

August 25, 2017

VIA ELECTRONIC SUBMISSION

Attn: Regulatory Affairs Group, Office of the General Counsel, Pension Benefit Guaranty Corporation

Re: PBGC-2017-0009 - Regulatory Planning and Review of Existing Regulations

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law¹ respectfully submits the following comments to the Pension Benefit Guaranty Corporation (“PBGC”) regarding its obligation, pursuant to Executive Order 13,777, to evaluate existing regulations and identify some for repeal, replacement, or modification.² Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

Executive Order 13,777 directs agencies to identify regulations that “impose costs that exceed benefits” and prioritize “outdated, unnecessary, or ineffective” regulations for repeal, replacement, and modification.³ It requires agencies to seek input on identifying such regulations from interested persons.⁴ Policy Integrity submits these comments to ensure that PBGC stays focused on its mandate to identify outdated, unnecessary, ineffective, or net costly regulations for repeal, replacement, or modification and does not instead prioritize recently promulgated and overwhelmingly cost-benefit justified rules identified by industry commenters. Policy Integrity offers two main comments:

- First, retrospective review should prioritize reanalysis of regulations for which actual costs and benefits diverge significantly from predicted costs and benefits because of changing economic circumstances, new technological innovations, or emerging scientific understandings. **Prioritizing retrospective review based purely on the volume of opposition from regulated entities—without consideration of regulatory benefits—is an irrational and inefficient approach.**
- Second, PBGC should use this as an opportunity to **establish a process to review the performance of any future economically significant rules.**

¹ This document does not purport to present New York University School of Law’s views, if any.

² Exec. Order No. 13,777, 82 Fed. Reg. 12,285, 12,286 (Feb. 24, 2017).

³ *Id.* § 3(d),(f).

⁴ *Id.* § 3(e).

- Third, to the extent that other stakeholders argue for the repeal of regulations by alleging large negative impacts on employment, Policy Integrity urges reliance on well-accepted economic theory and strong evidence: **Regulations have little effect on aggregate employment or unemployment rates.**

Below, we explain each comment in turn.

I. Retrospective review should prioritize reanalysis of regulations for which actual costs and benefits diverge significantly from predicted costs and benefits because of changed circumstances—and should not rehash recent debates over massively cost-benefit justified rules.

Retrospective review is an opportunity to recalibrate regulations to improve efficiency and effectiveness. PBGC must approach the review of existing regulations with a plan for identifying appropriate candidates for such modification.

Every President since Carter has sought to identify and address inefficient existing regulations through a process of retrospective review of regulatory costs and benefits. President Trump’s Executive Order 13,777 follows this tradition by directing agencies to identify regulations for repeal, replacement, and modification that are “outdated, unnecessary, or ineffective” or that “impose costs that exceed benefits.”⁵ Executive Order 13,777 embraces past methodologies for identifying such regulations, reaffirming President Obama’s Executive Order 13,563,⁶ which called on agencies to develop plans “to promote retrospective analysis of rules that are outmoded, ineffective, insufficient, or excessively burdensome” and “to modify, streamline, expand, or repeal them in accordance with what has been learned.”⁷ It also reaffirms President Clinton’s Executive Order 12,866, particularly its call for agencies “to determine whether regulations promulgated by the executive branch of the Federal Government have become unjustified or unnecessary as a result of changed circumstances.”⁸ Thus, the procedures underlying retrospective review pursuant to Executive Order 13,777 should be consistent with those underlying past efforts.

In other words, agencies should identify net costly or otherwise outdated rules by determining whether, in light of changed circumstances, the actual benefits of the implemented rules no longer justify the actual costs, or the rules as implemented do not maximize net benefits. To prioritize such regulations for modification, PBGC must not get diverted by comments from stakeholders complaining about recently promulgated and overwhelmingly cost-benefit justified rules. Retrospective review should strive to enhance net benefits, not just to decrease compliance costs.

1. Retrospective review should prioritize reanalysis of older regulations for which actual costs and benefits diverge significantly from predicted costs and benefits.

