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PUTTING THE TRUST BACK IN THE
BLACK LUNG DISABILITY TRUST FUND



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I. INTRODUCTION

Current and former coal miners and their communities face many challenges. The decline of the coal industry and the resulting threat to paychecks and benefits looms large. The waning industry also leaves behind unreclaimed mines, holes in state and local government budgets,¹ and, as we discuss here, the physical scars of work in the coal mines. When miners inhale dust, over time they can develop coal workers' pneumoconiosis, commonly known as CWP or black lung disease. Tiny coal particles inflame and stiffen the lungs, causing cough, shortness of breath, and chest tightness. Worsening disease reduces blood oxygen levels, stressing other parts of the body, including the heart.² The most advanced cases of CWP feature masses of toughened tissue, typically in the upper to middle lungs, known as progressive massive fibrosis (PMF).³ Sufferers can become totally disabled or die prematurely from the disease.

Miners' risks are not only from coal dust. As the mineral resources have played out, some coal seams have gotten thinner and require cutting away more rock to get to the coal. This creates silica dust as well as coal dust, adding the risk of silicosis to the hazards of pneumoconiosis.⁴ This dangerous dual exposure can affect even workers with only five years of mining experience.⁵ Adding to these concerns is the new fear that infection from COVID-19 could hit those with black lung disease and silicosis particularly hard.

Unfortunately, the risk of developing CWP from a coal mining career is high, and in some areas the risk has gotten higher. Currently more than ten percent of coal miners with 25 years or more of mining experience have black lung. The highest prevalence is in central Appalachia, where 20.6 percent of miners suffer from the disease and approximately five percent develop PMF.⁶ This is the highest such incidence on record over the past 25 years.⁷ Appalachian coal miners could be disproportionately at risk for lung disease because of the area's higher proportion of underground mines, but there are other factors influencing the incidence of disease that are still not fully understood.

¹ Adele C. Morris & Noah Kaufman and Siddhi Doshi, 2020, "Revenue at Risk in Coal-Reliant Counties," *NBER Chapters*, in: *Environmental and Energy Policy and the Economy*, 2, p. 83-116

² Carrie Arnold, 2016, "A Scourge Returns: Black Lung in Appalachia," *Environ Health Perspect* 124(1): A13–A18.

³ Kelly J. Butnor MD, Victor L. Roggli MD, "Pneumoconioses" in *Practical Pulmonary Pathology: A Diagnostic Approach* (Third Edition), 2018

⁴ Brent C. Doney, David Blackley, Janet M. Hale, Cara Halldin, Laura Kurth, Girija Syamlal, and Scott Laney, 2019, "Respirable coal mine dust in underground mines, United States, 1982–2017," *Am J Ind Med*, 62(6): 478–485.

⁵ Anna Allen and Carl Wentz, "Black Lung Disease On The Rise: 5 Questions Answered," *The Conversation*, February 16, 2018, <https://theconversation.com/black-lung-disease-on-the-rise-5-questions-answered-91637>

⁶ David J. Blackley, Cara N. Halldin, and A. Scott Laney, 2016, "Continued Increase in Prevalence of Coal Workers' Pneumoconiosis in the United States, 1970–2017," *Am J Public Health* 108(9): 1220–1222.

⁷ U.S. Government Accountability Office, *Black Lung Benefits Program: Improved Oversight of Coal Mine Operator Insurance Is Needed*, GAO-20-21, 2021, p. 7, <https://www.gao.gov/assets/gao-20-21.pdf>

Because CWP is a workplace injury, coal mining companies are legally responsible for the care and compensation of their workers and retirees. In practice, attributing responsibility is more complicated. For example, miners may work for different companies throughout their careers. In law, the last coal mine operator for whom a disabled miner worked for at least one year is usually responsible for paying benefits.

Operators are supposed to fund benefits by purchasing insurance or through self-insurance, meaning they must set aside resources to cover those liabilities. Federal payments under the Black Lung Benefits Act of 1973 take over when:

- “The miner's last coal mine employment was before January 1, 1970;
- There is no liable coal mine operator; or
- The miner's most recent employment of at least one year with an operator ended while the operator was authorized to self-insure, and such operator is no longer financially capable of securing benefit payments.”⁸

The federal government finances these benefits through the Black Lung Disability Trust Fund (the Trust Fund), which is administered by the Office of Workers’ Compensation Programs in the U.S. Department of Labor. The Trust Fund is funded primarily by an excise tax on coal produced in the United States. Exported coal and lignite coal, respectively about 13 percent and 8 percent of U.S. coal production, are exempt from the tax.⁹ The Trust Fund also receives revenue from reimbursements, interest, fines, and penalties from mine operators and short-term advances from the Treasury.¹⁰

Currently about 25,000 retired miners receive benefits for their black lung-related disabilities, either through their former mine employers or through the federal Black Lung Program.¹¹ In context, as of July 2021 there were only about 41,000 coal mining employees in the United States.¹² Further, some miners do not yet receive benefits but may develop dust-related disabilities in the future. These miners and former miners are rightfully worried about whether disability benefits will be there when they need them.

⁸ See U.S. Department of Labor, Office of Worker’s Compensation Programs, “Black Lung Program,” <https://www.dol.gov/owcp/dcmwc/regs/compliance/blbenact.htm>

⁹ Lignite’s exemption arose from a 1977 amendment. The Senate Finance Committee concluded that there was little or no evidence to connect lignite mining with black lung. See U.S. Energy Information Administration, “Coal Explained: Coal Imports and Exports,” <https://www.eia.gov/energyexplained/coal/imports-and-exports.php> and U.S. Energy Information Administration, “Coal Explained: Coal Prices and Outlook,” <https://www.eia.gov/energyexplained/coal/prices-and-outlook.php#:~:text=Lignite%20accounted%20for%20about%208,States%20in%202018%20was%20subbituminous.>

¹⁰ U.S. Department of Labor, “Congressional Budget Justification: Black Lung Disability Trust Fund,” 2019, p. 7, <https://www.dol.gov/sites/dolgov/files/general/budget/2019/CBJ-2019-V2-08.pdf>

¹¹ See U.S. Department of Labor, “Black Lung Program Statistics,” 2020, <https://www.dol.gov/agencies/owcp/dcmwc/statistics/PartsBandCBeneficiaries>

¹² <https://fred.stlouisfed.org/series/CEUI021210001>

This paper makes two key points. First, coal production is no longer a reliable source of revenue to fund the Black Lung Program. Second, the problem is going to get worse fast, and policymakers should promptly prepare for that and ensure that coal workers are not left behind.

Coal production in the United States has already fallen dramatically over the last thirteen years. As U.S. coal production falls, two factors strain Trust Fund resources. Coal companies go bankrupt, ceding their benefit liabilities to the federal Black Lung Program. For example, from 2014 to 2016, coal company bankruptcies transferred about \$865 million in benefit liabilities to the Trust Fund.¹³ At the same time, lower coal production reduces revenues generated by the federal excise tax on coal that go directly to the Trust Fund. These increasing liabilities and decreasing revenues, along with interest on previous debt, are rapidly undermining the fiscal balance of the black lung benefits program. And that's under current policies. This paper shows that new policies to reduce greenhouse gas (GHG) emissions in the power sector will reduce coal consumption and production dramatically further, exacerbating the insufficiency of the Trust Fund.¹⁴

While we focus here on budget outcomes, several related issues also deserve policymaker attention. One is ensuring that disabled miners and their survivors can qualify for benefits without onerous impediments. Because some people diagnosed with CWP don't develop symptoms or disability until later in life, sometimes even after retirement,¹⁵ eligibility rules need to account appropriately for the lag between dust exposure and disease.

Congress could also revise the potentially corrupt system miners face in accessing benefits. For example, some physicians who evaluate miners for workplace illness have a financial interest in not finding it.¹⁶ A yearlong Pulitzer prize-winning investigation found that Appalachian coal miners struggled to access their black lung benefits because of tactics such as withholding evidence and malpractice, employed by doctors and lawyers hired by coal mine operators.¹⁷ In

¹³ U.S. Government Accountability Office, *Black Lung Benefits Program: Improved Oversight of Coal Mine Operator Insurance Is Needed*, p. 11.

¹⁴ Morris and others (2019) describe the likely declines in U.S. coal production that could arise from a carbon tax. See Adele Morris, Noah Kaufman, and Siddhi Doshi, 2019. "The Risk of Fiscal Collapse in Coal-Reliant Communities," Center for Global Energy Policy, Columbia SIPA, <https://www.energypolicy.columbia.edu/research/report/risk-fiscal-collapse-coal-reliant-communities>

¹⁵ See American Lung Association, "Learn About Coal Worker's Pneumoconiosis," <https://www.lung.org/lung-health-diseases/lung-disease-lookup/black-lung/learn-about-black-lung>

¹⁶ Friedman, Lee S., Sudeshna De, Kirsten S. Almberg, and Robert A. Cohen, 2021, "Association Between Financial Conflicts of Interest and ILO Classifications for Black Lung Disease." *Annals of the American Thoracic Society*

¹⁷ See Center for Public Integrity, "Breathless and Burdened," 2014, <https://publicintegrity.org/topics/environment/breathless-and-burdened/>

2012, only 14 percent of black lung claimants successfully obtained compensation.¹⁸ Provisions in the Affordable Care Act aim to ease access to black lung benefits.¹⁹ Assessing the degree to which those provisions have been implemented, effective, and sufficient would be worthwhile.

