

TESTIMONY OF

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before the

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Subcommittee on Environment and Economics
U.S. House of Representatives**

Hearing on Environmental Regulations, the Economy, and Jobs

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Mr. Chairman, ranking member Green, and members of the subcommittee, I appreciate the opportunity to testify today on the mistaken belief that environmental protection kills jobs.

No matter how many times this fatally flawed argument is repeated, empirical evidence supporting this assertion is scant and not credible. Instead, the evidence shows that environmental regulations save lives, preserve irretrievable natural resources, and—not incidentally—create jobs.

In fact, if we pull the camera back and look at the economy as a whole, we must conclude that the primary cause of the economic recession causing so much suffering in this country is under-regulation, not over-regulation. Everything—from the TARP bailouts to the “underwater” mortgage crisis that has pushed so many out of their homes—can be traced back to excessive corporate corner-cutting unchecked by an effective regulatory system.

I am a law professor at the University of Maryland School of Law and the President of the Center for Progressive Reform (CPR) (<http://www.progressivereform.org/>). Founded in 2002, CPR is a 501(c)(3) nonprofit research and educational organization comprising a network of sixty scholars across the nation who are dedicated to protecting health, safety, and the environment through analysis and commentary. I joined academia mid-career, after working for the Federal Trade Commission for seven years and this committee for five years, and serving as outside counsel for a wide variety of small and mid-sized businesses for seven years. My work on environmental regulation includes four books, and over twenty-seven articles (as author or co-author). My most recent book, published by the University of Chicago Press, is *The People's Agents and the Battle to Protect the American Public: Special Interests, Government, and Threats to Health, Safety, and the Environment*, which I co-authored with Professor Sidney Shapiro of Wake Forest University's School of Law, analyzes the state of the regulatory system that protects public health, worker and consumer safety, and natural resources, concluding that these agencies are under-funded, lack adequate legal authority, and are undermined by political pressure motivated by special interests. I have served as consultant to EPA and have testified previously before Congress on regulatory subjects on numerous occasions.

My testimony today makes four points:

1. Environmental regulations have saved millions of lives, preventing chronic respiratory illness and heart attacks in cities across the country. These rules protect children from irreversible neurological damage, save billions of dollars in cleanup costs, and preserve water quality in lakes, rivers, and streams.
2. If anything, our regulatory system is dangerously weak, and Congress should focus on reviving it rather than eroding public protections.
3. Fanciful studies, including and especially the analysis prepared for the Small Business Administration (SBA) by Nicole and Mark Crain, are the shaky foundation for the false claims that excessive regulation is at the root of the nation's problems. These claims are fomented by large companies seeking to escape regulation, with

small businesses shoved to the front of the crusade in an effort to put a friendlier face on this self-serving agenda.

4. The American people have always supported environmental protection with great enthusiasm and the results of the mid-term elections did not confer a popular mandate for these kinds of attacks.

Saving Life and Natural Resources

EPA regulations save lives, avoid injuries, and preserve finite natural resources, all goals that are important to the society for ethical, social, practical, and economic reasons. These protections reduce health care costs, keep families intact and productive, let workers stay on the job, and preserve resources for future generations. Not incidentally, taking the remedial steps that they require, especially when capital investments are involved, creates jobs. Pollution control equipment must be designed, manufactured, and installed. People must be hired to construct and operate highly engineered landfills that can safely contain hazardous waste and treat sewage and drinking water. Even if we restrict the analysis of regulatory impacts to monetary investments, and do not consider the ethics of preserving life, health, and nature, the money that is not spent treating cancers, asthma, broken limbs, or neurological disease can be used in other, more productive ways. It is very difficult to project all these alternatives out in a mathematically accurate way, especially with respect to regulations across the economy. But ignoring them does not make them disappear.

Two relevant and closely related examples make this case.

Regulations implementing the Clean Air Act saved 164,300 adult lives in 2010, and will save 237,000 lives by 2020. EPA estimates that the economic value of Clean Air Act regulatory controls will be \$2 trillion annually by 2020; costs of compliance in that year will be \$65 billion. Air pollution controls saved 13 million days of work loss and 3.2 million days of school loss in 2010. By 2020, they will save 17 million work loss days and 5.4 million school loss days.

EPA's estimates are based on extraordinarily conservative assumptions regarding regulatory benefits that, if anything, low-ball these figures. For example, EPA says that when Clean Air Act protections prevent a non-fatal heart attack in a person 0-24 years old, the incident is worth only \$84,000 and an avoided emergency room visit to treat an asthma attack is worth only \$363 per incident—hospitals don't give you a plastic ID bracelet for that little! The reason we are able to develop reliable cost and benefit estimates for the Clean Air Act, of course, is that EPA has spent 40 years developing an effective system. Before a rule goes into effect, it is much harder to predict how much its requirements will cost, and any such estimates—typically based on information provided by potentially regulated industries—overstate costs significantly.

Another ramification of Clean Air Act protections is that, as we have gotten better at preventing pollutants from going up and out of the stack, we have created other equally pressing problems because these pollutants do not vaporize, but rather fall out of the scrubbers into fly and bottom ash. And, in turn, that ash is land-disposed. One place where this phenomenon has developed into an acute environmental problem is with the disposal of coal ash by electric

utilities. The highly toxic heavy metals present in coal include antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and thallium; burning coal concentrates these contaminants to dangerous levels.

Utilities generate some 145 million tons of coal ash annually, more than three times the amount of hazardous chemical waste produced by the manufacturing sector. About half of this ash is dumped in so-called “surface impoundments,” a euphemism for unlined pits in the ground, many of which are located adjacent to the bodies of water that power plants depend upon to cool giant turbines and other equipment. Some 31 percent of landfills and 62 percent of surface impoundments devoted to coal ash disposal lack liners to contain leaching of hazardous constituents into underground aquifers, while 10 percent of such landfills and 58 percent of such impoundments did not have any system for monitoring leaks. About one-third of these impoundments were constructed without consulting with a professional engineer and, as they grew in size to accommodate growing volumes of waste, they ended up depending on a jury-rigged system of retaining walls and dams, making each one of them a disaster waiting to happen.

In the early morning hours of December 22, 2008, an earthen dam holding back a 40-acre surface impoundment at a Tennessee Valley Authority (TVA) power plant burst, releasing one billion gallons of inky coal ash sludge across Kingston, Tennessee. The flood of sludge crossed a river, destroying twenty-six houses, and infiltrated several streams that bisected the area, lifting one house off its foundation and moving it forty yards downhill and covering 300 acres in four to five feet of sludge and mud. Miraculously, no one was killed.

In the aftermath of this catastrophe, which in sheer volume exceeded the Gulf oil spill that transfixed the nation this past summer, EPA began a rulemaking to compel the safe disposal of any such coal ash that is not “beneficially reused,” another euphemism that in this case embraces some reuses that are by no means proven to be beneficial—spreading coal ash on fields without testing it first for toxicity, for example. Despite EPA’s decision not to even think about regulating how coal ash is reused, leaving it up to utilities to sell their ash to any taker, electric utilities—the vast majority of which are very large businesses—have made this minimal rule a top priority target in the myopic crusade against regulation that has monopolized the House in recent weeks. If President Obama succumbs to this pressure or Congress intervenes, regulatory benefits of \$102 billion over the next several decades could be lost.