Retrospective review is an opportunity to go back and fix some regulations that have become “outdated, unnecessary, or ineffective” due to changed economic circumstances, new technological innovations, or emerging scientific understandings. When promulgating

⁵ *Id.* § 3(d),(f).

⁶ *Id.* § 2(iii).

⁷ Exec. Order No. 13,563 § 6(b), 76 Fed. Reg. 3821 (Jan. 21, 2011).

⁸ Exec. Order No. 12,866 § 5, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

new rules, agencies make estimates about what the rules' future costs and benefits will likely be. These *ex ante* estimates typically reflect the best available data, scientific models, and economic tools. Nevertheless, *ex ante* estimates are still estimates made in the face of uncertainty. Changing economic conditions, new technological innovations, or emerging scientific understandings can cause a rule's actual costs and benefits to diverge greatly from the agency's *ex ante* estimates. Consequently, after a rule takes effect, *ex post* calculations of actual costs and benefits may reveal that the rule was poorly calibrated. A rational approach to retrospective review would identify such rules and initiate a process to modify them.

New rules are typically not good candidates for retrospective review because, in most cases, regulated entities have not yet fully implemented and adapted to the rules. For such rules, there have been no economic, technological, scientific, or other changed circumstances that shed light on the true costs and benefits of the rules. The cost-benefit analyses conducted before the rules were issued continue to reflect society's best estimates of the costs and benefits of these rules. There is nothing yet to fix; there is only industries' unwillingness to make changes necessary to implement and adapt to the rules. Eliminating such rules under the guise of "retrospective review" would be premature and irrational.

In fact, agencies should be careful not to review existing rules so early as to reduce the ability or incentive for industry to adapt. Adaptation, learning, and innovation by industry in the early years of implementation have often brought down compliance costs.⁹ Moreover, these rules are often overwhelmingly cost-benefit justified. Thus, older rules are better candidates for review because technological or other relevant changed circumstances are more likely to have occurred since the rules were issued.

2. *PBGC must not rely exclusively on the volume of complaints it receives from stakeholders to prioritize rules for review.*

Although eliminating new rules under the guise of "retrospective review" would be premature and irrational, many stakeholders are likely to encourage PBGC to do exactly that. When the Department of Commerce recently sought input from manufacturers on existing regulations, for example, the agency received many comments recommending repeal of recently issued and overwhelming cost-benefit justified rules.¹⁰ Many targeted rules had not yet been fully implemented, making them particularly poor candidates for retrospective review for the reasons discussed previously. The commenters tended to offer no new information on costs or benefits in their comments to the Department of Commerce; the majority of comments simply rehashed the same arguments and facts presented to and considered by agencies during the initial notice-and-comment rulemaking process.

⁹ See Winston Harrington, Richard D. Morgenstern, & Peter Nelson, On the Accuracy of Regulatory Cost Estimates, Resources for the Future Discussion Paper #99-18 (1999); see also OFFICE OF MGMT. & BUDGET, OMB CIRCULAR NO. A-4, REGULATORY ANALYSIS (2003) [hereinafter CIRCULAR NO. A-4].

¹⁰ See Department of Commerce, Public Comments on Impact of Federal Regulations on Domestic Manufacturing, available at <https://www.regulations.gov/docketBrowser?rpp=25&so=DESC&sb=commentDueDate&po=0&dct=PS&D=DOC-2017-0001>.

We suspect that PBGC will receive similar kinds of requests from stakeholders. Of course, public comments, including from regulated entities, should play a role in informing regulatory review. But it would waste significant resources if the retrospective review process simply provided another opportunity to rehash prior arguments. Therefore, PBGC should resist the urge to review rules solely as a result of intensive lobbying by regulated entities. A high volume of repetitive comments resulting from such lobbying should not by itself weigh in favor of conducting a retrospective review.

