Table 8.2
Annualized Cost of the Proposed and Final CWIS Rule

Source: EPA 2002a, 2004b.

	Proposed regulation (2001$)	Final regulation (2002$)
One-time costs	**121.3**	**176.1**
Capital costs	83.5	124.5
Connection outage	0.0	32.6
Initial permit application	37.8	17.0
Pilot study	—	2.0
Recurring costs	**61.1**	**73.5**
Operations and maintenance	19.0	30.6
Monitoring, recordkeeping, and reporting	34.1	30.7
Permit renewal	8.0	12.2
Total annualized costs	**182.4**	**249.5**

In fact, between the proposed and final rules, EPA changed the decisionmaking assumptions in the cost estimation model. In the proposed rule, EPA assumed that the plant was a cost minimizer. In the final rule, the agency recognized that there would be some uncertainty regarding the exact performance at a particular site, and that, at many sites, more than one technology might be under consideration. In modeling the technology choice at those sites, EPA selected the technology expected to perform the best, rather than the least-cost technology.

Moreover, the best performing technology concept, when necessary to apply, relied on assigning technologies about a median cost, with some choices above and below. Therefore, for each model facility (or intake), in order to ensure that the technology on which costs were based would in fact achieve compliance at that model site, the agency could not rely on a one-size-fits-all, least-cost approach.[8]

The technologies added with the NODA were high-cost, high-performance technologies that would very likely achieve compliance at every site. The addition of this element of performance uncertainty into the model ensured that these high-cost technologies would perforce be selected at some plants. The change in modeling explains why capital and operating costs increased—and by approximately the same percentage. It also explains why the costs associated with permitting, recordkeeping, and monitoring declined because the amount of proof that the technology would actually work required by EPA was much lower for the added technologies.

Quantifying I&E Losses and the Effects of the CWIS Rule

Although EPA has always produced estimates of the costs of its regulations, the requirement to produce benefit estimates originated with RIAs. In principle, the benefit study must show how the regulation will affect the physical and biological environment, it must quantify those changes, and it must estimate in monetary units how much people value those changes. However, some categories of benefits put forward often resist the final valuation step, and some cannot even be quantified, at least given present methods and data. For the CWIS rules, the claims for these nonmonetized benefits are unusually large relative to the monetized benefits.

The CWIS rule is supposed to generate benefits by reducing impingement mortality and entrainment of aquatic species. Thus, EPA's task in the RIA is (a) to explain quantitatively how the regulation will reduce the mortality of species affected by CWIS I&E and (b) to estimate the welfare effects of these changes—in other words, estimate the willingness to pay.

To demonstrate (a), Chapter 4 of the Technical Development Document (TDD) (EPA 2002b) presented data on experiments at selected power plants around the United States showing that impingement mortality was substantially reduced by the installation of each of the recommended technologies. Total entrainment was also reduced, although the evidence base was smaller and more variable. In addition, EPA had little information on entrainment mortality. In the proposed regulation, EPA assumed that entrainment mortality was 100 percent. This assumption was a holdover from an early guidance document issued by the agency in 1977 to guide permit writers in the absence of a regulation. It was also the assumption used in the permitting programs of at least 12 states. After the proposed rule appeared, this assumption was challenged by the electric utilities, many of which presented studies of entrainment mortality that purported to show that it was often less than 100 percent. Prior to issuing the final rule, EPA reviewed 37 such entrainment survival studies and concluded that they were so variable in species covered, quality, and approach, that they at best only had local validity (Regional Studies Chapter A7) (EPA 2004c). For the calculation of national benefits, EPA disregarded these studies and continued to assume 100 percent entrainment mortality.

By reducing the mortality of aquatic species, the CWIS rule is designed to lead to healthier aquatic ecosystems with larger populations of valued fish and shellfish. Although mature individuals of these primary species are too large to be directly affected by CWIS, fishing yields are affected by losses to the young of those species and to the forage species that comprise their diet. EPA developed two simple models to relate losses of immature primary species and forage species to reductions in yield or future production of primary species. These models used a yield-per-recruit (YPR) approach to modeling fish populations. The models assumed that the survivor function—that is, the probability that an individual of a species would survive from age one to age two—was independent of the population density of that species, resulting in a constant yield of mature fish for any recruit of a given age. The procedure for relating forage species was somewhat more involved because it took into account the importance of various forage species in the diet of the primary species and the conversion of biomass from one to the other. Table 8.3 shows EPA's expected reductions in I&E by region, as well as the improvements in biological endpoints. EPA reported the results in three metrics, first converting mortality at each life stage to "age one equivalents," which were in turn converted to forgone fishery yield and forgone biomass production.

During the rulemaking process, EPA convened several peer-review panels to examine various aspects of the Phase II rule. One of the panels was meant to peer review EPA's biological model. The YPR model came under some criticism, both internally and from the panel, because its linearity assumption disregarded the possibility of *density dependence*, which holds that the probability of survival is a function of the density of the species in the water body and, therefore, in the current context, I&E mortality (e.g., *see* Newbold and Iovanna 2007a, 2007b). EPA used the model nonetheless, adding a disclaimer that the YPR model was most suitable to the case when I&E losses constituted a small part of total mortality. And indeed, the peer-review committee noted that the most serious issue with the biological modeling was the inadequate empirical data on population and population dynamics.

Table 8.3
Expected Reduction in I&E, Final Rule

Source: Economic Benefits Analysis Chapter C3, Table C3-1 (EPA 2004d).

Region	Reductions in impingement	Reductions in entrainment
California	31%	21%
North Atlantic	44	29
Mid-Atlantic	54	48
South Atlantic	44	17
Gulf of Mexico	59	32
Great Lakes	52	40
Inland	47	16

Table 8.4
Summary of Estimated CWIS Net Benefits, Final Rule (Exclusive of Nonuse Benefits)

Source: Economic Benefits Analysis Tables D1-4, C3-A-1 (EPA 2004d).

Region	Commercial	Recreation	Total use benefits	Costs	Net use benefits
California	$0.5	$2.5	$3.0	$31.7	($28.7)
North Atlantic	$0.1	$1.4	$1.4	$13.3	($11.9)
Mid-Atlantic	$1.7	$43.4	$45.0	$62.6	($17.5)
South Atlantic	$0.2	$6.9	$7.1	$9.0	($1.9)
Gulf of Mexico	$0.7	$6.2	$6.9	$22.8	($15.9)
Great Lakes	$0.2	$14.0	$14.1	$58.7	($44.6)
Inland	NA	$3.0	$3.0	$170.1	($167.2)
Total	**$3.5**	**$79.3**	**$82.9**	**$389.2**	**($306.3)**

Monetary Benefits

Having estimated the biological losses from CWIS, to value these avoided losses, EPA considered five categories of benefits. A summary of the kinds of items in each category, data needs, and approaches is given in Table 8.5. Although five categories were considered, benefits were actually monetized in only two: commercial and recreational fisheries.

Direct use benefits for market goods. The benefits of commercial fishing to producers and consumers are referred to as direct use benefits for market goods. EPA's analysis of the affected fisheries markets in Chapter 10 of the Regional Analysis (EPA 2004c) found that the reduced I&E losses would result in small increases (between 0.03 and 2.99 percent) in harvests in the six regions. EPA asserted that these increases in output would result in negligible changes in prices, so that the benefits to consumers would be zero. Thus, EPA's analysis focuses on benefits to producers only. To determine the commercial fishing losses attributable to I&E, EPA assumes proportionality. Suppose S is the total stock of a harvested species and M is the production lost to I&E. If kS is the amount

Table 8.5: Benefit Categories

DIRECT USE, MARKETED GOODS		
■ Increased commercial landings ■ Fishing tournament with entry fee and prizes	■ Estimated change in landings of specific species ■ Estimated change in total economic impact	■ Market-based approach using data on landings and the value of landing data from the National Marine Fisheries Service (NMFS) ■ Based on facility-specific I&B data and ecological modeling ■ Based on available literature
INDIRECT USE, MARKET GOOD		
Increase in market values: ■ Equipment sales, rental, and repair ■ Bait and tackle sales ■ Increased consumer market choices ■ Increased choices in restaurant meals ■ Increased property values near water ■ Ecotourism (charter trips, festivals, other organized activities with fees such as riverwalks)	■ Estimated change in landings of specific species ■ Relationship between increased fish/shellfish landings and secondary markets ■ Local activities and participation fees ■ Estimated numbers of participating individuals	■ Not estimated for the final Section 316(b) rule analysis due to data constraints
DIRECT USE, NONMARKET GOODS		
Improved value of a recreational fishing trip: ■ Increased catch of targeted/preferred species	■ Increased incidental catch ■ Estimated number of affected anglers ■ Value of an improvement in catch rate	■ Regional RUM analysis ■ Benefit transfer (inland region)
Increase in recreational fishing participation:	■ Estimated number of affected anglers or estimate of potential anglers ■ Value of an angling day	■ Regional RUM analysis (not estimated for the California and inland regions)
INDIRECT USE, NONMARKETED		
Increase in value of boating, scuba-diving, and near-water recreational experience: ■ Enjoying observing fish while boating, scuba-diving, hiking, or picknicking ■ Watching aquatic birds fish or catch aquatic invertebrates	■ Estimated number of affected near-water recreationists, divers, and boaters ■ Value of boating, scuba-diving, and near-water recreational experience	
Increase in boating and near-water recreational participation:	■ Estimated number of affected boating and near-water recreationists	■ Value of a near-water recreational experience
Increase in nonuse values: ■ Existence (stewardship) ■ Altruism (interpersonal concerns) ■ Bequest (interpersonal and intergenerational equity) motives ■ Appreciation of the importance of ecological services apart from human uses or motives (e.g., eco-services interrelationships, reproductive success, diversity, and improved conditions for recovery)	■ I&B loss estimates ■ Primary research using stated preference approach (not feasible within EPA constraints) ■ Applicable studies upon which to conduct benefit transfer	■ Site-specific studies or national stated preference surveys ■ Benefit transfer, including meta-analysis of applicable studies ■ Restoration-based values of common and/or endangered species

Source: EPA 2004c

harvested each year, then kM is the amount lost to I&E. Dockside prices are applied to this quantity to get the revenue losses resulting from I&E for a species.

Chapter 10 of the Regional Analysis (EPA 2004c) contains a table summarizing the results of four studies containing estimates of producer surplus in nine fisheries markets. In these studies, producer surplus ranges between 0 and 37 percent of total revenue.[9] In converting revenues to surplus, EPA uses these results to bracket surplus as 0 to 40 percent of revenue.

Direct use benefits for nonmarket goods. To estimate the enhancement in recreational benefits associated with the rule, EPA estimated a set of econometric models, including a random utility model to relate recreation site characteristics and travel costs to an individual's probability of visiting the site. This model predicts the average utility of the site. A second model estimates trip frequency as a function of this average utility plus individual characteristics. The main data source is National Marine Fisheries Service.

Indirect use benefits. Indirect use benefits are those welfare improvements that accrue to individuals who benefit from the enhancement of the fishery without enjoying the fish or the enhanced fishing opportunities. For example, birdwatchers might benefit if the fishery attracts more birds to the site. Another example is provided by increased populations of forage fish, which are not consumed directly, but which contribute to the primary stock. Thus, indirect use benefits can be either recreational or commercial.

Nonuse benefits. Nonuse benefits must be estimated by stated preference methods. EPA considered commissioning its own survey to elicit nonuse benefits of I&E losses, but the agency was not able to secure the required approval from OMB. EPA then attempted to use benefit transfer methods to apply studies of nonuse values at particular sites, but the analysts were uncomfortable scaling up to a national benefit level. Therefore, EPA decided not to estimate nonuse benefits.

Summary of monetary benefits. Table 8.4 shows the direct commercial and recreational benefits estimated for the Phase II rule and compares them to the costs. As shown, costs exceed benefits by about a factor of five. Recall that benefits are monetized for only two of the five categories.

The Legal Challenge

After the final rule was issued in 2004, it was challenged by states, environmental groups, and advocates for the utility industry in the U.S. Court of Appeals for the Second Circuit. This court had also heard the appeal of the Phase I rule, so it was already well educated on the substance of the rule and the situation. The state and environmentalist arguments were similar in asserting that EPA did not comply with the requirements of the CWA and in several ways wrote regulations that gave far too much discretion to utility plants in how to comply with the standard. They also argued that EPA made changes in the final rule that were not supported by the docket. The most important utility industry arguments were as follows: CWA Section 316(b) does not apply to existing facilities; the agency did not justify its definition of AEI or its assumption of zero entrainment survival; and the requirement of evaluation of qualitative nonuse benefits in site-specific cost–benefit studies was improper. The individual appeals were merged into a single case, argued on June 8, 2006, and decided on January 25, 2007 (*Riverkeeper, Inc. et al. v. EPA*).

The result was a clear win for the states and the environmental groups. Most of the aspects of the rule most troubling to environmentalists—which consisted of most of the rulemaking innovations identified and discussed above—were either rejected outright or remanded to EPA for further clarification, whereas the industry arguments found little favor with the court. To begin, the court opinion indicated that the use of cost–benefit analysis by EPA in this rule was an incorrect reading of the statute. The BTA performance standard precluded the balancing of benefits and costs, and indeed the court stated that the only legitimate use of cost information in this rule was to determine whether the cost of meeting the performance standard was something the industry could "reasonably bear." With that in mind, the court went on to observe that several utility plants did have closed-cycle cooling, and EPA's failure to identify that technology as the BTA could not be based on a cost–benefit test, but rather on what the industry can reasonably bear. It remanded this part of the rule to EPA to clarify its reasoning on this point.

One of the arguments made by the environmental groups was that the use of ranges for performance standards was impermissibly vague; these groups asked the court to require a point standard. Although the court sympathized with EPA's position that the mortality ranges were often site-specific and in any case not fully within the control of the plant, it required EPA to tighten up the rule so that a plant could not get away with achieving the minimum performance in the range when more could have been done. The key point was that the plant should do its best, not the minimum.

The court also rejected the use of restoration as a compliance alternative, ruling that restoration was impermissible "compensation" for environmental impacts, rather than "minimization," and that, in any event, restoration was not a technology as defined in the statute.

Finally, the court remanded the site-specific compliance alternatives—the cost–cost test and the cost–benefit test. The latter was eliminated for the same reasons as the more general cost–benefit tests in the rule. The former failed in part because the agency changed the basis of calculating costs in the final rule, violating the procedural requirements of informal rulemaking by giving inadequate opportunity for comment.

Since this decision, EPA has had the following statement on its Section 316(b) website:

- EPA is suspending the Cooling Water Intake Structure Regulations for existing large power plants. This suspension is in response to the 2nd Circuit Court of Appeals decision in *Riverkeeper, Inc., v. Environmental Protection Agency.*
- EPA is still studying the court decision and has not yet decided how to revise the rule to comply with its requirements. Also, the industry petitioners have appealed the decision of the 2nd Court of Appeals to the U.S. Supreme Court.

Conclusion

Few types of regulation resist the use of cost–benefit analysis as much as TB regulation does. Such regulation requires EPA to identify a technology that meets some concept of "best" performance, a concept that is ordinarily established in the legislation. The agency then must set a performance standard for all users that achieves the performance of the designated technology, regardless of costs, the environmental improvements expected, and the value of those improvements. This ap-

proach is the antithesis of cost–benefit analysis, for which cost, environmental improvement, and value are very important.

EPA justified its attempts to go beyond the usual definition of TB standards by statutory language that called for minimization of adverse environmental impact. The agency pointed out the difficulty of defining performance standards without mention of I&E mortality, which in any case were highly variable depending on species and site characteristics. These efforts were to no avail as the court struck down virtually all of the features of the regulation that allowed plants more flexibility than the limited amount usually permitted by TB standards.

Even without the TB requirement, this regulation illustrates the great difficulty of basing regulatory decisions on the likely consequences because the knowledge base for determining those consequences was sadly deficient. This showed up in both the quantification of the physical effects of the regulation and the valuation of those effects. EPA's YPR model for linking I&E mortality to population effects was exposed in the ecological peer review as very questionable. And, without a comprehensive ecological model taking into account losses to both forage and primary species, there was no way to account for the interaction of I&E effects on both food supply and juveniles of primary species. As a result, EPA's benefit studies only included direct use benefits—and those were based on an ecological model that EPA's own peer review had called into question. Nonuse benefits were considered but abandoned when OMB refused EPA permission to conduct a survey of nonuse benefits.

All of this is not to say that a conventional TB standard would perform any better. It is difficult to determine whether this pair of court decisions—first to require EPA to write effluent guidelines for CWIS and then to limit the flexibility of plants in complying—improved matters or made them worse.

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Notes

1. 33 U.S.C. Ch. 26.

2. Sections 301 and 306 discuss the regulatory requirements for existing and new point sources of pollution, respectively.

3. Supporting documentation prepared by EPA for the rule can be found in the *Federal Register* notices for the proposed rule (67 FR 17121, April 9, 2002), the final rule (69 FR 41576, July 9, 2004), and a notice of data availability (68 FR 13522, March 19, 2003), which appeared during the comment period and contained information on additional compliance options available to regulated plants. In addition, the proposed and final rules were each supported by three technical reports prepared by the agency and its contractors. These are the Technical Development Document (TDD), which describes the alternative technologies for controlling impingement and entrainment and provided examples of applying those models to plants in several settings. The TDD also contains the micro-level compliance cost models. The Regional Analysis (RA) defines relevant outcome measures, provides information on the effects of the estimates on impingement mortality and entrainment in the baseline and with the technology options, and describes the micro-level benefit estimation studies. Finally, the Economic and Benefits Analysis (EBA) aggregates site-specific estimates of the benefits and costs of the rule and determines net benefits. These documents can be found on the Web at www.epa.gov/waterscience/316b/phase2/.

4. EO 12866 requires the rulemaking agency to submit a draft of the proposed rule to OMB for review. If OMB's review raises issues that cannot be resolved by negotiation between OMB and the issuing agency, the matter is re-

ferred to the president. If an issue cannot be resolved either by agency agreement or presidential intervention, the rulemaking agency cannot issue a proposed rule in the *Federal Register.*

5. EPA (2003), Phase II Cooling Water Intake Structures Proposed Rule: Notice of Data Availability (NODA). 68 FR 13522. March 19.

6. The development document also describes a dry cooling option, which works like a car radiator and essentially cuts water consumption to zero. However, EPA did not include dry cooling as a compliance option after finding it to be too costly.

7. Interestingly, the alternatives added by the NODA appeared to be more in line with the conventional meaning of TB standards. They defined compliance based on technological performance entirely; biological effects were not relevant.

8. EPA 2004b at 41650.

9. Another table providing information on numerous studies of normal profit rather than producer surplus (i.e., they do not include owners' opportunity costs) shows a much wider range of values for this ratio.

References

U.S. Environmental Protection Angency (EPA). 2002a. National Pollutant Discharge Elimination System—Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities; Proposed Rule. Office of Water. *Federal Register* 67: 17121, April 9.

———. 2002b. *Technical Development Document for the Proposed Section 316(b) Phase II Existing Facilities Rule.* EPA 821-R-02-003. Office of Water, April 2002. Washington, DC: EPA.

———. 2003. Phase II Cooling Water Intake Structures Proposed Rule: Notice of Data Availability (NODA). *Federal Register* 68: 13522, March 19.

———. 2004a. *Technical Development Document for the Final Section 316(b) Phase II Existing Facilities Rule (Final). EPA 821-R-04-007.* Office of Water, February 12. Washington, DC:EPA.

———. 2004b. National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities; Final Rule. *Federal Register* 69: 41576, July 9.

———. 2004c. *Regional Studies, Phase II CWIS Final Rule.* Office of Water. Washington, DC: EPA.

———. 2004d. *Economic and Benefits Analysis for the Final Section 316(b) Phase II Existing Facilities Rule.* Washington, DC: EPA.

Newbold, Stephen C., and Rich Iovanna. 2007a. Ecological Effects of Density-Independent Mortality: Application to Cooling-Water Withdrawals. *Ecological Applications* 17(2): 390–406.

———. 2007b. Population Level Impacts of Cooling Water Withdrawals on Harvested Fish Stocks. *Environmental Science and Technology* 41: 2108–2114.

Riverkeeper et al. v. U.S. EPA, U.S. Court of Appeals, 2nd Cir., Argued June 8, 2006, decided January 25, 2007.

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CHAPTER 9

Improving the CWIS Rule Regulatory Analysis: What Does an Economist Want?

SCOTT FARROW

Proponents, opponents, and some who aren't too sure have spilled much ink on the merits of cost–benefit analysis in support of government decisions, including the development of regulations. In this chapter, I present a proponent's view in the specific context of establishing requirements for cooling water intake structures (CWIS) at existing power plants (EPA 2004a). The policy context, regulatory proposal, and environmental and economic evaluation of this regulation are summarized by Harrington in Chapter 8 of this report. Voluminous comments were filed on particular aspects of the estimation procedures, and one more commenter on such details is unlikely to add much value. In its response to public comments, the U.S. Environmental Protection Agency (EPA) used 5,143 pages; of those, about 1,200 focused on benefits related to economics (EPA 2004e). Consequently, the focus of this chapter is on the consistency of the CWIS cost–benefit analysis with quality criteria to which the agency might have been expected to adhere and significantly less on specific details of the existing analysis.

In the remainder of the chapter, I focus on four topics. First, I discuss criteria for evaluating the economic content of the rule and whether the rule met those criteria. Second, I investigate criteria and outcomes with respect to decision rules for the design of the regulation. Third, I address the challenge faced by agency analysts because of the frontier nature of research linking ecological and economic impacts. Finally, I provide suggestions for improvement.

Criteria and Evaluation for the Economic Review of the CWIS Rule

What are the most appropriate economically based criteria for review of the regulatory impact analysis (RIA) conducted by EPA and how did the analysis perform on those criteria? Two sets of criteria appear relevant. The first set refers to analytical standards for the content of the analysis. The second set refers to decisionmaking standards that are at the boundary of economic and other risk management approaches. Although important nuances can be found in the text, I conclude that the RIA met minimum necessary analytical economic standards and may have met additional professional analytical standards. The analysis further met some aspects of economic-based decisionmaking standards but failed a critical one based on the law. I discuss each conclusion in turn.

What an Economist Wants—1: Analytical Standards for the Content of the Analysis

In contrast to accounting, in which Generally Accepted Accounting Principles (GAAP) are issued by professional organizations, no standards from a professional society are available for cost–benefit analysis (GAO 2005; Bray et al. 2007). Instead, reviewers generally refer to two sources—guidance provided by government agencies and the published literature. These sources are equivalent to the two lowest-ranking sources in a hierarchy of standards for accountants and auditors (GAO 2005). For EPA regulations, the Office of Management and Budget (OMB) and EPA have developed guidance (OMB 1992, 2003; EPA 2000) based primarily on authority derived from executive orders related to cost–benefit analysis and regulatory development. Based on the OMB guidance, Hahn and Dudley (2007), Belzer (1999), and GAO (2005) have developed scorecards for the basic quality of an analysis. These scorecards provide a way to determine whether the analysis was consistent with elements of OMB guidance and essentially are a type of analytical process check. Cost–benefit analysis substantially lacking these elements would almost certainly be of poor quality. For instance, questions on the scorecard refer to whether benefits are stated, quantified, or monetized; whether discounting was used and at what rate; whether alternatives were evaluated; and whether uncertainty was incorporated. However, while consistency with the guidance may be viewed as a necessary condition for a good-quality analysis, it is not sufficient. In particular, the analysis may have been done incompletely or incorrectly, in which case the result would be of poor quality.

I provide a slightly modified version of the scorecard used by Hahn and Dudley (2007) in Table 9.1. In this modification, I have deleted items specifically related to health, safety, or an executive summary as these were immaterial for the case at hand. The right-hand column provides my subjective assessment of the CWIS rule. Note, however, that some items are difficult to answer with a "yes" or "no" and the record was quite extensive. For instance, a reviewer might wish to know whether all or nearly all of the material beneficial impacts of the regulation had been considered, but this is difficult to ascertain without additional information and judgments. In the CWIS case, some commenters believed and I concur that nonuse and some types of fishery stock effects were potentially large and should have been included; consequently a "no" is recorded for "monetized all or nearly all benefits" in contrast to "monetized some benefits." However, this is a matter of judgment on items where information is lacking.

At this analytical process level, the EPA CWIS RIA passes virtually all of the steps of the scorecard, in contrast to many regulations (Hahn and Dudley 2007). The RIA[1] monetized at least some costs and benefits, estimated monetized net benefits, considered alternatives, used a prescribed discount rate, and so on. The RIA earns poorer marks on the clarity of analysis to justify trade-offs made in the regulation and the completeness of the benefits estimation. For instance, the RIA provides no logical or conceptual model up front to convey the sequence of steps, and important components are spread across multiple documents including the Economic and Benefit's Analysis (EPA 2004b), Regional Analysis (EPA 2004c), and Technical Development Document (EPA 2004d). Some of the analyses are quite involved, such as the econometrically estimated Random Utility Model, and others are simpler. Although summary tables of benefit and cost results are provided in both the final *Federal Register* notice and the Economic and Benefits Analysis (EPA 2004b), these tables provide minimal caution about the analytical steps and the degree of precision. The latter

Table 9.1
Scorecard Evaluation of CWIS Cost–Benefit Analysis

Item number	Variables	CWIS
	ESTIMATION OF COSTS	
1	Stated costs exist	Yes
2	Quantified at least some costs	Yes
3	Monetized at least some costs	Yes
4	Monetized all or nearly all costs	Yes
5	Provided point estimate of total costs	Yes
6	Provided range for total costs	Yes
7	Associated costs w/ federal government	Yes
8	Associated costs w/ nonfederal government	Yes
9	Associated costs with producers	Yes
10	Provided best estimate and range for total costs	Yes
	ESTIMATION OF BENEFITS	
11	Stated benefits exist	Yes
12	Quantified at least some benefits	Yes
13	Monetized at least some benefits	Yes
14	Monetized all or nearly all benefits	No
15	Provided point estimate of total benefits	Yes
16	Provided range for total benefits	No
17	Provided best estimate or range for total benefits	Yes
18	Provided best estimate and range for total benefits	No
	COMPARISON OF COSTS AND BENEFITS	
19	Calculated net benefits	Yes
20	Provided a point estimate of net benefits	Yes
21	Provided a range for net benefits	No
22	Calculated cost-effectiveness	Somewhat
23	Provided a point estimate of cost-effectiveness	Yes
24	Provided a range for cost-effectiveness	No
25	Had positive net benefits	No
26	Calculated net benefits or cost-effectiveness	Yes
27	Calculated net benefits and cost-effectiveness	Somewhat
28	Calculated both point estimate and range for net benefits	No
29	Calculated either point estimate or range for net benefits	Yes
	EVALUATION OF ALTERNATIVES	
30	Gave at least one alt. standard/level	Yes
31	Gave at least one alt. method	Yes
32	Quantified alternatives (costs)	Yes
33	Monetized alternatives (costs)	Yes
34	Quantified alternatives (benefits)	Somewhat
35	Monetized alternatives (benefits)	No
36	Calculated cost-effectiveness of alternatives	Somewhat
37	Calculated net benefits of alternatives	No
38	Calculated net benefits or cost-effectiveness of alternatives	Somewhat
39	Considered some alternatives	Yes
40	Clarity of presentation	Average/poor
	CONSISTENT USE OF ANALYTICAL ASSUMPTIONS	
41	Identified dollar year	Yes
42	Used consistent dollar year	Yes
43	Identified discount rate	Yes
44	Used consistent discount rate	Yes
45	Discount rate = 7 percent	Yes
46	Used consistent costs and benefits	Yes
47	Identified and consistently used discount rate and dollar year	Yes

Note: Evidence may be in supporting documents and not in summary documents.

Source: Scorecard format based on Hahn and Dudley (2007); some item numbers have been omitted because of their original focus on health and safety. CWIS evaluations are by the author.

issue also relates to the treatment of uncertainty in the final *Federal Register* notice itself, which does not convey some of the extended uncertainty analyses carried out in various supporting documents. Similarly, although implicit throughout the analyses, EPA provides no direct reporting of an average cost per adverse environmental impact (ABI) for different alternatives. The alternatives analysis, with its implicit wet cooling tower benchmark technology, was not clearly brought into the analysis as a likely "default" technology against which other regulations were measured. This is an example of an instance in which the usual "do nothing" alternative of cost–benefit analysis would not seem to be appropriate given the clear direction to "do something." Consequently, although many of the necessary aspects identified in the guidance were done well, other aspects—such as those identified in Table 9.1—were touched upon but could have been improved.

What of the role of a review standard based on the professional literature that goes beyond the necessary aspects identified in guidance and scorecard approaches? This criterion is more nebulous because of the ambiguity and vastness of the professional literature as applied to a specific problem. Variations may also exist for standard practice, best practice, and frontier application. However, this concern for the quality of the analysis is related to other guidance from OMB (2002) based on the Data Quality Act. In this guidance document, quality is composed of utility, objectivity, and integrity. Procedural steps are identified through which agencies can achieve quality; these procedures include the use of peer review panels, whereby the review is conducted by people with a professionally equivalent or advanced understanding of the problem investigated by the agency. However, if an analysis appears in a peer-reviewed publication, then it may—but need not—have met the data quality standards. In the case of a peer review panel, peer reviewers are not blind to the identity of the author and are selected by the reviewing authority, whereas in the case of a peer-reviewed publication, the reviewers are generally "blind" and are selected by the editors of the publishing outlet. To some extent, the availability of a document for public comment can be viewed as a nonblind review process in which the selection of the reviewers is based on self-interest, which can include payment from any parties. The OMB review of RIAs might be viewed by some as another type of peer review and, in fact, OMB appears to hold that opinion.[2] Three tests might be identified based on these different processes. First, did the agency conduct a peer review of the analysis and, if so, what was the outcome? Second, how did professional commenters respond during the public comment period? And third, is the analysis based on a peer-reviewed publication or, somewhat weaker, is it likely that a peer-reviewed publication would publish a paper based on the analysis? I briefly address these three checks on quality in turn.

Did EPA assemble a peer review panel of the cost–benefit analysis and, if so, what were the results? Partially—a peer review panel was convened for the ecological and fisheries aspects of impingement and entrainment, and a separate panel was convened on nonuse values, although the latter panel addressed a later phase of the regulation. As is often the case, the review panels developed a variety of comments and suggestions for improvement (EPA 2002; RTI International 2005). The reviewers raised a number of issues about broader ecological impacts and fisheries dynamics, although EPA appears to express substantial concern with linking such measures with economic valuation (Stratus Consulting 2004; EPA 2004e). With regard to nonuse values for the later regulatory phase, the panel appeared critical of the particular way in which EPA estimated nonuse values but supported EPA's efforts to provide a nonuse value estimate. OMB reviewed both the proposed and final rules and completed its actions by determining that the rule was "consistent with changes" (Regulatory Information 2002, 2004).

How did professional commenters respond publicly to the final rule? Unfortunately, this is basically unknowable because the public comment period applies only to the proposed rule. However, several professional economists criticized analytical elements of EPA's proposed rule and, later, data availability, on a variety of fronts.[3] Further, at least two of the economists, Frank Ackerman and Robert Stavins, disagreed with each other (see Chapter 10), while the other economists presented a somewhat more common methodological view. At the risk of ignoring other economists not obvious in the record, I counted four economists whom I interpret as having similar methodological interpretations and one with a different interpretation.[4] Some of the methods opposed by the larger group of economists were removed from the final analysis, whereas movement of the monetized cost–benefit analysis toward the views of the economist with the minority interpretation appeared to be slight. Because no comment period existed for the final rule, the extent of economic commenters' agreement on the quality of the final rule is unknown.

Finally, was the completed analysis published in a formal, externally peer-reviewed source? No. Could it potentially be published in such a source and thus by demonstration meet some level of professional standards? Possibly. Although this question has many facets—including the length of the CWIS analysis, which is more suited to a book than to a journal article, and the lack of a journal currently devoted to cost–benefit analysis—my sense is that a journal article devoted to the CWIS case could appear in an applied, peer-reviewed journal. In particular, the topic is at the frontier of integrating ecological and economic analysis, extensive information is provided in the analysis on technological alternatives, and a variety of quantitative analyses—including some relatively advanced econometric analyses of recreational choices—are provided. I conclude that a paper based on the CWIS rule could potentially appear in a peer-reviewed publication.

Although the evidence that the CWIS rule met the ambiguous "professional quality" standard is somewhat weaker, the fact that EPA carried out some peer reviews, that its analysis moved in the direction of the majority of professional commenters, and that it may be publishable in a peer-reviewed journal, indicates that it probably meets guidelines provided by the Data Quality Act and the more ambiguous auditing standard of consistency with professional norms. The difficulty in determining the quality of a controversial analysis may also indicate the ambiguity of criteria and the potential usefulness of work in this area.

What an Economist Wants—2: Decisionmaking Standards

Much of the controversy surrounding the CWIS rule appears to involve not only the analytical methods, but also the decisionmaking standards and the role played by OMB's Office of Information and Regulatory Affairs (OIRA; Heinzerling 2006). The choice of a decisionmaking standard by decisionmakers is outside of the role of economists, although a large body of public policy and economic literature, including cost–benefit analysis, suggests normative decision rules that could be followed in making a government decision. The Federal Water Pollution Control Act as amended in this case states that "[a]ny standard established...shall require...the best technology available for minimizing adverse environmental impact" (33 U.S.C. s. 316(b)). In addition, agencies are directed by presidential executive orders, primarily Executive Order (EO) 12866 (1993), (a) not to use the RIA to displace the agencies' authority or responsibilities as authorized by law (EO 12866, s. 9); (b) to assess both the costs and benefits of an intended regulation and propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation jus-

tify its costs (EO 12866, s. 6); (c) to identify and assess alternative forms of regulation that, to the extent feasible, specify performance objectives rather than a specific behavior or manner of compliance (EO 12866, s. 8); and (d) to tailor regulations to impose the least burden on society, including various societal elements (EO 12866, s. 11).

Consider first the decisionmaking standard under the law. Although a technology-based standard may appear simpler to define than an economics-based one, the apparent simplicity may belie complex issues in implementation and interpretation (Freeman 1980). Importantly in this case, EPA chose never to explicitly define the AEI (EPA 2004a, 41612). Even with the simpler focus on impingement and entrainment used by the EPA, substantial uncertainty about environmental impact remained because of a paucity of what may seem like basic data, such as the natural mortality rate of a species (EPA 2004a, Regional Studies, A6–5). Consequently, it is unknown whether EPA chose the technology that would minimize that impact. Further, the cost of technologies was identified as a possible, though secondary, element of the decision (EPA 2004a; *Riverkeeper, Inc. v. EPA* 2007).

Several weaknesses result from the lack of definition of the AEI, uncertainty about environmental impacts, and secondary use of cost information. Regardless of the definition of the AEI, it has multiple dimensions. EPA at least identified impacts, including the following: effects on various commercial, recreational, rare, sensitive, exotic, and disruptive species; disruptions of ecological relationships and public satisfaction; organic carbon, nutrient, and energy transfer; and decreased local biodiversity (EPA 2004a, 41662). Determination of the AEI would require a weighting of many factors. Analysts would be forced to come up with weights of relative importance, to defend equal weighting, or to explicitly acknowledge impacts that have zero weight in quantitative or monetized analyses but that may be discussed in the text. Decisions would have to be made about which impacts are material to the decision. Economists would generally seek to use observed or inferred functions of prices as weights; alternatively, other weighting approaches could be devised. In any event, the benefit of the regulation is essentially the reduction in the weighted AEI with a standard economic benefit analysis using monetized weights.

Because any AEI developed based on the record would contain substantial uncertainty about impacts on the environment, it is extremely unlikely that one technology would be unambiguously best, an issue made even more complex by the multiple environments being considered, such as estuaries, freshwater lakes, and rivers. Thus, following the direction of the statute appears to allow for the potential for a benefit evaluation, measured by uncertain AEI reduction, and some evaluation of cost as a secondary element.

OMB guidance (2003) further indicates that in situations of uncertainty, expected (mean) values should be used as the foundation for analysis; however, other treatments of uncertainty could be used, possibly including probabilistic AEI and cost analysis. Consequently, it is conceivable that EPA could have used an analysis that included elements of AEI reduction (benefits) and costs in a manner more consistent with the statute than developing a cost–benefit analysis that did not depend on a definition of AEI.

In general, however, the determination of a decisionmaking standard that complies with the law is a legal question that is not answerable by economists. In hindsight, the actual analysis carried out by EPA and the regulation failed the decisionmaking standard of both the law and EO 12866 (*Riverkeeper, Inc. v. EPA* 2007), although that conclusion is under review by the Supreme Court at the time of this writing.

What of the additional requirements of EO 12866? Did EPA assess the costs and benefits and choose an approach in which the benefits justify the costs? Yes and no. EPA assessed costs and benefits in the final CWIS regulation; on the basis of that analysis, the monetized benefits did not justify the cost (EPA 2004a; EPA 2004b, D1–4). A break-even analysis was provided to illustrate how large the nonmonetized benefits must be for the rule to break even on a monetized net benefit basis. One possible inference is that statutory responsibilities trumped this element of the executive order because, on a monetized cost–benefit basis, the country would be better off without the rule in the standard interpretation. Alternatively, EPA may have determined that, taken together, the monetized and nonmonetized benefits justified the costs, although they do not appear to explicitly make such a statement in the final regulation (EPA 2004a, 41663).

Did EPA specify a performance objective instead of the manner in which regulated entities must comply? Yes, to a large degree. An important aspect of the CWIS regulation was precisely the effort to identify a performance standard—the degree of mitigation provided by cooling towers—and to specify technological alternatives to meet that standard, which also varied by environmental conditions. The regulation specified a set of technologies that meet a range of impingement and entrainment performance reductions as well as some alternative means of compliance. Although this could be seen as an effort to acknowledge the uncertainty in both the AEI and the performance of technology, the integration of uncertainty and performance could have been better clarified in the determination of the standard.

