Grading the Government
Executive Summary

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For over a decade, scathing critiques of government have been fueled by a stream of stories and studies which purport to show that government regulation is pervasively irrational, and that the costs of many government regulations (particularly health, safety and environmental regulations) vastly outweigh their benefits.

These stories and studies have inspired a sustained campaign to try to force agencies to be more rational: requirements for cost-benefit analysis of all major rules, closer White House and congressional oversight, more searching judicial review, a new law facilitating challenges to the quality of agency data, and any number of additional proposals for further "regulatory reform."

Most important, perhaps, these allegations have created a climate of opinion that is receptive to all manner of proposals for freezing or rolling back health, safety and environmental regulations.

This Article addresses a long-overlooked foundational question: how reliable are these stories and studies?

The Stories

This Article will not have much to say about the anecdotes, except that they need to be treated with caution. Anyone who takes time to investigate these stories soon finds out that some are true; others are exaggerated; a startling number are simply false.

For example, Justice Breyer’s influential book, Breaking the Vicious Circle, reports that during his tenure as a circuit court judge he was asked to enjoin EPA from requiring a company to clean up a contaminated waste site to the point where the soil on the site would be safe for children to “eat” 245 days a year – though the site was not zoned residential. Though such requirements are no longer EPA practice, agency officials do not dispute Breyer’s basic account of that case.

House Majority Leader Tom DeLay, on the other hand, opposed Clean Water Act re-authorization in part with a tale of the plight of the citizens of Lake Jackson, Texas, who he claims were denied the right to build a golf course on land of their choosing when EPA declared that footprints of cows on the land were legally protected wetlands when filled with water.

This story comes close to pure invention. According to officials with the US Fish and Wildlife Service, the land in question was not pasture, but a forest which forms a part of the “only [remaining] forest habitat adjacent to the Gulf of Mexico.” The so-called “footprints of cows” on the parcel are actually “wetland sloughs” several feet deep.

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and up to two hundred feet wide, which fill with water every year to provide sustenance to local and migrating birds.

Unfortunately, tall tales of this sort abound because politicians, journalists and scholars alike are too often content to report sensational allegations, as allegations, without investigating their veracity. True, false, or exaggerated, these stories, through sheer repetition, take on a life of their own as “urban legends.” Even if a story turns out to be true, one has no way of knowing whether the incident is typical of agency practice, or aberrational.

The Studies

The obvious probative shortcomings of anecdotes have given rise to a group of much more comprehensive and important studies of regulation which have largely supplanted anecdotes as the leading source of regulatory skepticism. I call them “regulatory scorecards” and I devote most of the article to investigating their validity.

Regulatory scorecards are a special form of cost-benefit analysis. While the typical agency cost-benefit analysis devotes hundreds of pages to the investigation of the costs and benefits of a single project or rule, scorecards reduce these hundreds of pages to a few summary statistics – costs, benefits, net benefits, and/or cost-per-life-saved. The scorecardists then tabulate these statistics across scores of rules in order to generate a seemingly concise and precise picture of the cost-benefit rationality of programs, agencies, and even government regulation across the board.

While any number of scorecards have circulated in one form or another, three studies have been particularly influential in shaping the modern debate over the cost-benefit rationality of the administrative state.

- In 1987, an OMB economist named John Morrall published a table of 44 regulations. One-third of the regulations in his list show a cost over $100 million for every statistical life saved. One allegedly cost up to $72 billion per life saved.

- In 1996, John Graham and Tammy Tengs at the Harvard Center for Risk Analysis published a study which concluded that 60,000 additional lives could be saved, at no additional cost, by simply re-allocating funds from ineffective life-saving interventions to more cost-effective ones. From this the authors concluded that 60,000 lives are lost each year due to irrational risk regulation – a situation that John Graham has called “statistical murder.”

- In 1996, and again in a 2000 update, Robert Hahn published what he calls “the most comprehensive assessment to date of the impact of federal regulatory activities on the economy.” His conclusion: “less than half the major rules issued over the period 1981-1996 pass a neutral economist’s benefit-cost test” using the government’s own numbers.

When three prestigious studies all arrive at the same basic conclusion – that our regulatory system is pervasively irrational and, in one case, that this irrationality is killing people – it should come as no surprise that their studies have a large impact. In
fact, these studies have featured in General Accounting Office reports, in OMB annual reports to Congress, in congressional testimony, in court of appeals opinions, in the debate over the Contract With America, in administrative law school textbooks, and in all manner of think tank publications. Their basic conclusions have appeared in virtually every newspaper and magazine – where they are invariably cited as strong evidence, if not proof, of a pervasive pattern of regulatory irrationality.

