
Impacts of the Oil and Natural Gas Industry on the US Economy in 2019

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Impacts of the Oil and Natural Gas Industry on the US Economy in 2019

Executive Summary

This report explores the economic impact of the oil and natural gas industry in the United States. These impacts are the result of three channels: direct impacts from the employment and production within the oil and natural gas industry; indirect impacts through the industry's purchases of intermediate and capital goods from a variety of other US industries; and induced impacts from the personal purchases of employees and business owners both within the oil and natural gas industry and its supply chain, as well as from the personal spending by shareholders out of the dividends received from oil and natural gas companies.¹

The American Petroleum Institute engaged PricewaterhouseCoopers LLP ("PwC") to quantify the economic impacts of the US oil and natural gas industry in terms of employment, labor income, and value added at the national, state, and Congressional District level.² In addition, the economic impacts of the onshore upstream subsector of the industry in 14 states are also quantified. This report provides PwC's economic impact estimates for 2019.

The report's findings show that the US oil and natural gas industry has a widespread economic impact throughout all sectors of the economy. Combining the industry's **operational impact** (due to purchases of intermediate inputs and payments of employee compensation and dividends) and its **capital investment impact** (due to its investment in new structures and equipment), the industry's total impact amounted to 11.3 million full-time and part-time jobs and accounted for 5.6 percent of total US employment in 2019 (see **Table E-1**, below).

Table E-1.— Total Operational and Capital Investment Impacts of the Oil and Natural Gas Industry on the US Economy, 2019

Item	Direct Impacts	Indirect and Induced Impacts		Total Impacts	Percent of US Total
		Operational Impacts	Capital Investment Impacts		
Employment (millions)*	2.5	6.5	2.3	11.3	5.6%
Labor Income (\$billions)**	\$318.6	\$416.7	\$157.4	\$892.7	6.8%
Value Added (\$billions)	\$763.3	\$678.9	\$245.4	\$1,687.6	7.9%

Source: PwC calculations using the IMPLAN modeling system. Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

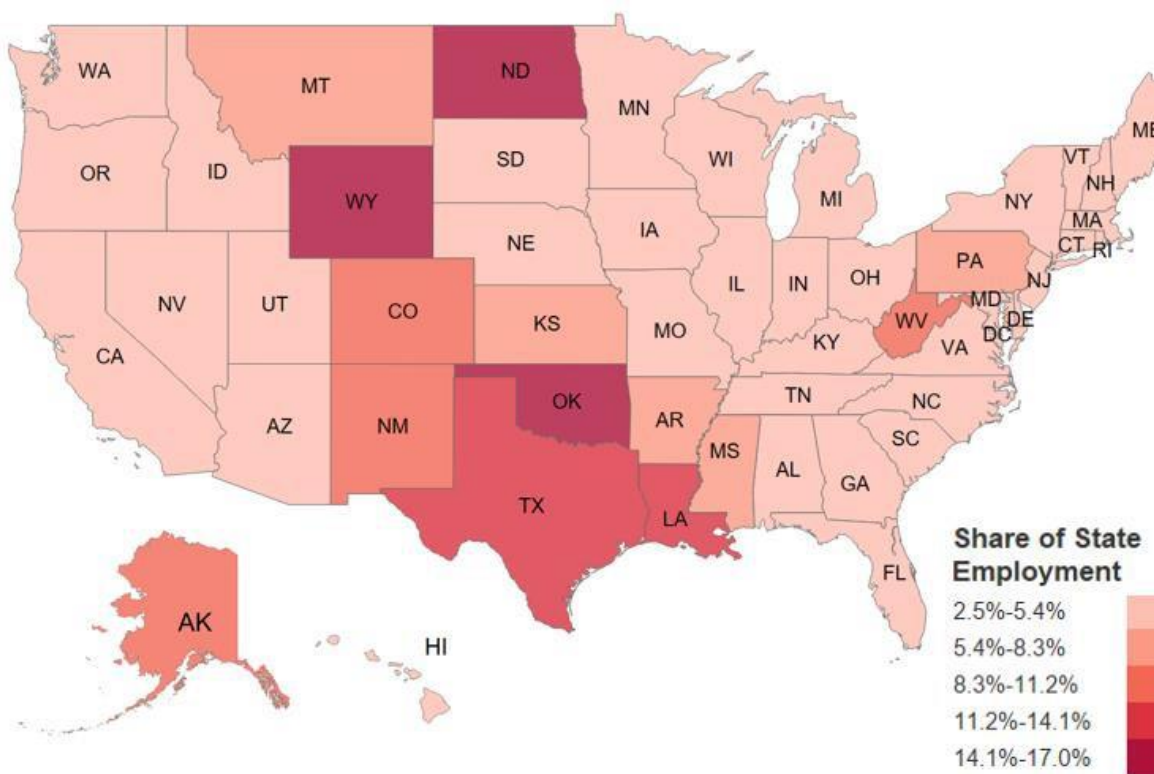
¹ These economic impacts represent the entire *backward linkages* of the US oil and natural gas industry to its suppliers. They do not capture *forward linkages* (i.e., the economic impact on production in sectors that use oil and natural gas as an input).

² Value added refers to the additional value created at a particular stage of production. It is a measure of the overall importance of an industry and represents the industry's portion of US gross domestic product ("GDP"). Value added consists of: employee compensation, proprietors' income, income to capital owners from property, and indirect business taxes (including excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses).

At the national level, each direct job in the oil and natural gas industry supported an additional 3.5 jobs elsewhere in the US economy in 2019 (for a multiplier of 4.5). Counting direct, indirect, and induced impacts, the industry's total impact on labor income (including proprietors' income) was \$892.7 billion, or 6.8 percent of the US national labor income in 2019. The industry's total impact on US GDP was nearly \$1.7 trillion, accounting for 7.9 percent of the national total in 2019.

The economic impact of the oil and natural gas industry can be seen across the United States. In 31 states the industry directly and indirectly supported at least 100,000 jobs in 2019. Texas alone had 2.5 million jobs supported by the industry, and California had over 1 million jobs attributable to the industry. The share of employment supported by the oil and natural gas industry (including direct, indirect and induced impacts) in each state ranges from 2.6 percent in the District of Columbia to 16.7 percent in Oklahoma (see **Figure E-1**, below).

Figure E-1. Share of Employment Directly and Indirectly Supported by the Oil and Natural Gas Industry, 2019



Source: PwC calculations.

At the congressional district level, the number of jobs directly provided by the oil and natural gas industry was at least 1,000 in all but three districts and exceeded 5,000 in 132 congressional districts in 2019. Including direct, indirect, and induced effects, the industry supported more than 10,000 jobs in 424 congressional districts in 2019.

As shown in **Table E-2**, below, the onshore upstream subsector of the oil and natural gas industry directly provided 690,500 jobs, paid out \$126.2 billion in labor income, and generated \$221.6 billion in value added in 2019 in the 14 states studied. Including direct, indirect, and induced impacts, the total impacts of this subsector on the 14 states were 3.2 million jobs, \$297.2 billion in labor income, and \$493.1 billion in value added.

Table E-2. The Economic Impact of the Onshore Upstream Subsector of the Oil and Natural Gas Industry in Selected States, 2019
(Thousands of jobs; Billions of dollars)

State	Employment ⁽¹⁾		Labor Income ⁽²⁾		Value Added	
	Direct	Total	Direct	Total	Direct	Total
Alaska	9.3	28.6	\$1.7	\$2.9	\$5.1	\$7.3
California	29.1	399.4	\$2.8	\$34.1	\$7.0	\$58.0
Colorado	42.2	235.4	\$12.5	\$25.2	\$10.7	\$30.7
Louisiana	43.4	153.4	\$6.0	\$11.9	\$8.8	\$19.4
Montana	4.5	21.1	\$0.5	\$1.3	\$0.5	\$1.8
New Mexico	28.2	72.7	\$2.4	\$4.6	\$9.3	\$13.3
North Dakota	23.5	58.4	\$2.6	\$4.7	\$5.8	\$9.2
Ohio	17.5	146.0	\$0.8	\$9.2	\$9.9	\$23.9
Oklahoma	94.9	257.6	\$8.7	\$18.4	\$21.3	\$36.6
Pennsylvania	27.4	188.9	\$2.3	\$14.2	\$13.3	\$31.9
Texas	334.4	1,549.1	\$82.9	\$162.9	\$122.5	\$245.4
Utah	5.9	44.4	\$0.4	\$2.6	\$0.8	\$4.6
West Virginia	13.2	39.8	\$1.1	\$2.6	\$3.3	\$5.9
Wyoming	16.8	37.2	\$1.5	\$2.6	\$3.3	\$5.2
Subtotal	690.5	3,231.9	\$126.2	\$297.2	\$221.6	\$493.1

Source: PwC calculations based on the IMPLAN model and data from IHS Markit, Alaska's Department of Natural Resources, and the Energy Information Administration. Details may not add up to totals due to rounding.

(1) Employment is defined as the number of direct, indirect, and induced payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

These results were calculated using the IMPLAN model, an input-output model based on government data.

Impacts of the Oil and Natural Gas Industry on the US Economy in 2019

I. Introduction

The American Petroleum Institute engaged PwC to quantify the economic impacts of the US oil and natural gas industry on the national economy in terms of employment, labor income, and value added.³ In addition, the economic impacts of the onshore upstream subsector of the industry in 14 states are also quantified. This report presents PwC's economic impact estimates for 2019.⁴

In describing the economic impact of the US oil and natural gas industry through its employment and purchases of goods and services, this report considers three separate channels -- the direct impact, the indirect impact, and the induced impact -- that in aggregate provide a measure of the total economic impact of the US oil and natural gas industry.

- **Direct impact** is measured as the jobs, labor income, and value added *within* the oil and natural gas industry.
- **Indirect impact** is measured as the jobs, labor income, and value added occurring *throughout the supply chain* of the oil and natural gas industry attributable to its operating and capital expenditures.⁵
- **Induced impact** is measured as the jobs, labor income, and value added resulting from *household spending* of labor and proprietor's income earned either directly or indirectly from the oil and natural gas industry's spending and from the personal spending by shareholders out of the dividends received from oil and natural gas companies.

For the indirect and induced impacts, this study separately quantifies the US oil and natural gas industry's **operational impact** (due to purchases of intermediate inputs and payments of employee compensation and dividends) and **capital investment impact** (due to its investment in new structures and equipment).⁶

Together these effects result in the oil and natural gas industry having a widespread economic impact throughout all sectors of the US economy.

³ Value added refers to the additional value created at a particular stage of production. It is a measure of the overall importance of an industry and represents the industry's share of gross domestic product ("GDP"). Value added consists of: employee compensation, proprietors' income, income to capital owners from property, and indirect business taxes (including excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses).

⁴ PwC has prepared several prior economic impact studies for the American Petroleum Institute, with the most recent being *The Economic Impacts of the Natural Gas, Oil and Petrochemical Industry on the US Economy in 2018* (May 2020).

⁵ Operating expenditures are the costs on non-capital inputs (such as materials, rent, and utilities) for a company to run its business operations on a daily basis. Capital expenditures are the amounts that companies use to purchase major physical goods or services that will have a productive life of more than one year.

⁶ These economic impacts represent all of the *backward linkages* of the US oil and natural gas industry to its suppliers. They do not capture *forward linkages* (i.e., the economic impact on production in sectors that use oil and natural gas as an input).

The main data source for the industry's **direct** jobs, labor income and value added is the *State Annual Personal Income and Employment* data set published by the US Bureau of Economic Analysis ("BEA"). The BEA data are supplemented by data from IHS Markit, Alaska's Department of Natural Resources, and US Energy Information Administration to quantify the direct impact of the onshore upstream subsector of the industry in 14 selected states.

For the industry's **indirect** and **induced** economic impacts, we have developed the estimates using customized input-output models for each study area built based on the IMPLAN input-output modeling system.⁷ The onshore upstream subsector's indirect and induced economic impacts are similarly estimated based on the IMPLAN model.

The rest of this report is organized as follows. **Section II** defines the oil and natural gas industry for this study. **Section III** presents PwC's estimates of the industry's economic impacts at the national, state and Congressional District level in 2019. It also includes PwC's estimates of the economic impacts of the industry's onshore upstream subsector in 14 states in 2019. **Section IV** presents a composite measure of the industry's total "spend" based on its direct labor income, capital expenditures, and dividend payments. Detailed results by sector, by state and by Congressional District and an overview of the methodology are provided in the appendices.

⁷The IMPLAN input-output economic modeling system is supported by the IMPLAN Group LLC. Its users include academia, federal, state, and local governments, and the private sector.

II. Industry Definition

The US oil and natural gas industry encompasses multiple activities that span separate industry classifications in government economic data. Oil and natural gas exploration and production is included in the mining sector; oil refining is part of the manufacturing sector; pipeline operations are included in the transportation sector; natural gas distribution is in the utilities sector; and oil marketing is considered part of the wholesale and retail trade sector. For this study, PwC has defined the oil and natural gas industry to include all of these activities.

Table 1, below, shows the composition of the industry as defined by PwC, followed by detailed descriptions based on the *North American Industry Classification System* (“NAICS”).

Table 1.– Composition of the US Oil and Natural Gas Industry

NAICS	IMPLAN Sector	Description
211**	20	Oil and gas extraction (including NGL extraction)
213111**	35	Drilling oil and gas wells
213112**	36	Support activities for oil and gas operations
2212	48, 528*	Natural gas distribution (private and public)
23712	56*	Oil and gas pipeline and related structures construction
32411	154	Petroleum refineries
32412	155, 156	Asphalt paving, roofing and saturated materials manufacturing
324191	157	Petroleum lubricating oil and grease manufacturing
4247	399	Petroleum and petroleum products merchant wholesalers
44711, 44719	408	Gasoline stations
45431	413*	Fuel dealers
486	419	Pipeline transportation

* IMPLAN sectors 56, 413 and 528 include additional NAICS activities outside the US oil and natural gas industry. Modeling of the economic impacts includes only the portion of these sectors that include the oil and natural gas industry's NAICS segments.

** Indicates the upstream subsector of the oil and natural gas industry.

NAICS 211. Oil and gas extraction. Establishments in this subsector operate and/or develop oil and gas field properties. Such activities may include exploration for crude petroleum and natural gas; drilling, completing, and equipping wells; operating separators, emulsion breakers, desilting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This subsector includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, and the production of natural gas, sulfur recovery from natural gas, and recovery of hydrocarbon liquids. Establishments in this subsector include those that operate oil and gas wells on their own account or for others on a contract or fee basis.

NAICS 213111. Drilling oil and gas wells. This subsector comprises establishments primarily engaged in drilling oil and gas wells for others on a contract or fee basis. This industry includes contractors that specialize in spudding, drilling, re-drilling, and directional drilling.

NAICS 213112. Support activities for oil and gas operations. This subsector comprises establishments primarily engaged in performing support activities on a contract or fee basis for oil and gas operations (except site preparation and related construction activities). Services included are exploration (except geophysical surveying and mapping); excavating slush pits and

cellars, well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells, shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells.

NAICS 2212. Natural gas distribution. This subsector comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers. Both privately and publicly owned establishments are included in this study.

NAICS 23712. Oil and gas pipeline and related structures construction. This subsector comprises establishments primarily engaged in the construction of oil and gas lines, mains, refineries, and storage tanks. The work performed may include new work, reconstruction, rehabilitation, and repairs. Specialty trade contractors are included in this group if they are engaged in activities primarily related to oil and gas pipeline and related structures construction. All structures (including buildings) that are integral parts of oil and gas networks (e.g., storage tanks, pumping stations, and refineries) are included in this subsector.

NAICS 32411. Petroleum refineries. This subsector comprises establishments primarily engaged in refining crude petroleum into refined petroleum. Petroleum refining involves one or more of the following activities: (1) fractionation; (2) straight distillation of crude oil; and (3) cracking.

NAICS 32412. Asphalt paving, roofing, and saturated materials manufacturing. This subsector comprises establishments primarily engaged in (1) manufacturing asphalt and tar paving mixtures and blocks and roofing cements and coatings from purchased asphaltic materials and/or (2) saturating purchased mats and felts with asphalt or tar from purchased asphaltic materials. These are primarily petroleum-based products.

NAICS 324191. Petroleum lubricating oil and grease manufacturing. This subsector comprises establishments primarily engaged in blending or compounding refined petroleum to make lubricating oils and greases and/or re-refining used petroleum lubricating oils.

NAICS 4247. Petroleum and petroleum products merchant wholesalers. This subsector comprises establishments with bulk liquid storage facilities primarily engaged in the merchant wholesale distribution of crude petroleum and petroleum products, including liquefied petroleum gas.

NAICS 44711. Gasoline stations with convenience stores. This subsector comprises establishments engaged in retailing automotive fuels (e.g., diesel fuel, gasohol, gasoline) in combination with convenience store or food mart items. These establishments can either be in a convenience store (i.e., food mart) setting or a gasoline station setting. These establishments may also provide automotive repair services.

NAICS 44719. Other gasoline stations. This subsector comprises establishments known as gasoline stations (except those with convenience stores) primarily engaged in one of the following: (1) retailing automotive fuels (e.g., diesel fuel, gasohol, gasoline) or (2) retailing these fuels in combination with activities, such as providing repair services; selling automotive oils, replacement parts, and accessories; and/or providing food services

NAICS 45431. Fuel dealers. This subsector comprises establishments primarily engaged in retailing heating oil, liquefied petroleum (LP) gas, and other fuels via direct selling.

NAICS 486. Pipeline transportation. Establishments in this subsector use transmission pipelines to transport products, such as crude oil, natural gas, refined petroleum products, and slurry. It also includes the storage of natural gas because the storage is usually done by the pipeline establishment and because a pipeline is inherently a network in which all the nodes are interdependent.

III. Economic Impact of the Oil and Natural Gas Industry

This section presents the estimated economic impact of the oil and natural gas industry at the national, state and Congressional District level. It also shows the estimated economic impact of the onshore upstream subsector of the industry in 14 selected states.

The total economic impact we have measured includes the **direct impact** (the jobs, labor income, and value added *within* the oil and natural gas industry), the **indirect impact** (the jobs, labor income, and value added occurring *throughout the supply chain* of the oil and natural gas industry), and the **induced impact** (the jobs, labor income, and value added resulting from *household spending* of labor and proprietor's income earned either directly or indirectly from the oil and natural gas industry's spending and from dividends received from oil and natural gas companies).

To quantify these linkages, we rely on the IMPLAN model, an input-output (I-O) model based on government data. For this analysis, we have separately quantified the indirect and induced impacts of the oil and natural gas industry's **operational** and **capital spending**. Operating expenditures are the costs on non-capital inputs (such as materials, rent, and utilities) for a company to run its business operations on a daily basis. Capital expenditures are the amounts that companies use to invest in major physical goods or services that have a productive life of more than one year.

A. National Results

The economic activity of the industry can be measured using three separate metrics: employment, labor income, and value added, as defined below.

- **Employment:** The number of payroll and self-employed jobs (including part-time jobs), averaged over the year.
- **Labor income:** The wages, salaries and benefits paid to employees and proprietors' income for the self-employed.
- **Value added:** The total output of each sector less the associated value of intermediate inputs. The sum of the value added across all sectors in the economy is GDP.⁸ An industry's value added represents its contribution to GDP.

Table 2, below, shows the direct impact of the US oil and natural gas industry on the US economy in terms of employment, labor income (including wages, salaries and benefits as well as proprietors' income), and value added. In 2019, the oil and natural gas industry directly provided 2.5 million jobs for American workers, paid \$318.6 billion in wages, salaries and fringe benefits and proprietors' income, and generated \$763.3 billion in GDP. The industry's direct national impact on the US jobs, labor income and value added ranged from 1.2 percent to 3.6 percent in 2019 (see **Appendix A** for a breakout of the industry's direct impact by detailed subsector).

⁸ Value added differs from gross output (or sales) because it excludes the value of intermediate goods that are embedded in the final sales of each industry.

Table 2. Direct Impact of the Oil and Natural Gas Industry on the US Economy, 2019

	Employment ⁽¹⁾ (millions of jobs)	Labor Income ⁽²⁾ (\$ Billion)	Value Added (\$ Billion)
The US Oil and Natural Gas Industry's Direct Impact	2.5	\$318.6	\$763.3
As a percent of the US economy	1.2%	2.4%	3.6%

Source: Estimates based on 2019 employment data from the US Bureau of Economic Analysis and supplemented by data from the US Bureau of Labor Statistics and US Census Bureau and 2019 input-output relationships from the IMPLAN modeling system.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

As shown in **Table 3**, below, the US oil and natural gas industry's total economic impact (including direct, indirect and induced impacts from both operational and capital spending) ranged between 5.6 percent and 7.9 percent of all US jobs, labor income, and value added in 2019.

Table 3.– Total Impact of the Oil and Natural Gas Industry on the US Economy, 2019

Item	Amount	Percent of US Total
Operational Impact		
Employment (millions of jobs)*	9.0	4.4%
Labor Income (\$ billions)**	\$735.3	5.6%
Value Added (\$ billions)	\$1,442.2	6.7%
Capital Investment Impact		
Employment (millions of jobs)*	2.3	1.2%
Labor Income (\$ billions)**	\$157.4	1.2%
Value Added (\$ billions)	\$245.4	1.1%
Total Impact		
Employment (millions of jobs)*	11.3	5.6%
Labor Income (\$ billions)**	\$892.7	6.8%
Value Added (\$ billions)	\$1,687.6	7.9%

Source: PwC calculations using the IMPLAN modeling system.

Note: Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Employment

PwC estimates that the US oil and natural gas industry's *operations* directly or indirectly supported 9.0 million full-time and part-time jobs in the national economy in 2019. Further, the industry's *capital investment* supported an additional 2.3 million jobs in the national economy. Combining the operational and capital investment impacts, the oil and natural gas industry's total employment impact on the national economy amounted to 11.3 million full-time and part-time jobs in 2019, accounting for 5.6 percent of total US employment.

Labor Income

The associated labor income (including wages and salaries and benefits as well as proprietors' income) from jobs directly or indirectly supported by the oil and natural gas industry through its

operations, capital investment, and household spending out of dividend payments is estimated to be \$892.7 billion, or 6.8 percent of total US labor income in 2019.

Value Added

Value added refers to the additional value created at a particular stage of production. The sum of value added across all industries in a country or region is, by definition, equivalent to its Gross Domestic Product (GDP). Value added consists of: employee compensation, proprietors' income, income to capital owners from property, and indirect business taxes (i.e., those borne by consumers rather than producers).

PwC estimates that the US oil and natural gas industry's *operations* directly or indirectly generated \$1.4 trillion of value added in the national economy in 2019, and its *capital investment* added an additional \$245.4 billion of value added. Combining both operational and capital investment impacts, the industry's total value-added impact at the national level was nearly \$1.7 trillion, accounting for 7.9 percent of US GDP in 2019.

The indirect and induced economic activity occurs across a broad range of other industries. For employment, 54.8 percent of the indirect and induced impact attributable to the industry's operational expenditures is in the services sector. Another 14.2 percent is in the finance, insurance, real estate, rental and leasing sector. The indirect and induced impact on employment attributable to the industry's capital expenditures is mostly concentrated in services, construction, and wholesale trade (see **Table 4a**, below).

For labor income, 51.2 percent of the indirect and induced impact attributable to the industry's operational expenditures is in the services sector, and another 15.3 percent is in the finance, insurance, real estate, rental and leasing sector. The indirect and induced impact to labor income attributable to the industry's capital expenditures is mostly concentrated in services, construction, and manufacturing (see **Table 4b**, below).

For value added, the services sector accounted for 37.2 percent of the indirect and induced impact attributable to the industry's operational expenditures. Finance, real estate, rental and leasing accounted for another 28.2 percent. The indirect and induced impact to value added attributable to the industry's capital expenditures is mostly concentrated in services, finance, real estate, rental and leasing, and manufacturing (see **Table 4c**, below).

Table 4a. Distribution of Indirect and Induced Activity Generated by the US Oil and Natural Gas Industry, 2019: *Employment*

Industry Impacted	Indirect and Induced Impacts	
	Operational	Capital
Total (in thousands)	6,482	2,353
Agriculture, forestry and fishing	1.2%	1.0%
Mining	0.2%	0.2%
Utilities	0.5%	0.3%
Construction	2.4%	17.3%
Manufacturing	5.1%	10.3%
Wholesale and retail trade	10.1%	11.2%
Transportation and warehousing	7.7%	5.2%
Information	1.9%	1.8%
Finance, insurance, real estate, rental and leasing	14.2%	10.0%
Services	54.8%	42.4%
Other	1.8%	0.4%
Total	100%	100%

Source: PwC calculations using the IMPLAN modeling system and data from US Census Bureau.
Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

Table 4b. Distribution of Indirect and Induced Activity Generated by the US Oil and Natural Gas Industry, 2019: *Labor Income*

Industry Impacted	Indirect and Induced Impacts	
	Operational	Capital
Total (\$billions)	\$416.7	\$157.4
Agriculture, forestry and fishing	0.6%	0.5%
Mining	0.3%	0.3%
Utilities	1.4%	0.6%
Construction	2.4%	16.8%
Manufacturing	6.2%	13.6%
Wholesale and retail trade	8.8%	10.2%
Transportation and warehousing	7.5%	4.2%
Information	3.9%	3.9%
Finance, insurance, real estate, rental and leasing	15.3%	10.3%
Services	51.2%	39.0%
Other	2.4%	0.5%
Total	100%	100%

Source: PwC calculations using the IMPLAN modeling system and data from US Census Bureau.
Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table 4c. Distribution of Indirect and Induced Activity Generated by the US Oil and Natural Gas Industry, 2019: Value Added

Industry Impacted	Indirect and Induced Impacts	
	Operational	Capital
Total (\$billions)	\$678.9	\$245.4
Agriculture, forestry and fishing	0.6%	0.5%
Mining	0.5%	0.4%
Utilities	2.8%	1.3%
Construction	1.9%	11.6%
Manufacturing	6.9%	14.7%
Wholesale and retail trade	9.3%	11.3%
Transportation and warehousing	6.3%	3.4%
Information	4.4%	5.8%
Finance, insurance, real estate, rental and leasing	28.2%	19.7%
Services	37.2%	30.6%
Other	1.9%	0.5%
Total	100%	100%

Source: PwC calculations using the IMPLAN modeling system and data from US Census Bureau.

B. State Results

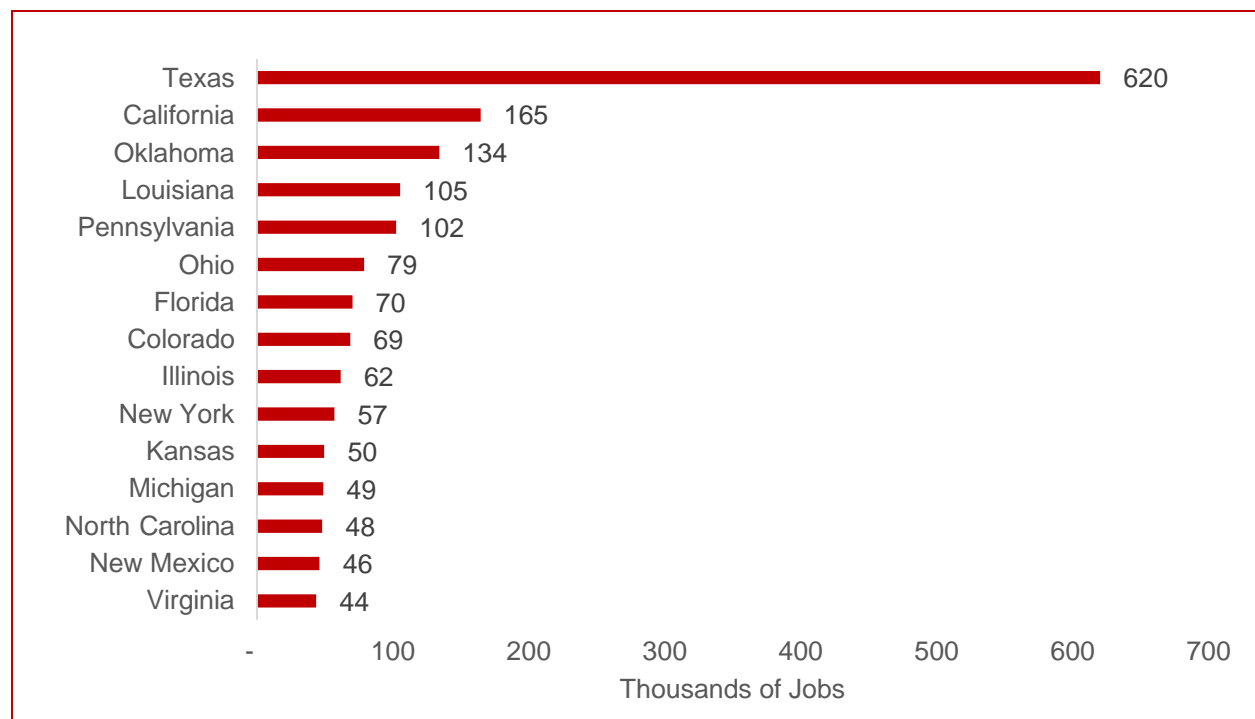
The economic impact of the oil and natural gas industry at the state level reflects the indirect and induced effects attributable to direct activity within each state's borders, as well as indirect and induced activity within a state that is attributable to direct activity in other states.⁹

The economic impact of the oil and natural gas industry varies from state to state, depending on factors such as each state's population, natural resources, industry mix, wage structure, spending and saving patterns, and connections to other economies. In terms of direct impact of the oil and natural gas industry, **Figures 1, 2, and 3**, below, present employment, labor income, and value added for the top 15 states ranked by direct impacts (details for all states are available in **Appendix B**).

The figures indicate that Texas ranks substantially above all other states in terms of direct impacts of the oil and natural gas industry, with 620,000 jobs, \$134.2 billion of labor income, and \$230.9 billion of value added contributed in 2019. Other states with exceptionally large direct impacts include California, Oklahoma, Louisiana, and Pennsylvania, each with more than 100,000 jobs directly attributable to the oil and natural gas industry. These states have vast oil and natural gas deposits on and off shore that have led to substantial upstream and downstream operations. The share of total state employment can be seen below in **Figure 7**.

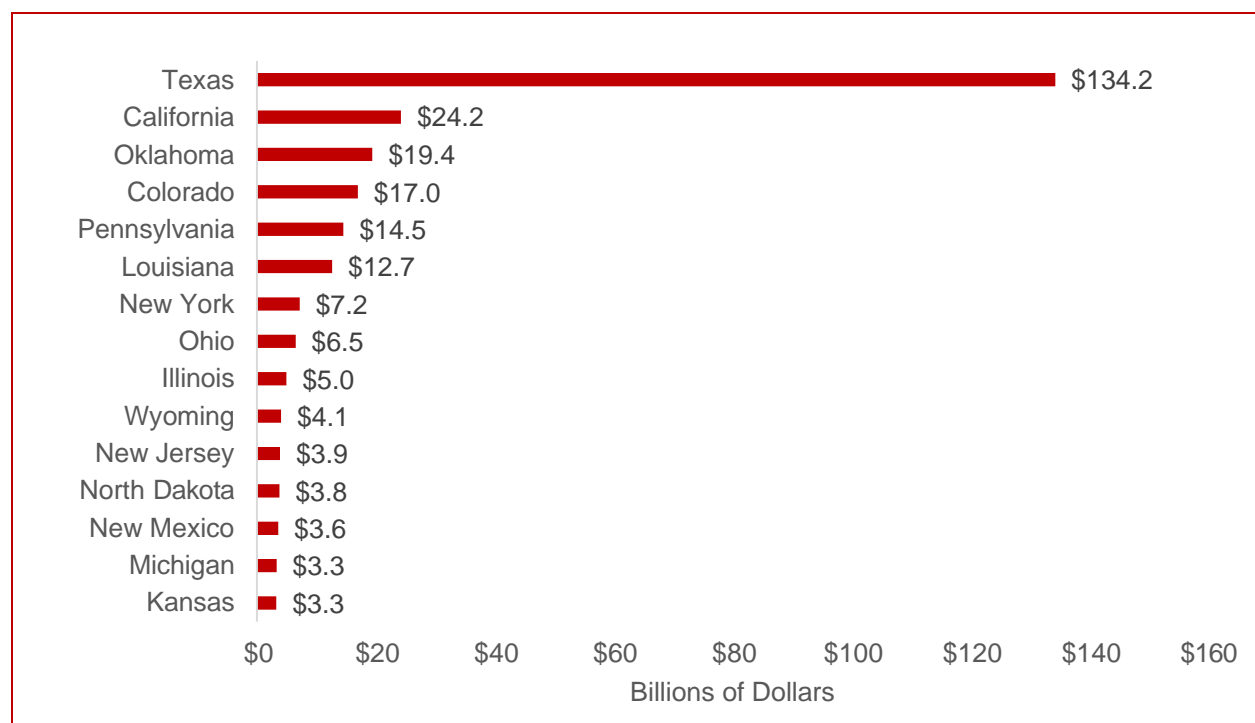
⁹ We have allocated the indirect and induced effects by industry attributable to direct activity in other states based on the overall level of economic activity of that industry in each state.