Another policy initiative could reform how mining companies avoid responsibilities to workers and communities by declaring bankruptcy.²⁰ The arcane details of U.S. bankruptcy law are beyond the scope here, but our reading of the literature suggests that without changes, the dying coal industry will bequeath large costs to taxpayers and society.

As the coal industry breathes its last, policymakers can do right by mineworkers in many ways.²¹ Certainly one is to ensure that those left sick and dying are properly supported. Section 2 of this paper examines recent trends and projections for the Black Lung Program under current and alternative climate policies. Section 3 explores options for shoring up federal black lung benefits and otherwise improving the program.

2. TRENDS AND OUTLOOK FOR THE TRUST FUND

The U.S. federal government's Division of Coal Mine Workers' Compensation, a.k.a. the Black Lung Program, pays claims under the Black Lung Benefits Act. The program administers benefits to coal miners who are totally disabled by pneumoconiosis and related conditions that were caused by work in coal mines. It also compensates the survivors of coal miners whose deaths were attributable to those diseases. Maximum cash payments ranged from about \$670 to \$1,340 per month in 2019, depending on how many dependents a beneficiary had. Miners receiving cash payments are also eligible for medical benefits for their black lung-related conditions, which may include hospital and nursing care, rehabilitation services, and reimbursement for drug and equipment expenses. The average annual cost for medical care in fiscal year 2019 was about \$8,225 per miner.²²

How federal trust funds work

¹⁸ Chris Hamby, "Breathless and Burdened Will Examine Coal Industry's Efforts to Defeat Black Lung Benefits Claims," *Center for Public Integrity*, May 19, 2014, <https://publicintegrity.org/environment/breathless-and-burdened-will-examine-coal-industrys-efforts-to-defeat-black-lung-benefits-claims/>

¹⁹ For example, the ACA shifts the burden of proof; instead of miners having to prove their work caused their disease, coal companies have to prove that it didn't.

²⁰ Macy and Salovaara (2019)

²¹ Adele C. Morris, 2016, "Build a Better Future for Coal Miners and Their Communities", *Climate and Energy Economics Discussion Paper*, *Brookings Institution*, Washington DC, <https://www.brookings.edu/research/build-a-better-future-for-coal-workers-and-their-communities/>

²² U.S. Government Accountability Office, *Black Lung Benefits Program: Improved Oversight of Coal Mine Operator Insurance Is Needed*, p. 6.

Federal trust funds are government accounting structures that fund specific government expenses. The United States federal government operates about six major trust funds and a few smaller ones. The largest trust funds are the Social Security and Medicare trust funds.²³ Smaller ones include the Highway Trust Fund, the Unemployment Trust Fund, and the Black Lung Disability Trust Fund. In principle, Congress can alter trust fund benefits or taxes at any time,²⁴ but the strong interests of stakeholder groups can make such changes politically difficult.²⁵ In fact, one objective of establishing a trust fund is to build public confidence that particular benefits will persist owing to their secure source of funding.

Trust funds are typically funded by fees or taxes imposed specifically for the purpose of the fund. When a federal trust fund runs a surplus, it accumulates a positive balance in the form of certain Treasury securities that are not available to the public. The Treasury uses the surplus for spending on other programs and general purposes, and consequently borrows less from the public than it otherwise would.²⁶ When the revenues of a trust fund are lower than its expenses, then the trust fund may use interest accumulated on those non-marketable Treasury securities to fund the shortfall. If shortfalls remain, a trust fund may redeem the securities, receiving funds from the Treasury to pay expenses. If that is still not enough, then Congress may increase trust fund revenues by raising the relevant fees or by injecting general revenues into it. Alternatively, Congress may reduce the expenses of the trust fund by limiting beneficiary payments. If Congress does not pass legislation to fix shortfalls, then trust funds can obligate only the revenues received each year, which requires a cut in benefits.²⁷

Congress has authorized some trust funds, including the Black Lung Disability Trust Fund, to borrow from the U.S. Department of the Treasury's General Fund. The General Fund is the set of assets and liabilities associated with financing the ordinary operations of the U.S. Government. So, when the Trust Fund runs a deficit, Treasury issues it loans as "repayable advances," which the Trust Fund must repay with interest back to the General Fund. Federal law does not limit how much the Trust Fund may borrow from the Treasury General Fund, so in principle it can accrue debts, and the associated burden of interest payments indefinitely with ever greater insolvency.²⁸ Medicare-related trust funds and the Social Security Disability

²³ Eugene C. Steuerle, "Government Trust Funds Are Selling America Short," *TaxVox: Federal Budget and Economy*, December 3, 2019, <https://www.taxpolicycenter.org/taxvox/government-trust-funds-are-selling-america-short>

²⁴ U.S. Government Accountability Office, *Federal Trust Funds and Other Dedicated Funds: Fiscal Sustainability is a Growing Concern for Some Key Funds*, 2020, GAO-20-156, <https://www.gao.gov/assets/gao-20-156.pdf>

²⁵ Congressional Research Service, *Federal Trust Funds and the Budget*, 2014, https://www.everycrsreport.com/files/20140227_R41328_530fc041e54005c503c1ae05ba80367eaa6791e4.pdf

²⁶ See Peter G. Peterson Foundation, "Budget Basics: Federal Trust Funds," <https://www.pgpf.org/budget-basics/budget-explainer-what-are-federal-trust-funds>

²⁷ Congressional Research Service, *Federal Trust Funds and the Budget*, p.16.

²⁸ U.S. Government Accountability Office, *Black Lung Benefits Program: Financing and Oversight Challenges Are Adversely Affecting the Trust Fund*, 2019, GAO-19-622T, p. 1, <https://www.gao.gov/assets/700/699871.pdf>

Insurance Trust funds do not work this way; they can exhaust their resources if not revised, which, absent a change in funding, prompts a cut in benefits.²⁹

A reasonable concern is what happens to the Black Lung Disability Trust Fund when lawmakers return to worrying about federal debt and deficits and consider cutting back on benefits with a growing fiscal hole. We now review how the Trust Fund is financed and explore the grim outlook for its solvency.

The number of beneficiaries

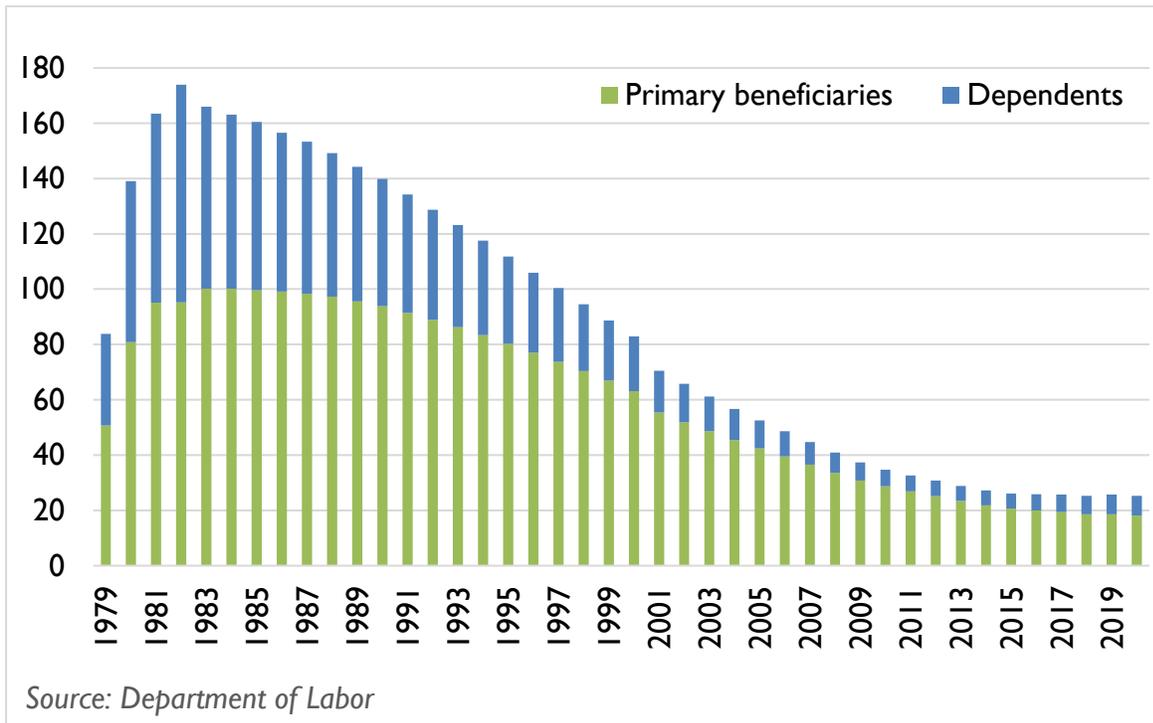
Figure I below shows the total number of black lung beneficiaries, federal and private, each year since the federal program began in 1979. In 2019, 25,699 total beneficiaries received black lung benefits, including 18,643 primary beneficiaries and 7,056 dependents.³⁰ That year, the Trust Fund served 13,335 beneficiaries and 4,380 interim beneficiaries whose black lung claims were pending. Mine operators paid the additional 7,985 beneficiaries.³¹ Thus, already the U.S. federal government serves more than double the number served by “responsible” mine operators, and this share could increase substantially with further coal company bankruptcies. Figure I shows that the number of beneficiaries has been decreasing since 1981, likely due to aging miners and a declining coal workforce.

