



IMPACTS OF THE  
**NATURAL GAS AND  
OIL INDUSTRY**  
ON THE US ECONOMY IN 2015





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# ***Impacts of the Oil and Natural Gas Industry on the US Economy in 2015***

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Institute**



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# Impacts of the Oil and Natural Gas Industry on the US Economy in 2015

## Executive Summary

The American Petroleum Institute engaged PwC to quantify the economic impacts of the US oil and natural gas industry in terms of employment, labor income, and value added.<sup>1</sup> This report provides PwC's economic impact estimates for 2015, the most recent year for which a consistent set of national and state-level data by industry are currently available.

The report's findings show that the oil and natural gas industry has a widespread economic impact throughout all sectors of the economy and across all 50 states and the District of Columbia. These impacts result directly from the employment and production within the oil and natural gas industry, indirectly through the industry's purchases of intermediate and capital goods from a variety of other US industries, by the personal purchases of employees and business owners both within the oil and natural gas industry and out of the additional income in the supply chain to the oil and natural gas industry, and from spending by shareholders out of the dividends received from oil and natural gas companies.

In describing these economic impacts, 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.
- **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.

This report quantifies the industry's **operational impact** (due to purchases of intermediate inputs and payments of labor compensation and dividends) and **capital investment impact** (due to its investment in new structures and equipment) at the national level. Separate detail is also provided on the industry's **operational impact** at the state level.<sup>2</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 any *forward linkages* (i.e., the economic impact on production in sectors that use oil and natural gas as an input).

The US oil and natural gas industry's total employment impact to the national economy in 2015, combining the **operational** and **capital investment** impacts, amounted to 10.3 million full-time and part-time jobs and accounted for 5.6 percent of total US employment (see **Table E-1**,

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<sup>1</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).

<sup>2</sup> The industry's *capital investment impact* is not quantified at the state level due to the non-availability of capital expenditure data at the state level.

below). At the national level, each direct job in the oil and natural gas industry supported an additional 2.7 jobs elsewhere in the US economy in 2015. Counting direct, indirect, and induced impacts, the industry’s total impact on labor income (including proprietors’ income) was \$714 billion, or 6.7 percent of national labor income in 2015. The industry’s total impact on US GDP was \$1.3 trillion, accounting for 7.6 percent of the national total in 2015.

**Table E-1.– Total Operational and Capital Investment Impacts of the Oil and Natural Gas Industry on the US Economy, 2015**

	Direct Impacts	Indirect and Induced Impacts		Total Impacts	Percent of US Total
		Operational Impacts	Capital Investment Impacts		
Employment*	2,794,900	5,277,700	2,268,000	10,340,700	5.6%
Labor Income (\$billions)**	\$289.6	\$290.6	\$134.1	\$714.2	6.7%
Value Added (\$billions)	\$602.6	\$495.3	\$219.9	\$1,317.9	7.6%

Source: PwC calculations using the IMPLAN modeling system (2015 database).

Note: Details may not add 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 reaches all 50 states and the District of Columbia. The total number of jobs directly or indirectly attributable to the oil and natural gas industry’s **operations** (i.e., not counting any **capital investment impacts**) ranged from a low of 11,800 (in District of Columbia) to nearly 2.0 million (in Texas) in 2015. The top 15 states, in terms of the total number of jobs directly or indirectly attributable to the oil and natural gas industry’s operations in 2015 were Texas, California, Oklahoma, Pennsylvania, Louisiana, Florida, Ohio, New York, Illinois, Colorado, Michigan, Georgia, New Jersey, North Carolina, and Kansas. Combined these states account for 83 percent of the total jobs attributable to the US oil and natural gas industry’s operations (see **Table E-2a**, below).

**Table E-2a. – Total Impacts of the Oil and Natural Gas Industry’s Operations in 2015**  
**Top 15 States, Ranked by Total Employment Impact**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of State Total	(\$ Million)	Percent of State Total	(\$ Million)	Percent of State Total
Texas	1,985,200	12.2%	\$180,039	18.1%	\$326,375	20.2%
California	730,600	3.2%	\$56,628	3.8%	\$119,631	4.9%
Oklahoma	379,100	16.6%	\$34,634	28.1%	\$51,712	27.3%
Pennsylvania	322,600	4.3%	\$22,994	5.1%	\$44,456	6.3%
Louisiana	291,200	11.0%	\$23,359	16.8%	\$50,730	20.7%
Florida	266,800	2.4%	\$11,916	2.2%	\$22,063	2.5%
Ohio	262,800	3.8%	\$14,743	4.0%	\$37,938	6.1%
New York	258,500	2.2%	\$21,306	2.4%	\$35,796	2.5%
Illinois	234,600	3.0%	\$14,860	3.1%	\$33,347	4.3%
Colorado	232,900	6.5%	\$23,099	11.3%	\$31,382	9.7%
Michigan	159,100	2.9%	\$8,235	2.7%	\$14,597	3.0%
Georgia	142,700	2.5%	\$7,467	2.5%	\$13,653	2.7%
New Jersey	142,200	2.7%	\$10,130	2.8%	\$20,972	3.7%
North Carolina	141,500	2.5%	\$6,959	2.4%	\$13,406	2.6%
Kansas	128,700	6.8%	\$8,113	8.5%	\$12,113	8.0%

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 top 15 states in terms of the percentage of jobs directly or indirectly attributable to the oil and natural gas industry’s operations in 2015 were Oklahoma (16.6 percent), Wyoming (14.4 percent), North Dakota (13.3 percent), Texas (12.2 percent), Louisiana (11.0 percent), Alaska (9.7 percent), New Mexico (8.3 percent), West Virginia (7.8 percent), Kansas (6.8 percent), Colorado (6.5 percent), Nebraska (6.3 percent), Montana (6.0 percent), Mississippi (5.3 percent), Arkansas (4.8 percent), and Pennsylvania (4.3 percent) (see **Table E-2b**, below).



**Table E-2b. – Total Impacts of the Oil and Natural Gas Industry’s Operations in 2015**  
**Top 15 States, Ranked by Employment Share of State Total**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of State Total	(\$ Million)	Percent of State Total	(\$ Million)	Percent of State Total
Oklahoma	379,100	16.6%	\$34,634	28.1%	\$51,712	27.3%
Wyoming	57,500	14.4%	\$4,350	20.8%	\$8,936	22.7%
North Dakota	78,700	13.3%	\$5,773	17.4%	\$11,727	21.1%
Texas	1,985,200	12.2%	\$180,039	18.1%	\$326,375	20.2%
Louisiana	291,200	11.0%	\$23,359	16.8%	\$50,730	20.7%
Alaska	45,300	9.7%	\$4,389	14.5%	\$15,783	28.9%
New Mexico	90,100	8.3%	\$5,244	10.0%	\$12,827	13.3%
West Virginia	70,900	7.8%	\$3,492	8.0%	\$8,054	10.9%
Kansas	128,700	6.8%	\$8,113	8.5%	\$12,113	8.0%
Colorado	232,900	6.5%	\$23,099	11.3%	\$31,382	9.7%
Nebraska	81,200	6.3%	\$6,413	9.2%	\$9,283	8.0%
Montana	39,500	6.0%	\$2,144	7.5%	\$4,861	10.5%
Mississippi	81,600	5.3%	\$4,233	6.4%	\$7,819	7.2%
Arkansas	76,000	4.8%	\$3,363	4.6%	\$8,137	6.5%
Pennsylvania	322,600	4.3%	\$22,994	5.1%	\$44,456	6.3%

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 in 2015

## I. Introduction

The American Petroleum Institute engaged PwC to quantify the economic impacts of the US oil and natural gas industry on the national and state economies in terms of employment, labor income, and value added.<sup>3</sup> This report presents PwC's economic impact estimates for 2015, the most recent year for which a consistent set of national and state-level data by industry is available.<sup>4</sup>

This study quantifies the industry's **operational impact** (due to purchases of intermediate inputs and payments of labor compensation and dividends) and **capital investment impact** (due to its investment in new structures and equipment) at the national level. Separate detail is also provided on the industry's **operational impact** at the state level.<sup>5</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 any *forward linkages* (i.e., the economic impact on production in sectors that use oil and natural gas as an input).

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.
- **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.

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

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"). For the industry's **indirect** and **induced** economic impacts at the national and

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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 prepared two prior studies for the American Petroleum Institute that quantified the economic impacts of the oil and gas industry. See PwC, *The Economic Impacts of the Oil and Natural Gas Industry on the US Economy in 2009: Employment, Labor Income, and Value Added* (May 2011) and *The Economic Impacts of the Oil and Natural Gas Industry on the US Economy in 2011* (July 2013).

<sup>5</sup> The industry's *capital investment impact* is not quantified at the state level due to the non-availability of capital expenditure data at the state level.

state level, we have developed the estimates using customized input-output models for each state and the District of Columbia built based on the IMPLAN input-output modeling system.<sup>6</sup>

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 total economic impacts at the national and state level in 2015. **Section IV** provides detail on each of the three separate components -- the direct, indirect, and induced economic impacts -- that in aggregate represent the total economic impacts of the oil and natural gas industry. **Section V** presents a composite measure of the industry's total "spend" based on its direct labor income, capital expenditures, and dividend payments. Detailed state-by-state operational impact results are presented in **Appendix A**. A description of the data sources and methodology used for the study is provided in **Appendix B**.

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<sup>6</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 a number of activities that span separate industry classifications in government economic data. Oil and natural gas exploration and production is included in the mining sector; oil refining is part of the manufacturing sector; pipeline operations are included in the transportation sector; natural gas distribution is in the utilities sector; and oil marketing is considered part of the wholesale and retail trade sector. For this study, PwC has defined the oil and natural gas industry to include all of these activities.

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

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

NAICS	IMPLAN Sector	Description
211	20	Oil and gas extraction (including NGL extraction)
213111	37	Drilling oil and gas wells
213112	38	Support activities for oil and gas operations
2212	50	Natural gas distribution (private)
2212	526*	Natural gas distribution (public)
23712	58*	Oil and gas pipeline and related structures construction
32411	156	Petroleum refineries
324121	157	Asphalt paving mixture and block manufacturing
324122	158	Asphalt shingle and coating materials manufacturing
324191	159	Petroleum lubricating oil and grease manufacturing
4247	395*	Petroleum and petroleum products merchant wholesalers
44711, 44719	402	Gasoline stations
45431	407*	Fuel dealers
486	413	Pipeline transportation

\*IMPLAN sectors 520, 58, 395, and 407 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 NAICS segment.

**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 in, drilling in, re-drilling, and directional drilling.

**NAICS 213112. Support activities for oil and gas operations.** This subsector comprises establishments primarily engaged in performing support activities on a contract or fee basis for

oil and gas operations (except site preparation and related construction activities). Services included are exploration (except geophysical surveying and mapping); excavating slush pits and cellars, well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells, shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells.

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

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

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

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

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

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

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

**NAICS 44719. Other gasoline stations.** This subsector comprises establishments known as gasoline stations (except those with convenience stores) primarily engaged in one of the following: (1) retailing automotive fuels (e.g., diesel fuel, gasohol, gasoline) or (2) retailing these fuels in

combination with activities, such as providing repair services; selling automotive oils, replacement parts, and accessories; and/or providing food services

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

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

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### **III. Total Economic Impact**

This section presents the estimated total economic impact of the US oil and natural gas industry on the national and state economies. As shown below, the oil and natural gas industry has a widespread economic impact throughout all sectors of the economy and across all 50 states and the District of Columbia. 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 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).

#### **A. National Impact**

As shown in **Table 2**, below, the total economic impact of the US oil and natural gas industry in terms of jobs, labor income (including wages and salaries and benefits as well as proprietors' income), and value added is significant.

##### Employment

PwC estimates that the US oil and natural gas industry's *operations* directly or indirectly supported 8.1 million full-time and part-time jobs in the national economy in 2015. 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 10.3 million full-time and part-time jobs in 2015, 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 spending out of dividend payments is estimated to be \$714.2 billion, or 6.7 percent of total US labor income in 2015.

##### 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 \$1.1 trillion of value added in the national economy in 2015, and its *capital investment* added an additional \$219.9 billion of value added. Combining both operational and capital investment impacts, the industry's total value added impact at the national level was \$1.3 trillion, accounting for 7.6 percent of US GDP in 2015.

**Table 2.– Total Operational and Capital Investment Impact of the Oil and Natural Gas Industry to the US Economy, 2015**

Item	Amount	Percent of US Total
<b><i>Operational Impact</i></b>		
Employment*	8,072,700	4.3%
Labor Income (\$ billions)**	\$580.1	5.5%
Value Added (\$ billions)	\$1,097.9	6.3%
<b><i>Capital Investment Impact</i></b>		
Employment*	2,268,000	1.2%
Labor Income (\$ billions)**	\$134.1	1.3%
Value Added (\$ billions)	\$219.9	1.3%
<b><i>Total Impacts</i></b>		
Employment*	10,340,700	5.6%
Labor Income (\$ billions)**	\$714.2	6.7%
Value Added (\$ billions)	\$1,317.9	7.6%

Source: PwC calculations using the IMPLAN modeling system (2015 database).

Note: Details may not add 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. State Impacts***

The US oil and natural gas industry's economic impact reaches all 50 states and the District of Columbia. The impact varies from state to state, depending on factors such as each state's industry mix, wage structure, spending and saving patterns, and connections to other economies.

**Table 3a**, below, shows the oil and natural gas industry's state-by-state total *operational* impact in terms of jobs, labor income (including wage and salaries and benefits as well as proprietors' income), and value added, where the states are shown alphabetically. **Table 3b**, below, is the same as **Table 3a**, except that the states are ranked in order of the industry's total employment impact as a percent of each state's total employment. State-level results, as explained earlier, do not include the economic impact of the industry's capital investment due to the non-availability of state capital expenditure data.



### Employment

The total number of jobs directly or indirectly attributable to the oil and natural gas industry's operations as a percent of each state's total employment in 2015 ranged from 1.3 percent (District of Columbia) to 16.6 percent (Oklahoma). The oil and natural gas industry directly or indirectly supported 5.0 percent or more of the total employment in 13 states in 2015: Oklahoma (16.6 percent), Wyoming (14.4 percent), North Dakota (13.3 percent), Texas (12.2 percent), Louisiana (11.0 percent), Alaska (9.7 percent), New Mexico (8.3 percent), West Virginia (7.8 percent), Kansas (6.8 percent), Colorado (6.5 percent), Nebraska (6.3 percent), Montana (6.0 percent), and Mississippi (5.3 percent). In these 13 states, the oil and natural gas industry was, on average, directly or indirectly responsible for one out of every nine jobs.

### Labor Income

As a percent of each state's total labor income (including wages and salaries and benefits as well as proprietors' income), the labor income from total jobs directly or indirectly supported by the oil and natural gas industry's operations ranged from 1.3 percent (District of Columbia) to 28.1 percent (Oklahoma) in 2015. The oil and natural gas industry's total labor income impact exceeded 5.0 percent of the state total in 14 states: Oklahoma (28.1 percent), Wyoming (20.8 percent), Texas (18.1 percent), North Dakota (17.4 percent), Louisiana (16.8 percent), Alaska (14.5 percent), Colorado (11.3 percent), New Mexico (10.0 percent), Nebraska (9.2 percent), Kansas (8.5 percent), West Virginia (8.0 percent), Montana (7.5 percent), Mississippi (6.4 percent), and Pennsylvania (5.1 percent).

### Value Added

As a percent of each state's economy, the oil and natural gas industry's total value-added impact from its operations ranged from 1.7 percent (District of Columbia) to 28.9 percent (Alaska) in 2015. The oil and natural gas industry's total value-added impact accounted for at least 5.0 percent of the state total in 17 states: Alaska (28.9 percent), Oklahoma (27.3 percent), Wyoming (22.7 percent), North Dakota (21.1 percent), Louisiana (20.7 percent), Texas (20.2 percent), New Mexico (13.3 percent), West Virginia (10.9 percent), Montana (10.5 percent), Colorado (9.7 percent), Nebraska (8.0 percent), Kansas (8.0 percent), Mississippi (7.2 percent), Arkansas (6.5 percent), Pennsylvania (6.3 percent), Ohio (6.1 percent), and Utah (5.0 percent).

**Table 3a.– Total Operational Impact of the Oil and Natural Gas Industry  
By State in 2015 (Sorted Alphabetically)**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of State Total	(\$ Million)	Percent of State Total	(\$ Million)	Percent of State Total
Alabama	86,400	3.4%	\$4,029.5	3.2%	\$8,851.0	4.2%
Alaska	45,300	9.7%	\$4,389.0	14.5%	\$15,783.0	28.9%
Arizona	95,300	2.7%	\$4,520.2	2.5%	\$8,031.5	2.7%
Arkansas	76,000	4.8%	\$3,363.2	4.6%	\$8,137.2	6.5%
California	730,600	3.2%	\$56,627.7	3.8%	\$119,630.7	4.9%
Colorado	232,900	6.5%	\$23,098.9	11.3%	\$31,381.6	9.7%
Connecticut	54,500	2.4%	\$4,407.9	2.7%	\$7,250.0	2.7%
Delaware	15,700	2.8%	\$1,014.5	2.9%	\$2,316.1	3.5%
District of Columbia	11,800	1.3%	\$1,214.1	1.3%	\$2,111.7	1.7%
Florida	266,800	2.4%	\$11,916.4	2.2%	\$22,063.5	2.5%
Georgia	142,700	2.5%	\$7,467.3	2.5%	\$13,652.9	2.7%
Hawaii	19,100	2.1%	\$1,041.6	2.1%	\$2,342.9	3.0%
Idaho	26,300	2.8%	\$1,162.4	2.8%	\$1,810.5	2.8%
Illinois	234,600	3.0%	\$14,859.9	3.1%	\$33,347.3	4.3%
Indiana	120,400	3.2%	\$6,114.4	3.2%	\$14,845.6	4.3%
Iowa	83,200	4.1%	\$4,304.2	4.1%	\$6,903.5	3.9%
Kansas	128,700	6.8%	\$8,112.9	8.5%	\$12,112.7	8.0%
Kentucky	80,200	3.3%	\$3,681.6	3.0%	\$7,861.7	3.9%
Louisiana	291,200	11.0%	\$23,359.2	16.8%	\$50,729.6	20.7%
Maine	29,200	3.6%	\$1,245.0	3.4%	\$2,246.4	3.9%
Maryland	72,500	2.0%	\$4,435.7	2.0%	\$7,896.1	2.1%
Massachusetts	102,600	2.3%	\$7,790.3	2.4%	\$12,518.8	2.6%
Michigan	159,100	2.9%	\$8,234.6	2.7%	\$14,596.9	3.0%
Minnesota	117,400	3.2%	\$7,078.5	3.3%	\$14,236.3	4.1%
Mississippi	81,600	5.3%	\$4,233.2	6.4%	\$7,819.2	7.2%
Missouri	117,500	3.2%	\$5,591.2	3.0%	\$10,467.5	3.5%
Montana	39,500	6.0%	\$2,143.9	7.5%	\$4,860.6	10.5%
Nebraska	81,200	6.3%	\$6,412.9	9.2%	\$9,283.1	8.0%
Nevada	44,900	2.8%	\$2,070.7	2.5%	\$4,086.5	2.9%
New Hampshire	24,100	2.8%	\$1,408.2	2.9%	\$2,262.4	3.1%
New Jersey	142,200	2.7%	\$10,130.4	2.8%	\$20,972.0	3.7%
New Mexico	90,100	8.3%	\$5,244.2	10.0%	\$12,827.2	13.3%
New York	258,500	2.2%	\$21,305.9	2.4%	\$35,796.5	2.5%
North Carolina	141,500	2.5%	\$6,958.8	2.4%	\$13,406.5	2.6%
North Dakota	78,700	13.3%	\$5,772.8	17.4%	\$11,726.8	21.1%
Ohio	262,800	3.8%	\$14,743.0	4.0%	\$37,937.6	6.1%
Oklahoma	379,100	16.6%	\$34,634.0	28.1%	\$51,712.4	27.3%
Oregon	57,500	2.4%	\$2,850.8	2.3%	\$5,358.4	2.5%
Pennsylvania	322,600	4.3%	\$22,994.2	5.1%	\$44,456.4	6.3%
Rhode Island	15,200	2.5%	\$1,023.3	2.9%	\$1,814.9	3.1%
South Carolina	67,600	2.6%	\$2,823.9	2.3%	\$5,233.8	2.6%
South Dakota	22,500	3.8%	\$906.6	3.2%	\$1,673.4	3.5%
Tennessee	106,600	2.8%	\$5,510.3	2.7%	\$10,586.5	3.3%
Texas	1,985,200	12.2%	\$180,038.5	18.1%	\$326,374.8	20.2%
Utah	66,800	3.7%	\$3,546.6	4.0%	\$7,416.3	5.0%
Vermont	13,900	3.2%	\$582.7	2.9%	\$991.7	3.2%
Virginia	125,500	2.5%	\$6,973.8	2.3%	\$11,971.6	2.4%
Washington	98,500	2.4%	\$6,107.8	2.3%	\$12,842.2	2.9%
West Virginia	70,900	7.8%	\$3,492.2	8.0%	\$8,054.2	10.9%
Wisconsin	98,200	2.7%	\$4,798.4	2.6%	\$8,393.1	2.7%
Wyoming	57,500	14.4%	\$4,350.0	20.8%	\$8,936.4	22.7%
<b>US Total</b>	<b>8,072,700</b>	<b>4.3%</b>	<b>\$580,117.3</b>	<b>5.2%</b>	<b>\$1,097,919.6</b>	<b>6.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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.

**Table 3b.– Total Operational Impact of the Oil and Natural Gas Industry  
By State in 2015 (Sorted by Employment Share of State Total)**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of State Total	(\$ Million)	Percent of State Total	(\$ Million)	Percent of State Total
Oklahoma	379,100	16.6%	\$34,634.0	28.1%	\$51,712.4	27.3%
Wyoming	57,500	14.4%	\$4,350.0	20.8%	\$8,936.4	22.7%
North Dakota	78,700	13.3%	\$5,772.8	17.4%	\$11,726.8	21.1%
Texas	1,985,200	12.2%	\$180,038.5	18.1%	\$326,374.8	20.2%
Louisiana	291,200	11.0%	\$23,359.2	16.8%	\$50,729.6	20.7%
Alaska	45,300	9.7%	\$4,389.0	14.5%	\$15,783.0	28.9%
New Mexico	90,100	8.3%	\$5,244.2	10.0%	\$12,827.2	13.3%
West Virginia	70,900	7.8%	\$3,492.2	8.0%	\$8,054.2	10.9%
Kansas	128,700	6.8%	\$8,112.9	8.5%	\$12,112.7	8.0%
Colorado	232,900	6.5%	\$23,098.9	11.3%	\$31,381.6	9.7%
Nebraska	81,200	6.3%	\$6,412.9	9.2%	\$9,283.1	8.0%
Montana	39,500	6.0%	\$2,143.9	7.5%	\$4,860.6	10.5%
Mississippi	81,600	5.3%	\$4,233.2	6.4%	\$7,819.2	7.2%
Arkansas	76,000	4.8%	\$3,363.2	4.6%	\$8,137.2	6.5%
Pennsylvania	322,600	4.3%	\$22,994.2	5.1%	\$44,456.4	6.3%
Iowa	83,200	4.1%	\$4,304.2	4.1%	\$6,903.5	3.9%
South Dakota	22,500	3.8%	\$906.6	3.2%	\$1,673.4	3.5%
Ohio	262,800	3.8%	\$14,743.0	4.0%	\$37,937.6	6.1%
Utah	66,800	3.7%	\$3,546.6	4.0%	\$7,416.3	5.0%
Maine	29,200	3.6%	\$1,245.0	3.4%	\$2,246.4	3.9%
Alabama	86,400	3.4%	\$4,029.5	3.2%	\$8,851.0	4.2%
Kentucky	80,200	3.3%	\$3,681.6	3.0%	\$7,861.7	3.9%
Missouri	117,500	3.2%	\$5,591.2	3.0%	\$10,467.5	3.5%
Vermont	13,900	3.2%	\$582.7	2.9%	\$991.7	3.2%
California	730,600	3.2%	\$56,627.7	3.8%	\$119,630.7	4.9%
Minnesota	117,400	3.2%	\$7,078.5	3.3%	\$14,236.3	4.1%
Indiana	120,400	3.2%	\$6,114.4	3.2%	\$14,845.6	4.3%
Illinois	234,600	3.0%	\$14,859.9	3.1%	\$33,347.3	4.3%
Michigan	159,100	2.9%	\$8,234.6	2.7%	\$14,596.9	3.0%
New Hampshire	24,100	2.8%	\$1,408.2	2.9%	\$2,262.4	3.1%
Delaware	15,700	2.8%	\$1,014.5	2.9%	\$2,316.1	3.5%
Tennessee	106,600	2.8%	\$5,510.3	2.7%	\$10,586.5	3.3%
Idaho	26,300	2.8%	\$1,162.4	2.8%	\$1,810.5	2.8%
Nevada	44,900	2.8%	\$2,070.7	2.5%	\$4,086.5	2.9%
Wisconsin	98,200	2.7%	\$4,798.4	2.6%	\$8,393.1	2.7%
New Jersey	142,200	2.7%	\$10,130.4	2.8%	\$20,972.0	3.7%
Arizona	95,300	2.7%	\$4,520.2	2.5%	\$8,031.5	2.7%
South Carolina	67,600	2.6%	\$2,823.9	2.3%	\$5,233.8	2.6%
North Carolina	141,500	2.5%	\$6,958.8	2.4%	\$13,406.5	2.6%
Georgia	142,700	2.5%	\$7,467.3	2.5%	\$13,652.9	2.7%
Virginia	125,500	2.5%	\$6,973.8	2.3%	\$11,971.6	2.4%
Rhode Island	15,200	2.5%	\$1,023.3	2.9%	\$1,814.9	3.1%
Oregon	57,500	2.4%	\$2,850.8	2.3%	\$5,358.4	2.5%
Connecticut	54,500	2.4%	\$4,407.9	2.7%	\$7,250.0	2.7%
Washington	98,500	2.4%	\$6,107.8	2.3%	\$12,842.2	2.9%
Florida	266,800	2.4%	\$11,916.4	2.2%	\$22,063.5	2.5%
Massachusetts	102,600	2.3%	\$7,790.3	2.4%	\$12,518.8	2.6%
New York	258,500	2.2%	\$21,305.9	2.4%	\$35,796.5	2.5%
Hawaii	19,100	2.1%	\$1,041.6	2.1%	\$2,342.9	3.0%
Maryland	72,500	2.0%	\$4,435.7	2.0%	\$7,896.1	2.1%
District of Columbia	11,800	1.3%	\$1,214.1	1.3%	\$2,111.7	1.7%
<b>US Total</b>	<b>8,072,700</b>	<b>4.3%</b>	<b>\$580,117.3</b>	<b>5.2%</b>	<b>\$1,097,919.6</b>	<b>6.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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.

## ***IV. Detail by Component of Economic Impact: Direct, Indirect, and Induced Impacts***

The total economic impact presented in the previous section 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 earned either directly or indirectly from the oil and natural gas industry's spending or from dividends received from oil and natural gas companies). In this section, the three different economic impacts are separately quantified.

### ***A. Direct Impact***

**Table 4**, below, shows the direct impact of the US oil and natural gas industry by NAICS subsector for the country as a whole in terms of employment, labor income (including wages and salaries and benefits as well as proprietors' income), and value added. In 2015, the oil and natural gas industry directly provided 2.8 million jobs for American workers, paid \$289.6 billion in wages, salaries and fringe benefits and proprietors' income, and generated \$602.6 billion in GDP.

**Table 4.– Direct Impact of the Oil and Natural Gas Industry in the US Economy by Subsector, 2015**

NAICS	Sub-sector Description	Employment*	Labor Income**	Value Added
			(\$ Millions)	(\$ Millions)
211	Oil and gas extraction (including NGL extraction)	832,300	107,353	206,171
213111	Drilling oil and gas wells	80,400	8,458	12,491
213112	Support activities for oil and gas operations	320,100	28,506	41,533
2212	Natural gas distribution (private)	119,100	18,236	60,096
2212	Natural gas distribution (public)	6,700	485	1,598
23712	Oil and gas pipeline and related structures construction	142,900	13,364	15,281
32411	Petroleum refineries	71,200	21,860	114,374
324121	Asphalt paving mixture and block manufacturing	14,400	2,966	15,519
324122	Asphalt shingle and coating materials manufacturing	10,800	2,268	11,869
324191	Petroleum lubricating oil and grease manufacturing	11,600	2,490	13,030
4247	Petroleum and petroleum products merchant wholesalers	102,900	9,485	18,513
44711, 44719	Gasoline stations	953,100	35,591	57,283
45431	Fuel dealers	80,100	4,985	8,023
486	Pipeline transportation	<u>49,300</u>	<u>33,520</u>	<u>26,811</u>
	<b>Total Oil and Natural Gas Industry</b>	<b>2,794,900</b>	<b>\$289,567</b>	<b>\$602,592</b>

Source: Estimates based on 2015 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 2015 input-output relationships from the IMPLAN modeling system.

Note: Details may not add 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.

**Table 5a**, below, shows the direct employment, labor income (including wages and salaries and benefits as well as proprietors' income) and value added impacts of the oil and gas industry as a whole by state, where the states are shown alphabetically. **Table 5b**, below, is the same as **Table 5a**, except that the states are ranked by the oil and natural gas industry's direct employment.

In 2015, the ten states with the largest direct employment effect generated by the oil and natural gas industry were, in order: Texas, California, Oklahoma, Louisiana, Pennsylvania, Ohio, Colorado, Florida, Illinois, and New York. These ten states accounted for 59.6 percent of the oil and natural gas industry's national direct employment, 76.2 percent of the oil and natural gas industry's national direct labor income, and 73.8 percent of the oil and natural gas industry's national direct value added in 2015.