Instead, agencies should prioritize rules for reconsideration based on evidence of changed costs or benefits. Public comments are most useful to the extent they offer evidence of circumstances that have changed since the rules were originally promulgated. The agency must remember that the goal of Executive Order 13,777 is not the elimination of cost-benefit justified rules. Moreover, regardless of the goal of the Order, PBGC cannot abandon its statutory obligation to protect the pension benefits of nearly 44 million Americans. PBGC must keep its objectives—the goals of Executive Order 13,777 and its statutory obligations—in mind as it critically reviews requests from regulated entities.

3. Retrospective review should include a thorough and balanced review of identified rules' actual impacts, including both costs and benefits.

As discussed above, PBGC should identify rules that are ripe for retrospective review based on changed costs and benefits over time. Once it identifies promising candidates for the review, the review should include a thorough and balanced assessment of a rule's actual impacts, including both costs and benefits and distributional consequences.

Agencies should aim to follow the same best practices in their retrospective analyses as they do when conducting a regulatory impact analysis during the notice-and-comment process.¹¹ These practices include such factors as choosing an appropriate baseline¹² and identifying the proper scope of the analysis.¹³ One of the persistent difficulties in prospective cost-benefit analysis is ensuring that evaluations sufficiently address the unquantified impacts of regulation.¹⁴ Some unquantified benefits and costs may be particularly amenable to retrospective analysis, as they may be easier to identify and measure after implementation of the regulation.

II. Going forward, PBGC should create a plan to review the performance of each significant rule¹⁵ it promulgates.

Executive Order 13,777 cites existing initiatives on regulatory reform, including Executive Order 13,563,¹⁶ which states in that a well-functioning regulatory system “must measure,

¹¹ CIRCULAR NO. A-4, *supra* note 9, at 14-42.

¹² *Id.* at 15; *see also* Thomas O. McGarity & Ruth Ruttenberg, *Symposium: What We Know and Do Not Know About the Impact of Civil Justice on the American Economy and Policy: Counting the Cost of Health, Safety and Environmental Regulation*, 80 TEX. L. REV. 1997, 2039 (2002).

¹³ CIRCULAR NO. A-4, *supra* note 9, at 15.

¹⁴ *Id.* at 27 (“You should carry out a careful evaluation of non-quantified benefits and costs.”).

¹⁵ “Significance” is defined by Executive Order 12,866 § 3(f), and “economically significant” is usually understood to refer to that definition’s first clause: “Any regulatory action that is likely to . . . [h]ave an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities.”

¹⁶ Exec. Order No. 13,777, §2(a).

and seek to improve, the actual results of regulatory requirements.”¹⁷ Accordingly, rather than waiting until years after a rule has taken effect and circumstances are already changing to look back at the rule’s effectiveness, agencies should look ahead when drafting each new rule toward addressing uncertain costs and benefits over time. PBGC—and all federal agencies—should include, in the preamble for each new “economically significant”¹⁸ regulation, a prospective plan to collect sufficient information on the rule’s performance under previously defined metrics of success to permit an informed assessment of the rule’s effectiveness and design over time.

In particular, for each new economically significant rule, agencies should set a timeline for future retrospective reviews and define the goals, metrics, and milestones against which the rule’s success will be evaluated. Agencies should also be rigorous in identifying sources of uncertainty in their new regulatory actions. Agencies should then develop plans to collect information on the rule’s performance under the metrics—ideally, the actual, *ex post* costs and benefits of the rule (both quantitative and qualitative)—to permit an informed assessment of the rule’s effectiveness and design. After an agency conducts its retrospective review at the pre-determined time, it should issue a reasoned statement on whether the retrospective review warrants any regulatory changes.

