

## BRIEFLY NOTED

# Changing Rule Estimates

BY SAM BATKINS AND MITCH BOYNTON

The regulatory process is consistently criticized by many observers for being opaque, political, and unaccountable. A rule's development can stretch years between its initial proposal and final publication. The Office of Information and Regulatory Affairs (OIRA) plays a central role in the regulatory process through its authority to review and "authorize" rules from executive agencies. It has, therefore, also been central to the debate over how proposed rules change as they move through the process.

Public interest advocates suggest that OIRA is mostly attentive to the concerns of business and therefore attempts to weaken rules by delaying their implementation, diluting their provisions, and substituting its own judgment for that of the initiating agency. On the other hand, conservatives complain that OIRA merely rubber-stamps agency action, delaying but rarely vetoing rulemakings that would fail a cost-benefit test.

Neither side currently has overwhelming empirical evidence to support its position. What quantitative research there is on OIRA's effect on proposed rules tends to focus on the final finding of the review, whether "approved without change," "approved with change," or (rarely) "returned" to the agency for further analysis. The Center for Progressive Reform, a pro-regulation group, found that OIRA changed up to 84 percent of health and safety rules. Regardless of whether such changes are decried for reducing safety or hailed for promoting efficiency, existing research offers some support for the view that OIRA does revise the content of proposed rules.

But those studies do not offer a means to assess the practical effect of the OIRA altera-

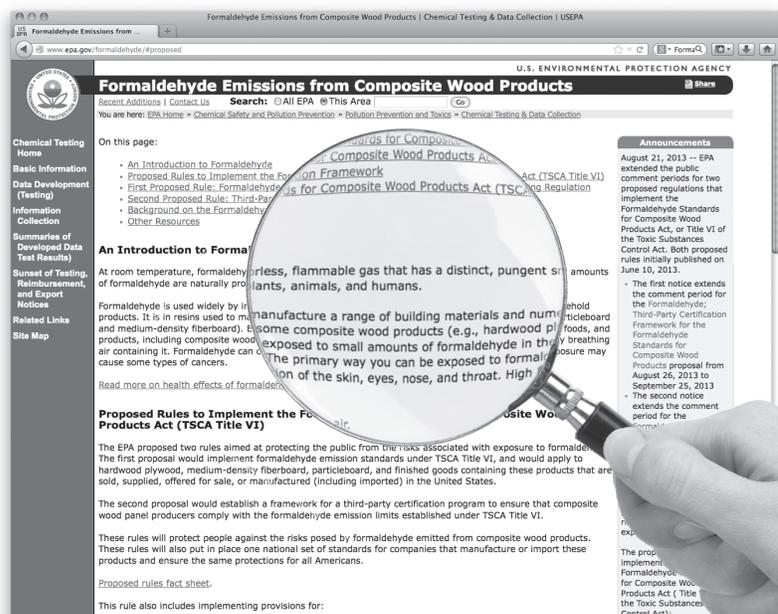
tions. Simply recording percentages of rules "changed" by OIRA fails to account for what sort of changes are made. "Approved with change" is a broad category that could contain anything from minor technical tweaks to removal of entire provisions. Claims that OIRA consistently deflates benefits, inflates costs, and hollows out public health and safety measures ignore the diversity and complexity inherent in a system producing thousands of rules each year. While critics can point to notable examples when OIRA review did produce such changes, it is questionable whether those anecdotes constitute a pattern.

To develop a better understanding of OIRA's effect on rulemaking, we conducted a review of the changes in cost and benefit

estimates between proposed and final rule-making stages. This study provides a better measure of the gravity of rule changes and adds empirical grounding to a debate driven overwhelmingly by competing anecdotes.

**Changes in Cost /** We analyzed 160 final rules (excluding routine Federal Aviation Administration regulations) published in 2012 and 2013 that underwent some form of review. OIRA reviewed 111 of those rules, while independent agencies produced (and reviewed) the other 49. According to our analysis, the average net change in cost between the proposed and final rules was an *increase* of \$137.1 million. The average percent change was an increase of 401 percent. However, a few rules with dramatic cost increases artificially elevated the averages.

A plurality of rules had increased costs: 74 (46 percent) had higher costs in the final stage than when originally proposed; 46 (28 percent) had lower costs; and 40 had no change (25 percent). In the aggregate, the positive changes represented increased costs of \$35.6 billion (an average change of \$481 million) while the negative changes decreased costs by \$13.7 billion (an average



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decrease of \$297 million). Thus, while cost estimates are more likely to increase than decrease during the rulemaking process, the direction of change is not exclusively positive.

Differences between the proposed and final rule can arise from a variety of factors. Changes may be caused by the addition of analyses not present in the proposed form (such as determining “major” rule status under the Congressional Review Act). Or analyses may have been present in the original edition of the rule, but were updated as new information became available. In either scenario, the actual content of the rule is unchanged, with the increase in costs reflecting procedural decisions by agencies and OIRA. Finally, cost and benefit changes could reflect substantive alterations to the actual content of the rule. Because of those different possibilities, it is unclear whether increasing cost estimates should be applauded as a more accurate accounting of the rules’ effects or decried as a gradual expansion of rules’ reach over time.

**Cost Changes by Agency** / When possible, net changes were considered on an agency-by-agency basis. Few agencies produced enough final rules in the period studied to allow for meaningful conclusions, but financial regulators (in the Consumer Financial Protection Bureau, Commodities Futures Trading Commission, Securities and Exchange Commission, and Department of the Treasury), health care regulators (in the Department of Health and Human Services and the Centers for Medicare and Medicaid Services) and the Environmental Protection Agency all had sufficiently large sample sizes (more than 25).

The first column of Table 1 presents the raw average percentage change in a proposed rule’s estimated cost. The next column, “adjusted average,” excludes the three rules with the largest percent changes in each category, so as to better capture the typical change.

The difference between the two columns confirms that the data are subject to a large amount of variability. The finance rules had the largest disparity in percentage

**TABLE 1**  
**CHANGE IN ESTIMATED COST**

Average percentage change of a proposed rule’s estimated cost by regulatory sector

REGULATED INDUSTRY	AVERAGE	ADJUSTED AVERAGE
Finance	1,691%	6.7%
Health	143%	48.2%
Environment	41.3%	-17%

changes, as shown by the dramatic reduction between the average and the adjusted average. The dispersion in the other two areas was not nearly as pronounced.

The HHS generally seems to have the largest cost increases between proposed and final stages. Social regulations often have wide scopes, which could explain the agency’s difficulty in accurately projecting costs. Despite its reputation for producing costly rules, the EPA’s cost estimates appear to remain stable throughout the process, in what might be a testament to OIRA’s effectiveness.

