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TESTIMONY

WHAT INFORMATION COULD HELP IN ANALYZING REGULATION? Is There a Problem to Be Fixed?

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I've been asked to discuss the costs of regulations, particularly with respect to three proposed bills that would each amend the Regulatory Review Act. If I can be so bold as to characterize all three of these bills with broad brush strokes, I would say that their goals, at least as I understand them, are

1. to require more review of existing regulations; and
2. to create more oversight for the creation of new regulations.

Of course, neither regulatory review nor oversight of the creation of regulations can be effective without high-quality information about the effects of regulations. To your state's credit, and judging by the existence of such terms as "acceptable data" in the Regulatory Review Act, you appear to have been concerned with the quality of information about regulations' effects for some time. I hope that my testimony can help focus your concerns on some specific information that could help in both regulatory review and regulatory oversight, as well as spur you to consider what motivates those who provide that information.

I have three major topics that I will address. First, I will discuss what relevant information we might hope to have when reviewing existing regulations or analyzing the effects of new ones. This will include a discussion of what goes into a typical calculation of regulatory costs and what is often missing.

Second, although I acknowledge that it is technically demanding to perform a good economic analysis of a regulation, there are relatively simple steps that could be followed to ensure that at least some useful information is considered in the regulatory decision-making process. A simple, two-step process requiring analysts to clearly identify the problem that a regulation would attempt to fix and to evaluate alternative approaches to doing so could go a long way toward crafting an environment that fosters competitiveness and economic efficiency without sacrificing the outcomes that regulations are intended to achieve. I will demonstrate this using evidence from research on occupational licensing regulations.

Finally, I will address the incentives of those who are charged with analyzing regulatory costs and benefits. Economists and analysts in regulatory agencies are repeatedly instructed on what information they should

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provide and how to do it, yet the quality and quantity of information in their analyses never seems to satisfy legislators, or for that matter, the public. Why? Maybe these analysts incentives point them in a different direction.

WHAT INFORMATION COULD HELP IN ANALYZING REGULATION?

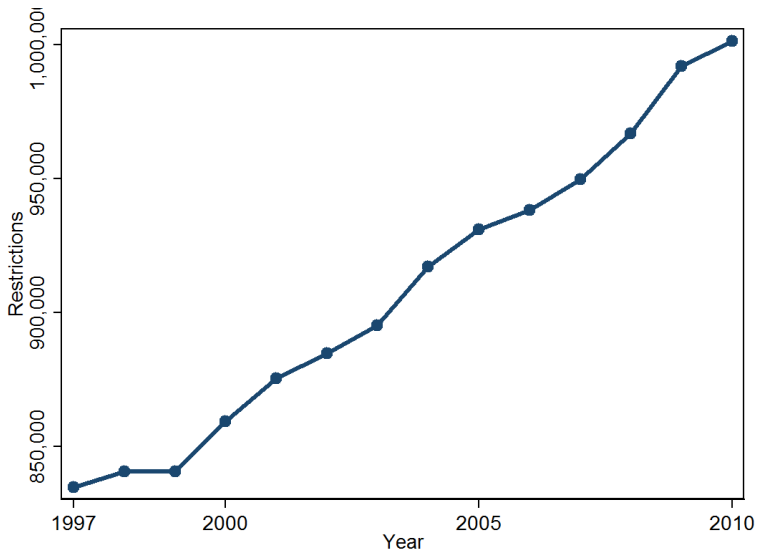
It is a difficult but valuable task to quantify the effects of regulation. In fact, not only is it difficult to quantify the effects of regulation, it is a monumental task to simply quantify regulation itself. What do we mean by regulation? A professor at the University of Pennsylvania aptly describes it: "at its most basic level, *regulation* seeks to change *behavior* in order to produce desired *outcomes*."[1] Regulatory reform bills are, in that sense, regulations themselves, as they would attempt to change the behavior of regulatory agencies. So I would ask some of the same questions of any proposed bills that I would ask of proposed regulations: what is the problem you are trying to fix, what changes in behavior do you want to elicit, and how will you know whether your intervention has succeeded?

IS THERE A PROBLEM TO BE FIXED?

Let me begin by discussing what I know about federal regulations. At the federal level, the analysis of the effects of a new regulation is called a regulatory impact analysis. Unfortunately, even though there are very clear instructions and guidelines for economists to follow,[2] the typical regulatory impact analysis does not contain anything close to the amount of high quality information that it could.[3] Despite the mediocre quality of regulatory impact analyses, the growth of regulation, at least at the federal level, continues unchecked, regardless of which party is in charge of the White House. Figure 1 shows one way of quantifying regulation, taken from a database on regulation called RegData that I established at the Mercatus center along with George Mason University professor Omar Al-Ubaydli.[4] RegData measures regulation by analyzing the actual regulatory text in the Code of Federal Regulations—the federal equivalent of Pennsyvlania's Administrative Code. The US Government Printing Office has made digital copies of the Code of Federal Regulations from previous years publicly available online for years 1997 onward. Our approach in creating RegData was to look for the words that indicate an attempt on the part of regulators to change behavior. As legislators, you will probably know these words well: they are words like, "shall," "must," "may not," and "prohibited," words that create a legal obligation to do something or a legal restriction from doing something. As Figure 1 shows, the quantity of these words, which we call "restrictions," has grown consistently from 1997 to 2010. In 1997, there were about 835,000 restrictions. In 2010, there were over one million, and although the figure doesn't show it, the number has continued to grow since then.