These guidelines for retrospective review will place new burdens on agencies’ resources. However, the information generated from such retrospective reviews would have the potential to facilitate future regulatory analyses by informing *ex ante* predictions of costs and benefits of other rules, thereby making it easier for agencies to address uncertainty. In fact, this recommendation is one of six consensus recommendations from a roundtable of former OIRA administrators (six from Republican administrations, two from Democratic administrations) convened by Policy Integrity in August 2016.¹⁹

III. Regulations have little effect on aggregate employment or unemployment rates.

If commenters submit PBGC rules as costly due to alleged “job-killing” effects, note that well-accepted economic theory and strong evidence indicate otherwise. Policy Integrity submits the following findings, detailed in an issue brief (appended to these comments and available online²⁰):

- (1) Regulations have little effect on aggregate employment or unemployment rates.
- (2) While regulatory or deregulatory action may temporarily create labor demand or lead to temporary layoffs, such actions do not typically affect long-term job growth across all sectors and regions.
- (3) Job analysis models can easily be manipulated to predict either job losses or

¹⁷ Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011), §1(a).

¹⁸ *Supra* note 15.

¹⁹ See Jason A. Schwartz & Caroline Cecot, Strengthening Regulatory Review: Recommendations for the Trump Administration from Former OIRA Leaders (2016), available at <http://policyintegrity.org/publications/detail/strengthening-regulatory-review>.

²⁰ See Policy Integrity, “Does Environmental Regulation Kill or Create Jobs?” (2017), http://policyintegrity.org/files/media/Jobs_and_Regulation_Factsheet.pdf.

gains, and therefore should not be relied upon to prioritize regulatory targets for retrospective review.

(4) Blocking or repealing regulations solely based on job effects without consideration of broader benefits and costs is bad economics, bad policy, and bad law.

(5) Regulations are poor tools for addressing the negative impacts from jobs shifting from one sector to another.

Respectfully,

Caroline Cecot

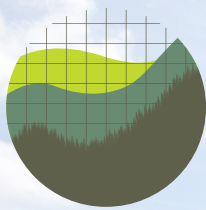
Jason A. Schwartz

Iliana Paul

Institute for Policy Integrity

Attached:

- (1) Policy Integrity, "Does Environmental Regulation Kill or Create Jobs?" (2017), http://policyintegrity.org/files/media/Jobs_and_Regulation_Factsheet.pdf.



Does Environmental Regulation Kill or Create Jobs?

FEBRUARY 2017

Government regulation and deregulation are often framed as extensions of employment policy. Advocates of all stripes portray environmental regulation either as “killing” jobs or as the primary driver behind “green job” growth. This misleading framing is not supported by economic theory or evidence, and it distracts from policies that could actually create economic security for workers in the U.S. economy. Job impact models provide limited economic context and are easily manipulated; these limitations should be considered in any debates about regulation and jobs.

Regulations have little effect on aggregate employment or unemployment rates.

There is no consistent evidence that regulations contribute to long-term changes in the unemployment rate.¹ While some regulations could shift jobs from one sector to another, these sectoral or regional layoffs are often accompanied by hiring in other areas.² “Deregulation” presents the same issue: while some may claim extreme growth in jobs from removing regulations, any job growth in that named sector will likely be paired with job losses in another sector or region.

The best predictions by agencies estimate that regulations have very little effect on jobs. And any job effects tend to be dwarfed by the overall effects on public welfare. For example, EPA finalized a rule in 2011 to curb upwind sources from impairing air quality in downwind states. The agency estimated a onetime increase of +2,230 compliance-related job-years, equivalent to creating 2,230 one-year positions or 1,115 two-year positions. The

annual net effect on the regulated industry was estimated at –1,000 to +3,000 jobs, with a central estimate of +700. By comparison, EPA estimated the rule would generate between \$120 and \$280 billion in annual net benefits, including up to 34,000 premature deaths avoided per year.³ Note that this estimation includes short-term employment (compliance-related job-years) and longer-term employment.

While a regulatory or deregulatory action may create labor demand temporarily, it often does not affect long-term job growth.

For instance, the State Department estimated that construction of the Keystone XL pipeline would create 10,000 temporary jobs lasting only 4-8 months each,⁴ and only 35 permanent jobs;⁵ the project would not have a significant impact on long-term employment. Some advocates of the pipeline insist that 42,100 jobs would result from the project,⁶ but provide no clarification on how many would be permanent, lasting jobs that would create economic security for workers. Similarly, President Trump recently claimed that 28,000 jobs would result from the project, without mention of how many of these jobs would be permanent.⁷

Job analysis models can easily be manipulated to predict either job losses or gains.