**Table 5a. – Direct Impact of the Oil and Natural Gas Industry by State, 2015  
(Sorted Alphabetically)**

State	Direct Employment*		Direct Labor Income**		Direct Value Added	
	Amount	Percent of US Total	(\$ Million)	Percent of US Total	(\$ Million)	Percent of US Total
Alabama	33,800	1.2%	\$1,520.3	0.5%	\$4,325.3	0.7%
Alaska	21,500	0.8%	\$3,108.5	1.1%	\$13,583.5	2.3%
Arizona	31,800	1.1%	\$1,229.1	0.4%	\$2,347.8	0.4%
Arkansas	33,300	1.2%	\$1,446.0	0.5%	\$4,666.5	0.8%
California	183,800	6.6%	\$21,694.1	7.5%	\$60,565.9	10.1%
Colorado	78,300	2.8%	\$15,074.7	5.2%	\$17,876.4	3.0%
Connecticut	16,300	0.6%	\$1,570.9	0.5%	\$2,485.3	0.4%
Delaware	5,200	0.2%	\$341.5	0.1%	\$957.6	0.2%
District of Columbia	2,100	0.1%	\$196.4	0.1%	\$744.6	0.1%
Florida	77,600	2.8%	\$2,582.5	0.9%	\$5,940.5	1.0%
Georgia	43,900	1.6%	\$2,213.8	0.8%	\$4,250.8	0.7%
Hawaii	4,700	0.2%	\$300.3	0.1%	\$1,059.0	0.2%
Idaho	9,800	0.3%	\$432.9	0.1%	\$586.6	0.1%
Illinois	69,500	2.5%	\$4,462.8	1.5%	\$15,727.8	2.6%
Indiana	40,300	1.4%	\$2,011.4	0.7%	\$7,061.0	1.2%
Iowa	30,400	1.1%	\$1,570.5	0.5%	\$1,994.2	0.3%
Kansas	63,200	2.3%	\$4,955.7	1.7%	\$6,828.1	1.1%
Kentucky	32,500	1.2%	\$1,367.6	0.5%	\$3,749.1	0.6%
Louisiana	130,400	4.7%	\$15,910.1	5.5%	\$37,800.0	6.3%
Maine	12,400	0.4%	\$483.0	0.2%	\$943.8	0.2%
Maryland	20,600	0.7%	\$1,244.7	0.4%	\$2,359.9	0.4%
Massachusetts	26,700	1.0%	\$2,104.2	0.7%	\$3,683.1	0.6%
Michigan	54,500	1.9%	\$2,504.2	0.9%	\$5,101.6	0.8%
Minnesota	39,400	1.4%	\$2,381.4	0.8%	\$6,397.9	1.1%
Mississippi	37,600	1.3%	\$2,445.0	0.8%	\$4,568.6	0.8%
Missouri	42,400	1.5%	\$1,693.8	0.6%	\$3,691.5	0.6%
Montana	17,100	0.6%	\$1,204.7	0.4%	\$3,266.9	0.5%
Nebraska	14,700	0.5%	\$3,228.3	1.1%	\$3,602.6	0.6%
Nevada	14,800	0.5%	\$554.6	0.2%	\$1,278.4	0.2%
New Hampshire	8,600	0.3%	\$505.5	0.2%	\$817.9	0.1%
New Jersey	36,900	1.3%	\$2,756.1	1.0%	\$9,040.1	1.5%
New Mexico	45,300	1.6%	\$3,347.5	1.2%	\$9,250.9	1.5%
New York	64,600	2.3%	\$5,907.4	2.0%	\$10,311.7	1.7%
North Carolina	47,100	1.7%	\$1,975.7	0.7%	\$3,782.4	0.6%
North Dakota	41,500	1.5%	\$3,962.0	1.4%	\$8,580.2	1.4%
Ohio	90,100	3.2%	\$5,536.2	1.9%	\$21,846.2	3.6%
Oklahoma	163,900	5.9%	\$25,229.9	8.7%	\$35,705.2	5.9%
Oregon	17,600	0.6%	\$754.0	0.3%	\$1,739.6	0.3%
Pennsylvania	106,200	3.8%	\$10,246.1	3.5%	\$23,799.1	3.9%
Rhode Island	4,100	0.1%	\$377.2	0.1%	\$720.6	0.1%
South Carolina	25,900	0.9%	\$860.2	0.3%	\$1,707.0	0.3%
South Dakota	10,200	0.4%	\$314.5	0.1%	\$567.4	0.1%
Tennessee	36,100	1.3%	\$1,651.5	0.6%	\$4,276.7	0.7%
Texas	701,400	25.1%	\$113,964.8	39.4%	\$215,325.2	35.7%
Utah	23,200	0.8%	\$1,463.5	0.5%	\$3,717.4	0.6%
Vermont	6,100	0.2%	\$219.4	0.1%	\$377.3	0.1%
Virginia	46,100	1.6%	\$2,239.6	0.8%	\$3,744.1	0.6%
Washington	27,400	1.0%	\$1,768.9	0.6%	\$5,228.2	0.9%
West Virginia	38,200	1.4%	\$2,022.5	0.7%	\$5,415.9	0.9%
Wisconsin	35,000	1.3%	\$1,437.2	0.5%	\$2,501.2	0.4%
Wyoming	31,000	1.1%	\$3,194.6	1.1%	\$6,693.9	1.1%
<b>US Total</b>	<b>2,794,900</b>	<b>100%</b>	<b>\$289,567</b>	<b>100%</b>	<b>\$602,592</b>	<b>100%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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.



**Table 5b. – Direct Impact of the Oil and Natural Gas Industry by State, 2015**  
*(Sorted by Direct Employment)*

State	Direct Employment*		Direct Labor Income**		Direct Value Added	
	Amount	Percent of US Total	(\$ Million)	Percent of US Total	(\$ Million)	Percent of US Total
Texas	701,395	25.1%	\$113,964.8	39.4%	\$215,325.2	35.7%
California	183,800	6.6%	\$21,694.1	7.5%	\$60,565.9	10.1%
Oklahoma	163,900	5.9%	\$25,229.9	8.7%	\$35,705.2	5.9%
Louisiana	130,400	4.7%	\$15,910.1	5.5%	\$37,800.0	6.3%
Pennsylvania	106,200	3.8%	\$10,246.1	3.5%	\$23,799.1	3.9%
Ohio	90,100	3.2%	\$5,536.2	1.9%	\$21,846.2	3.6%
Colorado	78,300	2.8%	\$15,074.7	5.2%	\$17,876.4	3.0%
Florida	77,600	2.8%	\$2,582.5	0.9%	\$5,940.5	1.0%
Illinois	69,500	2.5%	\$4,462.8	1.5%	\$15,727.8	2.6%
New York	64,600	2.3%	\$5,907.4	2.0%	\$10,311.7	1.7%
Kansas	63,200	2.3%	\$4,955.7	1.7%	\$6,828.1	1.1%
Michigan	54,500	1.9%	\$2,504.2	0.9%	\$5,101.6	0.8%
North Carolina	47,100	1.7%	\$1,975.7	0.7%	\$3,782.4	0.6%
Virginia	46,100	1.6%	\$2,239.6	0.8%	\$3,744.1	0.6%
New Mexico	45,300	1.6%	\$3,347.5	1.2%	\$9,250.9	1.5%
Georgia	43,900	1.6%	\$2,213.8	0.8%	\$4,250.8	0.7%
Missouri	42,400	1.5%	\$1,693.8	0.6%	\$3,691.5	0.6%
North Dakota	41,500	1.5%	\$3,962.0	1.4%	\$8,580.2	1.4%
Indiana	40,300	1.4%	\$2,011.4	0.7%	\$7,061.0	1.2%
Minnesota	39,400	1.4%	\$2,381.4	0.8%	\$6,397.9	1.1%
West Virginia	38,200	1.4%	\$2,022.5	0.7%	\$5,415.9	0.9%
Mississippi	37,600	1.3%	\$2,445.0	0.8%	\$4,568.6	0.8%
New Jersey	36,900	1.3%	\$2,756.1	1.0%	\$9,040.1	1.5%
Tennessee	36,100	1.3%	\$1,651.5	0.6%	\$4,276.7	0.7%
Wisconsin	35,000	1.3%	\$1,437.2	0.5%	\$2,501.2	0.4%
Alabama	33,800	1.2%	\$1,520.3	0.5%	\$4,325.3	0.7%
Arkansas	33,300	1.2%	\$1,446.0	0.5%	\$4,666.5	0.8%
Kentucky	32,500	1.2%	\$1,367.6	0.5%	\$3,749.1	0.6%
Arizona	31,800	1.1%	\$1,229.1	0.4%	\$2,347.8	0.4%
Wyoming	31,000	1.1%	\$3,194.6	1.1%	\$6,693.9	1.1%
Iowa	30,400	1.1%	\$1,570.5	0.5%	\$1,994.2	0.3%
Washington	27,400	1.0%	\$1,768.9	0.6%	\$5,228.2	0.9%
Massachusetts	26,700	1.0%	\$2,104.2	0.7%	\$3,683.1	0.6%
South Carolina	25,900	0.9%	\$860.2	0.3%	\$1,707.0	0.3%
Utah	23,200	0.8%	\$1,463.5	0.5%	\$3,717.4	0.6%
Alaska	21,500	0.8%	\$3,108.5	1.1%	\$13,583.5	2.3%
Maryland	20,600	0.7%	\$1,244.7	0.4%	\$2,359.9	0.4%
Oregon	17,600	0.6%	\$754.0	0.3%	\$1,739.6	0.3%
Montana	17,100	0.6%	\$1,204.7	0.4%	\$3,266.9	0.5%
Connecticut	16,300	0.6%	\$1,570.9	0.5%	\$2,485.3	0.4%
Nevada	14,800	0.5%	\$554.6	0.2%	\$1,278.4	0.2%
Nebraska	14,700	0.5%	\$3,228.3	1.1%	\$3,602.6	0.6%
Maine	12,400	0.4%	\$483.0	0.2%	\$943.8	0.2%
South Dakota	10,200	0.4%	\$314.5	0.1%	\$567.4	0.1%
Idaho	9,800	0.3%	\$432.9	0.1%	\$586.6	0.1%
New Hampshire	8,600	0.3%	\$505.5	0.2%	\$817.9	0.1%
Vermont	6,100	0.2%	\$219.4	0.1%	\$377.3	0.1%
Delaware	5,200	0.2%	\$341.5	0.1%	\$957.6	0.2%
Hawaii	4,700	0.2%	\$300.3	0.1%	\$1,059.0	0.2%
Rhode Island	4,100	0.1%	\$377.2	0.1%	\$720.6	0.1%
District of Columbia	2,100	0.1%	\$196.4	0.1%	\$744.6	0.1%
<b>US Total</b>	<b>2,794,900</b>	<b>100%</b>	<b>\$289,567</b>	<b>100%</b>	<b>\$602,592</b>	<b>100%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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. Indirect and Induced Impacts***

The oil and natural gas industry purchases intermediate inputs from a variety of other US industries, supporting jobs in these industries and spurring additional rounds of input purchases by these industries. Other economic impacts are generated by the personal spending of employees and business owners in the oil and natural gas industry and out of the additional income in the supply chain to the industry. Additional economic impact is generated by shareholder spending out of dividends received from oil and natural gas companies. The jobs, labor income (including wages and salaries and benefits as well as proprietors' income), and value added supported by this cycle of spending, or multiplier process, are referred to as the indirect and induced economic impacts.

The oil and natural gas industry also purchases capital goods from a variety of US suppliers, which has a similar multiplier effect on the rest of the US economy. Based on data from the Census Bureau and US Department of Commerce, PwC estimates that the oil and natural gas industry invested \$235.3 billion in new equipment and structures in 2015.

PwC quantified the indirect and induced impacts of the oil and natural gas industry's operational and capital spending using the customized impact models PwC has built based on the IMPLAN modeling system.

**Table 6**, below, shows the oil and natural gas industry's indirect and induced impacts by sector, separately identifying its ***operational*** and ***capital investment*** impacts at the national level. PwC estimates that at the national level, each direct job in the oil and natural gas industry supported an additional 2.7 jobs elsewhere in the US economy in 2015. That is, in addition to the 2.8 million direct jobs in the oil and natural gas industry, 7.5 million additional jobs were supported in the US economy through the indirect and induced impacts of the industry. The industry's purchase of intermediate inputs from other US suppliers and payment of dividends to shareholders supported more than 5.3 million indirect and induced jobs in other industries across the country in 2015, and its capital investment supported 2.3 million additional indirect and induced jobs across the US economy. Combined, the oil and natural gas industry directly or indirectly supported 10.3 million jobs in the US economy in 2015. The service sector accounts for the largest number of indirect and induced jobs attributable to the oil and natural gas industry's spending (3.6 million) in 2015, followed by Wholesale and Retail Trade (0.9 million), Finance, Insurance, Real Estate, Rental and Leasing (0.9 million), and Manufacturing (0.5 million).

The industry's estimated national indirect and induced labor income (including wages and salaries and benefits as well as proprietors' income) was \$424.6 billion and its estimated national indirect and induced value added was \$715.3 billion in 2015.

**Table 6.– The Direct, Indirect, and Induced Impact of the Oil and Natural Gas Industry to the US Economy, 2015**

Sector Description	Employment*	Labor Income (\$ million)**	Value Added (\$ million)
<b>Direct Impact of the Oil and Natural Gas Industry</b>	<b>2,794,900</b>	<b>\$289,566.8</b>	<b>\$602,592.4</b>
<b>Indirect and Induced Impact on Other Industries</b>	<b>7,545,800</b>	<b>\$424,601.3</b>	<b>\$715,267.0</b>
<b>Operational Impact</b>	<b>5,277,700</b>	<b>\$290,550.5</b>	<b>\$495,327.2</b>
Agriculture	81,700	\$3,470.7	\$4,647.7
Mining	23,400	\$2,585.0	\$8,578.1
Utilities	10,900	\$1,461.9	\$5,239.7
Construction	194,800	\$10,871.7	\$17,731.0
Manufacturing	213,500	\$17,474.1	\$35,447.6
Wholesale and retail trade	651,600	\$34,101.2	\$58,201.7
Transportation and warehousing	269,700	\$12,846.4	\$19,147.7
Information	188,400	\$14,288.4	\$27,596.8
Finance, insurance, real estate, rental and leasing	666,700	\$38,955.2	\$129,231.1
Services	2,639,700	\$135,105.1	\$164,920.4
Other	337,300	\$19,390.9	\$24,585.4
<b>Capital Investment Impact</b>	<b>2,268,000</b>	<b>\$134,050.7</b>	<b>\$219,939.8</b>
Agriculture	28,200	\$1,165.2	\$1,542.6
Mining	11,100	\$956.0	\$2,268.4
Utilities	5,700	\$832.4	\$3,079.8
Construction	318,000	\$18,443.4	\$24,264.5
Manufacturing	272,300	\$22,431.0	\$40,611.9
Wholesale and retail trade	293,900	\$15,961.1	\$28,509.6
Transportation and warehousing	78,800	\$4,458.0	\$6,265.0
Information	33,000	\$3,837.2	\$8,184.9
Finance, insurance, real estate, rental and leasing	225,800	\$13,776.7	\$43,034.0
Services	980,100	\$50,324.2	\$60,057.7
Other	<u>21,100</u>	<u>\$1,865.5</u>	<u>\$2,121.4</u>
<b>Total Economic Impact</b>	<b>10,340,700</b>	<b>\$714,168.1</b>	<b>\$1,317,859.4</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

Note: Details may not add 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 remainder of this section provides details on the operational economic impacts of the oil and natural gas industry at the state level. As previously discussed, the state-level impacts exclude the economic impacts from capital investment in the oil and natural gas industry because capital expenditure data is not available at the state level.

**Table 7a**, below, shows the sum of the oil and natural gas industry's indirect and induced effects from its operations (i.e., not including its capital investment impact) in terms of employment, value added, and labor income in the 50 states and the District of Columbia, where the states are shown alphabetically. **Table 7b**, below, is the same as **Table 7a** except that the states are ranked in order of the indirect and induced employment effect. In 2015, the five states with the largest combined indirect and induced employment effect generated by the oil and natural gas industry

operations were, in order: Texas (24.3 percent), California (10.4 percent), Pennsylvania (4.1 percent), Oklahoma (4.1 percent), and New York (3.7 percent). These five states accounted for 46.5 percent of the oil and natural gas industry's national combined operational indirect and induced employment, 47.7 percent of the oil and natural gas industry's national combined operational indirect and induced labor income, and 46.9 percent of the oil and natural gas industry's national combined operational indirect and induced value added in 2015.

**Table 8a**, below, shows the direct, indirect, induced, and total employment impact of the oil and natural gas industry from its operations in the 50 states and the District of Columbia, where the states are shown alphabetically. **Table 8b**, below, is the same as **Table 8a** except that the states are ranked in order of the industry's total employment impact from its operations as a percent of each state's total employment. Using this metric, the top five states in 2015 were, in order: Oklahoma (16.6 percent), Wyoming (14.4 percent), North Dakota (13.3 percent), Texas (12.2 percent), and Louisiana (11.0 percent).

**Table 9a**, below, shows the direct, indirect, induced, and total labor income impact of the oil and natural gas industry from its operations in the 50 states and the District of Columbia, where the states are shown alphabetically. **Table 9b**, below, is the same as **Table 9a** except the states are ranked in order of the industry's total impact from its operations as a percent of each state's total labor income. The top five states by this metric in 2015 were, in order: Oklahoma (28.1 percent), Wyoming (20.8 percent), Texas (18.1 percent), North Dakota (17.4 percent), and Louisiana (16.8 percent).

**Table 10a**, below, shows the direct, indirect, induced, and total value-added impact of the oil and natural gas industry from its operations in the 50 states and the District of Columbia, where the states are shown alphabetically. **Table 10b**, below, is the same as **Table 10a** except that the states are ranked in order of the industry's total impact from its operations to each state's GDP. The top five states by this metric in 2015 were, in order: Alaska (28.9 percent), Oklahoma (27.3 percent), Wyoming (22.7 percent), North Dakota (21.1 percent), and Louisiana (20.7 percent).

More detailed state-by-state operational impact results are included in **Appendix A**.

**Table 7a.– Indirect and Induced Impacts of the Oil and Natural Gas Industry’s Operations by State, 2015 (Sorted Alphabetically)**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of US Total	(\$ Million)	Percent of US Total	(\$ Million)	Percent of US Total
Alabama	52,500	1.0%	\$2,509.3	0.9%	\$4,525.7	0.9%
Alaska	23,700	0.4%	\$1,280.5	0.4%	\$2,199.5	0.4%
Arizona	63,500	1.2%	\$3,291.1	1.1%	\$5,683.6	1.1%
Arkansas	42,600	0.8%	\$1,917.2	0.7%	\$3,470.7	0.7%
California	546,900	10.4%	\$34,933.6	12.0%	\$59,064.8	11.9%
Colorado	154,600	2.9%	\$8,024.2	2.8%	\$13,505.2	2.7%
Connecticut	38,200	0.7%	\$2,837.0	1.0%	\$4,764.7	1.0%
Delaware	10,500	0.2%	\$673.0	0.2%	\$1,358.4	0.3%
District of Columbia	9,700	0.2%	\$1,017.7	0.4%	\$1,367.0	0.3%
Florida	189,200	3.6%	\$9,333.9	3.2%	\$16,123.0	3.3%
Georgia	98,800	1.9%	\$5,253.6	1.8%	\$9,402.1	1.9%
Hawaii	14,500	0.3%	\$741.2	0.3%	\$1,283.9	0.3%
Idaho	16,500	0.3%	\$729.6	0.3%	\$1,223.9	0.2%
Illinois	165,000	3.1%	\$10,397.0	3.6%	\$17,619.5	3.6%
Indiana	80,100	1.5%	\$4,103.0	1.4%	\$7,784.6	1.6%
Iowa	52,900	1.0%	\$2,733.7	0.9%	\$4,909.3	1.0%
Kansas	65,400	1.2%	\$3,157.2	1.1%	\$5,284.6	1.1%
Kentucky	47,700	0.9%	\$2,314.0	0.8%	\$4,112.6	0.8%
Louisiana	160,800	3.0%	\$7,449.0	2.6%	\$12,929.6	2.6%
Maine	16,800	0.3%	\$762.0	0.3%	\$1,302.6	0.3%
Maryland	51,900	1.0%	\$3,191.0	1.1%	\$5,536.1	1.1%
Massachusetts	76,000	1.4%	\$5,686.0	2.0%	\$8,835.7	1.8%
Michigan	104,600	2.0%	\$5,730.4	2.0%	\$9,495.4	1.9%
Minnesota	78,000	1.5%	\$4,697.2	1.6%	\$7,838.4	1.6%
Mississippi	44,000	0.8%	\$1,788.2	0.6%	\$3,250.6	0.7%
Missouri	75,100	1.4%	\$3,897.3	1.3%	\$6,776.0	1.4%
Montana	22,400	0.4%	\$939.2	0.3%	\$1,593.7	0.3%
Nebraska	66,500	1.3%	\$3,184.6	1.1%	\$5,680.5	1.1%
Nevada	30,000	0.6%	\$1,516.1	0.5%	\$2,808.2	0.6%
New Hampshire	15,500	0.3%	\$902.7	0.3%	\$1,444.5	0.3%
New Jersey	105,200	2.0%	\$7,374.3	2.5%	\$11,931.9	2.4%
New Mexico	44,800	0.8%	\$1,896.7	0.7%	\$3,576.4	0.7%
New York	193,900	3.7%	\$15,398.6	5.3%	\$25,484.8	5.1%
North Carolina	94,400	1.8%	\$4,983.2	1.7%	\$9,624.1	1.9%
North Dakota	37,200	0.7%	\$1,810.8	0.6%	\$3,146.6	0.6%
Ohio	172,800	3.3%	\$9,206.8	3.2%	\$16,091.5	3.2%
Oklahoma	215,200	4.1%	\$9,404.1	3.2%	\$16,007.1	3.2%
Oregon	40,000	0.8%	\$2,096.8	0.7%	\$3,618.8	0.7%
Pennsylvania	216,400	4.1%	\$12,748.2	4.4%	\$20,657.3	4.2%
Rhode Island	11,000	0.2%	\$646.1	0.2%	\$1,094.3	0.2%
South Carolina	41,700	0.8%	\$1,963.7	0.7%	\$3,526.8	0.7%
South Dakota	12,300	0.2%	\$592.2	0.2%	\$1,106.0	0.2%
Tennessee	70,500	1.3%	\$3,858.8	1.3%	\$6,309.8	1.3%
Texas	1,283,800	24.3%	\$66,073.7	22.7%	\$111,049.7	22.4%
Utah	43,600	0.8%	\$2,083.2	0.7%	\$3,699.0	0.7%
Vermont	7,800	0.1%	\$363.3	0.1%	\$614.5	0.1%
Virginia	79,400	1.5%	\$4,734.2	1.6%	\$8,227.5	1.7%
Washington	71,100	1.3%	\$4,338.8	1.5%	\$7,614.0	1.5%
West Virginia	32,700	0.6%	\$1,469.7	0.5%	\$2,638.3	0.5%
Wisconsin	63,200	1.2%	\$3,361.3	1.2%	\$5,892.0	1.2%
Wyoming	26,500	0.5%	\$1,155.3	0.4%	\$2,242.5	0.5%
<b>US Total</b>	<b>5,277,700</b>	<b>100.0%</b>	<b>\$290,550.5</b>	<b>100.0%</b>	<b>\$495,327.2</b>	<b>100.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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.

**Table 7b.– Indirect and Induced Impacts of the Oil and Natural Gas Industry’s Operations by State, 2015 (Sorted by Employment Impact)**

State	Employment*		Labor Income**		Value Added	
	Amount	Percent of US Total	(\$ Million)	Percent of US Total	(\$ Million)	Percent of US Total
Texas	1,283,800	24.3%	\$66,073.7	22.7%	\$111,049.7	22.4%
California	546,900	10.4%	\$34,933.6	12.0%	\$59,064.8	11.9%
Pennsylvania	216,400	4.1%	\$12,748.2	4.4%	\$20,657.3	4.2%
Oklahoma	215,200	4.1%	\$9,404.1	3.2%	\$16,007.1	3.2%
New York	193,900	3.7%	\$15,398.6	5.3%	\$25,484.8	5.1%
Florida	189,200	3.6%	\$9,333.9	3.2%	\$16,123.0	3.3%
Ohio	172,800	3.3%	\$9,206.8	3.2%	\$16,091.5	3.2%
Illinois	165,000	3.1%	\$10,397.0	3.6%	\$17,619.5	3.6%
Louisiana	160,800	3.0%	\$7,449.0	2.6%	\$12,929.6	2.6%
Colorado	154,600	2.9%	\$8,024.2	2.8%	\$13,505.2	2.7%
New Jersey	105,200	2.0%	\$7,374.3	2.5%	\$11,931.9	2.4%
Michigan	104,600	2.0%	\$5,730.4	2.0%	\$9,495.4	1.9%
Georgia	98,800	1.9%	\$5,253.6	1.8%	\$9,402.1	1.9%
North Carolina	94,400	1.8%	\$4,983.2	1.7%	\$9,624.1	1.9%
Indiana	80,100	1.5%	\$4,103.0	1.4%	\$7,784.6	1.6%
Virginia	79,400	1.5%	\$4,734.2	1.6%	\$8,227.5	1.7%
Minnesota	78,000	1.5%	\$4,697.2	1.6%	\$7,838.4	1.6%
Massachusetts	76,000	1.4%	\$5,686.0	2.0%	\$8,835.7	1.8%
Missouri	75,100	1.4%	\$3,897.3	1.3%	\$6,776.0	1.4%
Washington	71,100	1.3%	\$4,338.8	1.5%	\$7,614.0	1.5%
Tennessee	70,500	1.3%	\$3,858.8	1.3%	\$6,309.8	1.3%
Nebraska	66,500	1.3%	\$3,184.6	1.1%	\$5,680.5	1.1%
Kansas	65,400	1.2%	\$3,157.2	1.1%	\$5,284.6	1.1%
Arizona	63,500	1.2%	\$3,291.1	1.1%	\$5,683.6	1.1%
Wisconsin	63,200	1.2%	\$3,361.3	1.2%	\$5,892.0	1.2%
Iowa	52,900	1.0%	\$2,733.7	0.9%	\$4,909.3	1.0%
Alabama	52,500	1.0%	\$2,509.3	0.9%	\$4,525.7	0.9%
Maryland	51,900	1.0%	\$3,191.0	1.1%	\$5,536.1	1.1%
Kentucky	47,700	0.9%	\$2,314.0	0.8%	\$4,112.6	0.8%
New Mexico	44,800	0.8%	\$1,896.7	0.7%	\$3,576.4	0.7%
Mississippi	44,000	0.8%	\$1,788.2	0.6%	\$3,250.6	0.7%
Utah	43,600	0.8%	\$2,083.2	0.7%	\$3,699.0	0.7%
Arkansas	42,600	0.8%	\$1,917.2	0.7%	\$3,470.7	0.7%
South Carolina	41,700	0.8%	\$1,963.7	0.7%	\$3,526.8	0.7%
Oregon	40,000	0.8%	\$2,096.8	0.7%	\$3,618.8	0.7%
Connecticut	38,200	0.7%	\$2,837.0	1.0%	\$4,764.7	1.0%
North Dakota	37,200	0.7%	\$1,810.8	0.6%	\$3,146.6	0.6%
West Virginia	32,700	0.6%	\$1,469.7	0.5%	\$2,638.3	0.5%
Nevada	30,000	0.6%	\$1,516.1	0.5%	\$2,808.2	0.6%
Wyoming	26,500	0.5%	\$1,155.3	0.4%	\$2,242.5	0.5%
Alaska	23,700	0.4%	\$1,280.5	0.4%	\$2,199.5	0.4%
Montana	22,400	0.4%	\$939.2	0.3%	\$1,593.7	0.3%
Maine	16,800	0.3%	\$762.0	0.3%	\$1,302.6	0.3%
Idaho	16,500	0.3%	\$729.6	0.3%	\$1,223.9	0.2%
New Hampshire	15,500	0.3%	\$902.7	0.3%	\$1,444.5	0.3%
Hawaii	14,500	0.3%	\$741.2	0.3%	\$1,283.9	0.3%
South Dakota	12,300	0.2%	\$592.2	0.2%	\$1,106.0	0.2%
Rhode Island	11,000	0.2%	\$646.1	0.2%	\$1,094.3	0.2%
Delaware	10,500	0.2%	\$673.0	0.2%	\$1,358.4	0.3%
District of Columbia	9,700	0.2%	\$1,017.7	0.4%	\$1,367.0	0.3%
Vermont	7,800	0.1%	\$363.3	0.1%	\$614.5	0.1%
<b>US Total</b>	<b>5,277,700</b>	<b>100.0%</b>	<b>\$290,550.5</b>	<b>100.0%</b>	<b>\$495,327.2</b>	<b>100.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add 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.

**Table 8a.– Employment Impact of the Oil and Natural Gas Industry’s Operations by State, 2015 (Sorted Alphabetically)**

State	Direct Employment	Indirect Employment	Induced Employment	Total Contribution	Total Contribution as a % of State Total Employment
Alabama	33,800	15,200	37,300	86,300	3.4%
Alaska	21,500	4,900	18,800	45,200	9.7%
Arizona	31,800	16,800	46,700	95,300	2.7%
Arkansas	33,300	12,400	30,200	75,900	4.8%
California	183,800	141,600	405,200	730,600	3.2%
Colorado	78,300	26,000	128,600	232,900	6.5%
Connecticut	16,300	8,500	29,700	54,500	2.4%
Delaware	5,200	3,100	7,400	15,700	2.8%
District of Columbia	2,100	2,500	7,200	11,800	1.3%
Florida	77,600	45,300	143,800	266,700	2.4%
Georgia	43,900	25,500	73,300	142,700	2.5%
Hawaii	4,700	3,400	11,100	19,200	2.1%
Idaho	9,800	4,200	12,300	26,300	2.8%
Illinois	69,500	45,100	119,900	234,500	3.0%
Indiana	40,300	22,800	57,200	120,300	3.2%
Iowa	30,400	16,400	36,500	83,300	4.1%
Kansas	63,200	18,800	46,600	128,600	6.8%
Kentucky	32,500	13,900	33,800	80,200	3.3%
Louisiana	130,400	46,400	114,300	291,100	11.0%
Maine	12,400	5,100	11,700	29,200	3.6%
Maryland	20,600	12,200	39,700	72,500	2.0%
Massachusetts	26,700	18,000	58,000	102,700	2.3%
Michigan	54,500	27,200	77,400	159,100	2.9%
Minnesota	39,400	21,100	57,000	117,500	3.2%
Mississippi	37,600	14,000	30,000	81,600	5.3%
Missouri	42,400	20,200	54,800	117,400	3.2%
Montana	17,100	6,800	15,600	39,500	6.0%
Nebraska	14,700	14,000	52,500	81,200	6.3%
Nevada	14,800	7,400	22,600	44,800	2.8%
New Hampshire	8,600	4,100	11,400	24,100	2.8%
New Jersey	36,900	27,600	77,600	142,100	2.7%
New Mexico	45,300	11,100	33,700	90,100	8.3%
New York	64,600	43,500	150,400	258,500	2.2%
North Carolina	47,100	25,300	69,100	141,500	2.5%
North Dakota	41,500	9,900	27,200	78,600	13.3%
Ohio	90,100	51,400	121,400	262,900	3.8%
Oklahoma	163,900	41,000	174,200	379,100	16.6%
Oregon	17,600	10,500	29,500	57,600	2.4%
Pennsylvania	106,200	50,900	165,400	322,500	4.3%
Rhode Island	4,100	2,600	8,500	15,200	2.5%
South Carolina	25,900	11,300	30,400	67,600	2.6%
South Dakota	10,200	3,100	9,200	22,500	3.8%
Tennessee	36,100	18,800	51,800	106,700	2.8%
Texas	701,400	233,100	1,050,800	1,985,300	12.2%
Utah	23,200	12,200	31,400	66,800	3.7%
Vermont	6,100	2,000	5,800	13,900	3.2%
Virginia	46,100	20,600	58,800	125,500	2.5%
Washington	27,400	19,000	52,100	98,500	2.4%
West Virginia	38,200	9,300	23,400	70,900	7.8%
Wisconsin	35,000	16,500	46,700	98,200	2.7%
Wyoming	31,000	8,200	18,300	57,500	14.4%
<b>US Total</b>	<b>2,794,900</b>	<b>1,251,200</b>	<b>4,026,500</b>	<b>8,072,700</b>	<b>4.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add to totals due to rounding. Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.



