
Total industry	97.93	106.8	105.9	106.5	107.0	107.8	108.0	108.2	108.6	109.0
Manufacturing ¹	73.45	103.0	102.0	102.6	103.0	103.4	103.7	103.6	103.7	104.7
Durable	35.66	103.8	102.1	103.5	103.3	104.7	105.4	105.2	105.7	107.1
Measures excluding motor vehicles and parts										
Total industry	94.38	106.6	106.2	106.5	107.1	107.8	107.9	108.3	108.7	108.8
Manufacturing ¹	69.89	102.6	102.2	102.5	103.1	103.3	103.4	103.4	103.5	104.3
Durable	32.11	103.0	102.7	103.2	103.5	104.5	104.8	105.0	105.6	106.3
Measures excluding selected high-technology industries and motor vehicles and parts										
Total industry	92.31	105.7	105.3	105.5	106.1	106.8	106.8	107.3	107.7	107.8
Manufacturing ¹	67.83	101.1	100.8	101.0	101.5	101.7	101.8	101.9	102.0	102.7
Stage-of-process components of non-energy materials, measures of the input to										
Finished processors	10.01	104.7	103.4	104.4	104.7	105.8	105.8	105.6	106.4	107.1
Primary and semifinished processors	17.57	105.4	105.3	105.8	106.2	106.3	105.9	105.6	106.3	107.4

r Revised. p Preliminary.

1. Refer to note on cover page.

Table 6
DIFFUSION INDEXES OF INDUSTRIAL PRODUCTION
Percent

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
One month earlier												
2016	53.7	45.3	45.0	42.3	50.0	47.7	52.0	45.3	54.3	60.3	52.0	58.7
2017	60.0	51.3	47.0	65.3	43.7	57.7	51.0	52.3	55.7	63.0	54.0	59.0
2018	50.3	63.0	48.7	62.3	44.0	58.3	55.8	51.7	58.0	51.0	51.3	
Three months earlier												
2016	50.7	48.3	48.7	37.3	43.3	48.7	56.3	46.7	56.0	58.3	57.0	59.3
2017	55.7	61.0	52.3	57.7	45.3	56.0	48.0	50.3	56.3	63.0	69.0	64.0
2018	55.7	67.3	54.7	69.0	45.7	55.7	53.0	65.0	57.3	53.3	48.3	
Six months earlier												
2016	47.7	41.0	39.7	38.3	43.0	48.7	44.7	45.7	52.0	58.3	54.7	58.3
2017	57.0	64.3	55.7	60.0	56.0	56.3	49.3	50.0	58.7	53.0	61.0	63.3
2018	61.3	69.3	63.3	67.3	56.7	58.0	65.0	55.7	57.3	52.3	60.7	

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.

Table 7
CAPACITY UTILIZATION
Percent of capacity, seasonally adjusted

Item	2017 proportion	1972- 2017 ave.	1994- 95 high	2009 low	2018 Q2	Q3 ^r	Q4 ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Total industry	100.00	79.8	85.0	66.7	77.8	78.3	78.6	78.0	78.5	78.4	78.4	78.6	78.7
Manufacturing¹	77.37	78.3	84.6	63.7	75.5	75.9	76.1	75.7	76.0	76.1	75.9	75.8	76.5
Manufacturing (NAICS) 31-33	74.76	78.2	84.7	63.5	76.1	76.5	76.7	76.3	76.6	76.7	76.4	76.4	77.2
Durable manufacturing	39.10	76.9	83.8	58.3	75.2	76.0	76.8	75.2	76.2	76.5	76.3	76.6	77.5
Wood products 321	1.39	76.5	86.6	47.7	78.2	77.6	75.8	76.9	78.0	77.8	75.8	75.3	76.4
Nonmetallic mineral products 327	2.60	73.8	82.4	45.6	66.5	65.2	64.7	65.8	65.5	64.3	64.7	63.9	65.6
Primary metals 331	2.93	78.3	94.1	49.7	69.7	70.1	73.5	69.0	70.3	71.0	71.6	74.2	74.7
Fabricated metal products 332	5.42	77.5	84.9	61.9	80.9	81.4	81.7	81.0	81.5	81.5	81.6	81.7	81.7
Machinery 333	5.64	77.5	87.2	59.0	76.1	78.4	80.6	76.7	79.1	79.6	80.2	81.1	80.7
Computer and electronic products 334	5.47	77.5	84.4	70.3	71.5	72.3	72.0	72.5	72.4	72.1	71.7	71.7	72.4
Electrical equip., appliances, and components 335	1.82	82.2	92.7	66.8	76.8	77.4	76.6	77.7	77.3	77.2	76.6	76.7	76.6
Motor vehicles and parts 3361-3	5.59	75.2	87.7	33.7	77.1	78.7	79.6	76.3	79.0	80.7	78.4	78.4	82.1
Aerospace and miscellaneous transportation equipment 3364-9	4.36	74.2	70.4	73.0	75.3	76.8	78.6	76.0	76.8	77.5	77.6	78.5	79.8
Furniture and related products 337	1.20	76.7	82.7	55.8	75.3	75.4	76.4	75.5	74.9	75.9	76.6	76.3	76.3
Miscellaneous 339	2.67	76.6	81.3	68.4	77.4	76.9	77.1	76.9	77.1	76.8	77.8	76.8	76.6
Nondurable manufacturing	35.66	80.1	86.0	69.0	77.1	77.4	76.9	77.7	77.3	77.1	76.9	76.6	77.2
Food, beverage, and tobacco products 311,2	11.80	80.6	85.4	75.2	77.1	77.1	75.8	77.7	76.8	76.8	76.2	75.3	75.8
Textile and product mills 313,4	.73	78.8	91.8	54.0	69.8	70.2	70.9	69.7	71.0	69.7	71.3	71.0	70.6
Apparel and leather 315,6	.25	76.3	86.9	56.4	67.2	66.7	64.3	68.3	66.4	65.4	64.7	63.8	64.3
Paper 322	2.21	86.7	92.7	72.9	86.5	86.9	86.9	87.5	86.6	86.5	87.1	86.8	86.7
Printing and support 323	1.48	79.6	84.9	58.8	73.9	73.5	72.4	74.3	72.5	73.7	72.9	72.2	72.2
Petroleum and coal products 324	3.05	85.1	91.0	76.3	79.0	78.6	77.8	78.4	79.0	78.5	78.2	76.3	79.0
Chemicals 325	12.79	76.8	82.0	65.4	75.4	76.2	76.5	76.4	76.4	75.9	75.9	76.5	76.9
Plastics and rubber products 326	3.35	82.1	93.2	57.5	79.3	79.1	78.9	79.6	78.7	78.9	78.5	79.0	79.1
Other manufacturing (non-NAICS) 1133,5111	2.61	80.0	83.2	68.3	59.3	57.3	58.2	56.9	57.1	57.9	58.4	57.9	58.2
Mining 21	12.26	87.0	88.6	78.2	91.2	93.4	94.0	92.3	93.9	93.9	93.3	93.9	94.8
Utilities 2211,2	10.37	85.3	92.9	78.3	78.9	77.4	78.2	77.3	78.0	76.9	79.3	80.2	75.0
Selected high-technology industries	2.32	77.4	86.6	71.1	73.4	74.9	73.9	74.5	75.5	74.6	73.7	73.7	74.2
Computers and peripheral equipment 3341	.30	78.0	88.0	83.0	92.4	87.0	83.7	89.5	87.6	83.8	83.3	84.1	83.7
Communications equipment 3342	.63	76.4	86.0	77.2	60.3	64.1	64.5	62.9	64.4	64.9	64.7	64.5	64.4
Semiconductors and related electronic components 3344	1.39	78.6	91.8	62.9	75.2	77.2	76.1	76.6	78.0	77.1	75.9	75.7	76.7
Measures excluding selected high-technology industries													
Total industry	97.68	80.0	84.9	66.5	77.9	78.4	78.7	78.1	78.6	78.5	78.6	78.7	78.9
Manufacturing ¹	75.05	78.4	84.5	63.3	75.6	76.0	76.2	75.8	76.0	76.2	76.0	75.9	76.7
STAGE-OF-PROCESS GROUPS													
Crude	16.40	86.0	90.0	76.4	89.2	91.5	92.1	90.6	91.9	91.9	91.4	92.1	92.8
Primary and semifinished	44.89	80.4	87.7	63.8	76.5	76.0	76.3	75.9	76.3	75.9	76.3	76.6	76.0
Finished	38.71	76.9	80.7	66.6	74.5	75.4	75.6	75.0	75.3	75.7	75.5	75.2	76.0

r Revised. p Preliminary.

1. Refer to note on cover page.

Table 8
INDUSTRIAL CAPACITY
Percent change

Item	Average annual rate				Fourth quarter to fourth quarter				Annual rate				Monthly rate
	1972-79	1980-88	1989-94	1995-2018	2015	2016	2017	2018	2018 Q1	Q2	Q3	Q4	2018 Dec.
Total industry	3.0	1.9	2.3	2.0	.8	.6	.6	2.0	1.6	2.0	2.2	2.2	.2
Manufacturing ¹	3.2	2.2	2.6	2.0	-.3	1.3	.7	1.3	1.1	1.3	1.5	1.4	.1
Mining	.7	.1	-.7	1.2	.9	-3.1	-1.0	5.7	4.1	5.7	6.5	6.5	.5
Utilities	4.4	2.2	1.8	1.7	.4	1.6	1.8	2.0	1.8	1.9	2.1	2.2	.2
Selected high-technology industries	18.6	16.7	16.0	17.8	3.3	7.4	3.2	5.5	4.5	5.5	6.0	5.9	.5
Manufacturing ¹ ex. selected high-technology industries	2.6	1.3	1.6	.8	-.4	1.1	.7	1.2	1.0	1.2	1.3	1.3	.1
STAGE-OF-PROCESS GROUPS													
Crude	1.5	.4	-.5	1.1	.4	-2.4	-.5	4.1	3.0	4.1	4.6	4.7	.4
Primary and semifinished	3.0	1.3	2.5	2.2	-.2	1.7	.7	1.4	1.1	1.4	1.6	1.6	.1
Finished	3.9	3.3	2.8	1.9	.1	1.0	1.1	1.3	1.2	1.3	1.3	1.3	.1

1. Refer to note on cover page.

Table 9
GROSS VALUE OF FINAL PRODUCTS AND NONINDUSTRIAL SUPPLIES
Billions of 2009 dollars at annual rate, seasonally adjusted

Item	2009	2018	2018 Q2	Q3 ^r	Q4 ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Final products and nonindustrial supplies	3,235.9	3,729.2	3,713.9	3,732.7	3,763.5	3,707.5	3,738.8	3,751.7	3,764.8	3,750.2	3,775.6
Final products	2,409.2	2,769.9	2,754.0	2,774.6	2,802.5	2,749.8	2,779.0	2,794.8	2,805.0	2,790.7	2,811.8
Consumer goods	1,780.9	1,998.7	1,994.8	1,997.4	2,009.4	1,984.4	2,001.3	2,006.3	2,016.1	1,999.8	2,012.2
Durable	342.0	511.8	504.2	513.7	521.8	500.9	515.3	525.0	515.3	515.5	534.6
Automotive products	188.1	338.0	332.1	339.4	346.4	326.7	341.6	349.9	340.2	340.4	358.7
Other durable goods	153.9	173.5	171.9	174.0	175.0	174.0	173.4	174.8	174.8	174.8	175.5
Nondurable	1,438.9	1,502.7	1,505.6	1,499.6	1,504.2	1,498.4	1,502.1	1,498.3	1,516.6	1,500.4	1,495.5
Equipment, total	628.4	778.2	765.0	784.8	801.9	772.3	785.3	797.0	797.0	799.9	809.0
Business and defense	609.7	755.8	741.9	762.4	779.5	749.9	762.4	774.8	774.6	777.4	786.6
Business	492.9	643.2	631.6	648.7	662.3	637.8	648.8	659.4	659.2	660.8	667.0
Defense and space	116.8	113.3	111.0	114.4	117.9	112.8	114.4	116.1	116.2	117.3	120.1
Nonindustrial supplies	826.6	960.5	961.6	959.1	961.6	959.3	960.8	957.3	960.2	960.2	964.4
Construction supplies	232.1	295.9	295.9	295.8	296.5	295.4	296.8	295.3	294.2	295.5	299.9
Business supplies	594.5	664.2	665.3	662.8	664.5	663.4	663.4	661.5	665.7	664.3	663.6
Commercial energy products	218.3	243.4	243.8	242.1	243.9	241.8	244.4	240.2	245.4	244.7	241.7

^r Revised. ^p Preliminary.

Table 10
GROSS-VALUE-WEIGHTED INDUSTRIAL PRODUCTION: STAGE-OF-PROCESS GROUPS
Percent change, seasonally adjusted

Item	2017 gross value ¹	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '17 to Dec. '18
		2016	2017	2018	2018 Q2	Q3 ^r	Q4 ^p	2018 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Finished	2,130.9	-.2	2.0	3.4	.1	6.4	3.2	.2	1.0	.8	-.4	-.3	1.6	4.3
Semifinished	1,906.1	.7	1.4	2.0	2.9	.4	1.4	.0	.7	-.6	.1	.6	.0	1.9
Primary	1,452.4	1.9	2.3	2.4	6.2	-1.0	4.8	-.3	.7	-.1	1.0	.2	-.3	1.4
Crude	734.4	-2.0	5.8	8.1	14.8	13.1	4.8	1.0	1.4	.2	-.4	.9	1.1	8.7

^r Revised. ^p Preliminary.

1. Billions of 2009 dollars.

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

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)¹																	
1996	-.7	1.6	-.1	.9	.7	.8	-.1	.6	.7	-.1	.9	.7	2.7	8.9	5.3	5.7	4.5
1997	.1	1.2	.7	.0	.6	.5	.8	1.0	.9	.9	.9	.3	7.9	5.9	9.5	10.5	7.2
1998	.5	.1	.1	.4	.6	-.6	-.3	2.1	-.2	.8	-.1	.4	4.6	2.7	3.0	5.9	5.8
1999	.5	.5	.2	.3	.7	-.2	.6	.4	-.4	1.3	.5	.8	4.5	3.9	3.6	7.3	4.4
2000	.0	.3	.4	.7	.2	.1	-.1	-.3	.4	-.3	.0	-.3	4.1	5.0	-.4	-.9	3.9
2001	-.6	-.6	-.3	-.3	-.6	-.6	-.6	-.1	-.4	-.4	-.5	.0	-5.1	-5.0	-5.4	-4.1	-3.1
2002	.6	.0	.8	.4	.4	1.0	-.2	.0	.1	-.3	.5	-.5	3.0	6.3	2.3	-.1	.4
2003	.6	.3	-.2	-.7	.0	.2	.4	-.2	.6	.1	.8	-.1	2.3	-2.7	2.6	4.0	1.3
2004	.3	.6	-.5	.4	.8	-.8	.8	.1	.1	.9	.2	.7	2.8	2.3	2.3	5.8	2.7
2005	.5	.7	-.1	.2	.1	.4	-.3	.3	-1.9	1.3	1.0	.6	5.9	2.0	-1.8	3.9	3.3
2006	.1	.0	.2	.4	-.1	.4	.0	.4	-.2	-.1	-.1	1.1	3.8	2.4	1.5	.9	2.3
2007	-.5	1.0	.2	.7	.0	.0	.0	.2	.4	-.4	.6	.0	3.6	5.0	1.0	1.2	2.5
2008	-.3	-.3	-.2	-.8	-.6	-.2	-.5	-1.5	-4.3	1.0	-1.3	-2.9	-1.4	-5.8	-12.6	-16.0	-3.5
2009	-2.4	-.7	-1.6	-.8	-1.0	-.4	1.1	1.1	.8	.3	.4	.3	-20.7	-10.9	6.2	6.5	-11.5
2010	1.2	.4	.7	.4	1.4	.1	.4	.3	.2	-.3	.0	.9	8.1	8.0	5.3	1.3	5.5
2011	-.1	-.4	1.0	-.3	.2	.3	.5	.6	-.1	.7	-.1	.5	2.3	1.6	4.7	4.1	3.1
2012	.6	.3	-.5	.8	.2	.0	.3	-.4	.0	.2	.5	.3	4.0	2.6	.1	2.1	3.0
2013	.0	.5	.4	-.1	.1	.2	-.5	.7	.5	-.1	.3	.3	3.3	1.7	1.2	3.0	2.0
2014	-.5	.9	1.0	.1	.3	.3	.1	-.1	.3	.0	.8	-.1	3.0	5.7	2.1	2.7	3.1
2015	-.6	-.4	-.3	-.5	-.5	-.4	.5	-.1	-.4	-.4	-.6	-.5	-3.2	-5.0	-.3	-4.7	-1.0
2016	.7	-.7	-.8	.2	-.1	.3	.2	-.1	-.1	.1	-.2	.9	-1.9	-2.1	1.1	.7	-1.9
2017	-.2	-.4	.6	1.0	.0	.1	-.1	-.4	.0	1.5	.5	.5	1.0	5.0	-1.5	7.7	1.6
2018	-.3	.5	.5	1.1	-.8	.6	.4	.8	.1	.2	.4	.3	2.5	5.2	4.7	3.8	4.1
IP (2012=100)																	
2016	103.0	102.3	101.5	101.7	101.6	101.9	102.1	102.1	101.9	102.1	101.8	102.8	102.3	101.8	102.0	102.2	102.1
2017	102.5	102.2	102.7	103.7	103.7	103.8	103.6	103.2	103.2	104.8	105.3	105.8	102.5	103.7	103.3	105.3	103.7
2018	105.4	105.9	106.4	107.7	106.8	107.4	107.9	108.8	108.9	109.1	109.6	109.9	105.9	107.3	108.5	109.6	107.9
Capacity (percent of 2012 output)																	
2016	135.1	135.2	135.2	135.3	135.4	135.5	135.5	135.6	135.7	135.8	135.8	135.9	135.2	135.4	135.6	135.8	135.5
2017	135.9	136.0	136.0	136.0	136.1	136.1	136.2	136.3	136.4	136.5	136.6	136.8	136.0	136.1	136.3	136.6	136.2
2018	137.0	137.2	137.4	137.6	137.9	138.1	138.4	138.6	138.9	139.1	139.4	139.6	137.2	137.9	138.6	139.4	138.3
Utilization (percent)																	
1996	82.5	83.4	82.9	83.3	83.5	83.8	83.3	83.4	83.6	83.1	83.4	83.6	82.9	83.5	83.4	83.4	83.3
1997	83.3	83.9	84.0	83.6	83.6	83.6	83.7	84.1	84.4	84.6	84.7	84.5	83.7	83.6	84.1	84.6	84.0
1998	84.3	83.9	83.4	83.2	83.2	82.2	81.4	82.6	82.1	82.3	81.9	81.8	83.9	82.8	82.0	82.0	82.7
1999	81.8	81.9	81.7	81.6	81.8	81.4	81.6	81.6	81.0	81.8	81.9	82.2	81.8	81.6	81.4	81.9	81.7
2000	81.9	81.9	81.9	82.2	82.1	81.9	81.5	81.0	81.1	80.6	80.3	79.9	81.9	82.1	81.2	80.2	81.4
2001	79.1	78.4	77.9	77.5	76.8	76.1	75.5	75.2	74.8	74.3	73.8	73.6	78.5	76.8	75.2	73.9	76.1
2002	74.0	73.8	74.3	74.6	74.8	75.5	75.3	75.2	75.3	75.1	75.5	75.2	74.1	74.9	75.3	75.3	74.9
2003	75.6	75.9	75.8	75.3	75.3	75.5	75.8	75.7	76.2	76.3	76.9	76.8	75.8	75.3	75.9	76.7	75.9
2004	77.1	77.5	77.2	77.5	78.1	77.5	78.1	78.2	78.2	78.9	79.1	79.6	77.3	77.7	78.2	79.2	78.1
2005	79.9	80.4	80.2	80.2	80.2	80.4	80.1	80.2	78.6	79.5	80.2	80.6	80.2	80.3	79.6	80.1	80.0
2006	80.5	80.4	80.5	80.7	80.5	80.7	80.5	80.7	80.3	80.1	79.9	80.5	80.5	80.6	80.5	80.2	80.4
2007	79.9	80.5	80.5	80.9	80.8	80.7	80.6	80.7	80.9	80.6	81.0	81.1	80.3	80.8	80.7	80.9	80.7
2008	80.9	80.7	80.6	80.0	79.6	79.4	79.0	77.8	74.3	75.0	74.0	71.7	80.7	79.7	77.0	73.6	77.8
2009	70.0	69.4	68.3	67.7	67.0	66.7	67.5	68.3	68.9	69.2	69.6	69.9	69.2	67.1	68.2	69.6	68.5
2010	70.9	71.3	71.9	72.3	73.5	73.8	74.2	74.6	74.9	74.8	74.9	75.6	71.3	73.2	74.6	75.1	73.6
2011	75.6	75.3	76.0	75.7	75.8	76.0	76.3	76.6	76.5	76.9	76.7	77.0	75.6	75.8	76.5	76.9	76.2
2012	77.4	77.4	76.9	77.4	77.4	77.2	77.3	76.9	76.8	76.8	77.1	77.2	77.2	77.3	77.0	77.1	77.2
2013	77.1	77.4	77.6	77.5	77.4	77.5	77.1	77.6	77.9	77.7	77.9	78.1	77.4	77.5	77.5	77.9	77.6
2014	77.6	78.2	78.9	78.9	79.1	79.2	79.2	79.1	79.2	79.1	79.6	79.4	78.3	79.1	79.2	79.4	79.0
2015	78.8	78.4	78.1	77.7	77.3	76.9	77.3	77.2	76.9	76.6	76.1	75.7	78.5	77.3	77.1	76.1	77.3
2016	76.3	75.7	75.1	75.2	75.0	75.3	75.4	75.3	75.1	75.2	75.0	75.7	75.7	75.2	75.2	75.3	75.3
2017	75.4	75.1	75.5	76.2	76.2	76.2	76.1	75.7	75.7	76.8	77.1	77.3	75.4	76.2	75.8	77.0	76.1
2018	77.0	77.2	77.5	78.2	77.5	77.8	78.0	78.5	78.4	78.4	78.6	78.7	77.2	77.8	78.3	78.6	78.0

