

Returns for Domestic Nonfinancial Business

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THE PROFITABILITY OF domestic nonfinancial corporations declined for a second year in 2016 but remains above the lowest point reached in 2009, according to updated statistics from the Bureau of Economic Analysis (BEA). A similar but broader measure of profitability for nonfinancial industries—which includes proprietors' income—remained stable in 2016 but also remained above the 2009 trough.

Once a year, BEA reports on sector rates of return for domestic nonfinancial corporations, for nonfinancial industries, and for 14 major nonfinancial industry sectors, including mining, utilities, construction, manufacturing, wholesale trade, retail trade, and information services. These broad measures of profitability, based on returns on produced assets, may be useful to economists and policymakers. Industry sector and corporate business rates of return are available through 2016; these rates of return reflect revised statistics from both the 2017 annual update of the national income and product accounts (NIPAs) and the 2017 annual update of the industry economic accounts (IEAs).¹ Various Tobin's Q ratios, which compare the financial

market value of assets with the replacement-cost value of produced assets, are also presented in this article.

The rates of return presented in this article are calculated as the ratio of the net operating surplus to the net stock of produced assets.² The net operating surplus reflects the return to capital and is presented in table A. Produced assets are presented in table B. For nonfinancial corporations, the net operating surplus reflects statistics from the NIPAs and is defined as the sum of corporate profits from current production, net interest payments, and business current transfer payments, net.³ The net operating surplus for nonfinancial industries reflects statistics from the IEAs and is a broader concept that includes proprietors' income. For both nonfinancial corporations and nonfinancial industries, the statistics on net stock of produced assets are from BEA's fixed assets accounts. To calculate the Q ratios, additional statistics on financial market values are drawn from the Federal Reserve Board's financial accounts of the United States.

1. See Stephanie H. McCulla, Vijay Khosa, and Kelley Ramey, "The 2017 Annual Update of the National Income and Product Accounts," SURVEY OF CURRENT BUSINESS 97 (August 2017) and Kevin B. Barefoot, Teresa L. Gilmore, and Chelsea K. Nelson, "The 2017 Annual Update of the Industry Economic Accounts," SURVEY 97 (December 2017).

2. Produced assets refer to the net stock of capital plus inventories valued at current (replacement) cost.

3. Corporate profits and net interest are based on tabulations of "company" data rather than "establishment" data. As a result, net operating surplus of nonfinancial corporations includes the income earned by the corporation's financial services-producing establishments, and it excludes income earned by the nonfinancial establishments of financial corporations.

Table A. Net Operating Surplus of Domestic Nonfinancial Corporations and Nonfinancial Industries, 2001–2016

(Billions of dollars)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nonfinancial corporations	656.3	719.3	815.0	964.1	1,118.7	1,269.3	1,225.8	1,172.2	1,073.5	1,352.5	1,419.1	1,561.3	1,605.8	1,680.4	1,689.4	1,610.6
Total nonfinancial industries	1,424.0	1,533.2	1,730.2	1,959.7	2,141.7	2,233.3	2,325.5	2,350.8	2,193.8	2,486.5	2,582.9	2,686.0	2,839.3	2,887.1	2,870.4	2,921.0
Agriculture, forestry, fishing, and hunting	57.5	43.1	65.5	84.1	77.6	64.1	68.9	78.5	60.7	83.1	116.0	105.4	125.8	99.1	78.0	66.9
Mining.....	21.9	7.9	27.9	42.0	72.4	85.0	105.5	163.8	82.8	117.3	161.4	153.2	181.0	188.3	48.1	7.5
Utilities.....	56.0	41.7	47.0	55.4	47.5	63.4	58.2	53.4	62.6	74.0	70.7	60.6	60.0	64.9	61.5	59.2
Construction	133.3	137.3	159.5	195.8	229.7	236.9	232.5	175.6	165.6	156.9	158.2	177.7	191.3	208.4	235.9	257.2
Manufacturing.....	274.4	298.3	353.4	408.4	457.7	513.8	524.1	469.3	461.8	550.0	576.6	613.4	630.0	649.0	673.0	656.3
Durable-goods manufacturing.....	59.0	85.9	120.2	137.3	164.2	176.5	176.9	139.5	93.3	170.4	178.7	194.8	213.9	220.3	233.9	233.9
Nondurable-goods manufacturing.....	215.5	212.5	233.2	271.1	293.5	337.2	347.2	329.8	368.5	379.6	397.9	418.7	416.1	428.7	439.1	422.4
Wholesale trade	106.9	105.2	119.1	143.6	163.3	179.8	198.0	210.2	199.9	228.1	225.4	248.0	264.5	285.7	299.5	298.9
Retail trade.....	118.5	123.7	133.7	130.8	139.6	138.5	117.0	103.7	127.2	140.0	135.9	153.5	161.4	167.2	183.5	199.0
Transportation and warehousing	31.0	24.9	40.5	54.0	63.2	82.6	64.3	75.6	67.0	90.4	92.3	91.9	99.7	106.8	108.5	105.7
Information	75.5	137.4	148.9	194.2	204.9	197.2	230.6	255.7	236.5	259.7	236.3	232.0	261.4	233.6	279.4	300.8
Real estate and rental and leasing ¹	186.9	202.0	215.0	206.1	232.3	210.2	262.7	253.6	231.4	261.1	281.7	308.3	335.7	342.0	343.6	366.7
Professional and business services ²	182.9	212.7	229.0	244.7	250.4	250.2	274.2	324.3	295.6	308.2	312.4	316.0	305.5	314.7	322.5	341.9
Educational services, health care, and social assistance.....	52.9	54.7	54.8	56.9	51.4	52.8	45.5	62.8	76.1	75.7	71.9	69.8	59.3	55.9	53.7	60.8
Arts, entertainment, recreation, accommodation, and food services.....	67.0	79.0	80.4	86.8	87.6	93.3	88.2	79.2	78.8	88.0	93.0	100.7	108.0	113.6	122.9	135.2
Other services, except government.....	59.3	65.4	55.4	56.9	64.0	65.5	55.6	45.3	47.8	54.1	51.3	55.5	55.7	58.0	60.2	65.1

