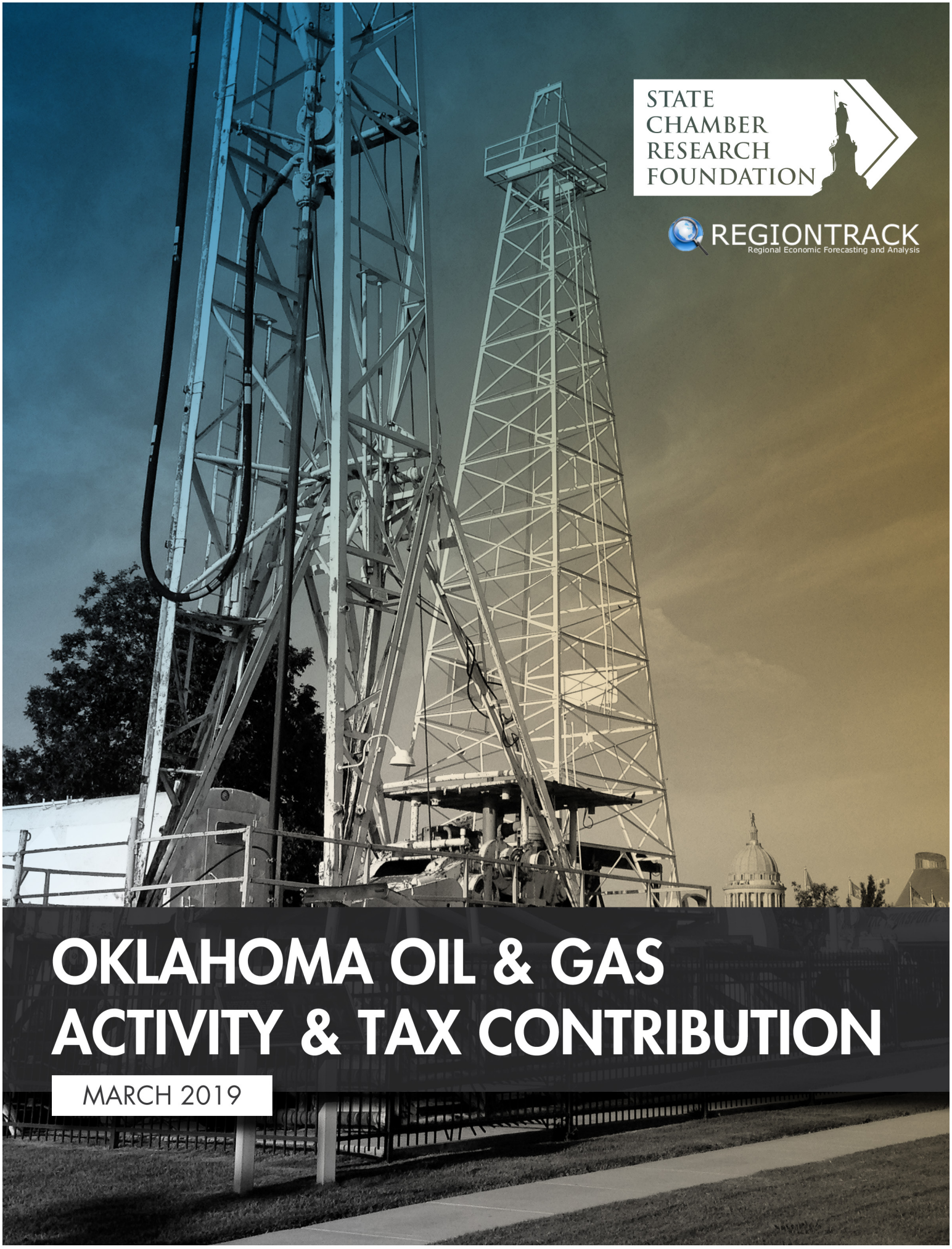

STATE CHAMBER RESEARCH FOUNDATION

REGIONTRACK
Regional Economic Forecasting and Analysis

OKLAHOMA OIL & GAS ACTIVITY & TAX CONTRIBUTION

MARCH 2019

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I. Introduction and Executive Summary

This report provides state policymakers with an update of activity in Oklahoma's oil and gas sector. The recent oil and gas-driven recession at the state level produced large swings in both the oil and gas industry and the broader Oklahoma economy.

The primary focus of the report is an evaluation of the industry's ongoing tax contribution at the state level. Most evaluations of oil and gas taxation continue to focus solely on production-related taxes, primarily severance and ad valorem taxes, and ignore the broader tax contribution of the industry. The newly increased severance tax rate on production in Oklahoma is expected to produce far higher tax revenue paid by the industry.

An underlying concern for policymakers is that oil and gas tax burden measured solely from the 'production' view may be wholly inconsistent with findings based on a broader view of the tax contribution of the industry. The collapse in total state tax revenue in the recent state slowdown highlighted the close ties between industry activity and total state tax revenue. Oil and gas firms in Oklahoma make substantial business tax payments across nearly every state tax stream. This 'business tax' view of the industry is often ignored in forming tax policy concerning the industry. Similarly, personal income tax payments and sales tax payments tied to oil and gas activity, including the earnings of employees and self-employed proprietors, play a large role in the tax contribution of oil and gas activity. This 'industry' view becomes especially relevant when doing cross-state comparisons of oil and gas tax policy because of widely differing tax structures across the states.

The report provides a comprehensive evaluation of oil and gas industry tax payments from all three tax perspectives – production, business, and industry – in order to better understand the various linkages between oil and gas activity and overall state tax collections. Valid comparisons of oil and gas taxation in Oklahoma to other producing states must also include a range of producing states with varying tax structures. In this pursuit, we evaluate the three views of oil and gas taxation in Oklahoma relative to the sixteen largest producing states.

Recent Oil and Gas-Driven Statewide Recession

The need to focus on the wider tax contribution of the industry became increasingly evident during the recent energy-driven statewide recession. The slowdown provided a rare opportunity to isolate the effects of fluctuations in the oil and gas sector on both state tax revenue and the broader state economy. This recessionary period provided a near-controlled experiment for gauging the economic influence of the oil and gas sector.

The steep collapse in state tax revenue in the slowdown revealed two key pieces of information about the overall tax contribution of the oil and gas sector. First, state tax collections and the overall economy remain highly sensitive to changes in oil and gas industry activity. Second, the severity of the collapse in taxes underscored the importance of examining more than simply production taxes when forming oil and gas tax policy in Oklahoma.

After peaking in the 3rd quarter of 2014, the state began a steady, cumulative decline of $1.5 billion (15.4%) in total state tax revenue. However, when compared to forecasts in place prior

to the onset of the oil price collapse and subsequent recession, the net decline in total expected state tax revenue reached an estimated $2.25 billion (23.7% decline) from the peak to the trough in activity in the oil and gas sector.

It is the oversized $2.25 billion (nearly 25%) net decline in total state tax revenue in response to the oil and gas slowdown that makes in-depth analysis of oil and gas taxation in Oklahoma and other top-tier energy producing states so necessary.

A summary of the estimated effects during the recent oil and gas recession from late 2014 through late 2016 is as follows:

- Direct Effects: Employment in the state's oil and gas industry declined by 21,500 wage and salary workers; earnings by oil and gas workers and self-employed proprietors declined by $8.9 billion; and GDP in the oil and gas sector declined by $22.1 billion.
- Total Effects: The state subsequently lost a total of 69,800 jobs, household earnings declined by $30.9 billion, and state GDP contracted by $51.8 billion from peak to trough based on counterfactual forecasts in place prior to the downturn.
- Tax Effect: As a result, total state taxes declined by $2.25 billion (23.7%) on a net basis in the downturn from peak to trough over the recession cycle as a result of the oil and gas slowdown.
- Spillover Effects: Estimated economic multipliers suggest that oil and gas activity accounts for about 30% of the direct economic change in employment and household earnings during the recession; oil and gas directly accounts for about 43% of the statewide decline in GDP.
- The findings suggest that a $1 billion reduction in oil and gas industry GDP equates to an average reduction of $102 million in total state tax revenue.

Policy Findings from the Recent Slowdown

The behavior of state tax revenue during the recent oil and gas-driven recession clearly illustrates several key policy findings about the overall tax contribution of the oil and gas sector in Oklahoma:

- The state remains a top-tier energy state with overall economic conditions highly sensitive to activity in the oil and gas sector;
- An extended energy sector slowdown is capable of producing a net 25% decline in total state tax revenue below budget projections;
- Overall state tax revenue remains highly sensitive to changes in activity in the oil and gas sector, with total state tax losses equal to 10% of the amount of GDP lost in the sector;
- The size of the reduction in taxes during the slowdown confirms that multiple tax streams beyond severance taxes play a major role in determining the total tax contribution of the oil and gas sector; and
- Other state taxes such as personal and corporate income tax, sales and use tax, motor vehicle, motor fuel, and other taxes are the greatest source of direct and spillover tax contributions traced to the industry.

Why are the Oil and Gas Tax Effects So Large in Oklahoma?

The high sensitivity of state tax revenue to oil and gas industry activity is tied to the large share of total state economic growth generated by the industry in recent years:

- During the period of reemergence of the oil and gas sector in the 2003 to 2017 period, the Oklahoma economy posted average real GDP growth of 2.41% annually.
- The state's mining sector contributed nearly 40% (0.96% annually) of all real growth in the state in the period.
- All other sectors combined contributed only 1.45% annually to real GDP growth in the period.
- The nearly 1% annual contribution of mining activity to state real GDP growth in Oklahoma is the 2nd largest among the sixteen top producing states, trailing only North Dakota (1.38%) in the period.
- Only Alaska (40.9% share) exceeded Oklahoma's 40.0% share of total state economic growth derived from the mining sector in the period.
- If Oklahoma had merely matched the national average GDP contribution of mining (0.08% annually), real GDP growth in the state would have trailed the nation by 0.2% annually.

Households in the state also receive an outsized share of their total earnings from the oil and gas sector:

- The share of earnings in Oklahoma derived from oil and gas activity reached a peak of 15.6% in 2008 and averaged 9.3% of total statewide household earnings in the full 2003 to 2017 reemergence period.
- Oklahoma's 9.3% average share of household earnings derived from the oil and gas sector leads all sixteen major producing states in the period.
- The state's share is 2 full percentage points above second ranked Texas and 3 to 4 percentage points above Wyoming, Alaska, and Louisiana, three of the largest traditional energy-producing states.
- It is important to note that a majority of earnings paid by the oil and gas industry to the household sector in Oklahoma now typically accrues to self-employed proprietors. Since 2003, slightly more than half (55%) of all household earnings from oil and gas activity in Oklahoma was received by self-employed proprietors, with the remainder (45%) received as compensation by wage and salary workers. In the 2003 to 2017 period, Oklahoma has the highest share (24.2%) of total proprietor earnings derived from the oil and gas sector among the sixteen largest producing states.

Measuring the Tax Contribution of Oil and Gas in Oklahoma

The ongoing debate over oil and gas tax policy in Oklahoma remains hampered by the use of differing approaches for measuring the industry's tax contribution. There are three common approaches used to measuring the tax contribution of the oil and gas sector – production, corporate, and industry views. Each provides useful information on tax policy but can be wholly misleading when used in isolation.

Proponents of higher severance taxes in Oklahoma focus almost exclusively on the 'production' view of oil and gas taxation (severance and ad valorem taxes) in advocating for tax policy changes. This approach ignores the broader business tax contribution of oil and gas firms in the state, implying that other taxes are either not relevant or are roughly equivalent across the producing states.

Relatively little research has been produced describing the overall business, or 'corporate,' tax burden faced by oil and gas firms in Oklahoma and most other producing states. This information is essential to policymakers in determining whether overall business tax payments are comparatively low in Oklahoma or not.

From a state budgetary perspective, tax contributions from the 'industry' view are far more important in explaining overall movements in total state tax revenue. In Oklahoma, the tax contribution of the oil and gas industry extends well beyond both the production and corporate contributions of the sector. The tax payments associated with compensation paid to oil and gas industry workers and the earnings of self-employed proprietors operating in the industry comprise an outsized share of total state tax revenue.

Production Tax View – Severance and Ad Valorem

The recent increase in the severance tax rate in Oklahoma will result in much higher production taxes paid by the industry. Gross production tax rates in Oklahoma increased in 2018 under House Bill 1010XX. Beginning July 1, 2018, production of crude oil and natural gas from all new wells and all existing wells taxed at the previous 2% rate will be taxed at a new 5% rate for the first 36 months of production. All production then reverts to a 7% rate.

- Under the old tax rate, Oklahoma's FY2018 effective severance tax rate of 4.0% ranks 8th among the sixteen largest producing states, slightly below the 16-state average of 4.4% in the period.
- Recent monthly severance tax receipts highlight the expected effect of the new 5% tax rate. The current pace of receipts equates to annualized collections of approximately $1.25 billion at current crude oil and natural gas prices.
- The new 5% rate is expected to increase the state's effective severance tax rate to 5.1% in FY2019, ranking 5th among current rates for the sixteen largest producing states.
- The state would also move well above the overall average rate of 4.4% across the top sixteen producing states.

While oil and gas reserves in the ground are exempt from ad valorem taxes in Oklahoma, substantial quantities of equipment used above ground are subject to local ad valorem taxes.

- The state's effective ad valorem tax rate was 1.4% in FY2016 based on $157.6 million in property tax payments and $11.4 billion in oil and gas production value.
- Oklahoma's 1.4% effective ad valorem tax rate ranks 9th among the 16 major producing states.

Oklahoma's combined effective severance and ad valorem tax rate will rise under the new 5% severance tax rate.

- Under the old severance tax rate, Oklahoma's combined effective rate of 5.4% ranked 11th among the 16 largest producing states.
- The combined effective rate is projected to rise to 6.4% in the current fiscal year (FY2019) following the recent severance tax rate increase to 5%.
- The new 5% severance tax rate will push the state's rank to 8th among the sixteen largest producing states.

Relative to the other top producing states:

- Oklahoma's FY2019 combined rate of 6.4% in FY2019 will be approximately equal to the 6.5% average combined rate across the major producing states.
- Oklahoma's FY2019 combined rate will rank 8th and be roughly equal to the combined rate levied by traditional producers Texas, Colorado, Louisiana, and Kansas.
- Oklahoma's combined rate will remain 0.6% below dominant-producer Texas but will have a higher effective severance tax rate coupled with a lower effective ad valorem tax rate (as mandated by law).
- Relative to the legacy oil-producing states of Alaska and California, the combined FY2019 rate in Oklahoma falls 1.3% below Alaska but 4.6% above the rate in California.
- Relative to the new emerging natural gas producing states of Pennsylvania and Ohio, Oklahoma's combined effective rate in FY2019 will be 4-5 percentage points higher.

Corporate, or Business, Tax View

The 'production' view of oil and gas taxes provides only limited information about the overall business tax contribution of firms comprising the state's oil and gas industry. We evaluate the total business tax contribution of the state's oil and gas sector using tax data from the Bureau of Economic Analysis (BEA) state-level gross domestic product (GDP) dataset which underlies most commonly used regional economic models.

The dataset is unique in that it divides total state tax payments into the industry sectors making the payments. The data is of further value because approximately 90% of the taxes are paid to state and local governments, with only about 10% going to federal government.

Key findings on the overall business tax contribution of oil and gas include:

- Based on the BEA dataset, Oklahoma establishments in the oil and gas sector paid a total of $2.43 billion in business taxes in 2016.
- This suggests that tax payments by the oil and gas industry accounted for 21.2% of total business taxes paid by all firms statewide in 2016.
- The tax contribution share is roughly double the oil and gas industry's 10% share of total state GDP.
- While 2016 is the most recent year of data available, it is highly conservative in that it reflects tax payments by the industry at the depths of the recent state recession.

The business tax contribution of Oklahoma's oil and gas industry is high relative to the sixteen largest producing states:

- The $2.43 billion in taxes paid by firms in Oklahoma's oil and gas sector in 2016 trailed only dominant producer Texas with $15.54 billion.
- Oklahoma firms paid 7.8% of total oil and gas-related business taxes paid nationally in 2016 and accounted for 7.5% of the value of national oil and gas production in FY2016.
- In Oklahoma, $2.43 billion in total taxes paid by the oil and gas sector represents 20.7% of the $11.76 billion in total market value of crude oil and natural gas production in FY2016.
- This ranks the Oklahoma oil and gas sector as having the third highest overall business tax burden as a share of production value, following only Texas (25.2%) and Alaska (28.6%).
- Oil and gas business taxes in Oklahoma totaled 1.3% of total state GDP of $181.5 billion in 2016. This share ranks Oklahoma 4th among the sixteen largest producing states trailing only Alaska, Wyoming, and North Dakota.

Oklahoma oil and gas firms also contributed a significant share of total business taxes paid statewide:

- As a share of the $10.37 billion in average annual taxes paid the past decade by all business entities operating in the state, the mining sector paid an average of $2.53 billion annually, or 24.4% of the total business taxes paid.
- Actual tax payments made by the industry the past decade represent a 10.5% share of total GDP produced by the industry.
- For comparison, all other sectors combined paid business taxes averaging only 5.5% of total GDP produced, roughly half the share of the oil and gas sector.
- The mining sector pays a higher share than the state's key sales tax conduit sectors, Wholesale Trade (18.5%) and Retail Trade (17.3%), both of which collect significant taxes but produce relatively little GDP (their combined GDP is less than the mining sector).
- The share of total statewide business taxes paid is far lower in six of the state's other key high-tax-share sectors, including Utilities ($419 million, 4.0% share), Insurance Carriers ($310 million, 3.0% share), Broadcasting and Telecommunications ($271 million, 2.6% share), Amusement, Gambling, and Recreation ($162 million, 1.6% share), Accommodations ($127 million, 1.2% share), and Air Transportation ($92 million, 0.9% share).
- Combined, these six high-tax industries paid an average of only $1.38 billion in taxes annually the past decade, or 13.3% of total statewide business taxes paid the past decade, only slightly more than half the 24.4% average share paid by the mining sector.

Key policy finding on the business tax contribution of oil and gas in Oklahoma:

- While the production view of oil and gas taxation in Oklahoma places Oklahoma in the middle of the producing states, the broader corporate view of taxes consistently places the state among those with the highest overall tax burden.

Industry Tax View

The report also extends the analysis to the tax contribution of the broader industry itself. This primarily includes the personal income tax and sales tax contributions made by employees and self-employed proprietors within the oil and gas sector. This approach captures the two largest tax sources in Oklahoma and accounts for key differences in the tax structure in other producing states (e.g. leading-producer Texas has no personal income tax).

The findings illustrate that personal income tax payments as a share of production in Oklahoma are high relative to other producing states:

- Across the sixteen largest producing states, the effective income tax payments traced to household earnings from oil and gas equals 0.52% of production value.
- Oklahoma's rate of 1.05% ranks 6th highest among the sixteen largest producers but is approximately double the overall average rate.
- Colorado has the highest effective rate at 2.9%, nearly triple Oklahoma's rate. Only Montana, Kansas, and California have effective rates above 2%, while Louisiana's rate falls just below 2%.
- All other major producing states have an effective income tax rate below 1%.
- In Texas, Wyoming, and Alaska, the effective income tax rate is 0%.

Sales tax payments as a share of production value in Oklahoma are proportionately high as well:

- Oklahoma's estimated total sales tax contribution of $591 million is second highest among the sixteen states, behind only the $3.77 billion estimate for Texas.
- Much of the sales tax contribution reflects sales tax-intensive drilling activity, with Oklahoma the second most drilling-active state.
- Oklahoma's effective sales tax rate on production of 4.1% is 4th highest among the 16 states and one percentage point below Texas, a historically high-sales tax state with active drilling.
- Oklahoma's effective rate is 0.7% above the average rate of 3.4% across all 16 states.
- However, the top four states – Louisiana, Texas, Ohio, and Oklahoma – contribute a far higher share of sales tax revenue as a percentage of production value than the remaining dozen states.

When the effective personal income tax and sales tax rates are combined with effective severance and ad valorem tax rates, the relatively broad tax contribution of Oklahoma's oil and gas industry relative to the other producing states is clear:

- Combined effective tax rates as a share of production across the four tax categories average 10.4% and range from a low of 3.7% in Pennsylvania to a high of 13.6% in Louisiana.
- Oklahoma's combined effective rate of 10.6% based on the FY2018 severance tax rate ranks 5th among the sixteen largest producing states, just above the overall average rate of 10.4%.
- The state's combined rate rises to 11.7% in FY2019 under the new 5% severance tax rate. Oklahoma will remain 5th among the sixteen largest producing states but will exceed the average by more than a full percentage point.
- Relative to the average for the group of sixteen states, Oklahoma has a similar effective rate for severance taxes, a lower effective ad valorem tax rate, and a higher than average effective rate for both sales and income taxes.

How are Severance Taxes Used in Oklahoma?

Severance taxes paid by state oil and gas producers totaled $682 million in FY2018. Over the past decade, the state's oil and gas sector has contributed $6.6 billion in gross production taxes ($655 million annually) to the funding of Oklahoma state government.

Gross production revenue is first apportioned by statute for several dedicated purposes, primarily local government and public education, with the remainder deposited in the general revenue fund. Of the $6.6 billion in gross production revenue paid the past decade, $3.1 billion (47%) went to dedicated uses, with the remaining $3.5 billion (53%) transferred to the state's general revenue fund. General revenue fund contributions from severance taxes (after allocations to dedicated uses) averaged $349 million annually the past decade.

Education-Related Funding

A total of $226 million of total severance tax revenue was apportioned to education-related dedicated funds in FY2018. Over the past decade, $2.11 billion in gross production tax revenue was apportioned for educational purposes, an average of $211 million annually.

Common education is the largest traditional direct beneficiary of gross production taxes. A portion of the gross production tax generated from oil and gas production in each county is allocated back to the county for distribution on an average daily attendance basis among the county's independent school districts. Since some counties have large amounts of oil and gas production and others very little, there is substantial variation in the revenues received.

Over the past decade, gross production revenue received by local school districts and the common education technical fund totaled $1.16 billion – $116 million annually. Common education's share of gross production taxes reached $131 million in FY2018, the largest amount received the past decade.

In total, school districts in 27 of the state's 77 counties received more than $1 million or more annually from oil and gas severance taxes from FY2008 to FY2017. School districts in only fourteen counties received less than $50,000 annually in gross production revenue in the ten-year period.

By individual school district, twelve received more than $1 million annually in gross production revenue between FY2008 and FY2017. Thirty additional districts received between $500,000 and $1 million annually in the period. Thirty-eight districts received between $250,000 and $500,000 annually. Eighty-nine districts received between $100,000 and $250,000 annually. Fifty-four districts received between $50,000 and $100,000 annually.

In total, 223 individual districts received $50,000 or more annually in gross production revenue between FY2008 and FY2017.

Contributions of gross production taxes to higher education totaled $902 million the past decade, or $90 million annually.

II. State Taxes in the Recent Oil and Gas Contraction

An important element of the ongoing policy debate over oil and gas taxation in Oklahoma is determining the degree to which the state's oil and gas industry contributes to total state tax collections. The industry contributes direct tax payments across a variety of tax streams as well as indirect tax revenue through spillover activity generated through interaction with other industries in the state economy.

Tax Experiment in Recent Oil and Gas Recession. Determining the size of the tax contribution of the industry was aided by the recent oil and gas-driven recession in Oklahoma. The energy slowdown in the state provided a rare opportunity to isolate the effects of fluctuations in the oil and gas sector on state tax revenue and the broader state economy. The state economy was in a strong, steady economic expansion in late 2014 when rapidly declining oil prices struck the state's oil and gas sector. The resulting oil and gas slowdown subsequently produced a significant state-level recession that extended approximately two years from late 2014 through late 2016.

This recessionary period provides a near-controlled experiment for gauging the economic influence of the oil and gas sector. The sharp contraction in the sector became the dominant influence on statewide economic growth in the period. The usefulness of the period is enhanced by the fact that the national economy provided a highly stable national backdrop throughout the slowdown and the state had relatively stable tax policy in the period.

These unique circumstances allow for much more reliable measurement of the economic ties between the state's oil and gas industry, the statewide economy, and state tax revenue. Typically, economic models must be used to derive estimates of these effects using historical relationships based on average responses. The experiment afforded by the recent state oil and gas-driven recession allows for estimates that are both more reliable and timelier.

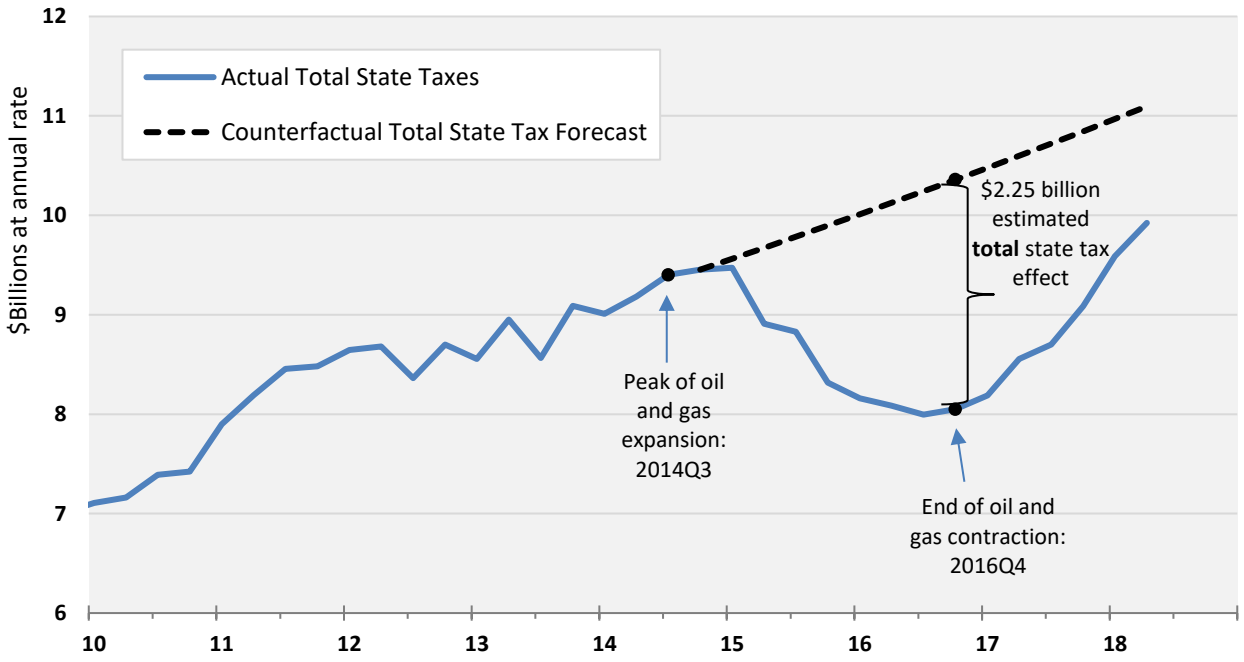
In the remainder of this section of the report, we first detail the significance of the downturn in state tax revenue during the recent oil and gas-driven recession. Multipliers reflecting the employment, earnings, and output response in the broader state economy are then estimated. The relative responsiveness of total state tax revenue to economic changes in the oil and gas sector is then evaluated using the estimated multiplier effects.

State Tax Loss in the Recent Recession

Figure 1 illustrates the path of total state tax revenue during the recent oil and gas-driven shock starting in the third quarter of 2014 and extending through the fourth quarter 2016. After peaking in the 3rd quarter of 2014, the state began a steady, cumulative decline of $1.5 billion (15.4%) in total state tax revenue. These estimates use the comprehensive measure of total state taxes provided by the Census Bureau.

Our forecast for state tax revenue from July 2014 serves as a highly useful counterfactual comparison case to the actual path of revenue for determining the net effect of the pullback in oil and gas activity on expected total state tax revenue.[1] The expected outlook prior to the collapse in oil prices was for average growth in total tax revenue of 4.6% annually through FY2018.

Figure 1. Total State Tax Revenue in Recent Energy Recession – Oklahoma



Source: Census Bureau and RegionTrack forecast (July 2014)

Based on the forecast shown in Figure 1, the net decline in total expected state tax revenue reached an estimated $2.25 billion (23.7% decline) from peak to trough in activity in the oil and gas sector. The $2.25 billion estimated tax revenue decline reflects the net difference between the initial expected outcome and the actual outcome through the 4th quarter of 2016.

In other words, the $1.46 billion decline in actual revenue represents a static estimate of the tax effect, while the $2.25 billion decline provides a much more representative dynamic estimate of the net state tax response based on prior expectations. The dynamic estimate is also more reflective of the budget shortfall legislators were forced to adapt to in setting budget policy in the period. There was also little expectation at the start of the recession that a slowdown in the oil and gas sector could produce a state tax revenue shortfall of nearly 25% below projected amounts.

Rarely is it possible, as in this case, to isolate the effect of a downturn in a single industry sector on the future path of overall state tax revenue. While the oil and gas downturn does not account for all movement in tax revenue during the downturn, it is believed to have accounted for the great majority of the movement based on the timing of the downturn, the absence of other identifiable factors, and the similarity of the pattern in other major producing states.

It is the oversized $2.25 billion (nearly 25%) net decline in total state tax revenue in response to the oil and gas slowdown that makes in-depth analysis of oil and gas taxation in Oklahoma and other top-tier energy producing states so necessary. The oversized effect is traced to both a large direct effect as the industry is buffeted directly by changes in energy prices and large spillover effects transmitted to other areas of the state economy. Measurements of both the direct effect taking place within the industry and the estimated spillover effects exerted on the statewide economy are detailed in the following section.

Earnings and Employment Multiplier Effects During State Recession

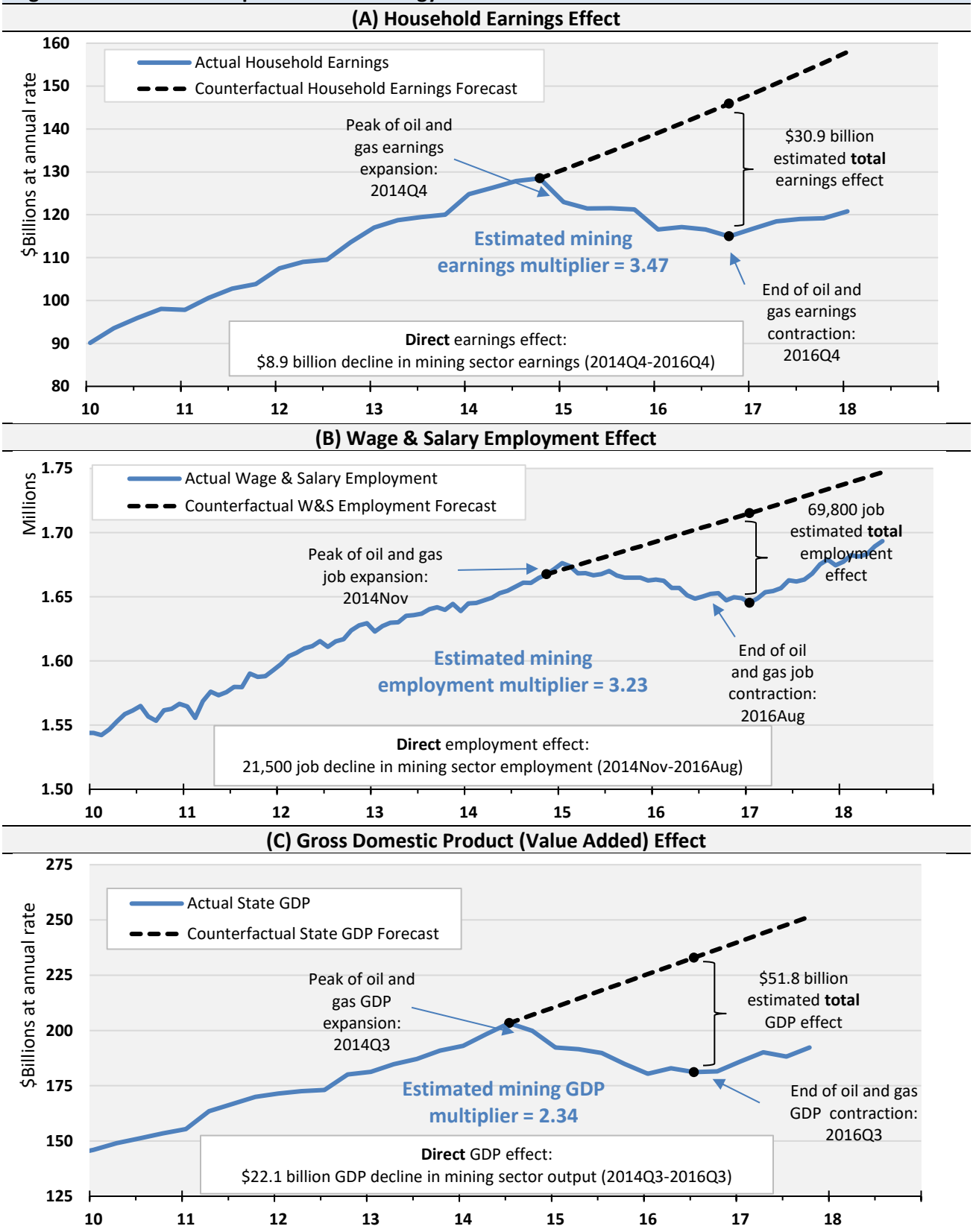
The recent state recession provides a near ideal case to examine the expected spillover (or economic multiplier) effects resulting from direct changes in activity in the oil and gas industry. These effects are examined using three common measures: 1) household earnings, 2) wage and salary employment, and 3) state gross domestic product (GDP). This provides broad evidence of the overall influence oil and gas activity has on statewide economic activity in Oklahoma.

Figure 2 illustrates estimated net multiplier effects based on changes in all three economic measures within the oil and gas sector as they were transmitted to the broader economy in 2015 and 2016. The simulations use our state-level forecasts in place prior to the oil and gas downturn as counterfactual comparisons for evaluating the shift in the expected path of the state economy following the downturn in oil prices beginning in 2014. All data reflect activity within the oil and gas components of the NAICS mining sector, with non-mining activity excluded.

Household Earnings. In the case of household earnings in Panel A of Figure 2, the oil and gas sector posted a cumulative direct decline of $8.9 billion in earnings paid by the industry between the 4th quarter of 2014 and the 4th quarter of 2016. This reflects a 55% decline, from $16.2 billion to $7.3 billion. This direct effect had a clear spillover effect on overall state household earnings. Statewide household earnings dropped $13.5 billion ($128.5 billion to $115.0 billion), or 10.5%, from peak to trough during the oil and gas recession. However, using a counterfactual comparison based on our July 2014 forecast of 6.4% annual growth for household earnings through FY2018, the net decline in earnings statewide reached an estimated $30.9 billion from peak to trough from its pre-recession path. This equates to an effective earnings multiplier of 3.47, whereby a one-dollar direct decline in household earnings in the oil and gas industry equates to a loss of 2.47 dollars (multiplier minus 1 to account for the direct effect) in lost spillover earnings in other industry sectors across the state. The estimated multiplier effect is considerably higher than recent static Type-2 earnings multipliers of approximately 2.2 produced by the Bureau of Economic Analysis (BEA) using historical input-output relationships.[2]

Wage and Salary Employment. In the case of employment in Panel B, the oil and gas sector posted a direct decline of 21,500 (34%) wage and salary jobs between November 2014 and August 2016. In response to the oil and gas slowdown, statewide employment subsequently fell by 30,800 jobs, a 1.9% decline. Using a counterfactual comparison based on our July 2014 wage and salary job forecast of 1.3% annual growth for wage and salary employment, the net decline in employment statewide reached an estimated 69,800 workers from peak to trough. This equates to an effective employment multiplier of approximately 3.23, whereby a decline of one job in the oil and gas industry equates to a loss of 2.23 jobs (multiplier minus 1 to account for the direct effect) in lost spillover employment in other industry sectors across the state. The estimated multiplier effect is consistent with recent static Type-2 oil and gas sector earnings multipliers of approximately 3.2 produced by BEA.

Figure 2. Estimated Multiplier Effects in Energy Recession - Oklahoma



Notes: Counterfactual forecasts are from RegionTrack July 2014 Oklahoma State & Local Economic Outlook. Net changes are measured peak-to-trough.

Source: U.S. Census Bureau, U.S. EIA, Bureau of Labor Statistics, Bureau of Economic Analysis, and RegionTrack forecasts and calculations.

State Gross Domestic Product. A similar exercise for state gross domestic product in Panel C shows the effect of the $22.1 billion direct decline in state GDP in the state's oil and gas sector from the third quarter of 2014 to the third quarter of 2016.[3] Using a counterfactual comparison derived from our July 2014 forecast of 6.5% annual growth for state GDP, the net effective decline in GDP statewide reached $51.8 billion (10.9% decline) from peak to trough. This equates to a GDP multiplier of 2.34, whereby a decline of one dollar of GDP in the oil and gas industry equates to a loss of 1.34 dollars (multiplier minus 1 to account for the direct effect) in lost spillover GDP in other industry sectors across the state. The estimated multiplier effect is higher than recent static Type-2 earnings multipliers of approximately 1.8 produced by BEA.

Linkage from Oil and Gas Activity to State Tax Revenue

The large estimated multiplier effects in the recent recession reflect the extensive economic interlinkages between the oil and gas industry and most other industry sectors in Oklahoma. They also underlie the high sensitivity of the overall state tax base to changes in the oil and gas industry.

In the case of both earnings and employment, the size of the estimated multipliers suggests that the direct decline in activity in the oil and gas sector accounts for approximately 30% (1 divided by the multiplier) of the total economic response, with the remaining 70% due to spillover effects in other industries. In the case of GDP, the estimated multiplier suggests that the direct loss in activity in the oil and gas sector accounts for approximately 43% of the total state GDP lost in the period, with the remaining 57% attributed to spillover effects.

A summary of the estimated effects during the recent oil and gas recession from late 2014 through late 2016 is as follows (see Figure 3):

- Direct Effects: Employment in the state's oil and gas industry declined by 21,500 wage and salary workers; household earnings by oil and gas workers and self-employed proprietors declined by $8.9 billion; and GDP in the oil and gas sector declined by $22.1 billion.
- Total Effects: The state subsequently lost a total of 69,800 jobs; household earnings declined by $30.9 billion; and state GDP contracted by $51.8 billion from peak to trough based on counterfactual forecasts in place prior to the downturn.
- Tax Effect: As a result, total state taxes declined by $2.25 billion in the downturn from peak to trough over the recession cycle as a result of the oil and gas slowdown.
- Estimated economic multipliers suggest that oil and gas activity accounts for 30% of the direct economic change in employment and household earnings during the recession; oil and gas directly accounts for 43% of the statewide decline in GDP.
- The findings suggest that a $1 billion reduction in oil and gas industry GDP equates to an average of $102 million dollars lost in total state tax revenue; or, an average of 10.2% of the total reduction in mining industry GDP is traced to diminished total state tax revenue.
- These estimates of the estimated economic and tax effects are most applicable in a period of rapid expansion or contraction in the industry.

Figure 3. Estimated Oil and Gas Sector Spillover Effects - Oklahoma				
Economic Measure	**Direct Effect**	**Total State Effect**	**Net Multiplier**	**Evaluation Period**
Total State Taxes	n/a	-$2.25 billion	n/a	2014Q3-2016Q4
Total Household Earnings	-$8.9 billion	-$30.9 billion	3.47	2014Q4-2016Q4
Total Wage and Salary Employment	-21,500 jobs	-69,800 jobs	3.23	2014Sep-2016Dec
Total Gross Domestic Product	-$22.1 billion	-$51.8 billion	2.34	2014Q3-2016Q3

Direct vs. Spillover Effects. There is no generally accepted method for apportioning the exact share of the total $2.25 billion estimated tax loss to either direct losses from industry payments or spillover tax losses from other sectors of the broader state economy. However, we can use the multipliers estimated from state data during the recession to gauge the approximate size of the tax response to each.

Based on the estimated multipliers, the estimated 30% share of earnings and employment lost directly in the oil and gas sector likely sets an absolute floor on the share of the tax revenue decline traced directly to the oil and gas industry. This suggests that at least $675 million of the $2.25 billion tax loss was a direct reduction in payments by the oil and gas sector, with the remaining $1.58 billion of the tax loss due to spillover effects in the remainder of the state economy. The estimated 43% direct share of GDP lost directly in the oil and gas sector suggests $968 million of the tax revenue decline is traced directly to the oil and gas sector, with $1.28 billion due to spillover tax losses.

Policy Conclusions. The behavior of state tax revenue during the recent oil and gas-driven recession clearly illustrates several key policy findings about the overall tax contribution of the oil and gas sector in Oklahoma:

- The state remains a top-tier energy state with overall economic conditions highly sensitive to activity in the oil and gas sector;
- An extended slowdown in the sector was capable of producing a net 25% decline in total state tax revenue below projections;
- Overall state tax revenue remains highly sensitive to changes in activity in the oil and gas sector, with total state tax losses equal to 10% of the amount of GDP lost in the sector;
- The size of the reduction in taxes during the slowdown suggests that multiple tax streams beyond severance taxes play a major role in determining the total tax contribution of the oil and gas sector; and
- Other state taxes such as personal and corporate income tax, sales and use tax, motor vehicle, motor fuel, and other taxes are the greatest source of direct and spillover tax contributions traced to the industry.

