

# The 2022 Annual Update of the Regional Economic Accounts: New Statistics for 2021 and Updated Statistics for 2017–2020

## Toward Regional Economic Recovery from the COVID–19 Pandemic

By Ledia Guci

The varying economic experiences across states precipitated by the financial crisis and the economic recession of 2007–2009 and, more recently, by the COVID–19 pandemic continue to emphasize the importance of regional economic statistics. On September 30, 2022, the U.S. Bureau of Economic Analysis (BEA) released the results of the 2022 annual update of the regional economic accounts. With this release, BEA published concurrently, for the first time, quarterly and annual statistics for gross domestic product (GDP) by state and state personal income.<sup>1</sup> The release of annual data on personal consumption expenditures (PCE) by state followed less than a week later, on October 6, 2022. This article focuses on the annual estimates for 2021 from these releases to tell a story of ongoing regional economic recovery from the COVID–19 pandemic.<sup>2</sup> It also provides an overview of the revised statistics for 2017–2020.

GDP by state, state personal income, and PCE by state are related economic measures that provide important and nuanced insights on various aspects of state economies. GDP by state is a comprehensive measure of production activities in each state. In addition to the value of goods and services produced, it shows industries' contribution to each state economy. One way to gauge how a state's economy is performing is to examine the change in state GDP from one period to another. Comparisons of states' GDP with pre-pandemic levels show, for instance, whether state economies are on a path to recovery and how that path varies across states.

Production of goods and services generates income for households. State personal income is a broad measure of the income received by households living in each state. It includes the income earned from production (e.g., wages), income earned from ownership of property (e.g., dividends), as well as transfer payments for government benefits (e.g., unemployment insurance benefits). Because the income that households receive plays an important role in determining their demand for goods and services, it is useful to examine the relationship between output and personal income. While these measures generally move together, there can be exceptions. For instance, as GDP declined during the COVID–19 pandemic, its impact on personal income was

mitigated by various federal pandemic response programs including the economic impact payments, the Paycheck Protection Program, unemployment compensation and assistance, and the advanced child tax credit, among others.<sup>3</sup>

PCE by state shows how households use their personal income to determine their consumption and, like state personal income, it is an important indicator of the well-being of households in each state. It is a broad measure of household spending and includes direct spending by households as well as spending on behalf of households (e.g., health care services paid for by Medicare and Medicaid). Among other insights, these statistics show how households allocate their consumption between necessities and discretionary products and how they adjust their spending in response to changes in economic conditions.

In summary, while GDP by state, state personal income, and PCE by state statistics, individually provide important information on the value of goods and services produced by industries, the incomes earned by households, and the composition of household consumption in each state, together they provide a fuller picture of state economies and a better understanding of current and past regional economic conditions.

## New Statistics for 2021

The newly released regional BEA data show how the state economies fared in 2021 following the impacts of the pandemic in 2020.<sup>4</sup> Despite being the shortest economic recession on record dated by the National Bureau of Economic Research,<sup>5</sup> the contraction in economic activity that marked this recession was severe, uneven, and widespread. The data show that while nationally the economy has generally recovered, the path to economic recovery has varied widely across states.

### GDP by state

Nationally, real GDP grew 5.9 percent in 2021 after declining 2.8 percent in 2020 (table 1). Real GDP grew in all states and the District of Columbia in 2021 (chart 1). States with the highest real GDP growth were New Hampshire (9.3 percent), Tennessee (9.0 percent), Nevada (8.9 percent), Florida (8.4 percent), California (7.8 percent), and Michigan (7.4 percent). These states experienced below-average declines in real GDP in 2020, except for Michigan and Nevada, whose real GDP declined 4.0 percent and 6.7 percent, respectively. Twelve other states had above-average growth in real GDP in 2021 that ranged from 6 to 7 percent.

Table 1. Gross Domestic Product (GDP) by State, State Personal Income, and Personal Consumption Expenditures (PCE) by State: 2019-2021

Region	Real GDP					Personal Income					PCE				
	Millions of chained 2012 dollars			Percent change from preceding period		Millions of dollars			Percent change from preceding period		Millions of dollars			Percent change from preceding period	
	2019	2020	2021	2020	2021	2019	2020	2021	2020	2021	2019	2020	2021	2020	2021
United States	19,036,052	18,509,143	19,609,812	-2.8	5.9	18,575,467	19,812,171	21,288,709	6.7	7.5	14,392,721	14,116,166	15,902,575	-1.9	12.7
Alabama	203,433	199,881	209,979	-1.7	5.1	216,588	232,040	250,829	7.1	8.1	177,412	177,094	199,867	-0.2	12.9
Alaska	53,434	50,705	50,869	-5.1	0.3	45,057	45,965	48,219	2.0	4.9	37,744	35,832	39,807	-5.1	11.1
Arizona	325,395	327,178	347,656	0.5	6.3	340,260	375,601	403,739	10.4	7.5	287,273	288,819	326,527	0.5	13.1
Arkansas	117,126	117,268	123,347	0.1	5.2	133,161	142,039	153,186	6.7	7.8	104,159	104,783	118,144	0.6	12.8
California	2,729,226	2,667,221	2,874,731	-2.3	7.8	2,567,426	2,790,524	3,006,184	8.7	7.7	1,917,201	1,848,652	2,082,807	-3.6	12.7
Colorado	358,439	353,345	373,763	-1.4	5.8	356,341	378,051	410,948	6.1	8.7	272,796	272,277	310,212	-0.2	13.9
Connecticut	251,568	235,235	246,556	-6.5	4.8	272,459	282,486	300,324	3.7	6.3	184,842	180,077	201,202	-2.6	11.7
Delaware	64,144	62,282	64,405	-2.9	3.4	53,203	55,867	60,134	5.0	7.6	45,735	45,112	51,286	-1.4	13.7
District of Columbia	124,597	122,485	126,983	-1.7	3.7	58,203	61,926	64,645	6.4	4.4	49,118	47,734	52,806	-2.8	10.6
Florida	965,673	950,164	1,029,576	-1.6	8.4	1,165,093	1,235,793	1,356,319	6.1	9.8	964,269	954,880	1,104,069	-1.0	15.6
Georgia	557,364	537,616	575,292	-3.5	7.0	522,393	557,601	602,464	6.7	8.0	415,665	410,296	469,589	-1.3	14.5
Hawaii	79,213	70,109	74,547	-11.5	6.3	79,700	83,110	87,858	4.3	5.7	66,957	64,032	70,859	-4.4	10.7
Idaho	74,163	75,146	80,094	1.3	6.6	83,032	91,449	99,550	10.1	8.9	63,940	65,101	75,541	1.8	16.0
Illinois	775,998	734,385	780,061	-5.4	6.2	750,936	794,460	852,082	5.8	7.3	573,085	556,286	627,976	-2.9	12.9
Indiana	337,902	327,278	346,241	-3.1	5.8	329,625	354,338	384,520	7.5	8.5	259,729	258,618	290,592	-0.4	12.4
Iowa	173,722	170,957	179,753	-1.6	5.1	160,361	169,994	182,525	6.0	7.4	121,666	119,315	133,335	-1.9	11.8
Kansas	159,826	158,348	162,291	-0.9	2.5	155,126	164,334	172,918	5.9	5.2	114,529	113,476	126,620	-0.9	11.6
Kentucky	192,972	188,396	197,818	-2.4	5.0	197,356	214,053	231,180	8.5	8.0	164,782	164,142	184,053	-0.4	12.1
Louisiana	237,045	218,422	221,153	-7.9	1.3	222,349	236,324	250,701	6.3	6.1	176,016	173,900	195,570	-1.2	12.5
Maine	59,553	59,881	63,595	0.6	6.2	68,863	74,806	80,254	8.6	7.3	62,018	61,371	69,380	-1.0	13.1
Maryland	368,056	352,384	368,571	-4.3	4.6	384,074	405,455	430,429	5.6	6.2	280,092	269,486	299,934	-3.8	11.3
Massachusetts	514,171	500,001	533,102	-2.8	6.6	513,710	550,460	584,291	7.2	6.1	376,244	360,538	408,832	-4.2	13.4
Michigan	467,107	448,455	481,778	-4.0	7.4	495,269	537,494	567,807	8.5	5.6	422,231	411,989	458,227	-2.4	11.2
Minnesota	340,557	328,490	346,204	-3.5	5.4	332,916	355,211	378,285	6.7	6.5	261,627	252,088	277,462	-3.6	10.1
Mississippi	100,983	100,527	104,354	-0.5	3.8	117,113	126,307	135,347	7.9	7.2	96,482	96,325	107,510	-0.2	11.6
Missouri	290,620	282,754	295,687	-2.7	4.6	301,031	320,698	341,254	6.5	6.4	251,601	246,983	277,506	-1.8	12.4
Montana	46,886	46,750	48,976	-0.3	4.8	54,084	58,770	62,887	8.7	7.0	45,496	46,022	52,880	1.2	14.9
Nebraska	118,604	118,142	122,136	-0.4	3.4	105,922	112,630	120,189	6.3	6.7	80,568	80,058	90,703	-0.6	13.3
Nevada	156,959	146,493	159,567	-6.7	8.9	161,434	172,539	189,308	6.9	9.7	125,722	124,031	140,947	-1.3	13.6
New Hampshire	76,819	75,928	82,986	-1.2	9.3	88,823	94,441	101,675	6.3	7.7	71,883	71,131	78,794	-1.0	10.8
New Jersey	559,649	535,324	566,893	-4.3	5.9	633,651	663,544	713,721	4.7	7.6	457,257	447,694	506,909	-2.1	13.2
New Mexico	94,897	92,496	93,625	-2.5	1.2	91,854	99,018	106,451	7.8	7.5	75,838	74,389	84,693	-1.9	13.9
New York	1,500,833	1,432,507	1,514,779	-4.6	5.7	1,362,299	1,442,625	1,524,129	5.9	5.6	1,010,359	966,028	1,056,366	-4.4	9.4
North Carolina	512,835	506,658	541,934	-1.2	7.0	505,470	542,727	592,695	7.4	9.2	406,984	407,610	463,815	0.2	13.8
North Dakota	56,385	53,654	53,804	-4.8	0.3	44,347	47,411	50,003	6.9	5.5	34,788	33,821	37,339	-2.8	10.4
Ohio	613,251	594,144	629,287	-3.1	5.9	589,836	631,331	670,036	7.0	6.1	474,618	467,691	519,370	-1.5	11.0
Oklahoma	201,162	192,486	193,230	-4.3	0.4	191,852	200,153	214,761	4.3	7.3	138,817	138,004	154,084	-0.6	11.7
Oregon	219,588	215,744	227,979	-1.8	5.7	222,257	241,790	261,547	8.8	8.2	180,303	179,130	202,877	-0.7	13.3
Pennsylvania	715,061	680,957	710,973	-4.8	4.4	739,892	788,282	833,315	6.5	5.7	592,927	572,692	635,754	-3.4	11.0
Rhode Island	53,411	51,516	54,606	-3.5	6.0	61,107	65,709	70,532	7.5	7.3	47,038	45,546	51,394	-3.2	12.8
South Carolina	213,238	208,234	221,045	-2.3	6.2	237,025	251,946	272,340	6.3	8.1	196,321	196,788	224,786	0.2	14.2
South Dakota	46,651	47,402	49,558	1.6	4.5	48,797	53,622	57,718	9.9	7.6	37,494	37,477	42,745	0.0	14.1
Tennessee	331,177	323,454	352,461	-2.3	9.0	338,609	362,278	394,520	7.0	8.9	260,151	259,372	296,228	-0.3	14.2
Texas	1,779,781	1,747,562	1,815,064	-1.8	3.9	1,560,504	1,624,526	1,767,682	4.1	8.8	1,171,627	1,168,805	1,332,116	-0.2	14.0
Utah	172,038	174,955	186,910	1.7	6.8	157,045	171,385	186,991	9.1	9.1	119,720	122,472	142,374	2.3	16.3
Vermont	29,941	29,065	30,547	-2.9	5.1	35,585	38,098	39,949	7.1	4.9	30,719	29,686	32,770	-3.4	10.4
Virginia	489,199	478,909	505,351	-2.1	5.5	507,874	536,817	573,028	5.7	6.7	376,752	369,718	416,985	-1.9	12.8
Washington	533,150	538,856	575,129	1.1	6.7	490,322	527,582	570,921	7.6	8.2	361,958	356,590	400,487	-1.5	12.3
West Virginia	72,633	70,444	71,343	-3.0	1.3	77,330	80,971	86,452	4.7	6.8	67,992	66,537	73,375	-2.1	10.3
Wisconsin	303,669	293,105	306,467	-3.5	4.6	311,019	329,623	351,551	6.0	6.7	243,920	239,973	266,289	-1.6	11.0
Wyoming	38,447	36,269	36,400	-5.7	0.4	36,889	37,974	40,323	2.9	6.2	24,806	24,566	27,685	-1.0	12.7

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U.S. growth rate = 5.9

State	Growth Rate (%)
WA	6.7
OR	5.7
ID	6.6
MT	4.8
ND	0.3
WY	0.4
SD	4.5
NE	3.4
KS	2.5
OK	0.4
TX	3.9
LA	1.3
MS	3.8
AL	5.1
GA	7.0
FL	8.4
SC	6.2
NC	7.0
VA	5.5
DE	3.4
MD	4.6
DC	3.7
NJ	5.9
CT	4.8
RI	6.0
MA	6.6
NH	9.3
VT	5.1
NY	5.7
PA	4.4
OH	5.9
IN	5.8
MI	7.4
WI	4.6
IL	6.2
IA	5.1
MO	4.6
AR	5.2
TX	3.9
NM	1.2
AZ	6.3
NV	8.9
UT	6.8
CO	5.8
AK	0.3
HI	6.3

Quintile growth rates

- 6.7 to 9.3
- 5.9 to 6.7
- 5.1 to 5.9
- 3.8 to 5.1
- 0.3 to 3.8

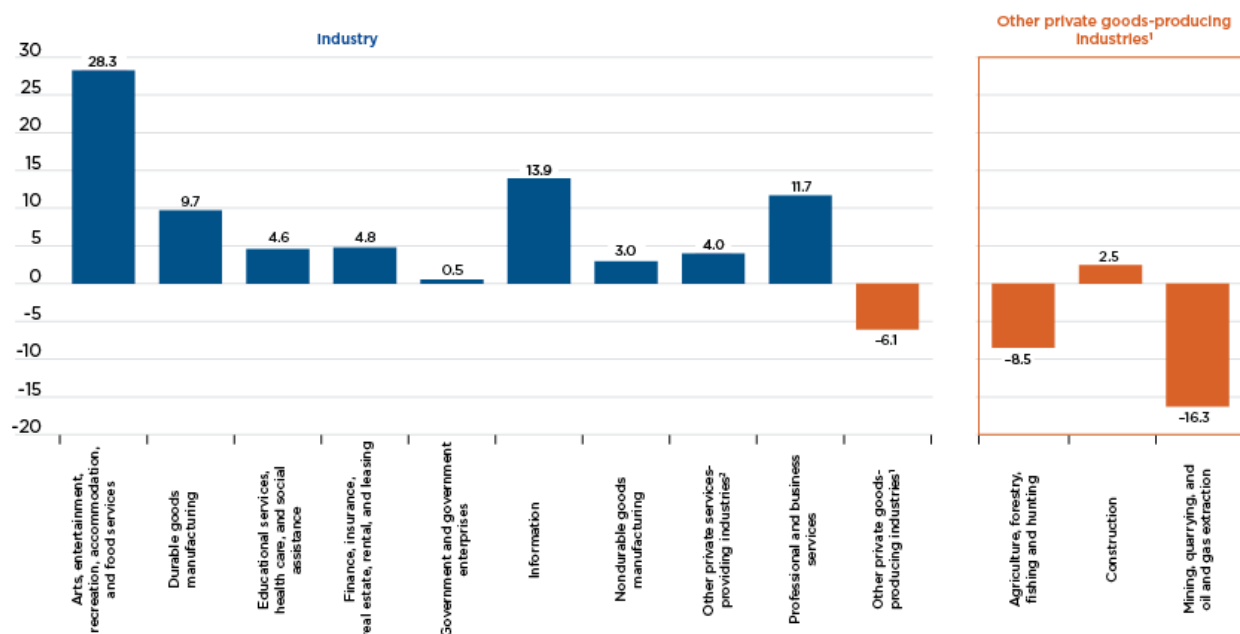
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**Table 2. Real Gross Domestic Product by Industry, United States: 2020-2021**