Hahn himself has been installed as Director of the prestigious AEI-Brookings Joint Center for Regulatory Studies. Graham has been appointed Director of the Office of Information and Regulatory Affairs (OIRA) at OMB – a position which gives him oversight of all agency regulation. Morrall is a senior official in OIRA. The regulatory world view shared by Morrall, Hahn, and Graham is now the view of the Bush Administration, much of the leadership of Congress, many scholars, and millions of Americans.

How reliable are the studies? To investigate this question I went back to the spreadsheets (where they exist) and the original rules on which the scorecards are based. I tried to replicate the scorecards' numbers and explored what, if anything, their numbers leave out. Without attempting to investigate every rule, I audited their database the way a careful accountant might audit a company's financial statements – not looking at every entry, but looking at enough entries to provide a fair picture of how reliable the bookkeeping is.

I found, in a nutshell, that all three studies rely on undisclosed data and non-replicable calculations; use biased regulatory samples; misrepresent $\textit{ex ante}$ guesses about costs and benefits as actual measurements; exclude all unquantified costs and benefits, and disregard all questions about the fairness of the distribution of cost and risk. They under-estimate the value of lives saved or the number of lives saved, or both. Graham and Tengs' famous conclusion – that 60,000 lives are lost by irrational regulation – rests entirely on a clearly counter-factual assumption.

Finally, none of these scorecards fully disclose the large uncertainties that are present in virtually every regulatory impact assessment. This last flaw, ironically, may hold the key to their great influence: regular use of speciously precise numbers lends them a scientific air which impresses the unsuspecting, but is quite unwarranted by the data.

The discussion that follows offers a fuller account of these defects and shows how most of these defects stack the deck against a finding of regulatory rationality.

1. Non-replicable data and calculations

\textit{Morrall.} Morrall's table has been widely cited for the proposition that federal regulations cost up to $72 \textit{billion} for each life saved. Where do these numbers come from? His study circulated for 13 years before anyone thought to ask.

Morrall acknowledges that he “sometimes revised” agency cost and benefit estimates. In fact, a comparison of his numbers with primary agency documents indicates that his revisions are numerous, large (several orders of magnitude in some cases), and almost always in the direction of higher costs or lower benefits. For example, in 1986, EPA estimated that its restrictions on land disposal of certain hazardous wastes would avert 40 cases of death or illness per year at a cost of $97 \textit{million}. Morrall alters that to 2.5 lives saved at a cost of $1.3 \textit{billion}. 
Morrall himself is an economist and has no training in the subject matter of any of the rules he critiques. Yet Morrall does not even name, much less defend, either the studies he relied on or the methods he used to generate his own substitute numbers.

_Hahn._ Hahn claims – in his title and at least eighteen times thereafter – that he is just “using the government’s numbers” and overtly distinguishes himself from Morrall in this regard. Buried in a few passages laden with technical jargon is the revelation that Hahn actually makes numerous and extensive adjustments to the government's numbers.

For example, he excludes cost savings from regulations because he believes “those savings are generally questionable.” He assigns his own values to avoided risks of death or injury, regardless of agency values. He discounts cost and benefit streams at his own “standard” discount rates, regardless of agency practice. In cases where agencies provide a range of expected costs or benefits, Hahn collapses the range and takes only the mid-point.

In other words, Hahn may begin with government estimates, but his numbers are not “the government's numbers.” Moreover, even with the benefit of his unpublished spreadsheets, it is often impossible to replicate Hahn's cost and benefit numbers by applying the adjustments he describes to the agency estimates he cites.

_Tengs/Graham._ Tengs and Graham draw their data from public and private sector studies of the baseline cost and life-saving performance of a wide range of government life-saving interventions, as compared to the predicted cost and life-saving potential of each program if it were fully implemented. These data both guide their hypothetical re-allocation of funds from allegedly ineffective programs to more cost-effective ones, and generate the estimate of how many additional lives would be saved by that re-allocation.

Unfortunately, their stated criteria for choosing source studies do not ensure that these studies are of high quality, or even that they are directly comparable. Moreover, key parameters in the Tengs/Graham study (such as baseline implementation rates, full implementation costs and life-saving potential) are calculated off-the-books, with no explanation, by anonymous reviewers, in a manner which makes replication impossible.