III. Why Such Large Tax Effects from Oil and Gas in Oklahoma?

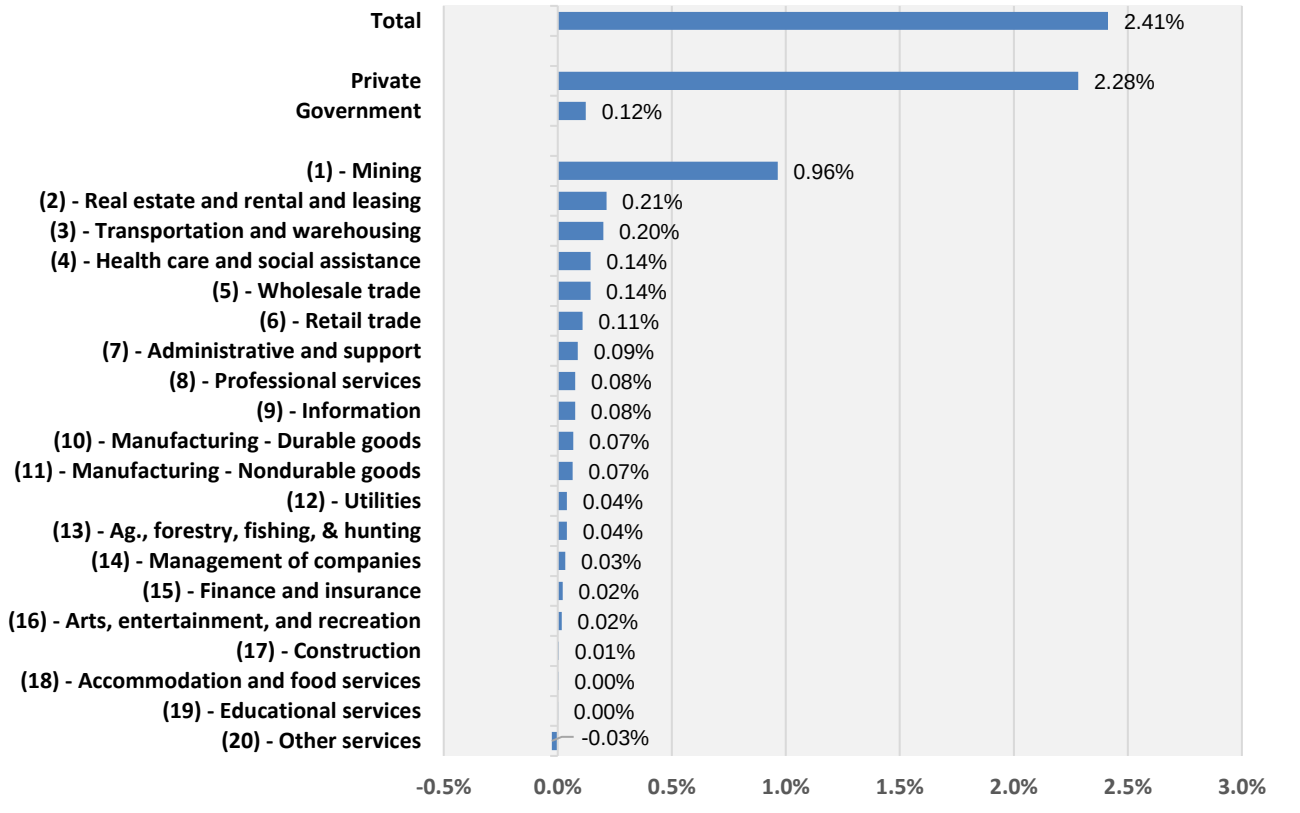
The outsized economic contribution of oil and gas to the Oklahoma economy and state tax revenue can be illustrated in several additional ways. The contribution is possibly best captured by measuring the share of state economic growth attributable to the industry in recent years. Since the reemergence of the domestic oil and gas industry beginning in 2003, the oil and gas sector (mining) has been the largest contributor to economic growth in Oklahoma across all major sectors, by far. The state also has the largest share of total household earnings derived from the oil and gas sector among all major producing states since 2003. A related factor underlying the high household earnings share is Oklahoma's high share of household earnings derived from self-employed proprietors in the oil and gas sector. Each of these factors is evaluated in the following sections.

Oil and Gas Contribution to State GDP

Figure 4 summarizes BEA industry-level measures of the contribution of each major NAICS sector to real GDP growth in Oklahoma from 2003 through 2017. This period stretches back to the initial stages of the reemergence of the industry in 2003 and extends through the most recently available data. The mining sector is used in this section to represent oil and gas activity because BEA makes these calculations readily available only for major NAICS sectors; however, oil and gas represents nearly all mining sector GDP in Oklahoma.

Figure 4. Industry Level Contributions to Real GDP Growth – Oklahoma

Average annual percent change in the 2003–2017 period



Source: Bureau of Economic Analysis

Across the full period, the Oklahoma economy posted average real GDP growth of 2.41% annually. Remarkably, the mining sector contributed nearly 40% (0.96% annually) of all real growth in the state in the period. All other sectors combined contributed only 1.45% annually to real GDP growth in the period. Again, the state's mining sector accounted for approximately 40% of the total increase in real economic output in Oklahoma during the reemergence of the oil and gas sector in the 2003 to 2017 period.

The state's mining sector far outpaced the contribution of all other major sectors. The gain from mining exceeded the contribution of the 2nd and 3rd ranked sectors - Real Estate (0.21% annually) and Transportation and Warehousing (0.20% annually) - by a factor of more than four. Each of the remaining sectors contributed less than 0.15% annually, with many industries contributing negligible amounts to overall state real GDP growth across the period.

GDP Contribution Across the Producing States

The contribution of oil and gas to state GDP growth is outsized in other major producing states as well. Figure 5 details the contribution to real GDP from both the mining and non-mining sectors in the 2003 to 2017 period for the sixteen top oil and gas-producing states measured by production value.

Figure 5. Contribution of Mining Sector to State Real GDP Growth

Region	Total Real GDP Growth %	Mining Sector		Non-Mining Sectors	
		Annual Real GDP Growth %	Share of Total Growth	Annual Real GDP Growth %	Share of Total Growth
Average annual percent change in real state GDP in the 2003-2017 period					
United States	1.74	0.08	4.8%	1.66	95.2%
North Dakota	4.98	1.38	27.8%	3.60	72.2%
Oklahoma	**2.41**	**0.96**	**40.0%**	**1.45**	**60.0%**
Alaska	1.39	0.57	40.9%	0.82	59.1%
Texas	3.07	0.54	17.5%	2.54	82.5%
Wyoming	1.91	0.50	26.2%	1.41	73.8%
West Virginia	0.99	0.39	39.3%	0.60	60.7%
New Mexico	1.35	0.34	25.2%	1.01	74.8%
Colorado	1.91	0.30	15.5%	1.62	84.5%
Pennsylvania	1.54	0.22	14.2%	1.32	85.8%
Arkansas	1.54	0.16	10.6%	1.38	89.4%
Ohio	0.95	0.14	14.3%	0.81	85.7%
Montana	2.27	0.09	4.2%	2.17	95.8%
Utah	3.07	0.07	2.3%	3.00	97.7%
California	2.43	0.01	0.5%	2.42	99.5%
Kansas	1.61	0.00	0.0%	1.61	100.0%
Louisiana	0.72	-0.33	-45.8%	1.05	145.8%

Source: Bureau of Economic Analysis and RegionTrack calculations

The nearly 1% annual contribution of mining activity to state real GDP growth in Oklahoma is the 2nd largest among the sixteen top producing states, trailing only North Dakota (1.38%) in the period. Alaska (0.57% annually) and Texas (0.54% annually) are the only other states

where mining contributed a half percentage point or more to annual real GDP growth. The dependence of total economic growth in Oklahoma upon mining sector activity is further evidenced by the share of total state GDP growth that originated in the mining sector in the period. Only Alaska (40.9% share) exceeded Oklahoma's 40.0% share of total state economic growth derived from the mining sector in the period.

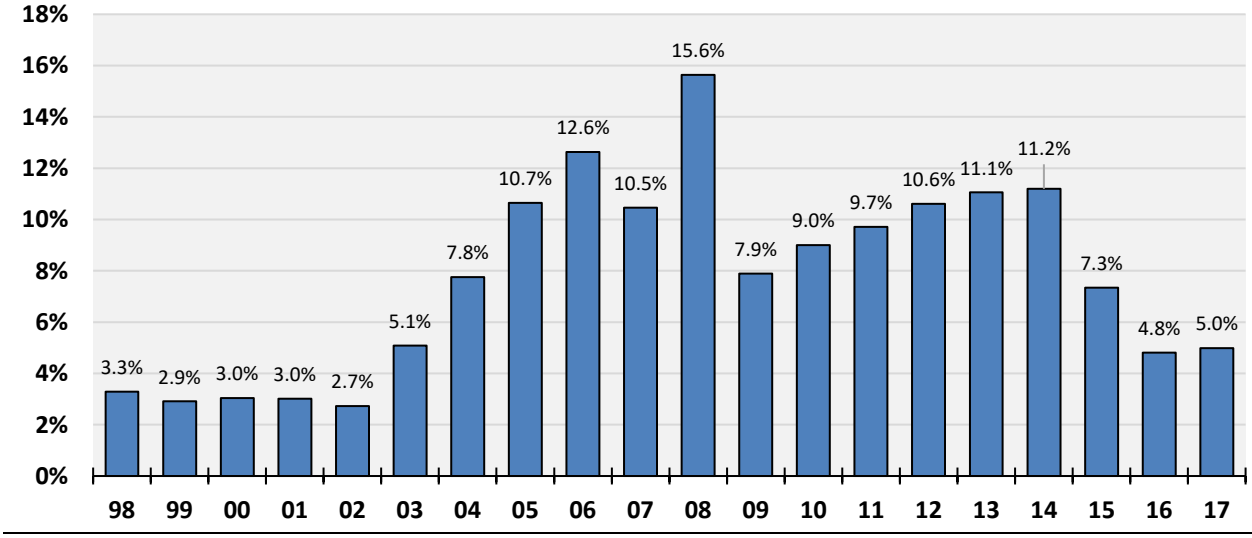
North Dakota's mining sector posted a larger absolute contribution to annual growth (1.38%) than Oklahoma but contributed only 27.8% of total state growth. West Virginia (39.3% share) similarly posted a high share of total growth from mining. However, both West Virginia and Alaska posted very slow overall growth in the period resulting from very weak growth in their non-mining sectors.[4]

Oklahoma vs. U.S. GDP Growth. Oil and gas also played a large role in the state's performance relative to the nation in the period. Oklahoma outpaced the U.S. in real GDP growth by 0.67% annually since the reemergence of the oil and gas industry in 2003. However, if the state had merely matched the national average contribution of mining (0.08% annually), real GDP growth in the state would have trailed the nation by 0.2% annually. Oklahoma also posted the 5th fastest total real GDP growth rate among the sixteen largest producing states in the period, trailing only North Dakota, Texas, Utah, and California.

Oil and Gas Share of Household Earnings

The influence of oil and gas activity on total state taxes is also traced to the high share of total household earnings derived directly from the state's oil and gas sector. Figure 6 illustrates the share of total statewide household earnings paid by the oil and gas industry directly to Oklahoma households the past two decades. The share includes only the oil and gas components of the mining sector and excludes other forms of mining. Household earnings includes both the compensation paid to wage and salary workers and income received by self-employed proprietors and participants in oil and gas partnerships.

Figure 6. Share of Total Household Earnings Derived from Oil and Gas Sector - Oklahoma



Notes: Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).

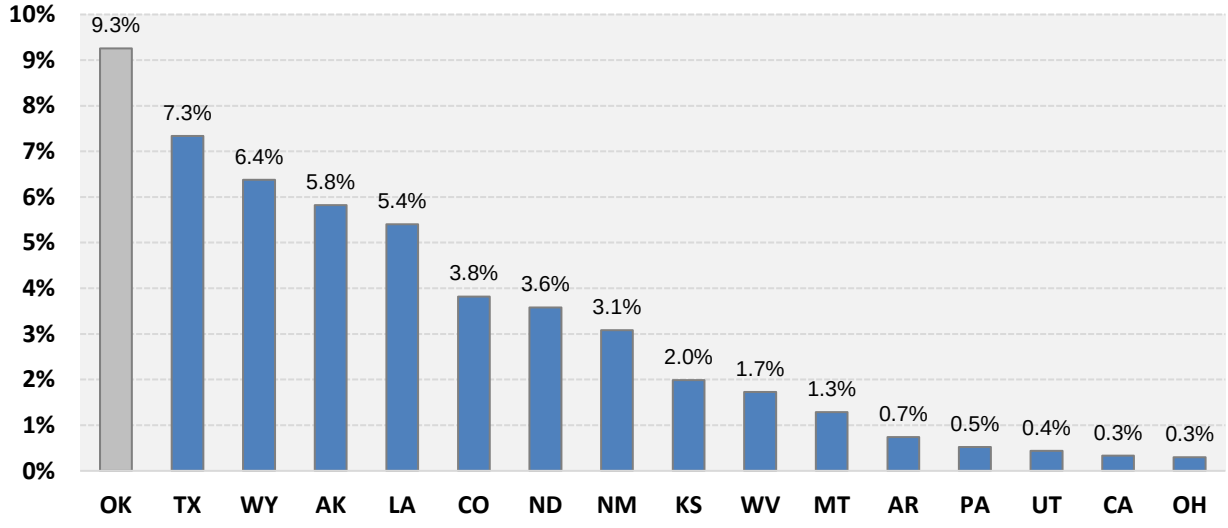
The share of earnings in Oklahoma derived from oil and gas activity reached a peak of 15.6% in 2008 and averaged 9.3% of total statewide household earnings in the full 2003 to 2017 reemergence period. The 15.6% share in Oklahoma during 2008 is the highest recorded share in any oil and gas-producing state in recent decades, including the previous-record 13.5% peak share in Wyoming during the 1982 Oil Boom period.

During the recent oil and gas recession of 2015 and 2016, household earnings received from the oil and gas sector in Oklahoma collapsed to only about 5% of statewide earnings in 2016 and 2017. This decline in household income weighed heavily on other state tax streams, particularly personal income tax and sales tax collections.

Household Earnings Share Across the Producing States

Oklahoma is one of only a handful of energy-producing states that can experience substantial swings in statewide household earnings and total state taxes in response to changes in the oil and gas sector. Figure 7 illustrates the average share of statewide household earnings derived from the oil and gas industry for the top sixteen producing states since the industry reemerged in 2003.

Figure 7. Share of Total Household Earnings from Oil and Gas Sector (2003-17 Average)



Notes: Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction), NAICS 213111 (Drilling oil and gas wells), and NAICS 213112 (Support activities for oil and gas operations) divided by total household earnings from all sectors.

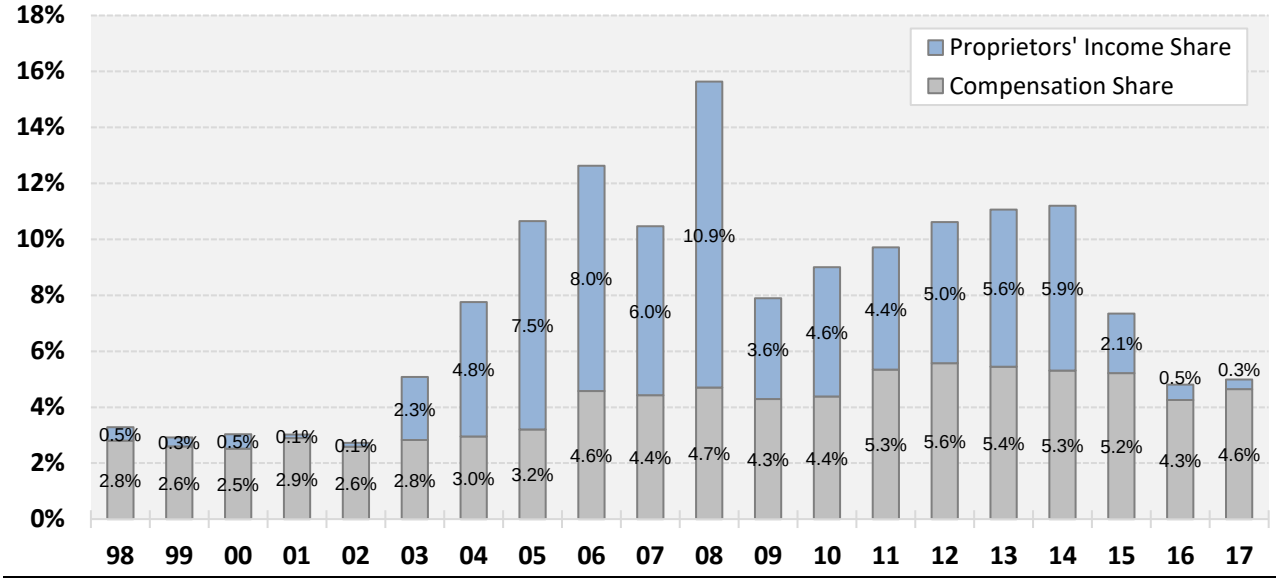
Oklahoma's 9.3% average share of household earnings derived from the oil and gas sector leads all sixteen major producing states. The state's share is 2 full percentage points above second ranked Texas and 3 to 4 percentage points above Wyoming, Alaska, and Louisiana, three of the largest traditional energy-producing states. It is important to note that Texas, Wyoming, and Alaska have no state personal income tax, and these oil and gas household earnings go largely untaxed in these states. The oil and gas share of household earnings in Oklahoma is 2.5-3 times the share received by households in Colorado, North Dakota, and New Mexico in the period.

The potential influence of oil and gas related household earnings on state tax revenue is quite limited in the eight remaining producing states in the comparison. The share over the period falls between 1.0% and 2.0% of household earnings for Kansas, West Virginia, and Montana. The share is less than 1% in Arkansas, Pennsylvania, Utah, California, and Ohio. In contrast to Oklahoma, these eight states are unlikely to experience meaningful fluctuations in state economic activity or state tax revenue because of changes in household earnings derived from the oil and gas sector.

Role of Oil and Gas Proprietor Income

It is important to note that a majority of earnings paid by the oil and gas industry to the household sector in Oklahoma now typically accrues to self-employed proprietors (see Figure 8).[5] Since 2003, slightly more than half (55%) of all household earnings from oil and gas activity in Oklahoma was received by self-employed proprietors, with the remainder (45%) received as compensation by wage and salary workers.

Figure 8. Share of Total State Household Earnings from Oil and Gas - Oklahoma



Notes: Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Proprietors' income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).

The volatility of the two household earnings streams in Figure 8 is quite different as well, leading to different roles in the volatility of state tax revenue. Compensation received by oil and gas wage and salary workers has remained in a mostly stable uptrend since 2003, rising from 2.8% of total state household income in 2003 to 4.6% in 2017. In contrast, wage and salary compensation produced only limited volatility in state tax revenue in the period.

The highly volatile proprietor income share of oil and gas earnings introduced most of the excessive volatility into state tax revenue. This component of earnings reflects approximately 85,700 individual non-corporate business entities in Oklahoma engaged in business activity in

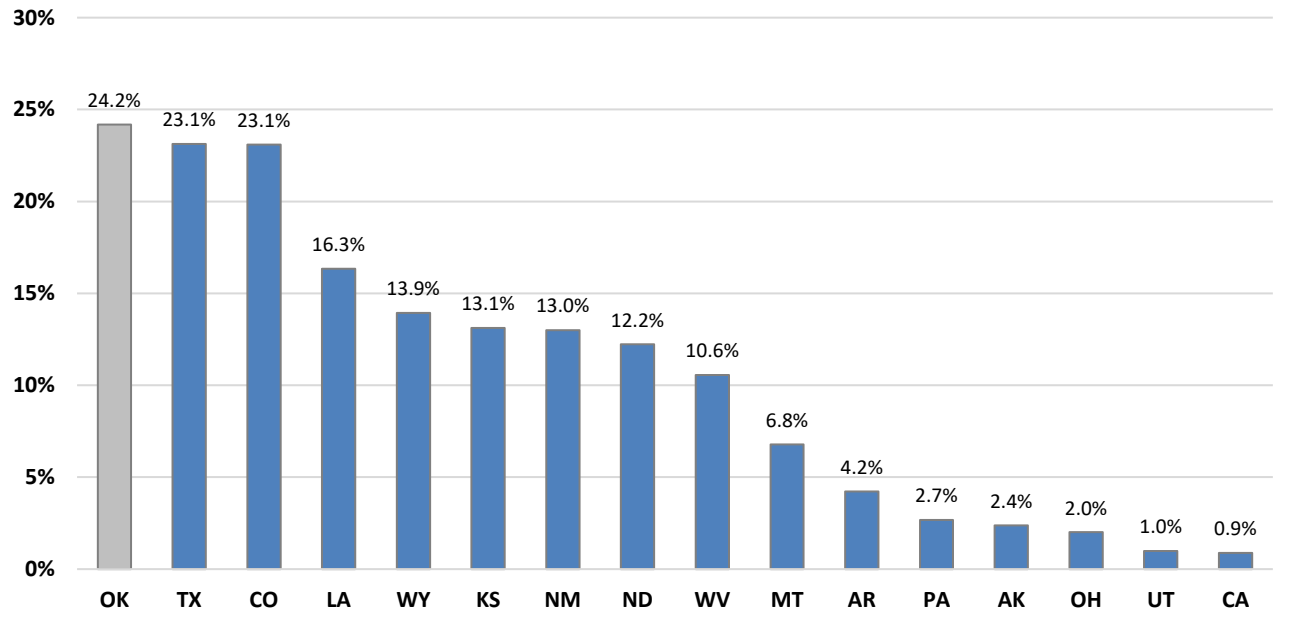
the oil and gas sector. This also reflects a relatively recent shift in the taxation of oil and gas industry earnings from corporate income to personal income tax rates.

The share of statewide household earnings derived from self-employed oil and gas proprietors increased more than four-fold from 2.3% in 2003 to 10.9% in 2008. The share collapsed to 3.6% in 2009 following the most recent national recession then increased steadily to 5.9% of statewide household earnings by 2014.

Following the state recession, oil and gas earnings by proprietors in the state dropped to less than one percent of total statewide earnings in both 2016 and 2017. In dollar terms, oil and gas proprietor earnings declined from $7.5 billion in 2014 to a low of only $405 million in 2017. The collapse in earnings accruing to self-employed oil and gas industry participants weighed heavily on total state tax collections from 2015 through 2017.

A high share of total proprietor earnings generated across all industries in Oklahoma is derived from the oil and gas sector (see Figure 9). In the 2003 to 2017 period, Oklahoma has the highest share (24.2%) of total proprietor earnings derived from the oil and gas sector among the sixteen largest producing states. Texas and Colorado have a similar share (23%). Most producing states have a share of 15% or less, with many of the newer producing states such as Arkansas, Ohio, and Pennsylvania having a far less developed oil and gas proprietor sector.

Figure 9. Oil and Gas Share of Total Non-Farm Proprietor Earnings (2003-17 Average)



Notes: Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction), NAICS 213111 (Drilling oil and gas wells), and NAICS 213112 (Support activities for oil and gas operations) divided by total nonfarm proprietor earnings from all sectors statewide.

IV. Oklahoma Oil and Gas Tax Contribution

Measuring Tax Contribution

The ongoing debate over oil and gas tax policy in Oklahoma remains muddled by the use of differing approaches to measuring the industry's tax contribution.

There are three common approaches to measuring the tax contribution of the oil and gas sector – production, corporate, and industry.

1. Production – The 'production' view is the most commonly used and typically focuses on the direct costs of production as measured by combined severance and ad valorem tax payments. This narrow view reflects the targeted nature of these taxes toward production and the historical link between severance and ad valorem taxes in many states.
2. Corporate – A broader 'corporate' view extends the 'production' approach to include a wider range of business taxes paid by oil and gas firms. This approach typically includes additional taxes paid by oil and gas business establishments such as corporate income, motor fuel, motor vehicle, franchise, and sales and use taxes. These additional taxes can far exceed the amount of severance and ad valorem tax payments in many producing states.
3. Industry – The 'industry' view extends both the 'corporate' and 'production' approaches to reflect the full range of tax revenue generated by the presence of the oil and gas 'industry' itself. This approach recognizes the range of taxes paid by workers and self-employed proprietors within the oil and gas sector. This approach is most applicable in producing states such as Oklahoma with significant oil and gas production, active exploration activity, a large concentration of white-collar workers, an extensive base of self-employment in oil and gas, and a broad base of corporate oil and gas establishments. It is also highly relevant when evaluating Oklahoma relative to those producing states with no personal income tax (e.g. Texas, Wyoming, and Alaska).

Forming State Oil and Gas Tax Policy

Proponents of higher severance taxes in Oklahoma focus almost exclusively on the 'production' view of oil and gas taxation (severance and ad valorem taxes) in advocating for tax policy changes. This approach ignores the broader corporate tax contribution of oil and gas firms in the state, implying that other taxes are either not relevant or are roughly equivalent across the producing states.

Relatively little research has been produced describing the overall business, or 'corporate,' tax burden faced by oil and gas firms in Oklahoma and most other producing states. This information is essential to policymakers in determining whether overall business tax payments are comparatively low in Oklahoma or not. Only by forming tax contribution estimates from a corporate viewpoint can the relative size of production taxes in Oklahoma be evaluated in context with the broader tax contribution of the industry.

From a state budgetary perspective, tax contributions from the 'industry' view are far more important in explaining overall movements in state tax revenue. In Oklahoma, the tax contribution of the oil and gas industry extends well beyond both the production and corporate contributions of the sector. The extreme sensitivity of total state tax revenue to changes in oil and gas activity demonstrated in the recent oil and gas-driven recession suggests that state tax policy must consider the broad range of tax payments tied to the industry – both direct and indirect. As discussed earlier in the report, estimates derived from the recent state recession suggest that each $1 billion decline in oil and gas sector GDP equated to a $102 million decline in total state tax revenue.

Differences in the overall tax structure in other major producing states can result in far different 'industry' tax burdens as well. The other oil and gas-producing states levy a widely varying range of taxes, including various levels of personal income and sales taxes. For example, the three major producing states of Alaska, Texas, and Wyoming levy no personal income tax. Household earnings in these states accrue to wage and salary workers, self-employed proprietors, royalty owners, and others in the oil and gas sector, but these earnings do not contribute to total state tax revenue through personal income tax payments. In Oklahoma, personal income taxes have comprised almost one-third of total state tax revenue the past two decades. Even among energy states that do levy an income tax, tax rates differ greatly.

Not all states collect sales taxes either, with rates highly variable among those that do. Alaska and Montana, two traditionally high severance tax states, have only small local sales taxes. In fact, Alaska has long relied predominately on production taxes from oil and gas to fund state government and is the only state that does not collect state sales tax or levy an individual income tax on personal income.

The underlying concern for policymakers is that oil and gas tax policy conclusions based solely on the 'production' tax burden of the industry may be wholly inconsistent with the 'corporate' and/or 'industry' views. Consequently, sound comparisons of oil and gas taxation in Oklahoma relative to other producing states requires an evaluation of all three approaches.

The following sections of the report provide a detailed evaluation of the three basic approaches to measuring the tax contribution of the oil and gas sector in Oklahoma. For comparative purposes, much of the analysis is extended beyond Oklahoma to include the sixteen largest oil and gas-producing states.

V. Tax Contribution - Production View

This section of the report focuses on the 'production' view of oil and gas taxation. Estimates of the combined effective severance and ad valorem tax rates are provided for the sixteen largest oil and gas-producing states, including Oklahoma.

The recent increase in severance tax rates in Oklahoma is discussed along with changes in total severance tax payments though FY2018, the most recently completed fiscal year, and Oklahoma Tax Commission (OTC) forecasts for FY2019.

Effective tax rates are calculated first for severance taxes and then for ad valorem taxes in the sixteen largest producing states. The individual rates are then combined to form a measure of the combined effective severance and ad valorem tax rate for each state.

The section concludes by examining a widely cited report produced for the state of Idaho evaluating the level of production taxes in Oklahoma and eight other states.

Recent Gross Production Tax Legislation

Gross production tax rates in Oklahoma increased in 2018 under House Bill 1010XX. Beginning July 1, 2018, production of crude oil and natural gas from all new wells and all existing wells taxed at the previous 2% rate will be taxed at a new 5% rate for the first 36 months of production. All wells revert to a 7% rate after 36 months of production. No general oil and gas production incentives remain available to Oklahoma producers.

OTC Forecast. The new 5% severance tax rate will lead to a substantial increase in state severance tax collections. Fiscal projections by the OTC suggest that total gross production revenue will reach $907 million in FY2019 (see Figure 10). The tax rate change was projected to raise at least $170 million annually in new severance tax revenue. These estimates include both severance taxes and the 0.095% petroleum excise tax levied by the state.

Figure 10. Oklahoma Severance Tax Revenue Projections by Tax Rate (FY2019)

Tax Rate	Crude Oil		Natural Gas		Total	
	Amount	Share	Amount	Share	Amount	Share
1%	0	0.0%	0	0.0%		0.0%
2%	79,493,000	16.6%	56,897,000	13.3%	136,390,000	15.0%
5%	99,365,000	20.7%	71,120,000	16.7%	170,485,000	18.8%
7%	301,409,000	62.8%	298,711,000	70.0%	600,120,000	66.2%
Total	$480,267,000	100.0%	$426,728,000	100.0%	$906,995,000	100.0%

Source: Oklahoma Tax Commission. State of Oklahoma FY19 Gross Production Forecast Reflecting HB 1010 XX Estimated Impact. Petroleum excise tax payments of 0.095% are included in the projections.

Lag in Reporting at 2% Rate. OTC estimates suggest that fully 85% of FY2019 severance tax payments will be made at either the current 7% rate or the new 5% rate in FY2019. Two-thirds of total severance tax in FY2019 will be made at the 7% rate. Less than 20% will be received at the new 5% tax rate.

Following the tax rate rise, 15% ($136.4 million) of total oil and gas severance tax in Oklahoma will still be paid at the 2% rate in FY2019 (see Figure 10). These 2% receipts

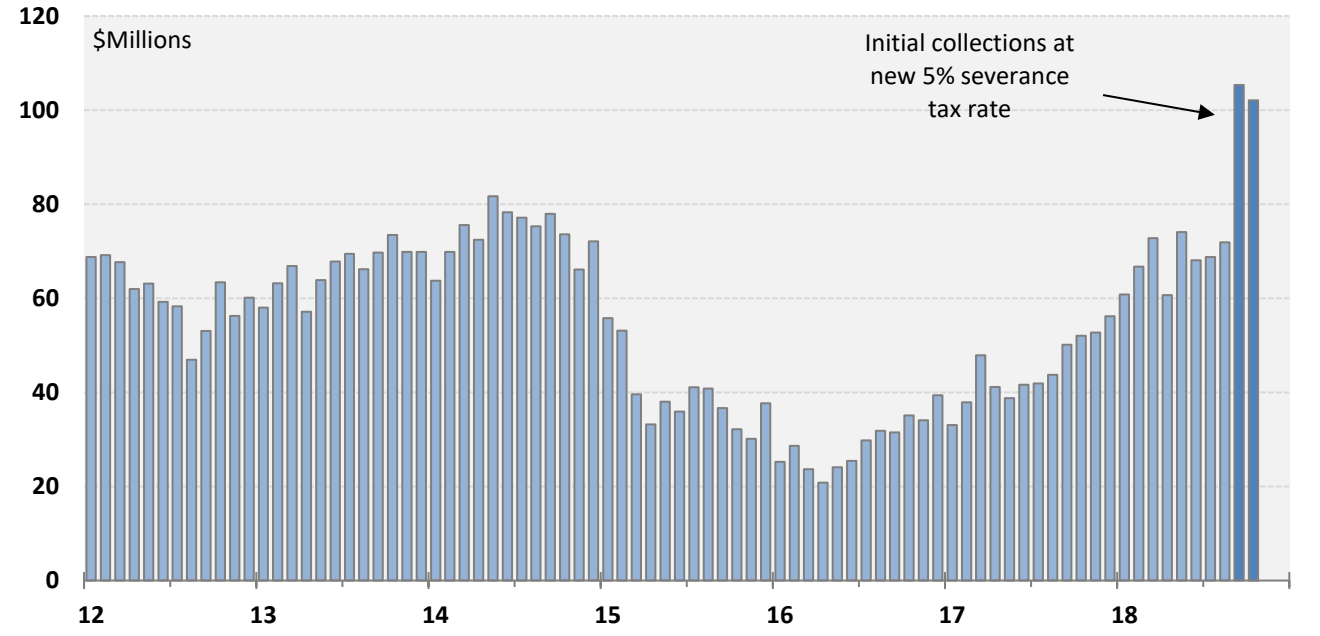
reflect the reporting and payment lag extending from the month of production to month of tax payment. Payments at the 2% rate will occur in the first few months of FY2019, but none are expected after the first three months of the fiscal year.

The lag in payments at the new 5% rate also leads to an understatement of the new trend rate of annual severance tax revenue that will be collected at the new rate. If the expected 15% share of total FY2019 production taxed at 2% was instead taxed at the new 5% rate, annualized total severance tax collections would reach $1.12 billion in the current fiscal year. This represents the best estimate of the new annual trend rate of severance taxes paid by the industry at the new tax rate given current energy prices and production levels.

Bounce in Revenue Underway. FY2019 gross production receipts are likely to far exceed the OTC forecast of $907 million. The projection is based on a conservative price outlook of $53.08 per barrel of oil that is well below market prices during the first half of the current fiscal year. The outlook also assumes a price of $2.99 per mcf for natural gas that is well below current market prices. In assessing the likelihood that OTC tax revenue forecasts are realized, the combination of strong growth in state crude oil and natural gas production and unexpectedly high prices for crude oil and natural gas in recent months suggest that gross production taxes should easily exceed $1.0 billion in FY2019.

Recent monthly severance tax receipts highlight the expected effect of the new 5% tax rate. Figure 11 illustrates the leading edge of the sharp rise underway in severance tax collections. Collections in September and October of 2018 capture payments received primarily at either 7% or the new 5% severance tax rate and averaged approximately $104 million per month. This pace equates to annualized collections of approximately $1.25 billion at current crude oil and natural gas prices.

Figure 11. Monthly Gross Production Tax Receipts – Oklahoma

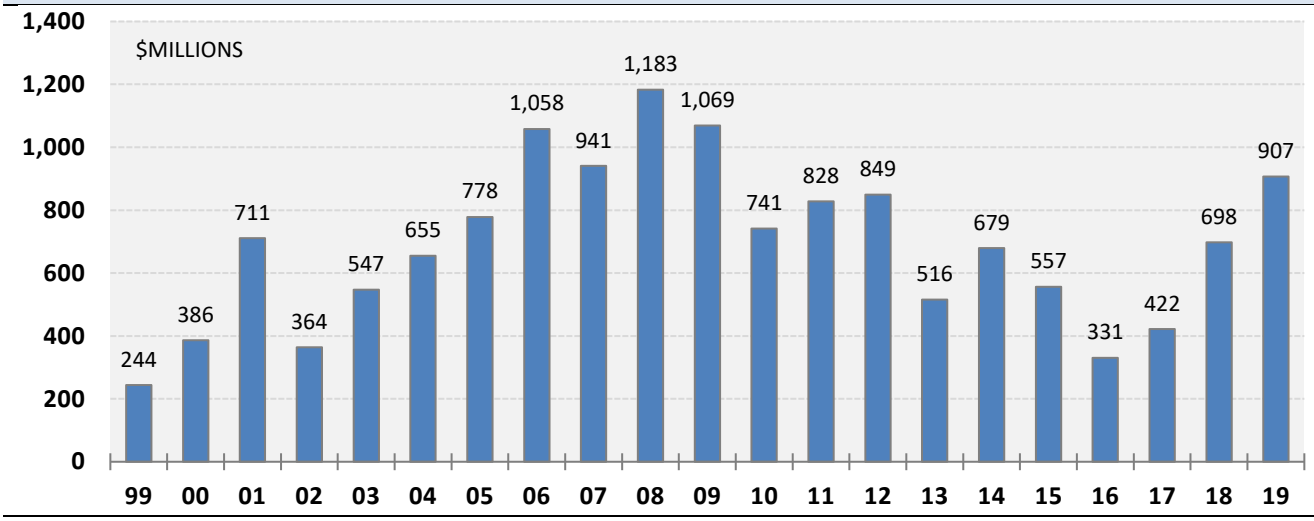


Source: Oklahoma Tax Commission online report: https://oktap.tax.ok.gov/OkTAP/Web/_/
Notes: Includes both severance taxes and the 0.095% petroleum excise tax.

Gross Production Revenue Responds to Rising Production, Prices, and Tax Rates

The state will post a third consecutive year of sharply rising gross production revenue in FY2019 (see Figure 12). Severance tax revenue bottomed at $331 million in FY2016 following the collapse in oil prices before more than doubling to nearly $700 million through FY2018, the most recently completed fiscal year. OTC projections suggest that gross production taxes will increase another 30% in FY2019 to $907 million. Gross production revenue continues to rise as a result of higher tax rates, increased production, and rebounding energy prices. This is the opposite set of circumstances faced by the state in FY2015 and FY2016.

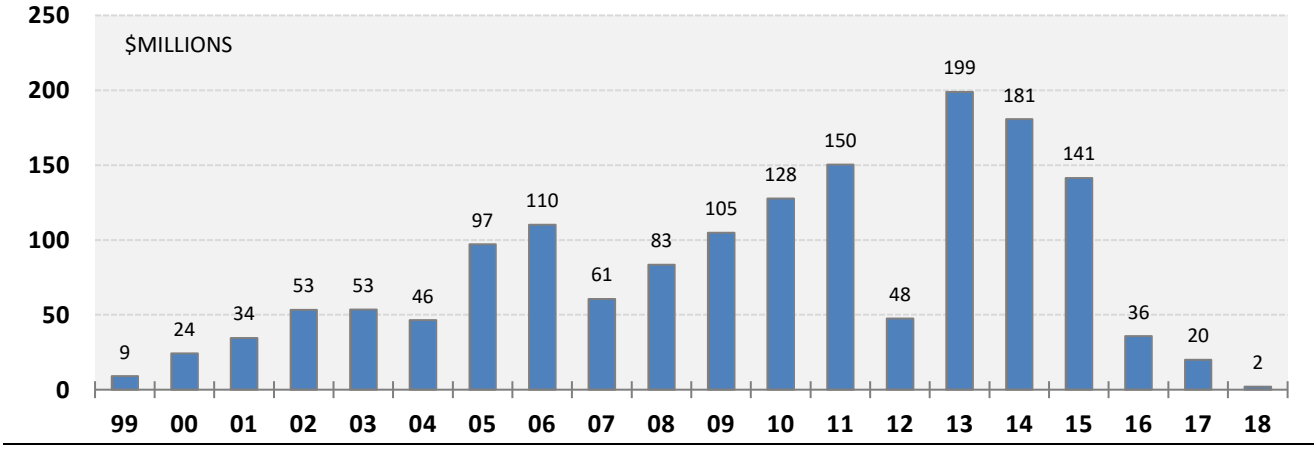
Figure 12. Net Oil and Gas Gross Production Tax Receipts – Oklahoma (Fiscal Year)



Source: Oklahoma Tax Commission document (*Gross Production Forecast FY-19 Reflecting HB 1010XX Impact*)
Notes: Includes both severance taxes and the 0.095% petroleum excise tax.

Refunds. Total gross production receipts in Figure 12 are stated net of refunds, including refunds tied to state tax incentives. Figure 13 details the payment of refunded severance taxes on an annual basis since FY1999. Refunds peaked in FY2013 at $199 million and have moved steadily to near zero in FY2018. Because refunds are typically paid in arrears, they are tracked in the tax year in which they are paid rather than the year of production.

Figure 13 Refunds of Oil and Gas Severance Taxes – Oklahoma (Fiscal Year)



Source: Oklahoma Tax Commission
Notes: Includes refunds of both oil and natural gas severance taxes.

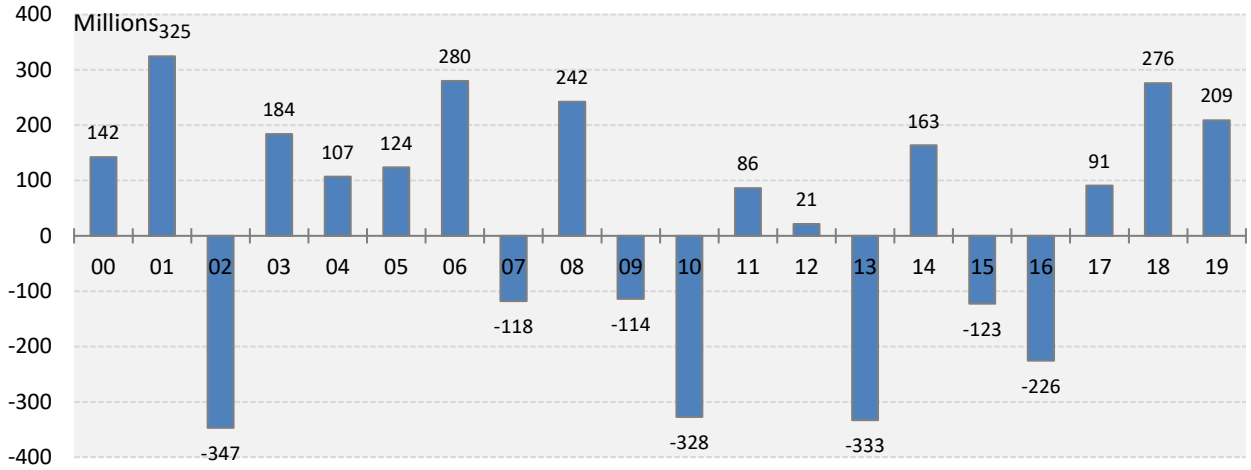
Severance Tax Gains - Tax Rate vs. Production Gains

The sharp increase in severance tax collections since the recent bottom in collections in FY2016 can be apportioned to either a change in the effective tax rate or a change in the taxable value of production. Annual changes in gross production taxes since 2000 are apportioned to changes in effective tax rates and changes in production value in Figure 14.

