

New and Updated Estimates of the Regional Economic Accounts

Results of the 2023 Comprehensive Update

By Ledia Guci and Nicholas Wetzler | December 14, 2023

On September 29, 2023, the U.S. Bureau of Economic Analysis (BEA) released the first set of results of the comprehensive update of the Regional Economic Accounts (REAs) with the release of quarterly and annual state personal income and annual gross domestic product (GDP) by state statistics. These results were published, for the first time, concurrently with the initial results of the comprehensive update of the National Economic Accounts (NEAs), which include the National Income and Product Accounts (NIPAs) and the Industry Economic Accounts. This release marked a culmination of a multiyear, agency-wide effort to harmonize the statistics and synchronize the release of these accounts. The release of updated data on annual personal consumption expenditures (PCE) by state followed on October 4, 2023.

BEA regularly updates its statistics through flexible annual updates and quinquennial comprehensive updates to ensure its economic accounts reflect the best available data and continue to accurately measure a dynamic U.S. economy. An important feature of the comprehensive updates is the benchmarking of BEA's statistics to the U.S. Census Bureau's quinquennial Economic Census. Comprehensive updates also provide an opportunity to introduce newly available and more detailed source data as well as to introduce comprehensive improvements to BEA's accounts. These include new and improved methodologies, updated definitions and classifications, and presentational changes to published tables.

With the 2023 comprehensive update, the REAs incorporated the results of the 2023 comprehensive update of the NEAs, which consisted of several methodology and classification changes. These include improved classification and measures of real estate investment trusts (REITs), improved measures of regulated investment companies (RICs), housing services, and own-account software investment, to mention a few.¹ The classification of industry measures was also updated to follow the 2017 North American Industry Classification System. In addition, the REAs incorporated more complete and detailed regional source data than those previously available as well as improvements to the estimation methods used to prepare the regional statistics.

The annual personal income by state statistics were revised from 1979 to 2022. Quarterly personal income by state statistics were revised from the first quarter of 1979 through the first quarter of 2023. Annual PCE by state statistics were revised from 1997 to 2021. The annual current-dollar measures of GDP by state and related components were revised from 2017 to 2022. In addition, the reference year for chained-dollar GDP by state measures was changed from 2012 to 2017. Additional results of the comprehensive update, including updated annual GDP by state statistics for the prior years, will be released later.

This article focuses on the annual state estimates for 2022 as well as summarizes some of the impacts of the comprehensive update on the REA estimates. Additional information on the comprehensive update, background materials, and results is available at ["Information on 2023 Comprehensive Updates to the National, Industry, and State Economic Accounts."](#)

New Statistics for 2022

This section takes a closer look at the latest data on GDP by state, state personal income, and PCE by state.² These statistics 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 more complete and more nuanced picture of the variation in economic trends and outcomes across states.

GDP by state

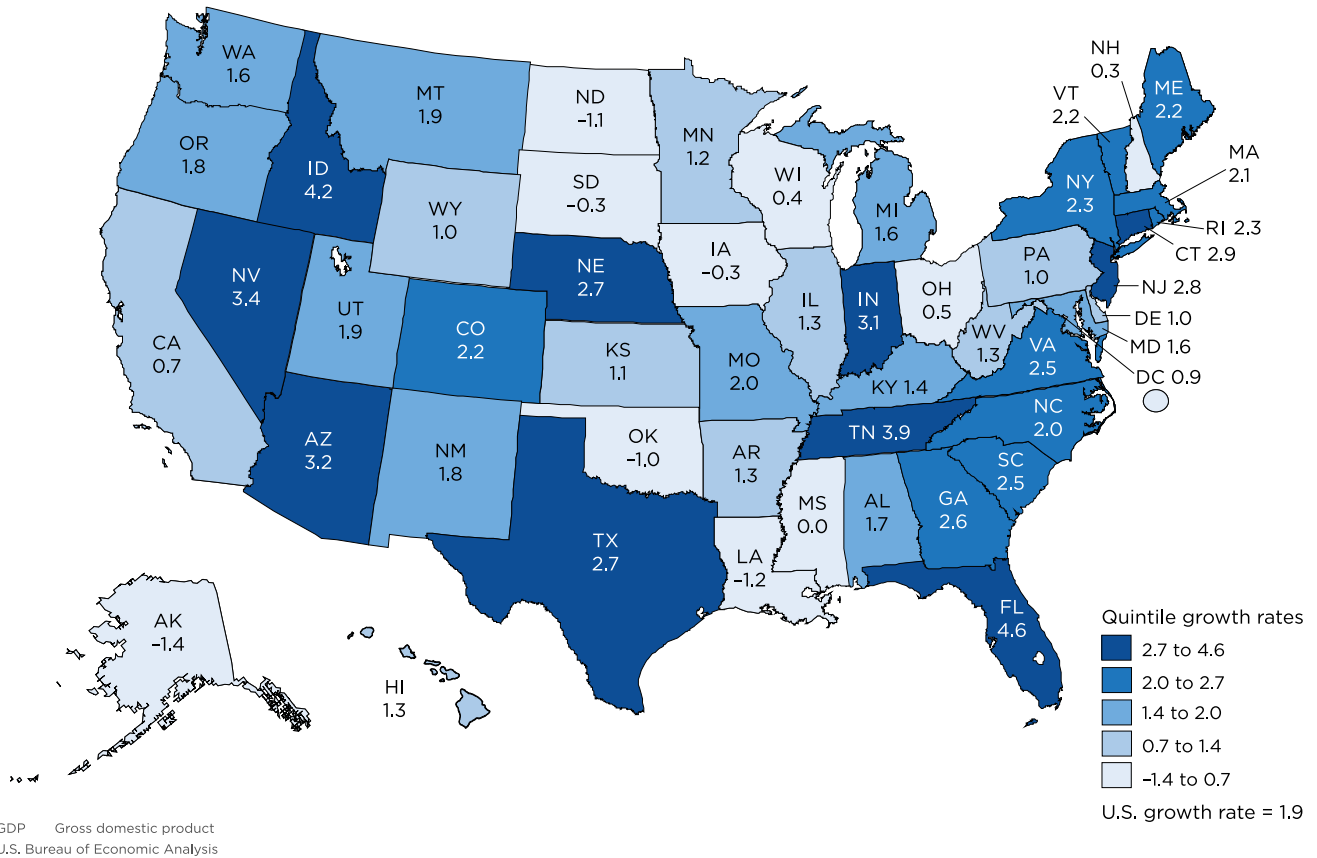
Nationally, current-dollar GDP increased 9.1 percent in 2022, following a 10.7 percent increase in 2021 (table 1). Current-dollar GDP increased in all states and the District of Columbia in 2022. States with the largest increases were Wyoming (16.4 percent), Texas (15.1 percent), and North Dakota (14.9 percent). Nineteen other states had above-average increases in current-dollar GDP in 2022 that ranged from 9.3 percent in Arkansas to 12.6 percent in West Virginia.

Table 1. Gross Domestic Product by State, State Personal Income, and Personal Consumption Expenditures by State: 2020-2022