In short, _none_ of these widely-cited regulatory scorecards are replicable based on data in the public domain. That circumstance alone should have marked these studies as unreliable from the beginning.

2. _Zeroing out regulatory benefits_

Although most of Hahn's calculations are “off-the-books” I was eventually able to obtain from him an unpublished spreadsheet that contained the summary statistics – costs, benefits and net benefits – that he calculated for each of the major rules in his database. That spreadsheet (reproduced as Appendix C of my article) immediately reveals, amazingly, that 41 of the 136 major rules in his database are assigned a “zero” benefit. These rules, it should be emphasized, are not rules for which it is claimed that costs equal benefits. _These are rules that are alleged to offer no benefit whatsoever._
Hahn’s list of allegedly zero-benefit rules includes:

- a rule requiring that owner/operators of tankers develop plans to respond to large oil spills;
- a rule requiring the public reporting of releases of certain toxic chemicals from large manufacturing facilities;
- a Clean Water Act rule aimed at protecting sensitive coastal areas from non-point-source water pollution;
- a rule to protect 3.9 million agricultural workers from exposure to harmful pesticides;
- three rules establishing national primary drinking water standards to limit public exposure to toxic pollutants in drinking water; and
- an FDA rule establishing requirements for the safe handling of seafood in commercial processing operations.

It turns out that Hahn’s accounting system simply does not recognize whole categories of benefit – like environmental protection (in most cases), or prevention of acute poisoning, or improved enforcement of other rules, or any benefits that are not quantified. Rules that yield such benefits have them excluded from the tally. Rules that provide only benefits that Hahn excludes get an automatic zero. Hence the 41 zero-benefit rules.

One example will serve to illustrate the way Hahn’s accounting methods distort the reality of health, safety and environmental rules. In 1992 EPA promulgated an agricultural worker protection standard for pesticides. Noting that the rule would help protect 3.9 million agricultural workers across the United States who are exposed to pesticides in their work, EPA predicted the following benefit:

“avoiding 8,000-16,000 physician-diagnosed (non-hospitalized) acute and allergic pesticide poisoning incidents, [while] avoiding about 300 hospitalized acute and allergic pesticide poisoning incidents, and avoiding potentially important numbers of cancer cases, serious developmental defects, stillbirths, persistent neurotoxic effects and non-diagnosed acute and allergic poisoning incidents.”

Hahn’s scorecard, however, does not recognize any non-accidental “health benefit” other than “reducing the risk of cancer, heart disease, and lead poisoning.” Since avoiding stillbirths, persistent neurotoxic effects and pesticide poisoning does not fit within any of these categories, the regulation protecting 3.9 million agricultural workers from acute pesticide poisoning is assigned a zero benefit. It thus fails Hahn’s cost-benefit test.

Given such accounting methods, it is no wonder that many rules “fail” cost-benefit analysis. What is remarkable is that so many rules pass.
Morrall and Graham/Tengs adopt an even more extreme accounting convention: by evaluating every regulation solely in terms of cost-per-life-saved, they manage to exclude non-life-saving benefits entirely.

Whatever one may say about the merits or demerits of cost-benefit analysis, this is not the way such analysis is supposed to work. Indeed, the widely-accepted Annapolis principles for sound cost-benefit analysis advise:

“not all impacts of a decision can be quantified or expressed in dollar terms. Care should be taken to assure that quantitative factors do not dominate important qualitative factors in decision-making.”

No one disputes this principle. Scorecards simply do not practice it. Moreover, it is hard to see how they could. The point of scorecards is to come up with the number of rules that generate positive net benefits, or that cost less than some threshold amount per life saved. Without relying exclusively on numbers, how do they keep score?

3. Selection bias

Scorecards analyze samples drawn from the larger universe of regulation in order to support broader inferences about that universe. Such inferences are valid only if the samples they select are broadly representative of the population as a whole. Yet the samples used in these scorecards are clearly not representative of the larger universe of regulation. In fact, all three scorecards adopt sampling criteria which systematically skew results towards showing a pattern of capricious regulation.

For example, fourteen of the sixteen EPA regulations on Morrall’s list have to do with just four pollutants – asbestos, benzene, arsenic or radionuclides – that have generated some of the most heated controversies in all of environmental law. Just seven toxic substances (including the four just named) account for 99 percent of the toxin control baseline costs in Graham and Tengs’ database. There is no reason to assume that the saga of these four, or seven, substances typifies EPA’s and OSHA’s experience in routinely overseeing thousands of other chemicals in the marketplace.