**Explaining Differences in Cost Changes** / Size is one factor that could logically affect the extent to which rules change. We expected that larger rules would experience larger net changes because their higher costs allow for changes of greater magnitude (e.g., a \$1 billion rule should have a greater ability to change by \$1 million than a \$2 million rule). We also expected that they would have larger percentage changes because larger and more expensive rules should be subjected to more scrutiny by OIRA and outside interests during the rulemakings process. However, there is no evidence to support either of those ideas. Regression analyses do not reveal any correlation between proposed cost and either net or percent change.

One of the reasons given for why larger and more important rules may experience greater changes in cost between their proposed and final stages is that OIRA would subject them to more extensive review. If OIRA subjects a rule to a prolonged review process, it is logical to infer that the delay is due to substantive changes to the rule. But when length of OIRA final rule review

is applied as an explanatory variable, it is not correlated with either percentage or net change. There are also no conclusive results if proposed rule length is used.

OIRA is often specifically criticized for reviews that extend beyond the general limit of 90 days. But rules subjected to a final review longer than 90 days actually experienced an average percent change in cost *below* the overall average. Critics may have other reasons to chastise OIRA for lengthy rule reviews (such as contending that delays expose the public to needless risk), but there is no statistical evidence that OIRA is unduly distorting the cost and benefit calculus of rules by holding them for a longer period.

**A Tale of Two Regs** / Last year, the EPA released proposed rules regulating “Formaldehyde Emissions” from wood products. The regulations spent more than a year at OIRA and generated plenty of progressive outrage. Georgetown University law professor and noted environmental law commentator Lisa Heinzerling charged that part of the delay may have come from OIRA lowering the purported benefits of the measure. The high-end estimate of benefits decreased from \$278 million to \$48 million, but some cost estimates also declined slightly, from \$89 million to \$81 million.

Heinzerling raised questions that have lingered since the existence of OIRA. There is anecdotal, and now comprehensive, evidence of wide variances in the pre- and post-OIRA-review benefit and cost estimates, but little is known about why agencies or OIRA alter such figures.

Another example shows cost estimates falling off the charts, but again little evidence exists to explain the drops. The HHS issued a rule under the Patient Protection and Affordable Care Act (PPACA), “Notice of Benefit and Payment Parameter for 2014,” that originally had \$3.2 billion in long-term costs and more than 10.7 million annual paperwork burden hours. The final payment parameter rule underwent one of the largest decreases in our sample. The number of paperwork hours declined from 10.7 million to just over 1

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million, with roughly \$3 billion in total costs disappearing. That was caused by the removal of more than 9 billion responses (not a typo) under OMB Control Number 0938-1155. The result lowered annual paperwork compliance from \$672 million to just \$89 million.

This obviously had profound changes for the overall cost-benefit calculus. At a 3 percent discount rate, the proposed rule would have imposed \$529 million in annualized costs during five years. The final rule imposed \$70 million in annualized costs. Progressives might complain about the shrinking benefits estimate, but an 87 percent drop in costs also deserves an explanation, especially when the amount of regulatory text codified in the *Code of Federal Regulations* increased during the rulemaking. Even more puzzling, the final rule produced annual paperwork compliance costs of \$89 million, while total

annualized costs were just \$70 million.

The HHS didn't offer much guidance in the regulatory text explaining the elimination of the 9 billion responses: "Although we had previously accounted for this estimate as a new administrative cost to issuers in the proposed rule, we are not doing so in the final rule because it is not an incremental cost that issuers will incur as a result of the provisions in this final rule." That explanation suggests a 9-billion-response error in the proposed rule analysis, not a radical drop in the requirements imposed by the PPACA rulemaking.

There are likely no "smoking gun" red-line edits from OIRA explaining the changes in the payment parameters rule, but the proposed rule spent only eight days at OIRA and the final rule was under review for 19 days. In fact, the entire rulemaking, from initial review at OIRA to discharge of the final rule, took approximately three

months. Economically significant rules can often have a comment period of three months, so perhaps the quick pace of the rule is another cautionary tale to regulators: try to rush rules and the analysis will suffer.

**The "OIRA 14"** / OIRA listed 14 major rules with quantified costs and benefits in its 2013 Draft Report to Congress. As OIRA attempts to provide an overall picture of the annual rulemaking activity, it is important that those rules accurately reflect the characteristics of the broader set of published rules. Table 2 presents the changes that the major rules underwent during their creation.

The most striking observation from the "OIRA 14" is the general direction of the changes. In the overall data set of rules we examined, roughly half increased in cost; among the OIRA 14, only three did so, while half decreased. The average percentage change for the OIRA 14 is -3 percent, reflecting both the small magnitude and the general negative direction of the changes.

TABLE 2  
OIRA REVIEWED RULES

2013 Draft Report to Congress

RULE	RIN	PROPOSED COST (in millions)	FINAL COST (in millions)	NET CHANGE	PERCENTAGE CHANGE
Administrative Simplification: Standards	0938-AQ11	N/A	\$3	N/A	N/A
Administrative Simplification: Health Plan	0938-AQ13	\$532	\$532	\$0	0%
Adoption of Operating Rules for Health Care Electronic Funds Transfers	0938-AR01	N/A	\$262	N/A	N/A
Hazard Communication	1218-AC20	\$79	\$193	\$113	143%
Standards for Organisms in Ships' Ballast	1625-AA32	\$134	\$74	-\$60	-45%
Standards for Fluorescent Lamp Ballasts	1904-AB50	\$357	\$407	\$50	14%
Standards for Residential Clothes Washers	1904-AB90	\$173	\$173	\$0	0%
Standards of Performance for Petroleum Refineries	2060-AN72	\$83	\$69	-\$13	-16%
MATS (Utility MACT)	2060-AP52	\$9,310	\$8,200	-\$1,110	-12%
Oil and Natural Gas Sector: NSPS	2060-AP76	\$647	\$162	-\$485	-75%
CAFE for 2017 and Later Model Year Vehicles	2060-AQ54	\$8,665	\$8,828	\$163	2%
National Registry: Medical Examiners	2126-AA97	\$516	\$282	-\$234	-45%
Hours of Service of Drivers	2126-AB26	\$401	\$393	-\$8	-2%
Positive Train Control Systems (RRR)	2130-AC27	\$21	\$21	\$0	0%

**Benefits** / Many rulemakings that contain cost estimates are unable to quantify benefits. There were only 14 major rules with both proposed and final benefit numbers in Fiscal Year 2012, so all benefit trends must be viewed in light of the small universe. Seven (50 percent) of the rules had increases from proposed to final, four (28 percent) had decreases, and three (21 percent) had no change—ratios similar to those found for the cost changes. The average net change was a decrease of \$2.4 billion, but the median net change was a decrease of just \$105 million, suggesting that benefits do not tend to decrease as drastically as initially suggested by the average. The average percentage change in benefits is 14 percent, smaller than the average change in costs (401 percent). The direction of change for benefits is similar to that of costs. Thus, suggestions that OIRA systematically reduces benefits and inflates costs are not supported by this analysis.