1. The housing component of Real estate and rental and leasing is excluded from these estimates to allow for better comparison with nonfinancial corporate returns.

2. To preserve the nonfinancial focus of this article management of companies and enterprises is excluded from this sector.

Table B. Produced Assets of Domestic Nonfinancial Corporations and Nonfinancial Industries, 2001–2016

[Billions of dollars]

	2001	2002	2003	2004	2005	2006	2007	2008
Nonfinancial corporations	9,545.0	9,858.0	10,177.3	10,769.0	11,701.4	12,683.6	13,539.3	14,265.3
Total nonfinancial industries	12,414.9	12,862.9	13,337.0	14,480.2	15,822.3	17,099.6	18,122.6	19,052.1
Agriculture, forestry, fishing, and hunting	473.7	492.3	520.5	556.5	596.5	622.2	661.3	678.1
Mining.....	663.5	736.5	790.5	944.2	1,239.4	1,438.4	1,521.2	1,608.4
Utilities.....	1,117.3	1,160.2	1,210.4	1,341.5	1,433.4	1,532.1	1,653.1	1,810.1
Construction.....	190.2	199.9	205.9	227.6	251.1	274.9	288.0	300.2
Manufacturing.....	2,774.1	2,810.0	2,853.3	3,000.6	3,183.1	3,353.9	3,584.3	3,725.9
Durable-goods manufacturing.....	1,578.3	1,579.3	1,584.1	1,652.1	1,740.7	1,831.1	1,924.0	2,011.3
Nondurable-goods manufacturing.....	1,195.8	1,230.7	1,269.1	1,348.5	1,442.4	1,522.8	1,660.3	1,714.4
Wholesale trade.....	687.1	699.3	721.8	789.6	876.1	953.6	1,018.7	1,048.9
Retail trade.....	1,086.5	1,151.2	1,211.5	1,338.1	1,434.6	1,538.4	1,619.3	1,667.9
Transportation and warehousing.....	852.6	860.3	871.2	920.3	962.4	1,010.0	1,042.5	1,106.0
Information.....	1,253.1	1,272.3	1,294.4	1,359.7	1,458.5	1,575.3	1,638.7	1,702.4
Real estate and rental and leasing ¹	963.2	994.6	1,022.9	1,121.2	1,231.0	1,349.4	1,434.7	1,516.3
Professional and business services ²	481.9	507.7	539.5	584.4	637.0	687.5	726.1	768.2
Educational services, health care, and social assistance.....	967.5	1,031.2	1,098.0	1,209.7	1,332.8	1,466.3	1,570.0	1,681.4
Arts, entertainment, recreation, accommodation, and food services.....	536.4	561.3	587.3	638.1	695.1	755.4	805.3	857.0
Other services, except government.....	367.8	386.1	409.8	448.7	491.2	532.1	559.4	581.3