Industry	Percent change		Change (millions of chained 2012 dollars)	
	2020	2021	2020	2021
All industry total	-2.8	5.9	-526,909	1,100,669
Farms	2.2	-10.3	4,000	-19,475
Forestry, fishing, and related activities	4.9	-2.4	1,701	-879
Oil and gas extraction	11.5	-27.9	47,431	-127,943
Mining (except oil and gas)	-0.4	0.2	-249	143
Support activities for mining	-33.0	6.2	-19,041	2,398
Utilities	3.6	-4.1	10,339	-11,950
Construction	-3.8	2.5	-25,954	15,904
Wood product manufacturing	3.9	-0.4	1,108	-104
Nonmetallic mineral product manufacturing	-2.2	3.1	-1,104	1,519
Primary metal manufacturing	10.5	-10.8	8,120	-9,210
Fabricated metal product manufacturing	-9.8	9.5	-13,863	12,115
Machinery manufacturing	-7.6	13.5	-10,694	17,532
Computer and electronic product manufacturing	2.3	5.8	7,723	20,254
Electrical equipment, appliance, and component manufacturing	-5.2	13.6	-3,058	7,495
Motor vehicles, bodies and trailers, and parts manufacturing	-9.0	33.3	-12,689	42,623
Other transportation equipment manufacturing	-12.1	8.3	-18,216	10,918
Furniture and related product manufacturing	-5.2	7.0	-1,430	1,842
Miscellaneous manufacturing	-4.6	12.6	-4,108	10,642
Food and beverage and tobacco product manufacturing	-0.1	8.1	-182	20,685
Textile mills and textile product mills	-4.7	6.3	-754	949
Apparel, leather, and allied product manufacturing	-22.5	25.0	-1,810	1,561
Paper manufacturing	7.0	-0.6	3,701	-353
Printing and related support activities	-14.3	4.9	-5,359	1,571
Petroleum and coal products manufacturing	-35.2	0.5	-79,271	681
Chemical manufacturing	1.3	-0.3	4,333	-960
Plastics and rubber products manufacturing	-5.2	3.7	-4,040	2,764
Wholesale trade	0.0	5.5	-130	61,168
Retail trade	-2.9	2.6	-32,041	28,383
Air transportation	-52.3	59.2	-63,940	34,458
Rail transportation	-11.5	8.6	-4,213	2,768
Water transportation	14.7	-22.9	1,337	-2,384
Truck transportation	-2.5	-1.2	-3,353	-1,533
Transit and ground passenger transportation	-23.6	3.2	-11,730	1,198
Pipeline transportation	-6.2	1.6	-2,020	496
Other transportation and support activities	3.6	0.4	3,777	432
Warehousing and storage	11.7	13.3	8,784	11,127
Publishing industries (except Internet)	15.1	17.6	47,748	63,927
Motion picture and sound recording industries	-11.1	21.1	-9,842	16,552
Broadcasting (except Internet) and telecommunications	-0.9	5.4	-5,150	29,311
Data processing, hosting, and other information services	5.0	21.6	14,528	66,081
Monetary Authorities- central bank, credit intermediation, and related services	12.2	8.1	53,934	40,151
Securities, commodity contracts, and other financial investments and related activities	-6.0	2.1	-14,025	4,684
Insurance carriers and related activities	-3.7	6.8	-21,269	37,456
Funds, trusts, and other financial vehicles	11.3	78.4	2,149	16,646
Real estate	-0.9	3.2	-18,751	66,511
Rental and leasing services and lessors of nonfinancial intangible assets	-10.3	2.8	-27,370	6,760
Legal services	-7.1	4.8	-15,506	9,604
Computer systems design and related services	4.5	11.5	18,291	49,090
Miscellaneous professional, scientific, and technical services	0.2	12.8	2,049	117,039
Management of companies and enterprises	1.7	10.9	7,206	47,922
Administrative and support services	-5.8	14.3	-30,789	71,625
Waste management and remediation services	-4.2	6.6	-1,936	2,946
Educational services	-9.9	3.3	-22,518	6,814
Ambulatory health care services	-3.1	7.0	-23,766	51,273
Hospitals	0.7	3.4	2,965	15,078
Nursing and residential care facilities	-0.3	0.1	-374	93
Social assistance	-3.7	3.3	-4,337	3,706
Performing arts, spectator sports, museums, and related activities	-35.7	40.2	-43,148	31,213
Amusement, gambling, and recreation industries	-36.3	28.2	-29,353	14,555
Accommodation	-29.9	31.2	-43,848	32,135
Food services and drinking places	-22.7	24.7	-87,457	73,360
Other services (except government and government enterprises)	-9.9	5.4	-36,420	17,977
Federal civilian	3.6	0.5	15,324	2,313
Military	2.2	1.5	6,437	4,493
State and local	-1.9	0.3	-28,319	4,915

Across industries, GDP by industry, or value added—a measure of an industry's contribution to GDP—grew the fastest in arts, entertainment, recreation, accommodations, and food services (28.3 percent), information (13.9 percent), professional and business services (11.7 percent), and manufacturing, particularly durable goods manufacturing (9.7 percent) (chart 2). In contrast, real GDP declined in non-manufacturing other private goods-producing industries driven by declines in agriculture and mining.

**Chart 2. Percent Change in Real GDP by Industry, United States: 2020–2021**



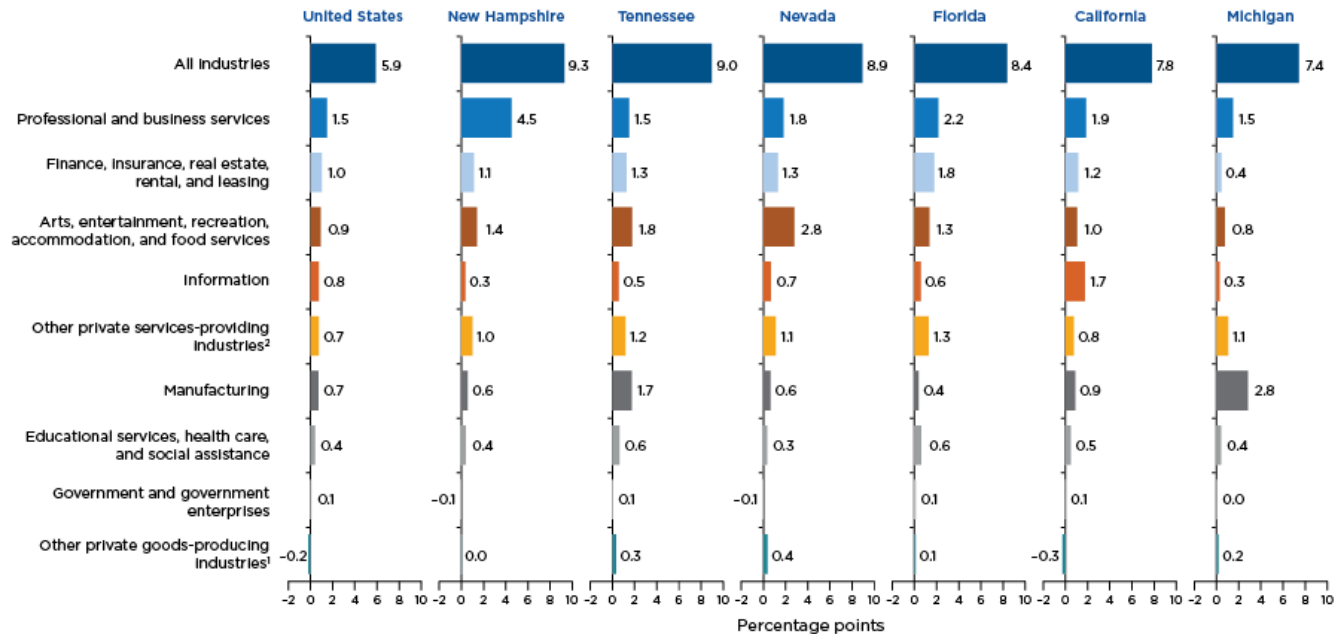
1. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

2. Other private services-providing industries consist of utilities, wholesale trade, retail trade, transportation and warehousing, and other services (except government and government enterprises).

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Professional and business services were the leading contributor to real GDP growth in 2021 in New Hampshire, Florida, and California and a large contributor to growth in all other fastest growing states (chart 3, table 3). Finance, insurance, real estate; and arts, entertainment, recreation, accommodation and food services were the next largest contributors to growth in Florida. Information was the second largest contributor to growth in California.

**Chart 3. Contributions to Percent Change in Real GDP, Fastest Growing States: 2020–2021**



1. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

2. Other private services-providing industries consist of utilities, wholesale trade, retail trade, transportation and warehousing, and other services (except government and government enterprises).

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Arts, entertainment, recreation, accommodation and food services were the leading contributor to real GDP growth in Nevada. Manufacturing, particularly durable goods manufacturing, was the largest contributor to growth in Michigan. These two industries also made sizable contributions to real GDP growth in Tennessee.



**Table 3. Contributions to Percent Change in Real GDP by State: 2020–2021**

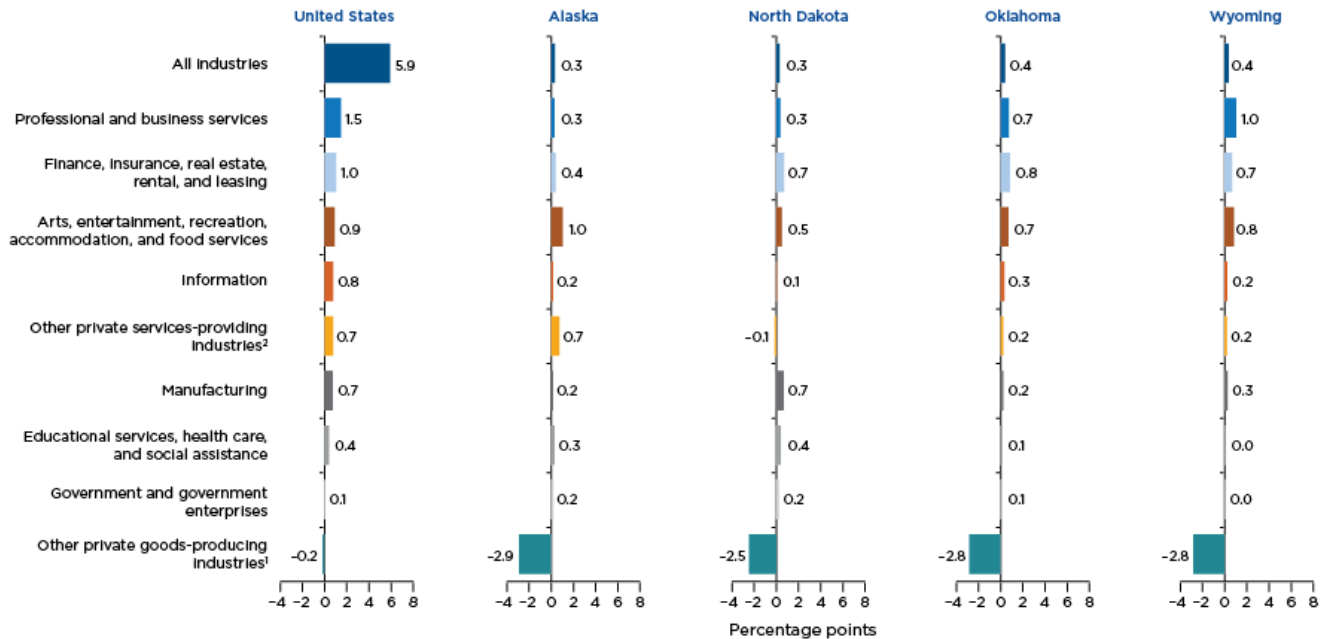
Region	Percent change in real GDP	Contributions to percent change (percentage points)									
		Durable goods manufacturing	Nondurable goods manufacturing	Other private goods-producing industries <sup>1</sup>	Information	Finance, insurance, real estate, rental and leasing	Professional and business services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other private services-providing industries <sup>2</sup>	Government and government enterprises
United States	5.9	0.57	0.14	-0.18	0.75	1.02	1.47	0.40	0.91	0.75	0.07
Alabama	5.1	0.86	0.10	0.31	0.26	1.23	0.93	0.33	0.56	0.42	0.05
Alaska	0.3	-0.02	0.18	-2.89	0.17	0.37	0.29	0.29	1.04	0.72	0.18
Arizona	6.3	0.63	0.15	0.32	0.48	1.27	1.42	0.35	0.80	0.91	-0.07
Arkansas	5.2	0.74	0.19	0.59	0.17	0.57	1.24	0.22	0.59	0.92	-0.04
California	7.8	0.81	0.07	-0.26	1.74	1.16	1.85	0.47	1.04	0.75	0.14
Colorado	5.8	0.21	0.29	-1.14	0.61	1.25	1.94	0.28	1.14	0.93	0.27
Connecticut	4.8	0.96	0.08	0.04	0.50	0.74	0.91	0.35	0.82	0.40	0.02
Delaware	3.4	0.03	0.01	0.09	0.12	0.71	0.90	0.31	0.60	0.48	0.16
District of Columbia	3.7	0.01	0.01	0.00	0.84	0.58	1.25	0.08	0.84	-0.06	0.11
Florida	8.4	0.24	0.14	0.09	0.58	1.77	2.17	0.62	1.34	1.27	0.13
Georgia	7.0	0.59	0.31	0.11	1.42	1.06	1.33	0.45	0.72	0.93	0.10
Hawaii	6.3	0.07	0.07	-0.26	0.50	0.97	0.73	0.29	3.04	0.65	0.28
Idaho	6.6	0.21	0.27	-0.56	0.43	1.62	1.46	0.70	0.91	1.45	0.09
Illinois	6.2	0.41	0.41	0.16	0.40	1.32	1.41	0.34	0.91	0.81	0.05
Indiana	5.8	2.40	-0.15	0.10	0.14	0.77	1.12	0.38	0.56	0.55	-0.07
Iowa	5.1	0.91	0.29	0.99	0.15	1.31	0.72	0.25	0.52	0.04	-0.04
Kansas	2.5	0.62	0.13	-0.38	0.29	0.36	0.51	0.16	0.54	0.22	0.03
Kentucky	5.0	1.21	0.24	-0.15	0.20	0.68	0.82	0.69	0.59	0.60	0.13
Louisiana	1.3	0.11	-0.71	-0.30	0.25	0.35	0.67	0.14	0.72	0.11	-0.10
Maine	6.2	0.53	0.24	-0.02	0.32	0.97	1.45	0.66	1.43	0.47	0.17
Maryland	4.6	0.05	0.08	0.00	0.90	0.44	1.43	0.36	0.66	0.47	0.20
Massachusetts	6.6	0.33	0.10	0.21	0.71	0.54	2.32	0.55	0.89	0.90	0.06
Michigan	7.4	2.68	0.16	0.17	0.28	0.44	1.49	0.40	0.76	1.06	-0.01
Minnesota	5.4	0.73	0.28	0.23	0.14	0.89	1.31	0.56	0.70	0.68	-0.12
Mississippi	3.8	0.84	0.59	0.15	0.23	0.37	0.74	0.01	0.74	0.22	-0.09
Missouri	4.6	0.70	0.18	0.08	0.36	0.70	0.99	0.25	0.86	0.53	-0.10
Montana	4.8	0.21	0.46	-1.62	0.40	1.29	1.27	0.61	1.30	0.82	0.02
Nebraska	3.4	0.53	0.52	-0.06	0.40	0.31	0.58	0.21	0.38	0.68	-0.16
Nevada	8.9	0.50	0.15	0.37	0.68	1.29	1.80	0.34	2.77	1.10	-0.08
New Hampshire	9.3	0.42	0.14	0.01	0.35	1.12	4.52	0.39	1.41	0.99	-0.05
New Jersey	5.9	0.19	-0.09	0.07	0.70	0.62	1.57	0.49	0.88	1.47	0.00
New Mexico	1.2	0.04	0.00	-2.54	0.50	0.38	0.88	0.32	1.18	0.25	0.21
New York	5.7	0.12	0.10	0.04	0.85	1.03	1.17	0.45	1.14	0.64	0.20
North Carolina	7.0	0.56	0.32	0.31	0.56	1.13	1.62	0.67	0.85	0.90	0.05
North Dakota	0.3	0.41	0.25	-2.46	0.07	0.70	0.35	0.40	0.49	-0.15	0.22
Ohio	5.9	0.85	0.27	-0.33	0.25	2.06	1.08	0.31	0.71	0.68	0.05
Oklahoma	0.4	0.17	0.07	-2.83	0.31	0.84	0.72	0.12	0.69	0.24	0.06
Oregon	5.7	-0.21	0.16	-0.12	0.67	0.99	1.54	0.41	1.11	0.83	0.27
Pennsylvania	4.4	0.35	0.07	-0.17	0.50	0.46	1.59	0.25	0.79	0.57	-0.01
Rhode Island	6.0	0.65	0.00	0.15	0.27	0.57	1.76	0.58	1.25	0.68	0.09
South Carolina	6.2	1.30	0.14	0.18	0.56	1.01	1.07	0.36	0.93	0.56	0.03
South Dakota	4.5	0.50	0.20	-0.32	0.13	2.05	0.68	0.37	0.55	0.50	-0.11
Tennessee	9.0	1.22	0.51	0.32	0.55	1.26	1.49	0.64	1.77	1.16	0.06
Texas	3.9	0.47	0.04	-1.82	0.43	1.21	1.66	0.29	0.65	0.85	0.07
Utah	6.8	0.68	0.43	0.16	0.85	1.56	1.08	0.35	0.71	0.76	0.25
Vermont	5.1	0.43	0.05	-0.07	0.24	0.97	1.61	0.36	1.35	0.44	-0.28
Virginia	5.5	0.42	0.19	-0.04	0.50	0.85	1.58	0.42	0.76	0.53	0.32
Washington	6.7	-0.05	0.15	-0.16	2.35	1.03	1.53	0.32	0.79	0.67	0.12
West Virginia	1.3	0.37	0.22	-1.62	0.23	0.50	0.62	0.37	0.67	0.04	-0.12
Wisconsin	4.6	1.25	0.36	-0.22	0.28	0.67	0.84	0.35	0.71	0.30	0.01
Wyoming	0.4	0.04	0.22	-2.82	0.22	0.65	1.02	0.01	0.81	0.19	0.02

1. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

2. Other private services-providing industries consist of utilities, wholesale trade, retail trade, transportation and warehousing, and other services (except government and government enterprises).

States with the slowest real GDP growth in 2021 were Alaska (0.3 percent), North Dakota (0.3 percent), Oklahoma (0.4 percent), and Wyoming (0.4 percent) (table 1). These states experienced sizable declines in real GDP in 2020 that ranged from 4.3 percent in Oklahoma to nearly 5.7 percent in Wyoming. While real GDP grew for many industries in these states, the positive contributions by these industries were almost entirely offset by large declines in other private goods-producing industries: agriculture and mining (chart 4, table 3).

**Chart 4. Contributions to Percent Change in Real GDP, Slowest Growing States: 2020–2021**



1. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

2. Other private services-providing industries consist of utilities, wholesale trade, retail trade, transportation and warehousing, and other services (except government and government enterprises).

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Overall, in 2021 production in all states was on a path to recovery from the pandemic recession.<sup>9</sup> This recovery, however, has been characterized by both supply- and demand-specific challenges including pandemic-related supply chain disruptions, tight labor markets, and strong demand stemming from federal relief and recovery measures.<sup>10</sup>

Ten states had yet to reach their pre-pandemic real GDP levels in 2021 (chart 5). Among these, Louisiana, Hawaii, Wyoming, Alaska, North Dakota, and Oklahoma had real GDP levels in 2021 that were nearly 4 to 7 percent lower than in 2019. In contrast, real GDP levels in Utah, New Hampshire, Idaho, and Washington were about 8 percent or more higher than in 2019. The national average real GDP growth from 2019 to 2021 was 3 percent.

Cummulative real GDP growth 2019-2021

- 4.0 to 9.0
- 2.0 to 4.0
- 0.0 to 2.0
- 2.0 to 0.0
- 5.0 to -2.0
- 7.0 to -5.0

U.S. growth rate = 3.0

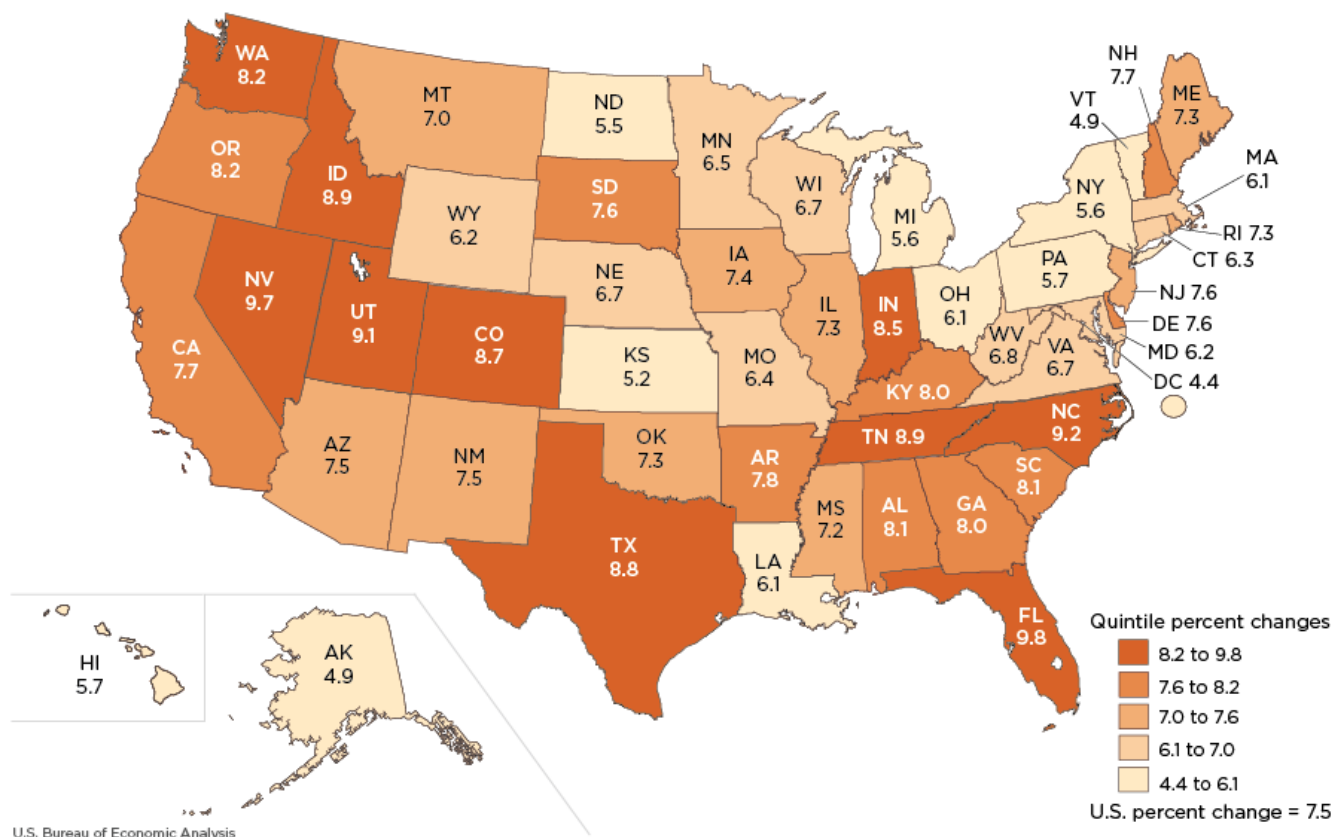
State	Growth Rate (%)
WA	7.9
OR	3.8
MT	4.5
ID	8.0
ND	-4.6
WY	-5.3
SD	6.2
MN	1.7
WI	0.9
MI	3.1
IN	2.5
OH	2.6
PA	-0.6
NY	0.9
VT	2.0
NH	8.0
ME	6.8
MA	3.7
RI	2.2
CT	-2.0
NJ	1.3
DE	0.4
MD	0.1
DC	1.9
VA	3.3
NC	5.7
SC	3.7
GA	3.2
AL	3.2
MS	3.3
TN	6.4
AR	5.3
LA	-6.7
TX	2.0
OK	-3.9
NM	-1.3
AZ	6.8
UT	8.6
CO	4.3
NE	3.0
IA	3.5
MO	1.7
KS	1.5
WV	-1.8
FL	6.6
AK	-4.8
HI	-5.9

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Next, statistics on personal income and personal consumer spending provide insights into how households fared in 2021. Specifically, how much income households received in each state and how they adjusted their spending in response to the relatively more favorable economic conditions in 2021 compared with 2020.

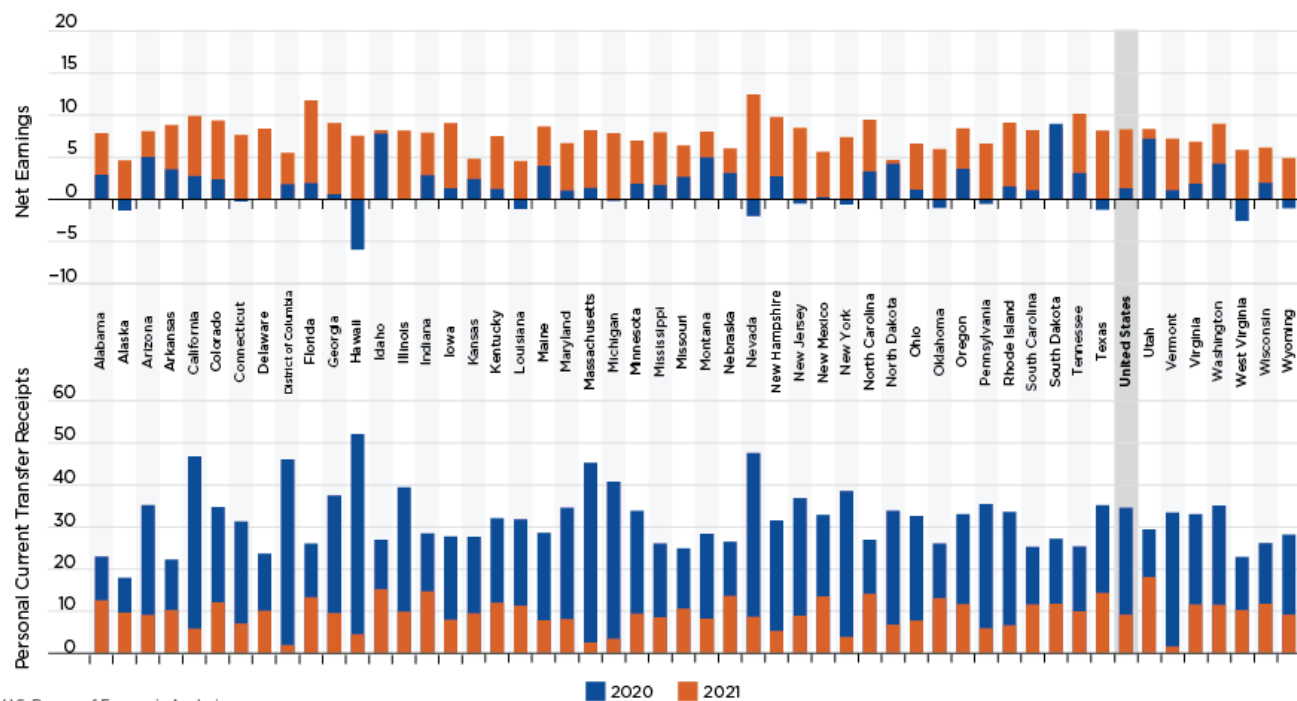
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Chart 6. Percent Change in Personal Income: 2020–2021



Across states, variations in personal income increases are largely attributable to a combination of industry-specific increases in earnings and variation in changes in personal current transfer receipts, which continued to increase in 2021 but at a slower pace compared with 2020. These general trends—the increase in income earned from current production and the deceleration in current transfer receipts (chart 7)—are consistent with the growth in production observed in the real GDP statistics.

**Chart 7. Percent Change from Preceding Period in Net Earnings and Personal Current Transfer Receipts: 2020-2021**



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Substantial increases in earnings—comprised of compensation of employees and proprietors' income—were the leading contributor to the overall increase in state personal income. Compensation of employees, the largest component of personal income, increased on average 8.2 percent in 2021, up from 1.2 percent in 2020 (table 4). The percent change in compensation across states ranged from 3.3 percent in North Dakota to 13.9 percent in New Hampshire and accelerated in all states and in the District of Columbia.

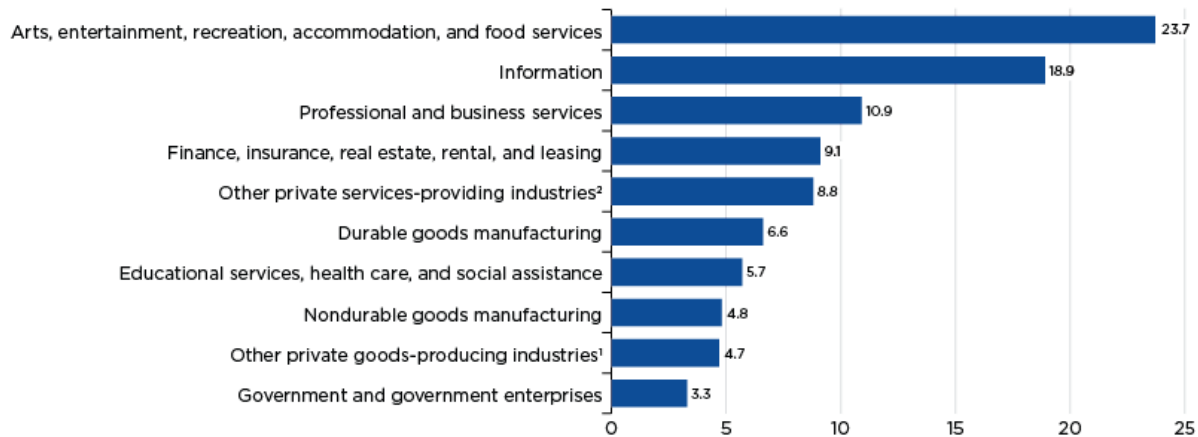
Table 4. Percent Change in State Personal Income and Selected Components: 2019–2021