Region	Gross domestic product (GDP)					Personal income					Personal consumption expenditures (PCE)				
	Millions of current dollars			Percent change from preceding period		Millions of current dollars			Percent change from preceding period		Millions of current dollars			Percent change from preceding period	
	2020	2021	2022	2021	2022	2020	2021	2022	2021	2022	2020	2021	2022	2021	2022
United States	21,322,950	23,594,031	25,744,108	10.7	9.1	19,609,985	21,392,812	21,820,248	9.1	2.0	14,206,231	16,042,964	17,511,745	12.9	9.2
Alabama	235,118	257,987	281,569	9.7	9.1	230,873	252,792	258,362	9.5	2.2	175,482	197,820	215,105	12.7	8.7
Alaska	51,262	58,646	65,699	14.4	12.0	45,366	48,208	50,350	6.3	4.4	35,006	39,633	43,413	13.2	9.5
Arizona	386,444	432,280	475,654	11.9	10.0	374,312	409,886	430,084	9.5	4.9	291,543	334,350	368,867	14.7	10.3
Arkansas	135,885	151,932	165,989	11.8	9.3	142,112	156,362	160,254	10.0	2.5	105,434	118,796	128,662	12.7	8.3
California	3,068,809	3,416,939	3,641,643	11.3	6.6	2,767,521	3,013,677	3,006,647	8.9	-0.2	1,885,029	2,146,539	2,352,362	13.9	9.6
Colorado	397,612	447,052	491,289	12.4	9.9	375,158	417,968	442,213	11.4	5.8	273,942	314,542	346,723	14.8	10.2
Connecticut	275,802	295,908	319,345	7.3	7.9	278,374	292,371	300,751	5.0	2.9	184,319	204,252	219,068	10.8	7.3
Delaware	77,615	82,953	90,208	6.9	8.7	55,338	59,172	64,407	6.9	8.8	44,677	50,944	55,535	14.0	9.0
District of Columbia	146,935	156,140	165,061	6.3	5.7	60,179	65,206	64,473	8.4	-1.1	46,913	52,905	57,595	12.8	8.9
Florida	1,140,133	1,292,391	1,439,065	13.4	11.3	1,221,122	1,376,880	1,441,599	12.8	4.7	964,080	1,114,052	1,234,951	15.6	10.9
Georgia	637,931	701,606	767,378	10.0	9.4	552,249	606,114	617,553	9.8	1.9	412,232	471,228	517,335	14.3	9.8
Hawaii	84,615	93,090	101,083	10.0	8.6	82,761	88,948	88,973	7.5	0.0	63,901	71,696	78,714	12.2	9.8
Idaho	88,188	98,793	110,871	12.0	12.2	91,889	103,114	109,776	12.2	6.5	64,147	75,485	84,364	17.7	11.8
Illinois	860,748	943,993	1,025,667	9.7	8.7	787,488	853,521	851,243	8.4	-0.3	561,360	627,074	683,721	11.7	9.0
Indiana	377,901	422,952	470,324	11.9	11.2	351,107	387,919	398,523	10.5	2.7	259,287	290,017	318,274	11.9	9.7
Iowa	199,447	220,818	238,342	10.7	7.9	167,779	185,622	192,742	10.6	3.8	120,917	135,091	145,481	11.7	7.7
Kansas	177,721	191,832	209,326	7.9	9.1	161,705	172,071	177,475	6.4	3.1	113,232	124,678	135,312	10.1	8.5
Kentucky	218,755	237,926	258,981	8.8	8.8	211,967	232,363	234,282	9.6	0.8	164,459	184,891	199,412	12.4	7.9
Louisiana	236,136	263,163	291,952	11.4	10.9	233,715	252,319	250,171	8.0	-0.9	173,941	194,871	207,377	12.0	6.4
Maine	72,092	78,918	85,801	9.5	8.7	74,042	80,826	83,951	9.2	3.9	62,955	71,245	77,287	13.2	8.5
Maryland	413,418	446,941	480,113	8.1	7.4	400,176	426,367	432,933	6.5	1.5	269,585	299,768	324,575	11.2	8.3
Massachusetts	589,033	645,434	691,461	9.6	7.1	541,421	583,363	590,400	7.7	1.2	368,685	414,258	448,337	12.4	8.2
Michigan	530,231	576,502	622,563	8.7	8.0	531,530	568,132	572,325	6.9	0.7	414,400	461,919	496,511	11.5	7.5
Minnesota	379,439	413,063	448,032	8.9	8.5	349,887	381,789	393,569	9.1	3.1	249,336	278,984	302,148	11.9	8.3
Mississippi	116,193	128,365	139,976	10.5	9.0	125,761	137,382	136,330	9.2	-0.8	96,883	108,194	116,654	11.7	7.8
Missouri	335,278	365,145	396,890	8.9	8.7	320,593	345,961	357,195	7.9	3.2	247,702	276,572	300,328	11.7	8.6
Montana	53,131	59,997	67,072	12.9	11.8	58,209	64,542	68,477	10.9	6.1	45,730	53,116	58,291	16.2	9.7
Nebraska	135,285	149,360	164,934	10.4	10.4	111,348	123,081	126,474	10.5	2.8	79,234	89,281	97,455	12.7	9.2
Nevada	175,982	200,127	222,939	13.7	11.4	170,269	192,006	197,291	12.8	2.8	126,437	145,289	161,819	14.9	11.4
New Hampshire	88,589	99,100	105,025	11.9	6.0	93,582	100,197	103,122	7.1	2.9	70,801	78,403	84,869	10.7	8.2
New Jersey	630,213	692,227	754,948	9.8	9.1	657,894	705,095	714,990	7.2	1.4	453,152	514,108	556,465	13.5	8.2
New Mexico	100,435	111,731	125,541	11.2	12.4	98,783	108,248	110,303	9.6	1.9	74,209	84,561	91,584	13.9	8.3
New York	1,766,857	1,911,346	2,048,403	8.2	7.2	1,405,029	1,508,135	1,483,802	7.3	-1.6	961,434	1,059,484	1,152,505	10.2	8.8
North Carolina	601,149	659,529	715,968	9.7	8.6	541,078	599,134	621,706	10.7	3.8	408,184	467,930	511,778	14.6	9.4
North Dakota	55,348	63,209	72,651	14.2	14.9	47,621	51,262	54,829	7.6	7.0	35,084	38,282	41,013	9.1	7.1
Ohio	692,122	759,626	825,990	9.8	8.7	623,836	670,873	679,233	7.5	1.2	468,366	520,162	561,568	11.1	8.0
Oklahoma	191,654	217,731	242,739	13.6	11.5	199,233	220,177	226,308	10.5	2.8	137,768	155,214	169,016	12.7	8.9
Oregon	251,856	275,444	297,309	9.4	7.9	239,863	262,382	264,174	9.4	0.7	179,459	202,810	221,162	13.0	9.0
Pennsylvania	777,427	844,392	911,813	8.6	8.0	783,826	833,322	836,778	6.3	0.4	574,142	635,949	696,634	10.8	9.5
Rhode Island	62,054	67,237	72,771	8.4	8.2	64,757	69,837	69,514	7.8	-0.5	47,361	53,435	57,771	12.8	8.1
South Carolina	249,482	271,495	297,546	8.8	9.6	250,288	274,348	283,246	9.6	3.2	195,696	222,947	244,163	13.9	9.5
South Dakota	56,163	62,607	68,782	11.5	9.9	52,793	58,628	62,028	11.1	5.8	36,652	41,174	44,579	12.3	8.3
Tennessee	390,173	438,180	485,658	12.3	10.8	359,634	396,986	411,035	10.4	3.5	261,449	297,834	326,338	13.9	9.6
Texas	1,798,596	2,087,491	2,402,137	16.1	15.1	1,611,228	1,789,719	1,879,420	11.1	5.0	1,176,164	1,343,753	1,473,924	14.2	9.7
Utah	205,666	232,125	256,370	12.9	10.4	169,940	190,468	201,012	12.1	5.5	125,533	146,419	162,917	16.6	11.3
Vermont	34,471	37,594	40,831	9.1	8.6	37,274	39,604	40,790	6.3	3.0	30,324	33,123	36,069	9.2	8.9
Virginia	565,063	613,920	663,106	8.6	8.0	530,920	578,640	599,042	9.0	3.5	370,614	415,582	452,040	12.1	8.8
Washington	621,493	688,632	738,101	10.8	7.2	522,714	574,267	586,520	9.9	2.1	356,914	403,721	440,420	13.1	9.1
West Virginia	76,976	86,510	97,417	12.4	12.6	80,741	87,617	88,745	8.5	1.3	66,990	73,693	78,923	10.0	7.1
Wisconsin	343,783	369,032	396,209	7.3	7.4	326,837	355,048	362,245	8.6	2.0	238,385	267,490	290,411	12.2	8.6
Wyoming	36,676	42,176	49,081	15.0	16.4	37,866	40,867	42,585	7.9	4.2	25,580	28,313	30,466	10.7	7.6

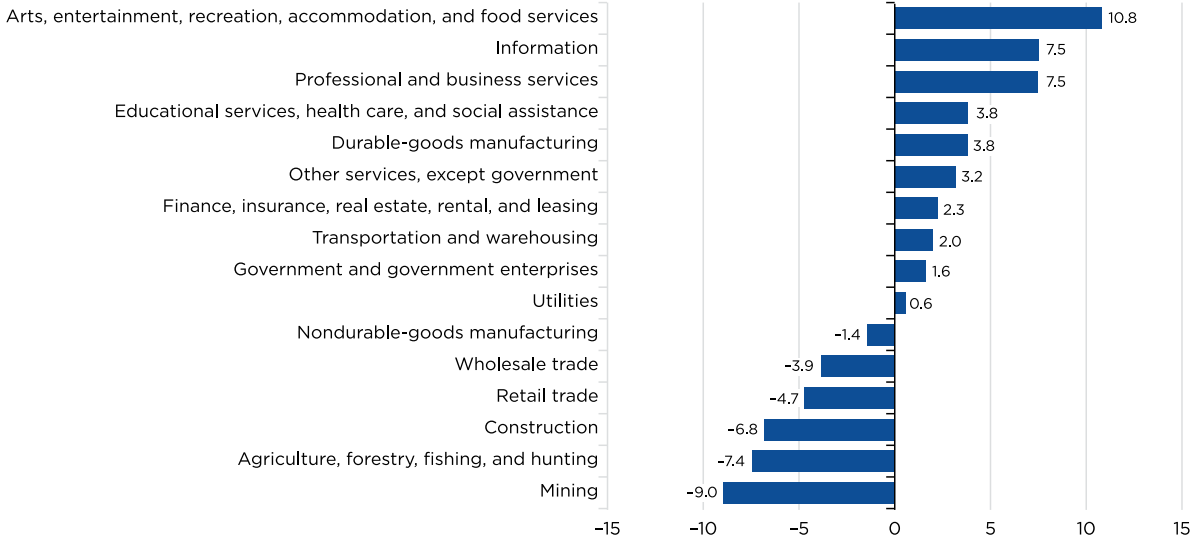
Inflation-adjusted (or real) GDP showed a much more moderate picture of economic growth in 2022, both nationally and across states, largely a result of higher prices (chart 1). At the national level, real GDP grew 1.9 percent in 2022. Across states, real GDP growth ranged from -1.4 percent in Alaska to 4.6 percent in Florida.

Chart 1. Percent Change in Real GDP: 2021-2022



In 2022, real GDP growth was driven by a broad range of industries. Real GDP by industry (or real value added)—a measure of an industry's contribution to GDP—grew the fastest in arts, entertainment, recreation, accommodations, and food services (10.8 percent), followed by information (7.5 percent) and professional and business services (7.5 percent) (chart 2). These industries jointly contributed 1.7 percentage points to national real GDP growth (chart 3). Finance, insurance, and real estate was also a notable contributor to national real GDP growth, with 0.5 percentage points. In contrast, real GDP declined in several industries, with the largest declines in nonmanufacturing private goods-producing industries—agriculture, mining, and construction. The declines in these industries jointly subtracted 0.5 percentage points from national real GDP growth.

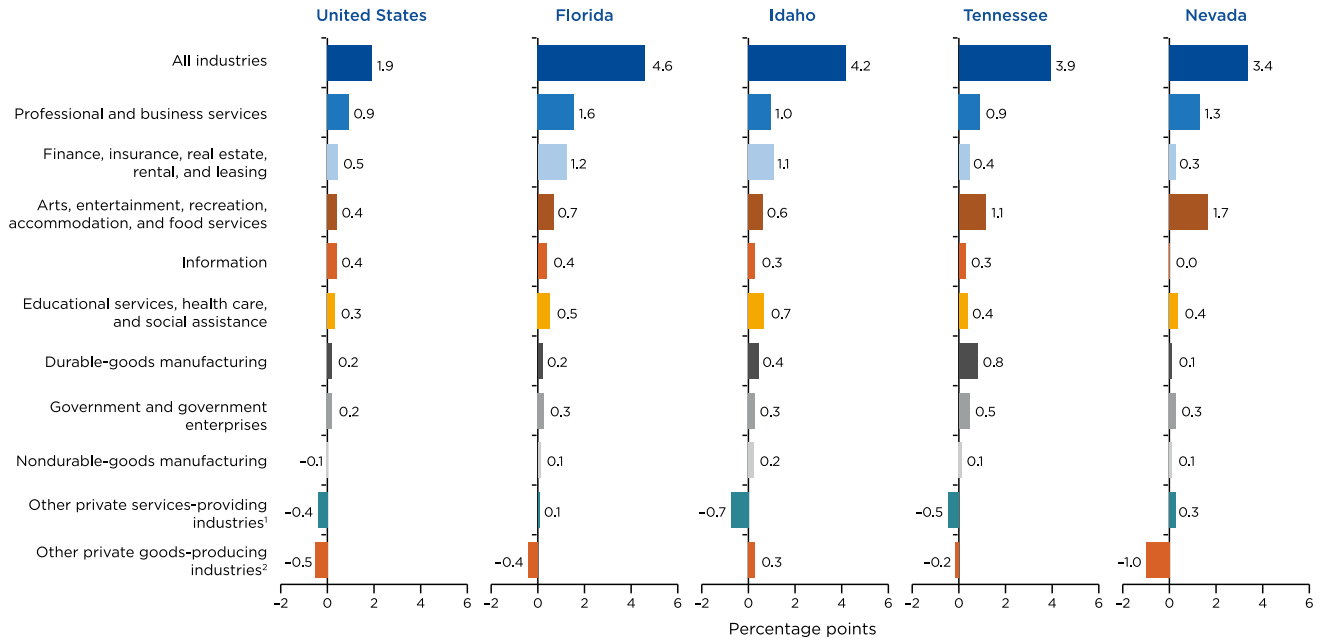
Chart 2. Percent Change in Real GDP by Industry, United States: 2021–2022



GDP Gross domestic product
U.S. Bureau of Economic Analysis

The fastest growing industries nationally made large contributions to growth in the fastest growing states. In addition to Florida, Idaho (4.2 percent), Tennessee (3.9 percent), and Nevada (3.4 percent) were among the fastest growing states in real GDP (chart 1). Arts, entertainment, recreation, accommodation, and food services was the leading contributor to real GDP growth in Nevada and Tennessee and made sizable contributions to growth in Florida and Idaho (chart 3). Information made sizable contributions to growth in Florida, Idaho, and Tennessee. Professional and business services was the largest contributor to real GDP growth in Florida and the second-largest contributor to real GDP growth in Idaho, Tennessee, and Nevada. Finance, insurance, and real estate was the leading contributor to real GDP growth in Idaho and the second-largest contributor in Florida.

