United States General Accounting Office

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Report to the Chairman, Committee on Governmental Affairs, U.S. Senate

July 1992

RISK-RISK ANALYSIS

OMB's Review of a Proposed OSHA Rule

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Program Evaluation and
Methodology Division

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The Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate

Dear Mr. Chairman:

In your letter of April 10, 1992, you asked us a number of questions concerning the recent suspension, by the Office of Management and Budget (OMB), of its review of a rule proposed by the Occupational Safety and Health Administration (OSHA) entitled "Air Contaminants Standard in the Construction, Maritime, Agriculture, and General Industries." OMB's support for its decision to suspend its review relied upon a procedure it termed risk-risk analysis, a procedure that is based upon a model developed by Professor Ralph Keeney of the University of Southern California. In particular, OMB made it a condition for the resumption of its review that OSHA itself perform such an analysis. You requested that we specifically examine OMB's application of this procedure, which attempts to estimate increased mortality risk indirectly attributable to the costs associated with implementing the rule.

To answer your questions, we analyzed documents from both OSHA and OMB. We interviewed Professor Keeney, as well as the author of the theory underlying the model, Professor Aaron Wildavsky of the University of California at Berkeley. We also convened a panel of experts in the fields of risk analysis and cost-benefit analysis to comment on the Keeney model and its application to the regulatory review process. (See appendix I for a list of the panelists.) Finally, we reviewed the legal question you posed; namely, whether the proposed use of this analysis is consistent with the Supreme Court decision in American Textile Manufacturers Institute v. Donovan, 452 U.S. 490 (1981).

On the basis of this work, we concluded that OMB's application of risk-risk analysis to the OSHA regulation (1) was based on a theory that is controversial in a number of respects, (2) employed a model that is as yet incomplete, (3) misinterpreted the model in several important ways, and (4) appears to be inconsistent with both Supreme Court and appellate court decisions. In the following pages, we explain each of these conclusions. First, however, we summarize the support developed by OSHA for the proposed regulation, OMB's application of the Keeney model in this case, and some key aspects of risk-risk and cost-benefit analysis.

Background

OSHA's Analysis

In January of 1989, OSHA published the Air Contaminants Final Rule, which reduced for general industry the permissible exposure limits (PELs) of 212 substances and established limits for 164 substances where none had previously existed. At that time, OSHA stated that it intended to extend these limits to the construction, maritime, and agriculture industries.

On February 14, 1992, OSHA submitted for OMB's review a proposed regulation, entitled "Air Contaminants Standard in the Construction, Maritime, Agriculture, and General Industries," that would establish 376 new or more protective exposure limits for the construction and maritime industries. In addition, the proposed rule would limit permissible exposure of 635 substances in the agriculture industry (where no PELs had previously been established) to the same levels that would apply to the other industries covered in the standard.

In its analysis, OSHA examined issues of both mortality and morbidity, projecting that the reduction of air contaminants in these industries would prevent between 8 and 13 annual work-related deaths, and that 31,000 annual work-related illnesses, including a predicted 12,000 illnesses involving lost work days, would be prevented. The majority of deaths and illnesses averted were expected to be in the construction industry (between 7 and 11 fatalities and 21,600 illnesses prevented, including 10,200 illnesses involving lost work days).

To achieve compliance with the reduced PELs in all industries in a cost-effective manner, OSHA suggested that combinations of different measures could be adopted as appropriate. OSHA predicted that "in many activities, engineering controls and work practices will effectively reduce airborne concentrations of hazardous substances."[1] Some examples of the technology and practices that OSHA suggested the industries could use were portable exhaust hoods, fans, fresh air supply blowers, dust catchers, vacuum cleaners, and water spraying. For areas in which controls were lacking or insufficient, the industries would be required to provide employees with respiratory protection.

[1]OSHA, "Preliminary Regulatory Impact Analysis for the Air Contaminants Standard in the Construction, Maritime, Agriculture, and General Industries," January 1992.

The costs for full compliance with the regulation were calculated for two exposure levels. The total cost for a proposed PEL of 5 mg/m^3 was estimated to be $103 million, with the majority of that cost deriving from the construction industry. The cost of compliance for a proposed PEL of 0.2 mg/m^3 was predicted to be $163 million, with all of the increase over the first proposed PEL occurring in the construction and general industries.

OMB's Analysis

In suspending its review of the rule proposed by OSHA, OMB referred to an appellate court comment on a model developed by Professor Ralph Keeney in an essay entitled "Mortality Risks Induced by Economic Expenditure." The comment stated that each $7.5 million expended on regulation could indirectly result in one additional fatality. Keeney's calculation of the expenditure level that would induce a fatality was based on three factors: (1) the annual mortality risk as a function of income, (2) the distribution of annual income prior to experiencing the cost of the regulation, and (3) the relative one-time cost of the regulation to an individual.[2] Keeney's model was itself based upon the "richer is safer" theory developed by Professor Aaron Wildavsky. According to this theory, as an individual's (or a nation's) wealth increases, his or her (or its) health will improve because the increase will be spent on healthful practices such as better nutrition, preventive health care, and more leisure activity. However, when a business is forced to spend money to comply with government regulations, it will pass along the costs of the regulation to the consumer, in the form of higher prices, or to the worker, in the form of lower wages and fewer benefits. Thus, Wildavsky argues that government imposition of costs through regulation can unintentionally result in increased mortality risks.[3]

