



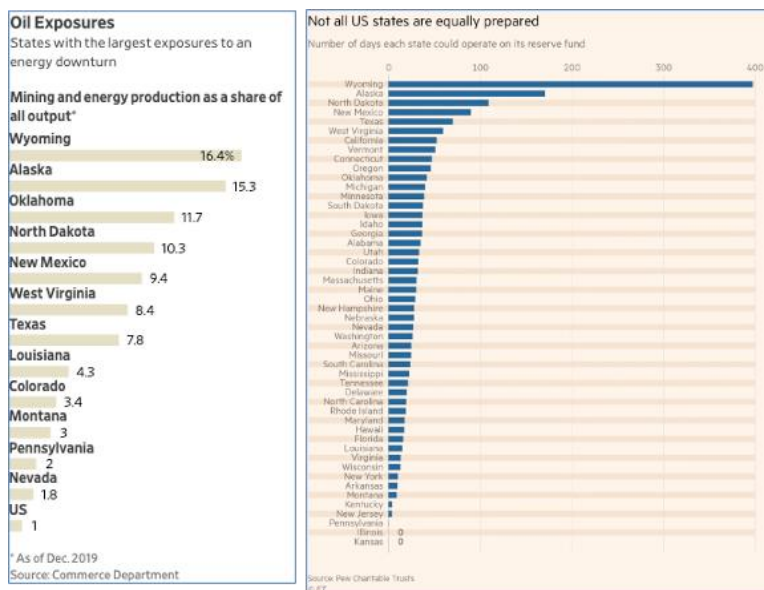
## Saving for a Rainy Day – or a Recession – Takes Energy

Andrew J. Nelson, Nelson Economics, April 2020

*Key takeaway: Energy-sector states tend to save more for leaner times. This prudence is admirable given the historical volatility of energy prices – and the public revenues that depend on them.*

Two recent articles caught my attention because they had similar-looking lists of U.S. states: First, an April 17 [article in the Financial Times](#) regarding vulnerability of state budgets to revenue shortfalls due to the COVID-19 recession. This was followed by an April 21 [article in the Wall Street Journal](#) concerning the impact of the fall in oil prices on state economies.

I was surprised to see that the states with the largest “rainy day funds” relative to their budget – that is, the states best positioned to survive revenue hits – are all states in which energy and/or mining contributes a significant share of state output. Indeed, as shown in the following charts, the seven top states ranked by the natural resource share of state economic output all rank among the states with the largest reserve funds relative to their budgets.



On average, energy and mining together account for 11.3% of economic output\* in these seven states, and these states have an average 134 days of reserve.† By comparison, energy production and mining account for just 1% of national GDP, and the average reserve fund nationally is just 28 days, with many states having only minimal or no reserve funds.

|   | State Ranking                 |   |                           | State Figures                 |   |                                    |
|---|-------------------------------|---|---------------------------|-------------------------------|---|------------------------------------|
|   | Mining/Energy Share of Output | Days worth of expenditures in reserve funds | Per Capita State Spending | Mining/Energy Share of Output | Days worth of expenditures in reserve funds | Per Capita State Spending (\$000s) |
| Wyoming   | 1                             | 1   | 7                         | 16.4%                         | 397.7                                       | 8.4                                |
| Alaska  | 2                             | 2   | 1                         | 15.3%                         | 170.8                                       | 16.4                               |
| Oklahoma  | 3                             | 11  | 36                        | 11.7%                         | 41.9  | 5.3                                |
| North Dakota  | 4                             | 3   | 15                        | 10.3%                         | 109.1                                       | 6.8                                |
| New Mexico  | 5                             | 4   | 10                        | 9.4%                          | 90.1  | 8.1                                |
| West Virginia   | 6                             | 6   | 14                        | 8.4%                          | 59.7  | 7.0                                |
| Texas   | 7                             | 5   | 46                        | 7.8%                          | 70.4  | 4.2                                |
| Louisiana   | 8                             | 40  | 16                        | 4.3%                          | 15.1  | 6.7                                |
| Colorado  | 9                             | 20  | 29                        | 3.4%                          | 32.4  | 5.7                                |
| Montana   | 10                            | 45  | 17                        | 3.0%                          | 9.2   | 6.6                                |
| Pennsylvania  | 11                            | 48  | 20                        | 2.0%                          | 0.3   | 6.3                                |
| Nevada  | 12                            | 27  | 46                        | 1.8%                          | 27.3  | 4.2                                |
| <b>Averages</b>   |                               |   |                           |                               |   |                                    |
| U.S.  |                               |   |                           | 1.0%                          | 40.1  | 6.0                                |
| Top 7 Resource States   | 4.0                           | 4.6   | 18.4                      | 11.3%                         | 134.3                                       | 8.0                                |
| Next 5 Resource States  | 10.0                          | 36.0  | 25.6                      | 2.9%                          | 16.9  | 5.9                                |
| Sources: Bureau of Economic Analysis via the Wall Street Journal; the Pew Charitable Funds via the Financial Times; compiled by Nelson Economics. |                               |   |                           |                               |   |                                    |

This only makes sense, as the energy sector is the [most volatile of all industries](#), with output, employment, and equity prices all unusually dependent on notoriously erratic commodity prices. To wit, the price of NYMEX dropped from over \$60/barrel at the beginning of the year to just \$20/barrel (3/18/20) in under four months – and then briefly plunged to -\$37.63/barrel at the beginning of last week (4/20/20) before recovering to a hair under \$17/barrel by the end of the week (4/24/20).

That's volatile! Accordingly, prudence suggests that states highly dependent on this revenue source should save more for times – like now – when petroleum prices plunge, taking state revenues with them, and this is exactly what is observed: energy-dependent states tend to save more for leaner times relative to their budget.

Of course, a high ranking on this score could be the result of either a large denominator (saving a lot) or small numerator (restrained budgets) or both. In fact, my analysis shows that these energy states tend to spend *more* per capita (\$8,000) than the national average (\$6,000), though excluding Alaska, most rank near the middle of the pack, suggesting these energy states exercise fiscal prudence on both sides of the equation: near-average budgets per capita in good years while reserving funds for those inevitable periods of falling energy prices and revenues.

So it seems that saving for a rainy day – or a recession – takes a lot of energy (or other natural resources).

Heading photo (cropped) by [Andrea Ang](#) on [Unsplash](#).

\* My personal calculations differ somewhat from those published by the WSJ, but had no material impact on the rankings, so I have stayed with the WSJ figures for consistency with their exhibit.

† This average reserve figure is distorted by Wyoming's whopping 397 days of reserve. However, the median days of reserve for these seven states, which reduces the impact of the Wyoming outlier, is still an impressive 90.1 days, almost double the 48-day national median.