1. Cary Coglianese, 2012. "Measuring Regulatory Performance: Evaluating the Impact of Regulation and Regulatory Policy." *Expert Paper* No. 1, Organisation for Economic Co-Operation and Development, http://www1.oecd.org/regreform/regulatory-policy/1_coglianese%20web.pdf.
2. See, for example, Circular A-4, Office of Management and Budget, September 17, 2003, http://www.whitehouse.gov/omb/circulars_a004_a-4, and Exec. Order No. 12866, September 30, 1993, http://www.whitehouse.gov/sites/default/files/omb/inforeg/eo12866/eo12866_10041993.pdf.
3. As shown in Jerry Ellig and Patrick A. McLaughlin, "The Quality and Use of Regulatory Analysis in 2008," Risk Analysis 32-5 (2012): 855–880; Jerry Ellig, Patrick A. McLaughlin, and John Morrall III, "Continuity, Change, and Priorities: The Quality and Use of Regulatory Analysis Across US Administrations," *Regulation & Governance*. Published online August 13, 2012. doi: 10.1111/j.1748-5991.2012.01149.x
4. Omar Al-Ubaydli and Patrick A. McLaughlin, "The Industry-Specific Regulatory Constraint Database (IRCD): A Numerical Database on Industry-Specific Regulations for All U.S. Industries and Federal Regulations, 1997–2010" Mercatus Working Paper. Arlington, VA: Mercatus Center at George Mason University, 2012. The RegData database is available at http://regdata.mercatus.org.

Figure 1: The Growth of Federal Regulation



But the growth of regulation in and of itself may not constitute a problem that needs to be fixed. After all, maybe these new restrictions were solving real problems. How do we know if this is the case? The short answer is: we don't, at least not based on the analyses produced by government economists. The analyses that are supposed to tell us about costs and benefits of regulations before new regulations are made are sorely lacking in information. Here's a short list of some specific components that an analysis should have, as well as the shortcomings of the typical analysis:

1. Prior to beginning to design a regulation, regulators should make every effort to understand the nature of the problem the regulation is supposed to address.5 This includes determining whether a widespread and systemic problem exists and, if one does, identifying the causes of the problem.6 While it may seem self-evident that regulators should try to identify the problem before trying to fix it, numerous studies have shown that the typical federal regulatory impact analysis does a very poor job of clearly identifying a problem.[7]

2. Once a problem has been identified, regulators should consider a wide range of alternative approaches to solving the problem before selecting a course of action.8 This, of course, reflects a basic tenet of problem-solving, and, again, you might think that this is obvious. Nonetheless, research has shown that if the analysis even considered multiple alternatives, the list of alternatives evaluated usually consists of two: create the regulation as proposed, or don't do anything.[9] A good evaluation of alternatives

5. Circular A-4, supra note 2.

6. Ibid.

7. Ellig and McLaughlin, supra note 3. Ellig, McLaughlin, and Morrall, supra note 3. Also, see: R.W. Hahn, J. Burnett, Y.I. Chan, E. Mader, and P. Moyle, "Assessing regulatory impact analyses: The failure of agencies to comply with Executive Order 12866," *Harvard Journal of Law and Public Policy* 23, no. 3 (2000): 859–871; R.W. Hahn and P. Dudley, "How well does the government do cost–benefit analysis?" *Review of Environmental Economics and Policy* 1, no. 2 (2007): 192–211; R.W. Hahn, R.W. Lutter, and W.K. Viscusi, "Do Federal Regulations Reduce Mortality?" Washington, DC: AEI-Brookings Joint Center for Regulatory Studies, 2000; R.W. Hahn and R. Litan, "Counting regulatory benefits and costs: Lessons for the U.S. and Europe," *Journal of International Economic Law* 8, no. 2 (2005): 473–508; R.W. Hahn and P.C. Tetlock, "Has economic analysis improved regulatory decisions?" *Journal of Economic Perspectives* 22, no. 1 (2008): 67–84; A. Fraas and R. Lutter,"The Challenges of Improving the Economic Analysis of Pending Regulations: The Experience of OMB Circular A-4," Washington, DC: Resources for the Future, 2010; S. Shapiro and J. Morrall, "The Triumph of Regulatory Politics: BCA and Political Salience," Rutgers University, Working paper, 2011.

8. Circular A-4, supra note 2.

9. Ellig and McLaughlin, supra note 3.

would consider multiple ways of achieving similar outcomes so that decisionmakers can weigh the benefits and costs of the various alternatives.

