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THREE STAGES IN THE USE OF COST-BENEFIT ANALYSIS AS
A TOOL FOR EVALUATING U.S. REGULATORY POLICY

Michael A. Livermore and Richard L. Revesz

EUROPEAN UNIVERSITY INSTITUTE, FLORENCE
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as a Tool for Evaluating U.S. Regulatory Policy*

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Abstract

Over the last thirty years a three-stage evolution has taken place in American politics with regard to the use of cost-benefit analysis as a tool for evaluating regulation. During that time, the appeal of cost-benefit analysis has shifted from one side of the aisle to the other. In the first stage, in the early 1980s, the Republican Party adopted cost-benefit analysis as a way of constraining regulation. Many progressive groups fought back by rejecting cost-benefit analysis altogether. Several years ago, in a second stage, some progressive groups finally started to speak the language of cost-benefit analysis and it looked like a consensus approach might emerge. But the economic crisis of 2008 has led the way to a third stage in which conservatives, who began to realize that cost-benefit analysis could justify stringent regulation, reframed the debate to one about jobs. The essay argues that, despite pleas to abandon the technique, cost-benefit analysis has proven robust, in part because it provides a common ground where all interests are given weight.

Keywords

Regulation; cost-benefit analysis; economic crisis; job analysis.

The lecture was delivered by Richard L. Revesz on 20 June 2012.

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Introduction

The use of cost-benefit analysis to evaluate the regulatory policy of the federal government has been a constant, significant feature of the U.S. administrative state since the early 1980s, but its sources of support and opposition have varied considerably during these three decades. In fact, the appeal of cost-benefit analysis has, to some extent, shifted from one side of the political aisle to the other. This process did not happen gradually, but rather, there were two points at which a marked shift happened, dividing the period into three relatively distinct stages.

In the first stage, conservatives within the Republican Party promoted cost-benefit analysis as a way to slow, and sometimes stop, agencies from promulgating regulations. Early in his first administration, President Reagan issued Executive Order 12,291, which required agencies to prepare a detailed cost-benefit analysis of any proposed regulation with a significant impact on the economy. This requirement succeeded in creating a serious drag on the regulatory process and was reviled by progressive groups.

The second stage did not occur until just a few years ago, when some progressive groups finally began to use cost-benefit analysis to their advantage by providing analyses that placed a monetary value on the health and environmental benefits of a regulation. This attitudinal shift was due in part to the efforts of the Institute for Policy Integrity, which I founded in 2008 with one of my former students, Michael A. Livermore. Policy Integrity's mission is, in part, to help progressive groups be effective in regulatory proceedings that use cost-benefit analysis.

More recently, however, conservatives, perhaps sensing a shift in power, began to lose interest, turning their rhetoric away from cost-benefit analysis and toward reframing the debate to one about employment, economic growth, or energy prices. The resulting lean away from cost-benefit analysis on the part of conservatives defines the third stage.

The effect of regulation on employment, in particular, will likely play a role in the 2012 national elections. Conservatives and regulated industry have been arguing that whether a regulation (usually an environmental regulation) "kills" jobs is a consideration that should trump all others and they have been using models that vastly overpredict the negative impact of regulation on jobs. But the effect of an environmental regulation on employment should simply be one consideration to be measured against all the other potential costs and benefits of that regulation, and the underlying models used to estimate a regulation's effect on employment should be sound. The conservatives are right in one way: the potential for a regulation to have an impact on employment, whether negative or positive, should be recognized in any well-conducted cost-benefit analysis, which has not traditionally been the case.

Cost-benefit analysis has weathered similar critiques in the past. Any ascendant political group is likely to chafe against cost-benefit analysis, with its tendency to place the concerns of that group within a broader social context. But despite the recent criticisms from the right—just as with those from the left three decades ago—cost-benefit analysis should, and likely will, remain a significant tool in the evaluation of regulatory policies.