OMB applied Keeney's quantification of this theory in its review of the regulation proposed by OSHA and determined that the costs of implementing the regulation could indirectly result in more fatalities than its preventive aspects were estimated to avert. By dividing the total estimated cost of the proposal at a PEL of 0.2 mg/m^3 ($163 million) by the cost expected to result in one fatality ($7.5 million), OMB arrived at an estimate of 22 additional fatalities as a result of implementation. By comparing the result of this calculation with the number of fatalities OSHA predicted would be averted as a direct consequence of the proposed rule,

[2]Ralph L. Keeney, "Mortality Risks Induced by Economic Expenditure," Risk Analysis, 10:1 (1990), p. 149.

[3]See Aaron Wildavsky, "Richer Is Safer," The Public Interest, 60 (Summer 1980), pp. 23-39, and Searching for Safety (New Brunswick, N.J.: Transaction Publishers, 1991).

OMB concluded that there would be a net loss of 8 to 14 lives. They therefore suspended review of the proposed regulation and returned it to OSHA for reanalysis. OSHA was directed to consider "whether the possible compliance costs on workers' health will outweigh the health improvements that may result from decreased exposure to regulated substances," as well as the effects of compliance costs on "other members of society."[4]

Cost-Benefit and Risk-Risk Analyses

Cost-benefit analysis and risk-risk analysis are both trade-off analyses that attempt to organize information about the effect of a proposed intervention. In a cost-benefit analysis, the expected costs of the proposed intervention are weighed against the expected benefits of the results. A cost-benefit analysis quantifies both the expected costs and expected benefits of proposals in terms of monetary value, and then compares the two. Risk-risk analysis weighs the risks associated with the proposed intervention against the risks associated with no intervention. For example, in chemotherapy, carcinogens are introduced into the body to attack cancer cells. In such a case, the risk of mortality or long-term morbidity from the chemotherapy was judged to be less than the risk of mortality or long-term morbidity from the cancer; thus, the intervention was recommended.

The main difference between the two types of analysis lies in the factors they compare. A properly constructed cost-benefit model will account for every factor that could conceivably contribute a cost or be viewed as a benefit. This could include the direct and indirect costs of a regulation, the manner in which the costs are distributed, the lost opportunity of expending funds on another proposed intervention, the number of illnesses prevented that would have resulted in lost work days, changes in consumer spending trends, and potential innovations in technology. The result of quantifying all of these considerations—and quite different methods of quantification are suggested by different economists—will be a net gain, a net loss, or no difference. Based on the result, the determination of whether to implement an intervention is made.

[4]Letter of James MacRae, Acting Administrator and Deputy Administrator, Office of Information Affairs, OMB, to Nancy Risque-Rohrbach, Assistant Secretary for Policy, Department of Labor (DOL), March 10, 1992.

A risk-risk analysis, on the other hand, compares the anticipated risks of highly specific outcomes. For example, a regulation requiring the construction of concrete domes around nuclear plants may be intended to save an estimated number of fatalities in the community, yet the construction of the domes is a risky procedure and may be expected to increase mortality in the short term. If the regulation were expected to result in more deaths than it saved, then its promulgation would not be recommended.

Findings

The analysis used by OMB in its decision to suspend its review of the Air Contaminants Standard is cost-benefit rather than risk-risk analysis. The application of risk-risk analysis in this setting would have involved, for example, balancing the risk posed to workers by the installation of exhaust hoods or fans against the risk posed by air contaminants in the workplace. The analysis suggested by OMB would compare the health benefits attributed to the proposed intervention with the monetary costs to industry or society. OMB's use of cost-benefit analysis, however, runs up against numerous methodological and legal questions concerning the Wildavsky theory, the Keeney model, and the agency's application of both. In particular, as we discuss in appendix II, the courts have made clear that, in the context of health standards, the benefit to workers' health is paramount and, as a general rule, cannot be outweighed by consideration of costs.

Theoretical Problems: Correlation, Causality, and Supporting Data

In his previously cited letter of March 10, 1992, notifying OSHA of the suspension of the review of the proposed regulation pending additional analysis, James MacRae of OMB stated that the positive causal relationship of wealth to health "has been established both theoretically and empirically." This position is controversial, however, because although correlations have been established, causation has not.

Statistically speaking, correlation between two variables refers to the degree that those variables (for example, wealth and health) vary with each other. A causal relationship adds two more criteria to this element of covariance between variables: temporal precedence and attribution. Temporal precedence means that a change in the independent variable (the "cause") must precede the change in the dependent variable (the "effect"). This is relatively easy to determine. More difficult to establish is whether the independent variable is actually the cause of the change.

As already noted, the "richer is safer" theory states that as an individual's wealth increases, he or she will spend more on healthful practices such as preventive health care, better nutrition, and more leisure activity. The theory thus postulates a direct causal linkage between an increase in wealth and an improvement in health.

