

Effects of Selected Federal Pandemic Response Programs on Personal Income, 2021 Annual Update
(Billions of dollars, seasonally adjusted at annual rates)

Line		Levels										Change from preceding month										
		2020										2020										
		Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	Personal income	19,006.4	18,646.3	20,971.8	20,125.8	19,948.5	20,123.1	19,533.9	19,675.3	19,628.8	19,435.0	19,562.2	-360.1	2,325.5	-846.0	-177.3	174.6	-589.3	141.5	-46.5	-193.9	127.3
	<i>Previously published</i>	19,116.2	18,763.5	21,093.1	20,246.1	20,032.7	20,173.9	19,624.3	19,762.2	19,728.2	19,544.4	19,677.1	-352.7	2,329.6	-847.0	-213.5	141.3	-549.6	137.9	-34.0	-183.8	132.6
2	Compensation of employees	11,901.7	11,574.0	10,735.4	11,044.1	11,308.0	11,424.9	11,553.8	11,640.4	11,844.3	11,977.8	12,070.5	-327.7	-838.6	308.7	263.9	116.9	128.8	86.6	203.9	133.5	92.6
	<i>Previously published</i>	11,824.6	11,483.9	10,660.5	10,962.1	11,225.8	11,354.1	11,479.5	11,564.9	11,759.7	11,884.9	11,973.5	-340.7	-823.4	301.6	263.8	128.3	125.4	85.3	194.8	125.2	88.6
3	Wages and salaries	9,733.5	9,444.7	8,731.6	8,995.5	9,209.8	9,310.6	9,423.7	9,496.7	9,680.2	9,796.3	9,872.6	-288.8	-713.1	263.9	214.2	100.8	113.1	72.9	183.5	116.1	76.3
	<i>Previously published</i>	9,659.3	9,358.1	8,661.9	8,925.4	9,139.1	9,246.2	9,354.8	9,428.9	9,606.3	9,715.7	9,789.6	-301.2	-696.2	263.5	213.6	107.2	108.6	74.1	177.3	109.5	73.8
4	Private industries	8,216.1	7,921.9	7,253.0	7,537.8	7,743.0	7,829.2	7,912.9	7,992.5	8,183.9	8,300.1	8,375.9	-294.2	-668.9	284.8	205.2	86.2	83.7	79.6	191.4	116.1	75.8
	<i>Previously published</i>	8,176.7	7,873.7	7,225.7	7,514.0	7,722.0	7,816.5	7,902.0	7,984.3	8,168.5	8,279.7	8,353.0	-303.0	-648.0	288.3	208.1	94.5	85.5	82.3	184.2	111.2	73.3
5	Government	1,517.4	1,522.8	1,478.5	1,457.7	1,466.8	1,481.4	1,510.8	1,504.2	1,496.3	1,496.3	1,496.7	5.4	-44.3	-20.8	9.0	14.7	29.4	-6.6	-7.9	0.0	0.4
	<i>Previously published</i>	1,482.5	1,484.4	1,436.2	1,411.5	1,417.0	1,429.7	1,452.8	1,444.6	1,437.7	1,436.0	1,436.5	1.9	-48.2	-24.7	5.5	12.7	23.1	-8.2	-6.9	-1.7	0.5
6	Supplements to wages and salaries	2,168.2	2,129.2	2,003.8	2,048.6	2,098.3	2,114.3	2,130.1	2,143.8	2,164.1	2,181.5	2,197.9	-39.0	-125.4	44.8	49.7	16.1	15.7	13.7	20.3	17.4	16.4
	<i>Previously published</i>	2,165.3	2,125.8	1,998.7	2,036.6	2,086.8	2,107.9	2,124.7	2,135.9	2,153.4	2,169.2	2,183.9	-39.5	-127.1	37.9	50.1	21.1	16.8	11.2	17.5	15.7	14.8
7	Proprietors' income with IVA and CCAdj	1,606.4	1,562.2	1,450.8	1,458.8	1,558.8	1,662.8	1,764.3	1,855.2	1,883.4	1,691.0	1,615.7	-134.2	-158.5	47.1	108.0	104.1	101.5	90.9	28.3	-192.5	-75.3
	<i>Previously published</i>	1,762.3	1,636.6	1,444.4	1,492.9	1,598.4	1,700.6	1,807.9	1,900.6	1,918.4	1,719.6	1,641.0	-125.7	-192.2	48.5	105.5	102.2	107.3	92.7	17.8	-198.8	-78.5
