

# ***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.<sup>1</sup>

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.<sup>2</sup> 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		
<b>Employment (millions)*</b>	2.5	6.5	2.3	11.3	5.6%
<b>Labor Income (\$billions)**</b>	\$318.6	\$416.7	\$157.4	\$892.7	6.8%
<b>Value Added (\$billions)</b>	\$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.

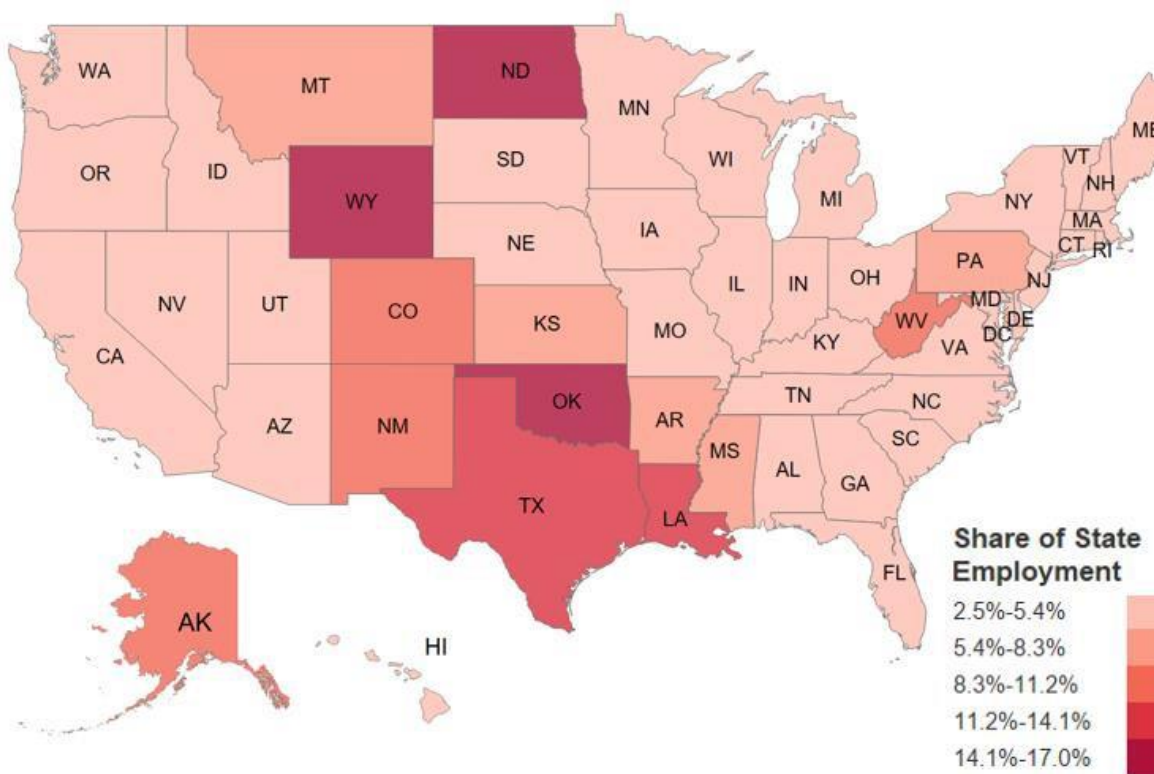
<sup>1</sup> These economic impacts represent the entire *backward linkages* of the US oil and natural gas industry to its suppliers. They do not capture *forward linkages* (i.e., the economic impact on production in sectors that use oil and natural gas as an input).

<sup>2</sup> 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 <sup>(1)</sup>		Labor Income <sup>(2)</sup>		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
<b>Subtotal</b>	<b>690.5</b>	<b>3,231.9</b>	<b>\$126.2</b>	<b>\$297.2</b>	<b>\$221.6</b>	<b>\$493.1</b>

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.<sup>3</sup> 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.<sup>4</sup>

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.<sup>5</sup>
- **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).<sup>6</sup>

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

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<sup>3</sup> 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).

<sup>4</sup> 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).

<sup>5</sup> 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.

<sup>6</sup> 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.<sup>7</sup> 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.

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<sup>7</sup>The 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
<b>211**</b>	20	Oil and gas extraction (including NGL extraction)
<b>213111**</b>	35	Drilling oil and gas wells
<b>213112**</b>	36	Support activities for oil and gas operations
<b>2212</b>	48, 528*	Natural gas distribution (private and public)
<b>23712</b>	56*	Oil and gas pipeline and related structures construction
<b>32411</b>	154	Petroleum refineries
<b>32412</b>	155, 156	Asphalt paving, roofing and saturated materials manufacturing
<b>324191</b>	157	Petroleum lubricating oil and grease manufacturing
<b>4247</b>	399	Petroleum and petroleum products merchant wholesalers
<b>44711, 44719</b>	408	Gasoline stations
<b>45431</b>	413*	Fuel dealers
<b>486</b>	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, redrilling, 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.<sup>8</sup> 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).

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<sup>8</sup> 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 <sup>(1)</sup> (millions of jobs)	Labor Income <sup>(2)</sup> (\$ 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
<b>Operational Impact</b>		
Employment (millions of jobs)*	9.0	4.4%
Labor Income (\$ billions)**	\$735.3	5.6%
Value Added (\$ billions)	\$1,442.2	6.7%
<b>Capital Investment Impact</b>		
Employment (millions of jobs)*	2.3	1.2%
Labor Income (\$ billions)**	\$157.4	1.2%
Value Added (\$ billions)	\$245.4	1.1%
<b>Total Impact</b>		
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
<b>Total (in thousands)</b>	<b>6,482</b>	<b>2,353</b>
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%
<b>Total</b>	<b>100%</b>	<b>100%</b>

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
<b>Total (\$billions)</b>	<b>\$416.7</b>	<b>\$157.4</b>
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%
<b>Total</b>	<b>100%</b>	<b>100%</b>

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
<b>Total (\$billions)</b>	<b>\$678.9</b>	<b>\$245.4</b>
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%
<b>Total</b>	<b>100%</b>	<b>100%</b>

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

## *B. State Results*

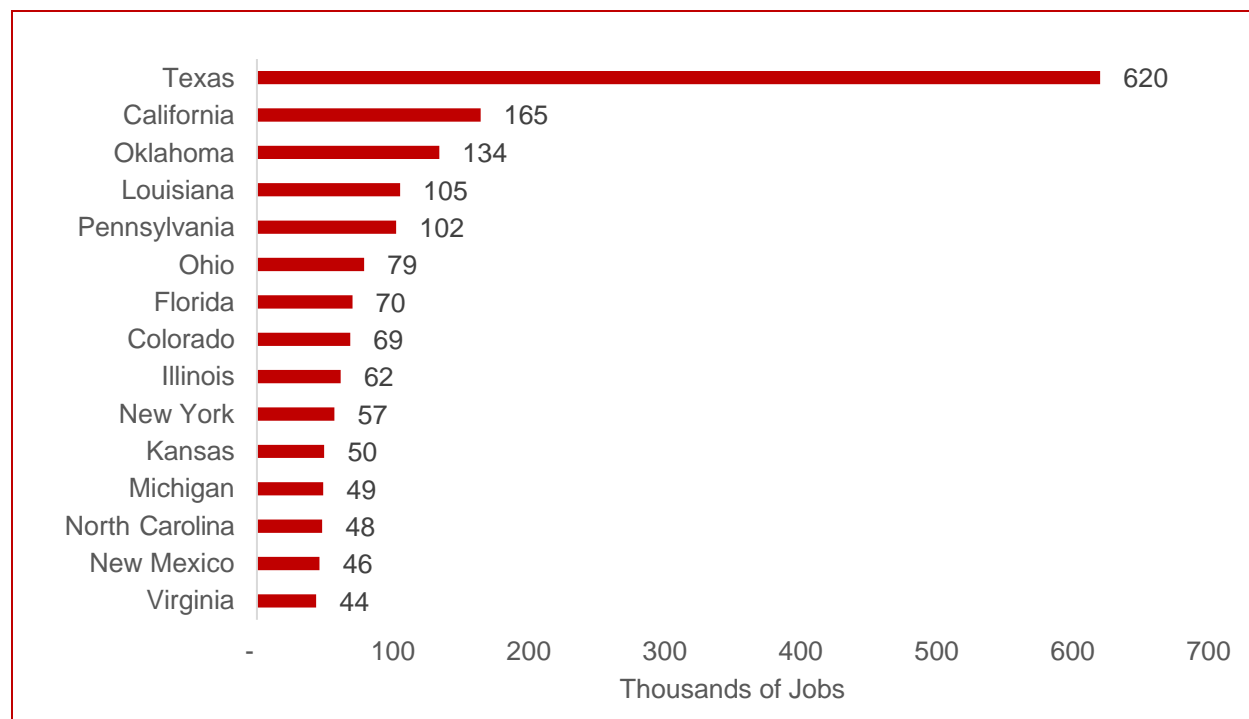
The economic impact of the oil and natural gas industry at the state level reflects the indirect and induced effects attributable to direct activity within each state's borders, as well as indirect and induced activity within a state that is attributable to direct activity in other states.<sup>9</sup>

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**.

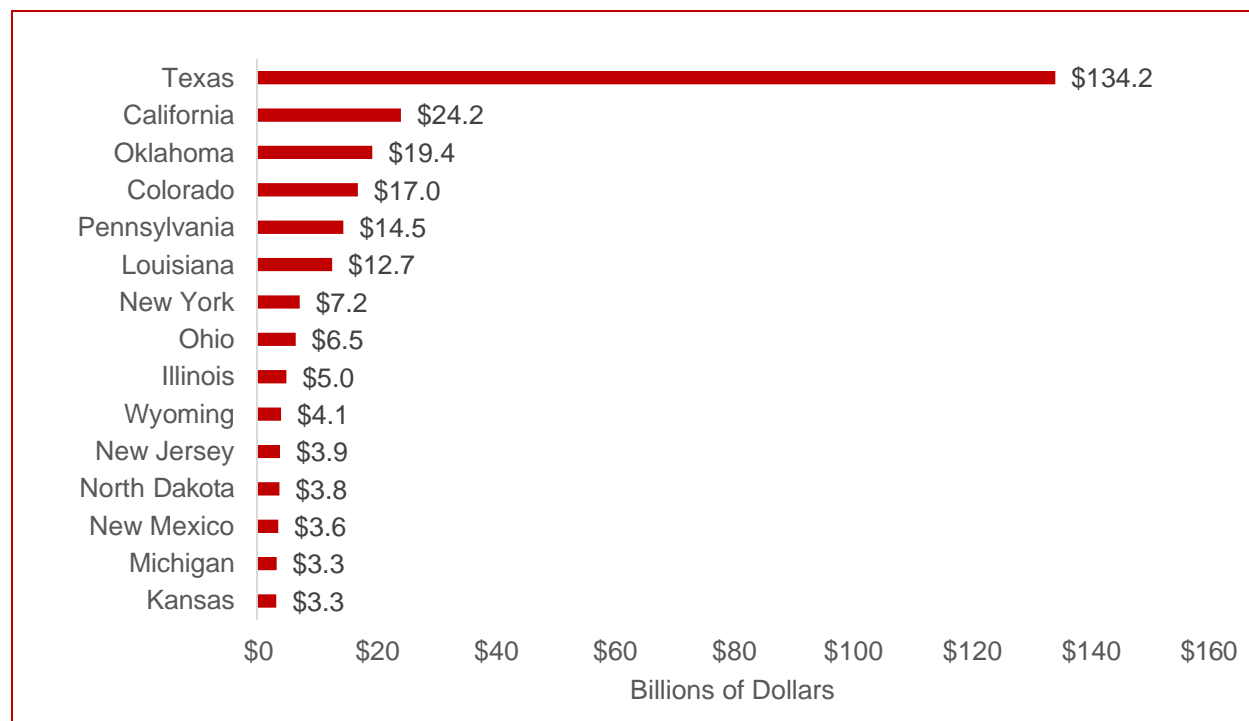
<sup>9</sup> We have allocated the indirect and induced effects by industry attributable to direct activity in other states based on the overall level of economic activity of that industry in each state.

**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.

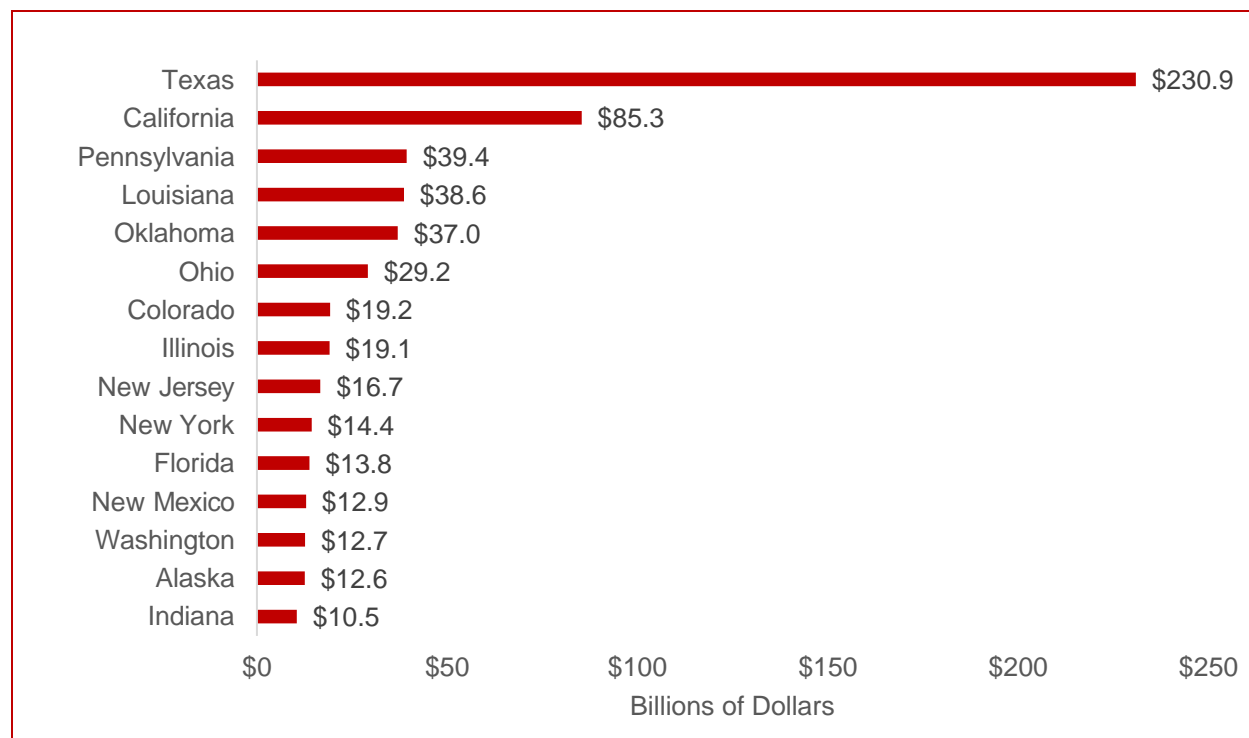
**Figure 2. The Oil and Natural Gas Industry's Direct Impact:  
Top 15 States by Direct Labor Income, 2019**



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



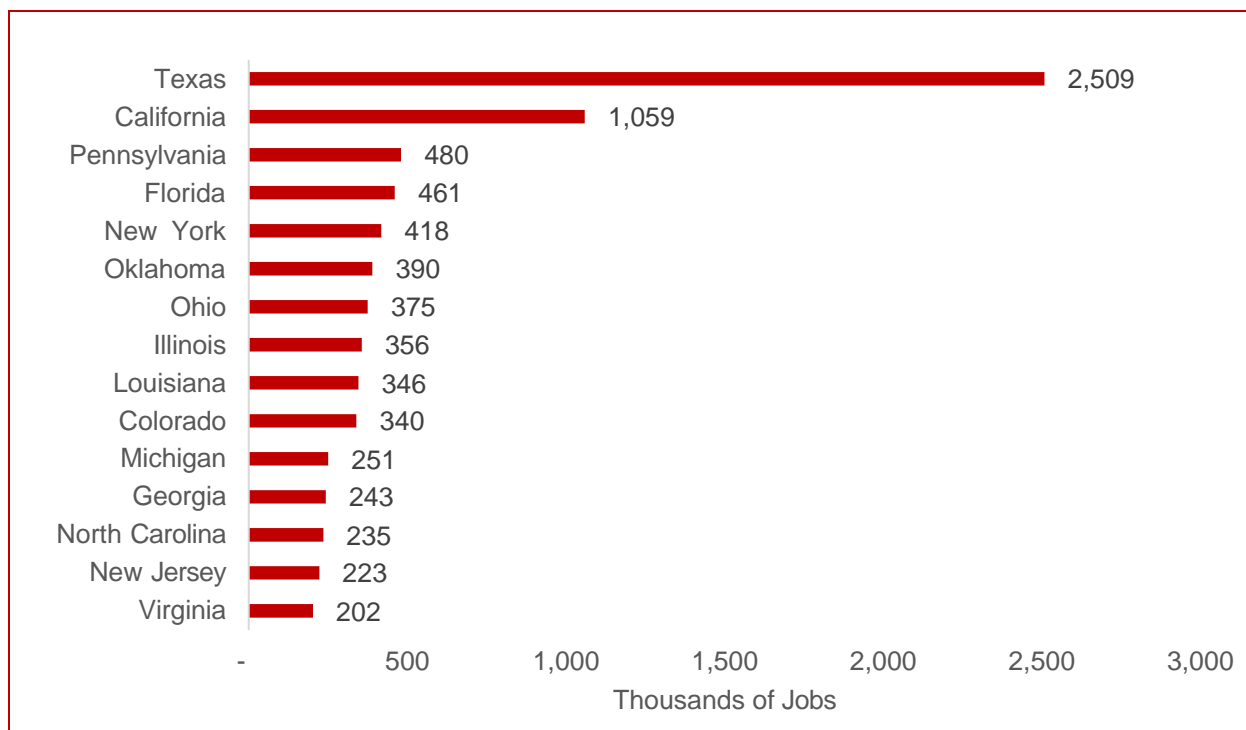
**Figure 3. The Oil and Natural Gas Industry's Direct Impact:  
Top 15 States by Direct Value Added, 2019**