²⁹ Congressional Budget Office, *The Outlook for Major Federal Trust Funds: 2020 to 2030*, 2020, <https://www.cbo.gov/publication/56541>

³⁰ A primary beneficiary is the person eligible for benefits on the miner's account. There is only one primary at a time. A living miner is always primary, followed by a surviving spouse or surviving divorced spouse, followed by dependent children, followed by dependent siblings. An eligible dependent may succeed to primary beneficiary upon the death of the prior primary.

³¹ U.S. Government Accountability Office, *Black Lung Benefits Program: Improved Oversight of Coal Mine Operator Insurance Is Needed*, p. 8.

**Figure 1: Number of black lung disability beneficiaries
(in thousands by fiscal year)**



The growing incidence of disease

Figure 1 might lead one to believe that demands on the Black Lung Program have bottomed out, perhaps owing to improvements in mining technology and dust control in recent decades. Unfortunately, this is not the case. Although the number of people receiving benefits has gone down, the number of people identified with the disease is going up, and that suggests the number of beneficiaries will rise when those with the disease become totally disabled. The Government Accountability Office (GAO) expects that higher rates of the disease in its most severe form, PMF, particularly among Appalachian coal miners, could drive up the number of beneficiaries.³²

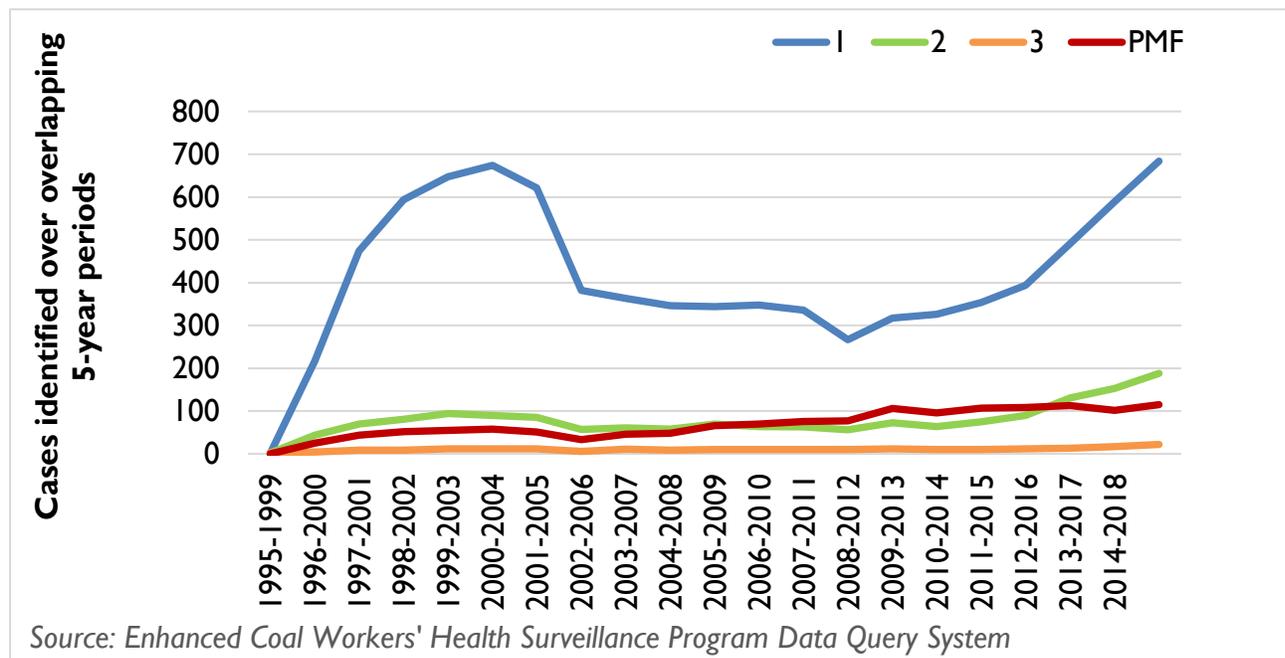
Figure 2 below shows the number of CWP cases identified from 1999 to 2018 by surveys conducted by the Coal Workers' X-ray Surveillance Program and the Enhanced Coal Workers' Health Surveillance Program in overlapping 5-year periods. The graph partitions cases by increasing severity, from categories one through three to PMF.³³ The blue curve shows that the greatest recent increases in identified cases have been those with relatively early disease. These

³² Ibid, p.10.

³³ The National Institute for Occupational Safety and Health, *Enhanced Coal Workers' Health Surveillance Program Data Query System*, 2020, <https://webappa.cdc.gov/ords/cwhsp-database.html>

data provide something of a preview of new beneficiaries to come. Owing to the progressive nature of the disease, people who now have early disease will likely later shift to higher severity categories and eventually become eligible for disability benefits.

Figure 2: Number of U.S. cases of Coal Workers’ Pneumoconiosis identified in two voluntary surveys of working miners



Importantly, the surveys shown in Figure 2 primarily target current miners and offer limited coverage of former miners. In recent decades, the estimated participation in these surveys has been between 30 and 40 percent of the potentially affected population. That means we do not know exactly how many people have CWP and may become disabled by it, and the values in Figure 2 likely significantly underestimate its true prevalence.³⁴ In sum, based on just the data available, the federal government should prepare at least for increased demands on the Trust Fund that are foreseeable. Depending on the significance of data gaps, ultimate costs could be much higher.

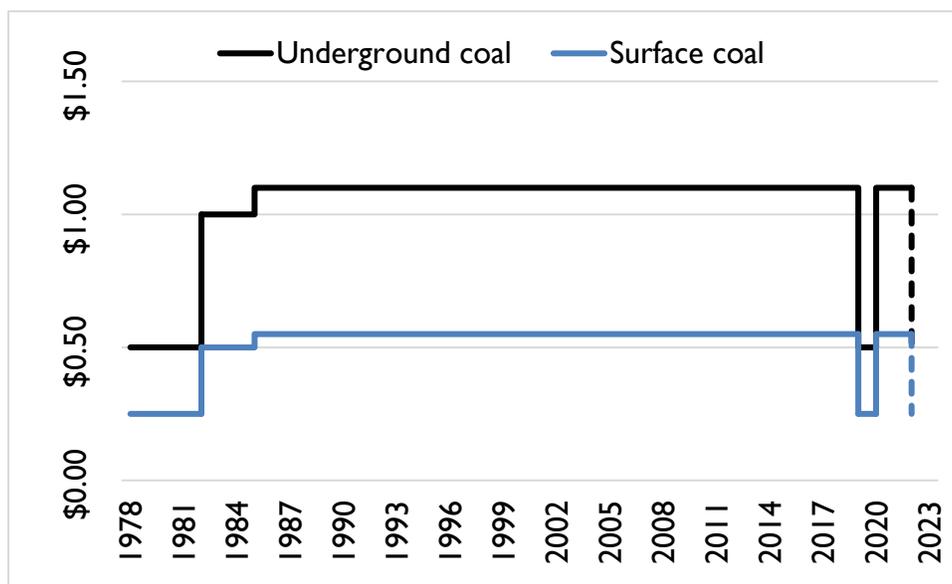
Tax collection outlook

Under current law, future expenses of the program are substantially higher than projected revenues to the Trust Fund. The first factor driving the mismatch is the black lung excise tax (BLET) rates. As shown in Figure 3, tax rates are currently \$1.10 per short ton of coal produced from underground mines (black line) and \$0.55 per short ton from surface mines

³⁴ Blackley and others, “Continued Increase in Prevalence of Coal Workers’ Pneumoconiosis in the United States, 1970–2017,” p. 1221

(blue line), or 4.4 percent of the coal’s selling price, whichever is lower.³⁵ Those dollar-value rates are the same in nominal terms as they were in 1987, a real decline of 68 percent.