Region	2019–2020					2020–2021				
	Personal income	Compensation of employees	Proprietors' income with IVA and CCAdj	Dividends, interest, and rent	Personal current transfer receipts	Personal income	Compensation of employees	Proprietors' income with IVA and CCAdj	Dividends, interest, and rent	Personal current transfer receipts
United States	6.7	1.2	2.3	0.0	34.5	7.5	8.2	7.3	2.9	9.1
Alabama	7.1	2.3	11.3	0.8	23.0	8.1	7.0	11.3	2.2	12.5
Alaska	2.0	–2.1	7.4	–1.7	17.9	4.9	4.6	5.0	0.5	9.6
Arizona	10.4	4.8	10.1	1.4	35.2	7.5	8.6	1.4	3.5	9.1
Arkansas	6.7	2.8	14.6	–2.2	22.2	7.8	7.3	18.8	2.5	10.2
California	8.7	3.1	–0.2	0.2	46.8	7.7	10.3	5.6	2.7	5.8
Colorado	6.1	2.3	2.9	0.6	34.8	8.7	8.8	10.8	4.2	12.1
Connecticut	3.7	–0.2	0.9	–1.6	31.3	6.3	6.0	5.8	1.7	7.0
Delaware	5.0	0.5	–6.5	0.1	23.7	7.6	6.2	12.1	2.4	10.0
District of Columbia	6.4	2.0	0.1	–2.8	46.1	4.4	4.7	19.2	2.6	1.9
Florida	6.1	1.8	3.7	0.7	26.0	9.8	11.9	6.9	3.6	13.2
Georgia	6.7	1.4	–4.0	0.8	37.5	8.0	9.0	8.7	3.0	9.5
Hawaii	4.3	–5.1	–11.1	–1.2	52.1	5.7	7.3	7.8	1.8	4.5
Idaho	10.1	6.8	15.1	2.6	26.9	8.9	10.9	–4.5	4.2	15.2
Illinois	5.8	–0.3	3.6	–0.4	39.5	7.3	7.0	15.1	1.8	9.8
Indiana	7.5	1.0	15.6	0.9	28.5	8.5	8.0	6.4	1.8	14.6
Iowa	6.0	1.5	1.2	0.6	27.7	7.4	5.5	30.6	1.3	7.9
Kansas	5.9	1.5	9.0	–0.4	27.7	5.2	5.0	2.6	2.2	9.4
Kentucky	8.5	0.9	9.1	0.3	32.1	8.0	7.6	9.0	2.5	11.9
Louisiana	6.3	–2.3	7.5	0.0	31.8	6.1	4.5	4.8	2.9	11.3
Maine	8.6	3.3	10.0	0.2	28.6	7.3	9.0	3.5	2.3	7.8
Maryland	5.6	1.4	–6.3	–0.4	34.6	6.2	6.5	6.9	2.5	8.1
Massachusetts	7.2	0.8	3.9	–0.5	45.3	6.1	8.2	6.8	3.0	2.5
Michigan	8.5	–2.0	16.9	0.3	40.8	5.6	7.6	6.2	1.9	3.4
Minnesota	6.7	0.3	15.7	0.5	33.9	6.5	6.7	5.7	2.1	9.3
Mississippi	7.9	1.7	6.7	0.1	26.1	7.2	6.1	17.3	1.8	8.5
Missouri	6.5	1.2	15.3	0.1	24.9	6.4	5.8	6.0	1.3	10.6
Montana	8.7	4.0	14.8	1.7	28.4	7.0	10.2	–3.3	3.6	8.2
Nebraska	6.3	2.2	10.0	1.1	26.5	6.7	5.5	7.7	2.4	13.6
Nevada	6.9	–2.4	–2.3	0.9	47.6	9.7	12.6	9.9	4.5	8.7
New Hampshire	6.3	3.0	8.9	–0.7	31.6	7.7	13.9	5.0	2.3	5.2
New Jersey	4.7	0.4	–2.9	–0.5	36.8	7.6	7.4	4.5	2.8	8.9
New Mexico	7.8	0.0	3.7	–0.6	32.9	7.5	5.8	3.4	3.3	13.5
New York	5.9	–0.8	–0.7	–1.3	38.6	5.6	8.0	9.9	2.5	3.9
North Carolina	7.4	2.8	9.6	0.7	26.9	9.2	9.4	8.1	2.2	14.1
North Dakota	6.9	–3.2	42.9	–2.6	33.9	5.5	3.3	6.9	6.7	6.7
Ohio	7.0	0.6	6.8	–0.3	32.7	6.1	6.1	7.3	2.1	7.8
Oklahoma	4.3	–1.1	1.0	–0.3	26.1	7.3	4.7	9.6	4.3	13.0
Oregon	8.8	2.7	9.4	1.2	33.1	8.2	8.6	4.8	3.1	11.6
Pennsylvania	6.5	–0.6	–1.4	–0.5	35.5	5.7	6.4	5.0	2.3	5.9
Rhode Island	7.5	0.3	4.4	0.2	33.6	7.3	7.2	6.9	2.5	6.6
South Carolina	6.3	0.8	–0.6	1.0	25.3	8.1	7.9	7.1	3.1	11.6
South Dakota	9.9	4.0	26.5	1.1	27.2	7.6	6.5	12.9	2.3	11.7
Tennessee	7.0	2.3	7.1	–0.1	25.3	8.9	9.9	8.8	2.0	9.9
Texas	4.1	0.5	–8.6	–1.0	35.2	8.8	8.0	8.1	5.5	14.3
Utah	9.1	6.4	14.2	3.0	29.4	9.1	9.5	–0.3	4.8	18.1
Vermont	7.1	0.4	4.7	–0.8	33.4	4.9	6.2	6.7	2.7	1.6
Virginia	5.7	2.7	–2.3	–0.8	33.1	6.7	6.8	7.8	2.1	11.5
Washington	7.6	4.2	6.0	–0.1	35.1	8.2	9.4	3.4	3.3	11.5
West Virginia	4.7	–2.7	–6.1	–1.7	22.9	6.8	5.3	5.0	2.5	10.2
Wisconsin	6.0	0.5	18.6	0.8	26.2	6.7	6.2	3.3	2.7	11.7
Wyoming	2.9	–3.4	11.0	–1.2	28.2	6.2	5.9	1.9	6.8	9.1

CCAdj Capital consumption adjustment  
IVA Inventory valuation adjustment

Across industries, compensation of employees increased the most in arts, entertainment, recreation, accommodations, and food services (23.7 percent), followed by information (18.9 percent) and professional and business services (10.9 percent) (chart 8). Across states, the increase in compensation in arts, entertainment, recreation, accommodations, and food services ranged from 37.1 percent in Hawaii to 15.6 percent in Louisiana (chart 9). The increase in compensation in information services ranged from 47.5 percent in Nevada to 7.3 percent in Alaska, while in the professional and business services sector, compensation increases ranged from 44.2 percent in New Hampshire to 2.4 percent in Alaska. Changes in compensation of employees for detailed industries are shown in table 5.

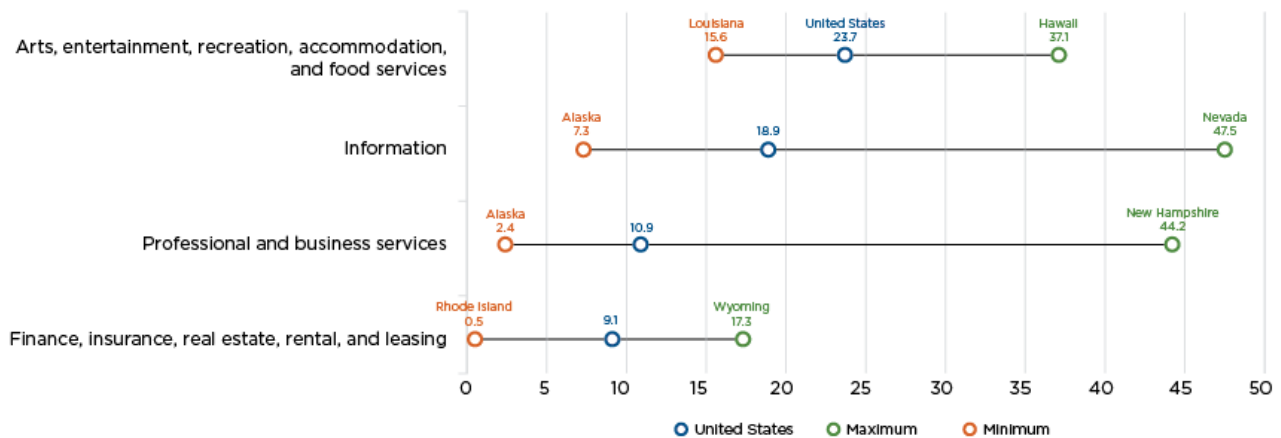
**Chart 8. Percent Change in Compensation of Employees by Industry, United States: 2020–2021**



1. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

2. Other private services-providing industries consist of utilities, wholesale trade, retail trade, transportation and warehousing, and other services (except government and government enterprises).  
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**Chart 9. Range in Percent Increases in Compensation of Employees Across States, Selected Industries: 2020–2021**



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Table 5. Compensation of Employees Component of Personal Income, by Industry, United States: 2020–2021

Industry	Percent change from previous year		Change from previous year (millions of dollars)	
	2020	2021	2020	2021
Farm compensation	6.9	3.0	1,965	917
Forestry and logging	8.5	−0.5	290	−19
Fishing, hunting and trapping	0.1	7.2	1	68
Support activities for agriculture and forestry	9.9	−1.3	2,300	−337
Oil and gas extraction	−8.6	−11.9	−2,652	−3,347
Mining (except oil and gas)	−7.5	5.5	−1,422	961
Support activities for mining	−31.5	−4.0	−11,477	−992
Utilities	5.7	0.3	5,045	296
Construction of buildings	0.0	6.7	−14	9,650
Heavy and civil engineering construction	−0.1	3.7	−105	3,729
Specialty trade contractors	0.0	6.8	−138	23,932
Wood product manufacturing	3.2	10.7	785	2,717
Nonmetallic mineral product manufacturing	−1.0	5.4	−309	1,705
Primary metal manufacturing	−8.3	8.6	−2,832	2,676
Fabricated metal product manufacturing	−4.7	6.0	−5,027	6,114
Machinery manufacturing	−5.3	5.6	−5,385	5,429
Computer and electronic product manufacturing	5.6	8.0	9,010	13,534
Electrical equipment, appliance, and component manufacturing	−1.6	7.8	−616	2,944
Motor vehicles, bodies and trailers, and parts manufacturing	−8.4	9.1	−6,868	6,759
Other transportation equipment manufacturing	−3.6	−0.3	−3,094	−256
Furniture and related product manufacturing	−2.5	7.6	−551	1,653
Miscellaneous manufacturing	−3.9	9.5	−2,269	5,260
Food manufacturing	5.8	5.6	5,867	5,949
Beverage and tobacco product manufacturing	0.8	10.4	159	2,078
Textile mills	−7.2	5.7	−453	335
Textile product mills	−5.8	7.9	−350	448
Apparel manufacturing	−13.6	7.3	−827	386
Leather and allied product manufacturing	−4.3	8.5	−67	126
Paper manufacturing	−1.2	2.5	−371	788
Printing and related support activities	−8.2	1.1	−2,188	269
Petroleum and coal products manufacturing	−1.4	−2.4	−286	−498
Chemical manufacturing	3.8	4.1	4,160	4,647
Plastics and rubber products manufacturing	0.1	8.1	32	4,098
Wholesale trade	0.6	7.8	3,534	43,865
Motor vehicle and parts dealers	−0.1	21.2	−68	27,176
Furniture and home furnishings stores	−4.7	17.7	−1,066	3,849
Electronics and appliance stores	−1.6	7.9	−446	2,232
Building material and garden equipment and supplies dealers	11.2	7.7	6,374	4,906
Food and beverage stores	9.5	1.7	9,874	1,890
Health and personal care stores	0.5	6.1	265	3,218
Gasoline stations	4.3	7.3	1,195	2,128
Clothing and clothing accessories stores	−17.5	13.9	−6,912	4,529
Sporting goods, hobby, musical instrument, and book stores	−2.7	16.7	−417	2,490
General merchandise stores	3.8	10.4	3,676	10,396
Miscellaneous store retailers	−4.5	17.8	−1,313	4,995
Nonstore retailers	12.0	15.0	6,040	8,455
Air transportation	−7.1	1.3	−4,402	776
Rail transportation	−11.9	−0.2	−2,774	−50
Water transportation	−7.1	1.4	−560	100
Truck transportation	−0.9	8.3	−970	9,139
Transit and ground passenger transportation	−28.4	13.9	−8,526	2,987
Pipeline transportation	−0.8	−2.9	−73	−253
Scenic and sightseeing transportation	−39.2	27.0	−647	271
Support activities for transportation	−3.0	11.0	−1,641	5,925
Couriers and messengers	17.7	22.4	7,978	11,904
Warehousing and storage	18.3	21.6	11,802	16,448
Publishing industries (except Internet)	9.6	22.9	11,326	29,652
Motion picture and sound recording industries	−13.7	26.8	−5,359	9,087
Broadcasting (except Internet)	−3.4	2.7	−1,026	811
Telecommunications	2.4	2.7	1,961	2,287
Data processing, hosting, and related services	9.5	24.2	5,141	14,388
Other information services	19.8	27.3	14,853	24,533
Monetary authorities-Central bank	5.0	7.3	148	228
Credit intermediation and related activities	10.0	9.2	28,809	28,888
Securities, commodity contracts, and other financial investments and related activities	4.7	16.0	12,301	43,606
Insurance carriers and related activities	5.7	2.6	16,963	8,069
Funds, trusts, and other financial vehicles	19.1	19.9	543	673
Real estate	3.2	11.2	4,146	14,874
Rental and leasing services	−11.1	8.9	−4,208	2,981
Lessors of nonfinancial intangible assets (except copyrighted works)	31.9	−18.5	941	−719
Professional, scientific, and technical services	4.2	11.0	47,135	129,972
Management of companies and enterprises	0.0	9.3	−155	33,306
Administrative and support services	−1.3	12.4	−5,923	55,515
Waste management and remediation services	2.1	6.9	707	2,408
Educational services	0.9	4.9	1,855	10,545
Ambulatory health care services	2.4	8.5	14,724	52,994
Hospitals	4.3	4.6	18,327	20,330
Nursing and residential care facilities	10.7	−1.5	15,162	−2,374
Social assistance	6.3	6.2	8,245	8,651
Performing arts, spectator sports, and related industries	−19.1	14.2	−11,256	6,741
Museums, historical sites, and similar institutions	−10.0	4.7	−773	329
Amusement, gambling, and recreation industries	−19.4	21.1	−11,398	10,013
Accommodation	−25.9	15.5	−23,634	10,483
Food services and drinking places	−20.1	28.4	−66,967	75,493
Repair and maintenance	−1.7	9.0	−1,278	6,741
Personal and laundry services	−18.4	18.8	−12,309	10,237
Religious, grantmaking, civic, professional, and similar organizations	7.0	−0.7	11,900	−1,295
Private households	−2.2	−1.8	−501	−410
Federal civilian	5.0	3.3	17,715	12,393
Military	4.9	6.6	6,848	9,620
State government	3.2	3.1	13,988	13,919
Local government	2.5	3.0	27,310	34,430



Proprietors' income—the income earned by unincorporated businesses that is received by persons—increased on average 7.3 percent in 2021, up from 2.3 percent in 2020 (table 4). This income component continued to be supported by the Coronavirus Food Assistance Program and the Paycheck Protection Program loans to businesses. Iowa, Arkansas, Mississippi, Illinois, South Dakota, Delaware, Alabama, and Colorado were among states with double-digit increases in proprietors' income. Proprietors' income declined in three states: Idaho, Montana, and Utah.