3. A regulatory analysis should clearly identify the outcomes the regulation will try to achieve, how it will measure progress towards that, and what will happen if and when those outcomes are achieved. Let me illustrate this with a counterexample: the Clean Air Act. The Clean Air Act requires that the US Environmental Protection Agency set maximum levels for how much lead, particulate matter, and other contaminants can be present in the air. Whether it's because of the Clean Air Act or otherwise, there is no doubt that our air has become a lot cleaner in the last four decades.[10] So the question is: when is it done? It is always possible to make the air relatively "cleaner," and it is also impossible to make it perfectly clean—it will never have zero airborne contaminants. Neither the Clean Air Act nor the regulations it has spawned make any specific provisions for when the Act has achieved its objective or what would happen when the air is deemed clean enough. To the contrary—the Clean Air Act actually requires that the EPA continually lower the maximum airborne contaminants levels, regardless of how costly that would be. This is a guaranteed recipe for eventually creating a regulation where the costs exceed the benefits, if it hasn't happened already.[11]

4. Analyses need to consider all costs, not just *direct compliance costs*, or the direct costs to companies and individuals who are directly affected by the rule. Simple examples of direct compliance costs are the fees regulated professionals, such as real estate agents and lawyers, pay to obtain licenses, plus the additional money they spend each year for continuing education required to keep their licenses. But some compliance costs are surprising. For example, restaurants sometimes must pay to have food inspectors perform inspections in the evening, when the restaurant is open, instead of during the day when food inspectors typically work.[12] As another example, if railroads were required to install computerized train control systems on all of their trains and throughout their rail networks that would help prevent train collisions, the costs of these systems and their installation would be considered direct compliance costs. However, those compliance costs are only the tip of the iceberg. There are several other sorts of costs that regulations entail:

    a. For one, there are indirect costs. In the example of computerized train control systems, the indirect costs would consist of the distortions in the economy that are the result of a chain reaction beginning with the direct compliance costs. If railroads have to purchase and install these systems, they will pass some of those costs on to shippers, such as coal producers. In turn, coal producers would have to charge a higher price for coal, causing energy prices to increase, and it's pretty easy to imagine how higher energy prices affect just about everyone in the economy. Manufacturers tend to rely heavily on energy as an input of production, and if they suddenly are faced with higher costs, they will also have to make some tough decisions that may result in higher prices for goods, downsizing and cutting some jobs, or possibly even shutting down altogether.

    b. In addition to money outlays to pay direct compliance costs, regulation necessarily creates what economists call "opportunity costs"—productive activity forgone because scarce resources get devoted to compliance with regulations. If the owner of a restaurant has to spend an evening showing the food inspector around the restaurant, the owner can't spend that same time greeting customers and ensuring that they have a quality dining experience. This would be categorized as an opportunity cost of labor. Any labor used in compliance is necessarily labor that is not used elsewhere

    c. The same logic applies to machinery, buildings, and other tools of production—what economists refer to as capital. Any capital used to comply with a regulation is capital that is not used for some

10. Patrick A. McLaughlin, "Ignoring Implementation Costs of the Clean Air Act: A Costly Mistake," Journal of Law, Economics, and Policy 7-1 (2010): 119-136.

11. Ibid.

12. See Lea Richards, "Regulation Nightmares: $125 an hour inspectors to make BBQ," CNN Money, September 22, 2011, http://money.cnn.com/galleries/2011/smallbusiness/1109/gallery.regulation_nightmares/4.html.

other project. In the case of railroads, if cranes or other machinery have to be used to update the rail network to comply with a regulation, the opportunity cost of that usage might be that the cranes were not used to construct a new line somewhere else.

Finally, I want to mention forgone entrepreneurship. While companies and economic analyses will sometimes try to estimate how much capital and labor must be allocated to compliance with a regulation, virtually no one tracks how much management time is spent on compliance. Company managers are charged with decisionmaking for the organization, and the more successful companies are constantly reinventing themselves to take advantage of new opportunities or to eliminate productions costs. However, as more and more regulations pile up, it seems likely that managers must spend more and more time coming up with ways to comply with them. Instead of planning the next great innovation, perhaps the next Steve Jobs is buried under a mountain of regulatory planning and paperwork. Any inventions, innovations, and even goods and services that managers fail to produce because they are dealing with regulations represent more opportunity costs of regulation. This can be especially true when the "manager" is a nascent entrepreneur.

In Miami, for example, it can take up to one year for entrepreneurs to get the required government permits to open a business. In the meantime, the entrepreneur may have to pay rent on an idle business location. This is true also for home businesses. Before an entrepreneur can open a home business, she must first apply for Class II Special Permit. Operating a home business without such a permit is punishable by a $500 fine and up to two months in jail. One attorney who wanted to open a home-based business had to go through a cumbersome process that included "acquiring the original building plan for her condominium, taking photos of both the exterior of the building and her home office, and sending certified letters to neighbors and local homeowners associations to give them the opportunity to object to her home law practice, even though she never sees clients at her home . . . mailing the letters alone cost nearly $150."[13] The value of the lost business opportunities while the entrepreneur waited for his or her license is an opportunity cost of licensing. The entrepreneur is worse off, but so are the customers he or she could have served.

WHAT BEHAVIOR ARE YOU TRYING TO ELICIT?