	2009	2010	2011	2012	2013	2014	2015	2016
Nonfinancial corporations	14,351.3	14,349.7	14,943.3	15,499.5	16,041.1	16,670.4	17,162.4	17,498.8
Total nonfinancial industries	18,400.8	19,019.4	19,866.0	20,506.6	21,323.5	22,224.7	22,605.0	23,141.9
Agriculture, forestry, fishing, and hunting.....	655.3	698.7	757.5	778.4	821.2	880.0	854.8	864.0
Mining.....	1,421.3	1,505.6	1,566.9	1,643.9	1,789.2	2,066.5	1,983.0	1,894.2
Utilities.....	1,776.0	1,896.9	2,033.7	2,117.0	2,177.6	2,274.8	2,318.6	2,403.0
Construction.....	275.2	265.3	267.2	271.4	282.4	292.1	308.3	320.3
Manufacturing.....	3,671.7	3,788.6	3,964.6	4,068.4	4,206.2	4,310.8	4,378.6	4,470.5
Durable-goods manufacturing.....	1,941.4	1,981.6	2,066.8	2,122.1	2,165.9	2,225.1	2,243.4	2,263.9
Nondurable-goods manufacturing.....	1,730.4	1,806.9	1,897.8	1,946.3	2,040.4	2,085.6	2,135.2	2,206.6
Wholesale trade.....	988.1	1,056.3	1,131.6	1,189.9	1,230.5	1,278.9	1,296.9	1,345.4
Retail trade.....	1,571.9	1,602.2	1,659.0	1,715.1	1,775.3	1,814.1	1,858.3	1,900.2
Transportation and warehousing.....	1,077.3	1,099.2	1,154.5	1,194.5	1,232.8	1,296.0	1,349.2	1,392.5
Information.....	1,695.4	1,791.6	1,861.9	1,897.9	1,944.0	1,953.7	1,999.7	2,066.8
Real estate and rental and leasing ¹	1,444.2	1,440.6	1,478.2	1,526.2	1,586.3	1,646.8	1,718.7	1,793.3
Professional and business services ²	770.7	789.0	813.4	835.0	865.9	881.4	908.6	936.5
Educational services, health care, and social assistance.....	1,667.3	1,706.3	1,778.7	1,838.2	1,924.3	1,982.5	2,039.8	2,090.4
Arts, entertainment, recreation, accommodation, and food services.....	829.3	821.6	832.6	850.9	889.7	927.5	955.9	1,004.4
Other services, except government.....	557.1	557.4	566.2	576.0	598.1	619.6	634.6	660.3

1. The housing component of Real estate and rental and leasing is excluded from these estimates to allow for better comparison with nonfinancial corporate returns.

2. To preserve the nonfinancial focus of this article management of companies and enterprises is excluded from this sector.

Corporate returns

In 2016, nonfinancial corporate rates of return on both a before-tax basis and an after-tax basis decreased for the second consecutive year. The before-tax rate of return was 9.2 percent in 2016, a decrease of 0.9 percentage point from a high of 10.1 percent in 2014 (chart 1 and table C). Since 1970, before-tax rates of return have ranged from 6.9 percent in both 1982 and 2001 to 10.1 percent in both 2012 and 2014. In the 1960s, average rates of return were higher, peaking at 13.7 percent in 1965. Net operating surplus as a share of net value added, both after-tax and before-tax, decreased in 2016 after reaching recent highs in 2012 of 18.8 percent (after-tax) and of 22.8 percent (before-tax) (table D).

Other measures of profitability—such as BEA's measure of corporate profits from current production—declined in 2016 after having increased consecutively for the previous 5 years. The measures presented in this article exclude the volatile financial sector and compare returns of nonfinancial corporations with their assets rather than with gross domestic product.

Industry returns

Rates of return can also be calculated for industry sectors using statistics from the IEAs, which provide annual statistics for 71 industries that together account for all U.S. economic activity. Similar to the method used to calculate the rates for nonfinancial corporations, the rates of return for industry sectors are calculated as the net operating surplus divided by the net stock of produced assets. For nonfinancial industries, net operating surplus as a share of net value added is calculated as net operating surplus divided by net value added. The balance for each published sector represents the share of net value added attributable to compensation of employees and taxes on production and imports less subsidies.

Similar to the net operating surplus of nonfinancial corporations, the net operating surplus of nonfinancial industries reflects corporate profits from current production, business transfer payments (net), and net interest payments. However, as noted, it also reflects proprietors' income, which includes the income of sole

proprietorships and partnerships. For this article the housing component of the real estate sector, which includes owner-occupied housing, is excluded from the nonfinancial industry statistics to allow for a better comparison with the nonfinancial corporate returns data, which do not reflect home ownership.