Hahn’s scorecard examines all major federal regulations promulgated within a specified period. However, this seemingly comprehensive approach turns out, on closer inspection, to be not comprehensive at all. In fact, it introduces at least two sources of anti-regulatory sampling bias.

First, the focus on “major” rules as defined by cost effectively excludes from the database all those rules which achieve major benefits without imposing commensurate costs – i.e., rules which are arguably the most cost-effective interventions of all.

Second, by focusing only on enacted rules to the exclusion of regulatory opportunities (i.e., situations where analysis has shown that cost-effective rules should have been issued but were not), Hahn and Morrall make it virtually impossible, by design, for their scorecards to show under-regulation, and almost certain that their studies will reveal at least some over-regulation.
4. The *ex ante* fallacy

Every year footballs pundits on pre-game shows take turns guessing the score or the point spread of the Super Bowl that is soon to follow. But then the game happens, and newspapers report the results of the game. Fortunately, there is no record of any occasion in recent history when a newspaper has committed the blunder of confusing the pre-game guesses with the actual score of the game.

Yet this sort of blunder is virtually universal in scorecards, where costs and benefits are routinely presented as actual measurements when, in fact, the numbers consist exclusively of analysts' educated guesses about what future costs and benefits might be in a variety of hypothetical scenarios. I call this the "*ex ante* fallacy."

Besides creating a false appearance of certainty, the *ex ante* fallacy may well introduce yet a further bias against a finding of regulatory effectiveness. This bias arises in part from the fact that cost estimates for prospective rules are often taken from industry sources who obviously have no incentive to under-state prospective compliance and every incentive to over-state them. Moreover, it can be genuinely difficult to anticipate whether, how far, or how fast, costs of new pollution control technologies will decline as new regulations which favor these technologies bring them into mass production. Finally, many rules contain waiver provisions which allow regulators and permit writers to soften the blow of unexpectedly costly regulations on a case-by-case basis. These circumstances suggest that *ex ante* guesses probably tend to over-state regulatory costs.

On the benefit side, regulatory critics frequently complain that risk assessments use excessively conservative risk assumptions which cause benefits estimates to be systematically over-stated. However, my examination of agency risk assessments and regulatory impact analyses suggests that agency *cancer* risk assessments have adopted quite conservative risk assumptions in the past, though that is changing. As seen above, non-cancer health risks, and ecological risks, are often left unquantified, leading scorecards to grossly *under*-estimate benefits in these areas.

5. Under-valuing the benefit of reducing risk to human life and health

How does one assign a monetary value to the benefit of reducing a risk to human life or health? Some scholars claim that assigning a "price" to risks to human life and health, even low risks, is immoral. Economists generally disagree. Without attempting to resolve that ethical debate, I simply argue that the values used by Hahn and others are, on their own (economic) terms, unscientific and irrational.

Hahn assigns a "standard" value of $5 million per statistical life saved, with $3 million and $7 million values used in sensitivity analysis. He then discounts the value of lives saved in the future – for example, after a lengthy latency period following exposure to a carcinogen – at 5 percent per year, with 3 and 7 percent rates used in sensitivity analysis. Hahn follows agency practice in drawing his risk-to-life values from a collection of contingent valuation and labor market studies. Yet the practice is highly controversial, and the values it yields are hotly contested.

Contingent valuation studies, as many scholars have pointed out, elicit hypothetical answers to hypothetical questions, with no way to verify that such polls measure people’s real values. Such studies are inherently unreliable.
Labor-market studies, on the other hand, observe actual market behavior in the form of wage-premiums accepted by workers in high risk jobs: the yearly wage-risk premium, divided by annual job risk, yields the implicit value of risk-to-life accepted by these workers. Despite this theoretical advantage, labor market studies exhibit several serious drawbacks:

(a) Existing labor market studies employ different data, methods, assumptions and models to yield a wide range of implicit life values, extending from less than $1 million to nearly $18 million, measured in 2000 dollars. These studies have not been quality-controlled to a level remotely commensurate with the policy weight they now carry, and agencies have offered no persuasive, public reason for choosing one value over another.

(b) Many labor market studies in current use draw on data that is very old. In many cases merely adjusting these studies for real income growth over the period between the year-date of the data and that of the regulatory decision would yield dramatic increases in agency life values. Yet even this obvious adjustment is not, in practice, made.