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

Table 12
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)²																	
1996	-8	1.6	-2	1.1	.8	1.0	.3	.5	.8	-1	.9	.9	2.0	10.0	7.7	6.0	4.9
1997	.1	1.4	1.0	-2	.7	.7	.7	1.3	.9	.9	1.1	.4	9.4	7.1	10.4	11.5	8.4
1998	.8	.1	-1	.5	.5	-8	-4	2.4	-2	1.0	.2	.5	6.1	2.1	3.3	8.0	6.7
1999	.3	.8	-1	.4	.9	-3	.5	.6	-4	1.5	.6	.7	5.1	4.5	3.2	8.6	5.1
2000	.1	.2	.6	.8	-1	.2	.1	-7	.4	-3	-3	-5	4.4	4.9	-4	-2.4	4.1
2001	-6	-6	-2	-3	-6	-7	-4	-5	-2	-6	-3	.3	-5.9	-5.2	-5.8	-3.8	-3.6
2002	.6	.0	.8	.2	.5	1.1	-3	.2	.1	-4	.4	-5	3.7	5.8	3.1	-3	.5
2003	.5	.1	.1	-8	.1	.5	.2	-4	.8	.1	1.0	-2	1.8	-1.9	2.4	4.5	1.3
2004	.0	.7	-2	.4	.8	-7	.9	.5	.0	1.0	.0	.7	2.6	3.3	4.0	5.5	3.1
2005	.8	.8	-5	.3	.3	.1	-3	.5	-1.0	1.5	.8	.2	6.6	2.3	-7	6.4	4.1
2006	.8	-3	-1	.5	-4	.4	-3	.6	.1	-4	.0	1.5	3.8	.8	1.0	1.5	2.6
2007	-5	.4	.8	.7	-1	.3	.1	-3	.5	-3	.5	.2	4.1	5.9	1.0	1.2	2.8
2008	-4	-6	-3	-1.1	-6	-7	-1.2	-1.2	-3.4	-6	-2.4	-3.5	-2.5	-8.2	-14.1	-21.8	-4.8
2009	-3.1	-2	-1.8	-7	-1.0	-3	1.5	1.1	.9	.2	1.0	-2	-24.4	-10.6	8.1	7.2	-13.8
2010	1.1	-1	1.2	.8	1.4	-1	.6	.1	.0	.1	.0	.5	6.9	10.3	4.1	1.2	5.8
2011	.2	.1	.6	-6	.1	.1	.6	.4	.3	.6	-3	.7	3.2	-.1	4.4	3.9	2.9
2012	.8	.4	-5	.6	-4	.2	-1	-2	-1	-4	.7	.8	5.3	.5	-1.2	1.2	2.6
2013	-3	.5	-1	-4	.3	.2	-1.0	1.0	.1	.1	.0	.0	3.0	-2	-3	1.9	.9
2014	-1.2	1.1	.8	-1	.2	.3	.3	-4	.0	-1	.8	-3	-6	4.2	1.3	.6	1.1
2015	-5	-6	.3	-1	-1	-4	.6	-3	-4	.0	-2	-2	-2.9	-1.0	.1	-2.4	-5
2016	.5	-4	-2	-3	-1	.3	.2	-3	.3	.2	.0	.3	.0	-2.5	.6	1.6	-8
2017	.3	.1	-5	1.1	-4	.1	-3	-2	-1	1.3	.2	.0	1.9	2.4	-2.1	5.3	1.2
2018	-5	1.5	-1	.6	-1.0	.7	.4	.5	.2	-2	.1	1.1	1.9	2.3	3.7	2.3	2.4
IP (2012=100)																	
2016	101.3	100.9	100.7	100.3	100.2	100.5	100.6	100.3	100.6	100.8	100.8	101.1	101.0	100.3	100.5	100.9	100.7
2017	101.5	101.6	101.1	102.2	101.8	101.9	101.7	101.4	101.3	102.6	102.9	102.8	101.4	102.0	101.5	102.8	101.9
2018	102.3	103.8	103.7	104.3	103.3	104.0	104.4	104.9	105.1	105.0	105.0	106.2	103.3	103.8	104.8	105.4	104.4
Capacity (percent of 2012 output)																	
2016	134.2	134.3	134.4	134.6	134.8	135.0	135.1	135.3	135.4	135.6	135.7	135.8	134.3	134.8	135.3	135.7	135.0
2017	135.9	136.0	136.0	136.1	136.2	136.2	136.3	136.4	136.5	136.6	136.7	136.8	136.0	136.2	136.4	136.7	136.3
2018	136.9	137.0	137.2	137.3	137.5	137.7	137.8	138.0	138.2	138.3	138.5	138.7	137.1	137.5	138.0	138.5	137.8
Utilization (percent)																	
1996	81.2	82.1	81.5	82.0	82.1	82.5	82.3	82.3	82.5	82.0	82.2	82.5	81.6	82.2	82.4	82.2	82.1
1997	82.1	82.8	83.1	82.5	82.6	82.7	82.7	83.1	83.3	83.4	83.7	83.4	82.7	82.6	83.0	83.5	83.0
1998	83.5	83.0	82.3	82.0	81.9	80.7	79.9	81.3	80.7	81.0	80.7	80.7	82.9	81.6	80.6	80.8	81.5
1999	80.6	80.8	80.4	80.4	80.7	80.1	80.1	80.3	79.6	80.4	80.6	80.8	80.6	80.4	80.0	80.6	80.4
2000	80.6	80.4	80.6	80.8	80.4	80.2	80.0	79.2	79.2	78.7	78.2	77.5	80.5	80.5	79.5	78.1	79.6
2001	76.7	76.0	75.6	75.1	74.4	73.7	73.2	72.7	72.4	71.9	71.6	71.7	76.1	74.4	72.8	71.7	73.8
2002	72.0	71.9	72.4	72.5	72.8	73.6	73.3	73.5	73.5	73.3	73.6	73.2	72.1	73.0	73.4	73.4	73.0
2003	73.6	73.7	73.8	73.2	73.3	73.7	73.9	73.6	74.2	74.3	75.0	74.9	73.7	73.4	73.9	74.7	73.9
2004	74.9	75.5	75.4	75.7	76.4	75.8	76.5	76.8	76.8	77.5	77.4	77.8	75.3	76.0	76.7	77.5	76.4
2005	78.3	78.8	78.3	78.4	78.5	78.5	78.0	78.2	77.3	78.3	78.8	78.8	78.5	78.5	77.9	78.6	78.4
2006	79.3	78.9	78.7	79.0	78.6	78.7	78.4	78.7	78.6	78.2	78.0	79.0	79.0	78.8	78.6	78.4	78.7
2007	78.4	78.5	79.0	79.3	79.0	79.1	79.0	78.6	78.8	78.5	78.8	78.9	78.6	79.2	78.8	78.7	78.8
2008	78.5	78.0	77.8	77.0	76.6	76.2	75.4	74.6	72.1	71.7	70.1	67.8	78.1	76.6	74.0	69.9	74.6
2009	65.8	65.8	64.7	64.4	63.8	63.7	64.8	65.6	66.3	66.5	67.3	67.2	65.5	64.0	65.5	67.0	65.5
2010	68.1	68.2	69.1	69.8	70.9	70.9	71.4	71.6	71.7	71.9	72.0	72.5	68.5	70.5	71.6	72.1	70.7
2011	72.7	72.8	73.3	73.0	73.1	73.2	73.6	73.9	74.1	74.5	74.2	74.7	73.0	73.1	73.9	74.5	73.6
2012	75.3	75.5	75.0	75.3	74.9	75.0	74.8	74.6	74.5	74.2	74.6	75.2	75.2	75.1	74.6	74.7	74.9
2013	74.9	75.2	75.1	74.7	74.9	75.1	74.3	75.0	75.1	75.1	75.1	75.1	75.0	74.9	74.8	75.1	75.0
2014	74.2	75.0	75.7	75.6	75.8	76.0	76.3	76.0	76.0	76.0	76.6	76.4	75.0	75.8	76.1	76.3	75.8
2015	76.1	75.7	76.0	76.0	75.9	75.7	76.2	76.0	75.6	75.6	75.4	75.2	75.9	75.9	75.9	75.4	75.8
2016	75.5	75.2	74.9	74.5	74.4	74.5	74.5	74.1	74.3	74.3	74.3	74.5	75.2	74.4	74.3	74.4	74.6
2017	74.7	74.7	74.3	75.1	74.8	74.8	74.6	74.4	74.2	75.2	75.3	75.2	74.6	74.9	74.4	75.2	74.8
2018	74.7	75.7	75.6	75.9	75.1	75.5	75.7	76.0	76.1	75.9	75.8	76.5	75.3	75.5	75.9	76.1	75.7

1. Refer to note on cover page.

2. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

Table 13
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Total Industry Excluding Selected High-Technology Industries¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)²																	
1996	-1.0	1.3	-.3	.8	.5	.6	-.4	.3	.5	-.3	.8	.5	-.6	6.6	2.2	3.1	1.7
1997	-.1	.9	.4	-.3	.3	.2	.5	.8	.6	.7	.7	.1	5.2	2.2	6.3	7.6	4.2
1998	.3	.0	.0	.2	.6	-.9	-.7	1.9	-.5	.6	-.3	.1	2.2	.8	-.3	2.5	3.1
1999	.2	.2	-.1	-.1	.5	-.5	.3	.4	-.5	1.2	.2	.6	.6	.3	.9	5.6	1.1
2000	-.3	.0	.1	.5	-.2	-.1	-.5	-.5	.3	-.4	-.2	-.5	.5	1.5	-3.2	-2.6	1.0
2001	-.7	-.6	-.3	-.2	-.6	-.5	-.4	-.1	-.4	-.5	-.5	-.1	-5.8	-4.3	-4.3	-4.4	-3.9
2002	.7	-.2	.8	.4	.4	.9	-.3	-.1	.1	-.3	.5	-.5	2.6	6.0	1.8	-.6	.3
2003	.5	.2	-.3	-.8	-.1	.0	.2	-.3	.5	.0	.7	-.1	1.3	-4.4	.6	2.7	.2
2004	.2	.6	-.6	.5	.8	-.9	.8	.0	.0	.9	.2	.7	1.9	2.1	2.0	5.3	1.7
2005	.3	.6	-.2	.1	.1	.4	-.4	.2	-2.1	1.2	1.0	.6	4.8	1.2	-3.0	2.7	2.6
2006	.1	-.1	.2	.4	-.2	.3	-.1	.3	-.3	-.1	-.2	1.1	3.2	1.8	.6	.1	1.4
2007	-.6	1.0	.0	.6	.1	.1	-.1	.1	.3	-.6	.4	.0	2.9	4.0	1.0	-.5	1.8
2008	-.3	-.5	-.4	-.8	-.7	-.3	-.5	-1.6	-4.5	1.2	-1.0	-2.8	-2.6	-6.9	-12.8	-14.9	-4.3
2009	-2.4	-.7	-1.7	-.9	-1.1	-.4	1.1	1.2	.7	.3	.3	.3	-20.5	-11.7	6.1	6.0	-11.5
2010	1.1	.2	.6	.3	1.4	.1	.4	.3	.2	-.3	.0	.9	7.1	7.4	5.1	.8	4.9
2011	-.2	-.5	1.1	-.4	.2	.2	.5	.5	.0	.7	-.1	.5	1.8	1.6	4.5	4.1	2.8
2012	.6	.2	-.5	.7	.2	-.1	.3	-.4	-.1	.2	.5	.3	3.7	2.1	-.1	1.7	2.8
2013	-.1	.6	.4	-.2	.0	.2	-.5	.7	.5	-.2	.3	.3	3.3	1.4	.8	2.8	1.8
2014	-.5	.9	.9	.1	.3	.3	.1	-.1	.3	.0	.8	-.1	2.9	5.4	2.0	2.7	2.9
2015	-.6	-.4	-.3	-.5	-.5	-.4	.6	-.1	-.4	-.4	-.6	-.5	-3.3	-5.3	-.3	-4.9	-1.1
2016	.7	-.7	-.8	.2	-.2	.3	.2	-.1	-.2	.1	-.2	1.0	-2.1	-2.2	1.0	.4	-2.1
2017	-.2	-.4	-.6	.9	.0	.1	-.1	-.4	.0	1.5	.5	.4	1.2	5.0	-1.6	7.6	1.5
2018	-.3	.5	.5	1.2	-.8	.6	.4	.8	.2	.2	.4	.3	2.5	5.2	4.5	3.9	4.0
IP (2012=100)																	
2016	102.4	101.7	100.8	101.0	100.9	101.2	101.4	101.3	101.1	101.2	101.0	102.0	101.6	101.0	101.3	101.4	101.3
2017	101.7	101.4	101.9	102.9	102.9	103.0	102.8	102.4	102.3	103.9	104.4	104.9	101.7	102.9	102.5	104.4	102.9
2018	104.6	105.0	105.6	106.8	105.9	106.5	107.0	107.8	108.0	108.2	108.6	109.0	105.1	106.4	107.6	108.6	107.0
Capacity (percent of 2012 output)																	
2016	134.1	134.1	134.2	134.2	134.3	134.4	134.4	134.5	134.5	134.6	134.6	134.7	134.1	134.3	134.5	134.6	134.4
2017	134.7	134.7	134.8	134.8	134.8	134.9	134.9	135.0	135.1	135.2	135.4	135.5	134.7	134.8	135.0	135.4	135.0
2018	135.7	135.9	136.1	136.3	136.5	136.8	137.0	137.2	137.5	137.7	138.0	138.2	135.9	136.5	137.2	138.0	136.9
Utilization (percent)																	
1996	82.2	83.1	82.7	83.3	83.6	83.9	83.4	83.5	83.7	83.3	83.7	83.9	82.7	83.6	83.5	83.6	83.4
1997	83.6	84.1	84.2	83.7	83.7	83.6	83.7	84.1	84.3	84.6	84.8	84.5	84.0	83.6	84.0	84.6	84.1
1998	84.5	84.1	83.8	83.6	83.8	82.7	81.9	83.1	82.4	82.6	82.1	81.9	84.1	83.4	82.5	82.2	83.0
1999	81.8	81.8	81.5	81.2	81.5	80.9	81.0	81.2	80.6	81.5	81.6	81.9	81.7	81.2	80.9	81.6	81.4
2000	81.5	81.4	81.4	81.7	81.4	81.3	80.8	80.3	80.5	80.0	79.8	79.4	81.4	81.5	80.5	79.7	80.8
2001	78.8	78.2	77.9	77.7	77.2	76.7	76.3	76.2	75.8	75.3	74.9	74.7	78.3	77.2	76.1	75.0	76.6
2002	75.2	75.0	75.6	75.8	76.1	76.8	76.6	76.6	76.7	76.5	76.9	76.5	75.3	76.3	76.6	76.6	76.2
2003	77.0	77.1	76.9	76.4	76.3	76.3	76.6	76.4	76.8	76.9	77.4	77.4	77.0	76.3	76.6	77.2	76.8
2004	77.5	78.0	77.6	77.9	78.6	77.9	78.6	78.6	78.6	79.4	79.6	80.1	77.7	78.2	78.6	79.7	78.5
2005	80.4	80.8	80.6	80.6	80.7	80.9	80.5	80.5	78.8	79.6	80.3	80.7	80.6	80.7	79.9	80.2	80.4
2006	80.6	80.5	80.5	80.7	80.4	80.6	80.4	80.5	80.1	79.9	79.7	80.4	80.6	80.6	80.3	80.0	80.4
2007	79.9	80.5	80.5	80.9	80.9	81.0	80.9	81.1	81.3	80.9	81.3	81.3	80.3	80.9	81.1	81.2	80.9
2008	81.1	80.8	80.6	79.9	79.4	79.2	78.8	77.5	74.0	74.8	73.9	71.7	80.8	79.5	76.7	73.5	77.6
2009	69.9	69.3	68.1	67.5	66.7	66.5	67.3	68.1	68.7	69.0	69.4	69.8	69.1	66.9	68.0	69.4	68.4
2010	70.7	71.0	71.6	72.0	73.2	73.5	74.0	74.4	74.6	74.5	74.6	75.4	71.1	72.9	74.3	74.8	73.3
2011	75.3	75.0	75.9	75.6	75.8	75.9	76.3	76.7	76.6	77.0	76.9	77.2	75.4	75.8	76.5	77.0	76.2
2012	77.6	77.6	77.1	77.6	77.6	77.4	77.5	77.1	76.9	77.0	77.3	77.4	77.4	77.5	77.2	77.2	77.3
2013	77.3	77.7	77.9	77.7	77.7	77.8	77.3	77.8	78.1	78.0	78.1	78.3	77.6	77.7	77.7	78.1	77.8
2014	77.9	78.5	79.1	79.1	79.3	79.4	79.4	79.2	79.3	79.2	79.8	79.6	78.5	79.3	79.3	79.5	79.2
2015	79.0	78.6	78.2	77.8	77.3	77.0	77.4	77.3	77.0	76.7	76.2	75.8	78.6	77.4	77.2	76.2	77.4
2016	76.3	75.8	75.1	75.3	75.1	75.3	75.4	75.3	75.2	75.2	75.0	75.7	75.8	75.2	75.3	75.3	75.4
2017	75.5	75.2	75.6	76.3	76.3	76.3	76.2	75.8	75.7	76.8	77.2	77.4	75.5	76.3	75.9	77.1	76.2
2018	77.1	77.3	77.6	78.4	77.6	77.9	78.1	78.6	78.5	78.6	78.7	78.9	77.3	77.9	78.4	78.7	78.1

1. Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.

2. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

Table 14
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing¹ Excluding Selected High-Technology Industries²

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)³																	
1996	-1.2	1.3	-4	1.0	.5	.8	-1	.2	.6	-.5	.7	.7	-2.1	7.4	4.2	2.9	1.5
1997	-.2	1.1	.7	-.5	.4	.4	.4	1.0	.6	.7	.8	.1	6.3	2.7	6.7	8.2	5.0
1998	.6	.0	-.3	.3	.4	-1.2	-.8	2.3	-.6	.7	-.1	.2	3.4	-.2	-.5	4.1	3.5
1999	-.1	.5	-.4	.0	.7	-.7	.0	.6	-.5	1.4	.4	.4	.6	.3	.0	6.8	1.3
2000	-.3	-.2	.3	.4	-.6	.0	-.2	-1.0	.3	-.5	-.5	-.8	.3	.8	-3.8	-4.6	.7
2001	-.6	-.6	-.3	-.2	-.6	-.5	-.2	-.4	-.2	-.6	-.2	.1	-6.9	-4.4	-4.5	-4.1	-4.7
2002	.7	-.2	.7	.2	.5	1.1	-.4	.1	.1	-.4	.4	-.6	3.2	5.4	2.4	-.9	.4
2003	.4	-.1	.0	-1.0	-.1	.3	.0	-.6	.7	.0	.9	-.3	.5	-3.9	.0	2.9	.0
2004	-.1	.7	-.2	.4	.8	-.8	1.0	.4	-.1	1.0	-.1	.6	1.5	3.1	3.8	4.8	2.0
2005	.6	.7	-.6	.2	.3	.1	-.5	.3	-1.3	1.4	.8	.1	5.3	1.3	-2.1	5.0	3.1
2006	.8	-.4	-.1	.5	-.5	.3	-.4	.5	-.1	-.4	.0	1.5	3.1	-.1	-.2	.6	1.5
2007	-.6	.3	.6	.5	.0	.5	.1	-.4	.3	-.6	.3	.1	3.1	4.7	1.0	-1.1	1.8
2008	-.5	-.8	-.5	-1.3	-.7	-.7	-1.1	-1.2	-3.6	-.4	-2.2	-3.3	-4.2	-9.8	-14.5	-20.7	-5.9
2009	-3.1	-.2	-2.0	-.8	-1.1	-.3	1.5	1.2	.8	.1	.9	-.2	-24.4	-11.6	8.1	6.6	-13.9
2010	1.0	-.3	1.1	.8	1.4	-.1	.5	.0	.0	.1	-.1	.3	5.5	9.6	3.7	.5	5.1
2011	.1	.1	.6	-.6	.1	.0	.7	.3	.4	.6	-.3	.7	2.5	-.2	4.2	4.0	2.5
2012	.8	.3	-.6	.5	-.5	.1	-.1	-.2	-.1	-.5	.8	.9	4.9	-.3	-1.5	.7	2.3
2013	-.4	.5	-.2	-.5	.2	.2	-1.1	1.0	.1	.0	-.1	.0	2.9	.7	-.9	1.6	.5
2014	-1.2	1.1	.8	-.2	.2	.3	.4	-.5	.0	-.1	.8	-.3	-1.0	3.7	1.2	.5	.8
2015	-.5	-.6	.3	-.1	-.1	-.4	.7	-.3	-.4	-.1	-.2	-.3	-3.0	-1.2	.1	-2.7	-.7
2016	.5	-.4	-.3	-.4	-.1	.3	.1	-.4	.2	.2	.0	.3	-.3	-2.7	.4	1.3	-1.0
2017	.4	-.2	-.5	1.1	-.4	.1	-.2	-.2	-.2	1.3	.2	-.1	2.2	2.3	-2.1	5.0	1.1
2018	-.5	1.5	-.1	.6	-1.0	.7	.3	.4	.3	-.1	.1	1.1	1.8	2.2	3.4	2.3	2.3
IP (2012=100)																	
2016	100.3	99.9	99.7	99.3	99.2	99.4	99.5	99.2	99.4	99.6	99.6	99.9	100.0	99.3	99.4	99.7	99.6
2017	100.3	100.5	100.0	101.1	100.6	100.8	100.5	100.3	100.1	101.4	101.6	101.5	100.2	100.8	100.3	101.5	100.7
2018	101.0	102.5	102.4	103.0	102.0	102.6	103.0	103.4	103.7	103.6	103.7	104.7	102.0	102.5	103.4	104.0	103.0
Capacity (percent of 2012 output)																	
2016	132.7	132.8	132.9	133.1	133.2	133.4	133.5	133.7	133.8	133.9	134.0	134.1	132.8	133.2	133.6	134.0	133.4
2017	134.2	134.3	134.3	134.4	134.5	134.5	134.6	134.6	134.7	134.8	134.9	135.0	134.3	134.5	134.6	134.9	134.6
2018	135.1	135.2	135.3	135.5	135.6	135.8	135.9	136.1	136.2	136.3	136.5	136.6	135.2	135.6	136.1	136.5	135.8
Utilization (percent)																	
1996	80.8	81.7	81.1	81.8	82.1	82.6	82.3	82.3	82.6	82.0	82.4	82.7	81.2	82.2	82.4	82.4	82.0
1997	82.3	83.0	83.3	82.5	82.5	82.5	82.5	83.0	83.1	83.3	83.7	83.4	82.9	82.5	82.9	83.5	82.9
1998	83.5	83.2	82.6	82.4	82.5	81.2	80.2	81.8	81.0	81.3	80.9	80.8	83.1	82.0	81.0	81.0	81.8
1999	80.5	80.6	80.0	79.9	80.2	79.4	79.3	79.6	79.0	80.0	80.1	80.3	80.4	79.8	79.3	80.1	79.9
2000	79.9	79.7	79.8	80.0	79.4	79.3	79.0	78.2	78.3	77.9	77.4	76.7	79.8	79.6	78.5	77.3	78.8
2001	76.1	75.6	75.3	75.1	74.6	74.2	74.0	73.6	73.4	72.9	72.7	72.8	75.7	74.7	73.7	72.8	74.2
2002	73.3	73.1	73.6	73.8	74.2	75.0	74.7	74.9	74.9	74.7	75.0	74.6	73.3	74.3	74.8	74.8	74.3
2003	75.0	75.0	75.1	74.3	74.3	74.6	74.6	74.2	74.8	74.8	75.5	75.4	75.0	74.4	74.6	75.2	74.8
2004	75.3	75.9	75.8	76.1	76.8	76.2	77.0	77.3	77.2	77.9	77.9	78.3	75.7	76.4	77.1	78.0	76.8
2005	78.7	79.2	78.7	78.8	79.0	78.9	78.4	78.6	77.4	78.4	78.9	78.8	78.9	78.9	78.1	78.7	78.7
2006	79.3	78.9	78.7	78.9	78.4	78.5	78.1	78.4	78.2	77.8	77.7	78.8	79.0	78.6	78.3	78.1	78.5
2007	78.2	78.4	78.8	79.1	79.0	79.4	79.3	79.0	79.2	78.7	79.0	79.0	78.5	79.2	79.2	78.9	78.9
2008	78.6	78.0	77.6	76.7	76.2	75.7	74.9	74.0	71.4	71.2	69.8	67.6	78.1	76.2	73.4	69.5	74.3
2009	65.6	65.5	64.3	64.0	63.4	63.3	64.4	65.3	65.9	66.2	66.9	66.9	65.2	63.5	65.2	66.7	65.1
2010	67.7	67.7	68.6	69.3	70.4	70.4	71.0	71.1	71.3	71.5	71.6	72.0	68.0	70.0	71.1	71.7	70.2
2011	72.2	72.4	73.0	72.7	72.9	73.0	73.5	73.8	74.1	74.5	74.3	74.8	72.5	72.8	73.8	74.6	73.4
2012	75.4	75.6	75.1	75.5	75.0	75.1	74.9	74.8	74.6	74.2	74.8	75.4	75.4	75.2	74.8	74.8	75.0
2013	75.1	75.4	75.3	75.0	75.1	75.3	74.5	75.2	75.3	75.4	75.3	75.4	75.3	75.1	75.0	75.4	75.2
2014	74.5	75.3	75.9	75.7	75.9	76.2	76.4	76.1	76.1	76.0	76.7	76.5	75.2	75.9	76.2	76.4	75.9
2015	76.2	75.8	76.1	76.0	76.0	75.8	76.3	76.1	75.7	75.7	75.5	75.2	76.0	75.9	76.0	75.5	75.9
2016	75.6	75.2	75.0	74.6	74.4	74.5	74.6	74.2	74.3	74.4	74.3	74.5	75.3	74.5	74.4	74.4	74.6
2017	74.7	74.8	74.4	75.2	74.8	74.9	74.7	74.5	74.3	75.2	75.3	75.2	74.7	75.0	74.5	75.3	74.8
2018	74.8	75.8	75.7	76.0	75.2	75.6	75.8	76.0	76.2	76.0	75.9	76.7	75.4	75.6	76.0	76.2	75.8

1. Refer to note on cover page.

2. Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.

3. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

Table 15
INDUSTRIAL PRODUCTION: RELIABILITY ESTIMATES
 Seasonally adjusted

Item	Annualized change		2012=100						Percent change					
	2018		2018						2018					
	Q3	Q4	July	Aug.	Sept.	Oct.	Nov.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total index														
85th percentile	4.94	4.78	107.89	108.85	109.05	109.35	109.89	110.35	.42	.88	.23	.37	.68	.66
Current estimate	4.73	3.79	107.89	108.79	108.94	109.15	109.57	109.95	.42	.83	.13	.20	.38	.35
15th percentile	4.53	3.06	107.89	108.73	108.83	108.97	109.30	109.53	.42	.78	.04	.08	.14	.00
Manufacturing (SIC)														
85th percentile	3.95	3.15	104.37	104.93	105.24	105.13	105.29	106.55	.37	.54	.33	-.05	.25	1.31
Current estimate	3.69	2.30	104.37	104.87	105.12	104.95	105.05	106.15	.37	.48	.24	-.16	.09	1.05
15th percentile	3.51	1.28	104.37	104.81	105.00	104.76	104.76	105.72	.37	.42	.13	-.28	-.06	.76
Mining														
85th percentile	17.93	12.35	123.81	126.75	127.69	127.70	129.79	132.03	.83	2.38	.84	.31	2.01	2.45
Current estimate	17.36	9.20	123.81	126.59	127.32	127.09	128.54	130.49	.83	2.25	.57	-.18	1.14	1.52
15th percentile	16.76	6.03	123.81	126.43	126.90	126.37	127.22	128.76	.83	2.12	.27	-.57	.41	.63
Electric and gas utilities														
85th percentile	-5.53	10.92	104.23	105.42	104.11	108.16	110.79	103.87	.16	1.14	-1.23	4.15	3.03	-4.50
Current estimate	-5.65	6.18	104.23	105.41	104.05	107.53	108.88	102.02	.16	1.13	-1.28	3.34	1.25	-6.30
15th percentile	-5.80	4.24	104.23	105.39	103.98	107.22	107.68	100.97	.16	1.11	-1.35	3.11	-.13	-8.07

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

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 2012. 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 1997, the total IP index has been constructed from 300 individual series based on the 2012 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 6 percent. If output in this industry increased 10 percent in a month, then this gain would boost growth in total IP by 6/10 percentage point (0.06 x 10% = 0.6%). 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 74 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, 95 percent in the third month, 96 percent in the fourth month, 97 percent in the fifth month, and 97 percent in the sixth month. Data availability by data type in early 2017 is summarized in the table below:

Availability of Monthly IP Data in Publication Window
(Percent of value added in 2017; the numbers may not sum because of rounding.)

Type of data	Month of estimate					
	1st	2nd	3rd	4th	5th	6th
Physical product	32	44	54	55	56	56
Production-worker hours	41	41	41	41	41	41
IP data received	74	85	95	96	97	97
IP data estimated	26	15	5	4	3	3

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 (32 percent out of a total of 56 percent). Of the 27 percent, about four-fifths (25 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 January 2018; for other series, the factors were estimated with data through at least December 2017. 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

0.27 percent during the 1987–2017 period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.22 percentage point during the 1987–2017 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 27 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 9 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 1972–2017 period, the average total industry utilization rate was 79.8 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 March 23, 2018, is available on the Board's website (www.federalreserve.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 is published at 9:15 a.m. on:

2018: January 17, February 15, March 16, April 17, May 16, June 15, July 17, August 15, September 14, October 16, November 16, and December 14.

2019: January 18, February 15, March 15, April 16, May 15, June 14, July 16, August 15, September 17, October 17, November 15, December 17.

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

FEDERAL RESERVE statistical release



G.17 (419)

For release at 9:15 a.m. (EST)
January 15, 2016

INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Industrial production declined 0.4 percent in December, primarily as a result of cutbacks for utilities and mining. The decrease for total industrial production in November was larger than previously reported, but upward revisions to earlier months left the level of the index in November only slightly below its initial estimate.

(over)

Industrial Production and Capacity Utilization: Summary

Seasonally adjusted

Industrial production	2012=100						Percent change						Dec. '14 to Dec. '15
	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Total index	107.5	107.6	107.6	107.4	106.4	106.0	.8	.1	.0	-2	-9	-4	-1.8
<i>Previous estimates</i>	107.5	107.7	107.5	107.1	106.5		.8	.2	-1	-4	-6		
Major market groups													
Final Products	104.8	105.2	104.9	104.6	103.9	103.4	1.2	.4	-3	-3	-7	-5	-1.2
Consumer goods	106.8	107.1	107.0	106.8	106.2	105.4	1.8	.2	-1	-2	-6	-8	.3
Business equipment	106.8	107.4	106.8	106.3	105.3	105.4	.1	.6	-6	-4	-1.0	.1	-8
Nonindustrial supplies	105.3	105.8	106.1	107.2	106.6	106.6	-3	.5	.3	1.1	-6	.0	.8
Construction	109.5	110.1	108.9	111.4	111.4	112.1	.1	.5	-1.1	2.2	.0	.6	1.6
Materials	110.4	110.1	110.2	109.7	108.4	108.0	.7	-3	.1	-5	-1.2	-3	-3.1
Major industry groups													
Manufacturing (see note below)	106.1	106.0	105.8	106.2	106.1	106.0	1.0	-1	-1	.4	-1	-1	.8
<i>Previous estimates</i>	106.1	106.1	105.9	106.2	106.2		1.0	-1	-2	.3	.0		
Mining	116.5	116.7	115.7	113.4	111.0	110.1	1.2	.2	-9	-2.0	-2.1	-8	-11.2
Utilities	101.7	103.2	104.9	103.1	98.0	96.0	-1.4	1.5	1.7	-1.8	-5.0	-2.0	-6.9
Capacity utilization	Percent of capacity											Capacity growth	
	Average 1972-2014	1988-89 high	1990-91 low	1994-95 high	2009 low	2014 Dec.	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	Dec. '14 to Dec. '15
Total industry	80.1	85.2	78.8	85.0	66.9	79.0	78.0	78.0	77.9	77.7	76.9	76.5	1.5
<i>Previous estimates</i>							78.0	78.1	77.9	77.5	77.0		
Manufacturing (see note below)	78.5	85.6	77.3	84.6	63.9	76.3	76.5	76.3	76.1	76.3	76.1	76.0	1.2
<i>Previous estimates</i>							76.5	76.4	76.1	76.3	76.2		
Mining	87.5	86.2	83.8	88.7	79.0	91.7	84.0	83.9	83.0	81.1	79.2	78.4	3.9
Utilities	85.9	92.9	84.3	93.3	78.5	79.2	77.8	78.9	80.2	78.7	74.8	73.2	.7
Stage-of-process groups													
Crude	86.3	87.6	84.3	89.8	76.9	88.9	83.2	83.0	82.6	81.3	79.8	79.1	3.0
Primary and semifinished	80.7	86.5	78.1	87.8	64.2	76.8	76.3	76.2	76.4	76.6	75.4	75.0	1.0
Finished	77.0	83.4	77.4	80.7	66.7	76.3	76.7	76.9	76.5	76.2	76.2	76.0	1.5

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.

For the fourth quarter as a whole, industrial production fell at an annual rate of 3.4 percent. Manufacturing output edged down in December. The index for utilities dropped 2.0 percent, as continued warmer-than-usual temperatures reduced demand for heating. Mining production decreased 0.8 percent in December for its fourth consecutive monthly decline. At 106.0 percent of its 2012 average, total industrial production in December was 1.8 percent below its year-earlier level. Capacity utilization for the industrial sector decreased 0.4 percentage point in December to 76.5 percent, a rate that is 3.6 percentage points below its long-run (1972–2014) average.

Market Groups

In December, the drop in utilities output contributed substantially to declines in the indexes for consumer goods, business supplies, and materials. The indexes for the major components of those categories unrelated to utilities, however, were little changed or declined slightly: The indexes for consumer durables and consumer non-energy nondurables each declined 0.3 percent, while the indexes for general business supplies and non-energy materials were roughly unchanged. The production of business equipment edged up, as a gain in information processing equipment was mostly offset by decreases elsewhere. The indexes for defense and space equipment and for construction supplies each rose 0.6 percent.

Industry Groups

Manufacturing output slipped 0.1 percent in December and increased at an annual rate of 0.5 percent in the fourth quarter. Factory output in December was 0.8 percent above its year-earlier level. The output of durable goods moved up slightly in December. Among the categories of durables, the indexes for motor vehicles and parts and for primary metals each dropped more than 1.5 percent, while the indexes for electrical equipment, appliances, and components and for computer and electronic products each increased more than 1.5 percent. The output of nondurables declined 0.2 percent, led by a drop of 1.2 percent for petroleum and coal products and by a reduction of 0.8 percent for paper. These declines were partially offset by increases for plastics and rubber products and for textile and product mills. The output of other manufacturing industries (publishing and logging) fell 0.5 percent. The index for mining declined 0.8 percent because of a large drop in coal mining, while the index for utilities decreased 2.0 percent; both major categories recorded drops of more than 15 percent at an annual rate in the fourth quarter.

The capacity utilization rate for manufacturing was little changed in December at 76.0 percent, a rate 2.5 percentage points below its long-run average. The operating rate for durable goods industries held steady at 75.8 percent, roughly 1 percentage point below its long-run average. At 77.6 percent, the operating rate for nondurable goods industries was 2.8 percentage points below its long-run average. Utilization for other manufacturing industries (publishing and logging) was down 0.3 percentage point to 60.0 percent. The utilization rate for mining fell 0.8 percentage point to 78.4 percent, and the rate for utilities dropped 1.6 percentage points to 73.2 percent, the lowest rate in the history of the series, which began in 1972.