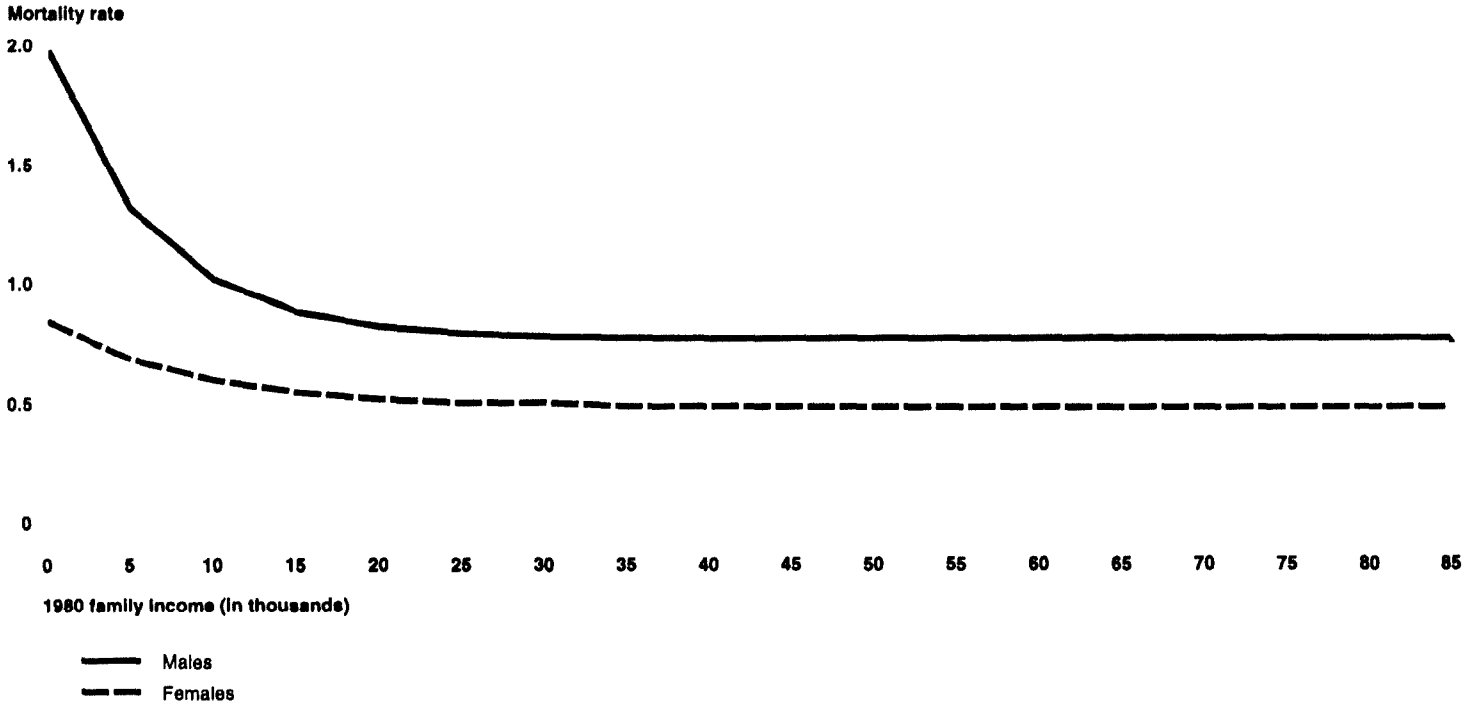
Although an association between increased wealth and improved health is well established, evidence is lacking to show that health improves if, and only if, wealth increases. Actually, there are multiple factors that confound the causal relationship between wealth and health that need to be accounted for in any complete analysis. In his essay, Keeney himself cites several confounding variables that may "contribute to decreased mortality rates" (emphasis added). These include improvements in education, social class, opportunity, and the converse effect of health on wealth (that is, poor health can lead to less income).[5]

However, not only does the theory have a causation problem, but there is also a shortage of empirical data to confirm it. In fact, the data cited for support suggest that the wealth-health relationship exists only for small segments of the population. In his essay, Keeney presents a distribution showing mortality risk by income.[6] This distribution shows that mortality risk decreases exponentially with increased income. In other words, the mortality risk does diminish with increases in income but at a steadily decreasing rate until, at some income level, the effect of increased income on mortality risk is marginal. Figure 1 illustrates the shape of the relationship between mortality rates and income which Keeney derived from a study of cardiovascular fatalities in Los Angeles from 1979 to 1981. If we agree that a marginal reduction in mortality risk with increased income is .001, then, for males, the increase in income from $15,000 to $20,000 would bring just such a marginal improvement (from .009 to approximately .008). The curve also indicates that the mortality risk for males making $20,000 or more does not vary significantly. The evidence cited suggests that regulatory—or other—costs would have substantial health effects only for lower income families.

[5]Keeney, p. 149.

[6]Keeney, p. 150.

Figure 1: The Relationship Between Income Level and Mortality Rate



Note: Mortality rate is the annual probability of dying per 1,000 individuals.

Source: Equation in R. L. Keeney, "Mortality Rates Induced by Economic Expenditures," Risk Analysis, 10:1 (1980), pp. 150 and 153-4; derived from R. R. Frerichs et al., "Cardiovascular Diseases in Los Angeles, 1975-1981," American Heart Association—Greater Los Angeles Affiliate, Inc. (Los Angeles: 1984).