The First Stage

Cost-benefit analysis first hit the political stage in a major way when the Republican Party adopted it as a way of constraining regulation. This process began during Reagan's campaign, when he cast regulation and the federal bureaucracy as the enemy of economic growth, positioning his agenda of deregulation and tax cutting as the key to creating jobs and increasing prosperity. Within a month of his inauguration in 1981, Reagan issued Executive Order 12,291, which asserted significant Presidential control over the administrative apparatus.¹ Reagan's executive order created the basic architecture of the central review of agency action that is in place today. It required agencies to prepare detailed cost-benefit analysis of proposed regulations with a significant impact on the economy, and, in general, required that a regulation's expected benefits exceed its expected costs.

¹ RICHARD L. REVESZ & MICHAEL A. LIVERMORE, *RETAKING RATIONALITY* 25 (2008).

Officials within OIRA—the Office of Information and Regulatory Affairs, within the Office of Management and Budget—oversaw the cost-benefit analysis process, and OIRA became known at the time as a “black hole” for regulations, in part because of its delay in performing reviews.² Many progressive groups fought back by rejecting the validity of cost-benefit analysis altogether, claiming that it suffered from fatal technical and moral problems.³

In 1993, President Clinton issued Executive Order 12,866, which updated Reagan’s plan that OIRA perform an economic analysis for every major regulation. Clinton’s executive order maintained the same architecture of cost-benefit, analysis-based, regulatory review, therefore giving rise to a bipartisan consensus behind the requirement. Pro-regulatory groups greeted the Clinton order with similar distrust.⁴

I became interested in the political context for cost-benefit analysis about fifteen years ago when I served on a U.S. Environmental Protection Agency (EPA) advisory committee on environmental economics, which was conducting a peer review on EPA’s guidelines for the preparation of cost-benefit analyses. In the committee meetings, we discussed the major building blocks of cost-benefit analysis, including important questions like the right estimate for the value of a statistical life, whether carcinogens should be treated in the same way as non-carcinogens, what discount rate should be used for latent harms, and whether the same discount rate should be used for environmental problems affecting future generations.

There was a severe imbalance in the participation of interest groups in these proceedings. Major trade associations for polluters participated frequently in our meetings, generally represented by the most sophisticated Washington, D.C. law firms, always arguing for a lower valuation of benefits and less regulation. But no environmental group ever showed up. When I raised this issue with a senior official at a major environmental organization, he recognized that from a strategic standpoint the environmental groups in the U.S. were missing out on an important opportunity to affect policy. But he said that the various constituencies of the environmental groups including their funders and members were suspicious of cost-benefit analysis, and that, as a result, these groups did not want to lend legitimacy to the process by entering the fray.

Years later, I was giving a talk at the American Enterprise Institute, and alluded to this experience. Someone from the back of the room asked me a question. It was Sally Katzen, who had served as the OIRA Administrator in the Clinton Administration. She said, similarly, that she had spent time trying to convince environmental groups that cost-benefit analysis could be a “neutral tool,” and encouraging them to participate, alongside industry groups, in methodological discussions concerning the valuation of costs and benefits. Whereas industry groups were eager to participate in these conversations, environmental groups were not. Eventually she gave up trying to bring them to the table.⁵

In 2008, Livermore and I published *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health*. The book discusses how anti-regulatory academics and trade associations for polluters captured the processes for determining appropriate methodologies for conducting cost-benefit analyses. We argue that as a result of the absence of progressive groups in these debates, important methodological fallacies, not supported by economic theory or empirical evidence, came to dominate the valuation of costs and benefits.

One such example concerns the use of risk-tradeoff analysis, a methodological approach that gained popularity in the late 1980s and early 1990s.⁶ The idea is that when government reduces some risks through regulation, it may also increase others. For example, if asbestos is banned because it is a carcinogen, individuals may substitute less effective products as fire retardants in ceilings, leading to a greater number of deaths from fires. But a common fallacy that tends to be embedded in this approach

² *Id.* at 26.

³ *See id.*

⁴ Michael A. Livermore & Richard L. Revesz, *Retaking Rationality Two Years Later*, 48 Hous. L. Rev. 1, 6-7 (2011).

⁵ REVESZ & LIVERMORE, *supra* note 1, at 32.