**Figure 3: Coal excise tax rates over time
(Nominal dollars per short ton of coal produced)**



As Figure 3 shows, coal excise tax rates have fluctuated recently.³⁶ For example, the rates fell roughly in half in 2019, back to the same nominal rates applicable in 1978. In 2020, the tax rose back to 2018 levels for the 2020 calendar year only, and legislation in 2021 extended the higher rates through the 2021 calendar year.³⁷ Unless Congress again enacts an extension, rates will roughly halve again in 2022.³⁸ If that happens, revenues will also roughly halve, all else equal. To illustrate, the rate cuts in 2019 reduced revenues in FY 2019 by 52.4 percent (\$167.5 million) relative to FY 2018.³⁹

³⁵ One rationale for the different tax rates on surface and underground coal lies in the higher likelihood of the disease from work in underground mines. For more on rates, see U.S. Internal Revenue Service, “Change in Rate for Coal Excise Tax,” <https://www.irs.gov/businesses/small-businesses-self-employed/change-in-rate-for-coal-excise-tax#:~:text=The%20section%204121%20rate%20of,Excise%20Tax%20Return%2C%20IRS%20Nos> and Department of The Interior, “Coal Excise Tax,” <https://revenue.data.doi.gov/how-it-works/coal-excise-tax/>

³⁶ A table with coal tax provisions, as modified, appear in Appendix I.

³⁷ U.S. House, *Consolidated Appropriations Act, 2021*, HR 133, 116th Cong, 2021, <https://www.gpo.gov/fdsys/pkg/CRECB-2001-pt14/pdf/CRECB-2001-pt14-Pg20400-3.pdf>

³⁸ U.S. Senate, Committee on Finance, *Black Lung Benefits Revenue Act of 1977 Report* (to Accompany S. 1538), S Rep. 95-336, 95th Cong, 1977, <https://www.finance.senate.gov/imo/media/doc/srpt95-336.pdf>

³⁹ U.S. Department of Labor, *Agency Financial Report, 2019*, p. 27, <https://www.dol.gov/sites/dolgov/files/OPA/reports/2019annualreport.pdf>

Policymakers have long recognized the problems created by inadequate revenue for the program. Even in 1977, when Congress debated the establishment of the coal excise tax, lawmakers knew the tax would probably not raise enough to support disabled miners fully. At the time, they believed that would motivate future Congressional action. One 1977 report wrote: “The Committee estimates that the proceeds of the tax will be less than the amount of benefits payable from the trust fund...this need for a general revenue contribution to the trust fund will call the attention of the Senate to the size of the cost involved in this program.”⁴⁰

A long-term solution remains elusive more than 40 years later. For example, in January 2020, Senator Joe Manchin of West Virginia introduced the Black Lung Benefits Disability Trust Fund Solvency Act of 2020, which would have extended current BLET rates through December 31, 2030.⁴¹ In July 2019, Representative Robert Scott of Virginia introduced a similar bill in the House, which would have extended current BLET rates through December 31, 2029.⁴² Neither bill passed, and so far neither has been reintroduced in the 117th Congress.

Stakeholders have mobilized on both sides of the issue. In March 2020, the National Mining Association wrote to Congress requesting an immediate reduction in the tax rates to their 2019 levels, citing COVID-19 and the resulting reduction in electricity demand as a challenge for the industry.⁴³ In response, the National Black Lung Association, Women of Black Lung, and eleven local chapters of black lung associations requested Congress to maintain the current rates and extend them for 10 years to ensure continued benefits for those dependent on them.⁴⁴ So far neither camp has prevailed.

While given the history of this issue the lobbying focus on tax rates is understandable, even if Congress stabilizes the tax rates at their current level, the Trust Fund is ultimately still fatally tied to coal production. The challenge of this linkage is clear over the past decade or so. Figure 4 below reports annual BLET collections since 1999 and projected revenue (as of 2020) from 2020 to 2024. During the 41.3 percent decline from 2007 to 2018, tax rates were constant and coal prices were fairly stable.

⁴⁰ Tax Aspects of Black Lung Legislation S. 1538, 1977, <https://www.jct.gov/CMSPages/GetFile.aspx?guid=b29e5c71-0268-4b7c-9f73-94c1f0e7cea0>

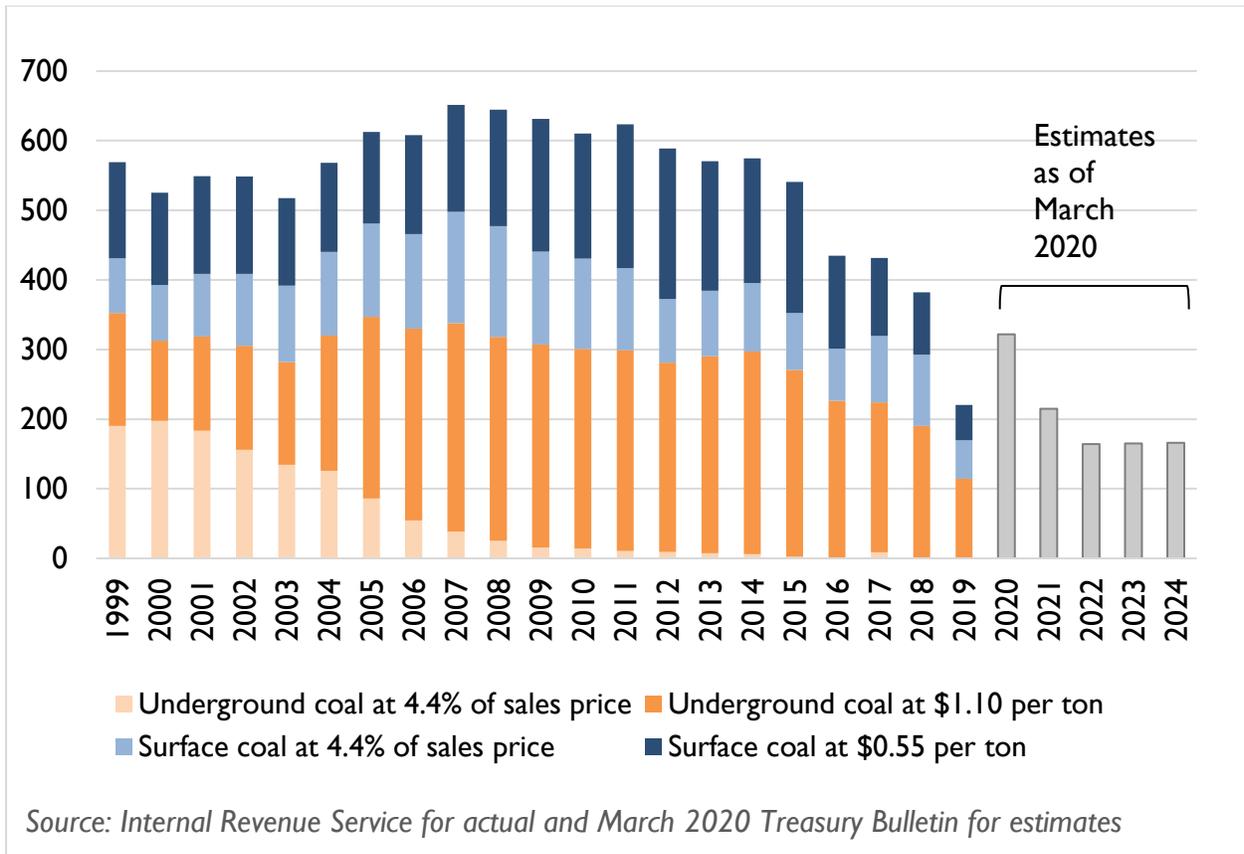
⁴¹ U.S. Senate, *Black Lung Benefits Disability Trust Fund Solvency Act of 2020*, S 3172, 116th Cong, 2020, <https://www.congress.gov/bill/116th-congress/senate-bill/3172/actions>

⁴² U.S. House, *Black Lung Benefits Disability Trust Fund Solvency Act*, HR 3876, 116th Cong, 2019, <https://www.congress.gov/bill/116th-congress/house-bill/3876>

⁴³ Rich Nolan, Rich Nolan to Donald Trump, Nancy Pelosi, and Mitch McConnell, March 18, 2020, https://www.eenews.net/assets/2020/03/20/document_ew_02.pdf

⁴⁴ National Black Lung Association and others, National Black Lung Association and others to Mitch McConnell, Nancy Pelosi, Charles E. Schumer, and Kevin McCarthy, April 23, 2020, https://appvoices.org/resources/BLA_letter_congress_april2020.pdf