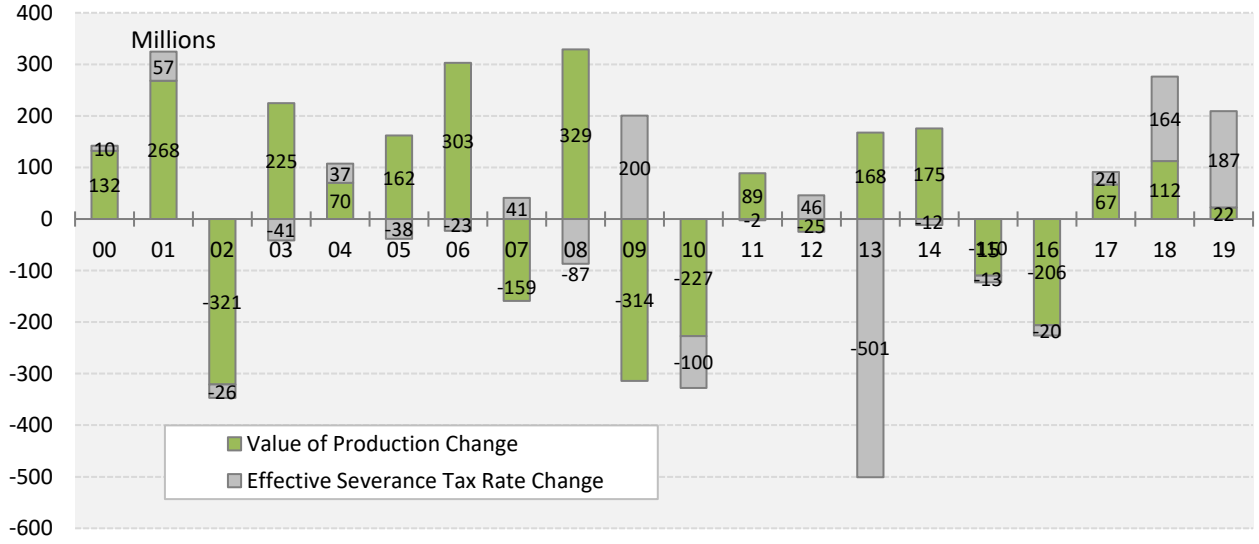
Most recently, of the cumulative $576 million projected rise in annual severance taxes from FY2016 to FY2019, two-thirds ($374 million) is attributed to a rise in the effective gross production tax rate while the remaining one-third ($202 million) is traced to increased production value of crude oil and natural gas. This is in sharp contrast to conditions from 2014 to 2016 when changes in severance tax collections were tied almost exclusively to production changes with little change resulting from tax rate changes.

Figure 14. Oklahoma Severance Tax – Source of Annual Changes (Fiscal Years)

(A) Annual Severance Tax Change



(B) Annual Change Apportioned to Production Value and Effective Tax Rate Changes



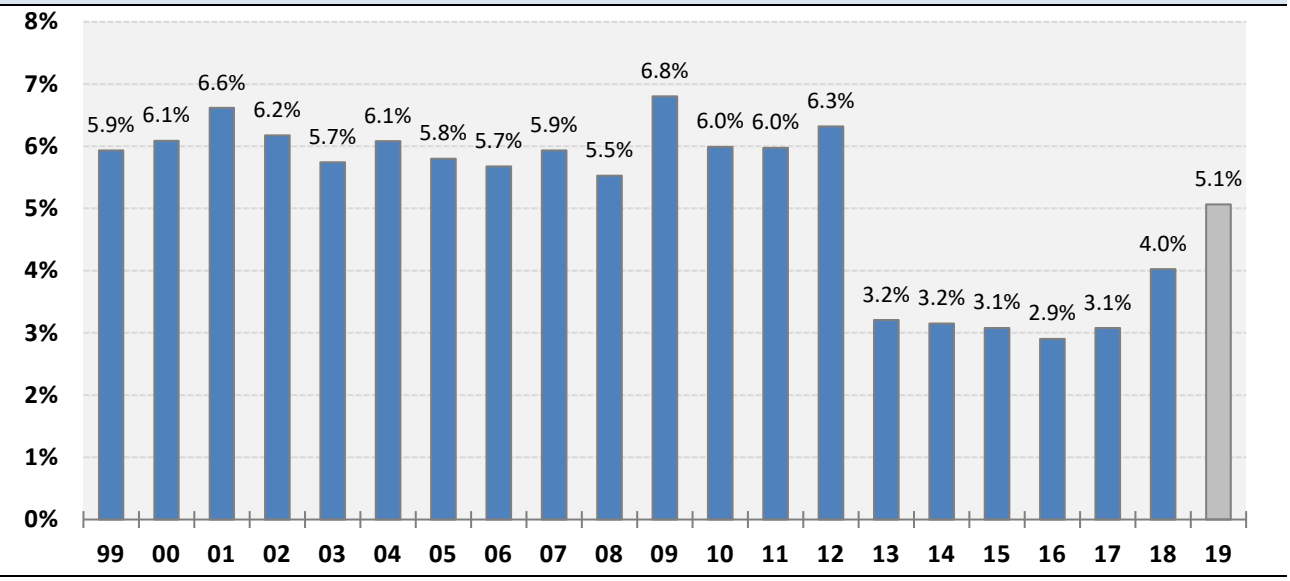
Source: Oklahoma Tax Commission and RegionTrack calculations

Effective Severance Tax Rate

Figure 15 provides updated historical effective severance tax rates for oil and gas production in Oklahoma from FY1999 through FY2018, along with a projection for the current fiscal year (FY2019) based on OTC estimates. See Appendix A for a detailed overview of the methodology used and data sources underlying the estimates.

Effective Rate Calculation. The effective rate is calculated as total gross production tax receipts (net of refunds) divided by the market value of crude oil and natural gas production. Production quantities of both crude oil and natural gas are based on Energy Information Administration (EIA) estimates. The price of crude oil is based on the state level series of first purchaser prices produced by EIA. The price of natural gas is based on the average spot price reported at major natural gas trading hubs across Oklahoma as provided by NGI.[6] The use of NGI spot prices reflects the general lack of standardized gas pricing data at the state level and widely different pricing methods followed by the producing states. All effective rate calculations are based on the state's fiscal year beginning July. The value of production is similarly tabulated on a matching fiscal year basis.

Figure 15. Effective Severance Tax Rate – Oklahoma (Fiscal Year)



Source: Oklahoma Tax Commission, Energy Information Administration, and RegionTrack calculations

Sharply Rising Effective Rates. The effective severance tax rate on production in Oklahoma has increased sharply from a recent low of 2.9% in FY2016 to 4.0% in FY2018. The effective rate is projected to increase again by more than a full percentage point in FY2019 as a result of the new 5% tax rate. Assuming flat state oil and gas production from FY2018 to FY2019, the effective tax rate is expected to reach 5.1% in FY2019.

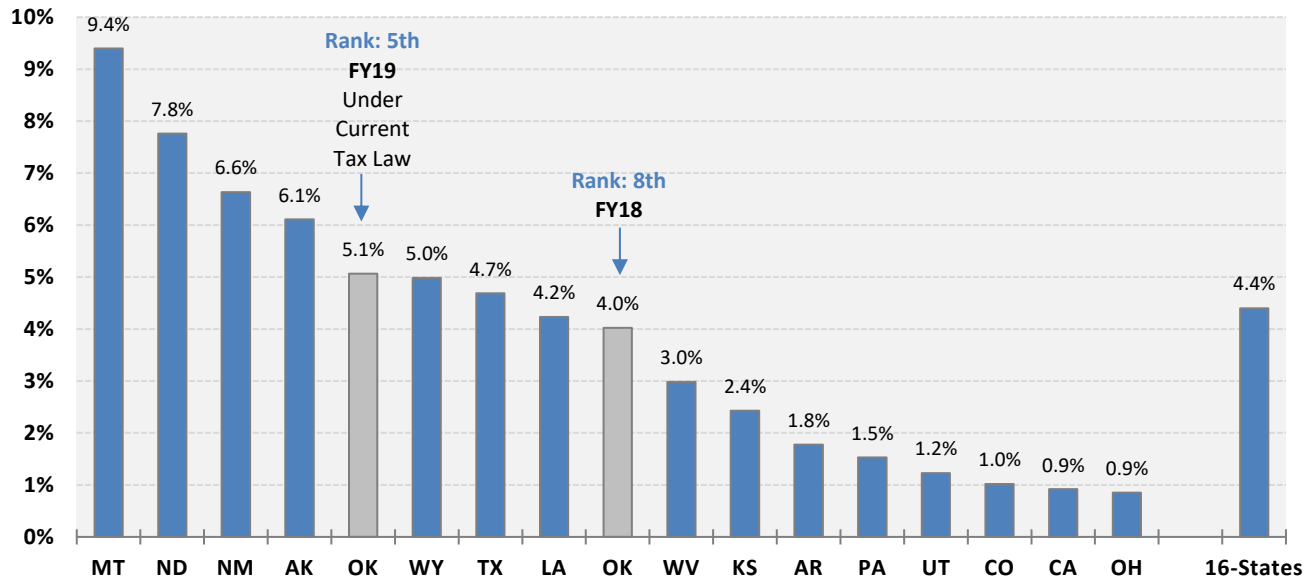
Effective rates in Oklahoma in FY2019 will approach the average rates in place over much of the past two decades. The estimated FY2019 rate is less than one percentage point below the 6.0% average rate in effect from FY1997 to FY2012 period. The effective rate is expected to approach 5.5% in FY2020 as all production moves out of the historical 2% production bracket.

Oklahoma Has 5th Highest Severance Tax Rate in FY2019

For a state-to-state comparison, updated effective severance tax rates for the sixteen largest producing states are detailed in Figure 16. Oklahoma's FY2018 effective rate of 4.0% ranks 8th among the sixteen states, slightly below the 16-state average of 4.4% in the period. Effective rate calculations for the sixteen states in the FY2012 to FY2018 period are detailed in Appendix A.

The new 5% severance tax rate in Oklahoma is expected to increase the state's effective rate to 5.1% in FY2019, ranking 5th among the sixteen largest producing states. The state would also move well above the overall average rate of 4.4% across the top producing states.

Figure 16. Effective Severance Tax Rate - 16 Largest Producing States (FY2018)



Source: Refer to Appendix A for estimation details and links to electronic sources.
*The 2018 estimate for AK is based on estimated production tax only. Pennsylvania assesses no severance tax but includes the state impact fee.
Notes: All data are stated on a fiscal year basis. The effective rate is calculated as total severance taxes divided by the total value of oil and gas production.

Montana (9.4%) and North Dakota (7.8%) currently have the highest effective severance tax rates. Montana has the highest effective rate but is the smallest producer, by far, among the sixteen states. North Dakota has the second highest effective rate and second highest value of output but allows no ad valorem taxes on oil and gas activity.

A second tier including large producers New Mexico (6.6%) and Alaska (6.1%) has effective rates above 6% in FY2018.

A third tier including Oklahoma, Wyoming, Texas, and Louisiana follows just behind this group with effective rates between 4% and 5%. Oklahoma's effective severance tax rate is expected to move from just below the rate in these states in FY2018 to just above them in FY2019.

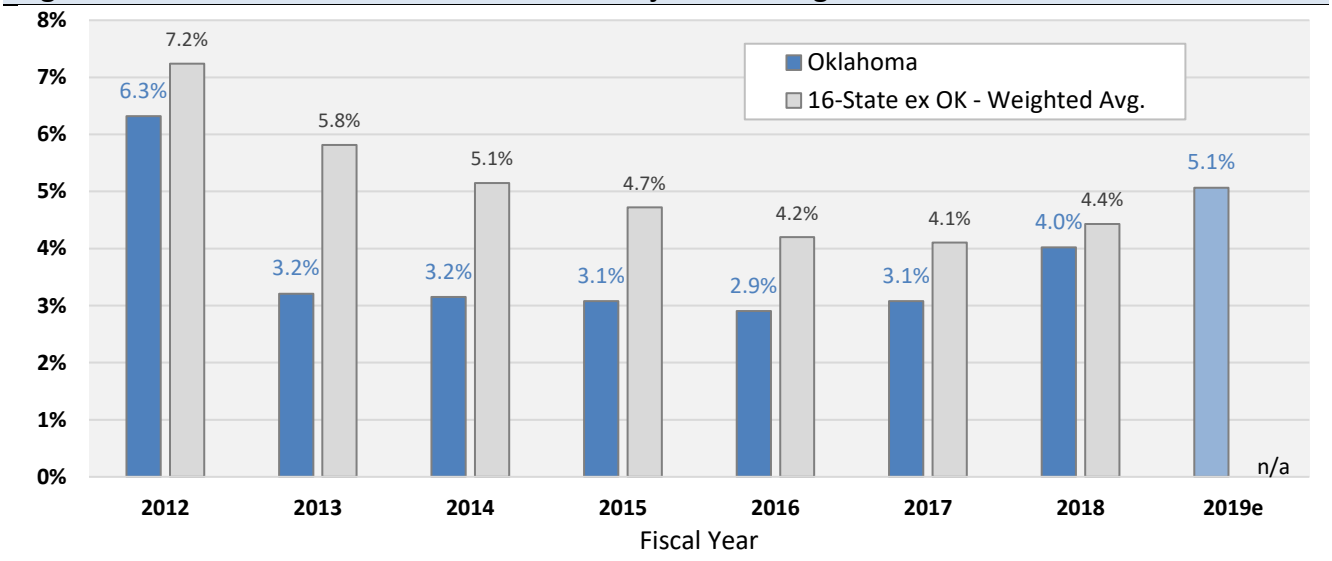
The eight lowest-rate states – West Virginia, Kansas, Arkansas, Pennsylvania, Utah, Colorado, California, and Ohio – all have effective severance tax rates of 3.0% or less in FY2018.

Four of the low-tax but major producing states – Colorado, Pennsylvania, California, and Ohio – assess minimal, or no, traditional severance-type production taxes. In these four states:

- Sixth-ranked producer Colorado's low effective severance tax rate is due to an offsetting credit based on ad valorem tax payments;
- Second-ranked gas producer Pennsylvania has no direct severance tax on production, however it's estimate does include the state's annual well impact fee;
- Major oil producer California also has no statewide severance tax on production, with its estimate based on the state's assessment fee of approximately 55 cents per barrel of oil and mcf of natural gas produced; and
- Emerging gas producer Ohio assesses only a fixed tax of 10 cents per barrel of oil and 2.5 cents per mcf of natural gas produced.

Severance Taxes Lower Across the Producing States. The average effective severance tax rate across the producing states has declined sharply in recent years. The downtrend in the average rate from 7.2% in FY2012 to a recent bottom of 4.1% in FY2017 has since rebounded slightly to 4.4% in FY2018 (see Figure 17). The recent rise largely reflects an increase in the effective rate in Alaska. Oklahoma's rate should exceed the overall average of the sixteen states by almost a full percentage point in FY2019.

Figure 17. Effective Severance Tax Rate – 16 Major Producing States



Source: Oklahoma Tax Commission and various state tax reporting agencies. Calculations by RegionTrack.
Notes: Sources available in electronic form are detailed in the notes to the report.

Effective Ad Valorem Tax Rate

While oil and gas reserves in the ground are exempt from ad valorem taxes in Oklahoma, substantial quantities of equipment used above ground are subject to ad valorem taxes.

Ad Valorem Tax Payments. The only statewide source of oil and gas property valuation data is a series of reports produced by the Oklahoma Tax Commission at two-year intervals. Valuations are currently available for the 2012, 2014, and 2016 tax years. Values for 2013 and 2015 are interpolated as the midpoint between the adjacent reported years.

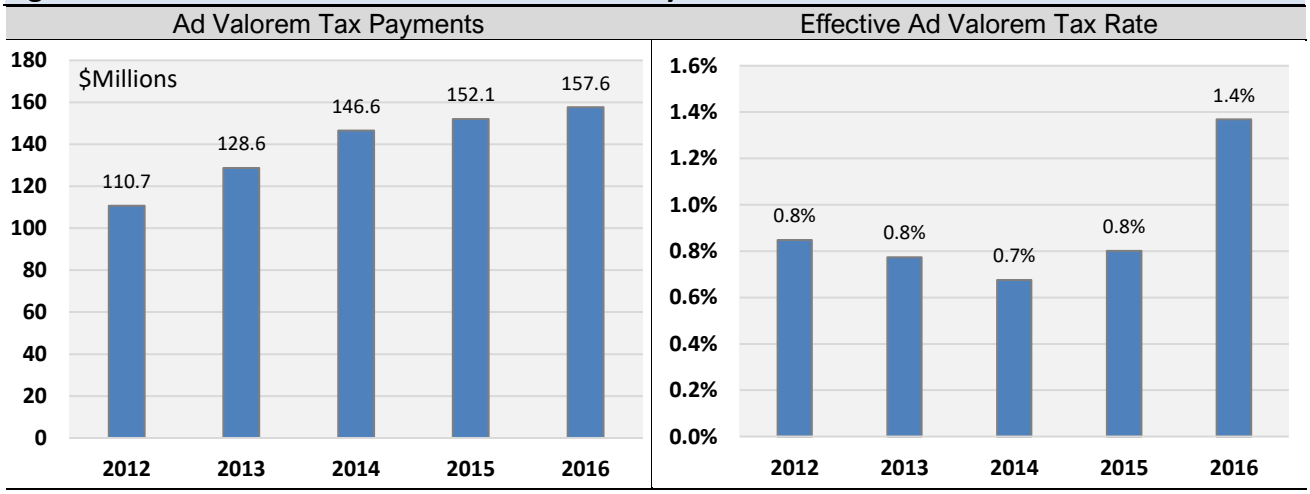
There is no standard approach available for determining the oil and gas-related assets that should be included in a calculation of the effective ad valorem tax rate on production in a given state. For Oklahoma, we use two categories of oil and gas-related equipment in the estimates – 1) Refineries, Gas Plants, Gathering, and Compression and 2) Other Oil, Gas, and Mining Property. Because refineries are part of the downstream oil and gas sector and are not strictly related to production, the value of major refineries in the four counties where they are present (Carter, Garvin, Kay, and Tulsa) is removed from the total. Centrally assessed transmission pipelines are excluded as well.

It is important to note that the totals also exclude the substantial amount of taxable property owned by oil and gas firms in the form of buildings, other structures, and business personal property. For example, Devon Tower in downtown Oklahoma City is assigned a depreciation-adjusted market value of approximately $500 million in FY2017. Accounting for this real property would produce substantially higher effective ad valorem tax rates for the industry but would overstate the share attributable to production.

Figure 18 illustrates annual Oklahoma property tax payments related to oil and gas production and effective ad valorem tax rates from FY2012 to FY2016. Payments totaled $157.6 million in FY2016, up 42% from $110.7 million in FY2012.

The state's effective ad valorem rate was 1.4% in FY2016 based on $157.6 million in property tax payments and $11.4 billion in oil and gas production value.

Figure 18. Oil and Gas-Related Ad Valorem Tax Payments and Effective Rate - Oklahoma



Source: Oklahoma Tax Commission and RegionTrack calculations.
Notes: Oklahoma levies a severance tax in lieu of ad valorem tax on production. All data are for fiscal years. Payments in 2013 and 2015 are interpolated as the midpoint between adjacent years. The effective rate is calculated as ad valorem tax payments divided by the total value of oil and gas production.

Over the FY2012 to FY2015 period, property taxes averaged slightly less than 1% of production value. The effective rate increased sharply in FY2016 because of both higher tax payments and falling production value.

State-Level Ad Valorem Comparison. Figure 19 details updated estimates of the effective ad valorem tax rate for the sixteen largest producing states. Ad valorem taxes are levied on a mix of production, reserves, and business personal property across the states. The estimates are

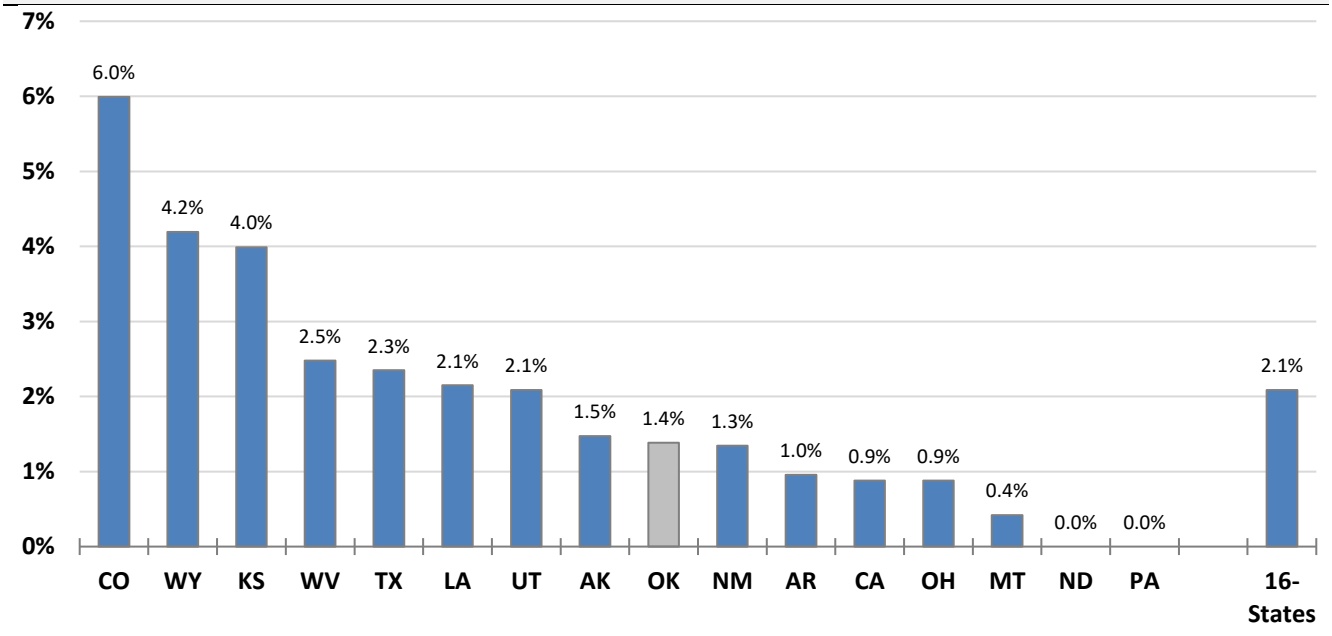
derived from the measure of oil and gas property as determined within each state. See Appendix A for a description of the methodology used and a detailed list of data sources.

The most recent year for which ad valorem taxes on oil and gas activity are generally available across most states remains either FY2016 or FY2017.[7] The estimates are based on the most recently available year for each state, with production value matched to the year of the ad valorem data. States using FY2017 data include Alaska, California, Kansas, Louisiana, Montana, New Mexico, Utah, West Virginia, and Wyoming. States with FY2016 data include Colorado, Oklahoma, and Texas. Estimates for Arkansas and Ohio are based on FY2015 data.[8] North Dakota and Pennsylvania levy no ad valorem taxes on oil and gas-related property.

Oklahoma's 1.4% effective ad valorem tax rate ranks 9th among the 16 major producing states (see Figure 19). The state's rate is 0.7% below the 2.1% average across the sixteen largest producing states.

Again, Oklahoma's limited reliance on oil and gas ad valorem taxes is due to the state's mandate that severance taxes on production be levied in lieu of local property taxes on reserve value and production equipment. Nevertheless, substantial ad valorem taxes are still levied at the local level on the value of personal property used in exploration and production of oil and natural gas, including drilling rigs and gathering systems.

Figure 19. Effective Ad Valorem Tax Rate – 16 Largest Producing States



Notes: Data are collected from various state reporting agency. Sources available in electronic form are detailed in the notes to the report. Estimates reflect the most recently available fiscal year. States using FY2017 data include Alaska, California, Kansas, Louisiana, Montana, New Mexico, Utah, West Virginia, and Wyoming. States with FY2016 data include Colorado, Oklahoma, and Texas. Estimates for Arkansas and Ohio are based on FY2015 data. North Dakota and Pennsylvania levy no ad valorem taxes on oil and gas-related property.

Colorado's 6.0% effective ad valorem rate is the highest among the group, but the state generally allows the offset of most severance taxes with ad valorem tax payments.

A second tier of states includes Wyoming and Kansas with effective ad valorem tax rates of approximately 4% of production. Wyoming levies relatively high severance taxes, while Kansas has relatively low severance taxes.

Four additional states - West Virginia, Texas, Louisiana, and Utah – form a fourth tier and have effective ad valorem rates in the 2.0-2.5% range. All but Utah are also middle- to low-tier severance tax states.

A fourth tier including Alaska, Oklahoma, New Mexico, and Arkansas has relatively low ad valorem rates in the 1.0-1.5% range.

California, Ohio, and Montana have very low effective ad valorem tax rates below 1%. Along with low ad valorem taxes in these states, California has no statewide severance tax and Ohio has very low effective severance taxes. Montana has the lowest ad valorem tax rate among the states that levy the tax but has the highest severance tax rate among the sixteen states.

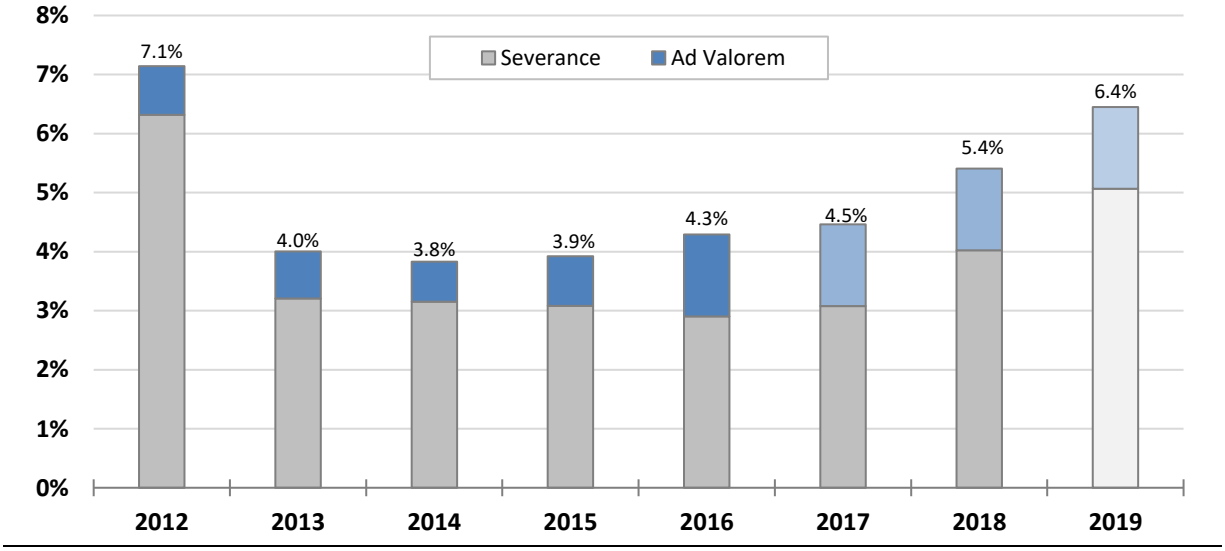
Large producers North Dakota and Pennsylvania levy no direct ad valorem taxes on oil and gas activity. North Dakota has no ad valorem tax but levies among the highest severance taxes. Pennsylvania has no severance tax or ad valorem tax – only a state impact fee.

Combined Ad Valorem and Severance Tax Rate

The recent increase in severance tax rates has also pushed up Oklahoma's combined effective severance and ad valorem tax rate from a recent low of 3.8% in FY2014 to 5.4% in the recently completed 2018 fiscal year (see Figure 20).

The combined rate is projected to rise another full percentage point to 6.4% in FY2019 as the effective severance tax component rises to 5.1%.

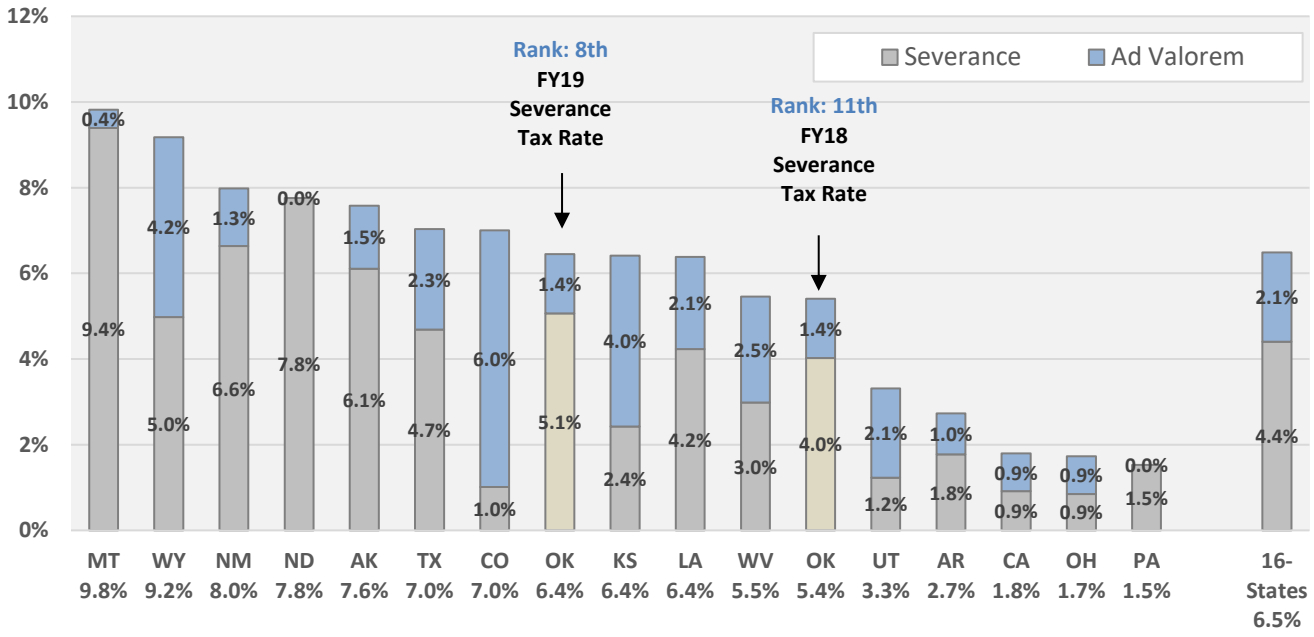
Figure 20. Combined Severance & Ad Valorem Effective Tax Rate – Oklahoma



Source: Oklahoma Tax Commission, Energy Information Administration, and RegionTrack calculations.
Notes: The combined effective ad valorem tax rate in FY2017, FY2018, and FY2019 are based on the effective ad valorem rate for FY2016, the most recently avaiable data. Severance tax receipts used in FY2019 are estimates from the Oklahoma Tax Commission. Value of crude oil and natural is calcluated as the total market value of crude oil and natural gas production on a fiscal year basis. The effective rate is calculated as the sum of the effective severance tax rate and effective ad valorem tax rate.

Largest Producing States. Figure 21 provides updated estimates of the combined effective severance and ad valorem tax rate for each of the sixteen largest producing states. The estimates are derived by summing estimates for the effective severance tax rate (see Figure 16) and effective ad valorem tax rate (see Figure 19) in each state as detailed in prior sections of the report.

Figure 21. Combined Effective Severance & Ad Valorem Tax Rates



Notes: Estimates reflect the sum of the effective rate estimates for each state shown in Figures 16 and 19.

Oklahoma's combined effective rate of 5.4% based on the old FY2018 severance tax rate ranks 11th among the 16 largest producing states. The combined effective rate is projected to rise to 6.4% in in the current fiscal year (FY2019) following the recent severance tax rate increase to 5%, pushing the state's rank to 8th among the sixteen largest producing states.

Montana and Wyoming have combined effective rates above 9%. Montana levies primarily severance taxes while Wyoming has relatively high severance and ad valorem taxes.

New Mexico, North Dakota, Alaska, Texas, and Colorado have effective rates between 7.0% and 8.0%. Texas has relatively high rates for both severance and ad valorem taxes, while New Mexico, North Dakota, and Alaska assess high severance taxes and little or no ad valorem taxes. Conversely, Colorado assesses primarily ad valorem taxes.

Oklahoma (under the new 5% tax rate), Kansas, and Louisiana have combined effective rates in the 6.0-7.0% range. Oklahoma assesses primarily severance taxes, while Kansas and Louisiana levy a more balanced mix of both taxes.

Oklahoma (under the old FY2018 tax rate) and six other states - West Virginia (5.5%), Utah (3.3%), Arkansas (2.7%), California (1.8%), Ohio (1.7%), and Pennsylvania (1.5%) - have a combined effective tax rate below 6%.

Relative to the other top producing states:

- Oklahoma's FY2019 combined rate of 6.4% in FY2019 will be approximately equal to the 6.5% average combined rate across the major producing states.
- Oklahoma's FY2019 combined rate will rank 8th and be roughly equal to the combined rate levied by traditional producers Texas, Colorado, Louisiana, and Kansas.
- Oklahoma's combined rate will remain 0.6% below dominant-producer Texas but will have a higher effective severance tax rate coupled with a lower effective ad valorem tax rate (as mandated by law).
- Relative to the legacy oil-producing states of Alaska and California, the combined FY2019 rate in Oklahoma falls 1.3% below Alaska but 4.6% above the rate in California.
- Relative to the new emerging natural gas producing states of Pennsylvania and Ohio, Oklahoma's combined effective rate in FY2019 will be 4-5 percentage points higher.

Idaho Report on Production Taxation

Proponents of higher severance taxes[9] in Oklahoma routinely refer to a 2017 report commissioned by the state of Idaho assessing the combined severance and ad valorem tax rate in Idaho. The report evaluated Idaho's effective rate in FY2016 relative to eight other producing states - Utah, Texas, North Dakota, Montana, Alaska, Louisiana, Wyoming, and Oklahoma.[10]

The report suggests a 3.2% effective severance tax rate and 0% effective ad valorem tax rate for Oklahoma in FY2016. The combined effective rate of 3.2% for Oklahoma is cited in the report as the lowest effective tax rate among the nine states reviewed.

This finding has been widely reported as evidence of preferential tax treatment for Oklahoma oil and gas producers. For example, advocates of higher severance tax rates refer to the report as evidence that "Oklahoma's tax rate on oil and gas is the lowest of any major oil and gas producing state…"[11]

The concern for state policymakers is that the report has several data and methodological issues that render it largely irrelevant for assessing Oklahoma oil and gas taxation. For the benefit of state policymakers, we provide a detailed evaluation of the overall report including the underlying data, the influence of the set of states used in the analysis, and the conclusions drawn regarding Oklahoma.

Idaho Report Concerns. There are four primary concerns with the Idaho report that warrant extended review and discussion:

1. **Oklahoma's effective severance and ad valorem tax rate is understated**

The report understates the state's effective production tax rate by not including ad valorem taxes paid by the industry on taxable oil and gas personal property such as drilling rigs and gathering systems in Oklahoma. Oklahoma levies a severance tax in lieu of ad valorem taxes on the value of reserves but still taxes significant amounts of oil and gas-related commercial personal property. Much like Louisiana, where production is exempt from ad valorem taxes, this type of ad valorem tax revenue was included in the Louisiana calculation but not in the Oklahoma estimate. This is important because ad valorem taxes paid directly by the industry on oil and gas-related commercial personal property in Oklahoma totaled a reported $157.6 million in FY2016.[12] A similar 2012 report[13] by the Idaho report author attributed only $11.5 million in ad valorem taxes to oil and gas in Oklahoma in FY2010. Making this simple adjustment raises the state's combined effective rate from 3.2% to 4.7% in FY2016.

2. Nearly all low-tax states are excluded from the comparison

The relative ranking of Oklahoma in the report is grossly distorted by the sample of states chosen for comparison. The report excluded eight of the sixteen largest producing states, nearly all of which are relatively low-tax states. The excluded states (along with their current rank by FY2018 production value) include Pennsylvania (4th), Colorado (6th), California (7th), Ohio (11th), West Virginia (12th), Kansas (14th), and Arkansas (15th). These states are all generally viewed as low-tax states and are overwhelmingly among the low-tax group shown in Figure 21 above. Oklahoma typically has a similar or higher combined effective rate than all these states over time.

The report provides much less than an adequate sample of large and small producing states. Six of the twelve largest by production value are excluded. Of these states, New Mexico is the only medium-tax rate state with an effective rate above Oklahoma. We see no other common theme among the excluded states other than a generally low effective tax rate. The exclusion of low-tax states is also not a direct result of the research path set out in the report of examining tax rates in the oil-producing states. Among the excluded states are four large traditional oil producers - California, Colorado, New Mexico, and Kansas. California was the only low-tax state included in the 2012 report by the same author comparing North Dakota to seven other states but was dropped in the 2017 report. California had a reported 2.5% effective rate, far lower than in Oklahoma and roughly equal to our finding in Figure 21. Utah, with historically low production taxes, was excluded from the 2012 report.

Low-tax states were also excluded from among the small producing states used for the comparison with small producer Idaho in the report. The very small producing states of Utah (13th) and Montana (16th) were included, with Montana generally viewed as a high tax state but Utah a relatively low-tax state. However, the small producing states of West Virginia (12th), Kansas (14th), and Arkansas (15th) were excluded, and all are historically viewed as low-tax states.

Idaho's evaluation, the core purpose of the study, is also distorted by the sample chosen. Idaho is a very small producing state with total output of only about 91,000 barrels of oil and 4 million mcf of natural gas in calendar year 2017 as reported by EIA. Its 4% effective rate is reported as lower than all states in the analysis other than

Oklahoma. Idaho's rank changes, however, after correcting Oklahoma's ad valorem tax rate, which gives Idaho the lowest effective rate in the group. But this bottom ranking for Idaho is primarily a result of the sample of states used. When using the sixteen largest producing states, Idaho's reported 4.0% rate falls well below Oklahoma's 5.3% rate but is higher than the effective rate in Utah, Arkansas, California, Ohio, and Pennsylvania (see Figure 21).

In short, the combination of failing to capture ad valorem tax payments in Oklahoma and overweighting the sample with high-tax states preordained Oklahoma's poor showing in the comparative rankings.

3. The effective rate in two other comparison states is overstated

Estimates for some of the other comparison states are overstated. While the effective rate estimates in the Idaho report are mostly consistent with our estimates in Figure 21, we find that the effective rates for both Utah and Alaska in FY2016 are far lower than reported in the Idaho study. These issues further distort Oklahoma's ranking and limit the usefulness of the Idaho report.

Utah is historically a relatively low-tax state but is assigned a 6.1% effective combined rate in the report. The primary issue is that the estimate used for severance taxes is far higher than reported by the state of Utah. Our estimate of combined severance and ad valorem tax revenue for Utah in FY2016 is 26% lower than the reported amount ($73.19 million vs. $98.98 million).[14] This one adjustment drops the effective rate in Utah to 4.5%, which falls below the corrected rate of 4.7% in Oklahoma. This discrepancy is possibly due to the use of estimates for FY2016 that were later revised. Our own FY2018 estimate for Utah is based upon current budgetary estimates and will require revision when final data is released.

Reported data for Alaska also far overstates the combined rate. Alaska underwent a collapse in severance taxes in FY2016 that pushed collections far lower than reported in the Idaho report. Our count of combined severance and ad valorem tax revenue for Alaska is approximately $300 million less than the estimate in the report. Severance taxes are approximately $108 million lower than we find ($136.8 million vs. $244.13 million) while ad valorem taxes in the report are more than $400 million higher than we document ($517.0 million vs. $111.74 million).[15] After adjusting tax payments downward for this net difference, the effective rate in Alaska is only 5.5% in FY2016, not 12.0% as reported, and only slightly higher than the corrected 4.7% rate in Oklahoma. It is also approximately equal to Oklahoma's latest FY2018 rate and falls below the state's projected FY2019 rate. Alaska is traditionally among the highest severance tax rate states, but this correction illustrates the effect of both data irregularities and the tremendous volatility over time in the effective rate calculations for any individual state.

The data discrepancy for Alaska is also possibly due to the use of estimates that are subject to substantial revision. Nevertheless, both of these data corrections lead to a

substantially different view of Oklahoma as an extreme outlier having the lowest production tax rate among the states in the report.

4. **The report focuses on a single year of data (FY2016) that occurs at the bottom of the production cycle and at the bottom of the tax cycle in Oklahoma**

   The single year of data chosen does not adequately capture the year-to-year volatility in effective tax rates across the states. FY2016 is the most volatile year in recent history in terms of year-to-year changes in effective rates and represents the bottom in the cycle of production value in most states.

   Alaska's experience is one example of this concern. Oklahoma's rapid rise in the effective rate since FY2016 after a tax rate increase is yet another. Continued use of the Idaho report by proponents of higher severance taxes in Oklahoma ignores the significant effect of both the data issues in the Idaho study and the recent sharp rise in effective tax rates in Oklahoma.

   Beyond tax rate changes in Oklahoma, using a single year also fails to capture the generally declining trend in effective severance tax rates across all the producing states in recent years.

In short, data irregularities and the selective sample of states used in the Idaho report greatly limit any usefulness it might otherwise have for evaluating oil and gas tax policy in Oklahoma. The recent sharp increase in the effective severance tax rate in Oklahoma further renders the report irrelevant for current tax policy evaluations in the state.