**Comparing Executive and Independent Agencies** / We were able to highlight the

effect of OIRA by comparing executive and independent agencies. One of the major distinctions between the two types of agencies is eligibility for OIRA review. Exempting independent agencies from OIRA's oversight is intended to eliminate a tool the chief executive could otherwise use to constrain their behavior.

The average percentage change in costs for executive agencies was 116 percent. For independent agencies, it was 1,068 percent. The difference is statistically significant at the 90 percent level. Independent agencies tend to increase cost estimates more than executive agencies.

As noted earlier, interpreting the results is made difficult by the inability of the data set to account for why the rules' figures are changing. One possibility is that OIRA review prevents executive agencies from adding new and expensive sections to their rules after the proposal stage.

More likely, the mandatory analyses that executive agencies must conduct before submitting their proposals for OIRA review, especially when creating a "major" rule, require the agencies to collect more substantial information earlier in the process. Therefore, their original cost estimates reflect a more rigorous and complete consideration of the rule's effect, making them less susceptible to major alterations because of new information. Also, if independent agencies do not conduct a full cost-benefit analysis at the time of a proposed rule, but add a more complete accounting of the rule's effect by the final stage, the delayed analysis will result in dramatic increases.

Thus, even if OIRA does not directly constrain executive agencies from making their rules more complex and costly, it may influence their behavior by forcing them to gather more information in the initial stages of rulemaking. Causing cabinet agencies to be more aware of the probable consequences of their decisions should lead them to craft better regulations by choosing the least burdensome alternative to achieve the regulatory end.

In addition, there is value in proposing an initial cost-benefit analysis. It enables the

regulated parties to begin to develop expectations about the economic effect of the new rule and to provide more informed input on compliance costs, because they are aware of what the agency is and is not considering. By omitting the initial analyses, independent agencies hinder the ability of the public to understand the costs of the regulation and discuss its consequences.

**Conclusion** / Rules tend to increase in estimated cost between their proposed and final stages. Benefits are equally likely to increase, but the percentage change in benefits tends to be smaller than the percentage change in costs. This analysis finds that benefits and costs increase in similar proportions. It challenges assertions that regu-

latory review only serves to shrink benefits.

Specific subsets of data reveal interesting patterns. The 14 rules included in OIRA's 2013 Draft Report to Congress are much more likely to decrease in costs and change by a smaller magnitude than the overall sample. In addition, when examined by agency or sector, HHS rules show consistent increases, while financial sector rules tend to increase in a much less reliable fashion. Finally, rules proposed by independent agencies tend to increase in estimated cost almost 10 times as much as those from the executive departments. The disparity speaks to the value OIRA provides in helping cabinet agencies to carefully consider costs and benefits from the outset. R

## OSHA's Long-Awaited Crystalline Silica Rule

◆ BY SUSAN E. DUDLEY

**T**he Occupational Safety and Health Administration recently sought comment on proposed standards to reduce occupational exposure to respirable crystalline silica. The agency faces multiple challenges in devising a regulatory approach that will meet its statutory goal of reducing significant risk. In a comment filed on

the public record, University of Alabama law professor Andrew Morriss and I recognize OSHA's challenges; however, we find that the greatest obstacle to reducing risks associated with silica exposure is not lack of will (on the part of employers or employees), but rather lack of information. Our analysis concludes that the proposed rule will contribute little in the way of new information and, indeed, may stifle the necessary generation of knowledge by precluding flexibility for experimentation and learning.

**Almost 40 years in the making** / Prolonged workplace exposure to free crystalline

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silica is associated with scarring of the lungs, leading to silicosis—a progressive, incurable disease that impairs respiratory function. Yet, silica is ubiquitous. Also called silicon dioxide or (more commonly) quartz, crystalline silica is the second most common mineral in the earth's crust and occurs abundantly in sand, soil, and rock. It is used to manufacture a wide variety of materials, including glass, concrete, and abrasives. Google "silica" and you'll find ads extolling its benefits as a nutritional supplement and beauty treatment.

OSHA first established a maximum permissible exposure level for crystalline silica in 1970 by adopting a consensus industry standard. Unfortunately, the form of that standard was obsolete by the time it was

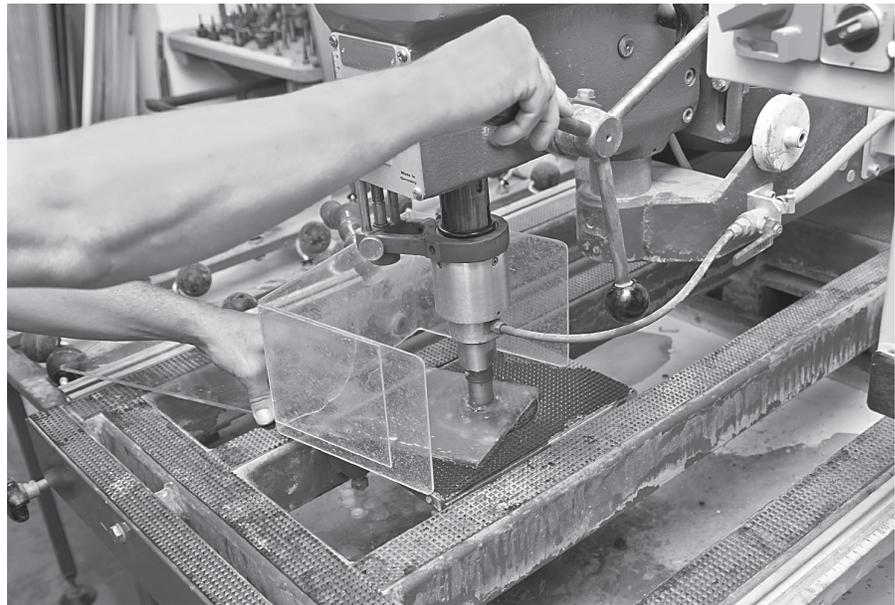
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adopted, and OSHA issued an advance notice of proposed rulemaking to modify it in 1974, but took no further action.