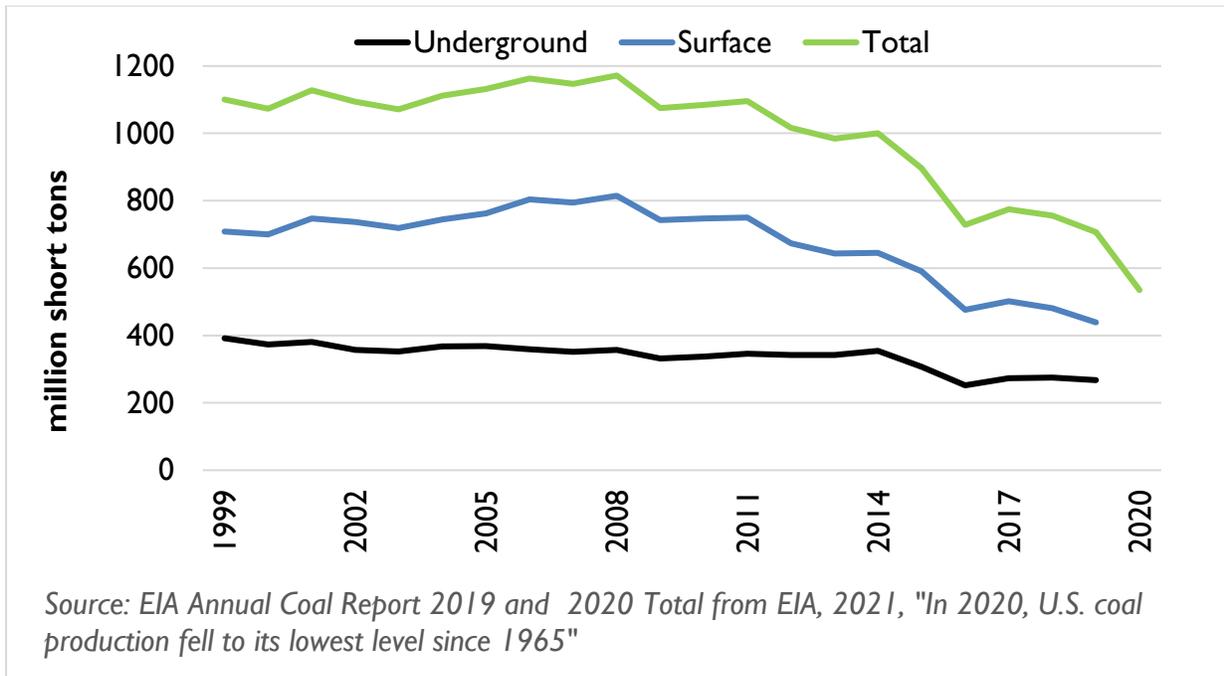
Figure 4: Black lung excise tax collections (millions of dollars, nominal)



The steep drop in BLET revenue shown above stemmed largely from falling coal production, as illustrated in Figure 5 below. Since its peak in 2008, U.S. coal production has fallen by over half. Some of the drop in 2020 derives from COVID recession and may be reversed as the economy recovers, but most of the decline over recent years has been market driven. Research shows that by far the main cause of the post-2007 decline of coal has been the persistently low price of natural gas, a competitor fuel for power production and industrial applications.⁴⁵ If coal production falls further, whether from market factors or policy, we can be sure that BLET revenue will fall along with it.

⁴⁵ Coglianesse et al. (2020)

Figure 5: U.S. coal production by type of coal



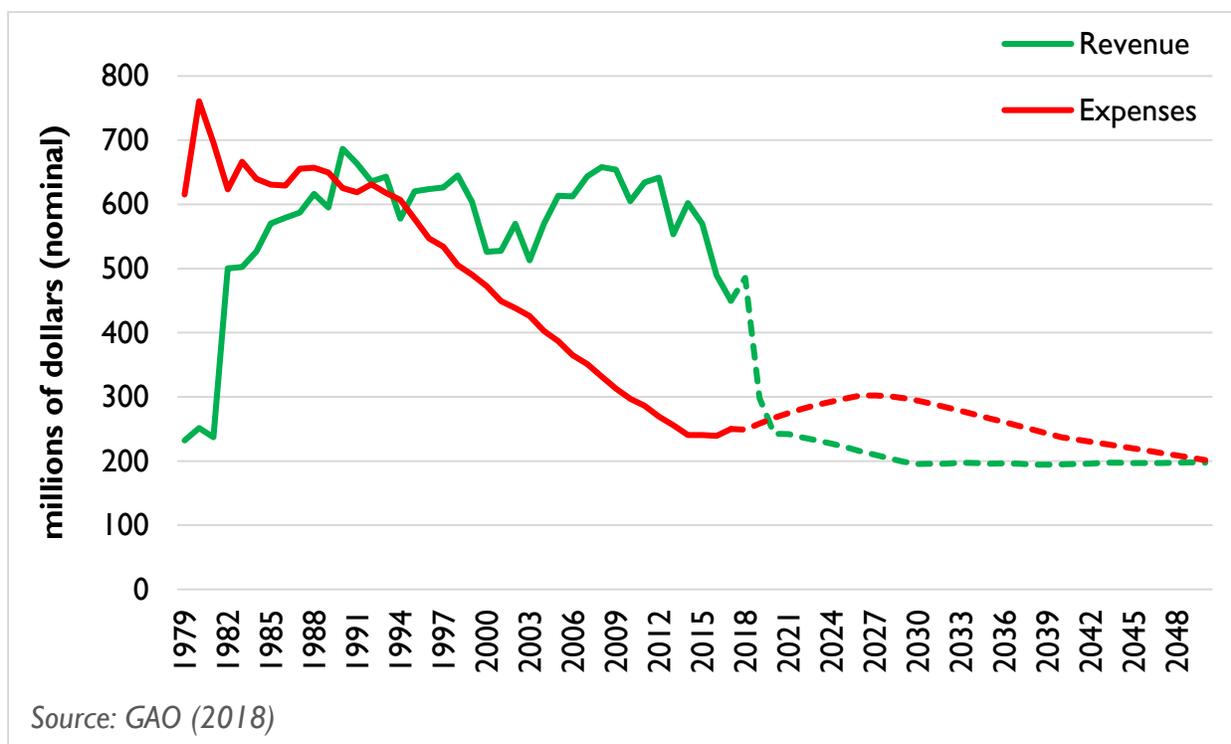
Total expenses and revenues

So far, we have shown that although the number of Black Lung Program beneficiaries has fallen, the numbers of people with CWP and potential future beneficiaries are rising, not even counting many potential cases. We also showed how BLET revenue has been falling and how that follows from falling coal production. Next, we review GAO’s numbers, looking at more comprehensive measures of revenues and expenditures of the program.⁴⁶

Figure 6 below shows total Trust Fund revenues (in green) and expenditures (in red) since 1979. It also shows GAO’s projections for those values from 2017 to 2050, assuming coal excise tax rates remain at the lower levels initiated in 2019. Actual values are the solid lines, and dashed lines are projections. Total revenue includes interest payments and fines and fees paid by mine operators, but not new loans from the Treasury to cover deficits. Expenses do not include interest payments to the Treasury, just principal payments. Beneficiaries and total expenses might not be perfectly correlated because some factors, like health care and administrative costs, can rise even if the number of people served goes down. Figure 6 shows that total Trust Fund revenues have on average fallen since 2008 and, as of 2020, GAO projected a very gradual decline through about 2029. GAO projected a modest uptick in expenditures through about 2027, but after that a gradual decline.

⁴⁶ U.S. Government Accountability Office, “Black Lung Benefits Program: Options for Improving Trust Fund Finances,” 2018, p. 8 for actual and p. 16 for projected, <https://www.gao.gov/assets/gao-18-351.pdf>

Figure 6: GAO’s estimated Trust Fund revenues and expenditures: Actual and projected

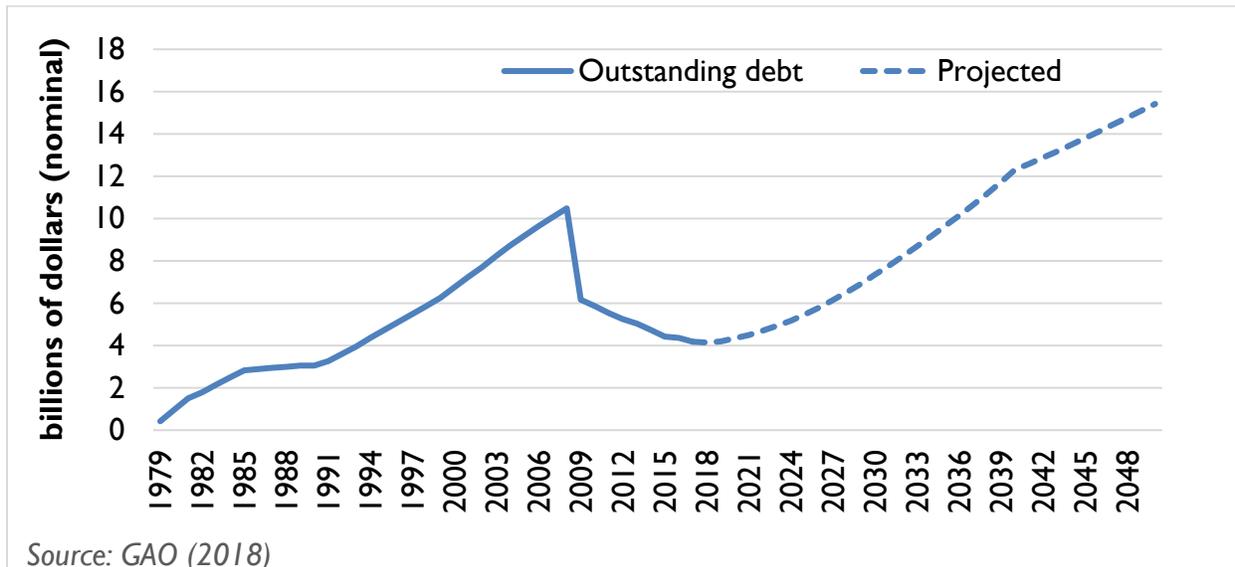


From Figure 6, Trust Fund revenues, even at the lower tax rates prevailing in 2019, look like they should have been covering expenses in recent years. However, a problem has lurked in numbers that are not included in Figure 6: loans from the Treasury and the consequent interest payments back to the Treasury. In the early years of the program, from 1979 to 1989, deficits were so high that the Trust Fund had to borrow heavily from the Treasury General Fund. Interest rates at that time were high, so interest payments generated a persistent shortfall in the Trust Fund’s cash flow. Interest on the interest compounded the Trust Fund’s debt.