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

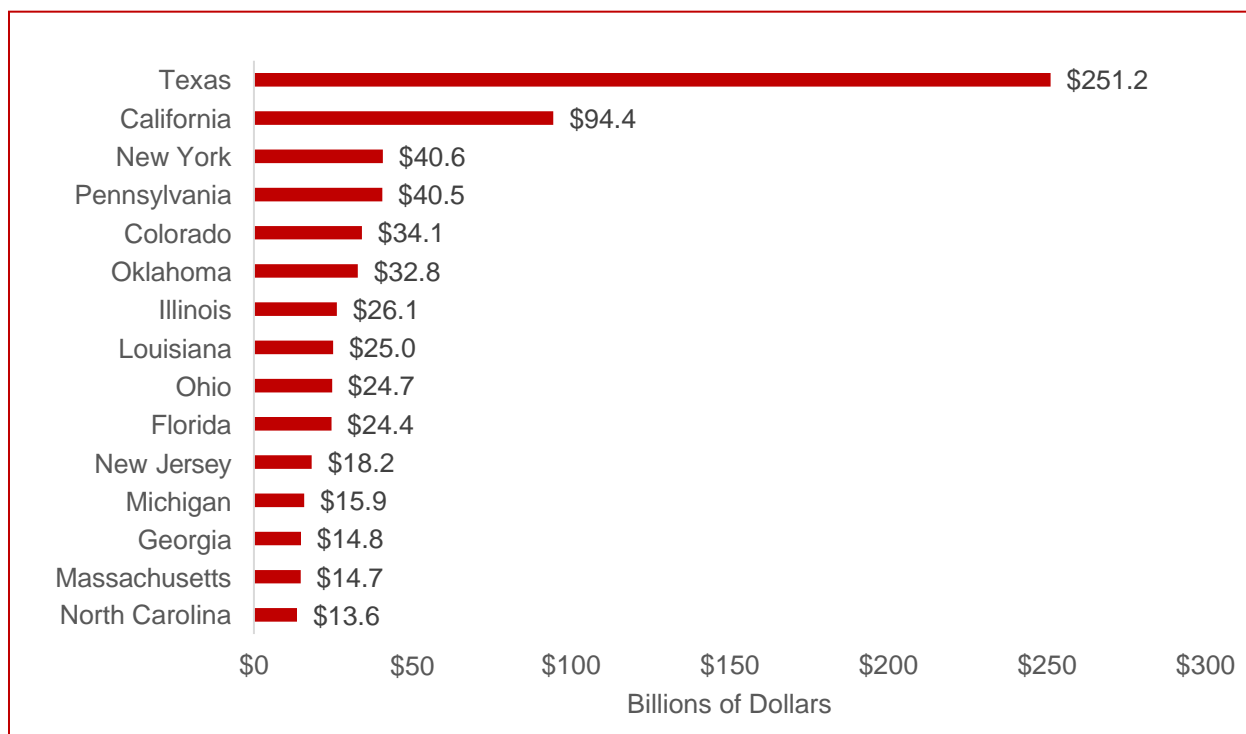
**Figures 4** through **9**, below, present the total impact of the oil and natural gas industry by state, including direct, indirect, and induced impacts. Looking at the top 15 states in terms of total employment attributable to the oil and natural gas industry, **Figure 4**, below, indicates that Texas 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**



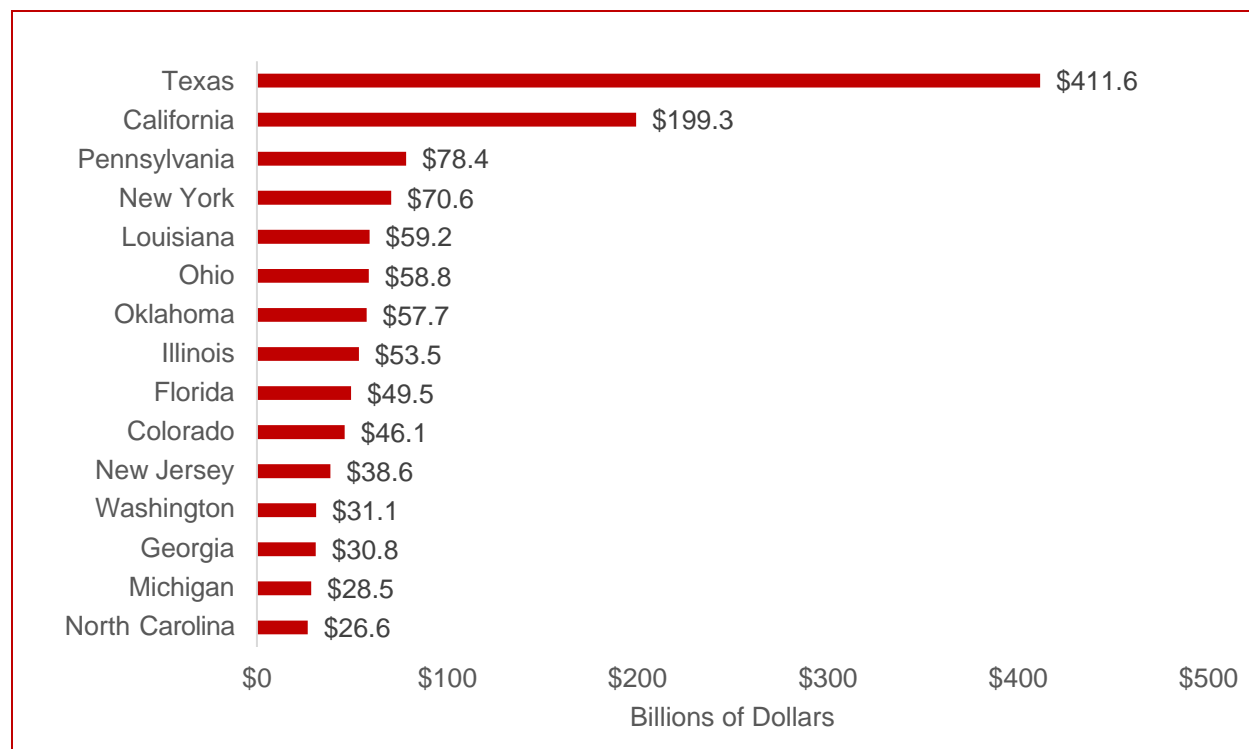
Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

**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.

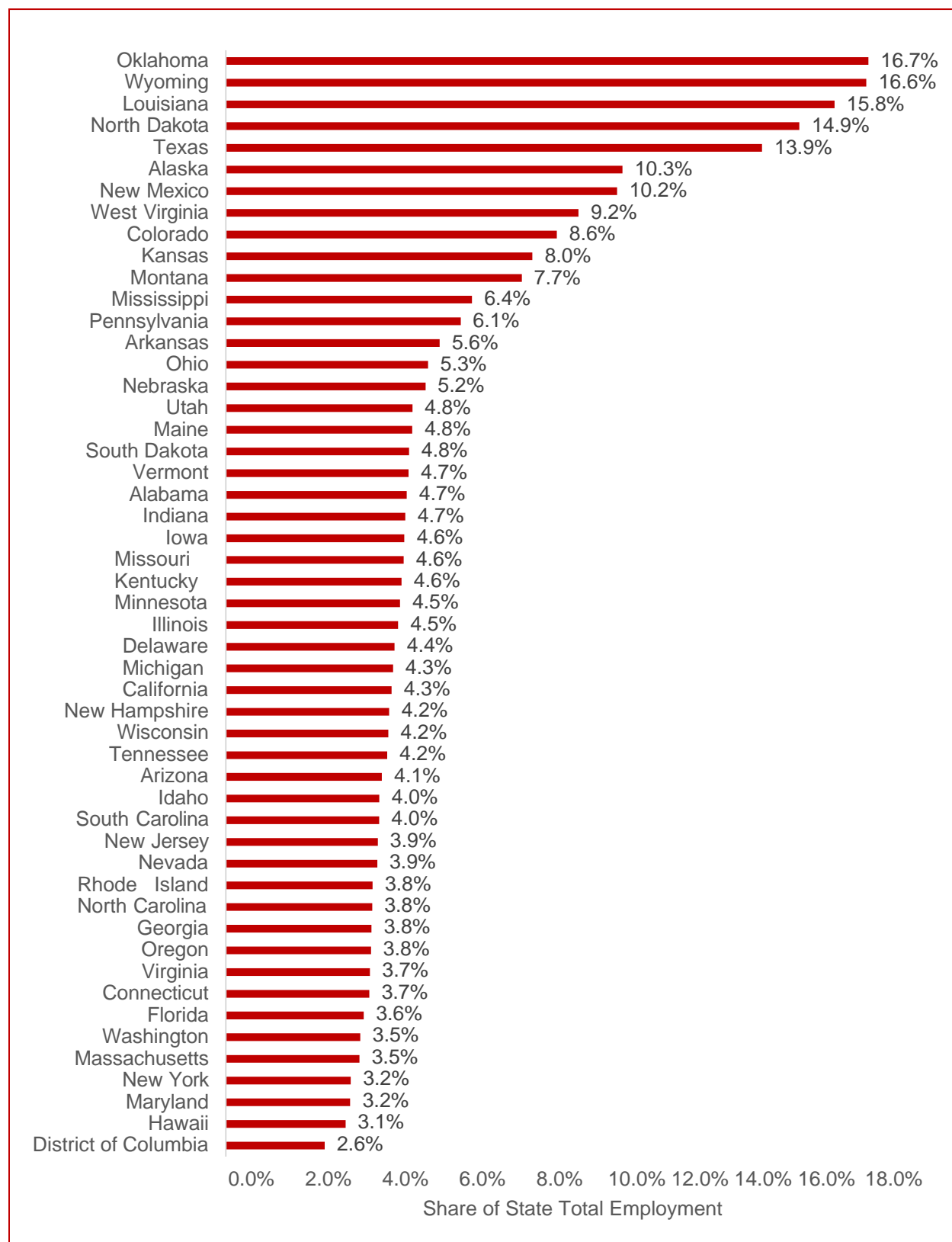
**Figure 6. The Oil and Natural Gas Industry's Total Impact:  
Top 15 States by Total Value Added, 2019**



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

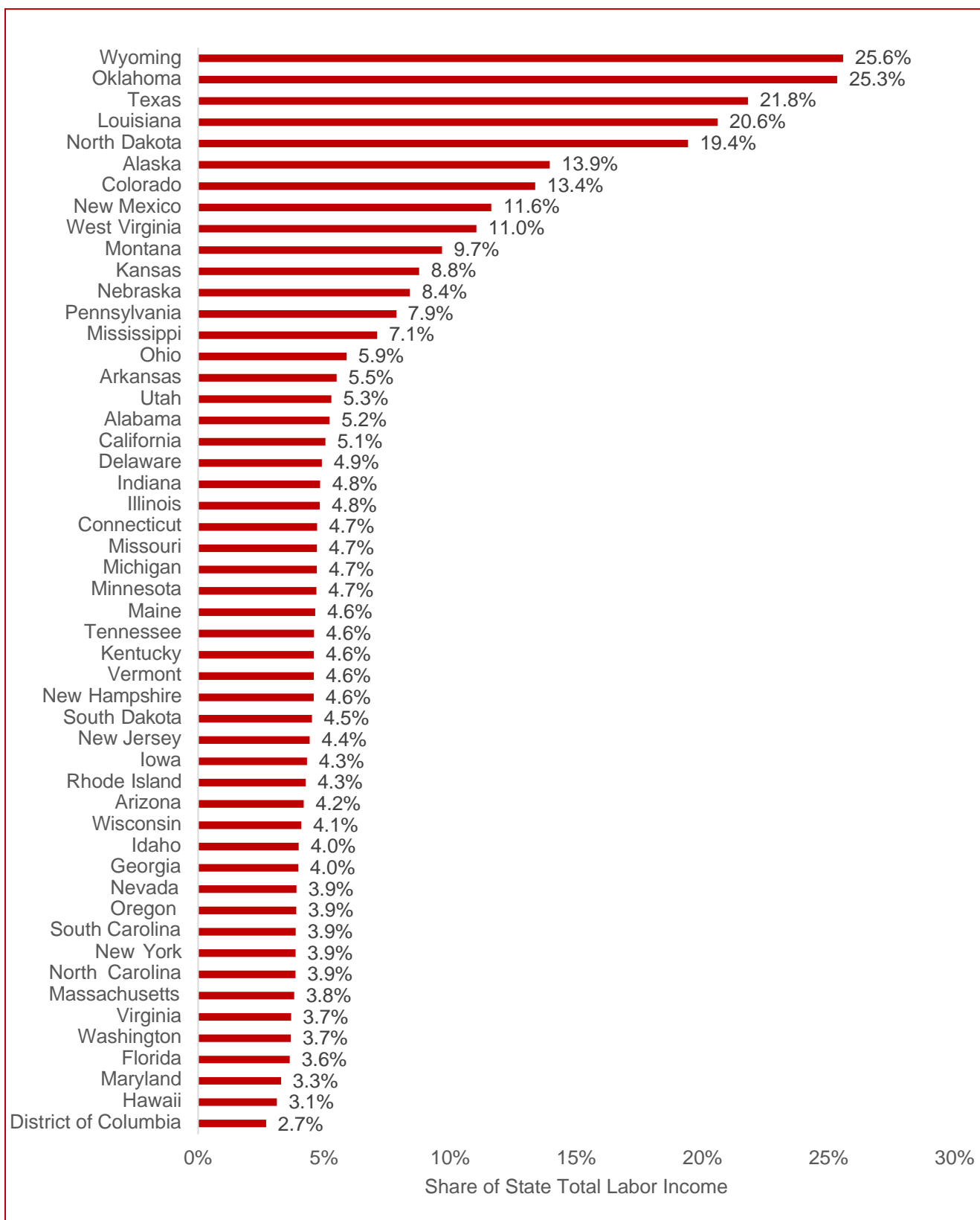
Looking at all states in terms of the share of state employment directly or indirectly attributable to the oil and natural gas industry, **Figure 7**, below, indicates that Oklahoma ranks highest, followed by Wyoming, Louisiana, North Dakota, Texas, Alaska, and New Mexico. In each of these states, the 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**



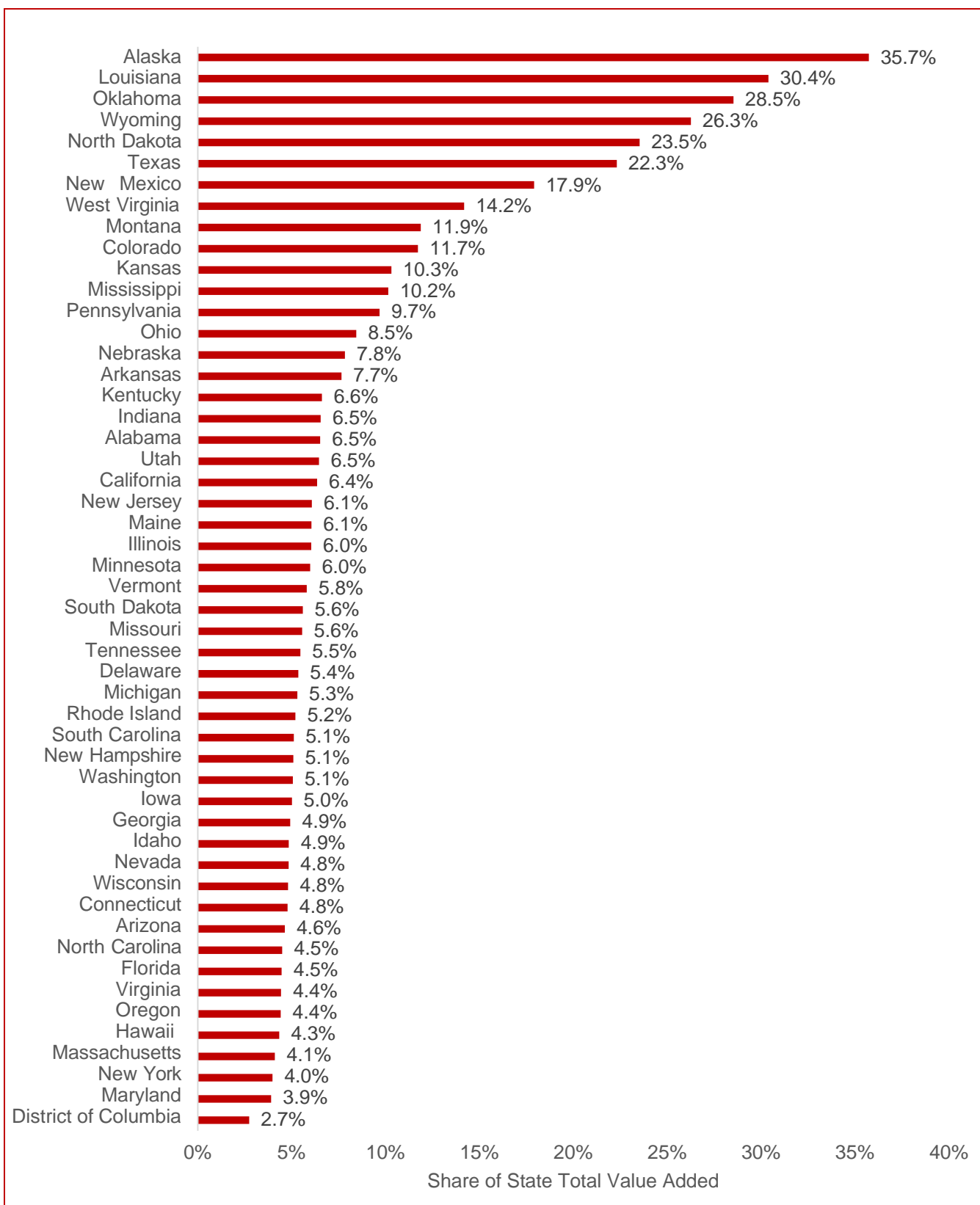
Source: PwC calculations based on the IMPLAN model. See Appendix B for underlying figures.