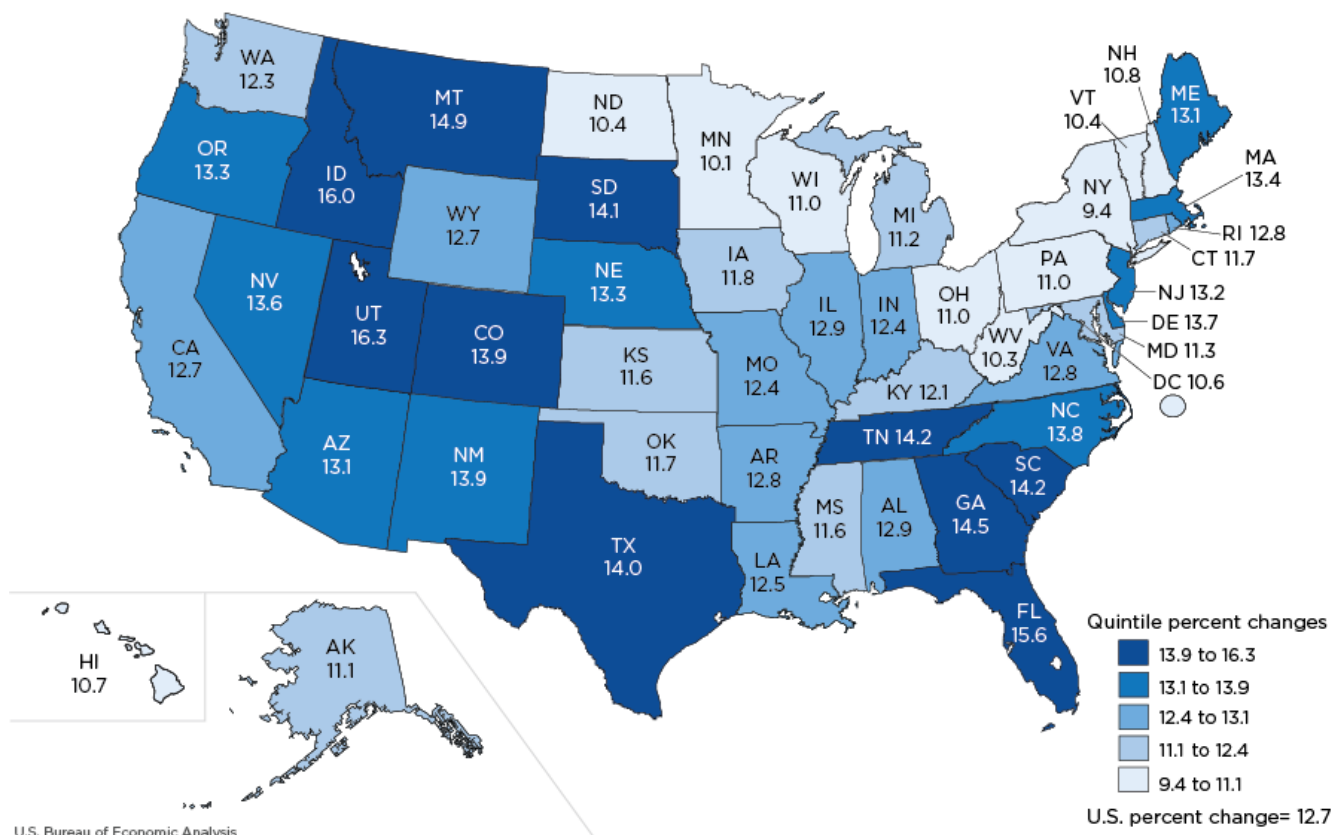
Personal current transfer receipts was the category most affected by policy responses to the pandemic, which included various increases and extensions of unemployment benefits, increases in Medicare reimbursements, economic income payments, and other programs. Personal current transfer receipts continued to increase in 2021 but decelerated, pointing to waning support from these programs. Current transfer receipts increased on average 9.1 percent in 2021 compared with 34.5 percent in 2020 (table 4). Personal current transfer receipts increased in all states and the District of Columbia in 2021, ranging from 1.6 percent in Vermont to 18.1 percent in Utah (chart 7).

Lastly, property income (dividends, interest, and rent) increased 2.9 percent in 2021, up from a negligible decline in 2020 (table 4). Dividends, interest, and rent increased in all states and the District of Columbia and ranged from 0.5 percent in Alaska to 6.8 percent in Wyoming.

## **PCE by state**

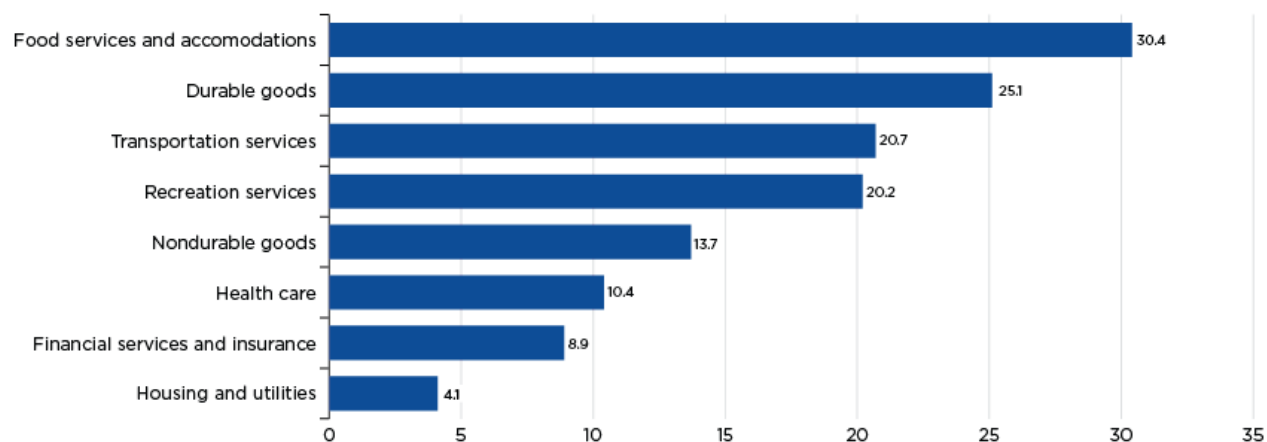
Consistent with the overall increase in personal income received in 2021, households increased their consumption spending. Nationally, current-dollar PCE increased 12.7 percent after declining 1.9 percent in 2020 (table 1). The states with the largest increases in PCE were Utah (16.3 percent), Idaho (16.0 percent), Florida (15.6 percent), and Montana (14.9 percent) (chart 10). The states with the lowest increases were New York (9.4 percent), Minnesota (10.1 percent), West Virginia (10.3 percent), Vermont (10.4 percent), North Dakota (10.4 percent), and the District of Columbia (10.6 percent).

Chart 10. Percent Change in Personal Consumption Expenditures: 2020–2021



Increases in PCE were driven by large increases in food services and accommodations, durable and nondurable goods, transportation and recreation services, and health care (chart 11). This is consistent with a story of increased socialization and partaking in recreation, entertainment, and travel activities following a year of pandemic-induced lockdowns and social distancing. The increases in health care spending reflect, in part, recovery of parts of the health care system that shut down in ambulatory care settings such as physician and dental offices.<sup>11</sup>

**Chart 11. Percent Change in Total Personal Consumption Expenditures, United States:  
2020-2021**



U.S. Bureau of Economic Analysis

Food services and accommodations were the largest contributor to PCE increases in 20 states, including Florida, the state with the third largest increase in PCE (table 6). Health care was the largest contributor to increases in 29 states and the District of Columbia, including Idaho, the state with the second largest increase. Recreational goods and vehicles were the leading contributor to the increase in Utah, the state with the largest PCE increase.

Table 6. Contributions to Percent Change in Total Personal Consumption Expenditures (PCE) by State: 2020–2021

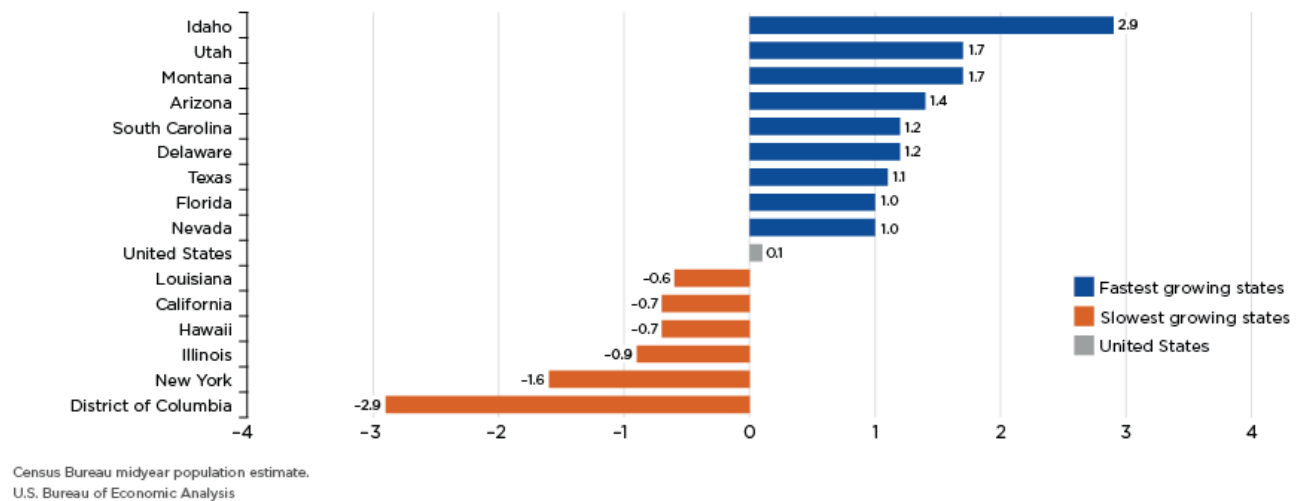
Region	Percent change in total PCE	Contributions to percent change (percentage points)															
		Durable goods				Nondurable goods				Services							
		Motor vehicles and parts	Furnishings and durable household equipment	Recreational goods and vehicles	Other durable goods	Food and beverages for off-premises consumption	Clothing and footwear	Gasoline and other energy goods	Other nondurable goods	Housing and utilities	Health care	Transportation services	Recreation services	Food services and accommodations	Financial services and insurance	Other services	Final consumption expenditures of NPISHs
United States	12.7	1.10	0.59	0.78	0.47	0.56	0.73	0.86	0.78	0.77	1.73	0.54	0.63	1.75	0.74	0.90	−0.27
Alabama	12.9	1.48	0.50	0.57	0.40	0.75	0.73	1.26	0.96	0.87	1.99	0.39	0.40	1.48	0.40	0.73	−0.05
Alaska	11.1	0.93	0.49	1.05	0.36	0.32	0.38	0.57	0.46	0.38	1.81	0.68	1.09	1.91	0.36	0.78	−0.47
Arizona	13.1	1.23	0.73	0.80	0.48	0.45	0.75	0.87	0.86	0.98	1.45	0.86	0.55	2.03	0.74	0.67	−0.38
Arkansas	12.8	1.41	0.60	0.48	0.46	0.87	0.90	1.46	0.75	0.51	1.89	0.32	0.38	1.63	1.01	0.51	−0.42
California	12.7	0.86	0.49	0.64	0.45	0.61	0.78	0.73	0.63	0.86	1.60	0.53	0.90	2.06	0.77	1.19	−0.43
Colorado	13.9	0.89	0.65	0.78	0.43	0.41	0.67	0.69	1.03	1.17	1.58	0.65	0.89	2.02	0.98	1.15	−0.05
Connecticut	11.7	0.62	0.64	0.69	0.50	0.71	0.68	0.64	0.93	0.68	1.65	0.70	0.59	1.68	0.21	1.32	−0.48
Delaware	13.7	0.86	0.62	0.68	0.49	0.49	0.75	1.08	0.81	1.23	2.00	0.51	0.41	2.00	0.77	0.90	0.08
District of Columbia	10.6	0.66	0.27	0.91	0.29	0.34	0.68	0.48	0.35	0.73	1.56	0.89	0.49	1.41	0.96	0.42	0.20
Florida	15.6	1.33	0.60	0.97	0.67	0.61	0.67	0.75	0.96	0.97	2.12	0.83	0.60	2.35	1.32	0.94	−0.05
Georgia	14.5	1.43	0.46	0.85	0.47	0.81	0.86	1.14	0.88	0.97	1.71	0.75	1.03	1.77	0.65	0.97	−0.31
Hawaii	10.7	0.76	0.41	0.60	0.23	0.63	0.61	0.40	0.37	1.30	1.21	0.80	0.65	2.02	0.23	0.80	−0.34
Idaho	16.0	1.39	0.66	1.86	0.47	0.69	0.60	1.42	1.15	1.38	2.03	0.49	0.55	1.86	0.82	0.78	−0.12
Illinois	12.9	0.95	0.74	0.99	0.53	0.58	0.82	0.73	0.97	0.42	1.19	0.79	0.55	1.66	0.51	0.83	0.64
Indiana	12.4	1.24	0.55	0.79	0.40	0.59	0.67	1.13	0.81	0.61	2.47	0.37	0.43	1.45	0.40	0.55	−0.10
Iowa	11.8	1.57	0.49	0.69	0.34	0.56	0.58	1.48	0.50	0.56	1.99	0.44	0.43	1.43	0.49	0.52	−0.32
Kansas	11.6	1.15	0.67	0.60	0.35	0.65	0.58	0.99	0.77	0.56	1.91	0.47	0.46	1.53	0.16	0.74	−0.03
Kentucky	12.1	1.32	0.47	0.62	0.40	0.58	0.71	1.14	0.50	0.68	2.27	0.19	0.57	1.63	0.53	0.57	−0.04
Louisiana	12.5	1.53	0.76	0.62	0.40	0.77	0.73	1.12	0.55	0.66	2.16	0.31	0.45	1.68	0.44	0.59	−0.31
Maine	13.1	0.94	0.59	0.88	0.38	0.71	0.65	1.06	1.03	0.81	1.90	0.28	0.66	2.06	0.48	0.82	−0.17
Maryland	11.3	0.74	0.66	0.88	0.52	0.52	0.82	0.70	1.17	0.59	1.58	0.28	0.64	1.53	0.45	0.84	−0.64
Massachusetts	13.4	0.58	0.61	0.64	0.45	0.46	0.74	0.56	0.77	0.94	2.28	0.76	0.63	1.76	1.28	0.97	−0.04
Michigan	11.2	0.91	0.55	0.85	0.54	0.47	0.70	0.91	0.71	0.61	1.55	0.43	0.47	1.31	0.72	0.66	−0.17
Minnesota	10.1	0.75	0.54	0.91	0.37	0.34	0.65	0.92	0.43	0.73	1.44	0.48	0.39	1.39	0.70	0.68	−0.66
Mississippi	11.6	1.41	0.62	0.58	0.45	0.38	0.79	1.39	0.64	0.39	1.86	0.37	0.46	1.62	0.58	0.49	−0.41
Missouri	12.4	1.28	0.51	0.64	0.45	0.55	0.70	1.38	0.90	0.61	1.83	0.44	0.63	1.62	0.28	0.57	−0.03
Montana	14.9	1.52	0.70	1.15	0.48	0.73	0.73	1.12	0.92	0.66	1.87	0.75	0.64	2.06	0.84	0.65	0.07
Nebraska	13.3	1.42	0.53	0.83	0.45	0.57	0.59	1.38	0.88	0.82	2.01	0.53	0.35	1.42	0.88	0.62	0.01
Nevada	13.6	1.34	0.39	0.69	0.50	0.66	0.87	0.89	0.94	1.40	1.08	0.70	0.68	2.01	0.91	0.95	−0.35
New Hampshire	10.8	1.35	0.55	0.48	0.43	0.37	0.78	0.76	0.59	0.57	1.54	0.28	0.57	1.45	0.83	0.78	−0.55
New Jersey	13.2	0.76	0.61	0.88	0.55	0.54	0.96	0.81	1.22	0.78	1.38	0.58	0.67	1.64	0.96	1.25	−0.37
New Mexico	13.9	1.49	0.53	0.71	0.68	0.72	0.73	1.14	0.67	0.70	2.37	0.33	0.46	2.10	0.82	0.42	−0.03
New York	9.4	0.7	0.45	0.43	0.38	0.41	0.64	0.43	0.42	0.67	1.08	0.56	0.50	1.73	0.81	0.92	−0.77
North Carolina	13.8	1.50	0.85	0.86	0.50	0.53	0.82	0.92	0.81	0.66	2.09	0.49	0.54	1.67	0.69	0.92	−0.07
North Dakota	10.4	0.97	0.60	0.59	0.41	0.53	0.76	0.63	0.38	0.00	2.14	0.59	0.38	1.58	0.80	0.63	−0.60
Ohio	11.0	1.18	0.57	0.59	0.44	0.50	0.73	0.95	0.70	0.47	1.94	0.32	0.53	1.44	0.34	0.69	−0.35
Oklahoma	11.7	1.59	0.53	0.73	0.48	0.47	0.77	1.05	0.56	0.51	1.96	0.24	0.44	1.73	0.58	0.45	−0.43
Oregon	13.3	1.26	0.58	1.01	0.44	0.60	0.86	0.76	0.51	0.94	1.77	0.56	0.51	1.45	0.59	0.81	0.62
Pennsylvania	11.0	0.90	0.61	0.58	0.43	0.59	0.68	0.90	0.65	0.52	1.71	0.38	0.62	1.40	0.77	0.88	−0.60
Rhode Island	12.8	0.77	0.45	0.64	0.51	0.60	0.72	0.50	0.49	0.84	2.01	0.63	0.75	2.43	0.69	1.11	−0.30
South Carolina	14.2	1.52	0.68	0.72	0.45	0.62	0.58	1.29	0.79	0.99	2.29	0.43	0.72	2.10	0.67	0.75	−0.36
South Dakota	14.1	0.91	0.78	0.54	0.43	0.54	0.70	0.78	0.62	0.46	4.09	0.42	0.65	1.81	1.07	0.68	−0.44
Tennessee	14.2	1.55	0.61	0.76	0.48	0.53	0.80	1.03	1.26	0.92	1.75	0.53	0.56	1.83	0.86	0.78	−0.03
Texas	14.0	1.55	0.82	0.97	0.52	0.60	0.77	0.98	0.96	0.83	1.91	0.42	0.64	1.71	0.60	1.02	−0.33
Utah	16.3	1.45	0.62	2.66	0.51	0.56	0.77	1.03	0.99	1.31	2.02	0.69	0.81	1.65	0.69	0.89	−0.41
Vermont	10.4	0.99	0.46	0.49	0.28	0.55	0.42	0.73	0.51	1.00	1.19	0.43	0.82	1.79	0.48	0.79	−0.53
Virginia	12.8	0.92	0.51	0.66	0.50	0.64	0.74	0.83	0.74	0.69	1.79	0.47	0.69	1.66	0.65	1.17	0.13
Washington	12.3	0.94	0.50	1.14	0.32	0.36	0.46	0.61	0.62	1.10	1.44	0.97	0.64	1.47	1.20	1.03	−0.50
West Virginia	10.3	1.06	0.47	0.30	0.38	0.62	0.71	1.17	0.49	0.45	2.07	0.18	0.41	1.40	0.32	0.74	−0.51
Wisconsin	11.0	1.06	0.47	0.63	0.36	0.39	0.59	1.13	0.66	0.50	1.58	0.28	0.45	1.45	0.86	0.66	−0.12
Wyoming	12.7	1.18	0.52	0.47	0.40	0.43	0.88	1.11	0.69	0.20	1.22	0.60	0.50	2.29	1.58	0.79	−0.17

NPISHs Nonprofit institutions serving households

Note. Category contributions were calculated from unrounded data and may not sum due to rounding.