Then, in 1994, OSHA identified crystalline silica as one of a few top-priority safety and health hazards, and, two years later, the International Agency for Research on Cancer concluded that “crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans.” In 1998, OSHA listed regulation of silica on its semi-annual agenda of upcoming regulatory actions and, by the fall of 1999, set a deadline of June 2000 for issuing a proposed rule. The agency missed that deadline.

In 2002, OSHA set a new deadline of November 2003 and listed the proposed rule as one of its top priorities. This deadline kept slipping, however, until February 2011, when OSHA sent a draft of the rule to the Office of Information and Regulatory Affairs for interagency review. The review took an unusually long 2.5 years to complete and culminated in OSHA publishing a proposal on its website on August 23, 2013. The agency then granted several extensions to the comment period, which ultimately closed this past February, followed by public hearings in March.

OSHA’s proposal has been greeted



with enthusiasm by labor unions and organizations such as the American Thoracic Society, and criticism by builders and contractors who express concern that the rule would impose unnecessarily prescriptive and costly requirements. (OSHA estimates the rule will cost \$637 million per year.) In a twist that can only heighten discord, OSHA realized after conducting a preliminary regulatory impact analysis that its proposal would affect an industry it had not previously considered: hydrau-

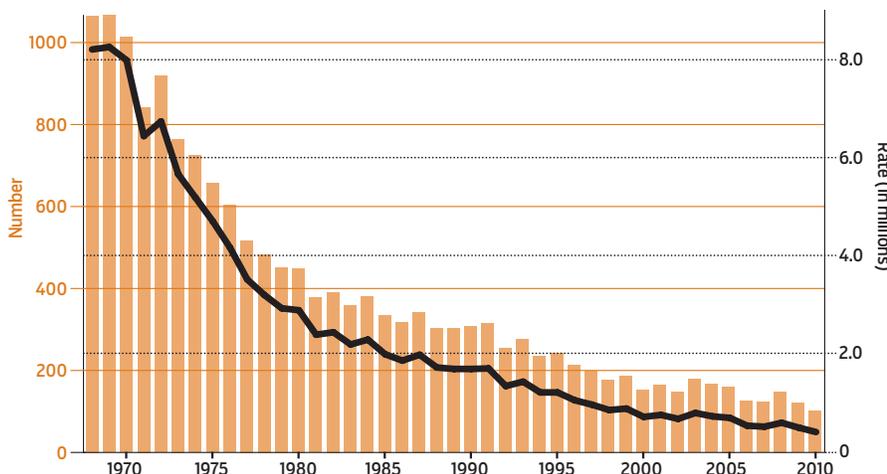
lic fracturing, or “fracking,” which is the subject of heated political debate.

**Unrealistic benefit estimates** / Our comment focused on OSHA’s estimated benefits of the proposal. The agency estimates that “the proposed rule will save nearly 700 lives and prevent 1,600 new cases of silicosis per year.” But those figures, as well as OSHA’s conclusions that crystalline silica poses a significant risk and that its proposed controls will substantially reduce that risk, are based on data that are at least a decade old. They also ignore evidence (such as the trends shown in Figure 1 of data from the Centers for Disease Control and Prevention) that adverse health effects from silica exposure have declined dramatically over the past 45 years.

Contrary to the observed trends, OSHA’s determination of the significance of the risk and its estimates of the risk reduction potential of the proposed regulation implicitly assume that, without the implementation of the agency’s proposed regulation, exposure and health effects would remain as they were over a decade ago. Not only is this analytical approach certain to overstate the risk-reduction benefits attributable to the rule, but it misses opportunities to identify and encourage successful risk-reducing practices. Despite using an unrealistic baseline assumption of no further reduction

FIGURE 1  
SILICA DEATHS

Number of silicosis deaths and age-adjusted mortality rate by year.



SOURCE: Centers for Disease Control and Prevention, National Occupational Respiratory Mortality System National Database

in risk absent the rule, OSHA's estimated benefits are less than what would be projected if past trends were simply to continue.

**Focus on generating knowledge** / Before OSHA can properly dispatch its statutory authority to identify and reduce significant risks, it must first understand what forms of silica lead to those risks. Further, to devise solutions to address remaining risks, OSHA's analysis should at least recognize the observed declines in silicosis mortality over the last several decades and work to understand the reasons behind those encouraging trends.

To address the information problem that is at the root of continued risks from silica exposure, OSHA should follow the guidance of President Obama's Executive Order 13563 and devise approaches that provide information, maintain flexibility for experimentation, and encourage the generation of knowledge.

OSHA's permissible exposure level (PEL) and engineering controls give a false impression of precision, and OSHA's analysis assumes that the controls it has specified will result in compliance with the new PEL. These are merely assumptions, however, as OSHA is unable to connect risk reductions to specific requirements. Perhaps more important, such standards provide no incentive for increasing knowledge about silica hazards in the workplace; indeed, they may even discourage it by focusing attention on compliance with the standard rather than on harm reduction. Given the costs and time involved in changing OSHA regulations, the design-based standards are unlikely to encourage investigations by private parties into developing information as to the relative hazard of different forms of silica or practices likely to reduce risks.

OSHA's proposal identifies two regulatory alternatives that it should seriously consider because they are more consistent with President Obama's executive orders directing agencies to "specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt." OSHA's Regulatory Alternative #7 "would elimi-

nate all of the ancillary provisions of the proposed rule" so that the PEL would serve as a performance standard and would allow employers and employees to determine the most effective way to meet that standard. OSHA's Regulatory Alternative #9, which would phase in a more stringent standard over time as more information becomes available, could have benefits not only in reduced compliance costs, but in knowledge-generation and sharing.

Regardless of the approach OSHA takes in the final rule, it should lay out a clear plan for conducting retrospective review, as required by President Obama's Execu-

tive Orders 13563 and 13610. This review should include an explanation of how the agency will measure exposure and risk and how it will evaluate the effectiveness of the different components of the final rule. **R**

#### READINGS

- "Defining what to Regulate: Silica and the Problem of Regulatory Categorization," by Andrew P. Morriss and Susan E. Dudley. *Administrative Law Review*, Vol. 58, No. 2 (Spring 2006).
- "Public Interest Comment on the Occupational Safety and Health Administration's Proposed Standards for Occupational Exposure to Respirable Crystalline Silica," by Susan E. Dudley and Andrew P. Morriss. The George Washington University Regulatory Studies Center, December 4, 2013.