**Table 8b.– Employment Impact of the Oil and Natural Gas Industry’s Operations by State, 2015 (Sorted by Employment Share)**

State	Direct Employment	Indirect Employment	Induced Employment	Total Contribution	Total Contribution as a % of State Total Employment
Oklahoma	163,900	41,000	174,200	379,100	16.6%
Wyoming	31,000	8,200	18,300	57,500	14.4%
North Dakota	41,500	9,900	27,200	78,600	13.3%
Texas	701,400	233,100	1,050,800	1,985,300	12.2%
Louisiana	130,400	46,400	114,300	291,100	11.0%
Alaska	21,500	4,900	18,800	45,200	9.7%
New Mexico	45,300	11,100	33,700	90,100	8.3%
West Virginia	38,200	9,300	23,400	70,900	7.8%
Kansas	63,200	18,800	46,600	128,600	6.8%
Colorado	78,300	26,000	128,600	232,900	6.5%
Nebraska	14,700	14,000	52,500	81,200	6.3%
Montana	17,100	6,800	15,600	39,500	6.0%
Mississippi	37,600	14,000	30,000	81,600	5.3%
Arkansas	33,300	12,400	30,200	75,900	4.8%
Pennsylvania	106,200	50,900	165,400	322,500	4.3%
Iowa	30,400	16,400	36,500	83,300	4.1%
South Dakota	10,200	3,100	9,200	22,500	3.8%
Ohio	90,100	51,400	121,400	262,900	3.8%
Utah	23,200	12,200	31,400	66,800	3.7%
Maine	12,400	5,100	11,700	29,200	3.6%
Alabama	33,800	15,200	37,300	86,300	3.4%
Kentucky	32,500	13,900	33,800	80,200	3.3%
Missouri	42,400	20,200	54,800	117,400	3.2%
Vermont	6,100	2,000	5,800	13,900	3.2%
California	183,800	141,600	405,200	730,600	3.2%
Minnesota	39,400	21,100	57,000	117,500	3.2%
Indiana	40,300	22,800	57,200	120,300	3.2%
Illinois	69,500	45,100	119,900	234,500	3.0%
Michigan	54,500	27,200	77,400	159,100	2.9%
New Hampshire	8,600	4,100	11,400	24,100	2.8%
Delaware	5,200	3,100	7,400	15,700	2.8%
Tennessee	36,100	18,800	51,800	106,700	2.8%
Idaho	9,800	4,200	12,300	26,300	2.8%
Nevada	14,800	7,400	22,600	44,800	2.8%
Wisconsin	35,000	16,500	46,700	98,200	2.7%
New Jersey	36,900	27,600	77,600	142,100	2.7%
Arizona	31,800	16,800	46,700	95,300	2.7%
South Carolina	25,900	11,300	30,400	67,600	2.6%
North Carolina	47,100	25,300	69,100	141,500	2.5%
Georgia	43,900	25,500	73,300	142,700	2.5%
Virginia	46,100	20,600	58,800	125,500	2.5%
Rhode Island	4,100	2,600	8,500	15,200	2.5%
Oregon	17,600	10,500	29,500	57,600	2.4%
Connecticut	16,300	8,500	29,700	54,500	2.4%
Washington	27,400	19,000	52,100	98,500	2.4%
Florida	77,600	45,300	143,800	266,700	2.4%
Massachusetts	26,700	18,000	58,000	102,700	2.3%
New York	64,600	43,500	150,400	258,500	2.2%
Hawaii	4,700	3,400	11,100	19,200	2.1%
Maryland	20,600	12,200	39,700	72,500	2.0%
District of Columbia	2,100	2,500	7,200	11,800	1.3%
<b>US Total</b>	<b>2,794,900</b>	<b>1,251,200</b>	<b>4,026,500</b>	<b>8,072,700</b>	<b>4.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database). Details may not add to totals due to rounding. Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.



**Table 9a. – Impact of the Oil and Natural Gas Industry’s Operations on Labor Income by State, 2015 (in \$ Millions, Sorted Alphabetically)**

State	Direct Labor Income	Indirect Labor Income	Induced Labor Income	Total Contribution	Total Contribution as a % of State Total Labor Income
Alabama	\$1,520.3	\$839.4	\$1,669.9	\$4,029.5	3.2%
Alaska	\$3,108.5	\$317.3	\$963.2	\$4,389.0	14.5%
Arizona	\$1,229.1	\$1,005.6	\$2,285.5	\$4,520.2	2.5%
Arkansas	\$1,446.0	\$652.4	\$1,264.8	\$3,363.2	4.6%
California	\$21,694.1	\$10,935.2	\$23,998.4	\$56,627.7	3.8%
Colorado	\$15,074.7	\$1,779.6	\$6,244.6	\$23,098.9	11.3%
Connecticut	\$1,570.9	\$774.2	\$2,062.9	\$4,407.9	2.7%
Delaware	\$341.5	\$235.0	\$438.1	\$1,014.5	2.9%
District of Columbia	\$196.4	\$302.2	\$715.5	\$1,214.1	1.3%
Florida	\$2,582.5	\$2,625.2	\$6,708.7	\$11,916.4	2.2%
Georgia	\$2,213.8	\$1,588.3	\$3,665.3	\$7,467.3	2.5%
Hawaii	\$300.3	\$200.6	\$540.6	\$1,041.6	2.1%
Idaho	\$432.9	\$199.5	\$530.0	\$1,162.4	2.8%
Illinois	\$4,462.8	\$3,495.3	\$6,901.7	\$14,859.9	3.1%
Indiana	\$2,011.4	\$1,356.1	\$2,746.9	\$6,114.4	3.2%
Iowa	\$1,570.5	\$1,014.0	\$1,719.7	\$4,304.2	4.1%
Kansas	\$4,955.7	\$1,109.4	\$2,047.7	\$8,112.9	8.5%
Kentucky	\$1,367.6	\$772.9	\$1,541.1	\$3,681.6	3.0%
Louisiana	\$15,910.1	\$2,628.7	\$4,820.3	\$23,359.2	16.8%
Maine	\$483.0	\$260.8	\$501.2	\$1,245.0	3.4%
Maryland	\$1,244.7	\$919.3	\$2,271.7	\$4,435.7	2.0%
Massachusetts	\$2,104.2	\$1,674.7	\$4,011.3	\$7,790.3	2.4%
Michigan	\$2,504.2	\$1,806.9	\$3,923.4	\$8,234.6	2.7%
Minnesota	\$2,381.4	\$1,541.1	\$3,156.1	\$7,078.5	3.3%
Mississippi	\$2,445.0	\$647.4	\$1,140.8	\$4,233.2	6.4%
Missouri	\$1,693.8	\$1,256.8	\$2,640.5	\$5,591.2	3.0%
Montana	\$1,204.7	\$335.0	\$604.2	\$2,143.9	7.5%
Nebraska	\$3,228.3	\$874.2	\$2,310.5	\$6,412.9	9.2%
Nevada	\$554.6	\$440.9	\$1,075.2	\$2,070.7	2.5%
New Hampshire	\$505.5	\$277.9	\$624.9	\$1,408.2	2.9%
New Jersey	\$2,756.1	\$2,401.4	\$4,972.9	\$10,130.4	2.8%
New Mexico	\$3,347.5	\$563.8	\$1,332.9	\$5,244.2	10.0%
New York	\$5,907.4	\$4,226.9	\$11,171.6	\$21,305.9	2.4%
North Carolina	\$1,975.7	\$1,561.7	\$3,421.4	\$6,958.8	2.4%
North Dakota	\$3,962.0	\$577.9	\$1,232.9	\$5,772.8	17.4%
Ohio	\$5,536.2	\$3,290.7	\$5,916.1	\$14,743.0	4.0%
Oklahoma	\$25,229.9	\$2,176.5	\$7,227.6	\$34,634.0	28.1%
Oregon	\$754.0	\$656.1	\$1,440.7	\$2,850.8	2.3%
Pennsylvania	\$10,246.1	\$3,725.9	\$9,022.2	\$22,994.2	5.1%
Rhode Island	\$377.2	\$179.7	\$466.4	\$1,023.3	2.9%
South Carolina	\$860.2	\$617.8	\$1,345.9	\$2,823.9	2.3%
South Dakota	\$314.5	\$165.6	\$426.5	\$906.6	3.2%
Tennessee	\$1,651.5	\$1,154.9	\$2,703.9	\$5,510.3	2.7%
Texas	\$113,964.8	\$15,543.7	\$50,530.0	\$180,038.5	18.1%
Utah	\$1,463.5	\$686.3	\$1,396.8	\$3,546.6	4.0%
Vermont	\$219.4	\$104.2	\$259.1	\$582.7	2.9%
Virginia	\$2,239.6	\$1,542.4	\$3,191.8	\$6,973.8	2.3%
Washington	\$1,768.9	\$1,387.2	\$2,951.6	\$6,107.8	2.3%
West Virginia	\$2,022.5	\$508.1	\$961.7	\$3,492.2	8.0%
Wisconsin	\$1,437.2	\$1,028.1	\$2,333.1	\$4,798.4	2.6%
Wyoming	\$3,194.6	\$441.6	\$713.7	\$4,350.0	20.8%
<b>US Total</b>	<b>\$289,566.8</b>	<b>\$84,406.7</b>	<b>\$206,143.9</b>	<b>\$580,117.3</b>	<b>5.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

**Table 9b. – Impact of the Oil and Natural Gas Industry’s Operations on Labor Income by State, 2015 (in \$ Millions, Sorted by Labor Income Share)**

State	Direct Labor Income	Indirect Labor Income	Induced Labor Income	Total Contribution	Total Contribution as a % of State Total Labor Income
Oklahoma	\$25,229.9	\$2,176.5	\$7,227.6	\$34,634.0	28.1%
Wyoming	\$3,194.6	\$441.6	\$713.7	\$4,350.0	20.8%
Texas	\$113,964.8	\$15,543.7	\$50,530.0	\$180,038.5	18.1%
North Dakota	\$3,962.0	\$577.9	\$1,232.9	\$5,772.8	17.4%
Louisiana	\$15,910.1	\$2,628.7	\$4,820.3	\$23,359.2	16.8%
Alaska	\$3,108.5	\$317.3	\$963.2	\$4,389.0	14.5%
Colorado	\$15,074.7	\$1,779.6	\$6,244.6	\$23,098.9	11.3%
New Mexico	\$3,347.5	\$563.8	\$1,332.9	\$5,244.2	10.0%
Nebraska	\$3,228.3	\$874.2	\$2,310.5	\$6,412.9	9.2%
Kansas	\$4,955.7	\$1,109.4	\$2,047.7	\$8,112.9	8.5%
West Virginia	\$2,022.5	\$508.1	\$961.7	\$3,492.2	8.0%
Montana	\$1,204.7	\$335.0	\$604.2	\$2,143.9	7.5%
Mississippi	\$2,445.0	\$647.4	\$1,140.8	\$4,233.2	6.4%
Pennsylvania	\$10,246.1	\$3,725.9	\$9,022.2	\$22,994.2	5.1%
Arkansas	\$1,446.0	\$652.4	\$1,264.8	\$3,363.2	4.6%
Iowa	\$1,570.5	\$1,014.0	\$1,719.7	\$4,304.2	4.1%
Ohio	\$5,536.2	\$3,290.7	\$5,916.1	\$14,743.0	4.0%
Utah	\$1,463.5	\$686.3	\$1,396.8	\$3,546.6	4.0%
California	\$21,694.1	\$10,935.2	\$23,998.4	\$56,627.7	3.8%
Maine	\$483.0	\$260.8	\$501.2	\$1,245.0	3.4%
Minnesota	\$2,381.4	\$1,541.1	\$3,156.1	\$7,078.5	3.3%
South Dakota	\$314.5	\$165.6	\$426.5	\$906.6	3.2%
Alabama	\$1,520.3	\$839.4	\$1,669.9	\$4,029.5	3.2%
Indiana	\$2,011.4	\$1,356.1	\$2,746.9	\$6,114.4	3.2%
Illinois	\$4,462.8	\$3,495.3	\$6,901.7	\$14,859.9	3.1%
Kentucky	\$1,367.6	\$772.9	\$1,541.1	\$3,681.6	3.0%
Missouri	\$1,693.8	\$1,256.8	\$2,640.5	\$5,591.2	3.0%
Delaware	\$341.5	\$235.0	\$438.1	\$1,014.5	2.9%
New Hampshire	\$505.5	\$277.9	\$624.9	\$1,408.2	2.9%
Vermont	\$219.4	\$104.2	\$259.1	\$582.7	2.9%
Rhode Island	\$377.2	\$179.7	\$466.4	\$1,023.3	2.9%
New Jersey	\$2,756.1	\$2,401.4	\$4,972.9	\$10,130.4	2.8%
Idaho	\$432.9	\$199.5	\$530.0	\$1,162.4	2.8%
Michigan	\$2,504.2	\$1,806.9	\$3,923.4	\$8,234.6	2.7%
Tennessee	\$1,651.5	\$1,154.9	\$2,703.9	\$5,510.3	2.7%
Connecticut	\$1,570.9	\$774.2	\$2,062.9	\$4,407.9	2.7%
Wisconsin	\$1,437.2	\$1,028.1	\$2,333.1	\$4,798.4	2.6%
Nevada	\$554.6	\$440.9	\$1,075.2	\$2,070.7	2.5%
Arizona	\$1,229.1	\$1,005.6	\$2,285.5	\$4,520.2	2.5%
Georgia	\$2,213.8	\$1,588.3	\$3,665.3	\$7,467.3	2.5%
Massachusetts	\$2,104.2	\$1,674.7	\$4,011.3	\$7,790.3	2.4%
North Carolina	\$1,975.7	\$1,561.7	\$3,421.4	\$6,958.8	2.4%
New York	\$5,907.4	\$4,226.9	\$11,171.6	\$21,305.9	2.4%
Washington	\$1,768.9	\$1,387.2	\$2,951.6	\$6,107.8	2.3%
South Carolina	\$860.2	\$617.8	\$1,345.9	\$2,823.9	2.3%
Virginia	\$2,239.6	\$1,542.4	\$3,191.8	\$6,973.8	2.3%
Oregon	\$754.0	\$656.1	\$1,440.7	\$2,850.8	2.3%
Florida	\$2,582.5	\$2,625.2	\$6,708.7	\$11,916.4	2.2%
Hawaii	\$300.3	\$200.6	\$540.6	\$1,041.6	2.1%
Maryland	\$1,244.7	\$919.3	\$2,271.7	\$4,435.7	2.0%
District of Columbia	\$196.4	\$302.2	\$715.5	\$1,214.1	1.3%
<b>US Total</b>	<b>\$289,566.8</b>	<b>\$84,406.7</b>	<b>\$206,143.9</b>	<b>\$580,117.3</b>	<b>5.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

**Table 10a.– Impact of the Oil and Natural Gas Industry’s Operations on Value Added by State, 2015 (in \$ Millions, Sorted Alphabetically)**

State	Direct Value Added	Indirect Value Added	Induced Value Added	Total Contribution	Total Contribution as a % of State GDP
Alabama	\$4,325	\$1,499	\$3,026	\$8,851	4.2%
Alaska	\$13,584	\$564	\$1,635	\$15,783	28.9%
Arizona	\$2,348	\$1,721	\$3,962	\$8,031	2.7%
Arkansas	\$4,667	\$1,147	\$2,323	\$8,137	6.5%
California	\$60,566	\$17,939	\$41,125	\$119,631	4.9%
Colorado	\$17,876	\$2,741	\$10,764	\$31,382	9.7%
Connecticut	\$2,485	\$1,278	\$3,487	\$7,250	2.7%
Delaware	\$958	\$445	\$913	\$2,316	3.5%
District of Columbia	\$745	\$421	\$946	\$2,112	1.7%
Florida	\$5,941	\$4,458	\$11,665	\$22,063	2.5%
Georgia	\$4,251	\$2,770	\$6,632	\$13,653	2.7%
Hawaii	\$1,059	\$335	\$949	\$2,343	3.0%
Idaho	\$587	\$352	\$872	\$1,811	2.8%
Illinois	\$15,728	\$5,714	\$11,905	\$33,347	4.3%
Indiana	\$7,061	\$2,599	\$5,186	\$14,846	4.3%
Iowa	\$1,994	\$1,792	\$3,117	\$6,904	3.9%
Kansas	\$6,828	\$1,736	\$3,548	\$12,113	8.0%
Kentucky	\$3,749	\$1,356	\$2,757	\$7,862	3.9%
Louisiana	\$37,800	\$4,375	\$8,555	\$50,730	20.7%
Maine	\$944	\$447	\$855	\$2,246	3.9%
Maryland	\$2,360	\$1,522	\$4,014	\$7,896	2.1%
Massachusetts	\$3,683	\$2,569	\$6,267	\$12,519	2.6%
Michigan	\$5,102	\$2,844	\$6,651	\$14,597	3.0%
Minnesota	\$6,398	\$2,488	\$5,350	\$14,236	4.1%
Mississippi	\$4,569	\$1,139	\$2,111	\$7,819	7.2%
Missouri	\$3,691	\$2,152	\$4,624	\$10,467	3.5%
Montana	\$3,267	\$569	\$1,024	\$4,861	10.5%
Nebraska	\$3,603	\$1,468	\$4,213	\$9,283	8.0%
Nevada	\$1,278	\$815	\$1,993	\$4,087	2.9%
New Hampshire	\$818	\$438	\$1,007	\$2,262	3.1%
New Jersey	\$9,040	\$3,679	\$8,253	\$20,972	3.7%
New Mexico	\$9,251	\$1,021	\$2,556	\$12,827	13.3%
New York	\$10,312	\$7,104	\$18,380	\$35,796	2.5%
North Carolina	\$3,782	\$3,026	\$6,598	\$13,406	2.6%
North Dakota	\$8,580	\$988	\$2,159	\$11,727	21.1%
Ohio	\$21,846	\$5,573	\$10,518	\$37,938	6.1%
Oklahoma	\$35,705	\$3,531	\$12,476	\$51,712	27.3%
Oregon	\$1,740	\$1,106	\$2,513	\$5,358	2.5%
Pennsylvania	\$23,799	\$5,887	\$14,770	\$44,456	6.3%
Rhode Island	\$721	\$298	\$796	\$1,815	3.1%
South Carolina	\$1,707	\$1,087	\$2,440	\$5,234	2.6%
South Dakota	\$567	\$324	\$782	\$1,673	3.5%
Tennessee	\$4,277	\$1,894	\$4,416	\$10,586	3.3%
Texas	\$215,325	\$25,489	\$85,560	\$326,375	20.2%
Utah	\$3,717	\$1,204	\$2,495	\$7,416	5.0%
Vermont	\$377	\$184	\$431	\$992	3.2%
Virginia	\$3,744	\$2,506	\$5,722	\$11,972	2.4%
Washington	\$5,228	\$2,334	\$5,280	\$12,842	2.9%
West Virginia	\$5,416	\$934	\$1,704	\$8,054	10.9%
Wisconsin	\$2,501	\$1,769	\$4,123	\$8,393	2.7%
Wyoming	\$6,694	\$846	\$1,397	\$8,936	22.7%
<b>US Total</b>	<b>\$602,592</b>	<b>\$140,481</b>	<b>\$354,846</b>	<b>\$1,097,920</b>	<b>6.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

Labor income includes wages and salaries and benefits as well as proprietors' income.

**Table 10b.– Impact of the Oil and Natural Gas Industry’s Operations on Value Added by State, 2015 (in \$ Millions, Sorted by Value Added Share)**

State	Direct Value Added	Indirect Value Added	Induced Value Added	Total Contribution	Total Contribution as a % of State GDP
Alaska	\$13,584	\$564	\$1,635	\$15,783	28.9%
Oklahoma	\$35,705	\$3,531	\$12,476	\$51,712	27.3%
Wyoming	\$6,694	\$846	\$1,397	\$8,936	22.7%
North Dakota	\$8,580	\$988	\$2,159	\$11,727	21.1%
Louisiana	\$37,800	\$4,375	\$8,555	\$50,730	20.7%
Texas	\$215,325	\$25,489	\$85,560	\$326,375	20.2%
New Mexico	\$9,251	\$1,021	\$2,556	\$12,827	13.3%
West Virginia	\$5,416	\$934	\$1,704	\$8,054	10.9%
Montana	\$3,267	\$569	\$1,024	\$4,861	10.5%
Colorado	\$17,876	\$2,741	\$10,764	\$31,382	9.7%
Nebraska	\$3,603	\$1,468	\$4,213	\$9,283	8.0%
Kansas	\$6,828	\$1,736	\$3,548	\$12,113	8.0%
Mississippi	\$4,569	\$1,139	\$2,111	\$7,819	7.2%
Arkansas	\$4,667	\$1,147	\$2,323	\$8,137	6.5%
Pennsylvania	\$23,799	\$5,887	\$14,770	\$44,456	6.3%
Ohio	\$21,846	\$5,573	\$10,518	\$37,938	6.1%
Utah	\$3,717	\$1,204	\$2,495	\$7,416	5.0%
California	\$60,566	\$17,939	\$41,125	\$119,631	4.9%
Indiana	\$7,061	\$2,599	\$5,186	\$14,846	4.3%
Illinois	\$15,728	\$5,714	\$11,905	\$33,347	4.3%
Alabama	\$4,325	\$1,499	\$3,026	\$8,851	4.2%
Minnesota	\$6,398	\$2,488	\$5,350	\$14,236	4.1%
Kentucky	\$3,749	\$1,356	\$2,757	\$7,862	3.9%
Maine	\$944	\$447	\$855	\$2,246	3.9%
Iowa	\$1,994	\$1,792	\$3,117	\$6,904	3.9%
New Jersey	\$9,040	\$3,679	\$8,253	\$20,972	3.7%
South Dakota	\$567	\$324	\$782	\$1,673	3.5%
Missouri	\$3,691	\$2,152	\$4,624	\$10,467	3.5%
Delaware	\$958	\$445	\$913	\$2,316	3.5%
Tennessee	\$4,277	\$1,894	\$4,416	\$10,586	3.3%
Vermont	\$377	\$184	\$431	\$992	3.2%
Rhode Island	\$721	\$298	\$796	\$1,815	3.1%
New Hampshire	\$818	\$438	\$1,007	\$2,262	3.1%
Michigan	\$5,102	\$2,844	\$6,651	\$14,597	3.0%
Hawaii	\$1,059	\$335	\$949	\$2,343	3.0%
Washington	\$5,228	\$2,334	\$5,280	\$12,842	2.9%
Nevada	\$1,278	\$815	\$1,993	\$4,087	2.9%
Idaho	\$587	\$352	\$872	\$1,811	2.8%
Connecticut	\$2,485	\$1,278	\$3,487	\$7,250	2.7%
Wisconsin	\$2,501	\$1,769	\$4,123	\$8,393	2.7%
Georgia	\$4,251	\$2,770	\$6,632	\$13,653	2.7%
Arizona	\$2,348	\$1,721	\$3,962	\$8,031	2.7%
North Carolina	\$3,782	\$3,026	\$6,598	\$13,406	2.6%
South Carolina	\$1,707	\$1,087	\$2,440	\$5,234	2.6%
Massachusetts	\$3,683	\$2,569	\$6,267	\$12,519	2.6%
Oregon	\$1,740	\$1,106	\$2,513	\$5,358	2.5%
New York	\$10,312	\$7,104	\$18,380	\$35,796	2.5%
Florida	\$5,941	\$4,458	\$11,665	\$22,063	2.5%
Virginia	\$3,744	\$2,506	\$5,722	\$11,972	2.4%
Maryland	\$2,360	\$1,522	\$4,014	\$7,896	2.1%
District of Columbia	\$745	\$421	\$946	\$2,112	1.7%
<b>US Total</b>	<b>\$602,592</b>	<b>\$140,481</b>	<b>\$354,846</b>	<b>\$1,097,920</b>	<b>6.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

Labor income includes wages and salaries and benefits as well as proprietors' income.

## ***V. 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 2015 is estimated to be \$289.6 billion and capital expenditures are estimated to be \$235.3 billion in 2015.<sup>7</sup> One measure of the industry's total "spend" is the sum of the industry labor income, capital expenditures, and dividend payments.

Total dividends paid by the industry were obtained from S&P's Compustat North America® database for US-headquartered companies in the oil and natural gas industry.<sup>8</sup> Excluding distributions from Master Limited Partnerships and other pass-through entities,<sup>9</sup> PwC estimates that the industry paid out a total of \$44.4 billion in dividends in 2015, including dividends paid to individuals, retirement plans, foreign shareholders, and other businesses.

Using this measure of total "spend" (consisting of the estimated direct labor income, capital expenditures, and dividend payments), the industry's total "spend" amounted to \$569.3 billion in 2015.

Another source for the industry's annual capital expenditures is a survey published annually by the *Oil & Gas Journal*, which puts the industry's 2015 US capital expenditures at \$182.4 billion.<sup>10</sup> If this estimate of the industry's capital expenditures is used for the purpose of computing the industry's total "spend" as defined above, the industry's total "spend" was \$516.4 billion in 2015.

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<sup>7</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>8</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 also includes dividends paid to US shareholders out of income from US operations by foreign corporations. It does not include the dollar value of stock dividends or dividends paid or accrued on preferred stock.

<sup>9</sup> Distributions from pass-through entities are included as proprietors' income in PwC's estimate of direct labor income.

<sup>10</sup> *Oil & Gas Journal*, March 7, 2016, available at: <http://www.ogj.com/articles/print/volume-114/issue-3/special-report-capital-spending-outlook/capital-expenditures-to-be-squeezed-further-in-2016.html>.