In addition to personal income, regional trends in population growth help explain some of the regional differences in PCE growth. Typically, states with the largest increases in PCE tend to have faster-growing populations, while states with slower increases or declines in PCE tend to have slow-growing or declining populations. In 2021, population grew 0.1 percent nationally (chart 12). States with the highest population growth were Idaho (2.9 percent), Utah (1.7 percent), and Montana (1.7 percent), which were also among states with the largest PCE increases. Population declined in 18 states, with District of Columbia (–2.9 percent) and New York (–1.6 percent) experiencing the largest population declines. These were also among states with the lowest PCE increases.

**Chart 12. Percent Change in Population, Fastest and Slowest Growing States: 2020–2021**

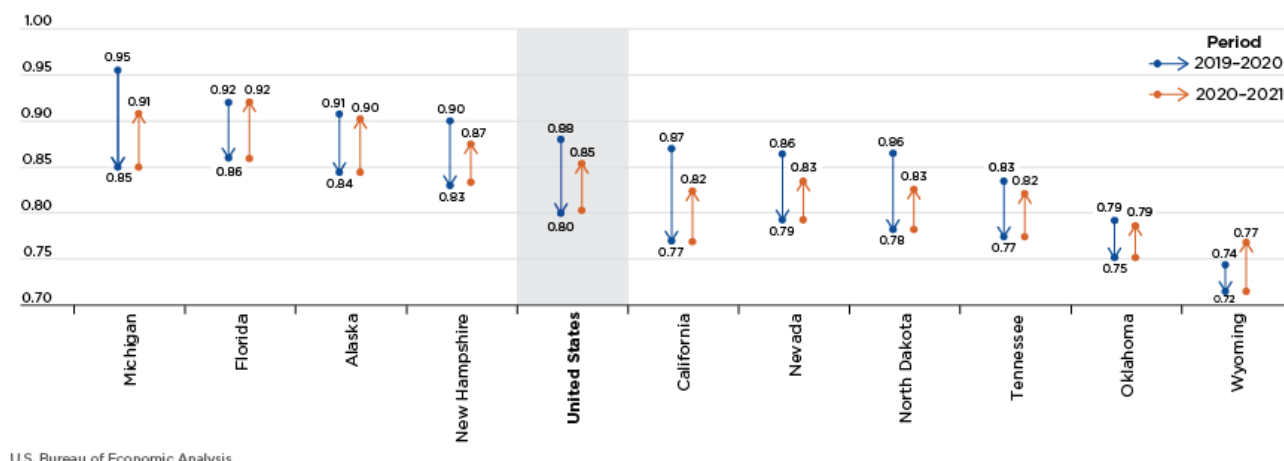


BEA will release price-adjusted statistics on personal income and consumer spending in December of 2022. Until these statistics become available, consumer spending as a share of personal income is a useful way to assess how households responded to pandemic-induced changes in personal income as personal income—specifically, the after-tax (disposable) personal income—is a key determinant of consumption. This share also provides a rough indication of personal saving as personal consumption expenditures are typically the largest personal outlays.<sup>12</sup>

In 2021, households spent on average 85 percent of their disposable personal income on consumption (chart 13). This compares with 88 percent in 2019 and 80 percent in 2020. Despite the increase in income in 2020 due to supplementation by various government programs, the decline in this share is consistent with consumers experiencing economic uncertainty. As the economy started to recover in 2021, this ratio increased, but has yet to reach pre-pandemic levels. Because consumer spending accounts for a large part of the economy (about 70 percent at the national level), it is an important driver of economic growth.

This same pattern is also observable at the state level, although the consumption-to-income ratio itself and the adjustment to consumption in response to changes in income vary across states. Chart 13 shows this ratio for the states with the fastest and slowest rates of real GDP growth in 2021. For these states, the consumption-to-income ratio in 2019 ranged from 74 percent in Wyoming to 95 percent in Michigan. In 2020, this ratio declined and ranged from 72 percent in Wyoming to 86 percent in Florida. In 2021, the consumption-to-income ratio increased compared with 2020, ranging from 77 percent in Wyoming to 92 percent in Florida, but for most of these states remained below the 2019 ratio.

**Chart 13. Consumer Spending Share of Disposable Personal Income, Selected States: 2019–2021**



## Updates to Previously Released Estimates

Each fall, with the annual release of GDP by state, state personal income, and PCE by state, BEA also updates previously released statistics. Previously released statistics are generally updated to incorporate the results of the annual updates of the National Income and Product Accounts (NIPAs) and GDP by industry statistics; to incorporate state source data that are more complete and more detailed than those previously available; as well as to incorporate any methodology improvements.

This year, there were no major methodology improvements incorporated in these state statistics as BEA is preparing for a comprehensive update of its economic accounts in the next year, including the comprehensive update of the regional economic accounts. The GDP by state, state personal income, and PCE by state statistics, however, were updated from 2017–2020 to incorporate the 2022 annual update of the NIPAs and GDP by industry statistics and updated state source data. A few of the major data sources that were updated for each of the statistics are summarized in table 7.<sup>13</sup>

Table 7. Summary of Updated Major State-level Data Sources

Component	Industry	Updated State Data Source
GDP by state		
Compensation of employees	All industries	Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Taxes on production and imports less subsidies	All industries	U.S. Census Bureau, Census of Government Finances (state and local taxes)U.S. Department of Transportation, Bureau of Transportation Statistics (federal highway excise taxes)
Gross operating surplus	All industries All industries Farms Mining Utilities Manufacturing Transportation and warehousing Monetary Authorities-central bank, credit intermediation, and related services Government	National Science Foundation, Business Research and Development Survey (R&D expenditures) National Science Foundation, Higher Education Research and Development Survey (R&D expenditures) U.S. Department of Agriculture, Economic Research Service (farm income and expenses) Energy Information Administration (oil, gas production and prices, and coal reports) Energy Information Administration (gas and electricity consumption) U.S. Census Bureau, Annual Survey of Manufacturers U.S. Department of Transportation, Bureau of Transportation Statistics (financial reports)  Federal Deposit Insurance Corporation (branch office deposits) U.S. Census Bureau, Census of Government Finances (government enterprises)
State personal income		
Compensation of employees	Nonfarm industries Farm Military	Bureau of Labor Statistics, Quarterly Census of Employment and Wages U.S. Department of Agriculture, Economic Research Service (farm labor expenses) Department of Defense (personnel and payroll data)Department of Homeland Security (Coast Guard payroll)
Proprietors' income	Nonfarm industries Farm	Internal Revenue Service (net profits of proprietorships and partnerships) U.S. Department of Agriculture, Economic Research Service (farm income and expenses)U.S. Department of Agriculture, Agricultural Resource Management Survey (corporate farm income)
Dividends, interest, and rent		Internal Revenue Service (income tax data)Federal Deposit Insurance Corporation (deposits)National Credit Union Administration (deposits)
Personal current transfer receipts		Social Security Administration (Social Security benefits)Centers for Medicare and Medicaid Services (medical benefits)U.S. Department of Labor (unemployment insurance compensation)U.S. Census Bureau, Annual Survey of State Government Finances (state and local government social benefits)
Contributions for government social insurance	All industries	Bureau of Labor Statistics, Occupational Employment Statistics (employee wage distributions)Private employer contributions for Old Age, Survivors, Disability, and Health Insurance (OASDHI)programs Social Security Administration (earnings and employment data)Centers for Medicare and Medicaid Services (supplemental medical insurance enrollment data)
Residence adjustment		Internal Revenue Service (wage data)
PCE by state		
Durable goods		Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Nondurable goods		Bureau of Labor Statistics, Quarterly Census of Employment and Wages U.S. Department of Agriculture, Economic Research Service (food consumption on farms)
Services		Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Housing and utilities		U.S. Census Bureau, American Community Survey (housing and utility expenditures)
Financial services and insurance		Federal Deposit Insurance Corporation (banking services)National Credit Union Administration (credit union services)National Association of Insurance Commissioners (insurance services)
Transportation services		U.S. Department of Transportation, Bureau of Transportation Statistics (passenger enplanement and passenger revenues)

GDP

Gross domestic product

PCE

Personal consumption expenditures

R&D

Research and development

In general, revisions to later years tend to be larger as new and revised data are incorporated across the national and regional statistics. The NIPA estimate of U.S. real GDP was revised downward for 2017 (–0.01 percent) and upward for 2018 (0.01 percent), 2019 (0.02 percent), and 2020 (0.68 percent) (table 8). For 2017–2019, the revisions to real GDP by state were less than 1 percent for all states. For 2020, the revisions to real GDP by state ranged from an upward revision of 2.25 percent in Tennessee to a downward revision of 1.74 percent in Louisiana.



**Table 8. Percent Revisions to Real Gross Domestic Product (GDP) by State, State Personal Income, and Personal Consumption Expenditures (PCE) by State: 2017–2020**

Region	Real GDP				Personal Income				PCE			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
United States	-0.01	0.01	0.02	0.68	-0.06	-0.13	0.88	1.04	-0.04	-0.06	-0.25	0.49
Alabama	-0.30	-0.21	0.02	1.51	-0.07	-0.16	0.30	1.44	-0.04	-0.04	-0.19	0.35
Alaska	0.28	0.15	0.18	1.08	-0.15	-0.28	-0.52	-1.00	-0.02	-0.01	-0.10	0.55
Arizona	0.38	0.39	0.46	2.07	0.45	0.37	1.87	1.94	-0.02	-0.03	-0.13	0.60
Arkansas	-0.03	-0.05	0.29	2.02	-0.39	-0.64	-1.58	-0.78	-0.04	-0.04	-0.26	0.28
California	-0.14	0.02	-0.37	0.13	-0.02	0.00	0.91	0.98	-0.04	-0.10	-0.22	0.69
Colorado	-0.01	0.06	0.47	2.12	-0.08	-0.03	1.70	2.07	-0.02	-0.03	-0.22	0.51
Connecticut	-0.13	-0.37	0.03	-0.28	-0.22	-0.34	0.81	1.03	-0.06	-0.06	-0.26	0.37
Delaware	-0.73	-0.50	-0.19	0.36	-0.19	-0.23	1.27	0.92	-0.19	-0.37	-0.28	0.62
District of Columbia	-0.12	-0.13	-0.31	0.12	0.02	0.24	1.68	0.36	-0.02	-0.01	-0.40	2.76
Florida	-0.03	-0.19	-0.61	0.65	0.07	0.15	2.22	2.13	-0.02	-0.01	-0.28	0.74
Georgia	-0.20	-0.13	-0.16	0.17	-0.01	0.07	0.79	0.55	-0.04	-0.03	-0.21	0.38
Hawaii	0.01	-0.01	0.05	-0.73	0.12	-0.02	1.51	0.71	0.08	0.14	-0.03	0.95
Idaho	-0.06	-0.31	0.34	2.02	-0.25	-0.32	1.46	2.66	-0.01	-0.01	-0.07	0.49
Illinois	-0.34	-0.31	-0.21	-0.44	-0.06	0.04	0.28	0.29	-0.06	-0.08	-0.21	0.48
Indiana	-0.26	-0.24	-0.13	-0.78	-0.23	-0.33	-0.02	1.02	-0.04	-0.04	-0.15	0.50
Iowa	0.41	0.36	0.47	0.91	-0.09	-0.10	0.44	0.48	-0.03	-0.04	-0.14	0.35
Kansas	0.07	-0.11	-0.22	1.01	-0.22	-0.29	0.11	0.53	-0.04	-0.04	-0.21	0.26
Kentucky	0.03	-0.08	0.84	1.54	-0.05	-0.01	0.56	0.99	-0.04	-0.03	-0.24	0.24
Louisiana	-0.18	0.44	0.46	-1.74	-0.04	-0.01	0.13	0.00	-0.03	-0.01	-0.29	0.22
Maine	-0.34	-0.14	0.20	1.91	-0.09	-0.16	1.48	2.20	-0.03	-0.04	-0.18	0.40
Maryland	-0.13	-0.18	-0.42	-0.19	-0.05	-0.09	0.70	0.23	-0.05	-0.07	-0.27	0.38
Massachusetts	-0.33	-0.28	-0.69	0.29	0.08	0.25	1.40	1.78	-0.04	-0.11	-0.36	0.58
Michigan	-0.03	-0.27	-0.04	0.62	0.15	0.30	0.66	1.26	-0.05	-0.04	-0.29	0.15
Minnesota	-0.37	-0.48	0.13	0.57	-0.10	-0.05	1.03	1.26	-0.04	-0.07	-0.31	0.35
Mississippi	-0.39	-0.26	-0.53	0.86	-0.01	-0.07	0.67	1.06	-0.04	-0.03	-0.05	0.34
Missouri	-0.33	-0.51	-0.08	0.04	-0.30	-0.31	0.16	0.84	-0.05	-0.05	-0.23	0.38
Montana	0.14	-0.06	0.21	1.28	-0.14	-0.41	0.88	1.92	-0.02	-0.02	-0.11	0.66
Nebraska	-0.29	-0.10	0.27	0.41	-0.12	-0.21	1.43	0.97	-0.04	-0.04	-0.15	0.43
Nevada	-0.15	-0.17	0.08	0.88	-0.12	-0.12	1.58	2.34	0.02	-0.03	-0.16	0.79
New Hampshire	-0.18	-0.13	-0.40	0.51	-0.10	-0.16	2.33	3.02	-0.03	-0.05	-0.20	0.58
New Jersey	0.10	0.00	-0.39	-0.09	0.11	0.24	2.36	1.69	-0.05	-0.06	-0.26	0.36
New Mexico	-0.08	-0.07	0.03	-0.22	0.05	0.18	1.45	1.45	-0.02	0.00	-0.26	0.15
New York	-0.03	0.03	0.41	0.87	-0.21	-0.38	0.06	0.18	-0.09	-0.12	-0.46	0.45
North Carolina	-0.30	-0.49	-0.35	1.43	0.14	0.17	0.99	1.77	-0.04	-0.06	-0.23	0.41
North Dakota	0.19	0.05	0.25	-1.70	0.13	-0.21	-0.17	0.68	-0.01	0.00	-0.14	0.56
Ohio	0.49	-0.17	0.34	0.72	-0.14	-0.23	0.45	0.65	-0.05	-0.06	-0.28	0.33
Oklahoma	-0.12	0.05	0.22	0.83	-0.05	-0.13	0.25	0.81	-0.02	-0.01	-0.09	0.39
Oregon	-0.11	-0.14	0.06	1.36	-0.02	0.06	0.48	1.23	-0.04	-0.05	-0.25	0.42
Pennsylvania	0.09	0.01	-0.16	-0.41	-0.15	-0.28	0.37	-0.06	-0.05	-0.06	-0.33	0.34
Rhode Island	0.16	0.11	0.35	0.20	0.02	0.21	2.00	2.19	-0.05	-0.07	-0.34	0.33
South Carolina	0.01	-0.32	0.36	-0.12	-0.14	-0.39	1.10	0.55	-0.02	-0.02	-0.15	0.42
South Dakota	-0.22	-0.33	0.02	1.54	-0.49	-0.81	0.51	1.32	-0.22	-0.29	-0.28	0.37
Tennessee	0.17	0.28	0.63	2.25	-0.20	-0.29	1.15	3.05	-0.04	-0.05	-0.25	0.43
Texas	-0.29	-0.06	-0.31	0.76	0.01	-0.03	1.07	0.36	-0.02	-0.06	-0.19	0.37
Utah	0.25	0.79	0.53	2.09	-0.37	-0.73	-0.18	1.02	-0.09	-0.15	-0.21	0.85
Vermont	-0.03	-0.05	0.13	1.45	0.12	0.42	2.94	3.26	-0.02	-0.02	-0.12	0.48
Virginia	0.14	0.02	0.40	1.07	-0.18	-0.21	1.05	0.86	-0.05	-0.06	-0.21	0.66
Washington	-0.17	-0.12	-0.53	1.12	0.04	0.07	2.18	2.16	-0.03	-0.07	-0.31	0.67
West Virginia	-0.05	0.08	0.12	1.05	-0.07	-0.05	1.35	0.83	-0.03	-0.01	-0.17	0.20
Wisconsin	-0.13	-0.12	-0.07	0.48	0.04	0.18	0.91	1.66	-0.05	-0.06	-0.26	0.44
Wyoming	0.25	0.24	-0.47	0.03	0.10	0.20	4.13	5.43	-0.01	0.01	-0.13	0.41