⁶ *Id.* at 55.

is that all collateral consequences of regulation are bad. A serious cost-benefit analysis of a regulation's impact should also pay attention to the collateral benefits of regulation, also known as the ancillary benefits. Aspirin, for example, has the unanticipated side effect of upsetting stomachs, but it also has the unanticipated benefit of preventing heart attacks and strokes. Indeed, the ancillary benefit associated with aspirin is probably greater than its target benefit of reducing pain.⁷ A recent environmental example in the United States is the EPA's proposed rule to limit mercury pollution from power plants, which produces tens of billions of dollars in yearly public health benefits from the ancillary effect of reducing particulate matter pollution. Industry has lobbied heavily that these important ancillary benefits not be counted, which would systematically bias cost-benefit analysis against regulation.⁸

A second flawed methodological approach, which began to gain acceptance, concerns the valuation of lives saved as a result of regulation. The standard way to measure the benefit of a saved life is to look at people's willingness to pay to avoid health and safety risks, which is then used to estimate the value of a statistical life. Recently, however, there have been efforts to substitute the value of a statistical life with the value of remaining "life years,"⁹ under which the value of being free from risk is proportional to one remaining life expectancy. Under the life-years methodology, the life of a 40-year-old is typically about four times more valuable than that of a 70-year-old.

It makes economic sense to make this adjustment only if one's willingness to pay to be free from the relevant risks decreases in a manner proportional to one's remaining life years.¹⁰ But there is neither theoretical nor empirical support for this proposition. From a theoretical perspective, such a relationship would be unlikely. As people age, they can anticipate fewer future life years and because of this scarcity, it is likely that they would value each future year more highly than younger people would. Moreover, as people age their income tends to increase, typically also increasing their willingness to pay to be free from risk. Empirical evidence also runs strongly counter to the life-year approach, suggesting that the relevant valuations are relatively constant from ages 40 to 60, and then begin to decrease gradually thereafter but at a much lower rate than the life-years methodology, with its proportional reductions, would suggest.¹¹ The life-years method, therefore, leads to the systematic underestimation of the regulatory benefits of important programs.¹²

The Second Stage

In 2008, a few months after we published our book, Livermore and I launched Policy Integrity, a think tank and advocacy organization at NYU Law School. We sought to persuade progressive groups that they could meaningfully participate in cost-benefit analyses. Due in part to our efforts at the Institute, pro-regulatory groups in general, and environmental organizations in particular, have begun to take an interest in the idea that cost-benefit analysis might advance their causes. Recently, there have been signs of a change in which progressive groups are finally starting to speak the language of cost-benefit-analysis, and this is what I think of as the second stage in the evolution of cost-benefit analysis as a regulatory tool.

Over the past three years, Policy Integrity worked to help this process along. To progressive groups that were willing to consider joining the fray, I told them the following story about my time as a law clerk to Justice Thurgood Marshall. Justice Marshall believed that the death penalty was unconstitutional in all instances as a violation of the Eighth Amendment prohibition against cruel and

⁷ *Id.* at 58.

⁸ *Id.* at 63; see also Michael A. Livermore, *Mercury Exposure Risks Beyond Measure*, NAT'L J. (Jun. 19, 2012), available at <http://energy.nationaljournal.com/2012/06/epas-cleanair-rules-defend-del.php#2219750>; Andrew Zajac, *Obama's Second Term To-Do List Positioned to Out-Regulate Bush*, BLOOMBERG BUSINESSWEEK (Mar. 15, 2012), available at <http://www.businessweek.com/news/2012-03-15/obama-s-second-term-to-do-list-positioned-to-out-regulate-bush>.

⁹ Cass Sunstein, *Lives, Life-Years and Willingness to Pay*, 104 COLUM. L. REV. 205 (2004).

¹⁰ *Id.* at 80.

¹¹ *Id.* at 81.

¹² *Id.* at 82.

unusual punishment. In every death penalty case, we inserted a standard paragraph explaining Justice Marshall's views. He was only one of two Justices who believed that and many cases were decided on a 7-2 vote contrary to his position. But every once in a while, we had a case for which Justice Marshall believed that even a Justice who did not share his general views on the constitutionality of the death penalty should vote to set aside a death sentence in a particular instance because of a problem in the trial or the sentencing proceeding. In those cases, in addition to the standard paragraph, we would draft an opinion aimed at obtaining at least five votes, which sometimes happened. I encouraged progressive groups to do the same with respect to cost-benefit analysis: At regulatory proceedings, they could begin briefly by explaining why they disapprove of the use of cost-benefit analysis, if they so wished. But then, quickly, they could move on to explaining what methodologies should be used and how costs and benefits should be evaluated under these methodologies.

