

Methods Documentation: Montana

Appendix of Working Paper 24-01 by **Daniel Raimi, Elena Davert, Haley Neuenfeldt, Amy Van Zanen, and Zach Whitlock**

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This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Montana for our sample counties.

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2. Federal Royalties

2.1. Policy

The federal government generates royalties from leasing mineral rights on federal lands in the state. They share 49% of royalty revenue with the state. Counties where mineral production occurs receive 25% of the money received from federal royalties in the state, and the remaining 75% goes to the state general fund. The county disbursements are distributed by the Montana Department of Revenue (MT_5).

1.2. Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports: Shared Revenue	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.

1.3. Calculations and Assumptions

1) Download Shared Revenues from Biennial Reports

We downloaded the “Shared Revenue” portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020.

2) Convert the Reports to Excel for Easier Copying

We converted each of the reports into a CSV format for easier copying.

3) Extract Oil and Gas Tax Revenue Data

We extracted the data from “Federal Mineral Royalties” from 2012-2020 for all counties of interest.

Note: The data was copy and passed into the tab ‘FML_Raw.’

4) Apply ONRR Ratios

In order to attribute energy types to these revenues, we used data from the US Department of Interior’s Office of Natural Resources Revenue (ONRR) to create production ratios on federal land for oil, gas, and coal, and applied those ratios to the federal mineral royalty allocations for each county. A more detailed description of the process for creating these ratios can be found in the Methods section related to ONRR.

Note: The ratios can be found in the tab ‘FML_Ratios.’ The values derived from applying these ratios can be found in the tab ‘FML_Interim.’

1.4. Output

Federal royalty allocations for coal, gas, and oil production to counties from 2012-2020 for all counties of interest.

2. Oil and Gas Production Tax, Oil and Gas Revenue Distribution Account, and Coal Gross Proceeds

2.1. Policy

The following passages are copied verbatim from the 2019-2020 Biennial Report (emphasis added):

“Each county receives a fixed percentage of tax revenue from **oil and natural gas production** in that county. The percentage is based on the allocation under the pre-2003 system which distributed revenue based on mill levies. In Fiscal Year 2020, counties received 48 percent of total oil and natural gas tax revenue. Within each county, revenue is allocated to school districts, county-wide school funds, and the county in proportions based on pre-2003 distributions.”

Some recent legislative changes have adjusted these distribution systems. More information can be found in the Oil and Gas Tax section of the Natural Resources chapter of the 2019-2020 Biennial Report.

“In addition to production tax revenue from oil and gas production, cities and towns receive revenue from the **Oil and Gas Natural Resource Distribution Account**. This tax rate is the difference between 0.3 percent of total oil and gas revenue and the rate set by the Board of Oil and Gas Conservation to fund its operations, up to 0.08 percent. The account distributes money to the counties where production occurred and the counties are responsible for distributing money to their incorporated cities based on relative population size.”

“[C]oal gross proceeds are collected by the counties. The Department of Revenue certifies the gross proceeds of the mine, and the county collects the tax and remits part of this revenue back to the state. Revenue from **coal gross proceeds** is distributed to taxing authorities in the same proportion as it was in Fiscal Year 1990 (15-23-703, MCA).”

2.2. Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports: Shared Revenue	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.

2.3. Calculations and Assumptions

1) Download Shared Revenues from Biennial Reports

We downloaded the “Shared Revenue” (2019-2020) or “Transfers to Local Government” (2011-2018) portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020.

2) Convert the Reports to Excel for Easier Copying

We converted each of the reports into a CSV format for easier copying.

3) Extract Fossil Fuel Revenue Data

We extracted the data from “Oil and Gas Revenue,” “Oil and Gas Revenue Distribution Account,” and “Coal Gross Proceeds Tax” from Biennial Reports for the years 2012-2020 for all counties of interest.

Note: These values can be found the tab ‘State-CollectedFossils_Raw.’

2.4 Output

Fossil-fuel related state-collected tax allocations to counties from 2012-2020 for all counties of interest.

3. Local Property Tax

3.1. Policy

Montana counties receive significant energy-related revenue from property taxes. Property taxes are applied to midstream and downstream energy processes including oil refineries, natural gas processing plants, coal processing plants, oil and gas pipelines, electric generating stations (including natural gas, coal, and wind), gas distribution property, and electric transmission property. The coal production tax and the oil and gas production taxes (reported in the previous section) have replaced all upstream-related property taxes for oil, gas, and coal (15-23-101, MCA).

The Montana Department of Revenue Property Tax Bureau is responsible for the assessment of centrally assessed properties which include: pipelines, public utilities, and electricity generating plants. These properties are assessed by the state and levied by the counties based on local mill rates, and distributed appropriately by county treasurers.

Other properties, including oil refineries, natural gas processing plants, and coal processing plants, are assessed locally by county assessors and local levy rates are applied, and the taxes are collected and distributed accordingly by county treasurers.