8	Farm	80.7	52.8	45.7	28.8	60.1	51.9	78.2	77.6	159.1	87.7	78.7	-27.9	-7.1	-16.9	31.3	-8.2	26.3	-0.6	81.4	-71.4	-9.0
	<i>Previously published</i>	79.8	44.9	33.7	22.9	60.2	47.4	71.7	69.3	150.7	79.6	71.3	-34.9	-11.2	-10.8	37.2	-12.8	24.3	-2.4	81.4	-71.1	-8.3
	<i>Of which:</i>																					
9	Coronavirus Food Assistance Program ¹	...	...	...	...	50.6	20.4	27.3	7.6	92.5	26.3	20.0	...	...	...	50.6	-30.3	6.9	-19.7	84.8	-66.2	-6.3
	<i>Previously published</i>	...	...	...	...	50.6	20.4	27.3	7.6	92.5	26.3	20.0	...	...	...	50.6	-30.3	6.9	-19.7	84.8	-66.2	-6.3
10	Paycheck Protection Program loans to businesses ²	...	...	2.8	7.0	8.6	8.6	8.7	8.7	6.0	1.7	0.2	...	2.8	4.2	1.5	0.1	0.1	0.0	-2.8	-4.2	-1.5
	<i>Previously published</i>	...	...	2.9	7.4	9.0	9.1	9.2	9.2	6.3	1.8	0.2	...	2.9	4.5	1.6	0.1	0.1	0.0	-2.9	-4.5	-1.6
11	Nonfarm	1,615.6	1,509.4	1,358.0	1,421.9	1,498.7	1,610.9	1,686.0	1,777.5	1,724.4	1,603.3	1,537.0	-106.2	-151.4	63.9	76.7	112.3	75.1	91.5	-53.2	-121.1	-66.3
	<i>Previously published</i>	1,682.5	1,591.7	1,410.7	1,470.0	1,538.2	1,653.2	1,736.2	1,831.3	1,767.7	1,640.0	1,569.8	-90.8	-181.0	59.3	68.2	115.0	83.0	95.1	-63.6	-127.7	-70.2
	<i>Of which:</i>																					
12	Paycheck Protection Program loans to businesses ²	...	...	90.0	227.3	276.7	279.7	281.5	282.5	192.5	55.2	5.8	...	90.0	137.3	49.4	3.0	1.8	1.0	-90.0	-137.3	-49.4
	<i>Previously published</i>	...	...	95.0	240.0	292.2	295.4	297.4	298.4	203.4	58.4	6.2	...	95.0	145.0	52.2	3.2	2.0	1.1	-95.0	-145.0	-52.2
13	Rental income of persons with CCAdj	712.2	716.2	714.7	711.0	703.0	708.3	713.7	721.6	716.2	710.5	703.4	4.0	-1.5	-3.7	-8.0	5.4	5.4	7.9	-5.4	-5.7	-7.1
	<i>Previously published</i>	802.3	803.9	799.9	796.6	791.7	797.9	803.7	811.6	807.4	804.3	801.3	1.6	-4.0	-3.3	-5.0	6.2	5.8	8.0	-4.3	-3.1	-3.1
14	Personal income receipts on assets	2,976.4	2,968.1	2,939.0	2,908.9	2,884.6	2,862.5	2,846.5	2,846.3	2,862.3	2,900.8	2,965.7	-8.3	-29.1	-30.1	-24.3	-22.2	-16.0	-0.2	16.0	38.5	65.0
	<i>Previously published</i>	2,984.1	2,978.8	2,945.1	2,908.9	2,876.6	2,870.5	2,847.9	2,838.6	2,858.3	2,894.7	2,959.9	-5.3	-33.7	-36.2	-22.2	-6.2	-22.6	-9.3	19.7	36.4	65.1
15	Personal interest income	1,638.6	1,629.6	1,619.5	1,610.8	1,603.5	1,597.6	1,596.1	1,599.0	1,606.3	1,611.1	1,613.6	-9.0	-10.1	-8.7	-7.3	-5.9	-1.5	2.9	7.3	4.9	2.5
	<i>Previously published</i>	1,679.8	1,671.0	1,654.0	1,637.0	1,619.9	1,628.4	1,619.1	1,611.8	1,622.0	1,624.2	1,626.6	-8.8	-17.0	-17.0	-17.1	8.5	-9.4	-7.3	10.2	2.3	2.4
16	Personal dividend income	1,337.8	1,338.6	1,319.5	1,298.1	1,281.1	1,264.9	1,250.4	1,247.3	1,256.0	1,289.6	1,352.1	0.8	-19.1	-21.4	-17.0	-16.3	-14.5	-3.1	8.7	33.6	62.5
	<i>Previously published</i>	1,304.4	1,307.8	1,291.1	1,271.8	1,256.7	1,242.0	1,228.8	1,226.8	1,236.4	1,270.5	1,333.2	3.4	-16.7	-19.3	-15.1	-14.7	-13.2	-2.0	9.5	34.1	62.8