Chart 3. Contributions to Percent Change in Real GDP, Fastest Growing States: 2021-2022



GDP Gross domestic product

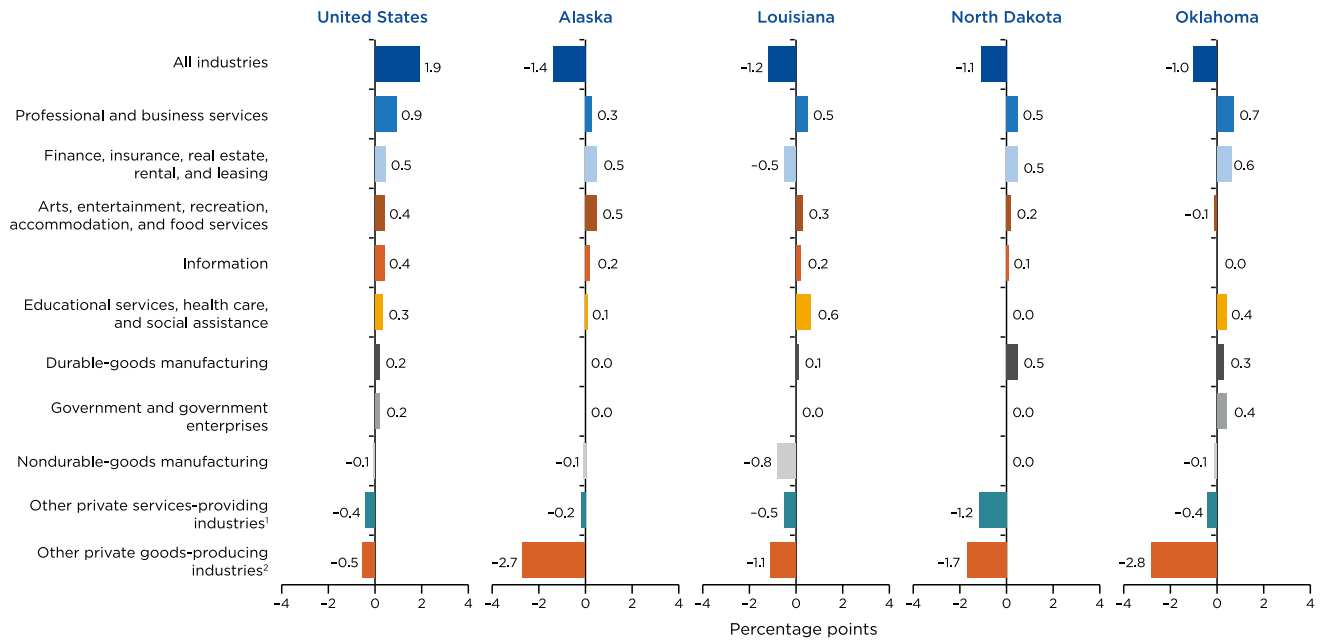
1. Other private services-providing industries consist of utilities, wholesale trade, retail trade, and transportation and warehousing.

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

U.S. Bureau of Economic Analysis

Along with Alaska, the following states experienced overall declines in real GDP: Louisiana (-1.2 percent), North Dakota (-1.1 percent), Oklahoma (-1.0 percent), South Dakota (-0.3 percent), and Iowa (-0.3 percent). While real GDP grew for many industries in these states, the positive contributions by these industries were more than offset by large declines in other industries, most notably, agriculture, mining, and construction (chart 4).

Chart 4. Contributions to Percent Change in Real GDP, Slowest Growing States: 2021-2022



GDP Gross domestic product

1. Other private services-providing industries consist of utilities, wholesale trade, retail trade, and transportation and warehousing.

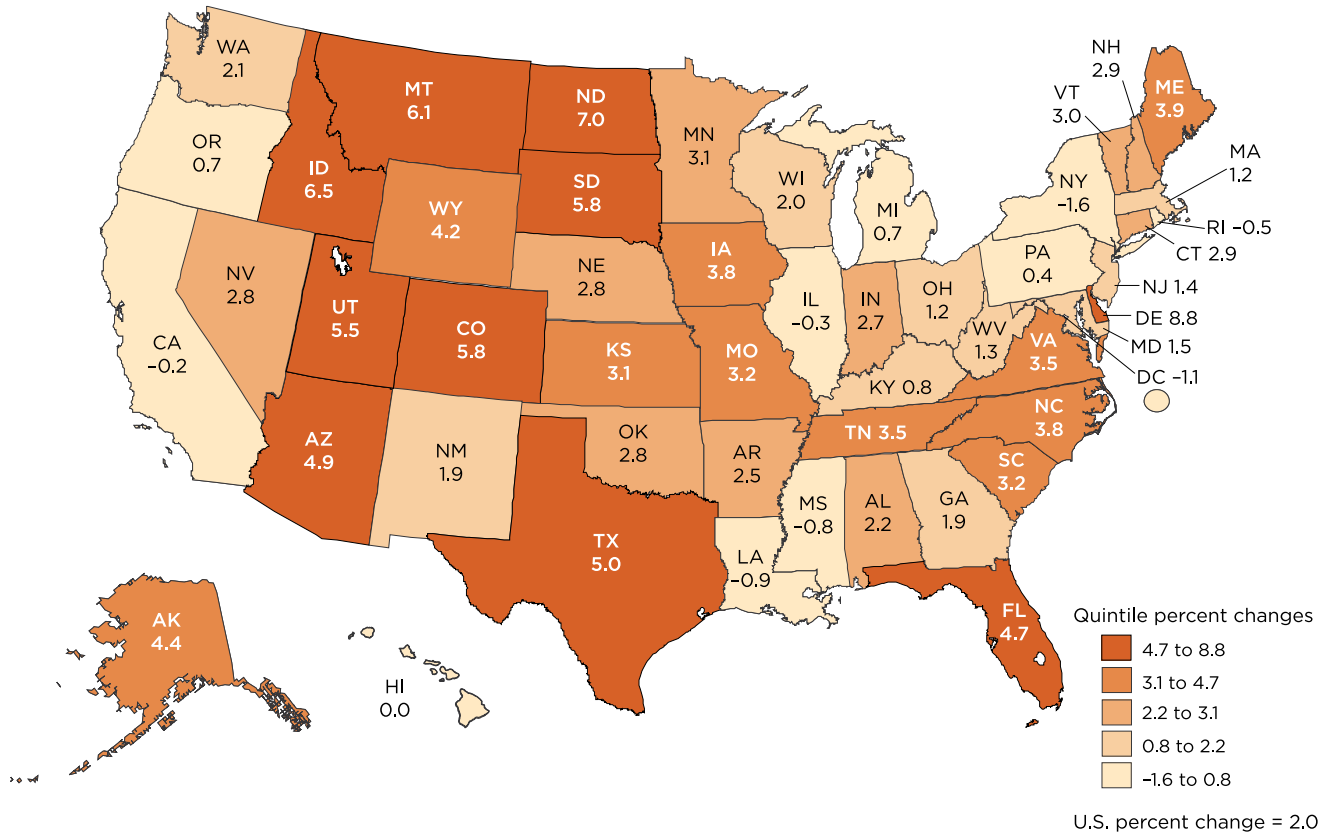
2. Other private goods-producing industries consist of agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and construction.

U.S. Bureau of Economic Analysis

State personal income

Nationally, current-dollar personal income increased 2.0 percent in 2022, following a 9.1 percent increase in 2021 (table 1). Changes in state personal income ranged from -1.6 percent in New York to 8.8 percent in Delaware (chart 5). In addition to Delaware, North Dakota, Idaho, Montana, Colorado, South Dakota, Utah, and Texas were among states with the largest increases in personal income. These were also among the states with large increases in current-dollar GDP. In addition to New York, Louisiana, Mississippi, Rhode Island, Illinois, and California were the states with declines in personal income. Personal income also declined in the District of Columbia (-1.1 percent).