## The Meaninglessness of the SEC Pay Disclosure Rule

◆ BY IKE BRANNON AND SAM BATKINS

A lawyer in Illinois recently billed a client for working 180 hours in a week. The client paid the bill, even though a week is only 168 hours long. The client wasn't being foolish—he knew how many hours are in a week. Instead, he saw value in paying the lawyer for what he asked. After all, the lawyer had just produced a major, hard-fought victory.

The case involved a construction firm that was facing bankruptcy. The company approached its largest unsecured creditor, which was the main bank in the community, and asked for another loan. The firm secured the loan by pledging its trucks, inventory, and equipment. Shortly thereafter, it went bankrupt and the bank took over the assets to cover not only its secured debt, but also its earlier, unsecured loans. That's not supposed to happen; unsecured creditors go to the back of the line when it comes to divvying up assets.

The trustee in bankruptcy asked a few top law firms to take on the case against the bank, but they demurred; suing the biggest financial institution in the area

was not for the faint of heart, and none saw much of a chance for a great payday. But one lawyer leapt to take the case. He secured the job by suggesting to the trustee that if it could be demonstrated that the bank made the final loan solely to get its hands on assets to cover the unsecured loan, the bank would have to disgorge every dime it took from the construction firm and pay penalties to boot.

He won the case and the trustee recouped millions of dollars from the bank, an order of magnitude more than he ever conceived he would recover for the other debtors. After the ruling, the bankruptcy judge convened a short hearing to wrap up loose ends and approve the trustee's expenses. When the judge noted the lawyer's bill included a week when he billed 180 hours, the trustee made it clear he would not object to that or any other item in the bill. The judge approved

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it. The trustee said the fee went beyond saying “thank you” for a job well done: he wanted to pay his lawyer a decent fee to let the rest of the bar know that he would take care of anyone willing to take on a big bank or who did more than just go through the motions and rack up hours.

It is an apt analogy for executive pay: boards (and shareholders) have every reason to reward chief executives and other officers who take over moribund companies and dramatically improve their value. To jump on a sinking ship can be a career-ender for an

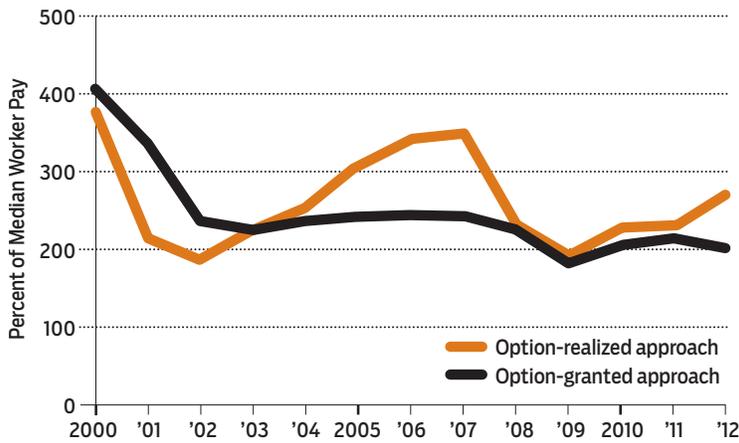
executive. Boards should want to reward CEOs who take on such challenges and succeed not only as a way to show their appreciation, but also to provide a tangible signal that the next guy who pulls off this trick for them will also be amply rewarded.

**CEO compensation disclosure rule** / The problem in executive compensation is that there are plenty of CEOs who receive outsized rewards for merely minding the store. And, of course, there are examples where CEO pay resembles crony capitalism and sizeable bonuses are completely unnecessary to retain the current CEO or attract a talented successor. Much of that pay represents an expense that produces nothing for the stockholder.

Despite the advent of new analytical measures of performance and a pause in CEO compensation growth (CEO pay growth has slowed dramatically in the last decade, as shown in Figure 1), Congress apparently thought that the private sector needed more help on this issue. The Dodd-Frank Financial Reform Act of 2010 tasked the Securities and Exchange Commission to implement a rule requiring corporations to regularly publish the ratio of their CEOs’ compensation (including benefits and bonuses) to the median compensation

FIGURE 1  
CEO PAY

Ratio of CEO compensation to median worker compensation, 2000–2012



SOURCE: Economic Policy Institute

of their work forces.

While it may seem churlish to object to merely asking firms for one more datum, this piece of information is all but useless in shedding light on the issue. Whether a CEO makes 20, 200, or 2,000 times as much as the median compensation of the firm’s employees provides no particular insight as to whether a CEO is fairly compensated.

For example, a company that operates retail outlets will have a host of workers earning the minimum wage. How does comparing its CEO pay ratio to a company that outsources all low-skilled jobs to service companies provide useful shareholder information? A similar issue arises when comparing a financial services company with thousands of branches across the country to another financial services company with no retail outlets. By this metric, the active retailer will seem grossly overpaid compared to the New York City investment bank CEO, regardless of salary or performance.

Perhaps we should exclude retail employees in this instance, or else impute a reasonable number of them for the investment bank to make this metric compelling. Or, more logically, the SEC should just do away with such a flawed measure altogether, as common sense would dictate.

The pay-ratio statistic is also suscep-

tible to manipulation and creates incentives Congress could never have intended. For instance, a few years ago food-maker Sarah Lee’s CEO, Brenda Barnes, spun off all of its bakeries, choosing to contract out all production and focus its attention on marketing and research. In one fell swoop, the CEO–median worker compensation ratio plummeted. Did it go down too much? What are the relevant companies to compare its pay ratio now? How would the ratio inform investors in any worthwhile way? Besides, if the CEO pay ratio would prove to be a mean-

ingful metric to investors, CEOs would have more of an incentive to contract out any activities primarily done with low-wage workers. Is this necessarily a good thing?

**Large costs, small benefits** / Another problem firms may face when trying to calculate the CEO pay ratio is that it necessitates compiling data in a way that most companies are not accustomed to doing. As a result, it will require companies to expend some effort (and resources) to calculate it. Major corporations do not typically centralize payroll operations; if a company owns several divisions that are working fine, it often leaves them alone with such arcane issues such as meeting payroll. They may no longer have this luxury.

Computing compensation—as opposed to just wages—makes this even more difficult. It requires examining health insurance costs, pension costs, and every other fringe benefit provided, and then ascribing a portion of the cost to each employee. There’s no “quick and dirty” way to do it—the value of health insurance depends greatly on an employee’s age and family situation, and of course pension benefits vary with income and tenure for most defined benefit plans.