**Figure 1. The Oil and Natural Gas Industry's Direct Impact:
Top 15 States by Direct Employment, 2019**



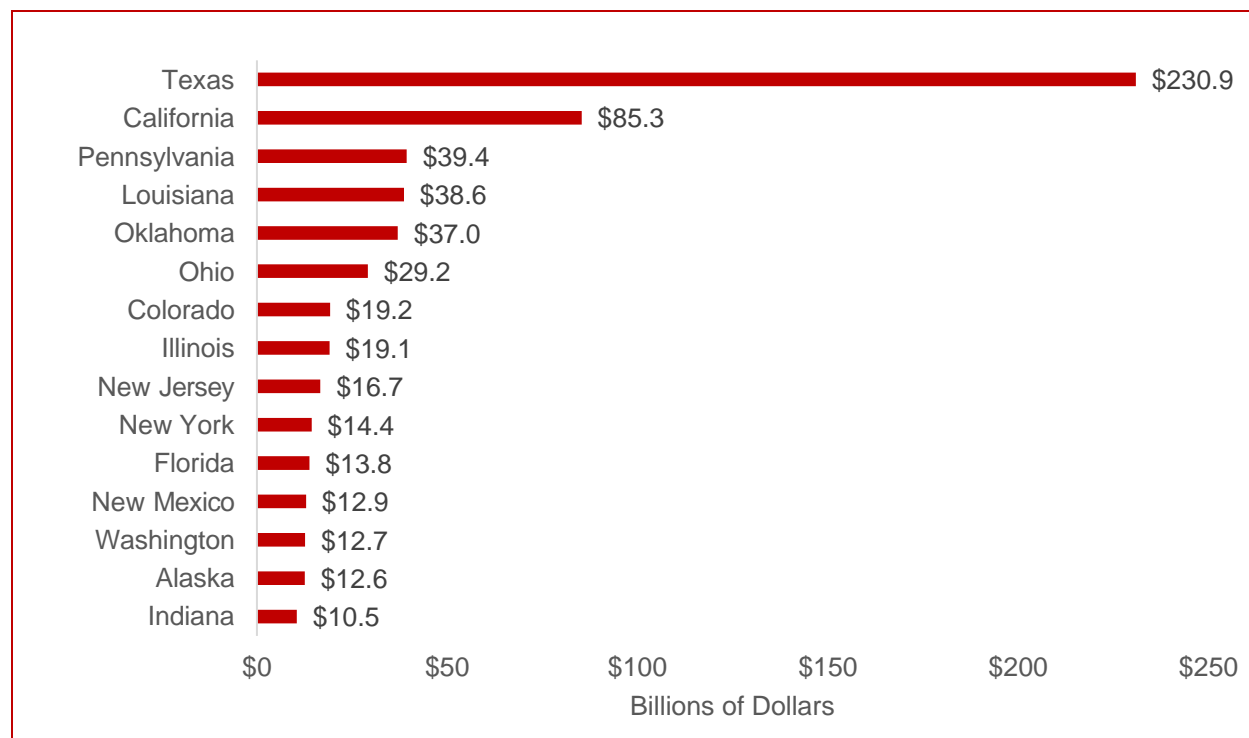
Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

**Figure 2. The Oil and Natural Gas Industry's Direct Impact:
Top 15 States by Direct Labor Income, 2019**



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

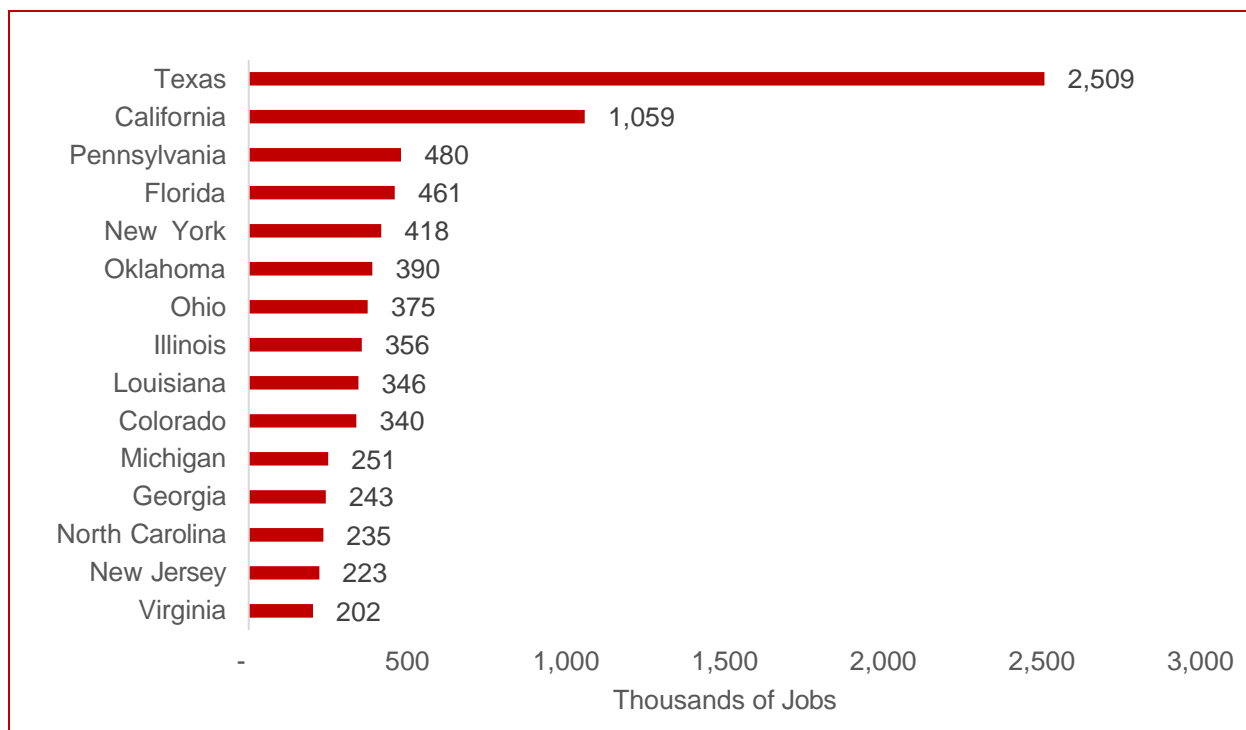
**Figure 3. The Oil and Natural Gas Industry's Direct Impact:
Top 15 States by Direct Value Added, 2019**



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

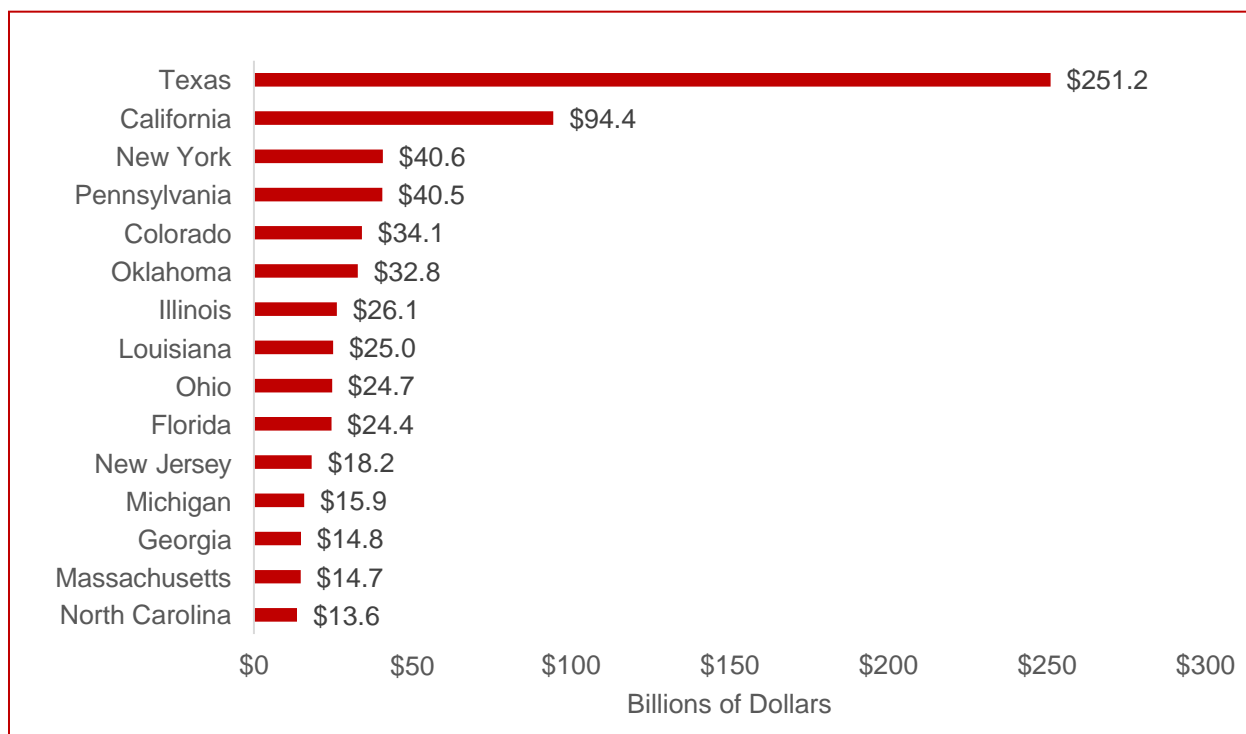
Figures 4 through **9**, below, present the total impact of the oil and natural gas industry by state, including direct, indirect, and induced impacts. Looking at the top 15 states in terms of total employment attributable to the oil and natural gas industry, **Figure 4**, below, indicates that Texas ranks highest by this measure as well, followed by California and Pennsylvania. These states also rank high in terms of labor income and value added attributable to the oil and natural gas industry (see **Figures 5** and **6**, below). These states have the highest amounts of activities directly or indirectly attributable to the oil and natural gas industry in part because they also are among the largest economies in the country.

**Figure 4. The Oil and Natural Gas Industry's Total Impact:
Top 15 States by Total Employment, 2019**



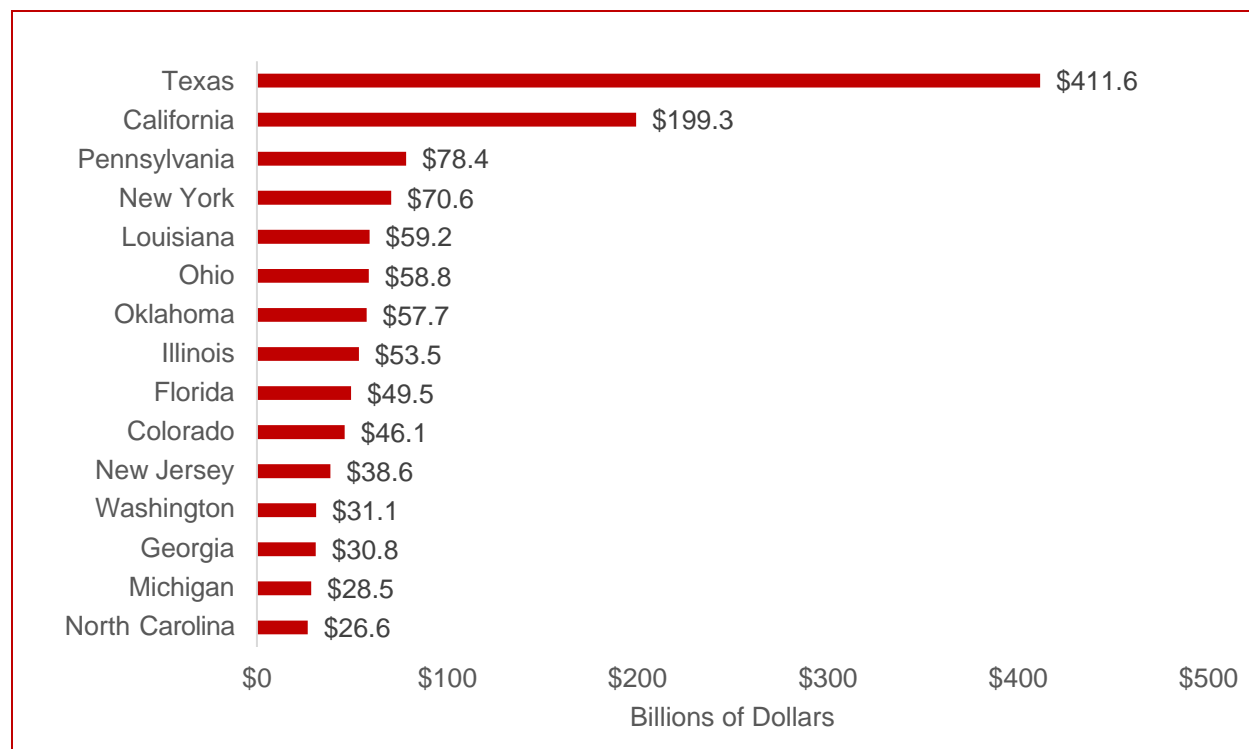
Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

**Figure 5. The Oil and Natural Gas Industry's Total Impact:
Top 15 States by Total Labor Income, 2019**



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

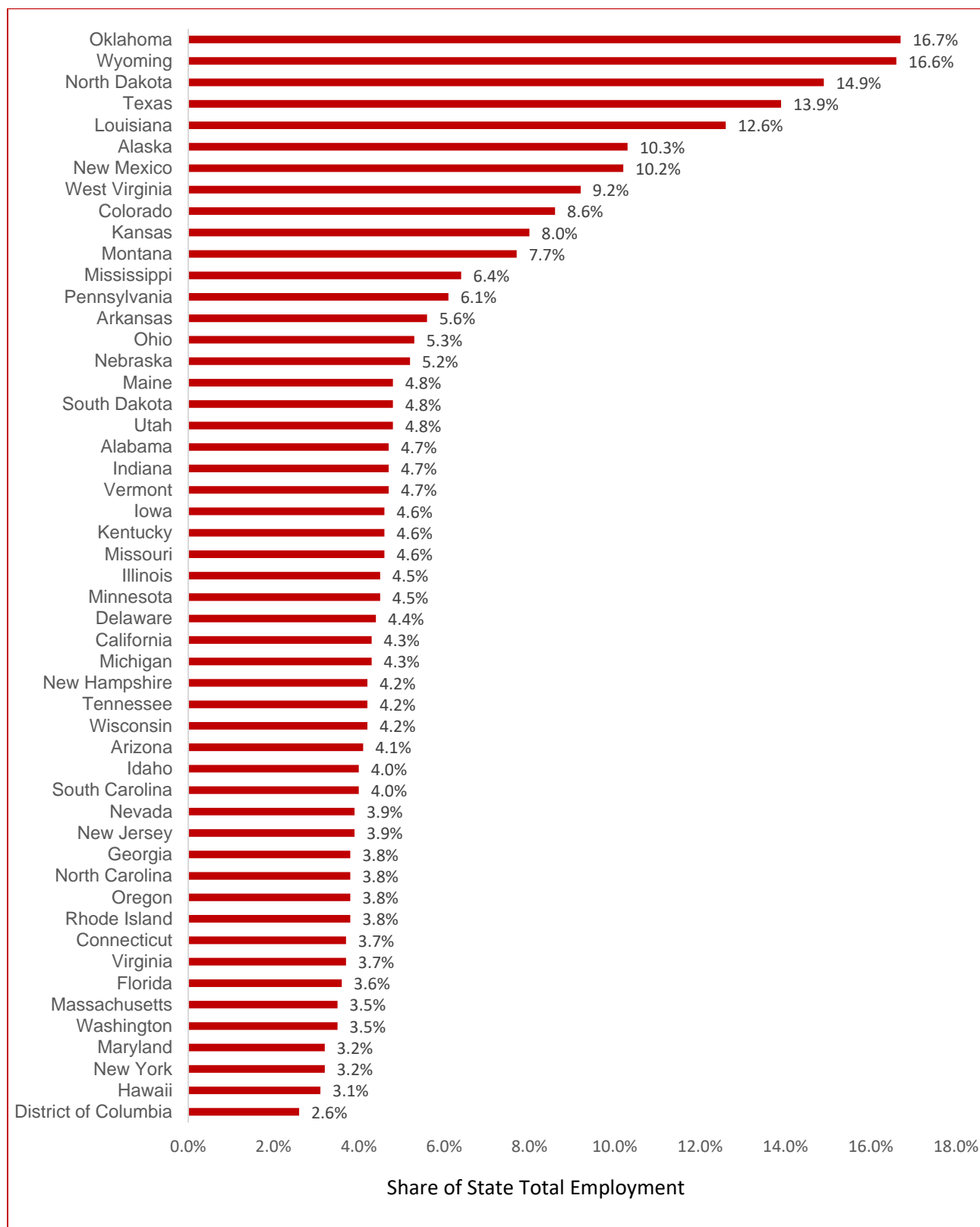
**Figure 6. The Oil and Natural Gas Industry's Total Impact:
Top 15 States by Total Value Added, 2019**



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

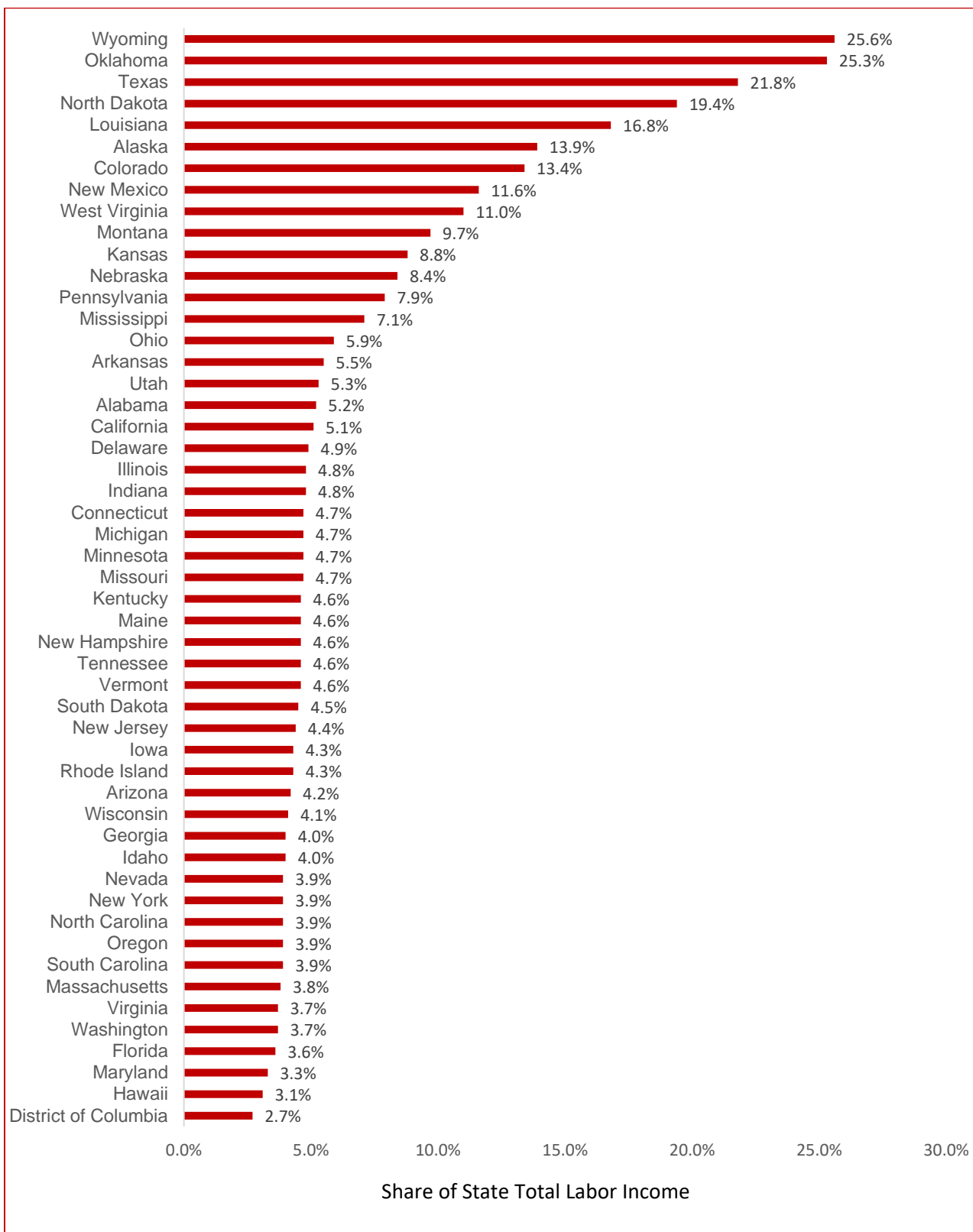
Looking at all states in terms of the share of state employment directly or indirectly attributable to the oil and natural gas industry, **Figure 7**, below, indicates that Oklahoma ranks highest, followed by Wyoming, North Dakota, Texas, Louisiana, Alaska, and New Mexico. In each of these states, the oil and natural gas industry directly and indirectly contributed more than 10 percent of state employment in 2019. These states also rank high in terms of the share of state labor income and value added directly and indirectly attributable to the oil and natural gas industry (see **Figures 8** and **9**, below). These states, which have large oil and natural gas deposits, produce much of the country's domestic energy supply. States with a relatively small share of economic activity attributable to the oil and natural gas industry include the District of Columbia, Hawaii and Maryland.

Figure 7. The Oil and Natural Gas Industry's Total Employment Impact as a Share of State Employment, 2019



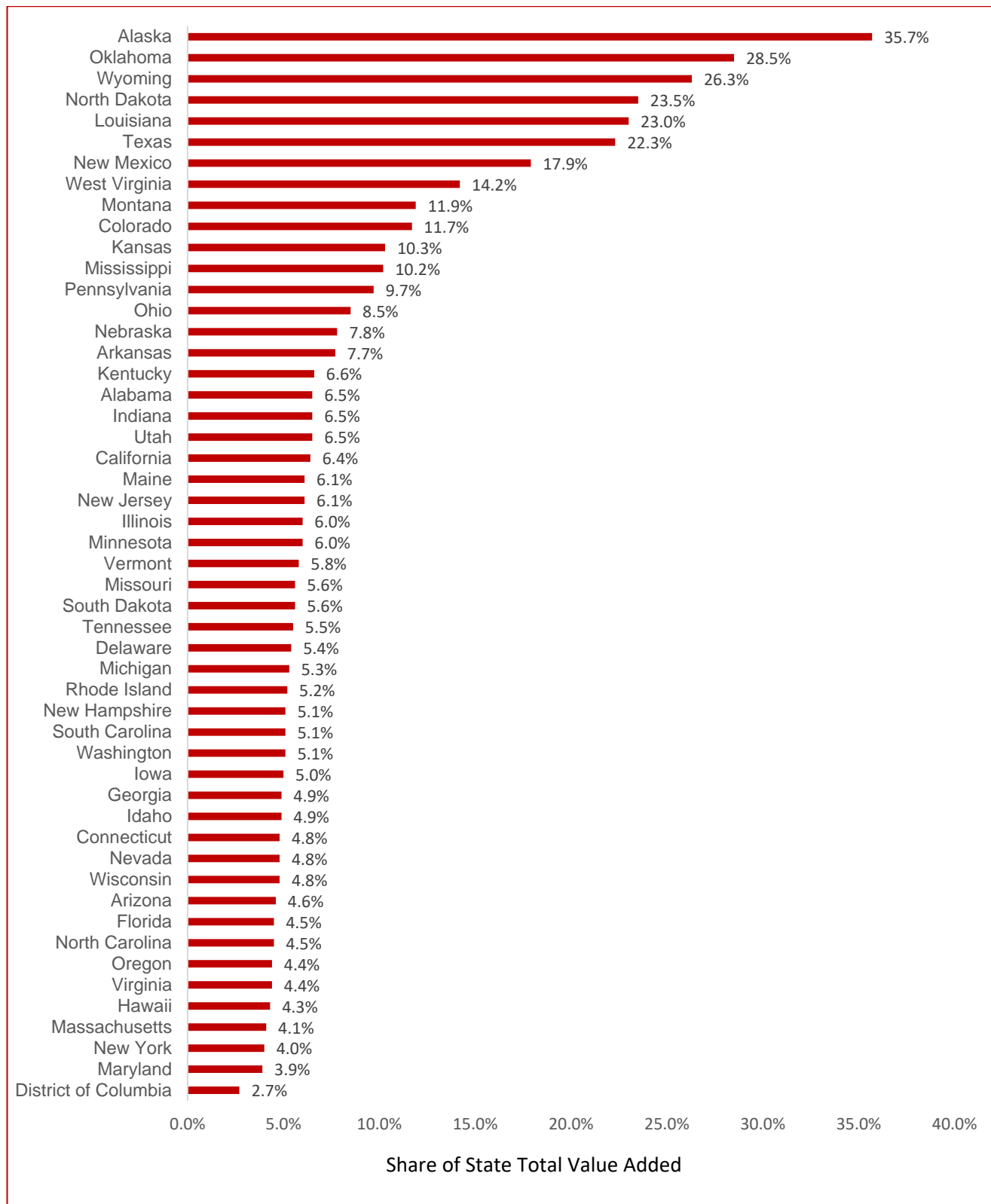
Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

Figure 8. The Oil and Natural Gas Industry's Total Labor Income Impact as a Share of State Labor Income, 2019



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

Figure 9. The Oil and Natural Gas Industry's Total Value-Added Impact as a Share of State GDP, 2019



Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

C. Congressional District Results

The economic impact of the oil and natural gas industry at the congressional district level reflects the indirect and induced effects attributable to direct activity within each congressional district's borders, as well as indirect and induced activity within a congressional district that is attributable to direct activity in other congressional districts.¹⁰

The oil and natural gas industry's activity varies considerably across congressional districts. The number of jobs directly attributable to the oil and natural gas industry was at least 1,000 in all but three districts and exceeded 5,000 in 132 congressional districts in 2019. Direct employment is especially pronounced in a number of districts in Texas, Oklahoma, and Louisiana with significant oil and gas extraction activities.

Table 5, below, presents employment, labor income, and value added for the top 15 congressional districts ranked by direct employment. Eight of the top 15 districts in terms of the oil and natural gas industry's direct employment are in Texas, home to the two of America's largest oil fields (the Permian basin and the Eagle Ford). Leading all districts in direct employment is Texas's 11th Congressional District, which encompasses 29 counties in west central Texas, including the top crude oil producing county of Midland. Oklahoma's 3rd Congressional District is home to the Anadarko basin. Oklahoma's 5th Congressional District covers almost all of Oklahoma County, which encompasses the Oklahoma Oil Field, one of the largest in the world. North Dakota's At-Large District covers the majority of the Bakken region, another key oil-producing basin in the country. Louisiana's 3rd Congressional District covers the southwestern and south-central portion of the state. Many of the nation's largest oil fields are found in the federal Outer Continental Shelf (OCS) off the Louisiana coast, with a large share of federal OCS production in the Gulf of Mexico coming onshore in Louisiana.

Direct employment in the top 15 congressional districts for the oil and natural gas industry was 510,000 in 2019, or about 20.3 percent of direct employment nationwide in the oil and natural gas industry.

In terms of total impacts (including indirect, indirect, and induced impacts), the oil and natural gas industry supported more than 10,000 jobs in 424 congressional districts in 2019.

Table 6, below, presents employment, labor income, and value added for the top 15 congressional districts ranked by total employment impact, reflecting the oil and natural gas industry's direct, indirect, and induced impacts. Many of the same congressional districts that rank high in terms of direct employment also rank high in terms of total employment directly and indirectly attributable to the oil and natural gas industry. Total industry-supported employment in the top 15 congressional districts was 1.6 million in 2019, or 14.2 percent of total industry-supported employment nationwide.

Details for all congressional districts are available in **Appendix C**.

¹⁰ We have allocated the indirect and induced effects by industry attributable to direct activity in other congressional districts within a state based on the overall level of economic activity of that industry in each congressional district in the state.

**Table 5. The Oil and Natural Gas Industry's Direct Impact, 2019:
Top 15 Congressional Districts, Ranked by Employment**

Rank	CD	Employment ⁽¹⁾		Labor Income ⁽²⁾		Value Added	
		Amount (Jobs)	Share of US ⁽³⁾	Amount (\$ Million)	Share of US ⁽³⁾	Amount (\$ Million)	Share of US ⁽³⁾
1	TX-11	82,040	3.26%	19,973	6.27%	27,993	3.67%
2	TX-7	43,760	1.74%	12,056	3.78%	22,223	2.91%
3	OK-3	39,220	1.56%	3,088	0.97%	6,428	0.84%
4	ND-1 (At-Large)	36,970	1.47%	3,783	1.19%	8,931	1.17%
5	OK-5	35,240	1.40%	4,807	1.51%	10,568	1.38%
6	TX-13	32,970	1.31%	3,135	0.98%	6,566	0.86%
7	NM-2	28,620	1.14%	2,490	0.78%	8,726	1.14%
8	WY-1 (At-Large)	28,270	1.12%	4,056	1.27%	7,268	0.95%
9	LA-3	28,170	1.12%	2,898	0.91%	8,163	1.07%
10	TX-2	28,090	1.12%	8,405	2.64%	14,666	1.92%
11	TX-18	26,780	1.07%	7,696	2.42%	13,583	1.78%
12	OK-1	25,910	1.03%	9,420	2.96%	15,596	2.04%
13	TX-19	25,240	1.00%	2,285	0.72%	4,800	0.63%
14	TX-1	25,150	1.00%	4,589	1.44%	6,911	0.91%
15	TX-23	23,510	0.94%	3,580	1.12%	5,404	0.71%

Source: PwC calculations based on the IMPLAN model.

(1) Employment is defined as the number of direct, indirect, and induced payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Share of US refers to the share of the US oil and natural gas industry's direct impact at the national level.

**Table 6. The Oil and Natural Gas Industry's Total Impact, 2019:
Top 15 Congressional Districts, Ranked by Employment**

Rank	CD	Employment ⁽¹⁾		Labor Income ⁽²⁾		Value Added	
		Amount (Jobs)	Share of US ⁽³⁾	Amount (\$ Million)	Share of US ⁽³⁾	Amount (\$ Million)	Share of US ⁽³⁾
1	TX-11	195,310	1.72%	25,614	2.87%	37,497	2.22%
2	TX-7	152,080	1.34%	20,994	2.35%	34,862	2.07%
3	TX-2	112,940	1.00%	14,949	1.67%	24,107	1.43%
4	OK-1	108,610	0.96%	14,073	1.58%	22,462	1.33%
5	TX-18	107,500	0.95%	14,193	1.59%	23,121	1.37%
6	TX-24	104,880	0.92%	10,881	1.22%	16,191	0.96%
7	OK-5	104,240	0.92%	8,992	1.01%	16,780	0.99%
8	TX-32	99,110	0.87%	14,264	1.60%	20,606	1.22%
9	CO-1	99,060	0.87%	17,091	1.91%	18,917	1.12%
10	TX-21	96,160	0.85%	11,170	1.25%	14,669	0.87%
11	TX-12	94,220	0.83%	9,374	1.05%	13,482	0.80%
12	OK-3	87,760	0.77%	5,259	0.59%	10,081	0.60%
13	ND-1 (At-Large)	87,380	0.77%	6,659	0.75%	13,458	0.80%
14	TX-13	85,270	0.75%	5,756	0.64%	10,966	0.65%
15	TX-1	82,590	0.73%	7,285	0.82%	11,178	0.66%

Source: PwC calculations based on the IMPLAN model.

(1) Employment is defined as the number of direct, indirect, and induced payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Share of US refers to the share of the oil and natural gas industry's total impact at the national level.

D. Onshore Upstream Impact Results

This section presents the direct and total impacts of the onshore upstream subsector of the oil and natural gas industry in terms of employment, labor income, and value added for 14 selected states. For this analysis, the upstream subsector of the oil and natural gas industry is defined to include three NAICS codes:

211	Oil and gas extraction (including NGL extraction)
213111	Drilling oil and gas wells
213112	Support activities for oil and gas operations

As shown in **Table 7**, below, the onshore upstream subsector of the oil and natural gas industry directly provided 690,500 jobs, paid out \$126.2 billion in labor income, and generated \$221.6 billion in value added in 2019 in the 14 states studied, with Texas receiving nearly half of the direct employment impact, 66 percent of the direct labor income impact, and 55 percent of the direct value added impact.

Including the indirect and induced impacts, the total impacts of the onshore upstream subsector of the oil and natural gas industry on the 14 states were 3.2 million jobs, \$297.2 billion in labor income, and \$493.1 billion in value added.

Table 7. The Economic Impact of the Onshore Upstream Subsector of the Oil and Natural Gas Industry in Selected States, 2019
(Thousands of jobs; Billions of dollars)

State	Employment ⁽¹⁾		Labor Income ⁽²⁾		Value Added	
	Direct	Total	Direct	Total	Direct	Total
Alaska	9.3	28.6	\$1.7	\$2.9	\$5.1	\$7.3
California	29.1	399.4	\$2.8	\$34.1	\$7.0	\$58.0
Colorado	42.2	235.4	\$12.5	\$25.2	\$10.7	\$30.7
Louisiana	43.4	153.4	\$6.0	\$11.9	\$8.8	\$19.4
Montana	4.5	21.1	\$0.5	\$1.3	\$0.5	\$1.8
New Mexico	28.2	72.7	\$2.4	\$4.6	\$9.3	\$13.3
North Dakota	23.5	58.4	\$2.6	\$4.7	\$5.8	\$9.2
Ohio	17.5	146.0	\$0.8	\$9.2	\$9.9	\$23.9
Oklahoma	94.9	257.6	\$8.7	\$18.4	\$21.3	\$36.6
Pennsylvania	27.4	188.9	\$2.3	\$14.2	\$13.3	\$31.9
Texas	334.4	1,549.1	\$82.9	\$162.9	\$122.5	\$245.4
Utah	5.9	44.4	\$0.4	\$2.6	\$0.8	\$4.6
West Virginia	13.2	39.8	\$1.1	\$2.6	\$3.3	\$5.9
Wyoming	16.8	37.2	\$1.5	\$2.6	\$3.3	\$5.2
Subtotal	690.5	3,231.9	\$126.2	\$297.2	\$221.6	\$493.1

Source: PwC calculations based on the IMPLAN model and data from IHS Markit, Alaska's Department of Natural Resources, and the Energy Information Administration. Details may not add up to totals due to rounding.

(1) Employment is defined as the number of direct, indirect, and induced payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

IV. Wages, Capital Spending, and Dividends from the Oil and Natural Gas Industry

As shown in the previous section, the US oil and natural gas industry's direct labor income in 2019 is estimated to be \$318.6 billion.

Based on data from the US Census Bureau's *Annual Capital Expenditure Survey*, the industry's capital expenditures are estimated to be \$232.2 billion in 2019.¹¹

Total dividends paid by the industry were obtained from S&P's *Capital IQ*® database. The measure of dividends used includes cash dividends from all classes of common stock out of income from US operations by US corporations in the oil and natural gas industry. It also includes dividends paid to US shareholders out of income from US operations by foreign corporations in the industry.¹² Excluding distributions from Master Limited Partnerships and other pass-through entities,¹³ PwC estimates that the industry paid out a total of \$52.8 billion in dividends in 2019, including dividends paid to individuals, retirement plans, foreign shareholders, and other businesses.

One measure of the industry's total "spend" is the sum of the industry's labor income, capital expenditures, and dividend payments. Using this measure, the industry's total "spend" amounted to \$603.5 billion in 2019, as shown in **Table 8**, below.

Table 8. The US Oil and Natural Gas Industry's Total Spend in 2019
(Billions of dollars)

Labor Income	Capital Spending	Dividend Payout	Total Spend
\$318.6	\$232.2	\$52.8	\$603.6

Sources: PwC calculations based on the IMPLAN model, the US Census Bureau's *Annual Capital Expenditure Survey*, and S&P's *Capital IQ*® database.

¹¹ The Census Bureau defines capital expenditures to include "all capitalized costs" incurred during the year for structures and equipment "chargeable to asset accounts, and for which depreciation and amortization accounts are ordinarily maintained."

¹² The measure of dividends used includes cash dividends from all classes of common stock, cash paid in lieu of fractional shares, liquidation payments to shareholders and other cash distributions to shareholders. It does not include the dollar value of stock dividends or dividends paid or accrued on preferred stock.

¹³ Distributions from pass-through entities are included as proprietors' income in PwC's estimate of direct labor income.

Appendix A: Direct Impact by Detailed Sector

Table A-1. Direct Impact of the Oil and Natural Gas Industry on the US Economy by Subsector, 2019

NAICS	Subsector Description	Employment ⁽¹⁾ (000's)	Labor Income ⁽²⁾ (\$ Billion)	Value Added (\$ Billion)
211	Oil and gas extraction (including NGL extraction)	507.0	\$106.6	\$193.1
213111	Drilling oil and gas wells	68.7	\$8.2	\$10.7
213112	Support activities for oil and gas operations	305.6	\$32.9	\$43.0
2212	Natural gas distribution	122.6	\$23.5	\$55.4
23712	Oil and gas pipeline and related structures construction	183.7	\$18.4	\$20.5
32411	Petroleum refineries	73.1	\$20.9	\$136.3
32412	Asphalt paving, roofing and saturated materials manufacturing	29.3	\$5.3	\$11.3
324191	Petroleum lubricating oil and grease manufacturing	11.8	\$2.3	\$7.2
4247	Petroleum and petroleum products merchant wholesalers	106.7	\$11.3	\$162.4
44711, 44719	Gasoline stations	977.2	\$41.0	\$65.1
45431	Fuel dealers	77.5	\$5.0	\$7.9
486	Pipeline transportation	51.2	\$43.0	\$50.5
	Total US Oil and Natural Gas Industry	2,514.3	\$318.6	\$763.3

Source: Estimates based on 2019 employment data from the US Bureau of Economic Analysis and supplemented by data from the US Bureau of Labor Statistics and US Census Bureau and 2019 input-output relationships from the IMPLAN modeling system.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Appendix B: Detailed Results by State

Table B-1. The Oil and Natural Gas Industry's Economic Impact by State, 2019
(Thousands of jobs; Billions of dollars)

	Employment		Labor Income		Value Added	
	Direct	Total	Direct	Total	Direct	Total
US Total	2,514.3	11,349.6	\$318.6	\$892.7	\$763.3	\$1,687.6
Alabama	31.9	128.5	\$2.2	\$7.4	\$6.5	\$14.9
Alaska	15.8	47.3	\$2.5	\$4.6	\$12.6	\$19.4
Arizona	29.3	160.8	\$1.7	\$9.5	\$4.4	\$17.2
Arkansas	25.7	92.9	\$1.0	\$4.4	\$4.4	\$10.0
California	164.6	1,059.2	\$24.2	\$94.4	\$85.3	\$199.3
Colorado	68.6	339.5	\$17.0	\$34.1	\$19.2	\$46.1
Connecticut	14.6	86.9	\$2.1	\$8.4	\$4.2	\$13.8
Delaware	5.5	26.6	\$0.5	\$1.9	\$1.3	\$4.1
District of Columbia	2.6	23.7	\$0.4	\$2.9	\$0.5	\$3.9
Florida	70.3	460.6	\$3.0	\$24.4	\$13.8	\$49.5
Georgia	43.4	243.0	\$2.7	\$14.8	\$10.1	\$30.8
Hawaii	4.5	29.0	\$0.3	\$1.8	\$1.6	\$4.2
Idaho	9.9	42.7	\$0.5	\$2.1	\$1.4	\$4.1
Illinois	61.6	356.3	\$5.0	\$26.1	\$19.1	\$53.5
Indiana	39.3	186.8	\$2.4	\$11.1	\$10.5	\$24.9
Iowa	27.1	97.1	\$1.0	\$5.0	\$3.0	\$9.8
Kansas	49.5	154.9	\$3.3	\$9.7	\$8.1	\$18.2
Kentucky	28.9	117.4	\$1.3	\$6.1	\$6.5	\$14.2
Louisiana	105.3	345.8	\$12.7	\$25.0	\$38.6	\$59.2
Maine	12.1	41.4	\$0.5	\$2.1	\$1.7	\$4.1
Maryland	19.1	122.9	\$1.3	\$8.6	\$4.8	\$16.7
Massachusetts	25.6	171.3	\$2.2	\$14.7	\$5.6	\$24.5
Michigan	48.7	250.8	\$3.3	\$15.9	\$8.8	\$28.5
Minnesota	37.8	172.9	\$2.2	\$11.4	\$8.6	\$23.0
Mississippi	32.3	103.4	\$2.0	\$5.1	\$6.5	\$11.8
Missouri	41.7	176.5	\$2.1	\$10.0	\$5.7	\$18.3
Montana	14.6	53.4	\$1.3	\$3.2	\$3.3	\$6.3
Nebraska	13.8	69.7	\$3.1	\$6.5	\$4.9	\$10.2
Nevada	14.1	74.8	\$0.7	\$4.1	\$2.7	\$8.6
New Hampshire	8.6	38.4	\$0.6	\$2.7	\$1.3	\$4.5
New Jersey	36.9	222.6	\$3.9	\$18.2	\$16.7	\$38.6
New Mexico	46.0	114.9	\$3.6	\$6.9	\$12.9	\$18.8
New York	57.0	417.8	\$7.2	\$40.6	\$14.4	\$70.6
North Carolina	47.9	235.3	\$2.5	\$13.6	\$7.4	\$26.6
North Dakota	37.0	87.4	\$3.8	\$6.7	\$8.9	\$13.5
Ohio	78.9	375.2	\$6.5	\$24.7	\$29.2	\$58.8
Oklahoma	134.2	389.8	\$19.4	\$32.8	\$37.0	\$57.7
Oregon	17.5	98.8	\$1.1	\$6.2	\$3.1	\$11.2
Pennsylvania	102.5	480.3	\$14.5	\$40.5	\$39.4	\$78.4
Rhode Island	4.5	25.0	\$0.4	\$1.7	\$1.2	\$3.2
South Carolina	26.2	115.6	\$1.1	\$5.9	\$4.7	\$12.7
South Dakota	9.4	29.4	\$0.4	\$1.5	\$1.1	\$3.1
Tennessee	36.4	176.3	\$2.6	\$11.3	\$7.3	\$20.6
Texas	620.3	2,508.9	\$134.2	\$251.2	\$230.9	\$411.6
Utah	20.7	103.1	\$1.5	\$6.1	\$4.7	\$12.4
Vermont	5.9	20.9	\$0.3	\$1.0	\$0.7	\$2.0
Virginia	43.5	202.4	\$2.2	\$12.9	\$7.4	\$24.7
Washington	25.6	162.3	\$2.2	\$13.0	\$12.7	\$31.1
West Virginia	32.3	82.0	\$2.5	\$5.2	\$6.8	\$11.2
Wisconsin	36.6	158.4	\$1.6	\$8.9	\$4.8	\$16.8
Wyoming	28.3	68.6	\$4.1	\$6.0	\$7.3	\$10.6

Source: PwC calculations based on the IMPLAN model.