***Appendix A: Detailed State-by-State Operational  
Impact Results***

### The Economic Impact of the Oil and Natural Gas Industry in Alabama, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>33,835</b>			<b>33,835</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		6,448	19,061	25,509	
<i>Wholesale and retail trade</i>		1,232	5,813	7,045	
<i>Finance, insurance, real estate, rental and leasing</i>		1,829	4,101	5,930	
<i>Manufacturing</i>		2,026	3,422	5,447	
<i>Transportation and warehousing</i>		1,726	1,333	3,059	
<i>Construction</i>		747	412	1,159	
<i>Agriculture</i>		151	998	1,149	
<i>Information</i>		206	440	646	
<i>Utilities</i>		146	277	423	
<i>Mining</i>		169	80	250	
<i>Other</i>		542	1,370	1,912	
<b>Total Operational Impact on Employment</b>	<b>33,835</b>	<b>15,221</b>	<b>37,308</b>	<b>86,364</b>	<b>3.4%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,520.3</b>			<b>\$1,520.3</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$309.6	\$750.8	\$1,060.3	
<i>Manufacturing</i>		\$140.0	\$214.7	\$354.7	
<i>Wholesale and retail trade</i>		\$77.1	\$219.2	\$296.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$90.2	\$178.4	\$268.6	
<i>Transportation and warehousing</i>		\$92.6	\$69.4	\$161.9	
<i>Agriculture</i>		\$7.8	\$49.4	\$57.1	
<i>Utilities</i>		\$19.9	\$37.0	\$56.9	
<i>Construction</i>		\$35.8	\$20.0	\$55.8	
<i>Information</i>		\$14.7	\$30.2	\$44.9	
<i>Mining</i>		\$15.0	\$6.9	\$21.9	
<i>Other</i>		\$36.8	\$94.0	\$130.8	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,520.3</b>	<b>\$839.4</b>	<b>\$1,669.9</b>	<b>\$4,029.5</b>	<b>3.2%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,325.3</b>			<b>\$4,325.3</b>	<b>2.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$378.3	\$912.2	\$1,290.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$329.1	\$808.9	\$1,138.0	
<i>Manufacturing</i>		\$271.8	\$403.7	\$675.5	
<i>Wholesale and retail trade</i>		\$140.1	\$379.9	\$520.0	
<i>Transportation and warehousing</i>		\$117.8	\$85.3	\$203.1	
<i>Utilities</i>		\$54.7	\$101.9	\$156.6	
<i>Information</i>		\$35.8	\$87.6	\$123.4	
<i>Mining</i>		\$65.4	\$29.6	\$95.0	
<i>Construction</i>		\$45.2	\$25.1	\$70.3	
<i>Agriculture</i>		\$8.5	\$57.4	\$65.9	
<i>Other</i>		\$52.8	\$134.7	\$187.5	
<b>Total Operational Impact on Value Added</b>	<b>\$4,325.3</b>	<b>\$1,499.4</b>	<b>\$3,026.3</b>	<b>\$8,851.0</b>	<b>4.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