Issues in Calculating Effective Rates. We are in no way minimizing the challenges faced in forming effective production tax rate estimates across many states. As the Idaho report clearly implies, state-to-state comparisons of effective severance and ad valorem tax rates are extremely difficult to make. We agree with this assessment. Numerous assumptions are necessary, and challenges related to the underlying source datasets for both production value and tax payments are many. Some of the more notable data issues include the following:

- tax receipts and production volumes are frequently revised;
- tax payments are often released with long lags after production;
- the tax system within many states produces differing effective tax rates at high versus low energy prices;
- estimates of tax receipts must be used for recent fiscal year(s) in some states;
- monthly production cannot be matched to the monthly receipt of severance tax revenue in most states
- oil and gas tax law changes occur regularly across the producing states;
- differing measures of severance tax receipts are reported across states;
- tax estimates can reflect differing accounting periods;
- ad valorem payments traced to oil and gas are defined inconsistently across states;

- some states provide no published estimates of statewide oil and gas-related taxes;
- state-level natural gas prices are highly uncertain;
- not all crude oil and natural gas production is reported by state agencies (particularly in Oklahoma);
- some states use biennial accounting procedures (North Dakota and Wyoming), making fiscal year analysis challenging;
- tax payments can be subject to state tax law changes and audit corrections in arrears; and
- state oil and gas and taxing authorities have differing abilities, resources, and willingness to respond to external data requests.

It is doubtful that we have successfully eliminated all possible concerns over these issues in our current estimates of combined effective rates in Figure 21. Revisions to the data alone will generally render our own, and all other, state-level estimates out-of-date on a year-to-year basis.

These issues illustrate why it is important to work toward a much more relevant evaluation of Oklahoma oil and gas taxation than provided by the Idaho report by taking these additional steps in our estimates:

1. Using a broad group of producing states as a comparison group;
2. Using multiple years of severance tax data to account for changing tax rates and the effect of changing energy prices on tax collections and production value;
3. Evaluating the effective rate over multiple years to account for year-to-year volatility;
4. Using a standardized approach to calculating production value of oil and natural gas; and
5. Using market prices for natural gas to better estimate the production value of natural gas output.

Production View of Oklahoma Oil and Gas Taxation. Our conclusions from the 'production' view of the tax contribution of oil and gas in Oklahoma are far different than suggested by the Idaho study. Using a broader comparison group including the top sixteen producing states and updating the effective rate estimates to the most recent vintage of data, relevant policy conclusions include the following:

1. Oklahoma's combined effective severance and ad valorem tax rate is far higher than suggested in the Idaho study, both when the study was released and currently;
2. The combined effective tax rate in Oklahoma has increased sharply since FY2016, reaching 5.4% in FY2018;
3. Oklahoma's combined effective rate should reach an estimated 6.4% in FY2019, the state's current fiscal year;
4. The effective severance tax rate will likely approach 7% in FY2020 when all production moves out of the 2% rate bracket;
5. The relative ranking of Oklahoma's effective rate is highly sensitive to the sample of producing states chosen for comparison;

6. Relative to the sixteen largest producing states, Oklahoma's FY2018 rate of 5.4% ranks 11th;
7. After the recent severance tax rate increase, the state's expected FY2019 effective rate of 6.4% would rank 8th;
8. Oklahoma's FY2019 overall ranking is a combination of a relatively high severance tax rate (5th) and a low ad valorem tax rate under state law (9th).

VI. Tax Contribution - Corporate View

Oklahoma currently ranks among the middle of the pack based on updated effective severance and ad valorem tax rates (see Figure 21). After the recent severance tax rate increase, the state's expected FY2019 effective severance and ad valorem tax rate of 6.4% would rank 8th among the sixteen largest producing states.

For state policymakers, however, this 'production' view of oil and gas taxes provides only limited information about the overall business tax contribution of firms comprising the state's oil and gas industry.

This section of the report extends the 'production' tax view in the prior section to a broader 'corporate' tax view of business taxation. Relatively little is known about the broader tax contribution of oil and gas firms across the producing states. Direct estimates of all state taxes paid directly by firms in the oil and gas sector are generally not available and cannot be tabulated by tax authorities in Oklahoma or other energy-producing states. When attempted, tax incidence studies of this nature tend to examine only a few major tax sources where industry-specific data is easily and reliably identifiable. Other efforts to assess the tax contribution of a given industry rely on widely-used economic models to provide broad evidence of the tax contribution of an industry.

In this section of the report, we evaluate the tax contribution of the oil and gas sector using tax estimates from the Bureau of Economic Analysis (BEA) dataset which underlies most commonly used regional economic models (e.g. IMPLAN and REMI models). The BEA dataset is described in the following sections and used to form estimates of the total business tax contribution of oil and gas firms in Oklahoma and other major producing states.

Data on Business Taxes

The BEA data collection program for Gross Domestic Product (GDP)[16] at the state level provides the most widely used comparative measure of federal, state, and local business taxes paid by industry sector within each state.[17] The BEA dataset provides a comprehensive and consistent tabulation of business taxes paid by firms in 81 NAICS industry sectors at the state level.

The BEA dataset is especially useful for the purposes of this report in calculating the 'corporate' tax contribution of firms within an industry because it captures all federal, state, and local taxes paid by firms that are deductible for tax purposes. As a result, the dataset captures nearly all taxes paid except corporate income taxes and employer social security contributions.[18]

Although not broken down into detail by individual type of tax, the dataset is unique in that it divides total state tax payments into the industry sectors making the payments. The data is of further value for our purposes because approximately 90% of the taxes are paid to state and local governments, with only about 10% going to federal government (primarily excise taxes and custom duties). A comprehensive set of state and local taxes are covered including sales and use taxes, motor fuel, property, severance, motor vehicle, state payroll, and others.

Most of the underlying tax estimates are built 'bottom-up' using either special tabulations at the state level, government finance data from the Census Bureau, or IRS tax receipts. The series also nets out any subsidies received by the industry. Totals are controlled to Census Bureau estimates for state and local tax payments received within each state to adjust for payments made within each state.

It is important to note that the BEA dataset captures taxes paid by business establishments and excludes tax payments by households on the compensation of wage and salary workers. Taxes paid on self-employment or proprietors' earnings are likewise excluded. This results in no overlap with estimates of the 'industry' tax contributions in later sections of the report.

Oklahoma Oil and Gas Business Taxes

BEA tax estimates are first adjusted to isolate the oil and gas industry within the mining sector by including only NAICS 211 (Oil and gas extraction) and the oil and gas-related share of NAICS 213 (Support activities for mining). NAICS 212, which excludes all mining other than oil and gas, is excluded from the analysis. The share of NAICS 213 is determined by the ratio of NAICS 211/(NAICS 211 + NAICS 212).[19]

Based on the BEA dataset, Oklahoma establishments in the oil and gas sector paid a total of $2.43 billion in business taxes in 2016, the most recent year available (see Panel A of Figure 22). Again, state and local taxes comprise most of the payments with federal payments only a small share. The $2.43 billion in taxes paid in 2016 is well below the recent peak of $3.01 billion in 2013 but is representative of the $2.53 billion average across the latest decade from 2007 to 2016.

The reemergence of the oil and gas sector beginning in 2003 is highly visible in the tax data. Total business tax payments from oil and gas establishments in Oklahoma tripled from less than $1 billion annually in 2003 to the recent peak of $3.0 billion in 2013.

Oil and Gas Pays a High Share of Total Oklahoma Business Taxes

BEA reports a total of $11.47 billion in total business taxes paid by all firms across all industries in Oklahoma in 2016. This suggests that tax payments by the oil and gas industry accounted for 21.2% of total business taxes paid by all firms statewide in 2016. This is roughly double the industry's 10% share of total state GDP.

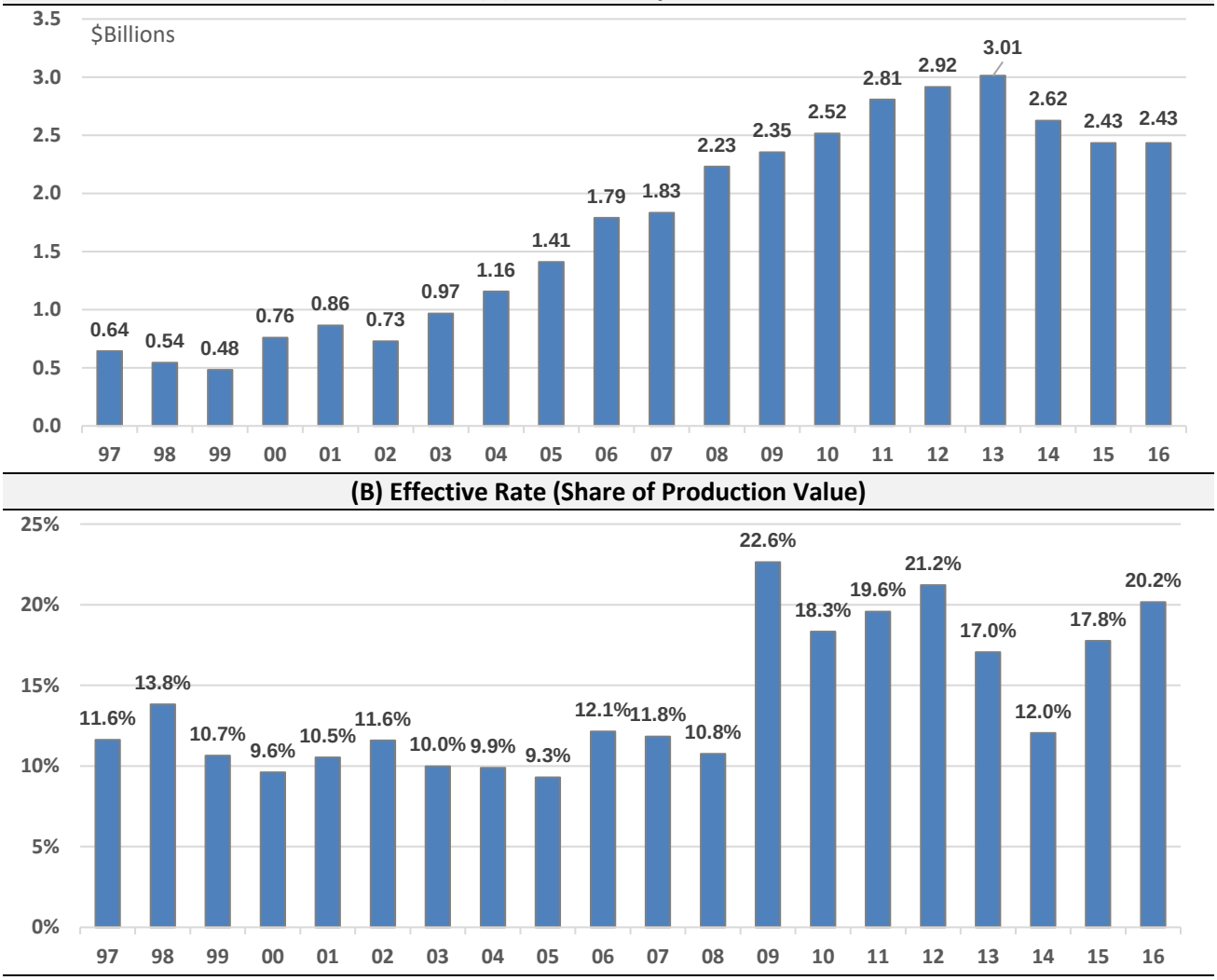
In the recent oil and gas recession, total taxes pulled back sharply in both 2014 and 2015 as the oil and gas industry was hit by the 2014 collapse in oil prices. Total taxes remained flat at $2.43 billion in 2016, the most recent year available.

As a gauge of taxes paid relative to the size of the industry, business tax payments as a share of oil and gas production value in Oklahoma the past two decades are shown in Panel B of Figure 22. Both tax payments and production value are on a calendar year basis.

After averaging 11.0% of production value from 1997 to 2008, the effective tax rate paid by the sector bounced sharply in 2009 as production value fell in the recession under falling energy prices. The effective rate subsequently averaged 18.6% from 2009 to 2016. The tax share of production pulled back to a recent low of 12.0% in 2014 under a combination of

elevated energy prices and falling tax payments before rebounding once again to above 20% in 2016 under falling energy prices.

Figure 22. Federal, State, & Local Tax Payments – Oklahoma



Notes: Production value and tax payments are in calendar years.
Source: Bureau of Economic Analysis, Energy Information Administration, and RegionTrack calculations

Oil and Gas vs. Other High-Tax Industries in Oklahoma

Few Oklahoma industries produce the same or higher share of GDP in total business taxes as the state's oil and gas sector.[20] Actual tax payments made by the industry the past decade represent a 10.5% share of total GDP produced by the industry. For comparison, all other sectors combined paid business taxes averaging only 5.5% of total GDP produced, roughly half the share of the oil and gas sector.[21] In other words, the total tax contribution of the oil and gas industry as a share of GDP produced is roughly twice the level across all industries.

Figure 23 details all major NAICS industry sectors in Oklahoma along with several key subsectors that also produce a high share of taxes relative to GDP. Most of the other high-tax sectors in Oklahoma are subject to a dedicated tax, much like the severance tax applied to

the oil and gas industry. They are all much smaller in size, however, and produce far lower amounts of total tax revenue.

Other high-tax-share sectors in Oklahoma include Amusement, Gambling, and Recreation (27.8% share of sector GDP, gaming tax); Accommodations (20.2% share of sector GDP, hotel/motel tax); Air Transportation (11.7% share of sector GDP, airport and air fare taxes); Insurance Carriers (10.9% share of sector GDP, premium tax); Utilities (10.7% share of sector GDP, ad valorem and utility service tax); and Broadcasting and Telecommunications (9.2% share of sector GDP, telecom user tax).

High tax shares are also found in Wholesale Trade (22.2% share of sector GDP) and Retail Trade (17.9% share of sector GDP). However, both sectors act primarily as a tax conduit that passes-through large amounts of general sales and use tax collections. The sales and use taxes collected by Wholesale Trade and Retail Trade are not necessarily tied to a particular product being sold but to the act of reselling in general.

As a group, these Oklahoma industries have the highest average total tax burdens as a share of output produced among the private industry sectors tracked by BEA.[22]

Figure 23. Taxes as Share of State Gross Domestic Product by Industry - Oklahoma

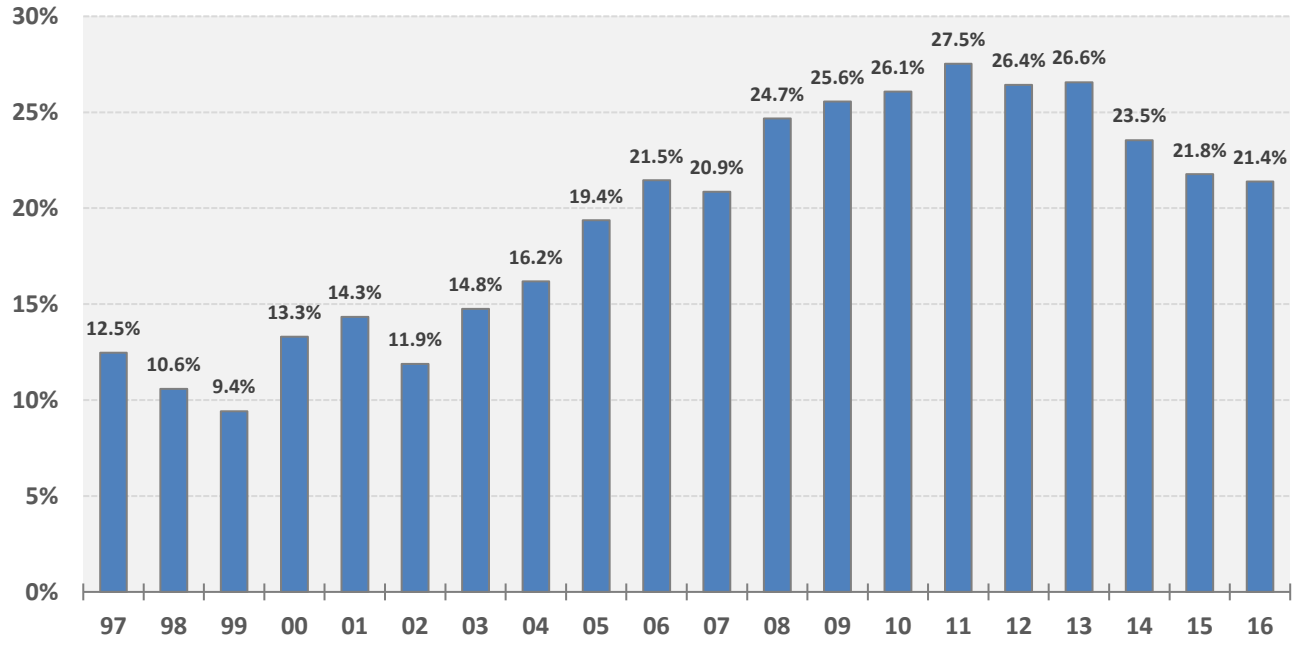
Industry Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average 2007-2016
All industry total	6.1%	5.8%	6.4%	6.5%	6.3%	6.4%	6.1%	5.7%	5.9%	6.3%	6.2%
Private industries	7.3%	7.0%	8.0%	8.0%	7.6%	7.7%	7.3%	6.7%	7.1%	7.7%	7.4%
Agriculture, forestry, fishing, and hunting	-2.0%	-2.2%	0.3%	-2.1%	-0.7%	-1.4%	-0.2%	-0.3%	-1.0%	-1.5%	-1.1%
Mining, quarrying, and oil and gas extraction	**8.6%**	**8.8%**	**14.1%**	**12.8%**	**10.8%**	**11.6%**	**9.0%**	**6.8%**	**9.4%**	**13.2%**	**10.5%**
Utilities	11.8%	10.5%	12.0%	11.6%	10.8%	9.9%	9.7%	10.0%	10.4%	10.4%	10.7%
Construction	0.8%	1.0%	0.9%	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Manufacturing	1.9%	1.5%	2.3%	2.6%	2.4%	2.1%	2.4%	2.1%	2.2%	2.5%	2.2%
Durable goods manufacturing	1.6%	1.3%	1.7%	1.6%	1.4%	1.5%	1.6%	1.4%	1.5%	1.6%	1.5%
Nondurable goods manufacturing	2.4%	1.7%	3.0%	4.0%	3.6%	2.8%	3.5%	3.2%	3.1%	3.6%	3.1%
Wholesale trade	22.4%	23.4%	25.6%	24.6%	23.5%	20.6%	20.6%	19.6%	20.6%	21.3%	22.2%
Retail trade	19.7%	18.7%	16.9%	17.5%	17.9%	18.2%	17.7%	18.0%	17.2%	17.5%	17.9%
Transportation and warehousing	4.3%	3.7%	4.8%	4.4%	3.9%	3.0%	2.9%	2.6%	2.4%	2.5%	3.4%
Air transportation	12.7%	11.8%	12.7%	11.2%	11.0%	10.7%	12.3%	11.0%	11.1%	12.2%	11.7%
Information	8.4%	7.1%	7.5%	8.2%	8.3%	8.6%	7.7%	6.5%	5.7%	5.5%	7.4%
Broadcasting (except Internet) and telecommunications	10.9%	9.0%	9.5%	10.5%	10.7%	10.8%	9.7%	7.8%	6.8%	6.6%	9.2%
Finance, insurance, real estate, rental, and leasing	5.9%	6.3%	6.6%	6.6%	6.1%	6.5%	6.5%	6.9%	7.4%	7.5%	6.6%
Finance and insurance	6.2%	6.8%	7.1%	7.2%	7.6%	8.1%	8.4%	9.4%	10.1%	10.4%	8.1%
Insurance carriers and related activities	9.5%	8.9%	9.1%	8.4%	9.7%	10.7%	11.1%	13.5%	13.8%	14.2%	10.9%
Real estate and rental and leasing	5.8%	6.1%	6.4%	6.4%	5.6%	5.9%	5.9%	5.9%	6.3%	6.3%	6.1%
Professional and business services	2.8%	2.9%	2.9%	3.0%	3.2%	3.2%	3.2%	3.1%	3.1%	3.1%	3.1%
Professional, scientific, and technical services	2.7%	2.5%	2.6%	2.7%	2.8%	2.9%	3.0%	2.8%	2.7%	2.7%	2.7%
Educational services, health care, and social assistance	2.6%	2.6%	2.7%	2.8%	2.4%	2.6%	2.5%	1.9%	2.0%	2.1%	2.4%
Health care and social assistance	2.5%	2.6%	2.6%	2.7%	2.2%	2.5%	2.4%	1.8%	1.8%	1.9%	2.3%
Arts, entertainment, recreation, accommodation, and food services	12.3%	10.4%	9.5%	10.7%	11.0%	13.3%	12.9%	12.6%	12.2%	12.0%	11.7%
Arts, entertainment, and recreation	25.8%	20.5%	19.3%	17.9%	18.4%	21.0%	20.9%	20.7%	19.6%	17.9%	20.2%
Performing arts, spectator sports, museums, and related activities	11.7%	5.2%	5.5%	5.8%	6.4%	6.5%	6.6%	5.8%	5.8%	5.5%	6.5%
Amusement, gambling, and recreation industries	33.4%	27.1%	26.7%	24.2%	24.7%	28.7%	28.7%	30.4%	28.5%	25.7%	27.8%
Accommodation and food services	9.7%	8.8%	7.9%	9.3%	9.6%	11.7%	11.2%	10.8%	10.5%	10.6%	10.0%
Accommodation	19.7%	19.4%	18.6%	19.2%	19.1%	25.9%	20.4%	19.9%	19.5%	20.5%	20.2%
Food services and drinking places	8.4%	7.5%	6.8%	8.1%	8.2%	9.3%	9.3%	9.0%	8.7%	8.7%	8.4%

Source: Bureau of Economic Analysis and RegionTrack calculations

An alternative view of the tax contribution of the oil and gas sector relative to other sectors in the state is the share of total state business taxes paid (see Figure 24). As a share of the $10.37 billion in average annual taxes paid the past decade by all business entities operating in the state, the mining sector paid an average of $2.53 billion annually, or 24.4% of the total business taxes paid statewide. Again, the majority of these taxes are paid to state and local government.

The share of total taxes paid roughly doubled from 14.8% in 2003 as the oil and gas industry began its reemergence to a recent high of 27.5% in 2011. The share has since declined to a recent low of 21.4% of total statewide business taxes in 2016.

Figure 24. Mining Sector Share of Total State Business Tax Payments – Oklahoma



Notes: Calculated as total mining business tax payments divided by total business tax payments by all industry sectors. Data stated on a calendar year basis.
Source: Bureau of Economic Analysis and RegionTrack calculations

The share of total state business taxes paid by the mining sector is far higher than all other high-tax share sectors. The mining sector pays a higher share than the state's key sales tax conduit sectors, Wholesale Trade (18.5%) and Retail Trade (17.3%), both of which collect significant taxes but produce relatively little GDP (their combined GDP is less than the mining sector).

The share of total statewide business taxes paid is far lower in the state's other key high-tax-share sectors, including Utilities ($419 million, 4.0% share), Insurance Carriers ($310 million, 3.0% share), Broadcasting and Telecommunications ($271 million, 2.6% share), Amusement, Gambling, and Recreation ($162 million, 1.6% share), Accommodations ($127 million, 1.2% share), and Air Transportation ($92 million, 0.9% share). Combined, these six high-tax industries paid an average of only $1.38 billion in taxes annually the past decade, or 13.3% of total statewide business taxes paid the past decade, only slightly more than half the 24.4% average share paid by the mining sector.

Oil and Gas-Related Business Taxes Across the Producing States

Figure 25 details BEA estimates of total business taxes paid by firms in the oil and gas sector in each of the top sixteen producing states. The data span the period from the reemergence of the domestic energy sector in 2003 through 2016, the most recently available year of data. To avoid counting non-oil and gas forms of mining, the mining sector totals are partitioned to include only oil and gas activity as described earlier in the report.

Firms in the sixteen largest producing states paid a combined total of $27.92 billion in taxes in 2016, or 98.4% of total taxes paid nationally by oil and gas firms. The $2.43 billion in taxes paid by firms in Oklahoma's oil and gas sector in 2016 trailed only dominant producer Texas with $15.54 billion.[23]

Oklahoma firms paid 7.8% of total oil and gas-related business taxes nationally in 2016 and accounted for 7.5% of the value of national oil and gas production in FY2016. Texas firms paid 49% of total oil and gas business taxes in 2016 and accounted for approximately 40% of the total value of production.

Figure 25. Business Taxes on Production and Imports - Oil and Gas Sector

$Millions

State	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Texas	7,823	9,012	11,836	13,606	14,622	16,613	12,506	13,182	15,288	15,478	16,440	18,042	14,663	15,537
Oklahoma	**966**	**1,157**	**1,410**	**1,789**	**1,833**	**2,230**	**2,354**	**2,516**	**2,808**	**2,916**	**3,012**	**2,624**	**2,433**	**2,433**
Alaska	949	1,028	1,343	1,646	3,185	8,309	2,781	3,835	5,431	5,639	6,010	4,724	2,862	1,919
California	572	747	909	1,114	1,474	1,980	1,566	1,714	1,607	1,519	1,670	1,491	1,285	1,297
Colorado	372	540	704	828	991	1,221	1,045	1,283	1,516	1,194	1,397	1,348	1,217	1,253
Louisiana	972	962	1,337	1,295	1,662	1,905	1,223	1,430	1,572	1,553	1,634	1,491	1,190	1,204
North Dakota	33	37	61	73	103	160	151	271	500	597	784	933	1,023	1,027
New Mexico	651	725	923	1,069	1,247	1,459	777	927	1,030	961	1,031	1,208	980	931
Wyoming	595	733	956	1,131	1,150	1,278	997	1,071	1,291	1,087	1,148	944	838	807
Pennsylvania	58	65	92	121	153	184	192	255	328	391	487	454	400	409
Kansas	237	271	328	392	418	503	321	331	383	364	394	351	305	307
Utah	73	94	141	186	229	260	181	207	256	257	280	278	206	202
West Virginia	75	81	116	136	165	198	153	169	181	174	206	215	189	201
Montana	28	37	64	72	87	126	119	151	197	192	212	203	166	187
Ohio	161	171	234	287	317	313	256	261	279	291	160	175	140	147
Arkansas	13	14	19	25	39	61	73	83	100	106	108	86	71	63
United States	13,899	16,051	20,984	24,386	28,353	37,748	25,303	28,361	33,562	33,432	35,770	35,242	28,457	28,372
16-States	13,578	15,671	20,473	23,768	27,673	36,799	24,694	27,684	32,767	32,719	34,971	34,567	27,968	27,924
16-State Share of U.S.	97.7%	97.6%	97.6%	97.5%	97.6%	97.5%	97.6%	97.6%	97.6%	97.9%	97.8%	98.1%	98.3%	98.4%

Notes: Data are stated on a calendar year basis.
Source: Bureau of Economic Analysis

The high share of taxes paid by firms in both Texas and Oklahoma reflects several factors:

1. The presence of a large producing sector for both oil and natural gas in both states;
2. Significant drilling and exploration activity as the two most active drilling states in recent years; and
3. Significant concentrations of white-collar oil and gas employment as the two largest oil and gas hub states in the U.S.

Other major producing states with firms paying approximately $1 billion or more in business taxes in 2016 include Alaska ($1.92 billion), California ($1.3 billion), Colorado ($1.25 billion), Louisiana ($1.2 billion), North Dakota ($1.03 billion), and New Mexico ($931 million).

The substantial year-to-year shifts in oil and gas sector business tax payments across the producing states over time reflect many market factors, including: the weak production years of 2015 and 2016 in most states; the long-run collapse in tax payments in Alaska; the surging long-run production trend in North Dakota, Pennsylvania, and Colorado; the weak long-run production trend in California; and two major energy price cycles the past decade.

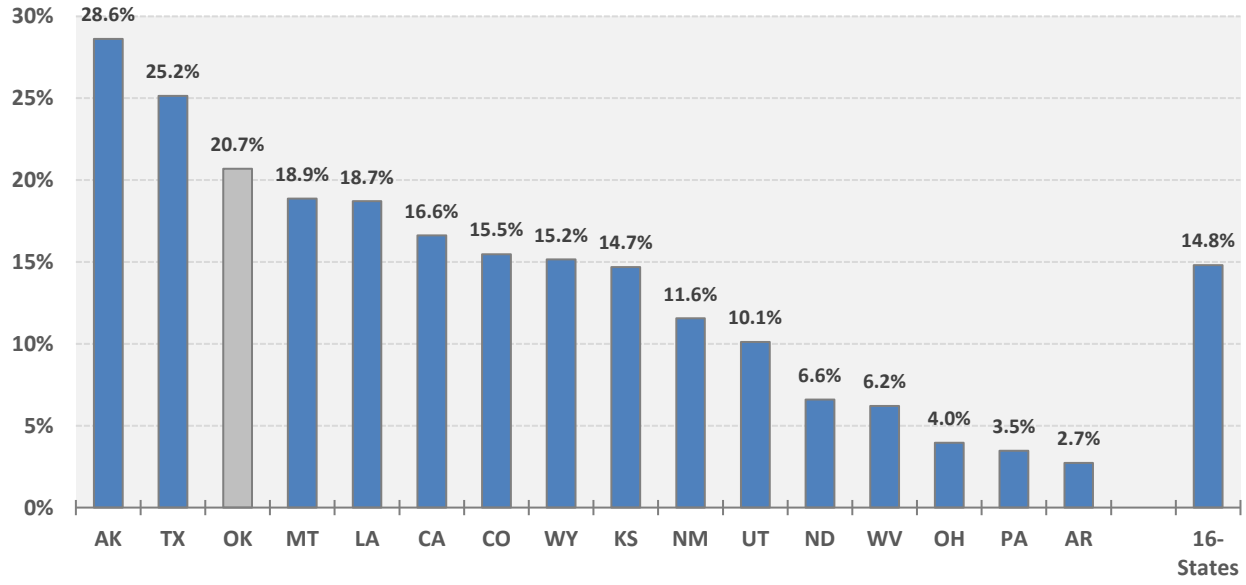
Business Tax Effective Rate

Figure 26 provides an alternative state-level comparison of the business tax burden of the oil and gas industry as a share of the total market value of annual production in each state.

Taxes as a Share of Production Value. In Oklahoma, $2.43 billion in total taxes paid by the oil and gas sector represents 20.7% of the $11.76 billion in total market value of crude oil and natural gas production in FY2016. This ranks the Oklahoma oil and gas sector as having the third highest overall business tax burden as a share of production value, following only Texas (25.2%) and Alaska (28.6%). The state's effective rate is also six full percentage points above the sixteen-state average of 14.8%.

Six additional states – Montana (18.9%), Louisiana (18.7%), California (16.6%), Colorado (15.5%), Wyoming (15.2%), and Kansas (14.7%) – have effective business tax rates between approximately 15% and 20%. The remaining seven states have effective rates below 12%, including New Mexico (11.6%), Utah (10.1%), North Dakota (6.6%), West Virginia (6.2%), Ohio (4.0%), Pennsylvania (3.5%), and Arkansas (2.7%).[24]

Figure 26. Business Tax Share of Production Value – 16 Largest Producing States (2016)



Notes: The effective tax rate is calculated as total federal, state, and local taxes divided by the annual market value of crude oil and natural gas production.
Source: Bureau of Economic Analysis, Energy Information Administration, and RegionTrack calculations

While the production view of oil and gas taxation in Oklahoma described earlier in the report places Oklahoma in the middle of the producing states, the broader corporate view of taxes consistently places the state among those with the highest overall tax burden. When expanded beyond severance and ad valorem taxes, both the total and effective tax contribution of the oil and gas industry in Oklahoma is quite high relative to other producing states.

Taxes as a Share of Economic Output. A final comparative view of the business tax burden of Oklahoma oil and gas firms is taxes paid as a share of total state economic output. Figure 27 illustrates total business taxes paid by firms in the oil and gas sector as a share of total statewide GDP for each of the sixteen largest producing states.

In 2016, the $2.43 billion in business taxes paid by firms in the Oklahoma oil and gas sector totaled 1.3% of total state GDP of $181.5 billion. This share is roughly three times the 0.4% average share across the sixteen states and ranks Oklahoma 4th among the group.

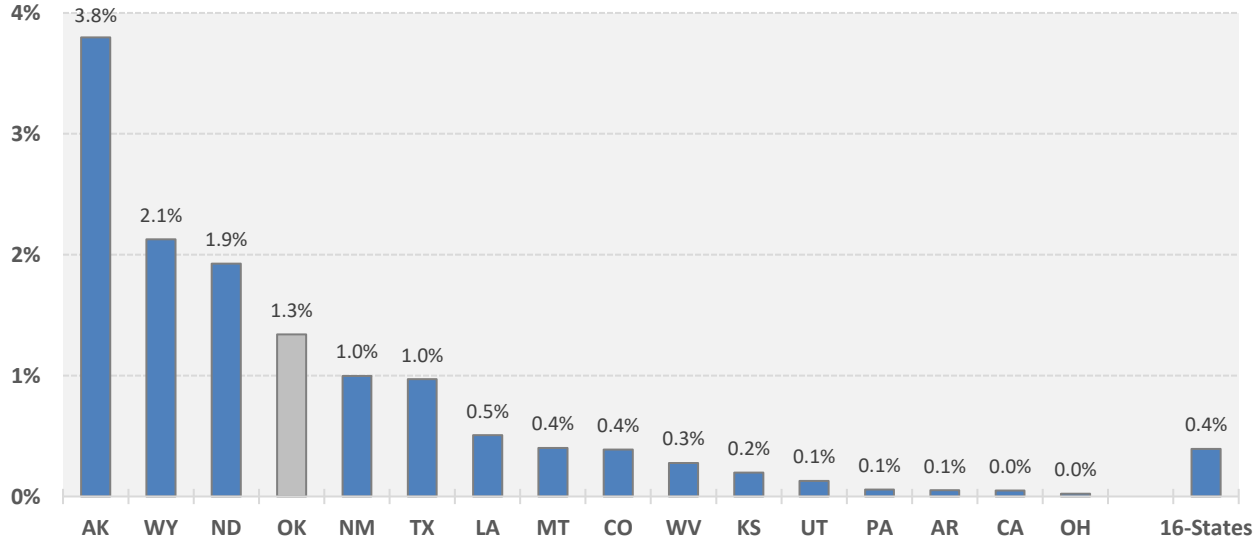
Oklahoma's share in 2016 trailed only Alaska (3.8%), Wyoming (2.1%), and North Dakota (1.9%), all three of which have very small statewide economies but a large oil and gas sector coupled with traditionally high taxes on the oil and gas sector.

Major producer New Mexico and dominant producer Texas both slightly trailed Oklahoma with oil and gas business taxes equivalent to 1.0% of total statewide GDP. Oil and gas firms in all other states produced taxes from oil and gas activity of 0.5% of state GDP or less in 2016.

Firms in the large producing states of Louisiana (0.5%) and Colorado (0.4%) produced less than half the share of state GDP in taxes relative to Oklahoma.

Firms in five states – Utah, Pennsylvania, Arkansas, California, and Ohio – produced a negligible share (0.1% or less) of total state GDP in oil and gas taxes in 2016. These five

Figure 27. Oil and Gas Business Tax Share of State GDP – Major Producing States (2016)



Notes: The effective tax rate is calculated as total federal, state, and local taxes divided by the annual market value of crude oil and natural gas production.
Source: Bureau of Economic Analysis, Energy Information Administration, and RegionTrack calculations

states are generally viewed as relatively low-tax producing states. Total state tax revenue in these states is unlikely to be influenced systematically by changing activity in the oil and gas sector.

Corporate vs. Production Taxes in Oklahoma

Estimates of the business, or 'corporate,' tax contribution of the oil and gas sector based on the BEA dataset suggest that the 'production' view alone provides policymakers with an incomplete view of the tax contribution of the oil and gas industry in Oklahoma. While Oklahoma ranks 8th in FY2019 based solely on its combined effective severance and ad valorem tax rate, the state consistently ranks among the states with the highest overall business tax contribution.

Relevant policy conclusions concerning the broader corporate tax contribution of oil and gas in Oklahoma include the following:

- Oklahoma oil and gas establishments paid a total of $2.43 billion in business taxes in 2016;
- Oklahoma firms paid the second highest total amount of taxes among the sixteen major producing states, trailing only dominant producer Texas;
- Oklahoma's oil and gas sector paid an average of $2.52 billion in business taxes annually the past decade, or 24.3% of the total business taxes paid by all industries statewide;
- Oklahoma oil and gas firms paid 7.8% of total oil and gas-related business taxes nationally and accounted for 7.5% of the value of national oil and gas production in 2016;
- Tax payments made by the industry in Oklahoma the past ten years represent a 10.5% share of total GDP produced by the sector. All other sectors in the state combined paid business taxes averaging only 5.5% of total GDP produced, roughly half the share of the oil and gas sector;
- Oil and gas business taxes in Oklahoma totaled 1.3% of total state GDP of $181.5 billion in 2016. This share ranks Oklahoma 4th among the sixteen largest producing states trailing only Alaska, Wyoming, and North Dakota;
- In Oklahoma, $2.43 billion in total taxes paid by the oil and gas sector represent 20.7% of the $11.76 billion in total market value of crude oil and natural gas production in 2016. This ranks the state as having the third highest overall business tax burden as a share of production value, following only Texas (25.2%) and Alaska (28.6%).

VII. Tax Contribution - Industry View

The two prior sections of the report examine the tax contribution of the Oklahoma oil and gas sector from both the production and corporate tax perspectives. Among the key findings, Oklahoma currently ranks among the middle of the producing states from a production tax view, due largely to statutory limits on ad valorem taxes. When viewed from a corporate perspective, the state's oil and gas firms have a consistently high tax contribution relative to most other major producing states. Oklahoma ranks 4th among the sixteen largest producing states based on business taxes as a share of GDP produced.

This section extends the analysis to consider the tax contribution of the broader industry itself. This primarily extends the analysis to the personal income tax and sales tax contributions made by employees and self-employed proprietors within the oil and gas sector. This approach captures the two largest tax sources in Oklahoma and accounts for key differences in the tax structure in other producing states (e.g. leading-producer Texas has no personal income tax).

The critical role of oil and gas activity in determining statewide income and sales tax collections is first illustrated through the behavior of these tax streams in the recent statewide oil and gas recession. Estimates are then formed for income and sales tax payments traced to oil and gas activity in the sixteen largest producing states. Sales tax includes both sales and use taxes at the state and local levels.

Effective personal income and sales tax rates as a share of production value are formed for Oklahoma and then compared to the sixteen largest producing states. Finally, a measure of the combined effective severance, ad valorem, personal income, and sales tax rates are formed for each state.

Income and Sales Tax Payments in the Recent State Recession

The recent state-level oil and gas recession illustrates just how sensitive state personal income and sales tax revenue in Oklahoma is to changes in activity in the oil and gas sector.

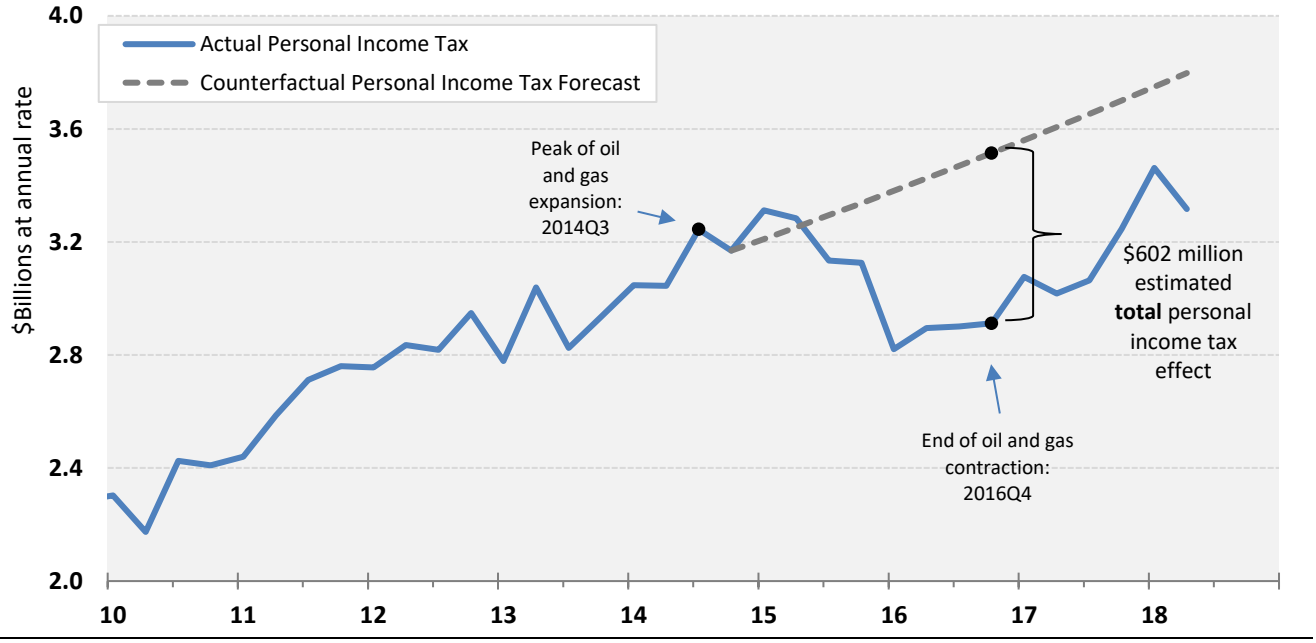
Personal Income Tax. Figure 28 illustrates the path of state personal income tax revenue during the recent oil and gas-driven shock. After oil and gas activity peaked in the 3rd quarter of 2014, the state began a steady, cumulative decline of $330 million (10%) in total personal income tax revenue through late 2016.

Our forecast for personal income tax revenue in July 2014 serves as a counterfactual comparison case to the actual path of revenue for determining the net effect of the pullback in oil and gas activity on expected personal income tax revenue. The expected outlook entering the recession was for average growth in personal income tax revenue of 5.2% annually through FY2018.

Based on the forecast in Figure 28, the net decline in total personal income tax revenue reached an estimated $600 million (17.2% decline) from peak to trough in activity in the oil and gas sector. The $600 million estimated income tax decline reflects the net difference between the initial expected outcome and the actual outcome through the 4th quarter of 2016.