A reasonable goal for regulatory reform is to eliminate and prevent the creation of regulations that are economically inefficient. Even the simple implementation of a regulatory process that ensures that a problem is clearly identified and that a broad range of alternatives are considered could help avoid some regulations that economic research has shown to have high cost and no benefit—which would be a textbook case of an economically inefficient regulation. For example, occupational licensing regulations seem to abound in state regulatory codes. Pennsylvania is no exception. By my count, at least thirty different occupations require licenses before a person can legally practice them in Pennsylvania. For several of these occupations, however, any good economic analysis of such licensing requirements would almost surely have concluded that the requirements accomplish little other than shielding the incumbents in those industries from competition and raising prices for consumers.

A specific example might help. Some states have occupational licensing requirements for interior designers. Advocates of licensing claim that it is necessary because "the unlicensed practice of interior design threatens public health and safely."[14] The rationale behind occupational licensing is to prevent public harm and promote consumer health and safety by improving the quality of services—a task the market is said to fail due to the existence of asymmetric information.[15] Information asymmetry occurs when one party to a transaction possesses

13. Paul Sherman, *Miami's Vice: Overregulating Entrepreneurs*, City Study Series (Institute for Justice, November 2010), 9.
14. Carpenter II and Ross, "Designing Cartels Through Censorship," 16.
15. Leland, "Quacks, Lemons, and Licensing: A Theory of Minimum Quality Standards"; Adams III, Jackson, and Ekelund, "Occupational Licensing in a 'Competitive' Labor Market: The Case of Cosmetology"; Adams III, Ekelund, and Jackson, "Occupational Licensing of a Credence Good: The Regulation of Midwifery."

significant information that would materially affect the other party's decision, but the information is concealed from or costly to convey to the second party. Think of a used car salesman deliberately and knowingly selling a lemon to an unsuspecting customer.

But in the case of interior designers, this is no more than an unsupported theory. Different state agencies have researched the subject of public harm caused by unregulated interior designers. No data demonstrating public harm was available from Better Business Bureaus, law enforcement agencies, other states, or even the American Society for Interior Design (ASID), a trade organization that supports licensing.[16] The failure of even ASID to provide evidence of public harm justifying the need for intervention casts doubt on whether such regulations are based on the consumer protection theory. In fact, the governors of Indiana, New York, Colorado, California, New Jersey, and Ohio vetoed interior design regulations due to lack of evidence regarding public harm in the absence of the proposed regulation.[17] When he vetoed a bill that would have regulated interior designers in Indiana, Gov. Mitch Daniels commented, "The marketplace serves as an effective check on poor performance; designers doing inadequate work are more likely to be penalized by negative customer reaction than by a government agency trying to enforce arbitrary and subjective qualification standards.[18]"

I've included three tables at the end of my testimony that summarize the scholarly literature on this topic. The first table summarizes the results of empirical studies of the effects of occupational licensing on quality. Licensing sometimes improves quality, but more often than not, it diminishes quality or leaves it unchanged. These results do not mean that information asymmetry never creates market failures. Rather, they suggest either that such failures are rare, or that licensing regulation in practice is not a very effective remedy. In fact, sometimes they may cause a problem rather than solve one. One study (included in Table 1) found that more stringent entry requirements for electricians are correlated with an increase in the rate of death from accidental electrocution. Since more stringent licensing tends to increase the price of electricians' services, some customers switch to cheaper substitutes. In this case, one cheaper substitute was "do it yourself"—which increased the risk of accidental electrocution. I suppose this is a shocking example of the law of unintended consequences.

In preparing for this testimony, I learned that Pennsylvania has dedicated a title of its administrative code to "professional and vocational standards," and in that title you can find the requirements an individual would have to fulfill to become licensed in at least thirty different occupations. One of the 63 chapters in that title applies to cosmetologists, which includes, among other things, nail technicians, and natural hair braiders. Using the aforementioned RegData method of quantifying regulation, the chapter for cosmetologists alone contains 151 restrictions spread over 56 pages of regulatory text. I tried to figure out whether I could open up my own hair braiding business. To be honest, I couldn't figure it out by simply reading the regulations. It is clear from p. 10 of that chapter that if I hold a natural hair braider license, I am "qualified to perform natural hair braiding services only." However, I rub shoulders, or perhaps butt heads, with lawyers often enough to know that doesn't necessarily mean it is illegal for me to braid hair without a license. Maybe getting a license is something like getting a graduate degree in economics—you hang it on your wall to try to reassure others that you actually know what you're doing, but there's nothing requiring you to have one in order to call yourself an economist. So after a few minutes of stumbling around on the internet, I found a phone number for the state board of cosmetology, and I called it. After listening to a three-minute long recorded message give me a complicated list of options that I could choose from using the numeric keypad on my phone, I figured out which button to push in order to ask someone my question. And to the board's credit, the woman I spoke to had a very clear and informative answer: I am not allowed to perform hair braiding services in Pennsylvania unless I have a license. I asked how to get a license, as someone who has never done any hair braiding before, and she told me I would need to train for 300 hours at a licensed school, have at least a 10th grade education, and pass both a theory and practical exam. That seems like a pretty high hurdle to clear just to be able to braid hair, but maybe there's some legitimate health or

16. Carpenter II and Ross, "Designing Cartels Through Censorship."

17. Ibid.

18. Mitchell E. Daniels Jr., SEA 490 Veto, 2007, http://www.in.gov/gov/files/SEA_490_Veto_Message.pdf.

safety concern. Thus my next question was obvious: why is the state of Pennsylvania requiring a license of would-be hair braiders? I found answer in a frequently asked questions document on the cosmetology board's website:

> * *Q: Why are we licensing hair braiders?*
>
> A: It was established over 15 years ago that the service of braiding came under the scope of practice of cosmetology. This determination was upheld in Commonwealth Court in Ramata Diwara, et al, v. State Board of Cosmetology, No. 2246 C.D. 2003, with the opinion rendered July 1, 2004. Members of the hair braiding community contacted their legislators to revise cosmetology law to create a new limited license for hair braiders. This law was signed by the governor as Act 99 on July 5, 2006. —Cosmetology Board FAQ[19]

This answer is refreshingly honest. The board did not supply any sort of health or safety reason. The board regulates hair braiding because legislation requires them to, and also the hair braiding community asked for it. Of course they asked for it—with licensing restrictions, they can keep competitors out of their industry and charge higher prices!

This is illustrated by Table 2 at the end of this document. It lists more than a dozen studies of occupational licensing regulations and their effects on price. In nearly all of these studies, the prices of goods or services supplied by the profession increase as a direct result of regulation of the providing profession, sometimes by as much as 100 percent. The lesson is clear: consumers have a lot at stake in occupational licensing regulation. Indeed, generally speaking, some kinds of regulation clearly and directly increase prices, and it is the government's responsibility to ensure that consumers get something of value in exchange for the increased price.

Another feature of occupational licensing regulations is that they disproportionately reduce the prevalence of minority practitioners in regulated occupations. For example, Federman et al (2006) showed that for every 100 hours of training required to become a licensed manicurist, the proportion of manicurists that are Vietnamese falls by 17.6 percent. Similarly, Angrist and Guryan (2006) found that licensing laws requiring new teachers to pass an examination reduce the proportion of new teachers who are Hispanic by 2 percent. These and other studies showing the effects of occupational licensing regulation on minority participation in regulated industries are summarized at the end of my testimony in Table 3. These studies exemplify the unintended consequences of finalizing a regulation without first considering all of its effects—a byproduct of an incomplete regulatory analysis.

HOW WILL YOU KNOW WHETHER THE REFORM IS SUCCESSFUL?

If the behavior you are trying to elicit is to have agency economists and analysts produce high-quality analyses, analyses that tell you whether there is a real problem to be fixed, so that there can be some benefits, and that those benefits can justify the consequences, intended or otherwise, of the regulation, then how will you know whether that is happening? I have three suggestions to consider:

1. Create an independent review board charged solely with judging the quality of economic analyses. This board would consist of professionals and academics with no vested interest in the regulation being considered and would function much like the peer-review system used in academic journals.

2. Prior to any decisionmaking, require a preliminary economic analysis considering whether there is a widespread or systemic problem and a broad range of alternatives. This would mean that before the legal text of a regulation is even proposed, economists in the agency should consider whether there is a real problem to be fixed and consider a broad range of alternatives for accomplishing the proposed outcome, if there is indeed a problem. Furthermore, this preliminary analysis should be provided to the legislature, the Independent Regulatory Review Board, and the public prior to moving forward with a

19. "Frequently Asked Questions of the Cosmetology Board," Pennsylvania State Board of Cosmetology,http://www.portal.state.pa.us/portal/server.pt/community/state_board_of_cosmetology/12507/faqs/572011, accessed on March 13, 2013.

regulation.

3. Address the incentives of the person performing the analysis so that she is motivated to produce a high-quality analysis instead of one that supports a decision to regulate. This is further discussed in the following section.

THE INCENTIVES OF ANALYSTS

In point of fact, the economic analyses of regulations, at least at the federal level, have been found lacking in quality and content for decades, despite blue ribbon commissions, expert guidance documents, scholars, and presidential appointees all suggesting ways the analyses could be improved. And here I am doing the same thing—listing some relevant information and methods that would improve economic analyses and make them more useful for decisionmakers like you. But why should we expect it to work this time around, when every other attempt to improve the economic analysis of regulations seems to have had little to no effect? I don't know the answer for sure, but I suspect that it's simple: we shouldn't expect this to work unless we change the incentives of the economists or analysts who produce the analyses.

People of all stripes respond to incentives. While everyone seems to understand this in the cases of businesspeople and, if you'll forgive me, politicians, it seems like we forget that scientists, analysts, and, yes, economists are people too. But they are, and we should keep that in mind when handing them the keys to the car. In fact, just like automobiles, economic analysis of regulations should be viewed as a tool that can be used to improve our lives, but at the same time, we have to be wary of its misuse. Just last year, the Proceedings of the National Academy of Sciences published an article showing that the percentage of scientific articles retracted after their publication has increased 10-fold since 1975.[20] Why? As the world has produced more and more scientists, it has become correspondingly more difficult to publish in top journals and to obtain research funding. So people lie about their experiments in order to make them seem more groundbreaking—to try to get into those top journals or get another government grant funding their research. In other words, they have incentive to commit fraud, and act accordingly.