Figure 7 below shows the principal debt owed by the Trust Fund to the Treasury’s General Fund as reported by GAO (in nominal dollars). The figure shows that outstanding debt rose continuously from the establishment of the Trust Fund through 2008, when Congress enacted a one-time appropriation of \$6.5 billion in the Energy Improvement and Extension Act of 2008. However, as of September 2019, Trust Fund debt still totaled \$5.85 billion. With no new policies, GAO projects that Trust Fund debt will rise to \$15.4 billion by 2050. GAO projects that revenues will be sufficient to cover benefit payments in FY2020 to FY2022, but they will

remain insufficient to cover interest payments, and Trust Fund debt will rise accordingly.⁴⁷ The more-debt-from-existing-debt dynamic continues.

**Figure 7: Trust Fund debt to Treasury’s General Fund:
Actual and projected**



*Coal production projections with and without new policies*⁴⁸

Without new policies, GAO projects trust fund debt will rise through the middle of the century. How much worse would the debt be if policies reduce coal production even further? To investigate this, we look to U.S. coal production projections from the Department of Energy’s Energy Information Administration (EIA).⁴⁹ Figure 8 below shows EIA’s reference projections (which assume no new policies), along with projections under three policy scenarios in which a fee is applied to the carbon content of fossil fuels used only in the electricity sector.⁵⁰ The fees begin at the indicated values in 2021 and increase by five percent over inflation each year thereafter. The fees are denominated in dollars per metric ton of carbon dioxide (CO₂), the greenhouse gas emitted when the fuels are burned. Over the decade

⁴⁷ U.S. Government Accountability Office, “Black Lung Benefits Program: Options for Improving Trust Fund Finances,” p. 16.

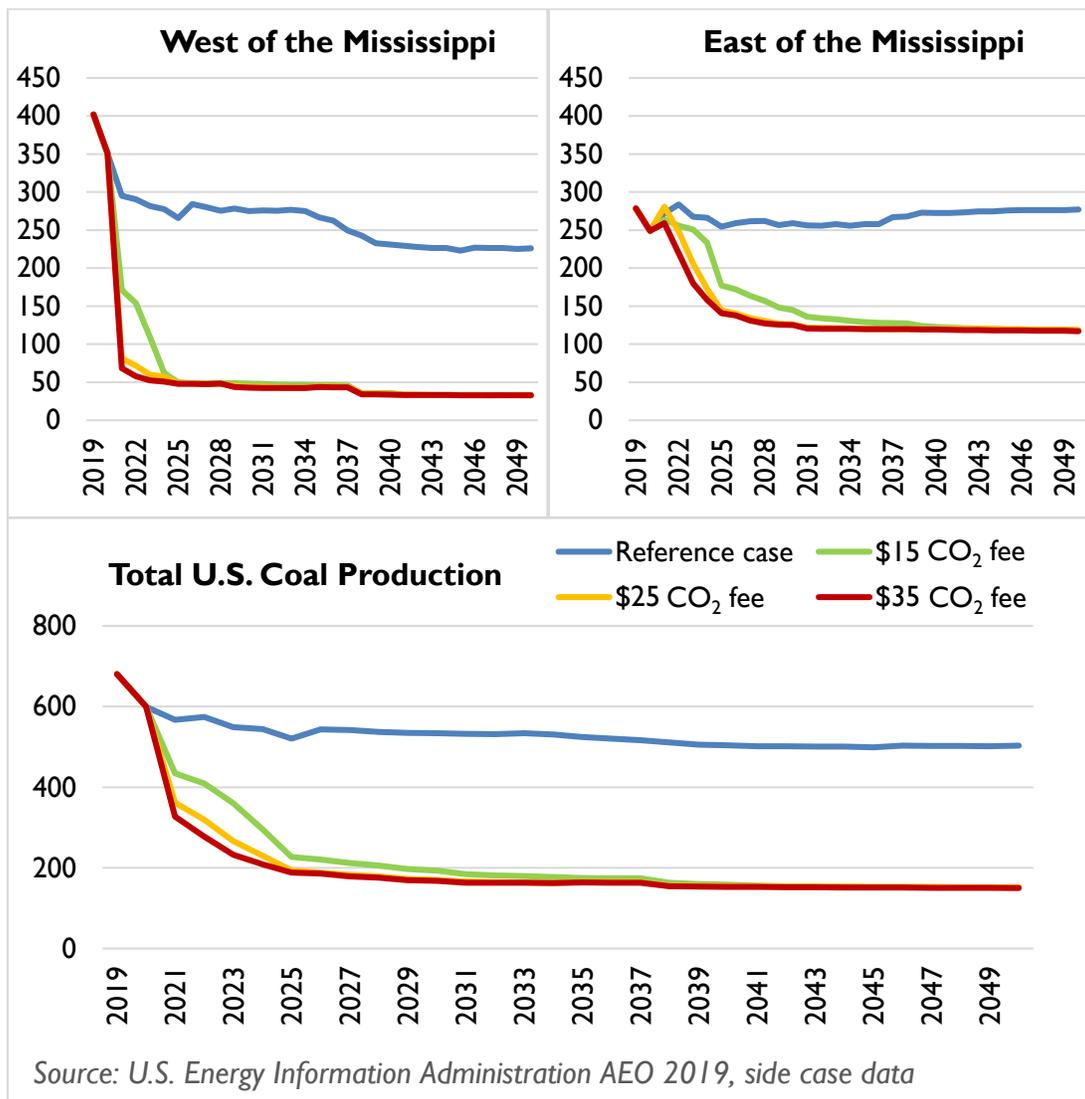
⁴⁸ This section draws from the authors’ previous work: Morris and others, “The Risk of Fiscal Collapse in Coal-Reliant Communities.”

⁴⁹ John Larsen, Kate Larsen, Whitney Herndon, Peter Marsters, Hannah Pitt, and Shashank Mohan, 2018, “Taking Stock 2018,” Rhodium Group, <https://rhg.com/research/takingstock-2018/> and see Energy Information Administration, “In 2018, U.S. Coal Production Declined as Exports and Appalachian Region Prices Rose,” Today in Energy, 2019, <https://www.eia.gov/todayinenergy/detail.php?id=38132>

⁵⁰ See Energy Information Administration, “Annual Energy Outlook 2021,” 2021, https://www.eia.gov/outlooks/aeo/tables_side.php

following 2019, EIA’s reference scenario projects that U.S. coal production declines by about 20 percent. In the CO₂ fee scenarios, coal production falls far more. Even the lowest fee scenario (in green), EIA projects coal production would decline by about three quarters over the next decade and collapse by nearly 90 percent west of the Mississippi River. One reason proportionately more coal production remains in the east than the west is that relatively more eastern coal is used in industry, such as in steel making, and is not subject to the power sector policy that EIA simulates.

Figure 8: Projections of U.S. coal production (millions short tons): Reference and CO₂ fee scenarios, 2019 to 2050



Black lung excise tax collections

The coal production projections in Figure 8 allow estimates of BLET revenue under a scenario with a carbon fee. Figure 9 reports those estimates with and without the fee starting at \$15

that EIA modeled, in red and blue, respectively. The scenarios in Figure 9 specify the applicable BLET rate paths applicable. As of Q3 2021, rates are \$0.55 and \$1.10 per short ton for coal from surface and underground mines, respectively. Rates are set by current law to fall to \$0.25 and \$0.50 next year. But since Congress may extend current rates as it has in the past, we construct both sets of revenue estimates. Solid lines reflect extending current rates and dashed lines let rates fall as scheduled. In green, the figure also reports total revenue projections from GAO (2018), including interest and fees from mining operators, assuming rates drop.