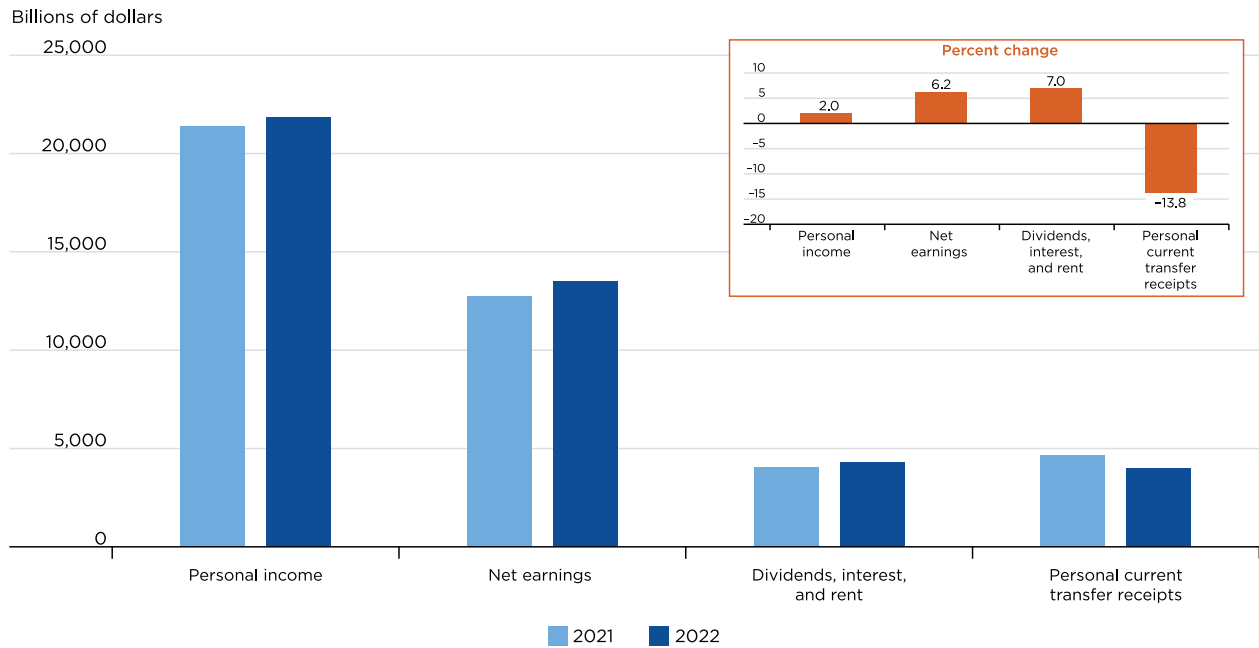
Chart 5. Percent Change in Personal Income: 2021-2022



U.S. Bureau of Economic Analysis

At the national level, the 2.0 percent increase in personal income resulted from a sizable increase in net earnings and property income (6.2 percent and 7.0 percent, respectively) that was largely offset by a double-digit decline (-13.8 percent) in personal current transfer receipts (chart 6). A similar trend was observed across states, as net earnings and property income increased in all states and personal current transfer receipts declined in all but one state (chart 7). The decline in personal current transfer receipts was a result of the expiration of various COVID-19 pandemic relief programs including the extended state unemployment insurance benefits and enhanced child tax credits toward the end of 2021.

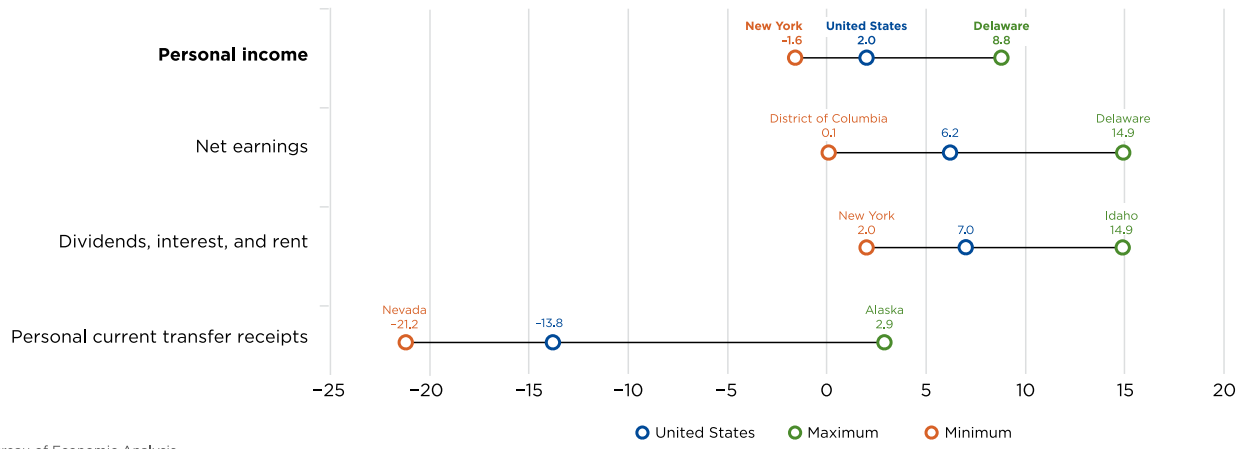
Chart 6. Personal Income and Its Components, United States: 2021-2022



U.S. Bureau of Economic Analysis

Increases in earnings—comprised of compensation of employees and proprietors' income—were the leading contributor to the increase in personal income for many states. Net earnings increased across all states, with the increases ranging from 0.1 percent in the District of Columbia to 14.9 percent in Delaware (chart 7).

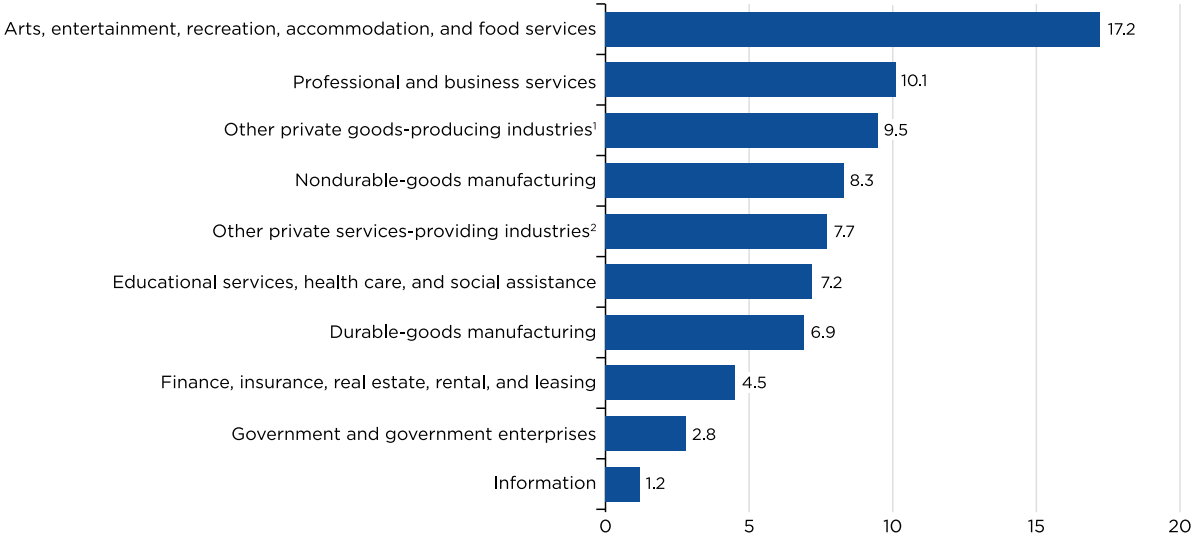
Chart 7. Range of Percent Changes in Personal Income and Its Components, by State: 2021-2022



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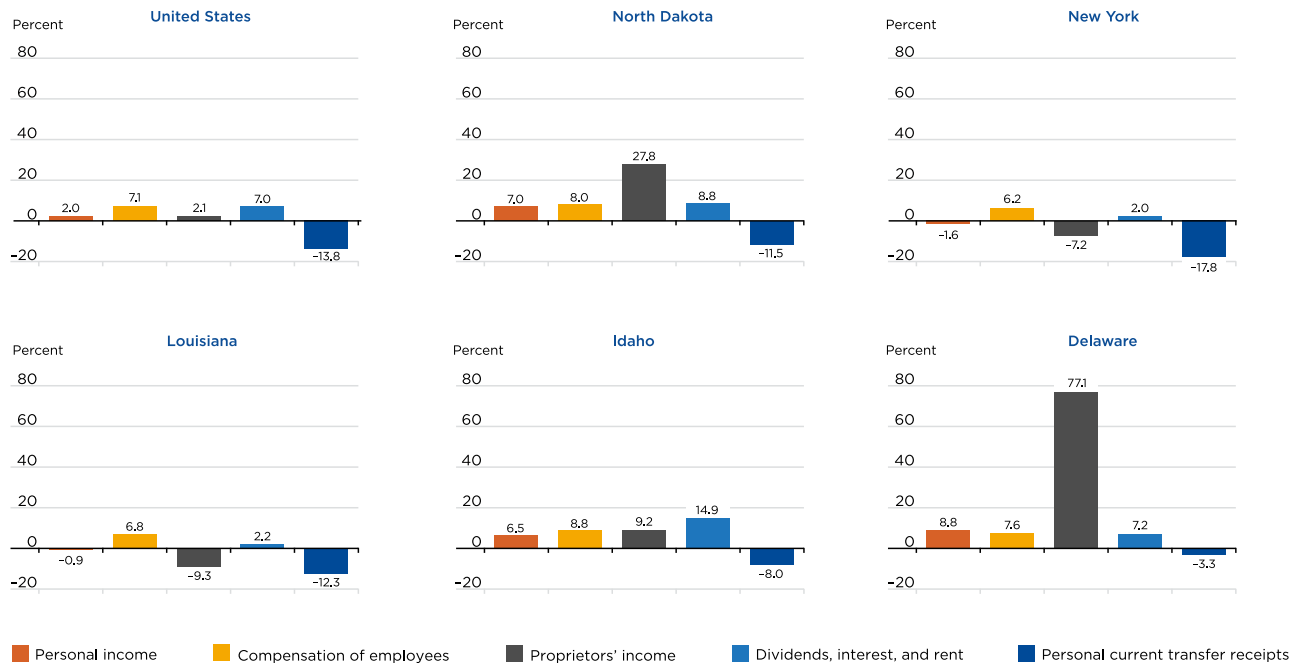
Compensation of employees, the largest component of earnings as well as personal income, increased on average 7.1 percent and ranged from 3.9 percent in New Hampshire to 11.7 percent in Nevada. Across industries, compensation increased the most in arts, entertainment, recreation, accommodations, and food services (17.2 percent) and professional and business services (10.1 percent) (chart 8). These industries were also among the fastest growing industries in real GDP. Proprietors' income increased on average 2.1 percent (chart 9). Delaware and North Dakota were among the states with the largest increases in proprietors' income, whereas Louisiana was among the states with large declines in proprietors' income.