Policy Integrity has partnered with many groups to help them use cost-benefit analysis to their advantage. Responding to a request from the Center for Reproductive Rights, we prepared an assessment of the cost-benefit analysis that the U.S. Department of Health and Human Services conducted in support of a "midnight regulation" at the end of George W. Bush's presidency, which made it much more difficult for women to obtain adequate reproductive health services. We filed an amicus brief in a legal challenge brought by Public Citizen to a Bush Administration deregulation that allowed truckers to spend longer hours behind the wheel, risking additional accidents and long-term health consequences from fatigue. Building on research conducted by Professor Rachel Barkow, among others, we expanded our work into the area of criminal justice reform. By focusing government resources on those interventions that deliver the greatest public benefit at the lowest expense, cost-benefit analysis can provide a much-needed corrective to criminal justice expenditures that impose significant pressure on state budgets.

With regard to the environment, we worked with the National Wildlife Federation to examine the harmful effects of the National Flood Insurance Program. We found that the policy redistributes wealth across income groups, and that middle-income areas are least likely to benefit, while relatively wealthy areas tend to be substantial beneficiaries. In partnership with the Environmental Defense Fund, we developed public comments regarding the value of government rules that curb greenhouse gases, and in particular the methodology for calculation the social value of avoiding climate change risks. To further our joint efforts in that area, in collaboration with National Resources Defense Council and Environmental Defense Fund, we hired a climate change economist to work with our respective groups to update the way in which the social cost of carbon is calculated.

At the 2010 Frankel Lecture at the University of Houston Law Center, I provided a progress report on how the arguments in *Retaking Rationality* and the work of Policy Integrity have fared over the past two years.¹³ Professor Douglas Kysar's response to that lecture made the strength of our progress particularly visible. Kysar, a Yale faculty member, is also part of the leadership of the Center for Progressive Reform, an organization that has exhibited unvarnished antipathy toward cost-benefit analysis. In commenting on our piece, Kysar wrote, "[a]ssuming Livermore and Revesz are correct that cost-benefit analysis is here to stay—and [I have] no reason to doubt their prediction—then proponents of environmental, health, and safety regulation would do well to start talking the talk as best they can."¹⁴ This statement represented a significant ideological shift for the progressive left.

Last year, Policy Integrity started a clinic that Livermore and I direct, which trains law students to participate effectively in the regulatory process, whether it is by commenting on regulations during the notice and comment period, sending policy recommendations by way of letters to the agencies and OIRA, or producing scholarly works that can influence the way in which policy is made. The students have tackled complex regulations on a range of issues, such as cooling water intake standards for power plants, fisheries enforcement, and labeling requirements for fuel-efficiency. Their work product has been of very high quality, and, agencies have been paying attention. For a fuel economy labeling rule, we were one of only two groups out of several thousand commenters that EPA and the U.S. Department of Transportation named in the text of the final rule's preamble, indicating

¹³ Livermore & Revesz, *supra* note 4.

¹⁴ *Id.* at 37.

that they took our comments seriously, even though they did not follow our recommendations.¹⁵ With regard to a rule regulating the greenhouse gas emissions from heavy-duty trucks, these agencies considered our comments and tentatively agreed to add a labeling program to future rulemakings. Our comments likely also helped support the U.S. Department of Energy's lifecycle policy, which considers the full set of impacts, including those caused by greenhouse gases, when regulating energy efficiency.

With the seemingly endless economic rut and the resulting turn of the political discourse, most advocates of stronger environmental protections have started to understand the importance of cost-benefit analysis as a tool. The biggest groups have hired economists and taken steps to be involved in even the most detailed of cost-benefit questions. The value of a statistical life, once reviled as a crass manner of placing a dollar figure on the worth of a human being, is now beginning to have a place in the toolbox of progressive advocacy organizations.