17	Personal current transfer receipts	3,208.1	3,278.5	6,550.9	5,420.7	4,930.1	4,912.6	4,115.8	4,079.7	3,811.5	3,657.4	3,719.4	70.4	3,272.4	-1,130.2	-490.6	-17.5	-796.8	-36.1	-268.2	-154.1	62.0
	<i>Previously published</i>	3,211.2	3,291.4	6,597.8	5,478.0	4,958.3	4,882.0	4,128.2	4,097.5	3,855.4	3,725.0	3,795.8	80.2	3,306.4	-1,119.8	-519.7	-76.2	-753.8	-30.7	-242.2	-130.3	70.7
18	Government social benefits to persons	3,150.1	3,220.3	6,492.5	5,362.2	4,856.9	4,853.8	4,056.9	4,020.7	3,752.4	3,598.2	3,660.1	70.2	3,272.2	-1,130.3	-505.3	-3.1	-796.9	-36.2	-268.3	-154.2	61.9
	<i>Previously published</i>	3,165.4	3,245.7	6,552.0	5,432.2	4,898.0	4,836.2	4,082.3	4,051.6	3,809.3	3,678.8	3,749.4	80.3	3,306.3	-1,119.8	-534.2	-61.8	-753.9	-30.7	-242.3	-130.5	70.6
19	Social security	1,066.6	1,072.4	1,074.5	1,075.9	1,074.0	1,078.0	1,081.2	1,081.4	1,090.7	1,086.9	1,088.9	5.8	2.1	1.4	-1.8	4.0	3.2	0.3	9.2	-3.7	1.9
	<i>Previously published</i>	1,067.2	1,073.3	1,075.1	1,076.5	1,074.6	1,078.1	1,081.8	1,082.1	1,091.2	1,087.6	1,090.0	6.1	1.8	1.4	-1.9	3.5	3.7	0.3	9.1	-3.6	2.4
20	Medicare	808.6	810.2	811.4	826.5	826.8	826.6	825.9	824.8	823.2	821.1	818.6	1.6	1.2	1.5	0.3	-0.2	-0.7	-1.1	-1.6	-2.1	-2.5
	<i>Previously published</i>	804.5	807.3	810.6	828.7	832.9	837.5	842.6	848.1	854.0	860.4	867.3	2.8	3.3	18.1	4.2	4.6	5.1	5.5	6.0	6.4	6.8
	<i>Of which:</i>																					
21	Increase in Medicare reimbursement rates ³	...	...	...	14.4	14.4	14.4	14.4	14.4	14.4	14.3	14.3	...	...	14.4	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
	<i>Previously published</i>	...	...	...	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	...	...	14.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1
22	Medicaid	602.4	613.0	635.3	655.0	672.3	687.3	693.1	690.7	679.8	675.9	679.2	10.6	22.3	19.7	17.3	14.9	5.8	-2.4	-10.9	-3.9	3.4
	<i>Previously published</i>	620.8	635.7	653.2	669.2	684.1	686.3	684.7	680.1	680.5	682.0	684.8	14.9	17.5	16.0	14.9	2.2	-1.6	-4.6	0.4	1.5	2.8
23	Unemployment insurance	25.6	66.7	435.2	1,287.2	1,395.8	1,365.8	612.3	325.3	295.8	285.0	318.9	41.1	368.5	852.0	108.6	-30.0	-753.5	-287.0	-29.5	-10.8	33.9
	<i>Previously published</i>	27.8	74.4	493.0	1,355.8	1,404.9	1,330.5	636.0	358.9	304.3	280.8	304.3	46.6	418.6	862.8	49.2	-74.4	-694.5	-277.1	-54.7	-23.5	23.5
	<i>Of which:</i> ⁴																					
24	Extended Unemployment Benefits	...	...	...	0.1	0.2	3.0	3.3	4.7	8.0	10.2	20.7	...	...	0.1	0.1	2.8	0.4	1.4	3.2	2.3	10.5
	<i>Previously published</i>	...	...	...	0.1	0.1	1.2	3.1														

Line		Levels											Change from preceding month									
		2020											2020									
		Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
29	Other	506.0	515.9	3,393.0	1,372.9	742.5	749.6	697.0	950.2	714.1	579.7	604.3	9.9	2,877.1	-2,020.1	-630.5	7.2	-52.6	253.3	-236.1	-134.4	24.7