Did EPA choose an approach that generated the least burden on society? Yes, to a large degree. This is the decisionmaking element closest to the discussion of the appropriateness of cost-effectiveness in *Riverkeeper, Inc. v. EPA* (2007). EPA clearly chose an approach that imposed a significantly lighter burden on society than the cooling tower option that formed the performance basis for the regulation. EPA estimated that a cooling tower option would have an annualized post-tax compliance cost of $2,316 million (EPA 2004a, proposed Economic and Benefits Analysis [EBA], B7–10, 2001$) and a total social cost of $3,507 million computed with a 7 percent real discount rate. This compares with an estimated annualized post-tax compliance cost of $250 million (EPA 2004a, final EBA, D1–3, 2002$) and a social cost of $389 million for the final regulation.

Although commenters debated many aspects of these estimates (EPA 2004e), it appears that EPA did incorporate the economic burden on society in its determination. The record provides substantial evidence that the agency considered a lower-cost alternative to meeting a standard with the potential to save approximately $3 billion in annualized dollars or approximately $40 billion in present value.[5] To put this in a different context, the GAO would probably score an approximate $40 billion dollar nongovernmental cost savings if the EPA made the regulatory desigu change away from cooling towers in response to a recommendation by the GAO6.

In summary, with regard to what decisionmaking standards were applied, the results are mixed, but EPA's failure to comply with statutory requirements appears to trump other aspects of the analysis at the time of this writing. Clearly, however, EPA did not apply a strict monetized cost–benefit decision rule, although cost-effectiveness information was applied with the potential for materially reducing the burden on society.

The Frontier of Linking Ecological and Economic Systems

In what ways does this case study illustrate weaknesses in linking ecological impacts with a cost–benefit approach? Consider that economists can be preoccupied with the monetary valuation stage and the normative, economics-based decision rules that constitute their area of comparative advantage. However, nothing can be monetarily valued without a change in quantity (or quality) in the environment broadly considered. Here lie the key difficulties in the case study. The environmental impacts of CWIS affect freshwater and saltwater ecosystems in a variety of ways, some of which are poorly understood. In short, the AEI was incompletely specified, not an unusual occurrence for ecological impacts. Even determining what is adverse requires some value judgment. For instance, increased recreational fishing or the congregation of an endangered species such as the manatee near thermal outlets may be viewed as adverse from one perspective if it is a deviation from an environmental baseline. In fact, EPA did not define the objective function of its regulation, the AEI (EPA 2004a, 41612).

From the standpoint of economically valuing impacts, the challenge is to find the material ecological outputs or services that people value and to find ways to measure those impacts and values. For instance, impingement and entrainment do not easily translate into dimensions that people value. As a consequence, the links that connect the ecological and economic impacts are difficult to measure. Commercially and recreationally landed fish provide the most concrete linkage between the ecological and economic measurements in the RIA, but other linkages proved problematic.

Governmental practitioners and consultants have been asked to resolve such basic research challenges. As indications of this frontier challenge, consider that the Committee on Valuing the Protection of Ecological Systems and Services (C-VPESS) of the EPA Science Advisory Board is drafting a report on the topic that may result in future guidance (EPA C-VPESS 2007, 2008). In addition, a National Research Council report has appeared since the regulation was finalized (National Research Council Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems [NRC C-AVSARTE] 2004). Would the CWIS analysis have been substantially assisted by having these documents available at an earlier date?

First, both the C-VPESS draft report and the NRC C-AVSARTE report (NRC C-AVSARTE 2004) discuss the difficulties in modeling ecological and economic systems and in linking the impacts. The C-AVSARTE report focuses primarily on economic approaches to valuation, embracing both use and nonuse values. The C-VPESS draft report considers an expanded set of valuation methods useful at various stages of the regulatory process but states that, in the case of RIAS, the economic component is to be "conducted in accordance with the methods and procedures of standard welfare economics" (EPA C-VPESS 2008, 122). The draft report included a survey of methods for social-based valuation approaches that are at the frontier of research; for instance, it posits that people may have different values as citizens than as consumers. However, at least some economists would probably be concerned about the decisionmaking context in which individuals are placed to elicit values for cost–benefit analysis (Spash 2007). For instance, a person placed in the experimental context of a citizen decisionmaker with a group of peers facing a relatively unknown problem may be influenced by the social context, the formation of the group, and the hypothetical nature of the setting, perhaps including issues related to the absence of actual budget limitations or the scope of choices being considered. List et al. (2004) recently found that a lack of social isolation

may create a bias roughly equivalent to that created by the hypothetical nature of surveys that elicit economic values. These authors interpret social settings for value elicitation as inducing "respondents to include any number of utility-enhancing values that come from publicly advertising one's own goodwill. But, since these 'externality-type' values are not germane to the good in question, rather to a class of goods, it is incorrect to lump them with any particular good's value" (List et al. 2007, 749).

The C-VPESS citable draft report (the latest version is not citable per its webpage) has a special section on valuation for national rulemaking (EPA C-VPESS 2007, s. 6.1). Examples of draft guidance (which may change) include the following:

- an early conceptual model of the ecological and economic system being analyzed (s. 6.1.2.1);
- early identification of socially important impacts that may not be limited to economic methods;
- early interaction of ecologists and economists to inform the prediction of biophysical changes in value-relevant terms (but the draft report notes, in the concentrated animal feeding operation example used, that "the combination of variation complexity, and gaps in information and understanding make it difficult for the Agency to assess the ecological impacts of its actions, particularly at the national scale," 122); and
- likely use of benefit transfer methods and quality checks in the development of monetized valuation measures.

Had this draft document become final, the advice may have served early on in the CWIS process to help frame and direct research. However, as is the case with general cost–benefit guidance from OMB, it is unlikely to have been a substantial help in resolving the difficulties in defining ecological impacts and linking those impacts to economic valuation measures.

Conclusion

Economists want decisionmakers to consider economic trade-offs based on credible information. We want a cost–benefit type of analysis to analyze our definition of efficiency while recognizing that cost–benefit analysis will not unambiguously identify a socially preferred policy (Arrow et al. 1996). If legal or other constraints exist, we typically want a cost-effectiveness analysis if the law is immutable or a cost–benefit analysis if we are considering changes in the law. We want price or functions of prices as societal measures of value from the interaction of many people in the marketplace. If markets are lacking, we want an experiment conducted that generates numbers as if a market existed. We want sufficient precision to distinguish positive from negative net benefit values or to test a specific hypothesis or question. Economists want this information as they seek the largest economy, broadly considered, that is consistent with people's preferences, technology, and environmental conditions. The largest economy, broadly considered, includes leisure time, the provision of environmental amenities, and nonmarket as well as market activity. If the distribution of goods and services that result from market forces in this largest economy is deemed inequitable, then economists currently look to the political process for distributional adjustments. Economists, and some other stakeholders, want an economic analysis to conform to norms of the discipline, which may be difficult to infer. Economists do not want decisionmakers to be provided only with distributional information.

Table 9.2
Research Recommendations

Research recommendations by the National Research Council's Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems (2004, 258), referred to as "overarching research needs," are as follows:

Although much is known about the services provided by aquatic ecosystems and methods for valuing changes in these services exist, the committee believes that there are still major gaps in knowledge that limit our ability to incorporate adequately the value of ecosystem services into policy evaluations. Drawing from the preceding major conclusions and overarching recommendations provided above, the committee has identified the following research needs. The committee believes that funding to address these needs is necessary if progress toward improving the use of ecosystem valuation in policy decisions is to be made, and it recommends that such funding be a high priority.

- Improved documentation of the potential of various aquatic ecosystems to provide goods and services and the effect of changes in ecosystem structure and functions on this provision
- Increased understanding of the effect of changes in human actions on ecosystem structure and functions
- Increased interdisciplinary training and collaborative interaction among economists and ecologists
- Development of a more explicit and detailed mapping between ecosystem services as typically conceived by ecologists and the services that people value (and hence to which economic valuation approaches or methods can be applied)
- Development of case studies that show how these links can be established and templates that can be used more generally
- Expansion of the range of ecosystem services that are valued using economic valuation techniques
- Improvements in study designs and validity tests for stated-preference methods, particularly when used to estimate nonuse values
- Development of "cutting-edge" valuation methods, such as dynamic production function approaches and general equilibrium modeling of integrated ecological-economic systems
- Improved understanding of the spatial and temporal thresholds for various ecosystems, and development of methods to assess and incorporate into valuation the uncertainties arising from the complex dynamic and nonlinear behavior of many ecosystems
- Improvements in the methods for assessing and incorporating uncertainty and irreversibility into valuation studies.

Other stakeholders in the regulatory process may want a different type of analysis. For instance, a package of reports might be associated with an analysis. In the context of the CWIS rule, the ecological impacts are important to some stakeholders in their natural units; impacts in natural units also form a first step in an economic analysis. Some other type of noneconomic valuation—such as energy or other modeling of the ecosystem—may gain credence. One can easily imagine, however, a set of summary tables that proceeds from qualitative impacts, to quantitative impacts in their natural units, to valuations, and finally to a cost–benefit table. The regulatory requirement for a cost–benefit or cost-effectiveness analysis, however, identifies an aspiration to report somewhere in the document a specific type of professionally recognized analysis.

What might EPA do to proceed, both in the specific CWIS case and for its economic regulatory evaluations in general? Regarding CWIS, ultimately, EPA created a complex regulation without a transparent message and analysis. An analysis of technologies that considers cost-effectiveness by defining a weighted ABI, taking explicit account of uncertainty and using cost as a secondary consideration, appears to be supported in the legal record and appears to contain many, if not all, of the elements that an economist would want. In particular, an explicit discussion of weighting an ABI may be one way of investigating alternative methods to capture society's preferences.

From a broader regulatory evaluation perspective, creating new interdisciplinary science is a high hurdle for a decision-support document like an RIA. EPA and other agencies, such as the National Science Foundation, might choose to foster additional frontier work so that models better linking ecosystems and the environment may be available commercially the next time a regulation calls for such analysis. Both the C-AVSARTE report (2004) and the EPA C-VPESS draft report (2008) contain recommendations for further research (those of the C-AVSARTE report are provided in Table 9.2). To these research issues, I would add the following topics: an examination of instances in which it is better to use a number in place of a default of zero, an investigation of faint behavioral trails for nonuse value, and research that more explicitly recognizes uncertainty in the risk-management decision that can lead to new valuation measures.

Regarding the use of default values of zero, cost–benefit analysts often are unable to find a number—whether related to quantity, value, or cost—that is exactly designed for the location or other context of the regulatory setting. Analysts often substitute estimates but, not infrequently, may choose to use a zero in the monetized cost–benefit computation because of imprecision or other reasons. In the context of the CWIS analysis, the final monetized cost–benefit analysis used zero values for fish that were not captured or that were not an input into commercial or recreational fishing, as well as for nonuse value. In another setting, the U.S. Army Corps of Engineers chooses not to monetize the probability of a loss of life, although such impacts are typically discussed in the text of corps documents (GAO 2005). In environmental applications, one aspect of this general issue has been discussed as *benefits transfer* (Freeman 2003), in which means have been sought to improve the accuracy of benefits that are estimated in one location and "transferred" to an analysis for another location. This issue is central to many debates about omitted impacts in which the analyst chooses to use zero in the monetized estimate instead of an estimate transferred from a related study or estimated by other means. Research and improved guidance might exist to help analysts determine when zero is a better estimate than another value. For instance, one can test for a value different from zero both in a statistical sense—via standard statistical testing—and in a decision-analytical sense. One could investigate questions such as, How far away from the true value does an estimate have to be before a value of zero is a better estimate? A pre-

liminary result is that, given a mean squared error loss function, a value of zero is a worse estimator than any number less than two times the (unknown) true value (Farrow 2005).

The value people ascribe to a resource that they may never use—its nonuse value—is also a difficult impact to monetize. The authoritative panel that provided guidance on the use of survey-based (contingent) valuation methods also suggested a search for a faint behavioral trail of revealed behavior (Arrow et al. 1993). In my view, little work has been conducted relevant to this suggestion compared with the work to extend the methods of contingent valuation. For instance, researchers might pursue the thin trail that links observed news gathering behavior to follow-on activity, such as charitable donations or changes in consumer purchases.

Finally, and probably for ease of implementation, regulatory reviews focus on a basic approach requiring benefits to justify costs. However, the basic decision rules can change substantially in the presence of uncertainty, irreversibility, and an ability to obtain more information (Dixit and Pindyck 1994). In cases where a property right is under dispute and the goal is to maintain a particular level of environmental services, it may be appropriate to spend significantly more than expected benefits (Farrow and Morel 2001). Analytically, such approaches suggest additional, difficult to measure, elements of the problem that are related to uncertainty. These elements are seldom considered, although they are mentioned in OMB guidance (2003).

Economists teach that wants are insatiable. What an economist wants to improve the regulatory process is probably insatiable as well, without consideration of the constraints on agency resources and the value of the economic information in the debate. Finding the analytical and communication level that is as simple as possible but no simpler—as was famously said by Einstein regarding natural science models—remains an art, not a science. Detail that is unlikely to change a decision should not be analyzed, but one should continue to ask, What policy alternative will improve the welfare of society? Economists have evolved their approach for more than 150 years, and regulations like the CWIS rule continue this evolution. Important questions can be easy to ask and hard to answer.

■ ■ ■

Notes

1. The RIA is here taken to be the final notice in the *Federal Register* and the final version of supporting documents. Where important, distinctions among documents are noted in the text.

2. OMB guidance appears to exempt regulatory analyses from peer review, saying "[t]his Bulletin covers original data and formal analytical models used by agencies in Regulatory Impact Analyses (RIAs). However, the RIA documents themselves are already reviewed through an interagency review process under E.O. 12866.... In that respect, RIAs are excluded from coverage by this Bulletin..." (OMB 2005, 2674).

3. Commenters with economics Ph.D.s included Frank Ackerman, Thomas Grigalunas and James Opaluch (together), Robert Stavins, and Ivar Strand. Economists may have been elements of other teams providing comments.

4. It is true that science is not a democratic, majority process, and the author could add yet one more view on particular analytical aspects of the regulation. However, the challenge I trace here is the difficulty of determining an acceptable level of "quality" given the mandates placed on the agency.

5. These are approximations without correcting for the one-year difference in the value of the dollar, differences in discount rates used by EPA for costs and benefits, and assuming a 7 percent real discount rate over an infinite time horizon. The difference between the infinite time horizon and a shorter one is $V/r*(1 - e - rT)$ where V is

the annual value, r is the discount rate, and T is the terminal time. For instance, a 25-year time horizon at 7 percent would reduce the infinite time horizon value by 17 percent. If the alternative 3 percent discount rate were used, the cost savings would be approximately $100 billion.

6. This did not occur; instead I provide this as an illustration of "scoring" cost savings such as used by the GAO (2008).

References

Arrow, K., M. Cropper, G. Eads, R. Hahn, L. Lave, R. Knoll, P. Portney, M. Russell, R. Schmalensee, V.K. Smith, and R. Stavins. 1996. Is There a Role for Benefit–Cost Analysis in Environmental, Health, and Safety Regulation? *Science* 272 (April): 221–222.

Arrow, K., R. Solow, P. Portney, E. Leamer, R. Radner, and H. Schuman. 1993. *Report of the NOAA Panel on Contingent Valuation*. Washington, DC: National Oceanic and Atmospheric Administration.

Belzer, R. 1999. Project on Regulatory Oversight: Appendix C, Evaluative criteria for compliance: EO 12866. Washington University in St. Louis. http://wc.wustl.edu/csab/regulation/Regulation.htm (accessed December 29, 2008).

Bray, C., S. Farrow, and T. Guinane. 2007. Microeconomic Performance: Uses, Gaps, and Opportunities in Government Program Evaluation. Vol. 23, *Research in Law and Economics*. Amsterdam: Elsevier.

Dixit, A., and R. Pindyck. 1994. *Investment Under Uncertainty*. Princeton, NJ: Princeton University Press.

Executive Order 12866. 1993. Regulatory Planning and Review. *Federal Register* 58, no. 190 (October 4): 51735–51744. www.whitehouse.gov/omb/inforeg/eo12866.pdf (accessed December 29, 2008).

Farrow, S. 2005. When is some number better than no number. Paper presented at the annual meeting of the Association for Public Policy Analysis and Management, Washington, DC, November (available from the author).

Farrow, S., and B. Morel. 2001. Continuation Rights, Options, and the Precautionary Principle. *Risk, Decision, and Policy* 6: 145–155.

Freeman, M., III. 1980. Technology-Based Effluent Standards: The U.S. Case. *Water Resources Research* 16(1): 21–27.

———. 2003. *The Measurement of Environmental and Resource Values*. 2nd ed. Washington, DC: Resources for the Future Press.

U.S. Government Accountability Office (GAO). 2005. *Economic Performance: Highlights of a Workshop on Economic Performance Measures*. GAO-05-796SP. Washington DC: GAO.

———. 2008. *Performance and Accountability Highlights: Fiscal Year 2007*. GAO-08-2SP. Washington, DC: GAO. www.gao.gov/new.items/do82sp.pdf (accessed May 30, 2008).

Hahn, R., and P. Dudley. 2007. How Well Does the U.S. Government Do Cost–Benefit Analysis? *Review of Environmental Economics and Policy* 1(2): 192–221.

National Research Council, Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems (NRC C-AVSARTE). 2004. *Valuing Ecosystem Services: Toward Better Environmental Decision-Making*. Washington, DC: The National Academies Press.

Heinzerling, L. 2006. Statutory Interpretation in the Era of OIRA. *Fordham Urban Law Journal* 33(4): 101–120.

List, J., R. Berrens, A. Bohara, and J. Kerkvliet. 2004. Examining the Role of Social Isolation on Stated Preferences. *American Economic Review* 94(3): 741-752.

OMB (Office of Management and Budget). 1992. *Guidelines and Discount Rates for the Benefit–Cost Analysis of Federal Programs.* Circular A-94. Washington, DC: OMB.

———. 2002. Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies. *Federal Register* 2 no. 67 (February 22): 8452.

———. 2003. *Regulatory Analysis.* Circular A-4. Washington, DC: OMB.

Regulatory Information. Historical Reports, Various Years. RIN 2040-AD62. www.reginfo.gov (select EPA for 2002 and 2004; accessed December 29, 2008).

Riverkeeper, Inc. v. U.S. Environmental Protection Agency (EPA), 475 F.3d 83, 90 (2d Cir. 2007), also known as Riverkeeper II.

RTI International. 2005. *Report of the Peer-Review Panel Analysis of Nonuse Benefits for 316(b) Phase III Rule.* RTI project number 09393.000, May. Research Triangle Park, NC: RTI International.

Spash, C. 2007. Deliberative Monetary Valuation: Issues in Combining Economic and Political Processes to Value Environmental Change. *Ecological Economics* 63(4): 690–699.

Stratus Consulting. 2004. *Summary of Peer Review of I and E Methods,* regulations.gov. Document ID: EPA-HQ-OW-2002-0049-0985.

U.S. Environmental Protection Agency (EPA). 2000. *Guidelines for Preparing Economic Analysis.* EPA 240-R-00-003. Washington, DC: EPA. http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html (accessed December 29, 2008).

———. 2002. Peer reviews available at regulations.gov. Document IDs: EPA-HQ-OW-2002-0049-1402 through 1406.

———. 2004a. Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities. *Federal Register* 69 (July 9): 41576–41693. www.epa.gov/waterscience/316b/ (accessed December 29, 2008).

———. 2004b. Economic and Benefits Analysis. EPA-821-R-04-005, www.epa.gov/waterscience/316b/phase2/econbenefits/final.htm (accessed December 29, 2008).

———. 2004c. Regional Analysis. www.epa.gov/waterscience/316b/phase2/casestudy/final.htm (accessed December 29, 2008).

———. 2004d. Technical Development Document. www.epa.gov/waterscience/316b/phase2/devdoc/final.htm (accessed December 29, 2008).

———. 2004e. Response to Public Comment March 29. www.epa.gov/waterscience/316b/phase2/comments/index.html (accessed December 29, 2008).

U.S. Environmental Protection Agency Science Advisory Board, Committee on Valuing the Protection of Ecological Systems and Services (EPA C-VPESS). 2007. Valuing the protection of ecological systems and services (draft report, September 24). http://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/C6814A495B15D3228525736A004C4680/$File/cvpess_draft-09-24-07.pdf (accessed December 29, 2008).

———. 2008. Valuing the protection of ecological systems and services (draft report, March 11). http://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/F4771258F94FDA8C8525740900671186/$File/C-VPESS+Draft-03-11-08.pdf (accessed December 29, 2008).

CHAPTER 10

Fish Tales

DOUGLAS A. KYSAR

Before it was amended in 1972, the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), required the setting of various ambient water quality standards that, in turn, were to afford a basis for determining acceptable levels of pollution in interstate navigable waterways. As the Supreme Court has noted, federal and state regulators operating under the early CWA approach found it "very difficult to develop and enforce standards to govern the conduct of individual polluters."[1] This difficulty was caused in substantial part by informational demands, scientific uncertainties, and valuation questions that accompanied the task of establishing acceptable water quality standards. Thus, "prompted by the conclusion of the Senate Committee on Public Works that 'the Federal water pollution control program has been inadequate in every vital respect,'"[2] Congress dramatically overhauled the CWA, requiring the placement of maximum effluent limitations on point sources of water pollution in addition to the achievement of water quality standards, and creating the National Pollutant Discharge Elimination System (NPDES) as a means of enforcing effluent limitations. Primary authority for implementing the CWA and for issuing and overseeing NPDES permits was vested in the U.S. Environmental Protection Agency (EPA), although states could continue to play a substantial role if they developed EPA-approved permitting programs.[3] Significantly, effluent limitations were to be determined by regulators with reference not to ambient water quality standards, but to the level of pollution reduction that could be achieved through the application by industry of identified high-performing technologies.

This new technology-based approach proved much more effective than the earlier standard-based approach;[4] nevertheless, few would contend that the CWA has been a complete success. For instance, nonpoint sources of water pollution have proven extremely difficult to subject to regulatory control, and the health of aquatic ecosystems continues to be impaired by dams and channelizations, withdrawals and transfers, and other disruptions. In addition, EPA has struggled mightily to implement the CWA's requirement that the agency regulate cooling water intake structures at point sources to reduce the structures' adverse environmental impact.[5] Electricity generating plants and other industrial facilities often depend on the withdrawal of water from rivers, lakes, and other waterways to manage excess heat generated during their production processes. The amount of water required is vast, on the order of 50 million gallons or more per day for a large plant and totaling billions of gallons of water per day for all national facilities. The resulting environmental impact is also dramatic: EPA estimates that over 3.4 billion fish and shellfish (expressed as "age 1 equivalents") are killed by cooling water intake operations each year, either from being

trapped against components of the cooling water intake structure and therefore suffering "exhaustion, starvation, asphyxiation, and descaling," or from being drawn into the cooling water system and therefore suffering "physical impacts," "pressure changes," "sheer stress," "thermal shock," and "chemical toxic effects."[6] These two mortality threats, referred to as *impingement* and *entrainment*, affect not only the various fish and shellfish species for which EPA was able to generate quantitative estimates, but also certain endangered, threatened, and other special status species, such as sea turtles, Chinook salmon, and steelhead, as well as immeasurable quantities of phytoplankton and zooplankton at the base of aquatic food chains. Moreover, impingement and entrainment are only the most obvious and measurable adverse effects of cooling water intake operations on aquatic ecosystems. Other impacts include "diminishment of a population's compensatory reserve; losses to populations including reductions of indigenous species populations, commercial fisheries stocks, and recreational fisheries; and stresses to overall communities and ecosystems as evidenced by reductions in diversity or other changes in system structure and function."[7] For all of these myriad effects, regulators only can generate rough predictions of their likelihood and magnitude, given that "[p]opulation dynamics and the physical, chemical, and biological processes of ecosystems are extremely complex."[8]

Cognizant of these kinds of informational difficulties, Congress in Section 316(b) of the CWA mandated that "the location, design, construction, and capacity of cooling water intake structures [must] reflect the best technology available for minimizing adverse environmental impact."[9] EPA's first effort to implement this statutory provision was remanded on procedural grounds following an industry challenge in 1977,[10] after which the agency formally withdrew the regulation in 1979.[11] In a hopeful gesture, EPA reserved space in the Code of Federal Regulations for future cooling water intake rules.[12] Nevertheless, amidst the changing political climate of the 1980s and the agency's enormous backlog of regulatory responsibilities under other federal environmental statutes, EPA essentially abandoned its Section 316(b) rulemaking efforts, leaving regulation of cooling water intake structures instead to the case-by-case decisionmaking of NPDES permit issuers.[13] Eventually, facing a legal challenge by environmental groups, EPA agreed in 1995 to a consent decree that required the agency to establish cooling water intake rules in multiple phases.[14] Phase I, involving new facilities, was completed by the agency on December 18, 2001, and generally required facilities to achieve environmental performance standards based on what is known as *closed-cycle cooling technology*, a process in which cooling water is recycled and only periodically replenished from neighboring waterways, rather than continuously withdrawn. Although environmentalists had argued on behalf of *dry cooling technology*, an even more protective approach that did not require the withdrawal of water at all, the Second Circuit in 2004 accepted EPA's conclusion that the expense of this technology rendered it not reasonably available to industry.[15] The court did, however, remand other portions of the Phase I rules, holding that EPA had impermissibly allowed facilities to use environmental restoration efforts to meet part of their compliance obligations, despite the CWA's clear mandate that facilities prevent, rather than compensate for, the environmental degradation associated with cooling water intake.[16]

Phase II involved the much more politically nettlesome category of large existing power plants. EPA's final Phase II regulations were issued on July 9, 2004, and involved a complicated array of compliance options that were built around a set of impingement and entrainment performance standards that required only certain facilities to engage in reductions and that, for those covered facilities, only formally required 80 percent and 60 percent reductions, respectively, in

impingement and entrainment. These performance standards were particularly notable because they marked a refusal by EPA to use closed-cycle cooling technology as the benchmark against which other proposed protection measures might be evaluated. Despite acknowledging that impingement and entrainment provide the "primary and distinct types of harmful impacts associated with the use of cooling water intake structures,"[17] and that "closed-cycle, recirculating cooling towers . . . can reduce mortality from impingement by up to 98 percent and entrainment by up to 98 percent,"[18] EPA nevertheless adopted standards that were based on the performance of less effective technologies. It did so because it chose to "interpret[] CWA section 316(b) as authorizing EPA to consider not only technologies but also their effects on and benefits to the water from which the cooling water is withdrawn."[19] More specifically, the agency chose to interpret Section 316(b) to allow performance standards that required not the best technology available for minimizing impingement and entrainment, but rather the technology that best equalizes the marginal ecological benefits of reducing impingement and entrainment with the marginal economic costs of doing so.[20] This efficiency-oriented approach had a dramatic effect: EPA estimated in its regulatory impact analysis that 125 facilities would adopt no impingement and entrainment controls at all under the Phase II rules.[21] Moreover, rather than up to 98 percent reduction in impingement and entrainment, most facilities would only achieve a 30.9 to 59.0 percent reduction in impingement and a 16.4 to 47.9 percent reduction in entrainment.[22] In short, the "best technology available for minimizing adverse environmental impact" became merely the technology that produces an acceptable benefit-to-cost ratio, irrespective of its overall level of environmental benefit.

EPA never quite got around to fully disclosing and accounting for this maneuver in the preamble to its final regulations. At one point, the agency noted that it "believes it is reasonable to vary performance standards by the potential for adverse environmental impact in a waterbody type."[23] However, attempting to correlate the stringency of performance standards with the ecological benefit to be gained from doing so does not seem to be a proper reading of the statutory mandate to minimize adverse environmental impact. EPA essentially admitted as much in the preamble to its proposed Phase II regulations when it noted that states might choose to use their own authority to impose more stringent requirements, such as performance standards based on dry cooling technology, to garner "additional protection above the levels provided by these technology-based *minimum* standards."[24] The statute requires maximum levels of environmental protection, not minimum. Put another way, it may well be that the appropriate minimizing technology will vary by water body type, but those technologies will never be equivalent to ones that optimally balance costs and benefits by water body type. Interestingly, when offering the proposed Phase II rule, EPA actually stated that it was "concerned about the cumulative overall degradation of the aquatic environment as a consequence of . . . intakes located with or adjacent to an impaired waterbody,"[25] because the goal of the CWA is to steadily restore the biological integrity of the nation's water bodies, even those that are quite severely impaired at any given moment. Allowing the degraded condition of a water body to reduce the level of protection that it receives—as EPA did—therefore seems inconsistent with the CWA's more dynamic, long-term goal of progressive improvement.

If at times it appeared that EPA was of two minds on the issue of how to establish performance standards, it was because, in fact, the agency's deliberations had been heavily influenced by an outside force. As Lisa Heinzerling has explained, EPA's hand was essentially forced by the Office of Information and Regulatory Affairs (OIRA) within the Office of Management and Budget

(OMB).[26] Documents released during the rulemaking process indicate that EPA's Phase II approach shifted dramatically following initial review by OIRA. In particular, EPA was pressured to abandon its original plan to impose standards based on closed-cycle cooling in favor of the eventual suite of compliance options, the most important of which were founded, either directly or indirectly, on a comparison of the demonstrated ecological benefits of protection technologies with their accompanying costs. The result of being forced to resort to cost–benefit analysis (CBA) in setting the Phase II performance standards was that much of EPA's analysis seemed to be at odds with the rules that it adopted. For instance, at one point the agency awkwardly observed that closed-cycle cooling would be granted a "streamlined" approval process under the Phase II rules because use of "this highly effective technology... would always achieve the performance standards."[27] In an attempt to disclaim the obvious inference to be drawn from this concession, the agency quickly added that closed-cycle cooling had been deemed "not economically practicable for many existing Phase II facilities."[28]

In part because of this conceptual awkwardness and dissonance that appeared throughout the Phase II rulemaking documentation, a Second Circuit appeals panel remanded the Phase II regulations almost in their entirety in 2007. The basic defect of the rules, in the panel's view, was EPA's apparent decision to use regulatory CBA to identify the performance standard that could be attained by "the best technology available for minimizing adverse impact." As the court observed, *best available technology* (BAT) requirements long have been understood to preclude reliance on cost–benefit balancing by EPA.[29] Because under a BAT requirement "Congress itself [already has] defined the basic relationship between costs and benefits," EPA's responsibility is simply to identify the most environmentally protective technology available at a cost that can be "reasonably borne" by the regulated industry.[30] In determining the ultimate standard, EPA may take account of "other factors, including cost-effectiveness, to choose a less expensive technology that achieves the same results as the benchmark."[31] When identifying the initial BAT, however, the agency must simply ask what level of environmental protection can be achieved by the *best available technology*—"not the average plant, but the optimally operating plant, the pilot plant which acts as a beacon to show what is possible."[32]

On April 14, 2008, the U.S. Supreme Court accepted three consolidated petitions for review arising out of EPA's rulemaking, with the court's consideration limited to the sole question of "whether Section 316(b) of the Clean Water Act, 33 U.S.C. 1326(b), authorizes the [EPA] to compare costs with benefits in determining the best technology available for minimizing adverse environmental impact at cooling water intake structures." To many observers, the court's decision to hear the case was surprising: the Second Circuit's opinion had lacked a dissent; there was no obvious split among the federal courts of appeals as to how to interpret Section 316(b); and the U.S. solicitor general had argued on behalf of the federal government against granting the petition for writ of certiorari. Moreover, although the statutory language of Section 316(b) is slightly ambiguous—in that EPA is left to determine what, in the context of cooling water intake structures, is the relevant "adverse environmental impact" to minimize, unlike the effluent reduction context, which simply demands minimization of pollutant outflows—few observers would have regarded EPA's eventual Phase II rule as a plausible interpretation of the long-familiar BAT language contained within the provision. Thus, the Supreme Court's willingness to consider overturning the Second Circuit's remand of the Phase II rules seemed to many observers to represent another

chapter in the long campaign, waged through both political and judicial channels, to subject environmental laws to the discipline of CBA, irrespective of their statutory language.

Regardless of the ultimate outcome of the case, the controversy thus far has imposed substantial administrative costs: the Phase II rulemaking docket included some 2,805 documents, many of which are hundreds of pages long; and by itself, the agency's final response to public comments on the rulemaking extended for 5,143 pages.[33] Much of this paperwork and analysis was generated by EPA to pursue a course of environmental impact assessment and cost–benefit balancing that was not required by the statute and that may well have been prohibited by it. So deeply dependent on CBA were the Phase II rules that EPA was forced, after the court's decision, to simply suspend operation of the rules entirely, reverting instead to the same case-by-case judgment that the agency had already agreed was inadequate to satisfy the mandate of Section 316(b).[34] Thus, unless the Supreme Court intervenes as a deus ex machina to rescue the aggressively creative Phase II rules, EPA, the regulated community, and the billions of life forms consumed by cooling water intake structures each year all will find themselves in the same dubious legal position that they have occupied for the previous 35 years. This would be an especially frustrating result given that, as the Second Circuit noted, the CWA plainly required EPA to begin adopting cooling water intake regulations *concurrently* with effluent limitation standards under Sections 301 and 306, which is to say, decades ago.[35]

The Phase II rulemaking provides a valuable opportunity to assess, in context, the competing merits of regulatory CBA and more traditional technology-based approaches to environmental law and policy. As a result of EPA's unprecedented approach to the Phase II rulemaking, scholars now have available for study both an expansive regulatory CBA and the technology-based standard that would have been adopted by EPA had the agency followed the straightforward technology-based approach that it took in the Phase I rulemaking. As I argue in this chapter, EPA's Phase II rulemaking illustrates several limitations of regulatory CBA that have yet to be overcome in practice and that, in some cases, cannot be overcome even in principle. Most notably, the practical challenges that prompted Congress to amend the CWA in 1972 remain just as insurmountable today. Although many advances have been made in the understanding of ecosystem functioning and in methods of monetizing environmental impacts, the process of reducing environmental policymaking to empirical technique remains deeply flawed. To be clear, no one denies the wisdom of acquiring information regarding the consequences of regulation as part of the policymaking process. But the wisdom of hinging regulatory outcomes on how well that information can be made to fit the form of a CBA exercise has not been demonstrated. Instead, renewed critical attention is required regarding whether and how to use environmental law to realign burdens of proof for the demonstration of harm, whether the staunch value monism of welfare economics adequately represents the significance and diversity of environmental "goods," and whether the unyielding atomism of environmental economic valuation techniques is consistent with the demands of democracy. Because proponents of regulatory CBA often incorporate debatable views regarding how these issues of information, valuation, and process should be resolved—while still contending that "questions about the correct measurement of benefits and costs" can be kept separate from "philosophical" or "ethical" discussion[36]—they end up offering cost–benefit accounts that, like fish tales, are best heard with skepticism.

Information

The choice of phrasing that Congress used in setting out the requirements of Section 316(b) of the CWA—"best technology available for minimizing adverse environmental impact"—was not incidental. The CWA includes a dizzying array of technology-related standards, each carrying a subtly, but significantly, distinct meaning. Section 301(b) of the CWA, for instance, requires EPA to establish initial effluent limitations for existing sources based on the "best practicable control technology currently available" (BPT). By 1989, EPA was to replace those standards with more stringent ones based on the "best available technology economically achievable." Section 306, in contrast, requires effluent limitations for new sources to be based on the "best available demonstrated control technology [offering] the greatest degree of effluent reduction." As the Second Circuit noted, these varying standards carry significantly different implications for the permissibility of CBA use by EPA. Under the initial BPT approach, regulatory standards could be premised on an explicit comparison of compliance costs to environmental benefits. For the setting of second-generation existing source standards and new source standards, however, EPA generally is prohibited from engaging in such comparison.

Because the language of Section 316(b) closely resembles the language of these more stringent standards, EPA's Phase II rules probably should not have been premised on cost–benefit balancing. Instead, the agency should have focused simply and directly on the affordability of increasingly efficacious environmental control technologies, recognizing that Congress itself already had determined that the benefits of regulation are sufficiently vast and difficult to quantify that only the "best" control technology will suffice. That approach would have mandated the achievement of performance levels equivalent to closed-cycle cooling because EPA earlier had acknowledged that "[c]losed-cycle cooling systems . . . are the most effective means of protecting organisms from [impingement and entrainment],"[37] and the imposition of standards based on closed-cycle cooling would have been affordable to the industry as a whole. Nevertheless, following interventions by OIRA and industry commenters, EPA, in its issuance of the final Phase II rules, sought to bootstrap its way into a CBA regime by reading the word *practicable* into the CWA's cooling water intake structure provision: "Section 316(b) authorizes consideration of the environmental benefit to be gained by requiring that the location, design, construction, and capacity of cooling water intake structures reflect the best economically *practicable* technology available for the purpose of minimizing adverse environmental impact."[38] This attempt by EPA to transform the BAT standard of Section 316(b) into a BPT standard—an attempt that failed to survive judicial review under the Second Circuit's analysis, but that may yet receive the blessing of the Supreme Court—ignored the pragmatic wisdom of Congress's effort to prescribe stringent technology-based standards irrespective of the agency's ability to precisely demonstrate the benefits of doing so. The decision to adopt such standards—which, on the surface, may appear to be one-sided or irrational because of the rejection of cost–benefit maximization—is one that pays due respect to the concerns of practical realizability that must accompany any lawmaking exercise.

Regulatory CBA, in contrast, carries an implicit assumption that the policy space within which EPA operates is informationally rich and probabilistically sophisticated, such that the agency easily can identify courses of action that maximize expected social welfare outcomes. This assumption is unwarranted: the scientific and economic information necessary to fulfill textbook efficiency analysis is almost always lacking in the environmental context. Thus, when proponents of

regulatory CBA argue that only the cost–benefit test "will—by definition—lead consistently to decisions which make the world better off,"[39] they fail to acknowledge that CBA only does so "by definition," that is, by an a priori assumption that the information needed to satisfy the form of the optimization exercise is both attainable and costless. In the case of cooling water intake structures, this assumption was even less warranted than in the typical environmental policymaking task. To meet the form of regulatory calculus demanded of it by CBA, EPA reduced a complex and highly uncertain decision to a question of how much to invest in "reductions in impingement and entrainment as a quick, certain, and consistent metric for determining performance."[40] Increased fish survival became the primary determining factor because, at least for those fish that are commercially or recreationally valuable, that factor offered an ecological benefit that was readily quantifiable and monetizable.