The Third Stage

Unfortunately, in the aftermath of the serious economic crisis that began in 2008, the political right has been insistently calling for an end to new environmental protections. Rather than focusing on cost-benefit analysis, over which it no longer exhibited the same level of primacy, it has sought to reframe the debate.

The abandonment of cost-benefit analysis on the part of conservatives, and their attempt to limit focus to specific economic factors, such as employment, growth, or energy prices, is what I see as the third stage. Alexander Volokh, a noted libertarian and professor at Emory Law School, also commented on my Frankel Lecture, which I mentioned earlier in connection with Professor Kysar's comment. Volokh said that libertarians had advocated for cost-benefit analysis because they had believed that it would lead to less stringent regulations. But he noted that if as a result of our work cost-benefit analysis could begin to be used by progressives to lead to more stringent regulation, then "libertarians should reconsider their tolerance of cost-benefit analysis and focus more on making their case for deregulation in moral terms."¹⁶ This flip in positions surprised me, but I thought this was perhaps due to idiosyncrasies specific to Kysar (the progressive) and Volokh (the libertarian).

Recently, however, I encountered this quote from presidential candidate Mitt Romney, who in his economic plan wrote the following:

Where standards are put in place to constrain the issuance of regulations—such as requiring the use of cost-benefit analysis—they tend to be vulnerable to manipulation and also disconnected from the central issue confronting our country today, namely, generating economic growth and creating jobs. The end result is an economy subject to the whims of unaccountable bureaucrats pursuing their own agendas.¹⁷

Note that Romney, with his Harvard Business School training and Boston Consulting Group pedigree is not the most obvious person to question the reliance on economic models.

The upshot is that although there was a brief moment in which it appeared that cost-benefit analysis would become the agreed-upon language that different groups from across the American political spectrum could finally speak together, instead, just as one side was getting on the cost-benefit analysis train, the other side was getting off, practically at the same station. Conservatives abandoned pushing cost-benefit analysis as a way of preventing regulation shortly after liberals decided that it could be used to bolster support for the regulations they wanted.

This kind of reversal has happened before. Federalism used to be a conservative talking point, particularly as it applied to the environment; when conservatives believed that states would not pass

¹⁵ Revisions and Additions to Motor Vehicle Fuel Economy Label, 76 Fed. Reg. 39,478, 39,517 (July 6, 2011) (to be codified at 49 C.F.R. pt. 575).

¹⁶ Livermore & Revesz, *supra* note 4, at 38.

¹⁷ Mitt Romney, *Believe In America: Mitt Romney's Plan for Jobs and Economic Growth--Regulatory Policy*, available at <http://www.mittromney.com/sites/default/files/shared/Regulatory.pdf>.

stricter environmental laws than the federal government, federalism suited conservatives just fine. But when states started to pass more progressive environmental laws than the federal government, liberals began to talk about the virtues of state regulation and conservatives began to argue for federal preemption of such regulation. Commitment to principle consistently seems to take a second seat to preferences over regulatory outcomes.

The desirability of an activist judiciary has similarly seen at least two reversals in the past century. During the New Deal period, when Congress and the President were reshaping the American social contract through their efforts to mitigate the effects of the Great Depression, conservatives favored, and liberals abhorred, an activist judiciary that struck down some New Deal legislation as unconstitutional interference with individual rights. This dynamic was reversed in the years during and after the Warren Court, which used its powers to push progress on race relations and rights for criminal defendants, among other issues. During that time, it was liberals who embraced, and conservatives who criticized “unelected judges.”¹⁸ Most recently, as the Supreme Court has struck down limits on corporate campaign contributions, the New Deal dynamic is repeated, with liberals railing against the Court and conservatives voicing support for the institution of judicial review.