Completeness and Applicability of the Keeney Model

In his conversation with us, Professor Keeney explicitly noted the numerous caveats in his essay. In addition, he pointed out that the purpose of the essay was to call attention to the possible indirect effects of economic expenditure, not to determine the threshold expenditure at which an additional fatality may occur.

To the extent that "the relationship between higher income and lower mortality rate is induced,"[7] the Keeney model could be viewed as providing a starting point for expanding the scope of factors to consider during the regulatory review process. However, since a simple causal relationship between wealth and health has not in fact been established, the model

[7]Keeney, p. 149.

cannot be used to make general statements about the indirect effects of regulation.

In addition, the model itself is not currently complete or usable. First, to define the form of the wealth-health relationship, Keeney used 1960 data, adjusted for inflation to 1980 levels. Keeney himself has suggested that more current data are needed. More importantly, a different level of economic data is needed. The difficulty here is in the application of a macro theory to segmented populations. Keeney's model relies on macro-level income measures that may not be the best indicator of the indirect consequences of a regulation. OSHA calculated the cost of the air-contaminants regulation for the construction industry to be $145 million.[8] Even in the unlikely event that the entire cost of the rule were absorbed by the workers in that industry (rather than dispersed widely to the general public through increased prices), workers would lose an average of only $29 annually under the more strict regulation.[9] It is highly unlikely that the loss of this sum could seriously affect a worker's health.

Second, the model operates on the assumption that people are indifferent to the manner in which mortality occurs, thus ignoring the public's willingness to pay for actions that reduce mortality and morbidity risk. Our expert panel noted that society's willingness to pay for improved health can vary significantly according to the type of hazard involved. For this reason, a single dollar-threshold should not be applied to all regulatory proposals.

Third, the model does not address morbidity. The direct effects of decreased morbidity associated with the proposed rule have been estimated by OSHA, but the indirect-effect model cannot address this issue. OMB could assume that the indirect effects of regulations on morbidity are proportional to the effects on mortality, but such an assumption appears even more premature than the acceptance of the mortality estimates. Risk experts have indicated that accepting Professor Keeney's number (or anyone else's, for that matter) as the exact expenditure level at which one additional fatality will occur is problematic. To find a similar figure for morbidity would be even more problematic.

[8]OSHA, January 1992, p. V-A5.

[9]This calculation is based on the cost of the regulation for the construction industry cited previously divided by the total number of construction workers, estimated by OSHA to be 5 million. (See OSHA, January 1992, p. V-B2.)

Finally, the model focuses on only two cost measures, and totally ignores indirect benefits. If a cost-benefit analysis of the indirect consequences of a proposed regulation is to be conducted, then the model must include factors on both sides of the equation. Some of the factors that could be included are education, the availability of substitute products from competing industries, savings from technological innovation, the growth of new industries, and changes in consumption levels.

OMB's Interpretation of the Keeney Model

In the case of the Air Contaminants Standard, we believe that OMB has misapplied the Keeney model. Keeney himself clearly points out that the calculations demonstrating the use of his model are for illustrative purposes only. In the section entitled "Illustrative Calculations," he states,

> "These calculations make the assumption that individuals on average use additional disposable income in a manner that reduces health and safety risks and therefore fatalities. The numbers calculated in this section should be considered very preliminary."[10]

OMB's misapplication of the model occurred in two ways. First, the agency's analysis treated the outcomes of Keeney's calculations as universally applicable economic rules. Second, the model was not properly utilized because data appropriate to the specific situation were lacking. Specifically, to determine the additional fatality threshold for the proposed regulation, what are required are separate analyses of the data that show (1) the annual mortality risk as a function of income, (2) the distribution of the annual income of workers prior to experiencing the cost of the regulation, and (3) the relative one-time cost of the regulation to an individual in the affected industries.[11]

Legal Issues

In addition to the problems outlined here with regard to the adequacy of both theory and model and their application by OMB, there are major legal difficulties involved in the use of cost-benefit analysis for this type of regulation. While the use of cost-benefit analysis is permissible in considering safety standards, its use is prohibited in developing health standards—that is, those associated with toxic materials or harmful physical agents—under section 6(b)(5) of the Occupational Health and

[10]Keeney, p. 152.

[11]In his conversation with us, Professor Keeney said that, in his opinion, OMB did not actually apply his model appropriately in making their determination to suspend review of the rule. He did, however, agree with the spirit in which they used it.

Safety Act of 1970. In American Textiles Manufacturers Institute v Donovan, 452 U.S. 490 (1981), often referred to as the Cotton Dust case, the Supreme Court rejected the argument that cost-benefit analysis was required for all standards promulgated under the Occupational Safety and Health Act and concluded that the Congress had intended to exclude health standards from any such requirement. The Court stated: "Congress itself defined the basic relationship between costs and benefits, by placing the 'benefit' of worker health above all other considerations save those making attainment of this 'benefit' unachievable." Subsequent lower court decisions have read the Supreme Court decision as implying that, for health standards, cost-benefit analysis not only is not required but also is not permitted. A 1989 court of appeals decision observed that "OSHA need not, indeed must not, consider cost-benefit criteria in setting toxic-substance standards."[12] In the 1991 decision cited by OMB in support of its requirement of its proposed analysis, the court made it clear that application of cost-benefit analysis did not extend to health standards.[13]

As noted earlier, our analysis has shown that the procedure utilized by OMB is cost-benefit and not risk-risk analysis. Therefore, it appears that application of OMB's proposed analysis to OSHA's Air Contaminants Standard, which is a health standard, is not consistent with the Supreme Court's Cotton Dust decision. (For a more complete discussion of these points, see appendix II.)