Again, the $330 million decline in actual revenue represents a static estimate of the tax effect, while the $600 million decline provides a more representative dynamic estimate of the net state income tax response based on prior expectations. These personal income tax effects are not present in producing states such as Texas, Alaska, and Wyoming that do not levy an income tax. The size of the effect also differs in proportion to the relative size of the average income tax rate in effect in the producing states that do levy an income tax.

Figure 28. Total Personal Income Tax Revenue in Recent Energy Recession – OK



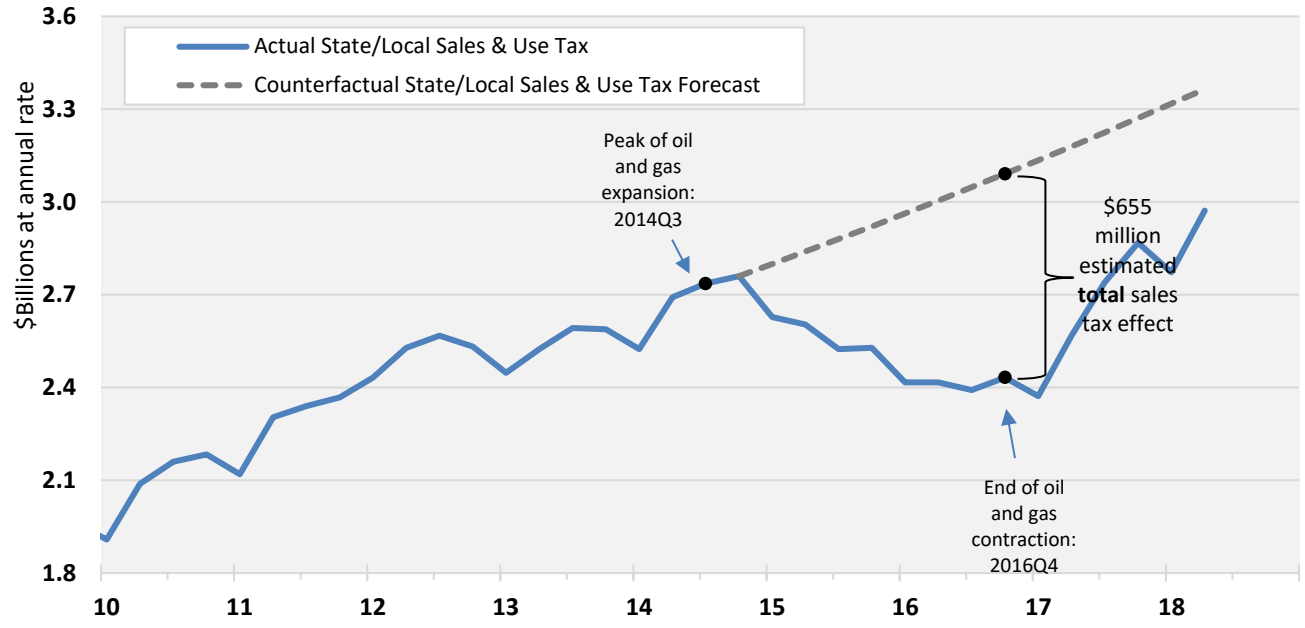
Source: Census Bureau and RegionTrack forecast (July 2014)

Sales Tax. Sales tax revenue was similarly affected during the oil and gas slowdown as shown in Figure 29. From the peak in oil and gas activity in the 3rd quarter of 2014, the state began a steady, cumulative decline of $300 million (11.1%) in state sales (and use) tax through late 2016 (see Figure 29). The decline in sales tax revenue was slightly larger than the decline in personal income taxes.

Our forecast for sales tax revenue from July 2014 serves as a highly useful counterfactual comparison case to the actual path of revenue for determining the net effect of the pullback in oil and gas activity on expected sales tax revenue. The expected outlook entering the recession was for average growth in sales tax revenue of 5.7% annually through FY2018.

Based on the forecast in Figure 29, the realized net decline in total sales tax revenue reached an estimated $660 million (17.2% decline) from peak to trough in activity in the oil and gas sector. The $660 million decline reflects the net difference between the initial expected outcome and the actual outcome through the 4th quarter of 2016.

Figure 29. State/Local Sales and Use Tax Revenue in Recent Energy Recession – OK



Source: Census Bureau and RegionTrack forecast (July 2014)

Personal Income and Sales Tax Contribution of Oil and Gas

In order to do a cross-state comparison of the relative personal income and sales tax contributions of Oklahoma's oil and gas industry, a recent RegionTrack report provided estimates of effective personal income and sales tax rates through FY2016 for the sixteen largest producing states.[25]

The estimates in this section provide an update of these effective tax rates for the sixteen largest producing states. While not a comprehensive assessment of the total tax contribution of the industry, this approach uses a consistent methodology across the producing states to provide estimates that are much more reflective of the broader tax contribution of the household-related component of the industry. It also demonstrates the necessity of using a broader approach when evaluating the tax contribution of the oil and gas industry in a state like Oklahoma that levies relatively large personal income and sales taxes.

Evaluating these elements of the tax contribution of the oil and gas industry in Oklahoma is especially relevant for three reasons:

1. The oil and gas sector in Oklahoma serves an outsized role as a source of total household earnings relative to most other industries in the state and relative to most other producing states (see Figures 6 and 7). The industry pays significantly higher average compensation to wage and salary workers than nearly all industry sectors in Oklahoma. The share of total statewide self-employment income from the oil and gas sector is also historically among the highest in Oklahoma relative to other producing states (see Figure 9). These factors translate into larger personal income and sales tax contributions on average from oil and gas workers and proprietors than from other sectors statewide.

2. The producing states have widely varying tax structures which collect varying degrees of revenue from wage and salary and self-employed individuals. Many oil and gas states have no personal income tax (Alaska, Texas, and Wyoming) and sales tax rates vary widely, with Oklahoma a traditionally high sales tax state. Ignoring differences in tax structure across the states makes cross-state comparisons challenging and potentially misleading.
3. The concentration of oil and gas activity, particularly white-collar employment and self-employment, varies greatly across the producing states. Oil and gas-hub states such as Oklahoma with a large concentration of industry employment and self-employment derive significant amounts of tax revenue from this activity. Oklahoma has the highest share of household earnings derived from the oil and gas sector among all producing states since the reemergence of the industry in 2003 (see Figure 9). States with a relatively small industry presence and less reliance on oil and gas for household earnings must rely more heavily on production and business taxes paid by the sector.

Personal Income Tax Contribution Across the Producing States

Figure 30 provides comparative estimates of the personal income tax contribution of oil and gas activity in Oklahoma and the other major producing states in FY2017. Estimates of total income tax payments are first derived by multiplying the total household earnings of workers and proprietors in the oil and gas sector by the average income tax rate within each state.

Household earnings in the oil and gas sector are averaged across the 2016 to 2017 period for greater consistency with FY2017 income tax receipt data. Non-mining activity (e.g. coal mining) is removed from mining sector data to isolate the contribution of oil and gas activity.

Average Personal Income Tax Rate. It is important to note that the use of average tax rates in this section will substantially understate the true amount of oil and gas-related income taxes paid in Oklahoma and most producing states given the high average earnings in the oil and gas industry and progressive tax rates in most states. Ideally, we would use the average income tax rate for individuals that matches the average income earned in the oil and gas sector in each producing state. The use of average rates is necessary because of a lack of access to recent measures of effective tax rates by income bracket in each producing state.

We can demonstrate the effect of using average tax rates by using the most recent tax data available for Oklahoma for FY2014. While the average income tax rate across all earnings in Oklahoma is 2.61% in FY2017 (see Figure 30), OTC data for tax year 2014 suggests that taxpayers in Oklahoma with federal adjusted gross income between $75,000 and $100,000 paid an average personal income tax rate of 3.5%. The 3.5% rate is believed to be the best approximation of the average rate paid by oil and gas industry wage and salary workers and proprietors in Oklahoma. Those earning between $100,000 and $200,000 paid an average rate of 3.9%. Those who reported more than $200,000 in federal adjusted gross income paid an average income tax rate of about 4.3%. Data from more recent tax years are not yet available.

Figure 30. Personal Income Tax Contribution of Oil & Gas Sector

State	Oil & Gas Sector Household Earnings[1]	Average Income Tax Rate[2]	Oil & Gas Income Tax Paid at Average Rate[3]	Oil and Gas Income Tax Paid at OK Rate (2.61%)[4]	Oil & Gas Production Value[5]	Effective Rate
Alaska	1,778,514,157	0.00%	0	46,462,600	$8,201,141,070	0.00%
Arkansas	301,771,151	3.67%	11,064,963	7,883,588	2,473,104,560	0.45%
California	3,300,886,087	5.36%	177,055,509	86,233,641	8,545,381,045	2.07%
Colorado	9,216,276,077	3.21%	295,747,438	240,769,606	10,069,941,250	2.94%
Kansas	1,787,303,623	2.67%	47,667,768	46,692,220	2,270,398,413	2.10%
Louisiana	6,280,473,116	2.22%	139,475,161	164,073,539	7,940,949,818	1.76%
Montana	594,527,101	4.07%	24,192,354	15,531,659	1,037,600,825	2.33%
North Dakota	1,804,099,252	1.07%	19,270,917	47,130,995	17,332,509,833	0.11%
New Mexico	1,851,275,618	2.13%	39,379,315	48,363,449	10,707,180,725	0.37%
Ohio	595,027,594	2.21%	13,123,951	15,544,734	5,422,020,204	0.24%
Oklahoma	5,748,093,196	2.61%	150,165,438	150,165,438	14,256,084,325	1.05%
Pennsylvania	1,767,313,825	2.66%	47,071,192	46,169,998	16,252,110,916	0.29%
Texas	60,701,867,150	0.00%	0	1,585,799,349	74,405,683,875	0.00%
Utah	405,854,520	3.92%	15,900,102	10,602,702	2,323,674,367	0.68%
West Virginia	619,113,788	4.44%	27,517,102	16,173,971	4,688,263,988	0.59%
Wyoming	932,717,077	0.00%	0	24,366,666	7,784,664,133	0.00%
16-States	$97,685,113,331	3.06%	$1,007,631,209	$2,551,964,156	$193,710,709,346	0.52%

Source: Bureau of Economic Analysis, Census Bureau, and RegionTrack calculations.

Notes: 1 Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Earnings are averaged over 2016 and 2017 for greater consistency with fiscal year tax and production data. Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).

2 The average income tax rate for each state is calculated as total individual income tax payments divided by total household earnings.

3 Income tax paid by the oil and gas industry is estimated as oil and gas earnings times the average income tax rate in the state.

4 Oil and gas earnings in each state multiplied by the 2.61% average rate in Oklahoma.

5 Production value is for FY2017.

Despite the overall average understating the true rate paid by oil and gas workers, this approach nonetheless provides a consistent measure across the producing states that captures average differences in state personal income taxation. This is done to facilitate cross-state comparisons of tax payments rather than provide an exact estimate of the total tax contribution in any single state.

Comparative Income Tax Rates. Across the sixteen states, average income tax rates range from a low of 0% in Texas, Wyoming, and Alaska to a high 5.4% in California.

Oklahoma's 2.61% average income tax rate falls about one-half percentage point below both the 3.17% average income tax rate nationally and the 3.06% rate in the sixteen major producing states in FY2017 (see Figure 30).

Other states with a high average income tax rate relative to Oklahoma include West Virginia (4.44%), Montana (4.07%), Utah (3.92%), Arkansas (3.67%), and Colorado (3.21%). These states would be expected to receive a greater proportionate tax contribution through personal income tax payments derived from the industry.

States with average income tax rates similar to Oklahoma include Kansas (2.67%), Louisiana (2.22%), New Mexico (2.13%), Ohio (2.21%), and Pennsylvania (2.66%).

Major producer North Dakota levies an average personal income tax rate of only 1.07%, less than half the average rate in Oklahoma.

Oklahoma Oil and Gas Income-Related Income Tax Payments. The underlying estimates of income tax payments at the average income tax rate are detailed in Figure 30. In Oklahoma, household earnings of $5.75 billion in the oil and gas sector taxed at the state average personal income tax rate of 2.61% would generate payments of $150.2 million by workers and proprietors in the industry in FY2017. Again, this is not an estimate of the actual taxes paid by the industry in Oklahoma but is a standardized measure of tax payments across the producing states at each state's average income tax rate.

The resulting $150.2 million in oil and gas-related personal income tax payments in Oklahoma would equal about 5% of the $3.13 billion in total personal income taxes paid in the state in FY2017. At the 3.5% average tax rate believed more reflective of oil and gas workers, personal income tax payments would total $201 million, or about 6.5% of total personal income tax payments in the state.

The FY2017 estimate of $150.2 million is sharply lower than tax payments traced to Oklahoma's oil and gas industry in recent years. Earnings in 2017 are 60% below the $14.2 billion earned as recently as 2014. This steep drop reflects the effect of the recent collapse in oil prices on industry earnings payouts. For comparison, payments would total $497 million at the 3.5% rate at the recent peak in oil and gas household earnings 2014, or 15.9% of total statewide personal income tax payments.

Comparative Effective Income Tax Rates on Production

Figure 30 also details the calculation of estimates of the effective personal income tax rate as a share of production across the producing states. The effective rate is calculated as estimated income tax paid on household earnings from the oil and gas industry divided by the total value of oil and gas production in FY2017.

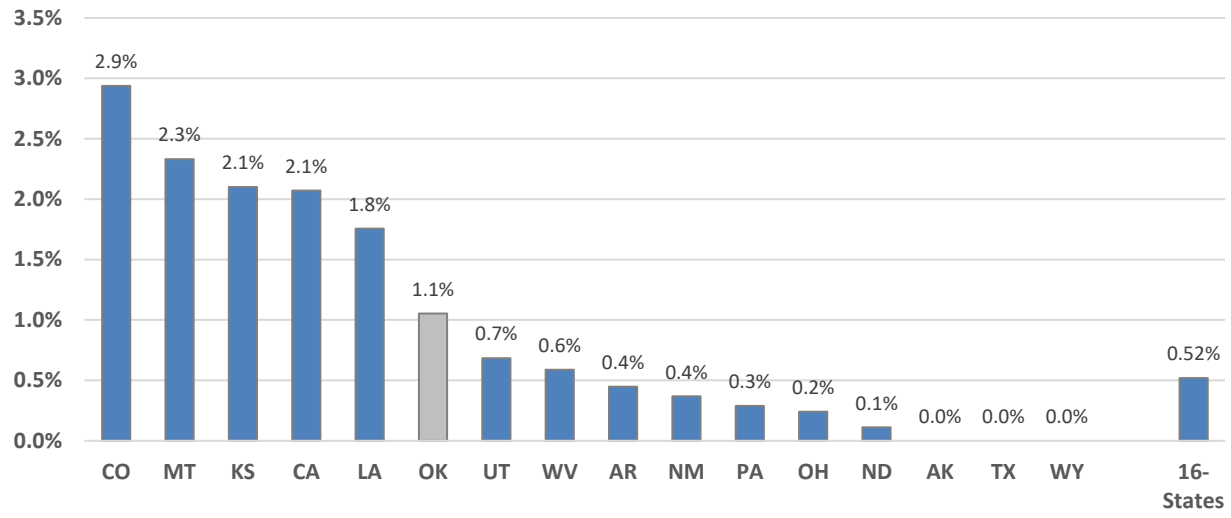
Effective personal income tax rates are shown in rank order for the sixteen largest producing states in Figure 31. This graphic illustrates the wide variation in effective income tax rates on oil and gas production across the producing states.

Across all sixteen states, the effective income tax payments traced to household earnings from oil and gas equals 0.52% of production value. Oklahoma's rate of 1.05% ranks 6th highest among the sixteen states, approximately double the overall average rate.

Colorado has the highest effective rate at 2.9%, nearly triple Oklahoma's rate. Montana, Kansas, and California have effective rates just above 2%, while Louisiana's rate falls just below 2%.

All other major producing states have an effective income tax rate below 1%, with major producers Alaska, Texas, and Wyoming having no personal income tax.

Figure 31. Effective Personal Income Tax Rate on Oil and Gas Production (2017)



Notes: Income tax is calculated as household earnings in the oil and gas sector times the average income tax rates in the state. The effective rate is income tax divided by total value of oil and gas production. Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).

The large gas-producing states of Ohio and Pennsylvania both have effective income tax rates of 0.3% or less. This is due primarily to the lack of associated white-collar employment relative to Oklahoma.

Notably, large oil producer North Dakota (0.1%) has the lowest effective income tax rate among those states with an income tax in place. Neighboring New Mexico has a similarly low effective rate of 0.4%.

Texas, Alaska, Wyoming, North Dakota, and New Mexico all illustrate the case of a state having a very large oil and gas sector but deriving very little (or no) personal income tax revenue from the presence of oil and gas workers and proprietors in the state. The absence of a personal income tax in Texas, Alaska, and Wyoming along with very low average personal income tax rates in several major producing states has great bearing on the evaluation of the tax contributions by the oil and gas industry in Oklahoma. Texas, for example, would collect $1.59 billion in personal income tax revenue from its oil and gas sector at Oklahoma's average personal income tax rate.

In contrast, Colorado, Montana, Kansas, California, Louisiana, and Oklahoma represent large producing states that derive substantial amounts of personal income tax revenue from the presence of oil and gas workers and proprietors in the states.

Oil and Gas-Related Sales Tax. Firms in the oil and gas industry and their employees also pay significant amounts of sales and use taxes, with many state and local governments highly dependent upon these taxes to fund government activities.[26] Sales taxes are an especially critical source of revenue at the local level in Oklahoma, given that ad valorem tax revenue cannot be used to fund general municipal expenditures.

Many producing states are much less reliant than Oklahoma on sales taxes and many have much lower average sales tax rates. Differences in the overall level of oil and gas activity across the states also produces much different sales tax contributions. States with larger oil and gas industries, in general, tend to generate relatively more sales tax revenue from oil and gas activity than states with a smaller industry. States with more drilling activity also tend to produce significantly more sales tax revenue. Oklahoma has both a large oil and gas industry and a high level of drilling activity.

Data Constraints. Collecting comparable state-level data on sales tax paid by the oil and gas industry from state tax agencies is generally not possible. Differences in tax law, reporting standards, payment processes, collecting and remitting parties, and treatment of out-of-state purchases makes assembling comparative sales tax data related to oil and gas activity virtually impossible in most states. The most significant hurdle is that it is not possible in most states to differentiate between sales tax payments collected and remitted by the oil and gas industry on their own taxable sales versus taxes paid in conjunction with their own taxable purchases, regardless of the industry remitting the tax. As a result, the sales tax payable on many of the purchases by the oil and gas industry are remitted by firms in other industries and cannot be tracked. The tax comparison in this report is most concerned with estimates of sales taxes paid directly by oil and gas firms, not necessarily the amount remitted by the oil and gas industry based on the purchases of others. This is a common misuse of sales tax data reported at the industry level. Comparative overall measures of sales tax burden are further complicated by differences in the share of the tax that is paid by residents versus nonresidents, particularly by tourists.

All sales tax data used in the analysis are derived from the Census Bureau's State and Local Government Finance database.[27] The database provides a standardized measure of tax collections by type of tax at both the state and local level. Total sales taxes are based on FY2017 data at the state level and FY2016 data at the local level. These measures reflect the most recently available data on a consistent basis across the states.

Comparative Measure of Sales Tax Payments. Comparative state-level estimates of the sales tax contribution of the oil and gas industry are formed in Figure 32 by apportioning total state and local sales and use tax receipts to each industry based on its average contribution to state GDP in the 2016 to 2017 period (for consistency with FY2017 tax data). This follows the approach commonly used to apportion state and local taxes at the industry level in widely-used economic impact models and by BEA.[28] Because oil and gas activity is a component of the broader mining sector, we remove non-oil and gas-related mining activity from GDP using the same approach in prior sections of the report.

The underlying assumption is that sales tax payments related to the oil and gas industry are proportional to the overall size of the industry. Hence, the amount of purchases made by the industry, income paid to workers, and earnings of proprietors who operate oil and gas-related businesses will be closely related to sales taxes paid. This approach is applied consistently to each state whereby the oil and gas industry's share of total state economic activity determines the overall share of state sales tax payments derived from the industry.[29] It also accounts for overall differences in the size of the taxable sales base across the producing

states. This provides for a consistent comparison of the oil and gas industry's sales tax contribution in each of the major producing states.

Figure 32. Sales Tax Contribution of Oil & Gas Sector (2017)

State	Oil & Gas Share of State GDP[1]	Total State and Local Sales Tax[2]	Oil & Gas-Related Sales Tax	Oil & Gas Production Value	Effective Rate
Alaska	11.2%	623,505,000	69,832,560	8,201,141,070	0.9%
Arkansas	1.0%	6,032,463,000	60,324,630	2,473,104,560	2.4%
California	0.3%	73,725,031,000	221,175,093	8,545,381,045	2.6%
Colorado	2.7%	9,496,189,000	256,397,103	10,069,941,250	2.5%
Kansas	0.6%	5,517,464,000	33,104,784	2,270,398,413	1.5%
Louisiana	3.6%	12,085,009,000	435,060,324	7,940,949,818	5.5%
Montana	1.0%	664,902,000	6,649,020	1,037,600,825	0.6%
North Dakota	7.1%	1,886,898,000	133,969,758	17,332,509,833	0.8%
New Mexico	5.8%	4,104,654,000	238,069,932	10,707,180,725	2.2%
Ohio	1.2%	22,187,945,000	266,255,340	5,422,020,204	4.9%
Oklahoma	9.9%	5,973,618,000	591,388,182	14,256,084,325	4.1%
Pennsylvania	1.5%	20,909,833,000	313,647,495	16,252,110,916	1.9%
Texas	6.7%	56,272,186,000	3,770,236,462	74,405,683,875	5.1%
Utah	0.5%	4,623,194,000	23,115,970	2,323,674,367	1.0%
West Virginia	3.5%	2,782,507,000	97,387,745	4,688,263,988	2.1%
Wyoming	6.8%	976,102,000	66,374,936	7,784,664,133	0.9%
16-States	2.7%	227,861,500,000	6,582,989,334	193,710,709,346	3.4%

Source: Bureau of Economic Analysis, Census Bureau, and RegionTrack calculations.
Notes: Oil and gas-related sales tax is calculated by multiplying the share of GDP in oil and gas by total state and local sales taxes.
1 The share of GDP in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).
2 Includes both state and local sales and use tax, as well as gross receipts. Based on the definition in the Census State and Local Government Finance database. State sales tax is for 2017. Local sales tax in 2016.

Sales Tax Contribution in Oklahoma. Oklahoma's estimated total sales tax contribution of $591 million is second highest among the sixteen states, behind only the $3.77 billion estimate for Texas.

The major producing states of Louisiana ($435 million), Pennsylvania ($314 million), Ohio ($266 million), Colorado ($256 million), New Mexico ($238 million), and California ($221 million) are the only other states estimated to collect more than $200 million in sales tax from oil and gas related activity and earnings.

North Dakota is estimated to generate only $134 million, roughly one-fourth the total in Oklahoma, which reflects both a smaller oil and gas industry and far lower average sales tax rates.

Several of the key producing states generate much less estimated sales tax revenue. These include West Virginia ($97 million), Alaska ($70 million), Wyoming ($66 million), Arkansas ($60 million), and Kansas ($33 million). Montana, which has no general state or local sales tax, produced only $7 million. Most of the low sales tax-producing states have relatively small levels of oil and gas employment and/or low average state and local sales tax rates.

Why Such Large Amounts of Sales Tax in Oklahoma? Critics of oil and gas industry taxation often question estimates of the sales tax contribution of the industry. The estimated $591 million paid by the sector in Oklahoma assumes a 9.9% share of total state and local sales taxes paid. The industry pays sales and use tax in many ways including well drilling and completion, general operations, equipment purchases, and information technology purchases. Most important, though, is sales and use taxes related to drilling activity.

To place the sales and use tax contribution of drilling into perspective, recent survey data of well drilling costs experienced by several major producers in Oklahoma finds an average of $98,000 per well in state and local sales and use tax ($1.2 million in taxable purchases) payments from the drilling and completion of a typical modern horizontal well with a 5,000 foot lateral in the state. At an average estimated cost of $6.125 million per well in FY2017, the drilling and completion of approximately 1,500 wells completed statewide in 2017 required a total of $9.2 billion in spending.

Based on approximately 1,500 wells completed in 2017, total sales and use tax payments from drilling activity alone totaled an estimated $147 million. This number of wells is significant but is now less than half the nearly 3,200 wells completed as recently as 2014 prior to the recent industry collapse. It is also far less than the average of 2,700 wells completed annually in Oklahoma in the 2001 to 2014 period. Drilling-related sales and use tax would total $265 million annually measured at the average drilling pace from 2001 to 2014.

The overall estimate of sales tax attributed to the industry is not highly sensitive to the choice of GDP to apportion the data. The relative sizes of the cross-state estimates are essentially unchanged when using other measures of economic activity such as total household earnings share, wage and salary income share, or total compensation share in place of GDP.

Effective Sales Tax Rates. Figure 33 ranks the sixteen largest producing states by effective sales tax rate as a share of oil and gas production. The effective rate is calculated as estimated oil and gas-related sales tax payments divided by the total value of oil and gas production in FY2017.

The overall effective rate across all sixteen states is 3.4%. The effective sales tax rates vary from a high of 5.5% in Louisiana to a low of 0.6% in Montana.

Oklahoma's effective sales tax rate of 4.1% is 4th highest among the 16 states and one percentage point below Texas, a historically high-sales tax state with active drilling. Oklahoma's rate is 0.7% above the average rate of 3.4% across all 16 states.

Drilling-active Louisiana and Ohio also rank among the highest effective sales tax rates.

The sales tax contribution is far higher in the top four states – Louisiana, Texas, Ohio, and Oklahoma - relative to the bottom twelve, with no other state having an effective sales tax rate above 2.6%. All four are highly active drilling states.

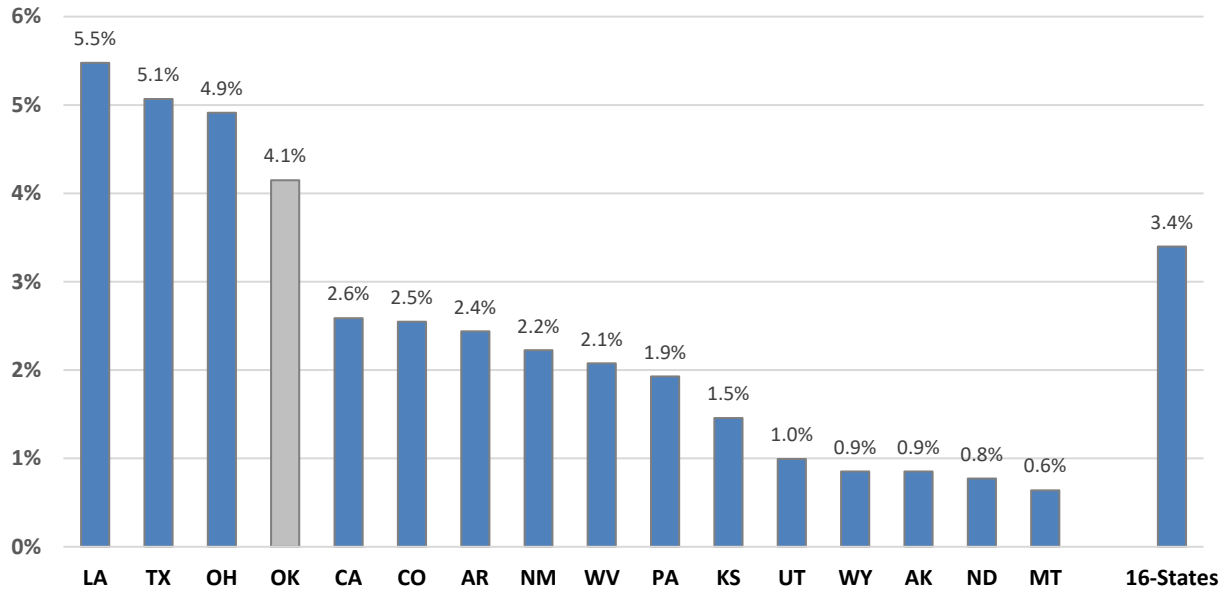
Seven states – California, Colorado, Arkansas, New Mexico, West Virginia, Pennsylvania, and Kansas – form a middle tier with effective sales tax rates between 1.5% and 2.6%.

Five additional states – Utah, Wyoming, Alaska, North Dakota, and Montana – have an effective sales tax rate of 1% or less.

Alaska, Montana, North Dakota, and Wyoming are all examples of traditional high tax oil and gas producing states, yet they receive relatively little contribution from oil and gas activity in the form of sales taxes.

This analysis illustrates the need to consider the sales tax contribution of oil and gas activity when evaluating tax policy in Oklahoma and the other three high-sales tax states. Ignoring the sales tax contribution when comparing Oklahoma to other traditional producing states such as Wyoming, Alaska, and North Dakota overlooks a key component of the industry's tax contribution within the state.

Figure 33. Effective Sales Tax Rate on Oil and Gas Activity (FY2017)



Notes: Includes both state and local sales and use tax, as well as gross receipts tax. Based on the definition used in the Census Bureau State and Local Government Finance Database. State sales tax is for FY2017, the latest year available. Local sales tax is for FY2016, the latest year available. The effective rate is state and local sales tax from oil and gas activity divided by total value of oil and gas production. Household earnings is defined by Bureau of Economic Analysis as employee compensation plus proprietors' income. Proprietor's income consists primarily of the income of sole proprietors and partnerships. The share of household earnings in each state derived from oil and gas activity is calculated as the sum of NAICS 201 (Oil and gas extraction) plus a share of NAICS 203 (Support activities for mining). The share of NAICS 203 included is determined by the ratio of NAICS 201/(NAICS 201 + NAICS 202 (Mining – except oil and gas)).

Combined Effective Rates

Figure 34 combines the effective personal income tax and sales tax rates from this section with severance and ad valorem effective tax rates developed in earlier sections of the report. Figure 35 provides a visual comparison of the relative contributions of the four taxes across the sixteen largest producing states.

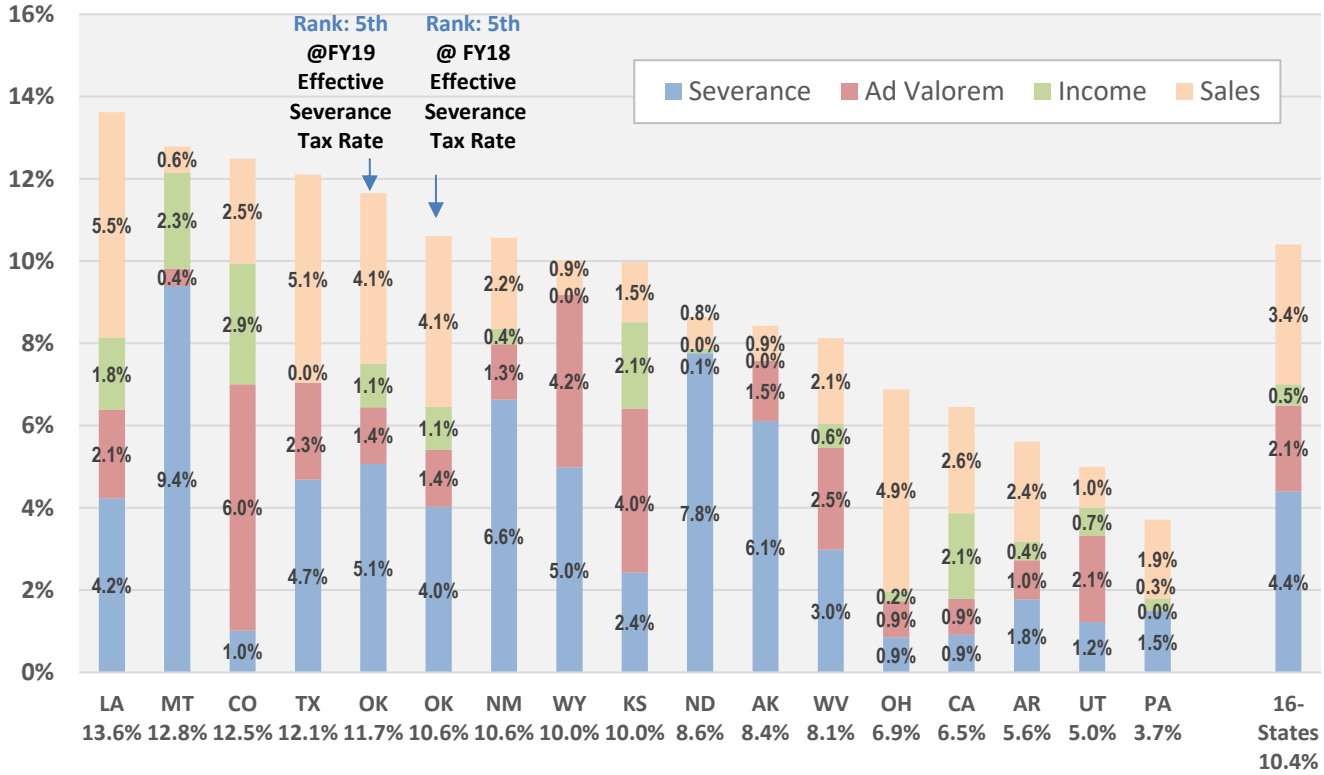
Combined effective tax rates as a share of production across the four tax categories average 10.4% and range from a low of 3.7% in Pennsylvania to a high of 13.6% in Louisiana.

Figure 34. Combined Effective Tax Rate – Oil and Gas-Related Taxes

State	Effective Rate				
	Severance	Ad Valorem	Sales	Income	Total
Alaska	6.1%	1.5%	0.0%	0.9%	8.4%
Arkansas	1.8%	1.0%	0.4%	2.4%	5.6%
California	0.9%	0.9%	2.1%	2.6%	6.5%
Colorado	1.0%	6.0%	2.9%	2.5%	12.5%
Kansas	**2.4%**	4.0%	2.1%	1.5%	10.0%
Louisiana	4.2%	2.1%	1.8%	5.5%	13.6%
Montana	9.4%	0.4%	2.3%	0.6%	12.8%
North Dakota	7.8%	0.0%	0.1%	0.8%	8.6%
New Mexico	6.6%	1.3%	0.4%	2.2%	10.6%
Ohio	0.9%	0.9%	0.2%	4.9%	6.9%
Oklahoma (FY18)	**4.0%**	**1.4%**	**1.1%**	**4.1%**	**10.6%**
Oklahoma (FY19)	**5.1%**	**1.4%**	**1.1%**	**4.1%**	**11.7%**
Pennsylvania	1.5%	0.0%	0.3%	1.9%	3.7%
Texas	4.7%	2.3%	0.0%	5.1%	12.1%
Utah	1.2%	2.1%	0.7%	1.0%	5.0%
West Virginia	3.0%	2.5%	0.6%	2.1%	8.1%
Wyoming	5.0%	4.2%	0.0%	0.9%	10.0%
16-States	**4.4%**	**2.1%**	**0.52%**	**3.4%**	**10.4%**

Notes: Base year is FY2017 for severance tax; approximately FY2016 for ad valorem tax subject to reported variability; FY2016/17 for sales tax; and FY2017 for personal income tax.

Figure 35. Overall Combined Effective Production Tax Rate – 16 Largest Producing States



Oklahoma's combined effective rate of 10.6% based on the FY2018 severance tax rate ranks 5th among the sixteen largest producing states, just above the overall average rate of 10.4%. The state's combined rate will rise further to 11.7% in FY2019 as the average effective severance tax rate in Oklahoma rises under the new 5% severance tax rate. The state's rank will remain 5th among the sixteen largest producing states but will exceed the average by more than a full percentage point.

Louisiana, Montana, Colorado, and Texas all exceed the rate in Oklahoma with combined effective rates between12% and 14%. However, Oklahoma's FY2019 combined rate will fall only slightly below the rate in Texas.

A second tier of states below Oklahoma includes New Mexico, Wyoming, Kansas, North Dakota, Alaska, and West Virginia, all with combined effective rates between 8% and 10%.

Ohio and California have estimated combined effective rates between 6% and 7%.

The remaining states of Arkansas, Utah, and Pennsylvania have overall effective rates below 6% of production value. Major gas producer Pennsylvania has the lowest overall effective rates across the four tax categories at 3.7% of production value.

Key Components in Oklahoma. By component of the overall effective rate in Figure 35, the 10.4% average across the sixteen states is comprised of a 4.4% severance tax rate, a 3.4% sales tax rate, a 2.1% ad valorem tax rate, and a 0.5% personal income tax rate.

Relative to the average for the group of sixteen states, Oklahoma has a similar effective rate for severance taxes, a lower effective ad valorem tax rate, and a higher than average effective rate for both sales and income taxes.

VIII. How are Oklahoma oil and gas severance tax revenues used?

Over the past decade, the state's oil and gas sector has contributed $6.6 billion in gross production tax revenue ($655 million annually) to the funding of Oklahoma state government (see Figure 35).[30]

Gross production revenue is first apportioned by statute for several dedicated purposes, primarily local government and public education, with the remainder deposited in the general revenue fund.[31]

Of the $6.6 billion in gross production revenue paid the past decade, $3.1 billion (47%) went to dedicated uses, with the remaining $3.5 billion (53%) transferred to the state's general revenue fund. General revenue fund contributions from severance taxes (after allocations to dedicated uses) averaged $349 million annually.

Current Severance Tax Apportionment

Severance taxes paid by state oil and gas producers in FY2018 totaled $682 million. Under current apportionment rules, severance taxes are first distributed to a range of dedicated funds (see Figure 36).[32]

FY2018 dedicated uses include $83.86 million returned to counties for roads, $83.86 million to local school districts, $47.37 million to the common education technical fund, $47.37 million to the higher education capital fund, $47.37 million to the Oklahoma student aid revolving fund, and $18.85 million to other dedicated uses. Gross production tax revenue supported a total of $329 million in off the top dedicated uses in FY2018. The remaining $353 million was distributed to the general revenue fund.

Education-Related Distributions

A total of $226 million was apportioned to education-related dedicated funds in FY2018. Recipients include both common and higher education. Over the past decade, $2.11 billion in gross production tax revenue was apportioned for educational purposes, an average of $211 million annually in the period.

Common education is the largest traditional direct beneficiary of gross production tax revenue. Over the past decade, gross production revenue received by local school districts and the common education technical fund[33] totaled $1.16 billion, or $116 million annually. Common education's share of gross production taxes reached $131 million in FY2018, the largest amount received the past decade.

Higher education remains a significant recipient as well, receiving $95 million in FY2018 through the higher education capital fund and the Oklahoma student aid revolving fund. Contributions of gross production taxes to higher education totaled $902 million the past decade, or $90 million annually.

Figure 36. Distribution of Oklahoma Gross Production Taxes

Fiscal Year	Total Apportion-ment*	General Revenue Fund	Dedicated Uses						Total Education-Related Distributions*
			Returned to Counties for Roads	To School Districts	Common Education Technical Fund	Higher Education Capital Fund	Oklahoma Student Aid Revolving Fund	Other*	
2009	$1,052,147,399	$727,272,066	$80,108,185	$80,108,185	$47,372,299	$47,372,299	$47,372,299	$22,542,066	$222,225,082
2010	732,151,105	444,359,631	60,899,931	60,899,931	47,372,299	47,372,299	47,372,299	23,874,715	203,016,828
2011	817,535,694	509,858,904	68,749,447	68,749,447	47,372,299	47,372,299	47,372,299	28,060,999	210,866,344
2012	835,987,836	430,478,292	70,326,434	70,326,434	47,372,298	47,372,298	47,372,298	122,739,782	264,889,028
2013	513,576,262	221,610,957	62,542,178	62,542,178	47,372,298	47,372,298	47,372,298	24,764,055	204,659,072
2014	665,470,660	333,239,402	80,971,420	80,971,420	47,372,295	47,372,296	47,372,295	28,171,532	223,088,306
2015	542,074,273	213,359,735	81,878,193	81,878,193	47,372,290	47,372,290	47,372,290	22,841,281	223,995,063
2016	319,784,759	95,011,360	55,965,659	55,965,659	33,890,977	33,890,977	33,890,977	11,169,150	157,638,590
2017	411,219,672	157,437,279	62,893,884	62,893,884	38,404,347	38,404,347	38,404,347	12,781,585	178,106,924
2018	682,072,596	353,386,508	83,861,652	83,861,652	47,371,864	47,371,864	47,371,864	18,847,192	225,977,244
10-year Total	$6,572,020,255	$3,486,014,134	$708,196,983	$708,196,983	$451,273,266	$451,273,267	$451,273,266	$315,792,357	$2,114,462,482
10-year Average	$657,202,026	$348,601,413	$70,819,698	$70,819,698	$45,127,327	$45,127,327	$45,127,327	$31,579,236	$211,446,248

Source: Historical issues of Apportionment of Statutory Revenues by the Oklahoma Tax Commission.

* "Other" includes but is not limited to: Community Water Infrastructure Development Revolving Fund, Conservation Commission Infrastructure Revolving Fund, County Bridge and Road Fund, OK Water Resources Board, Tourism & Recreation Capital Expenditure Revolving Fund, and the Statewide Circuit Engineering District Revolving Fund. "Education-Related Distributions" include School Districts, Common Education Technical Fund, Higher Education Capital Fund, Oklahoma Student Aid Revolving Fund, and special distributions to common education (FY2012 only).