Regulatory Dysfunction

A series of catastrophic regulatory failures have focused attention on the indisputably troubling condition of crucial regulatory agencies assigned to protect public health, worker and consumer safety, and the environment. The destructive convergence of funding shortfalls, political attacks, and outmoded legal authority have set the stage for ineffective enforcement and unsupervised industry self-regulation. From the Deepwater Horizon spill in the Gulf of Mexico that killed eleven and caused grave environmental and economic damage, to the worst mining disaster in 40 years at the Big Branch mine in West Virginia with a death toll of 29, the signs of regulatory dysfunction abound. Peanut paste tainted by salmonella, glasses imprinted with the Shrek logo contaminated by cadmium and sold at McDonald’s, Code Red smog days when

parents are warned to keep their children indoors, the Vioxx recall—at the bottom of each well-publicized event is an agency unable to do its job and a company that could not be relied upon to put the public interest first.

British Petroleum (BP) is the infamous example of the decade, although concluding that it is rogue, or unique, would be wishful thinking. In the half decade before the Gulf spill, its executives presided over multiple, extraordinarily serious, and undoubtedly chronic violations of American health and safety laws throughout its North American operations. If regulators had sufficient funding and the unequivocal mandate to be sure that worker and environmental safety were top priorities, not simply nuisance items to be dealt with on the path to massive profits, these tragedies could have been avoided, sparing the Gulf region and the people who live there all the damage the spill has caused.

An accident involving superheated water killed two workers at BP's Texas City refinery on September 2, 2004, triggering soul-searching at the plant but indifference at corporate headquarters. Six months later, a massive explosion at the Texas City plant killed fifteen people on March 25, 2005, in part because of a decision not to make a \$150,000 investment to upgrade equipment that was state-of-the-art in the 1950s and that government inspectors had instructed the company to change out. Later that summer, BP's \$1 billion Thunder Horse facility in the Gulf of Mexico collapsed, on July 11, 2005, when a valve designed to prevent the huge platform from flooding in severe weather failed because it was installed backwards. The platform was righted and now produces oil, although it is plagued by construction problems, including a welding job so shoddy that it left underwater pipelines brittle and full of cracks. The following year, a BP pipeline operating in Prudhoe Bay ruptured on March 2, 2006, releasing 267,000 gallons of oil, the largest spill ever on Alaska's North Slope. The spill occurred two years after a whistleblower warned an EPA attorney that the company was systematically neglecting pipeline maintenance and falsifying inspection reports.

Regulators were not exactly sitting silent during these events, but the penalties they meted out to BP for health, safety, and environmental violations were little more than a nuisance to the company, akin to tossing a marble at the side of a battleship as it steams out of port. BP subsidiaries—as opposed to executives—were convicted of environmental crimes three times in Alaska and Texas. Two of the cases involved felony charges brought by EPA for harm to the environment and public health, one under the Clean Air Act and the second under the Clean Water Act, with the company directed to pay \$20 million in fines. Separately, OSHA assessed a penalty of \$109,500 for the September 2, 2004 incident that killed two workers. Not surprisingly, given the puny nature of this kind of fine, BP's violations of OSHA requirements became chronic; the company received 862 OSHA citations between June 2007 and February 2010 for violations at the Texas City plant.

Under new leadership following the election of President Obama, OSHA fined BP \$50.6 million following the Texas City explosion. Even this amount paled in comparison to the \$1 billion in estimated damages that BP paid in settlement to tort plaintiffs in the aftermath of the accident. But to put these penalties for life-threatening and ecologically ruinous behavior in perspective, the Commodity Futures Trading Commission settled a case against the company for manipulating prices in the propane market, collecting \$303 million in civil penalties. BP's total

2005 profits were \$19.31 billion and \$17.29 billion in 2007. So with respect to those who argue that this is a battle about preserving jobs, I'd suggest that BP is evidence that this isn't really a fight about jobs. If anything, it's a fight about profit. BP had ample funds to hire all the safety workers it wanted, and yet BP cut corners to minimize costs and make money.

Not every industrial accident can be prevented. But BP has been serial violator. And yet the inspection resources and enforcement mechanisms available to the regulatory agencies simply aren't up to the task. Nor was it clear that the agencies were all that interested in inspections and enforcement during the Bush Administration. So it seems to me that the real question for Congress is how to revive the agencies assigned to protect the American people and how to give them the resources they need to conduct vigorous inspections and enforcement actions. The question should not be how to demoralize their staffs, cut their budget, and suppress badly needed new rules.

Fanciful Costs

Although those who assert that a burdensome regulatory system is killing jobs never really explain exactly why they think that to be case, I must surmise that the theory behind the claim is that businesses must spend so much to comply with regulations that they run out of capital to invest in job creation. A recent study on regulatory costs, authored by Nicole and Mark Crain for the SBA Office of Advocacy claims that regulation costs the U.S. economy \$1.75 trillion in 2008. The Crains' \$1.75 trillion estimate is far larger than the cost estimate generated by the Office of Management and Budget that same year: \$62 billion to \$73 billion. They attribute this massive difference to the fact that their report considers many more rules than do the annual OMB reports, but they refuse to make available a list of the rules they did count and it is difficult to imagine that this orders-of-magnitude difference is attributable solely to their attentiveness to minor rules that OMB somehow missed.

I have attached a copy of a Center for Progressive Reform (CPR) report, *Setting the Record Straight: The Crain and Crain Report on Regulatory Costs*, as an appendix to my testimony. This analysis shows that Crain and Crain's calculations for the regulations not covered by OMB's report appear to be based largely on a decidedly unusual data source for economists – public opinion polling, the results of which the Crains massage into a massive, but unsupported estimate of the costs of “economic” regulations. Again, because they have refused to make their underlying data or calculations public, apparently even withholding them from the SBA office that contracted for the study, it is difficult to know precisely how they arrived at this result. Nevertheless, their calculations inspire great skepticism.

For one thing, as stated, their estimate of economic regulatory costs is based on the results of public opinion polling, specifically a poll concerning the business climate of countries that has been collected in a World Bank report. The authors of the World Bank report warn that its results should not be used for exactly the type of extrapolations made by Crain and Crain, because their underlying data are too crude.

Professor Sidney Shapiro, my co-author and the vice-president of CPR, has written a letter to SBA urging the agency to withdraw the report before it causes further embarrassment. He has not yet received a reply.

Public Opinion and the Midterm “Mandate”

The emerging crusade against regulations seems to assume that the public will not miss the protections provided by regulation. It also seems based on the premise that the public thinks that all regulations are equally distasteful. From these presumptions, deregulators appear to argue the results of mid-term elections are a public mandate to de-fund and further weaken the regulatory system. Certainly that would be the impact of the FY 2011 budget proposal from the majority this week. If agencies like EPA are weakened further, hoping for a cessation in catastrophic environmental disasters, much less chronic pollution, is naïve to the point of being quixotic.