Much of the difference between the sum of the non-

financial industries rates of return and the corresponding corporate rates of return can be attributed to the inclusion of proprietors' income in the industry net operating surplus. However, several statistical differences between the IEAs and the NIPAs also affect the estimates. Notably, all IEA statistics are presented on an establishment basis, whereas the NIPA measure of

Chart 1. Rates of Return and Shares of Net Value Added for Nonfinancial Corporations, 1960–2016

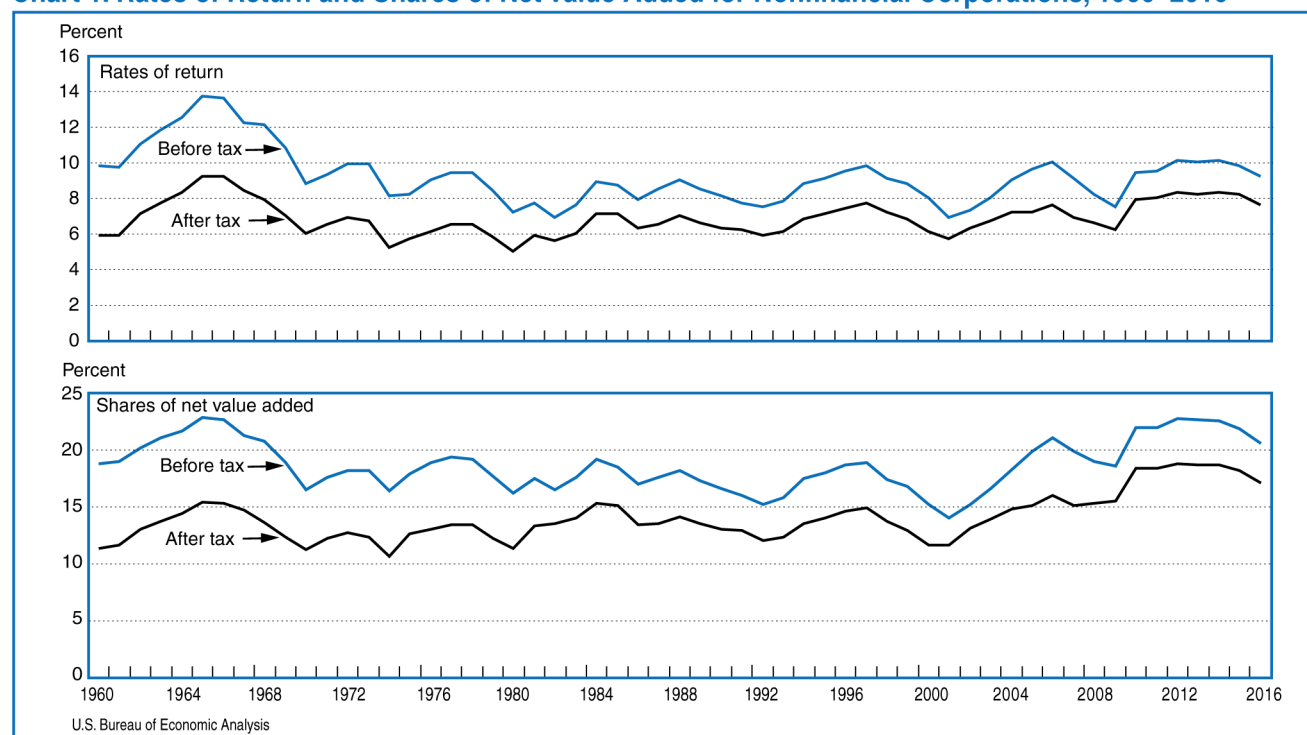


Table C. Rates of Return for Domestic Nonfinancial Corporations and Nonfinancial Industries, 2001–2016

[Percent]