Conservatives may be more reluctant to tout cost-benefit analysis than they once were. But what is the alternative to cost-benefit analysis? The alternative certainly cannot be jobs analysis. Republicans have been keen to label as “job killing” practically any regulation that any agency proposes, especially those proposed by the EPA, while simultaneously knocking down cost-benefit analysis models that predict lives lost, as Romney’s statement indicates. From 2007 to 2011, the phrase “job-killing regulations” underwent a 17,550% increase in usage in U.S. newspapers (from just four appearances in 2007 to over seven hundred in 2011).¹⁹ A study by Peter Dreier of Occidental College and Christopher R. Martin of the University of Northern Iowa found that the number of stories with the phrase “job killer” increased 1,156% between the first three years of the George W. Bush administration and the first three years of the Obama administration (from 16 stories to 201 stories).²⁰ A Google search of “job killing regulations” turns up 262,000 hits.²¹

The idea of “job killing” regulations is based on a one-sided model in which regulatory benefits are completely excluded. Under this approach, it is better to be dead than unemployed, because a regulation that eliminates a job should not be adopted even if it saves a life.

Reliance on these models is also problematic because they are still in a somewhat primitive state. The models are intended to capture how different sectors of the economy interact and what effect those interactions will have on employment. But most models can look only at part of the picture—like layoffs or hiring in a particular sector—and cannot predict the dynamic, economy-wide effects of a policy on aggregate employment levels.²² Because overall employment responds to large, macroeconomic factors, individual environmental regulations will rarely have lasting effects on aggregate employment.²³ Environmental regulations are more likely to influence the geographic and

18 See Mediamatters, *Memo To Fox: Bush Criticized "Unelected" Judges* (Apr. 4, 2012), available at <http://mediamatters.org/blog/201204040018>.

19 Results were calculated by a LexisNexis search of U.S. newspapers and wires. The search term “job-killing w/1 (regulation! or rule!)” was entered for each year, with a duplication filter eliminating highly-similar results. In 2007, the phrase appeared 4 times. In 2008, the count was at 17. By 2009, it had more than doubled, to 38. The frequency of use increased dramatically in 2010, to 206 times, and then again in 2011, to 706 times. As of March 8, 2012, the phrase had appeared 78 times already this year. See also Steven Pearlstein, ‘Job-killing’ regulation? ‘Job-killing’ spending? Let’s kill this GOP canard, *Wash. Post*, Jan. 6, 2011 (calculating that the more generic phrase “job-killing” appeared over 11,000 times in news articles from 2009-2010).

20 Peter Dreier and Christopher R. Martin, “*Job Killers*” in *the News: Allegations without Verification 2* (June 2012), available at http://www.uni.edu/martinc/JobKillerStudy_June2012.pdf.

21 This search was performed on July 2, 2012.

22 INSTITUTE FOR POLICY INTEGRITY, *THE REGULATORY RED HERRING: THE ROLE OF JOB IMPACT ANALYSIS IN ENVIRONMENTAL POLICY DEBATES 12* (2012).

23 *Id.*

sectorial distribution of employment opportunities, rather than national employment levels.²⁴ The current models are better suited to identify these effects than to forecast economy-wide consequences. While this information may be useful for policymakers, it should not be mistaken for an accurate picture of the net effects of an environmental policy on employment.²⁵ And although nearly every controversial environmental policy proposed during the last several years has given rise to a debate about the possible employment effects, the studies used to support either side of the debate hardly ever address the models' limitations.²⁶

These limitations, however, are abundantly clear. A stark example can be found in the studies of two different groups that looked at the effect on employment of the Clean Air Transport Rule, dealing with the interstate transport of pollution, and the Utility MACT (which stands for Maximum Achievable Control Technology) rule, controlling hazardous air pollution from boilers. The Political Economy Research Institute at the University of Massachusetts Amherst, found that 1.46 million jobs would be gained over the next five years, whereas a study commissioned by the American Council for Clean Coal Energy, found that 1.44 million jobs would be lost over the next seven years due to the same regulations.²⁷ These two studies essentially agreed on the number; they just disagreed on the sign of the effect—a quite important factor. So when conservatives like Romney argue that the models predicting lives saved are unreliable, and that instead we should worry about jobs, one has to wonder which jobs study it is that he finds so reliable. There may well be another study that cancels it out completely.

In this connection, several pitfalls need to be understood. In April 2012, Policy Integrity released a report that examines the models used to predict the employment effects of environmental regulations. What we found was that these models, in their current state, are very crude and heavily dependent on their input assumptions.