(c) Labor market studies assume that the workers in the database enjoy a free and unfettered choice of jobs with various risks, and that they accurately assess the risks of the jobs they are taking. This is a very strong assumption, the realism of which has been hotly disputed. Relaxing it raises serious doubt as to whether current studies measure the true willingness of these workers to accept compensation for risk on the job.

(d) Even if existing studies accurately measure workplace wage-risk premiums, workplace risks are not the sort of risks that matter to most social regulation. Workplace risks are discrete and (to some extent) controllable and voluntary. Environmental risks are typically cumulative, uncontrollable and involuntary. Scholars agree that involuntary risks should be valued more highly than voluntary ones: some say twice as high. Simple economics suggests that cumulative risks – the sort of risks that result when agencies apply a value-of-life rule-of-thumb to multiple agency decisions – should be valued more highly than isolated risks. Avoiding dread diseases like cancer are widely thought to merit a higher value than reducing the same number of sudden deaths in accidents. Yet the life values in current use fail to reflect any of these distinctions.

(e) Finally, current labor-market studies draw their data from the behavior of workers in high risk industries. Yet simple intuition suggests that workers who voluntarily take dangerous jobs are likely to be more tolerant of risk than the average American. If so, implicit risk values elicited from their market behavior will under-state the risk aversion of ordinary Americans, thereby under-stating the benefits of reducing risk through regulation. Again, current life values incorporate no adjustment to correct for this in-built skew against full recognition of the benefits of regulation.

6. Discounting future benefits

Even more controversial than the tendency to under-value life saved in the present is the practice of discounting the value of lives saved in the future after, for example, a latency period for cancer. Depending on one's choice of discount rate and latency period, discounting can have the effect of reducing regulatory benefits by as much as a factor of 50.
Economists insist that discounting is a standard way of reflecting the time value of money and consumption. But this position assumes, problematically, that the choice between a little more money now and a higher risk to life later can be treated in the same way as a simple choice between one apple now and two apples later. Critics of discounting argue that life is more than a bundle of consumption, and that loss of life is not a marginal loss in any case.

One possible way to avoid the treacherous terrain of life valuation and discounting is by doing as Tengs/Graham and Morrall do: evaluate regulations on the basis of the basis of cost per life saved without trying to assign a monetary value to the lives thus saved. This might have provided an escape from the dilemma of valuation had those authors not immediately thrown themselves back into the soup by insisting on discounting the number of lives saved in future years.

Discounting the number of lives means, in a nutshell, that a regulation which saves 100 lives after a twenty-year latency period is deemed to save only 61 lives at a five percent discount rate, and 37 lives at a seven percent rate. Discounting at ten percent for forty years, as Morrall appears to have done, has the effect of reducing the 100 lives saved to only 2.

One obvious problem with discounting lives is that death does not recognize accounting conventions and death does not discount. As a result, if one million people are exposed to a chemical that produces a 1:10,000 probability of fatal cancer among those exposed, then the odds are quite high that approximately 100 people (not 61, 37, or 2) will get cancer as a result of the exposure. In any case, the average reader of such analyses understandably does not appreciate that the physical reality of 100 lives saved in twenty years is being presented as 2 lives saved, or that 42 years of life extension are being shrunk (by the magic of discounting) to 10 or 17 years of life. Whether or not it constitutes sound economics, discounting lives is misleading and objectionable simply as a matter of English usage.

A far better approach is simply to follow OMB’s advice to agencies: “As a first step, you should consider presenting the streams of benefits and costs over time. These ‘raw’ streams of benefits and costs can help you – and your reader – better understand the effects of alternative regulatory actions.”

7. Ignoring distributive impacts and individual rights

Most cost-benefit analyses treat risks and costs as fungible commodities whose distribution can safely be ignored. The lives saved in these analyses are statistical lives, and the resources expended are society’s resources.

This approach, taken to its logical conclusion, implies that a 1:100,000,000 risk imposed involuntarily on ten million people is statistically interchangeable with a 1:10 risk of death imposed involuntarily on a single person. Common sense and basic fairness suggests otherwise. If a 1:1,000,000 risk is a tiny and widely dispersed risk which seems a reasonable price to pay for benefit of modern living (assuming the activity brings a clear benefit), a 1:10 risk of death is essentially a game of Russian roulette which society has no right to force anyone to play for any amount of social economic gain. Scorecards simply ignore such distinctions. By their very method, scorecards obscure ethical questions such as: By what right do I enrich myself by putting your life at risk? Conversely, by what right do you ask me to protect endangered species on my
property in order to preserve them for you? Sound analysis does not ignore such questions.