As the agency acknowledged, however, the potential impact of cooling water intake structures is much broader and more complex than direct mortality effects (which are, themselves, only roughly estimable):

In addition to their importance in providing food and other goods of direct use to humans, the organisms lost to [impingement and entrainment] are critical to the continued functioning of the ecosystems of which they are a part. Fish are essential for energy transfer in aquatic food webs, regulation of food web structure, nutrient cycling, maintenance of sediment processes, redistribution of bottom substrates, the regulation of carbon fluxes from water to the atmosphere, and the maintenance of aquatic biodiversity. Examples of ecological and public services disrupted by [impingement and entrainment] include:

- *decreased numbers of ecological keystone, rare, or sensitive species;*
- *decreased numbers of popular species that are not fished, perhaps because the fishery is closed;*
- *decreased numbers of special status (e.g., threatened or endangered) species;*
- *increased numbers of exotic or disruptive species that compete well in the absence of species lost to [impingement and entrainment];*
- *disruption of ecological niches and ecological strategies used by aquatic species;*
- *disruption of organic carbon and nutrient transfer through the food web;*
- *disruption of energy transfer through the food web;*
- *decreased local biodiversity;*
- *disruption of predator–prey relationships;*
- *disruption of age class structures of species;*
- *disruption of natural succession processes;*
- *disruption of public uses other than fishing, such as diving, boating, and nature viewing; and*
- *disruption of public satisfaction with a healthy ecosystem.*[41]

These various ecological and public services received no monetary value in EPA's economic analysis. Indeed, as the agency candidly admitted, even its focus on impingement and entrainment losses was highly incomplete, as it only accounted for losses insofar as they impacted commercial and recreational fish harvest; hence, the agency "was not able to monetize benefits for 98.2% of the age-one equivalent losses of all commercial, recreational, and forage species for the section 316(b) Phase II regulation."[42]

Even for the limited data on cooling water impacts that it did have available, EPA warned that "[b]ecause of... methodological weaknesses, EPA believes that studies... should only be used to gauge the *relative* magnitude of impingement and entrainment losses."[43] EPA also acknowledged

that "only 150 out of 554 Phase II facilities have indicated... that they have ever performed an impingement and entrainment... study."[44] Yet these methodologically weak and incomplete studies provided the raw material for the agency's economic analysis that rejected dry cooling and closed-cycle cooling technologies in favor of weaker performance ranges. Nor was the agency's counsel to use impingement and entrainment studies only to gauge "relative magnitude" the only unheeded disclaimer to appear in the rulemaking record. The agency also warned that "[t]o rely only on estimated use values would substantially undervalue the benefits of the final section 316(b) rule"; that "[t]he organisms that remain unvalued in the analysis provide many important ecological services that do not translate into direct human use"; and that "[t]o the extent that the latter are not captured in the benefits analyses, total benefits are underestimated."[45] Elsewhere, the agency offered the sage advice that "[a] comparison of complete costs and incomplete benefits does not provide an accurate picture of net benefits to society,"[46] and that "there is a real possibility that ignoring non-use values could result in serious misallocation of resources."[47]

Despite these multiple and seemingly sincere disclaimers, the agency ultimately could not resist claiming that its "proposed rule has the largest estimated net benefits, $452 million, of the five regulatory options analyzed."[48] Thus, one important level of objection to the cooling water intake rulemaking focuses on EPA's decision to allow regulatory CBA to heavily influence the ultimate selection of environmental performance standards when the CBA itself was woefully incomplete and uncertain. With so many effects remaining off the balance sheet, regulators actually had little reason to be confident that the conclusions offered by CBA were welfare-maximizing. Nonetheless, as in other contexts, the promise of an "objective" quantitative analysis seemed difficult to resist in the face of a heavily politicized, deeply uncertain, and morally fraught decision. This cognitive lure of CBA was especially evident in the public comments of one prominent environmental economist, who suggested that regulators should seek to identify the technology "which protects the target resources... up to the point where the incremental benefit from increased protection *just equals* the incremental cost of increased protection."[49] Because this standard of empirical sophistication is never met in the area of environmental regulation, important policy judgements must be made regarding how to handle information gaps, scientific uncertainties, system complexities, and other quantitatively intractable features of regulatory decisions such as the cooling water intake rules.

These kinds of policy judgments became especially evident in a difference of view that arose among public commenters regarding whether nonuse values attributable to saved organisms should be estimated by EPA. Beginning with the background precautionary assumption that not everything valuable about the environment can be discerned, dissected, and quantified by present human modes of understanding, one commenter advocated the use of admittedly imperfect attempts to quantify and monetize the variety of ecological impacts that go beyond simple reductions in commercially and recreationally valuable fish mortality. For instance, citing a literature review of use and nonuse value studies in the environmental context, the commenter noted that agencies could rely on a simple presumed ratio between use and nonuse values to provide an approximate numerical estimate of the latter values, conservatively estimated at a multiple of two dollars of nonuse benefit for every one dollar of use benefit.[50] This ratio was offered in contrast to EPA's customary "50 percent rule," which had been used to set nonuse benefits at half of the use benefits, but which this commenter argued was based on outdated studies. Regardless of the ultimate heuristic chosen, however, the commenter's most fundamental point was that EPA should

"avoid placing an effective value of zero on categories of value that the Agency does not have time or resources to analyze in detail."[51] Any other approach would be inconsistent with the environmentally precautionary tilt of the CWA.

Another commenter, in contrast, regarded the literature on use-to-nonuse value ratios to be inadequate to support quantitative estimations in the immediate policymaking context. Because the studies underlying the literature review cited by the first commenter addressed a variety of environmental and natural resources issues other than the impacts of cooling water intake structures on aquatic ecosystems, this commenter argued that the studies provide "no evidence of why, given the *specific* environmental improvements associated with the proposed regulations, non-use value should be of any *specific* magnitude."[52] In the policymaking context, this standard of exactitude carries vastly different implications than in an academic one. By demanding original, detailed, and unambiguous valuation studies of nonuse benefits and other ecological impacts, and by refusing to assign any nonzero value in the absence of such studies, the latter commenter's approach assigned a burden of proof to the agency that predictably biases decisions against environmental protection. Such exactitude might be appropriate within the ivory towers of the university, where scholars aim to bolster the scientific credentials of welfare economics by portraying the discipline as one of "objective implementation of benefit–cost analysis, based on established economic theory and empirical research."[53] In the real world of policymaking, however, decisions must be made in advance of comprehensive knowledge. Nevertheless, in light of the intense criticism that the agency received even for its cautious use of a 50 percent ratio to estimate nonuse benefits, EPA ultimately assigned no numerical value at all.[54]

A second, and potentially more significant, level of objection focuses on the opportunity cost of conducting regulatory CBA. One of the defining characteristics of environmental law is its demand that society make choices in advance of complete and reliable information regarding the consequences of those choices. Accordingly, a primary thrust of the precautionary approach to environmental law and policy is that regulatory decisionmaking should be designed not merely to react to existing information, but to actively intervene in the processes and institutions by which information is generated. For instance, through careful assignment and management of the burden of proof, regulators may be able to marshal the information-generating resources of firms and other private actors in service of the public's environmental aspirations. By instead placing the burden on regulators to identify, quantify, and monetize potential adverse impacts of market activity, regulatory CBA does not merely construe uncertainty against the environment, it also forfeits a valuable opportunity to use incentives, penalty defaults, and other regulatory strategies directly in furtherance of informational goals. Such an opportunity is especially significant in the environmental regulatory context given that, as public choice theory would predict, the regulated community is typically better represented and better resourced than nongovernmental organizations and other representatives of the public interest during administrative rulemaking. As the Phase II rulemaking process made all too plain, identification of the social welfare–maximizing policy is a function not merely of regulatory costs and benefits—or even of policy decisions regarding how to address inevitable uncertainties in costs and henefits—but also of the power of stakeholders to invest in shaping the understanding and perception of costs and benefits.

Lest it be genuinely obtuse, environmental policymaking must be conceived of with this informational and political context in mind. Many proponents of regulatory CBA, however, treat information acquisition and management as matters that simply happen out there. One important

task for the improvement of regulatory CBA is therefore to consider more fully the institutional context within which it unfolds and to expressly link its use to conditions within which it can be expected to generate reliable guidance. Regulatory CBA as currently practiced can perhaps be best understood as a method of executive control over agency decisionmaking, rather than as a genuine effort to identify welfare-maximizing uses of public resources. The Phase II rulemaking experience seems to bear this cynical view out, as one can read between the lines a sense of frustration among EPA staff members regarding OIRA's simultaneous demand for robust quantitative and monetary estimates of regulatory impacts on one hand and its refusal to grant EPA the required approvals to conduct original valuation studies on the other.[55] More broadly, the agency's Phase II rulemaking documents repeatedly stress that adequate valuations for the myriad nonuse benefits of the rule were not developed because of a lack of adequate time and resources. Again, the burden of proof becomes an issue in any real-world policy analysis such as this one, and OIRA seems to have influenced the rulemaking such that the burden fell on EPA to demonstrate harm rather than, as the CWA arguably prescribes, on those agents that adversely impact aquatic ecosystems to demonstrate the infeasibility of harm reduction.

Valuation

Even assuming that EPA did have reliable and comprehensive information regarding the myriad, complex environmental impacts of cooling water intake processes, the agency still, under regulatory CBA, needed to transform those impacts into a uniform monetary measure to enable quantitative comparison with the expected costs of protection technologies. As noted above, when designing the Phase II rules, EPA focused only on "reductions in impingement and entrainment as a quick, certain, and consistent metric for determining performance."[56] Moreover, reductions in impingement and entrainment were valued only insofar as they resulted in identifiable gains to commercially and recreationally valuable fish.[57] This choice of metric was useful for EPA because it allowed the agency to avoid intractable valuation questions that would have accompanied the effort to account for threatened or endangered species impacted by cooling water intake processes.[58] Indeed, the entire approach of focusing on reductions in impingement and entrainment as "a convenient indicator of the efficacy of controls in reducing environmental impact"[59] seemed designed to ensure that the agency could comply with the quantification and monetization demands of regulatory CBA, irrespective of the actual share of the consequentialist landscape that the agency encompassed within its calculations. Unable to measure what was important, EPA instead chose to make important what it could measure.

In earlier stages of its analysis, EPA candidly acknowledged that existing valuation techniques in the environmental economic literature tend to understate the benefits of environmental protection by focusing only on the most readily understood and quantifiable effects of human interference with ecosystems.[60] Thus, the agency sought to supplement its initial analysis with an indirect measure of the value of environmental protection, one that asks what the cost would be of replacing the variety of goods and services that are provided by a healthy, functioning aquatic ecosystem. Although conventional valuation techniques ask whether an environmental resource is worth saving based on estimates of the monetary worth of its fruits, EPA's *habitat replacement cost* (HRC) method instead asked what those fruits are worth based on how difficult and costly it would be to develop substitutes for the environmental resource that generates them. The former

approach reflects a demand-side estimate of environmental value based on the amount that individuals appear willing to pay to preserve discrete environmental goods or services; the latter approach generates a supply-side estimate of environmental value based on the amount that society would need to expend to replace those same environmental goods and services in their interrelated ecological context, essentially taking as given that those goods and services must be provided. The great advantage of the latter approach, as the agency noted, is that "[t]he HRC method can be used in benefit–cost analyses to value a broad range of ecological and human services associated with [impingement and entrainment] losses that are either undervalued or ignored by conventional valuation approaches."[61]

Nevertheless, one public commenter strongly condemned HRC as "a completely illegitimate method of analysis," stating that it is "essentially oxymoronic and completely invalid," and that it commits "one of the gravest of errors in economics" by confusing environmental costs and benefits.[62] Not content with this invective, the commenter also sought to denounce as "false" all of EPA's claimed reasons for deploying HRC estimation:

[I]t is claimed that 'the HRC method can be used to value a broad range of ecological and human services losses....' False. It is also asserted that 'it can be used as an alternative to conventional approaches that are based on recreational and commercial fishing impacts.' False. And it is stated that 'in addition, HRC can supplement conventional valuation results....' False.[63]

What accounts for such strong criticism? HRC estimations essentially assume that an object of environmental protection is a unique capital resource that produces a flow of valuable goods and services, the worth of which can only be approximated by asking what it would cost to develop a substitute resource that produced those same goods and services. To some observers, this approach is wrongheaded because the very point of regulatory CBA is to ask whether the environmental resource is worth preserving at all. That is, rather than just assume that society must have clean water, biodiversity, and the variety of other goods and services that flow from intact ecosystems (or their built replacements), regulators should estimate the monetary amount that individuals are actually willing to pay to obtain those specific, disaggregated goods and services. In this view, no resource or service—not fish, not freshwater, not human life—is considered sufficiently important to avoid being subjected to instrumentalist trading.

A second commenter objected to this radically commensurated worldview and sought instead to portray environmental resources as capital items in the manner assumed by HRC. The commenter asked:

Are the natural resources that are affected by cooling water intake best thought of as long-lived capital goods—or are they more like consumer goods that people, or power plants, might choose to consume when they are hungry? If you eat the last cookie and then throw out the box, you may not have to pay the full 'cookie replacement cost.' Perhaps you are getting tired of cookies and don't plan to buy any more, so there is no need to worry about replacement cost. Something along these lines seems to be involved in the claim that HRC overstates the value of environmental resources: if we are planning to consume the ecosystem without replacement, then HRC might overestimate the values at stake.[64]

Through this skeptical metaphor, the commenter joined rather illustrious company, even among economists: in Daniel Defoe's novel *Robinson Crusoe*—a favorite literary example of economists[65] and a key progenitor of the myth of the self-reliant individual that animates much of liberal political theory (and by extension welfare economics)[66]—the legendary protagonist despaired

over his declining supply of ink for writing on his island home. Although he attempted to engineer crude substitutes—such as the arrangement of large physical objects to serve as memory joggers akin to a written diary or a list—in the end, Crusoe was left sadly bemoaning the disappearance of an irreplaceable asset: "My Ink, as I observed, had been gone some time, all but a very little, which I eek'd out with Water a little and a little, till it was so pale it scarce left any Appearance of black upon the Paper...."[67] Whatever Crusoe's role in furthering the economic conception of human nature, his supply of ink seemed not to have been, to him, just another box of cookies.

The debate between these two commenters illustrates a more general theoretical distinction that exists between conventional environmental economists, who tend to view all natural and human-made capital as substitutable, and ecological economists, who in contrast view many features of natural capital and ecosystem services as practically irreplaceable. In this context at least, Congress appears to have sided with the ecological economists: the goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[68] The goal is not to view those waters as merely contingent resources, to be impaired or sacrificed at any moment for the promotion of an abstract and undifferentiated maximization of welfare. Nor is the CWA at all unusual in this regard: much of the project of environmental law aims to identify elements of the environment—for instance, particular species, habitats, ecosystems, or global atmospheric processes—that are sufficiently important to human well-being or sufficiently worthy of admiration and respect in their own right and to take them outside of the realm of instrumentalist trading; that is, to cordon them off from the market's continual demand that they demonstrate their monetary worth in order not to be consumed, developed, or otherwise sacrificed.

Such an approach should not be completely alien to welfare economists: in political theory, eminent welfarists such as Amartya Sen similarly offer an "objective list" of essential human goods or capabilities as the relevant indicia of social well-being that governments ought to pursue, rather than undifferentiated increases in overall well-being as approximated through willingness-to-pay, gross domestic product, or similar wealth-based measures.[69] Lexical orderings such as Sen's can be justified deontologically as conferring certain "rights" or "trumps" on individuals to help effectuate the liberal ideals of equality and autonomous flourishing (or, in the case of the rights of nature, to move beyond liberalism's relentless anthropocentricism). They also can be justified more pragmatically as offering better approximations of overall well-being than the preferentialism of welfare economics, given the insurmountable costs of information and deliberation that prevent preferentialist approaches from achieving their aim of comprehensive evaluation. It may be both just and efficient, in other words, to at least occasionally refuse to treat policy decisions as mere investment choices. Proponents of regulatory CBA would be wise to embrace, or at least experiment with, such alternative value criteria. Under Sen's approach, for instance, the so-called inevitable trade-off between efficiency and equity is accommodated by bringing the underlying value criterion, which ultimately determines what counts as efficient, into better alignment with the demands of equity. Likewise, by placing ecologically determined constraints on market ordering, such as through the mandated protection of endangered species or the steady renewal of the nation's water bodies and coastal areas, Congress has, in essence, made certain environmental goals foundational, such that they need not be seen as derogating from efficiency. Instead, they are put in place prior to the market operations that later will determine efficiency.

Nonetheless, to some proponents of CBA, value remains a steadfastly monistic concept. As one public commenter wrote, "[i]n economic terms, the benefits of some action are equivalent to the aggregate of the willingness to pay (WTP) by the affected human populations for that action or outcome."[70] From this perspective, everything of value in the world can be readily commensurated because, by assumption, value only takes the form of individual human preference, as manifested in measurable expressions of willingness to pay. Such a tendency toward value monism also was apparent in EPA's flirtation with a trading program as a compliance alternative for firms under the final Phase II rules. Under this radically commensurated approach, facilities would have been permitted to purchase credits from other firms representing environmental impact reductions equivalent to the purchasing facilities' regulatory obligation.[71] Interestingly, here EPA balked at the "comparability and implementation challenges" implied by such a trading program: "EPA does not believe that it is possible at this time to quantify with adequate certainty the potential effects on ecosystem function, community structure, biodiversity, and genetic diversity of such trades, especially when threatened and/or endangered species are present."[72] Those same challenges, however, also applied to the attempt to conduct a regulatory CBA of cooling water intake structure requirements. That is, the very challenges of information and valuation that caused EPA to back down from a trading program should have caused it also to withdraw from regulatory CBA.

Even assuming adequate information, the value monist approach of welfare economics still must meet the ecological economist's more fundamental conceptual objection that willingness-to-pay valuation measures confuse the categories of capital and income, stock and flow, and future and present. Characterizing natural resources as capital goods or stocks illuminates their irreducible intergenerational aspect. In the context of fish, for instance, one might say that the "optimal" management criterion for a given fishery is to seek maximum sustainable yield.[73] That intuitively appealing criterion represents, at bottom, a normative judgment regarding intergenerational distributive equity: the value of the fishery's yield is considered sufficiently large and distinct to merit preserving the underlying capital stock, such that the flow continues irrespective of opportunity costs. From the strict welfare economic perspective, on the other hand, the fishery would be managed sustainably only if the anticipated benefits of doing so happened to justify the costs. If it turned out that "liquidating" the fishery and reinvesting the monetary proceeds in other investment opportunities proved to have a higher net present value, then nothing in the value monism of welfare economics would counsel against such liquidation. As Robert Solow famously put it, from this perspective, "the world can, in effect, get along without natural resources, so exhaustion is just an event, not a catastrophe."[74]

This debate also touches on a longstanding difference of view among economists, philosophers, and others regarding the proper role of temporal discounting in regulatory CBA. Over the years, OMB has supported relatively high discount rates, often based on historical returns on private investment rather than arguably more appropriate measures, such as the real return on long-term government debt or, indeed, no discounting at all.[75] In 2003, for instance, OMB dismissed a public comment that had advocated a relatively low (e.g., 3 percent) discount rate for long-term policy evaluation, arguing that such a rate would "not be appropriate for regulations that had a strong displacing effect on capital investment."[76] Behind OMB's argument again lies an assumption that natural and human-made capital are generally substitutable, such that the proper rate of discount for the former safely can be assumed to be the rate of return given by the latter. If this assumption holds, then discounting by market rates of return will benefit future generations by en-

suring that their eventual resource base has taken advantage of the best available investment opportunities during intervening time periods. If the assumption does not hold, however, future generations may be left immeasurably harmed. In fact, they may be caused *not to exist at all,* even as cost–benefit models assure them that they are somehow "better off" as a result.[77]

Despite the obvious normative issues raised in this context, OMB's defense of intergenerational discounting has been meager. In its 2003 revised Circular A-4, for instance, OMB offered two misguided arguments: (a) future generations "will be wealthier and thus will value a marginal dollar of benefits and costs by less than those alive today," and (b) the longer time horizon involved for intergenerational policy analysis implies a greater level of uncertainty regarding future costs and benefits.[78] As Derek Parfit long ago pointed out, these two defenses fail even to address their proper subject: the first defense discounts consequences because they happen to people who are better off; the second, because the consequences may not actually happen. Neither defense actually bears an unequivocal relationship to time, which is, after all, the dimension along which discounting purports to proceed.[79] In fact, none of the conventional arguments in defense of discounting in the intergenerational context withstand analysis, except potentially the defense based on opportunity costs, which, as argued above, depends on a debatable assumption of perfect substitutability among the varieties of natural and human-made capital goods. Even the defense offered by EPA in connection with the Phase II rulemaking—which simply notes that individuals in the current generation tend to reveal a rate of time preference for present over future consumption[80]—fails to grapple with the intergenerational context because it assumes that one generation's rate of time preference can simply be transposed onto another. It even confuses the relevant interest holder: it implicitly treats society as one infinitely lived individual, rather than acknowledging the need to correlate periods of discounting with the time spans during which individuals actually are alive and experiencing temporal impatience. Such conceptual slippage is symptomatic of a broader confusion regarding CBA in the intergenerational context: when future generations are at issue, there can be no revealed or stated preferentialist approach to welfare maximization. Instead, analysts must engage directly with the inevitably paternalistic project of helping to structure the environment, the possibilities, and the very identities of future individuals. Recent work by Matthew Adler and Paul Dolan attempts to take this challenge seriously while still generating valuations that can be of practical worth.[81] Their work should be of great interest to the community of academics, bureaucrats, policy analysts, and others who are invested in the philosophically appropriate use of regulatory CBA.

For the cooling water intake rulemaking, these fundamental conceptual issues manifested in the question of whether EPA had underestimated the commercial and recreational value of fish by calculating only the value of fish that eventually are landed. From one perspective, uncaught fish should be credited as valuable because they form the stock from which future fish grow, including those caught fish that later register in EPA's benefit calculations. Treating natural capital instead as a pure consumable may lead to a situation that is deemed efficient even as it fails to ensure sustainability. This issue should have played a far more prominent role in EPA's decisionmaking, given the dire state of many of the nation's fisheries and the fact that "some studies estimating the impact of impingement and entrainment on populations of key commercial or recreational fish have predicted substantial declines in population size."[82] Likewise, the value of threatened, endangered, and other "special status" species was left unquantified in EPA's regulatory impact analysis, despite ample evidence that such species are threatened by the impacts of cooling water

intake. The attempts the agency did undertake to value threatened and endangered species, moreover, simply treated species preservation as an investment decision to be based on individuals' revealed preference for species survival. From this perspective, certain charismatic species, such as the loggerhead sea turtle, might fare well based on their high nonconsumptive value as objects of photography and other indirect uses, whereas more "obscure species" would be relegated to the notoriously difficult to estimate category of "pure non-use value."[83] Although preferable to EPA's eventual failure to credit endangered and threatened species impacts at all, the investment approach nevertheless fails to take seriously the awesomeness of extinction as a collective deed. Like the irreversible depletion of a once-grand fishery stock, species extinction is a deed that lies outside of secular time. Once these stocks and species are gone, they are gone. Thus, the decision to establish standards of protection entails not just a question of maximizing allocative efficiency—of squeezing the most net present value out of resources that are assumed to belong to the current generation—but a question of determining whether, as a matter of intergenerational distributive equity, they should remain available for the benefit of future generations. No matter how rigorous its techniques of valuation, regulatory CBA has no capacity to resolve the latter question, which must remain one of morality and law.

Process

Because EPA eventually felt the need to abandon both its conservative 50 percent rule for nonuse value estimation and the HRC measure of ecosystem value,[84] the agency ended up capturing only a very limited picture of the value of cooling water intake regulation. The agency did present what it styled as a "break-even analysis," which illustrated the amount of total and per capita annual willingness to pay for unvalued ecological impacts that would be required for the costs of the rule to equal its benefits.[85] This approach—which essentially allowed policymakers and their various publics to examine the value of habitat preservation implied by the CWA's precautionary mandate and to ask themselves, "Is it worth it?"—bore some relationship to another valuation technique that EPA was forced to back away from after harsh public comments, the *societal revealed preference* method.[86] Under this approach, the agency examined the level of compliance costs that had been tolerated by society in connection with previous governmental actions that sought to attain the same kinds of ecological benefits that the Section 316(b) rulemaking would promote. Also sometimes referred to as the *cost of control* method, this valuation approach appears to have been pioneered by public utility commissions in Massachusetts and other progressive states as part of an effort to monetize environmental externalities during electricity generation planning: "[t]he basic rationale for using cost of pollution control as a measure of the value of pollution reduction is that the cost of pollution controls required by the government provides an estimate of the price that society is willing to pay to reduce the pollutant."[87] Like EPA's HRC and break-even analyses, then, the societal revealed preference methodology represented an innovative way of responding to OIRA's demand for quantitative, monetized information regarding the costs and benefits of the Phase II rule, despite the great uncertainty characterizing ecological effects.

Some commenters, however, were no more pleased with the societal revealed preference methodology than with HRC; thus, EPA ultimately decided to back away from its innovative approach. As one environmental economist wrote, "[l]ike the HRC method, this approach has no foundation in economic theory, is not accepted by economists as a legitimate empirical method

of valuation, and is no more than a method of cost analysis mistakenly applied to the benefit side of the ledger."[88] Such criticism of the societal revealed preference methodology was instructive because it raised in a concrete setting the basic normative questions posed by Mark Sagoff in his classic critique of regulatory CBA: What, after all, is wrong with allowing valuations of collective goods to emerge from society's willingness to act collectively as citizens to preserve a threatened good? What is wrong with simply allowing individuals to express their preferences for environmental goals through political channels, by voting in favor of environmentally inclined or disinclined politicians or by holding direct referenda on environmental policies?[89] To be sure, a monetary value of the environment will be implied after the fact by the level of resources necessary to fulfill adopted environmental policies—a value that will even be quantitatively estimable through use of the societal revealed preference methodology—but this value will not drive the initial selection of policy. Rather the monetary value will simply be an ancillary effect of a policy choice that instead is premised on social values, explicitly discussed, and mediated through democratic decisionmaking processes.

This distinction between market-determining and market-determined views of the content of law is perhaps best illustrated through analogy to a context in which the sublimation of law to welfare analysis is more obviously problematic, or at least unfamiliar. In the wake of the 9/11 World Trade Center attacks, OMB issued a call for research on how to measure the value of liberty and privacy interests that would potentially be sacrificed by new antiterrorism measures.[90] Responding to this call, researchers at Harvard University attempted to measure individuals' willingness to trade off civil liberties for safety and convenience during airport security checkpoint procedures. In particular, the researchers questioned survey respondents' willingness to accept racial profiling in exchange for reduced time spent waiting in line. Not surprisingly, white respondents were generally more willing to accept racial profiling than nonwhite respondents.[91] The principle of race neutrality did figure somewhat in the white subjects' decisionmaking: when told that only nonwhite groups would be targeted for profiling, white respondents expressed an unwillingness to support the explicitly race-based program for a meager 10-minute time savings. For a 30-minute savings, however, the white respondents overcame their moral qualms.[92] They revealed, in other words, their willingness to pay to preserve the principle of race neutrality.

By calling for empirical research of this nature, OMB sought to develop procedures for estimating the welfare impacts of civil liberties restrictions. From the welfarist perspective, the value of civil liberties was thus made to be contingent on the level of burden that individuals appeared to be willing to accept to maintain them. In a constitutional scheme of government, however, the cart is typically at the other end of the horse: civil liberties are protected by law, and their value, assuming one insists on quantification, is implied by the level of burden that individuals are made to accept to maintain them. At least on their face, environmental, health, and safety laws also frequently display this structure: employees are *entitled* to a safe workplace, endangered species to necessary habitat, citizens to clean air and water, and so on. These entitlements are meant to be inviolable; that is, they are meant to be protected by law, such that their value is a creation, rather than a determinant, of law. Just as a constitutional scheme of rights is intended to protect certain interests of individuals from incursion by majoritarian politics, democratically enacted environmental laws often seek to protect certain interests from shortsighted destruction by land development, industrialization, and other potentially harmful human activities.

The most critical question raised by regulatory CBA, therefore, is not to be found in the details of ever more refined modes of valuation, but rather in the initial staging decision regarding what is, and is not, a proper subject of instrumentalist trading. Perhaps for the welfare economist a better example than civil rights would be the classical liberal principles of strong private property rights and freedom of contract. Should the content of *these* laws be determined through regulatory CBA? If so, how would the relevant valuations of cost and benefit be derived, considering that the very laws under consideration are the same ones that give rise to the market structure and exchange activities that enable revealed preference analysis? As with civil liberties, property rights, and freedom of contract, many of the central questions and tasks of environmental law and policy also are of a foundational character and therefore cannot be adequately posed within the language of regulatory CBA. Instead, they must be answered through the more familiar discourses and procedures of democratic constitutionalism.

Opposition to methodological innovations, such as the HRC and societal revealed preference valuation techniques, may be driven at bottom by a suspicion of precisely these familiar discourses and procedures. Yet it is not clear that individual willingness-to-pay valuations are above suspicion. Critics imply that the societal revealed preference methodology is especially unreliable because there is no guarantee that individuals *"actually (and voluntarily) incur [ ] costs* to avert (or tolerate) the environmental disruption in question."[93] The very domain of regulatory CBA, however, is one in which private market activity—that of individuals *"actually (and voluntarily) incurring costs"*—is presumed to have failed to maximize social welfare. Indeed, recent revisions to the executive order mandating regulatory CBA purport to make the identification of some market failure along these lines a prerequisite to agency action.[94] By assumption, then, conventional willingness-to-pay valuation exercises must apply outside of the context that is said to have made them especially reliable as indicators of value. This point needs to be stressed: policy analysts devote a great deal of attention to the practice of *benefits transfer analysis*, whereby values derived from one economic study are transferred for use in a somewhat analogous, but nevertheless distinct, regulatory setting. They spend comparatively little attention worrying about the fact that *every* willingness-to-pay study, when used in a regulatory context, is a benefits transfer exercise entailing deep conceptual and practical difficulties.

Thus, even putting aside the foundational normative issues raised by critics like Sagoff, it would be wrong to believe that conventional willingness-to-pay methodologies provide an objective measure of benefits. For example, even individual market valuations may differ dramatically depending on whether the individual must pay to obtain an entitlement or instead can simply demand an amount of monetary compensation adequate to compel voluntary relinquishment of the entitlement. Because welfare economists hope to avoid such overtly normative questions, they typically use only willingness-to-pay valuations. This choice can be defended on the methodological ground that such valuations are better behaved than willingness-to-accept valuations because the former are disciplined by actual or hypothetically imposed budget constraints and therefore tend to give more consistent (and lower) values. The conventional privileging of revealed preference studies over stated preference studies is often defended on similar pragmatic grounds.[95] But these choices also have the convenient normative effect of forcing individuals to demand greater levels of protection only through markets, using their existing rights and resources, rather than through law. The transformative potential of law is constrained by tethering social choice valuation to the status quo—the same status quo whose problematic features gave rise to a need for law. We should

hesitate to regard the fact that willingness-to-pay valuations are better behaved than willingness-to-accept valuations as evidence that society can identify the optimal level of harm through conventional regulatory CBA. Instead, we should see consistently lower willingness-to-pay valuations as evidence that workers, consumers, fish, and other imperiled entities ought to be given more power directly through law to help close the gap between the two valuations.

Also not properly characterized as objective are stated preference valuation methodologies, in which individuals are asked through hypothetical survey instruments to state their willingness to pay to protect a public good, such as an endangered species or a portion of rainforest. Such contingent valuation exercises have attracted criticism from two different extremes. To some critics, the exercises are practically unreliable because they require no actual performance of an individual's stated commitment. To others, the exercises are philosophically objectionable because they seem to force a market-based values framework onto experimental subjects, rather than approaching the environmental preservation decision as a social or collective one. Although economists have responded to the former criticism by enhancing the level of methodological sophistication found in contingent valuation experiments, they have only recently begun grappling with the latter objection. In one noteworthy study, researchers examined the role of social isolation on stated preferences by varying the degree of anonymity afforded to subject responses.[96] Their findings are significant: in addition to finding a gap between stated willingness to pay and actual contribution levels—thus confirming the complaint of the practical critics of contingent valuation studies—the researchers also documented large disparities among willingness-to-pay valuations depending on the social context within which subjects are asked to state their response amounts, thus confirming the complaint of the philosophical critics.

This apparent context-dependence of environmental valuations poses yet another theoretical challenge to the welfare economic framework: the process of preference elicitation itself seems to influence the resulting content of preferences, thereby further complicating the effort to identify preferences in a manner free from analyst bias.[97] Not that anyone should be especially surprised by this result; after all, as Amartya Sen has argued, "[t]he very idea that I treat the prevention of an environmental damage just like buying a private good is itself quite absurd. . . . [I]t would be amazing if the payment I am ready to make to save nature is totally independent of what others are ready to pay for it, since it is specifically a social concern."[98] During the public comment period for the Phase II rulemaking, one contributor argued that this quotation from Sen merely reflects the commonplace notion that, in the case of public goods, such as environmental conservation, individuals can be expected to free-ride, thereby driving a wedge between their true demand for public goods and their observed (unregulated) contributions to the provision of such goods. Thus, the commenter disagreed with others who viewed Sen's comment as more strongly supporting the need for alternative valuation mechanisms to conventional revealed preference methodologies.[99]

But in fact, Sen was making the stronger claim, namely that specifically social concerns demand specifically *social* methods of deliberation, valuation, and decisionmaking. As Sen noted in another context, "[w]e can have many reasons for our conservational efforts—not all of which are parasitic on our own living standards and some of which turn precisely on our sense of values and of fiduciary responsibility."[100] Because of this value pluralism, which is inherent in contemporary liberal societies, Sen emphasized the need to guarantee to individuals the "freedom to participate" in environmental policymaking. Thus, the famed economist and political theorist cast

his lot, not with conventional revealed preference methodologies or even with the supposedly radical economic methodologies of HRC and societal revealed preference, but rather with the kind of democratic forums, institutions, and processes championed by the likes of Sagoff. As Sen wrote:

The relevance of citizenship and of social participation is not just instrumental. They are integral parts of what we have reason to preserve. We have to combine the basic [instrumentalist] notion of sustainability... with a broader view of human beings—one that sees them as agents whose freedoms matter, not just as patients who are no more than their living standards.[101]

In recognition of the force behind such arguments, a growing body of literature within environmental economics attempts to fuse deliberative processes with economic valuation techniques, aiming to address both the political demand for participatory legitimacy and the economic demand for disciplined monetary valuation. As Clive Spash, a leading participant in this emerging literature, noted, proponents of such *deliberative monetary valuation* techniques "have sought processes where there is time for reflection, potential for information gathering and group deliberation," an approach that "seems to accept that preferences are formed during a process aiming to value environmental changes and that the type of process is therefore something which needs to be openly discussed as a matter of institutional design."[102] Deliberative monetary valuation therefore occupies a middle position between the radically atomized individualism of welfare economics and the political collectivity of conventional lawmaking. Although it is unclear whether such efforts to sensitize welfare economic policy analysis ultimately will be able to meet the democratic objection of thinkers like Sagoff and Sen, they undoubtedly represent an improvement over status quo valuation techniques.

Conclusion

Despite the implicit claim of welfare economists, laws are not only instrumental tools for serving human "patients," but also repositories of cultural value and meaning that both flow from and help to form human "agents." The temptation to reduce this complexity is great. Many economic observers, for instance, contend that BAT standards devolve in practice to CBA because, as noted above, courts often permit agencies to reject a technology whose costs are "wholly disproportionate" to environmental benefits.[103] However, such limited cost consideration does not render BAT standards extensionally equivalent to CBA. Technology-based standards continue to carry expressive connotations that are vastly different from those of CBA. The determination by Congress that an environmental, health, or safety goal is sufficiently important that only society's collective "best" efforts will suffice opens an inevitable and lamentable gap between statutory aspiration and regulatory achievement. Those harms that are not prevented under a BAT standard accordingly serve as moral remainders, indicating the collective need to constantly seek ways of doing better—of further protecting life and lowering environmental impact in the future. In contrast, under regulatory CBA, those harms that are not avoided simply represent the right, the efficient, or the optimal level of harm. Precisely because it purports to account for all relevant consequences of decisionmaking, CBA must inevitably round to zero the moral remainders of risk regulation, leaving nothing further to signify the societal need for redoubled vigilance. In EPA's Phase II rulemaking, for instance, literally billions of fish each year are simply ignored in the agency's CBA, treated as if their loss is meaningless because the question of their worth has been abandoned.

Environmental decisionmaking cannot be premised solely on static, localized costs and benefits in this manner. Regulatory approaches instead must aim to alter—over time and in rather dramatic macroscale ways—the economic and technological forces that combine to structure any given regulatory context, with its microscale snapshot of cost and benefit information that seems to admit of only one optimal solution. The latter approach ignores what is rightly regarded as law's transformative potential. For instance, as the Second Circuit observed when striking down EPA's Phase II rules, "the most salient characteristic of [the CWA's] statutory scheme, articulated time and again by its architects and embedded in the statutory language, is that it is technology forcing."[104] When EPA subtly shifted from expressing concern over the impact of cooling water intake structures on already impaired water bodies to using that present impairment as an efficiency-oriented excuse for lowering levels of protection, the agency abandoned the transformative potential of the CWA. The quest to use environmental law to progressively restructure the economic and technological landscape that gives rise to any momentary depiction of costs, benefits, and optimality instead became a surrender to those momentary depictions. To effectively serve the original, more ambitious aims of environmental law, statutes and regulations must form a part of the social glue that binds a political community together in pursuit of long-term, uncertain, and often simply audacious collective goals. To serve that aim, in turn, laws and policies must have "continuity with ordinary discourse and hence with real communities, real values, and real politics."[105] By literally denying the sacredness of life, and indeed of anything, regulatory CBA fails these tests.

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Notes

1. *Environmental Protection Agency v. State Water Resources Control Board*, 426 U.S. 200, 202–203 (1976).