One problem we frequently encountered in the jobs analyses we examined was that they conflated short-term and long-term unemployment. Doing so can lead to incorrect cost calculations and misleading rhetoric—the difference between them should be taken into account when determining the economic costs of layoffs. Short-term unemployment may involve minor costs for job searches and retraining, whereas long-term unemployment can have more severe effects, including long-term income and productivity effects as well as negative health consequences. Long-term unemployment can be driven by a number of factors, including inflexible wage rates, technological change, and foreign competition.²⁸ And long-term unemployment tends to be higher during periods of economic contraction. If an environmental regulation causes layoffs, that effect is likely to be worse during an economic downturn because those workers may have a harder time finding a new job.²⁹ But during an economic downturn, regulated industries might hire otherwise unemployed workers to design, manufacture, and install necessary pollution control equipment.³⁰ In such cases, where the regulatory costs are higher in some respects and lower in others, the net effect on jobs is ambiguous. Delaying implementation of a rule might not be the appropriate choice, even if one's only concern is with jobs. And delaying implementation will always mean foregoing the net social benefits that a rule would have generated in the meantime by improving environmental quality.³¹

Moreover, environmental regulations can have positive effects on a labor market. Regulation can spur demand in a local labor market by, for example, requiring facilities to retrofit pollution

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.* at 14.

²⁷ *Id.*

²⁸ *Id.* at 5.

²⁹ *Id.* at 6.

³⁰ *Id.*

³¹ *Id.*

control technology.³² Analysts and advocates on both sides of the debate should be careful to look at the whole picture and resist the temptation to cherry-pick results. And legislators should do the same when they are voting on bills that would impose across-the-board moratoria on rulemakings.³³

Finally, economic models used to predict employment effects should be appropriate to the type of regulatory effect policymakers are trying to estimate. Some models are better suited to estimating effects in a single region or industry, while others can better handle multi-sector or nationwide analysis. Models designed to understand regional or sector-specific impacts are often used incorrectly to make predictions about the nationwide, aggregate effects of regulations on employment. These models are poorly suited to that task because they do not take into account the primary factors that drive national employment levels, like aggregate demand or wage-price rigidity.³⁴

Consider, for example, companies that made mercury thermometers. For a long time, this type of thermometer was dominant in the market. But its risks were large. Mercury thermometers broke relatively easily and when they did, mercury, a hazardous liquid, spilled posing a risk to those nearby who might come into contact with it or breathe its vapors. As mercury thermometers are phased out by regulation, manufacturers of substitutes are able to expand their market. Workers who made mercury thermometers will lose their jobs, but some—perhaps most—of them will eventually shift to other companies and find new jobs, whether in the thermometer industry or elsewhere. Dynamic models take this type of transition into account and arrive at smaller job-loss numbers than static models that look at only one sector of the economy.

Jobs analysis should not replace cost-benefit analysis because it looks at only one consequence of regulation. But labor transition costs can and should be incorporated into cost-benefit analysis using standard economic principles.³⁵ The labor transition costs that cost-benefit analysis could reflect include relocation costs, retraining costs, long-term productivity effects, and any negative effects on psychological or physical health resulting from long-term unemployment. If these transition costs are substantial, they may be enough to justify altering the rule.³⁶

To some extent, it is understandable that the regulatory right is stressing economic productivity and questioning the models predicting saved human lives. Over the years, EPA has largely focused on the mortality benefits of regulation, because they tend to swamp out other benefits, like reduction in sickness. But environmental protections can have a range of other benefits that are more immediately tangible than small reductions in mortality risks for large populations. Health care costs, property values, late life illnesses that force early retirement, asthma and non-fatal heart attacks and cancer; intelligence and cognitive capacity: all are affected by environmental rules. These effects deserve far greater attention than they have received so far, in part because they provide a tangible current counterpoint to the focus on lost jobs. We do not need to wait for years to see whether the models predicting lost lives are accurate. Instead, we can see the consequences of pollution in our hospitals and in our workplaces on a regular basis.

³² *Id.* at 10.