**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.

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### *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.<sup>10</sup>

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 11<sup>th</sup> Congressional District, which encompasses 29 counties in west central Texas, including the top crude oil producing county of Midland. Oklahoma's 3<sup>rd</sup> Congressional District is home to the Anadarko basin. Oklahoma's 5<sup>th</sup> 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 3<sup>rd</sup> 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**.

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<sup>10</sup> 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 <sup>(1)</sup>		Labor Income <sup>(2)</sup>		Value Added	
		Amount (Jobs)	Share of US <sup>(3)</sup>	Amount (\$ Million)	Share of US <sup>(3)</sup>	Amount (\$ Million)	Share of US <sup>(3)</sup>
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 <sup>(1)</sup>		Labor Income <sup>(2)</sup>		Value Added	
		Amount (Jobs)	Share of US <sup>(3)</sup>	Amount (\$ Million)	Share of US <sup>(3)</sup>	Amount (\$ Million)	Share of US <sup>(3)</sup>
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 <sup>(1)</sup>		Labor Income <sup>(2)</sup>		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
<b>Subtotal</b>	<b>690.5</b>	<b>3,231.9</b>	<b>\$126.2</b>	<b>\$297.2</b>	<b>\$221.6</b>	<b>\$493.1</b>

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.<sup>11</sup>

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.<sup>12</sup> Excluding distributions from Master Limited Partnerships and other pass-through entities,<sup>13</sup> 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.

<sup>11</sup> 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."

<sup>12</sup> 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.

<sup>13</sup> 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 <sup>(1)</sup> (000's)	Labor Income <sup>(2)</sup> (\$ 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
	<b>Total US Oil and Natural Gas Industry</b>	<b>2,514.3</b>	<b>\$318.6</b>	<b>\$763.3</b>

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
<b>US Total</b>	<b>2,514.3</b>	<b>11,349.6</b>	<b>\$318.6</b>	<b>\$892.7</b>	<b>\$763.3</b>	<b>\$1,687.6</b>
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	15.8%	20.6%	30.4%
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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>31,870</b>			<b>31,870</b>	<b>1.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		16,840	28,210	<b>45,050</b>	
Manufacturing		6,830	3,920	<b>10,750</b>	
Finance, insurance, real estate, rental and leasing		4,560	6,080	<b>10,640</b>	
Wholesale and retail trade		2,920	7,330	<b>10,250</b>	
Construction		6,980	470	<b>7,450</b>	
Transportation and warehousing		4,750	1,970	<b>6,720</b>	
Government		980	810	<b>1,790</b>	
Agriculture		260	1,250	<b>1,510</b>	
Information		620	740	<b>1,360</b>	
Utilities		440	350	<b>790</b>	
Mining		<u>300</u>	<u>60</u>	<u>360</u>	
<b>Total Impact on Employment</b>	<b>31,870</b>	<b>45,490</b>	<b>51,190</b>	<b>128,540</b>	<b>4.7%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,244</b>			<b>\$2,244</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$908	\$1,185	<b>\$2,092</b>	
Manufacturing		\$525	\$250	<b>\$774</b>	
Finance, insurance, real estate, rental and leasing		\$272	\$283	<b>\$555</b>	
Wholesale and retail trade		\$206	\$287	<b>\$493</b>	
Construction		\$365	\$25	<b>\$389</b>	
Transportation and warehousing		\$269	\$95	<b>\$364</b>	
Government		\$72	\$61	<b>\$133</b>	
Utilities		\$75	\$56	<b>\$130</b>	
Information		\$46	\$53	<b>\$99</b>	
Agriculture		\$10	\$44	<b>\$54</b>	
Mining		<u>\$28</u>	<u>\$5</u>	<u>\$33</u>	
<b>Total Impact on Labor Income</b>	<b>\$2,244</b>	<b>\$2,775</b>	<b>\$2,343</b>	<b>\$7,362</b>	<b>5.2%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$6,502</b>			<b>\$6,502</b>	<b>2.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$1,045	\$1,417	<b>\$2,463</b>	
Finance, insurance, real estate, rental and leasing		\$801	\$1,180	<b>\$1,981</b>	
Manufacturing		\$929	\$432	<b>\$1,360</b>	
Wholesale and retail trade		\$351	\$461	<b>\$811</b>	
Transportation and warehousing		\$307	\$126	<b>\$433</b>	
Construction		\$373	\$30	<b>\$403</b>	
Utilities		\$196	\$148	<b>\$344</b>	
Government		\$116	\$102	<b>\$218</b>	
Information		\$90	\$106	<b>\$196</b>	
Mining		\$99	\$19	<b>\$119</b>	
Agriculture		<u>\$10</u>	<u>\$45</u>	<u>\$56</u>	
<b>Total Impact on Value Added</b>	<b>\$6,502</b>	<b>\$4,317</b>	<b>\$4,066</b>	<b>\$14,885</b>	<b>6.5%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>15,780</b>			<b>15,780</b>	<b>3.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>15,780</b>	<b>11,720</b>	<b>19,840</b>	<b>47,340</b>	<b>10.3%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,539</b>			<b>\$2,539</b>	<b>7.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$2,539</b>	<b>\$936</b>	<b>\$1,083</b>	<b>\$4,558</b>	<b>13.9%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$12,563</b>			<b>\$12,563</b>	<b>23.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$12,563</b>	<b>\$5,040</b>	<b>\$1,837</b>	<b>\$19,440</b>	<b>35.7%</b>

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

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

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

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>2,590</b>			<b>2,590</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>2,590</b>	<b>8,080</b>	<b>13,040</b>	<b>23,710</b>	<b>2.6%</b>
<b>Labor Income*** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$354</b>			<b>\$354</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$354</b>	<b>\$1,156</b>	<b>\$1,345</b>	<b>\$2,855</b>	<b>2.7%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$482</b>			<b>\$482</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$482</b>	<b>\$1,517</b>	<b>\$1,936</b>	<b>\$3,935</b>	<b>2.7%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>43,370</b>			<b>43,370</b>	<b>0.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>43,370</b>	<b>85,880</b>	<b>113,720</b>	<b>242,970</b>	<b>3.8%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,678</b>			<b>\$2,678</b>	<b>0.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$2,678</b>	<b>\$6,057</b>	<b>\$6,084</b>	<b>\$14,819</b>	<b>4.0%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$10,100</b>			<b>\$10,100</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$10,100</b>	<b>\$9,731</b>	<b>\$11,014</b>	<b>\$30,845</b>	<b>4.9%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>9,920</b>			<b>9,920</b>	<b>0.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>9,920</b>	<b>14,440</b>	<b>18,370</b>	<b>42,730</b>	<b>4.0%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$486</b>			<b>\$486</b>	<b>0.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$486</b>	<b>\$815</b>	<b>\$839</b>	<b>\$2,140</b>	<b>4.0%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,380</b>			<b>\$1,380</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$1,380</b>	<b>\$1,236</b>	<b>\$1,446</b>	<b>\$4,062</b>	<b>4.9%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>39,340</b>			<b>39,340</b>	<b>1.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>39,340</b>	<b>69,260</b>	<b>78,200</b>	<b>186,810</b>	<b>4.7%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,433</b>			<b>\$2,433</b>	<b>1.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$2,433</b>	<b>\$4,560</b>	<b>\$4,128</b>	<b>\$11,121</b>	<b>4.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$10,481</b>			<b>\$10,481</b>	<b>2.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$10,481</b>	<b>\$7,070</b>	<b>\$7,312</b>	<b>\$24,864</b>	<b>6.5%</b>

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>105,310</b>			<b>105,310</b>	<b>3.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>105,310</b>	<b>112,720</b>	<b>127,740</b>	<b>345,760</b>	<b>12.6%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$12,656</b>			<b>\$12,656</b>	<b>8.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$12,656</b>	<b>\$6,754</b>	<b>\$5,569</b>	<b>\$24,979</b>	<b>16.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$38,619</b>			<b>\$38,619</b>	<b>15.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$38,619</b>	<b>\$10,778</b>	<b>\$9,791</b>	<b>\$59,188</b>	<b>23.0%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>12,060</b>			<b>12,060</b>	<b>1.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>12,060</b>	<b>12,580</b>	<b>16,810</b>	<b>41,440</b>	<b>4.8%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$547</b>			<b>\$547</b>	<b>1.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$547</b>	<b>\$708</b>	<b>\$813</b>	<b>\$2,068</b>	<b>4.6%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,675</b>			<b>\$1,675</b>	<b>2.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$1,675</b>	<b>\$1,052</b>	<b>\$1,378</b>	<b>\$4,105</b>	<b>6.1%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>25,570</b>			<b>25,570</b>	<b>0.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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		100	10	110	
<b>Total Impact on Employment</b>	<b>25,570</b>	<b>57,660</b>	<b>88,110</b>	<b>171,330</b>	<b>3.5%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,177</b>			<b>\$2,177</b>	<b>0.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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		\$7	\$1	\$7	
<b>Total Impact on Labor Income</b>	<b>\$2,177</b>	<b>\$6,078</b>	<b>\$6,474</b>	<b>\$14,730</b>	<b>3.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$5,568</b>			<b>\$5,568</b>	<b>0.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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		\$17	\$2	\$19	
<b>Total Impact on Value Added</b>	<b>\$5,568</b>	<b>\$8,431</b>	<b>\$10,516</b>	<b>\$24,515</b>	<b>4.1%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>48,740</b>			<b>48,740</b>	<b>0.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>48,740</b>	<b>90,800</b>	<b>111,230</b>	<b>250,770</b>	<b>4.3%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$3,298</b>			<b>\$3,298</b>	<b>1.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$3,298</b>	<b>\$6,635</b>	<b>\$5,935</b>	<b>\$15,868</b>	<b>4.7%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$8,842</b>			<b>\$8,842</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$8,842</b>	<b>\$9,701</b>	<b>\$9,946</b>	<b>\$28,489</b>	<b>5.3%</b>

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

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

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

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>8,640</b>			<b>8,640</b>	<b>1.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>8,640</b>	<b>12,980</b>	<b>16,770</b>	<b>38,390</b>	<b>4.2%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$584</b>			<b>\$584</b>	<b>1.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$584</b>	<b>\$1,065</b>	<b>\$1,012</b>	<b>\$2,661</b>	<b>4.6%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,292</b>			<b>\$1,292</b>	<b>1.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$1,292</b>	<b>\$1,473</b>	<b>\$1,703</b>	<b>\$4,468</b>	<b>5.1%</b>

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>47,920</b>			<b>47,920</b>	<b>0.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>47,920</b>	<b>83,220</b>	<b>104,130</b>	<b>235,270</b>	<b>3.8%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,489</b>			<b>\$2,489</b>	<b>0.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$2,489</b>	<b>\$5,656</b>	<b>\$5,450</b>	<b>\$13,596</b>	<b>3.9%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$7,426</b>			<b>\$7,426</b>	<b>1.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$7,426</b>	<b>\$9,019</b>	<b>\$10,200</b>	<b>\$26,644</b>	<b>4.5%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>78,870</b>			<b>78,870</b>	<b>1.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>78,870</b>	<b>132,270</b>	<b>164,070</b>	<b>375,210</b>	<b>5.3%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$6,510</b>			<b>\$6,510</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$6,510</b>	<b>\$9,582</b>	<b>\$8,558</b>	<b>\$24,651</b>	<b>5.9%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$29,151</b>			<b>\$29,151</b>	<b>4.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$29,151</b>	<b>\$14,438</b>	<b>\$15,174</b>	<b>\$58,763</b>	<b>8.5%</b>

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>4,530</b>			<b>4,530</b>	<b>0.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>4,530</b>	<b>8,120</b>	<b>12,380</b>	<b>25,030</b>	<b>3.8%</b>
<b>Labor Income*** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$426</b>			<b>\$426</b>	<b>1.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$426</b>	<b>\$585</b>	<b>\$678</b>	<b>\$1,689</b>	<b>4.3%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,190</b>			<b>\$1,190</b>	<b>1.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$1,190</b>	<b>\$855</b>	<b>\$1,177</b>	<b>\$3,221</b>	<b>5.2%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>9,350</b>			<b>9,350</b>	<b>1.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>9,350</b>	<b>8,670</b>	<b>11,360</b>	<b>29,380</b>	<b>4.8%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$361</b>			<b>\$361</b>	<b>1.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$361</b>	<b>\$513</b>	<b>\$588</b>	<b>\$1,462</b>	<b>4.5%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,142</b>			<b>\$1,142</b>	<b>2.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$1,142</b>	<b>\$872</b>	<b>\$1,065</b>	<b>\$3,078</b>	<b>5.6%</b>

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>620,330</b>			<b>620,330</b>	<b>3.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Employment</b>	<b>620,330</b>	<b>746,590</b>	<b>1,141,950</b>	<b>2,508,870</b>	<b>13.9%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$134,250</b>			<b>\$134,250</b>	<b>11.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Labor Income</b>	<b>\$134,250</b>	<b>\$58,082</b>	<b>\$58,830</b>	<b>\$251,162</b>	<b>21.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$230,946</b>			<b>\$230,946</b>	<b>12.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
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	
<b>Total Impact on Value Added</b>	<b>\$230,946</b>	<b>\$83,641</b>	<b>\$96,970</b>	<b>\$411,557</b>	<b>22.3%</b>