The presumption that the public thinks environmental regulation is distasteful is directly refuted by public opinion polls. In a September 2010 Pew poll taken shortly before the midterm election, 81 percent of respondents said they favor stronger environmental regulation. A June 2010 Pew poll recorded 56 percent of respondents as favoring environmental protection over keeping energy prices low, a lower number but still a clear majority. Even in these dire economic times, with so many worrying about the cost of living, the deficit, and the availability of jobs, environmental pollution made the “top twelve” list of major issues in a December 15, 2010 Pew poll. The plurality of respondents—45 percent—concluded that the nation is staying about the same on the problem, 26 percent thought it is making progress, and 24 percent said it is losing ground.

I appreciate that the majority feels it has a mandate as a result of the election. But I would urge all Members to consider whether gutting environmental protection is really what voters had in mind, or whether this attack on regulation is simply an effort to re-fight past battles over the nation’s environmental laws, this time by objecting not to the laws themselves but to their enforcement. It’s bad enough that the agencies are underfunded to the point that they are barely able to do their jobs. But this fight is really about hobbling such legislative landmarks as the Clean Air Act, Clean Water Act, and outside the realm of the environment, the Occupational Safety and Health Act, banking reform, health care, and more.

The corporate and political voices in favor of deregulating today are, by and large, the same ones that opposed those laws from the outset. But Congress has already made the policy choices here, directing EPA, for example, to protect the water we drink and the air we breathe, and to make sure we are not bombarded by a variety of poisons in the food chain that ends in our lunch boxes and on our dinner tables. Those laws are already on the books, the product of lengthy consideration by Congress, following ample debate that included all voices. Many of those laws have been tested in court, too. For good reason, Congress delegated a measure of authority to the regulatory agencies to establish specific standards, the kind that require scientific expertise that Members could not reasonably be expected to possess. But Congress made clear in the law that the agencies must exercise that delegated authority within the specific parameters established by Congress.

I'd point out further that many of the regulations that are drawing fire have not yet been adopted. Industry is making the same arguments to Congress that it is making to the regulatory agencies themselves. That process is going forward, the agencies are pursuing the statutory obligations to craft regulations within the parameters Congress established, and industry and its allies are exercising their right to flood the agencies with information and objections that will shape those regulations. In other words, the arguments we're hearing from industry aren't unique. We heard many of them when the bills were passed and we heard them during agency consideration of the regulations. In some cases, we heard them in court. And now we are hearing them again. It's the same fight, all over again.

Regulations are a time-honored punching bag for business and for some on Capitol Hill. The corruption of the campaign finance system, accelerated dramatically by the Supreme Court's decision in *Citizens United*, 130 S. Ct. 876 (2010), has brought these destructive trends to the fore, with both parties struggling to amass the billions they need to compete in the 2012 election cycle. But it would be a mistake to suppose that the 2010 election results are indicative of a tolerance for environmental damage and even catastrophe.

The latest free-for-all against regulation frames a fundamental question for Congress: Will we do what we must to make sure that the environment we leave the next generation of Americans is clean enough for them to live their lives free of the health risks from environmental hazards? Or will we squeeze the last penny of monetary profit out of the planet's resources, at the cost of leaving behind a scarred landscape, polluted air and water, and enough toxics in the food we eat to pose serious risks to our children and their children? This question is the same that it has always been.

Thank you.

Attachment: *Setting the Record Straight*

Setting the Record Straight:

The Crain and Crain Report on Regulatory Costs

by CPR Member Scholar Sidney A. Shapiro (University Distinguished Chair in
Law, Wake Forest University School of Law),
Ruth Ruttenberg (Professor of Economics, National Labor College),
and CPR Policy Analyst James Goodwin



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Setting the Record Straight: The Crain and Crain Report on Regulatory Costs

Introduction

Critics of health, safety, and environment regulation have sought to buttress the case against regulation by citing a 2010 report by economists Nicole Crain and Mark Crain called *The Impact of Regulatory Costs on Small Firms*¹ (“the Crain and Crain report”). The Crain and Crain report is the fourth in a series of reports that have been produced under contract for the Small Business Administration’s (SBA) Office of Advocacy since 1995, each of which has attempted to calculate the total “burden” of federal regulations, and to demonstrate that small businesses in all economic sectors bear a disproportionate share of that burden.²

Among the Crain and Crain report’s findings is one that has become a centerpiece of regulatory opponents’ rhetoric: the “annual cost of federal regulations in the United States increased to more than \$1.75 trillion in 2008.”³ This figure is several orders of magnitude larger than the estimate generated by the Office of Management and Budget (OMB)—the official estimate of the aggregate costs and benefits of federal regulations prepared annually for Congress. The 2009 OMB report found that in 2008 annual regulatory *costs* ranged from \$62 billion to \$73 billion.⁴ The authors of the Crain and Crain report attribute this massive difference to the fact that their report considers many more rules than do the annual OMB reports, including rules with estimated costs less than \$100 million, rules that were put on the books more than 10 years ago, and rules issued by independent regulatory agencies.⁵

As this report demonstrates, however, much more is at work than that. In areas where the OMB and Crain and Crain calculations overlap, Crain and Crain use the same cost data as OMB, but, unlike OMB, which presents regulatory costs as a range, Crain and Crain always adopt the upper end of the range for inclusion in their calculations, a departure that is not justified as we explain in this report. Further, Crain and Crain’s calculations for the regulations not covered by OMB’s report appear to be based largely on a decidedly unusual data source for economists—public opinion polling, the results of which Crain and Crain massage into a massive, but unsupported estimate of the costs of “economic” regulations. Because Crain and Crain have refused to make their underlying data or calculations public—apparently even withholding them from the SBA office that contracted for the study—it is difficult to know precisely how they arrived at the result that economic regulation has a cost of \$1.2 trillion dollars, comprising more than 70 percent of the total costs in their report. Nevertheless, even based on what Crain and Crain reveal, their calculation of the cost of economic regulations is deeply flawed, as we also explain.

In addition, the OMB report accounts for an equally relevant figure that the Crain and Crain’s \$1.75 trillion figure simply omits: the economic benefits of regulation. OMB’s 2009 recent report found that in 2008 annual *benefits* of regulation ranged from \$153 billion to \$806 billion.⁶ And, as a series of CPR reports have explained, the OMB reports likely overestimate regulatory costs and underestimate regulatory benefits, including omitting from its calculations altogether significant benefits that happen to defy monetization.⁷ In contrast, the Crain and Crain report makes no effort to account for regulatory benefits. If, for example, a regulation imposes \$100 in

costs on a business, but provides twice that in benefits, the Crain and Crain report would still tally that as \$100 cost to society, even though it provides substantial net benefits.

It's easy to see why the anti-regulatory critics have seized on the Crain and Crain report and its findings.⁸ The \$1.75 trillion figure is a gaudy number that was sure to catch the ear of the media and the general public. Upon examination, however, it turns out that the \$1.75 trillion estimate is the result of transparently unreliable methodology and is presented in a fashion calculated to mislead.