Companies that have operations overseas where the government provides a large

degree of health care need to think about how to attribute that to their compensation costs. Generally, income taxes are higher in places with more generous public health benefits. That suggests that a company needs to consider those tax costs when trying to calculate the compensation of its median employee. The provision specifically includes all overseas workers, so there's no skirting the issue. Some multinationals operate in dozens of countries, and compiling data on all forms of employee compensation, dealing with third-party administrators, and then converting those figures into a pointless ratio for regulators makes for an expensive annoyance.

Real costs and virtually zero benefits to the company add up to a rule that flunks any bona fide cost-benefit analysis, but that is of little concern to Congress and the SEC. However, it may turn out to be a bigger concern to the courts. By law, SEC regulations must promote capital formation, increase efficiency, or facilitate investor protection. It's almost impossible to argue with a straight face that any of those goals are advanced by this rule.

The SEC's Proposal and Request for Comments sheepishly admits that it likely contains no notable benefits. It states, "Neither the statute nor the related legislative history directly states the objectives or intended benefits of the provision or a specific market failure." It also frankly admits the possible absence of any tangible benefits.

The projected compliance costs are large: one group of trade associations estimates it would cost roughly \$7.6 million per company to compile a satisfactory pay ratio, or nearly \$30 billion in total for the 3,830 companies estimated to be covered by the provision. Even if one assumes average compliance costs of \$250,000 per firm,

there are still annual costs to the economy approaching \$1 billion.

Not surprisingly, the SEC's cost estimates are much lower, as the agency only quantified the paperwork costs of outside professionals to derive the pay ratio. The SEC estimates that the rule would impose 545,792 annual hours of paperwork (which works out to 190 hours per company) and \$72.7 million in costs. Those figures differ from the trade associations' by a couple orders of magnitude. Given the paucity of analysis supporting the SEC's estimates, our hunch is that the actual number hews closer to the industry estimate.

Low-balling compliance costs isn't unusual for the SEC. Consider the agency's "conflict minerals" rule, which was also promulgated in accordance with Dodd-Frank. Under the rule, firms are required to report whether their products were manufactured using minerals extracted in the Democratic Republic of Congo or nearby areas, where valuable minerals are mined

*The SEC's Proposal and Request for Comment sheepishly admits that it likely contains no notable benefits. It also admits the possible absence of benefits.*

and sold to fund military conflict. The SEC originally estimated that the rule would impose 153,000 burden hours and \$71 million in costs on firms, but after an avalanche of complaints the agency raised the estimates to 2,225,273 burden hours and \$4.7 billion in total costs. That's a 650 percent increase. But even if the SEC's initial estimate for the compensation ratio rule proves to be the final figure, it would still be

the ninth most expensive Dodd-Frank rule to "fix" an issue that in no way contributed to the financial crisis.

**Baseball's dilemma** / Paying salaries above what the market would dictate is a problem that afflicts more than the executive suite. Major League Baseball clubs have been dealing with this problem for decades, though it became especially acute during the early free market era before the advent of advanced performance metrics.

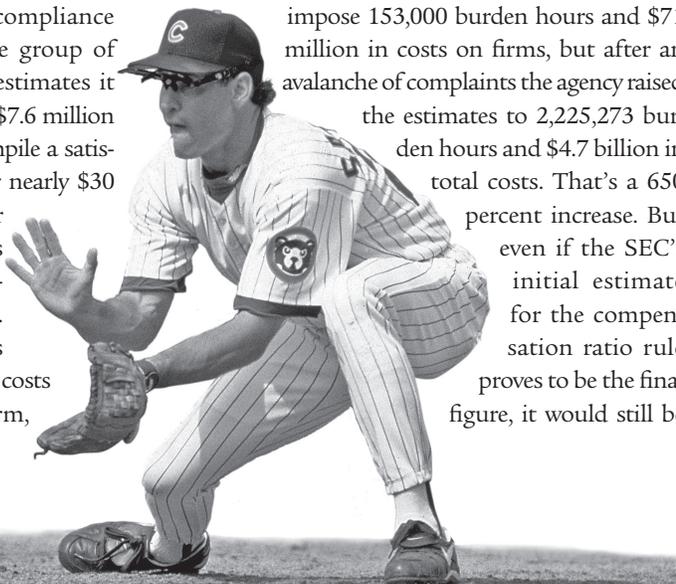
For instance, in the 1990s the Chicago Cubs had an outstanding right side of the infield in future Hall of Fame second baseman Ryne Sandberg and three-time all-star first baseman Mark Grace. In 1993, Sandberg became the highest-paid player in baseball, signing a contract worth \$6 million a year. The next year, the team gave Grace a similar contract after his agent argued that since Grace's offensive numbers were similar to Sandberg's, he deserved a similar salary.

But it was an erroneous comparison.

Second base is a defensively vital position, and throughout baseball history there have been only a few players who could both play the position well and hit for power. Sandberg was one of

them, as attested by his nine Gold Gloves (awarded to the league's best defensive player at each position), seven Silver Sluggers (league's best offensive player at each position), 10 All-Star Game appearances, and his 1984 National League Most Valuable Player award. According to the advanced baseball statistics website FanGraphs, between 1984 and 1994, Sandberg's play gave his team almost twice as many wins as his closest National League counterpart. Grace, on the other hand, was a singles hitter playing a position normally manned by a power hitter (though Grace was a good fielder, winning three Gold Gloves). In his prime, he was only a slightly-above-average hitter for a first baseman, yet his pay put him above most of his first base peers.

Today, most teams would not dream of paying a singles-hitting first baseman any-



## BRIEFLY NOTED

where near the salary of a power-hitting, slick-fielding second baseman (witness Robinson Cano's mammoth new contract with the Seattle Mariners). Teams have access to much more sophisticated statistics that capture a player's true contribution to his team, such as Wins Above Replacement (WAR) or Weighted On-Base Average (*wOBA*), than they did two decades ago. Using those measures, it is hard to justify *playing* Grace regularly at first base, let alone paying him a superstar's salary. Few teams would do so today.

But despite our ability to precisely quantify a player's performance, there are still many players who earn much more than their contributions on the field can justify. Consider the most recent contracts for the New York Yankees' Alex Rodriguez (10 years, \$252.87 million) and Alfonso Soriano (eight years, \$136 million) and the Los Angeles Angels' Alex Pujols (10 years, \$240 million).