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

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

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

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

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

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

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

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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Alabama</b>	<b>31,870</b>	<b>128,540</b>	<b>4.7%</b>	<b>\$2,244</b>	<b>\$7,362</b>	<b>5.2%</b>	<b>\$6,502</b>	<b>\$14,885</b>	<b>6.5%</b>
<b>AL-1</b>	5,220	20,420	5.1%	\$441	\$1,191	6.2%	\$1,035	\$2,248	7.3%
<b>AL-2</b>	4,310	16,290	4.6%	\$260	\$821	4.8%	\$859	\$1,803	6.0%
<b>AL-3</b>	4,670	16,830	4.7%	\$242	\$774	4.8%	\$554	\$1,449	5.6%
<b>AL-4</b>	5,500	18,690	5.6%	\$350	\$942	6.5%	\$1,328	\$2,311	9.8%
<b>AL-5</b>	3,030	16,110	3.7%	\$175	\$944	3.7%	\$370	\$1,541	4.0%
<b>AL-6</b>	3,790	18,140	4.3%	\$318	\$1,213	5.1%	\$770	\$2,256	5.9%
<b>AL-7</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Alaska</b>	<b>15,780</b>	<b>47,340</b>	<b>10.3%</b>	<b>\$2,539</b>	<b>\$4,558</b>	<b>13.9%</b>	<b>\$12,563</b>	<b>\$19,440</b>	<b>35.7%</b>
<b>AK-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Arizona</b>	<b>29,270</b>	<b>160,840</b>	<b>4.1%</b>	<b>\$1,688</b>	<b>\$9,508</b>	<b>4.2%</b>	<b>\$4,407</b>	<b>\$17,172</b>	<b>4.6%</b>
<b>AZ-1</b>	3,860	15,290	4.2%	\$208	\$784	4.1%	\$491	\$1,570	4.8%
<b>AZ-2</b>	2,210	14,380	3.7%	\$139	\$796	3.7%	\$298	\$1,359	4.0%
<b>AZ-3</b>	3,720	15,060	4.7%	\$194	\$827	4.5%	\$498	\$1,535	5.2%
<b>AZ-4</b>	4,980	15,720	5.1%	\$242	\$722	5.0%	\$728	\$1,593	6.3%
<b>AZ-5</b>	1,800	11,590	3.4%	\$95	\$693	3.5%	\$249	\$1,233	3.8%
<b>AZ-6</b>	4,350	30,670	4.2%	\$256	\$1,966	4.6%	\$513	\$3,154	4.7%
<b>AZ-7</b>	3,660	26,140	4.0%	\$271	\$1,713	4.3%	\$833	\$3,154	4.9%
<b>AZ-8</b>	1,580	8,390	3.4%	\$92	\$470	3.5%	\$190	\$846	3.7%
<b>AZ-9</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Arkansas</b>	<b>25,720</b>	<b>92,940</b>	<b>5.6%</b>	<b>\$989</b>	<b>\$4,443</b>	<b>5.5%</b>	<b>\$4,358</b>	<b>\$10,032</b>	<b>7.7%</b>
<b>AR-1</b>	6,500	20,220	5.6%	\$186	\$777	5.1%	\$999	\$2,029	8.0%
<b>AR-2</b>	5,840	23,320	5.0%	\$244	\$1,214	5.0%	\$765	\$2,383	6.0%
<b>AR-3</b>	4,690	22,810	4.9%	\$193	\$1,289	5.1%	\$786	\$2,457	6.3%
<b>AR-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>California</b>	<b>164,580</b>	<b>1,059,240</b>	<b>4.3%</b>	<b>\$24,217</b>	<b>\$94,412</b>	<b>5.1%</b>	<b>\$85,329</b>	<b>\$199,260</b>	<b>6.4%</b>
<b>CA-1</b>	4,180	17,350	4.6%	\$276	\$956	4.8%	\$1,560	\$2,720	7.9%
<b>CA-2</b>	3,210	20,060	4.1%	\$351	\$1,553	4.8%	\$1,373	\$3,259	6.1%
<b>CA-3</b>	3,820	17,920	4.1%	\$419	\$1,263	4.4%	\$1,704	\$3,195	6.4%
<b>CA-4</b>	4,170	21,640	5.1%	\$546	\$1,550	6.3%	\$1,840	\$3,469	8.4%
<b>CA-5</b>	4,400	25,070	6.4%	\$741	\$2,070	8.1%	\$3,679	\$5,801	13.2%
<b>CA-6</b>	2,400	16,520	3.6%	\$226	\$1,152	3.6%	\$1,190	\$2,640	5.4%
<b>CA-7</b>	1,810	13,560	3.4%	\$185	\$993	3.4%	\$895	\$2,145	4.9%
<b>CA-8</b>	3,480	12,650	4.3%	\$287	\$778	4.6%	\$804	\$1,690	5.7%
<b>CA-9</b>	2,780	14,310	4.5%	\$362	\$1,019	5.4%	\$1,521	\$2,657	8.2%
<b>CA-10</b>	2,510	14,000	4.3%	\$185	\$839	4.5%	\$1,833	\$2,900	9.3%
<b>CA-11</b>	11,200	56,720	10.7%	\$2,642	\$5,848	15.0%	\$11,304	\$16,404	23.0%
<b>CA-12</b>	1,750	33,160	3.4%	\$448	\$5,813	4.3%	\$713	\$8,873	4.1%
<b>CA-13</b>	2,830	20,850	4.3%	\$603	\$2,082	5.3%	\$1,421	\$3,718	6.0%
<b>CA-14</b>	1,920	19,210	3.4%	\$287	\$2,713	3.9%	\$479	\$4,791	3.8%
<b>CA-15</b>	2,570	19,130	4.0%	\$422	\$1,882	4.6%	\$1,220	\$3,535	5.3%
<b>CA-16</b>	2,910	14,740	4.4%	\$328	\$967	5.1%	\$1,395	\$2,438	8.0%
<b>CA-17</b>	1,800	25,420	3.5%	\$282	\$4,168	3.8%	\$1,030	\$7,284	4.0%
<b>CA-18</b>	2,110	24,360	3.6%	\$267	\$3,632	4.2%	\$629	\$6,040	4.2%
<b>CA-19</b>	1,660	14,160	3.4%	\$243	\$1,615	3.9%	\$536	\$2,733	4.0%
<b>CA-20</b>	2,040	14,170	3.6%	\$294	\$1,076	4.3%	\$921	\$2,141	5.4%
<b>CA-21</b>	6,690	21,380	5.9%	\$1,026	\$1,852	8.5%	\$3,556	\$4,977	13.3%
<b>CA-22</b>	2,450	15,190	4.0%	\$331	\$1,012	4.8%	\$1,400	\$2,519	7.4%
<b>CA-23</b>	8,290	27,040	8.0%	\$1,333	\$2,407	11.7%	\$3,838	\$5,580	16.2%
<b>CA-24</b>	4,060	24,360	4.6%	\$675	\$1,965	5.9%	\$2,148	\$4,168	7.9%
<b>CA-25</b>	1,980	11,900	4.0%	\$255	\$926	4.6%	\$628	\$1,739	5.2%
<b>CA-26</b>	2,110	14,960	4.0%	\$355	\$1,207	5.0%	\$999	\$2,384	6.0%
<b>CA-27</b>	2,060	17,740	3.5%	\$300	\$1,425	4.2%	\$795	\$2,645	4.7%
<b>CA-28</b>	1,670	20,100	3.3%	\$220	\$1,701	3.8%	\$576	\$3,091	4.1%
<b>CA-29</b>	1,030	8,970	3.3%	\$133	\$693	3.8%	\$385	\$1,365	4.3%
<b>CA-30</b>	2,430	23,170	3.6%	\$358	\$2,010	4.2%	\$896	\$3,712	4.5%
<b>CA-31</b>	2,110	13,470	4.1%	\$188	\$808	4.4%	\$661	\$1,678	5.5%
<b>CA-32</b>	2,120	15,220	4.1%	\$331	\$1,231	4.9%	\$1,081	\$2,603	6.1%
<b>CA-33</b>	5,150	43,000	4.8%	\$994	\$4,023	6.0%	\$5,185	\$10,007	8.7%
<b>CA-34</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Colorado</b>	<b>68,620</b>	<b>339,520</b>	<b>8.6%</b>	<b>\$16,976</b>	<b>\$34,052</b>	<b>13.4%</b>	<b>\$19,222</b>	<b>\$46,116</b>	<b>11.7%</b>
<b>CO-1</b>	15,350	99,060	11.9%	\$11,052	\$17,091	24.2%	\$9,487	\$18,917	18.4%
<b>CO-2</b>	6,690	40,280	6.0%	\$723	\$2,852	6.9%	\$1,250	\$4,582	7.0%
<b>CO-3</b>	12,810	44,910	9.8%	\$1,180	\$2,611	12.2%	\$1,832	\$4,218	12.2%
<b>CO-4</b>	16,340	59,450	10.7%	\$1,911	\$4,481	14.0%	\$2,272	\$6,347	12.5%
<b>CO-5</b>	5,210	27,730	5.7%	\$386	\$1,591	5.8%	\$752	\$2,679	6.4%
<b>CO-6</b>	6,300	35,900	7.6%	\$1,036	\$3,104	9.7%	\$1,917	\$5,128	10.1%
<b>CO-7</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Connecticut</b>	<b>14,630</b>	<b>86,920</b>	<b>3.7%</b>	<b>\$2,139</b>	<b>\$8,384</b>	<b>4.7%</b>	<b>\$4,171</b>	<b>\$13,779</b>	<b>4.8%</b>
<b>CT-1</b>	2,580	18,590	3.3%	\$233	\$1,604	3.6%	\$612	\$2,914	4.0%
<b>CT-2</b>	3,220	14,050	3.6%	\$280	\$994	4.0%	\$593	\$1,747	4.0%
<b>CT-3</b>	3,230	19,570	4.4%	\$658	\$1,863	6.1%	\$1,329	\$3,189	6.3%
<b>CT-4</b>	2,860	19,060	3.8%	\$703	\$2,680	5.4%	\$1,044	\$3,788	5.2%
<b>CT-5</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Delaware</b>	<b>5,450</b>	<b>26,590</b>	<b>4.4%</b>	<b>\$512</b>	<b>\$1,920</b>	<b>4.9%</b>	<b>\$1,332</b>	<b>\$4,129</b>	<b>5.4%</b>
<b>DE-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>District of Columbia</b>	<b>2,590</b>	<b>23,710</b>	<b>2.6%</b>	<b>\$354</b>	<b>\$2,855</b>	<b>2.7%</b>	<b>\$482</b>	<b>\$3,935</b>	<b>2.7%</b>
<b>DC-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Florida</b>	<b>70,270</b>	<b>460,580</b>	<b>3.6%</b>	<b>\$2,958</b>	<b>\$24,448</b>	<b>3.6%</b>	<b>\$13,803</b>	<b>\$49,472</b>	<b>4.5%</b>
<b>FL-1</b>	4,180	17,530	3.7%	\$122	\$770	3.2%	\$676	\$1,809	4.6%
<b>FL-2</b>	4,150	16,080	4.2%	\$138	\$666	3.8%	\$571	\$1,485	5.3%
<b>FL-3</b>	4,040	15,830	4.4%	\$124	\$641	3.9%	\$521	\$1,457	5.2%
<b>FL-4</b>	4,600	24,880	4.1%	\$179	\$1,444	4.0%	\$706	\$2,762	4.8%
<b>FL-5</b>	3,950	16,940	4.1%	\$145	\$910	3.9%	\$705	\$1,985	5.3%
<b>FL-6</b>	4,390	16,610	4.8%	\$77	\$611	4.2%	\$319	\$1,212	5.1%
<b>FL-7</b>	1,830	19,040	3.2%	\$72	\$1,113	3.4%	\$273	\$1,943	3.7%
<b>FL-8</b>	2,400	14,830	3.6%	\$120	\$815	3.7%	\$698	\$1,827	5.3%
<b>FL-9</b>	2,350	12,890	3.5%	\$86	\$587	3.4%	\$400	\$1,272	4.3%
<b>FL-10</b>	2,200	24,440	3.2%	\$87	\$1,340	3.4%	\$466	\$2,491	3.9%
<b>FL-11</b>	2,400	12,130	3.7%	\$79	\$477	3.6%	\$221	\$944	4.1%
<b>FL-12</b>	1,700	11,430	3.3%	\$61	\$534	3.3%	\$150	\$970	3.6%
<b>FL-13</b>	1,780	16,210	3.4%	\$71	\$920	3.6%	\$269	\$1,657	3.9%
<b>FL-14</b>	3,280	25,610	3.6%	\$245	\$1,710	4.0%	\$1,238	\$3,664	5.1%
<b>FL-15</b>	3,050	16,890	4.1%	\$178	\$941	4.2%	\$986	\$2,287	6.0%
<b>FL-16</b>	2,740	18,030	3.9%	\$72	\$891	3.9%	\$258	\$1,597	4.2%
<b>FL-17</b>	1,930	10,640	3.6%	\$70	\$477	3.5%	\$390	\$1,114	4.8%
<b>FL-18</b>	2,400	16,540	3.7%	\$100	\$825	3.8%	\$475	\$1,674	4.7%
<b>FL-19</b>	2,530	18,560	3.5%	\$88	\$962	3.5%	\$327	\$1,717	4.0%
<b>FL-20</b>	1,890	16,920	3.4%	\$100	\$988	3.6%	\$489	\$1,962	4.3%
<b>FL-21</b>	1,200	11,890	3.2%	\$68	\$654	3.3%	\$220	\$1,187	3.7%
<b>FL-22</b>	1,700	21,830	3.3%	\$124	\$1,328	3.7%	\$539	\$2,427	4.2%
<b>FL-23</b>	1,670	16,160	3.1%	\$101	\$897	3.3%	\$418	\$1,783	3.9%
<b>FL-24</b>	1,640	15,440	3.1%	\$101	\$823	3.3%	\$562	\$1,781	4.2%
<b>FL-25</b>	3,590	23,150	3.8%	\$231	\$1,358	4.0%	\$1,326	\$3,211	5.6%
<b>FL-26</b>	1,420	9,740	3.0%	\$61	\$506	2.9%	\$265	\$1,047	3.6%
<b>FL-27</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Georgia</b>	<b>43,370</b>	<b>242,970</b>	<b>3.8%</b>	<b>\$2,678</b>	<b>\$14,819</b>	<b>4.0%</b>	<b>\$10,100</b>	<b>\$30,845</b>	<b>4.9%</b>
<b>GA-1</b>	4,710	17,890	4.2%	\$296	\$935	4.2%	\$1,276	\$2,412	6.4%
<b>GA-2</b>	2,910	13,680	3.6%	\$124	\$648	3.4%	\$858	\$1,798	5.7%
<b>GA-3</b>	2,990	15,270	4.0%	\$153	\$693	4.2%	\$618	\$1,547	5.6%
<b>GA-4</b>	1,920	10,890	3.7%	\$89	\$556	3.7%	\$212	\$1,036	4.1%
<b>GA-5</b>	3,340	27,510	3.5%	\$340	\$2,452	4.0%	\$971	\$4,691	4.4%
<b>GA-6</b>	2,560	27,060	3.4%	\$275	\$2,409	3.9%	\$783	\$4,105	4.2%
<b>GA-7</b>	2,650	19,420	3.8%	\$213	\$1,313	4.3%	\$600	\$2,404	4.7%
<b>GA-8</b>	3,330	13,590	3.8%	\$131	\$560	3.4%	\$756	\$1,544	5.6%
<b>GA-9</b>	3,560	17,940	4.1%	\$196	\$891	4.3%	\$1,319	\$2,497	7.2%
<b>GA-10</b>	3,050	14,850	3.9%	\$141	\$659	4.0%	\$550	\$1,481	5.2%
<b>GA-11</b>	3,150	22,350	3.8%	\$236	\$1,547	4.2%	\$670	\$2,794	4.7%
<b>GA-12</b>	3,850	15,390	3.9%	\$153	\$712	3.5%	\$649	\$1,623	5.0%
<b>GA-13</b>	2,900	15,120	3.8%	\$209	\$881	4.1%	\$497	\$1,793	4.5%
<b>GA-14</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Hawaii</b>	<b>4,470</b>	<b>29,010</b>	<b>3.1%</b>	<b>\$327</b>	<b>\$1,792</b>	<b>3.1%</b>	<b>\$1,553</b>	<b>\$4,158</b>	<b>4.3%</b>
<b>HI-1</b>	1,650	15,320	2.9%	\$152	\$1,049	3.0%	\$726	\$2,257	4.0%
<b>HI-2</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Idaho</b>	<b>9,920</b>	<b>42,730</b>	<b>4.0%</b>	<b>\$486</b>	<b>\$2,140</b>	<b>4.0%</b>	<b>\$1,380</b>	<b>\$4,062</b>	<b>4.9%</b>
<b>ID-1</b>	4,210	19,410	3.8%	\$207	\$943	3.8%	\$634	\$1,862	4.7%
<b>ID-2</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Illinois</b>	<b>61,620</b>	<b>356,300</b>	<b>4.5%</b>	<b>\$4,954</b>	<b>\$26,141</b>	<b>4.8%</b>	<b>\$19,092</b>	<b>\$53,538</b>	<b>6.0%</b>
<b>IL-1</b>	1,360	9,470	3.5%	\$106	\$616	3.6%	\$292	\$1,176	4.2%
<b>IL-2</b>	2,250	11,100	3.9%	\$118	\$689	3.8%	\$445	\$1,412	4.7%
<b>IL-3</b>	2,280	16,090	4.3%	\$307	\$1,253	5.0%	\$1,259	\$2,802	6.8%
<b>IL-4</b>	1,320	9,670	3.9%	\$140	\$736	4.3%	\$457	\$1,469	5.1%
<b>IL-5</b>	1,590	19,890	3.5%	\$156	\$1,575	3.8%	\$531	\$2,827	4.2%
<b>IL-6</b>	2,080	19,810	4.1%	\$252	\$1,630	4.9%	\$648	\$2,772	5.3%
<b>IL-7</b>	2,800	44,570	3.8%	\$346	\$4,637	4.6%	\$1,056	\$7,564	4.8%
<b>IL-8</b>	1,880	19,390	3.7%	\$181	\$1,626	4.2%	\$650	\$2,960	4.7%
<b>IL-9</b>	1,280	16,300	3.4%	\$113	\$1,293	3.7%	\$420	\$2,321	4.1%
<b>IL-10</b>	1,930	17,110	3.8%	\$158	\$1,490	4.0%	\$497	\$2,717	4.3%
<b>IL-11</b>	2,950	21,190	5.1%	\$396	\$1,624	6.1%	\$1,871	\$3,834	8.7%
<b>IL-12</b>	5,480	21,360	6.0%	\$405	\$1,234	6.6%	\$1,687	\$3,070	9.9%
<b>IL-13</b>	4,770	19,980	5.1%	\$301	\$1,131	5.2%	\$1,589	\$3,026	8.3%
<b>IL-14</b>	3,650	22,360	4.7%	\$371	\$1,571	5.3%	\$1,675	\$3,625	7.3%
<b>IL-15</b>	11,120	30,540	8.7%	\$807	\$1,739	9.9%	\$2,882	\$4,478	15.1%
<b>IL-16</b>	5,920	21,060	6.0%	\$393	\$1,213	6.4%	\$1,842	\$3,250	9.9%
<b>IL-17</b>	3,990	17,830	4.8%	\$183	\$1,067	4.8%	\$565	\$2,026	5.6%
<b>IL-18</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Indiana</b>	<b>39,340</b>	<b>186,810</b>	<b>4.7%</b>	<b>\$2,433</b>	<b>\$11,121</b>	<b>4.8%</b>	<b>\$10,481</b>	<b>\$24,864</b>	<b>6.5%</b>
<b>IN-1</b>	5,730	26,660	7.1%	\$593	\$1,751	8.6%	\$4,672	\$6,608	18.0%
<b>IN-2</b>	3,750	19,350	4.5%	\$199	\$1,091	4.6%	\$672	\$2,055	5.6%
<b>IN-3</b>	5,040	22,780	4.8%	\$245	\$1,196	4.8%	\$867	\$2,418	6.1%
<b>IN-4</b>	4,310	17,890	4.5%	\$192	\$892	4.4%	\$552	\$1,765	5.1%
<b>IN-5</b>	3,570	22,280	3.9%	\$211	\$1,514	4.2%	\$558	\$2,632	4.6%
<b>IN-6</b>	4,700	18,470	4.7%	\$204	\$927	4.7%	\$586	\$1,818	5.5%
<b>IN-7</b>	3,140	19,950	3.7%	\$285	\$1,646	4.0%	\$857	\$3,137	4.5%
<b>IN-8</b>	5,650	23,590	5.2%	\$357	\$1,319	5.4%	\$1,309	\$2,951	7.2%
<b>IN-9</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Iowa</b>	<b>27,130</b>	<b>97,070</b>	<b>4.6%</b>	<b>\$1,001</b>	<b>\$4,957</b>	<b>4.3%</b>	<b>\$3,005</b>	<b>\$9,773</b>	<b>5.0%</b>
<b>IA-1</b>	6,460	23,570	5.0%	\$227	\$1,195	4.8%	\$725	\$2,377	5.5%
<b>IA-2</b>	6,710	23,960	4.5%	\$227	\$1,147	4.1%	\$620	\$2,165	4.7%
<b>IA-3</b>	6,330	25,210	4.4%	\$292	\$1,473	4.2%	\$891	\$3,004	4.8%
<b>IA-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Kansas</b>	<b>49,500</b>	<b>154,860</b>	<b>8.0%</b>	<b>\$3,259</b>	<b>\$9,745</b>	<b>8.8%</b>	<b>\$8,050</b>	<b>\$18,212</b>	<b>10.3%</b>
<b>KS-1</b>	19,790	47,300	9.7%	\$865	\$2,241	9.5%	\$1,930	\$4,147	11.3%
<b>KS-2</b>	8,860	28,530	6.9%	\$394	\$1,465	7.2%	\$1,421	\$3,178	9.5%