In addition to Tennessee, Colorado (2.12 percent), Utah (2.09 percent), Arizona (2.07 percent), Arkansas (2.02 percent), and Idaho (2.02 percent) had the largest upward revisions in real GDP for 2020. Sizable upward revisions to gross operating surplus and taxes on production and imports less subsidies were the leading contributors to the upward revision in GDP for these states (table 9). After Louisiana, North Dakota (–1.70 percent), Indiana (–0.78 percent) and Hawaii (–0.73 percent) had the largest downward revisions to real GDP for 2020. For these states, sizable downward revisions to gross operating surplus were the leading contributors to the downward revision in GDP.

**Table 9. Contributions to Revision in Current-dollar Gross Domestic Product (GDP) by State, by Component: 2020**

Region	Percent revision in current-dollar GDP by state	Contributions to revision (percentage points)		
		Compensation of employees	Taxes on production and imports less subsidies	Gross operating surplus
United States	0.80	0.10	0.46	0.24
Alabama	1.76	0.07	0.74	0.95
Alaska	1.32	-0.92	-0.32	2.55
Arizona	2.24	0.04	0.20	1.99
Arkansas	2.46	0.40	0.65	1.41
California	0.43	0.24	0.52	-0.33
Colorado	2.27	0.02	0.73	1.52
Connecticut	-0.07	-0.17	0.18	-0.08
Delaware	0.04	0.22	0.72	-0.89
District of Columbia	0.11	-0.04	-0.24	0.39
Florida	0.97	0.15	0.73	0.09
Georgia	0.45	-0.14	0.50	0.09
Hawaii	-0.42	0.54	0.03	-0.99
Idaho	2.51	0.19	1.08	1.25
Illinois	-0.17	0.06	0.19	-0.42
Indiana	-0.41	-0.07	0.59	-0.93
Iowa	1.40	-0.16	0.83	0.73
Kansas	1.39	0.00	0.27	1.12
Kentucky	2.04	0.06	0.77	1.20
Louisiana	-1.24	-0.15	0.46	-1.55
Maine	2.12	0.10	1.54	0.48
Maryland	0.06	-0.21	0.16	0.12
Massachusetts	0.46	0.13	0.19	0.14
Michigan	0.97	-0.04	0.27	0.73
Minnesota	0.82	0.19	0.53	0.10
Mississippi	1.12	-0.11	0.51	0.72
Missouri	0.27	-0.03	0.45	-0.14
Montana	1.64	0.16	0.68	0.81
Nebraska	0.86	-0.03	0.48	0.40
Nevada	0.95	0.38	0.12	0.44
New Hampshire	0.82	0.02	-0.23	1.03
New Jersey	0.24	0.20	0.24	-0.20
New Mexico	0.32	0.03	0.64	-0.35
New York	0.93	0.25	0.04	0.64
North Carolina	1.54	0.21	0.62	0.71
North Dakota	-0.79	0.03	-0.06	-0.76
Ohio	1.01	0.10	0.58	0.33
Oklahoma	1.07	-0.31	0.68	0.71
Oregon	1.72	0.55	0.78	0.39
Pennsylvania	-0.04	-0.10	0.33	-0.27
Rhode Island	0.36	-0.32	0.19	0.48
South Carolina	0.20	0.12	0.53	-0.45
South Dakota	1.63	0.04	0.44	1.15
Tennessee	2.55	0.09	1.33	1.13
Texas	0.81	0.05	0.58	0.17
Utah	2.31	0.22	0.95	1.15
Vermont	1.74	0.31	0.54	0.89
Virginia	1.36	-0.01	0.51	0.86
Washington	1.44	0.23	0.61	0.60
West Virginia	0.91	0.43	0.19	0.30
Wisconsin	0.85	0.00	0.48	0.37
Wyoming	0.02	-0.21	0.33	-0.10

The NIPA estimate of U.S. personal income was revised downward for 2017 (–0.06 percent) and 2018 (–0.13 percent) and upward for 2019 (0.88 percent) and 2020 (1.04 percent) (table 8). For 2017–2018, state personal income was revised less than 1 percent for all states. Revisions for 2019 and 2020 were larger and reflect, in part, the introduction of new 2019 and 2020 data from the Internal Revenue Service, Statistics of Income. These data affect primarily proprietor's income and property income (dividends, interest, and rent) components of personal income.

For 2019, revisions to state personal income ranged from an upward revision of 4.13 percent in Wyoming to a downward revision of 1.58 percent in Arkansas. For 2020, the revision to state personal income ranged from an upward revision of 5.43 percent in Wyoming to a downward revision of 1.0 percent in Alaska. For most states, dividends, interest, and rent was the component that contributed the most to the revision in state personal income for 2020 (table 10). The upward revision in Wyoming was driven by upward revisions to dividends, interest, and rent and proprietors' income. The downward revision in Alaska was driven by the downward revision in compensation of employees, specifically supplements to wages and salaries, as a result of newly updated source data for health insurance.

**Table 10. Contributions to Revision in State Personal Income, by Component: 2020**

Region	Percent revision in personal income <sup>1</sup>	Contributions to revision (percentage points)					
		Compensation of employees	Proprietors' income	Dividends, interest, and rent	Personal current transfer receipts	Contributions for government social insurance	Adjustment for residence
United States	1.04	0.12	-0.06	0.98	-0.05	-0.05	0.00
Alabama	1.44	0.09	0.60	0.69	0.00	-0.02	0.03
Alaska	-1.00	-0.86	0.23	-0.23	-0.09	0.05	0.00
Arizona	1.94	0.06	0.09	1.24	0.49	-0.04	0.03
Arkansas	-0.78	0.38	0.59	-1.72	-0.03	-0.02	-0.01
California	0.98	0.28	-0.13	0.82	-0.04	-0.06	0.00
Colorado	2.07	0.05	0.08	1.90	-0.04	-0.08	0.00
Connecticut	1.03	-0.16	0.28	0.54	-0.10	-0.02	0.45
Delaware	0.92	0.32	-0.19	1.31	-0.17	-0.01	-0.37
District of Columbia	0.36	-0.02	-0.61	1.60	-0.23	0.11	-0.27
Florida	2.13	0.15	-0.36	2.28	-0.01	-0.08	0.00
Georgia	0.55	-0.12	-0.60	1.19	0.03	-0.04	0.01
Hawaii	0.71	0.57	-0.98	1.10	-0.04	-0.06	0.00
Idaho	2.66	0.19	0.70	1.63	-0.06	-0.05	0.15
Illinois	0.29	0.08	-0.28	0.47	-0.07	-0.09	0.02
Indiana	1.02	-0.07	0.78	0.37	-0.07	-0.05	-0.04
Iowa	0.48	-0.18	-0.01	0.67	-0.03	-0.05	-0.01
Kansas	0.53	0.04	0.28	0.31	-0.20	-0.08	0.03
Kentucky	0.99	0.10	0.26	0.73	-0.03	-0.03	-0.10
Louisiana	0.00	-0.13	-0.36	0.46	-0.07	-0.10	0.00
Maine	2.20	0.10	0.51	1.67	-0.11	-0.03	0.00
Maryland	0.23	-0.18	-0.69	0.85	-0.09	-0.03	0.32
Massachusetts	1.78	0.14	0.49	1.34	-0.08	-0.07	-0.20
Michigan	1.26	-0.03	0.59	0.69	-0.07	-0.05	0.03
Minnesota	1.26	0.21	-0.26	1.32	-0.02	-0.06	-0.04
Mississippi	1.06	-0.07	0.22	0.83	-0.06	-0.01	0.12
Missouri	0.84	-0.05	0.39	0.55	-0.05	-0.06	-0.05
Montana	1.92	0.16	0.50	1.44	-0.13	0.05	0.00
Nebraska	0.97	-0.01	-0.79	1.74	-0.03	-0.06	0.01
Nevada	2.34	0.41	-0.02	1.95	-0.05	-0.12	-0.05
New Hampshire	3.02	0.02	1.20	1.56	-0.13	-0.03	0.33
New Jersey	1.69	0.20	-0.48	1.55	-0.04	-0.05	0.41
New Mexico	1.45	0.06	-0.18	1.49	0.02	-0.07	-0.01
New York	0.18	0.30	0.15	0.26	-0.23	-0.01	-0.31
North Carolina	1.77	0.28	0.55	0.96	-0.02	0.00	0.00
North Dakota	0.68	0.08	0.05	0.57	-0.18	-0.09	0.08
Ohio	0.65	0.11	-0.13	0.58	0.01	-0.06	0.01
Oklahoma	0.81	-0.27	0.35	0.67	-0.04	-0.06	0.02
Oregon	1.23	0.57	0.17	0.55	0.01	-0.02	-0.09
Pennsylvania	-0.06	-0.10	-0.16	0.32	-0.29	-0.05	0.12
Rhode Island	2.19	-0.27	0.09	1.49	-0.23	-0.08	1.04
South Carolina	0.55	0.15	-0.44	0.83	-0.04	-0.04	0.01
South Dakota	1.32	0.07	0.00	1.12	0.10	-0.06	-0.02
Tennessee	3.05	0.10	1.80	1.14	0.05	-0.01	-0.04
Texas	0.36	0.08	-0.89	1.12	0.01	-0.06	0.00
Utah	1.02	0.27	0.63	0.16	-0.10	-0.06	0.00
Vermont	3.26	0.27	0.33	2.63	-0.12	-0.03	0.13
Virginia	0.86	0.10	-0.29	1.22	-0.01	-0.07	-0.23
Washington	2.16	0.30	-0.13	2.12	-0.06	0.07	0.01
West Virginia	0.83	0.42	-0.67	1.05	-0.17	-0.12	0.09
Wisconsin	1.66	0.01	0.50	1.10	-0.03	-0.05	0.03
Wyoming	5.43	-0.19	0.89	4.71	0.01	0.03	0.03

1. Personal income is the sum of compensation of employees, proprietors' income, dividends, interest, and rent, and personal current transfer receipts less contributions for government social insurance plus the adjustment for residence.

The NIPA estimate of current-dollar national PCE was revised downward for 2017 (–0.04 percent), 2018 (–0.06 percent), and 2019 (–0.25 percent), and upward for 2020 (0.49 percent) (table 8). For 2017–2019, the revisions to PCE by state were less than 1 percent for all states. For 2020, PCE was revised upward for all states and the revisions to PCE by state ranged from 2.76 percent in the District of Columbia to 0.15 percent in Michigan and New Mexico. In addition to the District of Columbia, Hawaii (0.95 percent), Utah (0.85 percent), and Nevada (0.79 percent) had the largest upward revisions to PCE.

The upward revision to other services category was the leading contributor to the upward revision to PCE in the District of Columbia (table 11). For Hawaii, upward revisions to durable goods, food services and accommodations, and other services categories were the leading contributors to the upward revision in PCE. Upward revisions to durable goods, recreation services, and food services and accommodations were the leading contributors to the upward revision to PCE in Nevada, while upward revisions to durable goods and other services categories were the leading contributors to the upward revision to PCE in Utah.

Table 11. Contributions to Revision in Personal Consumption Expenditures (PCE) by State, by Component: 2020