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



**The Economic Impact of the Oil and Natural Gas Industry in Alaska, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>21,526</b>			<b>21,526</b>	<b>4.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		2,182	10,715	<b>12,898</b>	
<i>Wholesale and retail trade</i>		436	3,268	<b>3,703</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		699	1,907	<b>2,606</b>	
<i>Transportation and warehousing</i>		441	697	<b>1,137</b>	
<i>Construction</i>		482	190	<b>672</b>	
<i>Manufacturing</i>		104	382	<b>486</b>	
<i>Information</i>		93	283	<b>377</b>	
<i>Mining</i>		210	83	<b>293</b>	
<i>Agriculture</i>		17	170	<b>186</b>	
<i>Utilities</i>		46	111	<b>157</b>	
<i>Other</i>		<u>237</u>	<u>979</u>	<b>1,216</b>	
<b>Total Operational Impact on Employment</b>	<b>21,526</b>	<b>4,946</b>	<b>18,785</b>	<b>45,257</b>	<b>9.7%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,108.5</b>			<b>\$3,108.5</b>	<b>10.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$136.2	\$538.6	<b>\$674.8</b>	
<i>Wholesale and retail trade</i>		\$22.5	\$124.5	<b>\$147.1</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$35.8	\$86.4	<b>\$122.2</b>	
<i>Transportation and warehousing</i>		\$30.1	\$44.1	<b>\$74.2</b>	
<i>Construction</i>		\$37.2	\$14.6	<b>\$51.9</b>	
<i>Information</i>		\$7.5	\$23.0	<b>\$30.5</b>	
<i>Manufacturing</i>		\$5.3	\$20.0	<b>\$25.3</b>	
<i>Utilities</i>		\$5.8	\$14.1	<b>\$19.9</b>	
<i>Mining</i>		\$14.4	\$5.4	<b>\$19.9</b>	
<i>Agriculture</i>		\$0.8	\$4.1	<b>\$5.0</b>	
<i>Other</i>		<u>\$21.6</u>	<u>\$88.1</u>	<b>\$109.8</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$3,108.5</b>	<b>\$317.3</b>	<b>\$963.2</b>	<b>\$4,389.0</b>	<b>14.5%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$13,583.5</b>			<b>\$13,583.5</b>	<b>24.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$165.2	\$628.2	<b>\$793.4</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$120.9	\$480.0	<b>\$600.9</b>	
<i>Wholesale and retail trade</i>		\$46.8	\$193.2	<b>\$240.0</b>	
<i>Transportation and warehousing</i>		\$41.2	\$62.3	<b>\$103.5</b>	
<i>Mining</i>		\$75.1	\$28.1	<b>\$103.2</b>	
<i>Information</i>		\$18.9	\$61.8	<b>\$80.8</b>	
<i>Construction</i>		\$50.1	\$19.7	<b>\$69.9</b>	
<i>Utilities</i>		\$13.7	\$33.0	<b>\$46.6</b>	
<i>Manufacturing</i>		\$8.1	\$26.5	<b>\$34.6</b>	
<i>Agriculture</i>		\$0.9	\$7.1	<b>\$8.0</b>	
<i>Other</i>		<u>\$23.5</u>	<u>\$95.3</u>	<b>\$118.7</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$13,583.5</b>	<b>\$564.4</b>	<b>\$1,635.1</b>	<b>\$15,783.0</b>	<b>28.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>31,756</b>			<b>31,756</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		8,049	25,562	33,611	
<i>Finance, insurance, real estate, rental and leasing</i>		2,704	7,014	9,718	
<i>Wholesale and retail trade</i>		1,154	6,628	7,782	
<i>Manufacturing</i>		1,192	1,993	3,185	
<i>Transportation and warehousing</i>		1,401	1,643	3,044	
<i>Construction</i>		933	492	1,425	
<i>Information</i>		340	747	1,088	
<i>Agriculture</i>		75	885	960	
<i>Mining</i>		358	174	532	
<i>Utilities</i>		129	259	388	
<i>Other</i>		491	1,325	1,816	
<b>Total Operational Impact on Employment</b>	<b>31,756</b>	<b>16,827</b>	<b>46,722</b>	<b>95,304</b>	<b>2.7%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,229.1</b>			<b>\$1,229.1</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$446.4	\$1,177.4	\$1,623.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$147.1	\$317.6	\$464.6	
<i>Wholesale and retail trade</i>		\$82.7	\$296.5	\$379.2	
<i>Manufacturing</i>		\$86.0	\$135.4	\$221.3	
<i>Transportation and warehousing</i>		\$78.1	\$93.0	\$171.1	
<i>Information</i>		\$27.6	\$55.4	\$83.0	
<i>Construction</i>		\$44.4	\$23.6	\$68.0	
<i>Utilities</i>		\$17.9	\$35.0	\$52.9	
<i>Mining</i>		\$35.5	\$16.7	\$52.2	
<i>Agriculture</i>		\$2.9	\$34.8	\$37.7	
<i>Other</i>		\$36.9	\$100.3	\$137.2	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,229.1</b>	<b>\$1,005.6</b>	<b>\$2,285.5</b>	<b>\$4,520.2</b>	<b>2.5%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,347.8</b>			<b>\$2,347.8</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$546.6	\$1,420.4	\$1,967.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$421.9	\$1,155.6	\$1,577.6	
<i>Wholesale and retail trade</i>		\$145.0	\$515.1	\$660.1	
<i>Manufacturing</i>		\$133.0	\$219.1	\$352.1	
<i>Transportation and warehousing</i>		\$111.1	\$140.1	\$251.2	
<i>Mining</i>		\$138.5	\$63.9	\$202.4	
<i>Information</i>		\$52.0	\$123.9	\$175.9	
<i>Utilities</i>		\$55.3	\$108.7	\$163.9	
<i>Construction</i>		\$64.0	\$33.9	\$97.9	
<i>Agriculture</i>		\$3.7	\$45.4	\$49.1	
<i>Other</i>		\$50.3	\$136.2	\$186.5	
<b>Total Operational Impact on Value Added</b>	<b>\$2,347.8</b>	<b>\$1,721.4</b>	<b>\$3,962.2</b>	<b>\$8,031.5</b>	<b>2.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>33,331</b>			<b>33,331</b>	<b>2.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		5,397	15,928	21,325	
<i>Wholesale and retail trade</i>		1,023	4,653	5,676	
<i>Finance, insurance, real estate, rental and leasing</i>		1,416	2,979	4,395	
<i>Manufacturing</i>		1,234	2,381	3,616	
<i>Transportation and warehousing</i>		1,346	1,191	2,537	
<i>Construction</i>		963	318	1,281	
<i>Agriculture</i>		131	1,119	1,250	
<i>Information</i>		150	276	426	
<i>Utilities</i>		91	152	243	
<i>Mining</i>		102	32	135	
<i>Other</i>		554	1,194	1,748	
<b>Total Operational Impact on Employment</b>	<b>33,331</b>	<b>12,407</b>	<b>30,224</b>	<b>75,962</b>	<b>4.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,446.0</b>			<b>\$1,446.0</b>	<b>2.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$275.7	\$608.3	\$884.0	
<i>Wholesale and retail trade</i>		\$63.9	\$170.9	\$234.8	
<i>Manufacturing</i>		\$73.9	\$127.0	\$200.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$64.3	\$112.6	\$176.9	
<i>Transportation and warehousing</i>		\$72.0	\$65.1	\$137.1	
<i>Agriculture</i>		\$6.7	\$63.2	\$69.9	
<i>Construction</i>		\$39.0	\$12.8	\$51.8	
<i>Information</i>		\$10.1	\$18.0	\$28.0	
<i>Utilities</i>		\$10.3	\$16.7	\$27.0	
<i>Mining</i>		\$5.0	\$1.5	\$6.6	
<i>Other</i>		\$31.5	\$68.8	\$100.2	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,446.0</b>	<b>\$652.4</b>	<b>\$1,264.8</b>	<b>\$3,363.2</b>	<b>4.6%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,666.5</b>			<b>\$4,666.5</b>	<b>3.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$343.9	\$748.7	\$1,092.7	
<i>Finance, insurance, real estate, rental and leasing</i>		\$231.5	\$572.1	\$803.6	
<i>Wholesale and retail trade</i>		\$134.6	\$319.2	\$453.7	
<i>Manufacturing</i>		\$141.3	\$239.6	\$380.9	
<i>Transportation and warehousing</i>		\$97.4	\$83.3	\$180.6	
<i>Information</i>		\$48.0	\$121.2	\$169.1	
<i>Utilities</i>		\$33.9	\$55.8	\$89.8	
<i>Agriculture</i>		\$7.8	\$75.0	\$82.8	
<i>Construction</i>		\$56.2	\$18.5	\$74.7	
<i>Mining</i>		\$13.6	\$4.2	\$17.8	
<i>Other</i>		\$39.2	\$85.8	\$125.0	
<b>Total Operational Impact on Value Added</b>	<b>\$4,666.5</b>	<b>\$1,147.4</b>	<b>\$2,323.3</b>	<b>\$8,137.2</b>	<b>6.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>183,757</b>			<b>183,757</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		67,482	227,207	<b>294,689</b>	
<i>Wholesale and retail trade</i>		13,967	57,124	<b>71,092</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		17,143	50,338	<b>67,480</b>	
<i>Manufacturing</i>		11,362	22,290	<b>33,653</b>	
<i>Transportation and warehousing</i>		14,728	14,929	<b>29,657</b>	
<i>Information</i>		3,295	8,167	<b>11,462</b>	
<i>Construction</i>		7,771	3,691	<b>11,462</b>	
<i>Agriculture</i>		893	9,850	<b>10,742</b>	
<i>Utilities</i>		340	770	<b>1,109</b>	
<i>Mining</i>		392	147	<b>539</b>	
<i>Other</i>		4,259	10,709	<b>14,968</b>	
<b>Total Operational Impact on Employment</b>	<b>183,757</b>	<b>141,629</b>	<b>405,222</b>	<b>730,608</b>	<b>3.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$21,694.1</b>			<b>\$21,694.1</b>	<b>1.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$4,963.9	\$11,840.8	<b>\$16,804.7</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,264.4	\$3,099.9	<b>\$4,364.3</b>	
<i>Wholesale and retail trade</i>		\$1,112.5	\$2,821.9	<b>\$3,934.4</b>	
<i>Manufacturing</i>		\$1,021.5	\$1,832.3	<b>\$2,853.7</b>	
<i>Information</i>		\$674.9	\$1,444.1	<b>\$2,119.0</b>	
<i>Transportation and warehousing</i>		\$886.1	\$891.4	<b>\$1,777.5</b>	
<i>Agriculture</i>		\$52.7	\$618.6	<b>\$671.2</b>	
<i>Construction</i>		\$442.5	\$210.7	<b>\$653.3</b>	
<i>Utilities</i>		\$58.6	\$129.3	<b>\$188.0</b>	
<i>Mining</i>		\$24.3	\$8.7	<b>\$33.0</b>	
<i>Other</i>		\$433.8	\$1,100.7	<b>\$1,534.5</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$21,694.1</b>	<b>\$10,935.2</b>	<b>\$23,998.4</b>	<b>\$56,627.7</b>	<b>3.8%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$60,565.9</b>			<b>\$60,565.9</b>	<b>2.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$6,085.1	\$14,243.5	<b>\$20,328.6</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$3,804.6	\$11,073.6	<b>\$14,878.2</b>	
<i>Wholesale and retail trade</i>		\$2,072.5	\$5,039.3	<b>\$7,111.8</b>	
<i>Manufacturing</i>		\$2,158.4	\$3,631.5	<b>\$5,789.9</b>	
<i>Information</i>		\$1,163.5	\$3,089.9	<b>\$4,253.4</b>	
<i>Transportation and warehousing</i>		\$1,104.5	\$1,091.4	<b>\$2,195.9</b>	
<i>Construction</i>		\$671.8	\$319.6	<b>\$991.4</b>	
<i>Agriculture</i>		\$66.3	\$790.0	<b>\$856.4</b>	
<i>Utilities</i>		\$187.2	\$405.7	<b>\$592.9</b>	
<i>Mining</i>		\$66.8	\$24.2	<b>\$91.0</b>	
<i>Other</i>		\$558.7	\$1,416.6	<b>\$1,975.3</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$60,565.9</b>	<b>\$17,939.5</b>	<b>\$41,125.3</b>	<b>\$119,630.7</b>	<b>4.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>78,305</b>			<b>78,305</b>	<b>2.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		12,063	71,422	<b>83,485</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		4,017	19,536	<b>23,553</b>	
<i>Wholesale and retail trade</i>		2,392	20,196	<b>22,588</b>	
<i>Transportation and warehousing</i>		1,758	3,826	<b>5,584</b>	
<i>Manufacturing</i>		1,671	3,157	<b>4,828</b>	
<i>Construction</i>		2,094	1,486	<b>3,580</b>	
<i>Information</i>		602	2,311	<b>2,913</b>	
<i>Agriculture</i>		96	1,482	<b>1,578</b>	
<i>Utilities</i>		121	377	<b>498</b>	
<i>Mining</i>		283	109	<b>393</b>	
<i>Other</i>		<u>908</u>	<u>4,695</u>	<b><u>5,603</u></b>	
<b>Total Operational Impact on Employment</b>	<b>78,305</b>	<b>26,005</b>	<b>128,597</b>	<b>232,907</b>	<b>6.5%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$15,074.7</b>			<b>\$15,074.7</b>	<b>7.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$837.3	\$3,295.4	<b>\$4,132.7</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$228.6	\$829.5	<b>\$1,058.1</b>	
<i>Wholesale and retail trade</i>		\$175.7	\$866.5	<b>\$1,042.2</b>	
<i>Information</i>		\$91.1	\$295.2	<b>\$386.3</b>	
<i>Manufacturing</i>		\$123.2	\$218.2	<b>\$341.4</b>	
<i>Transportation and warehousing</i>		\$103.2	\$223.7	<b>\$326.9</b>	
<i>Construction</i>		\$108.1	\$77.5	<b>\$185.7</b>	
<i>Utilities</i>		\$16.9	\$52.1	<b>\$69.0</b>	
<i>Agriculture</i>		\$3.2	\$50.9	<b>\$54.1</b>	
<i>Mining</i>		\$27.8	\$10.2	<b>\$38.1</b>	
<i>Other</i>		<u>\$64.5</u>	<u>\$325.3</u>	<b><u>\$389.8</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$15,074.7</b>	<b>\$1,779.6</b>	<b>\$6,244.6</b>	<b>\$23,098.9</b>	<b>11.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$17,876.4</b>			<b>\$17,876.4</b>	<b>5.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,020.6	\$3,986.6	<b>\$5,007.2</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$557.3	\$3,199.1	<b>\$3,756.4</b>	
<i>Wholesale and retail trade</i>		\$288.1	\$1,430.8	<b>\$1,718.9</b>	
<i>Information</i>		\$172.0	\$653.0	<b>\$825.0</b>	
<i>Manufacturing</i>		\$195.6	\$412.1	<b>\$607.6</b>	
<i>Transportation and warehousing</i>		\$136.6	\$290.4	<b>\$427.0</b>	
<i>Construction</i>		\$142.5	\$101.5	<b>\$244.0</b>	
<i>Utilities</i>		\$58.0	\$178.5	<b>\$236.4</b>	
<i>Mining</i>		\$85.2	\$32.1	<b>\$117.3</b>	
<i>Agriculture</i>		\$4.6	\$76.4	<b>\$81.0</b>	
<i>Other</i>		<u>\$80.6</u>	<u>\$403.9</u>	<b><u>\$484.4</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$17,876.4</b>	<b>\$2,740.8</b>	<b>\$10,764.4</b>	<b>\$31,381.6</b>	<b>9.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>16,280</b>			<b>16,280</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		3,970	16,831	20,801	
<i>Finance, insurance, real estate, rental and leasing</i>		1,185	4,153	5,338	
<i>Wholesale and retail trade</i>		610	4,220	4,830	
<i>Manufacturing</i>		1,185	1,605	2,790	
<i>Transportation and warehousing</i>		770	970	1,740	
<i>Information</i>		204	508	712	
<i>Construction</i>		277	291	567	
<i>Agriculture</i>		23	219	242	
<i>Utilities</i>		40	87	127	
<i>Mining</i>		46	16	62	
<i>Other</i>		210	774	984	
<b>Total Operational Impact on Employment</b>	<b>16,280</b>	<b>8,518</b>	<b>29,676</b>	<b>54,474</b>	<b>2.4%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,570.9</b>			<b>\$1,570.9</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$338.8	\$989.3	\$1,328.1	
<i>Finance, insurance, real estate, rental and leasing</i>		\$137.7	\$467.3	\$605.0	
<i>Wholesale and retail trade</i>		\$57.4	\$228.1	\$285.4	
<i>Manufacturing</i>		\$115.9	\$143.3	\$259.2	
<i>Transportation and warehousing</i>		\$48.7	\$58.5	\$107.2	
<i>Information</i>		\$28.4	\$63.6	\$92.0	
<i>Construction</i>		\$16.4	\$18.5	\$34.9	
<i>Utilities</i>		\$8.0	\$16.8	\$24.8	
<i>Agriculture</i>		\$0.6	\$4.9	\$5.4	
<i>Mining</i>		\$2.1	\$0.7	\$2.8	
<i>Other</i>		\$20.0	\$71.9	\$91.9	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,570.9</b>	<b>\$774.2</b>	<b>\$2,062.9</b>	<b>\$4,407.9</b>	<b>2.7%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,485.3</b>			<b>\$2,485.3</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$414.4	\$1,202.5	\$1,616.9	
<i>Finance, insurance, real estate, rental and leasing</i>		\$332.1	\$1,172.1	\$1,504.2	
<i>Wholesale and retail trade</i>		\$113.4	\$402.7	\$516.1	
<i>Manufacturing</i>		\$183.2	\$259.7	\$442.8	
<i>Information</i>		\$73.8	\$175.0	\$248.8	
<i>Transportation and warehousing</i>		\$70.9	\$76.4	\$147.4	
<i>Utilities</i>		\$32.6	\$66.9	\$99.5	
<i>Construction</i>		\$21.2	\$22.8	\$44.0	
<i>Mining</i>		\$7.8	\$2.6	\$10.4	
<i>Agriculture</i>		\$0.7	\$6.3	\$7.0	
<i>Other</i>		\$28.0	\$99.5	\$127.4	
<b>Total Operational Impact on Value Added</b>	<b>\$2,485.3</b>	<b>\$1,278.0</b>	<b>\$3,486.7</b>	<b>\$7,250.0</b>	<b>2.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Delaware, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>5,176</b>			<b>5,176</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,309	3,999	5,308	
<i>Wholesale and retail trade</i>		338	1,129	1,466	
<i>Finance, insurance, real estate, rental and leasing</i>		379	1,080	1,459	
<i>Transportation and warehousing</i>		412	281	694	
<i>Manufacturing</i>		171	445	616	
<i>Construction</i>		264	75	339	
<i>Information</i>		39	82	121	
<i>Agriculture</i>		6	80	87	
<i>Utilities</i>		19	31	50	
<i>Mining</i>		4	1	5	
<i>Other</i>		159	226	385	
<b>Total Operational Impact on Employment</b>	<b>5,176</b>	<b>3,100</b>	<b>7,430</b>	<b>15,706</b>	<b>2.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$341.5</b>			<b>\$341.5</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$92.4	\$207.0	\$299.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$33.9	\$82.3	\$116.2	
<i>Wholesale and retail trade</i>		\$27.1	\$48.0	\$75.2	
<i>Manufacturing</i>		\$16.3	\$32.5	\$48.8	
<i>Transportation and warehousing</i>		\$25.9	\$16.5	\$42.4	
<i>Information</i>		\$10.1	\$14.7	\$24.8	
<i>Construction</i>		\$13.8	\$3.9	\$17.6	
<i>Agriculture</i>		\$0.7	\$11.1	\$11.8	
<i>Utilities</i>		\$2.9	\$4.6	\$7.5	
<i>Mining</i>		\$0.2	\$0.1	\$0.3	
<i>Other</i>		\$11.7	\$17.4	\$29.0	
<b>Total Operational Impact on Labor Income</b>	<b>\$341.5</b>	<b>\$235.0</b>	<b>\$438.1</b>	<b>\$1,014.5</b>	<b>2.9%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$957.6</b>			<b>\$957.6</b>	<b>1.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Finance, insurance, real estate, rental and leasing</i>		\$156.8	\$418.2	\$575.0	
<i>Services</i>		\$117.7	\$251.3	\$369.0	
<i>Wholesale and retail trade</i>		\$45.7	\$74.1	\$119.8	
<i>Manufacturing</i>		\$35.5	\$70.3	\$105.8	
<i>Transportation and warehousing</i>		\$30.1	\$18.5	\$48.5	
<i>Information</i>		\$15.7	\$28.0	\$43.7	
<i>Construction</i>		\$20.1	\$5.7	\$25.8	
<i>Utilities</i>		\$7.7	\$12.4	\$20.1	
<i>Agriculture</i>		\$0.8	\$12.5	\$13.3	
<i>Mining</i>		\$0.5	\$0.2	\$0.6	
<i>Other</i>		\$14.7	\$22.1	\$36.8	
<b>Total Operational Impact on Value Added</b>	<b>\$957.6</b>	<b>\$445.2</b>	<b>\$913.3</b>	<b>\$2,316.1</b>	<b>3.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 the District of Columbia, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>2,076</b>			<b>2,076</b>	<b>0.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,653	5,393	7,046	
<i>Finance, insurance, real estate, rental and leasing</i>		331	540	871	
<i>Transportation and warehousing</i>		134	279	413	
<i>Wholesale and retail trade</i>		63	336	399	
<i>Information</i>		81	186	267	
<i>Construction</i>		61	31	92	
<i>Manufacturing</i>		12	36	48	
<i>Utilities</i>		8	21	29	
<i>Mining</i>		1	0	1	
<i>Agriculture</i>		0	1	1	
<i>Other</i>		121	400	520	
<b>Total Operational Impact on Employment</b>	<b>2,076</b>	<b>2,464</b>	<b>7,223</b>	<b>11,763</b>	<b>1.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$196.4</b>			<b>\$196.4</b>	<b>0.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$202.7	\$506.6	\$709.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$39.4	\$59.7	\$99.1	
<i>Transportation and warehousing</i>		\$13.3	\$28.7	\$42.0	
<i>Information</i>		\$12.4	\$27.2	\$39.6	
<i>Wholesale and retail trade</i>		\$7.0	\$18.1	\$25.1	
<i>Construction</i>		\$3.9	\$2.0	\$5.8	
<i>Utilities</i>		\$1.3	\$3.3	\$4.6	
<i>Manufacturing</i>		\$1.4	\$2.2	\$3.6	
<i>Agriculture</i>		\$0.0	\$0.0	\$0.0	
<i>Mining</i>		\$0.0	\$0.0	\$0.0	
<i>Other</i>		\$21.0	\$67.7	\$88.6	
<b>Total Operational Impact on Labor Income</b>	<b>\$196.4</b>	<b>\$302.2</b>	<b>\$715.5</b>	<b>\$1,214.1</b>	<b>1.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$744.6</b>			<b>\$744.6</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$238.9	\$546.2	\$785.1	
<i>Finance, insurance, real estate, rental and leasing</i>		\$92.3	\$174.6	\$266.9	
<i>Information</i>		\$25.8	\$62.2	\$87.9	
<i>Wholesale and retail trade</i>		\$10.4	\$27.3	\$37.7	
<i>Transportation and warehousing</i>		\$11.0	\$21.9	\$33.0	
<i>Utilities</i>		\$5.4	\$13.9	\$19.3	
<i>Construction</i>		\$5.9	\$3.0	\$8.9	
<i>Manufacturing</i>		\$2.4	\$4.0	\$6.4	
<i>Agriculture</i>		\$0.0	\$0.0	\$0.0	
<i>Mining</i>		\$0.0	\$0.0	\$0.0	
<i>Other</i>		\$29.0	\$92.8	\$121.8	
<b>Total Operational Impact on Value Added</b>	<b>\$744.6</b>	<b>\$421.2</b>	<b>\$945.8</b>	<b>\$2,111.7</b>	<b>1.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Florida, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>77,580</b>			<b>77,580</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		22,571	81,656	104,227	
<i>Finance, insurance, real estate, rental and leasing</i>		6,572	20,524	27,096	
<i>Wholesale and retail trade</i>		3,619	20,795	24,413	
<i>Transportation and warehousing</i>		4,737	5,476	10,213	
<i>Manufacturing</i>		3,122	5,291	8,412	
<i>Construction</i>		1,773	1,529	3,302	
<i>Information</i>		972	2,279	3,251	
<i>Agriculture</i>		249	2,384	2,633	
<i>Utilities</i>		269	485	755	
<i>Mining</i>		283	79	362	
<i>Other</i>		1,180	3,338	4,518	
<b>Total Operational Impact on Employment</b>	<b>77,580</b>	<b>45,347</b>	<b>143,835</b>	<b>266,763</b>	<b>2.4%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,582.5</b>			<b>\$2,582.5</b>	<b>0.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,255.9	\$3,635.7	\$4,891.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$337.8	\$895.3	\$1,233.1	
<i>Wholesale and retail trade</i>		\$261.5	\$892.6	\$1,154.1	
<i>Transportation and warehousing</i>		\$247.2	\$291.6	\$538.8	
<i>Manufacturing</i>		\$203.9	\$321.2	\$525.1	
<i>Information</i>		\$99.1	\$205.3	\$304.5	
<i>Construction</i>		\$67.6	\$61.2	\$128.8	
<i>Utilities</i>		\$35.0	\$61.1	\$96.1	
<i>Agriculture</i>		\$8.8	\$76.1	\$84.8	
<i>Mining</i>		\$15.0	\$4.2	\$19.2	
<i>Other</i>		\$93.4	\$264.5	\$357.9	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,582.5</b>	<b>\$2,625.2</b>	<b>\$6,708.7</b>	<b>\$11,916.4</b>	<b>2.2%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,940.5</b>			<b>\$5,940.5</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,597.0	\$4,546.4	\$6,143.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,023.2	\$3,214.3	\$4,237.4	
<i>Wholesale and retail trade</i>		\$477.6	\$1,547.0	\$2,024.7	
<i>Manufacturing</i>		\$360.8	\$587.2	\$948.0	
<i>Transportation and warehousing</i>		\$332.2	\$417.9	\$750.0	
<i>Information</i>		\$196.2	\$486.3	\$682.5	
<i>Utilities</i>		\$159.6	\$277.4	\$437.0	
<i>Construction</i>		\$120.1	\$105.5	\$225.6	
<i>Agriculture</i>		\$12.3	\$118.5	\$130.8	
<i>Mining</i>		\$54.6	\$15.3	\$69.9	
<i>Other</i>		\$123.9	\$349.7	\$473.6	
<b>Total Operational Impact on Value Added</b>	<b>\$5,940.5</b>	<b>\$4,457.5</b>	<b>\$11,665.4</b>	<b>\$22,063.5</b>	<b>2.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>43,926</b>			<b>43,926</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		12,282	39,116	<b>51,398</b>	
<i>Wholesale and retail trade</i>		1,928	10,826	<b>12,754</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		3,064	8,261	<b>11,325</b>	
<i>Manufacturing</i>		2,875	5,774	<b>8,650</b>	
<i>Transportation and warehousing</i>		2,895	3,354	<b>6,249</b>	
<i>Information</i>		634	1,535	<b>2,169</b>	
<i>Construction</i>		754	729	<b>1,484</b>	
<i>Agriculture</i>		180	1,224	<b>1,404</b>	
<i>Utilities</i>		135	272	<b>407</b>	
<i>Mining</i>		166	70	<b>236</b>	
<i>Other</i>		<u>614</u>	<u>2,105</u>	<b><u>2,720</u></b>	
<b>Total Operational Impact on Employment</b>	<b>43,926</b>	<b>25,528</b>	<b>73,268</b>	<b>142,721</b>	<b>2.5%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,213.8</b>			<b>\$2,213.8</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$722.7	\$1,725.3	<b>\$2,448.0</b>	
<i>Wholesale and retail trade</i>		\$146.7	\$482.1	<b>\$628.9</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$173.9	\$420.7	<b>\$594.6</b>	
<i>Manufacturing</i>		\$195.8	\$382.3	<b>\$578.1</b>	
<i>Transportation and warehousing</i>		\$161.3	\$197.9	<b>\$359.2</b>	
<i>Information</i>		\$68.8	\$157.7	<b>\$226.5</b>	
<i>Agriculture</i>		\$9.2	\$66.8	<b>\$76.0</b>	
<i>Construction</i>		\$31.5	\$32.4	<b>\$63.9</b>	
<i>Utilities</i>		\$17.2	\$33.5	<b>\$50.7</b>	
<i>Mining</i>		\$13.2	\$5.4	<b>\$18.6</b>	
<i>Other</i>		<u>\$48.0</u>	<u>\$161.1</u>	<b><u>\$209.0</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,213.8</b>	<b>\$1,588.3</b>	<b>\$3,665.3</b>	<b>\$7,467.3</b>	<b>2.5%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,250.8</b>			<b>\$4,250.8</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$881.4	\$2,083.6	<b>\$2,965.0</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$684.0	\$1,808.6	<b>\$2,492.6</b>	
<i>Manufacturing</i>		\$369.7	\$776.9	<b>\$1,146.7</b>	
<i>Wholesale and retail trade</i>		\$262.8	\$839.0	<b>\$1,101.8</b>	
<i>Information</i>		\$140.3	\$383.2	<b>\$523.5</b>	
<i>Transportation and warehousing</i>		\$212.7	\$268.8	<b>\$481.5</b>	
<i>Utilities</i>		\$62.0	\$122.1	<b>\$184.1</b>	
<i>Construction</i>		\$47.4	\$46.9	<b>\$94.2</b>	
<i>Agriculture</i>		\$10.5	\$83.5	<b>\$94.0</b>	
<i>Mining</i>		\$38.3	\$15.5	<b>\$53.8</b>	
<i>Other</i>		<u>\$61.1</u>	<u>\$203.8</u>	<b><u>\$264.9</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$4,250.8</b>	<b>\$2,770.2</b>	<b>\$6,631.9</b>	<b>\$13,652.9</b>	<b>2.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>4,664</b>			<b>4,664</b>	<b>0.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,679	6,500	8,179	
<i>Wholesale and retail trade</i>		373	1,498	1,871	
<i>Finance, insurance, real estate, rental and leasing</i>		389	1,177	1,566	
<i>Transportation and warehousing</i>		349	456	806	
<i>Manufacturing</i>		81	357	438	
<i>Agriculture</i>		26	316	341	
<i>Construction</i>		205	104	310	
<i>Information</i>		53	141	194	
<i>Utilities</i>		29	61	91	
<i>Mining</i>		12	5	17	
<i>Other</i>		203	450	653	
<b>Total Operational Impact on Employment</b>	<b>4,664</b>	<b>3,400</b>	<b>11,066</b>	<b>19,130</b>	<b>2.1%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$300.3</b>			<b>\$300.3</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$91.8	\$312.8	\$404.6	
<i>Wholesale and retail trade</i>		\$21.5	\$57.1	\$78.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$19.6	\$53.0	\$72.6	
<i>Transportation and warehousing</i>		\$21.7	\$27.4	\$49.0	
<i>Construction</i>		\$13.6	\$6.9	\$20.5	
<i>Manufacturing</i>		\$3.9	\$14.4	\$18.3	
<i>Information</i>		\$4.3	\$11.3	\$15.6	
<i>Utilities</i>		\$4.5	\$9.4	\$13.9	
<i>Agriculture</i>		\$0.6	\$6.7	\$7.3	
<i>Mining</i>		\$1.1	\$0.4	\$1.5	
<i>Other</i>		\$18.1	\$41.3	\$59.4	
<b>Total Operational Impact on Labor Income</b>	<b>\$300.3</b>	<b>\$200.6</b>	<b>\$540.6</b>	<b>\$1,041.6</b>	<b>2.1%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,059.0</b>			<b>\$1,059.0</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$117.0	\$401.8	\$518.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$72.6	\$257.1	\$329.7	
<i>Wholesale and retail trade</i>		\$37.9	\$100.0	\$138.0	
<i>Transportation and warehousing</i>		\$30.4	\$43.7	\$74.2	
<i>Utilities</i>		\$13.0	\$26.5	\$39.5	
<i>Information</i>		\$9.6	\$29.0	\$38.5	
<i>Construction</i>		\$21.8	\$11.1	\$32.9	
<i>Manufacturing</i>		\$6.7	\$18.9	\$25.6	
<i>Agriculture</i>		\$0.7	\$8.5	\$9.1	
<i>Mining</i>		\$2.7	\$1.1	\$3.8	
<i>Other</i>		\$22.5	\$51.3	\$73.8	
<b>Total Operational Impact on Value Added</b>	<b>\$1,059.0</b>	<b>\$334.9</b>	<b>\$949.0</b>	<b>\$2,342.9</b>	<b>3.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Idaho, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>9,777</b>			<b>9,777</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,855	6,126	7,980	
<i>Wholesale and retail trade</i>		320	1,797	2,117	
<i>Finance, insurance, real estate, rental and leasing</i>		607	1,371	1,978	
<i>Manufacturing</i>		395	944	1,340	
<i>Agriculture</i>		89	900	989	
<i>Transportation and warehousing</i>		367	405	772	
<i>Construction</i>		213	144	357	
<i>Information</i>		78	160	238	
<i>Mining</i>		84	41	125	
<i>Utilities</i>		23	44	67	
<i>Other</i>		<u>147</u>	<u>397</u>	<u>544</u>	
<b>Total Operational Impact on Employment</b>	<b>9,777</b>	<b>4,179</b>	<b>12,329</b>	<b>26,285</b>	<b>2.8%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$432.9</b>			<b>\$432.9</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$83.3	\$227.8	\$311.0	
<i>Wholesale and retail trade</i>		\$18.6	\$71.2	\$89.8	
<i>Manufacturing</i>		\$23.7	\$55.4	\$79.1	
<i>Finance, insurance, real estate, rental and leasing</i>		\$22.2	\$47.6	\$69.8	
<i>Agriculture</i>		\$5.4	\$62.5	\$67.9	
<i>Transportation and warehousing</i>		\$17.4	\$19.6	\$37.0	
<i>Construction</i>		\$8.0	\$5.5	\$13.5	
<i>Information</i>		\$4.4	\$8.4	\$12.8	
<i>Utilities</i>		\$2.7	\$4.7	\$7.4	
<i>Mining</i>		\$4.7	\$2.2	\$6.9	
<i>Other</i>		<u>\$9.3</u>	<u>\$25.1</u>	<u>\$34.4</u>	
<b>Total Operational Impact on Labor Income</b>	<b>\$432.9</b>	<b>\$199.5</b>	<b>\$530.0</b>	<b>\$1,162.4</b>	<b>2.8%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$586.6</b>			<b>\$586.6</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$100.8	\$268.1	\$368.9	
<i>Finance, insurance, real estate, rental and leasing</i>		\$89.6	\$215.5	\$305.1	
<i>Wholesale and retail trade</i>		\$31.3	\$113.5	\$144.8	
<i>Manufacturing</i>		\$37.8	\$88.4	\$126.2	
<i>Agriculture</i>		\$6.6	\$77.5	\$84.1	
<i>Transportation and warehousing</i>		\$23.8	\$26.7	\$50.5	
<i>Mining</i>		\$22.7	\$10.5	\$33.2	
<i>Information</i>		\$8.0	\$18.0	\$25.9	
<i>Construction</i>		\$12.4	\$8.5	\$20.9	
<i>Utilities</i>		\$7.5	\$13.3	\$20.8	
<i>Other</i>		<u>\$11.7</u>	<u>\$31.7</u>	<u>\$43.5</u>	
<b>Total Operational Impact on Value Added</b>	<b>\$586.6</b>	<b>\$352.1</b>	<b>\$871.8</b>	<b>\$1,810.5</b>	<b>2.8%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>69,548</b>			<b>69,548</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		19,667	67,120	<b>86,787</b>	
<i>Wholesale and retail trade</i>		4,538	17,301	<b>21,838</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		4,815	13,856	<b>18,671</b>	
<i>Manufacturing</i>		5,537	7,865	<b>13,402</b>	
<i>Transportation and warehousing</i>		5,283	5,739	<b>11,022</b>	
<i>Construction</i>		2,520	1,024	<b>3,545</b>	
<i>Information</i>		771	1,791	<b>2,562</b>	
<i>Agriculture</i>		138	1,578	<b>1,717</b>	
<i>Utilities</i>		222	395	<b>618</b>	
<i>Mining</i>		244	101	<b>345</b>	
<i>Other</i>		1,393	3,109	<b>4,502</b>	
<b>Total Operational Impact on Employment</b>	<b>69,548</b>	<b>45,128</b>	<b>119,880</b>	<b>234,557</b>	<b>3.0%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,462.8</b>			<b>\$4,462.8</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,482.2	\$3,445.9	<b>\$4,928.1</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$386.6	\$970.4	<b>\$1,357.0</b>	
<i>Wholesale and retail trade</i>		\$378.6	\$818.5	<b>\$1,197.0</b>	
<i>Manufacturing</i>		\$500.7	\$660.4	<b>\$1,161.2</b>	
<i>Transportation and warehousing</i>		\$328.2	\$344.1	<b>\$672.2</b>	
<i>Information</i>		\$84.1	\$177.9	<b>\$261.9</b>	
<i>Construction</i>		\$153.1	\$62.0	<b>\$215.1</b>	
<i>Utilities</i>		\$37.2	\$64.7	<b>\$101.9</b>	
<i>Agriculture</i>		\$7.3	\$88.2	<b>\$95.5</b>	
<i>Mining</i>		\$22.8	\$9.3	<b>\$32.0</b>	
<i>Other</i>		\$114.6	\$260.4	<b>\$375.0</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$4,462.8</b>	<b>\$3,495.3</b>	<b>\$6,901.7</b>	<b>\$14,859.9</b>	<b>3.1%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$15,727.8</b>			<b>\$15,727.8</b>	<b>2.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,807.8	\$4,178.5	<b>\$5,986.3</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,197.7	\$3,526.0	<b>\$4,723.7</b>	
<i>Wholesale and retail trade</i>		\$679.3	\$1,412.6	<b>\$2,091.9</b>	
<i>Manufacturing</i>		\$885.1	\$1,156.5	<b>\$2,041.6</b>	
<i>Transportation and warehousing</i>		\$422.3	\$434.4	<b>\$856.7</b>	
<i>Information</i>		\$165.6	\$421.2	<b>\$586.8</b>	
<i>Utilities</i>		\$129.2	\$225.3	<b>\$354.5</b>	
<i>Construction</i>		\$212.1	\$86.1	<b>\$298.2</b>	
<i>Agriculture</i>		\$10.5	\$126.1	<b>\$136.5</b>	
<i>Mining</i>		\$68.4	\$27.6	<b>\$96.0</b>	
<i>Other</i>		\$136.6	\$310.7	<b>\$447.3</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$15,727.8</b>	<b>\$5,714.5</b>	<b>\$11,905.0</b>	<b>\$33,347.3</b>	<b>4.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>40,271</b>			<b>40,271</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		8,544	29,823	<b>38,366</b>	
<i>Manufacturing</i>		4,243	6,862	<b>11,105</b>	
<i>Wholesale and retail trade</i>		2,066	8,475	<b>10,541</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,061	5,182	<b>7,243</b>	
<i>Transportation and warehousing</i>		2,794	2,387	<b>5,181</b>	
<i>Construction</i>		1,526	557	<b>2,083</b>	
<i>Agriculture</i>		110	1,294	<b>1,404</b>	
<i>Information</i>		305	653	<b>957</b>	
<i>Utilities</i>		131	226	<b>358</b>	
<i>Mining</i>		171	79	<b>251</b>	
<i>Other</i>		<u>893</u>	<u>1,700</u>	<b><u>2,593</u></b>	
<b>Total Operational Impact on Employment</b>	<b>40,271</b>	<b>22,844</b>	<b>57,239</b>	<b>120,354</b>	<b>3.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,011.4</b>			<b>\$2,011.4</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$442.7	\$1,249.3	<b>\$1,692.0</b>	
<i>Manufacturing</i>		\$331.5	\$511.3	<b>\$842.8</b>	
<i>Wholesale and retail trade</i>		\$135.8	\$328.1	<b>\$463.9</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$105.7	\$241.1	<b>\$346.8</b>	
<i>Transportation and warehousing</i>		\$151.1	\$125.4	<b>\$276.4</b>	
<i>Construction</i>		\$76.2	\$27.6	<b>\$103.8</b>	
<i>Agriculture</i>		\$6.2	\$81.8	<b>\$87.9</b>	
<i>Information</i>		\$21.6	\$44.0	<b>\$65.6</b>	
<i>Utilities</i>		\$17.8	\$29.9	<b>\$47.8</b>	
<i>Mining</i>		\$15.9	\$7.1	<b>\$23.0</b>	
<i>Other</i>		<u>\$51.8</u>	<u>\$101.3</u>	<b><u>\$153.1</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,011.4</b>	<b>\$1,356.1</b>	<b>\$2,746.9</b>	<b>\$6,114.4</b>	<b>3.2%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$7,061.0</b>			<b>\$7,061.0</b>	<b>2.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$599.5	\$1,580.4	<b>\$2,179.9</b>	
<i>Manufacturing</i>		\$825.5	\$1,209.3	<b>\$2,034.8</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$391.5	\$1,161.0	<b>\$1,552.5</b>	
<i>Wholesale and retail trade</i>		\$248.8	\$578.5	<b>\$827.3</b>	
<i>Transportation and warehousing</i>		\$197.6	\$159.6	<b>\$357.2</b>	
<i>Information</i>		\$44.2	\$109.1	<b>\$153.3</b>	
<i>Utilities</i>		\$56.0	\$94.4	<b>\$150.5</b>	
<i>Construction</i>		\$107.2	\$39.1	<b>\$146.3</b>	
<i>Agriculture</i>		\$7.8	\$104.7	<b>\$112.6</b>	
<i>Mining</i>		\$57.3	\$25.4	<b>\$82.7</b>	
<i>Other</i>		<u>\$63.4</u>	<u>\$124.2</u>	<b><u>\$187.6</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$7,061.0</b>	<b>\$2,598.8</b>	<b>\$5,185.8</b>	<b>\$14,845.6</b>	<b>4.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Iowa, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>30,377</b>			<b>30,377</b>	<b>1.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		6,505	18,106	24,611	
<i>Wholesale and retail trade</i>		2,175	5,897	8,072	
<i>Finance, insurance, real estate, rental and leasing</i>		1,760	3,932	5,692	
<i>Manufacturing</i>		2,142	2,988	5,130	
<i>Transportation and warehousing</i>		2,107	1,339	3,446	
<i>Agriculture</i>		208	1,934	2,142	
<i>Construction</i>		448	375	822	
<i>Information</i>		288	471	759	
<i>Utilities</i>		114	153	267	
<i>Mining</i>		110	34	144	
<i>Other</i>		539	1,234	1,773	
<b>Total Operational Impact on Employment</b>	<b>30,377</b>	<b>16,395</b>	<b>36,464</b>	<b>83,235</b>	<b>4.1%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,570.5</b>			<b>\$1,570.5</b>	<b>1.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$354.7	\$698.1	\$1,052.8	
<i>Manufacturing</i>		\$185.5	\$217.0	\$402.5	
<i>Wholesale and retail trade</i>		\$135.2	\$214.7	\$349.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$106.0	\$207.2	\$313.2	
<i>Transportation and warehousing</i>		\$118.5	\$71.0	\$189.5	
<i>Agriculture</i>		\$15.3	\$159.8	\$175.1	
<i>Information</i>		\$21.2	\$32.3	\$53.4	
<i>Construction</i>		\$22.9	\$19.8	\$42.7	
<i>Utilities</i>		\$13.7	\$18.3	\$32.0	
<i>Mining</i>		\$7.0	\$2.1	\$9.1	
<i>Other</i>		\$34.2	\$79.4	\$113.6	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,570.5</b>	<b>\$1,014.0</b>	<b>\$1,719.7</b>	<b>\$4,304.2</b>	<b>4.1%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,994.2</b>			<b>\$1,994.2</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$437.1	\$869.3	\$1,306.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$358.6	\$906.3	\$1,264.9	
<i>Manufacturing</i>		\$383.1	\$405.6	\$788.7	
<i>Wholesale and retail trade</i>		\$234.0	\$351.2	\$585.3	
<i>Transportation and warehousing</i>		\$172.7	\$93.2	\$266.0	
<i>Agriculture</i>		\$20.8	\$211.9	\$232.8	
<i>Information</i>		\$44.7	\$83.7	\$128.4	
<i>Utilities</i>		\$47.8	\$63.7	\$111.5	
<i>Construction</i>		\$30.5	\$25.9	\$56.4	
<i>Mining</i>		\$19.1	\$5.8	\$24.9	
<i>Other</i>		\$43.4	\$100.7	\$144.1	
<b>Total Operational Impact on Value Added</b>	<b>\$1,994.2</b>	<b>\$1,791.9</b>	<b>\$3,117.5</b>	<b>\$6,903.5</b>	<b>3.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>63,236</b>			<b>63,236</b>	<b>3.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		7,855	24,902	<b>32,757</b>	
<i>Wholesale and retail trade</i>		1,881	7,721	<b>9,602</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,294	5,670	<b>7,964</b>	
<i>Manufacturing</i>		1,370	2,061	<b>3,432</b>	
<i>Transportation and warehousing</i>		1,835	1,477	<b>3,312</b>	
<i>Construction</i>		1,964	470	<b>2,434</b>	
<i>Agriculture</i>		104	1,486	<b>1,590</b>	
<i>Information</i>		274	601	<b>875</b>	
<i>Utilities</i>		108	167	<b>275</b>	
<i>Mining</i>		123	36	<b>159</b>	
<i>Other</i>		1,035	2,012	<b>3,047</b>	
<b>Total Operational Impact on Employment</b>	<b>63,236</b>	<b>18,844</b>	<b>46,604</b>	<b>128,684</b>	<b>6.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,955.7</b>			<b>\$4,955.7</b>	<b>5.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$466.4	\$1,031.9	<b>\$1,498.3</b>	
<i>Wholesale and retail trade</i>		\$119.6	\$277.1	<b>\$396.7</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$117.7	\$237.2	<b>\$354.9</b>	
<i>Manufacturing</i>		\$95.2	\$133.9	<b>\$229.0</b>	
<i>Transportation and warehousing</i>		\$105.9	\$79.3	<b>\$185.2</b>	
<i>Construction</i>		\$97.5	\$23.1	<b>\$120.5</b>	
<i>Agriculture</i>		\$5.2	\$77.4	<b>\$82.6</b>	
<i>Information</i>		\$19.7	\$42.5	<b>\$62.2</b>	
<i>Utilities</i>		\$14.2	\$21.8	<b>\$36.0</b>	
<i>Mining</i>		\$6.3	\$1.8	<b>\$8.2</b>	
<i>Other</i>		\$61.7	\$121.8	<b>\$183.5</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$4,955.7</b>	<b>\$1,109.4</b>	<b>\$2,047.7</b>	<b>\$8,112.9</b>	<b>8.5%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$6,828.1</b>			<b>\$6,828.1</b>	<b>4.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$561.8	\$1,240.7	<b>\$1,802.4</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$346.4	\$1,004.7	<b>\$1,351.1</b>	
<i>Wholesale and retail trade</i>		\$218.7	\$502.1	<b>\$720.8</b>	
<i>Manufacturing</i>		\$149.6	\$228.1	<b>\$377.7</b>	
<i>Transportation and warehousing</i>		\$148.8	\$111.6	<b>\$260.3</b>	
<i>Construction</i>		\$132.7	\$31.6	<b>\$164.3</b>	
<i>Information</i>		\$41.9	\$107.8	<b>\$149.8</b>	
<i>Agriculture</i>		\$7.0	\$102.4	<b>\$109.4</b>	
<i>Utilities</i>		\$42.9	\$65.8	<b>\$108.7</b>	
<i>Mining</i>		\$10.3	\$3.1	<b>\$13.3</b>	
<i>Other</i>		\$76.2	\$150.6	<b>\$226.8</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$6,828.1</b>	<b>\$1,736.2</b>	<b>\$3,548.5</b>	<b>\$12,112.7</b>	<b>8.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>32,522</b>			<b>32,522</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		5,575	16,892	22,467	
<i>Wholesale and retail trade</i>		1,139	5,032	6,171	
<i>Manufacturing</i>		1,799	3,132	4,931	
<i>Finance, insurance, real estate, rental and leasing</i>		1,421	3,239	4,659	
<i>Transportation and warehousing</i>		1,780	1,569	3,349	
<i>Agriculture</i>		142	1,644	1,786	
<i>Construction</i>		849	336	1,185	
<i>Information</i>		222	415	637	
<i>Mining</i>		346	166	512	
<i>Utilities</i>		86	140	226	
<i>Other</i>		565	1,193	1,758	
<b>Total Operational Impact on Employment</b>	<b>32,522</b>	<b>13,925</b>	<b>33,757</b>	<b>80,204</b>	<b>3.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,367.6</b>			<b>\$1,367.6</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$265.9	\$694.4	\$960.3	
<i>Manufacturing</i>		\$123.0	\$220.0	\$343.0	
<i>Wholesale and retail trade</i>		\$70.7	\$187.7	\$258.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$71.2	\$154.3	\$225.5	
<i>Transportation and warehousing</i>		\$102.7	\$91.3	\$194.0	
<i>Construction</i>		\$38.6	\$15.2	\$53.8	
<i>Information</i>		\$18.1	\$30.1	\$48.2	
<i>Mining</i>		\$29.2	\$13.5	\$42.8	
<i>Agriculture</i>		\$2.7	\$30.9	\$33.6	
<i>Utilities</i>		\$10.5	\$16.6	\$27.1	
<i>Other</i>		\$40.3	\$87.1	\$127.4	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,367.6</b>	<b>\$772.9</b>	<b>\$1,541.1</b>	<b>\$3,681.6</b>	<b>3.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,749.1</b>			<b>\$3,749.1</b>	<b>1.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$322.6	\$818.3	\$1,140.9	
<i>Finance, insurance, real estate, rental and leasing</i>		\$246.6	\$644.6	\$891.2	
<i>Manufacturing</i>		\$231.5	\$500.1	\$731.6	
<i>Wholesale and retail trade</i>		\$139.6	\$323.6	\$463.2	
<i>Transportation and warehousing</i>		\$132.4	\$115.7	\$248.1	
<i>Mining</i>		\$101.4	\$46.2	\$147.7	
<i>Information</i>		\$37.0	\$77.9	\$115.0	
<i>Utilities</i>		\$34.8	\$55.0	\$89.8	
<i>Construction</i>		\$57.4	\$22.6	\$80.0	
<i>Agriculture</i>		\$3.9	\$46.8	\$50.7	
<i>Other</i>		\$48.8	\$105.7	\$154.5	
<b>Total Operational Impact on Value Added</b>	<b>\$3,749.1</b>	<b>\$1,355.9</b>	<b>\$2,756.6</b>	<b>\$7,861.7</b>	<b>3.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>130,397</b>			<b>130,397</b>	<b>4.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		17,712	67,698	85,410	
<i>Wholesale and retail trade</i>		6,514	18,976	25,490	
<i>Finance, insurance, real estate, rental and leasing</i>		4,872	13,095	17,967	
<i>Transportation and warehousing</i>		5,181	3,519	8,700	
<i>Construction</i>		5,817	1,288	7,105	
<i>Manufacturing</i>		2,317	2,348	4,664	
<i>Information</i>		512	1,283	1,795	
<i>Agriculture</i>		184	1,089	1,273	
<i>Utilities</i>		271	430	701	
<i>Mining</i>		195	42	237	
<i>Other</i>		2,868	4,565	7,433	
<b>Total Operational Impact on Employment</b>	<b>130,397</b>	<b>46,442</b>	<b>114,333</b>	<b>291,173</b>	<b>11.0%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$15,910.1</b>			<b>\$15,910.1</b>	<b>11.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$856.8	\$2,705.9	\$3,562.8	
<i>Wholesale and retail trade</i>		\$400.6	\$684.0	\$1,084.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$249.5	\$495.5	\$745.0	
<i>Transportation and warehousing</i>		\$319.6	\$213.9	\$533.5	
<i>Construction</i>		\$341.0	\$74.8	\$415.9	
<i>Manufacturing</i>		\$192.4	\$180.8	\$373.2	
<i>Information</i>		\$33.0	\$81.0	\$114.0	
<i>Utilities</i>		\$33.1	\$51.5	\$84.6	
<i>Agriculture</i>		\$8.2	\$38.1	\$46.3	
<i>Mining</i>		\$13.0	\$2.6	\$15.6	
<i>Other</i>		\$181.5	\$292.1	\$473.6	
<b>Total Operational Impact on Labor Income</b>	<b>\$15,910.1</b>	<b>\$2,628.7</b>	<b>\$4,820.3</b>	<b>\$23,359.2</b>	<b>16.8%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$37,800.0</b>			<b>\$37,800.0</b>	<b>15.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,066.2	\$3,265.6	\$4,331.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$751.7	\$2,358.3	\$3,110.0	
<i>Wholesale and retail trade</i>		\$764.0	\$1,241.2	\$2,005.2	
<i>Manufacturing</i>		\$494.3	\$472.8	\$967.2	
<i>Transportation and warehousing</i>		\$420.9	\$279.1	\$700.0	
<i>Construction</i>		\$415.2	\$91.7	\$506.9	
<i>Information</i>		\$80.4	\$252.5	\$332.9	
<i>Utilities</i>		\$128.8	\$197.8	\$326.6	
<i>Agriculture</i>		\$8.9	\$49.8	\$58.7	
<i>Mining</i>		\$34.9	\$7.4	\$42.3	
<i>Other</i>		\$209.9	\$338.2	\$548.1	
<b>Total Operational Impact on Value Added</b>	<b>\$37,800.0</b>	<b>\$4,375.0</b>	<b>\$8,554.6</b>	<b>\$50,729.6</b>	<b>20.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>12,444</b>			<b>12,444</b>	<b>1.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		2,371	6,539	8,910	
<i>Wholesale and retail trade</i>		377	1,763	2,141	
<i>Finance, insurance, real estate, rental and leasing</i>		673	1,142	1,815	
<i>Manufacturing</i>		366	738	1,104	
<i>Transportation and warehousing</i>		693	379	1,072	
<i>Agriculture</i>		82	404	486	
<i>Construction</i>		213	138	352	
<i>Information</i>		90	142	231	
<i>Mining</i>		54	11	65	
<i>Utilities</i>		25	30	55	
<i>Other</i>		183	373	556	
<b>Total Operational Impact on Employment</b>	<b>12,444</b>	<b>5,127</b>	<b>11,659</b>	<b>29,230</b>	<b>3.6%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$483.0</b>			<b>\$483.0</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$116.1	\$267.9	\$384.0	
<i>Wholesale and retail trade</i>		\$22.9	\$65.3	\$88.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$30.5	\$52.3	\$82.8	
<i>Manufacturing</i>		\$23.8	\$43.8	\$67.7	
<i>Transportation and warehousing</i>		\$35.0	\$18.7	\$53.7	
<i>Information</i>		\$5.7	\$8.5	\$14.2	
<i>Agriculture</i>		\$2.8	\$10.1	\$12.9	
<i>Construction</i>		\$7.7	\$5.1	\$12.8	
<i>Utilities</i>		\$2.9	\$3.5	\$6.4	
<i>Mining</i>		\$1.0	\$0.2	\$1.2	
<i>Other</i>		\$12.3	\$25.8	\$38.1	
<b>Total Operational Impact on Labor Income</b>	<b>\$483.0</b>	<b>\$260.8</b>	<b>\$501.2</b>	<b>\$1,245.0</b>	<b>3.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$943.8</b>			<b>\$943.8</b>	<b>1.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$142.6	\$325.2	\$467.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$128.0	\$232.7	\$360.7	
<i>Wholesale and retail trade</i>		\$43.2	\$113.7	\$157.0	
<i>Manufacturing</i>		\$36.3	\$71.1	\$107.4	
<i>Transportation and warehousing</i>		\$42.0	\$23.0	\$65.0	
<i>Utilities</i>		\$15.4	\$18.2	\$33.5	
<i>Information</i>		\$10.6	\$18.7	\$29.4	
<i>Agriculture</i>		\$2.8	\$14.1	\$16.9	
<i>Construction</i>		\$9.5	\$6.2	\$15.6	
<i>Mining</i>		\$1.4	\$0.3	\$1.7	
<i>Other</i>		\$15.3	\$32.1	\$47.5	
<b>Total Operational Impact on Value Added</b>	<b>\$943.8</b>	<b>\$447.2</b>	<b>\$855.4</b>	<b>\$2,246.4</b>	<b>3.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Maryland, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>20,586</b>			<b>20,586</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		6,247	23,711	29,959	
<i>Wholesale and retail trade</i>		971	5,432	6,403	
<i>Finance, insurance, real estate, rental and leasing</i>		1,481	4,524	6,005	
<i>Transportation and warehousing</i>		1,360	1,626	2,986	
<i>Manufacturing</i>		836	1,565	2,401	
<i>Construction</i>		539	475	1,015	
<i>Information</i>		249	624	872	
<i>Agriculture</i>		35	373	408	
<i>Utilities</i>		77	147	224	
<i>Mining</i>		52	21	74	
<i>Other</i>		367	1,205	1,573	
<b>Total Operational Impact on Employment</b>	<b>20,586</b>	<b>12,215</b>	<b>39,704</b>	<b>72,506</b>	<b>2.0%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,244.7</b>			<b>\$1,244.7</b>	<b>0.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$452.3	\$1,235.1	\$1,687.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$103.2	\$289.8	\$393.0	
<i>Wholesale and retail trade</i>		\$74.5	\$242.4	\$317.0	
<i>Manufacturing</i>		\$73.7	\$119.6	\$193.3	
<i>Transportation and warehousing</i>		\$82.9	\$94.8	\$177.7	
<i>Information</i>		\$41.6	\$83.0	\$124.6	
<i>Construction</i>		\$30.0	\$28.1	\$58.2	
<i>Utilities</i>		\$13.3	\$24.7	\$38.1	
<i>Agriculture</i>		\$1.3	\$14.5	\$15.7	
<i>Mining</i>		\$3.6	\$1.4	\$5.0	
<i>Other</i>		\$42.9	\$138.2	\$181.1	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,244.7</b>	<b>\$919.3</b>	<b>\$2,271.7</b>	<b>\$4,435.7</b>	<b>2.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,359.9</b>			<b>\$2,359.9</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$553.6	\$1,500.8	\$2,054.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$336.7	\$1,167.6	\$1,504.3	
<i>Wholesale and retail trade</i>		\$130.8	\$409.9	\$540.7	
<i>Manufacturing</i>		\$148.8	\$264.7	\$413.5	
<i>Information</i>		\$77.7	\$181.7	\$259.4	
<i>Transportation and warehousing</i>		\$100.9	\$111.9	\$212.8	
<i>Utilities</i>		\$54.5	\$101.3	\$155.9	
<i>Construction</i>		\$41.1	\$37.1	\$78.2	
<i>Agriculture</i>		\$1.7	\$20.7	\$22.4	
<i>Mining</i>		\$9.3	\$3.6	\$12.9	
<i>Other</i>		\$67.1	\$214.5	\$281.6	
<b>Total Operational Impact on Value Added</b>	<b>\$2,359.9</b>	<b>\$1,522.2</b>	<b>\$4,013.9</b>	<b>\$7,896.1</b>	<b>2.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>26,667</b>			<b>26,667</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		9,163	34,866	<b>44,028</b>	
<i>Wholesale and retail trade</i>		1,321	7,763	<b>9,083</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,409	6,647	<b>9,055</b>	
<i>Manufacturing</i>		1,852	3,309	<b>5,161</b>	
<i>Transportation and warehousing</i>		1,461	1,891	<b>3,353</b>	
<i>Information</i>		488	1,219	<b>1,707</b>	
<i>Construction</i>		678	551	<b>1,230</b>	
<i>Agriculture</i>		39	347	<b>385</b>	
<i>Utilities</i>		84	167	<b>251</b>	
<i>Mining</i>		67	20	<b>86</b>	
<i>Other</i>		<u>393</u>	<u>1,245</u>	<b><u>1,637</u></b>	
<b>Total Operational Impact on Employment</b>	<b>26,667</b>	<b>17,954</b>	<b>58,024</b>	<b>102,644</b>	<b>2.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,104.2</b>			<b>\$2,104.2</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$847.5	\$2,154.6	<b>\$3,002.2</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$264.1	\$694.1	<b>\$958.2</b>	
<i>Wholesale and retail trade</i>		\$124.3	\$402.9	<b>\$527.2</b>	
<i>Manufacturing</i>		\$185.8	\$303.3	<b>\$489.2</b>	
<i>Information</i>		\$63.3	\$153.3	<b>\$216.6</b>	
<i>Transportation and warehousing</i>		\$93.8	\$114.1	<b>\$207.8</b>	
<i>Construction</i>		\$39.6	\$33.6	<b>\$73.2</b>	
<i>Utilities</i>		\$13.6	\$26.6	<b>\$40.2</b>	
<i>Agriculture</i>		\$0.9	\$8.0	<b>\$8.8</b>	
<i>Mining</i>		\$3.5	\$1.0	<b>\$4.5</b>	
<i>Other</i>		<u>\$38.3</u>	<u>\$119.9</u>	<b><u>\$158.1</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,104.2</b>	<b>\$1,674.7</b>	<b>\$4,011.3</b>	<b>\$7,790.3</b>	<b>2.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,683.1</b>			<b>\$3,683.1</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,002.1	\$2,480.2	<b>\$3,482.3</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$632.1	\$1,865.7	<b>\$2,497.8</b>	
<i>Manufacturing</i>		\$344.1	\$546.9	<b>\$891.0</b>	
<i>Wholesale and retail trade</i>		\$195.8	\$591.7	<b>\$787.6</b>	
<i>Information</i>		\$115.7	\$319.9	<b>\$435.5</b>	
<i>Transportation and warehousing</i>		\$109.4	\$132.8	<b>\$242.2</b>	
<i>Utilities</i>		\$42.9	\$83.1	<b>\$126.1</b>	
<i>Construction</i>		\$54.9	\$45.4	<b>\$100.3</b>	
<i>Mining</i>		\$10.9	\$3.2	<b>\$14.1</b>	
<i>Agriculture</i>		\$1.1	\$12.5	<b>\$13.6</b>	
<i>Other</i>		<u>\$59.6</u>	<u>\$185.7</u>	<b><u>\$245.3</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,683.1</b>	<b>\$2,568.7</b>	<b>\$6,267.0</b>	<b>\$12,518.8</b>	<b>2.6%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>54,495</b>			<b>54,495</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		12,248	43,047	55,295	
<i>Wholesale and retail trade</i>		1,996	10,980	12,975	
<i>Manufacturing</i>		4,798	7,384	12,183	
<i>Finance, insurance, real estate, rental and leasing</i>		2,977	7,781	10,757	
<i>Transportation and warehousing</i>		2,271	2,560	4,832	
<i>Construction</i>		1,312	707	2,019	
<i>Agriculture</i>		173	1,537	1,709	
<i>Information</i>		439	1,037	1,476	
<i>Utilities</i>		171	332	503	
<i>Mining</i>		137	65	202	
<i>Other</i>		702	1,993	2,695	
<b>Total Operational Impact on Employment</b>	<b>54,495</b>	<b>27,223</b>	<b>77,424</b>	<b>159,142</b>	<b>2.9%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,504.2</b>			<b>\$2,504.2</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$786.9	\$1,967.5	\$2,754.4	
<i>Manufacturing</i>		\$377.4	\$585.9	\$963.3	