Figure 37. Gross Production Tax Revenue Returned to School Districts

County	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
ADAIR	0	1,565	32	346	0	993	442	0	0	4	0	338
ALFALFA	278,901	318,482	316,249	317,137	349,751	706,616	1,733,355	3,737,264	6,675,851	4,415,648	4,753,655	2,332,401
ATOKA	97,064	412,273	592,286	351,202	381,449	292,346	178,799	153,328	130,222	92,847	110,791	269,555
BEAVER	2,018,381	2,178,315	2,071,842	1,277,279	1,096,382	1,391,075	1,293,302	2,151,798	1,643,232	723,908	629,900	1,445,703
BECKHAM	3,565,760	4,428,907	4,182,256	1,612,723	1,319,599	1,443,981	1,660,075	1,781,381	2,243,343	1,505,923	1,351,987	2,153,017
BLAINE	1,288,521	1,372,051	1,253,826	640,918	775,485	962,220	896,125	1,785,561	1,252,261	680,358	1,311,146	1,092,995
BRYAN	71,024	139,704	150,153	87,840	96,197	70,534	80,793	95,655	78,492	42,156	33,957	87,548
CADDO	3,179,423	4,050,424	4,361,425	2,464,365	2,494,773	2,699,846	1,475,751	1,764,750	1,520,317	907,452	966,132	2,270,523
CANADIAN	1,764,090	1,980,702	1,985,570	1,533,999	2,415,220	3,229,388	2,251,677	4,155,784	4,940,761	3,649,425	4,211,583	3,035,411
CARTER	2,545,615	3,222,150	3,495,192	2,998,076	3,855,089	5,058,388	3,792,832	5,665,667	4,888,488	3,635,591	2,441,572	3,905,305
CHEROKEE	0	0	0	36	69	0	0	0	0	0	0	11
CHOCTAW	0	0	0	0	0	0	0	0	0	0	0	0
CIMARRON	118,975	104,065	108,945	70,646	77,372	83,952	55,041	59,823	74,699	65,155	70,075	76,977
CLEVELAND	268,778	296,504	258,222	247,018	279,950	276,820	250,231	259,126	205,330	121,629	121,614	231,644
COAL	251,641	708,760	1,249,858	1,169,991	1,932,895	1,702,949	1,024,043	1,280,895	1,097,825	940,992	1,092,211	1,220,042
COMANCHE	115,105	123,113	175,697	127,716	109,482	131,338	76,328	86,526	62,250	33,565	30,983	95,700
COTTON	48,256	54,271	52,179	47,181	60,152	91,007	61,966	78,413	54,373	26,751	22,434	54,873
CRAIG	27,804	23,431	22,565	6,201	5,936	3,375	2,263	2,837	2,208	1,183	1,825	7,182
CREEK	937,212	1,058,243	1,163,030	984,512	1,115,881	869,072	1,286,504	1,041,695	865,392	559,952	541,782	948,606
CUSTER	2,270,415	2,535,412	2,562,699	1,324,703	1,380,650	1,587,679	931,034	889,602	829,663	517,971	594,576	1,315,399
DELAWARE	0	0	0	0	0	0	0	43	173	95	0	31
DEWEY	1,398,349	1,433,346	1,279,714	727,986	1,025,293	1,426,228	1,316,012	1,999,118	1,773,299	930,933	1,100,734	1,301,266
ELLIS	1,272,804	1,782,754	2,143,793	1,579,717	1,939,793	2,889,377	3,276,044	3,918,098	3,579,806	1,820,449	1,941,727	2,487,156
GARFIELD	590,906	674,733	684,863	468,800	503,770	463,229	452,173	943,272	1,355,773	1,630,831	1,783,840	896,128
GARVIN	2,083,188	2,504,794	2,605,609	2,056,948	2,407,925	3,009,522	2,098,126	2,715,211	3,061,771	1,958,364	2,373,972	2,479,224
GRADY	4,046,821	4,608,915	4,356,461	2,676,356	2,961,954	2,857,572	2,381,265	3,405,966	4,384,743	3,893,360	4,911,477	3,643,807
GRANT	397,965	535,897	453,148	387,754	464,762	519,630	940,730	2,030,543	2,412,169	1,125,695	859,422	972,975
GREER	3,436	5,013	7,477	3,959	1,984	1,756	2,029	1,882	1,419	989	864	2,737
HARMON	1,018	3,151	5,888	1,662	2,610	2,970	1,603	1,517	1,329	568	483	2,178
HARPER	853,560	947,486	826,054	577,897	592,870	702,110	630,990	568,348	429,364	304,393	219,912	579,942
HASKELL	1,057,226	1,165,731	1,009,081	446,095	335,516	239,256	144,526	153,834	117,807	61,382	115,650	378,888
HUGHES	349,870	704,640	1,097,469	1,176,551	1,676,932	1,462,553	787,398	849,219	701,956	742,177	1,020,270	1,021,917
JACKSON	30,048	40,435	37,298	37,226	71,513	43,753	36,418	125,034	108,221	63,740	34,482	59,812
JEFFERSON	136,728	166,298	162,166	146,911	183,039	258,301	180,253	256,430	124,358	22,020	33,632	153,341
JOHNSTON	6,158	12,247	22,644	94,204	113,052	230,318	172,641	278,385	354,839	315,043	255,799	184,917
KAY	352,835	469,246	533,373	523,481	661,636	879,618	652,819	923,799	1,047,164	825,443	494,490	701,107
KINGFISHER	1,192,318	1,356,121	1,498,490	972,345	1,145,790	1,173,485	892,829	1,190,708	1,874,411	1,871,157	4,256,329	1,623,166
KIOWA	114,278	87,344	84,930	104,035	70,893	66,780	36,214	33,769	24,945	19,660	19,469	54,804
LATIMER	4,176,497	4,936,641	4,233,625	2,291,456	1,882,566	1,134,710	802,517	773,336	311,814	263,635	452,560	1,708,286

Figure 37. (Cont.) Gross Production Tax Revenue Returned to School Districts

County	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
LE FLORE	905,889	1,081,147	1,211,358	606,002	515,352	337,151	224,295	254,881	159,348	74,810	171,403	463,575
LINCOLN	843,356	1,173,033	1,390,014	978,508	1,200,952	914,626	660,523	816,076	517,498	511,173	629,477	879,188
LOGAN	878,772	822,616	732,155	473,988	506,125	445,654	515,335	834,859	1,928,341	1,468,921	748,259	847,625
LOVE	238,591	273,493	280,540	209,015	283,179	311,526	334,263	631,590	450,998	357,391	840,944	397,294
MAJOR	2,069,575	2,396,206	2,555,227	1,771,312	1,952,959	1,992,499	1,290,035	1,426,478	1,241,155	713,755	642,011	1,598,164
MARSHALL	219,871	263,441	320,791	283,507	330,351	460,979	683,666	690,129	790,834	532,368	394,431	475,050
MAYES	7,542	9,642	9,436	9,164	8,356	9,610	1,456	2,209	1,451	754	5,424	5,750
MCCLAIN	898,290	1,119,974	1,074,843	784,410	919,805	1,008,003	806,392	1,087,165	841,289	569,802	528,141	873,982
MCCURTAIN	0	0	74	0	0	0	0	0	0	0	0	7
MCINTOSH	179,661	248,429	271,973	131,780	120,973	84,402	42,201	37,660	28,384	15,218	26,184	100,720
MURRAY	109,619	111,676	109,492	118,508	169,237	155,750	154,251	142,269	98,378	42,630	50,320	115,251
MUSKOGEE	37,303	34,703	35,673	32,784	38,897	27,991	32,444	32,287	25,780	9,811	15,356	28,572
NOBLE	533,738	679,426	839,647	636,122	741,719	699,912	541,371	1,010,959	1,181,970	878,254	391,166	760,055
NOWATA	259,591	274,842	280,548	147,022	114,622	182,214	108,321	151,457	60,378	50,629	65,324	143,536
OKFUSKEE	201,741	224,343	260,373	197,614	276,172	178,349	267,436	293,464	288,259	181,914	174,142	234,207
OKLAHOMA	1,066,559	1,314,602	1,381,829	1,247,181	1,623,545	1,351,368	1,512,883	1,298,260	1,243,317	714,323	762,404	1,244,971
OKMULGEE	175,527	203,832	226,779	191,541	228,118	160,845	169,142	169,518	161,138	79,193	83,486	167,359
OSAGE	846,865	986,361	1,316,441	1,320,186	1,275,266	1,922,188	1,318,157	1,674,914	927,242	536,404	770,994	1,204,815
OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0
PAWNEE	171,446	185,565	200,661	193,574	227,863	261,078	292,457	435,824	365,755	166,718	173,099	250,259
PAYNE	403,333	468,543	452,174	351,346	417,277	347,070	436,780	749,948	1,559,140	1,203,840	770,496	675,661
PITTSBURG	2,300,390	2,686,523	2,749,425	1,828,185	1,890,575	1,945,531	1,645,193	2,048,865	1,610,941	1,073,776	1,435,756	1,891,477
PONTOTOC	875,657	963,949	1,036,410	834,074	1,189,213	526,000	1,780,615	1,313,868	1,378,858	698,472	509,936	1,023,139
POTTAWATOMIE	846,405	1,063,973	985,987	636,746	833,716	514,900	915,667	749,400	757,488	404,091	285,668	714,764
PUSHMATAHA	290,409	430,653	417,903	151,171	78,103	31,021	50,470	40,758	43,693	19,682	26,053	128,951
ROGER MILLS	5,044,123	6,129,753	5,613,200	2,645,881	2,314,300	2,619,050	2,778,536	4,037,314	4,650,795	2,808,447	2,295,090	3,589,237
ROGERS	62,497	70,880	52,586	24,338	34,812	37,215	22,480	30,632	14,264	9,318	11,371	30,789
SEMINOLE	919,316	1,288,107	1,613,825	1,094,008	1,453,345	1,001,150	1,565,123	1,453,713	1,171,253	779,374	705,342	1,212,524
SEQUOYAH	88,619	107,043	95,638	67,878	52,005	37,519	20,254	17,000	11,996	10,591	16,200	43,612
STEPHENS	3,772,682	4,282,090	4,564,150	2,881,052	3,177,345	3,595,768	2,307,879	3,508,388	4,232,663	3,806,159	3,717,711	3,607,321
TEXAS	2,957,732	3,241,159	3,406,616	2,524,650	2,733,181	2,409,774	1,903,532	1,599,903	1,069,640	669,419	1,162,719	2,072,059
TILLMAN	22,744	24,974	27,222	49,904	112,518	112,608	85,899	228,010	182,442	59,435	38,295	92,131
TULSA	124,794	867,059	792,076	741,192	777,329	964,958	851,060	944,567	408,454	241,427	359,497	694,762
WAGONER	13,440	16,617	22,882	22,122	28,579	35,216	24,293	31,088	34,271	18,109	13,953	24,713
WASHINGTON	254,539	288,450	312,469	229,775	136,336	265,647	140,185	183,097	70,409	50,804	80,899	175,807
WASHITA	2,106,401	2,734,727	3,576,536	2,641,466	4,576,312	6,269,982	2,890,848	2,730,115	2,527,183	1,266,496	1,044,176	3,025,784
WOODS	961,234	1,222,346	1,551,338	1,587,806	1,837,739	2,597,269	1,724,824	3,460,533	5,120,367	2,788,893	3,163,986	2,505,510
WOODWARD	1,629,915	1,865,074	1,822,656	998,701	911,752	886,079	545,542	460,027	491,661	297,811	264,761	854,406
All Counties	$69,229,136	$83,598,414	$86,635,053	$58,177,785	$66,876,156	$72,663,646	$60,498,956	$79,735,839	$83,877,100	$56,880,656	$60,535,813	$70,947,942

Source: Oklahoma State Department of Education – Oklahoma Cost Accounting System

Gross Production Tax Distribution by Region

A portion of the gross production tax generated from oil and gas production in each county is allocated back to the county for distribution on an average daily attendance basis among the county's independent school districts. Figure 37 provides a breakdown of severance taxes distributed to school districts by county statewide in the FY2008 to FY2017 period.

County-Level Distributions. Since some counties have large amounts of oil and gas production and others very little, there is substantial variation in the revenues received.

School districts in six counties received distributions averaging more than $3 million annually the past decade - Carter ($3.9 million), Stephens County ($3.6 million), Roger Mills ($3.6 million), Grady ($3.6 million), Canadian ($3.0 million), and Washita ($3.0 million). All six counties are traditionally large oil and gas producers.

School districts in seven additional counties received distributions averaging between $2 million and $3 million annually. This group includes Alfalfa, Beckham, Caddo, Ellis, Garvin, Texas, and Woods, all traditional oil and gas producing counties.

Districts in fourteen additional counties received distributions averaging between $1 million and $2 million annually. These counties include Beaver, Blaine, Coal, Custer, Dewey, Hughes, Kingfisher, Latimer, Major, Oklahoma, Osage, Pittsburg, Pontotoc, and Seminole.

In total, districts in 27 counties received more than $1 million or more annually from oil and gas severance taxes from FY2008 to FY2017.

School districts in only fourteen counties – Adair, Cherokee, Choctaw, Craig, Delaware, Greer, Harmon, Mayes, McCurtain, Muskogee, Ottawa, Rogers, Sequoyah, and Wagoner – received less than $50,000 annually in gross production revenue in the ten-year period. Historically, these counties are home to very little oil or gas production.

Gross production taxes are much more concentrated outside the three largest counties in the state – Oklahoma ($1.23 million), Tulsa ($642,000), and Cleveland ($235,000).

School District Distributions. Gross production tax receipts by individual school district the past decade are detailed in Figure 38.

Larger schools located in traditional oil and gas producing regions of the state tend to receive the largest distributions.

Twelve individual school districts received more than $1 million annually in gross production revenue between FY2008 and FY2017 - Alva ($1.84 million), Duncan ($1.68 million), Ardmore ($1.33 million), Guymon ($1.32 million), Elk City ($1.27 million), Mustang ($1.23 million), Cheyenne ($1.15 million), Cherokee ($1.09 million), Chickasha ($1.07 million), Cordell ($1.05 million), Wilburton ($1.02 million), and Yukon ($1.0 million).

Thirty additional districts received between $500,000 and $1 million annually in the period. Thirty-eight districts received between $250,000 and $500,000 annually. Eighty-nine districts received between $100,000 and $250,000 annually. Fifty-four districts received between $50,000 and $100,000 annually.

In total, 223 individual school districts in Oklahoma received $50,000 or more annually in gross production revenue between FY2008 and FY2017.

The state's charter schools do not share in school district distributions of gross production tax revenue.

Figure 38. Gross Production Tax Distribution by County/District

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
ADAIR	CAVE SPRINGS	0	0	2	20	0	993	19	0	0	0	0	103
ADAIR	DAHLONEGAH	0	350	0	0	0	0	0	0	0	0	0	35
ADAIR	GREASY	0	0	0	0	0	0	0	0	0	0	0	0
ADAIR	MARYETTA	0	0	0	0	0	0	0	0	0	0	0	0
ADAIR	PEAVINE	0	0	0	0	0	0	0	0	0	0	0	0
ADAIR	ROCKY MOUNTAIN	0	0	0	0	0	0	0	0	0	0	0	0
ADAIR	STILWELL	0	0	15	156	0	0	194	0	0	2	0	37
ADAIR	WATTS	0	0	4	44	0	0	56	0	0	1	0	11
ADAIR	WESTVILLE	0	1,216	11	125	0	0	173	0	0	2	0	153
ADAIR	ZION	0	0	0	0	0	0	0	0	0	0	0	0
ALFALFA	BURLINGTON	55,204	61,152	60,998	68,274	83,287	165,371	377,123	782,657	1,252,508	830,532	947,167	462,907
ALFALFA	CHEROKEE	124,960	145,538	142,729	133,586	141,524	294,164	779,185	1,711,859	3,134,063	2,076,783	2,302,327	1,086,176
ALFALFA	TIMBERLAKE	98,737	111,792	112,523	115,277	124,939	247,081	577,047	1,242,748	2,289,280	1,508,332	1,504,161	783,318
ATOKA	ATOKA	49,216	206,864	298,977	180,527	183,862	141,980	85,830	71,453	60,667	44,555	55,237	132,995
ATOKA	CANEY	13,126	61,713	84,310	49,209	50,299	39,212	26,302	21,987	18,815	12,844	15,246	37,994
ATOKA	HARMONY	0	0	0	0	0	0	0	0	0	0	0	0
ATOKA	LANE	0	0	0	0	0	0	0	0	0	0	0	0
ATOKA	STRINGTOWN	11,231	43,373	58,534	31,970	56,544	35,486	20,022	19,603	17,993	12,981	14,887	31,139
ATOKA	TUSHKA	23,491	100,323	150,466	89,497	90,744	75,669	46,646	40,285	32,747	22,468	25,421	67,427
BEAVER	BALKO	193,522	251,710	227,726	144,919	135,112	192,291	189,101	320,259	232,112	102,068	89,990	188,529
BEAVER	BEAVER	684,150	722,906	717,569	450,852	383,926	473,306	430,580	688,962	549,383	247,967	203,747	486,920
BEAVER	FORGAN	328,024	371,786	329,289	201,954	178,603	226,316	207,157	337,687	227,332	93,519	88,554	226,220
BEAVER	TURPIN	812,685	831,913	797,258	479,554	398,741	499,162	466,465	804,889	634,405	280,354	247,610	544,035
BECKHAM	ELK CITY	2,137,462	2,684,868	2,520,077	958,026	793,286	872,917	983,653	1,042,960	1,281,889	835,794	728,343	1,270,181
BECKHAM	ERICK	233,382	295,944	272,680	108,713	84,453	92,336	111,042	120,302	145,449	95,611	94,230	142,076
BECKHAM	MERRITT	512,255	625,373	587,817	236,568	191,839	211,414	266,436	295,290	397,510	288,648	272,778	337,367
BECKHAM	SAYRE	682,661	822,722	801,683	309,416	250,022	267,314	298,944	322,828	418,495	285,869	256,636	403,393
BLAINE	CANTON	243,383	262,721	241,175	121,814	155,567	201,982	183,215	355,450	250,530	141,602	269,115	218,317
BLAINE	GEARY	288,953	291,317	269,571	137,209	164,404	208,789	193,998	384,560	267,420	144,527	269,315	233,111
BLAINE	OKEENE	231,639	253,361	235,687	117,803	136,797	163,394	155,358	300,736	214,506	117,678	228,614	192,394
BLAINE	WATONGA	524,546	564,651	507,392	264,092	318,717	388,055	363,554	744,815	519,806	276,551	544,101	449,174
BRYAN	(ILC) CHOCTAW NATION	0	0	0	0	0	0	0	0	0	0	0	0
BRYAN	ACHILLE	4,636	9,083	9,768	5,183	5,352	3,666	3,733	4,097	3,250	1,699	1,412	4,724
BRYAN	BENNINGTON	2,886	5,399	5,918	3,202	3,480	2,569	3,115	3,471	2,909	1,631	1,338	3,303
BRYAN	CADDO	4,532	8,357	9,721	5,594	6,484	4,859	5,411	6,266	4,975	2,618	2,169	5,645
BRYAN	CALERA	6,231	12,311	13,010	7,712	8,342	6,106	7,031	8,336	6,976	3,871	3,128	7,682
BRYAN	COLBERT	8,865	16,249	16,871	10,131	11,406	8,495	9,536	11,452	9,319	4,648	3,653	10,176
BRYAN	DURANT	32,265	63,295	68,707	40,955	44,921	32,882	38,278	44,962	37,246	20,159	16,328	40,773
BRYAN	ROCK CREEK	5,124	10,534	10,952	6,282	6,334	4,598	5,123	6,295	5,109	2,716	2,086	6,003
BRYAN	SILO	6,484	14,476	15,206	8,782	9,877	7,359	8,568	10,776	8,707	4,813	3,844	9,241
CADDO	ANADARKO	1,041,864	1,286,699	1,366,717	763,292	779,054	844,981	480,247	575,733	490,078	288,794	298,251	717,385
CADDO	BINGER-ONEY	178,032	229,735	253,435	137,411	139,119	152,236	79,845	109,128	101,398	60,929	59,823	132,306
CADDO	BOONE-APACHE	309,164	407,429	451,524	244,695	252,107	266,764	142,927	165,391	150,332	90,423	94,104	226,570
CADDO	CARNEGIE	331,852	410,082	452,063	257,003	251,236	275,892	141,187	170,794	145,503	87,552	94,058	228,537

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
CADDO	CEMENT	137,288	180,803	201,652	119,618	114,804	116,551	62,228	76,535	62,062	35,991	41,458	101,170
CADDO	CYRIL	202,842	277,727	259,110	143,174	147,598	157,844	87,206	100,561	88,418	57,482	62,826	138,195
CADDO	FORT COBB-BROXTON	181,377	242,455	248,162	140,127	142,955	157,843	86,150	104,941	85,479	50,403	55,888	131,440
CADDO	GRACEMONT	98,604	120,869	133,680	75,850	72,379	73,920	40,578	44,189	38,423	22,784	24,047	64,672
CADDO	HINTON	324,844	405,161	472,711	286,277	300,516	321,721	171,911	204,242	177,059	105,687	117,632	256,292
CADDO	HYDRO-EAKLY	241,696	319,703	340,539	195,729	197,177	218,541	120,604	140,094	113,882	65,950	74,083	178,630
CADDO	LOOKEBA SICKLES	131,861	169,764	181,832	101,189	97,828	113,553	62,867	73,142	67,681	41,456	43,961	95,327
CANADIAN	BANNER	0	0	0	0	0	0	0	0	0	0	0	0
CANADIAN	CALUMET	20,872	26,421	27,504	21,180	28,895	41,880	30,392	56,298	59,673	41,066	43,755	37,706
CANADIAN	DARLINGTON	0	0	0	0	0	0	0	0	0	0	0	0
CANADIAN	EL RENO	223,132	242,587	235,376	177,656	275,698	362,206	246,125	439,575	494,601	370,168	430,547	327,454
CANADIAN	MAPLE	0	0	0	0	0	0	0	0	0	0	0	0
CANADIAN	MUSTANG	712,971	792,660	797,334	612,828	971,306	1,289,535	904,331	1,676,378	2,009,382	1,505,389	1,743,160	1,230,230
CANADIAN	PIEDMONT	178,291	214,718	221,730	187,316	302,885	408,128	288,304	546,680	663,684	500,233	593,648	392,732
CANADIAN	RIVERSIDE	0	0	0	0	0	0	0	0	0	0	0	0
CANADIAN	UNION CITY	22,561	25,789	27,553	20,032	33,275	44,935	28,399	51,713	60,677	43,302	48,421	38,410
CANADIAN	YUKON	606,264	678,527	676,073	514,986	803,161	1,082,704	754,126	1,385,140	1,652,744	1,189,267	1,352,053	1,008,878
CARTER	(ILC) TRI-COUNTY	0	0	0	0	0	0	0	0	0	0	0	0
CARTER	ARDMORE	859,695	1,080,208	1,187,964	1,018,497	1,311,835	1,719,929	1,273,849	1,937,201	1,672,348	1,248,995	817,692	1,326,852
CARTER	DICKSON	373,888	462,240	501,465	420,967	565,581	762,671	579,930	831,107	725,584	534,264	368,660	575,247
CARTER	FOX	99,606	120,487	133,814	114,251	145,419	172,599	127,380	190,584	170,950	128,591	83,244	138,732
CARTER	HEALDTON	167,362	209,128	224,828	191,584	237,113	295,258	216,126	337,362	300,088	212,069	141,040	236,460
CARTER	LONE GROVE	449,313	581,752	616,162	515,346	663,931	881,493	665,095	959,732	800,986	606,420	412,314	670,323
CARTER	PLAINVIEW	407,471	509,308	552,680	482,599	616,532	825,215	621,097	952,951	825,058	624,343	427,626	643,741
CARTER	SPRINGER	51,970	71,342	81,563	79,902	106,630	137,585	99,906	147,016	118,285	83,727	59,924	98,588
CARTER	WILSON	136,310	187,685	196,715	174,932	208,048	263,637	209,449	309,714	275,189	197,182	131,072	215,362
CARTER	ZANEIS	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	BRIGGS	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	CHEROKEE IMMERSION CHARTER SCH	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	GRAND VIEW	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	HULBERT	0	0	0	14	8	0	0	0	0	0		3
CHEROKEE	KEYS	0	0	0	22	13	0	0	0	0	0	0	3
CHEROKEE	LOWREY	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	NORWOOD	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	PEGGS	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	SHADY GROVE	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	TAHLEQUAH	0	0	0	0	48	0	0	0	0	0	0	5
CHEROKEE	TENKILLER	0	0	0	0	0	0	0	0	0	0	0	0
CHEROKEE	WOODALL	0	0	0	0	0	0	0	0	0	0	0	0
CHOCTAW	BOSWELL	0	0	0	0	0	0	0	0	0	0	0	0
CHOCTAW	FORT TOWSON	0	0	0	0	0	0	0	0	0	0	0	0
CHOCTAW	HUGO	0	0	0	0	0	0	0	0	0	0	0	0
CHOCTAW	SOPER	0	0	0	0	0	0	0	0	0	0	0	0
CHOCTAW	SWINK	0	0	0	0	0	0	0	0	0	0	0	0
CIMARRON	BOISE CITY	73,390	64,850	70,905	46,978	50,574	54,227	33,811	38,783	48,151	42,000	43,221	49,350
CIMARRON	FELT	21,333	19,372	18,864	10,331	12,231	14,813	11,230	11,841	14,805	12,210	14,301	14,000

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
CIMARRON	KEYES	24,252	19,843	19,175	13,338	14,567	14,912	10,000	9,198	11,743	10,945	12,553	13,627
CLEVELAND	LEXINGTON	7,386	8,206	7,361	6,440	7,365	7,068	6,224	6,559	5,331	3,179	3,008	6,074
CLEVELAND	LITTLE AXE	8,877	9,392	8,222	7,201	8,302	8,073	6,897	6,915	5,774	3,417	3,342	6,754
CLEVELAND	MOORE	143,148	154,133	140,188	127,796	147,740	147,126	133,426	138,113	110,612	65,379	64,250	122,876
CLEVELAND	NOBLE	19,907	20,120	18,717	17,174	19,628	18,963	16,489	16,770	13,541	7,913	7,601	15,692
CLEVELAND	NORMAN	89,460	104,653	83,733	88,407	96,915	95,590	87,196	90,768	70,072	41,741	43,413	80,249
CLEVELAND	ROBIN HILL	0	0	0	0	0	0	0	0	0	0	0	0
COAL	COALGATE	190,172	520,068	908,539	867,429	1,389,483	1,249,306	756,628	952,521	803,163	691,230	794,672	893,304
COAL	COTTONWOOD	0	0	0	0	0	0	0	0	0	0	0	0
COAL	TUPELO	61,469	188,692	341,319	302,561	543,412	453,643	267,415	328,374	294,662	249,762	297,539	326,738
COMANCHE	BISHOP	0	0	0	0	0	0	0	0	0	0	0	0
COMANCHE	CACHE	8,053	8,841	12,209	9,585	8,405	10,468	6,440	7,947	5,416	3,005	2,851	7,517
COMANCHE	CHATTANOOGA	1,454	1,619	2,159	1,690	1,465	1,694	1,009	1,134	700	365	343	1,218
COMANCHE	ELGIN	7,597	8,517	12,441	9,462	8,653	11,302	7,122	9,153	6,300	3,549	3,420	7,992
COMANCHE	FLETCHER	2,396	2,668	3,851	3,075	2,494	2,883	1,649	2,024	1,440	773	726	2,158
COMANCHE	FLOWER MOUND	0	0	0	0	0	0	0	0	0	0	0	0
COMANCHE	GERONIMO	1,618	1,881	2,808	2,023	1,714	2,208	1,220	1,499	1,071	552	495	1,547
COMANCHE	INDIAHOMA	1,262	1,210	720	1,859	1,857	1,298	835	997	645	358	330	1,011
COMANCHE	LAWTON	90,499	96,077	138,151	97,503	82,774	98,913	56,520	61,848	45,398	24,287	22,187	72,366
COMANCHE	STERLING	2,227	2,299	3,357	2,518	2,120	2,572	1,534	1,923	1,280	675	630	1,891
COTTON	BIG PASTURE	10,214	11,745	10,788	9,309	11,596	17,495	11,211	14,603	10,528	4,954	4,146	10,638
COTTON	TEMPLE	9,734	10,851	10,533	9,385	11,455	18,196	12,181	13,086	8,135	4,184	3,731	10,174
COTTON	WALTERS	28,309	31,675	30,858	28,486	37,101	55,316	38,574	50,723	35,711	17,614	14,557	34,062
CRAIG	BLUEJACKET	1,705	1,430	1,514	428	363	238	179	230	164	85	148	478
CRAIG	KETCHUM	6,023	5,028	4,267	1,271	1,136	753	503	607	500	266	405	1,474
CRAIG	VINITA	14,514	12,110	12,415	3,404	2,853	1,877	1,289	1,631	1,279	688	1,038	3,858
CRAIG	WELCH	3,742	3,227	3,072	831	710	430	293	368	266	145	233	958
CRAIG	WHITE OAK	1,821	1,635	1,297	267	874	76	0	0	0	0	0	415
CREEK	ALLEN-BOWDEN	0	0	0	0	0	0	0	0	0	0	0	0
CREEK	BRISTOW	137,295	152,942	169,043	143,007	161,545	129,303	193,393	158,775	131,755	85,117	85,318	141,020
CREEK	DEPEW	28,276	32,971	34,954	31,105	38,044	28,463	42,373	37,494	30,821	18,945	18,135	31,330
CREEK	DRUMRIGHT	53,327	59,601	67,355	55,388	63,498	48,422	70,851	56,170	46,809	29,332	27,143	52,457
CREEK	GYPSY	0	0	0	0	0	0	0	0	0	0	0	0
CREEK	KELLYVILLE	97,104	108,898	119,534	103,469	115,262	90,202	131,708	104,191	85,755	54,302	50,816	96,414
CREEK	KIEFER	30,544	33,816	40,136	36,622	47,256	40,039	65,601	58,594	51,814	35,296	35,661	44,484
CREEK	LONE STAR	0	0	0	0	0	0	0	0	0	0	0	0
CREEK	MANNFORD	128,516	140,122	159,276	128,677	143,546	116,258	172,735	138,144	118,224	77,675	76,605	127,126
CREEK	MOUNDS	51,496	68,021	74,384	56,857	69,021	51,640	69,134	54,982	46,242	28,800	28,004	54,709
CREEK	OILTON	29,258	31,320	34,923	27,773	30,952	22,383	32,626	27,165	20,313	13,547	13,818	25,482
CREEK	OLIVE	32,215	38,321	40,195	34,343	40,144	30,169	45,515	35,641	29,661	18,524	17,067	32,958
CREEK	PRETTY WATER	0	0	0	0	0	0	0	0	0	0	0	0
CREEK	SAPULPA	349,181	392,230	423,230	367,271	406,614	312,191	462,567	370,540	303,998	198,415	189,215	342,627
CUSTER	ARAPAHO-BUTLER	155,877	164,222	207,075	93,962	94,719	115,538	66,871	64,770	61,704	38,237	47,733	95,483
CUSTER	BUTLER	45,451	47,844	0	0	0	0	0	0	0	0	0	4,784
CUSTER	CLINTON	943,469	1,070,826	1,102,983	587,948	616,517	697,852	419,973	389,469	358,965	219,591	248,584	571,271
CUSTER	THOMAS-FAY-CUSTER UNIFIED DIST	251,267	280,034	271,509	134,532	142,334	154,967	87,627	81,585	73,654	46,801	51,762	132,480

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
CUSTER	WEATHERFORD	874,350	972,485	981,132	508,262	527,080	619,322	356,564	353,779	335,340	213,342	246,498	511,380
DELAWARE	CLEORA	0	0	0	0	0	0	0	0	0	0	0	0
DELAWARE	COLCORD	0	0	0	0	0	0	0	5	17	10	0	3
DELAWARE	GROVE	0	0	0	0	0	0	0	18	73	41	0	13
DELAWARE	JAY	0	0	0	0	0	0	0	12	50	25	0	9
DELAWARE	KANSAS	0	0	0	0	0	0	0	6	26	15	0	5
DELAWARE	KENWOOD	0	0	0	0	0	0	0	0	0	0	0	0
DELAWARE	LEACH	0	0	0	0	0	0	0	0	0	0	0	0
DELAWARE	MOSELEY	0	0	0	0	0	0	0	0	0	0	0	0
DELAWARE	OAKS-MISSION	0	0	0	0	0	0	0	0	0	0	0	0
DEWEY	SEILING	681,674	688,739	643,850	372,495	512,388	723,690	667,246	1,003,402	893,240	480,027	553,990	653,907
DEWEY	TALOGA	212,706	201,240	140,215	62,010	107,813	176,044	150,076	179,398	145,694	80,455	126,016	136,896
DEWEY	VICI	503,969	543,367	495,649	293,481	405,091	526,494	498,690	816,317	734,365	370,451	420,728	510,463
ELLIS	ARNETT	297,725	395,889	454,527	329,303	389,700	601,280	760,588	921,882	806,414	442,310	489,587	559,148
ELLIS	FARGO	345,541	511,982	612,570	435,115	529,331	780,038	798,889	947,555	860,587	435,816	630,656	654,254
ELLIS	GAGE	214,710	280,872	314,268	215,516	258,872	379,106	366,622	422,503	374,037	150,304	0	276,210
ELLIS	SHATTUCK	414,828	594,011	762,428	599,782	761,891	1,128,952	1,349,945	1,626,158	1,538,767	792,019	821,484	997,544
GARFIELD	CHISHOLM	58,580	64,381	65,684	43,768	47,301	43,070	39,600	84,212	122,074	152,732	165,720	82,854
GARFIELD	COVINGTON-DOUGLAS	18,620	20,230	20,291	13,805	15,614	13,634	12,764	24,904	34,946	40,314	43,292	23,979
GARFIELD	DRUMMOND	17,039	19,078	19,702	16,886	17,327	15,378	14,640	29,427	41,562	47,157	49,577	27,073
GARFIELD	ENID	400,770	463,604	469,840	317,068	342,999	318,244	314,911	661,586	953,881	1,152,354	1,259,820	625,431
GARFIELD	GARBER	20,765	24,603	25,209	17,561	16,922	15,642	14,975	33,188	45,170	55,262	59,743	30,828
GARFIELD	KREMLIN-HILLSDALE	16,938	18,909	18,754	13,775	14,789	14,085	14,640	29,342	39,359	43,994	50,408	25,806
GARFIELD	PIONEER-PLEASANT VALE	35,092	38,923	41,327	29,042	30,823	27,137	25,505	50,269	71,785	80,493	88,362	48,366
GARFIELD	WAUKOMIS	23,103	25,005	24,055	16,896	17,996	16,039	15,138	30,344	46,995	58,525	66,917	31,791
GARVIN	ELMORE CITY-PERNELL	214,139	259,065	267,755	220,778	252,936	311,248	210,058	273,734	305,144	188,712	237,108	252,654
GARVIN	LINDSAY	475,067	578,708	599,976	486,410	566,764	708,741	510,030	646,313	738,902	481,845	579,571	589,726
GARVIN	MAYSVILLE	194,831	230,695	231,806	167,905	203,866	248,619	162,528	204,481	223,155	139,153	158,749	197,096
GARVIN	PAOLI	110,363	137,011	141,368	107,319	124,810	158,741	104,215	134,576	158,755	98,226	116,467	128,149
GARVIN	PAULS VALLEY	570,885	675,187	715,778	566,379	648,758	792,965	544,340	707,136	789,607	506,609	622,294	656,905
GARVIN	STRATFORD	228,754	288,537	298,269	248,625	298,772	381,492	280,373	364,983	418,404	273,360	331,737	318,455
GARVIN	WHITEBEAD	0	0	0	0	0	0	0	0	0	0	0	0
GARVIN	WYNNEWOOD	289,149	335,592	350,657	259,532	312,020	407,717	286,582	383,988	427,803	270,458	328,047	336,240
GRADY	ALEX	184,257	221,109	201,234	120,563	126,653	114,230	84,161	125,507	164,361	141,042	182,420	148,128
GRADY	AMBER-POCASSET	223,754	255,530	244,220	149,484	163,294	161,380	137,234	195,029	257,155	223,193	274,681	206,120
GRADY	BRIDGE CREEK	583,458	695,548	683,141	424,315	486,824	470,411	401,159	586,042	753,462	681,203	871,120	605,322
GRADY	CHICKASHA	1,336,395	1,445,525	1,320,172	817,976	885,531	835,769	686,697	990,323	1,254,293	1,109,739	1,379,966	1,072,599
GRADY	FRIEND	0	0	0	0	0	0	0	0	0	0	0	0
GRADY	MIDDLEBERG	0	0	0	0	0	0	0	0	0	0	0	0
GRADY	MINCO	273,267	308,304	290,324	177,116	197,830	194,639	165,978	231,409	307,952	268,206	328,151	246,991
GRADY	NINNEKAH	227,709	262,808	244,586	149,901	179,098	180,048	145,356	204,357	274,353	249,287	312,401	220,220
GRADY	PIONEER	0	0	0	0	0	0	0	0	0	0	0	0
GRADY	RUSH SPRINGS	290,543	336,331	321,454	193,837	211,056	205,526	171,362	241,613	308,372	259,469	329,930	257,895
GRADY	TUTTLE	765,980	900,150	879,985	548,548	616,954	601,155	509,442	723,587	932,217	840,941	1,076,910	762,989
GRADY	VERDEN	161,460	183,609	171,347	94,615	94,713	94,414	79,876	108,098	132,579	120,281	155,898	123,543
GRANT	DEER CREEK-LAMONT	100,295	134,018	117,219	95,975	116,277	126,184	232,550	459,856	524,299	250,133	193,062	224,957

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
GRANT	MEDFORD	114,797	153,246	132,420	112,005	134,929	199,197	340,906	763,590	885,819	391,832	293,665	340,761
GRANT	POND CREEK-HUNTER	141,007	199,113	163,194	141,195	171,330	194,248	367,273	807,097	1,002,050	483,731	372,694	390,192
GRANT	WAKITA	41,866	49,520	40,315	38,579	42,226	0	0	0	0	0	0	17,064
GREER	GRANITE	917	1,378	2,012	1,053	536	462	549	502	397	287	235	741
GREER	MANGUM	2,519	3,635	5,465	2,906	1,448	1,294	1,480	1,380	1,022	702	628	1,996
HARMON	HOLLIS	1,018	3,151	5,888	1,662	2,610	2,970	1,603	1,517	1,329	568	483	2,178
HARPER	BUFFALO	314,604	345,156	293,351	215,340	227,917	263,746	236,799	218,472	168,222	111,546	78,626	215,918
HARPER	LAVERNE	538,957	602,329	532,702	362,557	364,953	438,364	394,191	349,875	261,142	192,847	141,286	364,025
HASKELL	KEOTA	219,943	234,213	200,498	86,615	65,141	44,867	27,710	31,083	22,711	11,664	23,091	74,759
HASKELL	KINTA	85,554	90,963	87,058	39,245	30,322	23,415	13,745	14,013	10,284	5,435	10,659	32,514
HASKELL	MCCURTAIN	137,818	154,428	125,507	51,374	38,428	26,121	15,930	16,147	12,933	6,419	11,872	45,916
HASKELL	STIGLER	612,024	685,873	595,900	268,860	201,625	144,854	87,140	92,591	71,879	37,864	70,028	225,661
HASKELL	WHITEFIELD	1,887	254	118	0	0	0	0	0	0	0	0	37
HUGHES	CALVIN	27,743	53,138	81,743	83,880	111,081	112,195	55,983	59,590	51,500	56,255	68,879	73,424
HUGHES	HOLDENVILLE	162,705	322,612	507,992	549,505	775,282	668,658	362,853	411,447	334,797	345,490	495,166	477,380
HUGHES	MOSS	36,359	78,738	129,108	129,475	200,485	174,118	88,231	96,582	83,802	95,286	123,466	119,929
HUGHES	STUART	42,366	89,038	134,698	141,975	191,508	158,391	93,591	100,834	81,758	92,757	125,699	121,025
HUGHES	WETUMKA	59,481	121,428	196,737	210,620	322,244	294,791	163,811	180,767	150,100	152,390	207,061	199,995
JACKSON	ALTUS	22,891	30,729	28,356	28,283	58,683	32,779	27,415	94,148	81,518	47,582	25,741	45,523
JACKSON	BLAIR	1,748	2,216	1,981	1,978	2,962	2,639	2,149	7,951	6,600	3,981	2,202	3,466
JACKSON	DUKE	976	1,576	1,412	1,309	1,951	1,599	1,447	5,090	4,193	2,655	1,376	2,261
JACKSON	NAVAJO	2,692	3,636	3,543	3,588	5,046	4,215	3,334	11,030	9,968	6,308	3,563	5,423
JACKSON	OLUSTEE-ELDORADO	1,740	2,278	2,006	2,067	2,870	2,520	2,074	6,816	5,942	3,214	1,600	3,139
JEFFERSON	RINGLING	56,528	69,808	67,370	59,610	80,792	97,678	71,334	99,723	49,315	8,532	13,272	61,743
JEFFERSON	RYAN	29,472	35,892	35,366	31,086	36,350	60,820	41,610	59,551	30,434	5,326	7,750	34,419
JEFFERSON	TERRAL	0	0	0	0	83	0	0	0	0	0	0	8
JEFFERSON	WAURIKA	50,728	60,598	59,429	56,215	65,814	99,803	67,308	97,156	44,609	8,162	12,609	57,170
JOHNSTON	COLEMAN	701	1,427	2,743	11,065	13,336	28,019	22,021	33,126	38,893	35,986	26,328	21,294
JOHNSTON	MANNSVILLE	0	0	0	0	0	0	0	0	0	0	0	0
JOHNSTON	MILBURN	802	1,548	2,537	11,093	13,366	26,670	19,794	31,318	40,572	32,960	29,984	20,984
JOHNSTON	MILL CREEK	518	1,052	1,897	8,737	10,744	20,696	14,417	22,376	30,113	28,557	24,456	16,304
JOHNSTON	RAVIA	0	0	0	0	0	0	0	0	0	0	0	0
JOHNSTON	TISHOMINGO	3,278	6,518	12,411	50,184	60,102	123,776	93,984	153,210	196,523	173,114	138,244	100,807
JOHNSTON	WAPANUCKA	859	1,702	3,057	13,125	15,503	31,158	22,425	38,355	48,739	44,426	36,788	25,528
KAY	BLACKWELL	66,653	88,634	101,027	98,165	129,011	163,044	116,178	162,131	182,009	140,975	83,808	126,498
KAY	BRAMAN (Consolidated)	5,999	7,424	7,205	5,918	7,130	934	0	0	0	0	0	2,861
KAY	KILDARE	0	0	0	0	0	0	0	0	0	0	0	0
KAY	NEWKIRK	30,255	40,829	46,205	46,519	49,794	83,652	66,842	95,781	110,189	88,014	52,428	68,025
KAY	PECKHAM	0	0	0	0	0	0	0	0	0	0	0	0
KAY	PONCA CITY	215,546	286,034	326,835	321,095	411,152	549,320	410,166	584,005	663,490	522,852	313,621	438,857
KAY	TONKAWA	34,383	46,325	52,101	51,784	64,548	82,668	59,634	81,882	91,477	73,602	44,633	64,865
KINGFISHER	CASHION	175,930	206,857	233,904	149,469	176,979	182,506	126,148	166,555	268,318	261,753	595,211	236,770
KINGFISHER	DOVER	94,494	105,161	112,021	72,645	79,991	77,474	57,611	66,091	100,722	92,382	197,970	96,207
KINGFISHER	HENNESSEY	298,644	343,323	375,712	241,075	280,808	277,043	215,733	289,496	467,583	471,463	1,059,249	402,148
KINGFISHER	KINGFISHER	446,413	509,110	551,731	360,407	426,815	450,769	360,307	492,967	748,585	746,100	1,692,524	633,932
KINGFISHER	LOMEGA	70,387	80,499	93,324	62,477	75,403	77,629	57,265	76,647	124,977	124,927	303,429	107,658