Tables

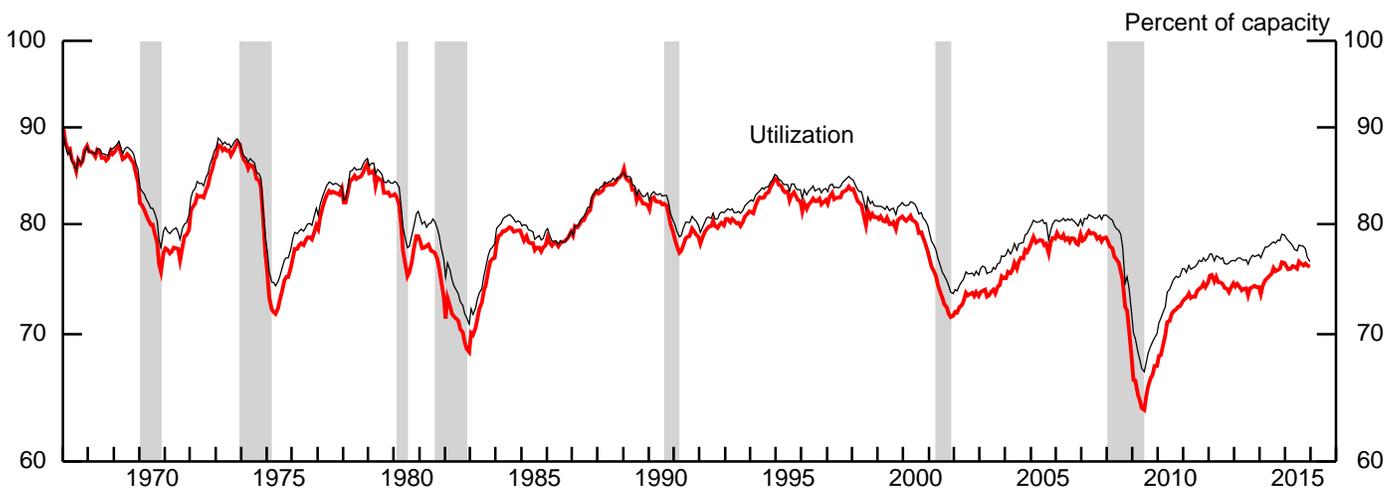
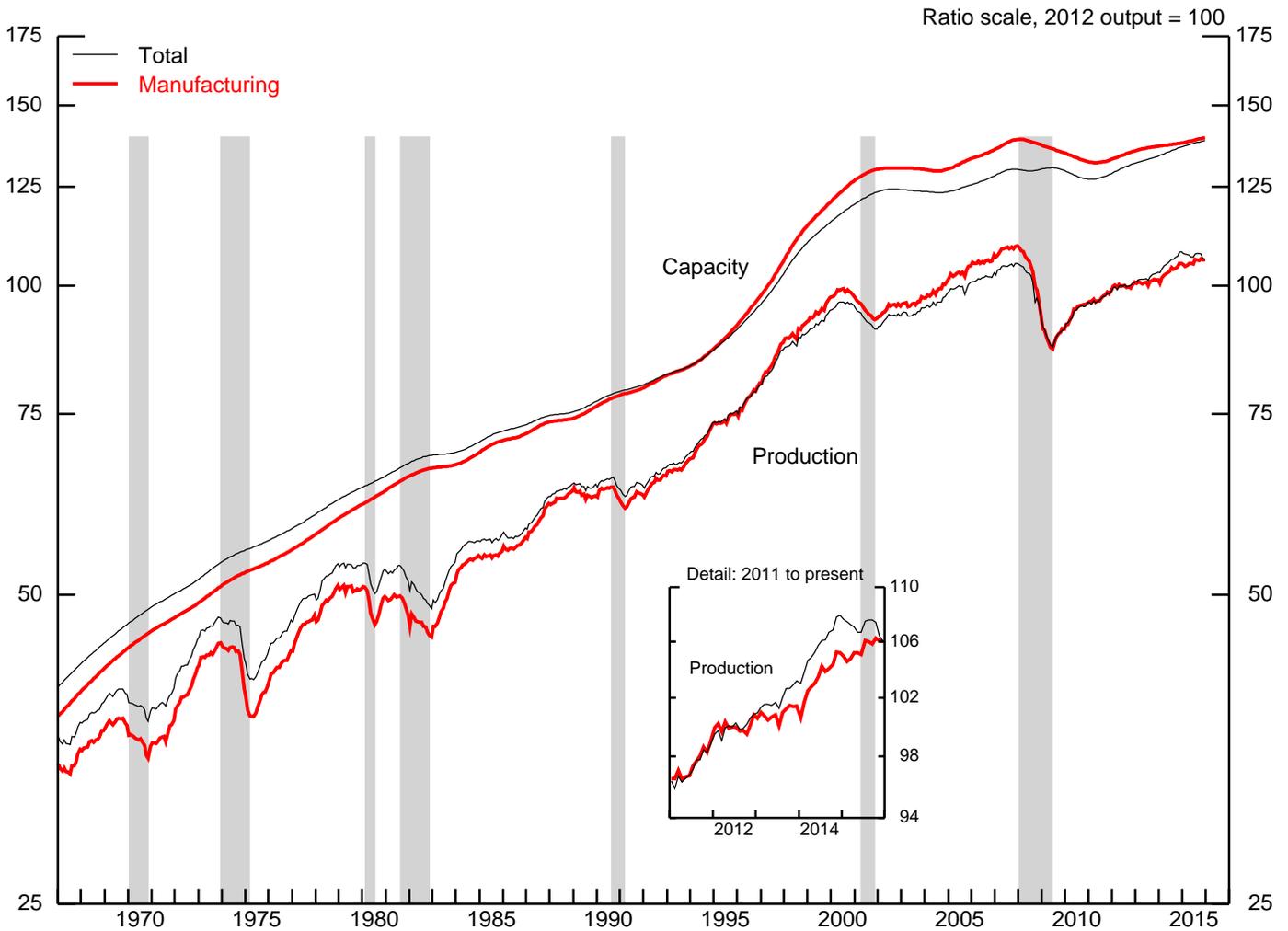
1. Industrial Production: Market and Industry Group Summary; percent change
 2. Industrial Production: Special Aggregates and Selected Detail; percent change
 3. Motor Vehicle Assemblies
 4. Industrial Production: Market and Industry Group Summary; indexes
 5. Industrial Production: Special Aggregates and Selected Detail; indexes
 6. Diffusion Indexes of Industrial Production
 7. Capacity Utilization
 8. Industrial Capacity
 9. Gross Value of Final Products and Nonindustrial Supplies
 10. Gross-Value-Weighted Industrial Production: Stage-of-Process Groups
 11. Historical Statistics: Total Industry
 12. Historical Statistics: Manufacturing
 13. Historical Statistics: Total Industry Excluding Selected High-Technology Industries
 14. Historical Statistics: Manufacturing Excluding Selected High-Technology Industries
- Further detail is available on the Board's website (www.federalreserve.gov/releases/G17/).

Revision of Industrial Production and Capacity Utilization

The Federal Reserve Board plans to issue its annual revision to the index of industrial production (IP) and the related measures of capacity utilization around the end of the first quarter of 2016. New annual benchmark data for 2014 for manufacturing will be incorporated, as well as other annual data, including information on the mining of metallic and nonmetallic minerals (except fuels). The updated IP indexes will include revisions to the monthly indicator (either product data or input data) and to seasonal factors for each industry. In addition, the estimation methods for some series may be changed. Any modifications to the methods for estimating the output of an industry will affect the index from 1972 to the present.

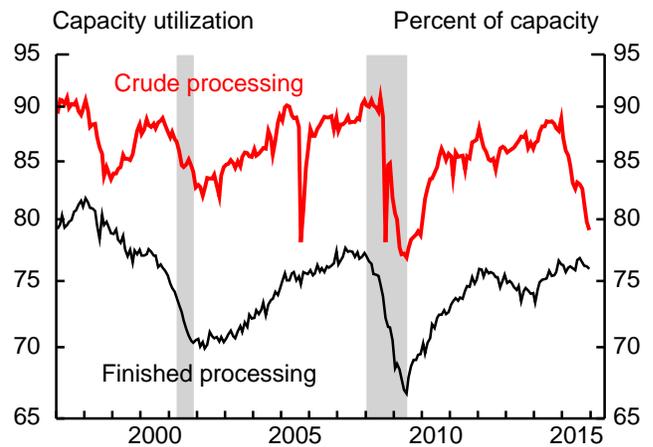
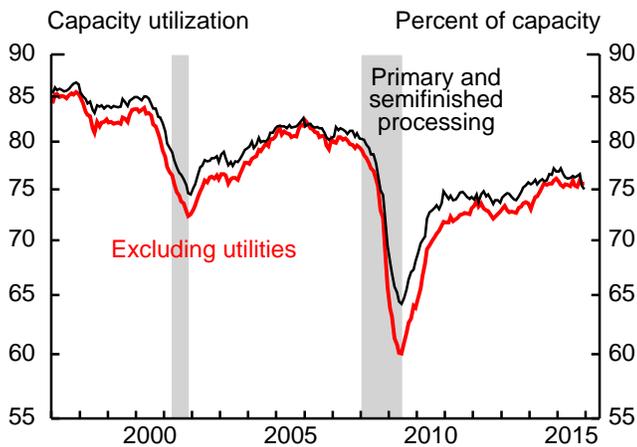
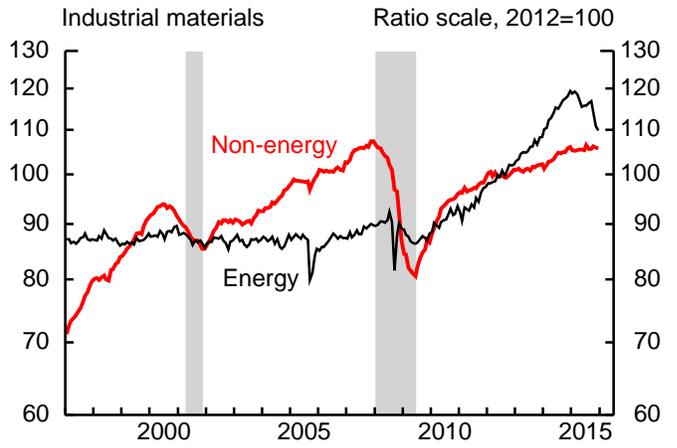
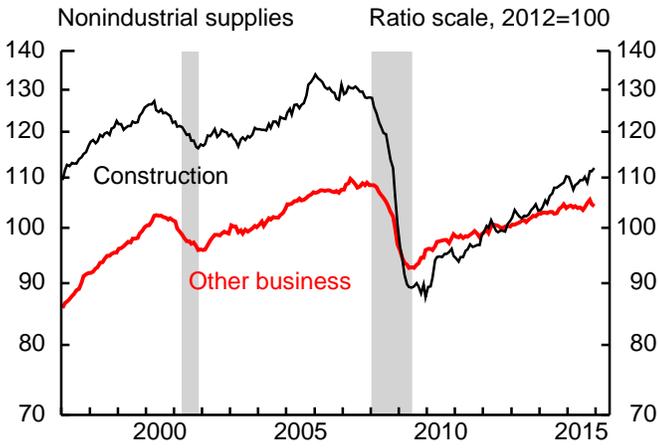
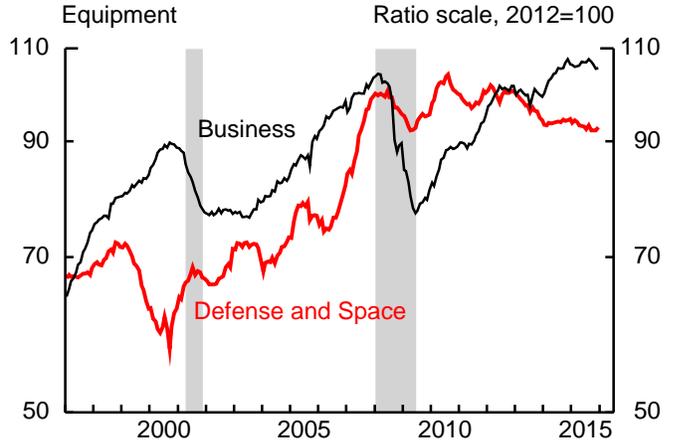
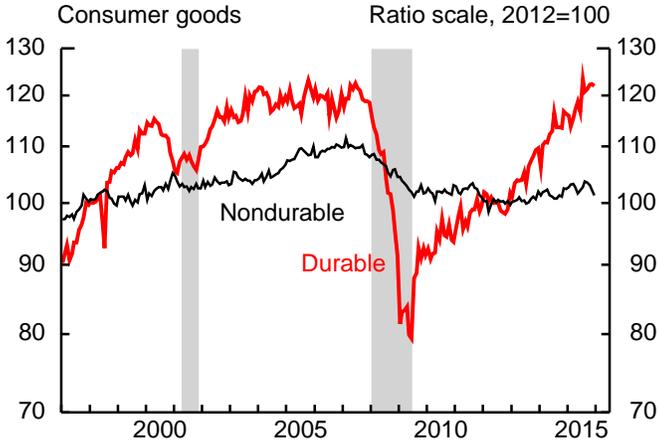
Capacity and capacity utilization will be revised to incorporate data through the fourth quarter of 2015 from the U.S. Census Bureau's Quarterly Survey of Plant Capacity along with new data on capacity from the U.S. Geological Survey, the U.S. Department of Energy, and other organizations.

1. Industrial production, capacity, and utilization



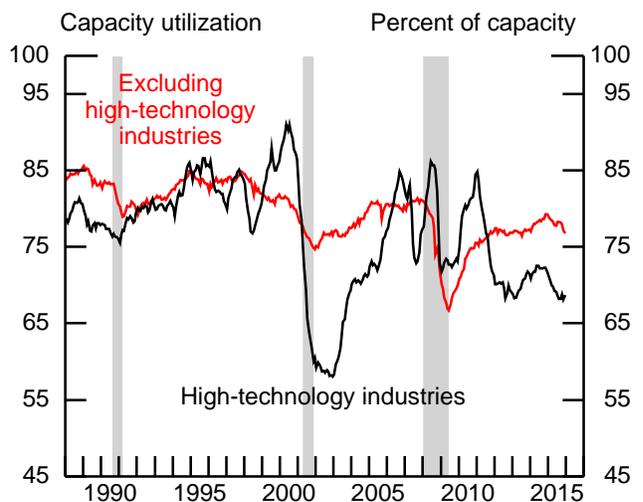
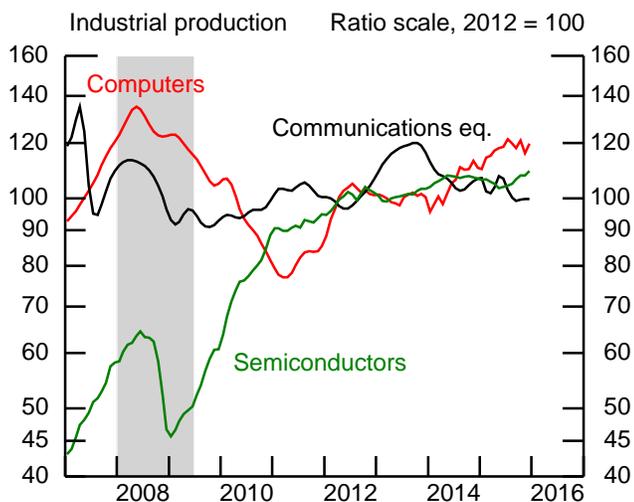
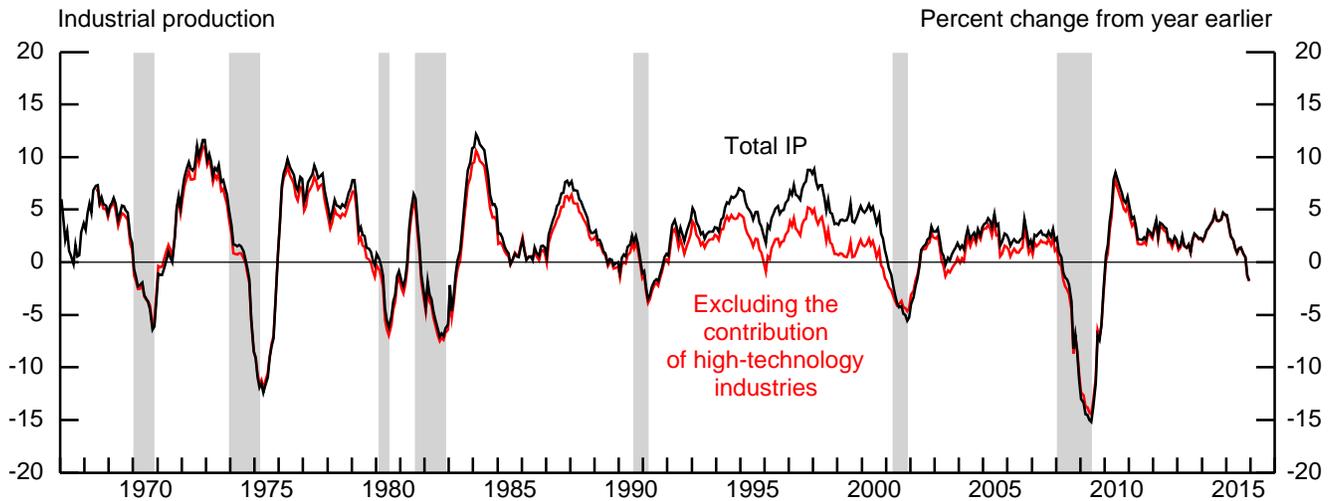
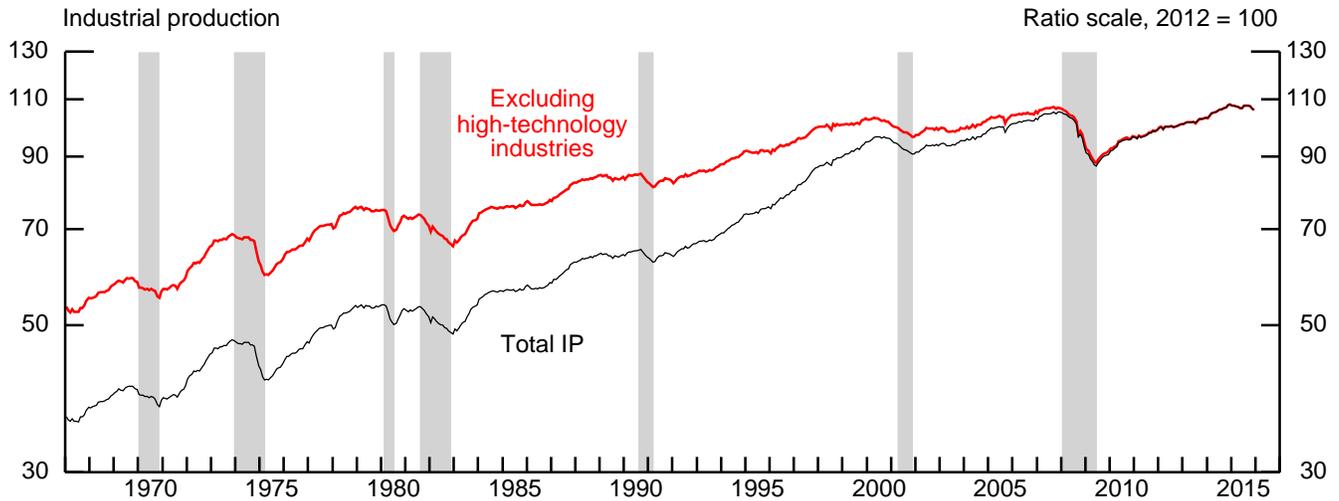
Note: The shaded areas are periods of business recession as defined by the National Bureau of Economic Research (NBER).

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 and capacity utilization, high-technology 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 are periods of business recession as defined by the NBER.