8. Ignoring public preferences

A further difficulty with scorecards may be illustrated with a simple example. Automobile accidents kill over 40,000 Americans – about twelve times the death toll of the World Trade Center bombings – every year. It is likely that a cross-section of experts assigned to consider the issue would agree that some of the many billions of dollars now being spent searching diaper bags and grandmothers in airports would actually save more lives per dollar if diverted to programs for improving auto safety.

Yet this is virtually unthinkable in the current climate. The American public is accustomed to auto risks and terrified of terrorism. We want everything done that can be done to stop the latter. Other threats, at other times, likewise have dominated public consciousness for a period leading to rather expensive public responses – cryptosporidium, AIDS, toxic waste, etc. Experts have known for over a decade that they rank risks differently than the public. The question is, so what? To the extent that there is value in minimizing public fear (as opposed to risk) – or virtue in democratic accountability to the public – then the best regulation may not always be the most cost-effective one.

9. Ignoring uncertainty

One of the most striking features of the Hahn, Morrall and Graham/Tengs scorecards – and, one suspects, a key to their great influence – is the precision of their numbers, which they typically report to three or four significant digits.

The appearance of precision in these numbers is highly misleading. A large literature already documents the data gaps and conceptual uncertainties that confront efforts to estimate physical risks to human health and eco-systems. We have just reviewed some of the conundrums facing efforts to assign a monetary value to the benefit of reducing such risks. A growing literature attests to the uncertainties facing regulatory cost predictions as well. Yet scorecardists present their results (particularly in the media) with the routine confidence of a draper measuring curtains.

The scorecardists’ failure to disclose uncertainties fully cannot be excused by weaknesses in agency assessments. Agencies quite often report ranges of estimates and disclose major sources of uncertainty in their estimates, in keeping with good practice. It is the scorecardists who largely omit this important step.

10. Incorporating covert and counter-factual assumptions

Graham’s “statistical murder” charge gained him nationwide recognition and delivered another black eye to the reputation of federal agencies. But Graham’s charge rests entirely on the covert, counter-factual assumption that a dollar spent on low risk A is automatically subtracted from spending on some other risk B where that dollar would save more lives. In fact, no such cost triage now occurs, nor should it. Ours is a 10 trillion dollar economy which spends only a small fraction of its resources on risk reduction. If money spent cleaning up hazardous waste sites might save more lives if re-
directed to combat smoking, then so might some small portion of, say, the $36 billion spent each year on lottery sales, the $92 billion spent on alcoholic beverages, or the $54 billion spent on tobacco.

Viewed from another perspective: Graham's own data reveal that 42,000 of the 60,000 additional lives saved by "rational" re-allocation of funds are saved by fully implementing just two programs that were not fully funded at the time of his study: universal flu vaccination, and continuous oxygen for hypoxemic lung disease patients. Are we really to believe that the nation's failure to implement a universal flu vaccine program is somehow caused by the putative over-regulation of benzene? If not, where is the statistical murder?

CONCLUSION

Despite their wide dissemination and influence, regulatory scorecards do not prove the pervasive irrationality of government regulation. What they prove is the propensity of quantitative cost-benefit or cost-effectiveness analysis to cause confusion about complex matters of vital interest to the public.

This does not mean that the current regulatory system is good and all regulations wise. Volumes have been written, quite properly, about the slowness and cumbersomeness of agency decision-making; the de-moralizing impact of work life in agencies where ten percent of the people do ninety percent of the work; the irrationality of congressional micro-management that compels agencies to regulate one thing while denying them authority to address other, greater harms. Rigorous case studies and court cases have shown that agencies do act irrationally in some cases.

This article is not meant to deny or discount these very real problems. Nor is it intended to suggest that all regulations are wise. This article simply argues that there is no reliable evidence for the claim that regulations are pervasively over-zealous and, more generally, that finding and correcting unwise regulations cannot be accomplished by the dowsing rod of strictly numerical analysis.

The benefits of health, safety and environmental regulations cannot be reduced to numbers alone. Real regulatory reform, if it turns out to be needed, will require a much more careful investigation of facts and law – one that gives proper weight to variables that cannot be quantified, to uncertainties, to public preferences, to cumulative impacts, to distributive concerns, and to the impacts of regulatory and de-regulatory decisions on individual rights.

Meanwhile, we should be wary of spectacular claims that purport to show the systemic irrationality of government regulation. For the tests that claim to show this are invalid.