<i>Wholesale and retail trade</i>		\$144.1	\$466.5	\$610.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$168.0	\$381.3	\$549.3	
<i>Transportation and warehousing</i>		\$135.7	\$151.5	\$287.2	
<i>Information</i>		\$35.5	\$79.4	\$115.0	
<i>Construction</i>		\$62.9	\$34.3	\$97.2	
<i>Utilities</i>		\$27.2	\$51.9	\$79.2	
<i>Agriculture</i>		\$5.6	\$48.6	\$54.2	
<i>Mining</i>		\$10.1	\$4.7	\$14.8	
<i>Other</i>		\$53.4	\$151.8	\$205.2	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,504.2</b>	<b>\$1,806.9</b>	<b>\$3,923.4</b>	<b>\$8,234.6</b>	<b>2.7%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,101.6</b>			<b>\$5,101.6</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$940.0	\$2,333.3	\$3,273.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$536.8	\$1,594.5	\$2,131.3	
<i>Manufacturing</i>		\$586.9	\$1,059.8	\$1,646.7	
<i>Wholesale and retail trade</i>		\$251.4	\$794.2	\$1,045.6	
<i>Transportation and warehousing</i>		\$168.8	\$190.4	\$359.1	
<i>Information</i>		\$72.2	\$191.5	\$263.7	
<i>Utilities</i>		\$78.2	\$149.4	\$227.7	
<i>Construction</i>		\$92.9	\$50.3	\$143.2	
<i>Agriculture</i>		\$7.8	\$75.5	\$83.3	
<i>Mining</i>		\$41.1	\$19.2	\$60.3	
<i>Other</i>		\$68.1	\$193.1	\$261.2	
<b>Total Operational Impact on Value Added</b>	<b>\$5,101.6</b>	<b>\$2,844.2</b>	<b>\$6,651.2</b>	<b>\$14,596.9</b>	<b>3.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>39,353</b>			<b>39,353</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		8,879	30,836	<b>39,715</b>	
<i>Wholesale and retail trade</i>		2,211	8,259	<b>10,469</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,353	6,238	<b>8,592</b>	
<i>Manufacturing</i>		2,760	4,403	<b>7,163</b>	
<i>Transportation and warehousing</i>		2,153	2,121	<b>4,274</b>	
<i>Agriculture</i>		146	1,732	<b>1,878</b>	
<i>Construction</i>		1,074	533	<b>1,608</b>	
<i>Information</i>		412	880	<b>1,292</b>	
<i>Utilities</i>		142	238	<b>380</b>	
<i>Mining</i>		184	88	<b>272</b>	
<i>Other</i>		749	1,640	<b>2,388</b>	
<b>Total Operational Impact on Employment</b>	<b>39,353</b>	<b>21,063</b>	<b>56,968</b>	<b>117,384</b>	<b>3.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,381.4</b>			<b>\$2,381.4</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$634.7	\$1,504.7	<b>\$2,139.3</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$174.6	\$439.1	<b>\$613.7</b>	
<i>Wholesale and retail trade</i>		\$184.0	\$384.4	<b>\$568.4</b>	
<i>Manufacturing</i>		\$214.3	\$332.2	<b>\$546.5</b>	
<i>Transportation and warehousing</i>		\$126.6	\$119.4	<b>\$246.0</b>	
<i>Information</i>		\$49.5	\$91.1	<b>\$140.6</b>	
<i>Agriculture</i>		\$7.6	\$99.5	<b>\$107.1</b>	
<i>Construction</i>		\$59.2	\$29.6	<b>\$88.8</b>	
<i>Utilities</i>		\$20.4	\$33.7	<b>\$54.0</b>	
<i>Mining</i>		\$19.4	\$9.0	<b>\$28.4</b>	
<i>Other</i>		\$50.9	\$113.4	<b>\$164.2</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,381.4</b>	<b>\$1,541.1</b>	<b>\$3,156.1</b>	<b>\$7,078.5</b>	<b>3.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$6,397.9</b>			<b>\$6,397.9</b>	<b>1.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$765.7	\$1,816.8	<b>\$2,582.5</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$539.4	\$1,518.4	<b>\$2,057.8</b>	
<i>Wholesale and retail trade</i>		\$295.4	\$621.7	<b>\$917.1</b>	
<i>Manufacturing</i>		\$340.0	\$556.7	<b>\$896.7</b>	
<i>Transportation and warehousing</i>		\$165.2	\$157.2	<b>\$322.3</b>	
<i>Information</i>		\$94.7	\$214.5	<b>\$309.1</b>	
<i>Utilities</i>		\$63.0	\$104.2	<b>\$167.2</b>	
<i>Agriculture</i>		\$10.8	\$144.3	<b>\$155.1</b>	
<i>Construction</i>		\$86.3	\$43.0	<b>\$129.2</b>	
<i>Mining</i>		\$62.6	\$28.7	<b>\$91.2</b>	
<i>Other</i>		\$65.0	\$145.1	<b>\$210.2</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$6,397.9</b>	<b>\$2,487.9</b>	<b>\$5,350.5</b>	<b>\$14,236.3</b>	<b>4.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>37,610</b>			<b>37,610</b>	<b>2.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		5,334	16,009	21,344	
<i>Wholesale and retail trade</i>		1,431	4,726	6,157	
<i>Finance, insurance, real estate, rental and leasing</i>		1,437	3,000	4,437	
<i>Transportation and warehousing</i>		1,904	1,076	2,980	
<i>Manufacturing</i>		1,007	1,965	2,972	
<i>Construction</i>		1,450	324	1,774	
<i>Agriculture</i>		140	1,023	1,163	
<i>Information</i>		176	319	495	
<i>Utilities</i>		118	175	293	
<i>Mining</i>		64	21	85	
<i>Other</i>		944	1,397	2,342	
<b>Total Operational Impact on Employment</b>	<b>37,610</b>	<b>14,004</b>	<b>30,036</b>	<b>81,650</b>	<b>5.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,445.0</b>			<b>\$2,445.0</b>	<b>3.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$210.0	\$542.8	\$752.9	
<i>Wholesale and retail trade</i>		\$75.5	\$156.7	\$232.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$60.2	\$106.2	\$166.4	
<i>Manufacturing</i>		\$59.0	\$101.5	\$160.6	
<i>Transportation and warehousing</i>		\$96.3	\$52.8	\$149.1	
<i>Construction</i>		\$61.5	\$13.5	\$75.0	
<i>Agriculture</i>		\$6.7	\$50.9	\$57.6	
<i>Utilities</i>		\$12.6	\$17.9	\$30.5	
<i>Information</i>		\$9.6	\$17.3	\$26.9	
<i>Mining</i>		\$3.5	\$1.1	\$4.6	
<i>Other</i>		\$52.4	\$79.8	\$132.3	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,445.0</b>	<b>\$647.4</b>	<b>\$1,140.8</b>	<b>\$4,233.2</b>	<b>6.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,568.6</b>			<b>\$4,568.6</b>	<b>4.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$269.6	\$686.9	\$956.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$241.6	\$567.6	\$809.2	
<i>Wholesale and retail trade</i>		\$155.4	\$293.6	\$449.1	
<i>Manufacturing</i>		\$117.2	\$196.6	\$313.8	
<i>Transportation and warehousing</i>		\$124.7	\$68.1	\$192.8	
<i>Utilities</i>		\$46.1	\$65.8	\$111.9	
<i>Construction</i>		\$79.2	\$17.6	\$96.8	
<i>Information</i>		\$23.5	\$53.1	\$76.6	
<i>Agriculture</i>		\$7.5	\$58.4	\$65.8	
<i>Mining</i>		\$8.8	\$2.8	\$11.6	
<i>Other</i>		\$65.9	\$100.7	\$166.6	
<b>Total Operational Impact on Value Added</b>	<b>\$4,568.6</b>	<b>\$1,139.5</b>	<b>\$2,111.1</b>	<b>\$7,819.2</b>	<b>7.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>42,420</b>			<b>42,420</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		9,464	29,413	<b>38,877</b>	
<i>Wholesale and retail trade</i>		1,526	8,170	<b>9,696</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,746	6,141	<b>8,887</b>	
<i>Manufacturing</i>		2,073	3,574	<b>5,647</b>	
<i>Transportation and warehousing</i>		2,191	2,160	<b>4,351</b>	
<i>Agriculture</i>		168	1,996	<b>2,164</b>	
<i>Construction</i>		781	549	<b>1,329</b>	
<i>Information</i>		402	813	<b>1,216</b>	
<i>Utilities</i>		126	221	<b>347</b>	
<i>Mining</i>		147	60	<b>207</b>	
<i>Other</i>		<u>599</u>	<u>1,745</u>	<b><u>2,344</u></b>	
<b>Total Operational Impact on Employment</b>	<b>42,420</b>	<b>20,223</b>	<b>54,842</b>	<b>117,485</b>	<b>3.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,693.8</b>			<b>\$1,693.8</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$582.6	\$1,305.4	<b>\$1,888.0</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$146.7	\$307.2	<b>\$453.9</b>	
<i>Wholesale and retail trade</i>		\$103.3	\$326.5	<b>\$429.8</b>	
<i>Manufacturing</i>		\$136.8	\$239.7	<b>\$376.6</b>	
<i>Transportation and warehousing</i>		\$124.3	\$119.4	<b>\$243.7</b>	
<i>Information</i>		\$50.8	\$83.9	<b>\$134.6</b>	
<i>Agriculture</i>		\$6.3	\$81.9	<b>\$88.3</b>	
<i>Construction</i>		\$37.8	\$27.3	<b>\$65.1</b>	
<i>Utilities</i>		\$15.5	\$26.2	<b>\$41.7</b>	
<i>Mining</i>		\$12.0	\$4.8	<b>\$16.9</b>	
<i>Other</i>		<u>\$40.6</u>	<u>\$118.2</u>	<b><u>\$158.8</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,693.8</b>	<b>\$1,256.8</b>	<b>\$2,640.5</b>	<b>\$5,591.2</b>	<b>3.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,691.5</b>			<b>\$3,691.5</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$713.4	\$1,590.9	<b>\$2,304.2</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$537.3	\$1,215.0	<b>\$1,752.3</b>	
<i>Manufacturing</i>		\$269.0	\$529.9	<b>\$798.9</b>	
<i>Wholesale and retail trade</i>		\$176.5	\$549.3	<b>\$725.8</b>	
<i>Transportation and warehousing</i>		\$167.7	\$159.5	<b>\$327.1</b>	
<i>Information</i>		\$92.4	\$194.5	<b>\$286.9</b>	
<i>Utilities</i>		\$58.0	\$97.3	<b>\$155.3</b>	
<i>Agriculture</i>		\$7.4	\$95.9	<b>\$103.3</b>	
<i>Construction</i>		\$48.2	\$34.2	<b>\$82.4</b>	
<i>Mining</i>		\$32.9	\$12.9	<b>\$45.8</b>	
<i>Other</i>		<u>\$49.8</u>	<u>\$144.3</u>	<b><u>\$194.0</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,691.5</b>	<b>\$2,152.4</b>	<b>\$4,623.7</b>	<b>\$10,467.5</b>	<b>3.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>17,139</b>			<b>17,139</b>	<b>2.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		2,456	8,674	11,130	
<i>Wholesale and retail trade</i>		933	2,573	3,506	
<i>Finance, insurance, real estate, rental and leasing</i>		765	1,777	2,543	
<i>Transportation and warehousing</i>		821	475	1,296	
<i>Construction</i>		761	184	945	
<i>Agriculture</i>		68	676	744	
<i>Manufacturing</i>		205	344	549	
<i>Information</i>		96	194	290	
<i>Mining</i>		151	71	222	
<i>Utilities</i>		44	70	114	
<i>Other</i>		456	596	1,051	
<b>Total Operational Impact on Employment</b>	<b>17,139</b>	<b>6,755</b>	<b>15,634</b>	<b>39,528</b>	<b>6.0%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,204.7</b>			<b>\$1,204.7</b>	<b>4.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$101.7	\$321.5	\$423.2	
<i>Wholesale and retail trade</i>		\$54.6	\$92.3	\$147.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$30.4	\$56.1	\$86.5	
<i>Transportation and warehousing</i>		\$48.3	\$26.2	\$74.5	
<i>Construction</i>		\$33.2	\$7.9	\$41.2	
<i>Manufacturing</i>		\$10.9	\$15.0	\$25.9	
<i>Agriculture</i>		\$2.2	\$21.2	\$23.4	
<i>Mining</i>		\$14.9	\$6.8	\$21.7	
<i>Information</i>		\$5.7	\$11.1	\$16.8	
<i>Utilities</i>		\$5.9	\$9.1	\$15.0	
<i>Other</i>		\$27.4	\$36.8	\$64.1	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,204.7</b>	<b>\$335.0</b>	<b>\$604.2</b>	<b>\$2,143.9</b>	<b>7.5%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,266.9</b>			<b>\$3,266.9</b>	<b>7.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$120.0	\$365.6	\$485.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$110.5	\$297.6	\$408.2	
<i>Wholesale and retail trade</i>		\$100.6	\$136.3	\$236.9	
<i>Transportation and warehousing</i>		\$65.8	\$39.5	\$105.2	
<i>Mining</i>		\$43.9	\$19.8	\$63.7	
<i>Construction</i>		\$48.8	\$11.7	\$60.5	
<i>Manufacturing</i>		\$17.8	\$23.6	\$41.4	
<i>Agriculture</i>		\$3.3	\$36.0	\$39.3	
<i>Information</i>		\$11.4	\$26.8	\$38.2	
<i>Utilities</i>		\$14.9	\$23.2	\$38.2	
<i>Other</i>		\$32.6	\$43.9	\$76.4	
<b>Total Operational Impact on Value Added</b>	<b>\$3,266.9</b>	<b>\$569.5</b>	<b>\$1,024.2</b>	<b>\$4,860.6</b>	<b>10.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>14,652</b>			<b>14,652</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		6,227	29,061	<b>35,288</b>	
<i>Wholesale and retail trade</i>		1,257	9,411	<b>10,668</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		1,518	5,846	<b>7,364</b>	
<i>Transportation and warehousing</i>		1,786	1,707	<b>3,493</b>	
<i>Manufacturing</i>		1,726	1,725	<b>3,451</b>	
<i>Agriculture</i>		81	1,292	<b>1,374</b>	
<i>Construction</i>		508	502	<b>1,010</b>	
<i>Information</i>		286	635	<b>921</b>	
<i>Utilities</i>		84	165	<b>248</b>	
<i>Mining</i>		110	20	<b>129</b>	
<i>Other</i>		466	2,098	<b>2,564</b>	
<b>Total Operational Impact on Employment</b>	<b>14,652</b>	<b>14,049</b>	<b>52,461</b>	<b>81,162</b>	<b>6.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,228.3</b>			<b>\$3,228.3</b>	<b>4.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$388.2	\$1,167.2	<b>\$1,555.5</b>	
<i>Wholesale and retail trade</i>		\$85.4	\$316.5	<b>\$401.9</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$84.2	\$259.2	<b>\$343.4</b>	
<i>Manufacturing</i>		\$103.8	\$105.1	<b>\$209.0</b>	
<i>Transportation and warehousing</i>		\$107.0	\$96.9	<b>\$203.8</b>	
<i>Agriculture</i>		\$8.4	\$143.3	<b>\$151.7</b>	
<i>Information</i>		\$22.9	\$44.3	<b>\$67.2</b>	
<i>Construction</i>		\$27.3	\$27.6	<b>\$54.9</b>	
<i>Utilities</i>		\$9.7	\$18.9	<b>\$28.6</b>	
<i>Mining</i>		\$8.1	\$1.4	<b>\$9.5</b>	
<i>Other</i>		\$29.2	\$129.9	<b>\$159.2</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$3,228.3</b>	<b>\$874.2</b>	<b>\$2,310.5</b>	<b>\$6,412.9</b>	<b>9.2%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,602.6</b>			<b>\$3,602.6</b>	<b>3.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$483.4	\$1,437.8	<b>\$1,921.1</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$283.7	\$1,309.5	<b>\$1,593.2</b>	
<i>Wholesale and retail trade</i>		\$164.2	\$556.2	<b>\$720.5</b>	
<i>Manufacturing</i>		\$194.4	\$223.7	<b>\$418.1</b>	
<i>Transportation and warehousing</i>		\$174.5	\$153.6	<b>\$328.1</b>	
<i>Agriculture</i>		\$10.7	\$177.4	<b>\$188.2</b>	
<i>Information</i>		\$44.2	\$104.8	<b>\$149.0</b>	
<i>Utilities</i>		\$33.8	\$64.3	<b>\$98.0</b>	
<i>Construction</i>		\$31.0	\$30.9	<b>\$62.0</b>	
<i>Mining</i>		\$13.8	\$2.5	<b>\$16.3</b>	
<i>Other</i>		\$34.3	\$151.8	<b>\$186.1</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,602.6</b>	<b>\$1,468.0</b>	<b>\$4,212.5</b>	<b>\$9,283.1</b>	<b>8.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>14,839</b>			<b>14,839</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		3,845	13,870	17,715	
<i>Finance, insurance, real estate, rental and leasing</i>		1,023	2,971	3,994	
<i>Wholesale and retail trade</i>		467	2,837	3,304	
<i>Transportation and warehousing</i>		764	930	1,694	
<i>Manufacturing</i>		341	672	1,013	
<i>Mining</i>		374	187	561	
<i>Construction</i>		284	216	500	
<i>Information</i>		111	260	370	
<i>Agriculture</i>		10	128	138	
<i>Utilities</i>		26	52	79	
<i>Other</i>		171	507	678	
<b>Total Operational Impact on Employment</b>	<b>14,839</b>	<b>7,417</b>	<b>22,630</b>	<b>44,886</b>	<b>2.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$554.6</b>			<b>\$554.6</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$221.5	\$663.1	\$884.5	
<i>Wholesale and retail trade</i>		\$32.2	\$123.1	\$155.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$40.4	\$89.1	\$129.4	
<i>Transportation and warehousing</i>		\$40.3	\$48.8	\$89.1	
<i>Manufacturing</i>		\$21.4	\$43.0	\$64.5	
<i>Mining</i>		\$42.3	\$20.3	\$62.6	
<i>Construction</i>		\$14.9	\$11.8	\$26.7	
<i>Information</i>		\$8.1	\$17.6	\$25.8	
<i>Utilities</i>		\$3.9	\$7.5	\$11.4	
<i>Agriculture</i>		\$0.4	\$5.4	\$5.8	
<i>Other</i>		\$15.4	\$45.6	\$61.0	
<b>Total Operational Impact on Labor Income</b>	<b>\$554.6</b>	<b>\$440.9</b>	<b>\$1,075.2</b>	<b>\$2,070.7</b>	<b>2.5%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,278.4</b>			<b>\$1,278.4</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$291.4	\$932.8	\$1,224.1	
<i>Finance, insurance, real estate, rental and leasing</i>		\$185.8	\$465.1	\$650.9	
<i>Wholesale and retail trade</i>		\$57.3	\$221.8	\$279.1	
<i>Mining</i>		\$109.2	\$51.5	\$160.7	
<i>Transportation and warehousing</i>		\$58.4	\$85.4	\$143.8	
<i>Manufacturing</i>		\$35.5	\$79.5	\$115.0	
<i>Information</i>		\$19.3	\$48.0	\$67.3	
<i>Construction</i>		\$24.7	\$19.1	\$43.8	
<i>Utilities</i>		\$14.8	\$28.5	\$43.3	
<i>Agriculture</i>		\$0.5	\$7.4	\$7.9	
<i>Other</i>		\$18.4	\$54.0	\$72.4	
<b>Total Operational Impact on Value Added</b>	<b>\$1,278.4</b>	<b>\$815.2</b>	<b>\$1,993.0</b>	<b>\$4,086.5</b>	<b>2.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>8,629</b>			<b>8,629</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,925	6,249	8,175	
<i>Wholesale and retail trade</i>		317	1,965	2,282	
<i>Finance, insurance, real estate, rental and leasing</i>		509	1,299	1,808	
<i>Manufacturing</i>		565	788	1,352	
<i>Transportation and warehousing</i>		363	308	671	
<i>Information</i>		92	196	288	
<i>Construction</i>		114	131	245	
<i>Agriculture</i>		30	150	179	
<i>Utilities</i>		22	36	58	
<i>Mining</i>		36	13	49	
<i>Other</i>		99	300	399	
<b>Total Operational Impact on Employment</b>	<b>8,629</b>	<b>4,073</b>	<b>11,434</b>	<b>24,136</b>	<b>2.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$505.5</b>			<b>\$505.5</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$127.6	\$314.7	\$442.3	
<i>Wholesale and retail trade</i>		\$28.4	\$96.7	\$125.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$31.0	\$82.6	\$113.6	
<i>Manufacturing</i>		\$42.6	\$58.1	\$100.6	
<i>Transportation and warehousing</i>		\$20.1	\$16.4	\$36.5	
<i>Information</i>		\$9.8	\$19.6	\$29.4	
<i>Construction</i>		\$5.6	\$7.0	\$12.6	
<i>Utilities</i>		\$3.2	\$5.2	\$8.4	
<i>Agriculture</i>		\$1.0	\$3.0	\$4.0	
<i>Mining</i>		\$1.4	\$0.5	\$1.9	
<i>Other</i>		\$7.0	\$21.1	\$28.1	
<b>Total Operational Impact on Labor Income</b>	<b>\$505.5</b>	<b>\$277.9</b>	<b>\$624.9</b>	<b>\$1,408.2</b>	<b>2.9%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$817.9</b>			<b>\$817.9</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$150.3	\$368.5	\$518.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$111.6	\$299.8	\$411.4	
<i>Wholesale and retail trade</i>		\$41.5	\$132.6	\$174.2	
<i>Manufacturing</i>		\$56.9	\$83.6	\$140.6	
<i>Information</i>		\$17.2	\$39.1	\$56.2	
<i>Transportation and warehousing</i>		\$30.4	\$22.5	\$53.0	
<i>Utilities</i>		\$9.9	\$15.8	\$25.7	
<i>Construction</i>		\$6.0	\$7.1	\$13.1	
<i>Agriculture</i>		\$1.0	\$4.5	\$5.5	
<i>Mining</i>		\$2.2	\$0.8	\$2.9	
<i>Other</i>		\$10.8	\$32.3	\$43.2	
<b>Total Operational Impact on Value Added</b>	<b>\$817.9</b>	<b>\$437.9</b>	<b>\$1,006.6</b>	<b>\$2,262.4</b>	<b>3.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Jersey, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>36,918</b>			<b>36,918</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		13,065	43,305	56,370	
<i>Wholesale and retail trade</i>		2,692	11,866	14,558	
<i>Finance, insurance, real estate, rental and leasing</i>		3,595	10,398	13,992	
<i>Transportation and warehousing</i>		3,195	3,704	6,899	
<i>Manufacturing</i>		2,143	3,672	5,815	
<i>Construction</i>		1,369	692	2,061	
<i>Information</i>		529	1,309	1,838	
<i>Agriculture</i>		42	435	478	
<i>Utilities</i>		96	190	286	
<i>Mining</i>		106	25	131	
<i>Other</i>		802	2,021	2,823	
<b>Total Operational Impact on Employment</b>	<b>36,918</b>	<b>27,634</b>	<b>77,616</b>	<b>142,167</b>	<b>2.7%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,756.1</b>			<b>\$2,756.1</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,140.8	\$2,556.3	\$3,697.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$286.9	\$695.6	\$982.5	
<i>Wholesale and retail trade</i>		\$258.8	\$667.8	\$926.7	
<i>Manufacturing</i>		\$221.9	\$344.0	\$565.8	
<i>Transportation and warehousing</i>		\$211.1	\$238.7	\$449.8	
<i>Information</i>		\$84.2	\$180.9	\$265.1	
<i>Construction</i>		\$93.9	\$47.7	\$141.6	
<i>Utilities</i>		\$17.7	\$33.4	\$51.0	
<i>Agriculture</i>		\$1.0	\$11.1	\$12.1	
<i>Mining</i>		\$8.3	\$1.9	\$10.2	
<i>Other</i>		\$76.7	\$195.5	\$272.3	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,756.1</b>	<b>\$2,401.4</b>	<b>\$4,972.9</b>	<b>\$10,130.4</b>	<b>2.8%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$9,040.1</b>			<b>\$9,040.1</b>	<b>1.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,401.7	\$3,071.0	\$4,472.7	
<i>Finance, insurance, real estate, rental and leasing</i>		\$704.2	\$2,356.8	\$3,061.0	
<i>Wholesale and retail trade</i>		\$450.5	\$1,102.8	\$1,553.3	
<i>Manufacturing</i>		\$379.7	\$564.6	\$944.2	
<i>Transportation and warehousing</i>		\$265.4	\$294.7	\$560.1	
<i>Information</i>		\$149.6	\$376.9	\$526.5	
<i>Utilities</i>		\$86.7	\$161.6	\$248.3	
<i>Construction</i>		\$129.7	\$65.8	\$195.5	
<i>Mining</i>		\$16.3	\$3.8	\$20.1	
<i>Agriculture</i>		\$1.4	\$16.3	\$17.7	
<i>Other</i>		\$93.7	\$238.6	\$332.3	
<b>Total Operational Impact on Value Added</b>	<b>\$9,040.1</b>	<b>\$3,679.1</b>	<b>\$8,252.8</b>	<b>\$20,972.0</b>	<b>3.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>45,328</b>			<b>45,328</b>	<b>4.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		4,969	19,788	<b>24,757</b>	
<i>Wholesale and retail trade</i>		1,133	5,830	<b>6,963</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		1,638	3,623	<b>5,261</b>	
<i>Transportation and warehousing</i>		824	903	<b>1,726</b>	
<i>Construction</i>		1,290	367	<b>1,657</b>	
<i>Manufacturing</i>		339	561	<b>901</b>	
<i>Agriculture</i>		59	747	<b>806</b>	
<i>Information</i>		130	346	<b>476</b>	
<i>Mining</i>		159	63	<b>221</b>	
<i>Utilities</i>		63	122	<b>185</b>	
<i>Other</i>		490	1,355	<b>1,845</b>	
<b>Total Operational Impact on Employment</b>	<b>45,328</b>	<b>11,093</b>	<b>33,706</b>	<b>90,127</b>	<b>8.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,347.5</b>			<b>\$3,347.5</b>	<b>6.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$243.7	\$744.2	<b>\$987.9</b>	
<i>Wholesale and retail trade</i>		\$52.8	\$193.7	<b>\$246.6</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$76.2	\$130.1	<b>\$206.2</b>	
<i>Transportation and warehousing</i>		\$49.2	\$50.0	<b>\$99.2</b>	
<i>Construction</i>		\$57.3	\$16.2	<b>\$73.4</b>	
<i>Manufacturing</i>		\$18.5	\$28.2	<b>\$46.7</b>	
<i>Agriculture</i>		\$2.4	\$35.3	<b>\$37.7</b>	
<i>Information</i>		\$7.4	\$19.9	<b>\$27.3</b>	
<i>Mining</i>		\$14.5	\$5.6	<b>\$20.1</b>	
<i>Utilities</i>		\$6.9	\$13.1	<b>\$20.0</b>	
<i>Other</i>		\$34.9	\$96.7	<b>\$131.6</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$3,347.5</b>	<b>\$563.8</b>	<b>\$1,332.9</b>	<b>\$5,244.2</b>	<b>10.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$9,250.9</b>			<b>\$9,250.9</b>	<b>9.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$309.9	\$925.3	<b>\$1,235.2</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$245.0	\$798.7	<b>\$1,043.7</b>	
<i>Wholesale and retail trade</i>		\$100.7	\$338.4	<b>\$439.1</b>	
<i>Transportation and warehousing</i>		\$69.8	\$70.5	<b>\$140.4</b>	
<i>Mining</i>		\$76.8	\$29.9	<b>\$106.7</b>	
<i>Construction</i>		\$81.2	\$23.1	<b>\$104.3</b>	
<i>Information</i>		\$21.3	\$75.9	<b>\$97.2</b>	
<i>Manufacturing</i>		\$31.0	\$46.2	<b>\$77.3</b>	
<i>Utilities</i>		\$20.6	\$39.4	<b>\$60.0</b>	
<i>Agriculture</i>		\$2.6	\$37.5	<b>\$40.1</b>	
<i>Other</i>		\$61.7	\$170.7	<b>\$232.4</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$9,250.9</b>	<b>\$1,020.7</b>	<b>\$2,555.6</b>	<b>\$12,827.2</b>	<b>13.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>64,575</b>			<b>64,575</b>	<b>0.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		21,586	87,876	109,461	
<i>Finance, insurance, real estate, rental and leasing</i>		5,647	18,839	24,486	
<i>Wholesale and retail trade</i>		3,478	19,957	23,436	
<i>Transportation and warehousing</i>		4,211	6,543	10,754	
<i>Manufacturing</i>		3,671	6,886	10,558	
<i>Information</i>		1,370	3,388	4,758	
<i>Construction</i>		1,610	1,262	2,873	
<i>Agriculture</i>		144	1,306	1,450	
<i>Utilities</i>		280	547	827	
<i>Mining</i>		302	96	398	
<i>Other</i>		1,197	3,748	4,945	
<b>Total Operational Impact on Employment</b>	<b>64,575</b>	<b>43,498</b>	<b>150,449</b>	<b>258,522</b>	<b>2.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,907.4</b>			<b>\$5,907.4</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,939.0	\$5,246.2	\$7,185.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$864.1	\$2,740.9	\$3,605.0	
<i>Wholesale and retail trade</i>		\$307.6	\$1,060.6	\$1,368.2	
<i>Manufacturing</i>		\$303.4	\$516.8	\$820.2	
<i>Information</i>		\$257.1	\$550.9	\$808.0	
<i>Transportation and warehousing</i>		\$259.5	\$406.9	\$666.4	
<i>Construction</i>		\$95.6	\$78.1	\$173.7	
<i>Utilities</i>		\$43.9	\$84.2	\$128.1	
<i>Agriculture</i>		\$5.4	\$59.8	\$65.2	
<i>Mining</i>		\$14.9	\$4.6	\$19.6	
<i>Other</i>		\$136.3	\$422.7	\$559.0	
<b>Total Operational Impact on Labor Income</b>	<b>\$5,907.4</b>	<b>\$4,226.9</b>	<b>\$11,171.6</b>	<b>\$21,305.9</b>	<b>2.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$10,311.7</b>			<b>\$10,311.7</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Finance, insurance, real estate, rental and leasing</i>		\$2,295.2	\$6,633.8	\$8,928.9	
<i>Services</i>		\$2,360.8	\$6,218.2	\$8,579.0	
<i>Wholesale and retail trade</i>		\$527.4	\$1,748.1	\$2,275.5	
<i>Information</i>		\$523.5	\$1,308.0	\$1,831.5	
<i>Manufacturing</i>		\$590.8	\$1,041.3	\$1,632.1	
<i>Transportation and warehousing</i>		\$311.7	\$425.3	\$737.0	
<i>Utilities</i>		\$141.5	\$274.5	\$416.0	
<i>Construction</i>		\$142.8	\$113.7	\$256.5	
<i>Agriculture</i>		\$6.4	\$74.8	\$81.3	
<i>Mining</i>		\$31.6	\$9.9	\$41.5	
<i>Other</i>		\$172.7	\$532.8	\$705.5	
<b>Total Operational Impact on Value Added</b>	<b>\$10,311.7</b>	<b>\$7,104.4</b>	<b>\$18,380.4</b>	<b>\$35,796.5</b>	<b>2.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>47,078</b>			<b>47,078</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		11,792	36,634	<b>48,426</b>	
<i>Wholesale and retail trade</i>		1,876	10,142	<b>12,019</b>	
<i>Manufacturing</i>		3,679	6,668	<b>10,348</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,905	7,261	<b>10,166</b>	
<i>Transportation and warehousing</i>		2,557	2,440	<b>4,997</b>	
<i>Agriculture</i>		169	1,525	<b>1,693</b>	
<i>Information</i>		529	1,133	<b>1,661</b>	
<i>Construction</i>		814	756	<b>1,570</b>	
<i>Utilities</i>		116	211	<b>326</b>	
<i>Mining</i>		107	47	<b>155</b>	
<i>Other</i>		749	2,323	<b>3,072</b>	
<b>Total Operational Impact on Employment</b>	<b>47,078</b>	<b>25,292</b>	<b>69,141</b>	<b>141,510</b>	<b>2.5%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,975.7</b>			<b>\$1,975.7</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$681.2	\$1,595.2	<b>\$2,276.4</b>	
<i>Manufacturing</i>		\$265.8	\$438.6	<b>\$704.4</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$185.0	\$405.8	<b>\$590.8</b>	
<i>Wholesale and retail trade</i>		\$128.9	\$416.7	<b>\$545.6</b>	
<i>Transportation and warehousing</i>		\$133.5	\$131.0	<b>\$264.4</b>	
<i>Information</i>		\$49.4	\$99.1	<b>\$148.5</b>	
<i>Agriculture</i>		\$9.3	\$103.8	<b>\$113.2</b>	
<i>Construction</i>		\$32.2	\$31.8	<b>\$64.0</b>	
<i>Utilities</i>		\$15.7	\$27.8	<b>\$43.5</b>	
<i>Mining</i>		\$5.6	\$2.4	<b>\$8.0</b>	
<i>Other</i>		\$55.0	\$169.2	<b>\$224.3</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,975.7</b>	<b>\$1,561.7</b>	<b>\$3,421.4</b>	<b>\$6,958.8</b>	<b>2.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,782.4</b>			<b>\$3,782.4</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$886.3	\$2,005.6	<b>\$2,892.0</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$723.2	\$1,720.6	<b>\$2,443.8</b>	
<i>Manufacturing</i>		\$716.1	\$1,310.5	<b>\$2,026.7</b>	
<i>Wholesale and retail trade</i>		\$222.0	\$678.2	<b>\$900.2</b>	
<i>Transportation and warehousing</i>		\$168.5	\$168.4	<b>\$336.9</b>	
<i>Information</i>		\$95.2	\$218.7	<b>\$314.0</b>	
<i>Utilities</i>		\$70.9	\$124.5	<b>\$195.4</b>	
<i>Agriculture</i>		\$10.4	\$115.5	<b>\$125.9</b>	
<i>Construction</i>		\$45.6	\$43.3	<b>\$88.8</b>	
<i>Mining</i>		\$20.6	\$8.8	<b>\$29.4</b>	
<i>Other</i>		\$66.8	\$204.4	<b>\$271.2</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,782.4</b>	<b>\$3,025.6</b>	<b>\$6,598.5</b>	<b>\$13,406.5</b>	<b>2.6%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>41,506</b>			<b>41,506</b>	<b>7.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		4,515	14,889	19,405	
<i>Wholesale and retail trade</i>		1,124	5,200	6,324	
<i>Finance, insurance, real estate, rental and leasing</i>		1,670	3,163	4,833	
<i>Transportation and warehousing</i>		750	801	1,551	
<i>Construction</i>		777	287	1,065	
<i>Agriculture</i>		53	709	762	
<i>Manufacturing</i>		342	381	723	
<i>Information</i>		176	320	496	
<i>Utilities</i>		54	118	172	
<i>Mining</i>		109	33	142	
<i>Other</i>		374	1,309	1,683	
<b>Total Operational Impact on Employment</b>	<b>41,506</b>	<b>9,945</b>	<b>27,210</b>	<b>78,661</b>	<b>13.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,962.0</b>			<b>\$3,962.0</b>	<b>11.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$228.2	\$624.3	\$852.4	
<i>Wholesale and retail trade</i>		\$76.3	\$207.5	\$283.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$95.5	\$156.6	\$252.1	
<i>Transportation and warehousing</i>		\$48.4	\$51.1	\$99.5	
<i>Construction</i>		\$51.4	\$18.9	\$70.3	
<i>Manufacturing</i>		\$21.6	\$22.5	\$44.1	
<i>Information</i>		\$12.6	\$23.8	\$36.4	
<i>Agriculture</i>		\$2.2	\$28.9	\$31.0	
<i>Utilities</i>		\$7.5	\$16.8	\$24.3	
<i>Mining</i>		\$11.4	\$3.4	\$14.8	
<i>Other</i>		\$22.8	\$79.3	\$102.1	
<b>Total Operational Impact on Labor Income</b>	<b>\$3,962.0</b>	<b>\$577.9</b>	<b>\$1,232.9</b>	<b>\$5,772.8</b>	<b>17.4%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$8,580.2</b>			<b>\$8,580.2</b>	<b>15.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$272.1	\$724.6	\$996.7	
<i>Finance, insurance, real estate, rental and leasing</i>		\$264.0	\$668.7	\$932.7	
<i>Wholesale and retail trade</i>		\$141.0	\$354.8	\$495.9	
<i>Transportation and warehousing</i>		\$69.6	\$73.6	\$143.1	
<i>Construction</i>		\$79.1	\$29.2	\$108.3	
<i>Manufacturing</i>		\$43.6	\$45.8	\$89.4	
<i>Information</i>		\$26.4	\$58.7	\$85.1	
<i>Utilities</i>		\$22.9	\$49.4	\$72.2	
<i>Agriculture</i>		\$4.2	\$55.7	\$59.8	
<i>Mining</i>		\$40.5	\$12.4	\$52.9	
<i>Other</i>		\$24.7	\$85.7	\$110.4	
<b>Total Operational Impact on Value Added</b>	<b>\$8,580.2</b>	<b>\$988.1</b>	<b>\$2,158.5</b>	<b>\$11,726.8</b>	<b>21.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>90,083</b>			<b>90,083</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		22,854	68,675	91,529	
<i>Wholesale and retail trade</i>		4,721	18,415	23,136	
<i>Finance, insurance, real estate, rental and leasing</i>		5,223	12,338	17,561	
<i>Manufacturing</i>		7,072	8,930	16,002	
<i>Transportation and warehousing</i>		5,118	4,638	9,756	
<i>Construction</i>		3,325	1,145	4,470	
<i>Information</i>		777	1,566	2,343	
<i>Agriculture</i>		173	1,803	1,976	
<i>Utilities</i>		204	330	535	
<i>Mining</i>		278	93	371	
<i>Other</i>		1,615	3,459	5,074	
<b>Total Operational Impact on Employment</b>	<b>90,083</b>	<b>51,361</b>	<b>121,392</b>	<b>262,836</b>	<b>3.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,536.2</b>			<b>\$5,536.2</b>	<b>1.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,431.9	\$3,030.6	\$4,462.4	
<i>Manufacturing</i>		\$522.7	\$638.8	\$1,161.5	
<i>Wholesale and retail trade</i>		\$318.8	\$748.9	\$1,067.8	
<i>Finance, insurance, real estate, rental and leasing</i>		\$312.9	\$686.2	\$999.1	
<i>Transportation and warehousing</i>		\$288.8	\$260.8	\$549.6	
<i>Construction</i>		\$168.9	\$57.7	\$226.7	
<i>Information</i>		\$62.7	\$120.7	\$183.5	
<i>Utilities</i>		\$27.4	\$43.4	\$70.8	
<i>Agriculture</i>		\$5.8	\$57.0	\$62.8	
<i>Mining</i>		\$30.7	\$10.2	\$40.9	
<i>Other</i>		\$120.1	\$261.7	\$381.8	
<b>Total Operational Impact on Labor Income</b>	<b>\$5,536.2</b>	<b>\$3,290.7</b>	<b>\$5,916.1</b>	<b>\$14,743.0</b>	<b>4.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$21,846.2</b>			<b>\$21,846.2</b>	<b>3.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,756.9	\$3,618.5	\$5,375.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,224.2	\$3,001.0	\$4,225.2	
<i>Manufacturing</i>		\$925.2	\$1,215.7	\$2,140.9	
<i>Wholesale and retail trade</i>		\$554.3	\$1,293.8	\$1,848.1	
<i>Transportation and warehousing</i>		\$364.9	\$316.5	\$681.4	
<i>Information</i>		\$131.3	\$302.0	\$433.2	
<i>Utilities</i>		\$152.5	\$242.1	\$394.7	
<i>Construction</i>		\$228.8	\$78.6	\$307.4	
<i>Mining</i>		\$71.8	\$23.7	\$95.5	
<i>Agriculture</i>		\$8.1	\$87.1	\$95.3	
<i>Other</i>		\$155.4	\$339.0	\$494.4	
<b>Total Operational Impact on Value Added</b>	<b>\$21,846.2</b>	<b>\$5,573.4</b>	<b>\$10,518.1</b>	<b>\$37,937.6</b>	<b>6.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>163,857</b>			<b>163,857</b>	<b>7.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		18,320	98,014	116,334	
<i>Wholesale and retail trade</i>		3,638	30,673	34,312	
<i>Finance, insurance, real estate, rental and leasing</i>		6,142	22,735	28,877	
<i>Transportation and warehousing</i>		3,042	4,945	7,987	
<i>Construction</i>		4,808	1,898	6,705	
<i>Manufacturing</i>		1,960	2,549	4,509	
<i>Information</i>		581	2,097	2,678	
<i>Agriculture</i>		154	2,449	2,603	
<i>Utilities</i>		257	734	991	
<i>Mining</i>		277	102	378	
<i>Other</i>		1,861	8,002	9,863	
<b>Total Operational Impact on Employment</b>	<b>163,857</b>	<b>41,040</b>	<b>174,197</b>	<b>379,095</b>	<b>16.6%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$25,229.9</b>			<b>\$25,229.9</b>	<b>20.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$898.0	\$3,928.6	\$4,826.6	
<i>Wholesale and retail trade</i>		\$210.7	\$1,131.7	\$1,342.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$294.9	\$839.3	\$1,134.2	
<i>Transportation and warehousing</i>		\$171.3	\$280.7	\$452.0	
<i>Construction</i>		\$253.4	\$99.9	\$353.3	
<i>Manufacturing</i>		\$138.9	\$152.8	\$291.7	
<i>Information</i>		\$45.7	\$145.6	\$191.4	
<i>Utilities</i>		\$28.4	\$81.0	\$109.4	
<i>Agriculture</i>		\$4.6	\$74.8	\$79.3	
<i>Mining</i>		\$16.1	\$5.0	\$21.0	
<i>Other</i>		\$114.5	\$488.4	\$602.8	
<b>Total Operational Impact on Labor Income</b>	<b>\$25,229.9</b>	<b>\$2,176.5</b>	<b>\$7,227.6</b>	<b>\$34,634.0</b>	<b>28.1%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$35,705.2</b>			<b>\$35,705.2</b>	<b>18.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,142.0	\$4,712.3	\$5,854.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$793.5	\$3,686.9	\$4,480.3	
<i>Wholesale and retail trade</i>		\$413.2	\$1,926.6	\$2,339.8	
<i>Transportation and warehousing</i>		\$251.4	\$375.3	\$626.7	
<i>Manufacturing</i>		\$227.3	\$261.3	\$488.6	
<i>Information</i>		\$90.1	\$375.8	\$465.9	
<i>Construction</i>		\$322.6	\$127.3	\$449.9	
<i>Utilities</i>		\$95.4	\$274.1	\$369.5	
<i>Agriculture</i>		\$5.2	\$84.8	\$90.1	
<i>Mining</i>		\$40.8	\$14.1	\$54.9	
<i>Other</i>		\$149.8	\$637.6	\$787.4	
<b>Total Operational Impact on Value Added</b>	<b>\$35,705.2</b>	<b>\$3,531.1</b>	<b>\$12,476.1</b>	<b>\$51,712.4</b>	<b>27.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>17,589</b>			<b>17,589</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		4,978	15,644	20,622	
<i>Wholesale and retail trade</i>		760	4,190	4,950	
<i>Finance, insurance, real estate, rental and leasing</i>		1,200	2,868	4,068	
<i>Manufacturing</i>		1,377	2,540	3,917	
<i>Transportation and warehousing</i>		979	1,050	2,030	
<i>Agriculture</i>		213	1,546	1,759	
<i>Information</i>		212	479	691	
<i>Construction</i>		330	283	614	
<i>Mining</i>		105	44	149	
<i>Utilities</i>		48	92	139	
<i>Other</i>		256	763	1,019	
<b>Total Operational Impact on Employment</b>	<b>17,589</b>	<b>10,458</b>	<b>29,500</b>	<b>57,547</b>	<b>2.4%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$754.0</b>			<b>\$754.0</b>	<b>0.6%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$311.1	\$720.9	\$1,032.0	
<i>Manufacturing</i>		\$97.4	\$167.5	\$264.9	
<i>Wholesale and retail trade</i>		\$52.5	\$176.7	\$229.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$60.1	\$127.0	\$187.1	
<i>Transportation and warehousing</i>		\$55.2	\$58.3	\$113.5	
<i>Agriculture</i>		\$11.1	\$57.0	\$68.1	
<i>Information</i>		\$19.8	\$41.0	\$60.8	
<i>Construction</i>		\$15.9	\$14.4	\$30.3	
<i>Utilities</i>		\$6.8	\$12.9	\$19.7	
<i>Mining</i>		\$4.9	\$2.0	\$6.9	
<i>Other</i>		\$21.2	\$63.0	\$84.3	
<b>Total Operational Impact on Labor Income</b>	<b>\$754.0</b>	<b>\$656.1</b>	<b>\$1,440.7</b>	<b>\$2,850.8</b>	<b>2.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,739.6</b>			<b>\$1,739.6</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$392.1	\$861.4	\$1,253.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$218.9	\$609.4	\$828.4	
<i>Manufacturing</i>		\$203.0	\$387.5	\$590.6	
<i>Wholesale and retail trade</i>		\$84.0	\$254.7	\$338.8	
<i>Transportation and warehousing</i>		\$72.3	\$77.4	\$149.7	
<i>Information</i>		\$34.5	\$83.5	\$118.0	
<i>Agriculture</i>		\$12.6	\$78.4	\$91.0	
<i>Utilities</i>		\$30.8	\$57.0	\$87.8	
<i>Construction</i>		\$22.3	\$19.5	\$41.9	
<i>Mining</i>		\$8.6	\$3.5	\$12.0	
<i>Other</i>		\$27.1	\$80.1	\$107.2	
<b>Total Operational Impact on Value Added</b>	<b>\$1,739.6</b>	<b>\$1,106.3</b>	<b>\$2,512.5</b>	<b>\$5,358.4</b>	<b>2.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>106,194</b>			<b>106,194</b>	<b>1.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		22,569	95,427	117,996	
<i>Wholesale and retail trade</i>		4,692	26,224	30,916	
<i>Finance, insurance, real estate, rental and leasing</i>		5,836	17,884	23,720	
<i>Manufacturing</i>		5,778	8,399	14,178	
<i>Transportation and warehousing</i>		5,472	6,671	12,143	
<i>Construction</i>		3,313	1,582	4,895	
<i>Information</i>		810	2,071	2,881	
<i>Agriculture</i>		205	1,876	2,081	
<i>Utilities</i>		252	531	783	
<i>Mining</i>		544	233	777	
<i>Other</i>		1,479	4,547	6,026	
<b>Total Operational Impact on Employment</b>	<b>106,194</b>	<b>50,950</b>	<b>165,446</b>	<b>322,589</b>	<b>4.3%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$10,246.1</b>			<b>\$10,246.1</b>	<b>2.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,649.1	\$4,904.4	\$6,553.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$407.5	\$1,112.3	\$1,519.8	
<i>Wholesale and retail trade</i>		\$350.9	\$1,100.1	\$1,451.0	
<i>Manufacturing</i>		\$435.2	\$591.5	\$1,026.7	
<i>Transportation and warehousing</i>		\$325.3	\$380.1	\$705.4	
<i>Information</i>		\$162.8	\$296.7	\$459.5	
<i>Construction</i>		\$190.0	\$90.9	\$280.9	
<i>Utilities</i>		\$38.5	\$79.1	\$117.6	
<i>Agriculture</i>		\$7.7	\$77.7	\$85.4	
<i>Mining</i>		\$36.9	\$15.1	\$51.9	
<i>Other</i>		\$122.2	\$374.3	\$496.5	
<b>Total Operational Impact on Labor Income</b>	<b>\$10,246.1</b>	<b>\$3,725.9</b>	<b>\$9,022.2</b>	<b>\$22,994.2</b>	<b>5.1%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$23,799.1</b>			<b>\$23,799.1</b>	<b>3.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$1,999.4	\$5,729.2	\$7,728.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$1,130.6	\$4,026.7	\$5,157.3	
<i>Wholesale and retail trade</i>		\$604.2	\$1,735.3	\$2,339.4	
<i>Manufacturing</i>		\$804.4	\$1,123.9	\$1,928.3	
<i>Information</i>		\$280.1	\$695.5	\$975.5	
<i>Transportation and warehousing</i>		\$385.4	\$438.8	\$824.2	
<i>Utilities</i>		\$133.3	\$272.7	\$406.0	
<i>Construction</i>		\$253.4	\$121.2	\$374.6	
<i>Mining</i>		\$133.9	\$54.8	\$188.7	
<i>Agriculture</i>		\$9.5	\$104.3	\$113.8	
<i>Other</i>		\$153.1	\$467.9	\$621.0	
<b>Total Operational Impact on Value Added</b>	<b>\$23,799.1</b>	<b>\$5,887.2</b>	<b>\$14,770.1</b>	<b>\$44,456.4</b>	<b>6.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>4,148</b>			<b>4,148</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,291	5,092	<b>6,382</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		378	978	<b>1,356</b>	
<i>Wholesale and retail trade</i>		177	1,128	<b>1,305</b>	
<i>Manufacturing</i>		289	540	<b>829</b>	
<i>Transportation and warehousing</i>		214	247	<b>461</b>	
<i>Information</i>		57	129	<b>186</b>	
<i>Construction</i>		70	77	<b>147</b>	
<i>Agriculture</i>		4	48	<b>52</b>	
<i>Utilities</i>		8	16	<b>24</b>	
<i>Mining</i>		8	4	<b>11</b>	
<i>Other</i>		<u>55</u>	<u>202</u>	<b><u>257</u></b>	
<b>Total Operational Impact on Employment</b>	<b>4,148</b>	<b>2,551</b>	<b>8,460</b>	<b>15,159</b>	<b>2.5%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$377.2</b>			<b>\$377.2</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$86.4	\$255.5	<b>\$342.0</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$27.2	\$68.1	<b>\$95.2</b>	
<i>Wholesale and retail trade</i>		\$12.7	\$49.7	<b>\$62.4</b>	
<i>Manufacturing</i>		\$21.0	\$36.6	<b>\$57.6</b>	
<i>Information</i>		\$9.8	\$17.0	<b>\$26.8</b>	
<i>Transportation and warehousing</i>		\$12.2	\$13.5	<b>\$25.6</b>	
<i>Construction</i>		\$3.4	\$4.1	<b>\$7.5</b>	
<i>Utilities</i>		\$1.1	\$2.3	<b>\$3.4</b>	
<i>Agriculture</i>		\$0.1	\$0.9	<b>\$1.0</b>	
<i>Mining</i>		\$0.5	\$0.2	<b>\$0.7</b>	
<i>Other</i>		<u>\$5.3</u>	<u>\$18.6</u>	<b><u>\$23.9</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$377.2</b>	<b>\$179.7</b>	<b>\$466.4</b>	<b>\$1,023.3</b>	<b>2.9%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$720.6</b>			<b>\$720.6</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$105.8	\$312.3	<b>\$418.0</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$85.4	\$244.9	<b>\$330.3</b>	
<i>Wholesale and retail trade</i>		\$23.3	\$83.1	<b>\$106.4</b>	
<i>Manufacturing</i>		\$31.6	\$54.5	<b>\$86.1</b>	
<i>Information</i>		\$18.4	\$40.7	<b>\$59.0</b>	
<i>Transportation and warehousing</i>		\$14.3	\$16.0	<b>\$30.3</b>	
<i>Utilities</i>		\$4.9	\$9.7	<b>\$14.6</b>	
<i>Construction</i>		\$5.5	\$6.2	<b>\$11.7</b>	
<i>Mining</i>		\$1.1	\$0.5	<b>\$1.6</b>	
<i>Agriculture</i>		\$0.1	\$1.3	<b>\$1.4</b>	
<i>Other</i>		<u>\$7.7</u>	<u>\$27.2</u>	<b><u>\$34.9</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$720.6</b>	<b>\$297.9</b>	<b>\$796.4</b>	<b>\$1,814.9</b>	<b>3.1%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Carolina, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>25,860</b>			<b>25,860</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		4,789	15,707	20,496	
<i>Wholesale and retail trade</i>		719	4,511	5,230	
<i>Manufacturing</i>		2,003	3,106	5,109	
<i>Finance, insurance, real estate, rental and leasing</i>		1,372	3,316	4,688	
<i>Transportation and warehousing</i>		1,303	1,108	2,411	
<i>Agriculture</i>		93	611	704	
<i>Construction</i>		327	325	652	
<i>Information</i>		183	416	599	
<i>Utilities</i>		107	214	320	
<i>Mining</i>		48	21	69	
<i>Other</i>		351	1,086	1,438	
<b>Total Operational Impact on Employment</b>	<b>25,860</b>	<b>11,296</b>	<b>30,420</b>	<b>67,576</b>	<b>2.6%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$860.2</b>			<b>\$860.2</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$227.3	\$607.5	\$834.8	
<i>Manufacturing</i>		\$145.3	\$209.9	\$355.1	
<i>Wholesale and retail trade</i>		\$45.4	\$171.3	\$216.7	
<i>Finance, insurance, real estate, rental and leasing</i>		\$64.3	\$141.9	\$206.2	
<i>Transportation and warehousing</i>		\$63.9	\$55.0	\$118.9	
<i>Information</i>		\$14.2	\$29.7	\$43.8	
<i>Utilities</i>		\$13.7	\$26.9	\$40.6	
<i>Construction</i>		\$13.0	\$13.8	\$26.8	
<i>Agriculture</i>		\$3.3	\$13.4	\$16.7	
<i>Mining</i>		\$2.9	\$1.2	\$4.2	
<i>Other</i>		\$24.6	\$75.4	\$99.9	
<b>Total Operational Impact on Labor Income</b>	<b>\$860.2</b>	<b>\$617.8</b>	<b>\$1,345.9</b>	<b>\$2,823.9</b>	<b>2.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,707.0</b>			<b>\$1,707.0</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$283.5	\$771.6	\$1,055.1	
<i>Finance, insurance, real estate, rental and leasing</i>		\$233.8	\$597.3	\$831.2	
<i>Manufacturing</i>		\$268.8	\$406.6	\$675.5	
<i>Wholesale and retail trade</i>		\$84.9	\$303.9	\$388.8	
<i>Transportation and warehousing</i>		\$80.0	\$68.2	\$148.2	
<i>Utilities</i>		\$41.9	\$81.6	\$123.5	
<i>Information</i>		\$29.0	\$72.1	\$101.1	
<i>Construction</i>		\$21.0	\$21.4	\$42.3	
<i>Agriculture</i>		\$3.9	\$20.3	\$24.2	
<i>Mining</i>		\$9.3	\$3.8	\$13.2	
<i>Other</i>		\$30.5	\$93.2	\$123.7	
<b>Total Operational Impact on Value Added</b>	<b>\$1,707.0</b>	<b>\$1,086.6</b>	<b>\$2,440.1</b>	<b>\$5,233.8</b>	<b>2.6%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>10,221</b>			<b>10,221</b>	<b>1.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		1,267	4,587	<b>5,854</b>	
<i>Wholesale and retail trade</i>		267	1,452	<b>1,719</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		448	1,052	<b>1,500</b>	
<i>Manufacturing</i>		306	578	<b>884</b>	
<i>Agriculture</i>		52	689	<b>741</b>	
<i>Transportation and warehousing</i>		348	283	<b>631</b>	
<i>Construction</i>		131	101	<b>232</b>	
<i>Information</i>		54	109	<b>163</b>	
<i>Mining</i>		56	14	<b>70</b>	
<i>Utilities</i>		22	36	<b>58</b>	
<i>Other</i>		<u>129</u>	<u>340</u>	<b>469</b>	
<b>Total Operational Impact on Employment</b>	<b>10,221</b>	<b>3,080</b>	<b>9,241</b>	<b>22,541</b>	<b>3.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$314.5</b>			<b>\$314.5</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$60.3	\$184.2	<b>\$244.5</b>	
<i>Wholesale and retail trade</i>		\$17.6	\$55.8	<b>\$73.4</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$21.7	\$45.2	<b>\$67.0</b>	
<i>Manufacturing</i>		\$21.1	\$36.5	<b>\$57.6</b>	
<i>Agriculture</i>		\$3.7	\$53.2	<b>\$56.9</b>	
<i>Transportation and warehousing</i>		\$18.0	\$14.6	<b>\$32.6</b>	
<i>Information</i>		\$4.5	\$7.8	<b>\$12.3</b>	
<i>Construction</i>		\$5.7	\$4.5	<b>\$10.2</b>	
<i>Utilities</i>		\$2.5	\$3.9	<b>\$6.4</b>	
<i>Mining</i>		\$3.0	\$0.8	<b>\$3.8</b>	
<i>Other</i>		<u>\$7.5</u>	<u>\$20.0</u>	<b>\$27.5</b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$314.5</b>	<b>\$165.6</b>	<b>\$426.5</b>	<b>\$906.6</b>	<b>3.2%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$567.4</b>			<b>\$567.4</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Finance, insurance, real estate, rental and leasing</i>		\$112.8	\$247.9	<b>\$360.7</b>	
<i>Services</i>		\$75.0	\$222.7	<b>\$297.7</b>	
<i>Wholesale and retail trade</i>		\$33.0	\$98.6	<b>\$131.6</b>	
<i>Manufacturing</i>		\$31.6	\$55.0	<b>\$86.6</b>	
<i>Agriculture</i>		\$5.1	\$72.6	<b>\$77.7</b>	
<i>Transportation and warehousing</i>		\$22.9	\$18.9	<b>\$41.8</b>	
<i>Information</i>		\$9.9	\$20.5	<b>\$30.4</b>	
<i>Utilities</i>		\$9.2	\$14.3	<b>\$23.5</b>	
<i>Construction</i>		\$7.7	\$6.0	<b>\$13.7</b>	
<i>Mining</i>		\$8.6	\$2.1	<b>\$10.8</b>	
<i>Other</i>		<u>\$8.6</u>	<u>\$22.9</u>	<b>\$31.5</b>	
<b>Total Operational Impact on Value Added</b>	<b>\$567.4</b>	<b>\$324.4</b>	<b>\$781.6</b>	<b>\$1,673.4</b>	<b>3.5%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>36,055</b>			<b>36,055</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		8,076	27,452	35,528	
<i>Wholesale and retail trade</i>		1,451	7,538	8,990	
<i>Finance, insurance, real estate, rental and leasing</i>		2,142	5,348	7,490	
<i>Manufacturing</i>		2,732	4,530	7,262	
<i>Transportation and warehousing</i>		2,394	2,444	4,838	
<i>Agriculture</i>		140	1,386	1,526	
<i>Construction</i>		723	533	1,256	
<i>Information</i>		317	721	1,038	
<i>Utilities</i>		150	290	440	
<i>Mining</i>		134	59	193	
<i>Other</i>		527	1,452	1,980	
<b>Total Operational Impact on Employment</b>	<b>36,055</b>	<b>18,786</b>	<b>51,754</b>	<b>106,594</b>	<b>2.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,651.5</b>			<b>\$1,651.5</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$469.2	\$1,383.8	\$1,853.1	
<i>Manufacturing</i>		\$197.0	\$323.8	\$520.8	
<i>Wholesale and retail trade</i>		\$100.7	\$324.3	\$425.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$123.0	\$292.9	\$415.9	
<i>Transportation and warehousing</i>		\$138.0	\$143.9	\$281.9	
<i>Information</i>		\$24.0	\$51.4	\$75.5	
<i>Construction</i>		\$37.8	\$28.8	\$66.6	
<i>Utilities</i>		\$18.9	\$36.5	\$55.4	
<i>Agriculture</i>		\$3.1	\$19.1	\$22.2	
<i>Mining</i>		\$8.4	\$3.6	\$12.0	
<i>Other</i>		\$34.7	\$95.8	\$130.5	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,651.5</b>	<b>\$1,154.9</b>	<b>\$2,703.9</b>	<b>\$5,510.3</b>	<b>2.7%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$4,276.7</b>			<b>\$4,276.7</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$579.3	\$1,583.9	\$2,163.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$378.1	\$1,025.0	\$1,403.1	
<i>Manufacturing</i>		\$355.3	\$653.4	\$1,008.7	
<i>Wholesale and retail trade</i>		\$187.1	\$553.6	\$740.8	
<i>Transportation and warehousing</i>		\$179.2	\$187.2	\$366.4	
<i>Information</i>		\$52.0	\$130.4	\$182.4	
<i>Utilities</i>		\$47.5	\$87.6	\$135.2	
<i>Construction</i>		\$44.2	\$33.0	\$77.3	
<i>Agriculture</i>		\$4.2	\$33.5	\$37.7	
<i>Mining</i>		\$23.4	\$9.9	\$33.3	
<i>Other</i>		\$43.1	\$118.8	\$161.8	
<b>Total Operational Impact on Value Added</b>	<b>\$4,276.7</b>	<b>\$1,893.5</b>	<b>\$4,416.3</b>	<b>\$10,586.5</b>	<b>3.3%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>701,395</b>			<b>701,395</b>	<b>4.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		96,213	583,442	679,656	
<i>Wholesale and retail trade</i>		24,665	169,307	193,973	
<i>Finance, insurance, real estate, rental and leasing</i>		33,778	155,362	189,140	
<i>Transportation and warehousing</i>		22,066	34,610	56,676	
<i>Manufacturing</i>		16,231	25,167	41,397	
<i>Construction</i>		22,554	10,870	33,424	
<i>Information</i>		3,673	14,385	18,058	
<i>Agriculture</i>		841	14,431	15,271	
<i>Utilities</i>		1,348	3,726	5,074	
<i>Mining</i>		1,376	453	1,830	
<i>Other</i>		10,315	39,034	49,349	
<b>Total Operational Impact on Employment</b>	<b>701,395</b>	<b>233,061</b>	<b>1,050,788</b>	<b>1,985,244</b>	<b>12.2%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$113,964.8</b>			<b>\$113,964.8</b>	<b>11.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$6,026.9	\$26,309.6	\$32,336.5	
<i>Finance, insurance, real estate, rental and leasing</i>		\$2,043.1	\$7,382.0	\$9,425.1	
<i>Wholesale and retail trade</i>		\$1,898.2	\$7,300.7	\$9,198.9	
<i>Transportation and warehousing</i>		\$1,354.2	\$2,135.1	\$3,489.3	
<i>Manufacturing</i>		\$1,376.7	\$1,820.7	\$3,197.4	
<i>Construction</i>		\$1,431.9	\$690.8	\$2,122.7	
<i>Information</i>		\$359.7	\$1,293.0	\$1,652.7	
<i>Utilities</i>		\$212.8	\$584.7	\$797.5	
<i>Agriculture</i>		\$22.9	\$320.7	\$343.6	
<i>Mining</i>		\$110.5	\$31.7	\$142.1	
<i>Other</i>		\$706.9	\$2,660.9	\$3,367.8	
<b>Total Operational Impact on Labor Income</b>	<b>\$113,964.8</b>	<b>\$15,543.7</b>	<b>\$50,530.0</b>	<b>\$180,038.5</b>	<b>18.1%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$215,325.2</b>			<b>\$215,325.2</b>	<b>13.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$7,358.8	\$30,705.4	\$38,064.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$4,864.4	\$24,331.3	\$29,195.7	
<i>Wholesale and retail trade</i>		\$3,727.4	\$13,008.1	\$16,735.5	
<i>Manufacturing</i>		\$3,164.8	\$4,340.4	\$7,505.2	
<i>Transportation and warehousing</i>		\$1,759.2	\$2,775.5	\$4,534.6	
<i>Information</i>		\$807.6	\$3,519.2	\$4,326.8	
<i>Utilities</i>		\$747.5	\$2,054.9	\$2,802.3	
<i>Construction</i>		\$1,856.2	\$895.2	\$2,751.3	
<i>Agriculture</i>		\$31.3	\$497.6	\$528.9	
<i>Mining</i>		\$282.3	\$87.9	\$370.2	
<i>Other</i>		\$890.0	\$3,344.8	\$4,234.8	
<b>Total Operational Impact on Value Added</b>	<b>\$215,325.2</b>	<b>\$25,489.4</b>	<b>\$85,560.3</b>	<b>\$326,374.8</b>	<b>20.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015