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nonfinancial corporations—after tax	5.7	6.3	6.7	7.2	7.2	7.6	6.9	6.6	6.2	7.9	8.0	8.3	8.2	8.3	8.2	7.6
Nonfinancial corporations—before tax	6.9	7.3	8.0	9.0	9.6	10.0	9.1	8.2	7.5	9.4	9.5	10.1	10.0	10.1	9.8	9.2
Total nonfinancial industries	11.7	12.1	13.2	14.1	14.1	13.6	13.2	12.6	11.7	13.3	13.3	13.3	13.6	13.3	12.8	12.8
Agriculture, forestry, fishing, and hunting	12.2	8.9	12.9	15.6	13.5	10.5	10.7	11.7	9.1	12.3	15.9	13.7	15.7	11.6	9.0	7.8
Mining	3.5	1.1	3.7	4.8	6.6	6.3	7.1	10.5	5.5	8.0	10.5	9.5	10.3	9.8	2.4	0.4
Utilities	5.1	3.7	4.0	4.3	3.4	4.3	3.7	3.1	3.5	4.0	3.6	2.9	2.8	2.9	2.7	2.5
Construction	71.4	70.4	78.6	90.3	96.0	90.1	82.6	59.7	57.6	58.1	59.4	65.5	69.1	72.5	78.6	81.8
Manufacturing	9.9	10.7	12.5	14.0	14.8	15.7	15.1	12.8	12.5	14.7	14.9	15.3	15.2	15.2	15.5	14.8
Durable-goods manufacturing	3.8	5.4	7.6	8.5	9.7	9.9	9.4	7.1	4.7	8.7	8.8	9.3	10.0	10.0	10.5	10.4
Nondurable-goods manufacturing	18.1	17.5	18.7	20.7	21.0	22.7	21.8	19.5	21.4	21.5	21.5	21.8	20.8	20.8	20.8	19.5
Wholesale trade	15.4	15.2	16.8	19.0	19.6	19.6	20.1	20.3	19.6	22.3	20.6	21.4	21.8	22.8	23.3	22.6
Retail trade	11.1	11.1	11.3	10.3	10.1	9.3	7.4	6.3	7.9	8.8	8.3	9.1	9.2	9.3	10.0	10.6
Transportation and warehousing	3.7	2.9	4.7	6.0	6.7	8.4	6.3	7.0	6.1	8.3	8.2	7.8	8.2	8.4	8.2	7.7
Information	6.2	10.9	11.6	14.6	14.5	13.0	14.3	15.3	13.9	14.9	12.9	12.3	13.7	12.0	14.1	14.8
Real estate and rental and leasing ¹	19.8	20.6	21.3	19.2	19.8	16.3	18.9	17.2	15.6	18.1	19.3	20.6	21.6	21.2	20.4	20.9
Professional and business services ²	39.1	43.0	43.7	43.5	41.0	37.8	38.8	43.4	38.4	39.5	39.0	38.3	35.9	36.0	36.0	37.1
Educational services, health care, and social assistance	5.6	5.5	5.2	4.9	4.0	3.8	3.0	3.9	4.5	4.5	4.1	3.9	3.2	2.9	2.7	2.9
Arts, entertainment, recreation, accommodation, and food services	12.9	14.4	14.0	14.2	13.1	12.9	11.3	9.5	9.3	10.7	11.2	12.0	12.4	12.5	13.1	13.8
Other services, except government	16.6	17.4	13.9	13.3	13.6	12.8	10.2	7.9	8.4	9.7	9.1	9.7	9.5	9.5	9.6	10.0

1. The housing component of Real estate and rental and leasing is excluded from these estimates to allow for better comparison with nonfinancial corporate returns.

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Table D. Net Operating Surplus Shares of Net Value Added for Domestic Nonfinancial Corporations and Nonfinancial Industries, 2001–2016