This report points out the severe flaws with the effort by Crain and Crain to estimate total regulatory costs. These flaws include:

- **Omitted benefits of regulation.** A discussion of regulation is inherently incomplete—and distorted—if it focuses on costs without also considering benefits. Simply put, OMB's calculations demonstrate that regulation has a positive net effect on the economy, and not by a little. The Crain and Crain report simply ignores the benefits of regulation, focusing solely on one half of the equation. But, claiming to present a compilation of regulatory costs, without also presenting a compilation of regulatory benefits, is fundamentally misleading. Indeed, using Crain and Crain's methodology, practically any economic transaction—from the purchase of a loaf of bread to the construction of a manufacturing plant—would be counted as a drain on the economy, because they only include the costs not the benefits.* The Crain and Crain report's failure to include an accounting of regulatory benefits is particularly puzzling, since virtually every source the authors rely on for estimates of costs also provide estimates of benefits as well.
- **Questionable assumptions and flimsy data.** The report's estimate of "economic regulatory" costs—financial regulations, for example—which account for 70 percent of the total regulatory costs, is not based on actual cost estimates. Instead, this estimate is based on the results of public opinion polling concerning the business climate of countries that has been collected in a World Bank report. The authors of the World Bank report warn that its results should not be used for exactly the type of extrapolations made by Crain and Crain, because their underlying data are too crude. Crain and Crain nevertheless enter the World Bank data into a formula, which they appear to have created out of whole cloth, that purports to describe a relationship between a country's regulatory stringency and its Gross Domestic Product (GDP). OMB has repeatedly warned against

* While comparing costs and benefits is beyond the scope of this paper, it is notable that the 2009 OMB report found that total regulatory benefits are far larger than total regulatory costs. See *infra* endnote 4 and *supra* accompanying text. This finding refers to total aggregate net benefits, which means that some individual regulations may not have benefits that exceed costs. But, this result usually arises from the difficulty of monetizing regulatory benefits, rather than the lack of actual benefits. See comments cited *infra* endnote 7; see also Rena Steinzor et al., *A Return to Common Sense: Protecting Health, Safety, and the Environment Through "Pragmatic Regulatory Impact Analysis"* (Ctr. for Progressive Reform, White Paper 909, 2009), available at http://www.progressivereform.org/articles/PRIA_909.pdf; John Applegate et al., *Reinvigorating Protection of Health, Safety, and the Environment: The Choices Facing Cass Sunstein* (Ctr. for Progressive Reform, White Paper 901, 2009), available at <http://www.progressivereform.org/articles/SunsteinOIRA901.pdf>; Frank Ackerman et al., *Applying Cost Benefit Analysis to Past Decisions: Was Protecting the Environment Ever a Good Idea?* (Ctr. for Progressive Reform, White Paper 401, 2004), available at http://www.progressivereform.org/articles/Wrong_401.pdf.

trying to reduce the complex relationship between these two concepts to such simplistic terms, yet this is precisely what Crain and Crain do.

- **Opaque calculations.** Contrary to academic and government norms, Crain and Crain do not reveal their data or show the calculations they used to arrive at their cost estimates. Neither is the information available from the SBA Office of Advocacy. Moreover, Crain and Crain declined to furnish their data to CPR despite several requests. As a result, it is impossible to replicate their results, a flaw so significant it would prevent the publication of their paper in any respectable academic journal.
- **Slanted methodology.** The Crain and Crain report suffers from several methodological problems, all of which tilt the results towards an overstatement of regulatory costs. These problems are itemized and explained further below.
- **Overstated costs.** To estimate the cost of non-economic regulation, Crain and Crain almost always used the agency estimates of such costs that were submitted to OMB. Although OMB presents these costs as a range, Crain and Crain always used the upper bound estimate, effectively eliminating the agencies' careful efforts to draw attention to the uncertainties in these calculations. Moreover, cost estimates are typically based on industry data, and regulated entities have a strong incentive to overstate costs in this circumstance. As discussed below, empirical studies have shown that such estimates are usually too high.
- **Peer review rendered meaningless.** The peer review process used by the SBA Office of Advocacy does not support the reliability of the report. Only two people examined the document. The authors ignored a significant criticism raised by one of the two reviewers concerning their estimate of economic regulatory costs. As for the second person, the entire review consisted of the following comments: "I looked it over and it's terrific, nothing to add. Congrats[.]"⁹

For the reasons that follow, we conclude that the Crain and Crain report is sufficiently flawed that it does not come close to justifying regulatory reform efforts, such as the REINS Act,[†] which seek to limit protection of people and the environment. If Crain and Crain had used a more straightforward and generally accepted methodology, they likely would have reached a figure that was several orders of magnitude smaller. And, if Crain and Crain had properly considered regulatory benefits, they likely would have found that regulation is a net economic plus for society. Such findings, however, would not comport with the political agenda of the SBA's Office of Advocacy or of the opponents of regulation in general.

[†] Regulations from the Executive in Need of Scrutiny (REINS) Act, H.R. 10, 112th Cong. (2011). Under this bill, no new "economically significant" regulations would take effect unless Congress affirmatively approved the regulation within 90 days of receiving it, by means of a joint congressional resolution of approval, signed by the President. For more information on the REINS Act, see Sidney Shapiro, *The REINS Act: The Conservative Push to Undercut Regulatory Protections for Health, Safety, and the Environment* (Ctr. for Progressive Reform, Backgrounder, 2011), available at http://www.progressivereform.org/articles/CPR_Reins_Act_Backgrounder_2011.pdf.

The Crain and Crain Report's Methodology

The Crain and Crain report purports to provide a complete accounting of all regulatory costs. It divides the regulatory universe into four categories: economic regulations; environmental regulations; tax compliance regulations; and occupational health and safety and homeland security regulations. Notably, the report never provides a clear definition of the term “regulation,” nor does it provide clear definitions of each of the four regulatory categories. Next, the authors employ different methodologies to calculate the total costs of regulation in each category. Finally, they add up the costs of regulation for each category to derive a total cost of federal regulations.

The report provides only a part of the data, equations, assumptions, extrapolations, and calculations that would be necessary for replicating the report's results. The authors of this white paper made several attempts to obtain the missing additional materials from the authors of the Crain and Crain report, as well as from the SBA Office of Advocacy, which funded the report, so that we could fully understand and verify the methodologies, data, and assumptions that were employed. The authors of the Crain and Crain report provided us with only very general responses and have given no indication that they would furnish us with the missing information.

Remarkably, a staff member at the SBA Office of Advocacy explained that his office did not have access to any of the additional materials, since it had only contracted to receive the final report from the authors.¹⁰ Thus, the SBA Office of Advocacy entered into an agreement with Crain and Crain to spend taxpayer money on a report whose findings it could not then have verified in any significant way—not even checking the arithmetic.[‡]

Because this underlying information is unavailable, the Crain and Crain report is a political document, rather than an academic study. No academic author would submit such a study for publication without revealing the data and calculations on which the scholar relied. No academic publication would accept such a study unless such information was released. Academic reports also acknowledge and discuss potential weaknesses in their calculations, a modesty that is absent from the Crain and Crain report.