Chart 8. Percent Change in Compensation of Employees by Industry, United States: 2021-2022



1. Other private goods-producing industries consist of farm; 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).
 U.S. Bureau of Economic Analysis

Chart 9. Percent Change in Personal Income and Its Components for Selected States: 2021-2022



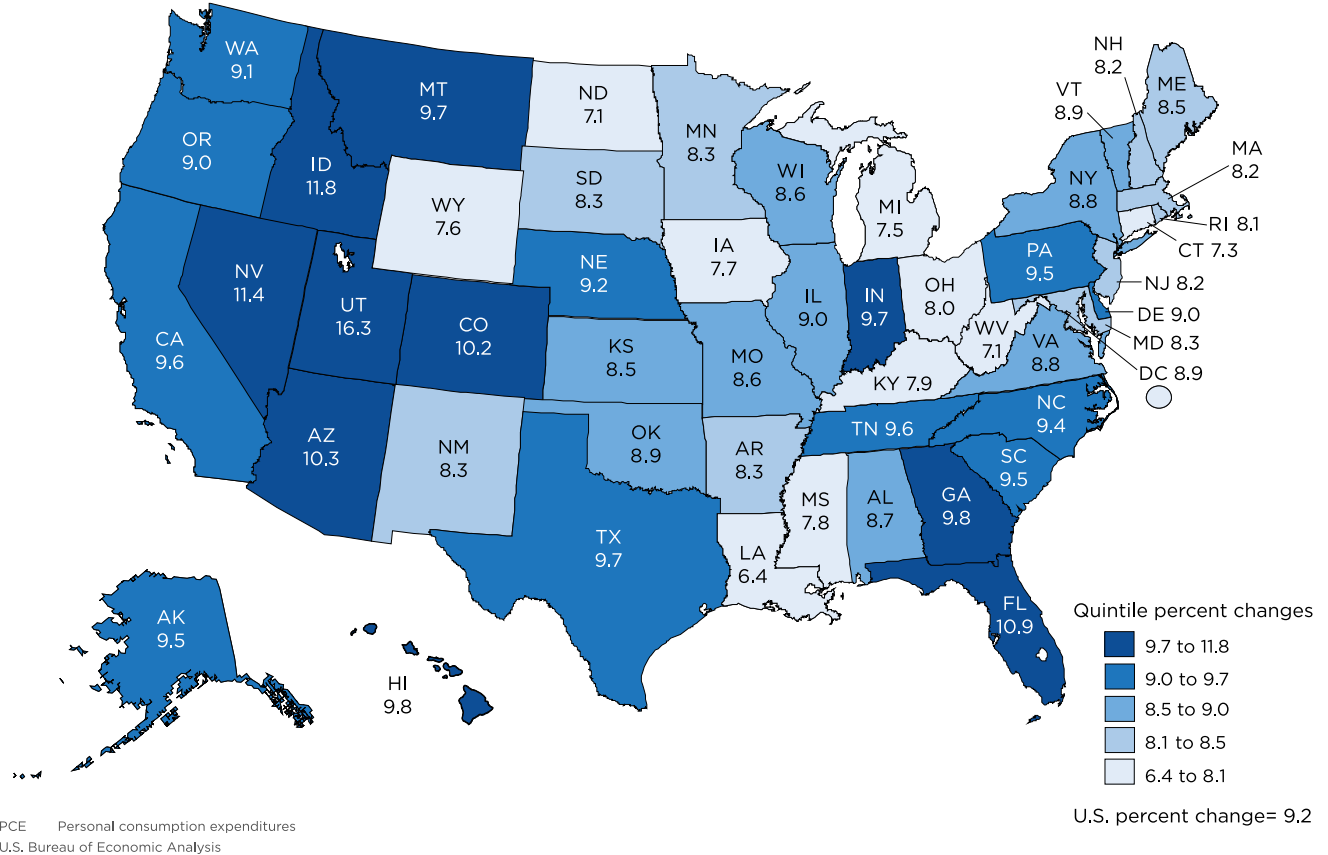
U.S. Bureau of Economic Analysis

Property income (dividends, interest, and rent) increased on average 7.0 percent in 2022. Property income increased in all states and the District of Columbia, with the increases ranging from 2.0 percent in New York to 14.9 percent in Idaho (chart 7). Lastly, personal current transfer receipts, the income component most affected by policy responses to the COVID-19 pandemic, declined on average 13.8 percent. Personal current transfer receipts declined in all but one state. In Alaska, transfer receipts increased by 2.9 percent because of a large permanent fund dividend payment in 2022. The largest decline in transfer receipts was in Nevada (-21.2 percent).

PCE by state

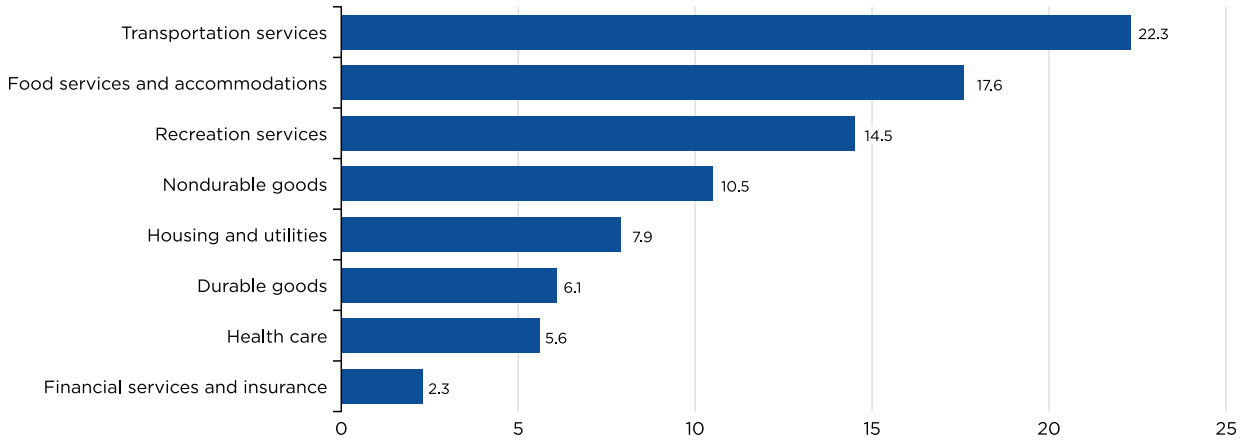
Nationally, current-dollar PCE increased 9.2 percent in 2022, following a 12.9 percent increase in 2021 (table 1). The states with the largest increases in PCE were Idaho (11.8 percent), Nevada (11.4 percent), Utah (11.3 percent), Florida (10.9 percent), Arizona (10.3 percent), and Colorado (10.2 percent) (chart 10). The states with the lowest increases were Louisiana (6.4 percent), West Virginia (7.1 percent), North Dakota (7.1 percent), and Connecticut (7.3 percent).

Chart 10. Percent Change in PCE: 2021-2022



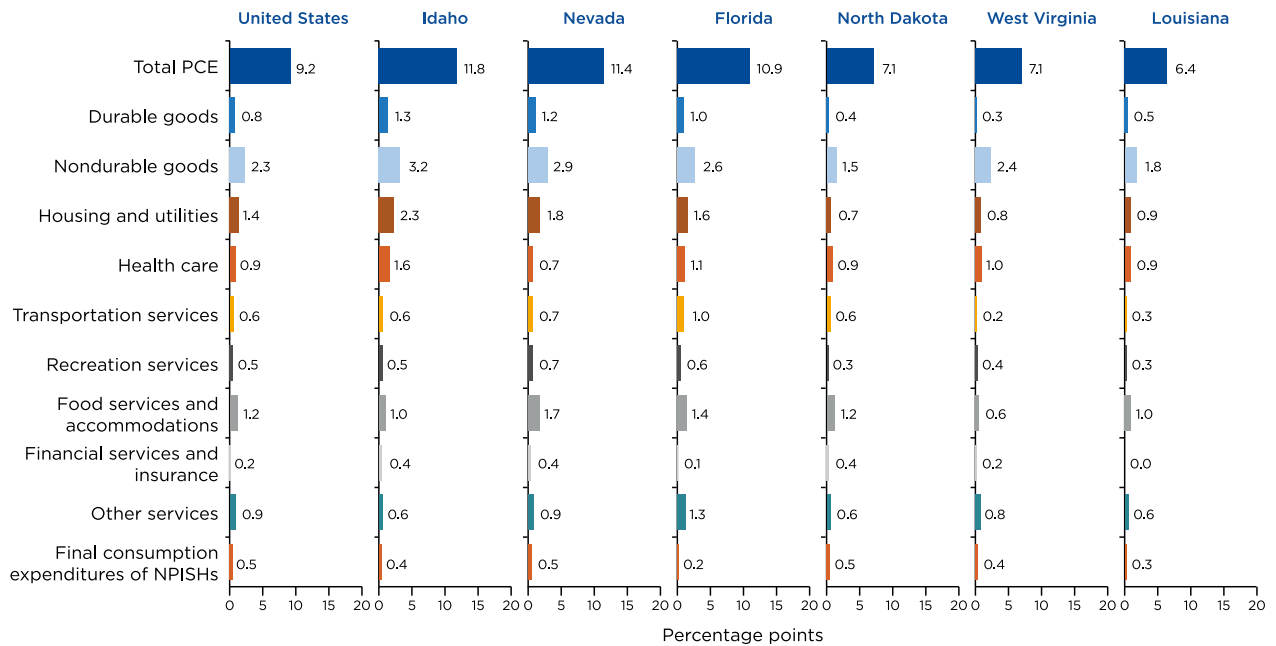
The PCE categories with the largest increases were transportation services (22.3 percent), food services and accommodations (17.6 percent), recreation services (14.5 percent), and nondurable goods (10.5 percent) (chart 11). This is consistent with a story of post-pandemic increases in travel and participation in entertainment and recreation activities, despite the lower increases in income, due to the financial buffer provided by the pandemic relief programs. The contribution of these categories to total PCE growth is evident across many states (chart 12).

Chart 11. Percent Change in PCE for Selected Categories, United States: 2021-2022



PCE Personal consumption expenditures
U.S. Bureau of Economic Analysis

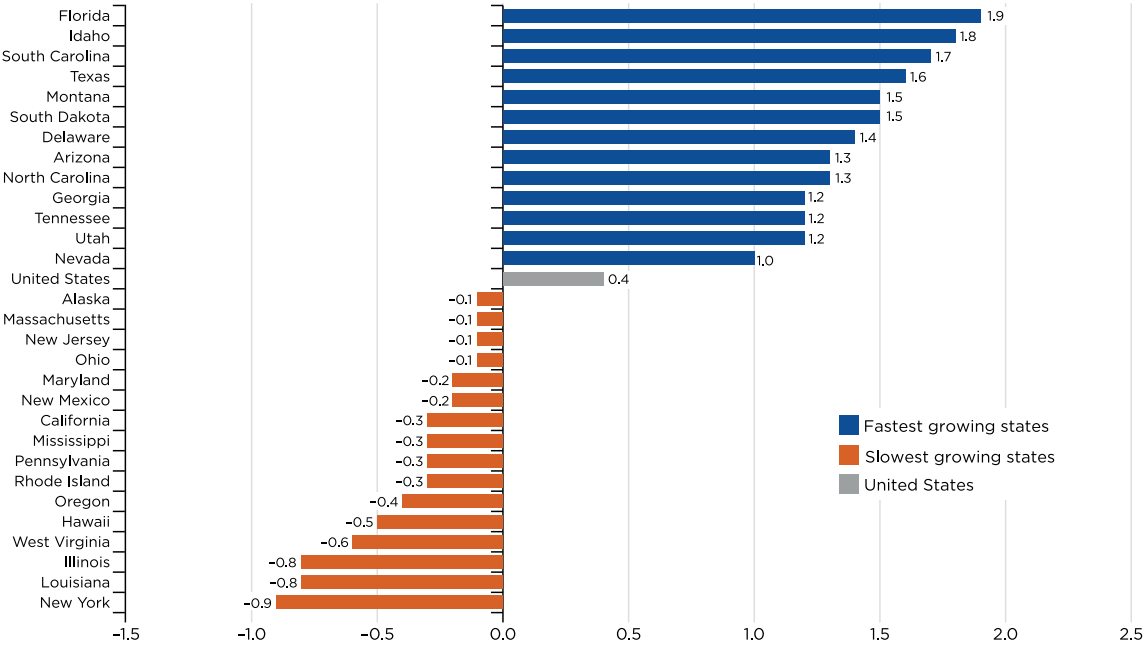
Chart 12. Category Contributions to Percent Change in Total PCE, Fastest and Slowest Growing States: 2021-2022



NPISH Nonprofit institutions serving households
PCE Personal consumption expenditures
U.S. Bureau of Economic Analysis

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 2022, population grew 0.4 percent nationally (chart 13). States with the highest population growth were Florida (1.9 percent) and Idaho (1.8 percent), which were also among states with the largest PCE increases. Population declined in 16 states, with New York (-0.9 percent), Louisiana (-0.8 percent), Illinois (-0.8 percent), and West Virginia (-0.6 percent) experiencing the largest population declines. Of these, Louisiana and West Virginia were among states with the lowest PCE increases.