Figure 9: Projected BLET revenue, With and without a CO₂ fee and with different BLET tax rates

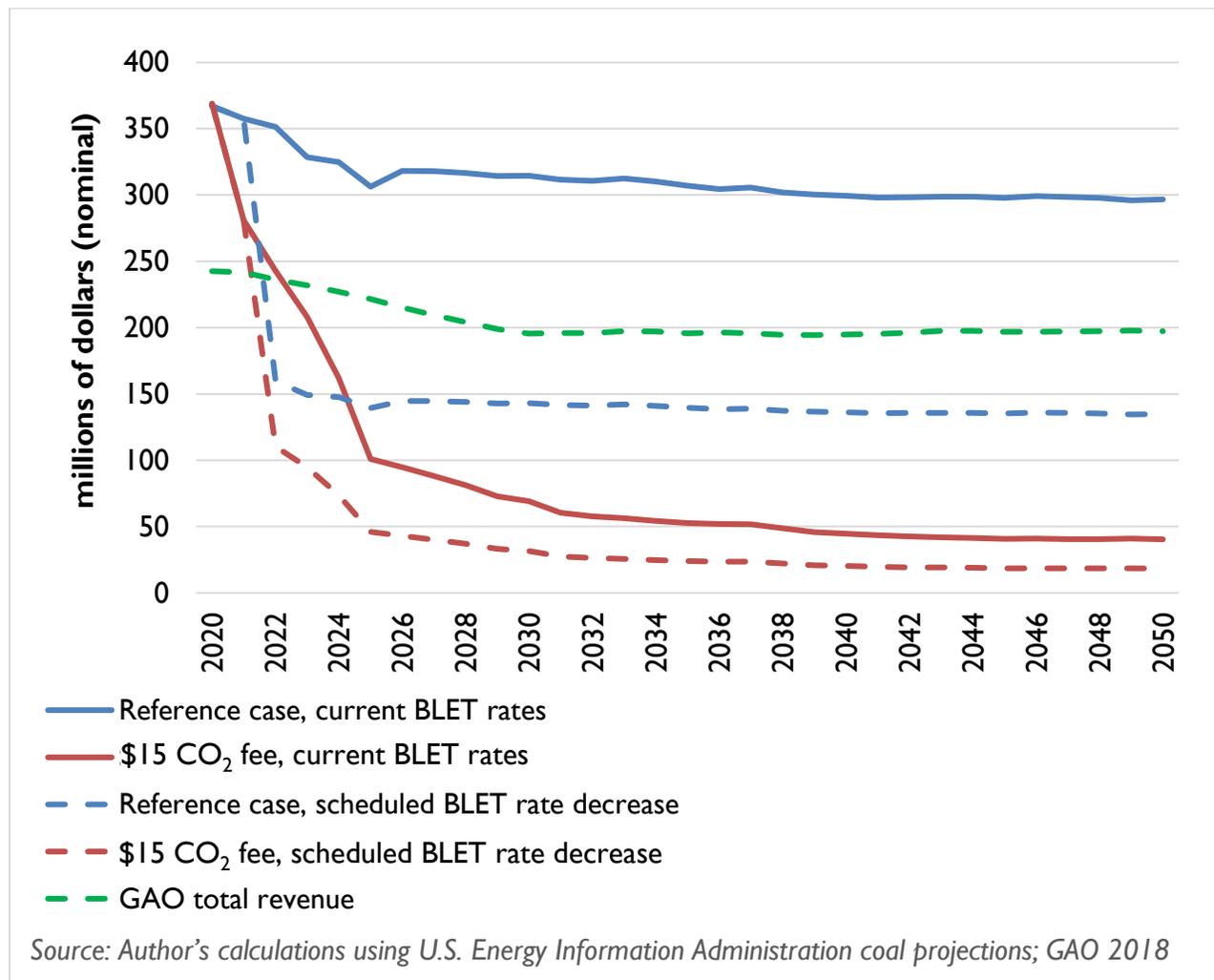


Figure 9 shows how climate policy could dramatically reduce BLET revenue, whether or not the BLET rate falls. Comparing the solid red line (with the CO₂ fee) and the dashed blue line (with the rate decrease) shows that imposing the CO₂ fee lowers annual revenue by significantly more than lowering BLET tax rates. Allowing BLET rates to fall and imposing the CO₂ fee (the

dashed red line) would lower BLET revenue by about 90 percent by 2030 relative to doing neither.

The estimates above require some assumptions. EIA's projections helpfully divide coal by surface and underground sources. EIA also reports how much of the coal is lignite and how much is exported, both of which are not subject to the tax and need to be subtracted from the taxable production streams before we apply the excise. However, EIA does not report whether the lignite and exported coal are from underground or surface sources, so we don't know which tax base to subtract them from. Following GAO's methodology, we assume all lignite is surface mined and subtract the lignite production levels from the surface coal tax base. Again, following GAO, we assume that exported coal comes from the same proportion of underground and surface mines that total production does. Once we have adjusted projected coal production trajectories using these assumptions for lignite and exports, we apply the specified BLET rates. We do not adjust the projections in Figure 9 for the alternative lower tax liabilities that could be based on the coal's selling price. In this regard our BLET collection estimates are an upper bound. Also, these estimates are just for BLET collections and do not include potential interest or fee payments from mine operators.

3. POLICY OPTIONS AND RECOMMENDATIONS

This paper emphasizes the fiscal challenges to the Black Lung Disability Trust Fund, particularly if policymakers adopt meaningful new policies to reduce CO₂ emissions from the power sector. Before we turn to financial solutions, we offer two important opportunities. First, the recent upsurge in CWP cases is concerning. It may disproportionately derive from that especially dangerous combination of black lung and silicosis mentioned above, but we are not aware of data that confirm this. We recommend prioritizing and acting on research to explain why so many miners are still getting sick, including from relatively short service in the mines. Even if climate policy aims to reduce coal use quickly, any remaining production should be as safe as feasible. Put another way, the best way to improve the Black Lung Program is to reduce the number of people with black lung.

Second, policymakers could make all these decisions easier by gathering better data on current and former miners, identifying those with CWP, and tracking their illness as it progresses. These surveys are important to help current miners avoid worse disease by catching it early and limiting further dust exposure. Surveys that actively engage former miners could help them get the benefits they deserve and reduce guesswork in program projections.

Moving on to the system for funding black lung benefits, under current law there is no limit to the amount the Trust Fund can borrow to cover its expenses.⁵¹ This is helpful in that benefits are not automatically cut when the fund goes empty. On the other hand, it makes little sense to have one part of the government owe another part of the government debt that increases as far as the eye can see. At some point Congress could address the debt problem by cutting benefits for miners and their families, unfairly burdening injured workers. Furthermore, concerns about their disability benefits may prompt mining families to protest reasonable efforts to protect the earth's climate, leaving society worse off.

A fair and efficient resolution is in the eye of the beholder. Since coal mining is responsible for black lung disease, costs should arguably fall on coal producers, not taxpayers or injured workers. After all, the federal program was meant to be a backstop. On the other hand, mine operators argue that the economics of coal in the power sector are already deteriorating, so taxing coal further could lower coal output and employment just as they are already falling.⁵² This would come in part at the expense of current miners. A higher coal tax could also induce more mine operator bankruptcies and inadvertently raise liabilities to the government. With this as background, we start with two approaches for which there are clear precedents: amending BLET rates and forgiving Trust Fund obligations to the General Fund.

Amend Black Lung Excise Tax rates

Obviously, the scheduled drop in BLET rates next year will exacerbate Trust Fund deficits and debt. Congress could address this in many ways, for example by temporarily or permanently extending current tax rates.⁵³ Some advocate increasing the BLET rates by 25 percent.⁵⁴ GAO (2018) reports projections for Trust Fund debt under different BLET tax rates. Not surprisingly, the scenario with the tax rate decrease as scheduled in current law leaves the Trust Fund with the largest debt. Maintaining current rates would generate smaller, but still growing, debt. Increasing the BLET rates by 25 percent relative to current levels would produce a projected surplus of \$600 million by 2050, if EIA's projections for stable long-term coal production hold. However, with a surge in disabled miners, climate policy, or other factors that deepen the substitution away from coal, even higher tax rates will not retire the debt.

⁵¹ Government Accountability Office, *Black Lung Benefits Program: Financing and Oversight Challenges Are Adversely Affecting the Trust Fund*, p. 1.

⁵² For one take on the bleak outlook for the industry in the U.S. see https://ieefa.org/wp-content/uploads/2020/03/US-Coal-Outlook-2020_March-2020.pdf.

⁵³ See U.S. Senate, *The American Miners Act of 2019*, S 2788, 116th Cong. 2019, <https://www.congress.gov/bills/116/congress/senate-bill/27?q=%7B%22search%22%3A%5B%22American+miners+act+of+2019%22%5D%7D&s=3&r=5> *Black Lung Benefits Disability Trust Fund Solvency Act*, and *The Black Lung Benefits Disability Trust Fund Solvency Act of 2020*

⁵⁴ This approach appears in Senator Bernie Sanders' [End Polluter Welfare Act of 2021](#).