Region	Percent revision in PCE by state	Contributions to revision (percentage points)									
		Goods		Services							
		Durable goods	Nondurable goods	Housing and utilities	Health care	Transportation services	Recreation services	Food services and accommodations	Financial services and insurance	Other services	Final consumption expenditures of NPISHs
United States	0.49	0.22	-0.10	-0.01	0.22	0.03	0.16	0.09	-0.18	0.19	-0.13
Alabama	0.35	0.15	-0.08	-0.01	0.23	0.02	0.11	0.09	-0.16	0.14	-0.14
Alaska	0.55	0.24	-0.12	-0.01	0.26	0.05	0.10	0.09	-0.10	0.12	-0.09
Arizona	0.60	0.18	-0.08	-0.02	0.21	0.03	0.19	0.11	-0.08	0.18	-0.12
Arkansas	0.28	0.17	-0.09	-0.01	0.25	0.02	0.09	0.08	-0.20	0.11	-0.14
California	0.69	0.30	-0.10	-0.01	0.18	0.04	0.20	0.10	-0.06	0.18	-0.14
Colorado	0.51	0.24	-0.09	-0.01	0.18	0.02	0.14	0.09	-0.16	0.23	-0.12
Connecticut	0.37	0.21	-0.11	0.00	0.22	0.03	0.12	0.07	-0.18	0.17	-0.16
Delaware	0.62	0.28	-0.11	-0.01	0.32	0.01	0.08	0.08	-0.13	0.21	-0.12
District of Columbia	2.76	0.22	0.02	-0.01	0.20	-0.06	0.17	0.14	-0.33	2.53	-0.12
Florida	0.74	0.25	-0.11	-0.01	0.20	0.04	0.33	0.10	-0.19	0.23	-0.11
Georgia	0.38	0.20	-0.11	-0.01	0.22	0.02	0.11	0.09	-0.19	0.18	-0.14
Hawaii	0.95	0.34	-0.15	-0.01	0.18	0.08	0.12	0.23	0.06	0.23	-0.12
Idaho	0.49	0.20	-0.13	-0.01	0.26	0.02	0.14	0.09	-0.11	0.18	-0.15
Illinois	0.48	0.20	-0.09	-0.01	0.22	0.03	0.11	0.07	-0.16	0.23	-0.13
Indiana	0.50	0.18	-0.10	-0.01	0.28	0.03	0.13	0.08	-0.15	0.17	-0.12
Iowa	0.35	0.12	-0.10	-0.01	0.25	0.02	0.12	0.07	-0.20	0.18	-0.10
Kansas	0.26	0.14	-0.13	-0.01	0.25	0.02	0.07	0.07	-0.21	0.18	-0.13
Kentucky	0.24	0.15	-0.10	-0.01	0.25	0.02	0.10	0.08	-0.26	0.11	-0.11
Louisiana	0.22	0.15	-0.12	-0.01	0.25	0.03	0.13	0.09	-0.32	0.12	-0.10
Maine	0.40	0.18	-0.18	0.00	0.22	0.02	0.20	0.09	-0.17	0.13	-0.09
Maryland	0.38	0.18	-0.14	-0.01	0.22	0.03	0.15	0.08	-0.20	0.22	-0.16
Massachusetts	0.58	0.31	-0.11	-0.01	0.22	0.04	0.14	0.07	-0.19	0.21	-0.12
Michigan	0.15	0.18	-0.12	-0.01	0.23	0.02	0.11	0.06	-0.33	0.12	-0.11
Minnesota	0.35	0.17	-0.09	-0.01	0.22	0.02	0.16	0.06	-0.25	0.21	-0.14
Mississippi	0.34	0.13	-0.13	-0.01	0.28	0.05	0.06	0.09	-0.09	0.09	-0.13
Missouri	0.38	0.13	-0.08	-0.01	0.25	0.03	0.17	0.08	-0.22	0.15	-0.11
Montana	0.66	0.23	-0.12	-0.01	0.27	0.02	0.16	0.10	-0.14	0.26	-0.11
Nebraska	0.43	0.19	-0.10	-0.01	0.26	0.01	0.12	0.07	-0.12	0.13	-0.12
Nevada	0.79	0.29	-0.12	-0.01	0.19	0.01	0.22	0.21	-0.05	0.18	-0.12
New Hampshire	0.58	0.31	-0.17	0.00	0.24	0.03	0.13	0.07	-0.12	0.21	-0.11
New Jersey	0.36	0.19	-0.10	-0.01	0.21	0.03	0.11	0.06	-0.20	0.20	-0.13
New Mexico	0.15	0.14	-0.12	-0.01	0.26	0.02	0.09	0.10	-0.32	0.11	-0.12
New York	0.45	0.16	-0.07	0.00	0.22	0.05	0.21	0.07	-0.32	0.28	-0.15
North Carolina	0.41	0.22	-0.12	-0.01	0.24	0.01	0.15	0.09	-0.19	0.16	-0.14
North Dakota	0.56	0.21	-0.08	-0.01	0.29	0.02	0.11	0.09	-0.15	0.17	-0.09
Ohio	0.33	0.18	-0.11	-0.01	0.27	0.02	0.15	0.07	-0.27	0.14	-0.12
Oklahoma	0.39	0.12	-0.09	-0.01	0.25	0.02	0.16	0.10	-0.14	0.13	-0.16
Oregon	0.42	0.25	-0.12	-0.02	0.23	0.02	0.20	0.08	-0.25	0.17	-0.13
Pennsylvania	0.34	0.20	-0.10	-0.01	0.23	0.03	0.12	0.06	-0.28	0.20	-0.12
Rhode Island	0.33	0.18	-0.13	-0.01	0.23	0.04	0.15	0.09	-0.31	0.19	-0.10
South Carolina	0.42	0.16	-0.11	-0.01	0.22	0.02	0.17	0.10	-0.13	0.13	-0.12
South Dakota	0.37	0.11	-0.08	-0.01	0.34	0.02	0.14	0.08	-0.21	0.11	-0.14
Tennessee	0.43	0.16	-0.06	-0.01	0.22	0.05	0.14	0.10	-0.21	0.17	-0.13
Texas	0.37	0.18	-0.10	-0.01	0.20	0.03	0.14	0.09	-0.16	0.11	-0.11
Utah	0.85	0.35	-0.09	-0.01	0.20	0.01	0.19	0.09	-0.03	0.27	-0.13
Vermont	0.48	0.20	-0.17	0.00	0.25	0.03	0.15	0.08	-0.13	0.16	-0.09
Virginia	0.66	0.22	-0.10	-0.01	0.21	0.03	0.19	0.08	-0.14	0.31	-0.13
Washington	0.67	0.45	-0.10	-0.02	0.21	0.03	0.14	0.07	-0.18	0.17	-0.11
West Virginia	0.20	0.13	-0.11	-0.02	0.33	0.03	0.08	0.08	-0.24	0.00	-0.09
Wisconsin	0.44	0.23	-0.09	-0.01	0.25	0.02	0.14	0.07	-0.24	0.18	-0.11
Wyoming	0.41	0.10	-0.10	-0.01	0.26	0.02	0.10	0.13	-0.09	0.14	-0.15

NPISHs Nonprofit institutions serving households

Note. Category contributions were calculated from unrounded data and may not sum due to rounding.

## Conclusion

This report covered annual estimates for 2021 from the GDP by state, state personal income, and PCE by state releases to tell a story of ongoing regional economic recovery from the COVID-19 pandemic. The data show that while nationally the economy has generally recovered, the path to economic recovery has varied widely across states. Each state's path has been shaped differently depending on many factors including its industry composition and how households in each state respond to changes in economic conditions. The upcoming release of price-adjusted state personal income and PCE by state statistics in December 2022 will provide additional information on how households fared in 2021 and whether real personal income and real consumer spending in 2021 reached pre-pandemic levels.

The report also provided an overview of the updates to previously released statistics. The GDP by state, state personal income, and PCE by state statistics were revised from 2017–2020 to incorporate the 2022 annual update of the NIPAs and GDP by industry statistics and updated available state source data. The revisions were generally small in the earlier years and a bit larger in the later years as new and revised data were incorporated across the national and regional statistics.

### Concepts, Definitions, and Corresponding Measures in the NIPAs

Gross domestic product (GDP) by state, state personal income, and personal consumption expenditures (PCE) by state are the state counterparts of the corresponding measures of GDP, personal income, and PCE in the national income and product accounts (NIPAs). The national totals in the state measures, however, differ slightly from the corresponding national measures in the NIPAs primarily because of differences in coverage that stem from different concepts of residence. Differences in source data, methods, and timing of the availability of source data may also contribute to this difference.

#### GDP by state

GDP by state is the market value of goods and services produced by the labor and property located in each state and the District of Columbia. It is calculated as the sum of incomes earned by labor and capital and the costs incurred in the production of goods and services.

The featured GDP measure in the NIPAs is calculated as the sum of goods and services purchased by final users (i.e., personal consumption expenditures plus gross private domestic investment plus government consumption expenditures and gross investment plus net exports). In principle, income earned should equal spending, but because of different data sources, they result in a difference referred to as the “statistical discrepancy.” The GDP by state estimates, measured by the sum of incomes earned, are scaled to the GDP measure in the NIPAs to account for the statistical discrepancy.

In addition, U.S. GDP by state differs slightly from the GDP in the NIPAs and thus from GDP by industry in the annual industry accounts, because the U.S. GDP by state excludes federal military and civilian activity located overseas, which cannot be attributed to a particular state.<sup>14</sup>

#### State personal income

State personal income is the income received by, or on behalf of, all persons that reside in each state and the District of Columbia from all sources: participation in production, ownership of a home or business, ownership of financial assets, and transfers from businesses and government.

State personal income differs slightly from the NIPA measure of personal income. For NIPA personal income, a U.S. resident has a center of economic interest in the country and resides, or expects to reside, in the country for a year or more. For state personal income, a resident is a participant in a U.S. regional economy, regardless of the individual's national citizenship or duration of residence.<sup>15</sup>



The NIPA measure of personal income is broader. It includes: the earnings of federal civilian and military personnel stationed abroad, and the property income received by the federal retirement plans of these workers; all income earned by U.S. citizens living abroad for less than a year; the income of foreign nationals working at international organizations in the United States; and the income of foreign nationals only if they live and work in the United States for a year or more. State personal income excludes the income of U.S. citizens living abroad but includes the income of resident foreign nationals working in the United States regardless of length of stay or residency.<sup>16</sup>

Both NIPA and state personal income include the income of U.S. residents employed by international organizations or by other countries while living in the United States, and both exclude the income of foreign nationals employed by their home governments and the income of private U.S. citizens living outside the country for a year or more.

### Relation of Personal Income in the NIPAs and the State Personal Income Accounts

[Billions of dollars]

Component	2019	2020	2021
<b>Personal income, NIPAs</b>	<b>18,587.0</b>	<b>19,832.3</b>	<b>21,294.8</b>
<b>Plus adjustments for:</b>			
<b>Coverage differences</b>	<b>-19.4</b>	<b>-23.8</b>	<b>-20.1</b>
Federal workers abroad	-34.6	-35.4	-34.7
Wage and salary disbursements	-23.4	-23.9	-23.4
Supplements to wages and salaries <sup>1</sup>	-7.8	-8.3	-8.7
Dividends, interest, and rent <sup>2</sup>	-5.8	-5.6	-5.0
Less: Personal contributions for social insurance	-2.4	-2.4	-2.4
Rest-of-the-world difference	15.2	11.6	14.6
Wages of private foreign nationals in U.S.	16.7	12.9	16.0
Wages of private U.S. residents abroad	-1.5	-1.3	-1.4
<b>Use of more current source data</b>	<b>9.0</b>	<b>4.8</b>	<b>15.1</b>
Wage and salary disbursements	0.0	0.0	0.0
Farm proprietors' income	9.0	4.8	15.1
Personal current transfer receipts	<0.1	<0.1	<0.1
Statistical discrepancy <sup>3</sup>	-1.1	-1.1	-1.1
<b>Equals: State personal income<sup>4</sup></b>	<b>18,575.5</b>	<b>19,812.2</b>	<b>21,288.7</b>

1. Employer contributions for government social insurance and for employee pension and insurance funds for federal workers stationed abroad.
2. Investment income received by federal retirement plans that is attributed to federal workers stationed abroad.
3. Includes revisions made in the NIPAs that are not yet reflected in state personal income concerning wages of border workers and foreign nationals working for international organizations.
4. State personal income was released September 30, 2022.

### PCE by state

PCE by state is the value of the goods and services purchased by, and on behalf of, resident households in each state and the District of Columbia. In addition to out-of-pocket spending, PCE by state includes imputations for the consumption of goods and services without market transactions as well as the net expenditures of nonprofit institutions serving households (NPISHs). The two main imputations in PCE by state are for housing services for owner-occupied housing and financial services with no explicit charge. The net expenditures of NPISHs represent the value of the services that is unaccounted for by households' out-of-pocket purchases, since the services by NPISHs are typically provided to households for less than the cost of the service.<sup>17</sup>

There are minor differences in coverage between the regional and national PCE statistics.<sup>18</sup> PCE by state excludes the net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad less personal remittances in kind to nonresidents. These expenditures are included in national PCE, but they cannot be attributed to a particular state. PCE by state, however, does include the travel expenditures abroad by U.S. residents.

### Residency adjustments

Residency definitions are important to the regional economic accounts to align measures of income and consumption for meaningful comparisons within a given geography. PCE by state statistics use the residency concept of regional income statistics so state expenditures correspond to the same population used to measure state personal income.

Residency adjustments are made to both state personal income and PCE statistics; however, these adjustments serve different purposes. For state personal income statistics, a residence adjustment is made to reallocate income earned in places of work other than the recipients' place of residence. For the PCE by state statistics, a residency adjustment is made to reallocate expenditures made in states other than the households' state of residence.

## Personal Consumption Expenditures, Disposable Personal Income, and Personal Saving

Personal saving is the amount of current-period disposable personal income that is available for investment or for future consumption. In the national income and product accounts (NIPAs), personal saving is calculated by subtracting personal outlays from disposable personal income. The table illustrates the calculation of personal outlays at the national level.

Personal outlays include personal consumption expenditures, which are typically the largest outlays, personal interest payments and personal current transfer payments. Personal interest payments (line 4) consist of nonmortgage interest payments, such as interest on credit card debt. Personal current transfer payments (line 5) consist of transfer payments to government and the net personal transfer payments to the rest of the world. Current transfer payments from persons to government (line 6) includes fines, fees, certain tax penalties, unclaimed bank deposits, donations, excise taxes on IRAs, and excise taxes paid by nonprofit institutions serving households.<sup>19</sup> Net personal transfer payments to the rest of the world (line 7) is the sum of remittances paid to nonresident households and remittances received from nonresident households. To calculate personal outlays at the state level, an additional entry (line 8) would be needed to account for interstate personal transfers, which do not need to be accounted for at the national level.

Thus, while PCE by state statistics comprise a major piece in the calculation of personal saving for states, the latter requires development of additional state-level data on other personal outlays, which are likely to vary across geographies.

	Component	Billions of dollars, 2021	Percent of personal outlays
1	Disposable personal income	18,633.1	
2	Less: Personal outlays	16,389.8	
3	Personal consumption expenditures	15,902.6	97.0
4	Personal interest payments	274.4	1.7
5	Personal current transfer payments	212.8	1.3
6	To government	110.3	0.7
7	To the rest of the world (net)	102.4	0.6
8	To other states (net) <sup>1</sup>		
9	Equals: Personal saving	2,243.4	
10	Personal saving as a percentage of disposable personal income	12.0	

Source. NIPA table 2.1.

1. This entry is not part of the national income and product accounts (NIPAs) table 2.1, but it would be needed to calculate personal saving at the state level to account for interstate personal transfers.

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1. To provide a fuller picture of state economies, BEA will now release state GDP and personal income together each quarter.
2. The full economic effects of the pandemic cannot be separately quantified in these estimates, because the impacts are generally embedded in the source data.
3. For more information on the effects of pandemic response programs on state personal income, see [covid-workbook-ann.pdf \(bea.gov\)](#) and the [Regional Quarterly Report](#) in the November 2021 issue of the *Survey of Current Business*.
4. BEA released preliminary state personal income and GDP by state statistics for 2021 on March 23, 2022, and March 31, 2022, respectively. These statistics were based on quarterly data for an early read on the state economies in 2021.
5. <https://www.nber.org/news/business-cycle-dating-committee-announcement-july-19-2021>
6. Large declines in expenditures corroborate the declines in these industries; see Dunn, Hood, and Driessen (2020).
7. Dunn (2021) chronicles supply chain disruptions from the start of the pandemic and how they affected manufacturing and other industries.
8. See, for example, Brynjolfsson et al. (2020); Bacher-Hicks, Goodman, Mulhern (2020); and Bokolo (2020), for near real-time studies on COVID-induced remote work, online learning, and telemedicine and virtual care.
9. In 2021, all states exceeded their pre-pandemic current-dollar GDP levels, except for Hawaii, where current-dollar GDP was less than 1 percent below the 2019 level. Current-dollar GDP by state statistics are available at: <https://apps.bea.gov/itable/?ReqID=70&step=1>.
10. See, for example, Shapiro (2022).
11. See, for example, Rhyen, Turner, and Miller (2020), for more information on how the COVID-19 pandemic impacted the U.S. health sector.
12. Personal saving is the amount of current-period disposable personal income that is available for investment or for future consumption. It is calculated by subtracting personal outlays from disposable personal income. BEA does not calculate personal saving at the state level. While PCE by state statistics comprise a major piece in the calculation of personal saving at the state level, the latter requires development of additional regional data on other personal outlays (see the "Personal Consumption Expenditures, Disposable Personal Income, and Personal Saving" box in this article).
13. For a complete list of data sources used to generate the GDP by state and state personal income statistics, see [Gross Domestic Product by State Estimation Methodology](#) and [State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods](#) on the BEA website. For PCE by state, data sources and methods are documented in a working paper (BEA WP2013-6) and a series of *Survey of Current Business* articles (see [August 2013](#), [November 2016](#), [December 2018](#), and [January 2020](#) issues).
14. See [Gross Domestic Product by State Estimation Methodology](#) on the BEA website.
15. See [State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods](#) on the BEA website.
16. For a description of military coverage in state personal income, see "New Treatment of State Estimates of Military Compensation," *Survey* 85 (October 2005): 116.
17. For more information, see "Chapter 5. Personal Consumption Expenditures" in [Concepts and Methods of the U.S. National Income and Product Accounts](#) on the BEA website.
18. For a more detailed discussion on residency in the national and regional economic accounts, see Christian Awuku-Budu, Ledia Guci, Christopher A. Lucas, and Charles Ian Mead, "Prototype Personal Consumption Expenditures by State," *Survey* 94 (September 2014).
19. Bureau of Economic Analysis (BEA), [Government Transactions](#) (methodology paper 5, Washington, DC: BEA September 2005).