Methodological Problems

Economic Regulation Costs

To calculate the total cost of economic regulations, Crain and Crain employ a regression analysis that purports to establish a correlation between a country's score on the World Bank's “Regulatory Quality Index” (RQI) and the size of the country's economic activity, as measured by GDP per capita.¹¹ According to the World Bank report, the RQI seeks to measure public “perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.”¹² Crain and Crain have

[‡] If the SBA Office of Advocacy contracts to have similar reports performed in the future, we strongly urge it to obtain all the data, equations, assumptions, extrapolations, and calculations as part of the contract, and to make these materials readily available in a useable format on its website.

interpreted the RQI as measuring how friendly a country is to business interests.¹³ The World Bank researchers did not intend for the RQI to be used as a proxy measure for regulatory burden or as a tool for critiquing a particular country's regulatory stringency.¹⁴ Nevertheless, Crain and Crain use the RQI in precisely this fashion.

As the World Bank report explains, the RQI is based on public opinion polling, not quantitative data. It is derived from a composite of 35 opinion surveys that asked questions about the regulatory climate of approximately 200 countries.¹⁵ Given its subjective origins, the World Bank researchers responsible for the RQI designed it with a few limited applications in mind—namely, to make meaningful cross-country comparisons as well as to monitor a single country's progress over time. At the same time, these researchers strongly caution against using the RQI for developing specific policy prescriptions in particular countries.¹⁶

Crain and Crain provide no justification defending their use of the RQI to estimate regulatory costs, nor do they ever acknowledge the myriad theoretical or empirical problems with calculating such costs based on public opinion polling. Significantly, one of the peer reviewers of the Crain and Crain report raised this objection, stating “I am concerned that the index may not measure what the authors say it measures, and even if it does, it may overstate the costs of regulation when used in conjunction with the other measures.”¹⁷ The authors do not appear to have revised the report in response to this comment.

As noted above, the Crain and Crain report uses the RQI, which the authors have converted into a proxy measure for a country's regulatory stringency, as the main variable in their formula for calculating the cost of a country's economic regulations—that is, the supposed reduction in that country's GDP caused by the regulations. The authors do not explain how they devised this formula, nor do they provide any of the underlying data, calculations, and assumptions that they used to devise it. Consequently, no one can verify whether or not the formula provides a reasonable model of reality, nor can anyone verify their calculations.

Using this formula, Crain and Crain calculate the loss in GDP the United States suffers because of economic regulation. It is unclear whether Crain and Crain calculate the loss in GDP as compared to the country with the highest RQI score or whether they calculate the loss in GDP attributed to all regulation. The latter baseline would reflect the GDP in a hypothetical United States that had no economic regulations. Whichever baseline they use, Crain and Crain thus conclude that the cost of economic regulations in the United States in 2008 was \$1.236 trillion, “as reflected in lost GDP.”¹⁸

Crain and Crain do not clearly define the category of “economic regulations,” other than to note it is broadly inclusive.[§] The lack of a clear definition opens up the possibility that the category of “economic regulations” also includes the other categories of regulations identified by Crain and Crain. If, for example, this category includes some environmental regulation costs, those costs are also the subject of a separate calculation in the report. This would mean that some of

[§] The report indicates that the category of economic regulations is broad enough to include “a wide range of restrictions and incentives that affect the way businesses operate—what products and services they produce, how and where they produce them, and how products and services are priced and marketed to consumers.” CRAIN & CRAIN, *infra* endnote 1, at 17.

these regulation costs would be counted twice (once as an economic regulation and once as an environmental regulation), leading to an exaggeration of total regulation costs. Some of the polling data used by the authors of the World Bank study in the calculation of the RQI asks questions of environmental and safety regulations, although the majority of the questions are about tax and price control regulations, trade barriers, access to capital, and regulatory barriers to starting a new business.**

One other significant problem in this category of costs is that the regression analysis used in the report assumes an overly simplistic relationship between regulatory stringency and GDP. As noted above, the Crain and Crain report's formula implies that increases in regulatory stringency *cause* a reduction in a country's economic activity, which are reflected in a decreased GDP. The actual relationship between regulatory stringency and a country's economic activity is not so clear-cut, however, because measurements of GDP do not include regulatory benefits. On this subject, the 2009 OMB report to Congress notes:

The relationship between regulation and indicators of economic activity raises a number of complex questions, conceptual, empirical, and normative. A key issue involves identification of the appropriate measures. For example, is GDP the appropriate measure? As we have seen, many regulations have favorable net benefits, and by hypothesis, such regulations are desirable on standard economic grounds. Of course it would be useful to understand the effects on GDP of particular regulations and of classes of regulations. But while important, GDP is hardly a complete measure of relevant values, and some of the benefits of regulation, such as environmental protection, are not adequately captured by changes in GDP.¹⁹

Finally, the report's use of the RQI is misleading because it gives the false impression that the U.S. regulatory burden is especially high. In fact, the United States has one of the highest RQI scores, ranking eleventh out of more than 200 countries.²⁰ The United States ranks higher than many of its competitive trading partners, including China, Germany, Japan, Mexico, South Korea, and Taiwan, and its RQI score has remained fairly constant since 1996, when these scores were first developed.²¹ But Crain and Crain's use of the RQI, and the SBA's use of the Crain and Crain report, imply that the U.S. is inferior to these other countries as an excellent place to do business.

Environmental Regulation Costs

To calculate the costs of environmental regulations, the Crain and Crain report adds up the estimated costs of environmental regulations found in each of OMB's annual reports to Congress on cost-benefit analysis since 2001.²² These estimates in turn are based on aggregation of the

** The World Bank study relied on 35 different sources of global or regional surveys, produced by 33 different organizations. Only 16 of the sources had any measure of regulation at all. Only one specifically mentioned environmental regulations (the World Economic Forum Global Competitiveness Survey). Only 2 of the 35 sources mentioned labor market policy: the African Development Bank (not relevant to the US) and the Institute for Management Development World Competitiveness Yearbook. Neither of these two said which labor market issues they measured, and there was no mention of safety and health by them. See Kaufmann et al., *infra* endnote 11, at 29 (Table 1), 39-71 (App. A).

cost-benefit analyses that EPA produced when developing the regulations. Based on this data, Crain and Crain find that the total cost of environmental regulations in 2008 was \$281 billion,²³ which is 16 percent of the total regulatory costs according to their estimate of total costs.

To generate cost estimates for its cost-benefit analyses, EPA primarily relies on surveys of representative companies that the regulation will likely affect. Because companies know the purpose of the surveys, they have a strong incentive to overstate costs in order to skew the final cost-benefit analysis toward weaker regulatory standards.²⁴ Agencies must also fill in any data gaps they encounter by making various assumptions. Due to fear of litigation over the regulation, they tend to adopt conservative assumptions about regulatory costs, such that the cost assessment ends up reflecting the maximum possible cost, rather than the mean.²⁵

Industry cost estimates—and therefore the cost estimates that EPA develops-- do not account for technological innovations that reduce the cost of compliance and produce non-regulatory co-benefits, such as increased productivity. When companies are asked to predict which technology they will employ to comply with a particular environmental regulation, they often will point to the most expensive existing “off-the-shelf” technology available. Once the regulation actually goes into effect, however, companies have a strong incentive to invent or purchase less costly technologies to come into regulatory compliance. As a result, compliance costs tend to be less, and often much less, than the predicted costs. Moreover, the technological innovations tend to produce co-benefits unrelated to the regulation—such as increased productivity and efficiency—that the company strives to achieve in any event. Given these co-benefits, only a portion of the innovative technology’s costs can fairly be counted as compliance costs.²⁶

As the following chart indicates, retrospective studies of regulatory costs find that the initial cost estimates are often too high.