Now, I'm not suggesting that there is fraud being committed by economists performing economic analyses of regulations. But I am suggesting that these economists will also respond to the incentives they face. If they are rewarded in their careers for creating new regulations, then we should probably expect that the average analysis will conclude that the new regulation is a good idea. I used to work at the US Department of Transportation, and my primary function was to produce economic analysis of regulation—the regulatory impact analyses I mentioned earlier. I have multiple plaques and awards tucked away in a drawer in my office that I received because I was part of teams that successfully and quickly created new regulations. I even got a promotion and a raise as a result of such performance. On the other hand, not all proposed regulations that I worked on ended up actually becoming final regulations. I took the role of lead economist on one proposal and came up with some estimates of what the proposal might cost the economy. Based on my work, my team recommended that the department not proceed with the regulation, and that was that—the project ended and the team went their separate ways. By my estimation, this choice avoided over one hundred million dollars in costs to our economy in exchange for little to no benefit. Yet there was no plaque given for this, no pay raise, and hardly even a pat on the back. This was probably my greatest accomplishment in my years of government service, but if I had wanted to advance my career, I would have been better served to find a way to make the analysis support the decision to make a new regulation.

The current regulatory review process in Pennsylvania appears to rely on regulatory agencies to provide information about a proposed regulation to the public and to the Independent Regulatory Review Commission. Having an independent commission review proposed regulations is a wonderful idea, but I wonder to what degree agency economists and analysts are providing the best possible information to the commission. I also wonder to what degree the commissioners can tell whether the best possible information is being provided, given

20. Ferric C. Fang, R. Grant Steen, and Arturo Casadevall, "Misconduct Accounts for the Majority of Retracted Scientific Publications," *Proceedings of the National Academy of Sciences* (2012). Published electronically September 5, 2012. doi: 10.1073/pnas.1212247109.

that they must be reviewing regulations that cover all subject areas and industries. I don't think a generalist can easily spot whether an analysis adequately evaluated all possible alternatives, but a specialist in that area might. These same specialists happen to work for the regulatory agencies, at least at the federal level and I suspect in Pennsylvania, too. Maybe a regulatory reform bill that wanted to ensure that the best possible analysis was supplied to the IRRC would address the incentives of those specialists. Instead of rewarding them for being part of an agency that created more regulations, reward them for producing high quality analyses.

Table 1: Empirical Studies of the Effects of Licensing on Quality of Service

OCCUPATION	TYPE OF LICENSING RESTRICTION	EFFECT ON QUALITY[21]	AUTHOR
Optometry	Commercial practice, advertising, & continuing education	Positive: Occupational restriction in optometry increased the quality of eye exams (measured in length and quantity of eye exams).	Feldman & Begun (1985)
Pharmacy	Reciprocal licensing (allowing professionals licensed in other states to practice in reciprocating states)	Positive: Issuance of reciprocal license is positively correlated with quality.	Martin (1982)
Repairmen	Licensing	Unclear: Licensing of repairmen does not reduce the unnecessary replacement of parts or charging for parts not actually replaced (parts fraud). Authors compared fraud complaints between DC (no license laws), New Orleans (license law), and San Francisco (registration Laws). Parts fraud incidents were 20% in San Francisco compared to 50% in New Orleans and DC.	Phelan (1974)
Electricians	Oral exams & prior occupational experience	Negative: States requiring an oral exam reduced the supply of electricians and reduced the quality of service received by consumers. More stringent entry requirements for electricians are correlated with an increase in the rate of death from accidental electrocution. Since more stringent licensing requirements are associated with an increase in price of services, customers switch to cheaper substitutes, in this case "doing it themselves."	Carroll & Gatson (1981)
Dentistry	Gold foil restoration in the exam & other restrictions	Positive: Entry requirements for licensing of dentists increase the quality of dental services. More stringent requirements (whether certain factors are required, such as a completion of a gold foil restoration in the licensure exam) were associated with lower rate of dental neglect (the ratio of untreated dental disease to total dental disease). Study does not estimate net benefits of licensure and makes no conclusion regarding consumer welfare.	Holen (1978)
Accounting, Optometry, Pharmacy, Physicians	Advertising, branch office restrictions, and trade name restrictions	Neutral: Quality of services is unaffected by business practice restrictions associated with licensing.	Young (1986), Paul (1984), Bond (1980), Cady (1976)
Laboratory Personnel	Licensing	Neutral: Restrictions on the use of professionals in clinical labs do not affect the quality of services received by consumers.	Healey (1973)
Legal	Advertising	Negative: Quality of services decreases with increased licensing or business practice restrictions associated with licensing.	Muris & McChesney (1978)
Optometry	Advertising	Negative: The average quality of eye care is lower in regions with advertising restrictions.	Kwoka (1984)
Barbers	Licensing	Neutral: Licensing barbers has little impact on the number of entrants into the occupation.	Thornton (1979)
Teachers	Licensing	Uncertain: Licensing teachers had no impact on wages and uncertain effects on quality (measured in student achievement scores). Licensing was found to reduce SAT scores, raise ACT scores, and increase graduation rates.[22]	Kleiner & Petree (1988)

21. The labels neutral, negative, and positive reflect the effect of occupational licensing only on the quality of the licensed service and not the effect of occupational licensing on overall economic welfare.