Note: Details may not add up to totals due to rounding.

Table B-2. The Oil and Natural Gas Industry's Total Economic Impact as a Share of State Total, 2019
(Percentage of State Total)

	Industry Supported Total Employment / State Total Employment	Industry Supported Total Labor Income / State Total Labor Income	Industry Supported Total Value Added / State Total GDP
Alabama	4.7%	5.2%	6.5%
Alaska	10.3%	13.9%	35.7%
Arizona	4.1%	4.2%	4.6%
Arkansas	5.6%	5.5%	7.7%
California	4.3%	5.1%	6.4%
Colorado	8.6%	13.4%	11.7%
Connecticut	3.7%	4.7%	4.8%
Delaware	4.4%	4.9%	5.4%
District of Columbia	2.6%	2.7%	2.7%
Florida	3.6%	3.6%	4.5%
Georgia	3.8%	4.0%	4.9%
Hawaii	3.1%	3.1%	4.3%
Idaho	4.0%	4.0%	4.9%
Illinois	4.5%	4.8%	6.0%
Indiana	4.7%	4.8%	6.5%
Iowa	4.6%	4.3%	5.0%
Kansas	8.0%	8.8%	10.3%
Kentucky	4.6%	4.6%	6.6%
Louisiana	12.6%	16.8%	23.0%
Maine	4.8%	4.6%	6.1%
Maryland	3.2%	3.3%	3.9%
Massachusetts	3.5%	3.8%	4.1%
Michigan	4.3%	4.7%	5.3%
Minnesota	4.5%	4.7%	6.0%
Mississippi	6.4%	7.1%	10.2%
Missouri	4.6%	4.7%	5.6%
Montana	7.7%	9.7%	11.9%
Nebraska	5.2%	8.4%	7.8%
Nevada	3.9%	3.9%	4.8%
New Hampshire	4.2%	4.6%	5.1%
New Jersey	3.9%	4.4%	6.1%
New Mexico	10.2%	11.6%	17.9%
New York	3.2%	3.9%	4.0%
North Carolina	3.8%	3.9%	4.5%
North Dakota	14.9%	19.4%	23.5%
Ohio	5.3%	5.9%	8.5%
Oklahoma	16.7%	25.3%	28.5%
Oregon	3.8%	3.9%	4.4%
Pennsylvania	6.1%	7.9%	9.7%
Rhode Island	3.8%	4.3%	5.2%
South Carolina	4.0%	3.9%	5.1%
South Dakota	4.8%	4.5%	5.6%
Tennessee	4.2%	4.6%	5.5%
Texas	13.9%	21.8%	22.3%
Utah	4.8%	5.3%	6.5%
Vermont	4.7%	4.6%	5.8%
Virginia	3.7%	3.7%	4.4%
Washington	3.5%	3.7%	5.1%
West Virginia	9.2%	11.0%	14.2%
Wisconsin	4.2%	4.1%	4.8%
Wyoming	16.6%	25.6%	26.3%

Source: PwC calculations based on the IMPLAN model.

The Economic Impact of the Oil and Natural Gas Industry in Alabama, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	31,870			31,870	1.2%
Indirect/Induced Impacts on Other Industries					
Services		16,840	28,210	45,050	
Manufacturing		6,830	3,920	10,750	
Finance, insurance, real estate, rental and leasing		4,560	6,080	10,640	
Wholesale and retail trade		2,920	7,330	10,250	
Construction		6,980	470	7,450	
Transportation and warehousing		4,750	1,970	6,720	
Government		980	810	1,790	
Agriculture		260	1,250	1,510	
Information		620	740	1,360	
Utilities		440	350	790	
Mining		<u>300</u>	<u>60</u>	<u>360</u>	
Total Impact on Employment	31,870	45,490	51,190	128,540	4.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,244			\$2,244	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$908	\$1,185	\$2,092	
Manufacturing		\$525	\$250	\$774	
Finance, insurance, real estate, rental and leasing		\$272	\$283	\$555	
Wholesale and retail trade		\$206	\$287	\$493	
Construction		\$365	\$25	\$389	
Transportation and warehousing		\$269	\$95	\$364	
Government		\$72	\$61	\$133	
Utilities		\$75	\$56	\$130	
Information		\$46	\$53	\$99	
Agriculture		\$10	\$44	\$54	
Mining		<u>\$28</u>	<u>\$5</u>	<u>\$33</u>	
Total Impact on Labor Income	\$2,244	\$2,775	\$2,343	\$7,362	5.2%
Value Added (\$ Millions)					
Industry Direct Impact	\$6,502			\$6,502	2.9%
Indirect/Induced Impacts on Other Industries					
Services		\$1,045	\$1,417	\$2,463	
Finance, insurance, real estate, rental and leasing		\$801	\$1,180	\$1,981	
Manufacturing		\$929	\$432	\$1,360	
Wholesale and retail trade		\$351	\$461	\$811	
Transportation and warehousing		\$307	\$126	\$433	
Construction		\$373	\$30	\$403	
Utilities		\$196	\$148	\$344	
Government		\$116	\$102	\$218	
Information		\$90	\$106	\$196	
Mining		\$99	\$19	\$119	
Agriculture		<u>\$10</u>	<u>\$45</u>	<u>\$56</u>	
Total Impact on Value Added	\$6,502	\$4,317	\$4,066	\$14,885	6.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Alaska, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	15,780			15,780	3.4%
Indirect/Induced Impacts on Other Industries					
Services		4,960	12,140	17,100	
Finance, insurance, real estate, rental and leasing		1,860	2,130	3,990	
Wholesale and retail trade		870	3,060	3,930	
Transportation and warehousing		1,400	650	2,050	
Construction		1,520	170	1,690	
Government		230	510	740	
Manufacturing		190	460	650	
Information		210	290	500	
Mining		320	70	390	
Agriculture		30	280	310	
Utilities		120	90	210	
Total Impact on Employment	15,780	11,720	19,840	47,340	10.3%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,539			\$2,539	7.8%
Indirect/Induced Impacts on Other Industries					
Services		\$340	\$678	\$1,018	
Transportation and warehousing		\$220	\$37	\$257	
Finance, insurance, real estate, rental and leasing		\$107	\$95	\$202	
Wholesale and retail trade		\$52	\$128	\$180	
Construction		\$126	\$14	\$140	
Government		\$24	\$51	\$75	
Information		\$19	\$26	\$45	
Manufacturing		\$10	\$27	\$37	
Utilities		\$16	\$12	\$28	
Mining		\$21	\$4	\$25	
Agriculture		\$2	\$10	\$12	
Total Impact on Labor Income	\$2,539	\$936	\$1,083	\$4,558	13.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$12,563			\$12,563	23.1%
Indirect/Induced Impacts on Other Industries					
Transportation and warehousing		\$3,888	\$57	\$3,945	
Services		\$396	\$794	\$1,190	
Finance, insurance, real estate, rental and leasing		\$305	\$567	\$872	
Wholesale and retail trade		\$120	\$190	\$310	
Construction		\$126	\$16	\$142	
Government		\$30	\$65	\$95	
Mining		\$77	\$15	\$92	
Information		\$35	\$50	\$85	
Utilities		\$45	\$34	\$79	
Manufacturing		\$17	\$34	\$51	
Agriculture		\$1	\$15	\$16	
Total Impact on Value Added	\$12,563	\$5,040	\$1,837	\$19,440	35.7%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Arizona, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	29,270			29,270	0.7%
Indirect/Induced Impacts on Other Industries					
Services		24,650	42,090	66,740	
Finance, insurance, real estate, rental and leasing		7,170	10,500	17,670	
Wholesale and retail trade		3,170	9,720	12,890	
Construction		9,010	650	9,660	
Transportation and warehousing		5,520	3,640	9,160	
Manufacturing		5,270	2,640	7,910	
Information		1,300	1,970	3,270	
Government		550	900	1,450	
Agriculture		100	1,070	1,170	
Mining		680	140	820	
Utilities		<u>440</u>	<u>380</u>	<u>820</u>	
Total Impact on Employment	29,270	57,870	73,700	160,840	4.1%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,688			\$1,688	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$1,554	\$2,117	\$3,671	
Finance, insurance, real estate, rental and leasing		\$473	\$544	\$1,016	
Wholesale and retail trade		\$277	\$483	\$760	
Manufacturing		\$502	\$187	\$689	
Construction		\$522	\$37	\$560	
Transportation and warehousing		\$243	\$140	\$383	
Information		\$148	\$201	\$349	
Utilities		\$75	\$61	\$136	
Government		\$47	\$74	\$121	
Mining		\$73	\$16	\$88	
Agriculture		<u>\$4</u>	<u>\$44</u>	<u>\$48</u>	
Total Impact on Labor Income	\$1,688	\$3,917	\$3,903	\$9,508	4.2%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,407			\$4,407	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$1,829	\$2,602	\$4,431	
Finance, insurance, real estate, rental and leasing		\$1,161	\$2,019	\$3,181	
Wholesale and retail trade		\$471	\$841	\$1,312	
Manufacturing		\$789	\$307	\$1,096	
Construction		\$633	\$57	\$691	
Information		\$256	\$346	\$602	
Transportation and warehousing		\$326	\$206	\$531	
Utilities		\$237	\$195	\$432	
Mining		\$202	\$43	\$245	
Government		\$66	\$107	\$172	
Agriculture		<u>\$6</u>	<u>\$67</u>	<u>\$73</u>	
Total Impact on Value Added	\$4,407	\$5,975	\$6,789	\$17,172	4.6%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Arkansas, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	25,720			25,720	1.5%
Indirect/Induced Impacts on Other Industries					
Services		13,480	18,890	32,370	
Finance, insurance, real estate, rental and leasing		3,550	3,680	7,230	
Wholesale and retail trade		2,090	4,620	6,710	
Manufacturing		3,650	2,930	6,580	
Transportation and warehousing		3,700	1,560	5,260	
Construction		4,410	300	4,710	
Agriculture		200	1,430	1,630	
Government		770	510	1,280	
Information		400	370	770	
Utilities		320	180	500	
Mining		<u>150</u>	<u>20</u>	<u>170</u>	
Total Impact on Employment	25,720	32,720	34,500	92,940	5.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$989			\$989	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$832	\$833	\$1,665	
Manufacturing		\$242	\$167	\$409	
Finance, insurance, real estate, rental and leasing		\$172	\$148	\$320	
Wholesale and retail trade		\$130	\$177	\$306	
Transportation and warehousing		\$184	\$80	\$264	
Construction		\$208	\$14	\$222	
Government		\$48	\$33	\$81	
Utilities		\$41	\$22	\$63	
Agriculture		\$10	\$51	\$61	
Information		\$29	\$26	\$55	
Mining		<u>\$7</u>	<u>\$1</u>	<u>\$8</u>	
Total Impact on Labor Income	\$989	\$1,902	\$1,552	\$4,443	5.5%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,358			\$4,358	3.3%
Indirect/Induced Impacts on Other Industries					
Services		\$991	\$1,021	\$2,011	
Finance, insurance, real estate, rental and leasing		\$543	\$690	\$1,233	
Manufacturing		\$462	\$294	\$755	
Wholesale and retail trade		\$258	\$313	\$571	
Transportation and warehousing		\$235	\$100	\$334	
Construction		\$228	\$18	\$246	
Utilities		\$140	\$77	\$217	
Information		\$62	\$56	\$118	
Government		\$62	\$44	\$105	
Agriculture		\$10	\$46	\$56	
Mining		<u>\$24</u>	<u>\$4</u>	<u>\$28</u>	
Total Impact on Value Added	\$4,358	\$3,012	\$2,662	\$10,032	7.7%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in California, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	164,580			164,580	0.7%
Indirect/Induced Impacts on Other Industries					
Services		163,050	304,830	467,880	
Finance, insurance, real estate, rental and leasing		39,950	63,930	103,880	
Wholesale and retail trade		21,380	62,880	84,260	
Transportation and warehousing		43,060	29,440	72,500	
Construction		55,770	3,960	59,730	
Manufacturing		33,770	24,090	57,860	
Information		8,270	13,720	21,990	
Agriculture		1,020	11,660	12,680	
Government		4,150	6,480	10,630	
Utilities		1,350	1,050	2,400	
Mining		<u>740</u>	<u>110</u>	850	
Total Impact on Employment	164,580	372,500	522,160	1,059,240	4.3%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$24,217			\$24,217	1.3%
Indirect/Induced Impacts on Other Industries					
Services		\$15,148	\$17,724	\$32,872	
Finance, insurance, real estate, rental and leasing		\$3,909	\$4,967	\$8,876	
Manufacturing		\$3,726	\$2,100	\$5,825	
Wholesale and retail trade		\$2,035	\$3,605	\$5,640	
Information		\$2,115	\$3,015	\$5,130	
Transportation and warehousing		\$2,904	\$1,884	\$4,788	
Construction		\$4,259	\$300	\$4,559	
Government		\$477	\$723	\$1,200	
Agriculture		\$59	\$651	\$709	
Utilities		\$306	\$231	\$537	
Mining		<u>\$51</u>	<u>\$8</u>	\$59	
Total Impact on Labor Income	\$24,217	\$34,988	\$35,207	\$94,412	5.1%
Value Added (\$ Millions)					
Industry Direct Impact	\$85,329			\$85,329	2.7%
Indirect/Induced Impacts on Other Industries					
Services		\$17,567	\$21,605	\$39,172	
Finance, insurance, real estate, rental and leasing		\$9,294	\$18,487	\$27,781	
Manufacturing		\$5,994	\$4,211	\$10,204	
Wholesale and retail trade		\$3,804	\$6,377	\$10,181	
Information		\$4,074	\$5,910	\$9,984	
Transportation and warehousing		\$4,185	\$2,944	\$7,129	
Construction		\$4,916	\$422	\$5,338	
Government		\$606	\$948	\$1,554	
Utilities		\$832	\$630	\$1,462	
Agriculture		\$71	\$914	\$985	
Mining		<u>\$121</u>	<u>\$19</u>	\$140	
Total Impact on Value Added	\$85,329	\$51,464	\$62,466	\$199,260	6.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Colorado, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	68,620			68,620	1.7%
Indirect/Induced Impacts on Other Industries					
Services		49,570	98,070	147,640	
Finance, insurance, real estate, rental and leasing		14,820	27,090	41,910	
Wholesale and retail trade		5,660	23,370	29,030	
Transportation and warehousing		6,240	7,920	14,160	
Construction		12,030	1,760	13,790	
Manufacturing		5,600	3,870	9,470	
Information		2,230	4,050	6,280	
Government		1,290	3,270	4,560	
Agriculture		160	2,200	2,360	
Utilities		560	500	1,060	
Mining		<u>540</u>	<u>100</u>	<u>640</u>	
Total Impact on Employment	68,620	98,690	172,210	339,520	8.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$16,976			\$16,976	6.7%
Indirect/Induced Impacts on Other Industries					
Services		\$4,365	\$5,047	\$9,411	
Finance, insurance, real estate, rental and leasing		\$964	\$1,325	\$2,289	
Wholesale and retail trade		\$503	\$1,110	\$1,613	
Construction		\$799	\$117	\$917	
Transportation and warehousing		\$526	\$371	\$897	
Manufacturing		\$508	\$264	\$773	
Information		\$207	\$336	\$543	
Government		\$103	\$254	\$357	
Utilities		\$83	\$72	\$155	
Mining		\$59	\$9	\$67	
Agriculture		<u>\$4</u>	<u>\$51</u>	<u>\$55</u>	
Total Impact on Labor Income	\$16,976	\$8,120	\$8,956	\$34,052	13.4%
Value Added (\$ Millions)					
Industry Direct Impact	\$19,222			\$19,222	4.9%
Indirect/Induced Impacts on Other Industries					
Services		\$5,054	\$6,243	\$11,297	
Finance, insurance, real estate, rental and leasing		\$2,076	\$4,869	\$6,946	
Wholesale and retail trade		\$891	\$1,869	\$2,760	
Manufacturing		\$817	\$475	\$1,292	
Information		\$481	\$810	\$1,291	
Transportation and warehousing		\$493	\$585	\$1,078	
Construction		\$914	\$159	\$1,073	
Utilities		\$257	\$224	\$481	
Government		\$131	\$323	\$454	
Agriculture		\$7	\$106	\$113	
Mining		<u>\$94</u>	<u>\$17</u>	<u>\$111</u>	
Total Impact on Value Added	\$19,222	\$11,214	\$15,681	\$46,116	11.7%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Connecticut, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	14,630			14,630	0.6%
Indirect/Induced Impacts on Other Industries					
Services		10,370	26,100	36,470	
Finance, insurance, real estate, rental and leasing		3,700	7,020	10,720	
Wholesale and retail trade		1,820	5,420	7,240	
Manufacturing		4,050	1,730	5,780	
Construction		4,530	360	4,890	
Transportation and warehousing		2,620	1,970	4,590	
Information		490	760	1,250	
Government		230	510	740	
Agriculture		30	270	300	
Utilities		130	130	260	
Mining		<u>60</u>	<u>10</u>	<u>70</u>	
Total Impact on Employment	14,630	28,030	44,270	86,920	3.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,139			\$2,139	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$978	\$1,638	\$2,616	
Finance, insurance, real estate, rental and leasing		\$537	\$794	\$1,331	
Manufacturing		\$472	\$178	\$650	
Wholesale and retail trade		\$193	\$316	\$508	
Transportation and warehousing		\$321	\$105	\$426	
Construction		\$356	\$28	\$384	
Information		\$82	\$120	\$202	
Government		\$24	\$50	\$73	
Utilities		\$24	\$23	\$46	
Agriculture		\$1	\$7	\$8	
Mining		<u>\$1</u>	<u>\$0</u>	<u>\$1</u>	
Total Impact on Labor Income	\$2,139	\$2,988	\$3,257	\$8,384	4.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,171			\$4,171	1.4%
Indirect/Induced Impacts on Other Industries					
Finance, insurance, real estate, rental and leasing		\$1,054	\$2,104	\$3,158	
Services		\$1,122	\$1,956	\$3,078	
Manufacturing		\$630	\$263	\$892	
Wholesale and retail trade		\$309	\$505	\$814	
Information		\$254	\$326	\$579	
Transportation and warehousing		\$248	\$138	\$387	
Construction		\$318	\$29	\$348	
Utilities		\$108	\$103	\$210	
Government		\$38	\$80	\$118	
Mining		\$10	\$2	\$12	
Agriculture		<u>\$2</u>	<u>\$10</u>	<u>\$12</u>	
Total Impact on Value Added	\$4,171	\$4,092	\$5,516	\$13,779	4.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income. *** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in Delaware, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	5,450			5,450	0.9%
Indirect/Induced Impacts on Other Industries					
Services		3,560	6,890	10,450	
Finance, insurance, real estate, rental and leasing		1,080	1,770	2,850	
Wholesale and retail trade		600	1,550	2,150	
Construction		1,670	100	1,770	
Transportation and warehousing		1,200	490	1,690	
Manufacturing		470	530	1,000	
Information		230	480	710	
Government		150	150	300	
Utilities		70	50	120	
Agriculture		10	100	110	
Mining		<u>0</u>	<u>0</u>	<u>0</u>	
Total Impact on Employment	5,450	9,040	12,100	26,590	4.4%
Labor Income*** (\$ Millions)					
Industry Direct Impact	\$512			\$512	1.3%
Indirect/Induced Impacts on Other Industries					
Services		\$265	\$375	\$640	
Finance, insurance, real estate, rental and leasing		\$107	\$124	\$230	
Construction		\$112	\$7	\$119	
Wholesale and retail trade		\$40	\$65	\$105	
Transportation and warehousing		\$64	\$23	\$87	
Information		\$30	\$56	\$86	
Manufacturing		\$43	\$35	\$78	
Government		\$12	\$12	\$24	
Utilities		\$13	\$8	\$21	
Agriculture		\$1	\$15	\$16	
Mining		<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	
Total Impact on Labor Income	\$512	\$686	\$721	\$1,920	4.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,332			\$1,332	1.7%
Indirect/Induced Impacts on Other Industries					
Finance, insurance, real estate, rental and leasing		\$495	\$688	\$1,183	
Services		\$320	\$446	\$765	
Information		\$68	\$123	\$191	
Wholesale and retail trade		\$77	\$89	\$166	
Construction		\$138	\$10	\$147	
Manufacturing		\$68	\$62	\$131	
Transportation and warehousing		\$78	\$30	\$108	
Utilities		\$37	\$23	\$60	
Government		\$16	\$18	\$34	
Agriculture		\$1	\$11	\$12	
Mining		<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	
Total Impact on Value Added	\$1,332	\$1,297	\$1,500	\$4,129	5.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs. ** Less than 5.

*** Labor income is defined as wages and salaries and benefits as well as proprietors' income. **** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in District of Columbia, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	2,590			2,590	0.3%
Indirect/Induced Impacts on Other Industries					
Services		4,570	9,410	13,980	
Finance, insurance, real estate, rental and leasing		1,550	1,570	3,120	
Transportation and warehousing		530	580	1,110	
Wholesale and retail trade		250	630	880	
Construction		710	40	750	
Information		250	370	620	
Government		160	330	490	
Manufacturing		30	70	100	
Utilities		30	30	60	
Agriculture		0	0	0	
Mining		0	0	0	
Total Impact on Employment	2,590	8,080	13,040	23,710	2.6%
Labor Income*** (\$ Millions)					
Industry Direct Impact	\$354			\$354	0.3%
Indirect/Induced Impacts on Other Industries					
Services		\$596	\$856	\$1,453	
Finance, insurance, real estate, rental and leasing		\$325	\$251	\$575	
Information		\$50	\$67	\$117	
Transportation and warehousing		\$54	\$56	\$109	
Government		\$32	\$60	\$92	
Wholesale and retail trade		\$39	\$42	\$81	
Construction		\$51	\$3	\$54	
Utilities		\$6	\$6	\$12	
Manufacturing		\$3	\$5	\$8	
Mining		\$0	\$0	\$0	
Agriculture		\$0	\$0	\$0	
Total Impact on Labor Income	\$354	\$1,156	\$1,345	\$2,855	2.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$482			\$482	0.3%
Indirect/Induced Impacts on Other Industries					
Services		\$639	\$1,018	\$1,657	
Finance, insurance, real estate, rental and leasing		\$534	\$541	\$1,075	
Information		\$104	\$140	\$244	
Government		\$45	\$88	\$133	
Transportation and warehousing		\$60	\$54	\$114	
Wholesale and retail trade		\$47	\$62	\$110	
Construction		\$60	\$5	\$64	
Utilities		\$21	\$19	\$40	
Manufacturing		\$6	\$8	\$14	
Mining		\$0	\$0	\$0	
Agriculture		\$0	\$0	\$0	
Total Impact on Value Added	\$482	\$1,517	\$1,936	\$3,935	2.7%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs. ** Less than 5.

*** Labor income is defined as wages and salaries and benefits as well as proprietors' income. **** Less than \$0.5 million.

Impacts of the Oil and Natural Gas Industry on the US Economy

The Economic Impact of the Oil and Natural Gas Industry in Florida, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	70,270			70,270	0.5%
Indirect/Induced Impacts on Other Industries					
Services		68,390	131,600	199,990	
Finance, insurance, real estate, rental and leasing		21,320	34,520	55,840	
Wholesale and retail trade		10,000	30,520	40,520	
Construction		29,710	1,990	31,700	
Transportation and warehousing		15,850	11,640	27,490	
Manufacturing		11,330	6,970	18,300	
Information		2,880	4,340	7,220	
Government		1,590	2,180	3,770	
Agriculture		440	3,080	3,520	
Utilities		820	680	1,500	
Mining		<u>410</u>	<u>60</u>	<u>470</u>	
Total Impact on Employment	70,270	162,740	227,570	460,580	3.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,958			\$2,958	0.4%
Indirect/Induced Impacts on Other Industries					
Services		\$4,331	\$6,215	\$10,546	
Finance, insurance, real estate, rental and leasing		\$1,381	\$1,694	\$3,075	
Wholesale and retail trade		\$815	\$1,457	\$2,272	
Construction		\$1,588	\$106	\$1,694	
Manufacturing		\$889	\$441	\$1,331	
Transportation and warehousing		\$631	\$436	\$1,068	
Information		\$347	\$457	\$803	
Government		\$132	\$177	\$309	
Utilities		\$138	\$109	\$247	
Agriculture		\$17	\$101	\$117	
Mining		<u>\$24</u>	<u>\$3</u>	<u>\$27</u>	
Total Impact on Labor Income	\$2,958	\$10,293	\$11,197	\$24,448	3.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$13,803			\$13,803	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$5,202	\$7,846	\$13,048	
Finance, insurance, real estate, rental and leasing		\$3,199	\$6,028	\$9,227	
Wholesale and retail trade		\$1,566	\$2,580	\$4,146	
Manufacturing		\$1,464	\$860	\$2,323	
Construction		\$1,979	\$169	\$2,147	
Information		\$656	\$889	\$1,546	
Transportation and warehousing		\$863	\$629	\$1,492	
Utilities		\$576	\$455	\$1,031	
Government		\$176	\$244	\$420	
Agriculture		\$22	\$153	\$174	
Mining		<u>\$101</u>	<u>\$14</u>	<u>\$114</u>	
Total Impact on Value Added	\$13,803	\$15,803	\$19,867	\$49,472	4.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Georgia, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	43,370			43,370	0.7%
Indirect/Induced Impacts on Other Industries					
Services		35,140	64,640	99,780	
Finance, insurance, real estate, rental and leasing		8,350	13,220	21,570	
Wholesale and retail trade		6,040	15,150	21,190	
Manufacturing		9,260	7,250	16,510	
Transportation and warehousing		9,960	6,280	16,240	
Construction		13,620	900	14,520	
Information		1,720	2,730	4,450	
Government		780	1,430	2,210	
Agriculture		320	1,660	1,980	
Utilities		430	390	820	
Mining		270	50	320	
Total Impact on Employment	43,370	85,880	113,720	242,970	3.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,678			\$2,678	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$2,416	\$3,073	\$5,489	
Finance, insurance, real estate, rental and leasing		\$654	\$768	\$1,422	
Wholesale and retail trade		\$541	\$761	\$1,302	
Manufacturing		\$683	\$463	\$1,147	
Construction		\$780	\$52	\$832	
Transportation and warehousing		\$516	\$281	\$797	
Information		\$274	\$426	\$700	
Government		\$67	\$116	\$183	
Utilities		\$80	\$69	\$149	
Agriculture		\$18	\$70	\$88	
Mining		\$28	\$5	\$33	
Total Impact on Labor Income	\$2,678	\$6,057	\$6,084	\$14,819	4.0%
Value Added (\$ Millions)					
Industry Direct Impact	\$10,100			\$10,100	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$2,793	\$3,729	\$6,522	
Finance, insurance, real estate, rental and leasing		\$2,165	\$3,226	\$5,391	
Wholesale and retail trade		\$967	\$1,323	\$2,290	
Manufacturing		\$1,259	\$940	\$2,199	
Information		\$537	\$840	\$1,377	
Transportation and warehousing		\$671	\$412	\$1,083	
Construction		\$919	\$77	\$996	
Utilities		\$252	\$219	\$471	
Government		\$85	\$153	\$238	
Agriculture		\$17	\$82	\$99	
Mining		\$66	\$12	\$78	
Total Impact on Value Added	\$10,100	\$9,731	\$11,014	\$30,845	4.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Hawaii, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	4,470			4,470	0.5%
Indirect/Induced Impacts on Other Industries					
Services		4,210	9,250	13,460	
Finance, insurance, real estate, rental and leasing		1,130	1,690	2,820	
Wholesale and retail trade		600	2,110	2,710	
Construction		2,100	120	2,220	
Transportation and warehousing		710	580	1,290	
Manufacturing		210	470	680	
Agriculture		40	420	460	
Government		140	280	420	
Information		120	200	320	
Utilities		60	60	120	
Mining		20	0	20	
Total Impact on Employment	4,470	9,340	15,200	29,010	3.1%
Labor Income*** (\$ Millions)					
Industry Direct Impact	\$327			\$327	0.6%
Indirect/Induced Impacts on Other Industries					
Services		\$271	\$502	\$773	
Construction		\$172	\$10	\$182	
Finance, insurance, real estate, rental and leasing		\$74	\$92	\$167	
Wholesale and retail trade		\$41	\$100	\$142	
Transportation and warehousing		\$34	\$26	\$60	
Government		\$15	\$28	\$43	
Manufacturing		\$14	\$22	\$36	
Information		\$13	\$20	\$33	
Utilities		\$9	\$10	\$19	
Agriculture		\$1	\$9	\$10	
Mining		\$2	\$0	\$2	
Total Impact on Labor Income	\$327	\$646	\$820	\$1,792	3.1%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,553			\$1,553	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$340	\$695	\$1,035	
Finance, insurance, real estate, rental and leasing		\$231	\$474	\$705	
Wholesale and retail trade		\$110	\$199	\$309	
Construction		\$206	\$14	\$220	
Transportation and warehousing		\$47	\$31	\$78	
Utilities		\$33	\$34	\$67	
Information		\$25	\$40	\$65	
Government		\$20	\$39	\$60	
Manufacturing		\$19	\$29	\$49	
Agriculture		\$1	\$11	\$12	
Mining		\$5	\$1	\$6	
Total Impact on Value Added	\$1,553	\$1,037	\$1,568	\$4,158	4.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs. ** Less than 5.