2. Id. at 203.

3. *See* 33 U.S.C.A. §§ 1251, 1342. *See also Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1041–42 (D.C. Cir. 1978); *Bethlehem Steel Corp. v. EPA*, 538 F.2d 513, 514–15 (2d Cir. 1976); *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 623–24 (2d Cir. 1976).

4. *See* Oliver A. Houck, *The Clean Water Act TMDL Program: Law, Policy, and Implementation* (Washington, DC: Environmental Law Institute, 1999), 3.

5. *See* 33 U.S.C.A. § 1326(b).

6. U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities," *Federal Register* 69 (July 9, 2004): 41576, 41586 (to be codified at 40 C.F.R. pts. 9, 122–25) [hereinafter, "Final Regulations"].

7. Id.

8. Id. at 41,586.

9. 33 U.S.C.A. § 1326(b).

10. *See Appalachian Power Co. v. Train*, 566 F.2d 451, 457 (4th Cir. 1977).

11. *See Federal Register* 44: 32956.

12. *See Cronin v. Browner*, 898 F. Supp. 1052, 1056 (S.D.N.Y. 1995).

13. *See* Karl R. Rábago, "What Comes Out Must Go In: Cooling Water Intakes and the Clean Water Act," *Harvard Environmental Law Review* 16 (1992): 429, 467.

14. *See Riverkeeper, Inc. v. United States Environmental Protection Agency*, 358 F.3d 174, 181 (2d Cir. 2004) [hereinafter, Riverkeeper I]; *Riverkeeper, Inc. v. United States Environmental Protection Agency*, 475 F.3d 83, 90 (2d Cir. 2007) [hereinafter, Riverkeeper II].

15. *See* Riverkeeper I, 358 F.3d at 196.

16. "Final Regulations," *Federal Register* 69: 41583.

17. Id. at 41598.

18. Id. at 41,601. *See also* U.S. Environmental Protection Agency, *Economic and Benefits Analysis for the Final Section 316(b) Phase II Existing Facilities Rule*, EPA-821-R-04-005 (Washington, DC: U.S. EPA, 2004), A2-5 ("Closed-cycle cooling systems... are the most effective means of protecting organisms from [impingement and entrainment]."), available at www.epa.gov/waterscience/316b/phase2/econbenefits/final.htm [hereinafter, Final Rule EBA].

19. "Final Regulations," *Federal Register* 69: 41583.

20. *See* id. at 41603 ("[I]n determining that the technologies on which EPA based the compliance alternatives and performance standards are the best technologies available for existing facilities to minimize adverse environmental impact, EPA considered the national cost of those technologies in comparison to the national benefits....").

21. Final Rule EBA, at D1-1 (predicting "no compliance action" for 200 facilities but noting that 75 of these facilities already have adopted closed-cycle cooling).

22. Final Rule EBA, at C3-2.

23. "Final Regulations," *Federal Register* 69: 41599. *See also id.* at 41,604 ("[I]n a waterbody that is already degraded, very few aquatic organisms may be subject to impingement or entrainment, and the costs of retrofitting an existing cooling water intake structure may be significantly greater than the benefits of doing so."); U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System—Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities," *Federal Register* 67 (proposed Apr. 9, 2002): 17122 (to be codified at 40 C.F.R. pts. 9, 122–25) ("In general, the more sensitive or biologically productive the waterbody, the more stringent the requirements proposed as reflecting the best technology available for minimizing adverse environmental impact.") [hereinafter, "Proposed Regulations"].

24. "Proposed Regulations," *Federal Register* 67: 17,168 (emphasis added). A similar slip occurred with respect to non-impingement and entrainment environmental effects, which EPA claimed would be "acceptable at the national level." "Final Regulations," Federal Register 69: 41586. Again, the standard is minimization of environmental harms, not acceptability.

25. "Proposed Regulations," *Federal Register* 67: 17136.

26. *See* Lisa Heinzerling, "Statutory Interpretation in the Era of OIRA," *Fordham Urban Law Journal* 33 (2006): 1097.

27. "Final Regulations," *Federal Register* 69: 41601.

28. *Id.*

29. Riverkeeper II, 475 F.3d at 97–98. *See also* Heinzerling, *supra* note 26, at 1102.

30. Riverkeeper II, 475 F.3d at 99 (quoting *Am. Textile Mfrs. Inst. Inc. v. Donovan*, 452 U.S. 490, 509 (1981)).

31. Riverkeeper II, 475 F.3d at 100.

32. *Kennecott v. United States EPA*, 780 F.2d at 445, 448 (4th Cir. 1985).

33. *See also* Riverkeeper II, 475 F.3d at 104.

34. *See* U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System—Suspension of Regulations Establishing Requirements for Cooling Water Intake Structures at Phase II Existing Facilities," *Federal Register* 72 (July 9, 2007): 37107.

35. Riverkeeper I, 358 F.3d at 185.

36. Robert N. Stavins, Letter to Water Docket ID no. OW-2002-0049, Re: Comments on Proposed Rule RIN 2040-AD62; Notice of Data Availability Clean Water Act Section 316(b) —National Pollutant Discharge Elimination System—Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, at 4 (April 21, 2003) [hereinafter, Stavins 4/21/2003 Letter].

37. Final Rule EBA, at A2-5.

38. "Final Regulations," *Federal Register* 69: 41,603 (emphasis added). *See also id.* at 41,591 (stating that EPA compliance alternatives were designed "to ensure that the rule requirements are economically practicable"); id. at 41596 ("EPA was not able to identify a uniform set of technologies that would be available and economically practicable....").

39. Robert N. Stavins, Letter to Proposed Rule Comment Clerk—W-00-32, Re: Comments on Proposed Rule RIN 2040-AD62 Clean Water Act Section 316(b)—National Pollutant Discharge Elimination System—Proposed Regulations for Cooling Water Intake Structures at Phase II Existing Facilities, EPA ICR no. 2060.01, at 9 (July 19, 2002) [hereinafter, Stavins 7/19/2002 Letter].

40. "Final Regulations," *Federal Register* 69: 41,586.

41. U.S. Environmental Protection Agency, *Regional Analysis Document for the Final Section 316(b) Phase II Existing Facilities Rule*, EPA-821-R-02-003 (Washington, DC: EPA, 2004), A9-1, available at www.epa.gov/water science/316b/phase2/casestudy/final.htm [hereinafter, Final Rule RS].

42. Final Rule EBA, at C3-2. *See also* "Final Regulations," *Federal Register* 69: 41,661 ("The Agency's direct use valuation does not account for the remaining 98.2% of the age 1 equivalent aquatic organisms estimated to be protected nationally under today's rule.").

43. U.S. Environmental Protection Agency, *Case Study Analysis for the Proposed Section 316(b) Phase II Existing Facilities Rule*, EPA-821-R-02-001 (Washington, DC: U.S. EPA, 2002), A8-1 (emphasis added), available at www.epa.gov/waterscience/316b/phase2/casestudy/ [hereinafter, Proposed Rule CS].

44. Final Rule EBA, at A2-1.

45. Final Rule RS, at A9-8.

46. Final Rule EBA, at DI-5.

47. "Final Regulations," *Federal Register* 69: 41,660 (quoting Myrick Freeman).

48. U.S. Environmental Protection Agency, *Economic and Benefits Analysis for the Proposed Section 316(b) Phase II Existing Facilities Rule*, EPA-821-R-02-001 (Washington, DC: EPA, 2002), DI-4, available at www.epa.gov/water science/316b/phase2/econbenefits/.

49. Stavins 7/19/2002 Letter, at 10 (emphasis added).

50. Frank Ackerman, Comments on Proposed Rule, RIN 2040-AD62 Clean Water Act §316(b)—National Pollutant Discharge Elimination System—Proposed Regulations for Cooling Water Intake Structures at Phase II Existing Facilities, EPA ICR no. 2060.01, August 1, 2002, at 11–13 (citing Thomas C. Brown, "Measuring Nonuse Value: A Comparison of Recent Contingent Valuation Studies," in *Benefits and Costs Transfer in Natural Resource Planning, Sixth Interim Report*, ed. J.C. Bergstrom (Athens, GA: University of Georgia, Department of Agricultural and Applied Economics, 1993).

51. Frank Ackerman and Rachel Massey, Comments on Notice of Data Availability, EPA 40 CFR Part 125 Clean Water Act §316(b)—National Pollutant Discharge Elimination System—Proposed Regulations for Cooling Water Intake Structures at Phase II Existing Facilities; Notice of Data Availability, March 19, 2003, June 2, 2003, at 4.

52. Stavins 4/21/2003 Letter, at 3 (emphasis added).

53. Id. at 2.

54. "Final Regulations," *Federal Register* 69: 41624.

55. Final Rule RS, at A13-13.

56. "Final Regulations," *Federal Register* 69: 41586.

57. Id. at 41,624.

58. Id. at 41,587 (observing that threatened, endangered, and other special status species might be impacted by cooling water intake and noting, as an example, "that 3,200 threatened or endangered sea turtles entered enclosed cooling water intake canals at the St. Lucie Nuclear Generating Plant in Florida").

59. Id. at 41,612.

60. Proposed Rule CS, at A11-1 ("Conventional techniques to value the benefits of technologies that reduce [impingement and entrainment] losses at § 316(b) facilities can omit important ecological and public services.").

61. Id. at A11-2.

62 Stavins 7/19/2002 Letter, at 3, 15.

63. Id. at 25.

64. Ackerman, *supra* note 50, at 14.

65. See Ulla Grapard, "Robinson Crusoe: The Quintessential Economics Man?" Feminist Economics 1 (1995): 33.

66. *See* Bernadette A. Meyler, "Daniel Defoe and the Written Constitution," *Cornell Law Review* 94 (2008): 73 (citing Ian Watt, *Myths of Modern Individualism: Faust, Don Quixote, Don Juan, Robinson Crusoe* (Cambridge, UK: Cambridge University Press, 1996).

67. Daniel Defoe, *Robinson Crusoe*, ed. Michael Shinagel (New York, NY: W.W. Norton and Company, Inc., 1993), 76.

68. 33 U.S.C.A. § 1251(a). *See also Rapanos v. United States* 547 U.S. 715 (2006).

69. *See generally* Amartya Sen, *Commodities and Capabilities* (Amsterdam, the Netherlands: North–Holland, 1985).

70. Stavins 7/19/2002 Letter, at 17.

71. "Final Regulations," *Federal Register* 69: 41610.

72. *Id.* at 41,610.

73. *See* Douglas A. Kysar, "Law, Environment, and Vision," *Northwestern University Law Review* 97 (2003): 675, 690.

74. Robert M. Solow, "The Economics of Resources or the Resources of Economics," American Economic Review: Papers and Proceedings 64 (1974): 1, 11.

75. *See* Daniel H. Cole, "'Best Practice' Standards for Regulatory Benefit–Cost Analysis," *Research in Law and Economics* 23 (2007): 6; Lisa Heinzerling, "Discounting Our Future," *Land and Water Law Review* 34 (1999): 39.

76. Cole, supra note 75, at 15 (quoting Office of Management and Budget, *Informing Regulatory Decisions: 2003 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities* (Washington, DC: OMB, 2003), 176.

77. *See* Douglas A. Kysar, "Discounting...on Stilts," *University of Chicago Law Review* 74 (2007): 119.

78. Office of Management and Budget, *Informing Regulatory Decisions: 2003 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities* (Washington, DC: OMB, 2003), at 36.

79. *See* Derek Parfit, *Reasons and Persons* (Oxford, UK: Oxford University Press, 1986). *See also* Tyler Cowen and Derek Parfit, "Against the Social Discount Rate," in *Justice between Age Groups and Generations*, ed. Peter Laslett and James S. Fishkin (New Haven, CT: Yale University Press, 1992), 144, 144–61.

80. *See* Final Rule RS, at A14-1 ("Discounting refers to the economic conversion of future benefits and costs to their present values, accounting for the fact that individuals tend to value future outcomes less than comparable near-term outcomes.").

81. *See* Matthew D. Adler and Paul Dolan, "Introducing a 'Different Lives' Approach to the Valuation of Health and Well-Being" (University of Pennsylvania, Institute for Law & Economics Research Paper no. 08-05, March 19, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1112636.

82. "Proposed Regulations," *Federal Register* 67: 17,138. For instance, one study using conservative entrainment survival assumptions estimated that each year up to 20 percent of striped bass, 25 percent of bay anchovy, and 43 percent of Atlantic tom cod would be lost to entrainment in the Hudson River estuary from just three power plants. *See id.*

83. Final Rule RS, at A13-12.

84. "Final Regulations," *Federal Register* 69: 41624–41625.

85. *See id.* at 41,664 (indicating a break-even value of $5.07 annual willingness to pay per household at the national level).

86. *See* Proposed Rule CS, at B5-1 (noting that, because of data, budget, and time constraints on conventional valuation techniques, "HPA is pursuing an approach that uses actual sums of money which society has dedicated to restoring and preserving [threatened and endangered] species of fish as an indication of society's revealed preference valuation for protecting those species.").

87. Richard D. Gary and Michael L. Teague, "The Inclusion of Externalities in Electricity Generation Resource Planning: Coal in the Crossfire," *West Virginia Law Review* 95 (1993): 839, 851 (quoting Massachusetts Department of Public Utilities, Integrated Resource Management Practices, 116 Pub. Util. Rep. 4th (PUR) (Boston, MA: Mass. DPU, 1991): 67, 91. *See also* Stephen S. Bernow and Donald B. Marron, *Valuation of Environmental Externalities for Energy Planning and Operations*, Update 3-4 (Boston, MA: Tellus Institute, 1990).

88. Stavins 7/19/2002 Letter, at 3.

89. *See* Mark Sagoff, *The Economy of the Earth: Philosophy, Law, and the Environment* (Cambridge, UK: Cambridge University Press, 1988), 7–14.

90. *See* Office of Management and Budget, "Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations," *Federal Register* 68 (Feb. 3, 2003): 5492, 5499.

91. W. Kip Viscusi and Richard J. Zeckhauser, "Sacrificing Civil Liberties to Reduce Terrorism Risks," *Journal of Risk and Uncertainty* 26 (2003): 99, 104–105.

92. Id. at 105, Table 1.

93. Stavins 7/19/2002 Letter, at 25 (emphasis in original).

94. *See* President, "Executive Order no. 13,422," *Federal Register* 72 (Jan. 23, 2007): 2,763–2,765; Office of Management and Budget, "Final Bulletin for Agency Good Guidance Practices," *Federal Register* 72 (Jan. 25, 2007): 3,432.

95. *See, e.g.,* Stavins 7/19/2002 Letter, at 20 ("There is a consensus view in economics that when an appropriate and reliable revealed-preference approach is available for valuing a particular environmental amenity, then that approach should be used, rather than resorting to a stated preference approach, such as contingent valuation.").

96. *See* John A. List, Robert P. Berrens, Alok K. Bohara, and Joe Kerkvliet, "Examining the Role of Social Isolation on Stated Preferences," *American Economic Review* 94 (2004): 741.

97. Cf. Douglas A. Kysar, "Preferences for Processes: The Process/Product Distinction and the Regulation of Consumer Choice," *Harvard Law Review* 118 (2004): 525.

98. Amartya Sen, "The Discipline of Cost–Benefit Analysis," *Journal of Legal Studies* 29 (2000): 931, 949.

99. *See* Stavins 4/21/2003 Letter, at 18 (contending that Sen offered "not a commentary on peoples' valuations of public goods (indirectly estimated by valid willingness-to-pay or willingness-to-accept measures), but a commentary on actual voluntary payments for the use of public goods").

100. Amartya Sen, "Why We Should Preserve the Spotted Owl," *London Review of Books,* 26 (2004): www.lrb.co.uk/v26/n03/sen_01_.html.

101. Id.

102. Clive L. Spash, "Deliberative Monetary Valuation (DMV): Issues in Combining Economic and Political Processes to Value Environmental Change," *Ecological Economics* 63 (2007): 690.

103. *See, e.g.,* Riverkeeper II, 475 F.3d at 105, 113 n. 25. Indeed, EPA argued that judicial interpretations of Section 316(b) are consonant with its own in the final Phase II rule. See "Final Regulations," *Federal Register* 69: 41,626 (citing *Seacoast Anti-Pollution League v. Costle,* 597 F.2d 306, 311 (1st Cir. 1979). The referenced case, however, only upheld EPA's position at that time that costs need not be imposed that are "wholly disproportionate to any environmental benefit." Id. Thus, the case provides no support for EPA's more ambitious present claim that Section 316(b) authorizes full CBA.

104. Riverkeeper II, 475 F.3d at 99 (quoting *Natural Res. Def. Council, Inc. v. EPA,* 822 F.2d 104, 123 (D.C. Cir. 1987)).

105. Sidney A. Shapiro and Christopher H. Schroeder, "Beyond Cost–Benefit Analysis: A Pragmatic Reorientation," *Harvard Environmental Law Review* 32 (2008): 433 (quoting James Boyd White, "Law as Rhetoric, Rhetoric as Law: The Arts of Cultural and Communal Life," *University of Chicago Law Review* 52 (1985): 684, 701).

CHAPTER 11

What We Learned

WINSTON HARRINGTON, LISA HEINZERLING, AND RICHARD D. MORGENSTERN

This report began by noting some of the controversies surrounding the use of economic methods to evaluate the benefits and costs of new environmental regulations, including the concern by some about the excessive focus on economic efficiency criteria, the limited ability to quantify health and environmental damages, and quite fundamental questions about the monetization of these effects. While recognizing the importance of these issues, we have deliberately placed some of the broader questions beyond the reach of this volume, and have chosen instead to focus on what we believe to be the most tractable question, namely the development and use of regulatory impact analyses (RIAs) by the U.S. Environmental Protection Agency (EPA). A key goal of an RIA should be to help inform regulators, Congress, and the general public about the expected consequences—both the benefits and the costs—of pending decisions.

To provide focus, we decided to examine as case studies three recent, relatively sophisticated RIAs conducted by EPA, and to engage experts, both economists and lawyers, with diverse perspectives on the issues. Our process involved the development of in-depth critiques of the three RIAs, with an opportunity for debate among the authors and outside reviewers, including academic, private, and government experts.

At the time of case selection, each of the three rules chosen had been appealed by various stakeholders, but only one outcome had been reached (the cooling water rule had recently been invalidated by a federal appeals court). Since then, our study has achieved a rare trifecta: all three rules have been overturned by the courts, sometimes for reasons explicitly linked to the economic analyses.

In choosing to dig deeply into individual RIAs, we hoped to focus on the current practice of cost–benefit analysis (CBA) in the regulatory process and to downplay the strictly textbook or philosophical issues that sometimes surround debates about the use of the technique. At the outset, we stipulated that the objective was not to defend or attack CBA, but to improve its use in environmental decisionmaking. Thus, we assumed, as others have, that CBA is here to stay. Our goal is to improve the quality, acceptability, and usefulness of the analyses that are undertaken.

Whereas the challenge for the authors of the RIA critiques was to assess the individual studies conducted by EPA, we the editors took on the task of preparing comparisons and developing a set of recommendations for changes to current practices on which the three of us could jointly agree. At the outset, we recognized that it might not be feasible to reach consensus among ourselves and that any consensus we did reach might not represent meaningful reform.

This chapter presents the results of our work. We make no claims about the revolutionary nature of our recommendations. At the same time, we believe that they are both substantive and achievable, and that by embracing them, EPA, and possibly other agencies, could improve the overall credibility and usefulness of RIAs.

A natural starting point is to review, in brief, the assessments of the three individual RIAs, comparing and contrasting the views expressed by the various chapter authors. From there, we launch directly into our recommendations for reform.

Summary of RIA Critiques

Clean Air Interstate Rule

Nat Keohane and Wendy Wagner develop in-depth and broad-ranging assessments of the RIA prepared by EPA for the Clean Air Interstate Rule (CAIR), a regulation designed to achieve major reductions in power plant emissions of sulfur oxides and nitrogen oxides. In general terms, Keohane and Wagner both see the RIA as a quite competent example of CBA in many respects, including use of clear and consistent baselines, consideration of various categories of benefits and costs, and an innovative treatment of uncertainty. At the same time, they both strongly criticize the RIA for its failure to consider alternative options. They also see the RIA as somewhat unfocused, devoting excessive attention to the estimation of some very small benefit categories, such as emergency room visits for asthma and lower and upper respiratory symptoms in children, and virtually ignoring potentially major issues, such as ozone mortality and ecological damages.

The exclusive focus on the particular policy option selected by EPA rather than on a broader set of alternatives, as mandated in the agency's RIA Guidelines for Preparing Economic Analyses, is identified by Keohane and Wagner as the RIA's major flaw.[1] This failure to consider alternatives is all the more surprising considering that the agency had already prepared assessments of competing proposals in unsuccessful efforts to advance the Bush administration's Clear Skies legislation. Wagner goes so far as to label the RIA as principally a litigation-support document, albeit a technically sophisticated one, rather than the genuine aid to decisionmaking envisioned by RIA advocates. Keohane sees the single-option focus as an attempt to mask the greater net benefits that could probably have been achieved by a more stringent standard. Further, he notes that EPA's approach precludes development of a cost-effectiveness analysis that, ironically might have strengthened the legal underpinnings of the rule.

Keohane and Wagner both express concern that the excessive technical complexity of the document limits its usefulness for nonexperts in the field. Thus, they believe it fails in what should be one of the RIA's key objectives: providing clear, transparent information to Congress and the general public about the true societal impacts of the CAIR.

Beyond the similarities in their assessments, the issues raised by Keohane and Wagner also differ in important ways. Keohane focuses on various technical aspects of the RIA, including both benefit and cost estimations, the consideration of equity and the differential impacts among subpopulations, the discounting of delayed benefits and costs, and the treatment of uncertainty. He argues that, because even a simple assessment would reveal the presence of large net benefits from the chosen option, little is gained from the excessive detail presented, especially so late in the regulatory process. As an alternative to this false precision, Keohane favors a different focus, namely

a simpler, more straightforward study that would be accessible to a broader audience. For example, he favors greater use of physical units, in addition to monetary terms, for estimating benefits.

Wagner takes a somewhat different tack in her proposals for reform. Given her assessment that the RIA is largely designed to protect the agency against legal challenge, she seeks to develop institutional incentives to make the document more relevant to actual decisionmaking. In that regard, she would try to separate the RIAs from judicial review as much as possible. For example, she would reward agencies for high-quality analyses, perhaps by attaching a strong presumption in favor of the policy choices made in the rulemaking—well beyond the "arbitrary and capricious" standard commonly used. Wagner also endorses development of a set of criteria that could help determine whether an RIA met the high-quality standard that would qualify it for more deferential judicial treatment. Further, she would require that the RIA be completed at a much earlier point in the rulemaking process. Consistent with Keohane's approach, Wagner would also encourage more qualitative assessments and a greater emphasis on estimates denominated in natural units rather than monetary terms. Interestingly, Wagner compares this emphasis on early, less technical analyses to the scoping documents prepared for environmental impact statements under the National Environmental Policy Act. Very much like Keohane, Wagner favors a more open, transparent process for decisionmaking and the development of documents to support such a process.

Clean Air Mercury Rule

Alan Krupnick and Catherine O'Neill both present detailed reviews and analyses of the RIA prepared by EPA for the Clean Air Mercury Rule (CAMR), a regulation designed to cut power plant mercury emissions via a cap-and-trade approach. Not surprisingly, Krupnick and O'Neill agree in their assessments of a number of the RIA's shortcomings. At the same time, there are also important disagreements between them on a range of technical issues as well as on the basic economic efficiency approach adopted in the analysis.

Focusing first on examples of agreement, chapter authors Krupnick and O'Neill acknowledge the daunting task of analyzing the benefits and costs of mercury emissions controls, given the complexities and uncertainties of the underlying problem and the evolving nature of the available scientific information. Nonetheless, they both highlight the very limited set of options considered in the RIA, including the sole focus on emissions trading, and the failure to analyze the costs and benefits of adopting maximum achievable control technology (MACT) standards, especially in light of the prior determination by the Clinton administration that mercury is a hazardous air pollutant as defined under section 112 of the Clean Air Act. They also highlight the failure to consider alternative baselines—for example, treating the benefits and costs of CAIR as ancillary to CAMR, rather than solely defining CAMR as ancillary to CAIR. Further, both authors chastise the EPA for the virtually contemporaneous issuance of the RIA and the underlying regulation, thus undercutting the use of the RIA as a decision tool.

Krupnick and O'Neill also agree on a number of the limitations of the exposure analysis, including the emphasis on freshwater fish consumption, and the failure to consider damages other than IQ loss. With regard to benefits monetization, both authors raise concerns about the netting out of educational costs from the estimates of reduced lifetime earnings attributable to IQ loss. On this point, O'Neill cites Professor Rena Steinzor: "... the good news is that stupider children

need less school and earn just a little more money because they are working rather than sitting in a classroom."[2]

Beyond the similarities in the issues raised by Krupnick and O'Neill, their disagreements fall into two categories: technical and philosophical. From a technical perspective, O'Neill questions the selection of studies chosen for inclusion in the RIA, noting that in the Bush administration, all judgment calls went "one way." Krupnick focuses more on likely errors of omission in study selection without suggesting bias. O'Neill sees the failure to quantify or monetize certain benefit categories as a fundamental flaw, whereas Krupnick sees it more as a sign that too few resources were committed to following recent National Research Council recommendations on this issue.

Another technical difference involves their approaches to distributional issues. O'Neill focuses on the high baseline mercury blood-level concentrations among Chippewa or other ethnic populations that have a strong identification with freshwater fish consumption. She is concerned that the RIA does not explicitly consider who will bear the costs and benefits of the rule, nor whether the decision ameliorates or worsens current inequities. She is also concerned that the delays involved in implementing CAMR rather than the MACT standard will cause permanent harm to millions of children. Krupnick hones in on the issue of emissions trading, specifically whether the use of trading will create "hot spots." Using publicly available EPA data, he finds that for the vast majority of plants, there are no increases in mercury emissions compared to the no-control baseline with or without CAIR in place. At the same time, he does find that several plants are predicted to increase mercury emissions over their baselines when emissions trading is allowed. He chides the EPA for failing to exploit its own data on this highly contentious issue.

Finally, we note the not insignificant philosophical divide between Krupnick and O'Neill. Overall, Krupnick sees the CAMR RIA as a quite reasonable approach in light of data limitations, as well as budget and time constraints. In general, he sees the deficiencies—which are extensive in some cases—as inherently remediable with greater effort on the part of the agency. He recommends allotting more time and resources to enable EPA to collect better studies, to rely less on (arbitrary) assumptions and more on actual data, and to more fully explore relevant policy options. He also proposes that the agency adopt a more thorough, academic-style peer review process.

In contrast, O'Neill calls for a more interdisciplinary approach to the analysis of regulatory issues, with less emphasis on economic efficiency and without use of a single analytical approach purporting to incorporate all considerations. Importantly, O'Neill sees certain resources such as mink and loons, which serve as Chippewa clan symbols, as the type of priceless resources that should neither be ignored nor subjected to traditional cost–benefit analysis. In short, whereas Krupnick seeks greater technical sophistication to enhance the usefulness of the RIA in agency decisionmaking, O'Neill seeks to employ the tools of multiple disciplines to enhance the economic analyses and to make the RIA more accessible to the broader (nonexpert) public.

Cooling Water Intake Structures Rule

The U.S. Supreme Court is now reviewing the decision by the Court of Appeals for the Second Circuit to remand the Cooling Water Intake Structures (CWIS) Phase II rule. As Doug Kysar explains in his chapter, the sole issue before the court is whether a cost–benefit comparison will be allowed in the determinations of the best technology available (BTA) for individual permittees. It bears repeating that the retail-level comparison of benefits and costs goes far beyond the require-

ments imposed by Executive Order (EO) 12866 to ensure that the benefits of regulations justify their costs. This instruction applies at the rulemaking stage and refers to the comparison of total benefit and cost estimates of a new rule. But, although not required, the case-by-case cost–benefit comparison is much closer to the economists' notion that benefits and costs should always be compared at the margin.

The cost–benefit test was not the only issue discussed at the appeals-court level. Also at issue was whether the statutory language authorizing the CWIS rule supports the kind of flexibility that EPA inserted into the rule. This flexibility included not only the site-specific comparison of benefits and costs, but also allowed as abatement technologies what looked to environmentalists like impermissible compensatory measures, in particular the use of habitat restoration measures elsewhere in the river reach to compensate for ecological and environmental damages at the site of the CWIS.

The Second Circuit's opinion was pretty clear that this level of flexibility was over the line. For one thing, the same court had remanded Phase I of the rule (applying to new plants) a few years previously because it allowed more flexibility than the court considered statutorily appropriate, and Phase II had attempted to adopt an even more flexible approach to existing plants. The statutory requirement to use the "best technology available" might admit of some wiggle room with respect to the economic hardship imposed on the utility industry and its investors, but seemingly much less so with respect to the environmental consequences (at least according to the Second Circuit).

Both chapter authors Scott Farrow and Doug Kysar identified flaws in the CWIS RIA, but on the whole they seemed to take opposing positions as to the overall effectiveness and value of the document. Farrow's critique is largely restricted to the CBA itself and is generally the technical assessment of a professional economist. Because there are so many criteria for judging, Farrow subjects the RIA to a contents "checklist" developed by Robert Hahn and Patrick Dudley (2007). As Farrow points out, a "good" score on such a checklist does not necessarily indicate a high-quality RIA, but a poor score certainly indicates a bad one. The score for the CWIS RIA is quite high; it is missing or lacking in only a few elements considered essential by economists. Farrow even suggests that as a professional document, the quality of the analysis may achieve a standard required for publishing in a professional journal, were it not for the document's great length. However, Farrow has more reservations about the quality of the data supporting it.

As an aid to decisionmaking, Farrow sees the document as mixed. He argues in particular that EPA based much of the regulatory flexibility introduced into the rule on the adverse environmental impact (AEI) of the rule without ever defining the AEI. Admittedly, this would have been very difficult because the agency did identify a long list of potential impacts qualitatively; it just did not try to provide weights so that an overall assessment of the AEI could be made. Providing such weights for a comparison of benefits with costs and with other benefits is one of the principal objectives of CBA. In this case, so many categories of benefits were left nonmonetized that the cost–benefit comparisons were not meaningful. However, considering the analysis instead as an exercise in cost-effectiveness, Farrow found it to be more valuable. EPA claimed that, compared with cooling towers—a technology that achieves at least a 90 percent reduction in aquatic mortality—a wire screening technology for water intakes would, where applicable, achieve better than half the level of reductions at about 10 percent of the cost. EPA asserted that, under most circumstances, this level of protection could meet the BTA standard, even though it was possible to do much better.

Kysar's assessment of the rule is both broader and more critical. Deeply skeptical of the value of CBA to begin with, he found little in this RIA to change his mind. Three issues in particular concerned him. First, after EPA had prepared a proposed regulation that relied much more heavily on regenerative cooling as the BTA, the Office of Management and Budget (OMB) intervened, evidently encouraging EPA to provide more flexibility in the definition of BTA to reduce cost. In Kysar's view, the OMB intervention went well beyond the regulatory review required by EO 12866. In addition, the substance of OMB's comments and revisions were not made part of the public record, so it was difficult for parties interested in the outcome of the rulemaking to discover essential elements of the decision process. Moreover, these inputs were not subject to public comment during the rulemaking process.

Second, Kysar complains that the technical information made available to EPA (and made available by EPA) was not adequate to support valuation. As he puts it in his chapter, "CBA . . . carries an implicit assumption that the policy space within which EPA operates is informationally rich and probabilistically sophisticated," pointing to the fact that, of 554 facilities subject to the regulation, only 150 had performed impingement and entrainment studies. A defender of the regulation might point out that a sample of 150 out of 554 is frequently adequate to draw conclusions, depending on how the sample is drawn, but in fact these studies focused only on the direct and indirect mortality of the species subject to impingement and entrainment and not on the larger questions of local and global ecosystem effects. EPA acknowledges and provides a long list of such ecological effects (reproduced in Kysar's chapter), about which little is known and which are unquantifiable based on current information.

On the other hand, steam-electric plants with once-through cooling systems have been in place on the nation's water bodies for nearly 100 years and constitute only one of myriad environmental insults to aquatic systems. The fact that they are still capable, according to EPA, of destroying billions of organisms each year, along with the fact that on most water bodies a relatively small portion of the flow (of a stream) or volume (of a lake or estuary) passes through the steam plant, suggests that the aggregate biota of these water bodies is still very large. This, in turn, may suggest that those systems are not in long-term crisis, at least not from steam-electric generation.

Kysar's third point concerns valuation, and he suggests two alternatives to the individual willingness-to-pay (WTP) approach that is the intellectual backbone of CBA. One, a proposal to value environmental assets at their replacement costs is not likely to find acceptance among economists in academia or at EPA because it assumes what is at issue, namely that the threatened resource is worth saving. Yet statutes like the Clean Water Act take as their premise that natural resources—such as rivers, lakes, and streams—are indeed worth protecting. A methodology aimed at evaluating individual regulations may perform best when it respects this foundational policy determination. The other proposal is to substitute a measure of WTP that is partially or totally determined by group interactions. Some observers in political science, psychology, and similar disciplines believe that this would usefully replace the private, utility-based method with one more appropriate to the valuation of public goods by emphasizing the collective nature of these decisions. As discussed elsewhere in this chapter, group-mediated valuation need not result in an increase in valuation estimates.

Perhaps more critically, the question of valuation gets back to the question of information. If information about the physical consequences of regulatory actions is nonexistent or inadequate,

what is the point of valuation? When both valuation and physical-effects data and methods are less than adequate, which offers the largest marginal improvement?

Recommendations for Reform of RIAs

In considering the three RIAs analyzed in this volume, and drawing on our experiences in the field of regulatory assessment, we have developed a series of specific reforms that we believe would enhance the overall quality and usefulness of the substantial studies that are conducted as part of the regulatory development process. We develop a dozen recommendations addressing the content of the RIAs as well as the process by which they are prepared. These recommendations cover five overarching topics:

- technical quality of the analyses;
- relevance to the agency decisionmaking process;
- transparency of the analyses;
- treatment of new scientific findings; and
- balance in both the analyses and the associated processes, including the treatment of distributional consequences.

In addition, we have developed two recommendations involving future research. Most of the recommendations could be implemented by the agency alone, although in a few cases changes in the governing executive order would be desirable. Only one of the recommendations requires statutory reform, specifically of the Paperwork Reduction Act (PRA) of 1995.

Technical Quality of the Analyses

1. Give greater consideration to meaningful alternative policy options

If an RIA is truly designed to inform and guide regulatory decisionmaking—and not, as Wendy Wagner suggests, simply to serve as a litigation support document or, in Nat Keohane's view, only to provide information about the consequences of a regulatory decision made on other grounds—then it must examine a reasonable set of alternative policy options. An RIA that only compares the proposed action to the existing regulation, such as the RIA produced for the CAIR, or that considers only very limited options, such as the one developed for the CAMR, does little to help decisionmakers determine the appropriate course to take.

As noted at the beginning of this report, CBA and the RIAs that embody it are not intended to be decisive in the regulatory process; they are inputs, or tools, rather than dispositive frameworks. Thus, even with a very high-quality RIA, regulators may well end up selecting an approach that is not the most efficient from an economic perspective, as concerns about equity or other factors may drive the decision in another direction. At the same time, given the acceptance in economic circles of the efficiency criterion and the appeal of quantitative analysis even to those outside the cost–benefit world, EPA decisionmakers may be reluctant to adopt a "second-best" approach by choosing a regulatory option that generates fewer net benefits than an alternative. The path of least resistance is to analyze only one alternative and thereby avoid explaining why

a different, more efficient, choice has been rejected. However understandable this may be from a bureaucratic or political perspective, we do not believe this approach is consistent with the underlying purpose of the executive orders governing regulatory analysis. Thus, we recommend that meaningful alternative options be analyzed in RIAs. Although it may be tempting to stipulate some minimum number of alternatives to be considered, we prefer to focus on the term *meaningful,* which we define to include the full set of options deemed to be technically feasible and legally defensible.

2. Choice of baselines should reveal choices and trade-offs, not conceal them

The expected outcomes of a regulation cannot possibly be understood without reference to what would have happened in its absence. As a result, expected outcomes are routinely measured against baselines, which represent the development of an intricate set of choices made by the regulator to generate a future or a set of alternative futures that would take place if the rule were not issued. They are also known by the more revealing name of *counterfactuals.*

Constructing a baseline requires a legion of assumptions concerning such matters as future population and economic growth, rates of improvement of existing technologies or replacement by new ones, and trends in future regulation. The credible evaluation of benefits and costs is not possible without a well-constructed baseline or set of baselines. The construction and presentation of baselines are every bit as important to the estimation of net benefits as the construction and presentation of alternative regulations. RIAs should reflect that reality.

A vivid example can be found in Catherine O'Neill's case study in this report of mercury emissions from coal-fired power plants. Control of airborne mercury emissions was widely anticipated under the new MACT standards enacted as part of the Clean Air Act of 1990. Although EPA did promulgate MACT rules for two important sources (municipal and hospital waste incinerators) in the late 1990s, and began work on a third (emissions from electric power generation) in 2003, agency analysts involved in the technical and economic aspects of the utility MACT rule were instructed by top management to stop their work. Instead, they were to begin drafting a new rule based not on the MACT section of the statute, but on a cap-and-trade policy modeled after the sulfur dioxide (SO_2) trading program for fossil electric plants.

The initial regulation, like all MACT regulations, would be required by statute to achieve the emissions reduction performance of the top 12 percent of existing plants and was expected to be implemented around 2007. Its replacement, the CAMR, would only be implemented after the CAIR, a cap-and-trade program for SO_2 emissions that was to be phased in beginning in 2010, with a lower cap to be phased in beginning in 2018. The difference in the performance and timing of the two rules could hardly be more dramatic: whereas the MACT rule would require nearly a 90 percent reduction in mercury emissions by 2007, the CAMR would not achieve its objective of a 70 percent reduction until nearly 2030.