Table 1
INDUSTRIAL PRODUCTION: MARKET AND INDUSTRY GROUP SUMMARY

Percent change, seasonally adjusted

Item	2014 proportion ¹	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '14 to Dec. '15
		2013	2014	2015	2015 Q2	Q3 ^r	Q4 ^p	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Total IP	100.00	2.3	4.5	-9	-2.3	2.8	-3.4	.8	.1	.0	-.2	-.9	-.4	-1.8
MARKET GROUPS														
Final products and nonindustrial supplies	54.46	1.6	3.0	-1	-1.8	3.9	-1.7	.8	.4	-.1	.1	-.6	-.4	-.7
Consumer goods	26.69	2.9	1.8	1.4	-1.0	7.2	-3.1	1.8	.2	-.1	-.2	-.6	-.8	.3
Durable	5.68	9.5	5.9	5.8	8.8	15.5	1.3	5.7	-2.1	.4	.8	.1	-.3	5.0
Automotive products	2.79	15.5	6.8	8.7	15.5	25.2	-3.0	11.1	-4.3	.2	1.4	-.5	-1.4	6.4
Home electronics	.16	2.4	3.4	7.3	11.2	9.9	6.2	.9	-1.2	2.7	.6	-1.5	1.7	6.5
Appliances, furniture, carpeting	.82	5.6	7.6	2.8	3.1	8.5	4.0	1.5	-.7	1.3	1.0	-1.0	.1	1.5
Miscellaneous goods	1.90	3.8	4.2	2.7	1.5	5.1	6.7	.0	.8	.0	-.1	1.7	1.2	4.2
Nondurable	21.01	1.3	.8	-.2	-3.6	4.8	-4.4	.6	.9	-.2	-.5	-.8	-.9	-1.0
Non-energy	15.69	-.9	1.8	1.4	.1	4.7	-.6	.9	.7	-.5	-.3	.6	-.3	1.0
Foods and tobacco	8.70	1.1	.4	1.3	1.3	4.9	-.9	1.4	1.7	-.7	-.5	.3	.1	1.1
Clothing	.24	-1.5	.1	-4.9	-9.5	4.8	-14.5	1.9	-.1	-.4	-3.6	.3	-.4	-6.8
Chemical products	4.96	-4.9	6.3	2.0	-3.4	3.5	.5	.1	-.3	-.3	.0	1.1	-1.0	.9
Paper products	1.29	-.5	-5.6	.8	7.6	9.7	-3.5	1.6	-2.0	-.1	-.1	.1	-.4	1.5
Energy	5.32	7.3	-1.8	-3.9	-14.2	5.2	-16.3	-.2	1.8	1.0	-1.1	-5.3	-3.2	-7.8
Business equipment	10.18	-1.5	7.3	-1.0	2.4	1.8	-4.9	.1	.6	-.6	-.4	-1.0	.1	-.8
Transit	2.51	1.4	11.8	-.2	6.4	3.9	-10.1	3.6	-1.3	-.8	-.5	-1.2	-.9	-1.6
Information processing	2.20	-.2	3.4	1.0	1.0	.6	.0	-.9	.4	-.9	-.5	.6	1.6	1.9
Industrial and other	5.46	-3.3	6.9	-2.2	1.1	1.2	-4.2	-1.3	1.6	-.3	-.4	-1.4	-.1	-1.6
Defense and space equipment	2.15	-5.2	-.8	-2.0	-3.6	-2.0	-1.0	-.5	.7	-1.1	.0	.0	.6	-1.9
Construction supplies	4.52	3.4	5.2	2.1	-.2	2.4	7.8	.1	.5	-1.1	2.2	.0	.6	1.6
Business supplies	10.12	2.2	1.7	.6	-.5	.3	2.4	-.4	.4	.9	.5	-.9	-.3	.4
Materials	45.54	3.2	6.1	-1.8	-3.0	1.3	-5.6	.7	-.3	.1	-.5	-1.2	-.3	-3.1
Non-energy	27.14	1.6	3.4	.4	.6	1.8	.3	1.1	-.8	.0	.6	-.3	-.1	-.2
Durable	16.61	2.4	4.8	-1	-.8	3.5	-1.1	1.6	-.7	-.5	.8	-.6	.0	-.8
Consumer parts	2.92	4.0	9.0	4.4	10.2	14.9	-7.0	6.2	-2.8	1.3	.6	-3.0	-.8	2.5
Equipment parts	5.51	.8	4.0	-.3	-2.3	.4	3.3	.0	.6	-.3	.6	.0	.9	.6
Other	8.19	3.0	3.8	-1.8	-3.6	1.4	-1.7	1.0	-.7	-1.4	1.0	-.1	-.4	-3.0
Nondurable	10.52	.4	1.1	1.2	3.0	-.9	2.5	.3	-.8	.8	.3	.2	-.1	.8
Textile	.40	6.7	1.5	2.4	2.4	-11.1	13.0	-2.3	-1.0	.6	2.6	-.2	1.8	2.7
Paper	1.91	-1.4	-1.8	-1.9	.0	-4.1	-1.1	-.2	.0	.7	.4	-1.7	-.2	-3.1
Chemical	5.10	.0	2.4	2.3	5.1	-.9	5.1	.0	-1.4	1.1	.7	.5	.0	2.1
Energy	18.40	5.6	9.9	-5.7	-8.7	.6	-15.4	.0	.6	.4	-2.3	-3.0	-.9	-8.0
INDUSTRY GROUPS														
Manufacturing	73.91	1.3	3.4	1.1	1.5	3.2	.5	1.0	-.1	-.1	.4	-.1	-.1	.8
Manufacturing (NAICS) 31-33	71.35	1.4	3.9	1.1	1.3	3.2	.5	1.0	-.1	-.1	.4	-.2	-.1	.7
Durable manufacturing	38.10	2.0	5.1	.6	1.4	3.9	-.2	1.2	-.3	-.3	.5	-.5	.1	.5
Wood products	321	1.14	5.3	4.2	1.8	-4.6	9.3	11.4	2.2	.5	-.2	2.1	.5	1.8
Nonmetallic mineral products	327	1.83	3.6	5.2	5.1	-.7	4.0	15.4	.4	1.2	-1.0	2.9	1.3	5.2
Primary metals	331	2.55	5.5	1.2	-7.7	-2.5	-.5	-9.5	-.5	-2.5	-1.6	1.7	-1.7	-10.8
Fabricated metal products	332	5.48	2.9	2.4	-1.7	-.6	-3.5	-2.9	.2	-1.6	.2	-.5	-.2	1.0
Machinery	333	5.91	-3.6	8.2	-3.7	-.4	1.8	-5.9	-.7	2.4	-.1	-.6	-2.2	-3.0
Computer and electronic products	334	5.70	-.5	3.6	1.2	-1.9	2.9	3.7	-.3	.5	.0	.0	.3	1.6
Electrical equip., appliances, and components	335	1.78	-.7	2.6	7.1	8.0	5.1	11.4	.1	1.6	-1.9	3.5	-1.0	2.3
Motor vehicles and parts	3361-3	5.12	10.2	9.8	6.5	14.0	19.8	-7.1	10.6	-5.1	.5	1.1	-1.5	-1.7
Aerospace and miscellaneous transportation equipment	3364-9	4.42	-1.1	3.0	.5	1.3	.3	-1.9	.0	1.0	-.8	-.3	-.2	.5
Furniture and related products	337	1.15	3.2	9.3	3.1	-5.3	6.7	11.2	.3	.6	1.3	1.3	.9	1.7
Miscellaneous	339	3.02	5.6	5.8	1.5	-.2	2.1	7.2	-2.3	1.7	-1.0	.7	1.3	2.5
Nondurable manufacturing	33.25	.7	2.6	1.7	1.2	2.4	1.4	.7	.2	.0	.2	.2	-.2	1.0
Food, beverage, and tobacco products	311,2	10.45	1.4	.7	1.5	1.4	5.3	-1.0	1.6	1.5	-.6	-.6	.3	1.4
Textile and product mills	313,4	.67	5.5	1.7	1.8	4.8	-6.2	9.7	-1.3	-.3	.4	2.0	-.1	.6
Apparel and leather	315,6	.26	-.7	.4	-4.9	-8.7	4.3	-15.0	1.8	-.2	-.4	-3.7	.2	-.3
Paper	322	2.59	-2.0	-.9	-2.4	-.4	-4.8	-1.3	-.2	-.6	.9	.0	-.7	-3.7
Printing and support	323	1.43	3.0	.2	2.7	.4	4.4	5.0	.5	1.0	-.3	.6	-.8	2.1
Petroleum and coal products	324	3.25	5.6	.1	3.5	3.5	1.5	4.2	1.4	-.1	.5	1.4	-.4	-1.2
Chemicals	325	11.33	-1.9	4.5	2.0	1.1	.8	3.2	.0	-1.0	.5	.6	.5	1.2
Plastics and rubber products	326	3.27	2.1	9.7	2.5	-.2	6.3	1.6	1.1	1.3	-.5	.1	.0	2.7
Other manufacturing (non-NAICS) 1133,5111	2.56	-1.6	-8.6	.6	8.0	1.6	-1.0	.8	-1.5	.0	.3	.1	-.5	1.4
Mining 21	15.46	5.8	12.3	-8.6	-14.0	.8	-15.6	1.2	.2	-.9	-2.0	-2.1	-.8	-11.2
Utilities 2211,2	10.63	4.6	-1.0	-4.8	-12.3	2.5	-15.6	-1.4	1.5	1.7	-1.8	-5.0	-2.0	-6.9
Electric	2211	9.29	3.7	-.6	-3.9	-9.9	2.7	-13.7	-1.5	1.7	2.3	-2.1	-4.6	-5.9
Natural gas	2212	1.34	11.0	-3.2	-12.0	-28.7	.9	-30.1	-.1	-.5	-3.2	1.4	-8.4	-15.3

r Revised, p Preliminary.

NOTE. Under the industry groups, the figures to the right of the series descriptions are 2012 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). Under market groups, in the products category, miscellaneous consumer nondurables, oil and gas drilling, and manufactured homes are not shown separately; in the nondurable materials category, containers and miscellaneous nondurable materials are not shown separately.

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.

Table 2
INDUSTRIAL PRODUCTION: SPECIAL AGGREGATES AND SELECTED DETAIL

Percent change, seasonally adjusted

Item	2014 proportion	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '14 to Dec. '15	
		2013	2014	2015	2015 Q2	Q3 ^r	Q4 ^p	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p		
Total industry	100.00	2.3	4.5	-9	-2.3	2.8	-3.4	.8	.1	.0	-2	-9	-4	-1.8	
Energy	27.52	5.6	6.6	-6.4	-12.2	1.3	-14.6	.0	.8	.7	-1.8	-3.5	-1.5	-8.9	
Consumer products	5.32	7.3	-1.8	-3.9	-14.2	5.2	-16.3	-2	1.8	1.0	-1.1	-5.3	-3.2	-7.8	
Commercial products	3.04	4.7	1.3	-1.8	-5.9	.6	-5.2	-1	.0	2.1	-2	-3.1	-1.3	-3.2	
Oil and gas well drilling	213111	.76	-1.3	7.3	-59.4	-83.3	-17.9	-39.1	1.3	1.7	-4.0	-5.0	-4.0	-61.7	
Converted fuel	3.90	.9	.8	-6	-4.0	5.1	-10.4	-1.9	.5	2.6	-2.1	-3.2	-9	-1.1	
Primary energy	14.51	6.8	12.2	-7.2	-10.2	-7	-17.0	.7	.6	-.3	-2.4	-2.9	-8	-9.9	
Non-energy	72.48	1.1	3.6	1.0	1.3	3.3	.4	1.0	-.1	-.2	.4	-.1	.0	.6	
Selected high-technology industries	2.87	2.6	1.6	.7	-1.2	.2	7.4	-.1	-.2	.6	1.4	-.5	1.4	1.6	
Computers and peripheral equipment	3341	.39	-.9	10.3	6.8	17.6	6.7	-2.9	2.6	-1.4	-1.5	2.5	-4.0	3.0	8.1
Communications equipment	3342	.56	13.6	-10.7	-5.6	9.2	-18.4	-3.6	-3.8	-2.5	-1.0	.5	.1	.1	-6.4
Semiconductors and related electronic components	3344	1.92	.2	4.1	1.1	-7.5	4.6	12.8	.3	.7	1.5	1.4	.0	1.4	2.5
Excluding selected high-technology industries	69.61	1.0	3.6	1.0	1.4	3.4	.1	1.1	-.1	-.3	.3	-.1	-.1	.6	
Motor vehicles and parts	3361-3	5.12	10.2	9.8	6.5	14.0	19.8	-7.1	10.6	-5.1	.5	1.1	-1.5	-1.7	3.7
Motor vehicles	3361	2.41	14.6	8.1	5.6	20.6	27.9	-16.2	16.1	-7.9	-1.0	1.4	-1.9	-3.2	1.4
Motor vehicle parts	3363	2.32	5.4	11.6	6.5	11.3	13.0	-3.6	6.5	-3.8	1.6	.6	-1.7	-6	4.5
Excluding motor vehicles and parts	64.49	.4	3.2	.5	.5	2.1	.8	.3	.3	-.3	.3	.0	.1	.4	
Consumer goods	18.86	-.1	2.4	1.7	.5	5.1	.3	.8	.7	-.4	-.3	.6	.0	1.4	
Business equipment	8.69	-2.4	7.3	-1.2	1.0	1.4	-3.2	-.9	1.3	-.4	-.5	-.8	.3	-.6	
Construction supplies	4.50	3.4	5.3	2.1	-.2	2.5	7.9	.1	.5	-1.1	2.3	.0	.6	1.6	
Business supplies	6.54	1.1	1.5	1.7	2.7	.0	5.3	-.6	.6	.3	.8	.1	.0	1.9	
Materials	23.76	1.5	2.7	-.2	.2	.6	.2	.6	-.5	-.3	.5	-.1	-.1	-.7	
Measures excluding selected high-technology industries															
Total industry	97.13	2.3	4.5	-9	-2.3	2.8	-3.7	.8	.1	.0	-2	-9	-4	-1.9	
Manufacturing ¹	71.04	1.2	3.5	1.1	1.6	3.3	.2	1.0	-.1	-.2	.3	-.1	-.1	.7	
Durable	35.38	2.0	5.3	.6	1.6	4.3	-.9	1.4	-.3	-.4	.5	-.5	.0	.4	
Measures excluding motor vehicles and parts															
Total industry	94.88	2.0	4.2	-1.3	-3.2	1.8	-3.2	.2	.4	-.1	-.2	-.9	-.3	-2.1	
Manufacturing ¹	68.78	.7	3.0	.7	.6	1.9	1.1	.2	.3	-.2	.3	.0	.1	.5	
Durable	33.13	.9	4.3	-.3	-.5	1.6	.9	-.3	.5	-.4	.4	-.4	.4	.0	
Measures excluding selected high-technology industries and motor vehicles and parts															
Total industry	92.01	2.0	4.3	-1.3	-3.2	1.8	-3.5	.2	.5	-.1	-.3	-.9	-.3	-2.2	
Manufacturing ¹	65.91	.6	3.0	.7	.7	2.0	.9	.3	.3	-.2	.3	.0	.0	.5	
Stage-of-process components of non-energy materials, measures of the input to															
Finished processors	10.74	1.4	4.2	.9	1.6	3.1	-.2	1.6	-.6	.3	.6	-1.2	.3	.6	
Primary and semifinished processors	16.40	1.8	2.8	.0	.0	.9	.5	.7	-.9	-.3	.5	.3	-.3	-.7	

r Revised. p Preliminary.

1. Refer to note on cover page.

Table 3
MOTOR VEHICLE ASSEMBLIES

Millions of units, seasonally adjusted annual rate

Item	2015 average	2015 Q1	Q2	Q3	Q4	2015 July	Aug.	Sept.	Oct.	Nov.	Dec.
Total	12.11	11.56	12.16	12.68	12.06	13.34	12.38	12.33	12.36	11.99	11.83
Autos	4.17	4.09	4.34	4.28	3.94	4.64	4.13	4.08	4.00	3.87	3.95
Trucks	7.94	7.47	7.83	8.40	8.12	8.70	8.25	8.25	8.36	8.13	7.88
Light	7.62	7.15	7.50	8.07	7.81	8.39	7.91	7.92	8.04	7.82	7.58
Medium and heavy	.32	.32	.32	.33	.31	.32	.34	.33	.32	.30	.30
Memo											
Autos and light trucks	11.79	11.24	11.84	12.35	11.75	13.03	12.04	11.99	12.04	11.69	11.53