	<i>Previously published</i>	506.4	515.2	3,379.3	1,359.8	758.3	759.5	691.8	936.0	732.0	619.7	653.9	8.8	2,864.1	-2,019.5	-601.5	1.2	-67.7	244.2	-204.0	-112.2	34.2
	<i>Of which:</i>																					
30	Economic impact payments ⁵	...	...	2,588.4	605.8	40.2	32.8	9.0	4.8	14.1	1.1	0.0	...	2,588.4	-1,982.6	-565.6	-7.4	-23.8	-4.2	9.2	-13.0	-1.1
	<i>Previously published</i>	...	...	2,588.4	605.8	40.2	32.8	9.0	4.8	14.1	1.1	0.0	...	2,588.4	-1,982.6	-565.6	-7.4	-23.8	-4.2	9.2	-13.0	-1.1
31	Lost wages supplemental payments ⁶	...	...	...	...	...	...	21.5	297.1	86.2	12.5	8.8	...	...	...	...	...	21.5	275.6	-210.9	-73.7	-3.7
	<i>Previously published</i>	...	...	...	...	...	...	21.5	297.1	86.2	12.5	8.8	...	...	...	...	...	21.5	275.6	-210.9	-73.7	-3.7
32	Paycheck Protection Program loans to NPISH ²	...	...	26.0	65.6	79.9	80.8	81.3	81.6	55.6	15.9	1.7	...	26.0	39.6	14.3	0.9	0.5	0.3	-26.0	-39.6	-14.3
	<i>Previously published</i>	...	...	8.7	21.9	26.7	27.0	27.0	27.0	5.1	0.3	...	...	8.7	13.2	4.8	0.3	0.0	0.0	0.0	-21.9	-4.8
33	Provider Relief Fund to NPISH ⁷	1.2	1.9	237.3	161.8	83.7	99.1	48.1	28.1	23.9	17.6	62.0	0.7	235.4	-75.5	-78.1	15.4	-51.0	-20.0	-4.2	-6.4	44.4
	<i>Previously published</i>	...	...	237.3	161.8	83.7	99.1	48.1	28.1	23.9	17.6	62.0	...	237.3	-75.5	-78.1	15.4	-51.0	-20.0	-4.2	-6.4	44.4
34	Other current transfer receipts, from business (net)	58.0	58.2	58.4	58.5	73.2	58.8	58.9	59.0	59.1	59.2	59.3	0.2	0.2	0.1	14.7	-14.4	0.1	0.1	0.1	0.1	0.1
	<i>Previously published</i>	45.8	45.8	45.8	45.8	60.3	45.8	45.9	46.0	46.1	46.2	46.4	0.0	0.0	0.0	14.5	-14.5	0.1	0.1	0.1	0.1	0.2
35	Less: Contributions for government social insurance	1,488.3	1,452.8	1,371.9	1,409.7	1,436.0	1,448.0	1,460.1	1,467.8	1,488.9	1,502.6	1,512.5	-35.5	-80.9	37.8	26.2	12.0	12.1	7.7	21.1	13.6	9.9
	<i>Previously published</i>	1,468.2	1,431.1	1,354.6	1,392.3	1,418.1	1,431.1	1,442.8	1,451.0	1,470.9	1,484.1	1,494.4	-37.1	-76.5	37.7	25.8	13.0	11.7	8.2	19.9	13.2	10.2
36	Less: Personal current taxes	2,271.6	2,202.0	2,052.4	2,101.7	2,142.9	2,162.6	2,184.3	2,198.5	2,229.9	2,259.4	2,290.0	-69.6	-149.6	49.3	41.2	19.6	21.7	14.3	31.4	29.5	30.7
	<i>Previously published</i>	2,285.0	2,213.4	2,057.3	2,099.1	2,133.2	2,165.4	2,193.9	2,215.5	2,251.7	2,271.5	2,287.3	-71.6	-156.1	41.8	34.1	32.2	28.6	21.5	36.3	19.7	15.8
37	Equals: Disposable personal income (DPI)	16,734.8	16,444.3	18,919.4	18,024.0	17,805.6	17,960.6	17,349.6	17,476.8	17,398.9	17,175.6	17,272.2	-290.5	2,475.1	-895.4	-218.4	155.0	-610.9	127.2	-77.9	-223.3	96.6
	<i>Previously published</i>	16,831.3	16,550.1	19,035.9	18,147.1	17,899.5	18,008.6	17,430.4	17,546.8	17,476.5	17,273.0	17,389.8	-281.2	2,485.8	-888.8	-247.6	109.1	-578.1	116.4	-70.3	-203.5	116.8
