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WHY LOCAL GOVERNMENTS SHOULD PREPARE FOR THE FISCAL EFFECTS OF A DWINDLING COAL INDUSTRY

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If the United States takes significant steps to address climate change, the use of coal in the power sector will decline rapidly. This presents major risks to the 53,000 US workers[1] employed by the industry and the communities where they work and live. At least 26 US counties meet the definition of "coal-mining dependent,"[2] which means that coal-mining operations employ at least 8 percent of the workforce there.[3] In these areas, the industry is also an important contributor to local government finances through a complex system of taxes, royalties, and lease bonuses.

A sharp decline in coal production would jeopardize the fiscal health of these governments, eroding their abilities to provide adequate public services and issue and service debt. Shareholders are increasingly calling on companies to disclose and manage climate-related risks, but coal-reliant local governments have yet to experience the same pressure to grapple with the potential impact of climate policies on their finances. Importantly, the potential consequences of the financial decline of coal-reliant counties extend to entities beyond their borders because these counties have significant outstanding municipal bonds that they may struggle to repay.

To be sure, US climate policy is uncertain. Experts have long recommended strong actions to reduce greenhouse gas emissions, and for years, policymakers have largely ignored their advice. Nevertheless, support for a more robust US climate policy has been growing among the public and policymakers, and change may be on the horizon.[4] Consequently, those dependent on coal should be looking ahead to manage their risks.

This policy brief summarizes the implications of a carbon-constrained future on coal-dependent local governments in the United States.[5] It considers the outlook for US coal production over the next decade under such conditions and explores how county finances could be affected. It also considers the responsibilities of jurisdictions to disclose these risks, particularly when they issue bonds, and the actions leaders can take to mitigate them.

QUANTIFYING THE FISCAL EXPOSURE TO COAL

Coal production in the United States fell by one-third between 2007 and 2017.[6] The primary driver for this was the decline in the price of natural gas, a competitor fuel in power production and industrial applications. Advances in drilling technologies and the higher efficiency of cleaner-burning natural gas plants combined to increase the amount of

competition that aging coal plants faced. Other factors that have driven coal's decline include a decline in the cost of renewable electricity sources, slower-than-expected increases in US electricity demand (caused by the Great Recession and improved energy efficiency), weak coal, and air quality regulations.

Modeling projections of the US energy system under current policies suggest that coal use and production will fall gradually in the coming decade. In contrast, projections under even a moderately stringent national climate policy suggest existential risks for the coal industry. For example, as part of its 2018 *Annual Energy Outlook*, the US Energy Information Administration modeled a policy scenario that, starting in 2020, imposes a fee of $25 per metric ton of carbon dioxide emitted from US power plants. The price rises at 5 percent over inflation each year thereafter. Under this scenario, EIA projects a rapid decline in total US coal production such that by 2030, total US coal production would be 77 percent below 2016 levels.[7] EIA projects that the sharpest reduction in coal mining would happen in Wyoming's Powder River Basin, currently the source of nearly 40 percent of US coal,[8] where coal production would fall 95 percent between 2016 and 2030. Coal production elsewhere in the western US would experience a similarly dramatic and rapid decline, and other US regions would be hit hard as well, although production declines there would not be as rapid as those in the West. For example, production in Appalachia would fall 50 to 80 percent.

How might the projected declines in coal production translate into revenue declines for state and local governments? Ideally, we would project coal production under two scenarios, one assuming that no new climate policies have been enacted and a second assuming that they have; estimate the corresponding government revenue streams that coal generates; and compare the two outcomes. This is more difficult than it may sound because state and local governments collect coal-related revenue in widely varying ways, including through royalties, lease bonuses, severance taxes, sales taxes, property taxes, business taxes, and personal income taxes. In some places and for some taxes, coal revenue goes directly to county governments and school districts. In other cases, it flows to those jurisdictions via state trust funds. And some states use coal revenue to pay directly for public services that would otherwise fall to counties, such as the construction and maintenance of county roads.

To understand the fiscal exposure of coal-dependent governments, we studied the finances of three counties: Boone County in West Virginia, Campbell County in Wyoming, and Mercer County in North Dakota. All three are among the eight US counties that are most dependent on coal mining, as measured by the share of the labor force employed by the industry.[9] Although the revenue streams of these counties differ in composition, each county's budget and ability to provide public services are heavily dependent on the coal industry. For example, in both Boone County and Campbell County, revenue from the coal industry supports more than one-third of the county budget and contributes significant funding to the local school system.

Boone County is already experiencing a dramatic loss in coal-related revenue. In 2012, 31 mines produced 16.4 million short tons[10] of coal. Five years later, in 2017, the 11 remaining mines produced only 5.0 million short tons, a 70 percent decline.[11] As a result, the county government's property tax revenue fell 50 percent, and its total revenue declined 38 percent.[12]

But as important as coal is to these areas, their complex flows of funds and a lack of sufficiently detailed budget data make it difficult to quantify just how reliant on coal they are. Regardless, estimates of the direct contributions of the coal industry to county revenues will almost certainly understate the fiscal risks of industry decline because lost economic activity and jobs will ripple across the economy and lower revenues from other sources, such as residential property taxes and sales taxes.

MUNICIPAL BONDS

The potential for fiscal distress could extend to coal-reliant governments' ability to repay outstanding debts. They use municipal bonds to finance a broad suite of capital investments, including schools and infrastructure. In primary offerings, bond issuers must produce an "official statement," a document that informs investors about the issuer and the project being funded by the bonds. Regulations require state and local government issuers to provide information to the Municipal Securities Rulemaking Board about their securities on an ongoing basis, a practice called "continuing disclosure."