*** Labor income is defined as wages and salaries and benefits as well as proprietors' income. **** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in Idaho, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	9,920			9,920	0.9%
Indirect/Induced Impacts on Other Industries					
Services		5,520	9,660	15,180	
Finance, insurance, real estate, rental and leasing		1,600	2,240	3,840	
Wholesale and retail trade		880	2,550	3,430	
Construction		3,030	190	3,220	
Manufacturing		1,530	1,270	2,800	
Transportation and warehousing		1,150	670	1,820	
Agriculture		120	1,190	1,310	
Information		220	260	480	
Government		180	260	440	
Mining		130	30	160	
Utilities		80	60	140	
Total Impact on Employment	9,920	14,440	18,370	42,730	4.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$486			\$486	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$297	\$415	\$712	
Manufacturing		\$124	\$92	\$215	
Wholesale and retail trade		\$63	\$112	\$175	
Construction		\$155	\$10	\$164	
Finance, insurance, real estate, rental and leasing		\$71	\$81	\$152	
Transportation and warehousing		\$50	\$30	\$80	
Agriculture		\$5	\$54	\$59	
Information		\$17	\$19	\$36	
Government		\$12	\$17	\$29	
Utilities		\$11	\$8	\$18	
Mining		\$11	\$2	\$13	
Total Impact on Labor Income	\$486	\$815	\$839	\$2,140	4.0%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,380			\$1,380	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$356	\$515	\$871	
Finance, insurance, real estate, rental and leasing		\$219	\$378	\$598	
Manufacturing		\$194	\$133	\$327	
Wholesale and retail trade		\$108	\$178	\$286	
Construction		\$186	\$15	\$201	
Transportation and warehousing		\$68	\$42	\$110	
Agriculture		\$8	\$96	\$103	
Information		\$32	\$37	\$69	
Utilities		\$39	\$28	\$66	
Government		\$16	\$23	\$40	
Mining		\$9	\$2	\$11	
Total Impact on Value Added	\$1,380	\$1,236	\$1,446	\$4,062	4.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Illinois, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	61,620			61,620	0.8%
Indirect/Induced Impacts on Other Industries					
Services		52,650	96,760	149,410	
Finance, insurance, real estate, rental and leasing		13,890	21,590	35,480	
Wholesale and retail trade		8,470	20,880	29,350	
Transportation and warehousing		15,170	10,090	25,260	
Manufacturing		15,810	9,300	25,110	
Construction		16,510	1,110	17,620	
Information		2,000	2,950	4,950	
Government		1,510	1,990	3,500	
Agriculture		190	2,020	2,210	
Utilities		760	520	1,280	
Mining		<u>440</u>	<u>70</u>	<u>510</u>	
Total Impact on Employment	61,620	127,400	167,270	356,300	4.5%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$4,954			\$4,954	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$4,486	\$5,453	\$9,939	
Finance, insurance, real estate, rental and leasing		\$1,398	\$1,749	\$3,147	
Manufacturing		\$1,417	\$811	\$2,228	
Wholesale and retail trade		\$804	\$1,156	\$1,960	
Transportation and warehousing		\$858	\$466	\$1,325	
Construction		\$1,142	\$77	\$1,219	
Information		\$262	\$354	\$615	
Government		\$137	\$177	\$314	
Utilities		\$170	\$112	\$283	
Agriculture		\$9	\$103	\$112	
Mining		<u>\$38</u>	<u>\$6</u>	<u>\$44</u>	
Total Impact on Labor Income	\$4,954	\$10,721	\$10,466	\$26,141	4.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$19,092			\$19,092	2.2%
Indirect/Induced Impacts on Other Industries					
Services		\$5,148	\$6,715	\$11,863	
Finance, insurance, real estate, rental and leasing		\$3,504	\$5,837	\$9,341	
Manufacturing		\$2,302	\$1,511	\$3,813	
Wholesale and retail trade		\$1,455	\$2,058	\$3,514	
Transportation and warehousing		\$1,151	\$625	\$1,776	
Construction		\$1,315	\$107	\$1,422	
Information		\$523	\$733	\$1,256	
Utilities		\$491	\$326	\$817	
Government		\$165	\$221	\$386	
Agriculture		\$11	\$132	\$143	
Mining		<u>\$99</u>	<u>\$16</u>	<u>\$115</u>	
Total Impact on Value Added	\$19,092	\$16,164	\$18,282	\$53,538	6.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Indiana, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	39,340			39,340	1.0%
Indirect/Induced Impacts on Other Industries					
Services		24,000	44,410	68,410	
Manufacturing		13,760	7,130	20,890	
Wholesale and retail trade		4,240	10,190	14,430	
Finance, insurance, real estate, rental and leasing		5,660	7,750	13,410	
Transportation and warehousing		8,640	4,020	12,660	
Construction		10,080	630	10,710	
Government		1,120	990	2,110	
Agriculture		170	1,720	1,890	
Information		810	1,000	1,810	
Utilities		470	300	770	
Mining		310	60	370	
Total Impact on Employment	39,340	69,260	78,200	186,810	4.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,433			\$2,433	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$1,433	\$2,128	\$3,560	
Manufacturing		\$1,100	\$555	\$1,655	
Finance, insurance, real estate, rental and leasing		\$399	\$529	\$928	
Wholesale and retail trade		\$303	\$419	\$721	
Transportation and warehousing		\$483	\$199	\$682	
Construction		\$598	\$37	\$636	
Information		\$71	\$83	\$154	
Government		\$72	\$64	\$135	
Utilities		\$68	\$42	\$110	
Agriculture		\$9	\$68	\$77	
Mining		\$25	\$5	\$29	
Total Impact on Labor Income	\$2,433	\$4,560	\$4,128	\$11,121	4.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$10,481			\$10,481	2.8%
Indirect/Induced Impacts on Other Industries					
Services		\$1,730	\$2,661	\$4,391	
Manufacturing		\$1,952	\$1,303	\$3,255	
Finance, insurance, real estate, rental and leasing		\$1,062	\$1,841	\$2,903	
Wholesale and retail trade		\$511	\$694	\$1,206	
Transportation and warehousing		\$616	\$265	\$880	
Construction		\$656	\$49	\$705	
Utilities		\$248	\$153	\$401	
Information		\$124	\$156	\$281	
Government		\$100	\$92	\$192	
Agriculture		\$9	\$87	\$96	
Mining		\$61	\$11	\$72	
Total Impact on Value Added	\$10,481	\$7,070	\$7,312	\$24,864	6.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Impacts of the Oil and Natural Gas Industry on the US Economy

The Economic Impact of the Oil and Natural Gas Industry in Iowa, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	27,130			27,130	1.3%
Indirect/Induced Impacts on Other Industries					
Services		9,880	18,980	28,860	
Manufacturing		5,950	3,490	9,440	
Finance, insurance, real estate, rental and leasing		3,320	4,570	7,890	
Wholesale and retail trade		1,860	4,960	6,820	
Transportation and warehousing		4,300	1,730	6,030	
Construction		4,890	310	5,200	
Agriculture		160	2,410	2,570	
Government		950	510	1,460	
Information		540	600	1,140	
Utilities		240	150	390	
Mining		<u>120</u>	<u>20</u>	<u>140</u>	
Total Impact on Employment	27,130	32,200	37,740	97,070	4.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,001			\$1,001	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$562	\$825	\$1,387	
Manufacturing		\$503	\$251	\$754	
Finance, insurance, real estate, rental and leasing		\$199	\$250	\$448	
Transportation and warehousing		\$225	\$94	\$319	
Construction		\$295	\$19	\$313	
Wholesale and retail trade		\$123	\$187	\$310	
Agriculture		\$9	\$141	\$149	
Information		\$53	\$59	\$112	
Government		\$65	\$36	\$100	
Utilities		\$33	\$20	\$53	
Mining		<u>\$8</u>	<u>\$2</u>	<u>\$10</u>	
Total Impact on Labor Income	\$1,001	\$2,074	\$1,882	\$4,957	4.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$3,005			\$3,005	1.5%
Indirect/Induced Impacts on Other Industries					
Finance, insurance, real estate, rental and leasing		\$693	\$1,084	\$1,777	
Services		\$661	\$1,000	\$1,662	
Manufacturing		\$831	\$451	\$1,282	
Wholesale and retail trade		\$206	\$292	\$498	
Transportation and warehousing		\$289	\$134	\$423	
Construction		\$302	\$23	\$325	
Agriculture		\$13	\$229	\$242	
Utilities		\$124	\$76	\$200	
Information		\$93	\$103	\$197	
Government		\$87	\$51	\$138	
Mining		<u>\$21</u>	<u>\$4</u>	<u>\$25</u>	
Total Impact on Value Added	\$3,005	\$3,320	\$3,449	\$9,773	5.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Kansas, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	49,500			49,500	2.5%
Indirect/Induced Impacts on Other Industries					
Services		26,230	28,320	54,550	
Finance, insurance, real estate, rental and leasing		7,050	6,800	13,850	
Wholesale and retail trade		3,210	7,230	10,440	
Transportation and warehousing		5,230	2,140	7,370	
Manufacturing		4,090	2,460	6,550	
Construction		5,690	440	6,130	
Government		1,180	980	2,160	
Agriculture		120	1,840	1,960	
Information		790	720	1,510	
Utilities		400	150	550	
Mining		<u>240</u>	<u>30</u>	<u>270</u>	
Total Impact on Employment	49,500	54,240	51,120	154,860	8.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,259			\$3,259	2.9%
Indirect/Induced Impacts on Other Industries					
Services		\$1,828	\$1,324	\$3,151	
Finance, insurance, real estate, rental and leasing		\$604	\$369	\$973	
Transportation and warehousing		\$434	\$107	\$541	
Wholesale and retail trade		\$235	\$276	\$510	
Manufacturing		\$285	\$156	\$441	
Construction		\$326	\$25	\$352	
Information		\$108	\$108	\$215	
Government		\$77	\$65	\$142	
Utilities		\$60	\$22	\$82	
Agriculture		\$4	\$60	\$64	
Mining		<u>\$12</u>	<u>\$2</u>	<u>\$13</u>	
Total Impact on Labor Income	\$3,259	\$3,972	\$2,514	\$9,745	8.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$8,050			\$8,050	4.6%
Indirect/Induced Impacts on Other Industries					
Services		\$2,236	\$1,622	\$3,859	
Finance, insurance, real estate, rental and leasing		\$1,344	\$1,263	\$2,606	
Wholesale and retail trade		\$443	\$491	\$934	
Manufacturing		\$476	\$287	\$764	
Transportation and warehousing		\$442	\$163	\$605	
Construction		\$375	\$34	\$408	
Information		\$186	\$190	\$375	
Utilities		\$199	\$75	\$274	
Government		\$99	\$86	\$185	
Agriculture		\$8	\$127	\$135	
Mining		<u>\$15</u>	<u>\$2</u>	<u>\$17</u>	
Total Impact on Value Added	\$8,050	\$5,823	\$4,340	\$18,212	10.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Kentucky, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	28,870			28,870	1.1%
Indirect/Induced Impacts on Other Industries					
Services		15,360	25,450	40,810	
Manufacturing		5,930	3,650	9,580	
Finance, insurance, real estate, rental and leasing		4,200	4,920	9,120	
Wholesale and retail trade		2,410	6,350	8,760	
Transportation and warehousing		5,210	2,510	7,720	
Construction		6,020	370	6,390	
Agriculture		190	2,150	2,340	
Government		810	690	1,500	
Information		620	670	1,290	
Mining		430	90	520	
Utilities		310	190	500	
Total Impact on Employment	28,870	41,490	47,040	117,400	4.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,275			\$1,275	1.0%
Indirect/Induced Impacts on Other Industries					
Services		\$863	\$1,174	\$2,037	
Manufacturing		\$462	\$266	\$729	
Finance, insurance, real estate, rental and leasing		\$251	\$256	\$508	
Transportation and warehousing		\$302	\$148	\$450	
Wholesale and retail trade		\$162	\$253	\$414	
Construction		\$330	\$20	\$351	
Government		\$58	\$51	\$109	
Information		\$51	\$53	\$103	
Utilities		\$41	\$24	\$65	
Agriculture		\$7	\$47	\$54	
Mining		\$27	\$5	\$32	
Total Impact on Labor Income	\$1,275	\$2,556	\$2,297	\$6,127	4.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$6,466			\$6,466	3.0%
Indirect/Induced Impacts on Other Industries					
Services		\$1,007	\$1,399	\$2,406	
Finance, insurance, real estate, rental and leasing		\$684	\$985	\$1,668	
Manufacturing		\$768	\$530	\$1,298	
Wholesale and retail trade		\$303	\$422	\$724	
Transportation and warehousing		\$344	\$170	\$515	
Construction		\$380	\$29	\$408	
Utilities		\$153	\$90	\$243	
Information		\$97	\$107	\$204	
Government		\$77	\$70	\$147	
Mining		\$74	\$15	\$89	
Agriculture		\$8	\$69	\$78	
Total Impact on Value Added	\$6,466	\$3,895	\$3,886	\$14,246	6.6%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Louisiana, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	105,310			105,310	3.8%
Indirect/Induced Impacts on Other Industries					
Services		49,710	78,380	128,090	
Finance, insurance, real estate, rental and leasing		15,940	16,300	32,240	
Wholesale and retail trade		7,050	18,490	25,540	
Construction		16,350	1,310	17,660	
Transportation and warehousing		12,290	4,670	16,960	
Manufacturing		5,320	2,500	7,820	
Government		2,640	2,170	4,810	
Information		1,690	1,840	3,530	
Agriculture		310	1,650	1,960	
Utilities		1,050	390	1,440	
Mining		350	30	380	
Total Impact on Employment	105,310	112,720	127,740	345,760	12.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$12,656			\$12,656	8.5%
Indirect/Induced Impacts on Other Industries					
Services		\$2,777	\$3,392	\$6,170	
Finance, insurance, real estate, rental and leasing		\$889	\$636	\$1,524	
Wholesale and retail trade		\$506	\$725	\$1,230	
Construction		\$973	\$78	\$1,051	
Transportation and warehousing		\$660	\$189	\$850	
Manufacturing		\$467	\$172	\$639	
Government		\$190	\$157	\$347	
Information		\$117	\$125	\$243	
Utilities		\$139	\$52	\$191	
Agriculture		\$11	\$41	\$52	
Mining		\$24	\$2	\$26	
Total Impact on Labor Income	\$12,656	\$6,754	\$5,569	\$24,979	16.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$38,619			\$38,619	15.0%
Indirect/Induced Impacts on Other Industries					
Services		\$3,240	\$4,100	\$7,339	
Finance, insurance, real estate, rental and leasing		\$2,416	\$2,984	\$5,400	
Wholesale and retail trade		\$1,182	\$1,239	\$2,421	
Manufacturing		\$900	\$371	\$1,270	
Construction		\$1,054	\$93	\$1,147	
Transportation and warehousing		\$840	\$244	\$1,084	
Utilities		\$585	\$218	\$803	
Information		\$261	\$287	\$548	
Government		\$231	\$194	\$424	
Agriculture		\$10	\$56	\$67	
Mining		\$60	\$6	\$66	
Total Impact on Value Added	\$38,619	\$10,778	\$9,791	\$59,188	23.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Maine, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	12,060			12,060	1.4%
Indirect/Induced Impacts on Other Industries					
Services		4,800	9,970	14,770	
Wholesale and retail trade		820	2,310	3,130	
Finance, insurance, real estate, rental and leasing		1,320	1,790	3,110	
Construction		2,310	170	2,480	
Transportation and warehousing		1,520	570	2,090	
Manufacturing		1,060	930	1,990	
Agriculture		140	520	660	
Information		250	250	500	
Government		200	230	430	
Utilities		70	40	110	
Mining		90	10	100	
Total Impact on Employment	12,060	12,580	16,810	41,440	4.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$547			\$547	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$277	\$479	\$756	
Finance, insurance, real estate, rental and leasing		\$71	\$84	\$155	
Wholesale and retail trade		\$53	\$94	\$147	
Manufacturing		\$69	\$60	\$129	
Construction		\$118	\$9	\$126	
Transportation and warehousing		\$69	\$26	\$94	
Information		\$21	\$21	\$42	
Government		\$15	\$18	\$33	
Agriculture		\$5	\$17	\$22	
Utilities		\$9	\$5	\$14	
Mining		\$2	\$0	\$2	
Total Impact on Labor Income	\$547	\$708	\$813	\$2,068	4.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,675			\$1,675	2.5%
Indirect/Induced Impacts on Other Industries					
Services		\$336	\$600	\$936	
Finance, insurance, real estate, rental and leasing		\$231	\$378	\$609	
Wholesale and retail trade		\$90	\$155	\$245	
Manufacturing		\$109	\$98	\$207	
Transportation and warehousing		\$83	\$34	\$117	
Construction		\$99	\$8	\$108	
Utilities		\$45	\$27	\$71	
Information		\$34	\$34	\$68	
Government		\$19	\$23	\$41	
Agriculture		\$3	\$21	\$24	
Mining		\$3	\$0	\$4	
Total Impact on Value Added	\$1,675	\$1,052	\$1,378	\$4,105	6.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income. *** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in Maryland, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	19,130			19,130	0.5%
Indirect/Induced Impacts on Other Industries					
Services		18,330	36,690	55,020	
Finance, insurance, real estate, rental and leasing		4,070	7,100	11,170	
Wholesale and retail trade		3,030	7,290	10,320	
Construction		9,220	560	9,780	
Transportation and warehousing		4,590	3,530	8,120	
Manufacturing		3,140	2,040	5,180	
Information		690	1,100	1,790	
Government		430	880	1,310	
Agriculture		60	530	590	
Utilities		210	210	420	
Mining		<u>80</u>	<u>10</u>	<u>90</u>	
Total Impact on Employment	19,130	43,860	59,940	122,930	3.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,305			\$1,305	0.5%
Indirect/Induced Impacts on Other Industries					
Services		\$1,521	\$2,044	\$3,564	
Finance, insurance, real estate, rental and leasing		\$466	\$568	\$1,034	
Construction		\$616	\$37	\$654	
Wholesale and retail trade		\$223	\$352	\$576	
Manufacturing		\$330	\$155	\$485	
Information		\$163	\$201	\$364	
Transportation and warehousing		\$212	\$145	\$357	
Government		\$56	\$106	\$162	
Utilities		\$63	\$57	\$120	
Agriculture		\$3	\$15	\$17	
Mining		<u>\$5</u>	<u>\$1</u>	<u>\$6</u>	
Total Impact on Labor Income	\$1,305	\$3,658	\$3,681	\$8,644	3.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,848			\$4,848	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$1,809	\$2,548	\$4,358	
Finance, insurance, real estate, rental and leasing		\$1,023	\$2,117	\$3,140	
Wholesale and retail trade		\$409	\$594	\$1,003	
Manufacturing		\$586	\$362	\$948	
Construction		\$658	\$50	\$708	
Information		\$257	\$336	\$592	
Transportation and warehousing		\$274	\$183	\$457	
Utilities		\$170	\$156	\$326	
Government		\$94	\$184	\$278	
Agriculture		\$3	\$24	\$27	
Mining		<u>\$19</u>	<u>\$3</u>	<u>\$23</u>	
Total Impact on Value Added	\$4,848	\$5,302	\$6,558	\$16,707	3.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Massachusetts, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	25,570			25,570	0.5%
Indirect/Induced Impacts on Other Industries					
Services		24,300	54,840	79,140	
Finance, insurance, real estate, rental and leasing		6,750	11,030	17,780	
Wholesale and retail trade		3,520	10,290	13,810	
Construction		9,970	660	10,630	
Manufacturing		6,320	3,710	10,030	
Transportation and warehousing		5,020	4,630	9,650	
Information		990	1,450	2,440	
Government		400	780	1,180	
Agriculture		70	470	540	
Utilities		220	230	450	
Mining		<u>100</u>	<u>10</u>	<u>110</u>	
Total Impact on Employment	25,570	57,660	88,110	171,330	3.5%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,177			\$2,177	0.6%
Indirect/Induced Impacts on Other Industries					
Services		\$2,650	\$3,642	\$6,292	
Finance, insurance, real estate, rental and leasing		\$903	\$1,189	\$2,093	
Manufacturing		\$697	\$328	\$1,026	
Wholesale and retail trade		\$391	\$610	\$1,001	
Construction		\$816	\$54	\$870	
Transportation and warehousing		\$367	\$304	\$670	
Information		\$145	\$195	\$340	
Government		\$44	\$80	\$124	
Utilities		\$54	\$52	\$107	
Agriculture		\$5	\$18	\$23	
Mining		<u>\$7</u>	<u>\$1</u>	<u>\$7</u>	
Total Impact on Labor Income	\$2,177	\$6,078	\$6,474	\$14,730	3.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$5,568			\$5,568	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$3,080	\$4,390	\$7,470	
Finance, insurance, real estate, rental and leasing		\$1,768	\$3,301	\$5,069	
Manufacturing		\$1,116	\$659	\$1,775	
Wholesale and retail trade		\$571	\$927	\$1,498	
Transportation and warehousing		\$601	\$503	\$1,105	
Construction		\$781	\$62	\$843	
Information		\$267	\$363	\$630	
Utilities		\$147	\$142	\$289	
Government		\$77	\$145	\$223	
Agriculture		\$5	\$21	\$26	
Mining		<u>\$17</u>	<u>\$2</u>	<u>\$19</u>	
Total Impact on Value Added	\$5,568	\$8,431	\$10,516	\$24,515	4.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Michigan, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	48,740			48,740	0.8%
Indirect/Induced Impacts on Other Industries					
Services		37,270	64,680	101,950	
Manufacturing		16,510	8,220	24,730	
Finance, insurance, real estate, rental and leasing		8,940	13,050	21,990	
Wholesale and retail trade		5,830	14,410	20,240	
Construction		11,620	850	12,470	
Transportation and warehousing		7,330	4,300	11,630	
Information		1,450	1,960	3,410	
Agriculture		290	1,930	2,220	
Government		780	1,340	2,120	
Utilities		540	440	980	
Mining		250	50	300	
Total Impact on Employment	48,740	90,800	111,230	250,770	4.3%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,298			\$3,298	1.0%
Indirect/Induced Impacts on Other Industries					
Services		\$2,713	\$3,255	\$5,968	
Manufacturing		\$1,430	\$658	\$2,088	
Finance, insurance, real estate, rental and leasing		\$579	\$669	\$1,248	
Wholesale and retail trade		\$462	\$670	\$1,131	
Construction		\$721	\$53	\$774	
Transportation and warehousing		\$384	\$206	\$590	
Information		\$148	\$190	\$338	
Utilities		\$106	\$83	\$189	
Government		\$65	\$108	\$173	
Agriculture		\$9	\$41	\$50	
Mining		\$17	\$3	\$20	
Total Impact on Labor Income	\$3,298	\$6,635	\$5,935	\$15,868	4.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$8,842			\$8,842	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$3,115	\$3,907	\$7,023	
Finance, insurance, real estate, rental and leasing		\$1,572	\$2,690	\$4,261	
Manufacturing		\$2,230	\$1,126	\$3,356	
Wholesale and retail trade		\$794	\$1,093	\$1,887	
Construction		\$825	\$75	\$899	
Transportation and warehousing		\$464	\$277	\$740	
Information		\$258	\$329	\$587	
Utilities		\$274	\$216	\$490	
Government		\$83	\$141	\$224	
Mining		\$76	\$15	\$92	
Agriculture		\$11	\$78	\$89	
Total Impact on Value Added	\$8,842	\$9,701	\$9,946	\$28,489	5.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Minnesota, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	37,790			37,790	1.0%
Indirect/Induced Impacts on Other Industries					
Services		21,540	44,960	66,500	
Finance, insurance, real estate, rental and leasing		6,040	9,580	15,620	
Wholesale and retail trade		3,870	9,880	13,750	
Manufacturing		8,520	4,900	13,420	
Transportation and warehousing		5,990	3,510	9,500	
Construction		8,520	570	9,090	
Agriculture		190	2,080	2,270	
Information		790	1,090	1,880	
Government		790	1,010	1,800	
Utilities		500	310	810	
Mining		<u>370</u>	<u>70</u>	440	
Total Impact on Employment	37,790	57,140	77,950	172,880	4.5%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,220			\$2,220	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$1,784	\$2,501	\$4,285	
Finance, insurance, real estate, rental and leasing		\$502	\$683	\$1,185	
Manufacturing		\$709	\$376	\$1,086	
Wholesale and retail trade		\$346	\$506	\$852	
Construction		\$603	\$40	\$644	
Transportation and warehousing		\$373	\$196	\$569	
Information		\$89	\$111	\$200	
Government		\$61	\$77	\$138	
Utilities		\$82	\$50	\$131	
Agriculture		\$7	\$69	\$75	
Mining		<u>\$31</u>	<u>\$6</u>	\$37	
Total Impact on Labor Income	\$2,221	\$4,587	\$4,616	\$11,423	4.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$8,620			\$8,620	2.2%
Indirect/Induced Impacts on Other Industries					
Services		\$2,089	\$2,985	\$5,074	
Finance, insurance, real estate, rental and leasing		\$1,261	\$2,220	\$3,481	
Manufacturing		\$1,094	\$605	\$1,699	
Wholesale and retail trade		\$589	\$845	\$1,434	
Transportation and warehousing		\$492	\$279	\$771	
Construction		\$650	\$53	\$703	
Information		\$167	\$220	\$386	
Utilities		\$222	\$136	\$358	
Government		\$78	\$101	\$179	
Agriculture		\$10	\$138	\$148	
Mining		<u>\$105</u>	<u>\$20</u>	\$126	
Total Impact on Value Added	\$8,620	\$6,758	\$7,602	\$22,980	6.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Mississippi, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	32,300			32,300	2.0%
Indirect/Induced Impacts on Other Industries					
Services		13,910	19,820	33,730	
Finance, insurance, real estate, rental and leasing		4,140	3,830	7,970	
Wholesale and retail trade		2,040	4,970	7,010	
Transportation and warehousing		4,990	1,500	6,490	
Construction		5,320	320	5,640	
Manufacturing		3,350	2,180	5,530	
Government		860	650	1,510	
Agriculture		230	1,170	1,400	
Information		530	460	990	
Utilities		430	210	640	
Mining		140	20	160	
Total Impact on Employment	32,300	35,940	35,130	103,370	6.4%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,983			\$1,983	2.8%
Indirect/Induced Impacts on Other Industries					
Services		\$604	\$743	\$1,347	
Manufacturing		\$217	\$115	\$332	
Finance, insurance, real estate, rental and leasing		\$190	\$129	\$319	
Transportation and warehousing		\$231	\$65	\$296	
Wholesale and retail trade		\$110	\$173	\$282	
Construction		\$236	\$14	\$250	
Government		\$53	\$41	\$94	
Utilities		\$48	\$23	\$72	
Agriculture		\$12	\$48	\$60	
Information		\$30	\$26	\$56	
Mining		\$6	\$1	\$6	
Total Impact on Labor Income	\$1,983	\$1,736	\$1,378	\$5,097	7.1%
Value Added (\$ Millions)					
Industry Direct Impact	\$6,484			\$6,484	5.6%
Indirect/Induced Impacts on Other Industries					
Services		\$726	\$913	\$1,638	
Finance, insurance, real estate, rental and leasing		\$591	\$704	\$1,295	
Manufacturing		\$377	\$194	\$571	
Wholesale and retail trade		\$230	\$290	\$521	
Transportation and warehousing		\$312	\$91	\$404	
Construction		\$263	\$18	\$282	
Utilities		\$167	\$81	\$248	
Information		\$69	\$64	\$133	
Government		\$66	\$53	\$118	
Agriculture		\$11	\$52	\$63	
Mining		\$15	\$2	\$17	
Total Impact on Value Added	\$6,484	\$2,828	\$2,462	\$11,773	10.2%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Missouri, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	41,700			41,700	1.1%
Indirect/Induced Impacts on Other Industries					
Services		23,360	43,530	66,890	
Finance, insurance, real estate, rental and leasing		6,920	9,440	16,360	
Wholesale and retail trade		4,150	9,940	14,090	
Manufacturing		6,680	4,330	11,010	
Transportation and warehousing		6,160	3,190	9,350	
Construction		8,180	620	8,800	
Agriculture		230	2,510	2,740	
Information		1,130	1,400	2,530	
Government		1,030	1,040	2,070	
Utilities		390	270	660	
Mining		<u>270</u>	<u>50</u>	<u>320</u>	
Total Impact on Employment	41,700	58,520	76,310	176,520	4.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,079			\$2,079	1.0%
Indirect/Induced Impacts on Other Industries					
Services		\$1,622	\$2,137	\$3,759	
Finance, insurance, real estate, rental and leasing		\$529	\$583	\$1,112	
Manufacturing		\$502	\$314	\$816	
Wholesale and retail trade		\$319	\$418	\$737	
Construction		\$479	\$36	\$515	
Transportation and warehousing		\$300	\$153	\$453	
Information		\$118	\$133	\$251	
Government		\$73	\$74	\$147	
Utilities		\$56	\$38	\$94	
Agriculture		\$6	\$19	\$25	
Mining		<u>\$13</u>	<u>\$2</u>	<u>\$15</u>	
Total Impact on Labor Income	\$2,079	\$4,017	\$3,907	\$10,003	4.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$5,660			\$5,660	1.7%
Indirect/Induced Impacts on Other Industries					
Services		\$1,932	\$2,634	\$4,566	
Finance, insurance, real estate, rental and leasing		\$1,293	\$1,878	\$3,171	
Manufacturing		\$793	\$576	\$1,369	
Wholesale and retail trade		\$521	\$703	\$1,223	
Transportation and warehousing		\$416	\$219	\$635	
Construction		\$476	\$43	\$520	
Information		\$227	\$260	\$487	
Utilities		\$177	\$118	\$295	
Government		\$92	\$97	\$189	
Agriculture		\$9	\$80	\$89	
Mining		<u>\$56</u>	<u>\$10</u>	<u>\$66</u>	
Total Impact on Value Added	\$5,660	\$5,993	\$6,618	\$18,271	5.6%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Montana, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	14,600			14,600	2.1%
Indirect /Induced Impacts on Other Industries					
Services		7,350	11,940	19,290	
Finance, insurance, real estate, rental and leasing		2,330	2,840	5,170	
Wholesale and retail trade		1,170	3,100	4,270	
Construction		3,210	230	3,440	
Transportation and warehousing		1,980	680	2,660	
Manufacturing		640	480	1,120	
Agriculture		100	920	1,020	
Government		380	330	710	
Information		250	270	520	
Mining		310	60	370	
Utilities		<u>180</u>	<u>80</u>	<u>260</u>	
Total Impact on Employment	14,600	17,910	20,930	53,440	7.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,323			\$1,323	4.0%
Indirect/Induced Impacts on Other Industries					
Services		\$377	\$518	\$895	
Finance, insurance, real estate, rental and leasing		\$119	\$107	\$226	
Wholesale and retail trade		\$69	\$121	\$189	
Construction		\$173	\$12	\$185	
Transportation and warehousing		\$116	\$33	\$149	
Manufacturing		\$37	\$22	\$59	
Government		\$26	\$23	\$49	
Information		\$20	\$21	\$41	
Utilities		\$24	\$10	\$34	
Mining		\$28	\$5	\$34	
Agriculture		<u>\$4</u>	<u>\$22</u>	<u>\$26</u>	
Total Impact on Labor Income	\$1,323	\$993	\$894	\$3,210	9.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$3,303			\$3,303	6.2%
Indirect/Induced Impacts on Other Industries					
Services		\$424	\$616	\$1,040	
Finance, insurance, real estate, rental and leasing		\$300	\$447	\$747	
Wholesale and retail trade		\$128	\$163	\$291	
Transportation and warehousing		\$167	\$50	\$216	
Construction		\$193	\$16	\$209	
Utilities		\$71	\$31	\$102	
Mining		\$82	\$15	\$97	
Manufacturing		\$60	\$35	\$95	
Information		\$36	\$38	\$74	
Government		\$32	\$29	\$61	
Agriculture		<u>\$5</u>	<u>\$50</u>	<u>\$55</u>	
Total Impact on Value Added	\$3,303	\$1,497	\$1,491	\$6,291	11.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Nebraska, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	13,790			13,790	1.0%
Indirect/Induced Impacts on Other Industries					
Services		7,430	20,000	27,430	
Finance, insurance, real estate, rental and leasing		2,190	4,790	6,980	
Wholesale and retail trade		1,050	5,110	6,160	
Transportation and warehousing		2,320	1,660	3,980	
Manufacturing		1,920	1,910	3,830	
Construction		3,140	340	3,480	
Agriculture		90	1,580	1,670	
Information		420	710	1,130	
Government		230	560	790	
Utilities		190	170	360	
Mining		50	10	60	
Total Impact on Employment	13,790	19,020	36,850	69,660	5.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,150			\$3,150	4.1%
Indirect/Induced Impacts on Other Industries					
Services		\$478	\$945	\$1,423	
Transportation and warehousing		\$417	\$100	\$517	
Finance, insurance, real estate, rental and leasing		\$138	\$238	\$376	
Wholesale and retail trade		\$78	\$191	\$269	
Manufacturing		\$133	\$126	\$259	
Construction		\$163	\$18	\$181	
Information		\$41	\$65	\$106	
Agriculture		\$4	\$81	\$85	
Utilities		\$36	\$32	\$67	
Government		\$18	\$40	\$58	
Mining		\$3	\$1	\$4	
Total Impact on Labor Income	\$3,150	\$1,509	\$1,836	\$6,495	8.4%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,885			\$4,885	3.8%
Indirect/Induced Impacts on Other Industries					
Services		\$563	\$1,154	\$1,718	
Finance, insurance, real estate, rental and leasing		\$430	\$993	\$1,422	
Transportation and warehousing		\$297	\$171	\$467	
Wholesale and retail trade		\$143	\$323	\$466	
Manufacturing		\$212	\$225	\$437	
Information		\$76	\$122	\$198	
Utilities		\$101	\$90	\$191	
Agriculture		\$7	\$159	\$166	
Construction		\$142	\$17	\$159	
Government		\$23	\$52	\$74	
Mining		\$8	\$2	\$9	
Total Impact on Value Added	\$4,885	\$2,001	\$3,307	\$10,193	7.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Nevada, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	14,140			14,140	0.7%
Indirect/Induced Impacts on Other Industries					
Services		10,830	21,240	32,070	
Finance, insurance, real estate, rental and leasing		2,890	4,640	7,530	
Wholesale and retail trade		1,380	4,190	5,570	
Transportation and warehousing		3,120	2,090	5,210	
Construction		4,580	290	4,870	
Manufacturing		1,610	1,040	2,650	
Information		430	650	1,080	
Mining		680	140	820	
Government		230	340	570	
Agriculture		20	160	180	
Utilities		<u>100</u>	<u>70</u>	<u>170</u>	
Total Impact on Employment	14,140	25,860	34,840	74,840	3.9%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$672			\$672	0.6%
Indirect/Induced Impacts on Other Industries					
Services		\$692	\$1,091	\$1,783	
Construction		\$301	\$19	\$320	
Wholesale and retail trade		\$113	\$202	\$316	
Finance, insurance, real estate, rental and leasing		\$149	\$162	\$311	
Transportation and warehousing		\$133	\$72	\$206	
Manufacturing		\$123	\$66	\$189	
Information		\$52	\$70	\$122	
Mining		\$70	\$15	\$85	
Government		\$23	\$32	\$55	
Utilities		\$16	\$11	\$28	
Agriculture		<u>\$1</u>	<u>\$4</u>	<u>\$4</u>	
Total Impact on Labor Income	\$672	\$1,673	\$1,746	\$4,091	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$2,656			\$2,656	1.5%
Indirect/Induced Impacts on Other Industries					
Services		\$881	\$1,572	\$2,453	
Finance, insurance, real estate, rental and leasing		\$493	\$868	\$1,361	
Wholesale and retail trade		\$220	\$377	\$597	
Construction		\$349	\$28	\$377	
Manufacturing		\$193	\$113	\$306	
Transportation and warehousing		\$175	\$100	\$275	
Information		\$100	\$137	\$236	
Mining		\$154	\$33	\$187	
Utilities		\$61	\$43	\$104	
Government		\$27	\$41	\$68	
Agriculture		<u>\$1</u>	<u>\$10</u>	<u>\$11</u>	
Total Impact on Value Added	\$2,656	\$2,655	\$3,320	\$8,630	4.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in New Hampshire, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	8,640			8,640	1.0%
Indirect/Induced Impacts on Other Industries					
Services		4,870	9,810	14,680	
Wholesale and retail trade		930	2,610	3,540	
Manufacturing		2,430	880	3,310	
Finance, insurance, real estate, rental and leasing		1,230	2,060	3,290	
Construction		2,140	160	2,300	
Transportation and warehousing		940	580	1,520	
Information		190	250	440	
Government		100	190	290	
Agriculture		50	180	230	
Utilities		50	50	100	
Mining		40	10	50	
Total Impact on Employment	8,640	12,980	16,770	38,390	4.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$584			\$584	1.0%
Indirect/Induced Impacts on Other Industries					
Services		\$386	\$572	\$958	
Manufacturing		\$238	\$64	\$302	
Finance, insurance, real estate, rental and leasing		\$101	\$139	\$241	
Wholesale and retail trade		\$100	\$141	\$240	
Construction		\$155	\$12	\$167	
Transportation and warehousing		\$43	\$33	\$76	
Information		\$21	\$27	\$48	
Government		\$8	\$14	\$23	
Utilities		\$8	\$7	\$15	
Agriculture		\$2	\$4	\$6	
Mining		\$2	\$0	\$2	
Total Impact on Labor Income	\$584	\$1,065	\$1,012	\$2,661	4.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,292			\$1,292	1.5%
Indirect/Induced Impacts on Other Industries					
Services		\$452	\$704	\$1,156	
Finance, insurance, real estate, rental and leasing		\$264	\$533	\$797	
Manufacturing		\$340	\$99	\$439	
Wholesale and retail trade		\$134	\$192	\$327	
Transportation and warehousing		\$85	\$60	\$145	
Construction		\$110	\$9	\$119	
Information		\$37	\$47	\$83	
Utilities		\$33	\$28	\$61	
Government		\$14	\$25	\$39	
Agriculture		\$1	\$5	\$6	
Mining		\$3	\$1	\$4	
Total Impact on Value Added	\$1,292	\$1,473	\$1,703	\$4,468	5.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income. *** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in New Jersey, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	36,890			36,890	0.7%
Indirect/Induced Impacts on Other Industries					
Services		31,220	62,250	93,470	
Finance, insurance, real estate, rental and leasing		9,850	16,960	26,810	
Wholesale and retail trade		5,280	14,580	19,860	
Transportation and warehousing		9,640	6,790	16,430	
Construction		11,190	810	12,000	
Manufacturing		5,670	4,900	10,570	
Information		1,210	1,940	3,150	
Government		750	1,290	2,040	
Agriculture		70	570	640	
Utilities		310	260	570	
Mining		<u>130</u>	<u>20</u>	<u>150</u>	
Total Impact on Employment	36,890	75,320	110,370	222,590	3.9%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,877			\$3,877	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$2,969	\$3,944	\$6,913	
Finance, insurance, real estate, rental and leasing		\$913	\$1,194	\$2,107	
Wholesale and retail trade		\$549	\$942	\$1,491	
Manufacturing		\$590	\$574	\$1,165	
Construction		\$885	\$64	\$949	
Transportation and warehousing		\$555	\$357	\$912	
Information		\$179	\$267	\$446	
Government		\$79	\$130	\$209	
Utilities		\$67	\$52	\$118	
Mining		\$29	\$4	\$33	
Agriculture		<u>\$4</u>	<u>\$15</u>	<u>\$19</u>	
Total Impact on Labor Income	\$3,877	\$6,818	\$7,543	\$18,238	4.4%
Value Added (\$ Millions)					
Industry Direct Impact	\$16,659			\$16,659	2.6%
Indirect/Induced Impacts on Other Industries					
Services		\$3,547	\$4,737	\$8,283	
Finance, insurance, real estate, rental and leasing		\$1,818	\$3,749	\$5,566	
Wholesale and retail trade		\$944	\$1,569	\$2,513	
Manufacturing		\$834	\$928	\$1,762	
Transportation and warehousing		\$727	\$472	\$1,199	
Construction		\$967	\$85	\$1,052	
Information		\$348	\$512	\$860	
Utilities		\$217	\$170	\$387	
Government		\$99	\$167	\$266	
Agriculture		\$5	\$23	\$28	
Mining		<u>\$25</u>	<u>\$3</u>	<u>\$28</u>	
Total Impact on Value Added	\$16,659	\$9,529	\$12,416	\$38,604	6.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in New Mexico, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	46,010			46,010	4.1%
Indirect/Induced Impacts on Other Industries					
Services		13,100	23,840	36,940	
Finance, insurance, real estate, rental and leasing		5,420	4,320	9,740	
Wholesale and retail trade		2,260	5,600	7,860	
Construction		4,150	370	4,520	
Transportation and warehousing		2,530	1,150	3,680	
Manufacturing		1,100	720	1,820	
Government		690	810	1,500	
Agriculture		80	940	1,020	
Information		480	500	980	
Utilities		300	150	450	
Mining		<u>290</u>	<u>50</u>	<u>340</u>	
Total Impact on Employment	46,010	30,390	38,450	114,850	10.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,585			\$3,585	6.1%
Indirect/Induced Impacts on Other Industries					
Services		\$719	\$990	\$1,710	
Finance, insurance, real estate, rental and leasing		\$278	\$167	\$445	
Wholesale and retail trade		\$131	\$198	\$329	
Construction		\$217	\$20	\$237	
Transportation and warehousing		\$137	\$51	\$188	
Government		\$53	\$61	\$114	
Manufacturing		\$47	\$33	\$80	
Information		\$33	\$34	\$67	
Utilities		\$33	\$17	\$50	
Agriculture		\$2	\$27	\$29	
Mining		<u>\$24</u>	<u>\$4</u>	<u>\$28</u>	
Total Impact on Labor Income	\$3,585	\$1,676	\$1,602	\$6,862	11.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$12,906			\$12,906	12.3%
Indirect/Induced Impacts on Other Industries					
Services		\$943	\$1,259	\$2,202	
Finance, insurance, real estate, rental and leasing		\$759	\$953	\$1,713	
Wholesale and retail trade		\$291	\$317	\$608	
Construction		\$250	\$26	\$276	
Transportation and warehousing		\$200	\$74	\$274	
Government		\$105	\$125	\$230	
Manufacturing		\$112	\$62	\$174	
Utilities		\$111	\$56	\$167	
Information		\$66	\$77	\$143	
Mining		\$92	\$14	\$106	
Agriculture		<u>\$3</u>	<u>\$42</u>	<u>\$45</u>	
Total Impact on Value Added	\$12,906	\$2,934	\$3,004	\$18,843	17.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in New York, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	56,950			56,950	0.4%
Indirect/Induced Impacts on Other Industries					
Services		51,530	137,710	189,240	
Finance, insurance, real estate, rental and leasing		20,290	35,360	55,650	
Wholesale and retail trade		7,860	25,960	33,820	
Construction		22,920	1,490	24,410	
Transportation and warehousing		10,890	11,730	22,620	
Manufacturing		10,790	8,070	18,860	
Information		3,200	5,600	8,800	
Government		1,100	2,580	3,680	
Agriculture		220	1,600	1,820	
Utilities		740	780	1,520	
Mining		<u>390</u>	<u>60</u>	<u>450</u>	
Total Impact on Employment	56,950	129,930	230,940	417,820	3.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$7,197			\$7,197	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$5,457	\$9,107	\$14,565	
Finance, insurance, real estate, rental and leasing		\$3,707	\$4,945	\$8,651	
Wholesale and retail trade		\$789	\$1,562	\$2,351	
Information		\$838	\$1,224	\$2,062	
Construction		\$1,753	\$113	\$1,866	
Manufacturing		\$980	\$618	\$1,598	
Transportation and warehousing		\$812	\$694	\$1,506	
Government		\$140	\$298	\$437	
Utilities		\$167	\$166	\$333	
Agriculture		\$9	\$39	\$48	
Mining		<u>\$28</u>	<u>\$5</u>	<u>\$33</u>	
Total Impact on Labor Income	\$7,197	\$14,680	\$18,770	\$40,647	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$14,365			\$14,365	0.8%
Indirect/Induced Impacts on Other Industries					
Finance, insurance, real estate, rental and leasing		\$8,013	\$13,349	\$21,362	
Services		\$6,358	\$11,231	\$17,589	
Information		\$1,910	\$2,826	\$4,737	
Wholesale and retail trade		\$1,339	\$2,572	\$3,911	
Manufacturing		\$1,524	\$1,153	\$2,677	
Transportation and warehousing		\$1,158	\$987	\$2,145	
Construction		\$1,949	\$157	\$2,106	
Utilities		\$479	\$476	\$955	
Government		\$176	\$385	\$560	
Agriculture		\$12	\$76	\$88	
Mining		<u>\$49</u>	<u>\$8</u>	<u>\$57</u>	
Total Impact on Value Added	\$14,365	\$22,966	\$33,220	\$70,551	4.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in North Carolina, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	47,920			47,920	0.8%
Indirect/Induced Impacts on Other Industries					
Services		32,150	58,400	90,550	
Finance, insurance, real estate, rental and leasing		8,270	12,310	20,580	
Wholesale and retail trade		6,040	14,500	20,540	
Manufacturing		10,980	8,000	18,980	
Construction		14,550	940	15,490	
Transportation and warehousing		8,070	4,460	12,530	
Information		1,300	1,740	3,040	
Government		980	1,550	2,530	
Agriculture		290	1,900	2,190	
Utilities		390	300	690	
Mining		190	40	230	
Total Impact on Employment	47,920	83,220	104,130	235,270	3.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,489			\$2,489	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$2,155	\$2,814	\$4,969	
Manufacturing		\$896	\$532	\$1,428	
Finance, insurance, real estate, rental and leasing		\$616	\$758	\$1,374	
Wholesale and retail trade		\$478	\$641	\$1,119	
Construction		\$809	\$52	\$861	
Transportation and warehousing		\$392	\$228	\$620	
Information		\$130	\$164	\$294	
Government		\$80	\$121	\$202	
Utilities		\$73	\$54	\$128	
Agriculture		\$12	\$83	\$95	
Mining		\$14	\$3	\$17	
Total Impact on Labor Income	\$2,489	\$5,656	\$5,450	\$13,596	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$7,426			\$7,426	1.3%
Indirect/Induced Impacts on Other Industries					
Services		\$2,661	\$3,498	\$6,159	
Finance, insurance, real estate, rental and leasing		\$1,837	\$2,887	\$4,724	
Manufacturing		\$1,706	\$1,564	\$3,270	
Wholesale and retail trade		\$772	\$1,039	\$1,811	
Construction		\$838	\$66	\$904	
Transportation and warehousing		\$546	\$354	\$900	
Information		\$263	\$331	\$594	
Utilities		\$244	\$183	\$427	
Government		\$109	\$171	\$281	
Agriculture		\$13	\$100	\$113	
Mining		\$29	\$5	\$34	
Total Impact on Value Added	\$7,426	\$9,019	\$10,200	\$26,644	4.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in North Dakota, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	36,970			36,970	6.3%
Indirect/Induced Impacts on Other Industries					
Services		9,330	16,120	25,450	
Finance, insurance, real estate, rental and leasing		4,600	3,860	8,460	
Wholesale and retail trade		1,660	4,590	6,250	
Transportation and warehousing		1,910	1,100	3,010	
Construction		2,360	250	2,610	
Manufacturing		950	480	1,430	
Government		390	590	980	
Agriculture		50	810	860	
Information		410	390	800	
Utilities		230	130	360	
Mining		<u>170</u>	<u>30</u>	<u>200</u>	
Total Impact on Employment	36,970	22,060	28,340	87,380	14.9%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$3,783			\$3,783	11.0%
Indirect/Induced Impacts on Other Industries					
Services		\$583	\$766	\$1,349	
Finance, insurance, real estate, rental and leasing		\$303	\$187	\$490	
Wholesale and retail trade		\$134	\$179	\$313	
Transportation and warehousing		\$127	\$69	\$196	
Construction		\$167	\$18	\$185	
Manufacturing		\$65	\$31	\$96	
Information		\$36	\$32	\$68	
Government		\$26	\$40	\$67	
Utilities		\$34	\$19	\$53	
Agriculture		\$2	\$39	\$42	
Mining		<u>\$16</u>	<u>\$3</u>	<u>\$18</u>	
Total Impact on Labor Income	\$3,783	\$1,494	\$1,383	\$6,659	19.4%
Value Added (\$ Millions)					
Industry Direct Impact	\$8,931			\$8,931	15.6%
Indirect/Induced Impacts on Other Industries					
Services		\$673	\$911	\$1,584	
Finance, insurance, real estate, rental and leasing		\$662	\$662	\$1,324	
Wholesale and retail trade		\$219	\$254	\$474	
Transportation and warehousing		\$161	\$105	\$266	
Construction		\$200	\$25	\$225	
Manufacturing		\$130	\$56	\$186	
Utilities		\$97	\$54	\$150	
Information		\$62	\$57	\$119	
Government		\$32	\$49	\$80	
Agriculture		\$4	\$71	\$75	
Mining		<u>\$37</u>	<u>\$5</u>	<u>\$43</u>	
Total Impact on Value Added	\$8,931	\$2,278	\$2,248	\$13,458	23.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Ohio, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	78,870			78,870	1.1%
Indirect/Induced Impacts on Other Industries					
Services		54,620	96,820	151,440	
Finance, insurance, real estate, rental and leasing		12,840	19,240	32,080	
Manufacturing		20,270	9,940	30,210	
Wholesale and retail trade		8,660	21,440	30,100	
Transportation and warehousing		13,880	7,470	21,350	
Construction		16,950	1,270	18,220	
Information		2,020	2,700	4,720	
Government		1,720	2,160	3,880	
Agriculture		280	2,570	2,850	
Utilities		680	420	1,100	
Mining		350	50	400	
Total Impact on Employment	78,870	132,270	164,070	375,210	5.3%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$6,510			\$6,510	1.6%
Indirect/Induced Impacts on Other Industries					
Services		\$3,897	\$4,866	\$8,763	
Manufacturing		\$1,626	\$733	\$2,359	
Finance, insurance, real estate, rental and leasing		\$846	\$1,003	\$1,848	
Wholesale and retail trade		\$686	\$962	\$1,648	
Transportation and warehousing		\$949	\$374	\$1,323	
Construction		\$1,071	\$80	\$1,151	
Information		\$192	\$242	\$434	
Government		\$139	\$172	\$312	
Utilities		\$103	\$62	\$165	
Agriculture		\$14	\$55	\$69	
Mining		\$58	\$10	\$68	
Total Impact on Labor Income	\$6,510	\$9,582	\$8,558	\$24,651	5.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$29,151			\$29,151	4.2%
Indirect/Induced Impacts on Other Industries					
Services		\$4,544	\$5,901	\$10,445	
Finance, insurance, real estate, rental and leasing		\$2,845	\$4,543	\$7,388	
Manufacturing		\$2,624	\$1,428	\$4,052	
Wholesale and retail trade		\$1,132	\$1,627	\$2,759	
Transportation and warehousing		\$1,076	\$503	\$1,579	
Construction		\$1,164	\$103	\$1,267	
Information		\$382	\$500	\$882	
Utilities		\$397	\$238	\$635	
Government		\$185	\$236	\$421	
Agriculture		\$16	\$84	\$99	
Mining		\$73	\$11	\$85	
Total Impact on Value Added	\$29,151	\$14,438	\$15,174	\$58,763	8.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Oklahoma, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	134,180			134,180	5.7%
Indirect/Induced Impacts on Other Industries					
Services		50,830	83,140	133,970	
Finance, insurance, real estate, rental and leasing		21,700	20,160	41,860	
Wholesale and retail trade		7,690	22,840	30,530	
Transportation and warehousing		8,670	4,960	13,630	
Construction		9,450	1,490	10,940	
Manufacturing		6,090	2,640	8,730	
Government		2,600	3,230	5,830	
Information		2,210	2,170	4,380	
Agriculture		220	2,850	3,070	
Utilities		1,410	580	1,990	
Mining		610	80	690	
Total Impact on Employment	134,180	111,480	144,140	389,800	16.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$19,404			\$19,404	15.0%
Indirect/Induced Impacts on Other Industries					
Services		\$2,917	\$3,665	\$6,582	
Finance, insurance, real estate, rental and leasing		\$1,106	\$737	\$1,843	
Wholesale and retail trade		\$522	\$811	\$1,333	
Transportation and warehousing		\$976	\$239	\$1,215	
Manufacturing		\$461	\$162	\$623	
Construction		\$505	\$80	\$585	
Government		\$179	\$221	\$400	
Information		\$187	\$167	\$354	
Utilities		\$177	\$72	\$249	
Mining		\$105	\$17	\$122	
Agriculture		\$4	\$39	\$43	
Total Impact on Labor Income	\$19,404	\$7,138	\$6,210	\$32,752	25.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$37,010			\$37,010	18.3%
Indirect/Induced Impacts on Other Industries					
Services		\$3,524	\$4,423	\$7,947	
Finance, insurance, real estate, rental and leasing		\$2,537	\$3,140	\$5,676	
Wholesale and retail trade		\$1,023	\$1,290	\$2,314	
Manufacturing		\$716	\$276	\$992	
Transportation and warehousing		\$599	\$353	\$952	
Information		\$357	\$348	\$705	
Utilities		\$474	\$195	\$669	
Construction		\$524	\$91	\$615	
Government		\$246	\$307	\$553	
Mining		\$104	\$14	\$117	
Agriculture		\$6	\$94	\$100	
Total Impact on Value Added	\$37,010	\$10,111	\$10,529	\$57,650	28.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Oregon, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	17,520			17,520	0.7%
Indirect/Induced Impacts on Other Industries					
Services		13,180	26,670	39,850	
Finance, insurance, real estate, rental and leasing		3,370	5,070	8,440	
Wholesale and retail trade		2,120	6,200	8,320	
Manufacturing		5,030	3,150	8,180	
Construction		5,720	380	6,100	
Transportation and warehousing		3,130	2,280	5,410	
Agriculture		330	2,170	2,500	
Information		460	680	1,140	
Government		310	550	860	
Utilities		160	130	290	
Mining		<u>150</u>	<u>30</u>	<u>180</u>	
Total Impact on Employment	17,520	33,960	47,310	98,790	3.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,131			\$1,131	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$981	\$1,413	\$2,394	
Manufacturing		\$439	\$214	\$652	
Finance, insurance, real estate, rental and leasing		\$240	\$272	\$512	
Wholesale and retail trade		\$178	\$296	\$474	
Construction		\$397	\$26	\$423	
Transportation and warehousing		\$177	\$129	\$307	
Information		\$52	\$68	\$121	
Government		\$31	\$52	\$83	
Agriculture		\$18	\$57	\$74	
Utilities		\$27	\$22	\$49	
Mining		<u>\$7</u>	<u>\$1</u>	<u>\$8</u>	
Total Impact on Labor Income	\$1,131	\$2,548	\$2,550	\$6,229	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$3,056			\$3,056	1.2%
Indirect/Induced Impacts on Other Industries					
Services		\$1,177	\$1,713	\$2,891	
Finance, insurance, real estate, rental and leasing		\$646	\$1,234	\$1,880	
Manufacturing		\$795	\$368	\$1,163	
Wholesale and retail trade		\$272	\$434	\$706	
Construction		\$423	\$35	\$457	
Transportation and warehousing		\$251	\$191	\$443	
Information		\$97	\$126	\$223	
Utilities		\$87	\$70	\$156	
Government		\$40	\$69	\$109	
Agriculture		\$19	\$89	\$108	
Mining		<u>\$14</u>	<u>\$3</u>	<u>\$16</u>	
Total Impact on Value Added	\$3,056	\$3,821	\$4,330	\$11,207	4.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Pennsylvania, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	102,460			102,460	1.3%
Indirect/Induced Impacts on Other Industries					
Services		57,330	142,880	200,210	
Finance, insurance, real estate, rental and leasing		16,850	29,220	46,070	
Wholesale and retail trade		9,070	30,160	39,230	
Manufacturing		17,720	10,030	27,750	
Transportation and warehousing		15,490	11,650	27,140	
Construction		20,170	1,730	21,900	
Government		2,480	2,880	5,360	
Information		1,840	3,040	4,880	
Agriculture		320	2,390	2,710	
Utilities		840	660	1,500	
Mining		<u>860</u>	<u>160</u>	<u>1,020</u>	
Total Impact on Employment	102,460	142,980	234,810	480,250	6.1%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$14,536			\$14,536	2.8%
Indirect/Induced Impacts on Other Industries					
Services		\$4,712	\$7,977	\$12,689	
Finance, insurance, real estate, rental and leasing		\$1,337	\$1,789	\$3,127	
Manufacturing		\$1,455	\$771	\$2,226	
Wholesale and retail trade		\$793	\$1,402	\$2,194	
Transportation and warehousing		\$1,321	\$599	\$1,920	
Construction		\$1,412	\$121	\$1,533	
Information		\$622	\$783	\$1,406	
Government		\$213	\$247	\$460	
Utilities		\$145	\$111	\$255	
Agriculture		\$17	\$52	\$69	
Mining		<u>\$48</u>	<u>\$9</u>	<u>\$57</u>	
Total Impact on Labor Income	\$14,536	\$12,074	\$13,862	\$40,472	7.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$39,370			\$39,370	4.9%
Indirect/Induced Impacts on Other Industries					
Services		\$5,405	\$9,405	\$14,810	
Finance, insurance, real estate, rental and leasing		\$3,112	\$6,258	\$9,370	
Manufacturing		\$2,287	\$1,433	\$3,720	
Wholesale and retail trade		\$1,312	\$2,215	\$3,527	
Information		\$954	\$1,394	\$2,348	
Construction		\$1,573	\$162	\$1,735	
Transportation and warehousing		\$965	\$754	\$1,719	
Utilities		\$460	\$353	\$814	
Government		\$279	\$331	\$610	
Mining		\$193	\$36	\$229	
Agriculture		<u>\$19</u>	<u>\$96</u>	<u>\$115</u>	
Total Impact on Value Added	\$39,370	\$16,560	\$22,437	\$78,368	9.7%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Rhode Island, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	4,530			4,530	0.7%
Indirect/Induced Impacts on Other Industries					
Services		3,460	7,780	11,240	
Finance, insurance, real estate, rental and leasing		1,080	1,630	2,710	
Wholesale and retail trade		520	1,410	1,930	
Manufacturing		900	610	1,510	
Construction		1,320	90	1,410	
Transportation and warehousing		600	460	1,060	
Information		120	170	290	
Government		80	140	220	
Agriculture		10	70	80	
Utilities		30	30	60	
Mining		10	0	10	
Total Impact on Employment	4,530	8,120	12,380	25,030	3.8%
Labor Income*** (\$ Millions)					
Industry Direct Impact	\$426			\$426	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$241	\$399	\$640	
Finance, insurance, real estate, rental and leasing		\$86	\$106	\$192	
Wholesale and retail trade		\$50	\$72	\$123	
Manufacturing		\$72	\$41	\$113	
Construction		\$86	\$6	\$92	
Transportation and warehousing		\$26	\$19	\$45	
Information		\$11	\$15	\$26	
Government		\$8	\$13	\$21	
Utilities		\$4	\$3	\$7	
Agriculture		\$0	\$3	\$3	
Mining		\$1	\$0	\$1	
Total Impact on Labor Income	\$426	\$585	\$678	\$1,689	4.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,190			\$1,190	1.9%
Indirect/Induced Impacts on Other Industries					
Services		\$288	\$507	\$794	
Finance, insurance, real estate, rental and leasing		\$208	\$390	\$598	
Wholesale and retail trade		\$74	\$114	\$187	
Manufacturing		\$104	\$63	\$167	
Construction		\$94	\$8	\$102	
Transportation and warehousing		\$32	\$25	\$56	
Information		\$21	\$29	\$50	
Utilities		\$21	\$18	\$39	
Government		\$12	\$21	\$32	
Agriculture		\$0	\$3	\$3	
Mining		\$3	\$0	\$3	
Total Impact on Value Added	\$1,190	\$855	\$1,177	\$3,221	5.2%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs. ** Less than 5.