	[Percent]															
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nonfinancial corporations—after tax	11.6	13.1	13.9	14.8	15.1	16.0	15.1	15.3	15.5	18.4	18.4	18.8	18.7	18.7	18.2	17.1
Nonfinancial corporations—before tax	14.0	15.2	16.6	18.3	19.9	21.1	19.9	19.0	18.6	22.0	22.0	22.8	22.7	22.6	21.9	20.6
Total nonfinancial industries	22.7	23.8	25.5	26.8	27.6	27.0	27.0	26.8	26.4	28.6	28.5	28.3	28.8	28.1	27.0	26.4
Agriculture, forestry, fishing, and hunting	77.3	61.8	73.5	73.6	79.4	67.0	63.9	66.2	60.4	68.0	73.8	68.9	72.1	65.0	60.2	55.4
Mining	28.9	13.5	33.9	40.7	50.0	49.7	52.3	58.6	46.7	53.3	57.4	54.0	57.1	56.9	27.6	6.4
Utilities	40.2	31.0	33.4	35.9	31.8	36.3	33.1	31.0	34.1	37.5	35.5	32.1	31.5	32.6	31.0	29.5
Construction	28.7	29.2	31.8	34.9	36.8	35.6	34.2	28.5	30.6	30.8	30.8	32.1	32.6	32.6	33.6	34.2
Manufacturing	22.8	25.0	28.2	30.6	32.5	34.3	34.3	32.0	33.6	37.3	37.4	38.0	38.3	38.0	38.1	37.3
Durable-goods manufacturing	8.9	13.0	17.4	18.8	21.2	21.7	21.3	17.9	14.1	22.9	22.8	23.6	25.1	24.8	25.3	25.1
Nondurable-goods manufacturing	39.6	39.6	41.5	44.9	46.3	49.4	49.6	48.0	51.5	51.7	52.5	53.1	52.6	52.3	52.2	51.0
Wholesale trade	18.7	18.4	19.8	21.9	23.1	23.7	24.7	25.7	26.2	28.2	26.6	27.6	28.3	29.1	29.2	29.1
Retail trade	17.7	17.9	18.4	17.5	17.7	17.1	14.5	13.2	16.5	17.5	16.6	17.9	18.1	18.1	18.8	19.6
Transportation and warehousing	12.3	10.0	15.2	18.2	19.9	23.9	18.7	21.3	20.2	25.2	24.4	23.4	24.2	24.6	23.6	22.4
Information	20.8	33.8	35.5	41.0	41.8	40.3	43.2	45.9	44.5	47.1	43.7	42.3	44.1	40.0	43.3	44.4
Real estate and rental and leasing ¹	67.1	67.1	67.9	65.0	66.7	62.5	66.7	66.6	65.7	68.4	69.5	69.3	70.3	70.2	69.4	70.1
Professional and business services ²	20.1	22.7	23.6	23.6	22.4	21.0	21.4	23.7	23.0	23.2	22.3	21.4	20.3	19.9	19.2	18.1
Educational services, health care, and social assistance	7.8	7.5	7.0	6.8	5.9	5.7	4.7	6.0	6.8	6.6	6.1	5.7	4.7	4.3	3.9	4.3
Arts, entertainment, recreation, accommodation, and food services	18.9	21.0	20.4	20.6	20.0	20.1	18.2	16.4	16.8	18.0	18.2	18.5	18.8	18.6	18.8	19.5
Other services, except government	23.8	24.5	20.9	20.5	22.1	21.8	18.3	15.0	15.9	17.8	16.5	17.0	16.7	16.5	16.3	17.0

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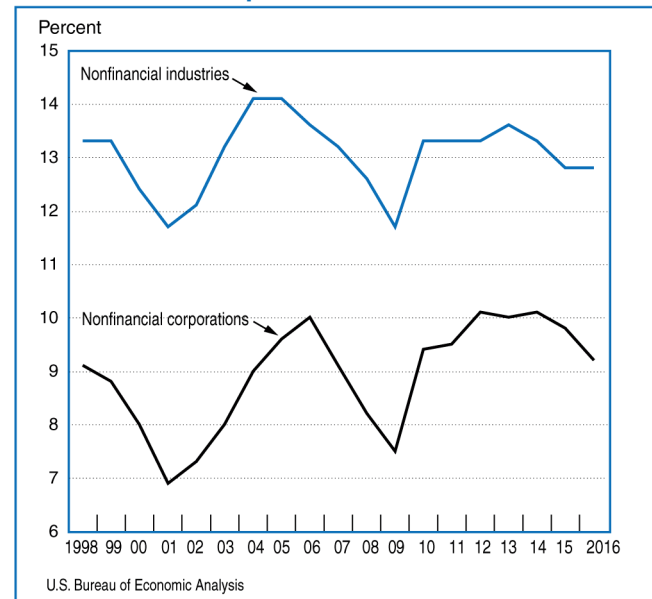
corporate nonfinancial net operating surplus is presented on a company basis. As a result, the nonfinancial industry measures reflect adjustments that (1) exclude the financial services-producing establishments of primarily nonfinancial corporations and (2) include the nonfinancial services-producing establishments of primarily financial corporations. In addition, the IEA net operating statistics also include a share of the NIPA statistical discrepancy. Despite the differences between the IEA nonfinancial industries aggregate rate of return and the NIPA nonfinancial corporate rate of return, the annual patterns of change of each are similar (chart 2).

The overall rate of return for nonfinancial industries in 2016 was 12.8 percent, the same as the 2015 rate (table C)—the lowest level since 2009. Net operating surplus as a share of net value declined for the third consecutive year to 26.4 percent in 2016, the lowest level since 2003 (table D).