Conclusions

As discussed earlier, cost-benefit analysis and risk-risk analysis differ in two important aspects: the scope of the analysis and the measurement of factors. Cost-benefit analysis examines a wide variety of factors that are quantified in monetary terms. Risk-risk analysis is a narrowly focused examination of the risks derived from an intervention compared with those that result from no intervention. We therefore conclude that the analysis conducted by OMB to support suspension of its review of the Air Contaminants Standard is cost-benefit analysis and not risk-risk analysis. As such, it is prohibited under the Occupational Safety and Health Act as inappropriate for a health standard.

[12]National Grain & Feed Ass'n v. OSHA, 866 F.2d 717 (5th Cir. 1989).

[13]International Union, UAW v. OSHA, 938 F.2d 1310 (D.C. Cir. 1991).

Even if it were acceptable to conduct this analysis, however, there are major difficulties associated with the approach that OMB has taken. The causal nature of the relationship between increased wealth and improved health posited by the theory is overstated, and the few empirical data used to support it suggest only a weak relationship. In addition, Keeney's quantification of the theory has been inappropriately applied and does not, in any case, consider the many other direct and indirect effects of regulation. While we strongly support efforts to form more comprehensive and realistic estimates of the effects of government action, we find the application of the procedure that has been termed risk-risk analysis to be seriously flawed.

As you requested, and because of your expedited time frame, we did not ask for written comments on this report from OMB or DOL. We did, however, meet with both agencies at the conclusion of our work to report our findings orally and to request their comments.

The position taken by OMB officials is that the theory underlying the Keeney model discussed here is basically sound but needs further elaboration. They disagreed with our statement that they had applied the Keeney model to the OSHA case. Instead, they stated that they had not applied any analytic model in their response to the proposed OSHA standard but rather had simply "raised questions" about some possible effects of the standard that OSHA had not addressed.

We do not believe OMB's action is mischaracterized as "applying the Keeney model." OMB did in fact suspend regulatory review of the proposed OSHA regulation, citing the Keeney model among its reasons for so doing and concluding that "the $163 million annual cost of the PEL update rule will result in approximately 22 additional deaths per year."[14] We believe this is clear evidence of an application of the model to the OSHA proposed rule.

In discussing the model's analytic procedure, OMB officials agreed that it should not be termed "risk-risk analysis" but disagreed with our conclusion that it is cost-benefit analysis. When we requested a more detailed written discussion of how OMB would define cost-benefit analysis, or how OMB might classify the Keeney model procedures, the OMB officials offered to provide this information to us but said that it would take some time to do so. In the absence of convincing arguments to the contrary,

[14]MacRae, p. 2.

therefore, we maintain our position that the procedures used do in fact constitute the type of cost-benefit analysis that has been prohibited by the courts for health standards.

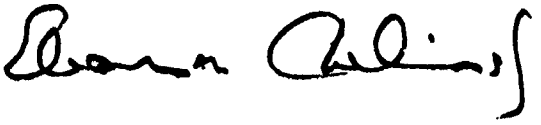
At our meeting, OMB officials declined to address the legal issues associated with the model's use in considering a health standard, but did disagree with our position that it effectively associated a monetary value with human life.

We also met with DOL to inform them of our findings and request their comments. At this meeting, DOL officials asked a number of clarifying questions but did not offer substantive comments or express disagreement with our findings.

Our work was performed in accordance with generally accepted government auditing standards.

If you have any questions or would like additional information, please call me at (202) 275-1854 or Kwai-Cheung Chan, Director of Program Evaluation in Physical Systems Areas, at (202) 275-3092. Other major contributors to this report are listed in appendix III.

Sincerely yours,



Eleanor Chelimsky
Assistant Comptroller General

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Abbreviations

DOL	Department of Labor
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
PEL	Permissible exposure limit

Risk-Risk Analysis Panelists

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Resources for the Future
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Professor Lester Lave
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Dr. Joseph Rodricks
Environ Corporation
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Professor Richard Wilson
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Legal Analysis

QUESTION: To what extent is the application of so-called risk-risk analysis to the proposed air contaminant standard consistent with the Occupational Safety and Health Act as interpreted by the Supreme Court in American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490 (1981)?

ANSWER: The Supreme Court held in American Textile Mfrs. that the Occupational Safety and Health Act does not require a cost-benefit analysis as a precondition to the promulgation of standards for toxic materials and harmful physical agents (health standards). The proposed air contaminant standard is a health standard. Thus, cost-benefit analysis of the standard is not required under the Act.

The Supreme Court did not directly decide in American Textile Mfrs. whether the Act prohibits cost-benefit analysis of health standards. The Office of Management and Budget (OMB) has argued that cost-benefit analysis to determine the feasibility of a proposed health standard, such as the air contaminant standard, while not required, is permitted. OMB also suggests that what it refers to as risk-risk analysis—in which negative health effects of a regulation are taken into account along with positive health benefits—differs from cost-benefit analysis and, therefore, is not prohibited by the Supreme Court's decision, even if the decision were construed to prohibit cost-benefit analysis.