*** Labor income is defined as wages and salaries and benefits as well as proprietors' income. **** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in South Carolina, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	26,150			26,150	0.9%
Indirect/Induced Impacts on Other Industries					
Services		15,400	26,820	42,220	
Manufacturing		6,300	3,720	10,020	
Finance, insurance, real estate, rental and leasing		4,110	5,540	9,650	
Wholesale and retail trade		2,610	6,520	9,130	
Construction		6,420	410	6,830	
Transportation and warehousing		4,340	2,000	6,340	
Government		1,330	710	2,040	
Information		640	830	1,470	
Agriculture		200	840	1,040	
Utilities		300	270	570	
Mining		<u>100</u>	<u>20</u>	<u>120</u>	
Total Impact on Employment	26,150	41,760	47,680	115,590	4.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,093			\$1,093	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$864	\$1,126	\$1,991	
Manufacturing		\$496	\$266	\$762	
Finance, insurance, real estate, rental and leasing		\$248	\$265	\$512	
Wholesale and retail trade		\$178	\$260	\$438	
Construction		\$350	\$22	\$372	
Transportation and warehousing		\$197	\$89	\$286	
Information		\$76	\$89	\$164	
Government		\$99	\$55	\$153	
Utilities		\$44	\$37	\$82	
Agriculture		\$6	\$11	\$17	
Mining		<u>\$9</u>	<u>\$2</u>	<u>\$10</u>	
Total Impact on Labor Income	\$1,093	\$2,567	\$2,223	\$5,882	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,707			\$4,707	1.9%
Indirect/Induced Impacts on Other Industries					
Services		\$1,033	\$1,446	\$2,479	
Finance, insurance, real estate, rental and leasing		\$636	\$1,030	\$1,666	
Manufacturing		\$938	\$480	\$1,418	
Wholesale and retail trade		\$314	\$428	\$742	
Construction		\$435	\$36	\$471	
Transportation and warehousing		\$247	\$120	\$367	
Information		\$129	\$165	\$294	
Utilities		\$144	\$123	\$267	
Government		\$126	\$75	\$201	
Mining		\$25	\$5	\$29	
Agriculture		<u>\$7</u>	<u>\$22</u>	<u>\$29</u>	
Total Impact on Value Added	\$4,707	\$4,035	\$3,930	\$12,671	5.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in South Dakota, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	9,350			9,350	1.5%
Indirect/Induced Impacts on Other Industries					
Services		3,080	5,910	8,990	
Finance, insurance, real estate, rental and leasing		1,080	1,440	2,520	
Wholesale and retail trade		590	1,490	2,080	
Manufacturing		1,040	730	1,770	
Construction		1,470	100	1,570	
Transportation and warehousing		870	360	1,230	
Agriculture		60	850	910	
Information		210	260	470	
Government		150	170	320	
Utilities		70	40	110	
Mining		60	10	70	
Total Impact on Employment	9,350	8,670	11,360	29,380	4.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$361			\$361	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$171	\$289	\$460	
Finance, insurance, real estate, rental and leasing		\$60	\$73	\$132	
Manufacturing		\$75	\$44	\$119	
Wholesale and retail trade		\$39	\$61	\$100	
Construction		\$82	\$6	\$88	
Agriculture		\$3	\$52	\$55	
Information		\$24	\$29	\$53	
Transportation and warehousing		\$34	\$17	\$51	
Government		\$9	\$11	\$20	
Utilities		\$9	\$5	\$14	
Mining		\$6	\$1	\$7	
Total Impact on Labor Income	\$361	\$513	\$588	\$1,462	4.5%
Value Added (\$ Millions)					
Industry Direct Impact	\$1,142			\$1,142	2.1%
Indirect/Induced Impacts on Other Industries					
Finance, insurance, real estate, rental and leasing		\$259	\$351	\$610	
Services		\$209	\$349	\$558	
Manufacturing		\$114	\$67	\$182	
Wholesale and retail trade		\$66	\$95	\$161	
Information		\$46	\$55	\$100	
Agriculture		\$5	\$84	\$88	
Construction		\$81	\$7	\$88	
Transportation and warehousing		\$42	\$23	\$65	
Utilities		\$32	\$20	\$52	
Government		\$12	\$14	\$26	
Mining		\$6	\$1	\$7	
Total Impact on Value Added	\$1,142	\$872	\$1,065	\$3,078	5.6%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Tennessee, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	36,440			36,440	0.9%
Indirect/Induced Impacts on Other Industries					
Services		22,630	45,300	67,930	
Finance, insurance, real estate, rental and leasing		5,550	8,650	14,200	
Manufacturing		8,680	5,400	14,080	
Wholesale and retail trade		3,340	10,450	13,790	
Transportation and warehousing		7,630	4,510	12,140	
Construction		9,490	660	10,150	
Information		1,060	1,530	2,590	
Agriculture		240	1,940	2,180	
Government		730	930	1,660	
Utilities		480	400	880	
Mining		<u>250</u>	<u>50</u>	<u>300</u>	
Total Impact on Employment	36,440	60,080	79,810	176,330	4.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,620			\$2,620	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$1,502	\$2,573	\$4,075	
Manufacturing		\$668	\$396	\$1,064	
Finance, insurance, real estate, rental and leasing		\$374	\$503	\$877	
Wholesale and retail trade		\$260	\$489	\$749	
Transportation and warehousing		\$470	\$248	\$718	
Construction		\$625	\$43	\$669	
Information		\$94	\$130	\$225	
Utilities		\$66	\$54	\$120	
Government		\$52	\$65	\$117	
Mining		\$14	\$3	\$17	
Mining		<u>\$5</u>	<u>\$1</u>	<u>\$7</u>	
Total Impact on Labor Income	\$2,620	\$4,132	\$4,506	\$11,257	4.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$7,328			\$7,328	1.9%
Indirect/Induced Impacts on Other Industries					
Services		\$1,800	\$3,022	\$4,822	
Finance, insurance, real estate, rental and leasing		\$997	\$1,809	\$2,806	
Manufacturing		\$1,131	\$775	\$1,906	
Wholesale and retail trade		\$444	\$807	\$1,251	
Transportation and warehousing		\$528	\$324	\$852	
Construction		\$593	\$48	\$641	
Information		\$184	\$261	\$445	
Utilities		\$172	\$139	\$311	
Government		\$68	\$88	\$156	
Mining		\$41	\$8	\$49	
Agriculture		<u>\$7</u>	<u>\$32</u>	<u>\$40</u>	
Total Impact on Value Added	\$7,328	\$5,965	\$7,314	\$20,607	5.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Texas, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	620,330			620,330	3.4%
Indirect/Induced Impacts on Other Industries					
Services		360,530	651,500	1,012,030	
Finance, insurance, real estate, rental and leasing		117,480	172,630	290,110	
Wholesale and retail trade		45,820	166,030	211,850	
Transportation and warehousing		67,500	50,960	118,460	
Construction		73,330	10,630	83,960	
Manufacturing		45,080	26,310	71,390	
Information		15,570	22,850	38,420	
Government		10,980	19,970	30,950	
Agriculture		1,150	16,850	18,000	
Utilities		6,100	3,760	9,860	
Mining		3,050	450	3,500	
Total Impact on Employment	620,330	746,590	1,141,950	2,508,870	13.9%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$134,250			\$134,250	11.7%
Indirect/Induced Impacts on Other Industries					
Services		\$27,413	\$32,026	\$59,438	
Finance, insurance, real estate, rental and leasing		\$8,237	\$9,631	\$17,868	
Wholesale and retail trade		\$4,039	\$7,755	\$11,794	
Transportation and warehousing		\$5,347	\$2,213	\$7,559	
Manufacturing		\$4,189	\$1,821	\$6,010	
Construction		\$4,963	\$722	\$5,685	
Information		\$1,572	\$2,214	\$3,786	
Government		\$853	\$1,535	\$2,388	
Utilities		\$1,107	\$676	\$1,782	
Mining		\$339	\$44	\$383	
Agriculture		\$23	\$194	\$217	
Total Impact on Labor Income	\$134,250	\$58,082	\$58,830	\$251,162	21.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$230,946			\$230,946	12.5%
Indirect/Induced Impacts on Other Industries					
Services		\$31,453	\$37,662	\$69,115	
Finance, insurance, real estate, rental and leasing		\$18,006	\$30,283	\$48,289	
Wholesale and retail trade		\$8,360	\$12,696	\$21,057	
Manufacturing		\$7,643	\$3,592	\$11,235	
Transportation and warehousing		\$4,691	\$2,988	\$7,679	
Information		\$2,928	\$4,348	\$7,277	
Construction		\$5,454	\$893	\$6,347	
Utilities		\$3,252	\$1,989	\$5,241	
Government		\$1,073	\$1,943	\$3,016	
Mining		\$745	\$104	\$849	
Agriculture		\$34	\$471	\$506	
Total Impact on Value Added	\$230,946	\$83,641	\$96,970	\$411,557	22.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Utah, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	20,730			20,730	1.0%
Indirect/Induced Impacts on Other Industries					
Services		16,370	23,300	39,670	
Finance, insurance, real estate, rental and leasing		4,540	6,560	11,100	
Wholesale and retail trade		2,020	6,230	8,250	
Construction		6,270	420	6,690	
Transportation and warehousing		4,110	2,140	6,250	
Manufacturing		3,310	2,240	5,550	
Information		890	1,270	2,160	
Government		570	650	1,220	
Agriculture		60	630	690	
Mining		390	70	460	
Utilities		<u>200</u>	<u>110</u>	<u>310</u>	
Total Impact on Employment	20,730	38,730	43,620	103,080	4.8%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,460			\$1,460	1.3%
Indirect/Induced Impacts on Other Industries					
Services		\$1,033	\$1,058	\$2,091	
Finance, insurance, real estate, rental and leasing		\$249	\$275	\$524	
Wholesale and retail trade		\$170	\$313	\$483	
Construction		\$382	\$26	\$408	
Manufacturing		\$246	\$144	\$391	
Transportation and warehousing		\$247	\$129	\$376	
Information		\$85	\$113	\$197	
Government		\$42	\$47	\$89	
Utilities		\$33	\$18	\$51	
Mining		\$22	\$4	\$26	
Agriculture		<u>\$1</u>	<u>\$10</u>	<u>\$11</u>	
Total Impact on Labor Income	\$1,460	\$2,509	\$2,136	\$6,106	5.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,688			\$4,688	2.4%
Indirect/Induced Impacts on Other Industries					
Services		\$1,208	\$1,311	\$2,519	
Finance, insurance, real estate, rental and leasing		\$756	\$1,153	\$1,909	
Wholesale and retail trade		\$291	\$505	\$796	
Manufacturing		\$419	\$245	\$663	
Transportation and warehousing		\$346	\$200	\$545	
Construction		\$480	\$40	\$520	
Information		\$162	\$213	\$375	
Utilities		\$105	\$58	\$164	
Government		\$58	\$68	\$126	
Mining		\$90	\$16	\$105	
Agriculture		<u>\$2</u>	<u>\$28</u>	<u>\$30</u>	
Total Impact on Value Added	\$4,688	\$3,916	\$3,836	\$12,440	6.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Vermont, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	5,930			5,930	1.3%
Indirect/Induced Impacts on Other Industries					
Services		2,550	5,300	7,850	
Finance, insurance, real estate, rental and leasing		640	830	1,470	
Wholesale and retail trade		370	1,040	1,410	
Manufacturing		720	540	1,260	
Construction		1,150	80	1,230	
Transportation and warehousing		650	270	920	
Agriculture		50	280	330	
Information		110	100	210	
Government		80	120	200	
Utilities		40	30	70	
Mining		<u>40</u>	<u>10</u>	50	
Total Impact on Employment	5,930	6,410	8,590	20,930	4.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$259			\$259	1.1%
Indirect/Induced Impacts on Other Industries					
Services		\$153	\$248	\$401	
Manufacturing		\$55	\$33	\$88	
Finance, insurance, real estate, rental and leasing		\$37	\$41	\$78	
Construction		\$61	\$4	\$66	
Wholesale and retail trade		\$22	\$44	\$65	
Transportation and warehousing		\$26	\$13	\$39	
Government		\$6	\$9	\$15	
Information		\$8	\$7	\$15	
Utilities		\$6	\$5	\$11	
Agriculture		\$1	\$6	\$7	
Mining		<u>\$2</u>	<u>\$0</u>	\$3	
Total Impact on Labor Income	\$259	\$378	\$412	\$1,049	4.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$748			\$748	2.2%
Indirect/Induced Impacts on Other Industries					
Services		\$182	\$312	\$494	
Finance, insurance, real estate, rental and leasing		\$114	\$190	\$304	
Manufacturing		\$72	\$45	\$117	
Wholesale and retail trade		\$37	\$70	\$107	
Transportation and warehousing		\$34	\$19	\$52	
Construction		\$47	\$4	\$50	
Utilities		\$19	\$15	\$34	
Information		\$15	\$14	\$29	
Government		\$8	\$11	\$19	
Agriculture		\$2	\$11	\$12	
Mining		<u>\$9</u>	<u>\$2</u>	\$10	
Total Impact on Value Added	\$748	\$538	\$691	\$1,976	5.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income. *** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in Virginia, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	43,510			43,510	0.8%
Indirect/Induced Impacts on Other Industries					
Services		31,370	51,950	83,320	
Finance, insurance, real estate, rental and leasing		6,250	10,160	16,410	
Wholesale and retail trade		4,360	11,140	15,500	
Construction		12,160	780	12,940	
Transportation and warehousing		7,570	4,720	12,290	
Manufacturing		5,430	3,890	9,320	
Information		1,590	2,270	3,860	
Government		1,220	1,570	2,790	
Agriculture		220	1,410	1,630	
Utilities		310	230	540	
Mining		<u>310</u>	<u>60</u>	<u>370</u>	
Total Impact on Employment	43,510	70,760	88,160	202,430	3.7%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,249			\$2,249	0.6%
Indirect/Induced Impacts on Other Industries					
Services		\$2,925	\$2,948	\$5,874	
Finance, insurance, real estate, rental and leasing		\$429	\$547	\$976	
Wholesale and retail trade		\$359	\$498	\$856	
Construction		\$725	\$46	\$771	
Manufacturing		\$431	\$251	\$682	
Transportation and warehousing		\$391	\$239	\$630	
Information		\$186	\$243	\$428	
Government		\$123	\$156	\$278	
Utilities		\$62	\$44	\$106	
Mining		\$21	\$4	\$24	
Agriculture		<u>\$8</u>	<u>\$16</u>	<u>\$24</u>	
Total Impact on Labor Income	\$2,249	\$5,658	\$4,991	\$12,898	3.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$7,354			\$7,354	1.3%
Indirect/Induced Impacts on Other Industries					
Services		\$3,434	\$3,631	\$7,065	
Finance, insurance, real estate, rental and leasing		\$1,307	\$2,587	\$3,894	
Manufacturing		\$735	\$785	\$1,521	
Wholesale and retail trade		\$628	\$856	\$1,484	
Construction		\$821	\$65	\$886	
Information		\$374	\$487	\$861	
Transportation and warehousing		\$486	\$268	\$754	
Utilities		\$230	\$165	\$395	
Government		\$161	\$213	\$374	
Mining		\$73	\$13	\$86	
Agriculture		<u>\$9</u>	<u>\$41</u>	<u>\$50</u>	
Total Impact on Value Added	\$7,354	\$8,258	\$9,112	\$24,725	4.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Washington, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	25,580			25,580	0.6%
Indirect/Induced Impacts on Other Industries					
Services		21,210	44,560	65,770	
Wholesale and retail trade		3,730	10,940	14,670	
Finance, insurance, real estate, rental and leasing		5,100	8,870	13,970	
Construction		11,550	670	12,220	
Transportation and warehousing		6,700	4,850	11,550	
Manufacturing		5,530	3,830	9,360	
Agriculture		320	2,880	3,200	
Information		1,150	1,770	2,920	
Government		840	1,200	2,040	
Utilities		400	280	680	
Mining		260	40	300	
Total Impact on Employment	25,580	56,790	79,890	162,260	3.5%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,168			\$2,168	0.6%
Indirect/Induced Impacts on Other Industries					
Services		\$1,889	\$2,666	\$4,555	
Transportation and warehousing		\$739	\$574	\$1,312	
Wholesale and retail trade		\$380	\$877	\$1,256	
Construction		\$891	\$51	\$942	
Finance, insurance, real estate, rental and leasing		\$385	\$525	\$910	
Manufacturing		\$499	\$260	\$760	
Information		\$244	\$332	\$576	
Government		\$84	\$116	\$200	
Agriculture		\$23	\$134	\$157	
Utilities		\$66	\$45	\$111	
Mining		\$31	\$4	\$35	
Total Impact on Labor Income	\$2,168	\$5,229	\$5,584	\$12,981	3.7%
Value Added (\$ Millions)					
Industry Direct Impact	\$12,674			\$12,674	2.1%
Indirect/Induced Impacts on Other Industries					
Services		\$2,335	\$3,200	\$5,535	
Finance, insurance, real estate, rental and leasing		\$1,137	\$2,504	\$3,642	
Transportation and warehousing		\$1,427	\$1,160	\$2,587	
Wholesale and retail trade		\$666	\$1,495	\$2,161	
Manufacturing		\$858	\$425	\$1,283	
Information		\$496	\$702	\$1,198	
Construction		\$1,040	\$74	\$1,114	
Utilities		\$240	\$164	\$403	
Government		\$110	\$158	\$268	
Agriculture		\$23	\$171	\$194	
Mining		\$29	\$4	\$33	
Total Impact on Value Added	\$12,674	\$8,360	\$10,059	\$31,092	5.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in West Virginia, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	32,320			32,320	3.6%
Indirect/Induced Impacts on Other Industries					
Services		10,120	16,500	26,620	
Finance, insurance, real estate, rental and leasing		3,370	2,500	5,870	
Wholesale and retail trade		1,810	3,890	5,700	
Transportation and warehousing		2,270	880	3,150	
Construction		2,520	200	2,720	
Manufacturing		1,520	710	2,230	
Agriculture		120	720	840	
Government		350	460	810	
Mining		660	130	790	
Information		350	270	620	
Utilities		<u>180</u>	<u>110</u>	<u>290</u>	
Total Impact on Employment	32,320	23,260	26,380	81,960	9.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,525			\$2,525	5.4%
Indirect/Induced Impacts on Other Industries					
Services		\$631	\$762	\$1,393	
Finance, insurance, real estate, rental and leasing		\$201	\$110	\$312	
Wholesale and retail trade		\$109	\$136	\$245	
Construction		\$155	\$13	\$167	
Transportation and warehousing		\$121	\$44	\$164	
Manufacturing		\$111	\$48	\$160	
Mining		\$65	\$13	\$79	
Government		\$24	\$31	\$55	
Information		\$25	\$20	\$45	
Utilities		\$27	\$16	\$43	
Agriculture		<u>\$4</u>	<u>\$2</u>	<u>\$6</u>	
Total Impact on Labor Income	\$2,525	\$1,474	\$1,194	\$5,193	11.0%
Value Added (\$ Millions)					
Industry Direct Impact	\$6,791			\$6,791	8.6%
Indirect/Induced Impacts on Other Industries					
Services		\$683	\$900	\$1,583	
Finance, insurance, real estate, rental and leasing		\$580	\$566	\$1,146	
Wholesale and retail trade		\$211	\$230	\$441	
Manufacturing		\$189	\$96	\$285	
Mining		\$189	\$38	\$227	
Construction		\$193	\$19	\$211	
Transportation and warehousing		\$143	\$58	\$200	
Utilities		\$82	\$49	\$131	
Information		\$51	\$40	\$91	
Government		\$32	\$42	\$74	
Agriculture		<u>\$4</u>	<u>\$9</u>	<u>\$12</u>	
Total Impact on Value Added	\$6,791	\$2,355	\$2,047	\$11,194	14.2%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income. *** Less than \$0.5 million.