Economists use several types of models to estimate job impacts, and **most models rely on assumptions that drastically affect the results.** Input-output models use a number of simplifying assumptions to allow researchers to focus on employment results in particular sectors or regions. **Ideally, data going into these models would be collected from detailed surveys of manufacturers,⁸ but in fact such data is often built around shortcuts that can undermine their reliability.⁹ This type of modeling tends to overstate employment effects,¹⁰** as it assumes prices are constant and does not reflect long-term, structural changes to the economy like globalization and industrialization.¹¹

Computable General Equilibrium models (CGEs) use the same data as input-output models, with all the attendant reliability issues. Unlike input-output models, CGEs allow for price changes and more complex interactions among economic sectors.¹² This complexity, while depicting a more accurate picture of the economy, also makes the model less transparent to a lay or policy audience. Since CGEs often do not explicitly define all their assumptions, the models are frequently characterized as “black boxes.”¹³ **Small tweaks to these often undisclosed assumptions can have large effects on results, allowing advocates to cherry-pick a set of assumptions in order to produce a result they want.**

In an advocacy context, job impact analyses using these models can tell very different stories, often depending on the narrator. **In one revealing example, the American Coalition for Clean Coal Electricity estimated that two EPA rules on power plant emissions would trigger a 1.4 million job loss; meanwhile, using a different model and different assumptions, the Political Economy Research Institute predicted the same two rules would generate a 1.4 million job gain.¹⁴** EPA estimated the total job impact of the two rules to be relatively small: a combined total of fewer than 50,000 one-time job gains and fewer than 9,000 jobs created annually.¹⁵

Both of these studies looked at limited parts of our dynamic economy. **Modeling layoffs or hiring in a particular sector cannot accurately capture the dynamic, economy-wide effects of a policy on aggregate employment levels.**

Because overall employment responds to large, macroeconomic factors like inflation and monetary policy, **individual environmental regulations will rarely have lasting effects on aggregate employment.**¹⁶

Models can tell us some information about redistribution in the workforce.

Environmental regulations are more likely to influence the geographic or sectoral distribution of employment opportunities, rather than national employment levels. Current employment models are better suited to measuring these effects than forecasting economy-wide consequences.¹⁷ Even if aggregate, economy-wide demand for labor is not affected by a rule, a policy could expand employment opportunities in specific markets and have particularly significant benefits for workers—especially in areas in which the regional or local economy is depressed. Models can also show the specific sectors and regions experiencing layoffs due to economic shifts, helping identify where additional policy is needed to support those workers.¹⁸ Such considerations need to be properly incorporated into the broader, existing mandates for regulatory impact analysis.¹⁹

Blocking regulation solely based upon job effects is bad economics, bad policy, and bad law.

Effects on employment are often small compared to the net social benefits of regulation. Well-designed rules can save the public money by preventing negative impacts before they happen, rather than mitigating expensive impacts after they happen. **The health benefits of an environmental rule, such as avoiding early mortality, are normally much larger than either the costs for industries to comply with the rule or the potential job impacts.**²⁰ For example, EPA proposed controls for hazardous air pollutants, such as mercury, from industrial boilers in 2010. EPA estimated the rule would generate between \$25.2 and \$65.5 billion in annual net benefits, including up to 8,000 premature deaths avoided per year. By comparison, the agency estimated a cumulative, net employment effect on the regulated industry of between -4,000 and +8,300 jobs, with a central estimate of +2,100.²¹

Even in cases like these, job impacts are important for the individuals affected and should be given appropriate weight in the decisionmaking process. Avoiding discussion of the public benefits of a regulation does not help these individuals, who also must bear the burden of under-regulation.

Regulations are poor tools for addressing the negative impacts from jobs shifting from one sector to another.

Other policies, like supporting technical job training for growing areas of the economy and tax policy that promotes economic growth, are tools that can help address distributional effects.²² Repealing or blocking regulation solely based on potential job effects and ignoring their massive benefits to the public will neither save taxpayers money nor help U.S. workers.

