Oregon State Treasury Coal Investment Performance Analysis

December 2023
Published by Divest Oregon

Summary

Investing in thermal coal companies carries significant financial risk, but quantifying that risk is difficult and uncertain. Predicting when coal investments will become stranded assets depends on forecasting years into the future. However, coal prices are dropping and production costs are increasing.[1,2] As of June 30, 2022, the Oregon State Treasury (OST) had over $1 billion invested in thermal coal-related stocks, bonds and private investment funds, and these investments support the retirement of over 380,000 members of the Public Employees Retirement System (PERS).

The performance of the OST's public equity investments for PERS in coal was evaluated between January 15, 2014 and June 30, 2022. The OST does not regularly disclose its investments, so this analysis approximates the historical performance of its coal investments by assuming that the public equity inventory from June 30, 2022 was held continuously over this analysis period. The resulting historical value of coal holdings was compared against their value if these coal holdings had instead been invested in a fossil fuel free index beginning in early 2014. The method considered a set of 152 specific coal holdings with a market value of $610 million as of June 2022. The estimated result is an underperformance of coal holdings in the public equity asset class over the eight and a half year period of $340 million. This result suggests that the underperformance of coal investments should not be neglected when considering calls for divesting the Oregon Treasury from thermal coal. These lost opportunities would have helped reduce the unfunded actuarial liability in PERS, reported by OST to be at nearly $28 billion as of October 2023.[3]

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[1] IEEFA Coal Price Forecast September-October 2023
https://ieefa.org/resources/cost-inflation-underlines-thermal-coal-miners-fragile-profits-and-financing-risks
https://assets.kpmg.com/content/dam/kpmg/au/pdf/2023/coal-price-fx-market-forecast-september-october-2023.pdf

[2] KPMG Coal Price Forecast September-October 2023
https://assets.kpmg.com/content/dam/kpmg/au/pdf/2023/coal-price-fx-market-forecast-september-october-2023.pdf

[3] KGW Oregon's Public Pension Fund Lost Money Last Year
https://www.kgw.com/article/news/local/the-story/oregon-pers-unfunded-liability-public-pension-treasury-investments/283-65dbb743-725a-4aa0-a3f0-c5b5b47f8c5d#:~:text=The%20state's%20unfunded%20liability%20for,a%20total%20of%20%2428%20billion.&text=PORTLAND%2C%20Ore.,sitting%20at%20roughly%20%24103%20billion.

Methods

The OST is not required to regularly publish an inventory of its holdings, so it is not possible for the public (even PERS members) to directly evaluate the historical performance of its thermal coal holdings. However, in response to numerous public records requests by Divest Oregon, the OST now provides a list of its public equity holdings and their market values in December of each year. The latest data provided is as of June 30, 2022.[4] As permitted under Oregon Statute, contents of private investments are shielded from disclosure and thus were unable to be analyzed for this report.

Divest Oregon worked with Third Rail Economy to analyze the PERS public equity holdings for exposure to thermal coal companies and assets. Third Rail Economy categorized the holdings based on the 2021 Global Coal Exit List (GCEL)[5]. GCEL is a list of companies that covers the entire thermal coal value chain from coal exploration and mining to coal power production and coal gasification. It was created by Urgewald to give financial institutions a tool to understand the coal holdings in their portfolios. For 2021, any company that generated 20% or more of its revenue or power generation from coal was on the list. It is updated annually and is the most comprehensive public database on the global coal industry.[6]

In order to evaluate the performance of the PERS public equity investments in coal, the June 2022 inventory was assumed to have been held continuously over the period beginning January 15, 2014 through June 30, 2022. Their value was estimated using daily historical price data downloaded through the Yahoo! Finance Application Program Interface (API).[7] The value of each holding was fixed on June 30, 2022 based on data from OST, and the value before and after changed proportionally with the price. Daily values were estimated using the adjusted closing price, which accounts for stock splits and reinvestment of dividends, adhering to Center for Research in Security Prices (CRSP) standards. Components of investment operations that were not factored into this analysis include costs of management, purchasing and sale of stocks.

PERS's June 30, 2022 coal holdings were modeled to estimate the number of stocks and total market value back to January 15, 2014. The holdings included 152 companies with adjusted closing price data available over the analysis period. Tickers were determined individually by searching for the closest match to the text description of each holding. Each

[4] Oregon State Treasury, OPERF. Public Equity Portfolio. June 30, 2022 https://www.oregon.gov/treasury/invested-for-oregon/Documents/Invested-for-OR-Performance-and-Holdings/2022/OPERF-Public-Equity-Holdings-as-of-06-30-2022.pdf

[5] Global Coal Exit List (GCEL) https://www.coalexit.org/

[6] In 2023, Urgewald expanded the definition to companies that have a coal revenue or a coal share of power production of at least 10%.