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

2012 = 100, seasonally adjusted

Item		2014 proportion	2015 Apr.	May	June	July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Total IP		100.00	107.1	106.7	106.7	107.5	107.6	107.6	107.4	106.4	106.0
MARKET GROUPS											
Final products and nonindustrial supplies		54.46	104.3	104.1	104.1	104.9	105.3	105.2	105.3	104.6	104.2
Consumer goods		26.69	105.5	104.9	105.0	106.8	107.1	107.0	106.8	106.2	105.4
Durable		5.68	117.1	118.7	116.7	123.4	120.8	121.2	122.3	122.4	122.0
Automotive products		2.79	126.1	129.3	123.8	137.5	131.6	131.9	133.8	133.1	131.2
Home electronics		.16	109.8	111.4	112.9	114.0	112.6	115.6	116.3	114.6	116.5
Appliances, furniture, carpeting		.82	112.4	112.4	113.5	115.2	114.4	115.8	117.0	115.9	116.0
Miscellaneous goods		1.90	107.5	107.8	109.0	108.9	109.8	109.7	109.6	111.4	112.7
Nondurable		21.01	102.6	101.6	102.1	102.7	103.7	103.5	103.0	102.2	101.3
Non-energy		15.69	100.9	99.9	100.4	101.3	102.0	101.4	101.1	101.7	101.4
Foods and tobacco		8.70	103.2	102.1	101.0	102.4	104.1	103.4	102.8	103.2	103.3
Clothing		.24	92.9	92.3	92.0	93.7	93.6	93.2	89.8	90.1	89.7
Chemical products		4.96	99.2	97.6	100.0	100.1	99.8	99.5	99.5	100.6	99.7
Paper products		1.29	90.4	92.3	94.4	95.9	93.9	93.8	93.7	93.9	93.5
Energy		5.32	107.5	106.1	106.7	106.5	108.4	109.5	108.4	102.6	99.3
Business equipment		10.18	106.0	106.9	106.7	106.8	107.4	106.8	106.3	105.3	105.4
Transit		2.51	120.5	122.1	118.7	123.0	121.4	120.4	119.8	118.3	117.2
Information processing		2.20	103.8	104.3	105.7	104.8	105.2	104.3	103.8	104.4	106.1
Industrial and other		5.46	101.1	101.8	102.3	101.0	102.7	102.4	102.0	100.5	100.4
Defense and space equipment		2.15	93.1	93.0	92.9	92.4	93.1	92.1	92.1	92.1	92.7
Construction supplies		4.52	108.4	108.8	109.4	109.5	110.1	108.9	111.4	111.4	112.1
Business supplies		10.12	104.2	103.8	103.9	103.5	103.9	104.8	105.4	104.5	104.2
Materials		45.54	110.3	109.7	109.7	110.4	110.1	110.2	109.7	108.4	108.0
Non-energy		27.14	105.4	105.5	105.2	106.4	105.6	105.5	106.1	105.8	105.8
Durable		16.61	107.1	107.0	106.9	108.7	107.9	107.3	108.1	107.4	107.4
Consumer parts		2.92	117.5	119.8	116.8	124.1	120.6	122.1	122.8	119.1	118.2
Equipment parts		5.51	103.2	103.0	102.9	102.9	103.4	103.1	103.7	103.7	104.6
Other		8.19	106.2	105.5	106.3	107.4	106.6	105.1	106.1	106.0	105.6
Nondurable		10.52	102.9	103.1	102.7	103.0	102.1	102.9	103.2	103.4	103.3
Textile		.40	109.3	109.1	108.8	106.4	105.4	106.0	108.7	108.5	110.4
Paper		1.91	97.3	96.9	95.5	95.3	95.3	96.0	96.4	94.8	94.6
Chemical		5.10	104.1	105.0	105.1	105.1	103.6	104.7	105.5	106.0	106.0
Energy		18.40	117.3	115.5	115.7	115.7	116.4	116.9	114.2	110.8	109.8
INDUSTRY GROUPS											
Manufacturing		73.91	105.2	105.2	105.1	106.1	106.0	105.8	106.2	106.1	106.0
Manufacturing (NAICS)	31-33	71.35	105.9	105.9	105.7	106.8	106.7	106.6	106.9	106.8	106.7
Durable manufacturing		38.10	107.1	107.6	107.4	108.7	108.4	108.1	108.6	108.1	108.2
Wood products	321	1.14	109.6	108.8	108.9	111.2	111.8	111.6	113.9	114.5	115.4
Nonmetallic mineral products	327	1.83	111.2	110.9	111.2	111.7	113.0	111.9	115.1	116.5	117.2
Primary metals	331	2.55	98.7	98.9	102.6	102.1	99.6	98.1	99.7	98.1	94.6
Fabricated metal products	332	5.48	104.9	104.9	104.8	104.9	103.3	103.5	102.9	102.7	103.7
Machinery	333	5.91	99.8	100.5	99.6	98.9	101.2	101.1	100.5	98.3	97.8
Computer and electronic products	334	5.70	103.4	103.3	104.4	104.1	104.6	104.6	104.6	104.9	106.6
Electrical equip., appliances, and components	335	1.78	105.3	105.0	106.3	106.4	108.1	106.0	109.7	108.6	111.0
Motor vehicles and parts	3361-3	5.12	126.2	129.3	123.5	136.6	129.6	130.3	131.8	129.8	127.6
Aerospace and miscellaneous transportation equipment	3364-9	4.42	105.5	105.9	105.2	105.2	106.2	105.4	105.1	104.9	105.4
Furniture and related products	337	1.15	111.7	112.0	112.6	112.9	113.6	115.2	116.7	117.7	116.6
Miscellaneous	339	3.02	109.7	109.6	113.2	110.5	112.4	111.3	112.0	113.5	114.5
Nondurable manufacturing		33.25	104.6	104.0	103.8	104.6	104.8	104.9	105.1	105.3	105.1
Food, beverage, and tobacco products	311,2	10.45	104.1	103.0	101.9	103.5	105.0	104.4	103.8	104.1	104.3
Textile and product mills	313,4	.67	107.2	107.8	107.2	105.8	105.4	105.9	108.0	107.9	108.5
Apparel and leather	315,6	.26	94.2	93.7	93.3	95.0	94.8	94.4	90.9	91.1	90.8
Paper	322	2.59	97.5	97.5	96.3	96.0	95.4	96.3	96.3	95.6	94.9
Printing and support	323	1.43	103.1	102.2	102.6	103.1	104.2	103.9	104.5	105.4	105.1
Petroleum and coal products	324	3.25	110.1	109.0	107.6	109.1	109.1	109.7	111.2	110.7	109.4
Chemicals	325	11.33	103.0	102.4	103.8	103.8	102.8	103.3	103.9	104.4	103.9
Plastics and rubber products	326	3.27	113.6	114.0	113.4	114.7	116.2	115.6	115.7	115.7	116.4
Other manufacturing (non-NAICS)	1133,5111	2.56	87.1	88.0	88.4	89.1	87.8	87.8	88.1	88.2	87.7
Mining	21	15.46	117.9	115.3	115.1	116.5	116.7	115.7	113.4	111.0	110.1
Utilities	2211,2	10.63	102.7	102.2	103.1	101.7	103.2	104.9	103.1	98.0	96.0
Electric	2211	9.29	101.7	101.3	101.9	100.4	102.2	104.5	102.2	97.6	96.1
Natural gas	2212	1.34	109.7	108.4	111.9	111.8	111.3	107.7	109.2	100.1	93.3

^r Revised, ^p Preliminary.

NOTE. Refer to notes on table 1.

Table 5
INDUSTRIAL PRODUCTION INDEXES: SPECIAL AGGREGATES

2012 = 100, seasonally adjusted

Item	2014 proportion	2015 Apr.	May	June	July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Total industry	100.00	107.1	106.7	106.7	107.5	107.6	107.6	107.4	106.4	106.0	
Energy	27.52	112.3	110.5	110.7	110.7	111.6	112.3	110.3	106.4	104.9	
Consumer products	5.32	107.5	106.1	106.7	106.5	108.4	109.5	108.4	102.6	99.3	
Commercial products	3.04	107.0	105.5	105.5	105.4	105.4	107.6	107.4	104.0	102.7	
Oil and gas well drilling	213111	.76	52.1	47.5	45.6	46.2	46.9	45.1	42.8	41.1	38.1
Converted fuel	3.90	101.6	102.6	105.1	103.1	103.7	106.4	104.1	100.8	99.8	
Primary energy	14.51	121.6	118.9	118.2	119.0	119.7	119.3	116.5	113.1	112.2	
Non-energy	72.48	104.9	105.0	104.9	105.9	105.8	105.6	105.9	105.8	105.8	
Selected high-technology industries	2.87	106.0	105.9	106.1	105.9	105.8	106.4	107.8	107.3	108.8	
Computers and peripheral equipment	3341	.39	117.1	118.0	118.4	121.4	119.8	118.0	120.9	116.1	119.6
Communications equipment	3342	.56	103.5	107.5	106.7	102.7	100.1	99.1	99.6	99.7	99.8
Semiconductors and related electronic components	3344	1.92	104.8	103.3	103.8	104.1	104.9	106.4	107.9	107.9	109.4
Excluding selected high-technology industries	69.61	104.8	104.9	104.8	105.9	105.8	105.5	105.8	105.7	105.7	
Motor vehicles and parts	3361-3	5.12	126.2	129.3	123.5	136.6	129.6	130.3	131.8	129.8	127.6
Motor vehicles	3361	2.41	127.9	132.3	124.4	144.3	132.9	131.6	133.5	131.0	126.8
Motor vehicle parts	3363	2.32	124.4	126.7	123.3	131.3	126.3	128.4	129.1	127.0	126.3
Excluding motor vehicles and parts	64.49	103.3	103.2	103.5	103.8	104.1	103.8	104.0	104.1	104.1	
Consumer goods	18.86	102.2	101.5	101.9	102.8	103.5	103.2	102.8	103.4	103.4	
Business equipment	8.69	104.4	104.9	105.6	104.6	105.9	105.5	104.9	104.1	104.4	
Construction supplies	4.50	108.4	108.8	109.4	109.6	110.2	109.0	111.4	111.5	112.1	
Business supplies	6.54	102.7	102.8	103.0	102.3	103.0	103.2	104.1	104.2	104.2	
Materials	23.76	104.1	104.0	104.0	104.6	104.1	103.8	104.3	104.2	104.1	
Measures excluding selected high-technology industries											
Total industry	97.13	107.1	106.7	106.7	107.5	107.6	107.6	107.3	106.4	105.9	
Manufacturing ¹	71.04	105.1	105.1	105.0	106.1	105.9	105.8	106.1	106.0	105.8	
Durable	35.38	107.1	107.6	107.4	108.9	108.5	108.1	108.6	108.1	108.1	
Measures excluding motor vehicles and parts											
Total industry	94.88	106.1	105.6	105.9	106.1	106.5	106.5	106.2	105.3	105.0	
Manufacturing ¹	68.78	103.8	103.6	103.9	104.1	104.4	104.2	104.6	104.5	104.6	
Durable	33.13	104.4	104.6	105.2	104.9	105.5	105.0	105.5	105.1	105.5	
Measures excluding selected high-technology industries and motor vehicles and parts											
Total industry	92.01	106.1	105.6	105.8	106.0	106.5	106.4	106.1	105.2	104.8	
Manufacturing ¹	65.91	103.7	103.5	103.7	104.0	104.3	104.1	104.4	104.4	104.4	
Stage-of-process components of non-energy materials, measures of the input to											
Finished processors	10.74	106.0	106.4	105.3	107.0	106.4	106.7	107.4	106.1	106.4	
Primary and semifinished processors	16.40	105.0	104.8	105.2	106.0	105.0	104.7	105.3	105.6	105.3	

^r Revised. ^p Preliminary.

1. Refer to note on cover page.

Table 6
DIFUSION INDEXES OF INDUSTRIAL PRODUCTION

Percent

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
One month earlier												
2013	55.2	60.5	45.5	46.2	52.5	58.2	48.5	60.2	57.2	52.5	52.2	52.2
2014	40.8	63.5	66.6	49.5	60.9	57.2	63.9	46.5	61.2	56.2	63.2	54.5
2015	49.2	46.5	52.8	53.5	54.2	48.2	61.2	50.5	44.5	57.2	48.8	
Three months earlier												
2013	59.2	63.5	57.9	50.8	45.2	51.8	51.2	59.9	55.9	62.5	58.2	55.2
2014	47.8	57.9	64.2	69.6	68.9	58.9	64.2	62.5	62.9	57.5	64.9	65.9
2015	59.5	43.8	47.5	50.8	55.2	51.2	57.9	61.5	54.5	54.2	50.8	
Six months earlier												
2013	56.2	59.2	60.2	57.5	57.9	55.5	53.2	55.5	57.2	61.9	61.2	58.9
2014	53.5	56.2	64.9	63.2	62.2	67.2	69.6	68.9	64.2	63.9	69.2	68.6
2015	60.9	57.9	59.2	58.9	50.8	47.5	53.5	60.5	56.2	55.9	53.8	

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.

Table 7
CAPACITY UTILIZATION
Percent of capacity, seasonally adjusted

Item	2014 proportion	1972- 2014 ave.	1994- 95 high	2009 low	2015 Q2	Q3 ^f	Q4 ^p	2015 July ^f	Aug. ^f	Sept. ^f	Oct. ^f	Nov. ^f	Dec. ^p
Total industry	100.00	80.1	85.0	66.9	77.7	77.9	77.0	78.0	78.0	77.9	77.7	76.9	76.5
Manufacturing¹	74.74	78.5	84.6	63.9	75.9	76.3	76.1	76.5	76.3	76.1	76.3	76.1	76.0
Manufacturing (NAICS) 31-33	71.57	78.4	84.7	63.6	76.6	77.0	76.8	77.1	77.0	76.8	77.0	76.8	76.6
Durable manufacturing	37.90	76.9	83.8	58.3	76.0	76.4	76.0	76.7	76.4	76.0	76.3	75.8	75.8
Wood products 321	1.23	76.4	86.6	49.0	68.8	69.9	71.4	69.9	70.1	69.9	71.2	71.4	71.8
Nonmetallic mineral products 327	2.22	74.2	82.7	44.4	62.8	63.4	65.7	63.2	63.9	63.3	65.1	65.9	66.3
Primary metals 331	2.59	79.0	94.4	49.1	73.6	73.1	70.8	74.9	72.9	71.6	72.6	71.3	68.6
Fabricated metal products 332	5.12	77.6	84.9	62.3	81.6	80.9	80.4	81.7	80.4	80.6	80.2	80.1	80.9
Machinery 333	5.80	77.8	87.6	58.6	75.5	75.6	74.2	74.5	76.2	76.0	75.5	73.8	73.3
Computer and electronic products 334	5.80	77.9	84.5	70.3	72.0	71.6	71.3	71.7	71.7	71.4	71.1	71.0	71.8
Electrical equip., appliances, and components 335	1.63	82.2	92.3	66.3	85.6	86.8	89.3	86.4	87.8	86.1	89.2	88.3	90.3
Motor vehicles and parts 3361-3	5.14	74.8	87.8	33.8	78.0	80.9	78.8	83.9	79.4	79.6	80.3	78.9	77.4
Aerospace and miscellaneous transportation equipment 3364-9	4.31	73.8	70.6	72.5	78.8	78.7	78.3	78.5	79.2	78.5	78.3	78.1	78.4
Furniture and related products 337	1.13	76.5	82.5	57.2	77.9	79.2	81.3	78.5	79.0	80.0	81.1	81.8	81.1
Miscellaneous 339	2.92	76.3	80.7	69.2	77.0	76.8	77.5	76.4	77.5	76.5	76.8	77.7	78.1
Nondurable manufacturing	33.67	80.4	86.0	69.3	77.3	77.6	77.7	77.5	77.7	77.6	77.7	77.8	77.6
Food, beverage, and tobacco products 311,2	10.11	80.8	85.3	74.8	79.1	80.0	79.6	79.4	80.5	80.0	79.4	79.6	79.7
Textile and product mills 313,4	.71	79.5	91.8	53.8	74.2	73.0	74.7	73.0	72.8	73.1	74.6	74.5	74.9
Apparel and leather 315,6	.30	76.9	87.4	57.8	65.1	66.2	64.0	66.3	66.3	66.1	63.8	64.1	64.0
Paper 322	2.35	86.6	92.7	72.9	83.1	82.1	81.8	82.2	81.7	82.4	82.4	81.8	81.2
Printing and support 323	1.71	80.0	85.0	58.7	63.1	63.4	63.9	63.2	63.7	63.4	63.7	64.1	63.8
Petroleum and coal products 324	3.44	85.4	91.0	75.9	84.9	84.8	85.3	84.8	84.6	85.0	86.0	85.5	84.3
Chemicals 325	11.92	77.2	81.8	66.1	74.2	74.2	74.6	74.6	73.8	74.1	74.5	74.8	74.4
Plastics and rubber products 326	3.13	82.0	93.3	58.8	80.6	81.8	82.0	81.2	82.3	81.8	81.9	81.9	82.3
Other manufacturing (non-NAICS) 1133,5111	3.17	81.4	83.4	69.4	59.4	60.0	60.1	60.5	59.6	59.8	60.1	60.3	60.0
Mining 21	15.24	87.5	88.7	79.0	84.1	83.7	79.6	84.0	83.9	83.0	81.1	79.2	78.4
Utilities 2211,2	10.02	85.9	93.3	78.5	78.6	79.0	75.6	77.8	78.9	80.2	78.7	74.8	73.2
Selected high-technology industries	3.02	77.7	86.6	71.8	69.4	68.3	68.5	68.6	68.2	68.2	68.8	68.1	68.7
Computers and peripheral equipment 3341	.49	77.8	87.8	82.2	68.1	68.3	66.9	69.5	68.3	67.0	68.4	65.4	67.0
Communications equipment 3342	.57	76.8	84.3	77.0	72.4	67.9	66.3	69.6	67.5	66.5	66.5	66.3	66.1
Semiconductors and related electronic components 3344	1.96	79.1	91.8	63.0	69.0	68.7	69.6	68.4	68.5	69.1	69.7	69.3	69.9
Measures excluding selected high-technology industries	96.98	80.2	84.9	66.7	77.9	78.3	77.3	78.3	78.3	78.2	77.9	77.1	76.7
Total industry	71.72	78.6	84.5	63.4	76.2	76.7	76.5	76.8	76.7	76.5	76.7	76.5	76.3
STAGE-OF-PROCESS GROUPS													
Crude	19.34	86.3	89.8	76.9	83.5	82.9	80.1	83.2	83.0	82.6	81.3	79.8	79.1
Primary and semifinished	44.36	80.7	87.8	64.2	76.1	76.3	75.6	76.3	76.2	76.4	76.6	75.4	75.0
Finished	36.30	77.0	80.7	66.7	76.0	76.7	76.1	76.7	76.9	76.5	76.2	76.2	76.0

^f Revised. ^p Preliminary.

1. Refer to note on cover page.

Table 8
INDUSTRIAL CAPACITY
Percent change

Item	Average annual rate				Fourth quarter to fourth quarter				Annual rate				Monthly rate
	1972-79	1980-88	1989-94	1995-2015	2012	2013	2014	2015	2015 Q1	Q2	Q3	Q4	2015 Dec.
Total industry	3.0	1.9	2.3	2.3	2.4	1.6	2.1	1.5	1.7	1.5	1.4	1.4	.1
Manufacturing ¹	3.2	2.2	2.6	2.3	1.9	1.1	.7	1.2	1.0	1.2	1.3	1.3	.1
Mining	.7	.1	-.6	1.4	5.8	6.4	9.3	4.2	6.3	4.3	3.1	3.1	.3
Utilities	4.2	2.1	1.8	1.8	1.2	.3	1.2	.8	1.0	.8	.7	.7	.1
Selected high-technology industries													
Manufacturing ¹ ex. selected high-technology industries	18.6	16.8	16.0	18.5	13.7	-.5	.9	5.9	4.9	5.9	6.4	6.4	.5
	2.6	1.3	1.6	1.0	1.4	1.3	.7	.9	.8	.9	1.0	1.1	.1
STAGE-OF-PROCESS GROUPS													
Crude	1.5	.5	-.5	1.3	6.3	4.4	7.0	3.3	4.8	3.4	2.4	2.4	.2
Primary and semifinished	3.0	1.3	2.5	2.5	1.8	.7	.5	1.0	.8	.9	1.0	1.1	.1
Finished	3.9	3.3	2.7	2.1	1.2	1.6	1.3	1.5	1.3	1.4	1.5	1.6	.1

1. Refer to note on cover page.

Table 9
GROSS VALUE OF FINAL PRODUCTS AND NONINDUSTRIAL SUPPLIES
Billions of 2009 dollars at annual rate, seasonally adjusted

Item	2009	2015	2015 Q2	Q3 ^r	Q4 ^p	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p
Final products and nonindustrial supplies	3,259.8	3,777.1	3,761.5	3,804.2	3,781.7	3,802.7	3,802.8	3,807.1	3,808.1	3,780.3	3,756.8
Final products	2,413.4	2,802.8	2,791.3	2,831.4	2,796.3	2,834.1	2,830.0	2,830.2	2,817.8	2,796.5	2,774.7
Consumer goods	1,796.1	2,011.0	1,997.2	2,035.1	2,014.9	2,036.5	2,031.4	2,037.3	2,029.3	2,017.4	1,997.8
Durable	354.5	521.1	514.8	537.4	535.9	550.0	530.6	531.6	537.9	536.7	533.0
Automotive products	200.5	344.5	339.8	359.8	355.9	373.0	353.1	353.3	359.1	357.0	351.5
Other durable goods	154.0	176.7	175.1	177.9	180.2	177.4	177.7	178.5	179.1	179.8	181.6
Nondurable	1,441.6	1,506.1	1,498.5	1,515.3	1,496.9	1,505.3	1,517.9	1,522.8	1,509.3	1,498.7	1,482.7
Equipment, total	617.3	799.3	801.7	803.9	788.8	805.1	806.1	800.3	795.8	786.3	784.2
Business and defense	600.0	785.7	789.8	792.3	778.2	793.2	794.5	789.1	784.9	775.6	774.2
Business	483.2	671.7	675.5	678.8	665.4	679.9	680.3	676.2	672.2	663.0	661.0
Defense and space	116.8	114.5	114.9	114.1	113.4	114.0	114.8	113.5	113.3	113.2	113.8
Nonindustrial supplies	846.4	974.2	970.3	972.3	986.1	968.0	972.4	976.7	990.8	984.4	983.0
Construction supplies	232.2	282.7	280.8	282.1	288.5	281.8	283.2	281.3	287.9	287.9	289.7
Business supplies	614.2	691.8	689.9	690.7	697.9	686.7	689.5	695.9	703.4	696.8	693.5
Commercial energy products	232.5	251.8	251.0	250.5	251.3	249.2	248.9	253.4	256.9	250.5	246.7

^r Revised. ^p Preliminary.