<b>KS-3</b>	5,880	32,760	5.6%	\$422	\$2,612	6.4%	\$906	\$4,200	6.6%
<b>KS-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Kentucky</b>	<b>28,870</b>	<b>117,400</b>	<b>4.6%</b>	<b>\$1,275</b>	<b>\$6,127</b>	<b>4.6%</b>	<b>\$6,466</b>	<b>\$14,246</b>	<b>6.6%</b>
<b>KY-1</b>	6,120	19,820	4.7%	\$231	\$900	4.4%	\$1,167	\$2,265	6.8%
<b>KY-2</b>	5,280	20,360	4.9%	\$226	\$977	5.0%	\$1,173	\$2,412	7.3%
<b>KY-3</b>	2,410	19,000	3.5%	\$131	\$1,296	3.8%	\$480	\$2,311	4.3%
<b>KY-4</b>	4,970	21,910	4.8%	\$267	\$1,253	5.2%	\$1,431	\$2,984	7.6%
<b>KY-5</b>	6,130	18,370	6.4%	\$269	\$797	6.7%	\$1,636	\$2,505	12.7%
<b>KY-6</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Louisiana</b>	<b>105,310</b>	<b>345,760</b>	<b>12.6%</b>	<b>\$12,656</b>	<b>\$24,979</b>	<b>16.8%</b>	<b>\$38,619</b>	<b>\$59,188</b>	<b>23.0%</b>
<b>LA-1</b>	15,010	63,070	12.5%	\$3,830	\$6,299	21.6%	\$7,777	\$11,782	25.6%
<b>LA-2</b>	13,920	58,710	10.8%	\$2,056	\$4,728	14.4%	\$10,554	\$14,947	24.1%
<b>LA-3</b>	28,170	79,990	17.1%	\$2,898	\$5,410	21.7%	\$8,163	\$12,415	27.6%
<b>LA-4</b>	22,470	58,500	14.9%	\$1,691	\$3,316	17.1%	\$4,368	\$7,212	22.2%
<b>LA-5</b>	11,000	33,770	9.4%	\$644	\$1,682	10.3%	\$1,944	\$3,730	14.0%
<b>LA-6</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Maine</b>	<b>12,060</b>	<b>41,440</b>	<b>4.8%</b>	<b>\$547</b>	<b>\$2,068</b>	<b>4.6%</b>	<b>\$1,675</b>	<b>\$4,105</b>	<b>6.1%</b>
<b>ME-1</b>	5,060	21,100	4.4%	\$253	\$1,152	4.3%	\$698	\$2,105	5.2%
<b>ME-2</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Maryland</b>	<b>19,130</b>	<b>122,930</b>	<b>3.2%</b>	<b>\$1,305</b>	<b>\$8,644</b>	<b>3.3%</b>	<b>\$4,848</b>	<b>\$16,707</b>	<b>3.9%</b>
<b>MD-1</b>	3,150	15,450	3.6%	\$167	\$809	3.6%	\$675	\$1,763	4.7%
<b>MD-2</b>	2,370	15,340	3.4%	\$157	\$1,119	3.5%	\$685	\$2,284	4.3%
<b>MD-3</b>	2,250	19,660	3.0%	\$154	\$1,548	3.2%	\$566	\$2,794	3.6%
<b>MD-4</b>	1,850	12,220	3.0%	\$119	\$719	2.8%	\$317	\$1,303	3.0%
<b>MD-5</b>	2,650	13,840	3.3%	\$180	\$770	3.0%	\$1,033	\$2,044	4.6%
<b>MD-6</b>	3,180	15,460	3.7%	\$254	\$1,175	3.8%	\$836	\$2,278	4.7%
<b>MD-7</b>	1,770	14,350	3.1%	\$112	\$1,084	3.4%	\$378	\$1,935	3.8%
<b>MD-8</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Massachusetts</b>	<b>25,570</b>	<b>171,330</b>	<b>3.5%</b>	<b>\$2,177</b>	<b>\$14,730</b>	<b>3.8%</b>	<b>\$5,568</b>	<b>\$24,515</b>	<b>4.1%</b>
<b>MA-1</b>	3,220	16,200	3.8%	\$199	\$939	4.0%	\$505	\$1,680	4.6%
<b>MA-2</b>	3,020	16,850	3.7%	\$211	\$1,058	3.9%	\$672	\$2,026	4.7%
<b>MA-3</b>	2,220	15,250	3.4%	\$171	\$1,277	3.7%	\$385	\$2,025	3.8%
<b>MA-4</b>	2,670	19,200	3.5%	\$195	\$1,464	3.8%	\$483	\$2,350	4.0%
<b>MA-5</b>	2,340	18,760	3.3%	\$275	\$1,780	3.6%	\$560	\$2,906	3.8%
<b>MA-6</b>	3,050	20,660	3.6%	\$206	\$1,700	3.9%	\$413	\$2,704	3.9%
<b>MA-7</b>	2,310	21,660	2.9%	\$295	\$2,577	3.4%	\$781	\$4,179	3.6%
<b>MA-8</b>	3,160	24,960	3.4%	\$349	\$2,822	4.1%	\$1,085	\$4,685	4.5%
<b>MA-9</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Michigan</b>	<b>48,740</b>	<b>250,770</b>	<b>4.3%</b>	<b>\$3,298</b>	<b>\$15,868</b>	<b>4.7%</b>	<b>\$8,842</b>	<b>\$28,489</b>	<b>5.3%</b>
<b>MI-1</b>	7,370	23,000	6.0%	\$415	\$1,105	6.5%	\$925	\$2,091	7.5%
<b>MI-2</b>	4,070	20,730	4.6%	\$241	\$1,178	4.9%	\$902	\$2,338	6.2%
<b>MI-3</b>	3,040	18,510	4.1%	\$200	\$1,132	4.5%	\$616	\$2,037	5.2%
<b>MI-4</b>	4,650	16,890	5.1%	\$276	\$895	5.6%	\$731	\$1,718	6.6%
<b>MI-5</b>	3,340	14,300	4.9%	\$209	\$764	5.2%	\$764	\$1,666	6.9%
<b>MI-6</b>	3,280	17,730	4.2%	\$237	\$1,043	4.5%	\$683	\$1,992	5.2%
<b>MI-7</b>	4,070	18,380	4.3%	\$214	\$1,082	4.4%	\$529	\$1,950	4.8%
<b>MI-8</b>	3,530	17,100	4.3%	\$195	\$1,031	4.5%	\$615	\$1,960	5.2%
<b>MI-9</b>	1,840	16,830	3.6%	\$135	\$1,195	3.9%	\$222	\$1,842	3.9%
<b>MI-10</b>	3,470	15,400	4.5%	\$216	\$870	4.9%	\$465	\$1,506	5.2%
<b>MI-11</b>	2,200	20,640	3.8%	\$212	\$1,683	4.4%	\$474	\$2,609	4.5%
<b>MI-12</b>	2,560	16,330	3.7%	\$214	\$1,158	4.1%	\$548	\$2,025	4.6%
<b>MI-13</b>	3,120	16,480	4.7%	\$299	\$1,236	5.4%	\$764	\$2,222	6.0%
<b>MI-14</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Minnesota</b>	<b>37,790</b>	<b>172,880</b>	<b>4.5%</b>	<b>\$2,220</b>	<b>\$11,423</b>	<b>4.7%</b>	<b>\$8,620</b>	<b>\$22,980</b>	<b>6.0%</b>
<b>MN-1</b>	5,980	21,430	4.8%	\$244	\$1,085	4.5%	\$756	\$2,119	5.5%
<b>MN-2</b>	5,230	24,910	6.4%	\$524	\$1,765	7.5%	\$3,713	\$5,699	13.9%
<b>MN-3</b>	3,460	25,120	3.9%	\$328	\$2,239	4.4%	\$606	\$3,473	4.4%
<b>MN-4</b>	2,580	19,010	3.7%	\$158	\$1,316	3.9%	\$779	\$2,522	5.0%
<b>MN-5</b>	2,960	25,630	3.8%	\$276	\$2,314	4.3%	\$681	\$3,779	4.6%
<b>MN-6</b>	4,340	17,170	4.6%	\$162	\$896	4.4%	\$450	\$1,599	5.1%
<b>MN-7</b>	6,900	20,680	5.1%	\$291	\$953	4.9%	\$877	\$1,980	6.3%
<b>MN-8</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Mississippi</b>	<b>32,300</b>	<b>103,370</b>	<b>6.4%</b>	<b>\$1,983</b>	<b>\$5,097</b>	<b>7.1%</b>	<b>\$6,484</b>	<b>\$11,773</b>	<b>10.2%</b>
<b>MS-1</b>	7,430	25,180	5.7%	\$337	\$1,106	5.9%	\$1,041	\$2,331	7.8%
<b>MS-2</b>	6,990	22,570	6.2%	\$465	\$1,147	7.1%	\$1,726	\$2,906	10.9%
<b>MS-3</b>	9,660	30,950	6.9%	\$653	\$1,618	8.0%	\$1,905	\$3,521	11.0%
<b>MS-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Missouri</b>	<b>41,700</b>	<b>176,520</b>	<b>4.6%</b>	<b>\$2,079</b>	<b>\$10,003</b>	<b>4.7%</b>	<b>\$5,660</b>	<b>\$18,271</b>	<b>5.6%</b>
<b>MO-1</b>	4,830	27,750	4.2%	\$432	\$2,225	4.7%	\$1,055	\$3,812	5.4%
<b>MO-2</b>	3,820	23,190	4.1%	\$216	\$1,627	4.4%	\$508	\$2,673	4.8%
<b>MO-3</b>	6,020	22,190	5.0%	\$223	\$1,026	4.8%	\$596	\$1,929	5.6%
<b>MO-4</b>	5,090	16,870	4.7%	\$206	\$705	4.5%	\$652	\$1,486	6.1%
<b>MO-5</b>	4,010	21,840	4.1%	\$238	\$1,469	4.3%	\$600	\$2,496	4.9%
<b>MO-6</b>	6,610	23,150	5.2%	\$307	\$1,129	5.2%	\$866	\$2,253	6.4%
<b>MO-7</b>	5,590	23,420	4.9%	\$231	\$1,097	5.0%	\$773	\$2,146	6.3%
<b>MO-8</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Montana</b>	<b>14,600</b>	<b>53,440</b>	<b>7.7%</b>	<b>\$1,323</b>	<b>\$3,210</b>	<b>9.7%</b>	<b>\$3,303</b>	<b>\$6,291</b>	<b>11.9%</b>
<b>MT-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Nebraska</b>	<b>13,790</b>	<b>69,660</b>	<b>5.2%</b>	<b>\$3,150</b>	<b>\$6,495</b>	<b>8.4%</b>	<b>\$4,885</b>	<b>\$10,193</b>	<b>7.8%</b>
<b>NE-1</b>	4,070	18,000	4.3%	\$339	\$1,119	5.0%	\$661	\$1,938	5.2%
<b>NE-2</b>	2,690	28,110	5.4%	\$2,147	\$3,930	11.1%	\$2,570	\$5,302	9.0%
<b>NE-3</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Nevada</b>	<b>14,140</b>	<b>74,840</b>	<b>3.9%</b>	<b>\$672</b>	<b>\$4,091</b>	<b>3.9%</b>	<b>\$2,656</b>	<b>\$8,630</b>	<b>4.8%</b>
<b>NV-1</b>	4,080	26,090	3.7%	\$221	\$1,413	3.9%	\$658	\$2,696	4.4%
<b>NV-2</b>	4,720	21,280	4.5%	\$206	\$1,219	4.3%	\$1,282	\$3,011	6.4%
<b>NV-3</b>	2,600	16,550	3.6%	\$126	\$888	3.6%	\$340	\$1,692	3.9%
<b>NV-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>New Hampshire</b>	<b>8,640</b>	<b>38,390</b>	<b>4.2%</b>	<b>\$584</b>	<b>\$2,661</b>	<b>4.6%</b>	<b>\$1,292</b>	<b>\$4,468</b>	<b>5.1%</b>
<b>NH-1</b>	4,410	20,080	4.2%	\$313	\$1,422	4.6%	\$721	\$2,401	5.2%
<b>NH-2</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>New Jersey</b>	<b>36,890</b>	<b>222,590</b>	<b>3.9%</b>	<b>\$3,877</b>	<b>\$18,238</b>	<b>4.4%</b>	<b>\$16,659</b>	<b>\$38,604</b>	<b>6.1%</b>
<b>NJ-1</b>	4,340	21,410	5.5%	\$418	\$1,473	6.3%	\$3,275	\$4,894	13.0%
<b>NJ-2</b>	4,130	17,530	4.3%	\$316	\$1,036	4.7%	\$1,522	\$2,687	7.6%
<b>NJ-3</b>	3,930	18,620	4.1%	\$267	\$1,216	4.3%	\$645	\$2,148	4.8%
<b>NJ-4</b>	3,360	18,330	4.3%	\$339	\$1,275	5.0%	\$1,258	\$2,723	6.8%
<b>NJ-5</b>	3,250	18,570	3.9%	\$348	\$1,525	4.5%	\$965	\$2,713	5.4%
<b>NJ-6</b>	2,430	17,560	3.5%	\$177	\$1,349	3.8%	\$925	\$2,747	4.9%
<b>NJ-7</b>	3,920	24,570	4.1%	\$577	\$2,509	4.8%	\$2,252	\$5,121	6.5%
<b>NJ-8</b>	2,000	15,030	3.4%	\$230	\$1,453	4.0%	\$934	\$2,772	5.1%
<b>NJ-9</b>	2,090	17,570	3.5%	\$232	\$1,386	4.0%	\$903	\$2,647	5.0%
<b>NJ-10</b>	2,230	13,750	3.9%	\$316	\$1,246	4.5%	\$1,700	\$3,188	7.1%
<b>NJ-11</b>	2,490	20,990	3.5%	\$275	\$2,024	3.9%	\$1,258	\$3,840	4.9%
<b>NJ-12</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>New Mexico</b>	<b>46,010</b>	<b>114,850</b>	<b>10.2%</b>	<b>\$3,585</b>	<b>\$6,862</b>	<b>11.6%</b>	<b>\$12,906</b>	<b>\$18,843</b>	<b>17.9%</b>
<b>NM-1</b>	5,400	21,600	5.1%	\$307	\$1,220	5.3%	\$677	\$2,228	6.0%
<b>NM-2</b>	28,620	61,720	17.5%	\$2,490	\$3,984	21.5%	\$8,726	\$11,502	32.2%
<b>NM-3</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>New York</b>	<b>56,950</b>	<b>417,820</b>	<b>3.2%</b>	<b>\$7,197</b>	<b>\$40,647</b>	<b>3.9%</b>	<b>\$14,365</b>	<b>\$70,551</b>	<b>4.0%</b>
<b>NY-1</b>	2,140	13,610	3.3%	\$326	\$1,090	3.9%	\$746	\$2,000	4.5%
<b>NY-2</b>	1,740	11,860	3.3%	\$183	\$899	3.6%	\$619	\$1,792	4.4%
<b>NY-3</b>	2,530	22,230	3.5%	\$382	\$1,858	4.1%	\$1,127	\$3,514	4.7%
<b>NY-4</b>	1,830	14,500	3.5%	\$278	\$1,166	4.1%	\$661	\$2,119	4.6%
<b>NY-5</b>	1,340	7,870	2.8%	\$61	\$465	2.5%	\$117	\$833	2.7%
<b>NY-6</b>	1,260	9,030	2.8%	\$98	\$542	2.9%	\$175	\$938	3.1%
<b>NY-7</b>	1,530	16,830	3.1%	\$218	\$1,802	3.9%	\$471	\$3,097	3.9%
<b>NY-8</b>	1,150	9,450	3.2%	\$164	\$583	3.8%	\$346	\$1,174	4.2%
<b>NY-9</b>	650	6,420	2.5%	\$68	\$364	2.6%	\$121	\$659	2.8%
<b>NY-10</b>	1,340	36,100	2.8%	\$404	\$6,248	3.8%	\$613	\$10,430	3.7%
<b>NY-11</b>	1,600	10,870	3.3%	\$208	\$713	3.9%	\$582	\$1,456	4.8%
<b>NY-12</b>	2,240	57,260	3.0%	\$1,610	\$11,348	4.3%	\$1,575	\$17,488	3.9%
<b>NY-13</b>	310	6,110	2.1%	\$218	\$729	2.8%	\$138	\$1,183	2.4%
<b>NY-14</b>	1,360	11,390	2.9%	\$92	\$688	2.9%	\$190	\$1,274	3.1%
<b>NY-15</b>	730	7,010	2.7%	\$156	\$526	3.4%	\$178	\$769	3.2%
<b>NY-16</b>	1,220	9,320	3.0%	\$89	\$635	3.0%	\$176	\$1,065	3.1%
<b>NY-17</b>	1,870	16,560	3.2%	\$133	\$1,357	3.4%	\$299	\$2,234	3.5%
<b>NY-18</b>	2,390	12,320	3.4%	\$161	\$771	3.4%	\$617	\$1,635	4.4%
<b>NY-19</b>	4,410	15,740	4.0%	\$224	\$796	3.9%	\$517	\$1,531	4.4%
<b>NY-20</b>	3,230	16,890	3.4%	\$200	\$1,126	3.4%	\$593	\$2,216	4.0%
<b>NY-21</b>	4,490	14,890	4.0%	\$236	\$772	3.8%	\$632	\$1,587	4.6%
<b>NY-22</b>	2,880	12,460	3.7%	\$174	\$682	3.8%	\$603	\$1,501	5.0%
<b>NY-23</b>	4,540	16,950	4.3%	\$330	\$1,015	4.8%	\$144	\$1,326	3.8%
<b>NY-24</b>	2,860	16,580	3.8%	\$326	\$1,184	4.5%	\$1,087	\$2,518	5.8%
<b>NY-25</b>	1,650	14,730	3.2%	\$95	\$974	3.5%	\$309	\$1,738	3.8%
<b>NY-26</b>	2,280	15,630	3.6%	\$288	\$1,155	4.3%	\$707	\$2,257	4.8%
<b>NY-27</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>North Carolina</b>	<b>47,920</b>	<b>235,270</b>	<b>3.8%</b>	<b>\$2,489</b>	<b>\$13,596</b>	<b>3.9%</b>	<b>\$7,426</b>	<b>\$26,644</b>	<b>4.5%</b>
<b>NC-1</b>	3,510	17,050	3.7%	\$155	\$999	3.7%	\$499	\$1,982	4.3%
<b>NC-2</b>	3,600	15,670	3.9%	\$175	\$884	4.0%	\$434	\$1,754	4.4%
<b>NC-3</b>	3,560	13,590	3.2%	\$137	\$566	2.7%	\$502	\$1,258	3.7%
<b>NC-4</b>	2,950	22,420	3.3%	\$181	\$1,653	3.5%	\$416	\$2,963	3.7%
<b>NC-5</b>	3,670	18,080	4.0%	\$193	\$956	4.2%	\$462	\$1,841	4.6%
<b>NC-6</b>	4,220	18,530	4.1%	\$189	\$935	4.1%	\$536	\$1,859	4.7%
<b>NC-7</b>	4,310	17,210	4.1%	\$183	\$780	4.0%	\$716	\$1,794	5.2%
<b>NC-8</b>	4,290	19,530	3.6%	\$199	\$1,042	3.3%	\$561	\$1,964	4.0%
<b>NC-9</b>	3,460	16,140	4.0%	\$201	\$980	4.2%	\$805	\$2,054	5.6%
<b>NC-10</b>	3,710	18,110	4.1%	\$180	\$875	4.2%	\$458	\$1,622	4.8%
<b>NC-11</b>	3,840	15,920	4.2%	\$170	\$690	4.2%	\$575	\$1,449	5.5%
<b>NC-12</b>	3,470	26,360	3.6%	\$362	\$2,353	4.1%	\$975	\$4,406	4.6%
<b>NC-13</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>North Dakota</b>	<b>36,970</b>	<b>87,380</b>	<b>14.9%</b>	<b>\$3,783</b>	<b>\$6,659</b>	<b>19.4%</b>	<b>\$8,931</b>	<b>\$13,458</b>	<b>23.5%</b>
<b>ND-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Ohio</b>	<b>78,870</b>	<b>375,210</b>	<b>5.3%</b>	<b>\$6,510</b>	<b>\$24,651</b>	<b>5.9%</b>	<b>\$29,151</b>	<b>\$58,763</b>	<b>8.5%</b>
<b>OH-1</b>	3,290	22,870	4.3%	\$326	\$1,796	4.9%	\$1,000	\$3,423	5.5%
<b>OH-2</b>	3,670	20,920	4.7%	\$359	\$1,573	5.5%	\$993	\$3,025	6.2%
<b>OH-3</b>	3,320	21,670	4.2%	\$369	\$1,626	4.9%	\$1,068	\$3,198	5.8%
<b>OH-4</b>	5,390	23,970	5.6%	\$390	\$1,453	6.1%	\$1,633	\$3,342	8.6%
<b>OH-5</b>	6,350	27,560	6.0%	\$613	\$1,799	7.3%	\$1,858	\$3,709	9.5%
<b>OH-6</b>	9,260	26,610	7.7%	\$628	\$1,435	8.8%	\$4,969	\$6,353	20.8%
<b>OH-7</b>	8,250	29,530	6.8%	\$585	\$1,682	7.8%	\$3,588	\$5,356	14.7%
<b>OH-8</b>	4,760	20,960	5.1%	\$265	\$1,199	5.3%	\$922	\$2,492	6.4%
<b>OH-9</b>	4,110	20,700	6.4%	\$484	\$1,519	7.4%	\$3,503	\$5,165	14.8%
<b>OH-10</b>	2,870	17,380	4.2%	\$200	\$1,060	4.3%	\$878	\$2,259	5.6%
<b>OH-11</b>	3,390	25,510	4.3%	\$376	\$1,992	5.1%	\$1,005	\$3,632	5.7%
<b>OH-12</b>	4,960	25,790	5.0%	\$388	\$1,709	5.7%	\$1,745	\$3,836	7.9%
<b>OH-13</b>	3,760	17,610	5.1%	\$257	\$1,018	5.7%	\$1,085	\$2,311	8.1%
<b>OH-14</b>	4,630	24,710	4.9%	\$335	\$1,566	5.5%	\$1,507	\$3,514	7.4%
<b>OH-15</b>	5,150	24,720	5.2%	\$439	\$1,614	5.9%	\$1,331	\$3,304	7.3%
<b>OH-16</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Oklahoma</b>	<b>134,180</b>	<b>389,800</b>	<b>16.7%</b>	<b>\$19,404</b>	<b>\$32,752</b>	<b>25.3%</b>	<b>\$37,010</b>	<b>\$57,650</b>	<b>28.5%</b>
