

Economics, Uncertainty, and the Environment

BY JOHN A. WEINBERG

This issue of *Region Focus* features an article on the debate over using “fracking” to extract natural gas from shale deposits. The process, as the article points out, is controversial and the analysis complicated. Critics claim that fracking could make drinking water unsafe and, in some cases, may increase the potential for earthquakes. Proponents argue that such claims are exaggerated and that fracking could tap unused resources and boost the nation’s energy supply, driving down prices in that sector. In addition, there are the jobs that would accrue to the communities where fracking would take place — the same communities that *might* be hardest hit by environmental problems.

The reason that I italicized “might” in the previous sentence is that, as an economist, I don’t really know how likely it is that fracking could cause such environmental damage. And if such damage were to occur, I don’t know how costly it would be. The best that I can do is to rely on expert opinion from scientists who have studied fracking — but even they cannot be sure about the costs. So I am left in a quandary about how to evaluate the issue.

In general, when economists are asked to address environmental questions, they are inclined to say that property rights should, if feasible, be assigned in a way that will “internalize” the social costs of any private activity. In the case of fracking, though, we don’t know with certainty if the activity will contaminate drinking water until after companies have started work; we also don’t know if it will contribute to earthquakes. Both could have enormous costs — costs that firms might be unwilling to bear if they knew of them in advance. So it is very hard to make the calculation of how much, if at all, to effectively tax firms that wish to engage in fracking. This, potentially, could be an argument for delaying firms from acting at all. Until scientists can give us more precise estimates of the costs of fracking, we may decide it would be better to wait. Those costs could be larger than the benefits of tapping the additional energy — and thus larger than the firms themselves would want to bear if they had such information today. I make this point not as an environmental scientist, or environmental economist, but simply as an economist who recognizes the challenges of doing cost-benefit analysis for this kind of problem.

Such considerations are useful when thinking about how to address other environmental issues, including global warming. As with the potential dangers of fracking, I am not in a position to say whether the earth is warming. Most scientists believe that it is, but they have widely varying

estimates about its magnitude and the associated present and future costs. The estimates of the effects range from catastrophically negative (due to rising sea levels and melting ice sheets) to slightly positive (due to greater crop yields in some parts of the world). Given such uncertainty about the effects of global warming — combined with the certain large costs of significantly curtailing economic activity that is believed to lead to global warming — one could make a case for not taking widespread preventative measures. But, at the same time, there is also a strong case for being somewhat more aggressive in pursuing policies — including being more vigilant about internalizing social costs — that could reduce the probability of significant global warming that would impose enormous costs on future generations.

Some economists and ethicists would object to enacting any policies that might make the present population poorer — including those aimed at curbing global warming — in an effort to aid future generations. The reason, they would argue, is that such policies could have perverse redistributive effects. Although the recovery from the financial crisis and recession has been sluggish, it is likely that the economy will eventually rebound and continue to grow on its long-term trend path of roughly 3 percent a year. What this means is

that our children will be wealthier than us, and their children wealthier than them. Why should a poorer population sacrifice some prosperity to aid wealthier populations, critics would ask?

It’s a good question, and one that’s inherently hard to answer. Almost everyone would agree that we should avoid regressive policies — those that benefit the relatively rich at the expense of the relatively poor. But in the case of global warming, we just don’t know if our actions today might impose costs on future generations that are so large that they would be unable to effectively mitigate them. To not try to address such a possibility would be irresponsible. That doesn’t mean we should take drastic and reactionary steps, such as severely taxing or outright prohibiting the use of fossil fuels. Such actions would be even more irresponsible than denying that global warming may exist and its future costs might be significant. Instead, it means seeking appropriately cautious remedial actions that would not significantly alter our way of life but potentially save future generations from tremendous harm. Think of it as a catastrophic-care insurance policy.

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