The Economic Impact of the Oil and Natural Gas Industry in Wisconsin, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	36,630			36,630	1.0%
Indirect/Induced Impacts on Other Industries					
Services		17,500	36,660	54,160	
Manufacturing		12,810	7,190	20,000	
Finance, insurance, real estate, rental and leasing		4,960	7,380	12,340	
Wholesale and retail trade		3,430	8,590	12,020	
Transportation and warehousing		5,750	3,140	8,890	
Construction		7,700	490	8,190	
Agriculture		250	2,320	2,570	
Information		690	860	1,550	
Government		570	830	1,400	
Utilities		260	200	460	
Mining		<u>180</u>	<u>40</u>	<u>220</u>	
Total Impact on Employment	36,630	54,100	67,680	158,410	4.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,569			\$1,569	0.7%
Indirect/Induced Impacts on Other Industries					
Services		\$1,156	\$1,825	\$2,980	
Manufacturing		\$988	\$515	\$1,503	
Finance, insurance, real estate, rental and leasing		\$332	\$433	\$765	
Wholesale and retail trade		\$258	\$374	\$632	
Construction		\$503	\$32	\$535	
Transportation and warehousing		\$316	\$186	\$503	
Information		\$68	\$77	\$145	
Government		\$44	\$63	\$108	
Utilities		\$49	\$36	\$85	
Agriculture		\$9	\$43	\$52	
Mining		<u>\$12</u>	<u>\$3</u>	<u>\$15</u>	
Total Impact on Labor Income	\$1,569	\$3,737	\$3,586	\$8,892	4.1%
Value Added (\$ Millions)					
Industry Direct Impact	\$4,842			\$4,842	1.4%
Indirect/Induced Impacts on Other Industries					
Services		\$1,375	\$2,207	\$3,582	
Finance, insurance, real estate, rental and leasing		\$979	\$1,725	\$2,704	
Manufacturing		\$1,574	\$866	\$2,440	
Wholesale and retail trade		\$416	\$596	\$1,012	
Transportation and warehousing		\$440	\$293	\$733	
Construction		\$542	\$43	\$584	
Information		\$139	\$169	\$307	
Utilities		\$159	\$116	\$275	
Government		\$55	\$81	\$136	
Agriculture		\$13	\$118	\$131	
Mining		<u>\$70</u>	<u>\$14</u>	<u>\$84</u>	
Total Impact on Value Added	\$4,842	\$5,761	\$6,227	\$16,831	4.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Oil and Natural Gas Industry in Wyoming, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact on Employment	28,270			28,270	6.8%
Indirect/Induced Impacts on Other Industries					
Services		7,160	11,360	18,520	
Finance, insurance, real estate, rental and leasing		3,980	4,080	8,060	
Wholesale and retail trade		1,490	3,360	4,850	
Transportation and warehousing		2,100	650	2,750	
Construction		2,440	270	2,710	
Government		400	500	900	
Manufacturing		490	210	700	
Agriculture		50	530	580	
Mining		430	80	510	
Information		260	250	510	
Utilities		<u>180</u>	<u>80</u>	<u>260</u>	
Total Impact on Employment	28,270	18,980	21,380	68,620	16.6%
Labor Income** (\$ Millions)					
Industry Direct Impact on Labor Income	\$4,056			\$4,056	17.3%
Indirect/Induced Impacts on Other Industries					
Services		\$361	\$449	\$810	
Finance, insurance, real estate, rental and leasing		\$154	\$116	\$271	
Transportation and warehousing		\$194	\$35	\$229	
Wholesale and retail trade		\$96	\$110	\$206	
Construction		\$142	\$16	\$158	
Mining		\$60	\$12	\$72	
Government		\$31	\$38	\$68	
Manufacturing		\$38	\$12	\$50	
Utilities		\$24	\$11	\$36	
Information		\$17	\$17	\$34	
Agriculture		<u>\$2</u>	<u>\$9</u>	<u>\$12</u>	
Total Impact on Labor Income	\$4,056	\$1,120	\$825	\$6,001	25.6%
Value Added (\$ Millions)					
Industry Direct Impact on Value Added	\$7,268			\$7,268	18.0%
Indirect/Induced Impacts on Other Industries					
Services		\$442	\$559	\$1,001	
Finance, insurance, real estate, rental and leasing		\$397	\$550	\$947	
Wholesale and retail trade		\$197	\$177	\$374	
Transportation and warehousing		\$168	\$63	\$230	
Construction		\$188	\$23	\$211	
Mining		\$175	\$33	\$209	
Utilities		\$76	\$36	\$113	
Manufacturing		\$64	\$21	\$84	
Government		\$37	\$47	\$84	
Information		\$37	\$35	\$72	
Agriculture		<u>\$3</u>	<u>\$21</u>	<u>\$24</u>	
Total Impact on Value Added	\$7,268	\$1,784	\$1,565	\$10,618	26.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Appendix C: Detailed Results by Congressional District

Table C-1. Economic Impact of the Oil and Natural Gas Industry in Alabama, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Alabama	31,870	128,540	4.7%	\$2,244	\$7,362	5.2%	\$6,502	\$14,885	6.5%
AL-1	5,220	20,420	5.1%	\$441	\$1,191	6.2%	\$1,035	\$2,248	7.3%
AL-2	4,310	16,290	4.6%	\$260	\$821	4.8%	\$859	\$1,803	6.0%
AL-3	4,670	16,830	4.7%	\$242	\$774	4.8%	\$554	\$1,449	5.6%
AL-4	5,500	18,690	5.6%	\$350	\$942	6.5%	\$1,328	\$2,311	9.8%
AL-5	3,030	16,110	3.7%	\$175	\$944	3.7%	\$370	\$1,541	4.0%
AL-6	3,790	18,140	4.3%	\$318	\$1,213	5.1%	\$770	\$2,256	5.9%
AL-7	5,360	22,060	5.1%	\$457	\$1,478	5.9%	\$1,585	\$3,278	8.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-2. Economic Impact of the Oil and Natural Gas Industry in Alaska, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Alaska	15,780	47,340	10.3%	\$2,539	\$4,558	13.9%	\$12,563	\$19,440	35.7%
AK-1 (At-Large)	15,780	47,340	10.3%	\$2,539	\$4,558	13.9%	\$12,563	\$19,440	35.7%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-3. Economic Impact of the Oil and Natural Gas Industry in Arizona, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Arizona	29,270	160,840	4.1%	\$1,688	\$9,508	4.2%	\$4,407	\$17,172	4.6%
AZ-1	3,860	15,290	4.2%	\$208	\$784	4.1%	\$491	\$1,570	4.8%
AZ-2	2,210	14,380	3.7%	\$139	\$796	3.7%	\$298	\$1,359	4.0%
AZ-3	3,720	15,060	4.7%	\$194	\$827	4.5%	\$498	\$1,535	5.2%
AZ-4	4,980	15,720	5.1%	\$242	\$722	5.0%	\$728	\$1,593	6.3%
AZ-5	1,800	11,590	3.4%	\$95	\$693	3.5%	\$249	\$1,233	3.8%
AZ-6	4,350	30,670	4.2%	\$256	\$1,966	4.6%	\$513	\$3,154	4.7%
AZ-7	3,660	26,140	4.0%	\$271	\$1,713	4.3%	\$833	\$3,154	4.9%
AZ-8	1,580	8,390	3.4%	\$92	\$470	3.5%	\$190	\$846	3.7%
AZ-9	3,100	23,610	3.9%	\$190	\$1,536	4.1%	\$608	\$2,728	4.5%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-4. Economic Impact of the Oil and Natural Gas Industry in Arkansas, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Arkansas	25,720	92,940	5.6%	\$989	\$4,443	5.5%	\$4,358	\$10,032	7.7%
AR-1	6,500	20,220	5.6%	\$186	\$777	5.1%	\$999	\$2,029	8.0%
AR-2	5,840	23,320	5.0%	\$244	\$1,214	5.0%	\$765	\$2,383	6.0%
AR-3	4,690	22,810	4.9%	\$193	\$1,289	5.1%	\$786	\$2,457	6.3%
AR-4	8,680	26,590	7.2%	\$366	\$1,164	7.3%	\$1,808	\$3,163	11.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-5. Economic Impact of the Oil and Natural Gas Industry in California, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
California	164,580	1,059,240	4.3%	\$24,217	\$94,412	5.1%	\$85,329	\$199,260	6.4%
CA-1	4,180	17,350	4.6%	\$276	\$956	4.8%	\$1,560	\$2,720	7.9%
CA-2	3,210	20,060	4.1%	\$351	\$1,553	4.8%	\$1,373	\$3,259	6.1%
CA-3	3,820	17,920	4.1%	\$419	\$1,263	4.4%	\$1,704	\$3,195	6.4%
CA-4	4,170	21,640	5.1%	\$546	\$1,550	6.3%	\$1,840	\$3,469	8.4%
CA-5	4,400	25,070	6.4%	\$741	\$2,070	8.1%	\$3,679	\$5,801	13.2%
CA-6	2,400	16,520	3.6%	\$226	\$1,152	3.6%	\$1,190	\$2,640	5.4%
CA-7	1,810	13,560	3.4%	\$185	\$993	3.4%	\$895	\$2,145	4.9%
CA-8	3,480	12,650	4.3%	\$287	\$778	4.6%	\$804	\$1,690	5.7%
CA-9	2,780	14,310	4.5%	\$362	\$1,019	5.4%	\$1,521	\$2,657	8.2%
CA-10	2,510	14,000	4.3%	\$185	\$839	4.5%	\$1,833	\$2,900	9.3%
CA-11	11,200	56,720	10.7%	\$2,642	\$5,848	15.0%	\$11,304	\$16,404	23.0%
CA-12	1,750	33,160	3.4%	\$448	\$5,813	4.3%	\$713	\$8,873	4.1%
CA-13	2,830	20,850	4.3%	\$603	\$2,082	5.3%	\$1,421	\$3,718	6.0%
CA-14	1,920	19,210	3.4%	\$287	\$2,713	3.9%	\$479	\$4,791	3.8%
CA-15	2,570	19,130	4.0%	\$422	\$1,882	4.6%	\$1,220	\$3,535	5.3%
CA-16	2,910	14,740	4.4%	\$328	\$967	5.1%	\$1,395	\$2,438	8.0%
CA-17	1,800	25,420	3.5%	\$282	\$4,168	3.8%	\$1,030	\$7,284	4.0%
CA-18	2,110	24,360	3.6%	\$267	\$3,632	4.2%	\$629	\$6,040	4.2%
CA-19	1,660	14,160	3.4%	\$243	\$1,615	3.9%	\$536	\$2,733	4.0%
CA-20	2,040	14,170	3.6%	\$294	\$1,076	4.3%	\$921	\$2,141	5.4%
CA-21	6,690	21,380	5.9%	\$1,026	\$1,852	8.5%	\$3,556	\$4,977	13.3%
CA-22	2,450	15,190	4.0%	\$331	\$1,012	4.8%	\$1,400	\$2,519	7.4%
CA-23	8,290	27,040	8.0%	\$1,333	\$2,407	11.7%	\$3,838	\$5,580	16.2%
CA-24	4,060	24,360	4.6%	\$675	\$1,965	5.9%	\$2,148	\$4,168	7.9%
CA-25	1,980	11,900	4.0%	\$255	\$926	4.6%	\$628	\$1,739	5.2%
CA-26	2,110	14,960	4.0%	\$355	\$1,207	5.0%	\$999	\$2,384	6.0%
CA-27	2,060	17,740	3.5%	\$300	\$1,425	4.2%	\$795	\$2,645	4.7%
CA-28	1,670	20,100	3.3%	\$220	\$1,701	3.8%	\$576	\$3,091	4.1%
CA-29	1,030	8,970	3.3%	\$133	\$693	3.8%	\$385	\$1,365	4.3%
CA-30	2,430	23,170	3.6%	\$358	\$2,010	4.2%	\$896	\$3,712	4.5%
CA-31	2,110	13,470	4.1%	\$188	\$808	4.4%	\$661	\$1,678	5.5%
CA-32	2,120	15,220	4.1%	\$331	\$1,231	4.9%	\$1,081	\$2,603	6.1%
CA-33	5,150	43,000	4.8%	\$994	\$4,023	6.0%	\$5,185	\$10,007	8.7%
CA-34	4,640	28,290	5.0%	\$799	\$2,634	6.6%	\$2,328	\$5,153	7.9%

(continued on next page)

Table C-5. Economic Impact of the Oil and Natural Gas Industry in California, 2019, continued