Employment*					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>23,174</b>			<b>23,174</b>	<b>1.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		5,198	16,229	21,427	
<i>Finance, insurance, real estate, rental and leasing</i>		1,646	4,552	6,198	
<i>Wholesale and retail trade</i>		1,205	4,835	6,040	
<i>Manufacturing</i>		1,050	1,847	2,896	
<i>Transportation and warehousing</i>		1,270	1,207	2,478	
<i>Construction</i>		794	348	1,141	
<i>Information</i>		283	652	935	
<i>Agriculture</i>		38	464	501	
<i>Mining</i>		211	91	302	
<i>Utilities</i>		54	96	151	
<i>Other</i>		<u>500</u>	<u>1,061</u>	<u>1,561</u>	
<b>Total Operational Impact on Employment</b>	<b>23,174</b>	<b>12,249</b>	<b>31,382</b>	<b>66,805</b>	<b>3.7%</b>
Labor Income** (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,463.5</b>			<b>\$1,463.5</b>	<b>1.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$266.6	\$653.3	\$919.9	
<i>Wholesale and retail trade</i>		\$79.1	\$205.9	\$285.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$79.5	\$181.6	\$261.1	
<i>Manufacturing</i>		\$68.6	\$114.7	\$183.3	
<i>Transportation and warehousing</i>		\$71.4	\$69.4	\$140.8	
<i>Information</i>		\$22.6	\$49.7	\$72.3	
<i>Construction</i>		\$41.2	\$18.0	\$59.2	
<i>Mining</i>		\$17.0	\$7.1	\$24.1	
<i>Utilities</i>		\$7.1	\$12.3	\$19.4	
<i>Agriculture</i>		\$1.1	\$15.2	\$16.3	
<i>Other</i>		<u>\$32.2</u>	<u>\$69.6</u>	<u>\$101.8</u>	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,463.5</b>	<b>\$686.3</b>	<b>\$1,396.8</b>	<b>\$3,546.6</b>	<b>4.0%</b>
Value Added (\$ Millions)					
Sector Description	Direct	Indirect	Induced	Total	As a % of State Total
<b>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,717.4</b>			<b>\$3,717.4</b>	<b>2.5%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$327.1	\$799.8	\$1,127.0	
<i>Finance, insurance, real estate, rental and leasing</i>		\$285.0	\$772.9	\$1,057.9	
<i>Wholesale and retail trade</i>		\$130.6	\$317.7	\$448.4	
<i>Manufacturing</i>		\$121.0	\$200.4	\$321.4	
<i>Transportation and warehousing</i>		\$90.9	\$88.2	\$179.1	
<i>Information</i>		\$41.9	\$103.6	\$145.5	
<i>Mining</i>		\$78.1	\$32.5	\$110.6	
<i>Construction</i>		\$62.0	\$27.2	\$89.2	
<i>Utilities</i>		\$22.8	\$39.0	\$61.9	
<i>Agriculture</i>		\$1.4	\$20.5	\$21.9	
<i>Other</i>		<u>\$43.0</u>	<u>\$93.0</u>	<u>\$136.1</u>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,717.4</b>	<b>\$1,204.0</b>	<b>\$2,495.0</b>	<b>\$7,416.3</b>	<b>5.0%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>6,056</b>			<b>6,056</b>	<b>1.4%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		946	3,326	<b>4,272</b>	
<i>Wholesale and retail trade</i>		123	767	<b>890</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		244	495	<b>740</b>	
<i>Manufacturing</i>		213	449	<b>661</b>	
<i>Transportation and warehousing</i>		227	167	<b>394</b>	
<i>Agriculture</i>		36	235	<b>270</b>	
<i>Construction</i>		70	69	<b>139</b>	
<i>Information</i>		44	81	<b>125</b>	
<i>Utilities</i>		18	29	<b>47</b>	
<i>Mining</i>		30	13	<b>43</b>	
<i>Other</i>		<u>62</u>	<u>177</u>	<b><u>239</u></b>	
<b>Total Operational Impact on Employment</b>	<b>6,056</b>	<b>2,013</b>	<b>5,807</b>	<b>13,875</b>	<b>3.2%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$219.4</b>			<b>\$219.4</b>	<b>1.1%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$46.0	\$136.3	<b>\$182.2</b>	
<i>Manufacturing</i>		\$13.7	\$25.6	<b>\$39.4</b>	
<i>Wholesale and retail trade</i>		\$7.1	\$30.4	<b>\$37.6</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$10.9	\$23.0	<b>\$34.0</b>	
<i>Transportation and warehousing</i>		\$10.7	\$8.8	<b>\$19.5</b>	
<i>Agriculture</i>		\$0.9	\$8.3	<b>\$9.2</b>	
<i>Information</i>		\$3.0	\$5.4	<b>\$8.4</b>	
<i>Utilities</i>		\$3.3	\$5.1	<b>\$8.3</b>	
<i>Construction</i>		\$2.7	\$2.9	<b>\$5.6</b>	
<i>Mining</i>		\$1.2	\$0.5	<b>\$1.8</b>	
<i>Other</i>		<u>\$4.5</u>	<u>\$12.9</u>	<b><u>\$17.4</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$219.4</b>	<b>\$104.2</b>	<b>\$259.1</b>	<b>\$582.7</b>	<b>2.9%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$377.3</b>			<b>\$377.3</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$56.4	\$167.0	<b>\$223.4</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$52.2	\$113.1	<b>\$165.3</b>	
<i>Wholesale and retail trade</i>		\$13.2	\$50.2	<b>\$63.5</b>	
<i>Manufacturing</i>		\$17.5	\$33.0	<b>\$50.5</b>	
<i>Utilities</i>		\$8.7	\$13.3	<b>\$22.0</b>	
<i>Transportation and warehousing</i>		\$12.5	\$9.0	<b>\$21.5</b>	
<i>Information</i>		\$5.7	\$11.9	<b>\$17.6</b>	
<i>Agriculture</i>		\$1.1	\$10.9	<b>\$12.0</b>	
<i>Mining</i>		\$7.6	\$3.2	<b>\$10.8</b>	
<i>Construction</i>		\$3.2	\$3.2	<b>\$6.4</b>	
<i>Other</i>		<u>\$5.6</u>	<u>\$15.9</u>	<b><u>\$21.5</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$377.3</b>	<b>\$183.8</b>	<b>\$430.7</b>	<b>\$991.7</b>	<b>3.2%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Virginia, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>46,106</b>			<b>46,106</b>	<b>0.9%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		10,241	33,409	<b>43,649</b>	
<i>Wholesale and retail trade</i>		1,457	8,183	<b>9,640</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		2,524	6,377	<b>8,901</b>	
<i>Transportation and warehousing</i>		2,388	2,491	<b>4,879</b>	
<i>Manufacturing</i>		1,693	3,069	<b>4,763</b>	
<i>Information</i>		460	1,041	<b>1,501</b>	
<i>Construction</i>		792	643	<b>1,436</b>	
<i>Agriculture</i>		135	1,170	<b>1,304</b>	
<i>Utilities</i>		102	173	<b>275</b>	
<i>Mining</i>		175	85	<b>260</b>	
<i>Other</i>		<u>673</u>	<u>2,114</u>	<b><u>2,787</u></b>	
<b>Total Operational Impact on Employment</b>	<b>46,106</b>	<b>20,640</b>	<b>58,755</b>	<b>125,501</b>	<b>2.5%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,239.6</b>			<b>\$2,239.6</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$826.7	\$1,749.9	<b>\$2,576.7</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$162.8	\$361.7	<b>\$524.5</b>	
<i>Wholesale and retail trade</i>		\$103.8	\$336.4	<b>\$440.2</b>	
<i>Manufacturing</i>		\$119.1	\$195.8	<b>\$314.9</b>	
<i>Transportation and warehousing</i>		\$132.5	\$145.2	<b>\$277.7</b>	
<i>Information</i>		\$55.3	\$117.1	<b>\$172.3</b>	
<i>Construction</i>		\$37.5	\$31.9	<b>\$69.4</b>	
<i>Utilities</i>		\$14.9	\$24.9	<b>\$39.8</b>	
<i>Mining</i>		\$22.3	\$10.5	<b>\$32.8</b>	
<i>Agriculture</i>		\$3.8	\$20.9	<b>\$24.6</b>	
<i>Other</i>		<u>\$63.6</u>	<u>\$197.7</u>	<b><u>\$261.3</u></b>	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,239.6</b>	<b>\$1,542.4</b>	<b>\$3,191.8</b>	<b>\$6,973.8</b>	<b>2.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,744.1</b>			<b>\$3,744.1</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$985.9	\$2,093.3	<b>\$3,079.2</b>	
<i>Finance, insurance, real estate, rental and leasing</i>		\$578.3	\$1,516.5	<b>\$2,094.9</b>	
<i>Manufacturing</i>		\$229.9	\$628.7	<b>\$858.6</b>	
<i>Wholesale and retail trade</i>		\$179.7	\$568.6	<b>\$748.3</b>	
<i>Information</i>		\$102.2	\$248.1	<b>\$350.3</b>	
<i>Transportation and warehousing</i>		\$167.3	\$177.0	<b>\$344.3</b>	
<i>Utilities</i>		\$58.8	\$98.0	<b>\$156.8</b>	
<i>Construction</i>		\$58.5	\$48.3	<b>\$106.8</b>	
<i>Mining</i>		\$48.2	\$22.3	<b>\$70.5</b>	
<i>Agriculture</i>		\$5.0	\$36.5	<b>\$41.4</b>	
<i>Other</i>		<u>\$92.1</u>	<u>\$284.4</u>	<b><u>\$376.5</u></b>	
<b>Total Operational Impact on Value Added</b>	<b>\$3,744.1</b>	<b>\$2,505.8</b>	<b>\$5,721.7</b>	<b>\$11,971.6</b>	<b>2.4%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>27,387</b>			<b>27,387</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		7,773	27,533	35,307	
<i>Wholesale and retail trade</i>		2,122	7,727	9,849	
<i>Finance, insurance, real estate, rental and leasing</i>		1,920	5,469	7,389	
<i>Manufacturing</i>		1,730	3,187	4,917	
<i>Transportation and warehousing</i>		1,972	2,027	3,999	
<i>Agriculture</i>		251	2,264	2,515	
<i>Construction</i>		1,543	552	2,095	
<i>Information</i>		533	1,361	1,894	
<i>Utilities</i>		110	193	303	
<i>Mining</i>		141	52	192	
<i>Other</i>		896	1,760	2,656	
<b>Total Operational Impact on Employment</b>	<b>27,387</b>	<b>18,991</b>	<b>52,126</b>	<b>98,503</b>	<b>2.4%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,768.9</b>			<b>\$1,768.9</b>	<b>0.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$556.7	\$1,362.7	\$1,919.4	
<i>Wholesale and retail trade</i>		\$166.4	\$406.9	\$573.3	
<i>Finance, insurance, real estate, rental and leasing</i>		\$116.5	\$291.2	\$407.8	
<i>Manufacturing</i>		\$123.3	\$205.3	\$328.6	
<i>Information</i>		\$90.6	\$236.0	\$326.6	
<i>Transportation and warehousing</i>		\$129.7	\$134.0	\$263.6	
<i>Construction</i>		\$92.7	\$32.8	\$125.5	
<i>Agriculture</i>		\$14.5	\$102.7	\$117.1	
<i>Utilities</i>		\$15.3	\$26.3	\$41.6	
<i>Mining</i>		\$7.3	\$2.6	\$9.9	
<i>Other</i>		\$74.3	\$151.0	\$225.3	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,768.9</b>	<b>\$1,387.2</b>	<b>\$2,951.6</b>	<b>\$6,107.8</b>	<b>2.3%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,228.2</b>			<b>\$5,228.2</b>	<b>1.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$715.4	\$1,712.2	\$2,427.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$411.3	\$1,291.2	\$1,702.5	
<i>Wholesale and retail trade</i>		\$316.1	\$756.3	\$1,072.4	
<i>Information</i>		\$176.8	\$509.6	\$686.4	
<i>Manufacturing</i>		\$215.5	\$357.0	\$572.5	
<i>Transportation and warehousing</i>		\$172.3	\$172.5	\$344.8	
<i>Construction</i>		\$129.5	\$46.2	\$175.8	
<i>Agriculture</i>		\$16.1	\$135.3	\$151.4	
<i>Utilities</i>		\$56.4	\$92.8	\$149.2	
<i>Mining</i>		\$28.3	\$10.2	\$38.5	
<i>Other</i>		\$96.5	\$196.4	\$292.9	
<b>Total Operational Impact on Value Added</b>	<b>\$5,228.2</b>	<b>\$2,334.2</b>	<b>\$5,279.8</b>	<b>\$12,842.2</b>	<b>2.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>38,211</b>			<b>38,211</b>	<b>4.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		3,780	13,617	17,397	
<i>Wholesale and retail trade</i>		937	3,994	4,930	
<i>Finance, insurance, real estate, rental and leasing</i>		960	2,032	2,992	
<i>Transportation and warehousing</i>		888	730	1,618	
<i>Construction</i>		1,032	225	1,257	
<i>Manufacturing</i>		569	657	1,227	
<i>Mining</i>		423	208	631	
<i>Agriculture</i>		61	497	558	
<i>Information</i>		135	258	392	
<i>Utilities</i>		56	98	154	
<i>Other</i>		468	1,037	1,506	
<b>Total Operational Impact on Employment</b>	<b>38,211</b>	<b>9,309</b>	<b>23,353</b>	<b>70,874</b>	<b>7.8%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,022.5</b>			<b>\$2,022.5</b>	<b>4.7%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$183.1	\$540.3	\$723.3	
<i>Wholesale and retail trade</i>		\$45.8	\$131.9	\$177.7	
<i>Finance, insurance, real estate, rental and leasing</i>		\$42.8	\$77.2	\$120.0	
<i>Transportation and warehousing</i>		\$48.4	\$39.0	\$87.4	
<i>Manufacturing</i>		\$40.5	\$43.8	\$84.3	
<i>Construction</i>		\$55.2	\$11.9	\$67.1	
<i>Mining</i>		\$44.9	\$21.4	\$66.2	
<i>Information</i>		\$11.0	\$18.9	\$30.0	
<i>Utilities</i>		\$6.8	\$12.1	\$18.9	
<i>Agriculture</i>		\$1.2	\$1.9	\$3.0	
<i>Other</i>		\$28.3	\$63.4	\$91.7	
<b>Total Operational Impact on Labor Income</b>	<b>\$2,022.5</b>	<b>\$508.1</b>	<b>\$961.7</b>	<b>\$3,492.2</b>	<b>8.0%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$5,415.9</b>			<b>\$5,415.9</b>	<b>7.3%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$221.0	\$623.9	\$844.9	
<i>Finance, insurance, real estate, rental and leasing</i>		\$161.0	\$453.5	\$614.4	
<i>Wholesale and retail trade</i>		\$85.4	\$228.7	\$314.1	
<i>Mining</i>		\$157.0	\$73.7	\$230.6	
<i>Manufacturing</i>		\$78.3	\$86.5	\$164.7	
<i>Construction</i>		\$91.7	\$19.9	\$111.6	
<i>Transportation and warehousing</i>		\$60.5	\$47.9	\$108.4	
<i>Information</i>		\$19.4	\$41.4	\$60.8	
<i>Utilities</i>		\$20.5	\$36.9	\$57.5	
<i>Agriculture</i>		\$1.5	\$6.1	\$7.5	
<i>Other</i>		\$38.2	\$85.6	\$123.8	
<b>Total Operational Impact on Value Added</b>	<b>\$5,415.9</b>	<b>\$934.3</b>	<b>\$1,704.0</b>	<b>\$8,054.2</b>	<b>10.9%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 Wisconsin, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>35,039</b>			<b>35,039</b>	<b>1.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		6,457	23,204	29,661	
<i>Manufacturing</i>		4,001	5,949	9,951	
<i>Wholesale and retail trade</i>		1,181	6,752	7,933	
<i>Finance, insurance, real estate, rental and leasing</i>		1,709	4,428	6,137	
<i>Transportation and warehousing</i>		1,578	1,735	3,314	
<i>Agriculture</i>		182	1,955	2,137	
<i>Information</i>		308	696	1,004	
<i>Construction</i>		463	425	888	
<i>Utilities</i>		92	175	267	
<i>Mining</i>		109	54	163	
<i>Other</i>		406	1,336	1,742	
<b>Total Operational Impact on Employment</b>	<b>35,039</b>	<b>16,485</b>	<b>46,711</b>	<b>98,236</b>	<b>2.7%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$1,437.2</b>			<b>\$1,437.2</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$376.4	\$1,021.3	\$1,397.6	
<i>Manufacturing</i>		\$287.7	\$413.8	\$701.5	
<i>Wholesale and retail trade</i>		\$77.3	\$271.2	\$348.6	
<i>Finance, insurance, real estate, rental and leasing</i>		\$94.2	\$240.2	\$334.3	
<i>Transportation and warehousing</i>		\$86.3	\$93.4	\$179.6	
<i>Agriculture</i>		\$7.1	\$89.2	\$96.3	
<i>Information</i>		\$27.3	\$58.3	\$85.6	
<i>Construction</i>		\$22.0	\$21.3	\$43.3	
<i>Utilities</i>		\$13.2	\$25.0	\$38.2	
<i>Mining</i>		\$7.1	\$3.4	\$10.6	
<i>Other</i>		\$29.6	\$96.1	\$125.7	
<b>Total Operational Impact on Labor Income</b>	<b>\$1,437.2</b>	<b>\$1,028.1</b>	<b>\$2,333.1</b>	<b>\$4,798.4</b>	<b>2.6%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$2,501.2</b>			<b>\$2,501.2</b>	<b>0.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$469.4	\$1,265.8	\$1,735.2	
<i>Finance, insurance, real estate, rental and leasing</i>		\$392.0	\$1,071.3	\$1,463.3	
<i>Manufacturing</i>		\$463.9	\$713.1	\$1,177.0	
<i>Wholesale and retail trade</i>		\$128.9	\$452.4	\$581.3	
<i>Transportation and warehousing</i>		\$111.7	\$123.9	\$235.6	
<i>Information</i>		\$55.7	\$138.7	\$194.4	
<i>Agriculture</i>		\$9.1	\$119.5	\$128.6	
<i>Utilities</i>		\$43.1	\$80.9	\$124.0	
<i>Construction</i>		\$32.5	\$30.5	\$63.0	
<i>Mining</i>		\$27.4	\$13.1	\$40.5	
<i>Other</i>		\$35.3	\$114.0	\$149.3	
<b>Total Operational Impact on Value Added</b>	<b>\$2,501.2</b>	<b>\$1,768.9</b>	<b>\$4,123.0</b>	<b>\$8,393.1</b>	<b>2.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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, 2015**