[7] Yahoo! Finance Application Program Interface (API) https://python-yahoofinance.readthedocs.io/en/latest/api.html

holding was modeled according to its history of adjusted closing price, and the results were summed to show the aggregate behavior of this group of holdings. Some holdings had data available from the Yahoo! Finance API for only a portion of the analysis period, so those without prices in the entire period from January 15, 2014 to June 30, 2022 were omitted. Omitting them from the analysis introduces survivorship bias, however, the total value of these 21 omitted holdings in June 2022 was $51 million, a minor component compared with the 152 holdings included that were worth $610 million in June 2022.

Once the historical price and dividend data had been used to estimate the number of stocks and total market value on January 15, 2014, that initial estimated value of coal stocks was then modeled as being alternatively invested in the S&P 500 Fossil Fuel Free index (ticker SP5F3UT). The total returns daily value for that index was only available beginning on January 15, 2014, which is why that date was chosen as the early limit of this analysis.

As a basis of comparison, the S&P 500 Fossil Fuel Free Index that removes all fossil fuels including coal holdings consistently outperformed the S&P 500 index over the analysis period (Figure 1).

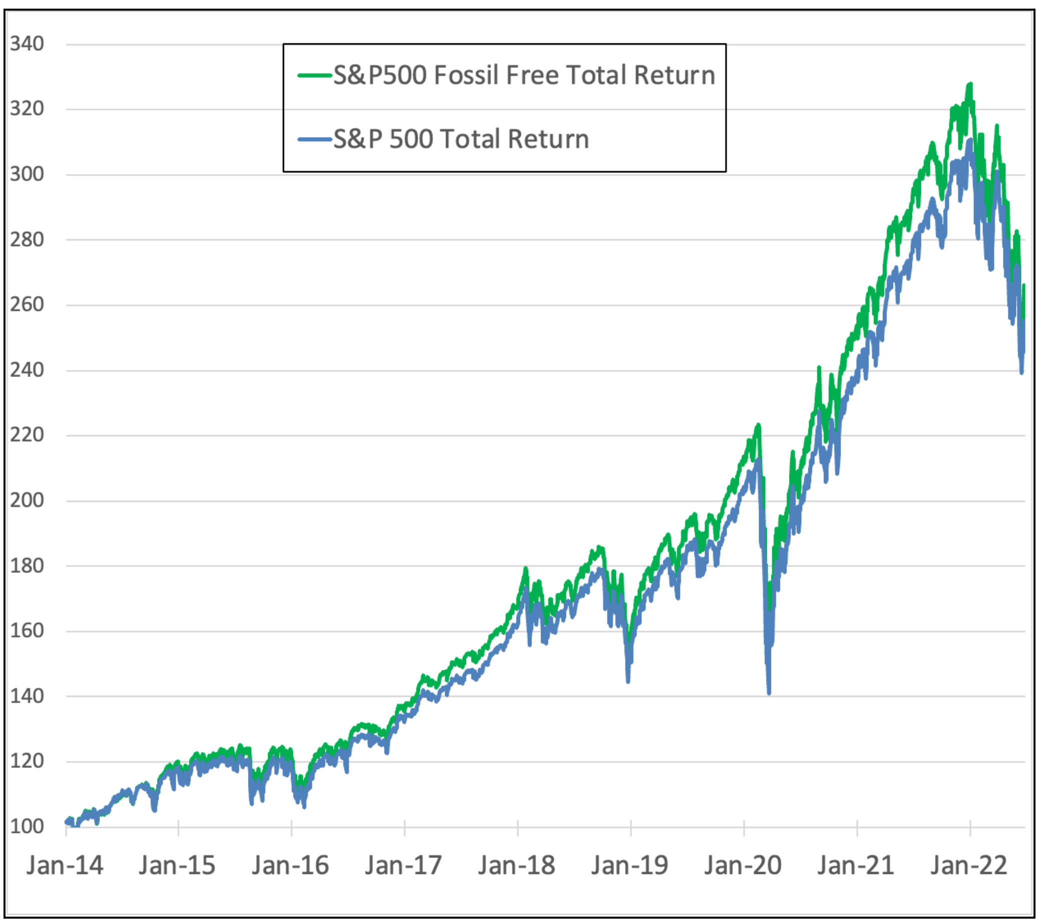

Figure 1: *Comparison of S&P 500 Fossil Fuel Free Index against the S&P 500 overall. Values are plotted weekly to facilitate comparison.*

Results

As described in the Methods section, the estimate was constructed by modeling the 152 individual coal holdings backward in time using adjusted price data available over the analysis period. The June 30, 2022 value of all these 152 holdings was $610 million. Projecting back in time from the known value in 2022, the estimated January 15, 2014 value was approximately $380 million, as shown in Figure 2.