³³ In January 2011, Representative Don Young proposed the Regulation Audit Revive Economy (RARE) Act of 2011, H.R. 213, seeking to create a two-year moratorium on rulemakings. Senator Ron Johnson introduced the Regulation Moratorium and Jobs Preservation Act of 2011, S. 1438, which would prevent agencies from taking any significant regulatory action until the national unemployment rate drops below 7.7%. Senator Warner has also started drafting a “regulatory paygo” bill, which would require that for every new regulation an agency wants to propose, it first must eliminate one existing regulation with similar economic impacts. Luke Burns, *PAYGO Proposed to Manage Agency Regulations*, REG BLOG, May 5, 2011, <http://www.law.upenn.edu/blogs/regblog/>

2011/05/paygo-proposed-to-manage-agency-regulations.html; EMILY YEHLE, *Democratic Senator Offers Sweeping Regulatory Reform Proposal*, E&E DAILY, Feb. 16, 2012.

³⁴ INSTITUTE FOR POLICY INTEGRITY, *THE REGULATORY RED HERRING: THE ROLE OF JOB IMPACT ANALYSIS IN ENVIRONMENTAL POLICY DEBATES 20* (2012).

³⁵ *Id.*; see also Jonathan S. Masur & Eric A. Posner, *Regulation, Unemployment, and Cost-Benefit Analysis*, 98 VA. L. REV. 579, 624 (2012).

³⁶ *Id.* at 9.

Consider the Clean Air Act Amendments of 1990. It is true that the Clean Air Act saves many lives every year. But it also has many other benefits. Because of the Act, there will be a significant reduction in risk by 2020. According to EPA, just based on the mitigating effect the Act has on fine particles released into the air, 17 million work days will not be lost due to illness, 180,000 people will not have come down with acute bronchitis, and 2.4 million people will not have had their asthma exacerbated.³⁷ Based on the combination of the reduction of fine particles released into the air and the reduction of ozone in the air, 135,000 people will not have to be admitted to a hospital, 120,000 people will not have to be rushed to an emergency room, and 110 million people will not have “restricted activity days.”³⁸ Based on the reduction of ozone alone, by 2020, countless school children will not have missed 5.4 million days of school.³⁹ In fact, these benefits of improved morbidity roughly equal the estimated cost of compliance with the 1990 Clean Air Act Amendment requirements, without even having to consider how many lives it saves or its ecological benefits.⁴⁰

Valuation of ecosystem services is also an important area for increased attention. Right now, our methods for assigning value to protecting ecosystems are quite primitive. Often, the most important category of value for ecosystem protection is non-use or existence value. While those factors are important, they are also quite intangible. Ecosystems provide the basic scaffolding that the rest of economic productivity is based on, such as water filtration, biodiversity, recreation, and pollination. Getting their value right is a significant challenge, but also an important opportunity for demonstrating that environmental protection can be a good investment.

A better understanding of non-mortality benefits will help to make the case that environmental protections are economically justified. In the coming years, EPA should expand its work on the non-mortality effects of its rulemakings to show how, in addition to helping us live longer, a clean environment also helps us live better.

Conclusion

Criticisms that EPA rules are an economic catastrophe will likely be with us for a long time. As long as they are, cost-benefit analysis will provide a needed counterpoint. Hopefully sometime soon, our current economic troubles will pass, and these arguments will lose some of their currency. Moderation may even become more politically fashionable. But conflict is built into our political system; contestation is at the heart of the American practice of democracy.

Cost-benefit analysis is unlikely to change that. But, by balancing a range of society interests and counting the good and the bad effects of government action, it is a tool to arrive at reasonable compromises, even in the face of profound divisions. Despite pleas to abandon the technique in favor of some purported alternative, like the precautionary principle on the left or “jobs analysis” on the right, cost-benefit analysis has proven robust in part because it provides a common ground where all interests are given weight. During a time of deep polarization, this is why cost-benefit analysis may be more relevant than ever.

³⁷ U.S. Environmental Protection Agency Office of Air and Radiation. 2011. The Benefits and Costs of the Clean Air Act from 1990 to 2020: Summary Report, Exhibit 8.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.* at 19.