We take no position in this report on whether the abandoned MACT rule was or was not a superior rule to the CAMR, which eventually adopted. Certainly, the MACT timetable and stringency would have produced more emissions reductions and would have produced them much sooner, and thus would have produced much greater benefits. But the costs would have been much higher as well. And because the net benefits of the CAMR were negative, at least according to the EPA analy-

sis, moving up and expanding the emissions reductions would only make things worse. Of course, many skeptics of CBA, including O'Neill, would strenuously disagree.

The point is that EPA could and perhaps should have been more informative in the CAMR about the earlier MACT analysis, perhaps including MACT implementation as an alternative to the customary "no policy" baseline. This would have provided a useful historical perspective and made it clear how much broader were the regulatory options than EPA's regulatory documents let on at the time.

3. Develop a checklist of good practices that all RIAs should have, and provide an explanation for missing items

All three of the RIAS examined in this volume violated one or more elements of EPA's Guidelines for Preparing Economic Analyses.[3] Other studies based on larger samples have reported similar findings, including a quite broad range of deviations from the approaches advanced in the guidelines (Hahn and Dudley 2007).

It is not entirely clear why there is such a gap between the agency's guidelines and current practices. Insufficient resources is an oft-cited reason, although it strains credibility to say that after spending more than $1 million to develop a major analytical effort, funds are not available to conduct one or two additional model simulations.

Robert Hahn has long advocated a checklist to assess RIA quality. In fact, it would be fairly simple for an agency to report on its adherence to some basic quality criteria, or to explain why it did not adhere to such criteria. The criteria reported on need not reflect every nuance covered in the guidelines but should focus on certain key topics. For example, they could include some or all of the issues suggested by Hahn and Dudley (2007), as described by chapter author Farrow. Perhaps the Economics Subcommittee of the agency's Science Advisory Board (SAB) could offer guidance on the "top ten" elements to include in an RIA. The EPA administrator could voluntarily report the checklist as a means of strengthening his or her hand with the public, OMB, and the courts, and could present the checklist results in the preamble to a rule, in concert with the actual presentation of the RIA findings. Alternatively, the president, acting through OMB, could require the checklist. In the absence of a sound peer review process, a high score on such a checklist would not provide complete assurance of RIA quality; however, a low score would be a sure indicator of failure. In her chapter in this report, Wendy Wagner proposes that RIAS deemed to be of high quality be given special deference by the courts.

Beyond the use of a checklist, other approaches could be used to encourage quality improvements in RIAS. For example, one could establish a formal review process involving outside experts, based either at EPA or at OMB, to more directly grade or otherwise evaluate RIA quality. Although appealing at many levels, however, such procedures would probably introduce further delays into an already lengthy regulatory development process. Thus, we propose the development of a checklist, with initial implementation to be carried out by EPA, presumably in consultation with the SAB.

Relevance to Agency Decisionmaking Processes

4. Be more strategic about devoting agency resources to the estimation of the benefits and costs of regulation

The value of regulatory analysis, with or without monetary estimates of benefits, is limited by the absence of coverage of important benefit categories. It is also limited by the precision and accuracy of the estimates of the physical effects of regulation. Although these observations may seem obvious, they are sometimes overlooked by both advocates and skeptics of CBA. Sometimes this can result in an overemphasis on certain scientific and economic issues that may not be entirely relevant to the decision. In other cases, the key issues may be underemphasized.

In several of the RIAS considered in this volume, the focus on precision for some relatively low-value benefit categories at the expense of even a rudimentary scoping of other, potentially higher-value categories is inexplicable. For example, both Nat Keohane and Wendy Wagner note the extensive details in the CAIR RIA on emergency room visits for asthma and lower and upper respiratory symptoms in children, and the absence of analysis of major issues such as ozone mortality and ecological damages.

At the same time, except for air quality management for criteria pollutants, most of the research effort into benefits assessment goes into the estimation of WTP for a given environmental improvement. Thus, whereas the models connecting a regulation to its effects are often fairly rudimentary, the WTP estimates are increasingly sophisticated. Certainly among economists, the professional rewards for developing better methods and data for estimating WTP for nonmarket goods exceed the rewards for linking regulation to physical outcomes. Similarly, whereas the incentives of natural scientists are to link causes to physical outcomes, they often ignore or devalue the effects that the behavioral responses of firms and individuals to regulation can have on regulatory outcomes. Research into physical effects usually involves interdisciplinary research combining natural and behavioral scientists. As anyone knows who has tried to do it, such research is quite difficult to do.

Skeptics of CBA can be as indifferent to the physical effects of regulation as they are to the monetary benefit estimates. For the skeptics' preferred regulatory alternative—best-technology standards—it often doesn't matter very much what the effects of regulation are.

In our view, the usefulness of RIAS would be enhanced if, at the outset of the rulemaking, an explicit judgment is made regarding the best way to allocate resources toward examining the consequences of the regulation. Regulators rarely have all the information they would like about either physical outcomes or their valuation. But not all information has the same value at the margin, and additional forethought about where the biggest payoffs are would probably be well rewarded. In addition to the current intra-agency review of the analytical plans for RIAS, it might be appropriate to send them to the SAB for review, possibly to a special subcommittee established for such a purpose.

5. Make key aspects of the RIAs available to decisionmakers earlier in the regulatory development process

Under current agency procedures, draft RIAS are required to be circulated to top decisionmakers three weeks in advance of final agency review. This applies equally for proposed and final regula-

tions. Reportedly, these deadlines are often not met. However, even when the internal deadlines are met, important opportunities for constructive use of the RIA results in rule development may be missed.

Typically, key elements of rule design are decided fairly early in the regulatory development process, sometimes by midlevel staff. Based on those early decisions, work is begun on monitoring, data collection, development of enforcement strategies, and related issues. If the RIA subsequently finds that the preferred approach is not the most efficient one, strong internal pressures discourage change.

Accordingly, we propose that agency procedures be modified to require that a preliminary RIA be prepared at least six months in advance of final agency review of proposed and final regulations. Understandably, a preliminary RIA may be incomplete and subject to greater uncertainties than the full study. At the same time, this preliminary RIA would characterize the full set of options being analyzed and would provide at least rough estimates of the benefits and costs of each option. It would also provide an opportunity to assess whether the most important benefit (and cost) categories are being assessed, as in recommendation number four. As noted by Wendy Wagner in her chapter on the CAIR, in some respects, a preliminary RIA would be similar to the scoping analysis conducted under the National Environmental Policy Act.[4]

Transparency of the Analyses

6. Include in RIAs detailed descriptions of expected consequences as physical or natural units, without monetization or discounting

As stipulated in both the Reagan and Clinton executive orders on regulatory review, an RIA is intended to be a document that aids in agency decisionmaking, not only at the level of the technical experts, but also at the level of agency heads and, if it comes to that, the White House. In addition, as Nat Keohane suggests, the RIA could also inform the public about the consequences of agency actions.

These purposes would be promoted if agencies included in their RIAs detailed descriptions of the concrete consequences of their decisions, presented in physical endpoints or natural units rather than solely in monetized and discounted form, at least for the major benefit categories. A key issue is how much detail can be developed with reasonable scientific confidence and at reasonable cost. If, for example, an environmental rule is expected to reduce premature mortality and adverse health conditions, then a range of details about those expected health outcomes may be of interest to decisionmakers; these details might include the expected nature of the death or adverse health condition, the likely age of the populations affected, the likely timing of the effects, and the socioeconomic status of the populations most affected. In cases where a strong scientific basis supports the development of such estimates at a reasonable cost, they should be provided.

In addition, it would be useful to have baseline information on these natural units wherever possible, or to at least include contextual information that gives the reader some perspective on the significance of the changes. For example, if a regulation is expected to reduce the frequency of asthma attacks in sensitive populations, what is the current attack frequency in those populations?

Baseline information of this sort is useful in at least two ways. It allows for a determination of not only the expected absolute change in outcomes, but also the relative or percentage change.

It's true that this baseline information is not relevant to the economic criterion of maximizing net benefits—only the marginal conditions are. But that applies specifically to monetary measures. Because good things gain in value as they become scarcer, the change relative to the baseline matters, and decisionmakers might want to know whether the regulatory proposal is going to reduce bad outcomes by 1 percent or 10 percent, for example. If a regulation is expected to reduce fish mortality, by how much are fish populations expected to change relative to the baseline? For example, if billions of fish are dying each year, it should matter whether you have billions or trillions to start with. In addition, having baseline information can provide a sense of perspective that can aid in assessing the credibility of the estimated changes in outcomes.

Agencies would provide this information in a summary chart just as they currently provide monetized and discounted benefit estimates. EPA's summary tables for the CAIR and the CAMR are good examples of this practice. Indeed, with respect to RIAs on the regulation of the criteria air pollutants, EPA generally does a good job of reporting expected consequences in natural units.

Where regulatory consequences are routinely captured by economic terminology, agencies should continue to supply information about these consequences in economic terms. An agency proposing a rule that will result in greater use of scrubber technology, for example, could report the estimated price of the scrubbers along with the number and expected location, of the scrubbers. But where regulatory consequences are not ordinarily stated in economic terms, where the "price" of a consequence must be divined by reference to complex revealed or stated preference methodologies, the economic description of these consequences should be supplemented by the description of natural units.

For any of the personnel directly involved in decisionmaking—top-level agency officials and White House staff—and even the general public, description of consequences in natural units could serve as useful aids in evaluating agency decisions. Officials unschooled in economics might be confused by the translation of human lives into dollars and by the process of discounting of future illness and other elements of the CBA. Presumably, many would gain additional insights from a comparison of economic costs and tangible consequences expressed in natural units. If the head of EPA, for example, were asked whether average utility customers ought to be asked to pay a penny a day to save billions of fish—an estimate of the cost of the CWIS rule for the typical household (Ackerman and Heinzerling 2003)—she might find this a much more tractable decision than one that invites her to evaluate the economic machinery that EPA deployed to calculate the precise value of those billions of fish. Prominent display of the natural units information will also be helpful to those comfortable with economic valuation because it makes it easier to understand the benefits calculations and judge their credibility. A further advantage of this approach is that it might create added incentives for the agency to develop quantitative estimates of some physical endpoints not typically quantified in the RIAs, such as noncancer health effects.

7. Ensure greater transparency at all stages of the process

As a number of participating authors have noted, RIAs have become huge, dense documents that are almost impenetrable to all but those with training in the relevant technical fields, especially economics. Even to the well-trained eye, RIAs are often opaque; it can be hard to find, for example, exactly what value the agency has placed on human life or exactly which discount rate it has used, over what time interval.

Because an important purpose of RIAs, beyond their use as aids to decisionmaking, is to communicate to Congress and the broader public about the benefits and costs of federal regulations, greater transparency in the analysis would be highly desirable. Accordingly, we recommend that agencies endeavor to make RIAs more comprehensible by nonexpert audiences. Obviously, the complexity of the analysis in RIAs constrains to some extent the degree of transparency that can be achieved. Even so, three quite straightforward changes in practice could considerably improve the transparency of RIAs.

Wherever possible, agencies should use plain English to describe their analysis. They should avoid technical jargon, or at least amplify it with parallel descriptions in plain English. OMB's Office of Information and Regulatory Affairs already monitors agency rules for plainness of speech; it should monitor RIAs for the same quality.

Agencies should use a similar format, across RIAs, to provide information on the key variables in the economic analysis. They should provide this information in the same location in each RIA. For example, in the portion of the RIA describing the benefits analysis for an environmental rule, the value of a statistical life, value of illness, value of ecosystem effects, discount rate, and time interval for discounting should all be presented in the same order and format across RIAs. One perusing many RIAs could then know exactly where to look in the RIA for information on crucial inputs to the analysis.

The executive summaries of most RIAs focus on the conclusions of the analysis rather than on the methods and assumptions used. With the adoption of a standardized format for summarizing the methods and assumptions, as described above, it might be useful to incorporate the same or similar information into the executive summary.

Several of the other reforms we suggest in this chapter (such as the recommendations that the benefits of regulation be expressed in natural units and that agencies complete a checklist relating to the quality of the RIA) also would enhance transparency.

Treatment of New Scientific Information

8. Update EPA guidance documents for RIAs more frequently to reflect significant developments in the literature

As in the natural sciences, the professional literature on environmental economics is evolving at a quite rapid pace. RIAs typically incorporate a range of analytical and empirical findings from the recent economics literature. Failure to incorporate these new findings into the RIAs can lead to biased estimates of benefits and costs.

Although in principle the concern about updating the RIA guidelines applies to virtually all parameters, the most recent examples involve discounting, the value of a statistical life, and cost analysis. In all of these cases, a similar pattern applied: recent research indicated a departure from past studies, yet the guidelines lagged behind. Fortunately, during the preparation of this volume, EPA has acted in a number of cases to update its approaches. At the same time, it is fair to observe that in the interim several RIAs were produced using the older values, which resulted in various biases in the estimates of benefits and/or costs.

Our purpose here is not to debate the individual issues. Rather, we would emphasize the dynamic nature of the economics literature and the corresponding need for EPA to keep abreast of the changes and, when appropriate, update the guidelines.

9. Reform current practices on nonmonetized benefits in a number of ways

EPA should indicate clearly and up front an enumeration of benefits into at least three categories: those that have been monetized, those that have been quantified but not monetized, and those that have neither been quantified nor monetized. This classification should be summarized in an easy-to-read table in the executive summary of the RIA. In case of substantial disagreement or uncertainty regarding which category an effect of a regulation belongs in, it should be further disaggregated, if possible, until the categorization is no longer ambiguous. Comments on the proposed regulation should be explicitly invited on the definition of major expected effects and their categorization.

Encourage the SAB to provide expedited review for new or innovative analyses presumed to be of high quality, including those unpublished studies that have particular relevance to RIAs. Currently, virtually all studies included in EPA's economic and scientific assessments are those that have been published in peer-reviewed journals or accepted for publication by such journals. Excluded are those studies still undergoing peer review, which can sometimes be a quite lengthy process, as well as those that represent solid research but are not deemed sufficiently novel to warrant publication in peer-reviewed journals.[5]

One possible approach to address this problem would be for EPA to encourage the SAB to establish an expedited review process for studies deemed to be potentially important for agency regulatory decisions. EPA should issue guidance on this expedited review process, covering both the nature of the process and the criteria for selecting studies for review. The goal of this expedited review should not be to lower the quality bar for the acceptability of new research, but rather to recognize the complexities of the peer review process and encourage inclusion in RIAs of high-quality research regardless of its publication status.

Consider whether it is better to include some number or distribution of values in place of the default of zero, either as a new scenario or as part of an uncertainty analysis. Notwithstanding the preceding suggestions for the expedited review of economic and scientific papers relevant to regulatory decisions, many regulations will probably still involve some nonmonetized categories of benefits. There are several reasons for this, some unavoidable and some even desirable. First, there may be a consensus that some effects are relatively small and under any reasonable assumption may not contribute much to total benefits. Second, the quantitative effects may be large enough to matter but not well understood or well estimated, in which case proceeding to a potentially arbitrary valuation step will appear to be meaningless twice over. Third, even when estimated, the quantitative effects may be subject to large and possibly asymmetric errors. Estimating WTP for such effects is likely to give misleading results. Climate change is the canonical example; economic estimates using conventional assumptions may greatly underestimate the likely consequences. Fourth, environmental effects may be understood quantitatively, but the link between the regulation and the change in the effect may not yet be established. Similarly, valuation information may be available, but not in a form that links easily to predicted changes in quantitative effects.

The well-known mismatch between water quality indicators, which measure decrements in water quality in contaminant concentrations, and recreational benefits, measured by increases in days spent in various recreation activities, is a case in point.

It is in the cases (and there are many) where total compliance costs exceed monetized benefits that the disposition of the nonmonetized benefits plays a crucial role in the regulator's decision. This reality poses what can be a difficult choice for regulatory decisionmakers: either enter a zero for benefits that have not been monetized, running the risk that they will be ignored by decisionmakers, or use some arbitrary values, if for no other reason than to prevent them from being ignored. Obviously, no regulatory decision strictly requires monetization of all benefits; we pay decisionmakers to make decisions in the hard cases, after all. But still, any perspective the RIA can provide on the potential magnitude of those benefits will be helpful to decisionmakers. In addition to providing potentially valuable information, better description and quantification of the value of nonmonetized benefits will provide explanation and justification for observing stakeholders.

EPA has usually opted for leaving out nonmonetized benefits. We believe there is something to be said for the other approach, heretical as it may be: the inclusion of nonzero benefit values for some benefit categories where such values are not currently supported by empirical benefit studies. At worst, including nonzero benefits in such cases is harmless as long as it is understood by decisionmakers that they are not supported by benefit studies. At best, they can prevent decisionmakers from disregarding such categories, and they can force all parties, from decisionmakers to analysts to stakeholders, to try to think through what numbers might be reasonable. If enough observers think that the potential benefits in such categories are sufficiently large, it may give an impetus for research to try to provide real estimates.

Nevertheless, simply assigning an arbitrary benefit number is not likely to gain instant acceptance among many observers. It is worth considering whether there are defensible approaches to assigning such numbers. Below are some options that may be worth considering, including some that have in fact been employed, at least informally, to assign benefits to previously nonmonetized effects or, at least, to put the benefits in other categories in perspective.

Imputation of necessary benefits. Calculate the implicit value of the nonmonetized benefits that, when added to other benefits, make the regulation a break-even proposition. Like all of the methods proposed here, this approach invites the decisionmaker to subject the benefits claim to his or her own judgment and experience. Inevitably, this approach assigns a single value to the total package of nonmonetized benefits. If many disparate effects remain nonmonetized, it may not be easy for decisionmakers to decide whether the resulting value is worth investing in. In other words, this top-down approach is wanting in the detail that might allow the decisionmaker to make an informed decision.

Expert elicitation. Convene a panel of recognized experts in economic benefit estimation, risk perception, and the appropriate natural sciences, and solicit their views on several matters, including the link between the regulatory options and the environmental improvement and the link between environmental improvement and WTP. This is more of a bottom-up approach, in principle at least, that allows explicit valuation of the individual components. At the same time, it raises a different set of methodological issues having to do with disaggregation. Are the experts to assign a monetary value to all of the benefits in the aggregate? Should they assign val-

ues to distinct benefit categories? Should they assign benefits to unit changes or to the aggregate change resulting from the regulation?

The convening of an expert panel brings another issue to the forefront that is worthy of consideration by EPA and indeed by all students of regulation. Should the opinions of the scientific experts be limited to the physical effects of the regulation? Or should their views on the monetary valuation of those effects, or at least what the trade-offs might be with other relevant effects, be accorded special weight? It is customary to solicit valuation from random samples of adults, an approach that makes sense when the benefits being valued are familiar to the average person, such as the valuation of health effects or recreation experiences. But is this practice justified when ecological changes are at stake and the environmental effects are subtle, hard to observe, and not directly connected to matters that people care about on a day-to-day basis? At the same time, is it reasonable to turn such authority over to an unelected panel of experts who may have personal and professional biases that can skew results?

Balance in Both the Analyses and the Regulatory Process, Including the Treatment of Distributional Consequences

10. Promote evenhanded treatment of decisions to regulate, deregulate, and decline to regulate

We recommend that agencies' decisions not to regulate—as well as their decisions to regulate—be subject to regulatory review when they pass the threshold of EO 12866: that is, when they "have 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."[6] Because EO 12866 currently applies only to rules, however, agencies' decisions not to regulate at all do not come within the formal terms of the order. Thus, this recommendation would involve amending the executive order to clarify that agency decisions not to regulate are also subject to regulatory review when they meet the triggering conditions of the order. In the case of deregulation, only a change in practice is required. To keep the process manageable, we would propose that these decisions be subject to regulatory review only when they are formal agency announcements, published in the *Federal Register.* This limitation would ensure that the process of regulatory review would not be set in motion by every agency decision that might possibly have an adverse effect on the environment.

This recommendation would respond to a long-standing criticism of regulatory review: decisions to regulate are subject to CBA, yet decisions to deregulate or not to regulate at all do not undergo this formal examination. This one-sidedness introduces a potential bias against regulation into the process of regulatory review that is unwarranted (Olson 1984).

The history on this issue is instructive. When the U.S. Department of Agriculture (USDA) Forest Service in 2002 reversed a Clinton-era initiative protecting almost 60 million acres of roadless areas in the national forests, it maintained that the rule would not "adversely affect in a material way... the environment." The Forest Service noted that an RIA had been prepared for the rule being discarded, but stated that it could not produce a quantitative analysis of its new approach because there was "no experience with implementing the roadless rule, and thus there are no data available" (USDA Forest Service 2005, 25649). When EPA issued its first rule relaxing the require-

ments for the Clean Air Act's New Source Review program, it did not prepare an RIA because it concluded that the rule would not adversely affect the environment (EPA 2002, 1). When the U.S. Department of Interior proposed trimming back the requirements for consultation with the wildlife agencies under the Endangered Species Act and changed regulatory definitions to make the statute inapplicable to effects resulting from climate change, it noted that the action was a "significant rule" within the meaning of EO 12866, but it did not prepare an RIA (U.S. Department of Interior and U.S. Department of Commerce 2008, 47872). Likewise, when the U.S. Department of Interior proposed easing rules regulating mountaintop mining, it stated that the rule would not have an adverse effect on the environment and it prepared no RIA (U.S. Department of Interior 2004, 1045).

Rather than rest with a conclusory and potentially questionable statement that deregulatory actions have no adverse effect on the environment, agencies should undertake the same process of regulatory review for deregulatory decisions as for regulatory ones when those decisions likely will have a material adverse effect on the environment. In principle, RIAs for deregulatory actions should be relatively easy to conduct because a regulatory RIA already exists. Moreover, a decision to deregulate will not come out of thin air, and the fact that a regulation already exists usually means that there is already some real-world experience with it. This experience provides a basis for analysis that is not available to newly proposed regulations, and agencies should report on this experience and use it to motivate their decisions.

Economic logic supports this recommendation for evenhandedness. Likewise, economic logic supports treating decisions not to regulate at all with the same degree of scrutiny as decisions to regulate. There is no more reason to believe, for example, that EPA's outright refusal, in 2003, to regulate greenhouse gases in any fashion promoted efficiency than to believe that its decision to regulate conventional pollutants in the CAIR promoted inefficiency. If one kind of decision deserves economic scrutiny, so does the other.

11. Reform the federal data collection request process

The Paperwork Reduction Act (PRA) of 1995, as well as OMB regulations issued in its name, impose stringent requirements on data collection from firms and individuals. To conduct a survey with more than nine respondents, any federal agency and any organization conducting a project sponsored by a federal agency must submit the survey instrument for public comment and OMB approval. These restrictions are intended to minimize the recordkeeping and survey burden on private citizens and firms and to prevent undue invasion of privacy. They apply not only to mandatory data collections, such as Internal Revenue Service forms and EPA data requests to support regulatory development, but also to voluntary participation in WTP surveys if those surveys are supported by federal grants and contracts. In addition, the PRA and OMB regulations require that surveys "must be adequately designed and justified, with an opportunity for public comment" (OMB 2005, 51).

Many researchers who do federally supported research on the benefits and costs of regulations, as well as federal agency personnel who are responsible for developing and supporting economically justified regulations, report horror stories about extensive delays in getting surveys approved. Virtually all would agree that the required public comment on surveys is an unwarranted and unwelcome intrusion on research autonomy. Most would further agree that the PRA and OMB's

interpretation of its requirements are a little too energetic and could be tweaked to make data collection to support regulation more efficient without compromising the goals of the PRA. Below we offer some possible solutions.

Exempt or relax voluntary surveys from the survey size restrictions in some cases. Arguably, there is little distinction between voluntary and mandatory surveys of firms regulated by an agency. What regulated firm wishes to risk being regarded as "uncooperative" by its regulator? However, that issue does not apply to the main concern raised here, namely, surveys of attitudes of and WTP for public goods by private citizens, because such surveys offer little possibility of coercion. In addition, OMB approval is required for surveys that do not directly support regulation; this requirement should be reviewed.

Limit OMB technical review of some survey instruments. No doubt OMB review has limited poor research designs and weak sampling methods in some cases. However, OMB has also rejected surveys where the issues involve unsettled methodological controversies. In some instances, for example, researchers have been denied the use of controlled web-based surveys because they are not in OMB's view properly randomized. OMB has also rejected the use of cash incentives for completed surveys. Both practices are generally accepted by social science researchers as the only cost-effective ways to recruit an adequate sample and achieve an acceptable response rate.

Eliminate or severely restrict the public comment requirement on WTP surveys, possibly replacing it with a peer review requirement. Most issues of experimental design are quite technical in nature, and self-selected laypersons rarely have much useful to add. Not surprisingly, comments often reflect interest group positions rather than independent professional judgments. However, it might not be inappropriate for OMB to request reviews from qualified professionals, or to invite commentary from all members of relevant scientific disciplines.

Replace OMB review of survey instruments and methodology with peer review by technically qualified persons outside of the federal government. OMB is regarded by many regulatory stakeholders as a nonneutral party, generally hostile to most social regulations. To some extent, these attitudes may be inevitable given OMB's executive and statutory role as regulatory gatekeeper, but it is not clear that the gatekeeping function should extend to survey quality. Indeed, it sits uneasily with OMB's recently acquired responsibilities under the Data Quality Act. It is strange for OMB to be, in effect, limiting the acquisition of information through surveys on the front end of the regulatory process and then criticizing the poor quality of regulatory information later in the process.

12. Consider interactions between the distribution of regulatory costs and benefits

Distributional consequences of regulation are important. At present, however, EPA tends to consider the distribution of regulatory costs and the distribution of benefits independently. It is possible, however, that strong and potentially adverse interactions exist, and these interactions should be considered explicitly in the RIA and during the rulemaking process.

EPA has demonstrated considerable concern about distributional consequences of its regulation, although sometimes not on the issues of most concern to environmental advocates. The agency clearly pays some attention to issues of environmental justice and the identification of dis-

proportionately affected communities, but by statute and executive order it is at least as concerned about the impacts of regulatory costs and other restrictions on various types of industrial facilities. Estimates of plant closings remain an important metric in assessments of economic impacts of regulation, and small plants routinely receive exemptions from the more stringent regulations governing larger plants. But small plants may be older and dirtier than their larger counterparts, and are probably located in the more run-down parts of inner cities or small towns, surrounded by low-income and perhaps minority communities. The location and continuous existence of these plants could therefore exacerbate adverse environmental justice outcomes that in other ways EPA explicitly attempts to avoid. At the same time, people living in these communities are frequently employed by the very plants whose actions may be harmful to their health, so that any action against small or old plants conceivably could increase local unemployment precisely at locations where few alternative jobs exist. Thus, any regulatory response here should be considered carefully, based on credible analysis of the potential for injustice, the potential interactions between regulatory costs and benefits, and disadvantaged communities.

Research-Oriented Recommendations

13. Consider the use of group- as well as individual-respondent methods for calculating WTP

Critics of CBA have argued persistently that when considering public goods, it is more appropriate to value them in a collective context than in the individual-consumer context prescribed by welfare analysis. According to this view, people's decisionmaking calculus about public goods is different from their valuation of private goods because the context is different. Their thinking is supposedly less parochial, more future-oriented, and more altruistic. In addition, critics argue that the context in which WTP is elicited in individual surveys is artificial and inconsistent with how individuals actually make market-based decisions. The issue we want to focus on is this: How might those concerns be addressed by the use of group processes to elicit WTP?

Primarily, advocates of group processes have in mind fully group-determined decisions, reached by some deliberative process followed by the exercise of some kind of voting mechanism. Group valuation methods seem to have risen out of the citizens' jury, a method of illuminating public policy controversies by convening one or more panels of citizens. In the United States, for example, the Hubert Humphrey School at the University of Minnesota has been prominent in its use of citizens' juries to compare pricing policies to other approaches to deal with traffic congestion. Group valuation methods add a valuation step to the citizens' jury concept. See Sagoff (1998) or Spash (2007) for brief reviews of different approaches to group-determined benefit estimates.

To economists, the problem with this sort of group valuation is that it breaks the link between theoretical welfare economics and CBA. In principle, CBA accepts only one method for valuing the outcomes of social regulations or of public investments: the sum of individual valuations, elicited either directly by survey or indirectly by inference from consumer behavior via autonomous market agents. Moreover, observers from numerous backgrounds see potential practical problems related to group-elicited WTP estimates.

A bigger problem is that little consensus exists regarding how to conduct such group elicitations, and many observers fear that any such estimate may reflect more than just the valuation of

the public good or service in question. For this reason, most observers would predict that the use of group methods would probably produce higher WTP estimates than would standard methods. List and his colleagues (2004), for example, agree that social approaches can lead to higher WTP values, but not because the values more faithfully reflect true WTP for the public good in question. Rather, group processes can include individuals' willingness to be accommodating to the values of others, as well as their signaling of their environmental and social concerns. These latter effects may be valid, but they could be connected to any public good or to no public good and, according to List et al., can only distort the estimates of WTP for the good in question.

However, perhaps it is possible to have a middle ground in which information and attitudes about the public good in question can be aired in a group setting but coupled with private elicitation of WTP in a manner consistent with welfare theory and current practice. To see how this group interaction might help, consider briefly how WTP surveys are typically conducted now. To elicit individual WTP, the general procedure is to conduct a single 15- to 30-minute personal or telephone interview in which the environmental problem or public good to be valued is described in some detail, and a public policy remedy that will regulate the harm is proposed, as is a method of covering its costs. The payment method is designed to make it clear to the respondent that the respondent would have to pay, and so would everyone else. Thus, most well-designed WTP studies attempt to eliminate concerns about free riding (unless altruism is the focus of the research). After the setup is explained to the respondent's satisfaction, a series of yes–no WTP questions is asked. These data are then aggregated across respondents to get the demand curve.

In other words, respondents come to the survey cold, are presented with the environmental problem and potential remedy having perhaps never thought of it before, and then are asked to absorb a great deal of information and make value decisions with very little time for consideration or introspection and without being able to discuss the matter with friends or colleagues. All this despite the fact that most people do spend time thinking about major decisions, and often consult friends and colleagues for advice or additional perspective.

For use values that are broadly familiar to the public and that have more or less direct counterparts in market activities, such as increased availability of outdoor recreation, improved health, or greater commercial fishing yields, estimation of WTP is relatively uncontroversial. These estimates are most often produced by indirect methods, but the fact that they are familiar to the public means that they are also better suited than other benefit categories to individual survey methods. For more obscure or less empirically supported use values, such as the water-purifying and flood-control benefits of wetlands, or nonuse values such as endangered species and habitat protection, few if any market surrogates are available, and survey methods are the only game in town. Unfortunately, such goods are also the ones for which respondents will most likely have greater difficulties in valuation surveys.

Coupling group information provision with individual WTP elicitation has begun to attract empirical attention. In one interesting empirical study of WTP for the preservation of wildlife habitat of endangered geese in Scotland, for example, McMillan et al. (2002) outline a group informational approach they call the Market Stall.[7] The authors recruit several groups of participants in a focus group-like setting, explaining to attendees the usual survey preliminaries of problem, potential solution, and payment method. A question-and-answer session follows. Researchers then ask the valuation questions in a format in which participants respond without revealing their answers to other participants. Respondents are then excused and invited back one week later for a

follow-up discussion. In the meantime, they are encouraged to do their own research and talk to their friends and families. At the follow-up meeting, participants are once again asked if they have any questions, and discussion is encouraged. When no one has anything else to say, WTP is again elicited privately. For comparison purposes, researchers also conduct a more conventional WTP survey without the group discussion.

The results were dramatic. Compared to the Market Stall participants, the conventional survey participants were nearly twice as likely to indicate they would "definitely pay" (DP; 33 percent to 18 percent). The mean WTP of DP respondents was £15.29 in the survey, compared to £3.67 for the Market Stall participants in the first session and £4.49 for the same participants in the second session. The Market Stall estimates also had much smaller standard errors. Learning about this problem in a group session appears to affect WTP dramatically, but probably not in the direction that most would expect. Obviously, one cannot conclude on the basis of one study that group methods will reliably produce lower estimates of WTP, but it does suggest that we might have much to learn from group processes and that some of these lessons are likely to be surprising.

Recently EPA's SAB recommended against the use of group sharing of information in WTP surveys and of group elicitation of WTP. In view of the substantial development of literature on these issues, we suggest that EPA revisit this issue.

14. Investigate the WTP to Avoid the Dread Associated with Increased Risk to Oneself or to One's Family

A persistent theme in the debate between proponents and opponents of CBA has been the question of whether the risk perceptions of experts or of laypeople should dominate in public decisionmaking about risk. One lesson from this discussion has been that risk involves more than the probability of material harm. Depending on the circumstances, it can also involve fear, anger, hopelessness, a sense of losing control, and more—myriad emotional and psychological reactions we will gather under the common heading, *dread*.

To the extent that CBA estimates only the WTP to avoid an increased probability of material harm, and ignores the dread associated with that probability, it may be missing an important category of regulatory benefits. Regulation may reduce both the probability of harm and the dread that often accompanies it. There is no theoretical reason for ignoring the latter in CBA if empirical evidence eventually shows a meaningful WTP to avoid dread. An important concern here is not to use WTP from studies of a health effect that is not expected, such as death in an automobile accident, to estimate WTP of a health effect where dread may play an important role. Comparison of valuation studies for various health effects suggest that differences beyond the direct risks of dying may raise WTP by 0 to 100 percent.

However, substantial practical obstacles may prevent the inclusion of this factor in CBA. People's emotional and psychological reactions to an increased probability of harm are highly contextual; they vary greatly depending on the nature of the risk. Thus, including dread as part of the cost–benefit calculus will either mean doing a great many studies of the WTP for avoided dread or using benefits transfer in a setting in which—because of the variability of WTP, depending on the specific context—it might be quite problematic. Not surprisingly, therefore, our recommendation is to further investigate the economic value of this benefit prior to making a decision to include it in RIAS.

Final Observations

Our recommendations for the reform of RIAs cover a range of topics: the quality of the analyses, relevance to agency decisionmaking, transparency, treatment of new scientific information, and the proper balance in both the analyses and the process, including the distributional consequences. The overall message is clear: improve the quality, scientific credibility, and timeliness of RIAs and, at the same time, make them more transparent and relevant to the decisionmaking process.

The natural pushback is to ask how much these improvements will cost. Presently, a small cottage industry is involved in preparing RIAs, both inside and outside of EPA. At an estimated cost of $1 million for each of the 8 to 10 RIAs produced annually, the agency is already committing substantial resources to this effort.[8] Despite a number of cost-reducing proposals among our recommendations, such as a more selective focus on particular topics to be studied in individual RIAs, we recognize that our proposals would probably add to the total costs of developing RIAs. It is also possible that some of our recommendations may be at odds with others. For example, more SAB review might well conflict with the goal of developing a preliminary RIA six months in advance of agency decision meetings.

Recalling that RIAs are generally focused on rules with a minimum of $100 million of annual costs and/or benefits, the potential gains from improved regulatory decisionmaking are large. Unfortunately, the evidence that RIAs actually add net benefits to regulation is limited. Despite one early study demonstrating the gains from RIAs, limited recent data are available on the subject.[9] Nonetheless, based on our review of the RIAs examined in this report, as well as other evidence, it is our judgment that recent RIAs have fallen well short of the mark in generating information and analyses that are truly useful to decisionmakers. We appear to be at a crossroads: either we fix the current system or we accept it without major reform. The recommendations developed here represent our judgment on an agenda for the former effort. We hope to spur further debate on these issues to stimulate constructive change.

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Notes

1. *See* http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html.

2. Steinzor (2008), 122.

3. According to EPA (2000), the guidelines "...establish a sound scientific framework for performing economic analyses of environmental regulations and policies. They incorporate recent advances in theoretical and applied work in the field of environmental economics. The Guidelines provide guidance on analyzing the economic impacts of regulations and policies and on assessing the distribution of costs and benefits among various segments of the population, with a particular focus on disadvantaged and vulnerable groups." *See* http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html.

4. Morgenstern and Landy (1997) also proposed that a NEPA-style scoping exercise be added to the RIA process.

5. An example drawn from the RIAs examined in this volume is the paper by Bell et al. (2004) on ozone mortality. Although the RIA on the CAIR cited the Bell et al. study, it was not included in the agency's benefit calculations because it had not yet been formally accepted for journal publication when the RIA was completed.

6. Executive Order 12866.

7. Strictly speaking, the experiment was to elicit the amount citizens were willing to contribute to compensate farmers for damages to land and crops caused by the protected species on their land. This illustrates a common problem of WTP studies: their connection to a regulation or to a policy outcome is tenuous at best. Based on the description in the paper, the respondent is not told how farmers would respond to the offer of compensation or how the goose populations would respond to the increase in habitat.

8. The estimate of $1 million is from Morgenstern and Landy (1997), based on a dozen RIAs conducted by EPA in the 1980s and 1990s. The Congressional Budget Office (CBO 1997) estimated the cost at about $700,000 apiece, although it highlighted the large variance in costs among different RIAs. Averaging the two estimates and inflating to current dollars yields about $1 million.

9. Morgenstern and Landy (1997) found that in a group of a dozen RIAs conducted in the 1980s–1990s, the increase in net benefits of the rules attributable to the RIAs greatly exceeded the costs of the actual studies. For a contrary view on the usefulness of RIAs, *see* Hahn and Tetlock (2008).

References

Ackerman, Frank, and Lisa Heinzerling. 2003. *Priceless: On Knowing the Price of Everything and the Value of Nothing.* New York: The New Press.

Bell, M.L., A. McDermott, S.L. Zeger, J.M. Samet, and F. Dominici. 2004. Ozone and Short-term Mortality in 95 U.S. Urban Communities, 1987–2000. *Journal of the American Medical Association* 292:2372–2378.

Congressional Budget Office (CBO). 1997. *Regulatory Impact Analysis: Costs at Selected Agencies and Implications for the Legislative Process.* Washington, DC: CBO

Executive Order 12866. 1993. *Federal Register* 58:51735, October 4.

Hahn, Robert W. and Patrick Dudley. 2007. How Well Does Government Do Cost-Benefit Analysis? *Review of Environmental Economics and Policy.* 1(2): 192–211.

Hahn, Robert W. and Paul C. Tetlock. 2008. Has Economic Analysis Improved Regulatory Decisions? *Journal of Economic Perspectives.* 22:1, 67–84.