What's the point of grumbling about those? It's that paying CEOs what they truly deserve is an even more difficult than paying ballplayers. Many of the metrics used (such as comparing one CEO to his peers in the same industry or of companies the same size) are facile and easy to manipulate, not unlike the data baseball agents torture in their quest to get big paydays for their clients. The economist Richard Thaler once observed in the *New Republic* that there is no business in the world where employers can measure the performance of their workers as precisely as baseball. We're hard-pressed to name an industry that is more competitive than the major leagues. If *those guys* regularly end up awarding contracts that overpay players, perhaps we should acknowledge that fairly compensating talented individuals is difficult.

**Metrics for CEO performance** / There is a need for baseball-like advanced statistics to provide a better understanding of the true value of a CEO. Fortunately, this analysis is already happening, as various economists and companies that work on executive compensation issues have devised metrics that aim to capture CEO

performance as well as ways to connect compensation to performance.

For baseball players, there is no single metric that can fully capture value. The aforementioned WAR is the one most commonly used by today's analysts, along with a variety of new metrics that attempt to capture defensive performance. Likewise, analysts who try to capture a CEO's contribution focus on earnings growth, revenue growth, and returns, all of which have a strong correlation with Total Shareholder Return (TSR). A recent study by

*If Dodd-Frank lowers CEO compensation, there is no reason to think that the savings would be used to increase the wages of rank-and-file employees.*

Farient Advisors suggests that earnings growth (whether earnings per share, net income, or operating income) had the highest correlation to shareholder value across industries.

However, those metrics don't work quite the same for every industry. For instance, energy, banking, and pharmaceuticals showed a particularly low correlation between earnings growth and TSR, which can be attributed in part to the difficulties in predicting future value in early-stage life sciences companies, as well as the inherent uncertainty faced by industries subject to considerable regulatory oversight. It's a difficult task, of course: while we may have better measures of company performance these days, the extent to which we can attribute a company's long-term profits to the CEO's performance is still (and will always be, at least for most industries) difficult or impossible to discern.

**Using rules to "send a message"** / The point of forcing firms to calculate and publish the CEO–median worker compensation ratio is, of course, to generate outrage in the hope that it will provoke a lower ratio. But it's unclear how this helps workers, and that is the relevant issue.

Why have unions been the most fervent advocates for this regulation since Congress first contemplated its inclusion in Dodd-Frank? Do unions expect that companies will lower this ratio by boosting median wages? If so, it is difficult to conceive why that would happen. It will always be cheaper for a firm to lower the ratio—if it ever did find it expedient to do so—by reducing the CEO's compensation. And if it lowers CEO compensation, there is no reason to think that the savings would be used to increase

the pay of rank-and-file employees, whose wages are largely dictated by the local labor market. Besides, it's more likely the firm would lower this ratio through subterfuge of some sort—perhaps by jettisoning

low-paid workers or deferring a CEO's compensation until he leaves. The most likely outcome of the rule is no change in firm behavior whatsoever, except that they will be forced to expend effort and resources to calculate a statistic that will be of no use to them, their boards, their shareholders, or investors.

SEC rules are not meant to serve as an ideological bulletin board for whatever political party happens to be in power. But that's precisely what the authors of the CEO pay ratio rule had in mind: it is intended to convey a message that CEOs are paid too much.

There's some evidence that the courts have a jaundiced eye for such political shenanigans. In January, lawyers arguing over the validity of the conflict minerals rule before the Court of Appeals for the District of Columbia suggested that the regulation is primarily intended to be a "shaming statute" or "scarlet letter" freighted with ideological intent, and that it serves no public purpose. The court seemed inclined to agree with that perspective.

Mandating the regular publication of a crude gauge of relative CEO compensation is a costly exercise that fixes precisely nothing. R

# Regressive Furnace Fans

BY SOFIE E. MILLER

In October, the U.S. Department of Energy issued a proposed rule setting energy efficiency standards for residential furnace fans. The rule is intended to save consumers money and reduce greenhouse gas emissions. However, the DOE's use of low discount rates when estimating the benefits of the fans results in a

proposed rule that would benefit well-off Americans but harm low- and median-income households. That raises the question of whether the rule is economically justified and would improve social welfare, as required by law.

The DOE's proposal establishes energy efficiency standards for 10 separate product classes of furnace fans. It would save a total of 4.58 "quads" of energy (4.58 quadrillion BTUs) over the first 30 years of implementation (2019–2048), according to the government analysis. The primary benefit of that energy conservation is the savings in energy expenditures by residential consumers, which comprise about 73 percent of the rule's total benefits. In exchange for reduced long-term energy expenditures, the rule would cause the price of furnace fans to increase by between \$67 and \$183 per unit, a price increase of 31–54 percent.

**Discounting consumer savings** / To determine whether the long-term benefits of energy savings outweigh consumers' higher upfront equipment costs, the value of future savings must be discounted so that it can be compared with current costs. In its guidance to federal agencies on how to conduct regulatory analysis, the Office of Management and Budget explains:

Benefits and costs do not always take place in the same time period. When they do not, it is incorrect simply to add all of the expected net benefits or costs without taking account of when [they]

actually occur. If benefits or costs are delayed or otherwise separated in time from each other, the difference in timing should be reflected in your analysis.

Because consumers will receive the benefit of reduced energy bills over the entire 22.6-year expected lifetime of their furnace fans, the DOE must discount those benefits to make them comparable with the upfront costs resulting from the standards. Benefits expected in the future are diminished in this calculation because people generally prefer present consumption to

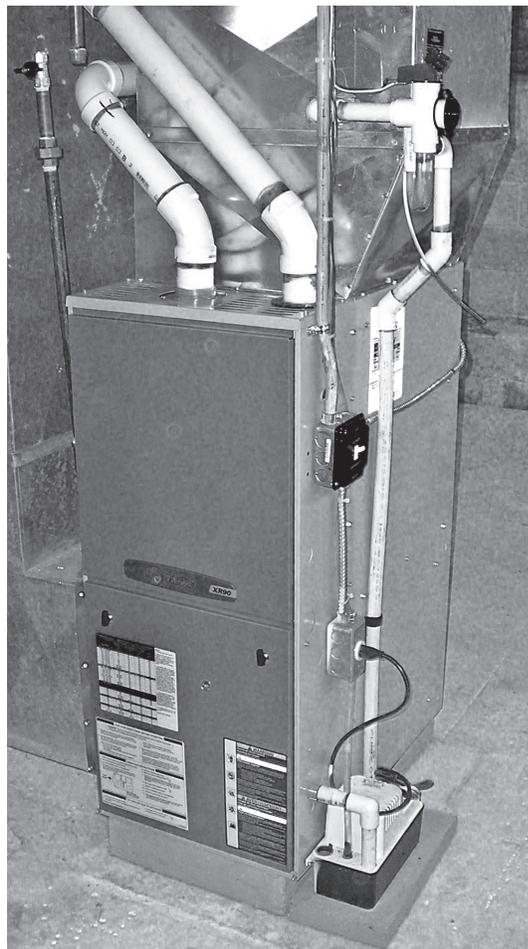
future consumption; that is, they have positive time preference.