38	Less: Personal outlays	15,342.4	14,296.4	12,526.8	13,545.9	14,360.3	14,601.1	14,751.2	14,970.7	15,028.0	14,936.3	14,846.0	-1,046.0	-1,769.6	1,019.1	814.4	240.9	150.1	219.4	57.3	-91.7	-90.3
	<i>Previously published</i>	15,442.3	14,419.3	12,622.2	13,658.0	14,489.8	14,702.9	14,878.5	15,080.1	15,115.4	15,008.2	14,913.7	-1,023.0	-1,797.1	1,035.8	831.8	213.1	175.6	201.6	35.3	-107.1	-94.5
39	Personal consumption expenditures	14,785.1	13,762.2	12,021.8	13,058.1	13,889.3	14,129.2	14,270.5	14,481.7	14,546.0	14,467.3	14,389.5	-1,022.9	-1,740.4	1,036.3	831.3	239.9	141.3	211.2	64.3	-78.7	-77.8
	<i>Previously published</i>	14,877.4	13,878.5	12,112.1	13,165.4	14,014.6	14,224.7	14,397.2	14,582.7	14,627.1	14,532.8	14,451.1	-998.9	-1,766.4	1,053.3	849.2	210.1	172.5	185.6	44.3	-94.3	-81.7
40	Personal interest payments	345.0	322.1	290.6	273.5	256.6	265.9	274.6	282.8	269.0	255.8	243.1	-22.9	-31.5	-17.1	-16.8	9.2	8.7	8.2	-13.8	-13.2	-12.7
	<i>Previously published</i>	360.1	335.9	303.6	286.0	268.4	277.8	287.2	296.6	283.5	270.5	257.4	-24.2	-32.3	-17.6	-17.6	9.4	9.4	9.4	-13.1	-13.1	-13.1
	<i>Of which:</i>																					
41	Student loan forbearance ⁸	...	-22.4	-37.8	-37.8	-37.8	-37.8	-37.8	-37.8	-37.8	-37.8	-37.8	-22.4	-15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Previously published</i>	...	-21.4	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0	-21.4	-14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	Personal current transfer payments	212.3	212.1	214.5	214.4	214.3	206.0	206.1	206.2	213.0	213.2	213.5	-0.2	2.4	-0.1	-0.1	-8.3	0.1	0.1	6.8	0.2	0.3
	<i>Previously published</i>	204.9	205.0	206.5	206.6	206.8	200.4	194.2	200.7	204.7	205.0	205.2	0.1	1.5	0.1	0.2	-6.4	-6.2	6.6	4.0	0.2	0.2
43	To government	114.8	114.6	114.4	114.3	114.3	114.3	114.3	114.4	114.6	114.8	115.0	-0.2	-0.2	-0.1	-0.1	0.0	0.1	0.1	0.2	0.2	0.3
	<i>Previously published</i>	112.2	112.3	112.3	112.5	112.6	112.8	113.0	113.1	113.3	113.6	113.8	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
44	To the rest of the world (net)	97.5	97.5	100.0	100.0	100.0	91.8	91.8	91.8	98.4	98.4	98.4	0.0	2.5	0.0	0.0	-8.3	0.0	0.0	6.7	0.0	0.0
	<i>Previously published</i>	92.7	92.7	94.1	94.1	94.1	87.6	87.6	87.6	91.4	91.4	91.4	0.0	1.4	0.0	0.0	-6.5	-6.4	6.4	3.8	0.0	0.0
45	Equals: Personal saving	1,392.4	2,147.9	6,392.5	4,478.1	3,445.3	3,359.4	2,598.4	2,506.2	2,370.9	2,239.3	2,426.2	755.5	4,244.6	-1,914.4	-1,032.8	-85.8	-761.1	-92.2	-135.3	-131.6	186.9
	<i>Previously published</i>	1,388.9	2,130.7	6,413.7	4,489.1	3,409.7	3,305.7	2,551.9	2,466.7	2,361.1	2,264.7	2,476.0	741.8	4,283.0	-1,924.6	-1,079.4	-104.0	-753.8	-85.2	-105.6	-96.4	211.3

CARES -Coronavirus Aid, Relief, and Economic Security
 CCAAdj -Capital consumption adjustment
 IVA -Inventory valuation adjustment
 NPISH -Nonprofit institutions serving households