22. Richard B Freeman and Casey Ichniowski, *When Public Sector Workers Unionize* (Chicago: University of Chicago Press, 1988).

Teachers	Education requirement	Negative: States in which a master's degree is required for certification have lower SAT scores for both math and verbal sections: 8 points lower verbal scores and 6 points lower math scores.	Berger & Toma (1994)
Teachers	Exam and experience requirements	Mixed: States that require teachers to pass a National Teachers Exam, to have field experience before teaching students, and complete a certain number of full-time weeks before receiving a license saw no effect on student achievement. Students of teachers with standard certification in states requiring an exam prior to licensure receive lower math scores on their 12th grade standardized exam than students of teachers in states not having this requirement.	Goldhaber & Brewer (2000)
Teachers	Testing requirement	Neutral: No evidence that testing requirements affect the quality of teachers as measured by students' average SAT scores.	Angrist & Guryan (2008)
Childcare	Classroom, education, and experience requirements	Neutral: Stricter childcare regulations in terms of staff-child ratio and group size mandates and increased educational and experience requirements have no effect on quality of childcare received, measured by the Early Childhood Environment Rating Scale (ECERS) and the Infant-Toddler Environment Rating Scale (ITERS).	Blau (2006)
Dentistry	Licensing	Neutral: More stringent licensing requirements for dentists had no effect on the quality of output. Dentists in the most regulated states earned 12% higher wages than those in less regulated states.	Kleiner & Kudrle (2000)

Sources: Carolyn Cox and Susan Foster, The Costs and Benefits of Occupational Regulation, Economic Issues (Bureau of Economics Federal Trade Commission, October 1990); Morris Kleiner, "Occupational Licensing and the Internet: Issues for Policy Makers," For the Federal Trade Commission Hearings on "Possible Anticompetitive Efforts to Restrict Competition on the Internet," October 1, 2000; Mark C. Berger and Eugenia F. Toma, "Variation in State Education Policies and Effects on Student Performance," Journal of Policy Analysis and Management *13, no. 3 (1994): 477; D. D. Goldhaber and D. J. Brewer, "Does Teacher Certification Matter? High School Teacher Certification Status and Student Achievement,"* Educational Evaluation and Policy Analysis *22, no. 2 (January 1, 2000): 129–145; Joshua Angrist and Jonathan Guryan, "Does Teacher Testing Raise Teacher Quality? Evidence from State Certification Requirements,"* Economics of Education Review *27, no. 5 (2008): 483–503; David Blau, "Unintended Consequences of Child Care Regulations,"* Labour Economics *14 (2007): 513–538.*

Table 2: Effect of Licensing Regulation on Prices

PROFESSION	RESTRICTION[23]	IMPACT ON PRICE	INCREASE IN PRICE	AUTHOR
Optometry	Advertising	Increase	25-100%	Benham (1972)
Optometry	Advertising	Increase	25-40%	Benham (1975)
Optometry	Advertising	Increase	9-16%	Feldman and Begun, (1978) and (1980)
Optometry	Commercial practice, advertising	Increase	33%	Bond (1980)
Optometry	Commercial practice, advertising	Increase	20%	Kwoka (1984)
Optometry	Commercial practice	Increase	5-13%	Haas-Wilson (1986)
Pharmacy	Advertising	Increase	5%	Cady (1976)
Law	Advertising	Increase	$33 more for legal service for an uncontested divorce[24]	Muris and McChesney (1978)
Law	Advertising	Increase	Greater price dispersion[25]	Cox, DeSerpa, and Canby (1982)
Law	Advertising	Increase	5-11%	Staff Report by the FTC's Bureau of Economics and Cleveland Regional Office (1984)
Law	Advertising	Increase	Prices more closely reflect costs[26]	Schroeter et al. (1987)
Dentistry	Reciprocity	Increase	15%	Shepard (1978)
Dentistry	Commercial practice, use of Auxiliaries	Increase	4%	Conrad and Sheldon (1982)
Dentistry	Use of auxiliaries	Increase	11%	Liang and Ogur (1978)
20, including Law and Architecture	Direct entry, mandatory fees, advertising	Increased income (fees & adverts.)	10.4% (fees) 32.8% (adverts.)	Muzondo and Pazderka (1980)
Cosmetologists	Increasing hours of training by 100 without education mandates	Increase	$0.69 more per average beauty salon visit.	Adams et al. (2002)
Cosmetologists	Increasing hours of training by 100 *with* education mandates (high school education)	Increase	$0.09 more per average beauty salon visit.	Adams et al. (2002)
Cosmetologists	Education requirement without training requirement	Increase	$8.68 more per average beauty salon visit.	Adams et al. (2002)
Cosmetologists	Each 100 hours of training in states with regulation requirement relative to states without	Increase	$2.15 more per average beauty salon visit.	Adams et al. (2002)

Sources: Adam Summers, Occupational Licensing: Ranking the States and Exploring Alternatives, Policy Study (Reason Foundation, August 2007); Frank Adams III, John Jackson, and Robert Ekelund, "Occupational Licensing in a 'Competitive' Labor Market: The Case of Cosmetology," Journal of Labor Research *XXIII, no. 2 (Spring 2002): 261–278.*

23. If the type of restriction for a certain occupation is repeated in the table, then that indicates that there are several studies estimating the effect on prices of that restriction in that occupation.