Congress could raise BLET rates now and lower them later if and when the Trust Fund debt is paid off and revenues can cover expenses. Alternatively, Congress could hard code a trajectory of coal tax rates into law that, based on current projections, would both support disabled miners and gradually pay down the Trust Fund debt. The problem with this, and it would otherwise be a reasonable fix, are those evolving factors that make forecasting revenue and expenses difficult.

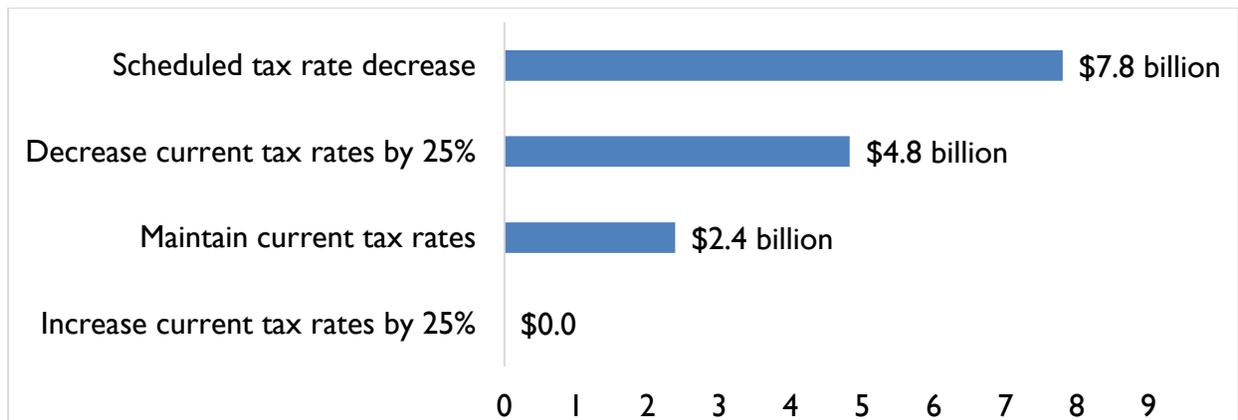
Congress does not typically delegate tax rates, but in this special case, it could make sense. Congress could give authority, for example to the Secretary of the Treasury, to set the excise rate each year such that revenues are expected to be sufficient to cover current and projected expenses and gradually retire the Trust Fund debt. This would allow the tax rate to evolve with coal production levels and the needs of workers in a way that ensures benefits, eliminates Trust Fund debt, and keeps the economic burden on coal companies. With this dynamic approach, coal companies would know that if they declare bankruptcy at one mine to avoid black lung and other liabilities, the tax rate on coal from the rest of their operations will go up. If the industry becomes more consolidated, as some expect, more of these external costs of bankruptcy will be internalized.

Debt forgiveness

Repayment of debt principal and interest payments have been chronic strains on the Trust Fund. Congress can lift this burden in several ways with appropriations from the General Treasury to the Trust Fund by forgiving debt, interest payments, or both. GAO (2019) shows that amongst the options analyzed, only approaches that forgive debt lead to long term solvency of the Trust Fund; reducing interest burdens is not enough by itself.

GAO (2019) also investigates how a combination of tax rate amendments and debt forgiveness could work. See Figure 10 below. In these scenarios, debt and/or interest are forgiven in 2019 such that Trust Fund finances are balanced by 2050. The scenario that allows BLET to fall as scheduled requires \$7.8 billion in debt forgiveness, while an extension of the current BLET rates only requires \$2.5 billion. Given that 2019 has passed without forgiveness, these numbers probably underestimate the level of forgiveness needed now to balance Trust Fund finances. Additionally, they rely on EIA's reference case coal production, which assumes no new climate policy.

Figure 10: Debt forgiveness in 2019 to balance the Trust Fund by 2050



Some would argue that debt forgiveness merely acknowledges the reality that this debt will never be paid off and removes it from the books, giving the Trust Fund a fresh start. Others would say that forgiving Trust Fund debt forgoes the opportunity for taxpayers to reclaim debts that should rightfully be paid by the companies whose operations inflicted the injuries on workers. Reasonable people can differ about whether raising taxes on ailing and litigious coal companies is politically or economically hopeless.

In any case, as noted above, there is a precedent for debt forgiveness. The Energy Improvement and Extension Act of 2008 provided a one-time appropriation of \$6.5 billion toward debt forgiveness. The remaining legacy debt was refinanced with lower-interest debt instruments. BLET revenue was lower than expended, and deficits and borrowing by the Trust Fund continued. This illustrates a key challenge in using debt forgiveness as a “one-time fix” for a chronic, but highly uncertain, shortfall.

Consider other sources of funding, including a GHG tax

The coal production projections in Figure 8 and our BLET revenue estimates in Figure 9, although not from a crystal ball, should motivate a hard look at role of the coal-specific BLET in funding durable benefits. Even if Congress or the Administration adopts a policy approach other than a CO₂ fee, if the policy includes the electricity sector and imposes significant emissions reductions, the economics of the sector are such that a disproportionate share of emissions reductions will likely come from substitution away from coal. From the standpoint of the overall economy and electricity consumers, this is not a bad thing. Substituting away from coal the least cost way to achieve significant near-term GHG abatement. But it does beg the question of what to do about people and communities that currently depend on coal production.

The debt forgiveness options above assume the money comes from the Treasury General Fund. Another option is to find another source of debt repayment. For example, if the United States adopts an economy-wide tax on all or most greenhouse gases, a single year's revenue could easily total ten times the forgiveness requirements in Figure 10: Debt forgiveness in 2019 to balance the Trust Fund by 2050.⁵⁵ Such a tax could replace the BLET as the primary funder of the Black Lung Program and remaining revenues could fund any number of other priorities, including reducing other taxes, reducing the federal budget deficit, and funding any number of other spending priorities.⁵⁶

Improved oversight

Finally, an overlooked but important approach is better oversight of coal operator finances before their liabilities fall to the federal Black Lung Program. Only if mine operators are unable to meet their black lung liabilities does the burden transfer to the federal program. A 2020 GAO report found that lack of oversight by the U.S. Department of Labor (DOL) made this transfer all too common.⁵⁷ GAO examined eight coal mine operator bankruptcies from 2014 to 2016. Three of these operators, each of them “self-insured,” transferred an estimated \$865 million worth of black lung liability to Trust Fund upon bankruptcy. GAO notes that DOL failed to estimate future benefit liability when setting collateral for self-insurance or to review changing financial conditions of operators regularly. Also, DOL did not employ available enforcement tools, such as revoking an operator's ability to self-insure, fining mine operators for operating without insurance, and placing liens on operator assets. GAO recommends that DOL establish clear self-insurance renewal procedures, set timelines for operators to submit documentation, and monitor operator compliance with their black lung liabilities.⁵⁸ Given the increasingly poor prospects for the coal industry, GAO's recommendations should feature amongst policymakers' most urgent priorities, and importantly they can be implemented with existing authority.

⁵⁵ <https://www.cbo.gov/budget-options/56873>

⁵⁶ <https://www.brookings.edu/wp-content/uploads/2016/07/howtousecarbontaxrevenueamarronmorris.pdf>

⁵⁷ Government Accountability Office, *Black Lung Benefits Program: Improved Oversight of Coal Mine Operator Insurance Is Needed*.

⁵⁸ The three companies are Alpha Natural Resources, James River Coal, and Patriot Coal.

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APPENDIX I

The table below documents the legislative history of the coal excise tax. Some legislated rate changes were preempted by later legislation. For example, the Consolidated Omnibus Budget Reconciliation Act of 1985 extended its new rates only until 1996, and later bills extended them through 2014, and then 2019.

Black Lung Excise Tax History

| Legislative change | Applicable dates | Rate per ton, underground coal | Rate per ton, surface coal | Alternative coal tax (share of sales value, applying if smaller than per-ton tax) |
|--|-------------------------|---------------------------------------|-----------------------------------|--|
| Black Lung Revenue Act of 1977 | 1978 | \$0.50 | \$0.25 | 2% |
| Black Lung Benefits Revenue Act of 1981 | 1982-1996 | \$1.00 | \$0.50 | 4% |
| The Consolidated Omnibus Budget Reconciliation Act of 1985 | 1986-1996 | \$1.10 | \$0.55 | 4.4% |
| The Omnibus Budget Reconciliation Act of 1987 | 1987-2014 | \$1.10 | \$0.55 | 4.4% |
| Emergency Economic Stabilization Act of 2008 | 2008-2019 | \$1.10 | \$0.55 | 4.4% |
| Rates revert to 1978 rates | 2019 | \$0.5 | \$0.25 | 2% |
| The Further Consolidated Appropriations Act of 2020 | 2020 | \$1.10 | \$0.55 | 4.4% |
| the Consolidated Appropriations Act of 2021 | 2021 | \$1.10 | \$0.55 | 4.4% |
| Rates scheduled to revert to 1978 rates | 2022 | \$0.5 | \$0.25 | 2% |