Study	Subject of Cost Estimates	Results
PHB, 1980 ²⁷	Sector level capital expenditures for pollution controls	– EPA overestimated capital costs more than it underestimated them, with forecasts ranging 26 to 126% above reported expenditures
OTA, 1995 ²⁸	Total, annual, or capital expenditures for occupational safety & health regulations	– OSHA overestimated costs for 4 of 5 health regulations, with forecasts ranging from \$5.4 million to \$722 million above reported expenditures
Goodstein & Hedges, 1997 ²⁹	Various measures of cost for pollution prevention	– Agency and industry overestimated costs for 24 of 24 OSHA & EPA regulations, by at least 30% and generally by more than 100%
Resources for the Future, 1999 ³⁰	Various measures of cost for environmental regulations	– Agency overestimated costs for 12 of 25 rules, and underestimated costs for 2 rules

Finally, unlike the OMB reports, which present regulatory costs as a range, Crain and Crain always adopt the upper end of the range for inclusion in their calculations.³¹ The authors justify this move by claiming that agencies allegedly have a strong incentive to underestimate regulatory costs, although they provide no empirical evidence to support this claim. In fact, as just explained, it is likely that regulatory costs are overstated. In any case, the choice by Crain and Crain to always take the higher bound estimate, rather than presenting their results as a range of costs, as OMB does, is a misleading use of the OMB data.

Agencies were not required by Executive Order to provide OMB with estimates of regulatory costs and benefits prior to 1988. For this reason, OMB had to rely on non-government estimates in order to estimate regulatory benefits and costs prior to 2000. For environmental regulations issued before 1988, the 2001 OMB report relied on a 1991 study of regulatory costs undertaken by economists Robert Hahn and John Hird.³²

Hahn and Hird performed no new calculations of regulatory costs, but instead they generated an estimate by synthesizing a set of earlier studies of regulatory costs conducted by a small circle of conservative economists.³³ These estimates are subject to the same limitations as agency-produced cost analyses, including relying on industry-estimates of compliance costs and failing to account for innovation.^{††} An additional problem is that the Hahn and Hird study is nearly 20 years old, and many of the earlier studies and data it relies upon are more than 30 years old. The data and assumptions reflected in the Hahn and Hird study cannot be reasonably extrapolated to modern social and economic reality.^{‡‡}

Occupational Safety and Health and Homeland Security Regulation Costs

The Crain and Crain report concludes that the total cost of occupational safety and health and homeland security regulations in 2008 was \$75 billion,³⁴ which is four percent of their total costs. Occupational safety and health regulations accounted for \$65 billion of the total.

Occupational Safety and Health Regulation Costs

To calculate the occupational safety and health regulations, the Crain and Crain report relies on two sources. The first source, a 2005 study by Joseph Johnson, provides the total costs of all occupational safety and health regulations issued before 2001.³⁵ The second source, the 2009

^{††} In addition, many of these earlier studies assume a regulatory baseline of zero for their comparisons of regulatory costs. In other words, these studies assume that in the absence of the regulations under examination, companies would have taken no environmentally protective actions. This assumption has no basis in a reality where other existing regulations (federal, state, and local), fear of tort liability, and simple market forces induce companies to take some minimal level of environmentally protective action all the time. This minimal level of actions represents the proper baseline against which regulatory costs should be measured. To the extent that these earlier studies assume a zero baseline, they grossly overestimate regulatory costs. McGarity & Ruttenberg, *infra* endnote 24, at 2047.

^{‡‡} In the intervening years, the U.S. economy and society have drastically changed. For example, scientific knowledge regarding the harmful public health and environmental effects of pollution has greatly improved, the U.S. has shifted from an industrial sector-based economy to a service sector-based one, and even industry has become characterized by more automation and less human labor. See Ian D. Wyatt & Daniel E. Hecker, *Occupational Changes During the 20th Century*, MONTHLY LABOR REV., March 2006.

OMB report to Congress, provides the total cost of all occupational safety and health regulation issued since 2001.

The cost estimate from the 2009 OMB report to Congress is based on a simple aggregation of the cost-benefit analyses that OSHA produced when developing these regulations.³⁶ As discussed above, the cost assessments generated as part of these cost-benefit analyses greatly overstate the costs of regulations, since the agencies that produce them rely on industry for estimates of compliance costs, adopt conservative assumptions to fill in data gaps, and fail to account for innovation.

The Johnson study likewise suffers from several flaws, leading it to overestimate these regulatory costs. The study begins by aggregating the agency-produced cost-benefit analyses for all of OSHA rules issued before 2001.³⁷ As just noted, these costs estimates are overstated. Nevertheless, the Johnson study then inflates OSHA's cost estimates by multiplying the total of all of the estimates by 5.5. According to Johnson, using the multiplier is necessary to account for the costs of all of OSHA's non-major regulations—since OSHA does not perform cost-benefit analyses for these regulations—and for *finer* levied for violations of any OSHA standards.³⁸ In other words, the Johnson study assumes that for every dollar industry spends on compliance with OSHA's major rules, it spends \$5.50 on compliance with non-major regulations and on fines for violations of existing OSHA standards.

We see no justification for counting the fines that companies pay for violating regulatory standards as regulatory costs. Instead, these are the costs of *choosing* to break the law. That is, the fines would never have occurred if the firms had not chosen to disobey the law. Under this logic, mass lawbreaking raises regulatory costs, enabling regulatory opponents to argue that we need to reduce regulation because of these high regulatory costs.

The Johnson study took the multiplier of 5.5 from a 1996 study by Harvey James.³⁹ The James study uses an unpublished and otherwise unavailable 1974 estimate prepared by the National Association of Manufacturers (NAM) of the per-firm cost of compliance with OSHA regulations.⁴⁰ Because the report is unavailable, it cannot be checked for accuracy. As we related earlier, industry estimates of regulatory costs are suspect because of the political incentive to inflate such costs. Nevertheless, the Crain and Crain report incorporate the Johnson study without any discussion of this significant limitation in the data.

Homeland Security Regulation Costs

To calculate the cost of all homeland security regulations, the Crain and Crain report again relies on the 2009 OMB report to Congress,⁴¹ which is based on the cost-benefit analyses that the Department of Homeland Security produced when developing its regulations.⁴² The cost assessments provided in these cost-benefit analyses are overstated for all the reasons stated above: industry-supplied estimates of compliance estimates; conservative assumptions to fill in data gaps; and failure to account for innovation.

Tax Compliance Regulation Costs

To calculate the cost of tax compliance regulations, the Crain and Crain report starts with estimates of the time that businesses, non-profit organizations, and individuals spend each year completing tax-related forms and filings, and multiplies it by an estimate of the hourly cost of filling out the forms. Using this methodology, the Crain and Crain report concludes that the total cost of tax compliance regulations in 2008 was \$160 billion,⁴³ which is about nine percent of their total costs.