<b>OK-1</b>	25,910	108,610	20.5%	\$9,420	\$14,073	37.4%	\$15,596	\$22,462	39.9%
<b>OK-2</b>	14,100	38,410	10.4%	\$849	\$1,815	12.0%	\$1,775	\$3,438	13.5%
<b>OK-3</b>	39,220	87,760	20.3%	\$3,088	\$5,259	26.1%	\$6,428	\$10,081	29.8%
<b>OK-4</b>	19,710	50,770	12.8%	\$1,240	\$2,613	14.3%	\$2,644	\$4,890	16.9%
<b>OK-5</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Oregon</b>	<b>17,520</b>	<b>98,790</b>	<b>3.8%</b>	<b>\$1,131</b>	<b>\$6,229</b>	<b>3.9%</b>	<b>\$3,056</b>	<b>\$11,207</b>	<b>4.4%</b>
<b>OR-1</b>	2,900	21,330	3.7%	\$229	\$1,658	4.0%	\$542	\$2,838	4.2%
<b>OR-2</b>	4,990	19,910	4.2%	\$241	\$994	4.3%	\$587	\$1,785	4.9%
<b>OR-3</b>	3,290	23,950	3.6%	\$314	\$1,748	3.9%	\$927	\$3,213	4.5%
<b>OR-4</b>	3,460	16,440	3.9%	\$184	\$857	3.9%	\$525	\$1,612	4.6%
<b>OR-5</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Pennsylvania</b>	<b>102,460</b>	<b>480,250</b>	<b>6.1%</b>	<b>\$14,536</b>	<b>\$40,472</b>	<b>7.9%</b>	<b>\$39,370</b>	<b>\$78,368</b>	<b>9.7%</b>
<b>PA-1</b>	3,390	21,590	4.6%	\$433	\$1,721	5.7%	\$771	\$2,762	5.7%
<b>PA-2</b>	1,700	11,310	3.6%	\$192	\$1,044	4.3%	\$303	\$1,549	4.2%
<b>PA-3</b>	1,770	21,190	3.8%	\$438	\$2,876	5.2%	\$1,296	\$4,691	5.9%
<b>PA-4</b>	3,620	27,120	4.2%	\$448	\$2,379	5.0%	\$712	\$3,849	4.8%
<b>PA-5</b>	3,270	25,340	5.9%	\$921	\$2,537	8.6%	\$3,380	\$5,774	12.1%
<b>PA-6</b>	4,440	23,060	5.2%	\$549	\$2,097	6.6%	\$1,119	\$3,376	6.9%
<b>PA-7</b>	4,030	23,430	5.2%	\$567	\$1,861	6.6%	\$1,009	\$2,937	6.8%
<b>PA-8</b>	3,950	19,850	5.4%	\$489	\$1,309	7.1%	\$925	\$2,203	7.5%
<b>PA-9</b>	6,010	23,820	6.2%	\$862	\$1,916	8.7%	\$1,739	\$3,324	9.7%
<b>PA-10</b>	4,780	24,470	5.0%	\$532	\$1,841	6.1%	\$883	\$2,836	6.2%
<b>PA-11</b>	4,890	26,010	5.9%	\$1,084	\$2,366	9.3%	\$1,601	\$3,463	9.0%
<b>PA-12</b>	10,690	32,290	9.0%	\$1,065	\$2,148	11.8%	\$3,236	\$4,937	16.5%
<b>PA-13</b>	5,950	24,420	6.3%	\$782	\$1,757	8.7%	\$1,508	\$2,987	9.5%
<b>PA-14</b>	12,280	45,280	11.4%	\$1,822	\$3,835	15.7%	\$6,763	\$9,822	23.9%
<b>PA-15</b>	13,430	38,650	10.4%	\$1,028	\$2,356	12.3%	\$4,638	\$6,711	20.9%
<b>PA-16</b>	6,420	24,800	7.0%	\$573	\$1,587	8.4%	\$1,491	\$3,035	10.3%
<b>PA-17</b>	7,000	36,580	8.5%	\$1,705	\$3,766	12.5%	\$5,197	\$8,263	17.1%
<b>PA-18</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Rhode Island</b>	<b>4,530</b>	<b>25,030</b>	<b>3.8%</b>	<b>\$426</b>	<b>\$1,689</b>	<b>4.3%</b>	<b>\$1,190</b>	<b>\$3,221</b>	<b>5.2%</b>
<b>RI-1</b>	1,920	12,010	3.6%	\$172	\$820	3.9%	\$454	\$1,472	4.6%
<b>RI-2</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>South Carolina</b>	<b>26,150</b>	<b>115,590</b>	<b>4.0%</b>	<b>\$1,093</b>	<b>\$5,882</b>	<b>3.9%</b>	<b>\$4,707</b>	<b>\$12,671</b>	<b>5.1%</b>
<b>SC-1</b>	3,520	15,650	3.8%	\$143	\$817	3.6%	\$554	\$1,637	4.5%
<b>SC-2</b>	3,560	15,230	4.0%	\$167	\$795	3.9%	\$492	\$1,574	4.7%
<b>SC-3</b>	3,460	13,920	4.0%	\$130	\$644	3.8%	\$554	\$1,482	5.2%
<b>SC-4</b>	3,800	19,250	4.0%	\$188	\$1,072	4.1%	\$1,106	\$2,519	6.0%
<b>SC-5</b>	3,390	14,530	4.1%	\$133	\$757	4.0%	\$521	\$1,540	5.1%
<b>SC-6</b>	5,000	22,230	4.0%	\$195	\$1,156	3.8%	\$990	\$2,569	5.2%
<b>SC-7</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>South Dakota</b>	<b>9,350</b>	<b>29,380</b>	<b>4.8%</b>	<b>\$361</b>	<b>\$1,462</b>	<b>4.5%</b>	<b>\$1,142</b>	<b>\$3,078</b>	<b>5.6%</b>
<b>SD-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Tennessee</b>	<b>36,440</b>	<b>176,330</b>	<b>4.2%</b>	<b>\$2,620</b>	<b>\$11,257</b>	<b>4.6%</b>	<b>\$7,328</b>	<b>\$20,607</b>	<b>5.5%</b>
<b>TN-1</b>	3,850	16,790	4.4%	\$198	\$828	4.6%	\$569	\$1,563	5.6%
<b>TN-2</b>	4,650	19,900	4.3%	\$272	\$1,140	4.5%	\$754	\$2,116	5.5%
<b>TN-3</b>	4,010	19,150	4.2%	\$253	\$1,177	4.5%	\$768	\$2,197	5.5%
<b>TN-4</b>	4,080	18,040	4.3%	\$276	\$996	4.8%	\$700	\$1,914	5.4%
<b>TN-5</b>	4,280	28,790	3.8%	\$494	\$2,471	4.3%	\$1,221	\$4,113	4.9%
<b>TN-6</b>	4,580	18,810	4.8%	\$285	\$1,027	5.3%	\$795	\$1,934	6.5%
<b>TN-7</b>	4,030	18,150	4.5%	\$355	\$1,332	5.3%	\$827	\$2,286	6.0%
<b>TN-8</b>	4,150	17,540	4.0%	\$221	\$948	4.2%	\$581	\$1,750	5.0%
<b>TN-9</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Texas</b>	<b>620,330</b>	<b>2,508,870</b>	<b>13.9%</b>	<b>\$134,250</b>	<b>\$251,162</b>	<b>21.8%</b>	<b>\$230,946</b>	<b>\$411,557</b>	<b>22.3%</b>
<b>TX-1</b>	25,150	82,590	20.4%	\$4,589	\$7,285	33.5%	\$6,911	\$11,178	32.2%
<b>TX-2</b>	28,090	112,940	17.5%	\$8,405	\$14,949	28.9%	\$14,666	\$24,107	31.0%
<b>TX-3</b>	8,960	55,310	9.9%	\$1,078	\$4,467	12.0%	\$1,909	\$7,058	11.9%
<b>TX-4</b>	12,440	45,450	10.5%	\$827	\$2,333	12.0%	\$1,964	\$4,413	14.0%
<b>TX-5</b>	8,400	35,900	10.5%	\$1,248	\$2,805	14.6%	\$1,847	\$4,416	14.2%
<b>TX-6</b>	6,910	37,920	8.9%	\$759	\$2,453	10.6%	\$1,547	\$4,341	11.5%
<b>TX-7</b>	43,760	152,080	19.8%	\$12,056	\$20,994	33.3%	\$22,223	\$34,862	36.3%
<b>TX-8</b>	16,650	72,820	15.5%	\$4,334	\$7,579	26.6%	\$6,680	\$11,601	26.2%
<b>TX-9</b>	9,270	46,160	11.6%	\$2,027	\$4,686	16.7%	\$3,591	\$7,489	17.7%
<b>TX-10</b>	11,370	61,530	11.8%	\$3,126	\$6,414	18.8%	\$3,966	\$8,946	17.0%
<b>TX-11</b>	82,040	195,310	36.3%	\$19,973	\$25,614	63.9%	\$27,993	\$37,497	58.6%
<b>TX-12</b>	23,350	94,220	17.3%	\$5,500	\$9,374	27.8%	\$7,400	\$13,482	25.1%
<b>TX-13</b>	32,970	85,270	18.9%	\$3,135	\$5,756	24.5%	\$6,566	\$10,966	26.0%
<b>TX-14</b>	17,270	75,200	18.6%	\$2,806	\$5,805	24.7%	\$15,085	\$19,997	38.2%
<b>TX-15</b>	11,840	47,860	11.6%	\$1,105	\$2,523	14.9%	\$2,023	\$4,206	16.6%
<b>TX-16</b>	5,160	34,000	8.2%	\$592	\$1,868	9.4%	\$1,956	\$3,949	13.0%
<b>TX-17</b>	11,040	51,370	9.7%	\$1,034	\$3,392	11.6%	\$1,800	\$5,548	11.9%
<b>TX-18</b>	26,780	107,500	15.6%	\$7,696	\$14,193	24.6%	\$13,583	\$23,121	26.4%
<b>TX-19</b>	25,240	72,130	17.1%	\$2,285	\$4,421	21.9%	\$4,800	\$8,360	24.9%
<b>TX-20</b>	4,750	34,210	8.9%	\$2,046	\$3,648	16.0%	\$2,232	\$4,841	14.1%
<b>TX-21</b>	15,690	96,160	13.4%	\$6,406	\$11,170	24.9%	\$7,292	\$14,669	21.4%
<b>TX-22</b>	11,160	55,950	12.2%	\$2,334	\$4,608	18.3%	\$3,414	\$6,997	16.8%
<b>TX-23</b>	23,510	73,210	15.7%	\$3,580	\$6,068	22.9%	\$5,404	\$9,605	22.4%
<b>TX-24</b>	15,890	104,880	10.1%	\$3,673	\$10,881	14.0%	\$5,415	\$16,191	13.3%
<b>TX-25</b>	13,540	68,200	12.9%	\$4,095	\$7,451	22.8%	\$4,991	\$10,118	20.3%
<b>TX-26</b>	6,760	40,530	9.6%	\$791	\$2,658	12.0%	\$1,282	\$4,149	11.9%
<b>TX-27</b>	21,350	72,370	17.2%	\$2,341	\$4,833	22.2%	\$7,110	\$11,151	27.9%
<b>TX-28</b>	15,020	48,660	13.8%	\$2,018	\$3,388	20.0%	\$3,447	\$5,724	21.0%
<b>TX-29</b>	11,320	53,760	15.3%	\$4,081	\$7,252	24.6%	\$9,996	\$14,802	29.4%
<b>TX-30</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>TX-31</b>	6,160	38,340	8.2%	\$775	\$2,870	9.4%	\$1,120	\$4,281	9.2%
<b>TX-32</b>	19,620	99,110	14.1%	\$7,676	\$14,264	24.7%	\$10,762	\$20,606	22.8%
<b>TX-33</b>	7,000	44,720	8.3%	\$1,072	\$3,680	10.1%	\$1,778	\$5,872	10.0%
<b>TX-34</b>	10,060	37,070	10.9%	\$891	\$1,968	13.6%	\$1,659	\$3,397	15.2%
<b>TX-35</b>	7,830	52,210	10.7%	\$3,179	\$5,764	19.1%	\$3,688	\$7,783	16.6%
<b>TX-36</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Utah</b>	<b>20,730</b>	<b>103,080</b>	<b>4.8%</b>	<b>\$1,460</b>	<b>\$6,106</b>	<b>5.3%</b>	<b>\$4,688</b>	<b>\$12,440</b>	<b>6.5%</b>
<b>UT-1</b>	6,850	24,480	5.7%	\$431	\$1,260	6.0%	\$1,053	\$2,462	7.0%
<b>UT-2</b>	7,760	40,500	5.8%	\$691	\$2,550	6.6%	\$2,703	\$5,782	8.9%
<b>UT-3</b>	3,670	20,660	4.2%	\$188	\$1,167	4.5%	\$570	\$2,177	5.1%
<b>UT-4</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Vermont</b>	<b>5,930</b>	<b>20,930</b>	<b>4.7%</b>	<b>\$259</b>	<b>\$1,049</b>	<b>4.6%</b>	<b>\$748</b>	<b>\$1,976</b>	<b>5.8%</b>
<b>VT-1 (At-Large)</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Virginia</b>	<b>43,510</b>	<b>202,430</b>	<b>3.7%</b>	<b>\$2,249</b>	<b>\$12,898</b>	<b>3.7%</b>	<b>\$7,354</b>	<b>\$24,725</b>	<b>4.4%</b>
<b>VA-1</b>	5,240	19,550	4.4%	\$237	\$955	4.3%	\$1,151	\$2,375	6.3%
<b>VA-2</b>	3,470	15,720	3.2%	\$123	\$761	2.8%	\$306	\$1,385	3.2%
<b>VA-3</b>	2,860	14,110	2.8%	\$114	\$761	2.4%	\$287	\$1,343	2.8%
<b>VA-4</b>	4,500	19,750	4.0%	\$248	\$1,230	4.1%	\$648	\$2,436	4.6%
<b>VA-5</b>	4,860	18,780	4.2%	\$202	\$891	4.2%	\$907	\$2,117	5.8%
<b>VA-6</b>	4,250	18,040	4.3%	\$198	\$896	4.4%	\$854	\$2,037	6.0%
<b>VA-7</b>	4,070	18,290	4.0%	\$182	\$1,179	4.1%	\$472	\$2,220	4.4%
<b>VA-8</b>	2,390	17,870	3.0%	\$225	\$1,766	3.1%	\$585	\$2,954	3.5%
<b>VA-9</b>	4,930	17,310	4.9%	\$219	\$779	5.0%	\$649	\$1,637	6.2%
<b>VA-10</b>	4,350	25,630	3.6%	\$247	\$2,028	3.8%	\$877	\$3,548	4.4%
<b>VA-11</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Washington</b>	<b>25,580</b>	<b>162,260</b>	<b>3.5%</b>	<b>\$2,168</b>	<b>\$12,981</b>	<b>3.7%</b>	<b>\$12,674</b>	<b>\$31,092</b>	<b>5.1%</b>
<b>WA-1</b>	3,780	21,350	4.5%	\$522	\$2,168	5.2%	\$3,963	\$6,870	9.0%
<b>WA-2</b>	2,910	16,650	4.0%	\$312	\$1,123	4.0%	\$2,393	\$3,764	7.2%
<b>WA-3</b>	3,140	14,690	4.0%	\$173	\$858	4.1%	\$918	\$2,047	5.7%
<b>WA-4</b>	3,070	14,110	3.6%	\$164	\$789	3.6%	\$1,005	\$2,038	5.6%
<b>WA-5</b>	2,130	13,370	3.4%	\$132	\$767	3.5%	\$444	\$1,511	4.2%
<b>WA-6</b>	2,650	13,460	3.3%	\$146	\$739	3.0%	\$850	\$1,819	4.7%
<b>WA-7</b>	1,530	21,780	2.9%	\$145	\$2,372	3.3%	\$421	\$4,178	3.4%
<b>WA-8</b>	2,090	12,160	3.2%	\$187	\$981	3.3%	\$712	\$2,073	4.0%
<b>WA-9</b>	2,140	23,180	3.1%	\$226	\$2,462	3.4%	\$1,089	\$4,985	3.9%
<b>WA-10</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>West Virginia</b>	<b>32,320</b>	<b>81,960</b>	<b>9.2%</b>	<b>\$2,525</b>	<b>\$5,193</b>	<b>11.0%</b>	<b>\$6,791</b>	<b>\$11,194</b>	<b>14.2%</b>
<b>WV-1</b>	13,920	35,250	10.2%	\$1,273	\$2,458	12.8%	\$3,902	\$5,826	17.9%
<b>WV-2</b>	11,370	28,180	9.4%	\$681	\$1,600	10.3%	\$1,707	\$3,202	12.5%
<b>WV-3</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Wisconsin</b>	<b>36,630</b>	<b>158,410</b>	<b>4.2%</b>	<b>\$1,569</b>	<b>\$8,892</b>	<b>4.1%</b>	<b>\$4,842</b>	<b>\$16,831</b>	<b>4.8%</b>
<b>WI-1</b>	3,660	16,930	4.1%	\$159	\$930	3.9%	\$415	\$1,674	4.4%
<b>WI-2</b>	4,530	21,370	3.7%	\$237	\$1,350	3.7%	\$712	\$2,656	4.4%
<b>WI-3</b>	6,460	21,560	4.9%	\$216	\$972	4.5%	\$656	\$1,949	5.5%
<b>WI-4</b>	1,980	16,420	3.5%	\$139	\$1,228	3.7%	\$520	\$2,191	4.3%
<b>WI-5</b>	3,330	18,780	4.0%	\$182	\$1,203	4.1%	\$421	\$2,030	4.4%
<b>WI-6</b>	5,170	21,000	4.4%	\$179	\$1,094	4.2%	\$420	\$1,926	4.6%
<b>WI-7</b>	6,790	22,120	5.0%	\$258	\$1,006	4.7%	\$1,041	\$2,283	6.6%
<b>WI-8</b>	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) <sup>(1)</sup>			Labor Income (\$Million) <sup>(2)</sup>			Value Added (\$Million)		
	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District	Direct	Total <sup>(3)</sup>	Total as a % of State / District
<b>Wyoming</b>	<b>28,270</b>	<b>68,620</b>	<b>16.6%</b>	<b>\$4,056</b>	<b>\$6,001</b>	<b>25.6%</b>	<b>\$7,268</b>	<b>\$10,618</b>	<b>26.3%</b>
<b>WY-1 (At-Large)</b>	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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>9,310</b>			<b>9,310</b>	<b>2.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		3,140	7,870	<b>11,010</b>	
Finance, insurance, real estate, rental and leasing		1,310	1,390	<b>2,700</b>	
Wholesale and retail trade		390	2,280	<b>2,670</b>	
Transportation and warehousing		300	490	<b>790</b>	
Construction		450	110	<b>560</b>	
Government		120	330	<b>450</b>	
Manufacturing		90	250	<b>340</b>	
Information		120	190	<b>310</b>	
Agriculture		10	150	<b>160</b>	
Mining		120	30	<b>150</b>	
Utilities		70	70	<b>140</b>	
<b>Total Impact on Employment</b>	<b>9,310</b>	<b>6,130</b>	<b>13,160</b>	<b>28,600</b>	<b>6.2%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,714</b>			<b>\$1,714</b>	<b>5.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$225	\$441	<b>\$666</b>	
Finance, insurance, real estate, rental and leasing		\$75	\$62	<b>\$137</b>	
Wholesale and retail trade		\$29	\$94	<b>\$123</b>	
Transportation and warehousing		\$24	\$29	<b>\$53</b>	
Construction		\$39	\$9	<b>\$48</b>	
Government		\$12	\$33	<b>\$45</b>	
Information		\$10	\$17	<b>\$27</b>	
Manufacturing		\$7	\$16	<b>\$22</b>	
Utilities		\$10	\$9	<b>\$19</b>	
Mining		\$9	\$2	<b>\$11</b>	
Agriculture		\$1	\$6	<b>\$6</b>	
<b>Total Impact on Labor Income</b>	<b>\$1,714</b>	<b>\$440</b>	<b>\$716</b>	<b>\$2,871</b>	<b>8.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$5,100</b>			<b>\$5,100</b>	<b>9.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$263	\$516	<b>\$779</b>	
Finance, insurance, real estate, rental and leasing		\$195	\$371	<b>\$566</b>	
Transportation and warehousing		\$293	\$66	<b>\$359</b>	
Wholesale and retail trade		\$70	\$152	<b>\$221</b>	
Manufacturing		\$37	\$30	<b>\$67</b>	
Government		\$15	\$42	<b>\$56</b>	
Utilities		\$27	\$25	<b>\$52</b>	
Information		\$20	\$32	<b>\$51</b>	
Construction		\$38	\$10	<b>\$49</b>	
Mining		\$32	\$8	<b>\$39</b>	
Agriculture		\$1	\$8	<b>\$8</b>	
<b>Total Impact on Value Added</b>	<b>\$5,100</b>	<b>\$990</b>	<b>\$1,259</b>	<b>\$7,348</b>	<b>13.5%</b>