3.2. Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.
Fed_6	U.S. Energy Information Administration	Preliminary Monthly Electric Generator Inventory September 2022	Excel/csv data of generation and locations of powerplants, renewable energy facilities by county by month. The September 2022 file contains a tab with information on all facilities retired since 2002.
MT_2	Yellowstone County	Oil Refinery Property Taxes	Parcel map that then links to Property Tax receipts from 2000-2022.

3.3. Calculations and Assumptions

1) Download Property Tax Reports for Each Fiscal Year

We downloaded the “Property Tax” portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020.

2) Extract Property Tax Data for Relevant Counties and Categories

Property tax data can typically be found around page 248 of the Biennial Reports though the page number varies by year. We identified and extracted the individual county property tax revenues for Property Tax Classes 9-utilities, 13- electric generating property, and 14- wind generation in the column “Taxes” for both Fiscal Years listed in each Biennial Report. Property Tax Class 9 is labeled as “utilities” and includes all “Non-Electric Generating Property Of Electrical Utilities (i.e. pipelines, oil and gas flow lines, oil and gas field equipment, and electric and gas utilities). Property Tax Class 13 includes “Telecommunication Utilities and Electric Generating Property of Electric Utilities” (MT_6). Property Tax Class 14 includes “Renewable Energy Production and Transmission Property” which encompasses “commercial wind generation, biodiesel production, biomass gasification, coal gasification ethanol production, and geothermal energy property.” In the reports through 2019-2020, these classes are subdivided such that it is possible to isolate Electrical Generation Property from Telecommunication Property and Wind Generation from other renewables. The 2021-2022 Biennial Report no longer breaks out the data by county by class.

Note: This data was copied and pasted into the tab ‘Property_Tax_Raw.’

3) Collect Electric Generating Station Data from EIA and Energy Source Data

Using the EIA 860 Generator data, we collected the data on all of the electric generating stations in each relevant county and searched for the energy source for each plant. To catch plants that may have retired between 2013 and 2020, we looked at data for all retired plants until September 2022 and sorted for plants that retired between 2013 and 2019. With this data, we were able to attribute an energy type to each of the electric generating property tax revenues in the counties of interest that were collected through the Biennial Reports.

Note: A list of these facilities and the associated energy type can be found in tab 'Property_Tax_Facilities.'

Note: A list of the matched energy types attributed to the property tax published in the Biennial Reports can be found in tab 'Property_Tax_Raw'

4) Collect information on Oil Refineries from County Property Tax Database

There are three oil refineries within our sample; all are located in Yellowstone County. We used EIA data on refinery facilities as of 2021 to find names, operators, and addresses of refineries to cross-check with the EIA Energy Infrastructure Map. We then used the Yellowstone County parcel map to locate the relevant parcels and used the option to "Click for more Property Tax Detail." which provides levies back to 2000. We downloaded these amounts and formatted them.

Note: These values can be found in the tab 'Property_Tax_OilRefinery_Raw.'

3.4. Output

Local property tax revenue for nonelectric generating property of electric utilities, electric generating property of electric utilities, wind generation, and oil refineries.

Note that DR independently verified that pipeline revenue data were not available at the county level (state level only).

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
MT_1	Montana Department of Revenue	MT Department of Revenue Biennial Reports	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.	Public	Property Tax, Federal Royalties, Production Taxes	1990-2020	https://mtrevenue.gov/dor-publications/biennial-reports/
MT_2	Yellowstone County	Oil Refinery Property Taxes	Parcel map that then links to Property Tax receipts from 2000-2022.	Public	Property Tax Receipts	2013-2020	https://maps.yellowstonecountymt.gov/mapping/
MT_3	Yellowstone County Department of Finance	Mill Levy Rates	includes: - mill levy rates 2002 - 2021	Public	Local Property Tax	2002-2021	https://www.yellowstonecountymt.gov/finance/millevyinfo.asp
MT_4	Montana State Legislature	Distribution of Taxes to Taxing Units- Appropriation	Oil and natural gas production tax distribution allocation amounts	Public	Production Tax	2021	https://leg.mt.gov/bills/mca/title_0150/chapter_0360/part_0030/section_0320/0150-0360-0030-0320.html

MT_5	Montana Department of Natural Resources	Natural Resources Biennial Report	Information on Federal Mineral Royalty Taxation and Distribution Policy	Public	Federal Mineral Royalties	2018	https://mtrevenue.gov/wp-content/uploads/2019/01/2018-Biennial-Report-Natural-Resources.pdf
MT_6	Montana State Legislature	Property Tax Payments by Class: Overview	Information on different classes of property	Public	Property Tax	2020	https://leg.mt.gov/content/Committees/Interim/2019-2020/Revenue/Meetings/January-2020/property-taxes-by-class-overview.pdf