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
KINGFISHER	OKARCHE	106,449	111,171	131,797	86,272	105,794	108,064	75,765	98,952	164,225	174,532	407,946	146,452
KIOWA	HOBART	53,570	41,663	40,805	50,473	34,245	32,495	17,677	16,665	12,770	10,259	9,696	26,675
KIOWA	LONE WOLF	8,139	5,554	5,154	6,954	4,258	3,858	1,776	1,678	1,462	1,025	1,462	3,318
KIOWA	MOUNTAIN VIEW-GOTEBO	18,441	13,734	12,787	14,449	10,380	9,402	5,609	5,340	3,917	3,069	2,987	8,167
KIOWA	SNYDER	34,128	26,392	26,183	32,158	22,011	21,025	11,153	10,086	6,795	5,306	5,324	16,643
LATIMER	BUFFALO VALLEY	454,005	532,438	452,366	246,733	194,450	121,378	87,226	89,152	36,236	27,253	43,365	183,060
LATIMER	PANOLA	671,218	839,497	731,568	379,800	302,109	169,070	115,658	105,506	40,727	27,785	46,504	275,822
LATIMER	RED OAK	480,343	592,388	541,728	289,849	259,171	162,302	120,737	121,386	50,751	47,582	88,504	227,440
LATIMER	WILBURTON	2,570,931	2,972,318	2,507,963	1,375,074	1,126,836	681,959	478,896	457,291	184,100	161,015	274,187	1,021,964
LE FLORE	ARKOMA	36,882	42,436	49,541	22,301	19,021	13,127	9,193	11,082	6,831	3,379	7,391	18,430
LE FLORE	BOKOSHE	25,417	30,690	33,298	15,310	12,356	7,768	4,899	5,972	3,438	1,740	4,054	11,952
LE FLORE	CAMERON	43,552	50,651	53,457	25,817	20,222	12,980	7,563	8,646	5,347	2,300	5,062	19,204
LE FLORE	FANSHAWE	0	0	0	0	0	0	0	0	0	0	0	0
LE FLORE	HEAVENER	94,239	112,172	129,290	67,832	59,812	40,513	25,561	30,230	18,918	8,738	19,783	51,285
LE FLORE	HODGEN	0	0	0	0	0	0	0	0	0	0	0	0
LE FLORE	HOWE	44,673	52,728	60,768	30,467	24,472	18,426	12,696	13,945	8,949	4,642	11,088	23,818
LE FLORE	LE FLORE	23,439	30,114	31,655	14,019	12,125	7,880	5,256	6,303	3,816	1,737	4,283	11,719
LE FLORE	MONROE	0	0	0	0	0	0	0	0	0	0	0	0
LE FLORE	PANAMA	77,856	88,753	98,566	49,868	41,412	25,762	16,450	19,280	12,690	6,034	13,940	37,275
LE FLORE	POCOLA	86,697	115,701	117,011	56,886	47,908	30,834	20,859	22,695	14,416	6,677	15,644	44,863
LE FLORE	POTEAU	215,958	256,579	295,543	147,369	129,365	84,727	57,934	64,765	40,440	19,009	44,028	113,976
LE FLORE	SHADY POINT	0	0	0	0	0	0	0	0	0	0	0	0
LE FLORE	SPIRO	123,775	143,700	161,997	79,786	68,282	43,783	29,405	33,171	19,833	9,078	20,684	60,972
LE FLORE	TALIHINA	59,779	69,735	82,885	44,798	37,312	23,680	15,796	17,636	10,882	4,973	11,338	31,903
LE FLORE	WHITESBORO	20,497	21,960	24,529	13,005	11,130	6,824	4,931	5,460	3,577	1,691	3,768	9,688
LE FLORE	WISTER	53,125	65,929	72,819	38,544	31,936	20,846	13,750	15,696	10,213	4,812	10,339	28,488
LINCOLN	AGRA	64,734	88,786	102,002	70,459	87,981	68,513	50,941	65,977	40,937	37,648	38,360	65,160
LINCOLN	CARNEY	30,947	42,779	52,550	37,390	46,129	33,629	25,171	34,082	20,223	20,310	27,103	33,937
LINCOLN	CHANDLER	173,960	245,639	292,943	200,374	246,532	185,994	131,120	163,567	106,649	109,632	137,646	182,009
LINCOLN	DAVENPORT	55,402	81,081	94,302	64,393	80,837	59,089	41,044	51,718	35,511	34,878	43,975	58,683
LINCOLN	MEEKER	131,790	181,965	213,947	150,151	184,790	143,099	103,965	128,646	79,228	77,910	97,345	136,105
LINCOLN	PRAGUE	151,020	214,927	258,985	186,949	226,658	177,557	127,733	150,845	95,360	97,067	117,277	165,336
LINCOLN	STROUD	129,351	174,966	212,320	152,367	187,229	140,608	102,203	123,814	76,792	74,634	93,978	133,891
LINCOLN	WELLSTON	106,152	142,890	162,966	116,424	140,795	106,138	78,347	97,427	62,799	59,093	73,794	104,067
LINCOLN	WHITE ROCK	0	0	0	0	0	0	0	0	0	0	0	0
LOGAN	COYLE	76,140	67,821	63,411	39,285	38,684	33,705	37,770	59,266	119,696	95,034	51,456	60,613
LOGAN	CRESCENT	125,927	120,688	104,002	73,535	73,319	61,119	72,099	114,783	273,145	205,781	100,785	119,926
LOGAN	GUTHRIE	625,590	589,176	527,958	335,522	366,495	325,805	376,658	614,402	1,435,606	1,092,243	556,215	622,008
LOGAN	MULHALL-ORLANDO	51,114	44,931	36,785	25,646	27,626	25,025	28,808	46,408	99,894	75,863	39,804	45,079
LOVE	GREENVILLE	0	0	0	0	0	0	0	0	0	0	0	0
LOVE	MARIETTA	149,439	169,749	172,259	126,328	174,216	190,173	206,630	394,549	281,646	220,844	517,902	245,430
LOVE	THACKERVILLE	44,446	52,500	54,068	42,090	56,462	59,015	58,431	111,673	81,298	67,638	167,833	75,101
LOVE	TURNER	44,705	51,245	54,213	40,598	52,500	62,338	69,202	125,368	88,055	68,909	155,209	76,764
MAJOR	ALINE-CLEO	215,827	242,549	254,325	180,198	224,097	216,373	135,219	134,128	120,492	70,402	64,972	164,275
MAJOR	CIMARRON	385,716	448,240	479,629	332,912	381,593	388,563	253,553	266,260	222,166	121,740	108,944	300,360
MAJOR	FAIRVIEW	952,787	1,093,996	1,133,399	788,826	836,594	861,333	565,298	658,658	573,755	334,344	298,354	714,456

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
MAJOR	RINGWOOD	515,244	611,421	687,873	469,377	510,675	526,230	335,964	367,432	324,741	187,268	169,741	419,072
MARSHALL	KINGSTON	86,639	99,324	123,406	107,098	123,764	176,114	263,576	273,594	317,545	218,028	160,901	186,335
MARSHALL	MADILL	133,232	164,117	197,385	176,409	206,587	284,864	420,091	416,535	473,288	314,341	233,530	288,715
MAYES	ADAIR	1,065	1,356	1,348	1,351	1,104	1,295	212	332	225	117	827	817
MAYES	CHOUTEAU-MAZIE	1,089	1,383	1,296	1,221	975	1,138	179	272	188	98	689	744
MAYES	LOCUST GROVE	1,764	2,285	2,183	2,101	1,722	1,985	317	489	311	156	1,129	1,268
MAYES	OSAGE	0	0	0	0	0	0	0	0	0	0	0	0
MAYES	PRYOR	2,682	3,435	3,413	3,328	2,736	3,246	565	849	554	292	2,110	2,053
MAYES	SALINA	942	1,182	1,196	1,165	1,819	1,946	184	268	173	90	670	869
MAYES	WICKLIFFE	0	0	0	0	0	0	0	0	0	0	0	0
MCCLAIN	BLANCHARD	218,929	269,171	254,262	188,479	220,784	246,777	201,168	271,705	210,786	145,282	134,101	214,251
MCCLAIN	DIBBLE	99,091	118,078	114,501	82,174	93,426	97,919	78,409	104,431	78,215	50,616	44,461	86,223
MCCLAIN	NEWCASTLE	188,990	245,934	246,482	184,132	221,244	243,371	194,501	272,906	216,787	150,447	144,360	212,016
MCCLAIN	PURCELL	203,581	249,366	233,090	167,623	192,730	208,964	165,762	217,756	163,654	107,054	98,476	180,447
MCCLAIN	WASHINGTON	125,832	156,837	146,821	106,089	123,810	136,321	108,283	144,336	111,270	75,517	70,146	117,943
MCCLAIN	WAYNE	61,867	80,588	79,685	55,914	67,811	74,650	58,270	76,030	60,577	40,886	36,597	63,101
MCCURTAIN	BATTIEST	0	0	3	0	0	0	0	0	0	0	0	0
MCCURTAIN	BROKEN BOW	0	0	21	0	0	0	0	0	0	0	0	2
MCCURTAIN	DENISON	0	0	0	0	0	0	0	0	0	0	0	0
MCCURTAIN	EAGLETOWN	0	0	3	0	0	0	0	0	0	0	0	0
MCCURTAIN	FOREST GROVE	0	0	0	0	0	0	0	0	0	0	0	0
MCCURTAIN	GLOVER	0	0	0	0	0	0	0	0	0	0	0	0
MCCURTAIN	HAWORTH	0	0	7	0	0	0	0	0	0	0	0	1
MCCURTAIN	HOLLY CREEK	0	0	0	0	0	0	0	0	0	0	0	0
MCCURTAIN	IDABEL	0	0	17	0	0	0	0	0	0	0	0	2
MCCURTAIN	LUKFATA	0	0	0	0	0	0	0	0	0	0	0	0
MCCURTAIN	SMITHVILLE	0	0	4	0	0	0	0	0	0	0	0	0
MCCURTAIN	VALLIANT	0	0	13	0	0	0	0	0	0	0	0	1
MCCURTAIN	WRIGHT CITY	0	0	6	0	0	0	0	0	0	0	0	1
MCINTOSH	CHECOTAH	89,440	121,668	132,077	63,152	57,602	38,889	20,013	17,879	13,587	7,673	13,184	48,573
MCINTOSH	EUFAULA	69,228	96,827	108,601	54,860	47,598	33,095	15,663	13,885	10,526	5,940	10,036	39,703
MCINTOSH	HANNA	6,172	8,289	9,062	3,820	8,042	6,542	3,669	3,203	2,025	521	899	4,607
MCINTOSH	MIDWAY	14,821	21,644	22,233	9,948	7,730	5,876	2,856	2,693	2,247	1,084	2,064	7,838
MCINTOSH	RYAL	0	0	0	0	0	0	0	0	0	0	0	0
MCINTOSH	STIDHAM	0	0	0	0	0	0	0	0	0	0	0	0
MURRAY	DAVIS	44,227	44,581	43,813	48,156	70,207	65,988	65,433	59,522	40,823	17,337	20,461	47,632
MURRAY	SULPHUR	65,392	67,095	65,678	70,352	99,030	89,762	88,817	82,747	57,555	25,293	29,859	67,619
MUSKOGEE	BOYNTON-MOTON	501	353	311	243	240	0	0	0	0	0	0	115
MUSKOGEE	BRAGGS	610	585	653	532	648	438	483	457	359	137	206	450
MUSKOGEE	FORT GIBSON	5,433	4,825	5,194	4,470	5,367	3,881	4,580	4,559	3,786	1,411	2,079	4,015
MUSKOGEE	HASKELL	2,686	2,369	2,550	2,192	2,582	1,890	2,165	2,121	1,694	609	928	1,910
MUSKOGEE	HILLDALE	5,259	4,626	4,926	4,379	5,257	3,796	4,449	4,457	3,729	1,409	2,107	3,914
MUSKOGEE	MUSKOGEE	16,646	16,451	15,925	15,773	18,329	13,213	15,222	15,130	11,665	4,526	7,438	13,367
MUSKOGEE	OKTAHA	1,879	1,746	1,948	1,659	2,128	1,552	1,835	1,916	1,543	570	821	1,572
MUSKOGEE	PORUM	1,488	1,335	1,477	1,257	1,513	1,088	1,207	1,185	984	376	567	1,099
MUSKOGEE	WAINWRIGHT	0	0	0	0	0	0	0	0	0	0	0	0

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
MUSKOGEE	WARNER	1,994	1,688	1,923	1,656	2,059	1,539	1,801	1,768	1,483	574	890	1,538
MUSKOGEE	WEBBERS FALLS	806	725	763	623	774	593	702	694	536	199	321	593
NOBLE	BILLINGS	30,012	37,378	41,234	29,766	36,921	31,498	20,783	33,490	35,229	26,629	13,633	30,656
NOBLE	FRONTIER	97,483	120,098	147,267	105,860	113,639	107,428	85,328	167,782	200,069	154,068	68,493	127,003
NOBLE	MORRISON	115,248	156,342	200,367	159,510	192,759	181,439	144,211	262,735	304,506	219,029	102,978	192,388
NOBLE	PERRY	290,995	365,608	450,779	340,987	398,401	379,548	291,048	546,952	642,166	478,528	206,063	410,008
NOWATA	NOWATA	139,134	147,207	146,931	77,493	65,560	93,089	56,113	76,943	30,518	25,273	32,490	75,162
NOWATA	OKLAHOMA UNION	83,135	88,165	90,700	48,465	34,790	62,904	37,127	53,583	20,961	18,237	23,399	47,833
NOWATA	SOUTH COFFEYVILLE	37,322	39,469	42,917	21,064	14,272	26,222	15,080	20,930	8,899	7,119	9,434	20,541
OKFUSKEE	BEARDEN	0	0	0	0	0	0	0	0	0	0	0	0
OKFUSKEE	BOLEY	6,188	5,147	575	0	0	0	0	0	0	0	0	572
OKFUSKEE	GRAHAM-DUSTIN	31,845	52,160	73,922	79,420	102,139	73,642	144,940	160,465	173,153	23,241	16,410	89,949
OKFUSKEE	MASON	24,746	27,301	30,285	22,597	29,501	19,136	19,717	20,653	17,645	23,854	24,321	23,501
OKFUSKEE	OKEMAH	86,436	98,895	112,801	90,394	130,185	80,633	71,577	63,900	54,592	76,810	73,956	85,374
OKFUSKEE	PADEN	26,234	29,807	33,367	23,639	32,344	21,661	19,752	18,931	16,780	21,521	22,660	24,046
OKFUSKEE	WELEETKA	47,508	50,719	56,613	42,660	58,335	37,678	34,380	29,514	26,090	36,488	36,795	40,927
OKLAHOMA	(ILC) POOLED INVESTMENT	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	ASTEC CHARTERS	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	BETHANY	14,627	18,218	18,971	17,335	22,502	18,217	21,912	17,686	16,876	9,776	10,434	17,193
OKLAHOMA	CHOCTAW-NICOMA PARK	46,733	56,912	60,719	53,771	69,865	56,239	77,766	78,471	76,110	32,888	33,552	59,629
OKLAHOMA	CROOKED OAK	10,094	12,328	13,130	11,349	14,858	11,774	14,126	11,882	11,013	6,511	7,413	11,439
OKLAHOMA	CRUTCHO	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	DEER CREEK	25,693	34,755	39,339	37,476	50,505	41,375	55,684	48,302	50,075	30,776	34,440	42,273
OKLAHOMA	EDMOND	185,208	235,151	248,296	224,389	294,519	236,684	287,168	236,422	226,758	133,152	144,365	226,690
OKLAHOMA	EPIC BLENDED LEARNING CHARTER	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	EPIC ONE ON ONE CHARTER SCHOOL	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	HARRAH	22,482	27,642	28,644	25,235	31,645	24,628	28,218	22,504	20,712	11,815	12,773	23,382
OKLAHOMA	INSIGHT SCHOOL OF OKLAHOMA	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	JOHN W REX CHARTER ELEMENTARY	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	JONES	10,540	12,797	13,790	12,269	16,276	12,898	15,248	12,025	11,218	6,285	6,789	11,959
OKLAHOMA	LUTHER	8,058	9,800	9,578	16,190	11,899	9,685	11,116	9,228	9,179	5,267	5,241	9,718
OKLAHOMA	MIDWEST CITY-DEL CITY	140,480	171,321	179,965	158,302	202,113	160,774	188,441	152,195	141,847	82,279	86,264	152,350
OKLAHOMA	MILLWOOD	10,813	12,335	12,873	11,087	13,973	11,654	13,605	9,447	10,032	5,577	5,401	10,598
OKLAHOMA	OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER SANTA FE SOUTH	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: DOVE SCIENCE ACAD	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: HARDING CHARTER	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: HARDING FINE ARTS	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: HUPFELD/W VILLAGE	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: INDEPENDENCE MS	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: KIPP REACH COLL.	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKC CHARTER: SEEWORTH ACADEMY	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKLAHOMA CITY	376,555	465,433	488,737	441,445	589,555	521,416	505,764	461,756	444,176	260,004	278,520	445,681
OKLAHOMA	OKLAHOMA CONNECTIONS ACADEMY	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKLAHOMA VIRTUAL CHARTER ACAD	0	0	0	0	0	0	0	0	0	0	0	0
OKLAHOMA	OKLAHOMA YOUTH ACADEMY	0	0	0	0	0	0	0	0	0	0	0	0

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
OKLAHOMA	PUTNAM CITY	184,356	219,937	227,559	201,661	257,800	206,784	246,295	200,119	189,167	108,953	115,377	197,365
OKLAHOMA	WESTERN HEIGHTS	30,920	37,972	40,227	36,672	48,036	39,240	47,542	38,222	36,154	21,041	21,835	36,694
OKMULGEE	BEGGS	29,121	34,098	38,935	34,268	41,733	29,609	31,398	31,682	29,962	14,655	15,049	30,139
OKMULGEE	DEWAR	11,248	13,103	15,118	13,355	16,709	10,673	11,218	11,445	10,026	5,065	5,448	11,216
OKMULGEE	HENRYETTA	32,214	37,946	43,158	36,719	43,694	31,005	32,962	32,986	32,183	15,455	16,337	32,244
OKMULGEE	MORRIS	26,841	31,654	34,623	28,736	34,553	24,263	26,660	27,266	27,237	13,273	14,063	26,233
OKMULGEE	OKMULGEE	47,285	54,242	57,889	48,061	56,466	39,636	39,922	40,350	38,795	18,937	19,754	41,405
OKMULGEE	PRESTON	14,558	16,877	20,181	16,906	20,124	14,809	15,330	14,237	13,335	7,184	7,914	14,690
OKMULGEE	SCHULTER	5,730	6,456	6,597	5,425	6,103	4,317	4,872	4,507	3,669	1,768	1,880	4,559
OKMULGEE	TWIN HILLS	0	0	0	0	0	0	0	0	0	0	0	0
OKMULGEE	WILSON	8,533	9,458	10,277	8,070	8,736	6,533	6,781	7,045	5,931	2,854	3,041	6,873
OSAGE	(ILC) OSAGE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	ANDERSON	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	AVANT	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	BARNSDALL	118,593	140,859	164,332	171,399	168,461	285,783	161,104	217,162	114,767	62,908	106,329	159,310
OSAGE	BOWRING	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	HOMINY	170,185	187,708	228,393	243,187	241,767	332,405	227,620	297,738	148,645	84,802	145,934	213,820
OSAGE	MCCORD	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	OSAGE HILLS	0	0	0	0	0	0	0	0	0	0	0	0
OSAGE	PAWHUSKA	241,779	285,146	467,902	413,781	407,672	604,651	422,032	560,251	343,685	196,425	231,061	393,261
OSAGE	PRUE	98,566	105,982	164,915	153,322	145,655	201,565	151,141	189,180	127,423	75,444	90,597	140,522
OSAGE	SHIDLER	61,246	72,952	83,023	113,375	95,430	142,850	89,923	126,522	59,375	36,181	58,733	87,836
OSAGE	WOODLAND	114,015	146,815	152,493	170,950	164,084	231,918	158,850	217,252	104,489	63,576	109,423	151,985
OSAGE	WYNONA	42,481	46,898	55,384	54,172	52,197	123,018	107,486	66,810	28,858	17,069	28,917	58,081
OTTAWA	AFTON	0	0	0	0	0	0	0	0	0	0	0	0
OTTAWA	COMMERCE	524,764	600,301	650,655	410,578	442,281	496,410	315,998	485,139	564,310	507,713	490,283	496,367
OTTAWA	FAIRLAND	0	0	0	0	0	0	0	0	0	0	0	0
OTTAWA	MIAMI	0	0	0	0	0	0	0	0	0	0	0	0
OTTAWA	QUAPAW	0	0	0	0	0	0	0	0	0	0	0	0
OTTAWA	TURKEY FORD	0	0	0	0	0	0	0	0	0	0	0	0
OTTAWA	WYANDOTTE	0	0	0	0	0	0	0	0	0	0	0	0
PAWNEE	CLEVELAND	119,890	130,493	140,936	136,351	160,738	183,321	206,169	302,307	247,373	113,796	120,355	174,184
PAWNEE	JENNINGS	0	0	0	0	0	0	0	0	0	0	0	0
PAWNEE	PAWNEE	51,556	55,071	59,725	57,222	67,124	77,757	86,287	133,516	118,382	52,922	52,744	76,075
PAYNE	(ILC) FIVE-STAR	0	0	0	0	0	0	0	0	0	0	0	0
PAYNE	CUSHING	74,467	85,480	82,015	62,551	71,932	59,922	76,045	128,886	266,698	203,117	129,247	116,589
PAYNE	GLENCOE	14,270	17,111	14,928	12,430	13,706	11,047	13,822	24,298	50,519	38,892	25,531	22,228
PAYNE	OAK GROVE	0	0	0	0	0	0	0	2	7	4	0	1
PAYNE	PERKINS-TRYON	54,504	63,160	61,278	48,096	57,931	48,676	60,270	104,856	215,874	168,895	108,477	93,751
PAYNE	RIPLEY	18,139	21,754	20,721	16,329	19,384	16,649	20,382	33,866	68,406	51,942	33,622	30,306
PAYNE	STILLWATER	220,193	255,218	248,310	192,821	231,898	193,671	246,697	424,725	888,725	691,259	443,097	381,642
PAYNE	YALE	21,760	25,820	24,921	19,119	22,425	17,106	19,564	33,317	68,918	49,735	30,521	31,145
PITTSBURG	CANADIAN	154,696	178,786	179,543	115,158	126,527	128,285	104,520	140,335	116,058	73,653	100,101	126,297
PITTSBURG	CARLTON LANDING ACADEMY	0	0	0	0	0	0	0	0	0	0	0	0
PITTSBURG	CROWDER	155,520	178,251	189,168	110,265	131,633	135,231	116,794	149,626	116,098	75,741	102,740	130,555
PITTSBURG	FRINK-CHAMBERS	0	0	0	0	0	0	0	0	0	0	0	0

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
PITTSBURG	HAILEYVILLE	156,179	198,076	192,128	126,775	130,117	118,771	94,632	115,149	88,315	58,423	76,628	119,901
PITTSBURG	HARTSHORNE	265,667	303,361	332,793	217,184	229,297	234,424	204,050	231,041	183,839	127,482	168,769	223,224
PITTSBURG	HAYWOOD	0	0	0	0	0	0	0	0	0	0	0	0
PITTSBURG	INDIANOLA	117,196	138,253	128,186	79,386	75,920	73,097	57,435	70,925	56,948	35,689	48,196	76,403
PITTSBURG	KIOWA	104,595	122,279	120,205	78,204	80,557	81,603	68,421	98,078	76,307	50,106	68,195	84,395
PITTSBURG	KREBS	0	0	0	0	0	362	0	0	0	0	0	36
PITTSBURG	MCALESTER	966,408	1,119,489	1,154,945	767,883	806,830	828,020	724,479	919,802	720,558	490,927	653,650	818,658
PITTSBURG	PITTSBURG	52,359	64,419	66,367	84,923	41,823	74,182	40,581	43,704	34,753	22,856	34,208	50,782
PITTSBURG	QUINTON	169,596	209,735	213,494	145,777	154,537	157,084	140,336	170,794	122,494	77,463	103,202	149,492
PITTSBURG	SAVANNA	158,175	173,874	172,596	102,631	113,335	114,472	93,946	109,411	95,572	61,437	80,068	111,734
PITTSBURG	TANNEHILL	0	0	0	0	0	0	0	0	0	0	0	0
PONTOTOC	ADA	335,958	380,252	411,750	323,198	466,672	200,513	680,106	491,473	516,053	263,491	187,949	392,146
PONTOTOC	ALLEN	58,450	63,657	67,527	52,558	74,503	33,078	110,470	83,911	89,809	47,197	35,514	65,822
PONTOTOC	BYNG	221,989	242,345	255,018	212,882	299,161	132,142	450,435	334,591	343,957	173,070	127,207	257,081
PONTOTOC	LATTA	92,137	101,088	112,914	91,131	123,020	54,986	203,009	159,167	172,171	83,956	62,227	116,367
PONTOTOC	ROFF	45,176	45,482	47,931	38,962	59,430	25,468	83,381	63,844	69,445	33,685	23,129	49,076
PONTOTOC	STONEWALL	53,397	56,884	62,785	50,681	70,910	32,787	108,493	81,360	85,796	44,902	34,312	62,891
PONTOTOC	VANOSS	68,550	74,240	78,485	64,662	95,515	47,025	144,721	99,522	101,627	52,172	39,598	79,757
POTTAWATOMIE	ASHER	16,100	22,122	18,599	12,477	16,506	11,494	19,661	16,629	17,699	9,399	6,472	15,106
POTTAWATOMIE	BETHEL	98,303	124,863	117,837	76,215	97,948	61,658	109,336	90,423	87,672	47,316	34,342	84,761
POTTAWATOMIE	DALE	54,268	67,518	63,580	41,296	53,303	31,201	55,356	46,668	47,630	26,666	19,640	45,286
POTTAWATOMIE	EARLSBORO	18,644	23,362	20,088	13,058	16,859	11,212	18,107	15,036	15,033	8,516	6,399	14,767
POTTAWATOMIE	GROVE	0	0	0	0	0	0	0	0	0	0	0	0
POTTAWATOMIE	MACOMB	26,555	33,260	30,579	19,730	27,263	17,148	29,412	21,598	21,109	10,235	7,309	21,764
POTTAWATOMIE	MAUD	24,707	30,861	27,829	18,181	24,123	13,371	25,674	21,131	21,661	11,700	8,092	20,262
POTTAWATOMIE	MCLOUD	131,113	165,582	153,149	100,396	131,761	80,386	145,774	117,946	120,106	64,963	46,597	112,666
POTTAWATOMIE	NORTH ROCK CREEK	0	0	0	0	0	0	0	0	0	0	0	0
POTTAWATOMIE	PLEASANT GROVE	0	0	0	0	0	0	0	0	0	0	0	0
POTTAWATOMIE	SHAWNEE	288,843	360,693	334,071	217,181	287,376	177,946	320,307	262,922	264,274	138,925	96,401	246,010
POTTAWATOMIE	SOUTH ROCK CREEK	0	0	0	0	0	0	0	0	0	0	0	0
POTTAWATOMIE	TECUMSEH	170,109	213,757	200,479	125,819	163,277	100,094	175,304	143,326	148,736	79,734	55,949	140,648
POTTAWATOMIE	WANETTE	17,762	21,955	19,776	12,392	15,302	10,390	16,735	13,719	13,566	6,638	4,468	13,494
PUSHMATAHA	ALBION	0	0	0	0	0	0	0	0	0	0	0	0
PUSHMATAHA	ANTLERS	150,717	223,983	211,211	77,480	40,250	16,121	25,173	20,366	21,851	9,948	12,923	65,931
PUSHMATAHA	CLAYTON	46,494	68,306	65,952	22,864	11,896	4,042	7,773	6,237	6,580	2,848	3,858	20,035
PUSHMATAHA	MOYERS	21,881	33,275	34,536	11,872	6,470	2,753	4,685	3,859	4,545	2,069	2,728	10,679
PUSHMATAHA	NASHOBA	0	0	0	0	0	0	0	0	0	0	0	0
PUSHMATAHA	RATTAN	71,318	105,090	106,204	38,954	19,487	8,104	12,838	10,296	10,717	4,818	6,545	32,305
PUSHMATAHA	TUSKAHOMA	0	0	0	0	0	0	0	0	0	0	0	0
ROGER MILLS	CHEYENNE	1,713,437	1,998,060	1,749,676	836,435	719,448	825,803	860,609	1,280,806	1,539,143	918,218	749,671	1,147,787
ROGER MILLS	HAMMON	1,158,717	1,538,709	1,477,376	699,657	607,084	654,410	684,145	1,005,491	1,129,816	658,432	515,712	897,083
ROGER MILLS	LEEDEY	1,186,290	1,411,873	1,180,580	532,520	469,196	552,997	562,917	835,085	891,961	555,625	483,859	747,661
ROGER MILLS	REYDON	531,110	737,646	676,833	340,759	311,906	361,051	403,284	511,374	540,407	352,443	258,787	449,449
ROGER MILLS	SWEETWATER	454,568	443,465	528,735	236,510	206,667	224,789	267,581	404,559	549,469	323,729	287,062	347,256
ROGERS	CATOOSA	9,850	11,507	8,253	3,828	4,891	5,861	3,669	4,876	2,233	1,455	1,770	4,834
ROGERS	CHELSEA	4,826	5,300	3,794	1,680	2,275	2,677	1,555	2,155	989	629	785	2,184

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
ROGERS	CLAREMORE	18,574	20,875	15,780	7,276	9,483	11,073	6,726	9,245	4,265	2,806	3,410	9,094
ROGERS	FOYIL	3,221	3,661	2,698	1,269	1,557	1,760	1,043	1,402	607	384	447	1,483
ROGERS	INOLA	6,011	6,722	4,912	2,235	3,288	3,662	2,171	3,021	1,480	968	1,172	2,963
ROGERS	JUSTUS-TIAWAH	0	509	0	0	2,781	0	0	0	0	0	0	329
ROGERS	OOLOGAH-TALALA	8,247	9,236	7,106	3,338	4,306	5,026	3,029	4,138	1,932	1,256	1,538	4,091
ROGERS	SEQUOYAH	6,373	6,988	5,358	2,510	3,277	3,768	2,251	3,008	1,451	950	1,164	3,072
ROGERS	VERDIGRIS	5,395	6,081	4,685	2,202	2,955	3,388	2,036	2,787	1,306	870	1,085	2,739
SEMINOLE	(ILC) SEMINOLE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0
SEMINOLE	BOWLEGS	61,934	92,324	109,670	72,984	96,325	63,447	97,366	81,714	65,549	44,580	39,623	76,358
SEMINOLE	BUTNER	49,376	76,450	85,708	51,650	67,124	40,018	65,947	64,189	56,312	37,109	34,860	57,937
SEMINOLE	JUSTICE	0	0	0	0	0	0	0	0	0	0	0	0
SEMINOLE	KONAWA	139,211	199,417	244,198	162,513	217,156	155,680	220,464	207,594	167,500	110,562	102,335	178,742
SEMINOLE	NEW LIMA	57,585	77,827	94,996	65,681	85,404	56,973	87,343	78,741	66,542	45,126	43,308	70,194
SEMINOLE	SASAKWA	40,009	57,421	76,904	55,023	73,434	49,629	74,557	62,123	47,880	34,061	30,998	56,203
SEMINOLE	SEMINOLE	313,707	436,796	553,008	379,075	516,380	362,977	575,169	530,700	414,347	275,209	251,197	429,486
SEMINOLE	STROTHER	64,890	89,728	117,197	82,982	110,573	78,042	119,999	117,297	104,202	66,069	61,659	94,775
SEMINOLE	VARNUM	53,819	78,469	106,702	64,380	73,451	51,987	95,204	85,655	68,403	46,075	41,683	71,201
SEMINOLE	WEWOKA	138,784	179,676	225,440	159,720	213,497	142,395	229,073	225,701	180,517	120,583	99,678	177,628
SEQUOYAH	BELFONTE	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH	BRUSHY	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH	CENTRAL	6,123	7,194	6,379	4,886	3,489	4,362	1,457	1,240	904	797	1,196	3,190
SEQUOYAH	GANS	4,713	5,524	5,108	3,801	2,801	2,057	1,120	909	658	638	1,023	2,364
SEQUOYAH	GORE	7,145	8,138	7,058	2,604	4,152	2,370	1,455	1,236	857	718	1,063	2,965
SEQUOYAH	LIBERTY	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH	MARBLE CITY	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH	MOFFETT	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH	MULDROW	20,184	24,356	21,695	15,927	11,970	8,195	4,596	3,795	2,681	2,323	3,584	9,912
SEQUOYAH	ROLAND	14,618	18,111	16,114	11,485	8,193	5,610	3,164	2,666	1,852	1,617	2,425	7,124
SEQUOYAH	SALLISAW	24,181	29,301	26,230	19,434	14,350	10,026	5,665	4,750	3,386	2,956	4,644	12,074
SEQUOYAH	VIAN	11,656	14,420	13,053	9,740	7,050	4,900	2,796	2,403	1,658	1,542	2,265	5,983
STEPHENS	BRAY-DOYLE	215,245	248,755	266,199	166,325	175,287	183,539	119,889	156,110	213,250	176,828	173,738	187,992
STEPHENS	CENTRAL HIGH	185,943	219,743	242,727	154,339	173,639	187,620	119,674	189,461	234,842	208,931	195,648	192,662
STEPHENS	COMANCHE	0	0	0	0	0	0	0	0	0	0	0	0
STEPHENS	DUNCAN	1,729,632	1,958,511	2,083,259	1,336,941	1,503,759	1,711,106	1,093,600	1,668,919	1,985,018	1,765,284	1,715,726	1,682,212
STEPHENS	EMPIRE	262,025	295,317	313,449	188,092	204,637	223,959	141,662	213,696	262,358	229,150	238,955	231,128
STEPHENS	GRANDVIEW	0	0	0	0	0	0	0	0	0	0	0	0
STEPHENS	MARLOW	644,397	720,559	755,336	466,600	508,334	596,588	394,593	603,179	732,763	689,413	676,076	614,344
STEPHENS	VELMA-ALMA	210,676	238,903	252,526	158,177	169,408	196,546	122,463	191,885	240,122	228,840	227,284	202,615
TEXAS	GOODWELL	152,711	160,685	171,256	129,866	136,261	113,677	87,359	77,766	52,241	36,357	60,290	102,576
TEXAS	GUYMON	1,825,500	2,034,386	2,153,872	1,598,488	1,752,897	1,568,303	1,225,257	1,021,596	682,685	425,328	750,968	1,321,378
TEXAS	HARDESTY	83,070	88,505	89,290	61,757	62,929	47,179	34,258	29,288	22,109	14,184	22,685	47,218
TEXAS	HOOKER	409,946	441,614	468,655	351,443	361,891	318,476	252,815	225,939	152,514	96,259	172,801	284,241
TEXAS	OPTIMA	0	0	0	0	0	0	0	0	0	0	0	0
TEXAS	STRAIGHT	0	0	0	0	0	0	0	0	0	0	0	0
TEXAS	TEXHOMA	210,160	222,130	224,246	164,125	184,616	155,966	132,719	103,708	66,990	41,918	64,656	136,107
TEXAS	TYRONE	181,130	194,836	196,918	146,002	156,036	138,434	109,956	94,889	61,269	36,554	60,601	119,549

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
TEXAS	YARBROUGH	95,215	99,004	102,378	72,969	78,551	67,739	61,170	46,716	31,833	18,820	30,718	60,990
TILLMAN	DAVIDSON	1,682	1,779	2,030	3,634	5,900	8,063	5,396	12,774	9,344	2,797	1,676	5,339
TILLMAN	FREDERICK	12,818	14,358	15,445	27,695	79,307	60,306	46,641	126,536	102,917	34,061	22,790	53,006
TILLMAN	GRANDFIELD	3,484	4,022	4,474	8,304	12,795	18,652	14,018	37,503	30,566	9,755	6,413	14,650
TILLMAN	TIPTON	4,759	4,814	5,273	10,270	14,517	25,588	19,844	51,197	39,614	12,822	7,416	19,136
TULSA	BERRYHILL	1,424	1,579	1,726	1,528	1,702	1,463	2,002	1,583	1,333	722	711	1,435
TULSA	BIXBY	4,860	5,440	6,104	5,708	6,439	5,978	8,384	6,776	5,867	3,304	3,413	5,741
TULSA	BROKEN ARROW	17,991	19,763	21,951	19,863	22,346	20,034	27,650	21,250	18,512	10,295	10,423	19,209
TULSA	COLLINSVILLE	2,543	2,902	3,293	3,096	3,525	3,215	4,367	3,310	2,727	1,518	1,518	2,947
TULSA	DEBORAH BROWN (CHARTER)	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	DOVE SCHOOLS OF TULSA	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	GLENPOOL	2,602	2,932	3,229	2,896	3,243	2,855	3,912	2,996	2,602	1,464	1,514	2,764
TULSA	JENKS	11,200	12,324	13,696	12,386	13,850	12,152	17,429	13,534	11,451	6,391	6,500	11,971
TULSA	KEYSTONE	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	LANGSTON HUGHES ACAD ARTS-TECH	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	LIBERTY	721	771	862	729	805	720	996	725	589	317	308	682
TULSA	OWASSO	9,776	10,758	11,876	10,770	12,269	11,032	15,241	11,745	9,682	5,454	5,444	10,427
TULSA	SAND SPRINGS	6,083	6,697	7,284	6,592	7,235	6,109	8,516	6,530	5,442	2,948	2,900	6,025
TULSA	SANKOFA MIDDLE SCHL (CHARTER)	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	SKIATOOK	2,875	3,170	3,438	3,053	3,429	3,051	4,173	3,165	2,598	1,426	1,414	2,892
TULSA	SPERRY	0	731,075	643,213	607,388	627,904	831,544	667,699	803,536	289,633	175,826	293,727	567,154
TULSA	TULSA	48,170	51,626	55,376	49,199	54,347	48,929	66,321	50,539	42,071	22,990	22,747	46,415
TULSA	TULSA CHARTER: COLLEGE BOUND	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	TULSA CHARTER: COLLEGIATE HALL	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	TULSA CHARTER: HONOR ACADEMY	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	TULSA CHARTER: KIPP TULSA	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	TULSA CHARTER: SCHL ARTS/SCI.	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	TULSA LEGACY CHARTER SCHL INC	0	0	0	0	0	0	0	0	0	0	0	0
TULSA	UNION	16,548	18,022	20,028	17,985	20,236	17,877	24,372	18,878	15,947	8,774	8,878	17,100
WAGONER	COWETA	6,173	7,848	10,841	10,811	13,813	16,939	11,904	15,311	16,978	9,086	6,944	12,047
WAGONER	OKAY	1,120	1,262	1,673	1,614	2,012	2,369	1,667	1,953	2,057	1,121	852	1,658
WAGONER	PORTER CONSOLIDATED	1,038	1,367	1,874	1,746	2,346	2,960	2,064	2,735	2,984	1,517	1,175	2,077
WAGONER	WAGONER	5,109	6,140	8,495	7,951	10,408	12,948	8,658	11,088	12,252	6,385	4,982	8,931
WASHINGTON	BARTLESVILLE	183,185	207,036	226,114	167,193	99,111	192,502	101,727	125,391	47,435	36,354	58,837	126,170
WASHINGTON	CANEY VALLEY	25,425	28,967	29,697	20,846	12,264	24,877	12,998	16,333	5,983	4,635	7,582	16,418
WASHINGTON	COPAN	10,864	11,683	12,141	8,056	4,887	9,154	4,561	14,420	7,060	2,283	2,378	7,662
WASHINGTON	DEWEY	35,064	40,765	44,517	33,680	20,073	39,113	20,899	26,953	9,931	7,532	12,102	25,557
WASHITA	BURNS FLAT-DILL CITY	626,143	846,403	1,076,680	787,977	1,351,371	1,878,492	897,058	836,684	758,414	385,820	299,451	911,835
WASHITA	CANUTE	242,953	372,635	530,741	444,815	831,386	1,232,722	582,364	541,036	502,299	256,061	215,259	550,932
WASHITA	CORDELL	704,501	908,088	1,208,303	884,116	1,719,565	2,213,411	985,186	923,997	875,767	427,991	360,969	1,050,739
WASHITA	SENTINEL	323,067	395,937	544,687	404,070	673,990	945,357	426,241	428,398	390,703	196,625	168,497	457,451
WASHITA	WASHITA HEIGHTS	209,738	211,663	216,124	120,486	0	0	0	0	0	0	0	54,827
WOODS	ALVA	716,818	898,301	1,138,085	1,128,780	1,291,557	1,942,963	1,271,109	2,572,076	3,735,639	2,030,610	2,349,039	1,835,816
WOODS	FREEDOM	56,229	75,010	106,025	163,932	218,698	168,171	102,734	201,513	326,085	174,265	187,275	172,371
WOODS	WAYNOKA	188,187	249,035	307,228	295,093	327,483	486,134	350,980	686,945	1,058,644	584,018	627,672	497,323
WOODWARD	FORT SUPPLY	65,785	69,640	69,799	43,842	37,239	31,942	18,599	14,843	14,925	10,145	9,797	32,077

County	District Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-year Average
WOODWARD	MOORELAND	230,205	262,269	250,512	140,070	129,254	131,452	76,561	62,738	66,729	38,971	36,585	129,577
WOODWARD	SHARON-MUTUAL	131,066	139,185	145,743	79,711	71,827	71,687	44,423	37,872	37,847	22,544	20,810	72,974
WOODWARD	WOODWARD	1,202,859	1,393,980	1,356,602	735,077	673,432	650,998	405,959	344,573	372,161	226,150	197,570	687,215

IX. Appendix A: Severance and Ad Valorem Tax Data and Methodology

Effective severance and ad valorem tax rates for the sixteen largest oil and gas producing states (including Oklahoma) are estimated and used throughout the report.