Laws require agencies to evaluate a range of regulatory advantages and disadvantages, and not focus disproportionately on a single factor like layoffs and hirings. Agencies are required by various statutes to create rules advancing their policy missions. Some of these statutes require extensive cost-benefit analysis. Some statutes

prohibit consideration of costs. Other statutes and judicial rulings encourage agencies to roughly weigh advantages and disadvantages. No statute, however, instructs agencies to avoid issuing even massively benefit-justified new regulations to prevent shifting any jobs from one sector to another.

When presented with claims about how regulation affects jobs, Congress and the media must ask these questions to understand the context of the claims.

What are the inputs and assumptions used in the model?

All models make simplifying assumptions. Changing the underlying assumptions of a model can dramatically change model results. **Any analysis that does not make its modeling choices public should be questioned**, and a request for that information should be made.

Do small changes in the above assumptions create large differences in outcomes?

One way to communicate the uncertainty associated with job impact analyses is to determine how sensitive model results are to any change in the model structure. A good analysis will show how model results change when the structure or underlying assumptions of a model change. This helps determine how robust (or reliable) the results of the model are, which aspects of the model are most strongly driving results, and what errors may exist in the model. **If sensitivity analysis is not conducted or is incomplete, this calls into question the results reported by the model.**

Does the model distinguish between the impacts of short-term and long-term unemployment?

When a worker quickly finds a new position after a layoff, it creates different stress than if the worker remains unemployed for a long time. Models determining the economic costs of layoffs should account for this difference between short-term and long-term unemployment. Short-term unemployment may create relatively minor costs for job search, relocation, and retraining. Long-term unemployment, by contrast, may entail more substantive costs, such as more intense retraining, long-term income and productivity effects, and negative health consequences. **Conflating these two distinct types of consequences in a job impact analysis leads to incorrect cost calculations and misleading rhetoric.**

Does the model clarify if new jobs are long-term or temporary?

Advocates may justify a project by declaring it will create several thousand jobs. **As in the Keystone Pipeline example, those several thousand jobs may last only a few months each and provide little economic security for workers.** If a job estimate is presented in “job years”, remember that this number presents an aggregate amount of labor demand, and likely temporary labor, rather than a number that can be linked to longer-term economic security for a set number of workers.

Has the model gone through independent review?

Ideally, analyses are peer reviewed or are at least replicable. Reports that have undergone peer review are usually more reliable than those that have not, if only because their assumptions and underlying data are likely to have been made available and tested. Requests to view the underlying information that goes into job analyses should be made in all cases.

What are the regulation's broader costs and benefits?

Environmental protection has a wide range of economic costs and benefits, including public health improvements and expenditures on pollution control technology. Regulation can also induce hiring and cause layoffs. These effects should be considered within the context of a complete cost-benefit analysis of a proposed rule. **In many cases, effects on employment are likely to be relatively small compared to both public health benefits and compliance costs.**

