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How does the cost of capital affect oil supply?

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In the past decade, a rapidly growing number of investors have divested from the oil-producing industry. The financial approach to the climate problem—e.g., the burgeoning green finance taxonomies—hopes that such divestment will contribute to aligning the industry’s incentives with climate policy targets by increasing targeted firms’ cost of financial capital. We ask how an augmented cost of capital might affect oil supply and equilibrium production. On the one hand, the cost of capital should reduce oil projects’ net present value, inducing projects’ abandonment. On the other hand, it makes the industry more short-termist, advancing projects to generate revenues earlier. We develop a model of oil supply in which the industry’s cost of financial capital—isolated from the cost of physical capital—affects drilling decisions and oil production. The model is calibrated using data covering all US oil assets and used to simulate the dynamic competitive equilibrium under various counterfactual policy scenarios for the period 2000-2030, including carbon pricing and “green finance,” modeled as an augmented cost of financial capital. Our results suggest that increasing the cost of capital by up to a few percentage points is counterproductive in the short run, because it encourages industry short-termism. Green finance becomes effective at deterring oil production only over longer horizons or under greater capital penalties. Yet the returns that financial markets would need to forgo to replicate the effect of a \$100 carbon price are unrealistically high.

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