List, John A., Robert P. Berrens, Alok K. Bohara, and Joe Kerkvliet. 2004. Examining the Role of Social Isolation on Stated Preferences. *American Economic Review* 94(3): 741–752.

McMillan, Douglas C., Lorna Philip, Nick Hanley, and Begona Alvarez-Farizo. 2002. Valuing the Nonmarket Benefits of Wild Goose Conservation: A Comparison of Interview and Group-Based Approaches. *Ecological Economics* 43:49–59.

Morgenstern, Richard, and Mark Landy. 1997. Chapter 15 (Conclusions), in *Economic Analyses at EPA: Assessing Regulatory Impact,* edited by Richard Morgenstern. Washington, DC: RFF Press.

Olson, Erik D. 1984. The Quiet Shift of Power: Office of Management and Budget Supervision of Environmental Protection Agency Rulemaking under Executive Order 12291. *Virginia Journal of Natural Resources Law* 4:1.

Office of Management and Budget (OMB). 2005. *Report to Congress on the Benefits and Costs of Federal Regulations.* Washington, DC: Office of Information and Regulatory Affairs, OMB.

Sagoff, Mark. 1998. Aggregation and Deliberation in Valuing Environmental Public Goods: A Look beyond Contingent Pricing. *Ecological Economics* 24: 213–230.

Spash, Clive L. 2007. Deliberative Monetary Valuation (DMV): Issues in Combining Economic and Political Processes to Value Environmental Change. *Ecological Economics* 63: 690–699.

Steinzor, Rena I. 2008. *Mother Earth and Uncle Sam: How Pollution and Hollow Government Hurt our Kids,* Austin, TX: University of Texas Press.

U.S. Department of Agriculture (USDA) Forest Service. 2005. Special Areas, State Petitions for Inventoried Roadless Area Management, Final Rule. *Federal Register* 70:25654, May 15.

U.S. Department of Interior. 2004. Office of Surface Mining Reclamation and Enforcement, Surface Coal Mining and Reclamation Operations, Excess Spoil, Stream Buffer Zones, Diversions, Proposed Rule. *Federal Register* 69:1035–1048, January 7.

U.S. Department of Interior, Fish and Wildlife Service, and U.S. Department of Commerce, National Marine Fisheries Service. 2008. Interagency Cooperation Under the Endangered Species Act, Proposed Rule. *Federal Register* 73:47868, August 15.

U.S. Environmental Protection Agency (EPA). 2000. *Guidelines for Preparing Economic Analyses,* Office of the Adminstrator (EPA 240-R-00-003), Washington, DC. http://yosemite.epa.gov/ee/epa/eed.nsf/web pages/Guidelines.html (accessed January 31, 2009).

———. 2002. New Source Review (NSR) Improvements, Supplemental Analysis of the Environmental Impact of the 2002 Final NSR Improvement Rules, November 21. www.epa. gov/NSR/documents/nsr-analysis.pdf (accessed January 11, 2008).

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CONTRIBUTORS

David A. Evans. *Economist, Center for Environmental Economics, U.S. Environmental Protection Agency*

David Evans' research interests include normative and positive analyses of regulatory design and the application of stated preference methods. At EPA, he performs and evaluates the economic analyses that support decisionmaking on federal air quality regulations. Evans was formerly a research assistant and then research associate at Resources for the Future. He holds a Ph.D. from the University of Maryland, a master's degree from the University of Illinois, and an undergraduate degree from Hiram College.

Scott Farrow. *Professor and Chair, Department of Economics, and Faculty Fellow, Center for Urban Environmental Research and Education, UMBC (University of Maryland, Baltimore County)*

Scott Farrow's research interests include risk-based economic approaches to government program evaluation, including decisionmaking under uncertainty. Previously, he was chief economist at the U.S. Government Accountability Office, where he led agency development with respect to risk management and economic performance, among other duties. Prior to that, he was director and principal research economist at the Center for the Study and Improvement of Regulation in the Department of Engineering and Public Policy and the H. John Heinz III School of Public Policy and Management at Carnegie Mellon University. Farrow holds a Ph.D. in economics and a master's degree in industrial organization and environmental economics from Washington State University, and an undergraduate degree in economics from Whitman College.

Winston Harrington. *Senior Fellow, Resources for the Future*

Winston Harrington's work encompasses urban transportation, motor vehicles and air quality, and problems of estimating the costs of environmental policy. He has worked extensively on the economics of enforcing environmental regulations, the health benefits derived from improved air quality, the costs of waterborne disease outbreaks, endangered species policy, federal rulemaking procedures, and the economics of outdoor recreation. Harrington has served as a consultant to state and federal governments, the World Bank, and the Harvard Institute for International Development. He also is on the adjunct faculty at Georgetown University. Harrington holds a Ph.D. in city and regional planning from the University of North Carolina at Chapel Hill and a master's degree in mathematics from Cornell University.

Lisa Heinzerling. *Professor of Law, Georgetown University Law Center (on leave of absence)*

Lisa Heinzerling received an A.B. from Princeton University and a J.D. from the University of Chicago Law School, where she was editor-in-chief of the *Law Review.* She clerked for Judge Richard A. Posner on the United States Court of Appeals for the Seventh Circuit and for Justice William J. Brennan, Jr. on the United States Supreme Court. Later, Heinzerling served as an assistant attorney general in Massachusetts, specializing in environmental law, before becoming a faculty member at Georgetown. She has been a visiting professor at the law schools at both Yale

and Harvard, and has published extensively, including a book with Frank Ackerman, *Priceless: On Knowing the Price of Everything and the Value of Nothing* (The New Press, 2004). Heinzerling is currently on leave of absence from Georgetown and serving as senior climate policy counsel at the Environmental Protection Agency.

Nathaniel O. Keohane. *Director of Economic Policy and Analysis, Climate and Air Program, Environmental Defense Fund (EDF)*

Nat Keohane oversees EDF's analytical work on the economics of climate policy, and helps to develop and advocate the organization's policy positions on global warming. His academic research has focused on the design and performance of market-based environmental policies. From 2001 to 2007, Keohane was an assistant and then associate professor of economics at the Yale School of Management. He has published articles on environmental economics in academic journals including the *Journal of Public Economics,* the *RAND Journal of Economics,* the *Journal of Environmental Economics and Management,* and the *Harvard Environmental Law Review.* Keohane is also the co-author of *Markets and the Environment* (Island Press, 2007) and co-editor of *Economics of Environmental Law* (Edward Elgar, 2009).

Alan Krupnick. *Senior Fellow and Director of Research, Resources for the Future*

Alan Krupnick's research focuses on analyzing environmental issues, in particular, the benefits, costs, and design of air pollution policies, both in the United States and in developing countries. He also studies the valuation of health and ecological improvements and, more recently, the ancillary benefits of climate policy and urban transportation and development problems. Krupnick has served as a consultant to state governments, federal agencies, private corporations, the Canadian government, the European Union, the World Health Organization, and the World Bank. Krupnick also served as senior economist on the President's Council of Economic Advisers, advising the Clinton administration on environmental and natural resource policy issues. He is a regular member of expert committees from the National Academy of Sciences and has served on a Royal Society of Canada committee analyzing ambient air quality standard setting in Canada. Krupnick holds a Ph.D. and a master's degree in economics from the University of Maryland.

Douglas A. Kysar. *Professor of Law, Yale Law School*

Douglas Kysar's teaching and research areas include tort law, international environmental law, sustainable development, products liability, and risk regulation. He received his bachelor's degree from Indiana University in 1995 and his J.D. from Harvard Law School in 1998, where he served on the student board of advisors. He has published widely on competing policymaking paradigms for the regulation of environmental, health, and safety risks, examining in particular certain underappreciated moral and political assumptions that underlay invocation of cost–benefit analysis and the precautionary principle within environmental policymaking contexts. He has recently completed a book on these subjects, *Regulating from Nowhere: Environmental Law and the Search for Objectivity* (Yale University Press, forthcoming).

Richard D. Morgenstern. Senior Fellow, Resources for the Future

Richard Morgenstern's work centers on the economic analysis of environmental issues with an emphasis on the costs, benefits, evaluation, and design of environmental policies, especially economic incentive measures. His analysis also focuses on climate change, including the design of cost-effective policies to reduce emissions in the United States and abroad. Immediately prior to joining RFF, Morgenstern was senior economic counselor to the undersecretary for global affairs at the U.S. Department of State. Previously, he served at the U.S. Environmental Protection Agency, where he acted as deputy administrator (1993); assistant administrator for policy, planning, and evaluation (1991–1993); and director of the Office of Policy Analysis (1983–1995). He has served on expert committees of the National Academy of Sciences and as a consultant to various organizations. Morgenstern holds a Ph.D. in economics from the University of Michigan.

Catherine A. O'Neill. Associate Professor of Law, Seattle University School of Law

Catherine O'Neill focuses her research on issues of justice in environmental law and policy, particularly issues affecting fish and other resources relied upon by American Indian tribes, and minority and low-income communities. She also works on methods of risk assessment and management as well as on approaches to regulatory analysis. She is a member scholar with the Center for Progressive Reform and has testified before Congress on regulations governing mercury emissions from coal-fired power plants. O'Neill has also served as a pro bono consultant to the attorneys for the National Congress of American Indians and other tribes in litigation challenging mercury regulations. She has published numerous scholarly articles in such journals as the *Stanford Environmental Law Journal, Ecology Law Quarterly,* and the *Vermont Law Review.* O'Neill was a Ford Foundation graduate fellow at Harvard Law School. She received her J.D. from the University of Chicago School of Law.

Wendy E. Wagner. Joe A. Worsham Centennial Professor, School of Law, University of Texas at Austin

In addition to being on the faculty at UT Austin, Wendy Wagner also teaches one semester per year at Case Western Law School. She serves on the National Research Council's Committee on Reducing Stormwater Discharge Contributions to Water Pollution and is a member scholar of the Center for Progressive Reform. Previously, she served as an honors attorney in the Enforcement Division of the Department of Justice's Environment and Natural Resources Division, and then as pollution control coordinator with the Department of Agriculture's Office of the General Counsel. Wagner holds a J.D. and a master's degree in environmental studies from Yale University, where she was senior editor of the *Yale Law Journal* and managing editor of the *Yale Journal of Regulation.*

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AMERICAN MEAT INSTITUTE

January 3, 2011

Honorable Darrell Issa
Chairman
House Committee on Oversight and Government Reform
2157 Rayburn House Office Building
Washington, DC 20515-6143

Dear Mr. Chairman:

You recently asked for information about existing and proposed regulations that have or will adversely affect the American Meat Institute's members and the meat industry more broadly. Your request particularly inquired about regulations with an adverse impact on job growth.

The meat industry is among the most heavily regulated industries in the American economy. Every day federal inspectors are in plants and in that regard, the industry has adapted to the existing regulatory scheme and produces the safest meat and poultry supply in the world. Although the regulatory burden in which the industry currently operates is significant, it pales when measured against the adverse impact that a proposed rule will have, not only on the meat and poultry industry, but also on livestock and poultry producers – the farmers and ranchers of this country.

Specifically, the United States Department of Agriculture's (USDA) Grain Inspection, Packers and Stockyards Administration (GIPSA) has proposed a rule, *Implementation of Regulations Required Under Title XI of the Food, Conservation and Energy Act of 2008; Conduct in Violation of the Act.*[1] Studies show this rule, if finalized as proposed, could cost the meat and livestock and related industries more than 100,000 jobs.[2] These several studies, done by affected industries as part of the rulemaking comment process demonstrating the likely job losses and other adverse effects, are in stark contrast to the absence of any meaningful economic impact analysis of the proposed rule done by USDA.[3].

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[1] 75 *Fed. Reg.* 35338 (June 22, 2010).
[2] See study summaries by Dunham & Assoc., Informa, and FarmEcon LLC, (Attachment A).
[3] Indeed, USDA's chief economist had virtually no role in analyzing the impact of the proposed rule before its publication.

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The absence of a sound economic analysis of the rule, calls for which have come from numerous members of the House and the Senate, is just one of the numerous problems attendant to the proposed rule.[4] Among the other significant problems with the rule is the fact that it goes well beyond the mandate given to GIPSA by Congress in the 2008 Farm Bill – a fact pointedly made by numerous members of the House Committee on Agriculture in both a July 2010 hearing and through other venues thereafter.

In addition, the proposed rule ignores and attempts to overturn long-standing case law interpreting the Packers and Stockyards Act (PSA) – case law developed and considered by eight separate federal appellate courts. Indeed, through this rule GIPSA would change well settled law and lessen the burden of proof that a plaintiff's lawyer would have to must meet when bringing a PSA a claim.[5]

In short, the proposed rule would reverse more than 30 years of progress and innovation driven by consumer demand. This rule, if implemented as written, will return the meat and poultry industry to what it once was, stifling the ability to provide consumers what they desire and making the industry less competitive in the world market. I would be happy to discuss at your convenience with the significant and adverse impact this proposed rule would have if implemented as written.

Respectfully submitted,

Mark D. Dopp
Sr. Vice President & General Counsel

Enclosures

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[4] For example, 115 members of the House of Representatives sent a letter to Secretary of Agriculture Vilsack asking that a comprehensive economic analysis be done. (Attachment B) See also other letters from members of the House and Senate expressing concerns and requesting an economic impact analysis. (Attachments C-G).

[5] In rejecting GIPSA's interpretation of the PSA only weeks before the rule was proposed the United States Court of Appeals for the Sixth Circuit said: "The tide has now become a tidal wave ... all told, seven circuits – the Fourth, Fifth, Seventh, Eighth, Ninth, Tenth, and Eleventh Circuits – have now weighed in on this issue with unanimous results." *Terry v. Tyson Farms* 604 F.3rd 272 6th Cir. (May 10, 2010). (See Attachment H). See also AMI's comments (Attachment I).

ATTACHMENT A

AMERICAN MEAT INSTITUTE

FACT SHEET

What Three Comprehensive Studies Have Said About the Cost of Proposed GIPSA Rule

In June, 2010, USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) proposed sweeping new livestock and poultry marketing rules. Although some parts of the rule were mandated by Title XI of the Food, Conservation and Energy Act of 2008 (Farm Bill), many more provisions were added and exceed the Congressional intent evidenced in the Farm Bill. Unfortunately, in developing the proposal, GIPSA conducted only a cursory analysis of the full impact of the proposed rule on the meat and poultry sector – an analysis that allowed GIPSA to claim that the rule's cost would be less than $100 million, which is the threshold that requires a comprehensive economic assessment. Since the rule was proposed, three in-depth, private economic analyses have documented the staggering costs — in both jobs and revenue — associated with the proposed rule. Although the studies use slightly different models and arrive at somewhat different final costs, they have one thing in common: each study projects that the rule's costs would be well in excess of $100 million.

The studies' top line findings are summarized below.

John Dunham and Associates

This economic impact study examines both the red meat and poultry sectors and concludes that if the new rule is finalized as proposed, 104,000 Americans would lose their jobs following the rule's implementation. The proposed rule also would reduce national GDP by $14 billion, and would cost a total of $1.36 billion in lost revenues to the federal, state and local governments.

The study's findings conclude that livestock producers would be especially affected by the implementation of this rule, costing as many as 21,274 jobs, many in rural America. Additionally, consumers would be forced to pay about 3.33 percent more for meat and poultry products, meaning that it will cost Americans an additional $2.7 billion to keep eating the same amount of meat they currently do.

The study was commissioned by the American Meat Institute. John Dunham & Associates is a New York-based firm that conducts economic impact studies on various pieces of legislation for parties from all sides of the political spectrum. The study is presented on an interactive website that aggregates economic impact on national, state and congressional district levels. The complete study can be found at: www.MeatFuelsAmerica.com/GIPSA.

Informa Economics, Inc.

This comprehensive analysis of the proposed regulation and how it would affect both the meat and the poultry sectors determined that the rule would result in job losses of more than 22,800, with an annual drop in gross domestic product by as much as $1.56 billion and an annual loss in tax revenues of $359 million.

The study found that the rule would result in "ongoing and indirect" costs to the livestock and poultry industries – eventually borne by producers and consumers – of more than $1.64 billion, including a nearly $880 million loss to the beef industry, more than $401 million in losses for the pork industry and almost $362 million to the poultry industry. The analysis concludes that, although the annual direct losses from the proposed rule will be borne by producers — $780 million for the beef industry, $259 million for the pork industry and $302 million for the poultry industry —, the "ongoing and indirect costs will eventually be borne by consumers and producers, not packers."

The study was commissioned by the National Meat Association in cooperation with the National Cattleman's Beef Association, the National Pork Producers Council and the National Turkey Federation. Informa Economics, Inc. is a world leader in broad-based domestic and international agricultural and commodity/product market research, analysis, evaluation and consulting. The company was founded in 1977 and is based in Memphis, Tennessee. To see the study, go to: http://bit.ly/aplwOy

FarmEcon LLC

The only study to date that examines the impact of the proposed rule solely on the meat chicken industry found that the proposed GIPSA rule would cost the broiler chicken industry more than $1 billion over five years in reduced efficiency, higher costs for feed and housing, and increased administrative expenses. "Higher costs would put upward pressure on chicken prices, and economic theory strongly suggests that consumers would ultimately bear most of these costs," the study says.

The report also notes that "the proposed rule changes are likely to slow the pace of innovation, increase the costs of raising live chickens and result in costly litigation." In addition to economic losses in the U.S., the report also warns of lost competitiveness abroad. "The Proposed Rules place cost burdens and regulatory restrictions on U.S. broiler companies that do not apply to foreign competitors. To the extent that U.S. chicken company competitiveness in global markets is reduced, U.S. chicken net exports would likely

decline in a manner similar to the recent decline in EU chicken net exports. Export competitor countries such as Brazil could reap significant benefits from the Proposed Rules." the study says.

The study was commissioned by the National Chicken Council. FarmEcon LLC is an agricultural and food industry consulting firm located near Indianapolis, in Carmel Indiana. For a copy of the study, click here: http://bit.ly/aXqxOt

Conclusion: USDA erred in concluding that the economic impact of the proposed rule would be less than the $100 million threshold that triggers more comprehensive economic impact assessments. For this reason, the rule should be withdrawn and USDA should immediately initiate a comprehensive economic impact study.

AMERICAN MEAT INSTITUTE

The Proposed GIPSA Rule will Cost the United States 104,000 Jobs

A regulation proposed by the Grain Inspection, Packers and Stockyards Administration (GIPSA) would, among other things, adversely affect packers' and their suppliers' willingness to use marketing agreements. Why? The proposed rule increases the risk associated with using marketing agreements because it would change longstanding judicial precedent and make it easier for a disgruntled livestock supplier to sue and win in a Packers and Stockyards Act lawsuit. In doing so, the proposed rule creates a disincentive for packers to use such agreements.

Although supporters of the rule claim the proposal will help livestock producers[1], a careful look at the economics of the proposal shows that it actually will lead to a decline in jobs, wages, economic activity, and tax revenues in United States. That's why so many organizations representing cattle, pig and poultry producers, as well as meat and poultry processors, oppose the rule.

The United States companies that produce, process, distribute, and sell meat and poultry products are an integral part of the nation's economy. Manufacturers, retailers, and distributors of meat and poultry products, provide well-paying jobs in the United States, and pay significant amounts in taxes to the State and Federal governments.

Economic Impact of the Proposed GIPSA Rule in the United States

	Direct[2]	Supplier	Induced	Total
Jobs (FTE)	30,000	43,443	30,151	104,000
Wages	$764,318,247	$1,415,726,892	$1,172,971,419	$3,353,016,558
Economic Impact	$3,838,461,850	$6,350,851,492	$3,795,974,168	$13,985,287,510

	Federal Taxes	State Taxes	Total
Business Taxes	$790,705,294	$569,758,882	$1,360,464,176

The Meat Industry is an Integral Part of the United States' Economy

- Companies in the United States that produce, process, distribute and sell meat and poultry products would lose as many as 30,000 jobs in the nation. As many as 74,000 jobs in supplier and ancillary industries will also be lost. These include jobs in companies supplying livestock and services to manufacturers, distributors and retailers, as well as those that depend on sales to workers in the meat industry.
- In this harsh economic period, every job is important. In fact, in the United States the unemployment rate has reached 9.2 percent. This means that there are already 14,139,762 people trying to find jobs in the nation and collecting unemployment benefits.

The Nation Would Suffer from a Decrease in Taxes Paid by the Industry

- Not only does the meat industry create jobs, it also generates sizable tax revenues. In the United States, the industry and its employees would pay about $1.4 billion less in taxes to the State and Federal governments, as a result of the proposed GIPSA rule.

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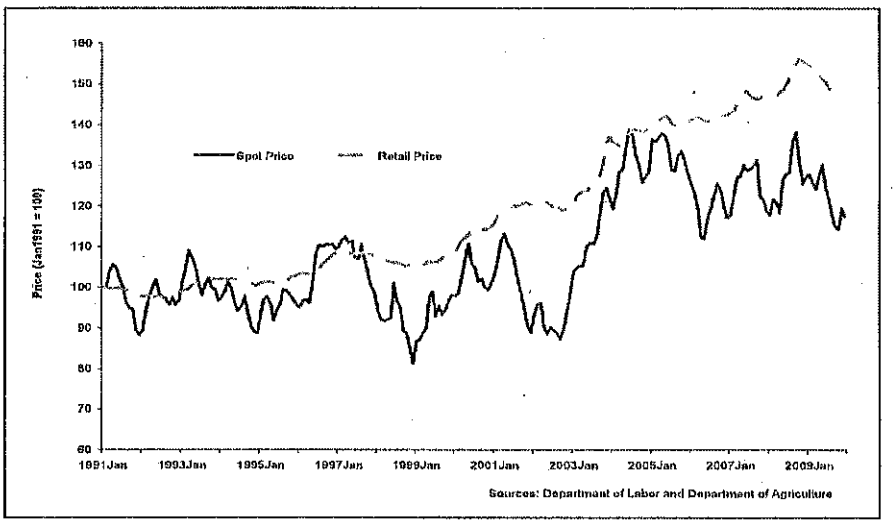
1 Producer jobs include agricultural supplier jobs that are meat and poultry related.

2 Direct jobs are those involved in the packing, wholesaling, and retailing of meat products. Supplier jobs include livestock and poultry producers, as well as those working in other companies that supply goods and services to meat packers, wholesalers, and retailers. Induced impacts come about when those working in the direct and supplier sectors spend their income in the regional economy.

AMERICAN MEAT INSTITUTE

The Proposed GIPSA Rule Will Cost Livestock Producers 21,000 Jobs[1] While Making it More Difficult for Them to Produce Quality Products

A regulation proposed by the Grain Inspection, Packers and Stockyards Administration (GIPSA) would, among other things, adversely affect packers' and their suppliers' willingness to use marketing agreements. Why? The proposed rule increases the risk associated with using marketing agreements because it would change longstanding judicial precedent and make it easier for a disgruntled livestock supplier to sue and win in a Packers and Stockyards Act lawsuit. In doing so, the proposed rule creates a disincentive for packers to use such agreements.



Marketing Agreements Help Producers Manage Volatile Day to Day Price Changes

- Historically, "spot" prices for livestock have been 500 percent more volatile than market prices for meat. As the graph above shows, meat prices have been fairly stable over time, while spot prices for livestock vary wildly by day or even hour.[2]
- This volatility not only leads to higher meat costs, but makes livestock production more difficult because no one producer, packer, retailer nor consumer knows what to expect from day to day. Producers who are forced to rely on a spot market may be forced to sell inventory when market prices are low, and will be forced to keep inventory longer than average in order to ensure a consistent flow of income.

Higher Consumer Prices Will Reduce the Overall Demand for Meat and Meat Products, Leading to a Reduction of About 21,000 Jobs for the United States Livestock Producers

- In these tough times with as many as 14,139,762 workers in the United States struggling to find jobs, removing 21,000 from the nation's economy will only make matters worse. In other words, even though the proposed GIPSA rule raises prices to consumers, it does nothing to stem the exodus of producers from the state.

---

1 Producer jobs include agricultural supplier jobs that are meat and poultry related.

2 The standard deviation of monthly growth rates of spot livestock prices was 3 compared to 0.6 for retail meat prices. There is a direct relationship between the price of livestock and the retail price of meat. In fact, over time the two prices are almost perfectly correlated.

Increased Uncertainty Will Reduce Producers' Ability to Benefit from the Production of Quality Products

- The prices reflected in marketing agreements reflect the innovation, care and work that farmers put into their product. The rule proposed by GIPSA will remove the incentive from farmers and ranchers to produce high quality livestock.

AMERICAN MEAT INSTITUTE

USDA's Grain Proposed GIPSA Rule will Raise Food Prices and Harm Consumers in the United States

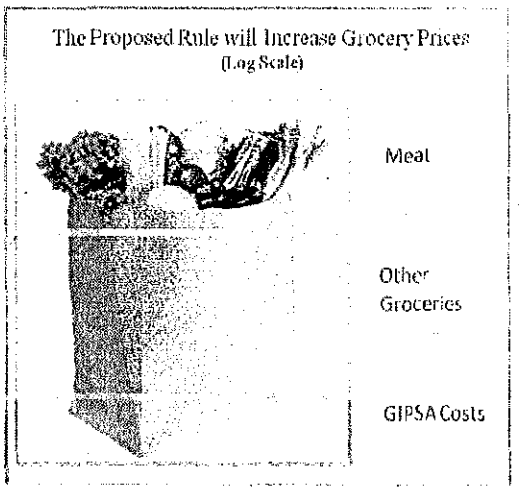
A regulation proposed by the Grain Inspection, Packers and Stockyards Administration (GIPSA) would, among other things, adversely affect packers' and their suppliers' willingness to use marketing agreements. Why? The proposed rule increases the risk associated with using marketing agreements because it would change longstanding judicial precedent and make it easier for a disgruntled livestock supplier to sue and win in a Packers and Stockyards Act lawsuit. In doing so, the proposed rule creates a disincentive for packers to use such agreements.

The Proposed GIPSA Rule Would Dismantle Innovative Marketing Tools that Help Producers[1] and Processors

- Rather than helping struggling consumers during these difficult economic times, a new bureaucratic regulation proposed by GIPSA will lead to higher consumer prices for meat and meat products.
- The current meat production system relies on mutually agreed upon marketing agreements to help both farmers and meat packers ensure a steady stream of quality products at a stable price.
- By forcing meat packers to purchase livestock on a volatile spot market, packers will have to increase their inventory carrying costs and will – over time – face higher prices for livestock.

The Proposed GIPSA Rule Will Cost United States Consumers More Than $2.7 billion per Year

- Currently, the people who live in the United States spend about $80.6 billion on meat and poultry products annually.
- If the proposed GIPSA rule is implemented, these consumers would be forced to pay about 3.33% more for their meat and poultry products.
- This means that the United States's residents will have to pay an additional $2.7 billion to keep eating the same amount of meat they currently do.
- As a result, they may be forced to make tough choices at the supermarket and elsewhere.



The United States's Producers Are Harmed by the Proposed GIPSA Rule

- Rather than helping the United States's livestock producers, the proposed GIPSA rule actually harms them. In fact, it is estimated that about 21,000 of the United States' livestock producers will lose their jobs as a result of these bureaucratic rules.
- That is why organizations like the National Cattlemen's Beef Association and the National Pork Producers' Council – groups that represent livestock producers – strongly oppose this government interference in the marketplace.

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1 Producer jobs include agricultural supplier jobs that are meat and poultry related.

AMERICAN MEAT INSTITUTE

The Proposed GIPSA Rule Will Have Unintended Consequences Throughout the United States

A regulation proposed by the Grain Inspection, Packers and Stockyards Administration (GIPSA) would, among other things, adversely affect packers' and their suppliers' willingness to use marketing agreements. Why? The proposed rule increases the risk associated with using marketing agreements because it would change longstanding judicial precedent and make it easier for a disgruntled producer to sue and win in a Packers and Stockyards Act lawsuit. In doing so, the proposed rule creates a disincentive for packers to use such agreements.

The Proposed GIPSA Rule Hurts Consumers

- Currently, the people who live in the United States spend about $80.6 billion on meat and poultry products annually.
- Under the proposed GIPSA rule, these consumers would be forced to pay about 3.33% - or $2.7 billion - more for the same amount of meat and poultry they currently purchase.

Producers Will Lose Jobs and Face Volatility on the Spot Market

- Over the last 20 years, livestock spot prices have been 500 percent more volatile than retail meat prices. Consumer prices for meat and poultry have been fairly stable over time, while livestock spot prices vary wildly by day or even hourly.[1]
- This volatility not only leads to higher producer prices, but makes production more difficult if producers are forced to sell livestock when market prices are low / or have to keep inventory in hopes of receiving a higher price.
- Conversely, more stable and predictable prices reached in marketing agreements reflect the innovation, care and work that producers put into their product. This rule will take those quality incentives away from producers.

The Meat Industry is an Integral Part of the United States' Economy

- Companies in the United States that produce, process, distribute and sell meat and poultry products would lose more than 30,000 jobs if the proposed GIPSA rule were implemented. In addition, almost 74,000 jobs in supplier and ancillary industries will also be lost. These include jobs in companies supplying livestock and services to packers, distributors and retailers, as well as those that depend on retail meat and poultry sales.
- In this harsh economic period, every job is important. In fact, in the United States the unemployment rate has reached 9.2 percent. This means that there are already 14,139,762 people trying to find jobs in the country and collecting unemployment benefits. The GIPSA rule would add another 104,000 unemployed Americans to the jobless list.

The Economic Benefit of the Industry Spreads Throughout the Nation

- Not only does the meat industry create good jobs in the United States but the industry also contributes to the economy as a whole. The proposed GIPSA rule could cost the nation as much as $14.0 billion in economic activity.
- Producers would be especially affected, losing more than 21,000 jobs under the proposed rule. In summary, the proposed GIPSA rule raises prices to consumers, it does nothing to stem the exodus of producers from rural America; rather it would exacerbate the job losses in rural America.

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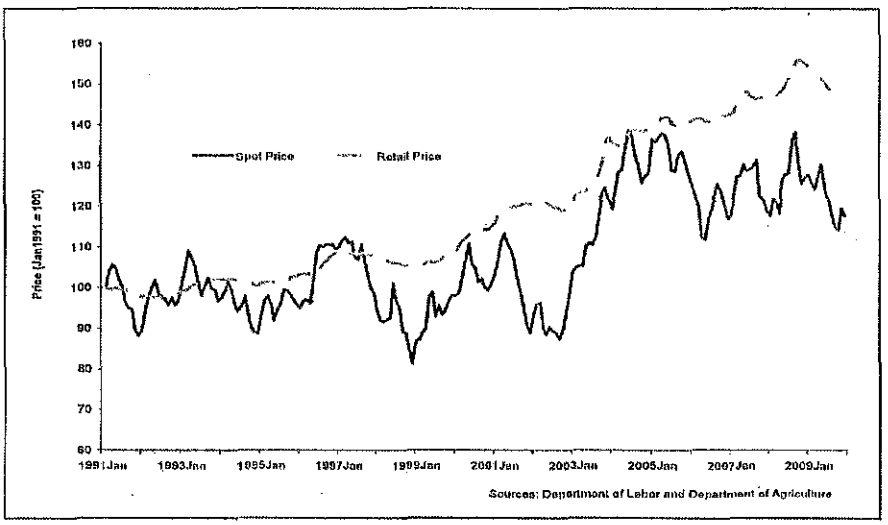
[1] The standard deviation of monthly growth rates of spot prices was 3 compared to 0.6 for retail prices.

AMERICAN MEAT INSTITUTE

The Proposed GIPSA Rule Will Cost Livestock Producers 21,000 Jobs[1] While Making it More Difficult for Them to Produce Quality Products

A regulation proposed by the Grain Inspection, Packers and Stockyards Administration (GIPSA) would, among other things, adversely affect packers' and their suppliers' willingness to use marketing agreements. Why? The proposed rule increases the risk associated with using marketing agreements because it would change longstanding judicial precedent and make it easier for a disgruntled livestock supplier to sue and win in a Packers and Stockyards Act lawsuit. In doing so, the proposed rule creates a disincentive for packers to use such agreements.



Marketing Agreements Help Producers Manage Volatile Day to Day Price Changes

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- This volatility not only leads to higher meat costs, but makes livestock production more difficult because no one producer, packer, retailer nor consumer knows what to expect from day to day. Producers who are forced to rely on a spot market may be forced to sell inventory when market prices are low, and will be forced to keep inventory longer than average in order to ensure a consistent flow of income.

Higher Consumer Prices Will Reduce the Overall Demand for Meat and Meat Products, Leading to a Reduction of About 21,000 Jobs for the United States Livestock Producers

- In these tough times with as many as 14,139,762 workers in the United States struggling to find jobs, removing 21,000 from the nation's economy will only make matters worse. In other words, even though the proposed GIPSA rule raises prices to consumers, it does nothing to stem the exodus of producers from the state.

---

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Increased Uncertainty Will Reduce Producers' Ability to Benefit from the Production of Quality Products

- The prices reflected in marketing agreements reflect the innovation, care and work that farmers put into their product. The rule proposed by GIPSA will remove the incentive from farmers and ranchers to produce high quality livestock.

Executive Summary

An Estimate of the Economic Impact of GIPSA's Proposed Rules

Informa Economics
Nov 8, 2010

Background:

In September and October of 2010, Informa Economics conducted an economic impact analysis of the recently proposed GIPSA rules on behalf of the National Meat Association in cooperation with the National Cattleman's Beef Association, the National Pork Producers Council and the National Turkey Federation. The primary objective of the research was to discern how industry participants might respond to the rules if implemented and to estimate the economic impact that would result. The study utilized an approach that relied on extensive interviews with key personnel in all stages of the beef, pork and poultry supply chains. In addition, cost estimates were solicited from many of the major companies operating in the packing sector. This information was used to develop an estimate of industry-wide direct and indirect costs that might be expected as a result of the rule. Finally, this cost information was utilized in an input-output model of the US economy which enabled the research team to project how the rule might impact employment, GDP and tax revenue nationwide.

Findings:

Total Economic Impact of GIPSA's Proposed Rules	
Job Losses	23,084
Annual GDP Loss	$1.56 billion
Annual Tax Revenue Loss	$360 million

With Respect to the Rule Itself:

- Industry participants are nearly unanimous in assessing the rule language as being vague and poorly-defined.
- Affected companies have no guidance as to how stringently GIPSA will interpret and enforce the rule. This has created considerable uncertainty and fostered an environment where participants are predisposed to take extreme measures to minimize their exposure to the risks associated with the proposed rule.
- The provision that removes the burden for litigants to show competitive injury in order to seek damages is by far the largest area of concern. Informa finds that nearly 75% of the expected economic damage arising from this proposed rule can be tied directly to this provision.

With Respect to Costs and Losses:

- Direct costs associated with rule compliance are significant but considerably smaller than the indirect costs that are expected to materialize. Direct costs encompass spending on people and systems needed to comply with the rule. Indirect costs refer to losses suffered by the industry from product quality deterioration and efficiency reduction.

- Direct one-time costs are projected as follows: Beef Industry, $39 million, Pork Industry $69 million, Poultry Industry: $28 million.

- Direct annual ongoing costs are projected as follows:

Annual Direct Ongoing Costs from GIPSA's Proposed Rules	
Beef Industry	$62 million
Pork Industry	$74 million
Poultry Industry	$35 million

- Indirect costs are largest in the beef sector where packers are likely to significantly reduce the use of marketing agreements that are currently used to supply premium and specialty beef as well as permit efficient plant throughput.

- Pork industry indirect costs arise from the presence of both marketing and production contracts. Changes to market agreements are expected to diminish product value and hamper plant efficiency. Changes to production contracts will foster production efficiency losses.

- Indirect losses in the poultry sector arise from lost efficiency in bird production that is expected to result from modification or abandonment of tournament pay systems.

- Annual indirect losses are estimated as follows:

Annual Indirect Losses from GIPSA's Proposed Rules	
Beef Industry	$780 million
Pork Industry	$259 million
Poultry Industry	$318 million

- Ongoing and indirect costs will eventually be borne by consumers and producers, not packers. Our analysis indicates the following percentages of costs borne by producers: Beef Industry, 82%; Pork Industry, 56%, Poultry Industry, 19%.

- The rule is expected to have a significant impact on livestock auction facilities and commission agents. We find that the rule may reduce buyer participation at auction barns to the point where 150-200 of the smallest barns in remote areas may go out of business.

With Respect to the US Economy:

- The added costs are expected to result in reductions in industry output that will impact not only the meat and poultry industries themselves, but support industries and entities that rely on spending by meat and poultry industry employees.

- This research finds the following industry contractions:

Industry Contraction Due to the Proposed Rules	
Beef Industry	-494,000 head (-0.6%)
Pork Industry	-1.25 million head (-1.9%)
Poultry Industry	-1.32 billion birds (-0.8%)

- Our full-economy model suggests that overall annual GDP could fall by as much as $1.56 billion, with the losses divided among the various industries as follows:

Lost Value Resulting From the Proposed Rules	
Beef Industry	-$837 million
Pork Industry	-$335 million
Poultry Industry	-$345 million
Livestock Auction Markets	-$45 million

- Total job losses as a result of the rule are expected to total just over 23,000.

- Job losses will be highest in the production sectors for beef and pork with cattle ranching expected to lose nearly 2900 jobs while pork production could lose over 1900 jobs.

- Other areas that will be particularly hard hit in terms of employment declines are agricultural support activities as well as the retail and foodservice sectors.

- As a result of the decline in economic activity, tax revenues are expected to decline by $360 million, with 46% of that reduction occurring at the state and local level.

With Respect to Timing:

- The outcomes portrayed above will take time to reach their full levels. For example, it may take 2-3 years before the declining beef quality or poultry production efficiency reach the point that results in the economic losses described above.

- Industry participants will eventually find ways to adapt to the rules and thus the economic impact will be lessened at much longer time horizons. However, we expect lingering economic effects for ten years or more in all three industries.