The only courts to address the issue have both concluded that, under the Supreme Court's decision, cost-benefit analysis may not be used to determine whether to promulgate a health standard. The decision relied on by OMB to support its position that risk-risk analysis is proper in connection with the air quality standards discusses the usefulness of risk-risk analysis, but in the context of safety standards, for which all concede that cost-benefit analysis is appropriate. The case does not hold that such analysis is a permissible technique for health standards. For a risk-risk analysis to be permissible, therefore, when considering health standards, it must be shown that it is a form of analysis quite distinct from cost-benefit analysis, rather than merely a variant of such analysis (see the discussion in the main body of the letter).

A detailed discussion follows.

Background

Introduction

The Department of Labor (DOL) is required under section 6 of the Occupational Safety and Health Act (OSH Act) to promulgate health and safety standards for affected workers in the United States. 29 U.S.C. § 655. On February 18, 1992, DOL submitted, on behalf of the Occupational Safety and Health Administration (OSHA), a draft regulation to the Office of Management and Budget (OMB), for review pursuant to Executive Order 12291. The draft regulation, "Air Contaminants Standard in the Construction, Maritime, Agriculture, and General Industries," represents the latest stage in OSHA's attempt to establish these standards.

Executive Order 12291 requires, in instances where an agency intends to promulgate major new regulations or to review existing regulations, that the agency prepare a Regulatory Impact Analysis. Among the purposes of the Order, set forth in section 2, are, to the extent permitted by law, to assure that administrative decisions are based on adequate information concerning the need for and consequences of the proposed regulation, to choose regulatory objectives so as to maximize the net benefits to society, and to choose the regulatory approach involving the least net cost to society.

Section 3 of the executive order implements section 2. Section 3(d) requires that the Regulatory Impact Analysis contain a description of the potential costs and benefits of the rule, including beneficial and adverse effects that cannot be quantified in monetary terms, and that the Analysis arrive at a "determination of the potential net benefits of the rule." Any "legal reasons why the rule cannot be based on the requirements set forth in Section 2" must be explained.

On March 10, 1992, James B. MacRae, Jr., Acting Administrator, OMB Office of Information and Regulatory Affairs, (OIRA), suspended OMB's review. Mr. MacRae informed DOL that its Regulatory Impact Analysis had omitted consideration of the effect on workers of the costs of compliance with the rule. Specifically, he found that OSHA's analysis had been limited to a description of the effects of compliance on firms' sales and profits, but failed to answer the question of how compliance would affect workers' "employment, wages, and therefore, health . . . ." He said further that "[t]he positive effect of wealth on health has been established both theoretically and empirically."

Referring to a decision of the Court of Appeals for the District of Columbia Circuit, Mr. MacRae's letter to DOL asserted that each $7.5 million in additional regulatory expenditures in an industry may result in an additional death. International Union, UAW v. OSHA, 938 F.2d 1310 (D.C. Cir. 1991). The premises for this conclusion are that the regulatory expenditures force the industry either to increase prices to the consumer or to lower wages (or some combination of the two); consumers or workers then have less money for medical care; and the result is poorer health and, potentially, death among the consumers or workers. OMB projected, therefore, that the $163 million in annual costs of the air contaminants rule would result in 22 additional deaths, more than offsetting the 8 to 13 deaths OSHA believes the rule would prevent.

In testimony before the Senate Committee on Governmental Affairs on March 19, Mr. MacRae elaborated on the theory in his letter, calling it a "risk-risk" analysis. He clarified that the source of the suggestion that for every $7.5 million of costs generated by additional regulation the result may be an additional death was a concurring opinion in International Union, UAW v. OSHA. He asserted that the decision of the Supreme Court in American Textile Mfrs., discussed below, does not bar OSHA from inquiring into the net effect of regulations on worker health.

Occupational Safety and Health Act

Congress declared its purpose in enacting the Occupational Safety and Health Act of 1970, Pub. L. No. 91-596, 29 U.S.C. § 651-678, to be "to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources . . . ." 29 U.S.C. § 651(b). To this end, the Act delegates broad authority to the Secretary of Labor to promulgate occupational safety and health standards.

Section 3(8) of the OSH Act, 29 U.S.C. § 652(8), defines "occupational safety and health standard" as:

> "a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment."

Where health standards—those associated with toxic materials or harmful physical agents—as opposed to safety standards, are concerned, they must also comply with section 6(b)(5) of the Act, 29 U.S.C. § 655(b)(5), which directs the Secretary to:

"set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity. . . ."

Thus, while section 3(8) is applicable to all standards, whether related to health or safety, section 6(b)(5) specifically governs health standards, those associated with toxic materials or harmful physical agents.[1] The air contaminants standard at issue here is a health standard.

Court Decisions

I

The Supreme Court has examined the relationship between section 3(8) and section 6(b)(5) of the OSH Act twice as it pertains to promulgating standards and cost-benefit analysis.