Table 10
GROSS-VALUE-WEIGHTED INDUSTRIAL PRODUCTION: STAGE-OF-PROCESS GROUPS
Percent change, seasonally adjusted

Item	2014 gross value ¹	Fourth quarter to fourth quarter			Annual rate			Monthly rate						Dec. '14 to Dec. '15
		2013	2014	2015	2015 Q2	Q3 ^r	Q4 ^p	2015 July ^r	Aug. ^r	Sept. ^r	Oct. ^r	Nov. ^r	Dec. ^p	
Finished	2,163.8	.9	4.5	.5	1.3	6.1	-2.9	2.4	-.4	-.1	-.3	-.1	-.4	-.1
Semifinished	1,914.8	2.5	4.3	1.2	-.2	3.5	.3	.9	.2	.3	.8	-1.6	.2	.8
Primary	1,455.4	5.4	-.2	-1.5	-2.6	1.2	-6.6	.4	-.5	.5	-.4	-1.2	-1.9	-3.4
Crude	776.5	3.3	5.9	-3.6	-4.3	-.8	-6.2	.5	-.2	-.2	-.5	-1.0	-.6	-5.3

^r Revised. ^p Preliminary.

1. Billions of 2009 dollars.

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

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)¹																	
1993	.4	.4	-.1	.3	-.3	.2	.3	-.1	.5	.8	.4	.5	3.6	.9	1.7	6.2	3.3
1994	.4	.0	1.0	.5	.5	.7	.2	.6	.4	.9	.6	1.1	5.0	7.5	5.3	8.6	5.3
1995	.2	-.1	.2	.0	.3	.4	-.4	1.3	.4	-.1	.3	.4	4.5	1.4	3.8	3.5	4.8
1996	-.7	1.6	-.1	.9	.7	.8	-.2	.6	.7	-.1	.9	.7	2.7	8.7	5.1	5.7	4.5
1997	.1	1.2	.7	.1	.6	.5	.8	1.1	.9	.9	.9	.3	7.9	6.3	9.7	10.8	7.3
1998	.5	.1	.1	.4	.6	-.6	-.4	2.0	-.2	.8	-.1	.4	4.7	2.7	2.8	5.7	5.9
1999	.5	.5	.2	.2	.7	-.2	.6	.4	-.4	1.3	.5	.8	4.3	3.9	3.8	7.5	4.3
2000	.0	.3	.4	.8	.2	.1	-.1	-.4	.4	-.3	.0	-.3	4.4	5.4	-.3	-1.1	4.1
2001	-.7	-.6	-.3	-.3	-.7	-.7	-.5	-.2	-.3	-.5	-.5	.0	-5.5	-5.4	-5.7	-4.4	-3.3
2002	.6	.0	.8	.4	.4	1.0	-.2	.0	.1	-.3	.5	-.5	2.9	6.4	2.4	-.2	.3
2003	.7	.3	-.2	-.8	.0	.1	.4	-.2	.6	.1	.8	-.1	2.6	-2.9	2.4	3.8	1.3
2004	.2	.6	-.5	.4	.8	-.8	.8	.1	.1	.9	.2	.7	2.3	1.8	2.2	5.7	2.4
2005	.5	.7	-.1	.1	.2	.4	-.3	.2	-1.9	1.3	1.0	.6	5.8	2.1	-1.9	3.8	3.3
2006	.1	.0	.3	.4	-.1	.4	.0	.3	-.1	.0	-.1	1.0	3.7	2.4	1.5	1.0	2.2
2007	-.5	1.1	.1	.7	.0	.0	.0	.2	.4	-.5	.6	.0	3.7	5.0	.9	.6	2.5
2008	-.3	-.3	-.3	-.7	-.5	-.2	-.5	-1.5	-4.3	.9	-1.2	-2.9	-1.4	-5.4	-12.1	-15.9	-3.4
2009	-2.3	-.6	-1.5	-.8	-1.0	-.4	1.1	1.1	.8	.4	.3	.4	-20.3	-11.0	5.9	6.6	-11.3
2010	1.2	.3	.7	.4	1.5	.2	.5	.3	.2	-.2	.0	.9	8.0	8.3	6.0	1.5	5.6
2011	.0	-.5	.9	-.4	.3	.2	.4	.6	.0	.7	-.1	.5	2.2	.9	4.4	3.9	3.0
2012	.7	.2	-.7	.8	.1	-.1	.3	-.4	.1	.3	.5	.2	3.9	2.2	.1	2.2	2.8
2013	.1	.4	.2	.0	-.1	.2	-.4	.8	.6	.0	.3	.3	2.9	1.1	1.7	3.7	1.9
2014	-.2	.8	.8	.2	.4	.4	.3	.0	.5	.2	.9	.1	3.6	5.7	3.9	4.7	3.7
2015	-.3	-.2	-.2	-.2	-.4	.0	.8	.1	.0	-.2	-.9	-.4	-.3	-2.3	2.8	-3.4	1.3
IP (2012=100)																	
2013	100.9	101.3	101.6	101.5	101.5	101.7	101.3	102.0	102.6	102.7	102.9	103.2	101.3	101.6	102.0	102.9	101.9
2014	103.0	103.8	104.7	104.9	105.2	105.7	106.1	106.1	106.7	106.8	107.8	107.9	103.8	105.3	106.3	107.5	105.7
2015	107.6	107.4	107.2	107.1	106.7	106.7	107.5	107.6	107.6	107.4	106.4	106.0	107.4	106.8	107.5	106.6	107.1
Capacity (percent of 2012 output)																	
2013	131.9	132.0	132.2	132.4	132.5	132.7	132.9	133.0	133.2	133.4	133.6	133.8	132.0	132.5	133.0	133.6	132.8
2014	134.1	134.3	134.5	134.8	135.0	135.2	135.5	135.7	136.0	136.2	136.4	136.6	134.3	135.0	135.7	136.4	135.3
2015	136.8	137.0	137.1	137.3	137.5	137.6	137.8	138.0	138.1	138.3	138.4	138.6	137.0	137.5	138.0	138.4	137.7
Utilization (percent)																	
1993	81.4	81.6	81.4	81.5	81.1	81.2	81.3	81.1	81.4	81.8	82.0	82.3	81.4	81.3	81.3	82.1	81.5
1994	82.4	82.3	82.9	83.1	83.3	83.6	83.5	83.7	83.7	84.2	84.4	85.0	82.5	83.4	83.7	84.5	83.5
1995	84.9	84.5	84.3	84.0	84.0	83.9	83.3	84.0	84.0	83.6	83.5	83.4	84.6	84.0	83.8	83.5	84.0
1996	82.5	83.4	83.0	83.3	83.5	83.8	83.3	83.4	83.6	83.1	83.4	83.6	83.0	83.6	83.4	83.4	83.3
1997	83.3	83.9	84.0	83.6	83.7	83.6	83.8	84.2	84.4	84.6	84.8	84.5	83.7	83.7	84.1	84.7	84.0
1998	84.4	83.9	83.5	83.2	83.2	82.2	81.4	82.6	82.0	82.3	81.8	81.8	83.9	82.9	82.0	82.0	82.7
1999	81.8	81.8	81.6	81.5	81.8	81.3	81.5	81.6	81.0	81.7	81.8	82.2	81.7	81.5	81.3	81.9	81.6
2000	81.9	81.9	81.9	82.2	82.1	81.9	81.6	81.0	81.1	80.6	80.4	79.9	81.9	82.1	81.3	80.3	81.4
2001	79.1	78.4	78.0	77.5	76.8	76.1	75.5	75.1	74.7	74.2	73.7	73.6	78.5	76.8	75.1	73.8	76.1
2002	73.9	73.8	74.3	74.6	74.8	75.5	75.3	75.3	75.4	75.2	75.6	75.2	74.0	75.0	75.3	75.3	74.9
2003	75.8	76.0	75.9	75.4	75.4	75.5	75.9	75.8	76.3	76.4	77.0	76.9	75.9	75.5	76.0	76.8	76.0
2004	77.1	77.6	77.2	77.5	78.1	77.5	78.1	78.2	78.2	79.0	79.1	79.6	77.3	77.7	78.2	79.2	78.1
2005	79.9	80.4	80.2	80.2	80.2	80.4	80.1	80.1	78.5	79.4	80.0	80.4	80.2	80.3	79.6	79.9	80.0
2006	80.4	80.3	80.4	80.6	80.4	80.6	80.4	80.5	80.3	80.1	79.8	80.5	80.4	80.5	80.4	80.1	80.3
2007	79.9	80.6	80.5	81.0	80.9	80.7	80.6	80.7	80.9	80.4	80.9	80.9	80.4	80.8	80.7	80.8	80.7
2008	80.7	80.6	80.4	79.9	79.6	79.4	79.0	77.8	74.5	75.1	74.1	71.9	80.6	79.6	77.1	73.7	77.7
2009	70.1	69.6	68.5	67.9	67.2	66.9	67.6	68.4	69.0	69.4	69.7	70.0	69.4	67.3	68.4	69.7	68.7
2010	71.0	71.4	72.0	72.4	73.6	73.9	74.4	74.8	75.1	75.0	75.1	75.8	71.4	73.3	74.8	75.3	73.7
2011	75.8	75.5	76.1	75.7	75.9	76.0	76.2	76.6	76.4	76.8	76.5	76.8	75.8	75.9	76.4	76.7	76.2
2012	77.2	77.2	76.5	77.0	76.9	76.7	76.8	76.3	76.2	76.3	76.5	76.6	77.0	76.9	76.4	76.5	76.7
2013	76.5	76.7	76.8	76.7	76.6	76.6	76.2	76.7	77.0	76.9	77.0	77.1	76.7	76.6	76.7	77.0	76.7
2014	76.8	77.3	77.8	77.8	78.0	78.2	78.3	78.2	78.5	78.5	79.0	79.0	77.3	78.0	78.3	78.8	78.1
2015	78.7	78.4	78.2	78.0	77.6	77.5	78.0	78.0	77.9	77.7	76.9	76.5	78.4	77.7	77.9	77.0	77.8

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

Table 12
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)²																	
1993	1.0	.2	-2	.5	-.1	-.2	.3	-.2	.6	.9	.4	.6	4.5	1.4	.8	6.9	3.5
1994	.2	.1	1.3	.8	.7	.3	.4	.8	.5	1.0	.8	1.1	4.8	9.5	6.2	10.4	5.9
1995	.2	-.2	.3	-.1	.1	.5	-.6	1.1	.9	-.1	.1	.4	4.7	.9	3.1	4.4	5.3
1996	-.8	1.6	-.2	1.1	.8	1.0	.2	.5	.8	-.2	.9	.9	1.9	9.9	7.5	5.9	4.9
1997	.1	1.4	1.1	-.2	.8	.7	.7	1.3	.9	.9	1.1	.4	9.4	7.5	10.8	11.7	8.5
1998	.9	.1	-.1	.5	.5	-.8	-.4	2.4	-.2	1.0	.2	.5	6.3	2.2	3.1	7.9	6.8
1999	.3	.8	-.1	.4	.9	-.3	.5	.6	-.4	1.5	.6	.7	4.9	4.4	3.4	9.0	5.0
2000	.1	.2	.7	.8	-.1	.2	.1	-.7	.4	-.3	-.3	-.6	4.8	5.2	-.4	-2.6	4.3
2001	-.6	-.6	-.3	-.3	-.8	-.7	-.5	-.5	-.2	-.6	-.3	.3	-6.4	-5.6	-6.2	-4.1	-3.9
2002	.5	.0	.8	.2	.5	1.1	-.3	.2	.1	-.4	.5	-.5	3.5	5.8	3.2	-.3	.3
2003	.5	.1	.1	-.9	.1	.5	.2	-.5	.8	.1	1.0	-.2	1.8	-1.9	2.0	4.3	1.3
2004	-.1	.7	-.2	.4	.8	-.7	.9	.4	.0	1.0	-.1	.7	1.9	3.0	3.8	5.4	2.8
2005	.8	.8	-.5	.3	.4	.2	-.3	.4	-1.0	1.5	.8	.1	6.5	2.4	-.6	6.4	4.0
2006	.8	-.3	-.1	.6	-.4	.3	-.3	.6	.1	-.3	.1	1.5	3.8	.9	.8	1.7	2.6
2007	-.5	.4	.8	.7	-.1	.3	.1	-.3	.4	-.4	.5	.1	4.2	5.8	.7	.5	2.7
2008	-.4	-.6	-.3	-1.1	-.5	-.5	-1.1	-1.2	-3.4	-.6	-2.4	-3.4	-2.7	-7.6	-13.4	-21.4	-4.7
2009	-3.0	-.2	-1.9	-.8	-1.1	-.4	1.4	1.1	.8	.2	.9	-.2	-24.2	-11.3	7.7	7.2	-13.7
2010	1.1	-.1	1.2	.9	1.4	-.1	.7	.2	.1	.1	.0	.4	6.8	10.9	5.0	1.5	5.9
2011	.3	.0	.5	-.6	.2	.0	.7	.3	.4	.6	-.3	.7	2.9	-.4	4.6	3.8	3.0
2012	1.0	.3	-.6	.7	-.5	.1	.0	-.3	.0	-.2	.7	.7	5.5	.5	-1.0	1.3	2.7
2013	-.2	.4	-.3	-.3	.2	.2	-.8	.9	.2	.2	-.1	.0	2.5	-.5	.5	2.7	.9
2014	-.8	1.1	.7	.3	.2	.4	.7	-.4	.2	.3	.9	.0	.7	5.9	3.8	3.4	2.5
2015	-.3	-.4	.2	.4	.0	-.1	1.0	-.1	-.1	.4	-.1	-.1	-.7	1.5	3.2	.5	2.0
IP (2012=100)																	
2013	100.6	101.0	100.7	100.5	100.7	100.8	100.1	101.0	101.2	101.5	101.4	101.4	100.8	100.6	100.8	101.4	100.9
2014	100.6	101.7	102.5	102.8	103.0	103.5	104.2	103.9	104.1	104.3	105.2	105.2	101.6	103.1	104.1	104.9	103.4
2015	104.9	104.5	104.8	105.2	105.2	105.1	106.1	106.0	105.8	106.2	106.1	106.0	104.7	105.1	106.0	106.1	105.4
Capacity (percent of 2012 output)																	
2013	135.5	135.7	135.9	136.0	136.1	136.2	136.3	136.4	136.5	136.6	136.7	136.8	135.7	136.1	136.4	136.7	136.2
2014	136.9	137.0	137.1	137.1	137.2	137.3	137.4	137.4	137.5	137.6	137.7	137.8	137.0	137.2	137.4	137.7	137.3
2015	137.9	138.1	138.2	138.3	138.5	138.6	138.8	138.9	139.1	139.2	139.4	139.5	138.1	138.5	138.9	139.4	138.7
Utilization (percent)																	
1993	80.5	80.5	80.2	80.5	80.3	80.1	80.2	79.9	80.2	80.8	81.0	81.2	80.4	80.3	80.1	81.0	80.5
1994	81.2	81.1	81.9	82.4	82.7	82.6	82.7	83.0	83.2	83.7	84.0	84.6	81.4	82.6	83.0	84.1	82.8
1995	84.5	83.9	83.8	83.4	83.2	83.2	82.3	82.9	83.2	82.8	82.4	82.3	84.1	83.2	82.8	82.5	83.2
1996	81.3	82.1	81.5	82.0	82.2	82.5	82.3	82.3	82.5	81.9	82.2	82.4	81.6	82.2	82.4	82.2	82.1
1997	82.0	82.7	83.1	82.5	82.6	82.7	82.7	83.2	83.3	83.5	83.7	83.5	82.6	82.6	83.1	83.6	83.0
1998	83.5	83.0	82.3	82.1	81.9	80.7	79.9	81.3	80.7	81.0	80.7	80.7	82.9	81.6	80.6	80.8	81.5
1999	80.5	80.8	80.3	80.3	80.7	80.0	80.0	80.2	79.6	80.4	80.6	80.8	80.6	80.3	79.9	80.6	80.3
2000	80.5	80.4	80.6	80.8	80.4	80.3	80.1	79.2	79.2	78.7	78.2	77.4	80.5	80.5	79.5	78.1	79.6
2001	76.7	76.0	75.5	75.1	74.3	73.6	73.1	72.6	72.3	71.8	71.5	71.6	76.1	74.4	72.7	71.6	73.7
2002	71.9	71.9	72.4	72.5	72.8	73.6	73.4	73.5	73.6	73.3	73.7	73.3	72.0	73.0	73.5	73.5	73.0
2003	73.7	73.8	73.9	73.3	73.4	73.8	73.9	73.6	74.2	74.3	75.1	75.0	73.8	73.5	73.9	74.8	74.0
2004	74.9	75.5	75.4	75.7	76.3	75.8	76.5	76.8	76.8	77.5	77.4	77.8	75.3	76.0	76.7	77.6	76.4
2005	78.3	78.8	78.3	78.4	78.5	78.5	78.0	78.1	77.2	78.3	78.7	78.6	78.5	78.4	77.8	78.5	78.3
2006	79.2	78.8	78.6	79.0	78.5	78.7	78.3	78.7	78.6	78.2	78.1	79.0	78.9	78.7	78.5	78.4	78.6
2007	78.4	78.6	79.0	79.4	79.1	79.1	79.0	78.6	78.8	78.4	78.7	78.7	78.7	79.2	78.8	78.6	78.8
2008	78.4	77.9	77.7	76.9	76.7	76.3	75.6	74.8	72.4	72.0	70.5	68.1	78.0	76.7	74.2	70.2	74.8
2009	66.2	66.2	65.0	64.6	64.0	63.9	64.9	65.7	66.4	66.6	67.4	67.4	65.8	64.2	65.7	67.1	65.7
2010	68.2	68.3	69.2	69.9	71.1	71.1	71.7	72.0	72.1	72.4	72.4	72.8	68.6	70.7	72.0	72.5	70.9
2011	73.1	73.2	73.6	73.2	73.3	73.3	73.8	73.9	74.1	74.5	74.1	74.5	73.3	73.3	73.9	74.4	73.7
2012	75.1	75.2	74.7	75.0	74.6	74.5	74.4	74.1	74.0	73.7	74.1	74.5	75.0	74.7	74.2	74.1	74.5
2013	74.2	74.4	74.1	73.9	73.9	74.0	73.4	74.0	74.1	74.2	74.2	74.1	74.3	73.9	73.8	74.2	74.1
2014	73.5	74.3	74.8	75.0	75.1	75.4	75.9	75.6	75.7	75.8	76.4	76.3	74.2	75.1	75.7	76.2	75.3
2015	76.1	75.7	75.8	76.1	76.0	75.8	76.5	76.3	76.1	76.3	76.1	76.0	75.9	75.9	76.3	76.1	76.1