Chart 13. Percent Change in Population, Fastest and Slowest Growing States: 2021-2022



U.S. Bureau of Economic Analysis

Updates to Previously Released Estimates

BEA released updated historical estimates for GDP by state, state personal income, and PCE by state measures. The updated estimates reflect the incorporation of the results of the 2023 comprehensive update of the NEAs as well as the incorporation of newly available and revised regional source data and improved estimation methods used to prepare these statistics. No presentational changes were made to the published REA tables. This section highlights the major regional source data that were updated and provides an overview of the main methodology changes and a summary of the impacts of these updates on the annual state-level measures.

Updates to source data

BEA incorporated several newly available and revised regional source data, including data from the Census Bureau's 2017 Economic Census and annual source data that became available since the last annual update of the REAs in September 2022. A summary of the annual major data sources for each of the statistics is provided in table 2. These data include Census Bureau Annual Survey of Manufactures and Annual Survey of State and Local Government Finances, U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW), Internal Revenue Service (IRS) data, and U.S. Department of Agriculture farm statistics.

Table 2. Summary of Updated Major State-Level Data Sources

Component	Industry	Updated state data source	Years covered
GDP by state			
Compensation of employees	All industries	U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages	2020–2021 (revised); 2022 (new)
Taxes on production and imports less subsidies	All industries	U.S. Census Bureau, Census of Government Finances (state and local taxes)	2021–2022 (new)
	All industries	U.S. Department of Transportation, Bureau of Transportation Statistics (federal highway excise taxes)	2022 (new)
Gross operating surplus	All industries	National Science Foundation, Business Research and Development Survey (R&D expenditures)	2021 (new)
	All industries	National Science Foundation, Higher Education Research and Development Survey (R&D expenditures)	2021 (new)
	Farms	U.S. Department of Agriculture, Economic Research Service (farm income and expenses)	2018–2021 (revised); 2022 (new)
	Mining	Energy Information Administration (oil, gas production and prices, and coal reports)	2022 (new)
	Utilities	Energy Information Administration (gas and electricity consumption)	2022 (new)
	Manufacturing	U.S. Census Bureau, Annual Survey of Manufacturers	2020 (revised); 2021 (new)
	Transportation and warehousing	U.S. Department of Transportation, Bureau of Transportation Statistics (financial reports)	2022 (new)
Monetary Authorities-central bank, credit intermediation, and related services		Federal Deposit Insurance Corporation (branch office deposits)	2022 (new)
	Government	U.S. Census Bureau, Census of Government Finances (government enterprises)	2021 (new)
State personal income			
Compensation of employees	Nonfarm industries	U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages	2020–2021 (revised); 2022 (new)
	Farm	U.S. Department of Agriculture, Economic Research Service (farm labor expenses)	2018–2021 (revised); 2022 (new)
	Military	U.S. Department of Defense (personnel and payroll data)	2022 (new)
Proprietors' income	Nonfarm industries	Internal Revenue Service (net profits of proprietorships and partnerships)	2021 (new)
	Farm	U.S. Department of Agriculture, Economic Research Service (farm income and expenses)	2018–2021 (revised); 2022 (new)
Dividends, interest, and rent	Farm	U.S. Department of Agriculture, Agricultural Resource Management Survey (corporate farm income)	2021 (new)
		Internal Revenue Service (income tax data)	2020–2021 (new)
		Federal Deposit Insurance Corporation (deposits)	2022 (new)
		National Credit Union Administration (deposits)	2022 (new)
Personal current transfer receipts		Social Security Administration (social security benefits)	2022 (new)
		Centers for Medicare and Medicaid Services (medical benefits)	2016–2022 (new)
		U.S. Department of Labor (unemployment insurance compensation)	2022 (new)
		U.S. Census Bureau, Annual Survey of State Government Finances (state and local government social benefits)	2017–2020 (revised); 2021 (new)
	All industries	U.S. Bureau of Labor Statistics, Occupational Employment Statistics (employee wage distributions)	2020 (new)
Contributions for government social insurance	All industries	Private employer contributions for Old Age, Survivors, Disability, and Health Insurance (OASDHI) programs	2022 (new)
	All industries	Social Security Administration (earnings and employment data)	2020 (new)
	All industries	Centers for Medicare and Medicaid Services (supplemental medical insurance enrollment data)	2022 (new)
Residence adjustment		Internal Revenue Service (wage data)	2020–2021 (new)
PCE by state			
Durable goods		U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages	2020–2021 (revised); 2022 (new)
Nondurable goods		U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages	2020–2021 (revised); 2022 (new)
Services		U.S. Department of Agriculture, Economic Research Service (food consumption on farms)	2022 (new)
		U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages	2020–2021 (revised); 2022 (new)
Health care		Centers for Medicare and Medicaid Services (outpatient and hospital services)	2013–2014 (revised); 2015–2020 (new)
Housing and utilities		U.S. Census Bureau, American Community Survey (housing and utility expenditures)	2021 (new)
		Federal Deposit Insurance Corporation (banking services)	2022 (new)
Financial services and insurance		National Credit Union Administration (credit union services)	2022 (new)
		National Association of Insurance Commissioners (insurance services)	2022 (new)
		Internal Revenue Service, Statistics of Income (financial services)	2019 (new)

GDP Gross domestic product
PCE Personal consumption expenditures
R&D Research and development

Updates to methodology

BEA also implemented several changes to the methodologies used to prepare the state statistics. More information on the regional methodology changes, including the improvements discussed below, are available in the August *Survey of Current Business* article “[Preview of the 2023 Comprehensive Update of the Regional Economic Accounts.](#)”

Housing services. With the 2021 annual update, BEA introduced a new methodology for estimating housing services using microdata on housing units from the Census Bureau American Community Survey (ACS). With this methodology, housing services for both tenant- and owner-occupied housing are estimated at the housing unit level based on observed rent expenditures (contract rent) and detailed housing characteristics (structure type, number of bedrooms, number of rooms, and age of structure), which are then aggregated at the state and national levels. When contract rent includes utilities, an adjustment is made to separate the rental value from the included utility costs. As part of the 2023 comprehensive update, BEA further improved the measures of housing services by using a more detailed adjustment for utilities included in the contract rent. The new utility adjustment accounts for expenditures on other fuels, such as heating oil and propane, in addition to electricity, gas, and water. The new adjustment was made to each housing unit where one or more utilities were included in the rent and excluded only the utilities that were included in any given unit. Housing estimates were revised from 1997 to 2021 and impacted regional measures of GDP, personal income, PCE, and regional price parities.

Chained-dollar measures of GDP in the REAs. BEA uses the Fisher Price Index formula in the calculation of real GDP estimates. In the REAs, chained-dollar measures of GDP are computed using national chain-type indexes following the same processes used in the national accounts. The presence of zero and negative values in the regional estimates causes breaks in the chain-type indexes. As part of the 2023 comprehensive update, BEA improved the calculation of chained-dollar GDP measures in the REAs by implementing a rearrangement of the Fisher formula that uses the current-dollar estimates and ratios of prices in adjacent time periods (i.e., price relatives). Depending on the location and prevalence of the breaks in the price index series, BEA used geometric interpolation between two existing price relatives to impute the missing values or a price index value from the closest related series to complete the index. This methodology change had limited impact on the annual estimates of GDP by state, but it had a more widespread impact on the quarterly GDP by state estimates from the first quarter of 2005 forward and on the annual GDP by county estimates from 2001 forward.

Discount rate for private and state and local defined benefit pension plans. BEA raised the discount rate for privately sponsored defined benefit pension plans and state and local government defined benefit pension plans from 4 percent to 5 percent in 2022. This increase, largely guided by the recent rise in the AAA corporate bond rate, brought the discount rate more in line with the historical returns of AAA bonds from 1929 to 2008, which averaged 5 to 7 percent. Raising the discount rate lowers liabilities (benefit entitlements) and employers' normal cost. This change impacted supplements to wages, more specifically employer contributions to employee pension and insurance funds, which incorporate employers' normal cost and pension service charges. Thus, it lowered the regional compensation estimates. In addition, the lower liabilities increased the funded ratio in the transactions of state and local government defined benefit pension plans tables.

Summary of revisions

BEA released updated annual GDP by state statistics for 2017–2021. The revisions to the GDP by state statistics for this period are largely due to the incorporation of updated national values and state source data. At the national level, current-dollar GDP was revised upward for all 5 years: 2017 (0.7 percent), 2018 (0.6 percent), 2019 (0.7 percent), 2020 (1.3 percent), and 2021 (1.2 percent) (table 3). The revisions to current-dollar GDP by state were less than 2.0 percent each year for most states. In general, revisions to later years tend to be larger, as new and more complete source data are incorporated into the statistics.