A lower discount rate implies that present consumption is valued relatively low compared to future consumption, whereas a higher discount rate implies future consumption has less value relative to present consumption. The appropriate rate by which to discount future benefits, however, is not certain. Assuming a discount rate that is too high or too low would effectively misallocate consumption over time. The benefits of the DOE's proposed rule vary dramatically depending on the discount rate used to compare them to costs. Thus the economic justifiability of the proposal depends crucially on the discount rate.

**OMB guidelines** / Pursuant to OMB guidelines, the DOE discounts at 3 percent and 7 percent to calculate the present value of its energy efficiency benefits, with 3 percent used for the primary benefit estimate. Using the two different rates, the DOE estimates the annualized benefits of this rule would be between \$1.45 billion and \$2.17 billion, respectively—a range of \$720 million. Clearly, the discount rate used in the assessment is important to the rule's economic justification.

However, consumers' actual discount rates are not homogenous, either across the population or across purchase types. There is greater variation in estimated benefits when we utilize actual consumer discount rates that are derived from field studies.

Conveniently, many studies of implicit consumer discount rates use the purchase of energy-using durables (such as air conditioners, dishwashers, and refrigerators) to measure consumer time preferences. These appliances have upfront costs that potentially can be offset by long-term energy savings, and there often are many available options with varying costs and levels of energy efficiency for consumers



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to choose. As noted in a 1979 *Bell Journal of Economics* paper by Jerry Hausman on how consumers discount home appliance purchases, home heating and cooling systems “provide important examples where tradeoffs between capital costs and operating costs are substantial,” making implicit discount rates more easily accessible. Because furnace fans are energy-using durables that provide consumers with “tradeoffs between capital costs and operating costs,” research on other energy-using home appliances is applicable to the DOE’s furnace fan rule.

Importantly, this examination shows that implicit discount rates are not stable, either over time or between purchase

discount rates because they have more certain future streams of income; low-income households, on the other hand, do not benefit from the same certainty. This disparity means that “a result of [energy efficiency] standards is to place an implicit tax on those individuals who are thought to have the highest discount rates: the less well off. Thus efficiency standards can have an adverse income distribution effect.”

The only individuals with actual discount rates that were approximate to the rates used by the DOE were in households with incomes higher than \$160,000 (in 2012 dollars), which were the highest-income households included in Haus-

man’s analysis. This implies that only high-income households are adequately represented by the DOE’s use of a 3 percent discount rate. Given Hausman’s findings (again, adjusted for inflation), even median-income U.S. households have significantly higher discount rates of 27 percent for the purchase of energy-using durables such as furnace fans.

most widely used residential furnace fans, comprising over 80 percent of projected furnace fan shipments through 2045. Importantly, because of higher discount rates, median-income, low-income, and senior-only households are more likely to bear net costs as a result of this rule, while high-income households are more likely to benefit. In this way, implementation of the proposed standard may act as a transfer payment from lower-income households to higher-income households. The DOE also notes that “the increased total installed cost of more efficient products causes some customers to forego (sic) product purchases,” indicating that the higher-priced furnace fans resulting from this rule will be out of reach for some consumers. Those distributive impacts necessitate close scrutiny to determine whether the proposed standards will actually improve social welfare.

**Conclusion /** Relying on discount rates of 3 percent and 7 percent, the DOE predicts enormous benefits from its energy efficiency standard. However, those discount rates only represent high-income households. When using discount rates that more accurately represent actual consumer behavior, the DOE’s standards do not yield net benefits. Consumers with higher discount rates—including median-income Americans, low-income Americans, and the elderly—are much more likely to be forced to pay more than they will receive for higher-efficiency furnace fans. R

TABLE 1

## SAVINGS AND DISCOUNT RATES

Net present value of DOE’s proposed standards at different discount rates (2012 dollars)

FAN TYPE	DISCOUNT RATE				
	3%	7%	27%	39%	102%
EF	\$796,943,752	\$363,092,232	-\$23,440,182	-\$38,849,429	-\$37,821,864
WFG	\$795,320,580	\$303,074,374	-\$65,782,010	-\$73,602,693	-\$59,271,637
NWGFc	\$11,332,273,514	\$4,934,089,515	-\$49,049,236	-\$257,801,753	-\$311,094,102
NWGFnc	\$8,050,557,355	\$4,026,082,392	\$129,457,492	-\$57,396,862	-\$154,348,979
<b>TOTAL</b>	<b>\$20,975,095,201</b>	<b>\$9,626,338,513</b>	<b>-\$8,813,936</b>	<b>-\$427,650,737</b>	<b>-\$562,536,582</b>

NOTE: Product classes are electric furnace/modular blower fans (EF), weatherized gas furnace fans (WFG), non-weatherized condensing gas furnace fans (NWGFc), and non-weatherized non-condensing gas furnace fans (NWGFnc).

types. The variance is often so wide that the DOE’s use (and the OMB’s recommendation) of 3 and 7 percent rates seems inadequate to measure actual consumer benefits from energy efficiency standards.

Actual discount rates for consumer appliances also vary quite a bit by income. In his paper on individual discount rates in the purchase of energy-using durables, Hausman noted that individuals’ implicit discount rates ranged from 5.1 percent to 89 percent for air conditioner purchases, depending on household income. Existing field studies show that median-income consumers use discount rates of about 27 percent, with low-income consumers using discount rates of 39 percent when making those purchases. Other studies put discount rates for such appliances at as high as 102 percent. Households with higher incomes can afford to bear lower

man’s analysis. This implies that only high-income households are adequately represented by the DOE’s use of a 3 percent discount rate. Given Hausman’s findings (again, adjusted for inflation), even median-income U.S. households have significantly higher discount rates of 27 percent for the purchase of energy-using durables such as furnace fans.

In light of this information, let’s reconsider the DOE’s cost-benefit analysis using five different discount rates: the DOE’s 3 percent and 7 percent, and field studies-recommended rates of 27 percent, 39 percent, and 102 percent. Table 1 presents the net present value for the first 15 years of the DOE proposal’s implementation. All values are discounted to the first year of implementation and are measured in constant 2012 dollars. The four product classes used in the table were chosen because they are the

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