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
CA-35	3,440	20,230	4.4%	\$311	\$1,297	4.8%	\$1,148	\$2,045	6.0%
CA-36	2,360	11,580	3.9%	\$192	\$622	4.3%	\$448	\$1,133	4.8%
CA-37	2,200	19,150	3.2%	\$189	\$1,677	3.8%	\$613	\$3,071	4.1%
CA-38	2,100	13,880	4.0%	\$301	\$1,101	4.9%	\$973	\$2,265	5.9%
CA-39	3,490	20,500	4.5%	\$312	\$1,537	5.1%	\$1,120	\$3,002	5.9%
CA-40	3,190	19,730	4.1%	\$302	\$1,295	4.5%	\$1,320	\$2,905	6.1%
CA-41	2,280	11,520	3.8%	\$195	\$624	4.2%	\$464	\$1,193	4.9%
CA-42	1,830	20,440	3.4%	\$198	\$1,799	4.0%	\$575	\$3,287	4.2%
CA-43	1,900	14,180	4.0%	\$304	\$1,131	4.8%	\$1,066	\$2,468	6.1%
CA-44	3,060	21,240	4.6%	\$497	\$1,794	5.7%	\$1,435	\$3,512	6.6%
CA-45	2,260	17,120	3.9%	\$337	\$1,350	4.6%	\$1,505	\$3,151	6.3%
CA-46	1,890	13,340	4.1%	\$164	\$751	4.3%	\$676	\$1,594	5.7%
CA-47	2,670	15,740	4.2%	\$271	\$938	4.6%	\$770	\$1,857	5.6%
CA-48	1,670	16,400	3.7%	\$251	\$1,325	4.2%	\$1,134	\$2,933	5.4%
CA-49	5,240	24,020	8.6%	\$971	\$2,251	11.5%	\$4,866	\$6,942	19.2%
CA-50	2,400	23,550	3.7%	\$342	\$2,064	4.4%	\$1,013	\$3,738	4.8%
CA-51	2,290	19,370	4.2%	\$485	\$1,727	5.5%	\$1,029	\$2,991	5.8%
CA-52	3,310	17,790	4.5%	\$368	\$1,395	5.2%	\$881	\$2,593	5.7%
CA-53	2,920	23,820	4.0%	\$385	\$1,995	4.8%	\$1,079	\$3,643	5.2%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-6. Economic Impact of the Oil and Natural Gas Industry in Colorado, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Colorado	68,620	339,520	8.6%	\$16,976	\$34,052	13.4%	\$19,222	\$46,116	11.7%
CO-1	15,350	99,060	11.9%	\$11,052	\$17,091	24.2%	\$9,487	\$18,917	18.4%
CO-2	6,690	40,280	6.0%	\$723	\$2,852	6.9%	\$1,250	\$4,582	7.0%
CO-3	12,810	44,910	9.8%	\$1,180	\$2,611	12.2%	\$1,832	\$4,218	12.2%
CO-4	16,340	59,450	10.7%	\$1,911	\$4,481	14.0%	\$2,272	\$6,347	12.5%
CO-5	5,210	27,730	5.7%	\$386	\$1,591	5.8%	\$752	\$2,679	6.4%
CO-6	6,300	35,900	7.6%	\$1,036	\$3,104	9.7%	\$1,917	\$5,128	10.1%
CO-7	5,920	32,180	6.8%	\$689	\$2,322	7.8%	\$1,713	\$4,246	9.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-7. Economic Impact of the Oil and Natural Gas Industry in Connecticut, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Connecticut	14,630	86,920	3.7%	\$2,139	\$8,384	4.7%	\$4,171	\$13,779	4.8%
CT-1	2,580	18,590	3.3%	\$233	\$1,604	3.6%	\$612	\$2,914	4.0%
CT-2	3,220	14,050	3.6%	\$280	\$994	4.0%	\$593	\$1,747	4.0%
CT-3	3,230	19,570	4.4%	\$658	\$1,863	6.1%	\$1,329	\$3,189	6.3%
CT-4	2,860	19,060	3.8%	\$703	\$2,680	5.4%	\$1,044	\$3,788	5.2%
CT-5	2,740	15,650	3.7%	\$265	\$1,242	4.3%	\$594	\$2,140	4.5%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-8. Economic Impact of the Oil and Natural Gas Industry in Delaware, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Delaware	5,450	26,590	4.4%	\$512	\$1,920	4.9%	\$1,332	\$4,129	5.4%
DE-1 (At-Large)	5,450	26,590	4.4%	\$512	\$1,920	4.9%	\$1,332	\$4,129	5.4%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-9. Economic Impact of the Oil and Natural Gas Industry in the District of Columbia, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
District of Columbia	2,590	23,710	2.6%	\$354	\$2,855	2.7%	\$482	\$3,935	2.7%
DC-1 (At-Large)	2,590	23,710	2.6%	\$354	\$2,855	2.7%	\$482	\$3,935	2.7%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-10. Economic Impact of the Oil and Natural Gas Industry in Florida, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Florida	70,270	460,580	3.6%	\$2,958	\$24,448	3.6%	\$13,803	\$49,472	4.5%
FL-1	4,180	17,530	3.7%	\$122	\$770	3.2%	\$676	\$1,809	4.6%
FL-2	4,150	16,080	4.2%	\$138	\$666	3.8%	\$571	\$1,485	5.3%
FL-3	4,040	15,830	4.4%	\$124	\$641	3.9%	\$521	\$1,457	5.2%
FL-4	4,600	24,880	4.1%	\$179	\$1,444	4.0%	\$706	\$2,762	4.8%
FL-5	3,950	16,940	4.1%	\$145	\$910	3.9%	\$705	\$1,985	5.3%
FL-6	4,390	16,610	4.8%	\$77	\$611	4.2%	\$319	\$1,212	5.1%
FL-7	1,830	19,040	3.2%	\$72	\$1,113	3.4%	\$273	\$1,943	3.7%
FL-8	2,400	14,830	3.6%	\$120	\$815	3.7%	\$698	\$1,827	5.3%
FL-9	2,350	12,890	3.5%	\$86	\$587	3.4%	\$400	\$1,272	4.3%
FL-10	2,200	24,440	3.2%	\$87	\$1,340	3.4%	\$466	\$2,491	3.9%
FL-11	2,400	12,130	3.7%	\$79	\$477	3.6%	\$221	\$944	4.1%
FL-12	1,700	11,430	3.3%	\$61	\$534	3.3%	\$150	\$970	3.6%
FL-13	1,780	16,210	3.4%	\$71	\$920	3.6%	\$269	\$1,657	3.9%
FL-14	3,280	25,610	3.6%	\$245	\$1,710	4.0%	\$1,238	\$3,664	5.1%
FL-15	3,050	16,890	4.1%	\$178	\$941	4.2%	\$986	\$2,287	6.0%
FL-16	2,740	18,030	3.9%	\$72	\$891	3.9%	\$258	\$1,597	4.2%
FL-17	1,930	10,640	3.6%	\$70	\$477	3.5%	\$390	\$1,114	4.8%
FL-18	2,400	16,540	3.7%	\$100	\$825	3.8%	\$475	\$1,674	4.7%
FL-19	2,530	18,560	3.5%	\$88	\$962	3.5%	\$327	\$1,717	4.0%
FL-20	1,890	16,920	3.4%	\$100	\$988	3.6%	\$489	\$1,962	4.3%
FL-21	1,200	11,890	3.2%	\$68	\$654	3.3%	\$220	\$1,187	3.7%
FL-22	1,700	21,830	3.3%	\$124	\$1,328	3.7%	\$539	\$2,427	4.2%
FL-23	1,670	16,160	3.1%	\$101	\$897	3.3%	\$418	\$1,783	3.9%
FL-24	1,640	15,440	3.1%	\$101	\$823	3.3%	\$562	\$1,781	4.2%
FL-25	3,590	23,150	3.8%	\$231	\$1,358	4.0%	\$1,326	\$3,211	5.6%
FL-26	1,420	9,740	3.0%	\$61	\$506	2.9%	\$265	\$1,047	3.6%
FL-27	1,250	20,340	3.1%	\$59	\$1,260	3.3%	\$335	\$2,207	3.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-11. Economic Impact of the Oil and Natural Gas Industry in Georgia, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Georgia	43,370	242,970	3.8%	\$2,678	\$14,819	4.0%	\$10,100	\$30,845	4.9%
GA-1	4,710	17,890	4.2%	\$296	\$935	4.2%	\$1,276	\$2,412	6.4%
GA-2	2,910	13,680	3.6%	\$124	\$648	3.4%	\$858	\$1,798	5.7%
GA-3	2,990	15,270	4.0%	\$153	\$693	4.2%	\$618	\$1,547	5.6%
GA-4	1,920	10,890	3.7%	\$89	\$556	3.7%	\$212	\$1,036	4.1%
GA-5	3,340	27,510	3.5%	\$340	\$2,452	4.0%	\$971	\$4,691	4.4%
GA-6	2,560	27,060	3.4%	\$275	\$2,409	3.9%	\$783	\$4,105	4.2%
GA-7	2,650	19,420	3.8%	\$213	\$1,313	4.3%	\$600	\$2,404	4.7%
GA-8	3,330	13,590	3.8%	\$131	\$560	3.4%	\$756	\$1,544	5.6%
GA-9	3,560	17,940	4.1%	\$196	\$891	4.3%	\$1,319	\$2,497	7.2%
GA-10	3,050	14,850	3.9%	\$141	\$659	4.0%	\$550	\$1,481	5.2%
GA-11	3,150	22,350	3.8%	\$236	\$1,547	4.2%	\$670	\$2,794	4.7%
GA-12	3,850	15,390	3.9%	\$153	\$712	3.5%	\$649	\$1,623	5.0%
GA-13	2,900	15,120	3.8%	\$209	\$881	4.1%	\$497	\$1,793	4.5%
GA-14	2,440	12,000	3.9%	\$121	\$565	4.0%	\$341	\$1,120	4.7%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-12. Economic Impact of the Oil and Natural Gas Industry in Hawaii, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Hawaii	4,470	29,010	3.1%	\$327	\$1,792	3.1%	\$1,553	\$4,158	4.3%
HI-1	1,650	15,320	2.9%	\$152	\$1,049	3.0%	\$726	\$2,257	4.0%
HI-2	2,830	13,690	3.3%	\$175	\$743	3.2%	\$827	\$1,901	4.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-13. Economic Impact of the Oil and Natural Gas Industry in Idaho, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Idaho	9,920	42,730	4.0%	\$486	\$2,140	4.0%	\$1,380	\$4,062	4.9%
ID-1	4,210	19,410	3.8%	\$207	\$943	3.8%	\$634	\$1,862	4.7%
ID-2	5,710	23,320	4.2%	\$279	\$1,197	4.1%	\$746	\$2,200	5.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-14. Economic Impact of the Oil and Natural Gas Industry in Illinois, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Illinois	61,620	356,300	4.5%	\$4,954	\$26,141	4.8%	\$19,092	\$53,538	6.0%
IL-1	1,360	9,470	3.5%	\$106	\$616	3.6%	\$292	\$1,176	4.2%
IL-2	2,250	11,100	3.9%	\$118	\$689	3.8%	\$445	\$1,412	4.7%
IL-3	2,280	16,090	4.3%	\$307	\$1,253	5.0%	\$1,259	\$2,802	6.8%
IL-4	1,320	9,670	3.9%	\$140	\$736	4.3%	\$457	\$1,469	5.1%
IL-5	1,590	19,890	3.5%	\$156	\$1,575	3.8%	\$531	\$2,827	4.2%
IL-6	2,080	19,810	4.1%	\$252	\$1,630	4.9%	\$648	\$2,772	5.3%
IL-7	2,800	44,570	3.8%	\$346	\$4,637	4.6%	\$1,056	\$7,564	4.8%
IL-8	1,880	19,390	3.7%	\$181	\$1,626	4.2%	\$650	\$2,960	4.7%
IL-9	1,280	16,300	3.4%	\$113	\$1,293	3.7%	\$420	\$2,321	4.1%
IL-10	1,930	17,110	3.8%	\$158	\$1,490	4.0%	\$497	\$2,717	4.3%
IL-11	2,950	21,190	5.1%	\$396	\$1,624	6.1%	\$1,871	\$3,834	8.7%
IL-12	5,480	21,360	6.0%	\$405	\$1,234	6.6%	\$1,687	\$3,070	9.9%
IL-13	4,770	19,980	5.1%	\$301	\$1,131	5.2%	\$1,589	\$3,026	8.3%
IL-14	3,650	22,360	4.7%	\$371	\$1,571	5.3%	\$1,675	\$3,625	7.3%
IL-15	11,120	30,540	8.7%	\$807	\$1,739	9.9%	\$2,882	\$4,478	15.1%
IL-16	5,920	21,060	6.0%	\$393	\$1,213	6.4%	\$1,842	\$3,250	9.9%
IL-17	3,990	17,830	4.8%	\$183	\$1,067	4.8%	\$565	\$2,026	5.6%
IL-18	4,960	18,570	4.9%	\$220	\$1,017	4.7%	\$724	\$2,209	5.6%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-15 Economic Impact of the Oil and Natural Gas Industry in Indiana, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Indiana	39,340	186,810	4.7%	\$2,433	\$11,121	4.8%	\$10,481	\$24,864	6.5%
IN-1	5,730	26,660	7.1%	\$593	\$1,751	8.6%	\$4,672	\$6,608	18.0%
IN-2	3,750	19,350	4.5%	\$199	\$1,091	4.6%	\$672	\$2,055	5.6%
IN-3	5,040	22,780	4.8%	\$245	\$1,196	4.8%	\$867	\$2,418	6.1%
IN-4	4,310	17,890	4.5%	\$192	\$892	4.4%	\$552	\$1,765	5.1%
IN-5	3,570	22,280	3.9%	\$211	\$1,514	4.2%	\$558	\$2,632	4.6%
IN-6	4,700	18,470	4.7%	\$204	\$927	4.7%	\$586	\$1,818	5.5%
IN-7	3,140	19,950	3.7%	\$285	\$1,646	4.0%	\$857	\$3,137	4.5%
IN-8	5,650	23,590	5.2%	\$357	\$1,319	5.4%	\$1,309	\$2,951	7.2%
IN-9	3,460	15,830	4.2%	\$148	\$785	4.2%	\$408	\$1,480	4.9%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-16. Economic Impact of the Oil and Natural Gas Industry in Iowa, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Iowa	27,130	97,070	4.6%	\$1,001	\$4,957	4.3%	\$3,005	\$9,773	5.0%
IA-1	6,460	23,570	5.0%	\$227	\$1,195	4.8%	\$725	\$2,377	5.5%
IA-2	6,710	23,960	4.5%	\$227	\$1,147	4.1%	\$620	\$2,165	4.7%
IA-3	6,330	25,210	4.4%	\$292	\$1,473	4.2%	\$891	\$3,004	4.8%
IA-4	7,630	24,330	4.7%	\$254	\$1,142	4.2%	\$769	\$2,227	5.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-17. Economic Impact of the Oil and Natural Gas Industry in Kansas, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Kansas	49,500	154,860	8.0%	\$3,259	\$9,745	8.8%	\$8,050	\$18,212	10.3%
KS-1	19,790	47,300	9.7%	\$865	\$2,241	9.5%	\$1,930	\$4,147	11.3%
KS-2	8,860	28,530	6.9%	\$394	\$1,465	7.2%	\$1,421	\$3,178	9.5%
KS-3	5,880	32,760	5.6%	\$422	\$2,612	6.4%	\$906	\$4,200	6.6%
KS-4	14,960	46,270	10.2%	\$1,578	\$3,426	13.0%	\$3,794	\$6,688	15.5%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-18. Economic Impact of the Oil and Natural Gas Industry in Kentucky, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Kentucky	28,870	117,400	4.6%	\$1,275	\$6,127	4.6%	\$6,466	\$14,246	6.6%
KY-1	6,120	19,820	4.7%	\$231	\$900	4.4%	\$1,167	\$2,265	6.8%
KY-2	5,280	20,360	4.9%	\$226	\$977	5.0%	\$1,173	\$2,412	7.3%
KY-3	2,410	19,000	3.5%	\$131	\$1,296	3.8%	\$480	\$2,311	4.3%
KY-4	4,970	21,910	4.8%	\$267	\$1,253	5.2%	\$1,431	\$2,984	7.6%
KY-5	6,130	18,370	6.4%	\$269	\$797	6.7%	\$1,636	\$2,505	12.7%
KY-6	3,960	17,940	4.0%	\$151	\$904	3.9%	\$578	\$1,769	4.9%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-19. Economic Impact of the Oil and Natural Gas Industry in Louisiana, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Louisiana	105,310	345,760	12.6%	\$12,656	\$24,979	16.8%	\$38,619	\$59,188	23.0%
LA-1	15,010	63,070	12.5%	\$3,830	\$6,299	21.6%	\$7,777	\$11,782	25.6%
LA-2	13,920	58,710	10.8%	\$2,056	\$4,728	14.4%	\$10,554	\$14,947	24.1%
LA-3	28,170	79,990	17.1%	\$2,898	\$5,410	21.7%	\$8,163	\$12,415	27.6%
LA-4	22,470	58,500	14.9%	\$1,691	\$3,316	17.1%	\$4,368	\$7,212	22.2%
LA-5	11,000	33,770	9.4%	\$644	\$1,682	10.3%	\$1,944	\$3,730	14.0%
LA-6	14,740	51,730	10.9%	\$1,536	\$3,545	13.6%	\$5,812	\$9,102	20.3%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-20. Economic Impact of the Oil and Natural Gas Industry in Maine, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Maine	12,060	41,440	4.8%	\$547	\$2,068	4.6%	\$1,675	\$4,105	6.1%
ME-1	5,060	21,100	4.4%	\$253	\$1,152	4.3%	\$698	\$2,105	5.2%
ME-2	7,000	20,340	5.4%	\$293	\$916	5.2%	\$976	\$2,001	7.3%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-21. Economic Impact of the Oil and Natural Gas Industry in Maryland, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Maryland	19,130	122,930	3.2%	\$1,305	\$8,644	3.3%	\$4,848	\$16,707	3.9%
MD-1	3,150	15,450	3.6%	\$167	\$809	3.6%	\$675	\$1,763	4.7%
MD-2	2,370	15,340	3.4%	\$157	\$1,119	3.5%	\$685	\$2,284	4.3%
MD-3	2,250	19,660	3.0%	\$154	\$1,548	3.2%	\$566	\$2,794	3.6%
MD-4	1,850	12,220	3.0%	\$119	\$719	2.8%	\$317	\$1,303	3.0%
MD-5	2,650	13,840	3.3%	\$180	\$770	3.0%	\$1,033	\$2,044	4.6%
MD-6	3,180	15,460	3.7%	\$254	\$1,175	3.8%	\$836	\$2,278	4.7%
MD-7	1,770	14,350	3.1%	\$112	\$1,084	3.4%	\$378	\$1,935	3.8%
MD-8	1,910	16,600	2.9%	\$162	\$1,420	3.1%	\$357	\$2,306	3.3%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-22. Economic Impact of the Oil and Natural Gas Industry in Massachusetts, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Massachusetts	25,570	171,330	3.5%	\$2,177	\$14,730	3.8%	\$5,568	\$24,515	4.1%
MA-1	3,220	16,200	3.8%	\$199	\$939	4.0%	\$505	\$1,680	4.6%
MA-2	3,020	16,850	3.7%	\$211	\$1,058	3.9%	\$672	\$2,026	4.7%
MA-3	2,220	15,250	3.4%	\$171	\$1,277	3.7%	\$385	\$2,025	3.8%
MA-4	2,670	19,200	3.5%	\$195	\$1,464	3.8%	\$483	\$2,350	4.0%
MA-5	2,340	18,760	3.3%	\$275	\$1,780	3.6%	\$560	\$2,906	3.8%
MA-6	3,050	20,660	3.6%	\$206	\$1,700	3.9%	\$413	\$2,704	3.9%
MA-7	2,310	21,660	2.9%	\$295	\$2,577	3.4%	\$781	\$4,179	3.6%
MA-8	3,160	24,960	3.4%	\$349	\$2,822	4.1%	\$1,085	\$4,685	4.5%
MA-9	3,590	17,790	4.0%	\$277	\$1,112	4.3%	\$683	\$1,959	4.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-23. Economic Impact of the Oil and Natural Gas Industry in Michigan, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Michigan	48,740	250,770	4.3%	\$3,298	\$15,868	4.7%	\$8,842	\$28,489	5.3%
MI-1	7,370	23,000	6.0%	\$415	\$1,105	6.5%	\$925	\$2,091	7.5%
MI-2	4,070	20,730	4.6%	\$241	\$1,178	4.9%	\$902	\$2,338	6.2%
MI-3	3,040	18,510	4.1%	\$200	\$1,132	4.5%	\$616	\$2,037	5.2%
MI-4	4,650	16,890	5.1%	\$276	\$895	5.6%	\$731	\$1,718	6.6%
MI-5	3,340	14,300	4.9%	\$209	\$764	5.2%	\$764	\$1,666	6.9%
MI-6	3,280	17,730	4.2%	\$237	\$1,043	4.5%	\$683	\$1,992	5.2%
MI-7	4,070	18,380	4.3%	\$214	\$1,082	4.4%	\$529	\$1,950	4.8%
MI-8	3,530	17,100	4.3%	\$195	\$1,031	4.5%	\$615	\$1,960	5.2%
MI-9	1,840	16,830	3.6%	\$135	\$1,195	3.9%	\$222	\$1,842	3.9%
MI-10	3,470	15,400	4.5%	\$216	\$870	4.9%	\$465	\$1,506	5.2%
MI-11	2,200	20,640	3.8%	\$212	\$1,683	4.4%	\$474	\$2,609	4.5%
MI-12	2,560	16,330	3.7%	\$214	\$1,158	4.1%	\$548	\$2,025	4.6%
MI-13	3,120	16,480	4.7%	\$299	\$1,236	5.4%	\$764	\$2,222	6.0%
MI-14	2,200	18,450	4.0%	\$236	\$1,496	4.7%	\$603	\$2,532	5.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-24. Economic Impact of the Oil and Natural Gas Industry in Minnesota, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Minnesota	37,790	172,880	4.5%	\$2,220	\$11,423	4.7%	\$8,620	\$22,980	6.0%
MN-1	5,980	21,430	4.8%	\$244	\$1,085	4.5%	\$756	\$2,119	5.5%
MN-2	5,230	24,910	6.4%	\$524	\$1,765	7.5%	\$3,713	\$5,699	13.9%
MN-3	3,460	25,120	3.9%	\$328	\$2,239	4.4%	\$606	\$3,473	4.4%
MN-4	2,580	19,010	3.7%	\$158	\$1,316	3.9%	\$779	\$2,522	5.0%
MN-5	2,960	25,630	3.8%	\$276	\$2,314	4.3%	\$681	\$3,779	4.6%
MN-6	4,340	17,170	4.6%	\$162	\$896	4.4%	\$450	\$1,599	5.1%
MN-7	6,900	20,680	5.1%	\$291	\$953	4.9%	\$877	\$1,980	6.3%
MN-8	6,360	18,920	5.3%	\$238	\$856	5.0%	\$758	\$1,809	6.4%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-25. Economic Impact of the Oil and Natural Gas Industry in Mississippi, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Mississippi	32,300	103,370	6.4%	\$1,983	\$5,097	7.1%	\$6,484	\$11,773	10.2%
MS-1	7,430	25,180	5.7%	\$337	\$1,106	5.9%	\$1,041	\$2,331	7.8%
MS-2	6,990	22,570	6.2%	\$465	\$1,147	7.1%	\$1,726	\$2,906	10.9%
MS-3	9,660	30,950	6.9%	\$653	\$1,618	8.0%	\$1,905	\$3,521	11.0%
MS-4	8,220	24,670	6.8%	\$529	\$1,226	7.3%	\$1,813	\$3,016	11.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-26. Economic Impact of the Oil and Natural Gas Industry in Missouri, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Missouri	41,700	176,520	4.6%	\$2,079	\$10,003	4.7%	\$5,660	\$18,271	5.6%
MO-1	4,830	27,750	4.2%	\$432	\$2,225	4.7%	\$1,055	\$3,812	5.4%
MO-2	3,820	23,190	4.1%	\$216	\$1,627	4.4%	\$508	\$2,673	4.8%
MO-3	6,020	22,190	5.0%	\$223	\$1,026	4.8%	\$596	\$1,929	5.6%
MO-4	5,090	16,870	4.7%	\$206	\$705	4.5%	\$652	\$1,486	6.1%
MO-5	4,010	21,840	4.1%	\$238	\$1,469	4.3%	\$600	\$2,496	4.9%
MO-6	6,610	23,150	5.2%	\$307	\$1,129	5.2%	\$866	\$2,253	6.4%
MO-7	5,590	23,420	4.9%	\$231	\$1,097	5.0%	\$773	\$2,146	6.3%
MO-8	5,740	18,120	5.2%	\$226	\$725	5.3%	\$609	\$1,475	6.6%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-27. Economic Impact of the Oil and Natural Gas Industry in Montana, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Montana	14,600	53,440	7.7%	\$1,323	\$3,210	9.7%	\$3,303	\$6,291	11.9%
MT-1 (At-Large)	14,600	53,440	7.7%	\$1,323	\$3,210	9.7%	\$3,303	\$6,291	11.9%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-28. Economic Impact of the Oil and Natural Gas Industry in Nebraska, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Nebraska	13,790	69,660	5.2%	\$3,150	\$6,495	8.4%	\$4,885	\$10,193	7.8%
NE-1	4,070	18,000	4.3%	\$339	\$1,119	5.0%	\$661	\$1,938	5.2%
NE-2	2,690	28,110	5.4%	\$2,147	\$3,930	11.1%	\$2,570	\$5,302	9.0%
NE-3	7,030	23,550	5.8%	\$664	\$1,446	7.4%	\$1,654	\$2,953	8.7%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-29. Economic Impact of the Oil and Natural Gas Industry in Nevada, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Nevada	14,140	74,840	3.9%	\$672	\$4,091	3.9%	\$2,656	\$8,630	4.8%
NV-1	4,080	26,090	3.7%	\$221	\$1,413	3.9%	\$658	\$2,696	4.4%
NV-2	4,720	21,280	4.5%	\$206	\$1,219	4.3%	\$1,282	\$3,011	6.4%
NV-3	2,600	16,550	3.6%	\$126	\$888	3.6%	\$340	\$1,692	3.9%
NV-4	2,730	10,920	4.0%	\$118	\$570	3.6%	\$375	\$1,231	4.5%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-30. Economic Impact of the Oil and Natural Gas Industry in New Hampshire, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
New Hampshire	8,640	38,390	4.2%	\$584	\$2,661	4.6%	\$1,292	\$4,468	5.1%
NH-1	4,410	20,080	4.2%	\$313	\$1,422	4.6%	\$721	\$2,401	5.2%
NH-2	4,220	18,310	4.3%	\$271	\$1,239	4.5%	\$571	\$2,067	5.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-31. Economic Impact of the Oil and Natural Gas Industry in New Jersey, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
New Jersey	36,890	222,590	3.9%	\$3,877	\$18,238	4.4%	\$16,659	\$38,604	6.1%
NJ-1	4,340	21,410	5.5%	\$418	\$1,473	6.3%	\$3,275	\$4,894	13.0%
NJ-2	4,130	17,530	4.3%	\$316	\$1,036	4.7%	\$1,522	\$2,687	7.6%
NJ-3	3,930	18,620	4.1%	\$267	\$1,216	4.3%	\$645	\$2,148	4.8%
NJ-4	3,360	18,330	4.3%	\$339	\$1,275	5.0%	\$1,258	\$2,723	6.8%
NJ-5	3,250	18,570	3.9%	\$348	\$1,525	4.5%	\$965	\$2,713	5.4%
NJ-6	2,430	17,560	3.5%	\$177	\$1,349	3.8%	\$925	\$2,747	4.9%
NJ-7	3,920	24,570	4.1%	\$577	\$2,509	4.8%	\$2,252	\$5,121	6.5%
NJ-8	2,000	15,030	3.4%	\$230	\$1,453	4.0%	\$934	\$2,772	5.1%
NJ-9	2,090	17,570	3.5%	\$232	\$1,386	4.0%	\$903	\$2,647	5.0%
NJ-10	2,230	13,750	3.9%	\$316	\$1,246	4.5%	\$1,700	\$3,188	7.1%
NJ-11	2,490	20,990	3.5%	\$275	\$2,024	3.9%	\$1,258	\$3,840	4.9%
NJ-12	2,720	18,650	3.8%	\$382	\$1,746	4.4%	\$1,023	\$3,124	5.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-32. Economic Impact of the Oil and Natural Gas Industry in New Mexico, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
New Mexico	46,010	114,850	10.2%	\$3,585	\$6,862	11.6%	\$12,906	\$18,843	17.9%
NM-1	5,400	21,600	5.1%	\$307	\$1,220	5.3%	\$677	\$2,228	6.0%
NM-2	28,620	61,720	17.5%	\$2,490	\$3,984	21.5%	\$8,726	\$11,502	32.2%
NM-3	11,990	31,530	8.9%	\$788	\$1,658	9.5%	\$3,503	\$5,113	16.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-33. Economic Impact of the Oil and Natural Gas Industry in New York, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
New York	56,950	417,820	3.2%	\$7,197	\$40,647	3.9%	\$14,365	\$70,551	4.0%
NY-1	2,140	13,610	3.3%	\$326	\$1,090	3.9%	\$746	\$2,000	4.5%
NY-2	1,740	11,860	3.3%	\$183	\$899	3.6%	\$619	\$1,792	4.4%
NY-3	2,530	22,230	3.5%	\$382	\$1,858	4.1%	\$1,127	\$3,514	4.7%
NY-4	1,830	14,500	3.5%	\$278	\$1,166	4.1%	\$661	\$2,119	4.6%
NY-5	1,340	7,870	2.8%	\$61	\$465	2.5%	\$117	\$833	2.7%
NY-6	1,260	9,030	2.8%	\$98	\$542	2.9%	\$175	\$938	3.1%
NY-7	1,530	16,830	3.1%	\$218	\$1,802	3.9%	\$471	\$3,097	3.9%
NY-8	1,150	9,450	3.2%	\$164	\$583	3.8%	\$346	\$1,174	4.2%
NY-9	650	6,420	2.5%	\$68	\$364	2.6%	\$121	\$659	2.8%
NY-10	1,340	36,100	2.8%	\$404	\$6,248	3.8%	\$613	\$10,430	3.7%
NY-11	1,600	10,870	3.3%	\$208	\$713	3.9%	\$582	\$1,456	4.8%
NY-12	2,240	57,260	3.0%	\$1,610	\$11,348	4.3%	\$1,575	\$17,488	3.9%
NY-13	310	6,110	2.1%	\$218	\$729	2.8%	\$138	\$1,183	2.4%
NY-14	1,360	11,390	2.9%	\$92	\$688	2.9%	\$190	\$1,274	3.1%
NY-15	730	7,010	2.7%	\$156	\$526	3.4%	\$178	\$769	3.2%
NY-16	1,220	9,320	3.0%	\$89	\$635	3.0%	\$176	\$1,065	3.1%
NY-17	1,870	16,560	3.2%	\$133	\$1,357	3.4%	\$299	\$2,234	3.5%
NY-18	2,390	12,320	3.4%	\$161	\$771	3.4%	\$617	\$1,635	4.4%
NY-19	4,410	15,740	4.0%	\$224	\$796	3.9%	\$517	\$1,531	4.4%
NY-20	3,230	16,890	3.4%	\$200	\$1,126	3.4%	\$593	\$2,216	4.0%
NY-21	4,490	14,890	4.0%	\$236	\$772	3.8%	\$632	\$1,587	4.6%
NY-22	2,880	12,460	3.7%	\$174	\$682	3.8%	\$603	\$1,501	5.0%
NY-23	4,540	16,950	4.3%	\$330	\$1,015	4.8%	\$144	\$1,326	3.8%
NY-24	2,860	16,580	3.8%	\$326	\$1,184	4.5%	\$1,087	\$2,518	5.8%
NY-25	1,650	14,730	3.2%	\$95	\$974	3.5%	\$309	\$1,738	3.8%
NY-26	2,280	15,630	3.6%	\$288	\$1,155	4.3%	\$707	\$2,257	4.8%
NY-27	3,360	15,210	4.0%	\$472	\$1,158	5.3%	\$1,025	\$2,216	6.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-34. Economic Impact of the Oil and Natural Gas Industry in North Carolina, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
North Carolina	47,920	235,270	3.8%	\$2,489	\$13,596	3.9%	\$7,426	\$26,644	4.5%
NC-1	3,510	17,050	3.7%	\$155	\$999	3.7%	\$499	\$1,982	4.3%
NC-2	3,600	15,670	3.9%	\$175	\$884	4.0%	\$434	\$1,754	4.4%
NC-3	3,560	13,590	3.2%	\$137	\$566	2.7%	\$502	\$1,258	3.7%
NC-4	2,950	22,420	3.3%	\$181	\$1,653	3.5%	\$416	\$2,963	3.7%
NC-5	3,670	18,080	4.0%	\$193	\$956	4.2%	\$462	\$1,841	4.6%
NC-6	4,220	18,530	4.1%	\$189	\$935	4.1%	\$536	\$1,859	4.7%
NC-7	4,310	17,210	4.1%	\$183	\$780	4.0%	\$716	\$1,794	5.2%
NC-8	4,290	19,530	3.6%	\$199	\$1,042	3.3%	\$561	\$1,964	4.0%
NC-9	3,460	16,140	4.0%	\$201	\$980	4.2%	\$805	\$2,054	5.6%
NC-10	3,710	18,110	4.1%	\$180	\$875	4.2%	\$458	\$1,622	4.8%
NC-11	3,840	15,920	4.2%	\$170	\$690	4.2%	\$575	\$1,449	5.5%
NC-12	3,470	26,360	3.6%	\$362	\$2,353	4.1%	\$975	\$4,406	4.6%
NC-13	3,330	16,670	4.0%	\$166	\$884	4.2%	\$487	\$1,699	4.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-35. Economic Impact of the Oil and Natural Gas Industry in North Dakota, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
North Dakota	36,970	87,380	14.9%	\$3,783	\$6,659	19.4%	\$8,931	\$13,458	23.5%
ND-1 (At-Large)	36,970	87,380	14.9%	\$3,783	\$6,659	19.4%	\$8,931	\$13,458	23.5%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-36. Economic Impact of the Oil and Natural Gas Industry in Ohio, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Ohio	78,870	375,210	5.3%	\$6,510	\$24,651	5.9%	\$29,151	\$58,763	8.5%
OH-1	3,290	22,870	4.3%	\$326	\$1,796	4.9%	\$1,000	\$3,423	5.5%
OH-2	3,670	20,920	4.7%	\$359	\$1,573	5.5%	\$993	\$3,025	6.2%
OH-3	3,320	21,670	4.2%	\$369	\$1,626	4.9%	\$1,068	\$3,198	5.8%
OH-4	5,390	23,970	5.6%	\$390	\$1,453	6.1%	\$1,633	\$3,342	8.6%
OH-5	6,350	27,560	6.0%	\$613	\$1,799	7.3%	\$1,858	\$3,709	9.5%
OH-6	9,260	26,610	7.7%	\$628	\$1,435	8.8%	\$4,969	\$6,353	20.8%
OH-7	8,250	29,530	6.8%	\$585	\$1,682	7.8%	\$3,588	\$5,356	14.7%
OH-8	4,760	20,960	5.1%	\$265	\$1,199	5.3%	\$922	\$2,492	6.4%
OH-9	4,110	20,700	6.4%	\$484	\$1,519	7.4%	\$3,503	\$5,165	14.8%
OH-10	2,870	17,380	4.2%	\$200	\$1,060	4.3%	\$878	\$2,259	5.6%
OH-11	3,390	25,510	4.3%	\$376	\$1,992	5.1%	\$1,005	\$3,632	5.7%
OH-12	4,960	25,790	5.0%	\$388	\$1,709	5.7%	\$1,745	\$3,836	7.9%
OH-13	3,760	17,610	5.1%	\$257	\$1,018	5.7%	\$1,085	\$2,311	8.1%
OH-14	4,630	24,710	4.9%	\$335	\$1,566	5.5%	\$1,507	\$3,514	7.4%
OH-15	5,150	24,720	5.2%	\$439	\$1,614	5.9%	\$1,331	\$3,304	7.3%
OH-16	5,730	24,710	6.1%	\$496	\$1,611	7.1%	\$2,065	\$3,843	10.4%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-37. Economic Impact of the Oil and Natural Gas Industry in Oklahoma, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Oklahoma	134,180	389,800	16.7%	\$19,404	\$32,752	25.3%	\$37,010	\$57,650	28.5%
OK-1	25,910	108,610	20.5%	\$9,420	\$14,073	37.4%	\$15,596	\$22,462	39.9%
OK-2	14,100	38,410	10.4%	\$849	\$1,815	12.0%	\$1,775	\$3,438	13.5%
OK-3	39,220	87,760	20.3%	\$3,088	\$5,259	26.1%	\$6,428	\$10,081	29.8%
OK-4	19,710	50,770	12.8%	\$1,240	\$2,613	14.3%	\$2,644	\$4,890	16.9%
OK-5	35,240	104,240	17.1%	\$4,807	\$8,992	23.7%	\$10,568	\$16,780	29.2%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-38. Economic Impact of the Oil and Natural Gas Industry in Oregon, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Oregon	17,520	98,790	3.8%	\$1,131	\$6,229	3.9%	\$3,056	\$11,207	4.4%
OR-1	2,900	21,330	3.7%	\$229	\$1,658	4.0%	\$542	\$2,838	4.2%
OR-2	4,990	19,910	4.2%	\$241	\$994	4.3%	\$587	\$1,785	4.9%
OR-3	3,290	23,950	3.6%	\$314	\$1,748	3.9%	\$927	\$3,213	4.5%
OR-4	3,460	16,440	3.9%	\$184	\$857	3.9%	\$525	\$1,612	4.6%
OR-5	2,870	17,150	3.5%	\$163	\$972	3.5%	\$475	\$1,760	4.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-39. Economic Impact of the Oil and Natural Gas Industry in Pennsylvania, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Pennsylvania	102,460	480,250	6.1%	\$14,536	\$40,472	7.9%	\$39,370	\$78,368	9.7%
PA-1	3,390	21,590	4.6%	\$433	\$1,721	5.7%	\$771	\$2,762	5.7%
PA-2	1,700	11,310	3.6%	\$192	\$1,044	4.3%	\$303	\$1,549	4.2%
PA-3	1,770	21,190	3.8%	\$438	\$2,876	5.2%	\$1,296	\$4,691	5.9%
PA-4	3,620	27,120	4.2%	\$448	\$2,379	5.0%	\$712	\$3,849	4.8%
PA-5	3,270	25,340	5.9%	\$921	\$2,537	8.6%	\$3,380	\$5,774	12.1%
PA-6	4,440	23,060	5.2%	\$549	\$2,097	6.6%	\$1,119	\$3,376	6.9%
PA-7	4,030	23,430	5.2%	\$567	\$1,861	6.6%	\$1,009	\$2,937	6.8%
PA-8	3,950	19,850	5.4%	\$489	\$1,309	7.1%	\$925	\$2,203	7.5%
PA-9	6,010	23,820	6.2%	\$862	\$1,916	8.7%	\$1,739	\$3,324	9.7%
PA-10	4,780	24,470	5.0%	\$532	\$1,841	6.1%	\$883	\$2,836	6.2%
PA-11	4,890	26,010	5.9%	\$1,084	\$2,366	9.3%	\$1,601	\$3,463	9.0%
PA-12	10,690	32,290	9.0%	\$1,065	\$2,148	11.8%	\$3,236	\$4,937	16.5%
PA-13	5,950	24,420	6.3%	\$782	\$1,757	8.7%	\$1,508	\$2,987	9.5%
PA-14	12,280	45,280	11.4%	\$1,822	\$3,835	15.7%	\$6,763	\$9,822	23.9%
PA-15	13,430	38,650	10.4%	\$1,028	\$2,356	12.3%	\$4,638	\$6,711	20.9%
PA-16	6,420	24,800	7.0%	\$573	\$1,587	8.4%	\$1,491	\$3,035	10.3%
PA-17	7,000	36,580	8.5%	\$1,705	\$3,766	12.5%	\$5,197	\$8,263	17.1%
PA-18	4,830	31,050	5.4%	\$1,047	\$3,077	7.5%	\$2,800	\$5,849	9.2%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-40. Economic Impact of the Oil and Natural Gas Industry in Rhode Island, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Rhode Island	4,530	25,030	3.8%	\$426	\$1,689	4.3%	\$1,190	\$3,221	5.2%
RI-1	1,920	12,010	3.6%	\$172	\$820	3.9%	\$454	\$1,472	4.6%
RI-2	2,610	13,030	4.0%	\$254	\$869	4.6%	\$736	\$1,749	5.9%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-41. Economic Impact of the Oil and Natural Gas Industry in South Carolina, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
South Carolina	26,150	115,590	4.0%	\$1,093	\$5,882	3.9%	\$4,707	\$12,671	5.1%
SC-1	3,520	15,650	3.8%	\$143	\$817	3.6%	\$554	\$1,637	4.5%
SC-2	3,560	15,230	4.0%	\$167	\$795	3.9%	\$492	\$1,574	4.7%
SC-3	3,460	13,920	4.0%	\$130	\$644	3.8%	\$554	\$1,482	5.2%
SC-4	3,800	19,250	4.0%	\$188	\$1,072	4.1%	\$1,106	\$2,519	6.0%
SC-5	3,390	14,530	4.1%	\$133	\$757	4.0%	\$521	\$1,540	5.1%
SC-6	5,000	22,230	4.0%	\$195	\$1,156	3.8%	\$990	\$2,569	5.2%
SC-7	3,420	14,780	4.0%	\$138	\$640	4.0%	\$489	\$1,349	5.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-42. Economic Impact of the Oil and Natural Gas Industry in South Dakota, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
South Dakota	9,350	29,380	4.8%	\$361	\$1,462	4.5%	\$1,142	\$3,078	5.6%
SD-1 (At-Large)	9,350	29,380	4.8%	\$361	\$1,462	4.5%	\$1,142	\$3,078	5.6%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-43. Economic Impact of the Oil and Natural Gas Industry in Tennessee, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Tennessee	36,440	176,330	4.2%	\$2,620	\$11,257	4.6%	\$7,328	\$20,607	5.5%
TN-1	3,850	16,790	4.4%	\$198	\$828	4.6%	\$569	\$1,563	5.6%
TN-2	4,650	19,900	4.3%	\$272	\$1,140	4.5%	\$754	\$2,116	5.5%
TN-3	4,010	19,150	4.2%	\$253	\$1,177	4.5%	\$768	\$2,197	5.5%
TN-4	4,080	18,040	4.3%	\$276	\$996	4.8%	\$700	\$1,914	5.4%
TN-5	4,280	28,790	3.8%	\$494	\$2,471	4.3%	\$1,221	\$4,113	4.9%
TN-6	4,580	18,810	4.8%	\$285	\$1,027	5.3%	\$795	\$1,934	6.5%
TN-7	4,030	18,150	4.5%	\$355	\$1,332	5.3%	\$827	\$2,286	6.0%
TN-8	4,150	17,540	4.0%	\$221	\$948	4.2%	\$581	\$1,750	5.0%
TN-9	2,810	19,160	3.9%	\$267	\$1,339	4.3%	\$1,114	\$2,734	5.7%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-44. Economic Impact of the Oil and Natural Gas Industry in Texas, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Texas	620,330	2,508,870	13.9%	\$134,250	\$251,162	21.8%	\$230,946	\$411,557	22.3%
TX-1	25,150	82,590	20.4%	\$4,589	\$7,285	33.5%	\$6,911	\$11,178	32.2%
TX-2	28,090	112,940	17.5%	\$8,405	\$14,949	28.9%	\$14,666	\$24,107	31.0%
TX-3	8,960	55,310	9.9%	\$1,078	\$4,467	12.0%	\$1,909	\$7,058	11.9%
TX-4	12,440	45,450	10.5%	\$827	\$2,333	12.0%	\$1,964	\$4,413	14.0%
TX-5	8,400	35,900	10.5%	\$1,248	\$2,805	14.6%	\$1,847	\$4,416	14.2%
TX-6	6,910	37,920	8.9%	\$759	\$2,453	10.6%	\$1,547	\$4,341	11.5%
TX-7	43,760	152,080	19.8%	\$12,056	\$20,994	33.3%	\$22,223	\$34,862	36.3%
TX-8	16,650	72,820	15.5%	\$4,334	\$7,579	26.6%	\$6,680	\$11,601	26.2%
TX-9	9,270	46,160	11.6%	\$2,027	\$4,686	16.7%	\$3,591	\$7,489	17.7%
TX-10	11,370	61,530	11.8%	\$3,126	\$6,414	18.8%	\$3,966	\$8,946	17.0%
TX-11	82,040	195,310	36.3%	\$19,973	\$25,614	63.9%	\$27,993	\$37,497	58.6%
TX-12	23,350	94,220	17.3%	\$5,500	\$9,374	27.8%	\$7,400	\$13,482	25.1%
TX-13	32,970	85,270	18.9%	\$3,135	\$5,756	24.5%	\$6,566	\$10,966	26.0%
TX-14	17,270	75,200	18.6%	\$2,806	\$5,805	24.7%	\$15,085	\$19,997	38.2%
TX-15	11,840	47,860	11.6%	\$1,105	\$2,523	14.9%	\$2,023	\$4,206	16.6%
TX-16	5,160	34,000	8.2%	\$592	\$1,868	9.4%	\$1,956	\$3,949	13.0%
TX-17	11,040	51,370	9.7%	\$1,034	\$3,392	11.6%	\$1,800	\$5,548	11.9%
TX-18	26,780	107,500	15.6%	\$7,696	\$14,193	24.6%	\$13,583	\$23,121	26.4%
TX-19	25,240	72,130	17.1%	\$2,285	\$4,421	21.9%	\$4,800	\$8,360	24.9%
TX-20	4,750	34,210	8.9%	\$2,046	\$3,648	16.0%	\$2,232	\$4,841	14.1%
TX-21	15,690	96,160	13.4%	\$6,406	\$11,170	24.9%	\$7,292	\$14,669	21.4%
TX-22	11,160	55,950	12.2%	\$2,334	\$4,608	18.3%	\$3,414	\$6,997	16.8%
TX-23	23,510	73,210	15.7%	\$3,580	\$6,068	22.9%	\$5,404	\$9,605	22.4%
TX-24	15,890	104,880	10.1%	\$3,673	\$10,881	14.0%	\$5,415	\$16,191	13.3%
TX-25	13,540	68,200	12.9%	\$4,095	\$7,451	22.8%	\$4,991	\$10,118	20.3%
TX-26	6,760	40,530	9.6%	\$791	\$2,658	12.0%	\$1,282	\$4,149	11.9%
TX-27	21,350	72,370	17.2%	\$2,341	\$4,833	22.2%	\$7,110	\$11,151	27.9%
TX-28	15,020	48,660	13.8%	\$2,018	\$3,388	20.0%	\$3,447	\$5,724	21.0%
TX-29	11,320	53,760	15.3%	\$4,081	\$7,252	24.6%	\$9,996	\$14,802	29.4%
TX-30	8,820	56,070	9.8%	\$2,468	\$6,175	14.7%	\$3,523	\$9,344	13.9%

(continued on next page)

Table C-44. Economic Impact of the Oil and Natural Gas Industry in Texas, 2019, continued

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
TX-31	6,160	38,340	8.2%	\$775	\$2,870	9.4%	\$1,120	\$4,281	9.2%
TX-32	19,620	99,110	14.1%	\$7,676	\$14,264	24.7%	\$10,762	\$20,606	22.8%
TX-33	7,000	44,720	8.3%	\$1,072	\$3,680	10.1%	\$1,778	\$5,872	10.0%
TX-34	10,060	37,070	10.9%	\$891	\$1,968	13.6%	\$1,659	\$3,397	15.2%
TX-35	7,830	52,210	10.7%	\$3,179	\$5,764	19.1%	\$3,688	\$7,783	16.6%
TX-36	15,180	67,860	17.1%	\$4,251	\$7,576	25.9%	\$11,325	\$16,492	28.9%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-45. Economic Impact of the Oil and Natural Gas Industry in Utah, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Utah	20,730	103,080	4.8%	\$1,460	\$6,106	5.3%	\$4,688	\$12,440	6.5%
UT-1	6,850	24,480	5.7%	\$431	\$1,260	6.0%	\$1,053	\$2,462	7.0%
UT-2	7,760	40,500	5.8%	\$691	\$2,550	6.6%	\$2,703	\$5,782	8.9%
UT-3	3,670	20,660	4.2%	\$188	\$1,167	4.5%	\$570	\$2,177	5.1%
UT-4	2,450	17,440	3.5%	\$150	\$1,129	3.8%	\$362	\$2,019	4.1%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-46. Economic Impact of the Oil and Natural Gas Industry in Vermont, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Vermont	5,930	20,930	4.7%	\$259	\$1,049	4.6%	\$748	\$1,976	5.8%
VT-1 (At-Large)	5,930	20,930	4.7%	\$259	\$1,049	4.6%	\$748	\$1,976	5.8%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-47. Economic Impact of the Oil and Natural Gas Industry in Virginia, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Virginia	43,510	202,430	3.7%	\$2,249	\$12,898	3.7%	\$7,354	\$24,725	4.4%
VA-1	5,240	19,550	4.4%	\$237	\$955	4.3%	\$1,151	\$2,375	6.3%
VA-2	3,470	15,720	3.2%	\$123	\$761	2.8%	\$306	\$1,385	3.2%
VA-3	2,860	14,110	2.8%	\$114	\$761	2.4%	\$287	\$1,343	2.8%
VA-4	4,500	19,750	4.0%	\$248	\$1,230	4.1%	\$648	\$2,436	4.6%
VA-5	4,860	18,780	4.2%	\$202	\$891	4.2%	\$907	\$2,117	5.8%
VA-6	4,250	18,040	4.3%	\$198	\$896	4.4%	\$854	\$2,037	6.0%
VA-7	4,070	18,290	4.0%	\$182	\$1,179	4.1%	\$472	\$2,220	4.4%
VA-8	2,390	17,870	3.0%	\$225	\$1,766	3.1%	\$585	\$2,954	3.5%
VA-9	4,930	17,310	4.9%	\$219	\$779	5.0%	\$649	\$1,637	6.2%
VA-10	4,350	25,630	3.6%	\$247	\$2,028	3.8%	\$877	\$3,548	4.4%
VA-11	2,590	17,400	3.4%	\$253	\$1,652	3.8%	\$619	\$2,674	4.2%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-48. Economic Impact of the Oil and Natural Gas Industry in Washington, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Washington	25,580	162,260	3.5%	\$2,168	\$12,981	3.7%	\$12,674	\$31,092	5.1%
WA-1	3,780	21,350	4.5%	\$522	\$2,168	5.2%	\$3,963	\$6,870	9.0%
WA-2	2,910	16,650	4.0%	\$312	\$1,123	4.0%	\$2,393	\$3,764	7.2%
WA-3	3,140	14,690	4.0%	\$173	\$858	4.1%	\$918	\$2,047	5.7%
WA-4	3,070	14,110	3.6%	\$164	\$789	3.6%	\$1,005	\$2,038	5.6%
WA-5	2,130	13,370	3.4%	\$132	\$767	3.5%	\$444	\$1,511	4.2%
WA-6	2,650	13,460	3.3%	\$146	\$739	3.0%	\$850	\$1,819	4.7%
WA-7	1,530	21,780	2.9%	\$145	\$2,372	3.3%	\$421	\$4,178	3.4%
WA-8	2,090	12,160	3.2%	\$187	\$981	3.3%	\$712	\$2,073	4.0%
WA-9	2,140	23,180	3.1%	\$226	\$2,462	3.4%	\$1,089	\$4,985	3.9%
WA-10	2,140	11,520	3.4%	\$161	\$723	3.4%	\$878	\$1,808	5.3%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-49. Economic Impact of the Oil and Natural Gas Industry in West Virginia, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
West Virginia	32,320	81,960	9.2%	\$2,525	\$5,193	11.0%	\$6,791	\$11,194	14.2%
WV-1	13,920	35,250	10.2%	\$1,273	\$2,458	12.8%	\$3,902	\$5,826	17.9%
WV-2	11,370	28,180	9.4%	\$681	\$1,600	10.3%	\$1,707	\$3,202	12.5%
WV-3	7,030	18,540	7.4%	\$571	\$1,134	9.2%	\$1,181	\$2,165	10.4%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-50. Economic Impact of the Oil and Natural Gas Industry in Wisconsin, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Wisconsin	36,630	158,410	4.2%	\$1,569	\$8,892	4.1%	\$4,842	\$16,831	4.8%
WI-1	3,660	16,930	4.1%	\$159	\$930	3.9%	\$415	\$1,674	4.4%
WI-2	4,530	21,370	3.7%	\$237	\$1,350	3.7%	\$712	\$2,656	4.4%
WI-3	6,460	21,560	4.9%	\$216	\$972	4.5%	\$656	\$1,949	5.5%
WI-4	1,980	16,420	3.5%	\$139	\$1,228	3.7%	\$520	\$2,191	4.3%
WI-5	3,330	18,780	4.0%	\$182	\$1,203	4.1%	\$421	\$2,030	4.4%
WI-6	5,170	21,000	4.4%	\$179	\$1,094	4.2%	\$420	\$1,926	4.6%
WI-7	6,790	22,120	5.0%	\$258	\$1,006	4.7%	\$1,041	\$2,283	6.6%
WI-8	4,720	20,230	4.3%	\$199	\$1,110	4.2%	\$656	\$2,121	5.0%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

Note: Details may not add up to totals due to rounding.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Table C-51. Economic Impact of the Oil and Natural Gas Industry in Wyoming, 2019

State / Congressional District	Employment (Jobs) ⁽¹⁾			Labor Income (\$Million) ⁽²⁾			Value Added (\$Million)		
	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District	Direct	Total ⁽³⁾	Total as a % of State / District
Wyoming	28,270	68,620	16.6%	\$4,056	\$6,001	25.6%	\$7,268	\$10,618	26.3%
WY-1 (At-Large)	28,270	68,620	16.6%	\$4,056	\$6,001	25.6%	\$7,268	\$10,618	26.3%

Source: PwC calculations using the IMPLAN model and data from the Census Bureau and the Bureau of Labor Statistics.

(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

(3) Total impact includes direct, indirect, and induced impacts. Direct impacts are those occurring directly within the oil and natural gas industry. Indirect impacts are those occurring within other businesses as part of the supply chain to the oil and natural gas industry. Induced impacts are those arising from household spending of income earned from the oil and natural gas industry or its supply chain.

Appendix D: Impact of the Onshore Upstream Subsector in Selected States

This Appendix provides the detailed results of the onshore upstream subsector of the oil and natural gas industry in 14 states: Alaska, California, Colorado, Louisiana, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, West Virginia, and Wyoming.