Specific industry groups

This article presents a disaggregation of the rates of return for several industry groups—for example, manufacturing, transportation and warehousing, information, and professional and business services among others (table C).

The statistics show the majority of the industry groups, 8 of 14 groups, had higher rates of return in 2016. The increases were led by construction; information; professional and business services; and arts, entertainment, recreation, accommodation, and food services. Some of these increasing rates of return, however, reflected decelerations. For example, construction

Chart 2. Rates of Return for Domestic Nonfinancial Industries and Corporations, 1998–2016

decelerated in its seventh consecutive year of growth, with growth of 3.2 percentage points, after increasing 6.0 percentage points in 2016.⁴ Rates of return for most information and retail trade also decelerated.

These higher rates of return for most industries were offset by declines in rates of return in agriculture,

4. Measuring rates of return for the construction sector presents unique challenges. For example, the classification of produced assets is based on the owning industry rather than on the using industry. It is highly likely that the construction sector leases a significant amount of capital, which is not reflected in the produced assets and which would result in overstating the sector's rates of return.

forestry, fishing, and hunting; mining; utilities; and nondurable-goods manufacturing. The mining sector continued to lead the decline; the rate of return declined 2.0 percentage points in 2016. Returns in nondurable-goods manufacturing decreased 1.3 percentage points in 2016. Returns in agriculture, forestry, fishing, and hunting decreased 1.2 percentage points. Highlights include the following:

- Returns to durable-goods manufacturing, which rebounded sharply after the last business cycle, have slowed.⁵ Rates of return more than doubled from a trough of 4.7 percent in 2009 to 10.5 percent in 2015 and declined less than 0.1 percentage point in 2016.
- Returns to nondurable-goods manufacturing, which includes petroleum refineries, have remained elevated and less volatile than returns to durable-goods manufacturing. The rate of return has declined since 2012 and was 19.5 percent in 2016, the same as in 2008, near the trough of the previous business cycle.
- Returns to retail trade continued trending upward for the fifth consecutive year, reflecting relatively large increases in net operating surplus from 2009 through 2016, except for 2011.
- Returns to wholesale trade were lower in 2016 after 4 consecutive years of growth since 2012.

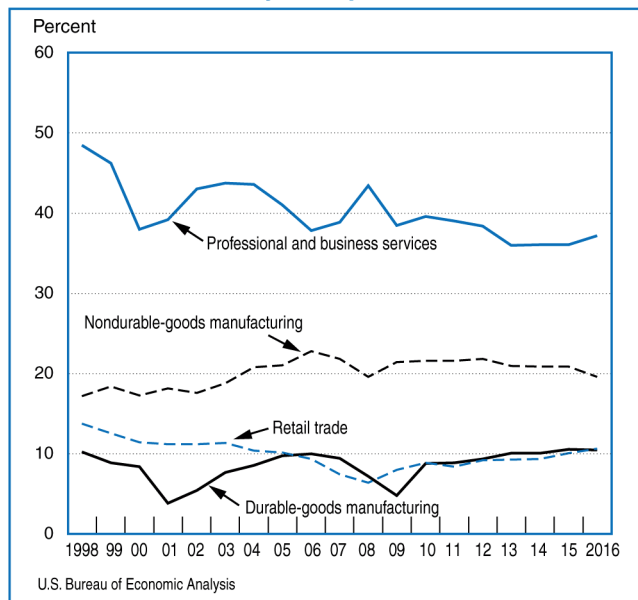
Users may find these industry statistics for net operating surplus, produced assets, and rates of return helpful for comparative studies. For example, from 2008 to 2016, the professional and business services industry group had rates of return notably higher than the overall rates for all nonfinancial industries (chart 3). Conversely, returns to the retail sector group were consistently lower than the nonfinancial industries aggregate over the same period.

Q ratios

Tobin's Q, or simply "Q," is the ratio of financial-market valuation of corporate assets to the current-cost value of the assets. A Q ratio above 1 indicates that financial markets value corporate assets above their replacement cost; as a Q ratio rises above 1, companies may be more inclined to make direct investments in plant and equipment. A value of Q below 1 indicates that the financial markets value corporate assets below the replacement cost; as Q falls below 1, companies

5. The National Bureau of Economic Research (NBER) Business Cycle Dating Committee has determined the peak and trough of the last three business cycles as December 2007–June 2009, March 2001–November 2001, and July 1990–March 1991. The NBER business cycle reference dates are available on [NBER's Web site](#).

Chart 3. Rates of Return for Selected Domestic Nonfinancial Industry Groups, 1998–2016



may be more inclined to buy other companies for their capacity rather than make direct investments.