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

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

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

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

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>28,230</b>			<b>28,230</b>	<b>2.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		8,930	15,700	<b>24,630</b>	
Finance, insurance, real estate, rental and leasing		4,330	2,870	<b>7,200</b>	
Wholesale and retail trade		1,380	4,350	<b>5,730</b>	
Transportation and warehousing		1,000	800	<b>1,800</b>	
Construction		1,420	250	<b>1,670</b>	
Manufacturing		550	410	<b>960</b>	
Government		310	530	<b>840</b>	
Information		320	310	<b>630</b>	
Agriculture		50	510	<b>560</b>	
Utilities		180	120	<b>300</b>	
Mining		120	20	<b>140</b>	
<b>Total Impact on Employment</b>	<b>28,230</b>	<b>18,590</b>	<b>25,860</b>	<b>72,680</b>	<b>6.4%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,441</b>			<b>\$2,441</b>	<b>4.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$517	\$653	<b>\$1,171</b>	
Finance, insurance, real estate, rental and leasing		\$227	\$109	<b>\$336</b>	
Wholesale and retail trade		\$85	\$151	<b>\$236</b>	
Transportation and warehousing		\$68	\$36	<b>\$105</b>	
Construction		\$75	\$13	<b>\$88</b>	
Government		\$23	\$40	<b>\$63</b>	
Manufacturing		\$30	\$20	<b>\$50</b>	
Information		\$21	\$22	<b>\$43</b>	
Utilities		\$20	\$13	<b>\$33</b>	
Agriculture		\$1	\$15	<b>\$16</b>	
Mining		\$10	\$2	<b>\$12</b>	
<b>Total Impact on Labor Income</b>	<b>\$2,441</b>	<b>\$1,080</b>	<b>\$1,074</b>	<b>\$4,594</b>	<b>7.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$9,299</b>			<b>\$9,299</b>	<b>8.8%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$676	\$829	<b>\$1,505</b>	
Finance, insurance, real estate, rental and leasing		\$552	\$634	<b>\$1,186</b>	
Wholesale and retail trade		\$194	\$261	<b>\$455</b>	
Transportation and warehousing		\$117	\$51	<b>\$169</b>	
Manufacturing		\$93	\$48	<b>\$141</b>	
Government		\$46	\$82	<b>\$128</b>	
Utilities		\$66	\$41	<b>\$107</b>	
Construction		\$87	\$17	<b>\$104</b>	
Information		\$43	\$48	<b>\$91</b>	
Mining		\$44	\$7	<b>\$51</b>	
Agriculture		\$2	\$22	<b>\$24</b>	
<b>Total Impact on Value Added</b>	<b>\$9,299</b>	<b>\$1,921</b>	<b>\$2,041</b>	<b>\$13,260</b>	<b>12.6%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>23,530</b>			<b>23,530</b>	<b>4.0%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		6,610	11,180	<b>17,790</b>	
Finance, insurance, real estate, rental and leasing		3,660	2,670	<b>6,330</b>	
Wholesale and retail trade		1,240	3,840	<b>5,080</b>	
Transportation and warehousing		1,010	810	<b>1,820</b>	
Construction		960	170	<b>1,130</b>	
Manufacturing		500	290	<b>790</b>	
Government		190	410	<b>600</b>	
Information		270	260	<b>530</b>	
Agriculture		40	430	<b>470</b>	
Utilities		150	100	<b>250</b>	
Mining		90	10	<b>100</b>	
<b>Total Impact on Employment</b>	<b>23,530</b>	<b>14,730</b>	<b>20,190</b>	<b>58,440</b>	<b>10.0%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,613</b>			<b>\$2,613</b>	<b>7.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$435	\$532	<b>\$967</b>	
Finance, insurance, real estate, rental and leasing		\$243	\$128	<b>\$371</b>	
Wholesale and retail trade		\$109	\$152	<b>\$261</b>	
Transportation and warehousing		\$101	\$53	<b>\$154</b>	
Construction		\$69	\$12	<b>\$81</b>	
Manufacturing		\$38	\$20	<b>\$58</b>	
Information		\$24	\$22	<b>\$46</b>	
Government		\$13	\$28	<b>\$41</b>	
Utilities		\$22	\$15	<b>\$37</b>	
Agriculture		\$2	\$21	<b>\$24</b>	
Mining		\$7	\$1	<b>\$9</b>	
<b>Total Impact on Labor Income</b>	<b>\$2,613</b>	<b>\$1,063</b>	<b>\$986</b>	<b>\$4,663</b>	<b>13.6%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$5,848</b>			<b>\$5,848</b>	<b>10.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$500	\$631	<b>\$1,131</b>	
Finance, insurance, real estate, rental and leasing		\$491	\$457	<b>\$948</b>	
Wholesale and retail trade		\$218	\$241	<b>\$459</b>	
Transportation and warehousing		\$170	\$79	<b>\$249</b>	
Manufacturing		\$86	\$40	<b>\$125</b>	
Construction		\$85	\$17	<b>\$102</b>	
Utilities		\$60	\$41	<b>\$102</b>	
Information		\$42	\$39	<b>\$81</b>	
Government		\$16	\$34	<b>\$49</b>	
Agriculture		\$4	\$39	<b>\$43</b>	
Mining		\$21	\$3	<b>\$24</b>	
<b>Total Impact on Value Added</b>	<b>\$5,848</b>	<b>\$1,693</b>	<b>\$1,620</b>	<b>\$9,161</b>	<b>16.0%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>17,500</b>			<b>17,500</b>	<b>0.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		28,510	41,050	<b>69,560</b>	
Finance, insurance, real estate, rental and leasing		6,790	7,890	<b>14,680</b>	
Manufacturing		9,550	4,990	<b>14,540</b>	
Wholesale and retail trade		3,560	10,120	<b>13,680</b>	
Transportation and warehousing		2,850	3,510	<b>6,360</b>	
Construction		3,880	530	<b>4,410</b>	
Information		810	1,130	<b>1,940</b>	
Agriculture		140	1,200	<b>1,340</b>	
Government		450	820	<b>1,270</b>	
Utilities		280	240	<b>520</b>	
Mining		110	30	<b>140</b>	
<b>Total Impact on Employment</b>	<b>17,500</b>	<b>56,940</b>	<b>71,510</b>	<b>145,950</b>	<b>2.0%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$771</b>			<b>\$771</b>	<b>0.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$2,300	\$2,094	<b>\$4,393</b>	
Manufacturing		\$806	\$377	<b>\$1,183</b>	
Finance, insurance, real estate, rental and leasing		\$491	\$426	<b>\$917</b>	
Wholesale and retail trade		\$294	\$468	<b>\$762</b>	
Transportation and warehousing		\$306	\$196	<b>\$502</b>	
Construction		\$248	\$33	<b>\$281</b>	
Information		\$79	\$104	<b>\$183</b>	
Government		\$37	\$68	<b>\$105</b>	
Utilities		\$43	\$35	<b>\$78</b>	
Agriculture		\$5	\$27	<b>\$32</b>	
Mining		\$16	\$5	<b>\$21</b>	
<b>Total Impact on Labor Income</b>	<b>\$771</b>	<b>\$4,624</b>	<b>\$3,833</b>	<b>\$9,228</b>	<b>2.2%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$9,882</b>			<b>\$9,882</b>	<b>1.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$2,619	\$2,544	<b>\$5,163</b>	
Finance, insurance, real estate, rental and leasing		\$1,370	\$1,964	<b>\$3,334</b>	
Manufacturing		\$1,452	\$771	<b>\$2,222</b>	
Wholesale and retail trade		\$581	\$851	<b>\$1,432</b>	
Transportation and warehousing		\$439	\$259	<b>\$697</b>	
Information		\$158	\$214	<b>\$372</b>	
Construction		\$257	\$44	<b>\$301</b>	
Utilities		\$164	\$133	<b>\$296</b>	
Government		\$50	\$95	<b>\$144</b>	
Agriculture		\$6	\$40	<b>\$46</b>	
Mining		\$27	\$5	<b>\$32</b>	
<b>Total Impact on Value Added</b>	<b>\$9,882</b>	<b>\$7,123</b>	<b>\$6,919</b>	<b>\$23,923</b>	<b>3.4%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>94,930</b>			<b>94,930</b>	<b>4.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		38,120	47,480	<b>85,600</b>	
Finance, insurance, real estate, rental and leasing		18,060	11,480	<b>29,540</b>	
Wholesale and retail trade		5,390	15,330	<b>20,720</b>	
Transportation and warehousing		3,950	3,100	<b>7,050</b>	
Manufacturing		3,650	1,460	<b>5,110</b>	
Construction		3,710	850	<b>4,560</b>	
Government		1,750	1,840	<b>3,590</b>	
Information		1,680	1,230	<b>2,910</b>	
Agriculture		110	1,480	<b>1,590</b>	
Utilities		1,170	410	<b>1,580</b>	
Mining		350	40	<b>390</b>	
<b>Total Impact on Employment</b>	<b>94,930</b>	<b>77,930</b>	<b>84,700</b>	<b>257,570</b>	<b>11.0%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$8,683</b>			<b>\$8,683</b>	<b>6.7%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$2,307	\$2,095	<b>\$4,402</b>	
Transportation and warehousing		\$1,360	\$206	<b>\$1,566</b>	
Finance, insurance, real estate, rental and leasing		\$927	\$419	<b>\$1,346</b>	
Wholesale and retail trade		\$395	\$539	<b>\$935</b>	
Manufacturing		\$333	\$104	<b>\$437</b>	
Construction		\$200	\$46	<b>\$246</b>	
Government		\$119	\$126	<b>\$245</b>	
Information		\$143	\$95	<b>\$238</b>	
Utilities		\$159	\$59	<b>\$217</b>	
Mining		\$50	\$9	<b>\$58</b>	
Agriculture		\$2	\$21	<b>\$23</b>	
<b>Total Impact on Labor Income</b>	<b>\$8,683</b>	<b>\$5,994</b>	<b>\$3,719</b>	<b>\$18,395</b>	<b>14.2%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$21,303</b>			<b>\$21,303</b>	<b>10.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$2,775	\$2,528	<b>\$5,304</b>	
Finance, insurance, real estate, rental and leasing		\$2,004	\$1,799	<b>\$3,803</b>	
Transportation and warehousing		\$1,672	\$279	<b>\$1,952</b>	
Wholesale and retail trade		\$840	\$922	<b>\$1,762</b>	
Manufacturing		\$540	\$184	<b>\$724</b>	
Utilities		\$408	\$147	<b>\$555</b>	
Information		\$270	\$198	<b>\$468</b>	
Government		\$163	\$175	<b>\$338</b>	
Construction		\$209	\$52	<b>\$261</b>	
Mining		\$63	\$7	<b>\$70</b>	
Agriculture		\$3	\$49	<b>\$53</b>	
<b>Total Impact on Value Added</b>	<b>\$21,303</b>	<b>\$8,948</b>	<b>\$6,341</b>	<b>\$36,592</b>	<b>18.1%</b>