The report says it derives its estimates of the time it takes to fill out tax forms from the Internal Revenue Service and the Tax Foundation, a conservative-leaning non-profit organization.⁴⁴ However, they do not explain which data they use or how those data contribute to their estimate. To the extent that data from the Tax Foundation are used, the report's estimate of the amount time spent on tax compliance should be viewed with caution since the Tax Foundation tends to be "anti-tax" in orientation.

The authors calculate tax compliance costs for businesses separately from individuals and non-profit organizations, using the reasonable assumption that businesses spend more money per hour complying with tax regulations. Crain and Crain assume that all businesses rely on "Human Resources professionals" to prepare their taxes, but they provide no evidence to justify this assumption. They nevertheless multiply estimates of the amount of time it takes to fill out the tax forms by \$49.77 per hour ("the hourly compensation rate for Human Resources professionals") on tax compliance.⁴⁵ The report then appears to assume that all individuals and non-profit organizations have their taxes prepared by accountants or auditors, and it estimates that these entities spend \$31.53 per hour ("the average hourly wage rate for accountant and auditors") on tax compliance.⁴⁶ With respect to individuals, this assumption seems particularly unfounded given that millions of American households prepare their own taxes.

Conclusion

The Crain and Crain study is rife with flawed methodologies and questionable data and assumptions. Of even greater importance, each of the problems with the Crain and Crain report's methodologies, data, and assumptions lead to an overstatement of regulatory costs. Because of these problems with the Crain and Crain report's reliability, we believe policymakers should disregard its misleading conclusions as they consider matters of regulatory policy.

Endnotes

¹ NICOLE V. CRAIN & W. MARK CRAIN, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS (2010) (This report was developed under a contract with the Small Business Administration's Office of Advocacy), *available at* <http://www.sba.gov/sites/default/files/rs371tot.pdf>.

² For the three earlier reports, see W. MARK CRAIN, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS (2005) (This report was developed under a contract with the Small Business Administration's Office of Advocacy), *available at* <http://archive.sba.gov/advo/research/rs264tot.pdf>; W. MARK CRAIN & THOMAS D. HOPKINS, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS (2001), *available at* <http://archive.sba.gov/advo/research/rs207tot.pdf>; THOMAS D. HOPKINS, PROFILES OF REGULATORY COSTS (1995), *available at* <http://archive.sba.gov/advo/research/rs1995hoptot.pdf>.

³ CRAIN & CRAIN, *supra* endnote 1, at 6 (2009 dollars).

⁴ OFFICE OF MGMT & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, 2009 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 3 (converted from 2001 to 2009 dollars), *available at* http://www.whitehouse.gov/sites/default/files/omb/assets/legislative_reports/2009_final_BC_Report_01272010.pdf [hereinafter 2009 OMB Report]. The Regulatory Right-to-Know Act requires OMB to produce a report every year that, among other things, calculates the annual cost of major regulations. Treasury and General Government Appropriations Act of 2001 §624, Pub. L. 106-554, 31 U.S.C. §1105 note.

⁵ CRAIN & CRAIN, *supra* endnote 1, at 3-5.

⁶ 2009 OMB Report, *supra* endnote 4, at 3 (converted from 2001 to 2009 dollars).

⁷ *See, e.g.,* Sidney Shapiro et al., *CPR Comments on Draft 2010 Report to Congress on the Benefits and Costs of Federal Regulations* 16-19 (App. A, Pt. C.) (2010), *available at* http://www.progressivereform.org/articles/2010_CPR_Comments_OMB_Report.pdf; Rena Steinzor et al., *CPR Comments on Draft 2009 Report to Congress on the Benefits and Costs of Federal Regulations* 16-19 (App. A, Pt. C.) (2009), *available at* http://www.progressivereform.org/articles/2009_CPR_Comments_OMB_Report.pdf; Amy Sinden & James Goodwin, *CPR Comments on Draft 2008 Report to Congress on the Benefits and Costs of Federal Regulations* 5-8 (2008), *available at* http://www.progressivereform.org/articles/2008_Comments_OMB_Report.pdf. For all of the comments on OMB's annual reports to Congress on the benefits and cost of federal regulation produced by CPR Member Scholars and staff, see Ctr. for Progressive Reform, *OMB Reports on the Costs and Benefits of Regulation*, <http://www.progressivereform.org/OMBCongress.cfm> (last visited Feb. 5, 2011).

⁸ For examples of instances in which anti-regulatory critics have cited the Crain and Crain report and its conclusions, see, e.g., James L. Gattuso, Diane Katz, & Stephen A. Keen, *Red Tape Rising: Obama's Torrent of New Regulation* (Heritage Foundation, Backgrounder No. 2048, 2010) ("According to a report recently released by the Small Business Administration, total regulatory costs amount to about \$1.75 trillion annually . . ."), *available at* http://thf_media.s3.amazonaws.com/2010/pdf/bg2482.pdf; Sen. Mark R. Warner, Op-Ed, *To Revive the Economy, Pull Back the Red Tape*, WASH. POST, Dec. 13, 2010 ("According to the U.S. Small Business Administration, the estimated annual cost of federal regulations in 2008 exceeded \$1.75 trillion."), *available at* <http://www.washingtonpost.com/wp-dyn/content/article/2010/12/12/AR2010121202639.html?hpid=opinionsbox1>; Press Release, U.S. Chamber of Commerce, U.S. Chamber Calls on Federal and State Lawmakers to Stem the Growing Tide of Excessive Regulation (Oct. 7, 2010) ("Donohue cited statistics from the Small Business Administration's Office of Advocacy estimating the total cost of federal regulations at \$1.75 trillion."), <http://www.uschamber.com/press/releases/2010/october/us-chamber-calls-federal-and-state-lawmakers-stem-growing-tide-excessive> (last visited Feb. 1, 2011).

⁹ OFFICE OF ADVOCACY, SMALL BUSINESS ADMINISTRATION, INFORMATION QUALITY PEER REVIEW REPORT FOR THE IMPACT OF FEDERAL REGULATORY COSTS ON SMALL FIRMS 4 (2010) (Bob Litan's peer review), *available at* <http://www.sba.gov/sites/default/files/files/TheImpactofFederalRegulatoryCostsonSmallFirmsPRFY2010.pdf>.

¹⁰ Telephone Interview with Radwan Saade, Regulatory Analyst, Small Business Administration, Office of Advocacy, Office of Economic Research (Jan. 11, 2011).

¹¹ CRAIN & CRAIN, *supra* endnote 1, at 18-25. The RQI was developed as part of the World Bank's Worldwide Governance Indicators project, which seeks to establish a variety of indexes for measuring countries' governance and institutional quality. *See* Daniel Kaufmann et al., *Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008* at 2 (The World Bank, Development Research Group, Macroeconomics and

Growth Team, Policy Research Working Paper No. 4978, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1424591## (follow “One-Click Download” hyperlink at the top of the page).

¹² Kaufmann et al., *supra* endnote 11, at 6.

¹³ See CRAIN & CRAIN, *supra* endnote 1, at 21 (explaining that increases in the RQI correspond to “reductions in regulatory burden.”).