There is no generally accepted methodology for calculating these effective tax rates. The basic formula – taxes paid divided by value of oil and gas production – is generally accepted. However, the method of determining each component used in the calculation can require significant judgement. Each step of the process is described in this section of the report along with a description of data sources used.

Fiscal Year Basis

All effective tax rate estimates are calculated on a fiscal year basis. The fiscal year for all producing states except Texas is July to June. The fiscal year in Texas is September to August. Both Wyoming and North Dakota use a biennial budget cycle, but efforts are made to calculate data for each fiscal year covering July to June. Data are generally reported for the FY2012 to FY2018 period. Some estimates for FY2019 are provided for Oklahoma.

Crude Oil and Natural Gas Production Quantity

For consistency across the states, the quantity of oil and gas production at the state level is derived from monthly EIA estimates for both crude oil and natural gas. Natural gas production represents marketed production.

EIA estimates are in turn derived from a combination of state reports, private vendors, and direct surveys of producers. Production is not derived from direct reports of state oil and gas reporting agencies. State-provided estimates suffer from many issues including incomplete reporting, delayed release, and lack of revisions. For example, Oklahoma has long underreported crude oil and natural gas production quantities.[34]

EIA production data is available online at:
https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_m.htm and
https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGM_mmcf_m.htm

Crude Oil and Natural Gas Prices

Crude oil prices are derived from EIA monthly estimates of the first purchaser price. Monthly values are used to create a fiscal year average. Crude oil prices are available online at:
https://www.eia.gov/dnav/pet/pet_pri_dfp1_k_m.htm

Natural gas prices are derived from three potential sources:

1. Prices are derived from state reporting entities in New Mexico.
2. Prices are provided for most states using proprietary price data provided by National Gas Intelligence (NGI) (naturalgasintel.com). Fiscal year annual averages are derived from an average of weekly prevailing spot prices at the major trading hubs serving each state. NGI prices are used in twelve states - Arkansas, California, Colorado, Kansas, Louisiana, Ohio, Oklahoma, Pennsylvania, Texas, Utah, West Virginia, and Wyoming. NGI prices are preferred because many prices reported by the states do

not necessarily reflect the actual revenue received by producers and can be reduced by a range of expenses. State-reported prices also may not provide statewide coverage of the range of prices received in the state. Most state-reported prices are highly consistent with NGI prices. The only significant differential is found in Wyoming. Prices reported in state-produced annual reports are consistently lower than reported spot prices at hubs used by Wyoming producers. This tends to raise the estimated value of production and lower the estimated effective tax rates in Wyoming. Because Wyoming is a significant natural gas producer, the use of reported spot prices will reduce the effective tax rate relative to estimates based on state reported data.

3. Henry Hub spot prices are used in three states – Alaska, Montana, and North Dakota. These states do not have an active hub tracked in the NGI dataset and we are unable to gather representative state-reported prices on a monthly basis. Using Henry Hub can result in some overstatement of the value of natural gas production in these states. The estimated effective severance and ad valorem tax rates are understated as a result. However, these three states are all very small natural gas producers with generally less than 10% of the value of production attributed to natural gas. The potential result is believed to represent only an insignificant understatement of the effective severance and ad valorem tax rates in these states.

Production Value

Production value of crude oil and natural gas is calculated for each on monthly basis as production quantity times price. Monthly estimates are aggregated to form fiscal year totals.

Severance Taxes

Severance taxes are typically collected directly from state reporting entities. Sources include budget documents, prepared tax reports, research documents, compilations from large online databases, and other methods. Taxes are collected on a fiscal year basis. Biennial budget data in Wyoming and North Dakota are converted to fiscal years.

Most states now provide ongoing severance tax collection information in electronic form. Links to online sources for each state are detailed below. These links are active at the time of publication but are undoubtedly subject to substantial change over time.

Source Data - Severance Taxes

Alaska

Alaska has undergone significant shifts in oil and gas production tax revenue in recent years. Unlike most producing states, oil and gas production taxes in Alaska are based on a firm's profitability rather than a fixed share or percentage of production value. Taxes collapsed to historically low levels in FY2015 under pressure from collapsing oil prices. Taxes receipts through FY2017 are as reported the Alaska Department of Revenue. FY2018 severance tax receipts are estimated from the FY2018 budget and include only oil production taxes.

http://tax.alaska.gov/programs/programs/reports/Annual.aspx?60650&Year=2017
http://www.tax.alaska.gov/programs/sourcebook/index.aspx
http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?1423r

Arkansas

Severance taxes are as reported by the Arkansas Bureau of Legislative Research.

http://www.arkleg.state.ar.us/assembly/2019/Summary%20Budget%20Manuals/2018-B-BOOK.pdf
http://www.arkleg.state.ar.us/assembly/2017/Summary%20Budget%20Manuals/2016_B_BOOK.PDF

California

There is no statewide severance tax levied in California. There is, however, a statewide quantity-based assessment on oil and gas production. The FY2018 assessment is $0.5038349 per barrel of oil and per 10,000 cubic feet of natural gas. The FY2019 assessment $.5547977 per barrel of oil and per 10,000 cubic feet of natural gas. Revenue payments made to the State Land Commission for production on state land are also included. These payments have not been updated beyond FY2016 and are carried forward in FY2017 and FY2018.

http://www.conservation.ca.gov/dog/for_operators/Pages/assessments.aspx
https://www.castatelands.opengov.com/transparency#/1908/accountType=revenues&embed=n&breakdown=types&currentYearAmount=cumulative&currentYearPeriod=years&graph=stacked&legendSort=desc&proration=true&saved_view=null&selection=77F2D803BBFF001F5C5F2F5E92919206&projections=null&projectionType=null&highlighting=null&highlightingVariance=null&year=NaN&selectedDataSetIndex=null&fiscal_start=earliest&fiscal_end=latest

Colorado

Colorado severance taxes are largely offset by credits for ad valorem tax payments. A 2016 Colorado Supreme Court ruling also affected severance tax receipts in Colorado. A wider range of operating expenses were allowed in calculating severance tax liability. This resulted in a significant decline in severance tax receipts beginning in FY2015.

http://leg.colorado.gov/sites/default/files/sept2018forecast.pdf
http://leg.colorado.gov/sites/default/files/sept2017forecast.pdf
https://leg.colorado.gov/sites/default/files/interested_persons_memo_on_severance_taxes.pdf
https://www.colorado.gov/pacific/revenue/annual-report

Kansas

https://www.ksrevenue.org/pdf/ar17complete.pdf
https://www.ksrevenue.org/pdf/taxesfees/06-18TaxesFees.pdf

Louisiana

http://revenue.louisiana.gov/NewsAndPublications/Publications
http://www.dnr.louisiana.gov/index.cfm/page/221
http://revenue.louisiana.gov/Publications/FY%202018%20Sev%20Coll%20and%20Dist.pdf

Montana

https://mtrevenue.gov/wp-content/uploads/2018/07/2018-FYE-Revenue-Monitoring-Report.pdf
https://mtrevenue.gov/wp-content/uploads/2018/01/FY2017-Fiscal-Year-End-Revenue-Monitoring-Report.pdf

North Dakota

North Dakota taxes include both gross production and oil extraction taxes.

https://www.legis.nd.gov/state-revenue-information
https://www.legis.nd.gov/files/resource/finance-facts/2018ndfinancefacts.pdf
https://www.nd.gov/tax/data/upfiles/media/2016-state-and-local-taxes-guide-web.pdf?20181121190142

New Mexico

Severance taxes included in the New Mexico analysis include the Oil and Gas Emergency School Tax, the Oil and Gas Conservation tax, and the Oil and Gas Severance tax.

https://tap.state.nm.us/Tap/_/

Ohio

Production taxes in Ohio are calculated as 10 cents per barrel of oil and 2.5 cents per mcf of natural gas.

https://www.tax.ohio.gov/Portals/0/communications/publications/annual_reports/2017AnnualReport/AR2017.pdf#page=89

Oklahoma

Gross production taxes in Oklahoma include severance taxes and a 0.095% excise tax. Refunds are deducted from total receipts on an annual basis. Because refineries are part of the downstream oil and gas sector and are not strictly related to production, the value of major refineries in the four counties where they are present in Oklahoma (Carter, Garvin, Kay, and Tulsa) is removed from the total. Centrally assessed transmission pipelines are excluded as well.

https://www.ok.gov/tax/Forms_&_Publications/Publications/Annual_Reports/index.html

Pennsylvania

Pennsylvania levies no direct severance tax on production. Instead, an impact fee is levied during the first 15 years of well operation. These fees are listed along with severance taxes in the analysis. Impact fees are included in the year of payment and distribution, not production year.

http://www.puc.state.pa.us/filing_resources/issues_laws_regulations/act_13_impact_fee_.aspx

Texas

https://comptroller.texas.gov/transparency/reports/revenue-by-source/history.php
https://comptroller.texas.gov/transparency/revenue/watch/general-revenue/

Utah

Severance taxes include the oil and gas severance tax and the oil and gas Conservation fee.

https://tax.utah.gov/econstats/revenue
https://tax.utah.gov/commission-office/reports
https://tax.utah.gov/esu/revenuereports/summary2018.pdf

West Virginia

https://tax.wv.gov/ResearchAndGovernment/Research/SeveranceTaxHistoryAndData/Pages/SeveranceTaxHistoryAndData.aspx
https://tax.wv.gov/Documents/Reports/SeveranceTaxes.TaxData.FiscalYears.2004-2016.pdf

Wyoming

http://eadiv.state.wy.us/creg/creg.html
http://eadiv.state.wy.us/creg/GreenCREG_Oct18.pdf

Source Data - Ad Valorem Taxes

We report the most recently available fiscal year of ad valorem tax payments by the oil and gas industry in each state. Data on ad valorem taxes at the state level are far less accessible than severance tax data and face several reporting issues. The primary concerns are that there is no standardized reporting of data across the states and the definition of oil and gas-related assets varies widely as well. Many states also have no centralized collection of ad valorem data.

Links to online sources for each state are detailed below. These links are active at the time of publication but are undoubtedly subject to substantial change over time.

Alaska

http://tax.alaska.gov/programs/programs/reports/Annual.aspx?60018&Year=2017

Arkansas

Arkansas no longer releases reports of property valuations by detailed property type, particularly minerals. Our estimate is based on the FY2015 ad valorem report which is no longer available online.

California

No statewide tabulations of oil and gas-related ad valorem tax receipts are readily available for California and must be estimated. Our estimate of statewide oil and gas ad valorem payments for FY2017 has dropped from prior estimates to only $75 million. Our estimate of ad valorem taxes for the state is based largely on data for Kern County assessment data. Kern County is the dominant producing region of the state and accounts for more than 70% of total oil production in the state. Ad valorem taxes from oil and gas property totaled approximately $40 million in FY2016 and $27 million in FY2017. This is down approximately 65% from FY2015 levels. Our estimate is that Kern County oil and gas-related ad valorem taxes averaged only approximately $50 million annually in the FY2015 to FY2017 period. Given the share of total statewide production in Kern County, assigning one-third of the estimated state total to other regions seems appropriate for our purposes.

https://www.kerncounty.com/CAO/budget/fy1718/rec/recommendedBudgetFinal.pdf
https://www.kerncounty.com/CAO/budget/fy1617/rec/recommendedBudgetFinal.pdf

Colorado

https://leg.colorado.gov/sites/default/files/interested_persons_memo_on_severance_taxes.pdf

Kansas

Kansas ad valorem taxes revenues from oil and gas are generally not published and must be calculated from assessment data. Our estimate of $88.566 million for FY2017 is formed using

a known taxable value of oil and gas assets of $651.4 million and a statewide average tax rate of 13.596% of total taxable value.

https://www.ksrevenue.org/PVDMAPS/Statewide.pdf

Louisiana

Louisiana ad valorem taxes revenues from oil and gas are generally not published and must be calculated from assessed value data. Includes oil and gas surface equipment, drilling rigs, and oil and gas wells. Reported assessed values are multiplied by a statewide average millage rate of 9.8% to determine tax payments.

http://www.latax.state.la.us/Menu_AnnualReports/UploadedFiles/2017%20LOUISIANA%20TAX%20COMMISSION%20ANNUAL%20REPORT.pdf

Montana

Taxes include Oil and Gas Field Equipment and Oil and Gas Flow Lines.

https://mtrevenue.gov/wp-content/uploads/2017/06/2016-Biennial-Report-Property-Taxes.pdf

North Dakota

North Dakota levies no ad valorem taxes on oil and gas activity.

https://www.nd.gov/tax/oilgas/

New Mexico

https://tap.state.nm.us/Tap/_/

Ohio

There is no statewide reporting of ad valorem taxes in Ohio. The $30.3 million estimate for FY2015 reflects tax payments in Belmont, Carroll, Guernsey, Harrison, Monroe, and Noble counties only. Based on the rising production trend in Ohio, ad valorem taxes are likely significantly higher in more recent fiscal years.

https://energyindepth.org/wp-content/uploads/2017/02/Ohios-Oil-and-Gas-Industry-Property-Tax-Payments2.pdf

Oklahoma

Two categories of oil and gas-related equipment are used in the estimates – Refineries, Gas Plants, Gathering, and Compression; and Other Oil, Gas, and Mining Property.

https://www.ok.gov/tax/Forms_&_Publications/Publications/Ad_Valorem_Publications/index.html

Pennsylvania

Pennsylvania levies no ad valorem taxes on oil and gas activity.

Texas

Statewide reporting on oil and gas-related ad valorem taxes are currently only available through FY2015. Estimates published in news accounts provide unofficial FY2016 estimates. We will report the official FY2015 total until a more recent update of the data is available.

https://comptroller.texas.gov/taxes/property-tax/reports/index.php

Utah

Includes ad valorem taxes on oil and gas production and oil and gas gathering only.

https://propertytax.utah.gov/annual-reports/2017annual.pdf

West Virginia

https://tax.wv.gov/Documents/Reports/SeveranceTaxStructure.JointSelectCommitteeOnTaxReform.pdf
https://www.energyindepth.org/record-tax-revenue-is-latest-shale-driven-good-news-for-w-virginia/

Wyoming

http://revenue.wyo.gov/dor-annual-reports

Severance Tax Payments, Production Value, and Effective Rate by State

Region	Fiscal Year	Production Volume		Production Value ($)			Severance Tax	Effective Rate
		Crude Oil (bbl)	Natural Gas (mmcf)	Crude Oil	Natural Gas	Total		
All 16 States	2012	1,697,942	22,561,756	159,786,849,680	65,878,743,514	225,665,593,194	16,218,398,337	7.2%
	2013	2,036,108	23,311,287	187,562,687,897	79,846,438,049	267,409,125,946	15,125,742,306	5.7%
	2014	2,418,592	24,496,894	229,606,405,102	104,753,570,173	334,359,975,274	16,783,127,917	5.0%
	2015	2,799,719	26,548,555	165,887,263,453	79,013,207,687	244,900,471,139	11,261,989,613	4.6%
	2016	2,689,969	26,878,433	98,706,690,746	52,957,570,948	151,664,261,694	6,219,744,213	4.1%
	2017	2,596,765	26,283,366	115,726,996,542	69,848,929,189	185,575,925,730	7,480,729,582	4.0%
	2018	3,001,788	28,945,961	171,091,585,930	74,564,986,121	245,656,572,052	10,803,257,190	4.4%
16 States ex OK	2012	1,613,839	20,602,356	152,127,589,470	60,100,792,059	212,228,381,529	15,369,451,288	7.2%
	2013	1,930,249	21,293,649	178,219,307,909	73,097,399,914	251,316,707,823	14,609,761,658	5.8%
	2014	2,291,628	22,367,965	217,224,241,002	95,572,453,842	312,796,694,844	16,103,724,587	5.1%
	2015	2,642,728	24,084,705	155,628,032,428	71,200,829,815	226,828,862,243	10,705,443,387	4.7%
	2016	2,528,833	24,376,901	92,588,491,106	47,686,059,023	140,274,550,129	5,888,919,913	4.2%
	2017	2,442,243	23,866,288	108,703,070,263	63,166,150,522	171,869,220,785	7,058,834,606	4.1%
	2018	2,817,486	26,228,961	160,696,799,545	67,609,007,168	228,305,806,713	10,105,286,612	4.4%
AK	2012	202,707	355,558	20,358,032,933	1,082,970,408	21,441,003,341	6,141,053,900	28.6%
	2013	186,168	343,692	17,680,685,240	1,184,305,350	18,864,990,590	4,120,062,888	21.8%
	2014	187,552	335,043	18,015,151,067	1,442,639,318	19,457,790,384	2,727,066,796	14.0%
	2015	174,792	345,661	10,737,326,900	1,157,676,299	11,895,003,199	524,009,352	4.4%
	2016	179,017	336,517	5,945,154,570	758,845,835	6,704,000,405	244,127,946	3.6%
	2017	180,236	349,642	7,152,215,070	1,048,926,000	8,201,141,070	490,837,994	6.0%
	2018	178,226	339,066	9,716,881,520	999,397,035	10,716,278,555	654,600,000	6.1%
AR	2012	6,250	1,127,047	556,437,500	3,363,745,919	3,920,183,419	52,588,803	1.3%
	2013	6,596	1,149,259	581,827,663	3,898,459,161	4,480,286,825	47,684,575	1.1%
	2014	6,659	1,136,986	629,808,220	4,867,418,255	5,497,226,475	72,076,246	1.3%
	2015	6,625	1,080,471	412,472,500	3,517,713,154	3,930,185,654	74,282,076	1.9%
	2016	5,862	924,988	211,584,005	1,989,544,480	2,201,128,485	31,858,962	1.4%
	2017	5,368	750,548	227,173,760	2,140,998,791	2,368,172,551	38,152,523	1.6%
	2018	5,112	642,272	266,318,160	1,796,696,447	2,063,014,607	36,579,167	1.8%
CA	2012	196,497	244,384	20,880,098,715	771,893,652	21,651,992,367	515,814,119	2.4%
	2013	197,426	249,956	20,163,939,988	876,665,124	21,040,605,113	421,036,101	2.0%
	2014	201,357	248,327	20,455,689,833	1,115,978,140	21,571,667,972	475,583,052	2.2%
	2015	205,285	242,214	13,479,697,383	810,533,828	14,290,231,211	258,355,049	1.8%
	2016	194,206	216,057	7,317,358,403	490,053,286	7,807,411,689	85,207,117	1.1%
	2017	179,176	201,269	7,969,001,913	574,534,940	8,543,536,853	58,968,049	0.7%
	2018	170,704	200,598	10,270,406,160	525,353,625	10,795,759,785	98,960,976	0.9%

Region	Fiscal Year	Production Volume		Production Value ($)			Severance Tax	Effective Rate
		Crude Oil (bbl)	Natural Gas (mmcf)	Crude Oil	Natural Gas	Total		
CO	2012	43,630	1,710,882	3,812,425,758	4,986,878,854	8,799,304,612	108,835,984	1.2%
	2013	56,594	1,652,386	4,789,125,765	5,500,999,542	10,290,125,307	195,948,763	1.9%
	2014	79,121	1,605,729	7,213,131,899	6,913,276,644	14,126,408,543	263,607,649	1.9%
	2015	113,137	1,668,598	6,773,606,471	5,258,887,872	12,032,494,342	24,264,418	0.2%
	2016	120,634	1,697,551	4,269,237,260	3,570,161,947	7,839,399,207	28,591,701	0.4%
	2017	115,757	1,685,143	5,103,436,738	4,554,185,453	9,657,622,191	57,856,222	0.6%
	2018	152,219	1,751,913	8,189,635,898	4,207,560,777	12,397,196,676	125,800,000	1.0%
KS	2012	42,636	301,116	3,775,702,040	892,045,695	4,667,747,735	125,709,000	2.7%
	2013	45,269	292,017	3,892,341,793	982,189,922	4,874,531,714	122,928,000	2.5%
	2014	47,768	288,982	4,550,459,293	1,276,297,030	5,826,756,324	151,273,000	2.6%
	2015	49,183	294,855	3,109,062,359	942,920,942	4,051,983,301	121,429,000	3.0%
	2016	41,283	259,784	1,505,453,400	550,304,121	2,055,757,521	43,770,874	2.1%
	2017	36,414	230,798	1,583,614,515	636,237,203	2,219,851,718	51,640,410	2.3%
	2018	35,091	211,014	1,890,615,353	541,141,599	2,431,756,952	59,001,570	2.4%
LA	2012	70,349	3,100,734	7,629,935,292	9,361,551,235	16,991,486,527	878,260,000	5.2%
	2013	71,541	2,731,767	7,487,958,000	9,355,259,915	16,843,217,915	825,760,000	4.9%
	2014	70,447	2,096,921	7,272,185,104	8,922,132,816	16,194,317,921	854,990,000	5.3%
	2015	67,441	1,860,306	4,697,659,056	6,119,068,106	10,816,727,162	719,550,000	6.7%
	2016	59,979	1,779,479	2,423,151,600	3,883,521,681	6,306,673,281	441,196,634	7.0%
	2017	54,205	1,815,223	2,544,427,871	5,249,986,425	7,794,414,295	357,918,568	4.6%
	2018	48,881	2,503,719	2,892,044,365	7,166,449,255	10,058,493,620	425,661,544	4.2%
MT	2012	24,758	71,752	2,106,059,902	211,285,723	2,317,345,624	227,704,000	9.8%
	2013	28,469	63,534	2,404,705,258	209,791,915	2,614,497,173	206,437,000	7.9%
	2014	29,239	61,521	2,622,056,057	259,446,874	2,881,502,931	230,293,000	8.0%
	2015	30,442	54,837	1,774,844,705	166,496,556	1,941,341,261	188,421,000	9.7%
	2016	25,630	50,510	877,421,692	100,287,605	977,709,297	95,429,000	9.8%
	2017	21,619	47,210	901,007,857	119,795,375	1,020,803,232	98,104,000	9.6%
	2018	20,370	46,308	1,084,312,075	100,063,870	1,184,375,945	111,280,000	9.4%
ND	2012	196,754	129,558	16,873,295,117	307,689,454	17,180,984,570	1,713,225,000	10.0%
	2013	275,461	204,249	23,767,004,631	587,224,385	24,354,229,016	2,457,530,000	10.1%
	2014	350,341	264,789	31,960,441,627	1,081,420,342	33,041,861,968	3,247,807,069	9.8%
	2015	428,609	413,644	25,902,270,567	1,336,208,001	27,238,478,568	2,800,985,013	10.3%
	2016	410,266	514,953	14,385,635,402	1,122,769,191	15,508,404,593	1,483,340,852	9.6%
	2017	367,191	531,513	15,758,919,743	1,456,124,156	17,215,043,899	1,454,871,000	8.5%
	2018	422,625	637,748	23,447,939,375	1,630,163,607	25,078,102,982	1,945,887,966	7.8%
NM	2012	77,687	1,232,825	7,018,437,798	3,728,915,504	10,747,353,301	848,261,450	7.9%
	2013	93,981	1,186,945	8,039,682,963	4,046,285,614	12,085,968,576	817,424,663	6.8%
	2014	112,799	1,198,119	10,667,965,425	5,196,193,106	15,864,158,531	1,091,845,658	6.9%
	2015	139,859	1,238,619	8,623,472,842	4,124,601,270	12,748,074,112	811,790,846	6.4%
	2016	145,957	1,242,137	5,533,838,024	2,521,538,110	8,055,376,134	475,551,579	5.9%
	2017	154,636	1,253,245	6,968,671,340	3,509,086,000	10,477,757,340	653,283,466	6.2%
	2018	203,161	1,346,985	11,142,872,948	3,623,389,650	14,766,262,598	979,742,523	6.6%
OH	2012	4,888	81,701	450,604,353	257,249,215	707,853,569	2,531,325	0.4%
	2013	5,621	98,515	509,852,805	347,830,810	857,683,615	3,024,975	0.4%
	2014	11,404	295,575	1,081,593,373	1,385,084,155	2,466,677,528	8,529,775	0.3%
	2015	21,132	758,070	1,242,720,090	2,213,154,832	3,455,874,922	21,064,950	0.6%
	2016	26,367	1,265,427	868,397,145	2,380,447,456	3,248,844,601	34,272,375	1.1%
	2017	18,388	1,541,400	799,341,683	3,875,626,700	4,674,968,383	40,373,800	0.9%
	2018	20,009	2,102,458	1,086,772,161	5,328,256,389	6,415,028,550	54,562,350	0.9%
OK	2012	84,103	1,959,400	7,659,260,210	5,777,951,455	13,437,211,665	848,947,049	6.3%
	2013	105,859	2,017,638	9,343,379,988	6,749,038,135	16,092,418,123	515,980,648	3.2%
	2014	126,964	2,128,929	12,382,164,100	9,181,116,331	21,563,280,431	679,403,330	3.2%
	2015	156,991	2,463,850	10,259,231,024	7,812,377,872	18,071,608,896	556,546,226	3.1%
	2016	161,136	2,501,532	6,118,199,640	5,271,511,925	11,389,711,565	330,824,299	2.9%
	2017	154,522	2,417,078	7,023,926,278	6,682,778,667	13,706,704,945	421,894,976	3.1%
	2018	184,302	2,717,000	10,394,786,385	6,955,978,954	17,350,765,339	697,970,578	4.0%
	2019e	184,302	2,717,000	9,782,750,160	8,123,830,000	17,906,580,160	906,995,000	5.1%

Region	Fiscal Year	Production Volume		Production Value ($)			Severance Tax	Effective Rate
		Crude Oil (bbl)	Natural Gas (mmcf)	Crude Oil	Natural Gas	Total		
PA	2012	3,646	1,778,349	323,889,372	5,623,198,287	5,947,087,659	204,210,000	3.4%
	2013	4,715	2,742,305	408,456,521	9,493,533,445	9,901,989,966	202,472,000	2.0%
	2014	6,250	3,805,016	561,182,292	15,393,782,663	15,954,964,954	225,752,000	1.4%
	2015	7,135	4,577,398	400,029,721	10,736,787,783	11,136,817,504	223,500,000	2.0%
	2016	6,809	5,131,812	247,558,218	7,421,342,331	7,668,900,548	187,711,700	2.4%
	2017	5,859	5,330,850	257,800,883	11,892,986,587	12,150,787,470	172,728,300	1.4%
	2018	6,978	5,724,228	372,724,055	13,647,102,193	14,019,826,248	209,557,300	1.5%
TX	2012	657,295	7,379,170	61,144,867,375	20,425,151,354	81,570,018,729	3,807,555,500	4.7%
	2013	861,644	7,560,179	80,720,245,993	26,467,850,237	107,188,096,231	4,486,090,000	4.2%
	2014	1,073,747	7,868,246	102,065,915,874	34,200,206,787	136,266,122,661	5,773,652,000	4.2%
	2015	1,261,609	8,039,518	70,448,246,560	24,438,247,859	94,886,494,419	4,159,630,000	4.4%
	2016	1,190,612	7,504,087	44,847,377,510	16,161,772,246	61,009,149,756	2,282,701,440	3.7%
	2017	1,192,476	6,761,532	54,719,742,450	19,379,084,306	74,098,826,756	3,090,098,096	4.2%
	2018	1,426,956	7,135,384	83,558,262,492	19,349,929,636	102,908,192,128	4,822,624,000	4.7%
UT	2012	27,833	477,941	2,324,078,694	1,379,447,254	3,703,525,948	65,540,973	1.8%
	2013	32,252	480,534	2,588,921,793	1,586,402,912	4,175,324,705	53,164,253	1.3%
	2014	38,567	467,910	3,337,684,598	2,000,810,393	5,338,494,990	89,159,562	1.7%
	2015	40,692	446,236	2,382,550,510	1,392,953,564	3,775,504,074	69,685,131	1.8%
	2016	32,676	385,158	1,128,356,740	801,425,533	1,929,782,273	27,740,000	1.4%
	2017	31,937	334,877	1,342,285,496	900,191,236	2,242,476,731	20,461,434	0.9%
	2018	35,718	303,054	1,841,828,435	728,491,307	2,570,319,742	31,543,542	1.2%
WV	2012	2,362	464,954	205,062,935	1,437,986,484	1,643,049,419	99,234,290	6.0%
	2013	4,262	619,178	367,270,747	2,156,751,769	2,524,022,515	115,014,548	4.6%
	2014	8,527	887,938	788,513,008	3,692,286,687	4,480,799,695	229,466,901	5.1%
	2015	12,125	1,257,240	658,609,792	3,298,185,793	3,956,795,584	215,361,550	5.4%
	2016	9,385	1,315,043	265,196,638	2,246,367,411	2,511,564,049	134,408,900	5.4%
	2017	8,054	1,457,173	319,482,045	3,565,004,102	3,884,486,147	133,052,031	3.4%
	2018	10,435	1,704,271	532,837,188	4,123,057,617	4,655,894,804	138,844,691	3.0%
WY	2012	56,547	2,146,385	4,668,661,688	6,270,783,021	10,939,444,709	578,926,944	5.3%
	2013	60,250	1,919,133	4,817,288,750	6,403,849,812	11,221,138,562	535,183,892	4.8%
	2014	67,850	1,806,863	6,002,463,333	7,825,480,632	13,827,943,966	662,621,879	4.8%
	2015	84,662	1,807,038	4,985,462,973	5,687,393,957	10,672,856,930	493,115,001	4.6%
	2016	80,150	1,753,398	2,762,770,500	3,687,677,790	6,450,448,290	293,010,834	4.5%
	2017	70,927	1,575,865	3,055,948,901	4,263,383,247	7,319,332,148	340,488,713	4.7%
	2018	81,001	1,579,943	4,403,349,362	3,841,954,161	8,245,303,523	410,640,983	5.0%

X. Endnotes

[1] The state economic forecasts used in the report for counterfactual comparisons are prepared multiple times each year as part of our ongoing economic forecasting project. All counterfactual forecasts are from the RegionTrack July 2014 release of the Oklahoma State and Local Area Economic Outlook. The forecasts are used as inputs to the state budgeting process by the Oklahoma Tax Commission.
[2] Referenced are Bureau of Economic analysis RIMS industry level multipliers using the 2007 U.S. benchmark input-output table and 2015 regional data at the state level.
[3] At the regional level, gross domestic product is essentially equivalent to value added as used in input-output modeling.
[4] Both West Virginia and Wyoming will have much lower shares after removing coal production from total mining activity.
[5] BEA defines Proprietors' Income as: Current-production income of sole proprietorships, partnerships, and tax-exempt cooperatives. Excludes dividends, monetary interest received by nonfinancial business, and rental income received by persons not primarily engaged in the real estate business.
[6] Natural gas pricing data is available as a service from Natural Gas Intelligence (www.naturalgasintel.com).
[7] Property taxes are generally paid one year in arrears. Because property taxes are typically levied at the local level, consolidated reporting at the state level is not readily available and is often only produced on a biennial basis with a significant reporting lag.
[8] Arkansas no longer breaks down property valuations for oil and gas-related assets after FY2015.
[9] For example, see: https://okpolicy.org/end-special-tax-break-oil-gas-producers/
[10] The report is available online at: https://www.idl.idaho.gov/oil-gas/2016-oil-gas-taxation-comparison_rev.pdf
[11] For example, see: https://okpolicy.org/end-special-tax-break-oil-gas-producers/
[12] See: https://www.ok.gov/tax/documents/2016%20statbook.pdf. The calculation includes two categories: Refineries, Gasoline Plants, Gathering and Compressor and Other Oil, Gas, and Mining Property. Refineries are removed from the total by dropping the valuations in the first category in counties that are home to a refinery.
[13] See: http://www.ndnrt.com/image/cache/oil_tax_report_final.pdf
[14] We find severance tax revenue of $27.74 million vs. $41.25 million in the Idaho report and ad valorem taxes of $45.45 million vs. $57.74 million in the Idaho report. For Utah, see: https://tax.utah.gov/econstats/revenue#reports and https://propertytax.utah.gov/general/annual-report.
[15] For Alaska, see: http://tax.alaska.gov/programs/programs/reports/Annual.aspx?60650&Year=2017 and http://tax.alaska.gov/programs/programs/reports/Annual.aspx?60018&Year=2017
[16] For access to the BEA data, see: https://www.bea.gov/data/gdp/gdp-state
[17] For details on the BEA methodology, see: https://www.bea.gov/sites/default/files/methodologies/0417_GDP_by_State_Methodology.pdf. For detailed coverage of taxes, see: https://apps.bea.gov/scb/2018/04-april/0418-preview-2018-comprehensive-nipa-update.htm
[18] BEA tracks employer contributions as a component of employee compensation.
[19] Oil and gas activity represents more than 99% of total mining sector (NAICS 21) tax payments in Oklahoma in 2016. Oil and gas tax payments represent $2.433 billion of $2.454 billion in total mining sector payments.
[20] We are using the mining sector as a proxy for oil and gas in this sector. Oil and gas represents approximately 99% of the activity in the mining sector in Oklahoma.
[21] The share of state and local taxes paid to the state in which a firm is located depends upon the tax filing practice of each firm.
[22] The BEA GDP dataset tracks 81 NAICS industry sectors.
[23] A simple bottom-up calculation performed annually for the Texas Oil and Gas Association finds oil and gas firms paid total state and local taxes and state royalties in Texas totaling $11 billion in FY2017 and $9.4 billion in FY2016. This is not a comprehensive accounting of all taxes paid by the industry but includes only those easily identified as paid directly by the industry. See: https://www.txoga.org/release-texas-oil-natural-gas-industry-paid-11-billion-taxes-royalties-2017-2016/
[24] The BEA data on tax payments does not appear to capture the full production tax and extraction tax in North Dakota. This will understate the calculated effective rate in the state considerably. The effective rate in North

Dakota when both the production and extraction taxes are included could be as high as 12-13%, but still well below the rate in Oklahoma.

[25] See: "Oklahoma Oil and Gas Industry Taxation." RegionTrack Inc. Available online at: https://www.regiontrack.com/www/wp-content/uploads/RegionTrack-OK-Oil-Gas-Taxation-20180121.pdf

[26] General sales taxes are defined as used in the Census Bureau's State and Local Government Finance database. Use taxes are treated synonymously with sales taxes. Gross receipts taxes are included in many states, particularly New Mexico.

[27] Available online at: https://www.census.gov/govs/

[28] For more details on the tax apportionment approach used in the IMPLAN input-output model: see https://implanhelp.zendesk.com/hc/en-us/articles/115009674528-Generation-and-Interpretation-of-IMPLAN-s-Tax-Impact-Report

[29] The size of the sales tax share in each state can be affected by the availability of special sales tax exemptions on the purchases of oil and gas-related goods and services. Oklahoma does not provide a general exemption of oil and gas-related purchases from sales and use tax.

[30] For detailed revenue and expenditure reports, see: https://sdeweb01.sde.ok.gov/OCAS_Reporting/StateReports.aspx

[31] For the full apportionment rules for gross production tax in Oklahoma, see: http://www.oscn.net/applications/oscn/deliverdocument.asp?cite=68+O.S.+1004

[32] For a summary of current and historical apportionment, see: https://www.ok.gov/tax/Forms_&_Publications/Reports_&_Statistics/Apportionment_Charts_&_Formulas/index.html

[33] For a description of the Common Education Technology Revolving Fund, see: http://www.oscn.net/applications/oscn/DeliverDocument.asp?citeid=456863

[34] See the following IHS report by for more details on production reporting issues in Oklahoma: https://penerdeq.ihsenergy.com/dynamic.splashscreen/documents/OK_Production_Data_Update_Sep2014.pdf

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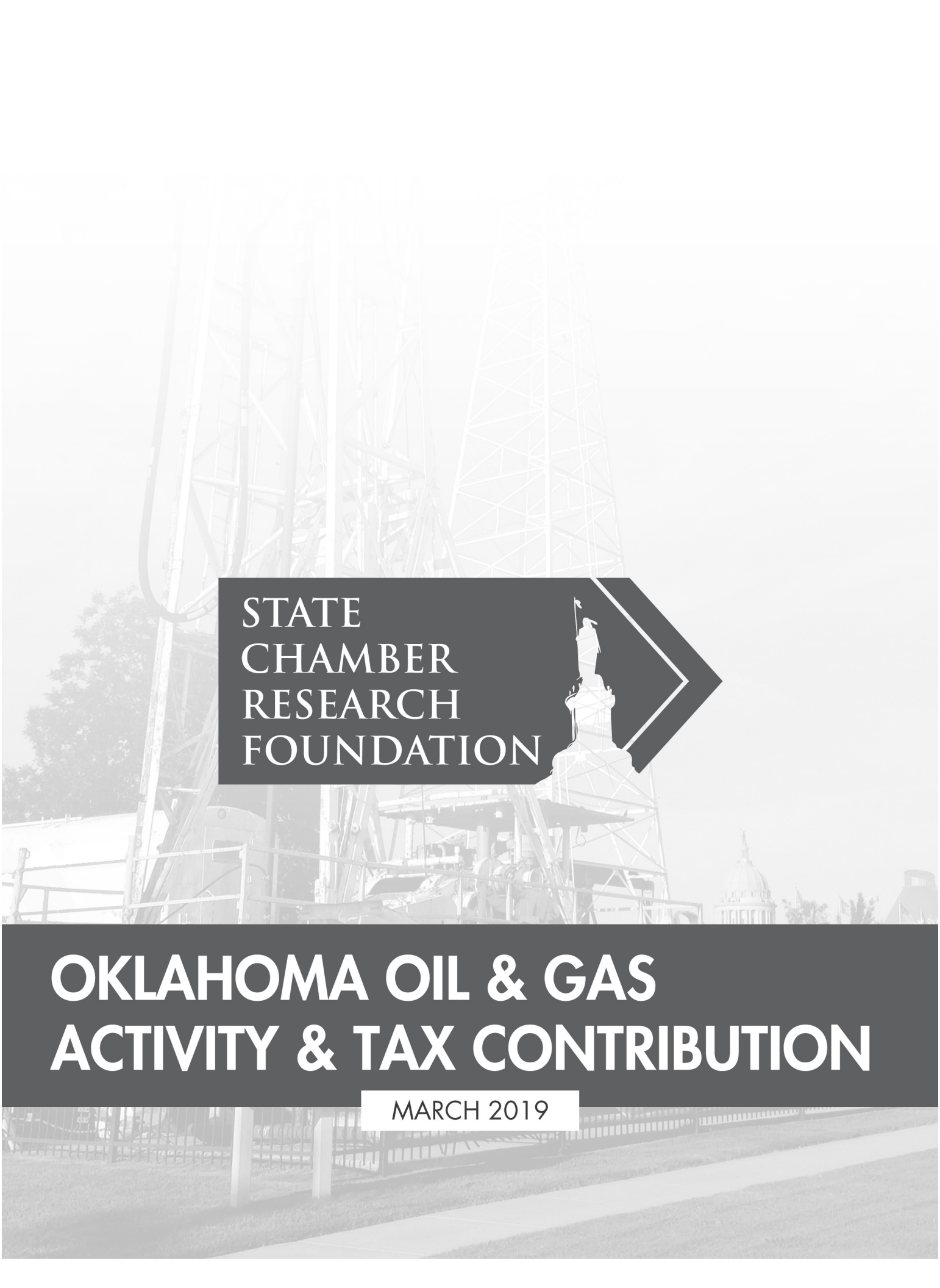

STATE CHAMBER RESEARCH FOUNDATION

OKLAHOMA OIL & GAS ACTIVITY & TAX CONTRIBUTION

MARCH 2019