- The Coronavirus Food Assistance Program, initially established by the CARES Act, provides direct support to farmers and ranchers where prices and market supply chains have been impacted by the COVID-19 pandemic.
- The Paycheck Protection Program, initially established by the CARES Act, provides forgivable loans to help small businesses and nonprofit institutions make payroll and cover other expenses. It also provides funding to reimburse private lending institutions for the costs of administering these loans. For more information, see [How does the Paycheck Protection Program impact the national income and product accounts \(NIPAs\)?](#)
- A two percent reduction in reimbursements paid to Medicare service providers that went into effect in 2013 was initially suspended by the CARES Act. The resulting increased reimbursement rates went into effect beginning on May 1, 2020.
- Unemployment insurance benefits were expanded through several programs that were initially established through the CARES Act. For more information, see [How will the expansion of unemployment benefits in response to the COVID-19 pandemic be recorded in the NIPAs?](#)
- Economic impact payments, initially established by the CARES Act, provide direct payments to individuals. For more information, see [How are federal economic impact payments to support individuals during the COVID-19 pandemic recorded in the NIPAs?](#)
- The Federal Emergency Management Agency (FEMA) was authorized to make payments from the Disaster Relief Fund to supplement wages lost as a result of the COVID-19 pandemic.
- The Department of Health and Human Services distributes money from the Provider Relief Fund to hospitals and health care providers on the front lines of the coronavirus response. This funding supports health care-related expenses or lost revenue attributable to COVID-19 and ensures uninsured Americans can get treatment for COVID-19. In the NIPAs, funds provided to nonprofit hospitals are recorded as social benefits.
- Interest payments due on certain categories of federally-held student loans were initially suspended by the CARES Act. For more information, see [How does the federal response to the COVID-19 pandemic affect BEA's estimate of personal interest payments?](#)

NOTE: For national statistics detailing the amount of federal government receipts and expenditures, BEA publishes the total level at an annualized rate. BEA does this so that monthly estimates can be easily compared to quarterly estimates included in BEA's quarterly gross domestic product report, for example. To be consistent, the figures in this table also are annualized. For more information, see [Why does BEA publish estimates at annual rates?](#) on BEA's website.

Data on this table will be superseded by updated estimates.

Source: U.S. Bureau of Economic Analysis