The Economic Impact of the Onshore Upstream Subsector in Alaska, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	9,310			9,310	2.0%
Indirect/Induced Impacts on Other Industries					
Services		3,140	7,870	11,010	
Finance, insurance, real estate, rental and leasing		1,310	1,390	2,700	
Wholesale and retail trade		390	2,280	2,670	
Transportation and warehousing		300	490	790	
Construction		450	110	560	
Government		120	330	450	
Manufacturing		90	250	340	
Information		120	190	310	
Agriculture		10	150	160	
Mining		120	30	150	
Utilities		70	70	140	
Total Impact on Employment	9,310	6,130	13,160	28,600	6.2%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,714			\$1,714	5.2%
Indirect/Induced Impacts on Other Industries					
Services		\$225	\$441	\$666	
Finance, insurance, real estate, rental and leasing		\$75	\$62	\$137	
Wholesale and retail trade		\$29	\$94	\$123	
Transportation and warehousing		\$24	\$29	\$53	
Construction		\$39	\$9	\$48	
Government		\$12	\$33	\$45	
Information		\$10	\$17	\$27	
Manufacturing		\$7	\$16	\$22	
Utilities		\$10	\$9	\$19	
Mining		\$9	\$2	\$11	
Agriculture		\$1	\$6	\$6	
Total Impact on Labor Income	\$1,714	\$440	\$716	\$2,871	8.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$5,100			\$5,100	9.4%
Indirect/Induced Impacts on Other Industries					
Services		\$263	\$516	\$779	
Finance, insurance, real estate, rental and leasing		\$195	\$371	\$566	
Transportation and warehousing		\$293	\$66	\$359	
Wholesale and retail trade		\$70	\$152	\$221	
Manufacturing		\$37	\$30	\$67	
Government		\$15	\$42	\$56	
Utilities		\$27	\$25	\$52	
Information		\$20	\$32	\$51	
Construction		\$38	\$10	\$49	
Mining		\$32	\$8	\$39	
Agriculture		\$1	\$8	\$8	
Total Impact on Value Added	\$5,100	\$990	\$1,259	\$7,348	13.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in California, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	29,110			29,110	0.1%
Indirect/Induced Impacts on Other Industries					
Services		76,930	127,610	204,540	
Finance, insurance, real estate, rental and leasing		20,270	25,230	45,500	
Wholesale and retail trade		8,240	28,700	36,940	
Manufacturing		14,900	11,200	26,100	
Transportation and warehousing		8,760	13,580	22,340	
Construction		12,340	1,570	13,910	
Information		3,440	6,130	9,570	
Agriculture		770	5,640	6,410	
Government		980	2,370	3,350	
Utilities		620	790	1,410	
Mining		190	50	240	
Total Impact on Employment	29,110	147,440	222,880	399,430	1.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,846			\$2,846	0.2%
Indirect/Induced Impacts on Other Industries					
Services		\$8,378	\$7,533	\$15,911	
Finance, insurance, real estate, rental and leasing		\$2,125	\$2,026	\$4,151	
Manufacturing		\$1,652	\$1,003	\$2,655	
Wholesale and retail trade		\$771	\$1,694	\$2,465	
Information		\$928	\$1,422	\$2,350	
Transportation and warehousing		\$681	\$911	\$1,592	
Construction		\$952	\$119	\$1,071	
Government		\$117	\$276	\$393	
Agriculture		\$40	\$319	\$359	
Utilities		\$146	\$177	\$323	
Mining		\$13	\$3	\$16	
Total Impact on Labor Income	\$2,846	\$15,803	\$15,482	\$34,131	1.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$7,013			\$7,013	0.2%
Indirect/Induced Impacts on Other Industries					
Services		\$9,325	\$9,215	\$18,540	
Finance, insurance, real estate, rental and leasing		\$4,297	\$7,783	\$12,079	
Wholesale and retail trade		\$1,772	\$3,262	\$5,034	
Manufacturing		\$2,875	\$2,127	\$5,002	
Information		\$1,799	\$2,783	\$4,582	
Transportation and warehousing		\$1,152	\$1,402	\$2,554	
Construction		\$1,051	\$171	\$1,222	
Utilities		\$418	\$495	\$913	
Government		\$151	\$371	\$521	
Agriculture		\$53	\$444	\$497	
Mining		\$32	\$8	\$40	
Total Impact on Value Added	\$7,013	\$22,924	\$28,061	\$57,997	1.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Colorado, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	42,180			42,180	1.1%
Indirect/Induced Impacts on Other Industries					
Services		39,320	70,270	109,590	
Finance, insurance, real estate, rental and leasing		11,990	19,520	31,510	
Wholesale and retail trade		3,550	19,450	23,000	
Transportation and warehousing		2,890	5,980	8,870	
Manufacturing		2,930	2,370	5,300	
Construction		3,550	1,260	4,810	
Information		1,530	2,810	4,340	
Government		850	2,400	3,250	
Agriculture		90	1,330	1,420	
Utilities		400	390	790	
Mining		240	60	300	
Total Impact on Employment	42,180	67,350	125,840	235,370	6.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$12,521			\$12,521	4.9%
Indirect/Induced Impacts on Other Industries					
Services		\$3,627	\$3,596	\$7,223	
Finance, insurance, real estate, rental and leasing		\$793	\$943	\$1,737	
Wholesale and retail trade		\$332	\$908	\$1,240	
Transportation and warehousing		\$576	\$301	\$877	
Manufacturing		\$267	\$163	\$430	
Information		\$139	\$232	\$371	
Construction		\$239	\$84	\$323	
Government		\$67	\$186	\$253	
Utilities		\$61	\$59	\$121	
Mining		\$38	\$5	\$43	
Agriculture		\$2	\$31	\$33	
Total Impact on Labor Income	\$12,521	\$6,141	\$6,509	\$25,171	9.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$10,689			\$10,689	2.7%
Indirect/Induced Impacts on Other Industries					
Services		\$4,155	\$4,441	\$8,597	
Finance, insurance, real estate, rental and leasing		\$1,590	\$3,502	\$5,092	
Wholesale and retail trade		\$627	\$1,580	\$2,207	
Transportation and warehousing		\$770	\$454	\$1,224	
Information		\$322	\$560	\$882	
Manufacturing		\$476	\$319	\$795	
Construction		\$275	\$114	\$389	
Utilities		\$186	\$177	\$363	
Government		\$84	\$236	\$320	
Agriculture		\$4	\$64	\$68	
Mining		\$45	\$10	\$55	
Total Impact on Value Added	\$10,689	\$8,533	\$11,457	\$30,679	7.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Louisiana, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	43,420			43,420	1.6%
Indirect/Induced Impacts on Other Industries					
Services		23,320	37,900	61,220	
Finance, insurance, real estate, rental and leasing		9,590	7,810	17,400	
Wholesale and retail trade		2,900	10,370	13,270	
Transportation and warehousing		2,450	2,540	4,990	
Manufacturing		3,080	1,390	4,470	
Construction		3,170	640	3,810	
Information		770	880	1,650	
Government		550	1,030	1,580	
Agriculture		110	810	920	
Utilities		320	210	530	
Mining		140	20	160	
Total Impact on Employment	43,420	46,400	63,580	153,400	5.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$6,043			\$6,043	4.1%
Indirect/Induced Impacts on Other Industries					
Services		\$1,414	\$1,645	\$3,059	
Finance, insurance, real estate, rental and leasing		\$541	\$306	\$847	
Wholesale and retail trade		\$230	\$400	\$630	
Manufacturing		\$341	\$112	\$452	
Transportation and warehousing		\$172	\$117	\$288	
Construction		\$191	\$38	\$229	
Government		\$40	\$75	\$115	
Information		\$53	\$60	\$114	
Utilities		\$42	\$27	\$70	
Agriculture		\$3	\$21	\$24	
Mining		\$13	\$1	\$14	
Total Impact on Labor Income	\$6,043	\$3,041	\$2,801	\$11,884	8.0%
Value Added (\$ Millions)					
Industry Direct Impact	\$8,803			\$8,803	3.4%
Indirect/Induced Impacts on Other Industries					
Services		\$1,617	\$1,989	\$3,606	
Finance, insurance, real estate, rental and leasing		\$1,347	\$1,445	\$2,792	
Manufacturing		\$1,148	\$386	\$1,534	
Wholesale and retail trade		\$483	\$741	\$1,224	
Transportation and warehousing		\$264	\$149	\$413	
Utilities		\$179	\$115	\$294	
Information		\$120	\$138	\$258	
Construction		\$196	\$45	\$241	
Government		\$49	\$92	\$141	
Agriculture		\$4	\$28	\$31	
Mining		\$26	\$3	\$28	
Total Impact on Value Added	\$8,803	\$5,432	\$5,132	\$19,367	7.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Montana, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	4,510			4,510	0.6%
Indirect/Induced Impacts on Other Industries					
Services		3,520	5,440	8,960	
Finance, insurance, real estate, rental and leasing		1,210	1,260	2,470	
Wholesale and retail trade		460	1,600	2,060	
Construction		600	100	700	
Transportation and warehousing		340	340	680	
Manufacturing		280	250	530	
Agriculture		50	450	500	
Information		100	120	220	
Government		80	140	220	
Mining		100	30	130	
Utilities		60	40	100	
Total Impact on Employment	4,510	6,800	9,780	21,100	3.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$460			\$460	1.4%
Indirect/Induced Impacts on Other Industries					
Services		\$202	\$237	\$439	
Finance, insurance, real estate, rental and leasing		\$66	\$48	\$115	
Wholesale and retail trade		\$31	\$63	\$95	
Transportation and warehousing		\$25	\$17	\$43	
Construction		\$33	\$6	\$38	
Manufacturing		\$20	\$13	\$32	
Information		\$8	\$9	\$17	
Government		\$5	\$10	\$15	
Utilities		\$8	\$6	\$13	
Agriculture		\$2	\$11	\$13	
Mining		\$9	\$3	\$12	
Total Impact on Labor Income	\$460	\$409	\$423	\$1,292	3.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$459			\$459	0.9%
Indirect/Induced Impacts on Other Industries					
Services		\$223	\$283	\$505	
Finance, insurance, real estate, rental and leasing		\$140	\$205	\$345	
Wholesale and retail trade		\$63	\$93	\$156	
Transportation and warehousing		\$51	\$26	\$78	
Manufacturing		\$46	\$28	\$75	
Construction		\$34	\$7	\$41	
Utilities		\$23	\$16	\$40	
Mining		\$25	\$8	\$33	
Information		\$14	\$17	\$32	
Agriculture		\$3	\$25	\$28	
Government		\$7	\$13	\$20	
Total Impact on Value Added	\$459	\$630	\$721	\$1,810	3.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in New Mexico, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	28,230			28,230	2.5%
Indirect/Induced Impacts on Other Industries					
Services		8,930	15,700	24,630	
Finance, insurance, real estate, rental and leasing		4,330	2,870	7,200	
Wholesale and retail trade		1,380	4,350	5,730	
Transportation and warehousing		1,000	800	1,800	
Construction		1,420	250	1,670	
Manufacturing		550	410	960	
Government		310	530	840	
Information		320	310	630	
Agriculture		50	510	560	
Utilities		180	120	300	
Mining		120	20	140	
Total Impact on Employment	28,230	18,590	25,860	72,680	6.4%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,441			\$2,441	4.1%
Indirect/Induced Impacts on Other Industries					
Services		\$517	\$653	\$1,171	
Finance, insurance, real estate, rental and leasing		\$227	\$109	\$336	
Wholesale and retail trade		\$85	\$151	\$236	
Transportation and warehousing		\$68	\$36	\$105	
Construction		\$75	\$13	\$88	
Government		\$23	\$40	\$63	
Manufacturing		\$30	\$20	\$50	
Information		\$21	\$22	\$43	
Utilities		\$20	\$13	\$33	
Agriculture		\$1	\$15	\$16	
Mining		\$10	\$2	\$12	
Total Impact on Labor Income	\$2,441	\$1,080	\$1,074	\$4,594	7.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$9,299			\$9,299	8.8%
Indirect/Induced Impacts on Other Industries					
Services		\$676	\$829	\$1,505	
Finance, insurance, real estate, rental and leasing		\$552	\$634	\$1,186	
Wholesale and retail trade		\$194	\$261	\$455	
Transportation and warehousing		\$117	\$51	\$169	
Manufacturing		\$93	\$48	\$141	
Government		\$46	\$82	\$128	
Utilities		\$66	\$41	\$107	
Construction		\$87	\$17	\$104	
Information		\$43	\$48	\$91	
Mining		\$44	\$7	\$51	
Agriculture		\$2	\$22	\$24	
Total Impact on Value Added	\$9,299	\$1,921	\$2,041	\$13,260	12.6%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in North Dakota, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	23,530			23,530	4.0%
Indirect/Induced Impacts on Other Industries					
Services		6,610	11,180	17,790	
Finance, insurance, real estate, rental and leasing		3,660	2,670	6,330	
Wholesale and retail trade		1,240	3,840	5,080	
Transportation and warehousing		1,010	810	1,820	
Construction		960	170	1,130	
Manufacturing		500	290	790	
Government		190	410	600	
Information		270	260	530	
Agriculture		40	430	470	
Utilities		150	100	250	
Mining		90	10	100	
Total Impact on Employment	23,530	14,730	20,190	58,440	10.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,613			\$2,613	7.6%
Indirect/Induced Impacts on Other Industries					
Services		\$435	\$532	\$967	
Finance, insurance, real estate, rental and leasing		\$243	\$128	\$371	
Wholesale and retail trade		\$109	\$152	\$261	
Transportation and warehousing		\$101	\$53	\$154	
Construction		\$69	\$12	\$81	
Manufacturing		\$38	\$20	\$58	
Information		\$24	\$22	\$46	
Government		\$13	\$28	\$41	
Utilities		\$22	\$15	\$37	
Agriculture		\$2	\$21	\$24	
Mining		\$7	\$1	\$9	
Total Impact on Labor Income	\$2,613	\$1,063	\$986	\$4,663	13.6%
Value Added (\$ Millions)					
Industry Direct Impact	\$5,848			\$5,848	10.2%
Indirect/Induced Impacts on Other Industries					
Services		\$500	\$631	\$1,131	
Finance, insurance, real estate, rental and leasing		\$491	\$457	\$948	
Wholesale and retail trade		\$218	\$241	\$459	
Transportation and warehousing		\$170	\$79	\$249	
Manufacturing		\$86	\$40	\$125	
Construction		\$85	\$17	\$102	
Utilities		\$60	\$41	\$102	
Information		\$42	\$39	\$81	
Government		\$16	\$34	\$49	
Agriculture		\$4	\$39	\$43	
Mining		\$21	\$3	\$24	
Total Impact on Value Added	\$5,848	\$1,693	\$1,620	\$9,161	16.0%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Ohio, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	17,500			17,500	0.2%
Indirect/Induced Impacts on Other Industries					
Services		28,510	41,050	69,560	
Finance, insurance, real estate, rental and leasing		6,790	7,890	14,680	
Manufacturing		9,550	4,990	14,540	
Wholesale and retail trade		3,560	10,120	13,680	
Transportation and warehousing		2,850	3,510	6,360	
Construction		3,880	530	4,410	
Information		810	1,130	1,940	
Agriculture		140	1,200	1,340	
Government		450	820	1,270	
Utilities		280	240	520	
Mining		110	30	140	
Total Impact on Employment	17,500	56,940	71,510	145,950	2.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$771			\$771	0.2%
Indirect/Induced Impacts on Other Industries					
Services		\$2,300	\$2,094	\$4,393	
Manufacturing		\$806	\$377	\$1,183	
Finance, insurance, real estate, rental and leasing		\$491	\$426	\$917	
Wholesale and retail trade		\$294	\$468	\$762	
Transportation and warehousing		\$306	\$196	\$502	
Construction		\$248	\$33	\$281	
Information		\$79	\$104	\$183	
Government		\$37	\$68	\$105	
Utilities		\$43	\$35	\$78	
Agriculture		\$5	\$27	\$32	
Mining		\$16	\$5	\$21	
Total Impact on Labor Income	\$771	\$4,624	\$3,833	\$9,228	2.2%
Value Added (\$ Millions)					
Industry Direct Impact	\$9,882			\$9,882	1.4%
Indirect/Induced Impacts on Other Industries					
Services		\$2,619	\$2,544	\$5,163	
Finance, insurance, real estate, rental and leasing		\$1,370	\$1,964	\$3,334	
Manufacturing		\$1,452	\$771	\$2,222	
Wholesale and retail trade		\$581	\$851	\$1,432	
Transportation and warehousing		\$439	\$259	\$697	
Information		\$158	\$214	\$372	
Construction		\$257	\$44	\$301	
Utilities		\$164	\$133	\$296	
Government		\$50	\$95	\$144	
Agriculture		\$6	\$40	\$46	
Mining		\$27	\$5	\$32	
Total Impact on Value Added	\$9,882	\$7,123	\$6,919	\$23,923	3.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Oklahoma, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	94,930			94,930	4.1%
Indirect/Induced Impacts on Other Industries					
Services		38,120	47,480	85,600	
Finance, insurance, real estate, rental and leasing		18,060	11,480	29,540	
Wholesale and retail trade		5,390	15,330	20,720	
Transportation and warehousing		3,950	3,100	7,050	
Manufacturing		3,650	1,460	5,110	
Construction		3,710	850	4,560	
Government		1,750	1,840	3,590	
Information		1,680	1,230	2,910	
Agriculture		110	1,480	1,590	
Utilities		1,170	410	1,580	
Mining		350	40	390	
Total Impact on Employment	94,930	77,930	84,700	257,570	11.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$8,683			\$8,683	6.7%
Indirect/Induced Impacts on Other Industries					
Services		\$2,307	\$2,095	\$4,402	
Transportation and warehousing		\$1,360	\$206	\$1,566	
Finance, insurance, real estate, rental and leasing		\$927	\$419	\$1,346	
Wholesale and retail trade		\$395	\$539	\$935	
Manufacturing		\$333	\$104	\$437	
Construction		\$200	\$46	\$246	
Government		\$119	\$126	\$245	
Information		\$143	\$95	\$238	
Utilities		\$159	\$59	\$217	
Mining		\$50	\$9	\$58	
Agriculture		\$2	\$21	\$23	
Total Impact on Labor Income	\$8,683	\$5,994	\$3,719	\$18,395	14.2%
Value Added (\$ Millions)					
Industry Direct Impact	\$21,303			\$21,303	10.5%
Indirect/Induced Impacts on Other Industries					
Services		\$2,775	\$2,528	\$5,304	
Finance, insurance, real estate, rental and leasing		\$2,004	\$1,799	\$3,803	
Transportation and warehousing		\$1,672	\$279	\$1,952	
Wholesale and retail trade		\$840	\$922	\$1,762	
Manufacturing		\$540	\$184	\$724	
Utilities		\$408	\$147	\$555	
Information		\$270	\$198	\$468	
Government		\$163	\$175	\$338	
Construction		\$209	\$52	\$261	
Mining		\$63	\$7	\$70	
Agriculture		\$3	\$49	\$53	
Total Impact on Value Added	\$21,303	\$8,948	\$6,341	\$36,592	18.1%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Pennsylvania, 2019					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	27,420			27,420	0.3%
Indirect/Induced Impacts on Other Industries					
<i>Services</i>		30,910	58,490	89,400	
<i>Finance, insurance, real estate, rental and leasing</i>		10,070	11,580	21,650	
<i>Wholesale and retail trade</i>		3,590	13,720	17,310	
<i>Manufacturing</i>		8,530	4,900	13,430	
<i>Transportation and warehousing</i>		3,400	5,180	8,580	
<i>Construction</i>		4,540	700	5,240	
<i>Information</i>		780	1,250	2,030	
<i>Government</i>		480	1,050	1,530	
<i>Agriculture</i>		140	1,090	1,230	
<i>Utilities</i>		360	340	700	
<i>Mining</i>		290	80	370	
Total Impact on Employment	27,420	63,070	98,390	188,880	2.4%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$2,281			\$2,281	0.4%
Indirect/Induced Impacts on Other Industries					
<i>Services</i>		\$2,841	\$3,308	\$6,149	
<i>Finance, insurance, real estate, rental and leasing</i>		\$851	\$733	\$1,584	
<i>Manufacturing</i>		\$754	\$385	\$1,140	
<i>Wholesale and retail trade</i>		\$313	\$641	\$954	
<i>Transportation and warehousing</i>		\$509	\$315	\$825	
<i>Information</i>		\$290	\$351	\$641	
<i>Construction</i>		\$322	\$49	\$371	
<i>Government</i>		\$42	\$92	\$135	
<i>Utilities</i>		\$61	\$55	\$115	
<i>Agriculture</i>		\$6	\$25	\$30	
<i>Mining</i>		\$17	\$4	\$21	
Total Impact on Labor Income	\$2,281	\$6,006	\$5,958	\$14,244	2.8%
Value Added (\$ Millions)					
Industry Direct Impact	\$13,313			\$13,313	1.6%
Indirect/Induced Impacts on Other Industries					
<i>Services</i>		\$3,208	\$3,913	\$7,120	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,716	\$2,588	\$4,303	
<i>Manufacturing</i>		\$1,273	\$744	\$2,017	
<i>Wholesale and retail trade</i>		\$641	\$1,100	\$1,741	
<i>Transportation and warehousing</i>		\$863	\$396	\$1,259	
<i>Information</i>		\$440	\$604	\$1,044	
<i>Construction</i>		\$349	\$66	\$415	
<i>Utilities</i>		\$194	\$173	\$367	
<i>Government</i>		\$56	\$126	\$182	
<i>Mining</i>		\$68	\$17	\$85	
<i>Agriculture</i>		\$7	\$45	\$52	
Total Impact on Value Added	\$13,313	\$8,814	\$9,771	\$31,898	3.9%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Texas, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	334,410			334,410	1.9%
Indirect/Induced Impacts on Other Industries					
Services		239,050	427,810	666,860	
Finance, insurance, real estate, rental and leasing		84,480	113,590	198,070	
Wholesale and retail trade		26,330	129,070	155,400	
Transportation and warehousing		26,530	36,650	63,180	
Manufacturing		25,840	16,420	42,260	
Construction		20,290	6,950	27,240	
Information		9,500	14,750	24,250	
Government		5,400	13,220	18,620	
Agriculture		670	10,110	10,780	
Utilities		3,610	2,760	6,370	
Mining		1,390	260	1,650	
Total Impact on Employment	334,410	443,100	771,610	1,549,110	8.6%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$82,887			\$82,887	7.2%
Indirect/Induced Impacts on Other Industries					
Services		\$19,279	\$21,003	\$40,282	
Finance, insurance, real estate, rental and leasing		\$5,987	\$6,298	\$12,286	
Wholesale and retail trade		\$2,446	\$5,943	\$8,389	
Transportation and warehousing		\$5,951	\$1,894	\$7,845	
Manufacturing		\$2,803	\$1,262	\$4,065	
Information		\$952	\$1,429	\$2,382	
Construction		\$1,391	\$472	\$1,863	
Government		\$417	\$1,015	\$1,432	
Utilities		\$659	\$501	\$1,160	
Mining		\$197	\$25	\$222	
Agriculture		\$12	\$118	\$129	
Total Impact on Labor Income	\$82,887	\$40,094	\$39,960	\$162,942	14.1%
Value Added (\$ Millions)					
Industry Direct Impact	\$122,457			\$122,457	6.6%
Indirect/Induced Impacts on Other Industries					
Services		\$21,846	\$24,686	\$46,533	
Finance, insurance, real estate, rental and leasing		\$12,391	\$19,913	\$32,304	
Wholesale and retail trade		\$5,177	\$10,213	\$15,390	
Manufacturing		\$6,573	\$2,888	\$9,461	
Transportation and warehousing		\$4,337	\$2,315	\$6,652	
Information		\$1,777	\$2,805	\$4,581	
Utilities		\$1,906	\$1,436	\$3,343	
Construction		\$1,507	\$583	\$2,090	
Government		\$523	\$1,283	\$1,806	
Mining		\$391	\$59	\$451	
Agriculture		\$19	\$284	\$303	
Total Impact on Value Added	\$122,457	\$56,448	\$66,466	\$245,371	13.3%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Utah, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	5,920			5,920	0.3%
Indirect/Induced Impacts on Other Industries					
Services		9,210	11,030	20,240	
Finance, insurance, real estate, rental and leasing		2,700	3,000	5,700	
Wholesale and retail trade		930	3,250	4,180	
Manufacturing		1,600	1,130	2,730	
Transportation and warehousing		830	1,060	1,890	
Construction		1,480	200	1,680	
Information		410	600	1,010	
Government		150	280	430	
Agriculture		30	300	330	
Mining		120	30	150	
Utilities		70	60	130	
Total Impact on Employment	5,920	17,540	20,950	44,410	2.1%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$365			\$365	0.3%
Indirect/Induced Impacts on Other Industries					
Services		\$638	\$505	\$1,143	
Finance, insurance, real estate, rental and leasing		\$153	\$127	\$281	
Wholesale and retail trade		\$78	\$162	\$240	
Manufacturing		\$124	\$74	\$199	
Transportation and warehousing		\$62	\$68	\$130	
Construction		\$91	\$12	\$103	
Information		\$39	\$55	\$94	
Government		\$11	\$21	\$32	
Utilities		\$12	\$10	\$22	
Mining		\$7	\$2	\$9	
Agriculture		\$1	\$5	\$6	
Total Impact on Labor Income	\$365	\$1,217	\$1,041	\$2,623	2.3%
Value Added (\$ Millions)					
Industry Direct Impact	\$819			\$819	0.4%
Indirect/Induced Impacts on Other Industries					
Services		\$725	\$628	\$1,352	
Finance, insurance, real estate, rental and leasing		\$396	\$547	\$943	
Wholesale and retail trade		\$147	\$274	\$422	
Manufacturing		\$231	\$133	\$364	
Transportation and warehousing		\$95	\$102	\$198	
Information		\$76	\$103	\$179	
Construction		\$112	\$19	\$131	
Utilities		\$38	\$33	\$71	
Government		\$16	\$30	\$46	
Mining		\$26	\$8	\$34	
Agriculture		\$1	\$14	\$15	
Total Impact on Value Added	\$819	\$1,864	\$1,892	\$4,574	2.4%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in West Virginia, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	13,180			13,180	1.5%
Indirect/Induced Impacts on Other Industries					
Services		6,190	8,620	14,810	
Finance, insurance, real estate, rental and leasing		2,330	1,290	3,620	
Wholesale and retail trade		840	2,330	3,170	
Transportation and warehousing		880	500	1,380	
Manufacturing		770	390	1,160	
Construction		760	110	870	
Agriculture		40	360	400	
Government		150	240	390	
Information		190	140	330	
Mining		240	70	310	
Utilities		110	70	180	
Total Impact on Employment	13,180	12,500	14,100	39,790	4.4%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,060			\$1,060	2.3%
Indirect/Induced Impacts on Other Industries					
Services		\$423	\$400	\$823	
Finance, insurance, real estate, rental and leasing		\$146	\$57	\$203	
Wholesale and retail trade		\$57	\$80	\$137	
Transportation and warehousing		\$86	\$26	\$112	
Manufacturing		\$66	\$28	\$94	
Construction		\$47	\$7	\$54	
Mining		\$22	\$7	\$29	
Government		\$10	\$16	\$26	
Utilities		\$16	\$9	\$25	
Information		\$14	\$10	\$24	
Agriculture		\$1	\$1	\$2	
Total Impact on Labor Income	\$1,060	\$889	\$641	\$2,590	5.5%
Value Added (\$ Millions)					
Industry Direct Impact	\$3,328			\$3,328	4.2%
Indirect/Induced Impacts on Other Industries					
Services		\$452	\$472	\$924	
Finance, insurance, real estate, rental and leasing		\$372	\$296	\$669	
Wholesale and retail trade		\$134	\$151	\$285	
Manufacturing		\$133	\$59	\$192	
Transportation and warehousing		\$152	\$35	\$187	
Mining		\$65	\$19	\$85	
Utilities		\$48	\$29	\$77	
Construction		\$60	\$10	\$70	
Information		\$28	\$21	\$49	
Government		\$13	\$22	\$35	
Agriculture		\$1	\$4	\$5	
Total Impact on Value Added	\$3,328	\$1,460	\$1,118	\$5,907	7.5%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The Economic Impact of the Onshore Upstream Subsector in Wyoming, 2019

Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
Employment*					
Industry Direct Impact	16,830			16,830	4.1%
Indirect/Induced Impacts on Other Industries					
Services		4,420	5,120	9,540	
Finance, insurance, real estate, rental and leasing		3,130	1,810	4,940	
Wholesale and retail trade		800	1,730	2,530	
Transportation and warehousing		520	340	860	
Construction		720	120	840	
Manufacturing		280	120	400	
Government		150	220	370	
Agriculture		30	260	290	
Information		160	110	270	
Mining		160	40	200	
Utilities		90	50	140	
Total Impact on Employment	16,830	10,460	9,920	37,210	9.0%
Labor Income** (\$ Millions)					
Industry Direct Impact	\$1,487			\$1,487	6.3%
Indirect/Induced Impacts on Other Industries					
Services		\$233	\$203	\$436	
Finance, insurance, real estate, rental and leasing		\$119	\$52	\$171	
Transportation and warehousing		\$135	\$27	\$162	
Wholesale and retail trade		\$63	\$59	\$122	
Construction		\$43	\$7	\$50	
Manufacturing		\$26	\$8	\$34	
Government		\$11	\$17	\$28	
Mining		\$21	\$6	\$26	
Utilities		\$12	\$7	\$19	
Information		\$11	\$8	\$19	
Agriculture		\$1	\$5	\$5	
Total Impact on Labor Income	\$1,487	\$673	\$398	\$2,558	10.9%
Value Added (\$ Millions)					
Industry Direct Impact	\$3,258			\$3,258	8.1%
Indirect/Induced Impacts on Other Industries					
Services		\$285	\$253	\$538	
Finance, insurance, real estate, rental and leasing		\$279	\$248	\$527	
Transportation and warehousing		\$242	\$45	\$287	
Wholesale and retail trade		\$119	\$102	\$220	
Mining		\$61	\$17	\$78	
Manufacturing		\$54	\$18	\$72	
Construction		\$57	\$11	\$68	
Utilities		\$37	\$20	\$57	
Information		\$23	\$16	\$39	
Government		\$14	\$21	\$35	
Agriculture		\$1	\$10	\$12	
Total Impact on Value Added	\$3,258	\$1,172	\$760	\$5,190	12.8%

Source: PwC calculations based on the IMPLAN modeling system (2019 database). Details may not add up to totals due to rounding.

* Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

** Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Appendix E: Data Sources and Methodology

This Appendix describes the methodology used to derive the results for the study. It first discusses the data sources PwC utilized to develop estimates of the US oil and natural gas industry's direct employment, labor income, and value-added impacts and its dividend and capital investment impacts. It then describes the development of the indirect and induced impact estimates.

Estimating the Direct Jobs, Labor Income and Value Added

PwC's employment estimates for the oil and natural gas industry include both full-time and part-time workers as well as self-employed business owners. The *State Annual Personal Income and Employment* data set published by the US Bureau of Economic Analysis ("BEA") is the only source on total employment including self-employed individuals by industry. In cases where there is a one-to-one correspondence between the subsectors of the oil and natural gas industry as defined by PwC and the BEA sectors, we use the BEA data on employment, labor income and GDP without any further adjustment. This is the case for three NAICS codes: NAICS 211 (Oil and gas extraction), NAICS 447 (Gasoline stations), and NAICS 486 (Pipeline transportation).

For the remaining subsectors for the oil and natural gas industry, which are more disaggregated compared to the BEA data, PwC obtained each subsector's paid employment from the US Bureau of Labor Statistics ("BLS"). PwC then estimated total self-employment for the more aggregated industry using the BEA data and allocated across the subsectors according to each industry's share of paid employment. For example, self-employment was estimated for NAICS sector 213 (Support Activities for Mining) and then allocated across five subsectors including 213111 (Drilling Oil and Gas Wells) and 213112 (Support Activities for Oil and Gas Operations). In a limited number of cases, data from the Census Bureau's *Nonemployer Statistics* was used to allocate self-employment across subsectors.¹⁴

Direct employment was separately estimated for the US as a whole, each of the 50 states and the District of Columbia, and each Congressional District. The state-level estimates were then scaled to match the national level estimates, and the Congressional District-level estimates were also scaled to match the state-level estimates.

A similar methodology was used to estimate labor income and GDP for sectors where there was not a one-to-one correspondence between the subsectors of the oil and natural gas industry as defined by PwC and the BEA sectors.

Estimating Capital Investment Impact

To quantify the industry's capital investment impact, PwC estimated its capital expenditures for 2019 based on data from the Census Bureau and the BEA. For the impact analysis, capital spending was then translated into purchases of capital assets by type through the use of the so-called "capital flow matrix" from the BEA.

¹⁴ A nonemployer is a business without paid employees. Most nonemployers are self-employed individuals operating small unincorporated businesses, which may or may not be the owner's principal source of income.

Estimating Dividend Impact

PwC obtained data on common stock dividend payments by companies in the US oil and natural gas industry.¹⁵ Dividend payments were allocated between households, foreign shareholders, retirement plans, governments, and other businesses using data from the Federal Reserve Board's *Financial Accounts of the United States*. Dividends paid to households by the oil and natural gas industry were allocated by income group and across the 50 states and the District of Columbia using tax return data published by the IRS's Statistics of Income Division.

Dividends paid to pension plans and other retirement accounts were allocated across income groups based on data on retirement assets by income quintile obtained from the 2019 *Survey of Consumer Finances*, conducted by the Federal Reserve. The data were then allocated across the 50 states and the District of Columbia using data on the distribution of assets in 401(k) and thrift savings accounts from the *Survey of Income and Program Participation* conducted by the US Census Bureau. These data were combined with the data on dividends paid directly to households by the oil and natural gas industry to derive our estimates of total dividends paid by the industry to residents in each state.

To quantify the economic impact resulting from the dividend payments of the US oil and natural gas industry, PwC first converted dividend payments into additional household consumption expenditures. For dividends paid directly to households, after-tax dividend income was estimated by income class based on average tax rates on dividend income. The additional consumption from dividends paid directly to households was estimated using published estimates of the marginal propensity to consume out of dividend income.¹⁶ Similarly, the additional consumption resulting from dividends paid to retirement accounts was estimated based on published estimates of the marginal propensity to consume out of wealth.¹⁷

Estimating the Indirect and Induced Economic Impacts

The initial round of output, income, and employment generated by the operations of the oil and natural gas industry leads to successive rounds of re-spending in the chain of production and through the personal consumption spending of industry and supplier employees. Such indirect and induced economic impacts can be measured using various approaches. The most common is multiplier analysis. In broad terms, a multiplier is an index that indicates the overall change in the level of economic activity that results from a given initial change. It effectively adds up all the successive rounds of re-spending, based on a number of assumptions that are embedded in the method of estimation.

¹⁵ The measure of dividends used includes cash dividends from all classes of common stock out of income from US operations by US corporations in the oil and natural gas industry. It also includes dividends paid to US shareholders out of income from US operations by foreign corporations in the industry. It does not include the dollar value of stock dividends or dividends paid or accrued on preferred stock.

¹⁶ The marginal propensity to consume out of dividend income is a measure of the additional consumption resulting from the last dollar of dividend income earned. The MPCs used for this study were based on Malcolm Baker, Stefan Nagel, and Jeffrey Wurgler, "The Effects of Dividends on Consumption" *Brookings Papers on Economic Activity*, 2007, pgs. 213-291. Using two micro data sets the authors estimated pre-tax MPCs ranging from 0.25 to 0.77. Using the authors' midpoint estimate of 0.4, PwC estimated the after-tax MPC for each income group as the pre-tax MPC divided by one minus the marginal effective tax rate on dividend income.

¹⁷ A review of the literature suggests that each additional dollar of financial wealth increases consumption between two and six cents. To be conservative we have assumed an MPC out of wealth of 0.028 for all income groups (based on Gabriel Chodorow-Reich, Plamen T. Nenov, and Alp Simsek, "Stock Market Wealth and the Real Economy: A Local Labor Market Approach," working paper, June 7, 2019).

There are different methods available for calculating multipliers. The method used in this report is *input-output* analysis. It is the most commonly used approach in regional economic impact studies. The input-output model developed by IMPLAN is a well-known input-output model for regional economic studies in the United States and is widely used by government, academics and private-sector researchers.¹⁸

The IMPLAN model is built around an “input-output” table that relates the purchases that each industry has made from other industries to the value of the output of each industry. To meet the demand for goods and services from an industry, purchases are made in other industries according to the patterns recorded in the input-output table. These purchases in turn spark still more purchases by the industry’s suppliers, and so on. Additionally, employees and business owners make personal purchases out of the additional income that is generated by this process, sending new demands rippling through the economy. Multipliers describe these iterations. The Type I multiplier measures the direct and indirect effects of a change in economic activity. It captures the inter-industry effects only, i.e., industries buying from local industries. The Type II (Social Accounting Matrix or SAM) multiplier captures the direct and indirect effects and, in addition, it also reflects induced effects (i.e., changes in spending from households as income increases or decreases due to the changes in production). The indirect and induced impacts by the oil and natural gas industry on other sectors of the economy in terms of employment, labor income (including wages and salaries and benefits as well as proprietors’ income), and value added were calculated through the multiplier process built into the model.¹⁹

For this study, PwC built customized IMPLAN input-output models for the national economy, each state and the District of Columbia, and each Congressional District to calculate the oil and natural gas industry’s *indirect* and *induced* economic impact on each study area in terms of employment, labor income, and value added.

Because IMPLAN regional models capture only the indirect and induced effects within a region, the indirect and induced effects crossing state borders (“cross-state spillover effects”) are not captured by the IMPLAN state models. PwC quantified the cross-state “spillover effects” and allocated them proportionally to each state. The state indirect and induced effects reported throughout this study include such allocation of the cross-state spillover effects. Similar modeling was performed at the Congressional District level to capture cross-district spillover effects.

Estimating the Onshore Upstream Subsector’s Economic Impacts

For the study, the upstream subsector of the oil and natural gas industry is defined to include three NAICS codes:

211	Oil and gas extraction (including NGL extraction)
213111	Drilling oil and gas wells
213112	Support activities for oil and gas operations

In nine of the 14 states studied, the upstream oil and natural gas extraction subsector includes onshore operations only, while the other five states include both onshore and offshore operations. These states are Alaska, Alabama, California, Louisiana, and Texas. For Alabama,

¹⁸ More information on IMPLAN is available at www.implan.com.

¹⁹ Because the IMPLAN models are used for total impact analysis (as opposed to marginal impact analysis) in this study, necessary adjustments are made to the initial indirect and induced impact estimates to prevent double counting. For instance, any indirect or induced effects from the estimates that are mapped to the oil and natural gas industry are removed.

California, Louisiana, and Texas, we relied on each state's daily onshore production volume of crude oil and natural gas in 2019 from IHS Markit and the 2019 prices for crude oil and natural gas from the Energy Information Administration (EIA) to estimate the direct output value of the onshore upstream subsector in the respective states. Similar production data for Alaska were obtained from Alaska's Department of Natural Resources to estimate the direct output value of the onshore upstream subsector in Alaska. The direct output of the subsector in each of the 14 states is then used to estimate the corresponding direct employment, direct labor income, and direct value added of the subsector based on the IMPLAN model.

As with the impact analysis for the oil and natural gas industry as a whole, the IMPLAN model is used to quantify the onshore upstream subsector's indirect and induced impacts in the 14 states. Cross-state spillover effects for each of the 14 states were also quantified. For example, if North Dakota's upstream subsector of the oil and natural gas industry buys intermediate inputs from a supplier located in a state outside of the selected 14 states (say Indiana), the indirect impact on Indiana is excluded from the current analysis, but if the said Indiana supplier then buys inputs from one of the 14 states (say California), then the indirect impact on California is included. Further, if the Indiana supplier's employees increase their purchase of gasoline, the effect on North Dakota is included.

In addition, a portion of the oil and natural gas industry's capital investment and dividend payout impacts was also allocated to each state based on the share of the onshore upstream subsector relative to the oil and natural gas industry as a whole in each state.

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