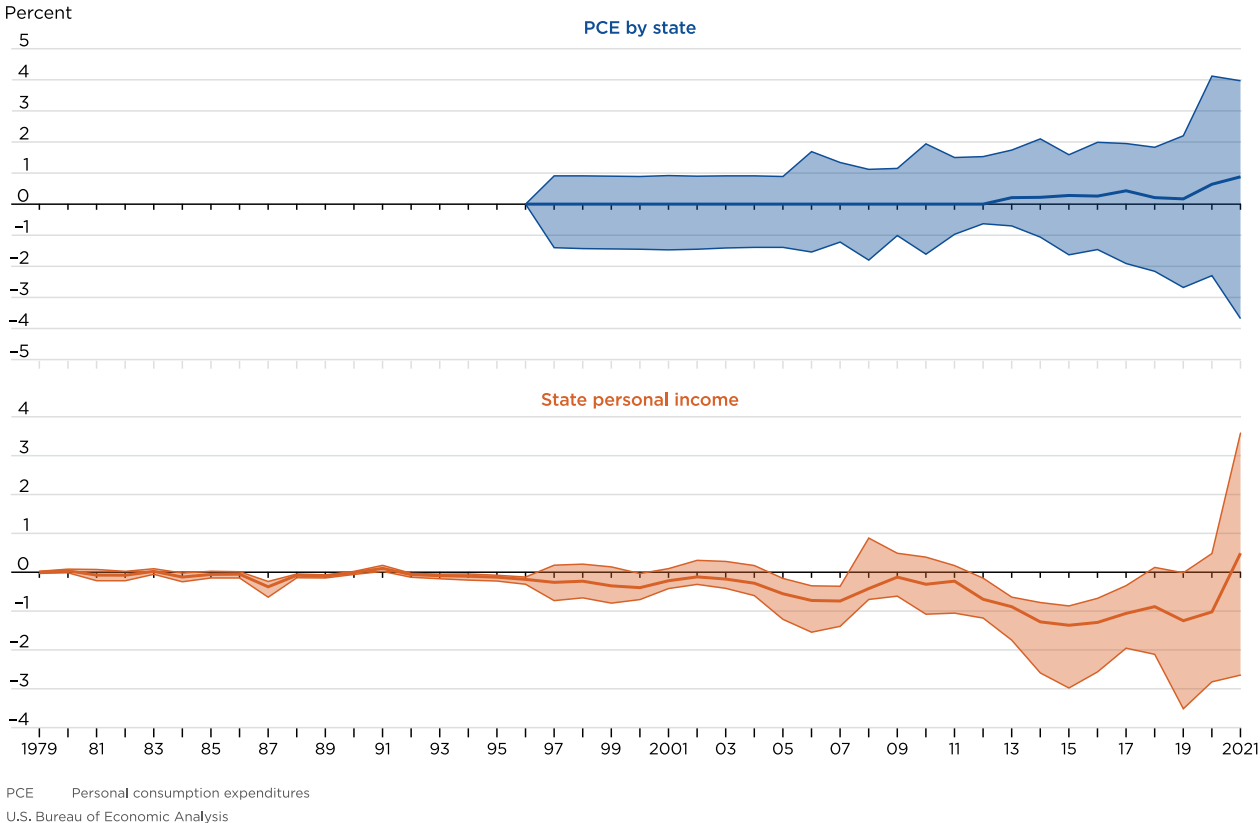
Table 3. Percent Revisions to Current-Dollar Gross Domestic Product by State, State Personal Income, and Personal Consumption Expenditures by State: 2017–2021

Region	Gross domestic product (GDP)					Personal income					Personal consumption expenditures (PCE)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
United States	0.7	0.6	0.7	1.3	1.2	-1.1	-0.9	-1.2	-1.0	0.5	0.4	0.2	0.2	0.6	0.9
Alabama	0.9	1.1	1.3	1.8	1.5	-0.6	-0.5	-0.7	-0.5	0.8	0.1	-0.8	-0.3	-0.9	-1.0
Alaska	0.5	-0.3	-0.5	1.6	2.3	-1.2	-1.0	-1.2	-1.3	0.0	-0.9	-1.5	-2.4	-2.3	-0.4
Arizona	0.3	0.5	0.8	1.1	2.9	-0.7	-0.5	-0.9	-0.3	1.5	0.2	0.2	-0.3	0.9	2.4
Arkansas	1.2	1.3	0.8	1.4	2.2	-1.2	-0.8	-1.3	0.1	2.1	0.2	0.7	0.1	0.6	0.6
California	0.4	0.1	0.6	1.6	1.3	-1.0	-0.9	-1.1	-0.8	0.2	0.8	1.2	1.1	2.0	3.1
Colorado	0.3	0.5	0.8	1.6	2.5	-2.0	-1.1	-1.4	-0.8	1.7	0.6	0.8	1.1	0.6	1.4
Connecticut	0.9	0.2	-1.1	-0.2	-0.8	-1.2	-1.1	-1.8	-1.5	-2.6	1.2	1.3	0.9	2.4	1.5
Delaware	1.8	1.7	2.3	2.4	2.2	-0.8	-0.1	-0.9	-0.9	-1.6	0.8	0.8	0.3	-1.0	-0.7
District of Columbia	0.8	1.1	0.8	1.5	1.6	-0.6	-0.6	-1.2	-2.8	0.9	0.6	0.6	0.9	-1.7	0.2
Florida	1.2	1.4	1.5	2.1	2.9	-1.3	-1.0	-1.7	-1.2	1.5	0.5	0.3	0.3	1.0	0.9
Georgia	1.7	1.7	1.4	2.0	1.4	-0.3	-0.5	-1.1	-1.0	0.6	0.0	-0.2	0.0	0.5	0.3
Hawaii	0.3	0.7	1.6	2.5	2.2	-1.2	-1.2	-1.4	-0.4	1.2	0.2	-0.9	-0.3	-0.2	1.2
Idaho	1.7	2.2	2.1	2.6	2.6	-0.6	0.1	0.0	0.5	3.6	-1.0	-2.1	-2.0	-1.5	-0.1
Illinois	1.0	0.6	0.7	0.4	-0.2	-1.0	-0.8	-1.2	-0.9	0.2	0.8	0.6	0.2	0.9	-0.1
Indiana	1.4	1.1	1.1	1.1	2.4	-1.0	-0.8	-1.0	-0.9	0.9	-0.1	-0.3	-0.3	0.3	-0.2
Iowa	1.4	0.9	0.2	1.3	1.8	-1.0	-0.8	-1.4	-1.3	1.7	1.0	0.5	1.1	1.3	1.3
Kansas	0.7	0.6	0.2	0.1	0.2	-0.8	-0.8	-1.4	-1.6	-0.5	0.3	-0.1	-0.2	-0.2	-1.5
Kentucky	0.8	0.9	1.0	0.9	0.3	-0.9	-0.8	-1.0	-1.0	0.5	0.1	0.3	0.2	0.2	0.5
Louisiana	-0.6	-0.1	0.6	1.6	1.8	-1.3	-1.3	-1.4	-1.1	0.6	0.7	0.4	0.3	0.0	-0.4
Maine	1.2	1.1	0.9	1.9	1.2	-1.0	-0.8	-1.5	-1.0	0.7	1.0	1.8	1.4	2.6	2.7
Maryland	-0.1	0.0	-0.2	0.6	0.7	-1.5	-1.1	-1.0	-1.3	-0.9	0.0	0.0	-0.3	0.0	-0.1
Massachusetts	-0.2	-0.6	-0.2	0.7	0.6	-0.9	-0.7	-1.2	-1.6	-0.2	1.2	1.5	1.5	2.3	1.3
Michigan	0.6	1.0	0.9	1.9	0.8	-1.0	-0.8	-1.2	-1.1	0.1	0.6	0.3	0.3	0.6	0.8
Minnesota	0.3	0.1	0.0	0.7	0.1	-0.8	-0.6	-1.1	-1.5	0.9	0.6	0.2	-0.2	-1.1	0.5
Mississippi	0.6	0.9	1.1	0.9	0.8	-0.9	-0.7	-0.7	-0.4	1.5	1.0	-0.3	-0.4	0.6	0.6
Missouri	1.1	0.7	0.6	1.5	1.8	-1.0	-0.9	-1.2	0.0	1.4	0.1	0.0	-0.5	0.3	-0.3
Montana	-0.1	0.5	1.6	1.5	2.2	-1.4	-0.8	-1.3	-1.0	2.6	0.5	0.8	0.6	-0.6	0.4
Nebraska	1.2	0.7	0.7	0.5	2.1	-1.2	-0.9	-1.4	-1.1	2.4	-0.4	-1.0	-0.8	-1.0	-1.6
Nevada	1.6	1.3	1.2	2.0	2.9	-1.1	-0.8	-1.3	-1.3	1.4	1.9	1.8	1.8	1.9	3.1
New Hampshire	0.7	0.0	0.2	0.3	-0.6	-0.8	-0.8	-1.3	-0.9	-1.5	0.4	-0.7	-1.1	-0.5	-0.5
New Jersey	0.5	0.9	0.7	1.6	1.4	-1.2	-1.1	-1.4	-0.9	-1.2	1.3	0.7	1.3	1.2	1.4
New Mexico	1.0	1.6	1.8	1.7	2.0	-0.7	-0.6	-0.8	-0.2	1.7	-0.2	-0.3	-0.7	-0.2	-0.2
New York	1.3	0.8	0.3	1.5	0.5	-1.1	-1.0	-1.4	-2.6	-1.0	0.0	-0.7	-0.7	-0.5	0.3
North Carolina	-0.3	0.0	-0.2	0.4	-0.4	-0.9	-0.7	-0.8	-0.3	1.1	0.7	-0.1	-0.5	0.1	0.9
North Dakota	2.0	1.9	2.2	1.7	-0.6	-1.3	-0.4	-0.9	0.4	2.5	0.0	0.7	2.2	3.7	2.5
Ohio	1.0	0.8	0.9	1.1	0.4	-1.1	-1.0	-1.3	-1.2	0.1	0.4	0.0	0.3	0.1	0.2
Oklahoma	1.0	0.7	0.5	0.8	1.1	-1.2	-0.8	-1.0	-0.5	2.5	0.5	0.0	-0.3	-0.2	0.7
Oregon	1.3	0.6	0.7	1.6	1.2	-0.9	-0.7	-1.0	-0.8	0.3	0.8	0.7	0.0	0.2	0.0
Pennsylvania	1.1	0.9	0.4	0.8	0.0	-1.0	-1.0	-1.5	-0.6	0.0	-0.1	-0.2	-0.3	0.3	0.0
Rhode Island	1.2	1.3	1.4	2.1	1.0	-1.1	-1.0	-1.3	-1.4	-1.0	1.1	1.3	1.6	4.0	4.0
South Carolina	0.7	1.4	0.8	1.7	0.6	-0.9	-0.8	-1.1	-0.7	0.7	-0.3	-1.0	-0.8	-0.6	-0.8
South Dakota	2.8	2.0	1.9	0.9	1.5	-1.4	-1.1	-1.6	-1.5	1.6	-1.9	-2.2	-2.7	-2.2	-3.7
Tennessee	1.3	1.8	1.5	2.9	2.6	-1.0	-0.9	-0.9	-0.7	0.6	0.5	-0.1	0.2	0.8	0.5
Texas	-0.4	-0.1	0.1	0.5	1.7	-1.4	-1.3	-1.5	-0.8	1.2	0.3	-0.3	-0.2	0.6	0.9
Utah	2.0	1.3	2.4	1.7	3.0	-0.5	-0.4	-0.9	-0.8	1.9	1.2	1.5	1.9	2.5	2.8
Vermont	1.0	1.3	1.2	1.3	1.3	-1.5	-1.4	-2.1	-2.2	-0.9	-0.2	0.9	0.7	2.1	1.1
Virginia	0.8	0.8	0.8	1.4	1.5	-0.9	-0.9	-1.2	-1.1	1.0	-0.4	-0.6	-0.3	0.2	-0.3
Washington	1.5	1.1	2.3	1.4	1.6	-0.8	-0.7	-1.2	-0.9	0.6	0.0	-0.4	-0.4	0.1	0.8
West Virginia	0.5	0.8	0.7	0.6	1.3	-0.8	-0.7	-0.8	-0.3	1.3	0.3	-0.2	-0.3	0.7	0.4
Wisconsin	1.1	0.8	0.6	0.9	0.1	-0.9	-0.8	-1.0	-0.8	1.0	0.6	-0.4	-0.1	-0.7	0.5
Wyoming	1.7	1.1	1.4	0.9	1.6	-1.4	-2.1	-3.5	-0.3	1.3	1.4	1.2	1.7	4.1	2.3