In the first case, Industrial Union Department, AFL-CIO, v. American Petroleum Institute, et al., 448 U.S. 607 (1980), (the Benzene Case), the majority avoided the issue of whether a cost-benefit analysis was required by either section 3(8) or section 6(b)(5). Five justices agreed, for reasons not related to cost versus benefit (although not all for the same reasons), that OSHA's benzene standard should be struck down. It was therefore unnecessary to reach the question whether, under section 6(b)(5), the benefits of a regulation must be weighed against its costs.

A dissenting opinion by Justice Marshall, joined by three of his colleagues, would have upheld the proposed standard. The dissent concluded that a cost-benefit analysis is not required under the OSH Act for health standards. Id. at 719.

One year later, the four dissenters in the Benzene Case joined by a fifth justice became the majority in American Textile Manufacturers Institute, Inc. v. Donovan, 452 U.S. 490 (1981) (the Cotton Dust Case). This time the Court addressed the cost-benefit issue squarely.

[1]OSHA interprets section 6(b)(5) as applicable only to health standards, which it views as coextensive with standards governing latent hazards, such as carcinogens, undetectable to the casual observer because they are subtle, and develop slowly or after latency periods. Safety standards address hazards that cause immediately visible physical harm. International Union, UAW v. OSHA, 938 F.2d 1310, 1313 (D.C. Cir. 1991).

Justice Brennan, writing for the majority in the Cotton Dust Case, concluded that a cost-benefit analysis was not required by section 6(b)(5). Section 6(b)(5) directs the Secretary to issue the standard that "most adequately assures...that no employee will suffer material impairment of health," limited only by the extent to which this is feasible. The majority, drawing on the definition of "feasible" as "capable of being done," said that

"Congress itself defined the basic relationship between costs and benefits, by placing the 'benefit' of worker health above all other considerations save those making attainment of this 'benefit' unachievable. Any standard based on a balancing of costs and benefits by the Secretary that strikes a different balance than that struck by Congress would be inconsistent with the command set forth in § 6(b)(5). Thus, cost-benefit analysis by OSHA is not required by the statute because feasibility analysis is."

452 U.S. at 509.

The majority noted that when Congress has intended an agency to engage in cost-benefit analysis, it has clearly indicated that intent on the face of the statute. Id. at 510. That was not done here. In examining the legislative history of the OSH Act, the majority noted

"the absence of any indication whatsoever that Congress intended OSHA to conduct its own cost-benefit analysis before promulgating a toxic or harmful physical agent standard. The legislative history demonstrates conclusively that Congress was fully aware that the Act would impose real and substantial costs of compliance on industry, and believed that such costs were part of the cost of doing business."

Id. at 514.

Rejecting, therefore, the argument that Congress required cost-benefit analysis under section 6(b)(5) for standards dealing with toxic materials or harmful physical agents, the majority looked to section 3(8) to decide if that section imposed such a requirement. Although the language of section 3(8) might be construed to contemplate some balancing of costs and benefits, the majority declined to conclude that it countermanded the specific feasibility requirement for health standards of section 6(b)(5):

"[A]s the legislative history makes plain . . . any standard that was not economically or technologically feasible would a fortiori not be 'reasonably necessary or appropriate' under [section 3(8) of] the Act. . . .

"This is not to say that § 3(8) might not require the balancing of costs and benefits for standards promulgated under provisions other than § 6(b)(5) of the Act."

Id. at 513, n. 31 and n. 32.

In a dissenting opinion, Justices Rehnquist and Burger interpreted the majority's opinion as concluding, with respect to section 6(b)(5), that "the Act does not require the Secretary to engage in a cost-benefit analysis, which suggests of course that the Act permits the Secretary to undertake such an analysis if he so chooses." Id. at 544 (emphasis supplied). Although agreeing with the majority that interpretation of the phrase "to the extent feasible" is critical to this case, the dissenters believed that it masked a fundamental policy disagreement in the Congress over whether the Secretary is mandated, permitted, or prohibited from undertaking a cost-benefit analysis. They concluded, therefore, that section 6(b)(5) amounted to an unconstitutional delegation of legislative authority to the Executive Branch.[2]

II

In the decade since the Cotton Dust Case, two Courts of Appeals have read it as implying that, for health standards promulgated under section 6(b)(5), cost-benefit analysis is not only not required, but is not permitted.

In Building and Construction Trades Department, AFL-CIO v. Brock 838 F.2d 1258 (D.C. Cir. 1988), a unanimous three-judge panel upheld OSHA's findings that a prior permissible exposure level to asbestos fiber posed a "significant risk" to health, and that a new stricter standard was feasible. As a preliminary matter, the court described the Cotton Dust Case:

"In Cotton Dust the Court held that the 'feasibility' standard of § 6(b)(5) does not require the Secretary to balance cost and benefit in defining a standard, and clearly manifested the Court's belief that the Act did not permit the Secretary to do so." (Emphasis supplied.)

838 F.2d at 1264.

This conclusion was dictum: that is, it was not necessary to decide the case and therefore would not be regarded by a subsequent court as a binding

[2]In a separate dissent, Justice Stewart said that it was not necessary to address the issue of the need for a cost-benefit analysis because DOL had failed to meet the requirement that it show that the proposed standard was economically feasible.

precedent.[3] Nevertheless, this reading of the Cotton Dust Case is entitled to some weight, especially in the absence of any contrary precedent.