ATTACHMENT B

Congress of the United States

Washington, DC 20515

October 1, 2010

The Honorable Tom Vilsack
Secretary of Agriculture
U.S. Department of Agriculture
1400 Independence Avenue, SW
Washington, D.C. 20250

Dear Secretary Vilsack,

We are writing to express our concerns regarding the economic analysis for the proposed rule, published in the *Federal Register* by the Grain Inspection, Packers and Stockyards Administration (GIPSA) on June 22, 2010, on the marketing of livestock and poultry under the Packers and Stockyards Act.

In the 2008 Farm Bill, Congress directed the Department to promulgate a discrete set of regulations under the Packers and Stockyards Act. However, in doing so, GIPSA also included additional proposed regulations that greatly exceed the mandate of the Farm Bill. Such a broad rule that extends so far beyond Congress' direction in the Farm Bill and that would precipitate major changes in livestock and poultry marketing requires a vigorous economic analysis. The analysis contained in the proposed rule fails to demonstrate the need for the rule, assess the impact of its implementation on the marketplace, or establish how the implementation of the rule would address the demonstrated need.

This proposed rule is sweeping in its scope and would have major consequences in the marketing of livestock and poultry for producers and processors of all sizes. In order for Congress and the public to evaluate this rule and its implications with full transparency, a thorough economic analysis is necessary. Our constituents need this analysis in order to participate in the rulemaking process in a meaningful way. We are asking USDA's Office of the Chief Economist to provide such an analysis, specifically addressing the above concerns.

Your prompt response to this request will be appreciated.

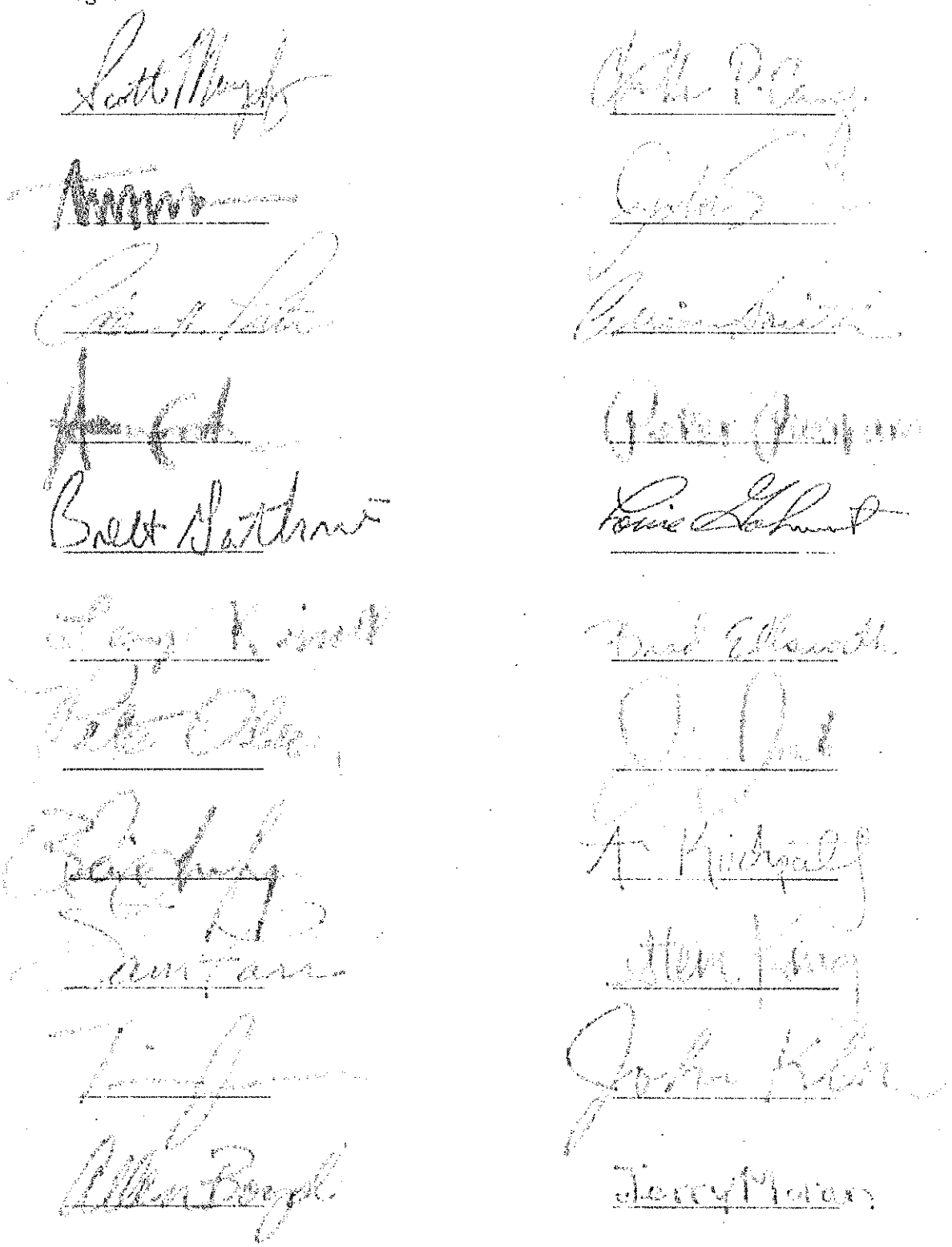
Sincerely,

Collin C. Peterson

Frank D. Lucas

David Scott

Randy Neugebauer



ATTACHMENT C

PAT ROBERTS
KANSAS

109 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510-1605
202-224-4774

http://roberts.senate.gov

United States Senate

WASHINGTON, DC 20510-1605

COMMITTEES:
AGRICULTURE

FINANCE

HEALTH, EDUCATION, LABOR, AND PENSIONS

ETHICS

RULES

July 26, 2010

The Honorable Cass Sunstein
Administrator
Office of Information and Regulatory Affairs
Eisenhower Executive Office Building
1650 Pennsylvania Ave, NW
Room 262
Washington, DC 20503

Dear Mr. Sunstein:

I write in reference to the United States Department of Agriculture, Grain Inspection, Packers and Stockyards Administration's (GIPSA) proposed rule amending the Packers and Stockyards Act (PSA) as published in the Federal Register on June 22, 2010. I have strong concerns that the Administration's cost-benefit analysis (CBA) of the proposed changes is inadequate. Given the potential impacts of the proposed rule on livestock and poultry producers, processors and consumers, I believe it is critical that a robust and comprehensive CBA is conducted to ensure all affected stakeholders have a firm understanding of the potential consequences of this regulation on their economic welfare and livelihood.

On June 9, 2009, we met in my office to discuss your nomination to be the Administrator of the Office of Information and Regulatory Affairs (OIRA). During that meeting you expressed your support for the federal government to apply sound CBA principles in the regulatory process. Furthermore, in 2002, you wrote, "At least cost-benefit analysis will help show them what they are doing." I could not agree more. However, federal agencies must examine the full range of consequences of proposed regulations for the administration and public to truly "know what they are doing."

Unfortunately, I fear the Administration neglected to conduct a thorough CBA of GIPSA's proposed rule. As an example, GIPSA's CBA never references potential costs to consumers. Based on my initial discussions with constituents, this rule could dramatically reduce consumer choice and increase costs. Over the past decade, consumer demand combined with innovative marketing arrangements created specialty protein products like natural, age verified and branded breed meats and poultry. GIPSA's proposal decreases the likelihood that a packer would enter into a variety of specialized arrangements over fear of litigation. Without such arrangements, consumers may find purchasing specialized products more costly or less convenient.

Additionally, the CBA overlooked the potential for producers who currently receive a premium for operating efficiently and producing higher quality livestock and poultry to lose income due to an erosion or elimination of marketing options for their livestock. Under the proposed rule, plaintiffs would no longer have to prove competitive injury in order to bring a successful claim under the PSA. Therefore, packers may very well forego many of the current alternative marketing arrangements that benefit producers and simplify their procurement methods in an effort to decrease legal exposure. Ultimately, this reduction of marketing options could depress the prices received by many of America's most efficient and successful producers. The Administration's CBA fails to consider this potential outcome and its effects on producers and their bottom line.

In 2007, GIPSA's Livestock and Meat Marketing Study showed that over ten years a 25 percent reduction in alternative marketing arrangements would cost feeder cattle producers $5.1 billion; fed cattle producers $3.9 billion; and $2.5 billion for consumers. If marketing arrangements were eliminated, the 10-year cumulative losses for producers and consumers would top $60 billion. Feeder cattle producers would lose $29 billion; fed cattle producers would lose $21.8 billion; and consumers would lose $13.7 billion. Now is not the time to take money out of the pockets of both producers and consumers.

As OIRA Administrator, your office is responsible for reviewing federal regulations before they are made public and put into practice. Simple cursory analysis in order to validate an agency's pre-determined policy position is not in the best interest of our country. I urge the Administration to look deeper into the proposed rule and provide the public with a better understanding of its potential impact on their daily lives and pocketbooks.

With every best wish,

Sincerely,

Pat Roberts

PR:jl

ATTACHMENT D

JACK KINGSTON
1st District, Georgia

WASHINGTON OFFICE
2368 Rayburn House Office Building
Washington, DC 20515
(202) 225-5831
(202) 226-2269 FAX

BRUNSWICK OFFICE
Federal Building, Room 304
805 Gloucester Street
Brunswick, GA 31520
(912) 265-9010
(912) 265-9013 FAX

Congress of the United States
House of Representatives

Committee On Appropriations
Ranking Member, Agriculture Subcommittee
Defense Subcommittee

SAVANNAH OFFICE
One Diamond Causeway, Suite 7
Savannah, GA 31406
(912) 352-0101
(912) 352-0105 FAX

BAXLEY OFFICE
P.O. Box 40
Baxley, GA 31515
(912) 367-7403
(912) 367-7404 FAX

VALDOSTA OFFICE
Federal Building, Room 215
P.O. Box 6066
Valdosta, GA 31603
(229) 247-9102
(229) 247-9103 FAX

August 26, 2010

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
14th and Independence Ave, SW
Washington, DC 20250

Dear Mr. Secretary:

I am writing today regarding the current rulemaking by the Grain Inspection, Packers and Stockyards Administration (GIPSA) dealing with livestock marketing.

We can agree that transparent and efficient markets benefit producers, processors, retailers and consumers. Make no mistake: there has never been any question that the Packers and Stockyards Act should be strictly and vigorously enforced. However, anyone who witnessed the recent Livestock, Dairy & Poultry Subcommittee hearing on the Administration's proposed rule got the message that there are broad, bipartisan concerns that the proposed rule goes far beyond the scope of the 2008 Farm Bill, lacks a sound economic analysis necessary to judge both the need and utility of the proposed rule and may be the result of a flawed rulemaking process.

Unfortunately, several questions have been raised with this rulemaking that require your immediate response. These include what some view as an attempt by the agency to circumvent the clear intent of Congress in crafting the rules to implement provisions of the 2008 Farm Bill; a noticeable lack of an economic analysis of the costs of the proposed regulations; and what appears to be a carefully choreographed effort by the agency and others within the USDA to lobby the Congress, press, industry and the public on the proposed rule.

As you recall, when the Congress debated the 2008 Farm Bill, many livestock marketing issues were considered. Among those that Congress consented to was a request to the USDA to define certain terms under the Packers and Stockyards Act and to improve transparency in arbitration of contract disputes. It is noteworthy that elements in GIPSA's proposed rule represent policies that were flatly rejected by the Congress during consideration of the Farm Bill. This is part of the reason that the objections raised during the recent hearing of the House Committee on Agriculture, Subcommittee on Livestock, Dairy, & Poultry were so strong and bipartisan.

While many in the affected industry and Congress have focused on what the proposed rule includes, also troubling is what it does not include – a sound economic analysis for interested parties to judge both the need and utility of the proposed rule. In my view, it is unprecedented

for a Federal agency to propose such a wide-sweeping regulation and not conduct an economic analysis. I am concerned that despite Congress having appropriated $13 million in the current fiscal year for the USDA Office of the Chief Economist, GIPSA has seemingly chosen to ignore this resource to analyze this proposal. In light of the fact that the President has requested continued funding for the Chief Economist, it is necessary and appropriate for you as Secretary to see to it that the expertise of this office is utilized when an agency under your supervision attempts to insert the Federal government into the day-to-day workings of our agricultural markets. As the public comment period has been extended and continued Congressional oversight is anticipated, I request and expect that a comprehensive analysis of this proposed regulation by the USDA Chief Economist be submitted in sufficient time for commenters to incorporate the analysis into their evaluation of the proposed rule.

Following the hearing held in the House Agriculture Subcommittee, USDA took the extraordinary step in the middle of a public comment period to publish an advocacy document aiming to persuade Members of Congress, the press, the affected industry and the general public regarding so-called "Misconceptions and Explanations" about this regulatory proposal. Some view this as contrary to the spirit and intent of the Administrative Procedure Act. This problem has likewise been exacerbated by the recent press reports of individuals within the USDA circulating information advocating specific points of view and activities concerning issues addressed in this regulation from groups with an economic interest in its outcome. Some observers have suggested that these incidents raise questions of impropriety within your department that may involve violations of the Hatch Act. I strongly encourage you to refer this matter to the Inspector General for an immediate investigation.

I am troubled that while the USDA and the Department of Justice are in the midst of conducting a series of workshops throughout the nation to gather information on a range of topics addressed by this proposal, USDA has chosen to focus its resources on efforts to promote this regulation rather than carefully consider the consequences, intended and unintended, particularly for those it purports to protect – producers.

Your attention to this critical matter is appreciated, and I look forward to your response.

Sincerely,

Jack Kingston

ATTACHMENT E

United States Senate

CHARLES E. GRASSLEY

WASHINGTON, DC 20510-1501

September 22, 2010

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
1400 Independence Ave, SW
Washington, DC 20250

Dear Secretary Vilsack,

I write today, on behalf of the Iowa Cattleman's Association, regarding the proposed rules published by the Grain Inspection Packers and Stockyards Administration (GIPSA) on June 22, 2010.

Many uncertainties surround the proposed rule, which could result in both positive and negative effects on independent producers. I believe a sound economic analysis conducted by the Office of the Chief Economist would be appropriate to answer producers concerns about what affect these rules could have on their operations. This analysis will be beneficial to both GIPSA and producers who are reviewing how these rules may change their bottom line.

Please consider conducting a comprehensive economic study of the proposed rule that can be reviewed prior to the closing of the comment period on November 22, 2010.

Thank you for consideration of this request.

Sincerely,

Charles E. Grassley
United States Senator

CEG:art

RANKING MEMBER
FINANCE

Committee Assignments:
BUDGET
JUDICIARY
AGRICULTURE

CO-CHAIRMAN
INTERNATIONAL NARCOTICS
CONTROL CAUCUS

ATTACHMENT F

Congress of the United States
Washington, DC 20515

October 5, 2010

The Honorable Tom Vilsack
Secretary U.S. Department of Agriculture
14th and Independence Ave, S.W.
Washington, DC 20250

Dear Mr. Secretary,

We write today regarding the current rule proposed by USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) dealing with livestock marketing. We certainly agree that America's livestock producers need efficient, competitive markets to maintain a strong vibrant industry. We also agree that the Packers and Stockyards Act should be strictly and aggressively enforced. However, the proposed rule goes well beyond the intentions of the 2008 Farm Bill and this proposed rule lacks a sound and thorough economic analysis necessary to determine the need, logic or functionality if implemented.

It appears the proposed rule by the agency is a clear attempt to circumvent Congress. Upon close review this proposed rule, it contains many elements and almost exact wording that was discussed and eliminated by Congress when the Farm Bill was passed in 2008. It is our opinion that government should not take on the role of manipulating domestic supply, cost or prices. This proposed rule is a clear invasion of the government into the private marketplace.

It directly conflicts with eight different court decisions. It will grossly restrict individual livestock producers' freedom to market livestock in buyer and seller agreements that will, consequently, create a chaotic business environment in which the industry will be forced to operate. The proposed rule clearly establishes enormous opportunity for unnecessary frivolous lawsuits.
The rule offers numerous restrictions on who shall represent buyers and sellers in livestock transactions and ownership.

Once again, we embrace the idea of USDA enforcing Packers and Stockyards Act across all segments of the industry however this proposed rule goes well beyond that. The vagueness in the proposed rule will lead to destruction of a multitude of value-added marketing programs. It will eliminate the incentives progressive producers pursue in investing and developing efficient high quality protein demanded by consumers. It has the potential of setting the industry back 30 –40 years. It will destroy jobs and drive our food supply to other countries.

Mr. Secretary, we strongly encourage you to delay implementation of this proposed rule and conduct a thorough and complete economic analysis. It is clear that the repercussions of this proposed rule have not been properly analyzed or thought out and upon doing so we hope you will reconsider implementation of this rule in its entirety.

Your time and attention in this matter is appreciated and we eagerly await your response.

Sincerely,

Bill Nelson
U.S. Senate

George S. LeMieux
U.S. Senate

Thomas J. Rooney
Member of Congress

Adam H. Putnam
Member of Congress

Allen Boyd
Member of Congress

Mario Diaz-Balart
Member of Congress

Jeff Miller
Member of Congress

Bill Posey
Member of Congress

ATTACHMENT G

United States Senate

WASHINGTON, DC 20510

December 21, 2010

The Honorable Tom Vilsack
United States Department of Agriculture
14th and Independence Ave, SW
Washington, DC 20250

Dear Secretary Vilsack:

We write regarding comments you recently made on your intentions to conduct a cost-benefit analysis (CBA) of your proposed rule amending regulations of the Packers and Stockyard Act. We are very concerned about the inadequacy of the Administration's CBA that was a part of the proposed rule, as it revealed nothing about the methodology or data used to arrive at its hasty conclusions.

According to press reports, last week you indicated that "a far more rigorous cost-benefit analysis will be conducted" and committed to having USDA Chief Economist Joseph Glauber involved in this process. We are hopeful that USDA is now on the path to conducting a thorough, comprehensive CBA, which will provide the kind of information that is necessary to understand the potential consequences of this rule. However, this announcement leads to several relevant questions:

- To what extent will Dr. Glauber be involved in USDA's CBA? Because of the economic expertise and analytic ability of the Office of the Chief Economist (OCE), we urge that the OCE lead the charge in conducting a robust and complete CBA of the proposed rule.

- To what extent will the Office of Information and Regulatory Affairs at the White House Office of Management and Budget be involved?

- Will the CBA be subject to external peer review, ensuring objectivity and that the best economists have an opportunity to rigorously review the new CBA?

- What is the scope of the CBA that will be conducted? Will this analysis account for the potential elimination of alternative marketing arrangements (AMAs)? GIPSA's own most recent study of AMAs concluded that restrictions on the use of AMAs would have severe negative economic effects on livestock producers, meat packers, and consumers. It is important that we have a clear understanding of both the marketing changes that may occur as a result of this rule, as well as the financial impacts on producers, related businesses, and consumers.

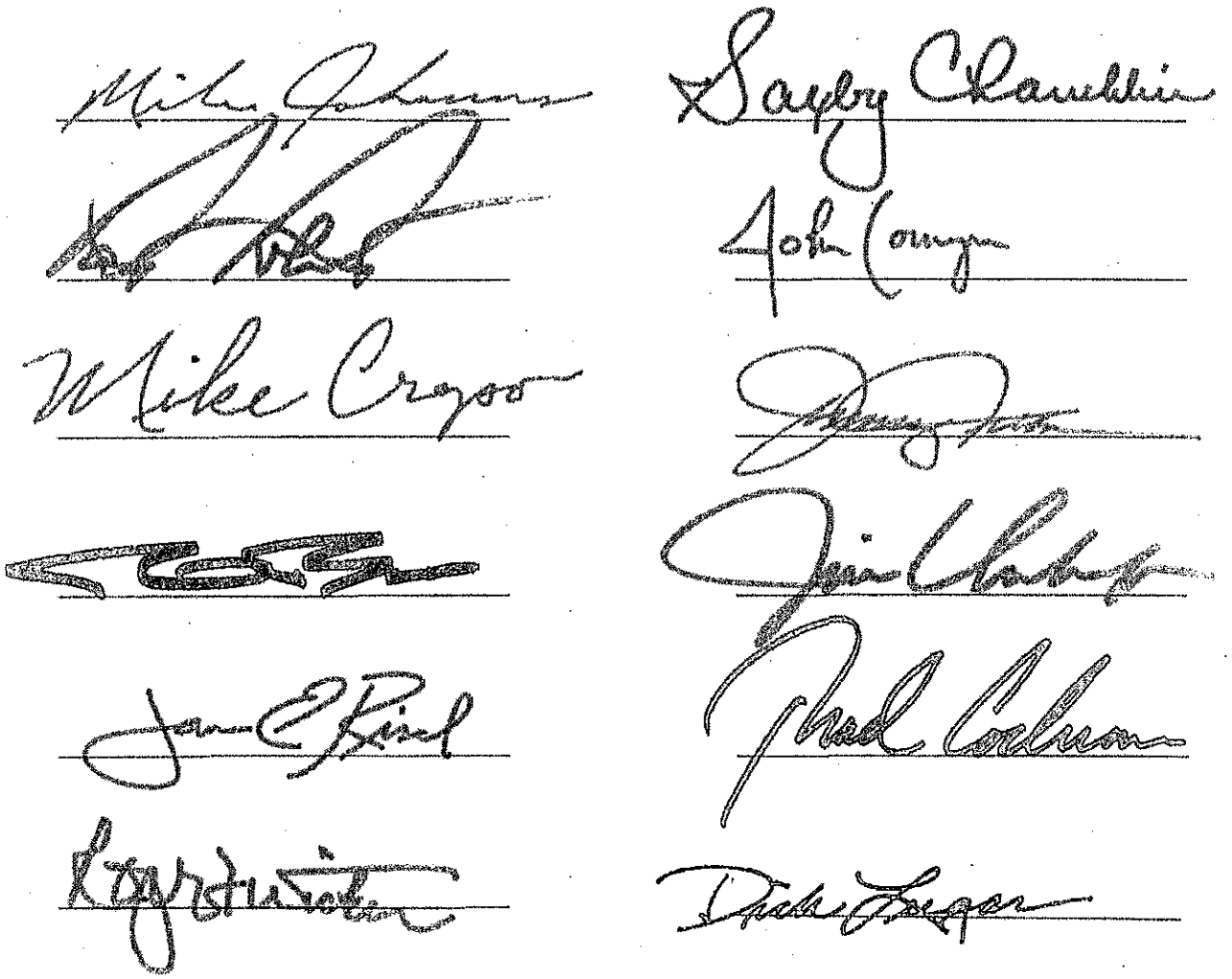
- Could the rule actually lead to decreased competition and fewer markets for American producers to market their livestock? We understand that many commenters on the rule are concerned that draconian requirements of the rule, never envisioned in the 2008 farm bill, will lead to fewer buyers, fewer auction barns, and lower producer prices.

As you know, an economic analysis conducted by Informa Economics Inc. on behalf of the National Cattlemen's Beef Association, National Meat Association, National Pork Producers Council, and National Turkey Federation estimated that the rule would result in job losses of more than 22,800, an annual decrease in gross domestic product of as much as $1.56 billion, and an annual loss in tax revenues of $359 million. While you may not agree with the conclusions in these industry studies, these analyses should at the very least highlight the need for USDA to conduct its own rigorous CBA that examines both the direct and indirect costs that will potentially result under this rule.

Given the significance of the potential impacts of the proposed rule on livestock and poultry producers, processors, and consumers, it is essential that we proceed with the best information we can, including a thorough and comprehensive CBA conducted by the OCE, aided by an impartial, external peer review.

We appreciate your consideration of our request and look forward to your timely response.

Very truly yours,



ATTACHMENT H

AMERICAN MEAT INSTITUTE Backgrounder

Competition in the Livestock and Meat Industry: What the Courts Have Said

USDA's Grain Inspection and Packers and Stockyards Administration (GIPSA) on June 18 unveiled a long awaited proposed rule (the Proposal) that would establish, among other things, criteria regarding undue or unreasonable preferences or advantages, as mandated by the Title XI of the Food, Conservation and Energy Act of 2008 (Farm Bill). The Proposal, however, extends well beyond the Congressional mandate in several important areas.

Specifically, the Proposal would create distinct disincentives for packers to continue many of the marketing programs that have evolved over the past 15-20 years through relationships between livestock producers and packers. These partnerships are important because meat products today bear brands and with brands come consumer expectations. Packers enter into supply relationships with livestock producers to get the number and types of animals they need to provide certain products that are consistent from purchase to purchase.

An aspect of the Proposal that will have a chilling effect on the use of these marketing agreements is the view posited by the Grain Inspection, Packers and Stockyard's Administration (GIPSA) is the breadth and vagueness of the proposed regulatory criteria with respect to what would be "unfair."

For example, proposed section 201.210(a)(8) would prohibit "[A]ny act that causes competitive injury or creates a likelihood of competitive injury." The definition of "Likelihood of Competitive Injury" is as far reaching as it is vague. In that regard part of the definition includes the following:

> *"wrongfully depressing prices paid to a producer or grower below market value or impairing a producer's or grower's ability to compete with other producers or growers or impairing a producer's or grower's ability to receive the reasonable expected full economic value from a transaction in the market channel or marketplace".*

That definition raises many questions, including:

- *Is offering a marketing agreement to one producer and not another impairing a producer's or grower's ability to compete with other producers or growers?* In other words, if Farmer A raises pigs according to certain animal welfare standards that your customer prefers, while Farmer B does not, is it unjust to offer an incentive to Farmer A for making the extra effort and investment?

- *Does having a marketing agreement with one producer impair the ability to compete of a different producer who doesn't want such an agreement?* If a packer needs a steady supply of cattle and Farmer A wants to contract with you so that he can use his contract as collateral for a bank loan while Farmer B on principle prefers the spot market, is the agreement with Farmer A by its very nature impairing Farmer B's income?

- *What constitutes "reasonable expected full economic value?"* Who decides what that phrase means? What is reasonable? And how is economic value determined? How are expectations to be determined?

The uncertainty created by this standard and definition is heightened by the fact that the Proposal would lower the legal standard necessary for a disgruntled producer to sue successfully if that producer believed he had been treated unfairly. Specifically, proposed section 201.3(c) provides that

> *"A finding that the challenged act or practice adversely affects or likely to adversely affect competition is not necessary in all cases. [C]onduct can be found to violate section 202(a) and/or (b) of the Act without a finding of harm or likely harm to competition."*

Simply put, this proposed rule would make it easier for a trial lawyer to bring a P&S case and win than under today's legal standard. That is so because this proposed rule conflicts directly with the judicial precedent established in 11 decisions from eight different appeals courts in the following cases, all of which have found that proving harm or likely harm to competition is a necessary element to successfully proving a Packers and Stockyards Act violation:

- *Philson v. Goldsboro Milling Co. (4th Circuit)*
- *Wheeler v. v. Pilgrim's Pride Corp. (5th Circuit)*
- *Terry v. Tyson Farms, Inc. (6th Circuit)*
- *Pac Trading Co. v. Wilson & Co. (7th Circuit)*
- *Jackson v. Swift Eckrich (8th Circuit)*
- *Farrow v. United States (8th Circuit)*
- *IBP, Inc. v Glickman (8th Circuit)*
- *De Jong Packing Co. v. U.S. Dept of Agric. (9th Circuit)*

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1150 Connecticut Avenue, NW • 12th Floor • Washington, D.C. 20036
(202) 587-4200 • fax (202) 587-4300 • http://www.MeatAMI.com

- *Been v. O.K. Industries (10th Circuit)*
- *London v. Fieldale Farms (11th Circuit)*
- *Pickett v. Tyson Fresh Meats, Inc. (11th Circuit)*

In some of these cases GIPSA was a party to the case and in several others GIPSA filed Amicus briefs. In every case, however, the interpretation of the law that GIPSA has proposed in the regulation has been soundly rejected by the courts.

In fact, the two most recent courts to address spoke directly to USDA's arguments and its efforts to seek different answers from different courts -- with some notable admonitions.

"The Government has appeared here as amicus to contend that the courts have had the PSA wrong and that it should be construed to make unfair practices unlawful without regard to competition. ... We conclude that an anti-competitive effect is necessary for an actionable claim under the PSA in light of the Act's history in Congress and its consistent interpretation in the courts." Wheeler v. Pilgrim's Pride Corp. (December 15, 2009) (Emphasis added)

"The tide has now become a tidal wave ... all told, seven circuits – the Fourth, Fifth, Seventh, Eighth, Ninth, Tenth, and Eleventh Circuits – have now weighed in on this issue with unanimous results." Terry v. Tyson Farms (6th Circuit -- May 10, 2010)

"Ultimately, Terry and USDA would have this court deviate from the course taken by the seven other circuits that have spoken on this issue, thus creating a conflict. We decline to do so. ... the rationale employed by our sister circuits is well –reasoned and grounded on sound principles of statutory construction. ... We therefore join these circuits and hold that in order to succeed on a claim under section 192(a) and (b) ... a plaintiff must show an adverse effect on competition." Terry v. Tyson Farms (6th Circuit -- May 10, 2010) (Emphasis added)

Given the legal history on this issue, USDA's proposals are much like the child who doesn't like the answer he gets from Dad and so he asks Mom. When Mom says no, he goes to Uncle Joe and then to Aunt Flo and finally, he just ignores the litany of no's he's received and just does it anyway.

In short, this aspect of the Proposal involves an executive branch agency refusing to abide by the repeated holdings of multiple federal appellate courts, which is contrary to how our system of government is supposed to work. The practical effect of USDA's refusal would be to destroy relationships built over decades that have improved the quality and variety of meat available to consumers. GIPSA needs to heed the court rulings and listen to the view of the majority of producers, and the packers, who are is saying unequivocally: "This rule hurts, not helps."

ATTACHMENT I

AMERICAN MEAT INSTITUTE

November 22, 2010

Tess Butler
GIPSA, USDA
1400 Independence Ave., NW
Room 1643-S
Washington, DC 20250-3604

Re: Implementation of Regulations Required Under Title XI of the Food, Conservation and Energy Act of 2008; Conduct in Violation of the Act; Proposed Rule; RIN 0580-AB07; 75 *Fed. Reg.* 35338 (June 22, 2010).

Dear Ms. Butler:

The American Meat Institute (AMI) submits this letter in response to an invitation for comments in the above-referenced notice of proposed rulemaking (proposal) published by the Grain Inspection, Packers and Stockyards Administration (GIPSA or the agency). AMI is the nation's oldest and largest trade association representing packers and processors of beef, pork, lamb, veal, turkey, and processed meat products, and AMI member companies account for more than 95 percent of United States output of these products. Many AMI members procure livestock and poultry on the spot market and through a variety of marketing agreements and contracts and as such would be subject to these proposed rules.

Title XI of the Food, Conservation and Energy Act of 2008 (Pub. L. 110-246) (Farm Bill) directed the Secretary of Agriculture to "promulgate Regulations with respect to the ... Packers and Stockyards Act, 1921 (7 U.S.C. 181 *et seq.)* to establish criteria that the Secretary will consider in determining

> (1) whether an undue or unreasonable preference or advantage has occurred in violation of such Act;

1150 Connecticut Avenue, 12th Floor, Washington, DC 20036
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(2) whether a live poultry dealer has provided reasonable notice to poultry growers of any suspension of the delivery of birds under a poultry growing arrangement;

(3) when a requirement of additional capital investments over the life of a poultry growing arrangement or swine production contract constitutes a violation of such Act; and

(4) if a live poultry dealer or swine contractor has provided a reasonable period of time for a poultry grower or a swine production contract grower to remedy a breach of contract that could lead to termination of the poultry growing arrangement or swine production contract." Section 11006, Farm Bill.

In addition to exceeding the Farm Bill's mandate, the proposal is fatally flawed and should be withdrawn for several other reasons.

- The proposed rule conflicts with long-standing judicial precedent.
- Many provisions would cause severe economic harm to producers, consumers, packers, and live poultry dealers.
- Many elements of the proposal are unconstitutionally vague and patently unworkable.
- The proposal would adversely affect the meat and poultry industry's ability to compete regarding international trade.
- The agency failed to meet the requirements of Executive Order 12866.

For these reasons, articulated in more detail below, AMI urges the agency to withdraw the proposal, reconsider many of the proposed sections, and reissue a proposed rule that is consistent with the Farm Bill mandate and that will not adversely affect livestock and poultry producers and the meat packing industry.

I. MANY PROVISIONS IN THE PROPOSED RULE ARE LEGALLY INFIRM.

GIPSA, through the proposal, seeks to do what it has failed to do through the judiciary on multiple occasions and what the Congress has not authorized the agency to do through legislation. Specially, the proposal would, in effect, waive a necessary element in a Packers and Stockyards Act (PSA or the Act) case, *i.e.*, a showing of competitive injury, thereby setting in motion a cascading effect that will dramatically increase the threat of litigation brought under the PSA and that ultimately will undermine the significant progress made by the meat and poultry industry in meeting consumer demands during the past quarter century. The elements of the proposal that would cause this problem, however, are flawed legally. A more detailed discussion of the legal infirmities follows.

Proposed Section 201.3(c) Conflicts with the Plain Meaning of the Act and Numerous Appellate Court Decisions, including Recent Cases in which the Agency has Participated.

Extensive Case Law before Enactment of the Farm Bill Conflicts with the Proposed Rule.

The agency asserts in the proposed rule that a plaintiff seeking to establish a claim under subsections 202(a) or 202(b) of the PSA need not demonstrate competitive injury or likelihood of competitive injury. This assertion conflicts with the great weight of judicial authority that has on numerous occasions examined that very question and thoroughly reviewed the intent of congress in enacting section 202 of the PSA. In fact, the agency's position conflicts with decisions of every federal circuit court to address the issue over the course of decades.

One of the first circuits to address this issue was the Seventh Circuit, which interpreted subsection 202(a) to require "either [predatory] intent or adverse competitive effect."[1] In that seminal decision, *Armour & Co. v.*

[1] *Armour & Co. v. United States*, 402 F.2d 712, 718. See also at 717-718 (discussing *Swift & Co. v. Wallace*, 105 F.2d 848 (7th Cir. 1939); *Wilson & Co. v. Benson*, 286 F.2d 891 (7th Cir. 1961); and *Swift & Co. v. United States*, 308 F.2d 849 (7th Cir. 1962)); see also *Pacific Trading Co. v. Wilson & Co.*, 547 F.2d 367, 369-370 (7th Cir. 1976) (holding that plaintiffs had failed to state a Section 202(a) claim because "the purpose of [the PSA] is to halt unfair business practices which adversely affect competition, not shown here").

United States, the Seventh Circuit recognized the PSA's "ancestry in antitrust law."[2] The antitrust laws, the court observed, "express a basic public policy distinguishing between fair and vigorous competition on the one hand and predatory or controlled competition on the other."[3] "The fact that a given provision [in the PSA] does not expressly specify the degree of injury or the type of intent required," the *Armour* court reasoned, "does not imply that these basic indicators of the line between free competition and predation are to be ignored."[4] Thus, the court concluded, "[s]urely words such as 'unfair' and 'unjustly' in Section 202(a) * * * require some examination of [a dealer's] intent and the likely effects of its acts or practices under scrutiny, even though [the] test under Section 202(a) * * * [may] be less stringent than under some of the anti-trust laws."[5]

The *Armour* court also found that the PSA's legislative history "fully supports [the] conclusion that Section 202(a) was not directed at [a practice] unless there was some intent to eliminate competition or unless the effect of the [practice] might lessen competition."[6] The court noted that the Senate Committee Report "makes it clear that this part of the legislation was promoted primarily by fear of monopoly and predation."[7] Likewise, the House Committee Report makes clear that the PSA "was aimed at halting 'a general course of action for the purpose of destroying competition.' "[8]

Many circuits have followed *Armour's* lead. For example, the Eighth Circuit stated that section 202(a) "authorize[s] the Secretary of Agriculture to regulate anticompetitive trade practices in the livestock and meat industry" and that "[a] practice is 'unfair' [under the PSA] if it injures or is likely to injure competition."[9] Likewise, the Ninth Circuit has held that, at the very least, section 202(a) requires "a reasonable likelihood that * * * the result [of

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[2] *Been v. O.K. Indus., Inc.*, 495 F.3d1217, 1228 (10th Cir. 2007)
[3] *Armour*, 402 F.2d at 717.
[4] *Id.*
[5] *Id.* (Emphasis added).
[6] *Id.* at 720.
[7] *Id.* (citing S. Rep. No. 66-429, at 1, 3) (Emphasis added).
[8] *Id.* (quoting H.R. Rep. No. 66-1297, at 11 (1921)).
[9] *Farrow v. United States Dep't of Agric.*, 760 F.2d 211, 214 (8th Cir. 1985) (Emphasis added). See also *IBP Inc. v. Glickman*, 187 F.3d 974, 977 (8th Cir. 1999) (agreement providing for right of first refusal did not violate Section 202(a) where it did not "potentially suppress or reduce competition sufficient to be proscribed by the Act"); *United States v. Stanko*, 491 F.3d 408, 417-418 (8th Cir. 2007) (construing Section 202(a) to require "proof of economic effects on competition or consumers").

a practice] will be an undue restraint of competition."[10] As the *DeJong* court stated, "[w]hile § 202 of the [PSA] may have been made broader than antecedent antitrust legislation in order to achieve its remedial purpose, it nonetheless incorporates the basic antitrust blueprint of the Sherman Act and other pre-existing antitrust legislation."[11]

Similarly the Fourth Circuit concluded that a plaintiff must prove that a practice or action at issue "was likely to affect competition adversely in order to prevail on [a] claim under [Section 202(a) of the PSA]."[12] And the Tenth and Eleventh Circuits have followed suit and held that "only those unfair, discriminatory or deceptive practices adversely affecting competition are prohibited by the PSA."[13] Thus, every circuit that examined this issue before enactment of the Farm Bill — reaching back over the course of decades — has held that showing an anticompetitive effect is required to establish a claim under subsections 202(a) or 202(b) of the PSA.[14]

In the face of this judicial precedent GIPSA attempts to support its erroneous interpretation of the PSA by citing legislative history and Congressional amendments to the PSA. Specifically, GIPSA claims that "Congress confirmed the agency's position by amending the P&S Act to specify specific instances of conduct prohibited as unfair that do not involve any inherent likelihood of competitive injury."[15] The amended sections of the PSA to which the agency refers for support for its argument, however, are sections 409 and 410 of the Act – not section 202.[16] If Congress wished to

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[10] *DeJong Packing Co. v. United States Dep't of Agric.*, 618 F.2d 1329, 1337 (9th Cir. 1980).
[11] *Id.* at 1335 n.7 (Emphasis added).
[12] *Goldsboro Milling Co.*, 1998 WL 709324, at *4. See also *Griffin v. Smithfield Foods, Inc.*, 183 F. Supp. 2d 824, 827 (E.D. Va. 2002) ("only those unfair, discriminatory or deceptive practices adversely affecting competition are prohibited by the Act") (quotation omitted); *Philson v. Cold Creek Farms, Inc.*, 947 F. Supp. 197, 201 (E.D.N.C. 1996) (Section 202(a) "is a general mandate against unfair acts by live poultry dealers which adversely affect competition").
[13] *London v. Fieldale Farms Corp.*, 410 F.3d 1295, 1303 (11th Cir. 2005). See *Been*, 495 F.3d at 1230 ("a plaintiff who challenges a practice under § 202(a) [must] show that the practice injures or is likely to injure competition").
[14] For like discussions that subsection 202(b) requires the same showing see *Adkins v. Cagle Foods JV, LLC*, 411 F.3d 1320, 1321, 1324 & n.6 (11th Cir. 2005); *IBP*, 187 F.3d at 976-977; *Armour*, 402 F.2d at 717.
[15] 75 *Fed. Reg.* at 35340.
[16] *Id.* See footnote 23 referencing sections 409 and 410.

amend section 202, as it has amended sections 409 and 410, it has had ample opportunity to do so. Congress, however, has declined that option.[17]

The agency also asserts that judicial decisions involving sections 307 and 312 support the concept articulated in proposed subsection 201.3(c). That effort, too, fails because the cases cited are both in circuits that have examined specifically the question of competitive injury as it pertains to section 202 of the PSA and both of those circuits have concluded that a showing of competitive harm is necessary. Specifically, GIPSA cites a 10th Circuit case, *Capitol Packing Company v. the United States*, 350 F.2d 67 (10th Cir. 1965), and a 9th Circuit case, *Spencer Livestock Comm'n Co. v. USDA*, 841 F.2d 1451 (9th Cir. 1988), which deal with parts of the PSA other than section 202, to support its position. The preamble, however, ignores the fact that a showing of competitive injury has been found necessary with respect to section 202 in both circuits.[18]

The agency also argues that the courts should defer to the agency's interpretation of the PSA. Deference, however, is inappropriate in this instance because, "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress."[19] Among the several circuits that have faced the deference argument the Eleventh Circuit's discussion in rejecting the agency's claim for deference best captures the issue: "Congress plainly intended to prohibit only those unfair, discriminatory or deceptive practices adversely affecting competition."[20] Thus, "a contrary interpretation of Section 202(a) deserves no deference."[21]

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[17] Section 202 has been amended more than once over the last few decades and Congress has never amended the statute to indicate that an anticompetitive effect is not required to establish a PSA claim. See, e.g., Farm Security and Rural Investment Act of 2002, Pub. L. No. 101-171, 116 Stat. 134, 509-510 (2002); Poultry Producers Financial Protection Act of 1987, Pub. L. No. 100-173, 101 Stat. 917, 917-918 (1987). In the Farm Bill Congress failed to enact proposed legislation that would have done just that. See Competitive and Fair Agricultural Markets Act of 2007, S. 622, 110th Cong., at 29 (2007).