1. Refer to note on cover page.

2. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

Table 13
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Total Industry Excluding Selected High-Technology Industries¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)²																	
1993	.4	.4	-.2	.3	-.4	.2	.3	-.2	.4	.7	.3	.5	3.2	.2	1.3	5.3	2.5
1994	.3	.0	.9	.3	.4	.6	.0	.3	.1	.6	.4	.9	4.2	5.4	3.1	5.7	4.0
1995	.1	-.2	-.1	-.3	.1	.2	-.5	1.1	.1	-.4	.1	.1	2.8	-1.2	1.3	.4	2.4
1996	-1.0	1.3	-.3	.8	.5	.6	-.5	.3	.5	-.4	.8	.5	-.5	6.6	2.0	3.0	1.7
1997	-.1	.9	.4	-.2	.3	.2	.5	.8	.7	.7	.6	.1	5.2	2.5	6.3	7.7	4.2
1998	.3	.0	.0	.2	.6	-1.0	-.7	1.9	-.6	.6	-.3	.1	2.1	.7	-.4	2.4	3.1
1999	.1	.2	-.1	-.1	.5	-.5	.3	.4	-.5	1.2	.2	.5	.6	.3	.9	5.5	1.1
2000	-.3	.0	.1	.5	-.1	-.1	-.4	-.5	.3	-.4	-.1	-.5	.5	1.8	-.3	-2.6	1.0
2001	-.7	-.6	-.3	-.1	-.6	-.5	-.3	-.2	-.4	-.5	-.5	-.1	-5.8	-4.4	-4.4	-4.5	-3.9
2002	.7	-.1	.8	.4	.4	.9	-.3	-.1	.1	-.3	.5	-.6	2.7	6.3	1.9	-.7	.3
2003	.6	.1	-.3	-.9	-.1	-.1	.3	-.3	.5	.0	.8	-.1	1.5	-4.6	.7	2.8	.2
2004	.1	.6	-.6	.4	.8	-.8	.8	.0	.0	.9	.2	.7	1.9	2.0	2.1	5.2	1.7
2005	.4	.6	-.2	.0	.1	.4	-.4	.1	-2.1	1.2	1.0	.6	4.8	1.3	-3.1	2.5	2.5
2006	.1	-.1	.2	.4	-.2	.3	-.1	.3	-.3	-.1	-.2	1.0	3.2	1.8	.6	.3	1.4
2007	-.5	1.0	-.1	.6	.1	.1	.0	.1	.3	-.7	.4	-.1	3.0	4.0	1.0	-1.0	1.8
2008	-.3	-.4	-.4	-.8	-.5	-.2	-.5	-1.5	-4.4	1.2	-1.0	-2.7	-2.6	-6.4	-12.3	-14.7	-4.2
2009	-2.3	-.7	-1.7	-.9	-1.1	-.4	1.1	1.1	.7	.4	.2	.3	-20.0	-11.9	5.7	6.1	-11.3
2010	1.1	.2	.6	.3	1.5	.2	.5	.3	.2	-.3	.0	.8	7.0	7.7	5.8	.8	5.0
2011	-.1	-.5	.9	-.4	.2	.2	.4	.6	.0	.7	-.2	.5	1.5	.9	4.2	3.9	2.7
2012	.8	.2	-.7	.8	.1	-.1	.3	-.4	.0	.2	.5	.2	3.6	1.7	.0	2.0	2.6
2013	.1	.4	.2	.0	-.1	.2	-.4	.8	.6	.0	.3	.3	3.1	1.0	1.6	3.7	1.9
2014	-.2	.8	.8	.2	.3	.5	.4	.0	.5	.1	.9	.1	3.8	5.7	4.0	4.7	3.8
2015	-.3	-.1	-.2	-.2	-.4	.0	.8	.1	.0	-.2	-.9	-.4	-.3	-2.3	2.8	-3.7	1.3
IP (2012=100)																	
2013	100.9	101.3	101.5	101.5	101.4	101.6	101.2	102.0	102.6	102.6	102.8	103.1	101.3	101.5	101.9	102.8	101.9
2014	103.0	103.8	104.6	104.8	105.2	105.7	106.1	106.1	106.7	106.8	107.8	107.9	103.8	105.2	106.3	107.5	105.7
2015	107.6	107.4	107.3	107.1	106.7	106.7	107.5	107.6	107.6	107.3	106.4	105.9	107.4	106.8	107.5	106.5	107.1
Capacity (percent of 2012 output)																	
2013	131.3	131.5	131.7	131.9	132.0	132.2	132.4	132.6	132.8	133.0	133.2	133.4	131.5	132.0	132.6	133.2	132.3
2014	133.7	133.9	134.2	134.4	134.7	134.9	135.2	135.4	135.6	135.8	136.0	136.2	133.9	134.7	135.4	136.0	135.0
2015	136.4	136.6	136.7	136.9	137.0	137.2	137.3	137.4	137.6	137.7	137.9	138.0	136.6	137.0	137.4	137.9	137.2
Utilization (percent)																	
1993	81.4	81.7	81.4	81.6	81.2	81.2	81.4	81.2	81.4	81.9	82.1	82.4	81.5	81.3	81.3	82.1	81.6
1994	82.6	82.5	83.1	83.2	83.4	83.8	83.6	83.8	83.7	84.1	84.3	84.9	82.7	83.5	83.7	84.5	83.6
1995	84.9	84.5	84.3	83.9	83.8	83.8	83.2	83.9	83.9	83.4	83.3	83.2	84.6	83.8	83.7	83.3	83.8
1996	82.3	83.2	82.8	83.3	83.6	84.0	83.4	83.5	83.7	83.2	83.7	83.9	82.8	83.6	83.6	83.6	83.4
1997	83.6	84.1	84.2	83.7	83.7	83.6	83.8	84.1	84.3	84.6	84.8	84.6	84.0	83.7	84.1	84.7	84.1
1998	84.5	84.2	83.8	83.6	83.8	82.7	81.8	83.1	82.4	82.6	82.1	81.9	84.1	83.4	82.4	82.2	83.0
1999	81.8	81.7	81.4	81.2	81.4	80.9	80.9	81.1	80.6	81.4	81.5	81.8	81.6	81.2	80.9	81.6	81.3
2000	81.4	81.3	81.3	81.6	81.4	81.2	80.8	80.3	80.5	80.0	79.8	79.4	81.3	81.4	80.5	79.7	80.8
2001	78.7	78.2	77.9	77.7	77.1	76.6	76.3	76.1	75.7	75.2	74.8	74.6	78.3	77.2	76.0	74.9	76.6
2002	75.1	75.0	75.5	75.8	76.1	76.8	76.6	76.6	76.7	76.5	76.9	76.5	75.2	76.3	76.6	76.6	76.2
2003	77.0	77.2	77.0	76.4	76.4	76.4	76.6	76.4	76.9	76.9	77.5	77.4	77.1	76.4	76.6	77.3	76.8
2004	77.5	78.0	77.6	78.0	78.6	78.0	78.6	78.7	78.7	79.4	79.6	80.1	77.7	78.2	78.7	79.7	78.6
2005	80.4	80.8	80.6	80.6	80.7	80.9	80.5	80.5	78.7	79.6	80.2	80.6	80.6	80.7	79.9	80.1	80.3
2006	80.5	80.4	80.4	80.6	80.3	80.5	80.3	80.4	80.1	79.9	79.7	80.4	80.4	80.5	80.3	80.0	80.3
2007	79.8	80.6	80.5	80.9	80.9	81.0	80.9	81.1	81.3	80.8	81.2	81.1	80.3	80.9	81.1	81.0	80.8
2008	80.9	80.7	80.4	79.8	79.3	79.1	78.7	77.5	74.0	74.8	73.9	71.8	80.7	79.4	76.7	73.5	77.6
2009	70.1	69.5	68.3	67.7	66.9	66.7	67.4	68.3	68.9	69.2	69.5	69.9	69.3	67.1	68.2	69.6	68.5
2010	70.9	71.1	71.7	72.1	73.4	73.7	74.2	74.6	74.9	74.8	74.8	75.5	71.2	73.1	74.6	75.0	73.5
2011	75.5	75.2	75.9	75.6	75.8	75.9	76.2	76.6	76.5	77.0	76.7	77.0	75.5	75.7	76.4	76.9	76.1
2012	77.5	77.5	76.8	77.3	77.2	77.0	77.1	76.6	76.5	76.6	76.8	76.9	77.2	77.1	76.7	76.7	77.0
2013	76.8	77.1	77.1	77.0	76.8	76.9	76.4	76.9	77.2	77.1	77.2	77.3	77.0	76.9	76.9	77.2	77.0
2014	77.0	77.5	78.0	78.0	78.1	78.3	78.5	78.4	78.7	78.7	79.2	79.2	77.5	78.2	78.5	79.0	78.3
2015	78.9	78.7	78.4	78.2	77.9	77.8	78.3	78.3	78.2	77.9	77.1	76.7	78.7	77.9	78.3	77.3	78.0

1. Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.

2. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

Table 14
HISTORICAL STATISTICS FOR INDUSTRIAL PRODUCTION, CAPACITY, AND UTILIZATION: Manufacturing¹ Excluding Selected High-Technology Industries²

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
IP (percent change)³																	
1993	1.0	.1	-4	.5	-1	-2	.3	-3	.6	.8	.3	.5	4.0	.6	.3	6.0	2.6
1994	.1	.1	1.1	.6	.5	.1	.2	.5	.2	.7	.6	.9	3.9	7.1	3.7	7.0	4.4
1995	.1	-4	-1	-4	-1	.3	-8	.8	.6	-4	-1	.0	2.7	-2.3	.2	.8	2.5
1996	-1.2	1.3	-5	1.0	.5	.8	-1	.2	.6	-5	.7	.7	-2.0	7.4	3.9	2.8	1.5
1997	-2	1.1	.8	-6	.4	.4	.4	1.0	.6	.7	.8	.1	6.2	3.0	6.9	8.2	4.9
1998	.6	.0	-3	.3	.4	-1.2	-8	2.3	-6	.7	-1	.2	3.4	-2	-6	4.2	3.5
1999	-1	.5	-4	.0	.7	-7	.0	.6	-5	1.4	.4	.4	.7	.3	.0	6.7	1.3
2000	-3	-2	.3	.4	-6	.0	-2	-1.0	.3	-4	-5	-8	.3	.9	-3.8	-4.6	.7
2001	-6	-6	-3	-1	-7	-6	-2	-5	-2	-7	-2	.1	-6.9	-4.4	-4.6	-4.2	-4.7
2002	.6	-2	.8	.2	.6	1.1	-4	.1	.1	-4	.4	-6	3.2	5.6	2.6	-1.0	.4
2003	.4	-1	.1	-1.0	-1	.3	.0	-6	.7	-1	1.0	-3	.5	-3.9	-1	3.1	.0
2004	-2	.7	-2	.4	.8	-8	1.0	.4	-1	1.0	-1	.6	1.3	3.3	3.7	4.8	2.0
2005	.6	.7	-6	.2	.3	.1	-5	.2	-1.2	1.5	.7	.0	5.2	1.4	-2.2	4.9	3.1
2006	.8	-4	-1	.5	-6	.2	-3	.5	.0	-4	.0	1.5	3.1	.0	-3	.8	1.5
2007	-6	.3	.6	.5	.0	.5	.1	-4	.3	-6	.3	.0	3.2	4.7	.8	-1.7	1.8
2008	-5	-8	-4	-1.2	-6	-6	-1.1	-1.2	-3.5	-4	-2.1	-3.3	-4.3	-9.1	-13.6	-20.2	-5.8
2009	-3.1	-2	-2.1	-9	-1.2	-4	1.4	1.2	.8	.2	.9	-2	-24.1	-12.4	7.5	6.6	-13.8
2010	1.0	-3	1.1	.8	1.5	-1	.6	.1	.0	.1	-1	.3	5.4	10.2	4.7	.6	5.1
2011	.2	.0	.6	-6	.1	.0	.7	.2	.4	.7	-4	.7	2.1	-4	4.3	3.9	2.5
2012	1.0	.2	-7	.6	-5	.1	.0	-2	-1	-3	.7	.7	5.2	-3	-1.2	1.0	2.4
2013	-2	.4	-3	-3	.2	.2	-8	1.0	.3	.2	-1	.1	2.8	-7	.3	2.7	.8
2014	-8	1.1	.8	.3	.2	.4	.8	-4	.2	.2	.9	.0	.9	6.0	3.9	3.4	2.5
2015	-3	-4	.2	.4	.0	-1	1.0	-1	-2	.3	-1	-1	-6	1.6	3.3	.2	2.0
IP (2012=100)																	
2013	100.5	100.9	100.7	100.4	100.5	100.7	99.9	100.8	101.1	101.3	101.2	101.3	100.7	100.5	100.6	101.3	100.8
2014	100.5	101.6	102.4	102.7	102.9	103.3	104.1	103.7	104.0	104.2	105.1	105.1	101.5	103.0	103.9	104.8	103.3
2015	104.8	104.4	104.7	105.1	105.1	105.0	106.1	105.9	105.8	106.1	106.0	105.8	104.6	105.1	105.9	106.0	105.4
Capacity (percent of 2012 output)																	
2013	135.0	135.1	135.3	135.4	135.6	135.7	135.8	135.9	136.1	136.2	136.3	136.4	135.1	135.6	135.9	136.3	135.7
2014	136.5	136.6	136.7	136.7	136.8	136.9	137.0	137.0	137.1	137.2	137.2	137.3	136.6	136.8	137.0	137.2	136.9
2015	137.4	137.5	137.6	137.7	137.8	137.9	138.1	138.2	138.3	138.4	138.5	138.7	137.5	137.8	138.2	138.5	138.0
Utilization (percent)																	
1993	80.6	80.6	80.2	80.5	80.3	80.1	80.2	79.9	80.2	80.8	81.0	81.3	80.5	80.3	80.1	81.0	80.5
1994	81.3	81.2	82.1	82.4	82.7	82.7	82.8	83.1	83.1	83.5	83.9	84.5	81.5	82.6	83.0	84.0	82.8
1995	84.4	83.9	83.7	83.2	82.9	83.0	82.1	82.6	82.9	82.4	82.1	82.0	84.0	83.0	82.5	82.2	82.9
1996	80.9	81.7	81.2	81.9	82.1	82.6	82.3	82.3	82.6	82.0	82.3	82.7	81.3	82.2	82.4	82.3	82.0
1997	82.3	82.9	83.2	82.5	82.5	82.5	82.5	83.0	83.1	83.3	83.7	83.4	82.8	82.5	82.9	83.5	82.9
1998	83.5	83.1	82.6	82.4	82.4	81.1	80.2	81.7	80.9	81.2	80.8	80.8	83.1	82.0	80.9	80.9	81.7
1999	80.4	80.6	80.0	79.8	80.2	79.4	79.2	79.5	79.0	79.9	80.0	80.2	80.3	79.8	79.2	80.1	79.9
2000	79.8	79.6	79.7	79.9	79.4	79.3	79.0	78.1	78.2	77.8	77.3	76.6	79.7	79.5	78.4	77.2	78.7
2001	76.0	75.5	75.2	75.1	74.5	74.1	73.9	73.5	73.3	72.8	72.6	72.7	75.6	74.6	73.6	72.7	74.1
2002	73.1	73.0	73.6	73.7	74.1	75.0	74.7	74.9	75.0	74.7	75.0	74.6	73.3	74.3	74.9	74.8	74.3
2003	75.0	75.0	75.1	74.3	74.3	74.6	74.6	74.2	74.8	74.8	75.6	75.4	75.0	74.4	74.5	75.3	74.8
2004	75.3	75.9	75.8	76.1	76.8	76.2	77.0	77.3	77.2	78.0	77.8	78.3	75.6	76.4	77.1	78.0	76.8
2005	78.7	79.2	78.7	78.8	78.9	78.9	78.4	78.5	77.4	78.4	78.9	78.7	78.9	78.9	78.1	78.7	78.6
2006	79.3	78.8	78.6	78.9	78.4	78.4	78.1	78.3	78.2	77.8	77.7	78.8	78.9	78.6	78.2	78.1	78.4
2007	78.3	78.4	78.8	79.2	79.1	79.4	79.4	79.0	79.2	78.7	78.9	78.8	78.5	79.2	79.2	78.8	78.9
2008	78.5	77.8	77.5	76.6	76.2	75.8	75.0	74.2	71.7	71.5	70.1	67.9	77.9	76.2	73.6	69.8	74.4
2009	65.9	65.9	64.6	64.2	63.5	63.4	64.5	65.4	66.1	66.3	67.1	67.1	65.5	63.7	65.3	66.8	65.3
2010	67.9	67.8	68.7	69.5	70.6	70.7	71.3	71.5	71.7	71.9	72.0	72.3	68.1	70.3	71.5	72.1	70.5
2011	72.5	72.7	73.2	72.8	73.0	73.1	73.6	73.8	74.1	74.6	74.2	74.7	72.8	73.0	73.8	74.5	73.5
2012	75.4	75.5	74.9	75.3	74.8	74.8	74.7	74.4	74.2	73.9	74.3	74.7	75.3	74.9	74.4	74.3	74.7
2013	74.5	74.7	74.4	74.1	74.2	74.2	73.5	74.2	74.3	74.4	74.3	74.3	74.5	74.2	74.0	74.3	74.2
2014	73.6	74.4	74.9	75.1	75.2	75.5	76.0	75.7	75.8	76.0	76.6	76.5	74.3	75.3	75.9	76.4	75.4
2015	76.3	75.9	76.1	76.3	76.3	76.1	76.8	76.7	76.5	76.7	76.5	76.3	76.1	76.2	76.7	76.5	76.4

1. Refer to note on cover page.

2. Selected high-technology industries are computers, communications equipment, and semiconductors and related electronic components.

3. Quarterly changes are at annual rates. Annual changes are calculated from annual averages.

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/About.htm. 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 all manufacturing, mining, and electric and gas utility establishments located in the United States, regardless of their ownership, but not those located in U.S. territories; the reference period for the index is 2012. Manufacturing consists of those industries included in the North American Industry Classification System (NAICS) definition of manufacturing *plus* those industries—newspaper, periodical, book, and directory publishing plus logging—that have traditionally been considered to be manufacturing. For the period since 2012, the total IP index has been constructed from 299 individual series based on the 2012 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 (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 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 computers, communications equipment, and semiconductors. When suitable direct measures of 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 United States 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 Bulletins* of 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

shown below. An output index for month m is denoted by I_m^A for aggregate A and I_m for each of its components. The monthly price measure in the formula (p_m) is interpolated from an annual series of value added divided by the average annual IP index.

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

The IP proportions (typically shown in the first column of the relevant tables in the 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 ($0.05 \times 10\% = 0.5\%$). 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 73 percent of the source data (in value-added terms) are available; the fraction of available source data increases to 83 percent for estimates in the second month that the estimate is published, 94 percent in the third month, 96 percent in the fourth month, 97 percent in the fifth month, and 98 percent in the sixth month. Data availability by data type in early 2015 is summarized in the table below:

Availability of Monthly IP Data in Publication Window
(Percent of value added in 2014)

Type of data	Month of estimate					
	1st	2nd	3rd	4th	5th	6th
Physical product	34	44	55	57	58	59
Production-worker hours	39	39	39	39	39	39
IP data received	73	83	94	95	97	97
IP data estimated	27	17	6	5	3	3

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 about half of the series (in terms of value added) that ultimately are based on physical product data (34 percent out of a total of 59 percent). Of the 34 percent, about two-thirds (22 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-12 ARIMA. For series based on production-worker hours, the current seasonal factors were estimated with data through May 2015; for other series, the factors were estimated with data through at least March 2015. Series are pre-adjusted for the effects of holidays or business cycles when appropriate. For the data since 1972, all seasonally adjusted aggregate indexes are calculated by aggregating the seasonally adjusted indexes of the individual series.

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

0.27 percent during the 1987–2014 period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.21 percentage point during the 1987–2014 period. In most cases (about 86 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. The capacity indexes cover all facilities located in the United States, regardless of their ownership, but not those located in U.S. territories. Capacity indexes are constructed for 88 detailed industries (70 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 (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—newspaper, periodical, book, and directory publishing plus logging—that have traditionally been considered to be manufacturing. 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 (*e.g.*, paper, industrial chemicals, petroleum refining, motor vehicles), as well as for electric utilities and mining; these industries represent about 25 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 a bit less than 70 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 5 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 the annual capacity aggregate 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 was a survey of large companies that reported, on average, higher utilization rates than those reported by establishments covered by the Census Bureau's annual *Survey of Plant Capacity* (the predecessor to the QSPC) for the fourteen years they overlapped. Adjustments have been made to keep the industry utilization rates currently reported by the Federal Reserve 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 QSPC.

Perspective. Over the 1972–2014 period, the average total industry utilization rate is 80.1 percent; for manufacturing, the average factory operating rate has been 78.5 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 industry and 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 July 21, 2015, is available on the Board's website (www.federalreserve.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

At 9:15 a.m. on

2016: January 15, February 17, March 16, April 15, May 17, June 15, July 15, August 16, September 15, October 17, November 16, and December 14.