The historical performance was then evaluated by simulating reinvestment of the estimated 2014 total value in the S&P 500 Fossil Fuel Free Index. The modeled value of this alternate investment on June 30, 2022 was $950 million suggesting that fossil fuel free investments would have outperformed the coal investments by $340 million (Figure 2).

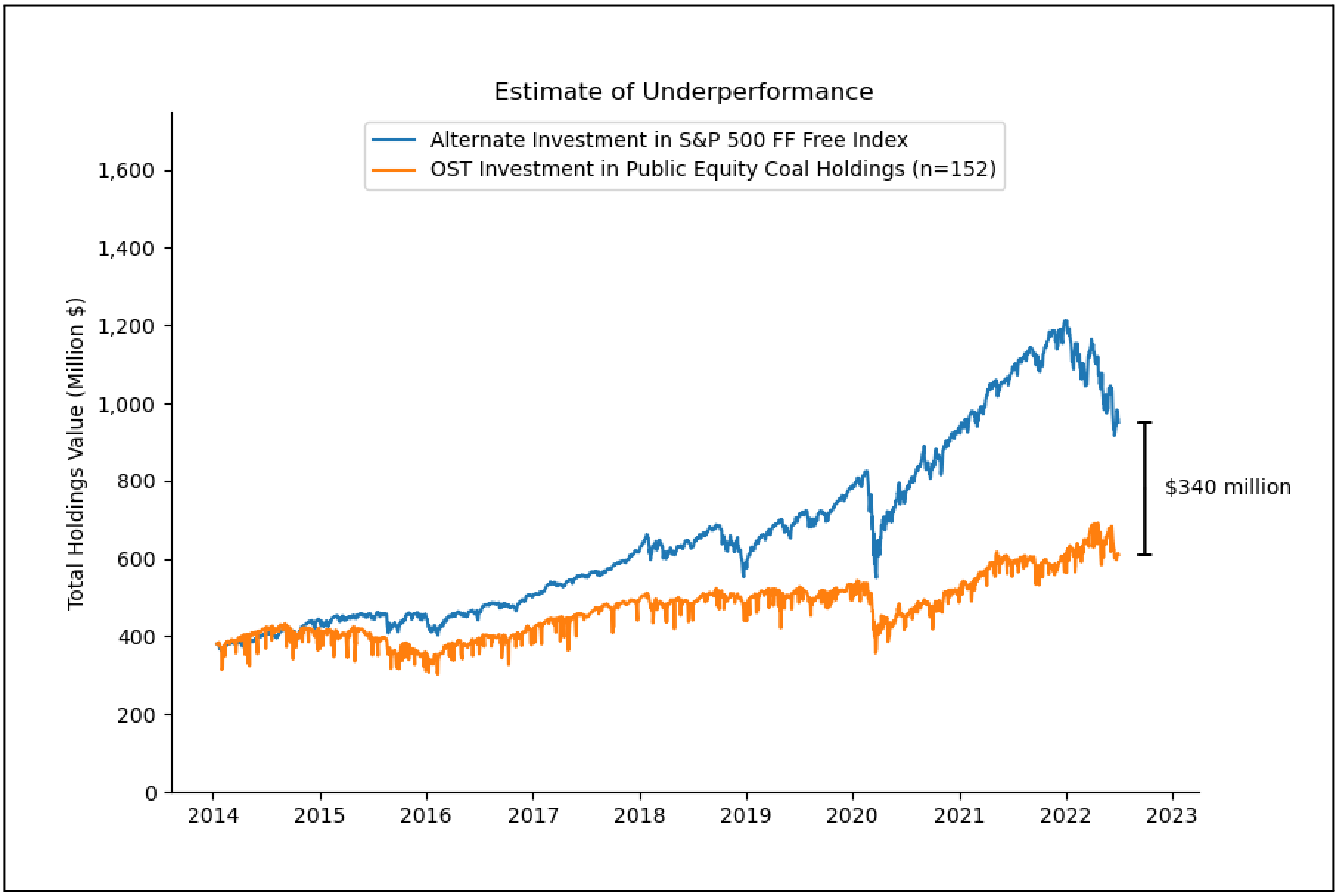

Figure 2: *Time series supporting estimate of coal underperformance. Lower line (orange): total value of the 152 coal holdings with available data modeled backward in time from the June 2022 value. Upper line (blue): modeled reinvestment of the January 15, 2014 estimated value in the S&P 500 Fossil Fuel Free Index.*

Discussion

The evaluation of the Oregon State Treasury's investments in coal stocks between January 15, 2014 and June 30, 2022 suggest that they underperformed compared with a fossil fuel free alternative by $340 million. The estimate assumed that coal holdings were held continuously over the analysis period with dividends reinvested, and it modeled investment of the estimated 2014 value of the assets into the S&P 500 Fossil Fuel Free Index as an alternative to coal investment. The actual historical content of these investments may have varied due to active management, but without regular disclosure of the OST's holdings, the best assumption available to the public is to assume that investments were held continuously for those 8.5 years.