[18] See *London* (10th Cir.) and *DeJong* (9th Cir.).

[19] *Chevron U.S.A., Inc. v. Natural Res. Defense Council, Inc.*, 467 U.S. 837, 842-843 (1984).

[20] *London*, 410 F.3d at 1304 (quotation omitted).

[21] *Id.* See also *Been*, 495 F.3d at 1227 ("we are not persuaded by the USDA's interpretation of the statute"); *Armour*, 402 F.2d at 722 ("in Section 202(a) Congress gave the Secretary no mandate to ignore the general outline of long-time antitrust policy by condemning practices which are neither deceptive nor injurious to competition nor intended to be so by the party charged").

Finally, the agency contends that publication of the new regulations constitutes a "material change in circumstances that warrants judicial reexamination of the issue."[22] That argument is inapplicable here, where 1) GIPSA has participated repeatedly in cases in which this issue was presented and in doing so has provided to the courts its interpretation of subsection 202(a) and (b), and 2) has had that interpretation rejected at least four times in the last five years by every circuit that has examined the issue.[23]

Cases Decided since the 2008 Farm Bill also Conflict with the Proposed Rule.

***Wheeler v. Pilgrim's Pride Corp.* – December 2009**

The discussion above focused on the conflict between the several cases decided before the 2008 Farm Bill. Since passage of the Farm Bill two more circuits have examined the issue and the agency's position, as reflected in subsection 201.3(c), which directly conflicts with the uniform interpretation of the PSA from the eight (8) different federal appellate courts that have considered the issue. The preamble discussion and the language in section 201.3(c) simply confirms that agency officials intend to apply the law as they see fit -- regardless of statutory language, Congressional intent, and existing judicial precedent.

Judicial rejection of the interpretation advanced by GIPSA in the preamble and articulated in section 201.3(c) is captured in the recent *en banc* decision from the United States Court of Appeals for the Fifth Circuit, *Wheeler v. Pilgrim's Pride Corp.*, 591 F.3d 355 (5th Cir. 2009) (*en banc*). The *Wheeler* case includes an extensive review and analysis of the Act's language, its legislative history, and the extensive case law history. The opinion begins, however, with the following observation, which more than suggests that the necessity of showing competitive injury in a PSA case is a matter of settled law.

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[22] 75 *Fed. Reg.* at 35341.

[23] *London v. Fieldale Farms Corp.*, 410 F.3d 1295, 1303 (11th Cir. 2005); *Been v. O.K. Indus., Inc.*, 495 F.3d1217, 1228 (10th Cir. 2007); *Wheeler v. Pilgrim's Pride Corp.*, 591 F.3d 355 (5th Cir. 2009) (*en banc*); and *Terry v. Tyson Farms, Inc.* 604 F3rd 272 (6th Cir. 2010).

> Once more a federal court is called to say that the purpose of the Packers and Stockyards Act of 1921 is to protect competition and, therefore, only those practices that will likely affect competition adversely violate the Act. That is this holding.[24]

The *Wheeler* court engaged in a thorough analysis of the history of the PSA and the extensive case law that preceded *Wheeler*. In that regard, the court examined holdings of the Supreme Court, as well as decisions in the 7th, 8th, 9th, 10th, and 11th Circuits.[25]

Wheeler also examined the legislative history of the Act and concluded that the history "supports the conclusion that it was designed to combat restraints on trade, with everyone from the Secretary of Agriculture to members of Congress testifying to the need of this statute to promote healthy competition."[26] The *Wheeler* court also recognized that Congress has amended the Act several times since its enactment, including the Farm Bill amendments.[27] The language at issue in *Wheeler* and in proposed section 201.3(c) however, sections 202 (a) and (b), has remained unchanged from original enactment even after many courts found that proving competitive injury necessary. Thus, the *Wheeler* court concluded, "[I]t is reasonable to conclude that Congress accepts the meaning of § 192(a) to require an effect on competition to be actionable because congressional silence in response to circuit unanimity 'after years of judicial interpretation supports adherence to the traditional view'."[28]

The *Wheeler* court properly rejected the agency's *Chevron* deference argument, which GIPSA made through its role as *amicus*. In fact, contrary to the agency's position in the proposed rule, *Wheeler* specifically found that such deference "is unwarranted where Congress has delegated no authority

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[24] *Wheeler* at 357.
[25] The *Wheeler* court also discussed an unpublished opinion from the 4th Circuit with a consistent finding.
[26] *Wheeler* at 361.
[27] Congress amended the PSA to provide for guidelines for poultry and hog production contracts that allow producers to terminate a contract within three days of execution, as well as mandating disclosure of required capital investments. The 2008 amendments also established a judicial forum for dispute resolution and provided producers an option regarding refusing arbitration clauses in contracts. See 122 Stat 1651, Pub. L. 110-246.
[28] *Wheeler* at 361-362 citing *General Dynamics Land Sys., Inc. v. Cline*, 540 U.S. 581, 593-94, 124 S. Ct. 1236, 1244-45 (2004).

to change the meaning the courts have given to the statutory terms, as the Eleventh and Tenth Circuits have held."[29]

Finally, in writing for the majority, Judge Reavley wrote: "We conclude that an anticompetitive effect is necessary for an actionable claim under the PSA in light of the Act's history in Congress and its consistent interpretation by the other circuits. ... Given the clear antitrust context in which the PSA was passed, the placement of § 192(a) and (b) among other subsections that clearly require anticompetitive intent or effect, and the nearly ninety years of circuit precedent, we find too that a failure to include the likelihood of an anticompetitive effect as a factor actually goes against the meaning of the statute."[30]

***Terry v. Tyson Farms, Inc.* -- May 2010**

Subsequent to *Wheeler* and just six weeks before the proposed rule published, the most recent interpretation of the PSA, this time from the United States Court of Appeals for the Sixth Circuit in *Terry v. Tyson Farms, Inc.* raised to eight the number of federal appellate courts that have considered the key issue of whether demonstrating harm or likely harm to competition is a necessary element of a PSA claim.[31] In *Terry* the Sixth Circuit said the following:

> The tide has now become a tidal wave, with the recent issuance of the Fifth Circuit Court of Appeals' *en banc* decision in *Wheeler v. Pilgrim's Pride Corp.*, 591 F.3d 355 (5th Cir. 2009) (*en banc*), in which that court joined the ranks of all other federal appellate courts that have addressed this precise issue when it held that "the purpose of the Packers and Stockyards Act of 1921 is to protect competition and, therefore, only those practices that will likely affect competition

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[29] *Wheeler* at 362.

[30] *Id.*

[31] *Terry v. Tyson Farms, Inc.* 604 F3rd 272 (6th Cir. 2010). An interesting and telling indicator of the agency's stubborn refusal to abide by the repeated rulings against the position articulated in proposed subsection 201.3(c) is the fact that in footnote 31 in the preamble to the proposed rule GIPSA references the fact that *Terry* was argued in March 2010, leaving the impression that the case had yet to be decided when the proposed rule published on June 22. The agency does not acknowledge that *Terry* was decided consistently with seven other circuits, and in a manner at odds with the agency's interpretation, on May 10 – six weeks before publication of the proposed rule.

> adversely violate the Act." *Wheeler*, 591 F.3d at 357. All told, seven circuits – the Fourth, Fifth, Seventh, Eighth, Ninth, Tenth, and Eleventh Circuits – have now weighed in on this issue, with unanimous results. *See Wheeler*, 591 F.3d 355; *Been v. O.K. Indus., Inc.*, 495 F.3d 1217, 1230 (10th Cir. 2007); *Pickett v. Tyson Fresh Meats, Inc.*, 420 F.3d 1272, 1280 (11th Cir. 2005), *cert. denied*, 547 U.S. 1040 (2006); *London v. Fieldale Farms Corp.*, 410 F.3d 1295, 1303 (11th Cir. 2005), *cert. denied*, 546 U.S. 1034 (2005); *IBP, Inc. v. Glickman*, 187 F.3d 974, 977 (8th Cir. 1999); *Philson v. Goldsboro Milling Co.*, Nos. 96-2542, 96-2631, 164 F.3d 625, 1998 WL 709324, at *4-5 (4th Cir. Oct. 5, 1998) (unpublished table decision); *Jackson v. Swift Eckrich, Inc.*, 53 F.3d 1452, 1458 (8th Cir. 1995); *Farrow v. United States Dep't of Agric.*, 760 F.2d 211, 215 (8th Cir. 1985); *DeJong Packing Co. v. United States Dep't of Agric.*, 618 F.2d 1329, 1336-37 (9th Cir. 1980), *cert. denied*, 449 U.S. 1061 (1980); and *Pac. Trading Co. v. Wilson & Co.*, 547 F.2d 367, 369-70 (7th Cir. 1976).[32]

The *Terry* court also referenced directly the agency's participation in the case as *amicus* stating:

> In this appeal, Terry, joined by *amicus curiae* United States Department of Agriculture ("USDA"), seeks to persuade us to adopt the decidedly minority view embraced by some district courts and vigorously articulated by Judge Garza, along with six of his colleagues, in his dissenting opinion in *Wheeler*. *See Wheeler*, 591 F.3d at 371 (Garza, J., dissenting). ...Ultimately, Terry and the USDA would have this court deviate from the course taken by the seven other circuits that have spoken on this issue, thus creating a conflict. We decline to do so.[33]

The *Terry* court found that "the rationale employed by our sister circuits is well-reasoned and grounded on sound principles of statutory construction. Moreover, under the fundamental principle of *stare decisis*, we deem the construction of this nearly 90-year-old statute to be a matter of settled law. We therefore join these circuits and hold that in order to succeed

[32] *Terry* at 277.
[33] *Terry* at 277-278.

on a claim under §§ 192(a) and (b) of the PSA, a plaintiff must show an adverse effect on competition."[34]

The agency's blatant disregard for the holdings in the extensive case law and its misplaced reliance on report language and dissents in one of those cases is the definition of arbitrary and capricious under the Administrative Procedure Act.

Proposed Section 201.3(c) does not reflect a Longstanding Agency Interpretation of the Packers and Stockyards Act.

The proposal is far reaching and several of the provisions are legally suspect. That conclusion is especially true with respect to proposed section 201.3(c), which reads as follows.

> (c) *Scope of Sections 202(a) and (b) of the Act.* The appropriate application of section 202(a) and (b) of the Act depends on the nature and circumstances of the challenged conduct. A finding that the challenged act or practice adversely affects or is likely to adversely affect competition is not necessary in all cases. Conduct can be found to violate section 202(a) and/or (b) of the Act without a finding of harm or likely harm to competition.

This proposed subsection conflicts not only with extensive judicial precedent requiring that private plaintiffs and the agency demonstrate harm or likely harm to competition to prevail in a PSA case brought under section 202(a) or (b), but it is at odds with previous agency positions.

In the preamble the agency contends that it has "consistently taken the position that, in some cases, a violation of section 202(a) or (b) can be proven without proof of predatory intent, competitive injury, or likelihood of injury."[35] Indeed, the agency goes on to say "[T]he longstanding agency position that, in some cases, a violation of section 202(a) or (b) can be proven without proof of likelihood of competitive injury is consistent with the language and structure of the P&S Act, as well as its legislative history and purposes."[36]

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[34] *Terry* at 279.
[35] 75 *Fed. Reg.* 35338, 35340 (June 22, 2010).
[36] *Id.*

That assertion is at odds, however, with a 1997 agency report responding to a petition submitted by the Western Organization of Resource Councils (WORC).[37] In its response to WORC GIPSA wrote:

> In order to prohibit activities of the packers through regulation or to file a complaint citing a violation of section 202, the Department must develop evidence that the packers have either predatory intent or that there is the likelihood that the complained of activity will result in injury.[38]

That the reference to injury means injury to competition is confirmed in the next sentence in which the report states:

> Case precedent supports this statement of the Secretary's authority to regulate packer activities. As the *Armour* court states: The clearer the danger of the [likelihood of competitive injury], as when competitors conspire to eliminate the uncertainties of price competition, the less important is proof of [predatory intent]. Conversely, the likelihood of injury arising from conduct adopted with predatory purpose is so great as to require little or no showing that such injury has already taken place. *Armour*, 402 F.2d 717. ...Therefore, to satisfy the *Armour* test, WORC would have to establish a violation of the Act based on evidence of the likelihood of injury.[39]

In addition, the Eleventh Circuit also concluded that the government had failed to establish that its interpretation was the Department of Agriculture's (USDA) "consistent view" of section 202(a).[40] That the

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[37] Review of Western Organization of Resource Councils (WORC) Petition for Rulemaking, Grain Inspection and Packers and Stockyards Administration, Packers and Stockyards Programs, August 29, 1997 http://archive.gipsa.usda.gov/psp/issues/worc_petition/worchmpg.pdf. (Attachment A)

[38]). *Id.* at 15-16.citing OGC Memorandum to the Chief Economist, June 20, 1996, p. 5 (Attachment 2).

[39] *Id.* at 16. (Emphasis added).

[40] *London*, 410 F.3d at 1304 n.7. Indeed, in *In re IBP, Inc.*, 57 Agric. Dec. 1353 (1998), the Judicial Officer held that a right of first refusal violated Section 202(a) precisely "because it ha[d] the effect or potential effect of reducing competition." 1998 WL 462705, at *34 (emphasis added), rev'd, *IBP*, 187 F.3d at 977 (holding that right of first refusal did not violate Section 202(a) because it did not "potentially suppress or reduce competition sufficient to be proscribed by the Act") (emphasis added).

government's interpretation is a mere litigating position also means it is not entitled to deference.[41]

In short, as recently as 1997 the agency understood and accepted the position that in order to prevail in a PSA case a plaintiff must demonstrate injury or likelihood of injury to competition, which calls into question the agency's assertion that the proposed rule reflects a "longstanding" GIPSA interpretation of the PSA. Why the agency shifted its position to that posited in the preamble is unknown and not explained by GIPSA.

The Proposed Rule Inappropriately Exceeds the Congressional Mandate in the Farm Bill.

As stated earlier, the Farm Bill directed the Secretary of Agriculture to promulgate rules that would establish criteria on several explicit topics. Specifically, the Secretary was directed to develop criteria for determining:

> (1) whether an undue or unreasonable preference or advantage has occurred in violation of such Act;
>
> (2) whether a live poultry dealer has provided reasonable notice to poultry growers of any suspension of the delivery of birds under a poultry growing arrangement;
>
> (3) when a requirement of additional capital investments over the life of a poultry growing arrangement or swine production contract constitutes a violation of such Act; and
> (4) if a live poultry dealer or swine contractor has provided a reasonable period of time for a poultry grower or a swine production contract grower to remedy a breach of contract that could lead to termination of the poultry growing arrangement or swine production contract.[42]

[41] See *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 213 (1988) ("Deference to what appears to be nothing more than an agency's convenient litigating position would be entirely inappropriate."); see also *Been*, 495 F.3d at 1227 ("USDA's position as stated in its *amicus* brief [is entitled] little to no deference").
[42] Section 11006, Farm Bill.

In addition, section 11005 of the Farm Bill amended the Act with respect to production contracts, choice of law and venue, and arbitration and for that reason the proposal includes proposed language concerning arbitration.

In contrast, several other provisions of the proposal were not mandated nor authorized by the Farm Bill. Indeed, the concepts included in many of these sections were considered by the House Committee on Agriculture, the Senate Committee on Agriculture, Nutrition and Forestry, or both, and were rejected or not included in the Farm Bill. In that regard, the provisions found in sections 201.3, 201.94, 201.210, 201.212, 201.213, and 201.214 are all outside the scope of the Farm Bill mandate.

For example, proposed rule's putative abolition of the competitive injury requirement found in section 201.3 was included in a discussion draft of Chairman Harkin's markup of the Farm Bill, but subsequently deleted from the bill offered to the Senate Agriculture Committee. Likewise, the concepts in section 201.210 regarding fairness were included in Chairman Harkin's mark up of the Farm Bill and were removed in conference. Similarly, the business justifications requirements in section 201.94 were included in an amendment offered by Senator Tester on the Senate Floor during the debate and vote on the Senate version of the Farm Bill. That amendment was defeated.

That these concepts were considered by the Congress in its debate on the Farm Bill and rejected or not included requires GIPSA to delete them and implement the Farm Bill as Congress intended. That the agency would usurp the will of Congress and seek to implement through the regulatory process that which the elected officials in the Congress have rejected is at odds with our system of government.

The Proposal Essentially Eliminates Preferences or Advantages that Possess a Valid Business Justification and have, on Balance, No Anticompetitive Effect.

Development of the criteria mandated by the Farm Bill concerning section 202(b) must start with a review of the plain language of the statute. In that regard, section 202(b) of the Act provides that

> "It shall be unlawful for any packer or swine contractor with respect to livestock, meats, meat food products, or livestock products in unmanufactured form, or for any live poultry dealer with respect to live poultry, to: ...
>
> (b) Make or give any undue or unreasonable preference or advantage to any particular person or locality in any respect, or subject any particular person or locality to any undue or unreasonable prejudice or disadvantage in any respect; ...."[43]

Thus, the plain language of the Act contemplates that preferences or advantages may be afforded to livestock suppliers by a packer or swine contactor, so long as those preferences or advantages are not "undue" or "unreasonable." As a practical matter, this conclusion makes perfect sense. A packer should be able to pay more, for example, for cattle that grade prime than for cattle that grade select, because meat derived from a prime steer generally has greater value than the meat from a select steer. By structuring payment terms to reward attributes that are desired by consumers, *e.g.*, organic, grass fed, *etc.*, packers are able to create incentives that benefit everyone in the supply chain. The proposal, however, is crafted in a manner such that a packer or swine contractor essentially is precluded from employing a preference or advantage that yields a social benefit (such as preferred product characteristics, increased efficiency, lower transaction costs, *etc.).*

In developing the proposal, GIPSA was not writing on a blank slate. Courts have addressed the meaning of this statutory language in case law that extends over decades. This case law makes clear that a preference is "undue" or "unreasonable" when (a) it has no valid business justification and (b) it has, on balance, an anticompetitive effect.

The following discussion of section 202 (from the Seventh Circuit) is illustrative.

> Surely words such as ... "undue" and "unreasonable" in Section 202(b) require some examination of the seller's intent and the likely effects of its acts or practices under scrutiny, even though these tests under Section 202(a) and (b) be less stringent than under some of the

[43] 7 U.S.C. 192(b). (Emphasis added).

> antitrust laws. These adjectival qualifications expressed in the statutory language enjoin the Department and courts to apply a rule of reason in determining the lawfulness of a particular practice under Section 202(a) and (b).[44]

The Seventh Circuit properly concluded that the packer's intent is one legitimate factor to consider in determining whether a preference or advantage is undue or unreasonable. The crucial issue with respect to intent is whether the packer made use of the preference or advantage in order to achieve a valid business objective, such as improved quality, greater efficiency, lower transaction costs, to meet competition, obtain a consistent supply of livestock for a plant, or the like. The proposal as written, however, does not contemplate this factor as a part of determining whether a preference or advantage is "undue" or "unreasonable."

Where there is no valid business justification for a preference, and the preference has the effect of suppressing competition, it is illegal under section 202. As the Seventh Circuit explained, the "rule of reason" is the appropriate screen to distinguish those preferences that have an anticompetitive effect. The "inquiry mandated by the [r]ule of [r]eason is whether the challenged agreement is one that promotes competition or one that suppresses competition."[45]

The courts have already considered assertions that section 202 requires that all producers be treated the same, regardless of valid business justifications that might warrant differences. Such assertions have been emphatically rejected. A leading Eighth Circuit case contains this discussion:

> Thus, their claim, in essence, is that § 202 of the PSA, 7 U.S.C. § 192, statutorily creates an entitlement to obtain the same type of contract that Swift Eckrich may have offered to other independent growers. We are convinced that the purpose behind § 202 of the PSA, 7 U.S.C. § 192, was not to so upset the traditional principles of freedom of contract. The PSA was designed to promote efficiency, not frustrate it.[46]

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[44] *Armour & Co. v. United States,* 402 F.2d 712717 (7th Cir. 1968) (emphasis added). Although in *Armour* the focus was on the packer's behavior as a seller of meat, the same reasoning and standards should apply to the packer's behavior as a buyer of livestock.

[45] *National Society of Professional Engineers v. United States,* 435 U.S. 679, 691 (1978).

[46] *Jackson v. Swift Eckrich, Inc.,* 53 F.3d 1452, 1458 (8th Cir. 1995).

Indeed, the United States agreed with such an approach in its *amicus* submission in a brief recently filed in *Wheeler v. Pilgrim's Pride Corp.* Specifically, the agency stated that "a primary (but not sole) purpose of the PSA was to foster competition and, for that reason, practices that have the potential to enhance efficiency should not be condemned as 'unfair' under the PSA without consideration of competitive effects."[47]

A Rule of Reason Approach also Must Apply to Many Other Components of the Rule.

A number of elements of the proposal fail to contemplate a rule of reason approach. For example, section 201.218 involves contract termination and providing a "reasonable time" to cure a breach of contract. Elements of that section suggest that in no circumstance can a swine contractor or live poultry dealer take immediate action to terminate a contract. Although hopefully the circumstances where immediate termination is necessary do not frequently arise, the criteria do not recognize that in some cases immediate action is necessary and warranted.

For example, many contracts include provisions allowing termination of a contract if the grower is found to have violated applicable animal welfare laws or if the grower fails to maintain the facilities in a manner such that the welfare of the livestock or birds is at risk. Section 201.218(d) includes as one of the criteria whether sufficient time has been afforded the grower to rebut in writing the allegation in the notice that serves as the basis for the termination and establishes a presumption that 14 days is necessary for the grower to respond. In the animal welfare circumstance discussed above, a swine contractor or live poultry grower should not have to wait 14 days to receive a response before taking action or risk being subject to a possible PSA violation. Yet, the proposal contemplates just that result – to the detriment of the livestock or birds in the care of the grower and the industry at large.[48] Similarly, other actions by growers may warrant immediate termination. In

[47] *Wheeler v. Pilgrim's Pride Corp., U.S. Court of Appeals for the Fifth Circuit, No. 07-40651, en Banc Brief for Amicus Curiae the United States,* September 8, 2009.

[48] Indeed, public viewing of and reaction to past instances of undercover film footage taken by animal rights organizations at a very small number of livestock and poultry production facilities documenting abuses by workers on those farms caused as much damage to the packers and poultry processors to whom those growers supplied livestock or birds than it did to the growers themselves.

short, the proposal's 14 day time in subsection 201.218(d) should be reconsidered.

Similarly, the agency should not establish "absolutes" in the rule regarding when a capital investment requirement "constitutes a violation" of the Act. A host of factors, such as technological advances or the development of generally accepted best practices related to food safety or animal welfare, are part of the calculus that can dictate the need for additional capital investment on the part of the grower. Such requirements must be considered in the context of whether there is a legitimate business justification for the investment requirement.

II. THE PROPOSAL WOULD RESULT IN CHANGES TO THE LIVESTOCK AND MEAT INDUSTRY THAT THE GIPSA RTI INTERNATIONAL STUDY FOUND HARMFUL TO PRODUCERS AND CONSUMERS

The RTI International Study Warns of Severe Adverse Effects if Alternative Marketing Agreements are Reduced or Eliminated.

The 2002 Farm Bill authorized, and in 2003 Congress allocated monies to GIPSA to conduct a study regarding the effects of what the agency defined as "alternative marketing arrangements" (AMAs) on the livestock and meat industries. RTI International (RTI) conducted the GIPSA Livestock and Meat Marketing Study (GIPSA study), which was completed in 2007.[49] As the discussion below demonstrates, based on the GIPSA study's conclusions, the proposal, if finalized, would have a very adverse effect on the meat and livestock industry. Livestock producers and consumers would suffer the greatest adverse effects, with a lesser but still significant adverse economic impact on packers and processors.

In its ***Assessment of the Livestock and Poultry Industries*** **Fiscal Year 2007** the agency recognized and discussed the GIPSA study and its results. In that regard, the agency stated that "[T]he study addressed many questions and concerns that have been raised about changes in the structure

[49] GIPSA Livestock and Meat Marketing Study, prepared for Grain Inspection, Packers and Stockyards Administration, prepared by RTI International (January 2007), http://archive.gipsa.usda.gov/psp/issues/livemarketstudy/LMMS_Vol_1.pdf. (Attachment B)

and business practices in the livestock and meat industries."[50] That 2007 Report went on to say that the "study found that alternative marketing arrangements provide net benefits to producers, packers, and consumers, and that net economic losses would result from restrictions on the use of such arrangements."[51]

Significantly, GIPSA stated the following in its 2007 Report.

> In particular, the study found that packers and consumers receive better quality and more consistent product as a result of alternative arrangements, and producers receive value for better quality livestock. All parties are better able to set delivery/sale dates. The arrangements help to stabilize the flow of supply, and provide cost savings in sellers and buyers interactions to arrive at a market price (*i.e.*, the price discovery process). In general, the use of alternative marketing arrangements provides livestock buyers and sellers with improved risk management options that lower costs or allow for the creation and capture of greater value.[52]

Certain specifics in the GIPSA study also are worthy of agency consideration regarding the proposed rule. In that regard, a fundamental conclusion of the GIPSA study was that "[M]any meat packers and livestock producers obtain benefits through the use of AMAs, including management of costs, management of risk (market access and price risk), and assurance of quality and consistency of quality."[53] Moreover, the GIPSA study concluded that "[I]n aggregate, restrictions on the use of AMAs for sale of livestock to meat packers would have negative economic effects on livestock producers, meat packers, and consumers."[54]

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[50] *Assessment of the Livestock and Poultry Industries* Fiscal Year 2007 Report, United States Department of Agriculture Grain Inspection, Packers and Stockyards Administration May 2008, p. 28-29. http://archive.gipsa.usda.gov/pubs/07assessment.pdf. (Attachment C)
[51] *Id.* at 29.
[52] *Id.* (Emphasis added).
[53] GIPSA study, ES-3.
[54] *Id.* (Emphasis added).

With respect to fed cattle and beef, the study found that "beef producers and packers interviewed believed that some types of AMAs helped them manage their operations more efficiently, reduced risk, and improved beef quality. Feedlots identified cost savings of $1 to $17 per head from improved capacity utilization, more standardized feeding programs, and reduced financial commitments required to keep the feedlot at capacity."[55] The GIPSA study stated that producers who use AMAs "identified the ability to buy/sell higher quality cattle, improve supply management, and obtain better prices as the leading reasons for using AMAs."[56] Packers also benefit, citing their top three reasons for using AMAs as 1) improving week-to-week supply management, 2) securing higher quality cattle, and 3) allowing for product branding in retail stores.[57]

Relevant to the impact of the proposed rule is RTI's conclusion about "hypothetical" reductions in AMAs. Unfortunately, if the proposal as written is finalized, the troubling reductions identified by RTI will not be hypothetical – they will be real.

Specifically, RTI found that a reduction in AMAs would have "a negative effect on producer and consumer surplus measures. Beef and cattle supplies and quality decreased and retail and wholesale beef prices increased because of reductions in AMAs."[58] Specifically, RTI found that the

> short-run, long-run, and cumulative present value surplus for producers and consumers associated with reduced AMA volumes are all negative. Over 10 years, a hypothetical 25% restriction in AMA volumes resulted in a *decrease* in cumulative present value of surplus of – 2.67% for feeder cattle producers, – 1.35% for fed cattle producers, – 0.86% for wholesale beef producers (packers), and – 0.83% for beef consumers. A hypothetical 100% restriction in AMA volumes resulted in a *decrease* in cumulative present value surplus of – 15.96% for feeder cattle producers, – 7.82% for fed cattle producers, – 5.24% for wholesale beef producers (packers), and – 4.56% for beef consumers.[59]

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[55] *Id.* at ES-3. (Emphasis added.)
[56] *Id.* at ES-4.
[57] *Id.*
[58] *Id.* at ES-8. (Emphasis added)
[59] *Id* at ES at 8-9.

In short, with respect to beef, RTI found that the net effect of eliminating AMAs would be to reduce prices, quantities, and producer and consumer surplus in almost all sectors of the industry – meaning that "reducing the use of AMAs would result in economic losses for beef consumers and the beef industry."[60]

RTI drew similar conclusions regarding the adverse impact that reducing or eliminating the use of AMAs would have with respect to hogs. In that regard, RTI found that "AMAs are an integral part of hog producers' selling practices and pork packers' procurement practices"[61] and that a "higher proportion of AMA use is associated with higher quality pork products."[62]

As with cattle and beef, RTI examined hypothetical restrictions regarding AMA use in the hog and pork industries and "found that hog producers would lose because of the offsetting effects of hogs diverted from AMAs to the spot market, consumers would lose as wholesale and retail pork prices rise, and packers would gain in the short run but neither gain nor lose in the long run."[63] (Emphasis added.) RTI identified losses to producers and consumers in every simulation scenario because of lost efficiencies associated with reducing the proportion of hogs sold through contracts and/or packer owned channels. RTI concluded that "[I]n all instances, the price spread between farm and wholesale prices would be expected to increase because of the net increase in the costs of processing. Moreover, wholesale, and hence retail, prices would increase, causing pork to become more expensive for consumers."[64]

The Proposal Will Force Packers to Consider Reducing Markedly Their Use of Marketing Agreements (Alternative Marketing Arrangements) or Eliminating them Altogether

The RTI conclusions are both relevant and significant because many, if not all, marketing agreements and forward contracts either may no longer be used or they may be notably limited in their use if the proposed rule becomes

[60] *Id.* at ES-9.
[61] *Id.*
[62] *Id.* at ES-12.
[63] *Id.* at ES-12-13.
[64] *Id.* at ES-13.

final as written. The reasons for that conclusion are straightforward and arise from the disincentives the proposal creates regarding the use of marketing agreements.

First, the threat of liability facing packers from lawsuits that are likely to be brought, either by GIPSA or by private plaintiffs, alleging violations of the Act is markedly greater if proposed section 201.3(c) becomes final. As discussed above in Section I, lessening the burden that a potential plaintiff must meet to prevail in a PSA lawsuit and based on past experience may cause many packers to consider abandoning or significantly limiting the number and types of marketing agreements they utilize simply to limit risk. Past experience, e.g., *Pickett v. Tyson Fresh Meats* may cause packers to consider limiting, if not abandoning wholly, the use of AMAs – however specious the litigation.

Second, the breadth and ambiguity in the definition of "likelihood of competitive injury" also makes the use of such instruments much more risky, again because of the threat of litigation. That definition reads, in pertinent part:

> It also includes situations in which a packer, swine contractor, or live poultry dealer wrongfully depresses prices paid to a producer or grower below market value, or impairs a producer's or grower's ability to compete with other producers or growers...[65]

This proposed definition is a backhanded attempt to satisfy the statutory requirement identified by the eight federal circuits regarding showing competitive injury or a likelihood of competitive injury. Elements of the definition, however, are so vague and so broad that a packer will not be able to make an informed decision regarding what must be done to comply. This uncertainty is particularly applicable regarding the risks of litigation attendant to using marketing agreements.

For example, under the proposed definition, it would be virtually impossible for a packer to know whether having marketing agreements with a particular producer or group of producers will be found to have "impaired" the ability of a different producer, *e.g.*, a producer who affirmatively chooses

[65] 75 *Fed. Reg.* at 35351, proposed 201.2(u) (Emphasis added).

not to use such agreements or who does business with another packer, to compete against the producers with whom the packer has such agreements.[66] Similarly, a packer may elect to enter into marketing agreements with a group of producers. At the same time the packer may choose not to enter into the same agreement with other producers for legitimate business reasons, *e.g.*, poor herd management skills, history of poor performance, or the packer simply has met all of its livestock needs. The definition's ambiguity leaves unclear whether the packer has impaired the ability of the producer with whom it has no agreement to compete with those producers who have such an agreement. If by not offering a marketing agreement to a producer the packer is deemed to have impaired that producer's ability to compete, that producer could be in a position to assert he or she has demonstrated a likelihood of competitive injury and prevail in a PSA because, as the agency stated in the preamble, "any act that ...is likely to harm competition necessarily violates the statute."[67]

Finally, the last clause of the "likelihood of competitive injury" definition is unacceptably vague. Specifically, the proposed definition would find a likelihood of competitive injury in a situation in which a packer impairs "a producer's or grower's ability to receive the reasonable expected full economic value from a transaction in the market channel or marketplace." (Emphasis added.) Absent is any explanation in the preamble of what the agency means by the phrase "reasonable expected full economic value."[68] Against this vague and unintelligible standard, the packer in both of the fact examples discussed above will be at an unacceptable risk in a lawsuit. In the first, the producer who sells on the cash market will assuredly assert that his ability to receive the "reasonable expected full economic value" was impaired by the packer's use of marketing agreements with other producers. In the second fact scenario, the producer who was denied a marketing agreement will contend that his ability to receive the "reasonable expected full economic value" was impaired because he was denied such an agreement.

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[66] This scenario is not hypothetical as the fact pattern of *Pickett v. Tyson Fresh Meats* is very similar.

[67] 75 *Fed. Reg.* at 35341. (Emphasis added).

[68] Indeed, the preamble merely recites the language in the proposed rule (or does the rule merely recite the language in the preamble?) in its attempt to explain what "likelihood of competitive injury" is.

In any of the circumstances discussed, and many others not discussed in these comments given time and space constraints, packers will be at risk of being sued successfully given the vagueness and breadth of the definition. Given the history of jury awards in earlier cases, packers will be reluctant to utilize marketing agreements in any meaningful way, to the detriment of most producers and consumers. Companies may consider reacting as they did in South Dakota and Missouri several years ago when those states enacted laws prohibiting any discrimination (including reasonable discrimination).

III. THE PRACTICAL IMPACT OF MANY PROVISIONS IN THE PROPOSED RULE WILL ADVERSELY AFFECT THE LIVESTOCK, MEAT, AND POULTRY SECTORS.

The Definition of "Likelihood of Competitive Injury" is Unworkable and Unconstitutionally Vague.

Subsection 201.2(u)'s definition of "likelihood of competitive injury" is so vague that it is unworkable and contrary to law. Specifically, the definition provides that "likelihood of competitive injury"

> includes but is not limited to situations in which a packer, swine contractor, or live poultry dealer raises rivals' costs; improperly forecloses competition in a large share of the market through exclusive dealing; restrains competition among packers, swine contractors, or live poultry dealers; or represents a misuse of market power to distort competition among other packers, swine contractors, or live poultry dealers. It also includes situations in which a packer, swine contractor, or live poultry dealer wrongfully depresses prices paid to a producer or grower below market value, or impairs a producer's or grower's ability to compete with other producers or growers or to impair a producer's or grower's ability to receive the reasonable expected full economic value from a transaction in the market channel or marketplace. (Emphasis added.)