The revisions to current-dollar GDP by state in 2017 ranged from an upward revision of 2.8 percent in South Dakota to a downward revision of 0.6 percent in Louisiana. Two other states had revisions of 2.0 percent: North Dakota and Utah. The revisions to current-dollar GDP by state in 2018 ranged from an upward revision of 2.2 percent in Idaho to a downward revision of 0.6 percent in Massachusetts. South Dakota also had a comparatively large revision (2.0 percent). In 2019, the revisions to current-dollar GDP by state ranged from an upward revision of 2.4 percent in Utah to a downward revision of 1.1 percent in Connecticut. Other states with revisions greater than 2.0 percent were Idaho (2.1 percent), North Dakota (2.2 percent), Delaware (2.3 percent), and Washington (2.3 percent). The revisions to current-dollar GDP by state in 2020 ranged from an upward revision of 2.9 percent in Tennessee to a downward revision of 0.2 percent in Connecticut. Other states with revisions greater than 2.0 percent were Florida (2.1 percent), Rhode Island (2.1 percent), Delaware (2.4 percent), Hawaii (2.5 percent), and Idaho (2.6 percent). In 2021, the revisions to current-dollar GDP by state ranged from an upward revision of 3.0 percent in Utah to a downward revision of 0.8 percent in Connecticut. In addition to Utah, 13 other states had revisions greater than 2.0 percent.

State personal income statistics were revised back to 1979. The revisions at the beginning of the period are primarily due to methodology changes, whereas for the most recent years, are primarily due to a combination of methodology changes and updated source data, including updated national estimates from the NIPAs. The range of state personal income revisions for the entire period are presented in chart 14. The revisions at the beginning of the period are due to the improved measures of RICs, which impacted state estimates of interest income starting in 1979. The improved utility adjustment for housing services impacted the rental income estimates starting in 1997. The classification changes and improved measures of REITs impacted estimates of dividend income from 2002 forward. These historical revisions are small, with personal income in most states being revised less than 1.0 percent each year.

Chart 14. Range of Percent Revisions in PCE by State and State Personal Income, 1979–2021



For the more recent years, 2017–2021, the revisions are larger because of source data including updated and new QCEW and IRS data. At the national level, personal income was revised downward for 2017 (–1.1 percent), 2018 (–0.9 percent), 2019 (–1.2 percent), and 2020 (–1.0 percent) and revised upward for 2021 (0.5 percent) (table 3). The revisions to state personal income for these years were less than 2.0 percent for most states.

The revisions to state personal income in 2017 ranged from a downward revision of 2.0 percent in Colorado to a downward revision of 0.3 percent in Georgia. In 2018, the revisions to state personal income ranged from an upward revision of 0.1 percent in Idaho to a downward revision of 2.1 percent in Wyoming. The revisions to state personal income in 2019 ranged from 0.0 percent in Idaho to a downward revision of 3.5 percent in Wyoming. Vermont also had a downward revision larger than 2.0 percent (–2.1 percent). In 2020, the revisions to state personal income ranged from an upward revision of 0.5 percent in Idaho to a downward revision of 2.8 percent in the District of Columbia. Other states with downward revisions greater than 2.0 percent were Vermont (–2.2 percent) and New York (–2.6 percent). In 2021, the revisions to state personal income ranged from an upward revision of 3.6 percent in Idaho to a downward revision of 2.6 percent in Connecticut. Other states with comparatively large revisions were Arkansas (2.1 percent), Nebraska (2.4 percent), North Dakota (2.5 percent), Oklahoma (2.5 percent), and Montana (2.6 percent).

PCE by state statistics were revised back to 1997. The revisions to PCE by state are largely due to the improved utility adjustment, which impacted PCE for housing services, and updated source data including QCEW, data from the Centers for Medicare & Medicaid Services on outpatient and hospital services, and updated national PCE estimates from the NIPAs. The range of PCE by state revisions for the entire period are presented in chart 14. For 2017–2021, national PCE was revised upward for all 5 years: 2017 (0.4 percent), 2018 (0.2 percent), 2019 (0.2 percent), 2020 (0.6 percent), and 2021 (0.9 percent). The revisions to PCE by state for these years were less than 2.0 percent for most states.

The revisions to PCE by state in 2017 were less than 2.0 percent for all states and ranged from an upward revision of 1.9 percent in Nevada to a downward revision of 1.9 percent in South Dakota. In 2018, the revisions to PCE by state ranged from an upward revision of 1.8 percent in Maine and Nevada to a downward revision of 2.2 percent in South Dakota. In addition to South Dakota, Idaho was revised downward by more than 2.0 percent (–2.1 percent). The revisions to PCE by state in 2019 ranged from an upward revision of 2.2 percent in North Dakota to a downward revision of 2.7 percent in South Dakota. Idaho (–2.0 percent) and Alaska (–2.4 percent) also had downward revisions of 2.0 percent or more. In 2020, the revisions to PCE by state ranged from an upward revision of 4.1 percent in Wyoming to a downward revision of 2.3 percent in Alaska. Other states with absolute revisions larger than 2.0 percent were South Dakota (–2.2 percent), Vermont (2.1 percent), Massachusetts (2.3 percent), Connecticut (2.4 percent), Utah (2.5 percent), Maine (2.6 percent), North Dakota (3.7 percent), and Rhode Island (4.0 percent). In 2021, the revisions to GDP by state ranged from an upward revision of 4.0 percent in Rhode Island to a downward revision of 3.7 percent in South Dakota. Other states with absolute revisions larger than 2.0 percent were Wyoming (2.3 percent), Arizona (2.4 percent), North Dakota (2.5 percent), Maine (2.7 percent), Utah (2.8 percent), California (3.1 percent), and Nevada (3.1 percent).

GDP by state, state personal income, and PCE by state are the state counterparts of the corresponding measures of GDP, personal income, and PCE in the 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., PCE 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, the result is 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 U.S. GDP by state excludes federal military and civilian activity located overseas, which cannot be attributed to a particular state.¹

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 (table I). 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.²

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.³

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.

Table I. Relation of Personal Income in the NIPAs and the State Personal Income Accounts

[Billions of dollars]

Component	2020	2021	2022
Personal income, NIPAs	19,629.0	21,407.7	21,840.8
Plus adjustments for:			
Coverage differences	-23.1	-19.2	-18.8
Federal workers abroad	-34.7	-34.1	-39.1
Wage and salary disbursements	-23.9	-23.3	-26.4
Supplements to wages and salaries ¹	-8.3	-8.6	-10.1
Dividends, interest, and rent ²	-5.0	-4.6	-5.3
Less: Personal contributions for social insurance	-2.5	-2.4	-2.7
Rest-of-the-world difference	11.6	14.9	20.3
Wages of private foreign nationals in U.S.	12.9	16.3	21.8
Wages of private U.S. residents abroad	-1.3	-1.4	-1.5
Use of more current source data	5.4	5.5	-0.3
Wage and salary disbursements	0.0	0.0	0.0
Farm proprietors' income	5.4	5.5	-0.3
Personal current transfer receipts	<0.1	<0.1	<0.1
Statistical discrepancy ³	-1.3	-1.2	-1.5
Equals: State personal income⁴	19,610.0	21,392.8	21,820.2

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 29, 2023.

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.⁴

There are minor differences in coverage between the regional and national PCE statistics.⁵ 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.

1. See [Gross Domestic Product by State Estimation Methodology](#) on the BEA website.
2. See [State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods](#) on the BEA website.
3. For a description of military coverage in state personal income, see “[New Treatment of State Estimates of Military Compensation](#),” *Survey* 85 (October 2005): 116.
4. 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.
5. 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).

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The estimates of wages and salaries, supplements to wages and salaries, employee contributions for government social insurance, farm proprietors' income, personal current transfer receipts, the adjustment for residence, taxes on production and imports, and personal current tax receipts were prepared by the Compensation and Government Branch, under the supervision of Amanda Budny. Major responsibilities were assigned to Alexander Adams, Kendra Asher, Peter Battikha, and John Laffman. Contributing staff members were Suet Boudhraa, John Broda, Ernie Enriquez, Terence Fallon, David Guo, Hong Han, Karan Kassan, Paul Medzerian, Kekai Liu, Russell Moncrief, Krishna Parajuli, Jesse Park, Michael Partyka, Steven Penarrieta, Ross Stepp, Troy Watson, and Nicholas Wetzler.

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Footnotes

1. For additional information, see Stephanie H. McCulla, Dorian L. Turner, and Lisa Mataloni, “[Preview of the 2023 Comprehensive Update of the National Economic Accounts: Changes in Methods, Definitions, and Presentations](#),” *Survey of Current Business* (June 23, 2023) and Lisa S. Mataloni, Dorian L. Turner, and Stephanie H. McCulla, “[Improved Estimates of the National Accounts: Results of the 2023 Comprehensive Update](#),” *Survey* (November 9, 2023).
2. BEA released preliminary state personal income and GDP by state statistics for 2022 on March 31, 2023. These statistics were based on quarterly data for an early read on the state economies in 2022. With the comprehensive update, BEA released revised state personal income and GDP statistics for 2022 that were based on more complete source data and the annual methodology as well as new PCE by state statistics for 2022.



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