The estimate considered only a limited subset of publicly traded holdings disclosed for June 2022. These were the 152 holdings with readily-discernible tickers and historical price and dividends data available over the analysis period. These holdings represent only Public Equity asset class holdings, while all other asset classes, such as Alternatives, Diversifying, Opportunity, Private Equity, and Fixed Income corporate bonds could not be analyzed.

The fact that holdings existed at all in 2022 reflects survivorship bias in this analysis, where some coal investments held in 2014 may have performed even worse and been dropped. Considering the general underperformance of the energy sector compared with the S&P 500 and its fossil fuel free index over the analysis period (Figure 1), the survivorship bias and limitations on the size of this subset almost certainly caused this method to underestimate the additional money that could have been made by investing free of coal.

Increased transparency from the OST about historical investments would enable better refined evaluations of their performance. For comparison, in 2015, the California State Teachers Retirement System (CalSTRS) and California Public Employee Retirement System (CalPERS) had a mandate to divest from thermal coal. The legislation (CA SB 185) prohibits CalPERS and CalSTRS from investing in public equity or debt securities of publicly-traded companies that generate 50% or more of their revenue from the mining of thermal coal. Per the legislative mandate, CalSTRS and CalPERS must regularly report on the impact this divestment has on the total fund. This is to ensure that CalPERS' standards for fiduciary care are upheld when divesting. Wilshire, CalPERS consultants, using the most recent results presented in October 2022, estimated the cumulative positive impact to the fund due to divesting from thermal coal to be $598 million for the time period of 2017 through FY 2022.

The underperformance of the OST's coal investments is most likely larger than the $340 million presented here because PERS' private investment holdings and fixed income corporate bonds were not evaluated. Neither were the other funds OST is responsible for, such as the Oregon Short Term Fund (OSTF). The specific private investments are unavailable via public records request because of state laws prohibiting their release. Thus, the performance of their coal components cannot be evaluated by the public. An October 2021 report by Private Equity Stakeholder Project (PESP) found that approximately 80% of energy investments made by the top 10 private equity firms since 2010 are in oil, gas and coal.[8] OST's September 2023 private equity portfolio invests in seven of these top ten firms (Oaktree Capital, KKR, Blackstone, Warburg Pincus, Apollo, TPG, CVC).[9] Consequently, the coal underperformance may be much higher than this conservative estimate.

Moody's 2021 analysis concludes that the coal industry's limited access to capital, loss of regulatory support, public opposition, health and safety risks, pollution contributions, and loss of employment base leaves it vulnerable to increasing pressure on investors to divest.[10]

While the recent increase in price of some coal stocks suggests that short-term performance may temporarily fluctuate, the particular circumstances driving major increases in coal prices are unpredictable and provide a questionable basis for long-term investment decisions. Institutional investment in coal often occurs passively through passive investment in index funds determined by external fund managers. In this analysis, we offer the S&P 500 Fossil Fuel Free Index fund as an alternative for reinvestment, but similar index funds and investment products provide ample opportunities to find the same or better returns.

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[8] Giachino, Alyssa and Mehta-Newgebauer, Riddhi. *Private Equity Propels the Climate Crisis.* Private Equity Stakeholder Project, Published October 2021. https://pestakeholder.org/wp-content/uploads/2021/10/PESP_SpecialReport_ClimateCrisis_Oct2021_Final.pdf, p. 6

[9] Oregon State Treasury, OPERF. Private Equity Portfolio. September 2023. https://www.oregon.gov/treasury/invested-for-oregon/Documents/Invested-for-OR-Performance-and-Holdings/2023/OPERF-Private-Equity-Portfolio-Quarter-2-2023.pdf

[10] Institute for Energy Economics and Financial Analysis, Stand.earth, C40, & the Wallace Global Fund (2021, October 26). *Invest/Divest 2021: A Decade of Progress Towards a Just Climate Future.* Retrieved March 19, 2022 from https://www.stand.earth/sites/stand/files/divestinvestreport2021.pdf

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[11] Oregon State Treasury, OPERF. Public Equity Portfolio. June 30, 2022 https://www.oregon.gov/treasury/invested-for-oregon/Documents/Invested-for-OR-Performance-and-Holdings/2022/OPERF-Public-Equity-Holdings-as-of-06-30-2022.pdf