<b>Employment*</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>30,983</b>			<b>30,983</b>	<b>7.8%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		2,859	9,800	12,659	
<i>Wholesale and retail trade</i>		1,026	3,237	4,263	
<i>Finance, insurance, real estate, rental and leasing</i>		1,121	2,575	3,696	
<i>Transportation and warehousing</i>		905	591	1,496	
<i>Construction</i>		1,130	218	1,348	
<i>Mining</i>		282	126	407	
<i>Agriculture</i>		29	358	387	
<i>Manufacturing</i>		153	164	316	
<i>Information</i>		100	211	312	
<i>Utilities</i>		54	89	143	
<i>Other</i>		541	949	1,491	
<b>Total Operational Impact on Employment</b>	<b>30,983</b>	<b>8,201</b>	<b>18,318</b>	<b>57,502</b>	<b>14.4%</b>
<b>Labor Income** (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$3,194.6</b>			<b>\$3,194.6</b>	<b>15.2%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Services</i>		\$119.7	\$348.9	\$468.6	
<i>Wholesale and retail trade</i>		\$60.5	\$113.9	\$174.4	
<i>Finance, insurance, real estate, rental and leasing</i>		\$45.2	\$79.2	\$124.3	
<i>Transportation and warehousing</i>		\$56.5	\$35.1	\$91.6	
<i>Construction</i>		\$62.6	\$11.9	\$74.6	
<i>Mining</i>		\$34.6	\$15.0	\$49.6	
<i>Manufacturing</i>		\$11.2	\$10.0	\$21.2	
<i>Information</i>		\$6.1	\$12.6	\$18.7	
<i>Utilities</i>		\$6.6	\$10.7	\$17.2	
<i>Agriculture</i>		\$0.8	\$9.4	\$10.2	
<i>Other</i>		\$37.9	\$67.1	\$105.0	
<b>Total Operational Impact on Labor Income</b>	<b>\$3,194.6</b>	<b>\$441.6</b>	<b>\$713.7</b>	<b>\$4,350.0</b>	<b>20.8%</b>
<b>Value Added (\$ Millions)</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>Direct Operational Impact of the Oil and Natural Gas Industry</b>	<b>\$6,693.9</b>			<b>\$6,693.9</b>	<b>17.0%</b>
<b>Indirect and Induced Operational Impacts on Other Industries</b>					
<i>Finance, insurance, real estate, rental and leasing</i>		\$151.5	\$442.0	\$593.5	
<i>Services</i>		\$149.4	\$427.9	\$577.3	
<i>Wholesale and retail trade</i>		\$113.5	\$210.8	\$324.3	
<i>Mining</i>		\$143.5	\$61.7	\$205.2	
<i>Transportation and warehousing</i>		\$83.4	\$55.4	\$138.8	
<i>Construction</i>		\$103.4	\$19.8	\$123.2	
<i>Information</i>		\$13.9	\$34.3	\$48.2	
<i>Utilities</i>		\$16.3	\$26.4	\$42.7	
<i>Manufacturing</i>		\$22.2	\$19.4	\$41.6	
<i>Agriculture</i>		\$1.1	\$15.1	\$16.2	
<i>Other</i>		\$47.4	\$84.0	\$131.4	
<b>Total Operational Impact on Value Added</b>	<b>\$6,693.9</b>	<b>\$845.6</b>	<b>\$1,396.8</b>	<b>\$8,936.4</b>	<b>22.7%</b>

Source: PwC calculations using the IMPLAN modeling system (2015 database).

\* 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 B: 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 sub-industries 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>11</sup> Direct employment was separately estimated for the US as a whole and for each of the 50 states and the District of Columbia. The state-level estimates were then scaled to match the national level estimates.

A similar methodology was used to estimate labor income and GDP for industries 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 their capital expenditures for 2015 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.

### ***Estimating Dividend Impact***

PwC obtained data on common stock dividend payments by companies in the US oil and natural gas industry. Dividend payments were allocated between households, foreign shareholders, retirement plans, governments, and other businesses using data from the Federal Reserve Board’s

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<sup>11</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.

*Flow of Funds Accounts.* 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 group based on data on retirement assets by income quintile obtained from the 2007 *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 received from the oil and natural gas industry was estimated using published estimates of the marginal propensity to consume by income quintile.<sup>12</sup> Similarly, the additional consumption resulting from dividend payments by the oil and natural gas industry to retirement accounts was estimated based on published estimates of the marginal propensity to consume out of wealth.<sup>13</sup>

### **Estimating the Indirect and Induced Economic Impacts**

Estimates of the indirect and induced economic impacts of the oil and natural gas industry were derived based on the IMPLAN models for the United States as a whole and for each of the 50 states and the District of Columbia.

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 more 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

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<sup>12</sup> The marginal propensity to consume (“MPC”) is a measure of the additional consumption resulting from the last dollar of income earned. The MPCs used for this study were estimated as one minus the marginal propensity to save reported in Table 9 of Karen E. Dynan, Jonathan Skinner, and Stephen P. Zeldes, “Do the Rich Save More?” *Journal of Political Economy*, 2004, Vol. 112, No. 2, pgs. 397-443. The estimated MPCs ranged from a high of 0.93 in the lower income levels to 0.75 in the top income quintile.

<sup>13</sup> A review of the literature suggests that each additional dollar of financial wealth increases consumption between two and five cents (see, for example, the literature review in Sherif Khalifa, Ousmane Seck, and Elwin Tobing, “Financial Wealth Effect: Evidence from Threshold Estimation,” September 26, 2010). To be conservative we have assumed an MPC out of wealth of 0.02 for all income groups.



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>14</sup>

For a given direct impact in a state, IMPLAN state models capture only the indirect and induced effects within that state, excluding the indirect and induced effects crossing state borders ("cross-state spillover effects"). PwC estimated and allocated the cross-state indirect and induced employment, labor income, and value added effects by industry across the 50 states and the District of Columbia in proportion to each state's share of the total national employment, labor income, and value added in each industry. The state indirect and induced effects reported throughout this study include such allocation of the cross-state spillover effects.

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<sup>14</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.

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