The three Q-type ratios for domestic nonfinancial corporations presented here are defined as follows:

- Q1 is calculated as the market value of outstanding equity divided by the net stock of produced assets.
- Q2 adds the book value of outstanding corporate bonds to the numerator used in Q1. The inclusion of bonds makes Q2 a more complete measure of invested capital, but including them at historical cost is clearly inconsistent with the underlying rationale for Q, which is to provide a comparison of market valuation with replacement cost.
- Q3 adds an estimate of the market value of outstanding corporate bonds and net liquid assets to the numerator used in Q1.⁶

All three Q ratios increased in 2016 after decreasing in 2015, reflecting stock market trends (chart 4 and table E). All three Q ratios also remain above their decade lows hit in 2008, when they fell below 1, partly reflecting recession-related stock market declines.

6. The market value of bonds outstanding is approximated by a procedure developed by James Tobin and Dan Sommers. In brief, the process begins with published book values of bonds outstanding and the assumption that a bond matures in 10 years and carries a coupon rate equal to the Baa rate that prevailed in the year the bond was issued. Net liquid assets are estimated as financial assets less liabilities other than municipal securities, corporate bonds, and mortgages. The data are from the Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*, statistical release Z.1 and "Selected Interest Rates," statistical release H.15 (Washington, DC: Board of Governors).

Table E. Q-Type Ratios, 1960–2016

	Q1 ¹	Q2 ²	Q3 ³		Q1 ¹	Q2 ²	Q3 ³		Q1 ¹	Q2 ²	Q3 ³
1960.....	0.75	0.91	0.75	1979.....	0.38	0.50	0.50	1998.....	1.34	1.58	1.36
1961.....	0.86	1.01	0.87	1980.....	0.43	0.55	0.55	1999.....	1.67	1.91	1.63
1962.....	0.80	0.96	0.83	1981.....	0.35	0.46	0.46	2000.....	1.34	1.59	1.25
1963.....	0.85	1.01	0.89	1982.....	0.36	0.47	0.48	2001.....	1.13	1.40	1.05
1964.....	0.95	1.11	1.01	1983.....	0.41	0.52	0.52	2002.....	0.83	1.10	0.75
1965.....	1.02	1.18	1.09	1984.....	0.37	0.49	0.48	2003.....	1.06	1.33	0.98
1966.....	0.82	0.98	0.90	1985.....	0.43	0.56	0.56	2004.....	1.12	1.37	1.01
1967.....	0.97	1.14	1.06	1986.....	0.49	0.64	0.62	2005.....	1.08	1.31	0.95
1968.....	1.06	1.22	1.14	1987.....	0.48	0.64	0.60	2006.....	1.13	1.35	0.98
1969.....	0.80	0.97	0.90	1988.....	0.50	0.68	0.62	2007.....	1.14	1.35	0.99
1970.....	0.73	0.90	0.82	1989.....	0.58	0.76	0.72	2008.....	0.67	0.88	0.60
1971.....	0.79	0.96	0.87	1990.....	0.52	0.70	0.66	2009.....	0.85	1.07	0.74
1972.....	0.91	1.08	0.98	1991.....	0.68	0.87	0.81	2010.....	0.97	1.20	0.84
1973.....	0.64	0.80	0.71	1992.....	0.73	0.92	0.88	2011.....	0.92	1.16	0.82
1974.....	0.37	0.52	0.39	1993.....	0.77	0.99	0.91	2012.....	1.00	1.24	0.92
1975.....	0.44	0.58	0.54	1994.....	0.73	0.95	0.83	2013.....	1.28	1.53	1.17
1976.....	0.49	0.64	0.60	1995.....	0.92	1.13	1.00	2014.....	1.36	1.62	1.27
1977.....	0.39	0.53	0.50	1996.....	0.92	1.14	0.98	2015.....	1.26	1.54	1.15
1978.....	0.36	0.50	0.48	1997.....	1.12	1.34	1.16	2016.....	1.33	1.62	1.20

1. Q1 is the market value of outstanding equity divided by the net stock of produced assets valued at current cost.
 2. Q2 is the market value of outstanding equity plus book value of outstanding corporate bonds

divided by the net stock of produced assets valued at current cost.
 3. Q3 is the market value of outstanding equity plus market value of outstanding corporate bonds plus net liquid assets divided by the net stock of produced assets valued at current cost.

Chart 4. Q-Type Ratios and Market Capitalization of Domestic Nonfinancial Corporations, 1960–2016