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.



<b>The Economic Impact of the Onshore Upstream Subsector in Pennsylvania, 2019</b>					
<b>Sector Description</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>As a % of State Total</b>
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>27,420</b>			<b>27,420</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
<i>Services</i>		30,910	58,490	<b>89,400</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		10,070	11,580	<b>21,650</b>	
<i>Wholesale and retail trade</i>		3,590	13,720	<b>17,310</b>	
<i>Manufacturing</i>		8,530	4,900	<b>13,430</b>	
<i>Transportation and warehousing</i>		3,400	5,180	<b>8,580</b>	
<i>Construction</i>		4,540	700	<b>5,240</b>	
<i>Information</i>		780	1,250	<b>2,030</b>	
<i>Government</i>		480	1,050	<b>1,530</b>	
<i>Agriculture</i>		140	1,090	<b>1,230</b>	
<i>Utilities</i>		360	340	<b>700</b>	
<i>Mining</i>		290	80	<b>370</b>	
<b>Total Impact on Employment</b>	<b>27,420</b>	<b>63,070</b>	<b>98,390</b>	<b>188,880</b>	<b>2.4%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$2,281</b>			<b>\$2,281</b>	<b>0.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
<i>Services</i>		\$2,841	\$3,308	<b>\$6,149</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$851	\$733	<b>\$1,584</b>	
<i>Manufacturing</i>		\$754	\$385	<b>\$1,140</b>	
<i>Wholesale and retail trade</i>		\$313	\$641	<b>\$954</b>	
<i>Transportation and warehousing</i>		\$509	\$315	<b>\$825</b>	
<i>Information</i>		\$290	\$351	<b>\$641</b>	
<i>Construction</i>		\$322	\$49	<b>\$371</b>	
<i>Government</i>		\$42	\$92	<b>\$135</b>	
<i>Utilities</i>		\$61	\$55	<b>\$115</b>	
<i>Agriculture</i>		\$6	\$25	<b>\$30</b>	
<i>Mining</i>		\$17	\$4	<b>\$21</b>	
<b>Total Impact on Labor Income</b>	<b>\$2,281</b>	<b>\$6,006</b>	<b>\$5,958</b>	<b>\$14,244</b>	<b>2.8%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$13,313</b>			<b>\$13,313</b>	<b>1.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
<i>Services</i>		\$3,208	\$3,913	<b>\$7,120</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,716	\$2,588	<b>\$4,303</b>	
<i>Manufacturing</i>		\$1,273	\$744	<b>\$2,017</b>	
<i>Wholesale and retail trade</i>		\$641	\$1,100	<b>\$1,741</b>	
<i>Transportation and warehousing</i>		\$863	\$396	<b>\$1,259</b>	
<i>Information</i>		\$440	\$604	<b>\$1,044</b>	
<i>Construction</i>		\$349	\$66	<b>\$415</b>	
<i>Utilities</i>		\$194	\$173	<b>\$367</b>	
<i>Government</i>		\$56	\$126	<b>\$182</b>	
<i>Mining</i>		\$68	\$17	<b>\$85</b>	
<i>Agriculture</i>		\$7	\$45	<b>\$52</b>	
<b>Total Impact on Value Added</b>	<b>\$13,313</b>	<b>\$8,814</b>	<b>\$9,771</b>	<b>\$31,898</b>	<b>3.9%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>334,410</b>			<b>334,410</b>	<b>1.9%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		239,050	427,810	<b>666,860</b>	
Finance, insurance, real estate, rental and leasing		84,480	113,590	<b>198,070</b>	
Wholesale and retail trade		26,330	129,070	<b>155,400</b>	
Transportation and warehousing		26,530	36,650	<b>63,180</b>	
Manufacturing		25,840	16,420	<b>42,260</b>	
Construction		20,290	6,950	<b>27,240</b>	
Information		9,500	14,750	<b>24,250</b>	
Government		5,400	13,220	<b>18,620</b>	
Agriculture		670	10,110	<b>10,780</b>	
Utilities		3,610	2,760	<b>6,370</b>	
Mining		1,390	260	<b>1,650</b>	
<b>Total Impact on Employment</b>	<b>334,410</b>	<b>443,100</b>	<b>771,610</b>	<b>1,549,110</b>	<b>8.6%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$82,887</b>			<b>\$82,887</b>	<b>7.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$19,279	\$21,003	<b>\$40,282</b>	
Finance, insurance, real estate, rental and leasing		\$5,987	\$6,298	<b>\$12,286</b>	
Wholesale and retail trade		\$2,446	\$5,943	<b>\$8,389</b>	
Transportation and warehousing		\$5,951	\$1,894	<b>\$7,845</b>	
Manufacturing		\$2,803	\$1,262	<b>\$4,065</b>	
Information		\$952	\$1,429	<b>\$2,382</b>	
Construction		\$1,391	\$472	<b>\$1,863</b>	
Government		\$417	\$1,015	<b>\$1,432</b>	
Utilities		\$659	\$501	<b>\$1,160</b>	
Mining		\$197	\$25	<b>\$222</b>	
Agriculture		\$12	\$118	<b>\$129</b>	
<b>Total Impact on Labor Income</b>	<b>\$82,887</b>	<b>\$40,094</b>	<b>\$39,960</b>	<b>\$162,942</b>	<b>14.1%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$122,457</b>			<b>\$122,457</b>	<b>6.6%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$21,846	\$24,686	<b>\$46,533</b>	
Finance, insurance, real estate, rental and leasing		\$12,391	\$19,913	<b>\$32,304</b>	
Wholesale and retail trade		\$5,177	\$10,213	<b>\$15,390</b>	
Manufacturing		\$6,573	\$2,888	<b>\$9,461</b>	
Transportation and warehousing		\$4,337	\$2,315	<b>\$6,652</b>	
Information		\$1,777	\$2,805	<b>\$4,581</b>	
Utilities		\$1,906	\$1,436	<b>\$3,343</b>	
Construction		\$1,507	\$583	<b>\$2,090</b>	
Government		\$523	\$1,283	<b>\$1,806</b>	
Mining		\$391	\$59	<b>\$451</b>	
Agriculture		\$19	\$284	<b>\$303</b>	
<b>Total Impact on Value Added</b>	<b>\$122,457</b>	<b>\$56,448</b>	<b>\$66,466</b>	<b>\$245,371</b>	<b>13.3%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>5,920</b>			<b>5,920</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		9,210	11,030	<b>20,240</b>	
Finance, insurance, real estate, rental and leasing		2,700	3,000	<b>5,700</b>	
Wholesale and retail trade		930	3,250	<b>4,180</b>	
Manufacturing		1,600	1,130	<b>2,730</b>	
Transportation and warehousing		830	1,060	<b>1,890</b>	
Construction		1,480	200	<b>1,680</b>	
Information		410	600	<b>1,010</b>	
Government		150	280	<b>430</b>	
Agriculture		30	300	<b>330</b>	
Mining		120	30	<b>150</b>	
Utilities		70	60	<b>130</b>	
<b>Total Impact on Employment</b>	<b>5,920</b>	<b>17,540</b>	<b>20,950</b>	<b>44,410</b>	<b>2.1%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$365</b>			<b>\$365</b>	<b>0.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$638	\$505	<b>\$1,143</b>	
Finance, insurance, real estate, rental and leasing		\$153	\$127	<b>\$281</b>	
Wholesale and retail trade		\$78	\$162	<b>\$240</b>	
Manufacturing		\$124	\$74	<b>\$199</b>	
Transportation and warehousing		\$62	\$68	<b>\$130</b>	
Construction		\$91	\$12	<b>\$103</b>	
Information		\$39	\$55	<b>\$94</b>	
Government		\$11	\$21	<b>\$32</b>	
Utilities		\$12	\$10	<b>\$22</b>	
Mining		\$7	\$2	<b>\$9</b>	
Agriculture		\$1	\$5	<b>\$6</b>	
<b>Total Impact on Labor Income</b>	<b>\$365</b>	<b>\$1,217</b>	<b>\$1,041</b>	<b>\$2,623</b>	<b>2.3%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$819</b>			<b>\$819</b>	<b>0.4%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$725	\$628	<b>\$1,352</b>	
Finance, insurance, real estate, rental and leasing		\$396	\$547	<b>\$943</b>	
Wholesale and retail trade		\$147	\$274	<b>\$422</b>	
Manufacturing		\$231	\$133	<b>\$364</b>	
Transportation and warehousing		\$95	\$102	<b>\$198</b>	
Information		\$76	\$103	<b>\$179</b>	
Construction		\$112	\$19	<b>\$131</b>	
Utilities		\$38	\$33	<b>\$71</b>	
Government		\$16	\$30	<b>\$46</b>	
Mining		\$26	\$8	<b>\$34</b>	
Agriculture		\$1	\$14	<b>\$15</b>	
<b>Total Impact on Value Added</b>	<b>\$819</b>	<b>\$1,864</b>	<b>\$1,892</b>	<b>\$4,574</b>	<b>2.4%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>13,180</b>			<b>13,180</b>	<b>1.5%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		6,190	8,620	<b>14,810</b>	
Finance, insurance, real estate, rental and leasing		2,330	1,290	<b>3,620</b>	
Wholesale and retail trade		840	2,330	<b>3,170</b>	
Transportation and warehousing		880	500	<b>1,380</b>	
Manufacturing		770	390	<b>1,160</b>	
Construction		760	110	<b>870</b>	
Agriculture		40	360	<b>400</b>	
Government		150	240	<b>390</b>	
Information		190	140	<b>330</b>	
Mining		240	70	<b>310</b>	
Utilities		110	70	<b>180</b>	
<b>Total Impact on Employment</b>	<b>13,180</b>	<b>12,500</b>	<b>14,100</b>	<b>39,790</b>	<b>4.4%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,060</b>			<b>\$1,060</b>	<b>2.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$423	\$400	<b>\$823</b>	
Finance, insurance, real estate, rental and leasing		\$146	\$57	<b>\$203</b>	
Wholesale and retail trade		\$57	\$80	<b>\$137</b>	
Transportation and warehousing		\$86	\$26	<b>\$112</b>	
Manufacturing		\$66	\$28	<b>\$94</b>	
Construction		\$47	\$7	<b>\$54</b>	
Mining		\$22	\$7	<b>\$29</b>	
Government		\$10	\$16	<b>\$26</b>	
Utilities		\$16	\$9	<b>\$25</b>	
Information		\$14	\$10	<b>\$24</b>	
Agriculture		\$1	\$1	<b>\$2</b>	
<b>Total Impact on Labor Income</b>	<b>\$1,060</b>	<b>\$889</b>	<b>\$641</b>	<b>\$2,590</b>	<b>5.5%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$3,328</b>			<b>\$3,328</b>	<b>4.2%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$452	\$472	<b>\$924</b>	
Finance, insurance, real estate, rental and leasing		\$372	\$296	<b>\$669</b>	
Wholesale and retail trade		\$134	\$151	<b>\$285</b>	
Manufacturing		\$133	\$59	<b>\$192</b>	
Transportation and warehousing		\$152	\$35	<b>\$187</b>	
Mining		\$65	\$19	<b>\$85</b>	
Utilities		\$48	\$29	<b>\$77</b>	
Construction		\$60	\$10	<b>\$70</b>	
Information		\$28	\$21	<b>\$49</b>	
Government		\$13	\$22	<b>\$35</b>	
Agriculture		\$1	\$4	<b>\$5</b>	
<b>Total Impact on Value Added</b>	<b>\$3,328</b>	<b>\$1,460</b>	<b>\$1,118</b>	<b>\$5,907</b>	<b>7.5%</b>

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
<b>Employment*</b>					
<b>Industry Direct Impact</b>	<b>16,830</b>			<b>16,830</b>	<b>4.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		4,420	5,120	<b>9,540</b>	
Finance, insurance, real estate, rental and leasing		3,130	1,810	<b>4,940</b>	
Wholesale and retail trade		800	1,730	<b>2,530</b>	
Transportation and warehousing		520	340	<b>860</b>	
Construction		720	120	<b>840</b>	
Manufacturing		280	120	<b>400</b>	
Government		150	220	<b>370</b>	
Agriculture		30	260	<b>290</b>	
Information		160	110	<b>270</b>	
Mining		160	40	<b>200</b>	
Utilities		90	50	<b>140</b>	
<b>Total Impact on Employment</b>	<b>16,830</b>	<b>10,460</b>	<b>9,920</b>	<b>37,210</b>	<b>9.0%</b>
<b>Labor Income** (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$1,487</b>			<b>\$1,487</b>	<b>6.3%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$233	\$203	<b>\$436</b>	
Finance, insurance, real estate, rental and leasing		\$119	\$52	<b>\$171</b>	
Transportation and warehousing		\$135	\$27	<b>\$162</b>	
Wholesale and retail trade		\$63	\$59	<b>\$122</b>	
Construction		\$43	\$7	<b>\$50</b>	
Manufacturing		\$26	\$8	<b>\$34</b>	
Government		\$11	\$17	<b>\$28</b>	
Mining		\$21	\$6	<b>\$26</b>	
Utilities		\$12	\$7	<b>\$19</b>	
Information		\$11	\$8	<b>\$19</b>	
Agriculture		\$1	\$5	<b>\$5</b>	
<b>Total Impact on Labor Income</b>	<b>\$1,487</b>	<b>\$673</b>	<b>\$398</b>	<b>\$2,558</b>	<b>10.9%</b>
<b>Value Added (\$ Millions)</b>					
<b>Industry Direct Impact</b>	<b>\$3,258</b>			<b>\$3,258</b>	<b>8.1%</b>
<b>Indirect/Induced Impacts on Other Industries</b>					
Services		\$285	\$253	<b>\$538</b>	
Finance, insurance, real estate, rental and leasing		\$279	\$248	<b>\$527</b>	
Transportation and warehousing		\$242	\$45	<b>\$287</b>	
Wholesale and retail trade		\$119	\$102	<b>\$220</b>	
Mining		\$61	\$17	<b>\$78</b>	
Manufacturing		\$54	\$18	<b>\$72</b>	
Construction		\$57	\$11	<b>\$68</b>	
Utilities		\$37	\$20	<b>\$57</b>	
Information		\$23	\$16	<b>\$39</b>	
Government		\$14	\$21	<b>\$35</b>	
Agriculture		\$1	\$10	<b>\$12</b>	
<b>Total Impact on Value Added</b>	<b>\$3,258</b>	<b>\$1,172</b>	<b>\$760</b>	<b>\$5,190</b>	<b>12.8%</b>

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.<sup>14</sup>

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.

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<sup>14</sup> 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.<sup>15</sup> 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.<sup>16</sup> 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.<sup>17</sup>

## 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.

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<sup>15</sup> 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.

<sup>16</sup> 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.

<sup>17</sup> 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.<sup>18</sup>

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.<sup>19</sup>

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,

<sup>18</sup> More information on IMPLAN is available at [www.implan.com](http://www.implan.com).

<sup>19</sup> 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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