Endnotes

- ¹ See Hafstead, M. A., & Williams III, R. C., *Unemployment and Environmental Regulation in General Equilibrium*, NATIONAL BUREAU OF ECONOMIC RESEARCH (May 2016), available at <http://www.nber.org/papers/w22269.pdf>.
- ² INSTITUTE FOR POLICY INTEGRITY, THE REGULATORY RED HERRING: THE ROLE OF JOB IMPACT ANALYSES IN ENVIRONMENTAL POLICY DEBATES 8 (April 2012), available at http://policyintegrity.org/files/publications/Regulatory_Red_Herring.pdf [hereinafter RED HERRING].
- ³ Livermore, M. and Schwartz, J., "Analysis to Inform Public Discourse on Jobs and Regulations," In: C. Coglianese, A. Finkel, and C. Carrigan, eds., *Does Regulation Kill Jobs?* Philadelphia: Pennsylvania Press. 242 (2014), available at <http://muse.jhu.edu/chapter/1071436> [hereinafter Jobs and Regulation].
- ⁴ DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT: KEYSTONE XL PROJECT, US STATE DEPARTMENT 5-6 (March 2013), available at <https://web.archive.org/web/20170203131326/https://keystonepipeline-xl.state.gov/documents/organization/205612.pdf>.
- ⁵ *Id.*, at 24.
- ⁶ *The Keystone XL Pipeline*, INSTITUTE FOR 21ST CENTURY ENERGY, US CHAMBER OF COMMERCE, available at <http://www.energyxxi.org/keystone-xl-pipeline>.
- ⁷ Osita Nwanevu, *Trump's Greenlighting of Keystone and DAPL Is a Power Play That Won't Create Jobs*, SLATE (Jan. 2017), available at http://www.slate.com/blogs/the_slat-est/2017/01/26/trump_is_getting_talking_points_from_fox_news_again.html.
- ⁸ Peter Berck & Sandra Hoffman, *Assessing the Employment Impacts of Environmental and Natural Resource Policy*, 140 ENV'T & RES. ECON. 133, 136 (2002) [hereinafter Berck and Hoffman].
- ⁹ See Harry W. Richardson, *Input-Output and Economic Base Multipliers: Looking Backward and Forward*, 25 J. REGIONAL SCI. 607 (1985).
- ¹⁰ Berck & Hoffman, *supra* note 8, 144-45.
- ¹¹ RED HERRING, *supra* note 2 at 12.
- ¹² J. Xie & S. Saltzman, *Environmental Policy Analysis: An Environmental Computable General Equilibrium Approach for Developing Countries*, 22 J. POL'Y MODELLING 453 (2000).
- ¹³ Arvind Panagariya & Rupa Duttagupta, *The 'Gains' from Preferential Trade Liberalization in the CGE Model: Where Do They Come From?* 3 (Working Paper, 2001), available at <http://www.columbia.edu/~ap2231/technical%20papers/cge-critique.pdf> (noting that in the context of trade liberalization, "Unearthing the features of CGE models that drive [their results] is often a time-consuming exercise. This

is because their sheer size, facilitated by recent advances in computer technology, makes it difficult to pinpoint the precise source of a particular result. They often remain a black box. Indeed, frequently, authors are themselves unable to explain their results intuitively and, when pressed, resort to uninformative answers.”)

¹⁴ James Heintz et al., POL. ECON. RES. INST. & CERES, *New Jobs—Cleaner Air: Employment Effects under Planned Changes to the EPA’s Air Pollution Rules* (2011); NERA ECON. CONSULTING & AM. COALITION FOR CLEAN COAL ELECTRICITY, *Proposed CATR + MACT* (2011).

¹⁵ Combining estimates for EPA’s Interstate Transport Rule (gains of 2,200 one-time jobs and 700 annual jobs) and Utility Mercury and Air Toxics Rule (gains of 46,000 one-time jobs and 8,000 annual jobs). See EPA, REGULATORY IMPACT ANALYSIS OF THE PROPOSED TOXICS RULE: FINAL REPORT (2011), available at http://www.epa.gov/ttn/atw/utility/ria_toxics_rule.pdf and OFFICE OF AIR AND RADIATION, EPA, REGULATORY IMPACT ANALYSIS FOR THE FEDERAL IMPLEMENTATION PLANS TO REDUCE INTERSTATE TRANSPORT OF FINE PARTICULATE MATTER AND OZONE IN 27 STATES (2011).

¹⁶ RED HERRING *supra* note 2 at 11.

¹⁷ RED HERRING *supra* note 2 at 11.

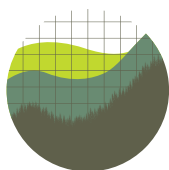
¹⁸ RED HERRING *supra* note 2 at 9.

¹⁹ RED HERRING *supra* note 2 at 6.

²⁰ Jobs and Regulation, *supra* note 3 at 241.

²¹ Jobs and Regulation, *supra* note 3 at 242.

²² Jobs and Regulation, *supra* note 3 at 251.



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