The Court of Appeals for the Fifth Circuit, in National Grain and Feed Ass'n. v. OSHA, 866 F.2d 717 (5th Cir. 1989), reached the same conclusion—that section 6(b)(5) precludes cost-benefit analysis—although, again, as dictum (because the hazard in this case was held not to be subject to section 6(b)(5)). The court described the Cotton Dust Case as holding that "OSHA need not, indeed must not, consider cost-benefit criteria in setting toxic-substance standards." 866 F.2d at 730 (emphasis in original).

In support of its position that risk-risk analysis is permitted for the air contaminant standards, OMB relies on International Union, UAW v. OSHA, 938 F.2d 1310 (D.C. Cir. 1991). The court in International Union decided that section 3(8), "outside the § 6(b)(5) realm," may reasonably be read as providing for cost-benefit analysis. The court makes clear that its conclusion does not extend to health standards under section 6(b)(5), the part of the OSH Act that applies to the air contaminant standards.

In his separate concurring opinion, Judge Williams raises the idea of what OMB calls risk-risk analysis, although he calls it cost-benefit analysis. He elaborates on the idea that cost-benefit may go beyond merely the direct costs and benefits of the regulation. Attempting to link lower incomes to poorer health and increased mortality, Judge Williams cites several studies, one of which "suggests that each $7.5 million of costs generated by regulation may, under certain assumptions, induce one fatality." (He alludes to a figure of $12 million per fatality from the same study.) He concludes that "[i]ncremental safety regulation reduces incomes and thus may exact a cost in human lives." Id.

[3]The industry in this case argued that cost-effectiveness was relevant in the sense that, given a choice between its method of achieving the required level of safety and OSHA's, the less expensive one should be implemented. The court acknowledged that the industry's argument seems consistent with the statutory requirement that OSHA do what is "reasonably necessary" to assure workers' safety and health. However, the court found it unnecessary to decide the question because neither OSHA's method nor that of the industry reached the statutory goal of eliminating significant risk. 838 F.2d at 1269.

Discussion

In the case of a standard dealing with toxic materials or harmful physical agents—that is, a safety standard—the Supreme Court made clear in the Cotton Dust Case that, having determined that a significant risk to health exists, OSHA must act to reduce the hazard if it is "feasible" to do so. The court also explained that what is feasible is not to be derived from balancing benefits and costs, but by assessing whether the risk is capable of being eliminated without putting the industry out of business.

Two courts of appeals have interpreted the Cotton Dust Case as implying that section 6(b)(5) of the OSH Act not only does not require OSHA to use cost-benefit analysis in establishing health standards, but in fact prohibits it from doing so. (These courts have reached this conclusion despite a suggestion to the contrary in the dissent in the Cotton Dust Case.) We have not found any opinions offering a different interpretation.

The decision on which OMB relies to support its call for DOL to provide a risk-risk analysis in connection with the proposed air contaminants standard, International Union v. OSHA, is not relevant. The court concluded in that case that cost-benefit analysis was permissible, but under section 3(8), not section 6(b)(5).

The Cotton Dust Case, the two lower court decisions referred to above, and the air contaminants standard now at issue, all involve health standards under section 6(b)(5). As noted above, under that section, cost-benefit analysis is not required (and, according to the courts of appeals, is not permitted.) Nothing in International Union is inconsistent with that conclusion. Indeed, the same judge who said in Building and Construction Trades, supra, that under the Cotton Dust Case cost-benefit analysis is prohibited in connection with health standards under section 6(b)(5), wrote in International Union that such analysis is permissible in connection with safety standards under section 3(8).

OMB's position leads to a result that, at least as a practical matter, is anomalous. It is difficult to justify delaying issuance of the air contaminants standard in order to conduct an analysis that OSHA is not permitted to consider in deciding whether to adopt the standard.

OMB asserts, however, that undertaking what it terms risk-risk analysis—considering the net effect of regulations on worker health—is not cost-benefit analysis, and thus is not prohibited by the Cotton Dust decision. As discussed in the main body of this letter, however, what OMB terms risk-risk analysis is not qualitatively different from the kind of

cost-benefit analysis that those courts that have squarely addressed the issue have said is not permitted by the OSH Act.

International Union, the case relied on by OMB, does not support the proposition that a clear distinction exists between cost-benefit analysis and risk-risk analysis, or that risk-risk analysis is not a type of cost-benefit analysis. In fact, the court in International Union uses the term cost-benefit analysis to describe a process much like what OMB calls risk-risk analysis. However, the court indicated that this analysis was permissible with respect to section 3(8) but not section 6(b)(5).[4]

Therefore, we believe that application of OMB's risk-risk analysis to OSHA's air contaminant standard, a health standard, is not consistent with the Supreme Court's Cotton Dust decision.

[4]"In an industry providing a good for which there are no close substitutes . . ., firms would be scarcely affected at all [by the cost of complying with a safety standard under section 3(8)]: their reactions would be some combination of avoiding the costs by substituting equipment for labor, passing the costs back to labor in the form of reduced wages, and passing them forward to their customers in the form of higher prices. We do not understand why one should call an analysis 'cost-benefit' if it disregards costs borne by workers and consumers." International Union, UAW v. OSHA, 938 F.2d at 1320.

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