¹⁴ See *id.*

¹⁵ Kaufmann et al., *supra* endnote 11, at 4.

¹⁶ *Id.* at 5 (describing the RQI as “too blunt a tool to be useful in formulating specific governance reforms in particular country contexts. Such reforms, and evaluation of their progress, need to be informed by much more detailed and country-specific diagnostic data . . .”).

¹⁷ OFFICE OF ADVOCACY, *supra* endnote 9, at 2 (Richard Williams’ peer review), *available at* <http://www.sba.gov/sites/default/files/files/TheImpactofFederalRegulatoryCostsonSmallFirmsPRFY2010.pdf>.

Richard Williams is a conservative economist who currently works as the Director of Policy Research at the Mercatus Center, an anti-regulatory think tank. See Mercatus Ctr., *Richard Williams Biography*, <http://mercatus.org/richard-williams> (last visited February 4, 2011).

¹⁸ CRAIN & CRAIN, *supra* endnote 1, at 24 (2009 dollars).

¹⁹ 2009 OMB Report, *supra* endnote 4, at 29.

²⁰ See Kaufmann et al., *supra* endnote 11, at 89-91 (Table C4). The RQI is designed so that possible scores range from -2.5 (*i.e.*, the greatest regulatory burden, however defined) to 2.5 (*i.e.*, the lowest regulatory burden, however defined). In 2008, the RQI score for the United States was 1.579. CRAIN & CRAIN, *supra* endnote 1, at 24.

²¹ See Kaufmann et al., *supra* endnote 11, at 89-91 (Table C4).

²² CRAIN & CRAIN, *supra* endnote 1, at 25- 27.

²³ *Id.* at 31 (Table 6) (2009 dollars).

²⁴ Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety, and Environmental Regulation*, 80 TEX. L. REV. 1997, 2011, 2044-45 (2002).

²⁵ *Id.* at 2046.

²⁶ *Id.* at 2049-50. Studies of OSHA’s vinyl chloride and cotton dust standards concluded that actual compliance costs were much lower than predicted costs in part because of overall productivity gains achieved by regulatees. When company scientists and engineers were forced to concentrate on cost-effective compliance techniques, they also identified ways to improve the overall productivity of an industrial process, or even an entire industry. See OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OFFICE OF PROGRAM EVALUATION, REGULATORY REVIEW OF OSHA’S COTTON DUST STANDARD (2000) (identifying extensive technological improvements and increased productivity in the textile industry spurred by OSHA’s cotton dust standard); RUTH RUTTENBERG, REGULATION IS THE MOTHER OF INVENTION 42, 44-45 (Working Papers for a New Society, May/June 1981), (identifying six regulation-induced changes in the vinyl chloride industry that resulted in increased productivity).

²⁷ Winston Harrington, Richard D. Morgenstern, & Peter Nelson, *On the Accuracy of Regulatory Cost Estimates* 6 (Resources for the Future, Discussion Paper 99-18, 1999) (citing PUTNAM, HAYES, & BARTLETT, INC., COMPARISONS OF ESTIMATED AND ACTUAL POLLUTION CONTROL CAPITAL EXPENDITURES FOR SELECTED INDUSTRIES (Report prepared for the Office of Planning & Evaluation, U.S. Env’tl. Protection Agency, 1980)), *available at* <http://www.rff.org/documents/RFF-DP-99-18.pdf>.

²⁸ OFFICE OF TECHNOLOGY ASSESSMENT, GAUGING CONTROL TECHNOLOGY AND REGULATORY IMPACTS IN OCCUPATIONAL SAFETY AND HEALTH: AN APPRAISAL OF OSHA’S ANALYTICAL APPROACH 58 (1995).

²⁹ Eban Goodstein & Hart Hodges, *Polluted Data: Overestimating Environmental Costs*, 8 AM. PROSPECT 64 (Nov./Dec. 1997).

³⁰ Harrington, Morgenstern, & Nelson, *supra* endnote 27. The Resources for the Future study notes that actual compliance costs can also be less than an agency estimates because there can be less regulatory compliance than the agency anticipates. If an agency overestimates the extent of pollution reduction, or some similar benefit, then the regulation may cost less than the agency estimates. In such cases, the original agency estimate might have been accurate, but it turns out to be wrong because the regulatory industry does not obey the regulation to the extent that the agency predicted. *Id.* at 14-15.

³¹ CRAIN & CRAIN, *supra* endnote 1, at 27.

³² *Id.* at 25.

³³ Robert W. Hahn & John A. Hird, *The Costs and Benefits of Regulation: Review and Synthesis*, 8 YALE J. ON REG. 233, 248-54 (1991).

³⁴ CRAIN & CRAIN, *supra* endnote 1, at 31 (2009 dollars).

³⁵ *Id.*

³⁶ 2009 OMB Report, *supra* endnote 4, at 11 (Table 1-2).

³⁷ Joseph M. Johnson, *A Review and Synthesis of the Cost of Workplace Regulations*, in CROSS-BORDER HUMAN RESOURCES, LABOR, AND EMPLOYMENT ISSUES 433, 453-54, 466 (Table 10) (Andrew P. Morriss & Samuel Estreicher eds., 2005).

³⁸ *Id.* at 455.

³⁹ HARVEY S. JAMES, JR., ESTIMATING OSHA COMPLIANCE COSTS 10-13 (Ctr. for the Study of Am. Bus., Policy Study No. 135, 1996).

⁴⁰ *Id.* James compared the NAM estimate to cost-benefit estimates produced by OSHA. Since the NAM estimate was approximately 5.5 times greater than the aggregate value of OSHA's cost-benefit analyses, he assumes he was justified using a 5.5 multiplier. *Id.* James did not cite an original source for the numbers that he derived from the NAM estimate. He merely cited a book by Robert S. Smith in which the NAM estimate was featured in a table. *Id.* at 4. There is no indication in James' report that he read or made any independent attempt to evaluate the accuracy of the NAM report.

⁴¹ CRAIN & CRAIN, *supra* endnote 1, at 31.

⁴² 2009 OMB Report, *supra* endnote 4, at 17-18.

⁴³ CRAIN & CRAIN, *supra* endnote 1, at 29 (2009 dollars).

⁴⁴ *Id.* at 28.

⁴⁵ *Id.* at 29.

⁴⁶ *Id.* at 29.

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Founded in 2002, the Center for Progressive Reform is a 501(c)(3) nonprofit research and educational organization comprising a network of scholars across the nation dedicated to protecting health, safety, and the environment through analysis and commentary. CPR believes sensible safeguards in these areas serve important shared values, including doing the best we can to prevent harm to people and the environment, distributing environmental harms and benefits fairly, and protecting the earth for future generations. CPR rejects the view that the economic efficiency of private markets should be the only value used to guide government action. Rather, CPR supports thoughtful government action and reform to advance the well-being of human life and the environment. Additionally, CPR believes people play a crucial role in ensuring both private and public sector decisions that result in improved protection of consumers, public health and safety, and the environment. Accordingly, CPR supports ready public access to the courts, enhanced public participation, and improved public access to information. The Center for Progressive Reform is grateful to the Public Welfare Foundation for its generous support of CPR's work on regulatory issues in general.

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