Even though regulations require local governments to disclose risks to their financial health in their official statements, our review of seven examples of current bond issues from coalfield counties in Wyoming and North Dakota found that counties are at best uneven and at worst misleading (by omission) in their characterizations of climate-related risks. Some of the official statements alluded to exposure to government policy and economic conditions, while others did not mention risks of any kind. One emphasized the central role that coal plays in the local economy in positive terms. Only two described the potential for policies that regulate carbon dioxide to have "a significant impact" on the facilities funded by the bonds. None discussed the connections between climate policy, coal production, and the economic and fiscal conditions of the county. Ratings reports are provided by credit rating agencies (such as Moody's, Fitch, and Standard & Poor's) to evaluate the riskiness of bonds.[13] We found that bond ratings reports are not much better than governments' official statements in describing the risks associated with the exposure of some local governments to the coal industry.

CONCLUSIONS

First, policymakers in coal-dependent communities must grapple with the severe risks facing their fiscal system. To understand and communicate those risks, they should prepare and publish budget data that break out the revenues dependent on the coal industry. They should also prioritize diversifying their economies and revenue systems and otherwise plan for the possibility of a rapid decline in the coal industry. Although some politicians may claim to have a plan to reinvigorate the coal industry, such promises are irresponsible considering the robustness of negative projections for the industry. To be sure, diversifying an economy that is deeply integrated with a particular industry is difficult, but communities that shirk the challenge are committing to an unacceptably high risk of fiscal stress.

Economic diversification will require large investments and thus significant external support for already struggling coal-dependent communities and workers. The federal government is a potential source of assistance, and one logical source would be a federal carbon tax or fee. Such a policy could generate hundreds of billions of dollars in new federal government revenue annually, and a small fraction of that could be devoted to economic development in coal communities and to direct assistance to the residents of those communities.

Second, participants in the municipal debt market—including issuers, ratings agencies, insurers, banks, and investors—should pay closer attention to the fiscal risks coal-reliant jurisdictions are facing, including by asking for more transparent budget data. We do not recommend specific actions but rather pose questions for stakeholder consideration and future research:

- Should the Municipal Securities Rulemaking Board and the Securities and Exchange Commission develop more specific guidance and/or requirements with respect to the disclosure of climate-related regulatory risks? Should they require the periodic reevaluation of these risks in light of potential policy changes?
- Should ratings agencies further highlight and evaluate the risks to coal communities of a carbon-constrained future?
- To what extent do market actors assess risks of future climate policies when deciding whether to, for example, underwrite and insure municipal bonds?

- In 2015, the G20's Financial Stability Board established the Task Force on Climate-Related Financial Disclosures (TCFD) to develop a voluntary framework for companies to disclose the financial impact of climate-related risks and opportunities. In its short lifetime, the TCFD has already encouraged a dramatic increase in corporate disclosures of climate-related risks. Should a similar voluntary effort apply to risk disclosure from public sector entities?
- Are climate policy-related risks to private bank loans in coal-dependent communities being appropriately evaluated and disclosed?

None of the challenges highlighted in this paper bolsters a case for delaying greenhouse gas mitigation. The climate challenge is real and exigent. Rather, because of the disproportionate burdens of climate action on coal-reliant areas, it behooves policymakers to prepare for and limit the foreseeable impacts on their communities.

REFERENCE

Morris, Adele, Noah Kaufman, and Siddhi Doshi. 2019. *The Risk of Fiscal Collapse in Coal-Reliant Communities*. Washington, DC: Brookings Institution.

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NOTES

[1] Data from US Bureau of Labor Statistics, All Employees: Mining and Logging: Coal Mining [CEU1021210001], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CEU1021210001.

[2] Share of coal workers calculated using coal workers data from US Department of Labor's Mine Safety and Health Administration and labor force data from US Bureau of Labor Statistics, Local Area Unemployment Statistics. All data are for 2015.

[3] US Department of Agriculture. 2019. "Descriptions and Maps: County Economic Types, 2015 Edition." Economic Research Service. https://www.ers.usda.gov/data-products/county-typology-codes/descriptions-and-maps.aspx#mining.

[4] One source of polling is the Yale Program on Climate Change Communication. See for example this report: https://climatecommunication.yale.edu/publications/politics-global-warming-april-2019/2/

[5] For elaboration on the points in this policy brief, see our accompanying paper (Morris, Kaufman, and Doshi 2019).

[6] Energy Information Administration (EIA). 2018. Annual Energy Outlook 2018. https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf.

[7] Data from the modeling scenarios were obtained here: https://www.eia.gov/outlooks/aeo/data/browser/#/?id=95-AEO2018&region=0-0&cases=ref2018~co2fee25&start=2016&end=2050&f=A&linechart=~~~~~~~~ref2018-d121317a.71-95-AEO2018~co2fee25-d022318a.71-95-AEO2018&map=&ctype=linechart&sourcekey=0

[8] US EIA coal data; https://www.eia.gov/coal/data/browser/.

[9] See footnote 3 for definition of "mining dependent". See footnote 2 for calculations determining the "mining-dependent" counties.

[10] The US EIA defines a "short ton" as a unit of weight equal to 2,000 pounds; https://www.eia.gov/tools/glossary/index.php.

[11] Data from the 2018 and 2012 *Annual Coal Reports* published by the EIA.

[12] Kent, Calvin. 2016. The Cruel Coal Facts: The Impact on West Virginia Counties from the Collapse of the Coal Economy. National Association of Counties.

[13] To learn more, see http://www.msrb.org/~/media/Files/Education/Credit-Rating-Basics-for-Municipal-Bond-Investors.ashx??.

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