24. Muris and McChesney (1978) find that "the price of legal services for an uncontested divorce, for example, averaged $33 more in cities with restrictive advertising regulations." See Organization for Economic Co-operation and Development, *OECD Policy Roundtables Competition in Professional Services* 1999 (Paris, February 23, 2000), 20, http://www.oecd.org/regreform/liberalisationandcompetition interventioninregulatedsectors/1920231.pdf.

25. When surveying lawyers for the fees they charge for routine legal services, the authors also collected information on whether the lawyers advertise their fees or plan on advertising, and, if so, what medium they chose or will choose to advertise. Even though the authors found significant price differentials between the lawyers who advertise (or plan to advertise) and those that do not, they were reluctant to draw conclusions. As they describe their findings: "in virtually every instance, the mean or standard deviation for those who had advertised or would advertise was significantly lower than that for the other attorneys surveyed. No inferences, however, concerning the likely effect of attorney advertising on routine legal service fees can be drawn from the differences these data show. Our findings provide a snap shot

Table 3: Empirical Studies of the Effects of Licensing on Minorities

OCCUPATION	TYPE OF LICENSING RESTRICTION	EFFECT ON MINORITIES	AUTHOR
Cosmetology	Written licensing examination	Blacks are 30% less likely to pass a written license examination than whites with the same education and training levels. Applicants for a cosmetology license who received their education from outside the United States are 26% less likely to pass the written examinations than others.	Dorsey (1980)
Barbers	Licensing	Licensing of barbers reduces the probability of a black individual working as a barber by 17.3%.	Law & Marks (2009)
A Range of Nonagricultural Occupations	Licensing	Except in the case of barbers, there is little evidence that licensing reduces the likelihood that an individual belonging to a minority group will be practicing in the licensed occupation. Occupations studied include barber, beautician, midwife, plumber, practical nurse, and registered nurse.	Law & Marks (2009)
Manicurists	Training and English proficiency test requirements	For every additional 100 hours of training, the number of Vietnamese manicurists decreases by 17.6% relative to the sample mean. Vietnamese with less English proficiency are more likely to become manicurists than those who speak English well. States that require an English proficiency test eliminate the possibility for those in the former group to become manicurists.	Federman, Harrington, and Krynski (2006)
Interior Design	Educational Requirements	Interior designers of black or Hispanic race are 30% less likely to hold a college degree compared to white designers. Therefore, licensing requirements requiring a college degree disproportionately exclude minorities from this occupation.	Harrington & Treber (2009)
Teachers	Testing Requirement	Licensing laws requiring new teachers to pass an examination reduce the proportion of new teachers who are Hispanic by 2%.	Angrist &Guryan (2006)

Sources: Stuart Dorsey, "The Occupational Licensing Queue," The Journal of Human Resources *15, no. 3 (Summer 1980): 424–434; Marc Law and Mindy Marks, "Effects of Occupational Licensing Laws on Minorities: Evidence from the Progressive Era,"* Journal of Law and Economics *52, no. 2 (May 2009): 351–366; Maya Federman, David Harrington, and Kathy Krynski, "The Impact of State Licensing Regulations on Low-Skilled Immigrants: The Case of Vietnamese Manicurists,"* The American Economic Review *96, no. 2 (May 2006): 237–241; Alison Cathles, David Harrington, and Kathy Krynski, "The Gender Gap in Funeral Directors: Buying Women with Ready-to-Embalm Laws?,"* British Journal of Industrial Relations *(2010): 1–18; David Harrington and Jaret Treber,* Designed to Exclude *(Institute for Justice, February 2009), http://www.ij.org/images/pdf_folder/economic_liberty/designed-to-exclude.pdf; Angrist and Guryan, "Does Teacher Testing Raise Teacher Quality? Evidence from State Certification Requirements,"* Economics of Education Review *(2007), doi: 10.1016/j.econedurev.2007.03.002.*

picture of the Phoenix routine legal service market at one point in time only. Thus, it is probable that the data capture the tendency for those seeking additional clients both to advertise and to charge lower fees." See Steven Cox, Allan DeSerpa, and William Canby, "Consumer Information and the Pricing of Legal Services," *The Journal of Industrial Economics* 30, no. 3 (March 1982): 315.

26. Schroeter et al. estimate a market-wide advertising intensity distribution with a mean of 0.14 and a standard deviation of 0.087. Also, they estimate that the advertising intensity of price to cost ratio, evaluated at the mean value of market-wide advertising intensity, to be -0.224. If advertising intensity increases by one half of a standard deviation from the mean [a change of 31%= (½(0.87))/0.14·100%], then the price to cost ratio would fall by 7% (31% of -0.224). Using a study by Collins and Preston (1968), which estimated price-cost ratios for 288 4-digit SIC manufacturing industries to have a median of 1.172, the authors estimate that the latter figure would decrease to 1.09 [1.172 – 1.172(7%)]. In other words, increasing advertising intensity modestly (by one half of one standard deviation) can reduce price premiums over cost by 8.2% [100 (1.172-1.09)]. See John Schroeter, Scott Smith, and Steven Cox, "Advertising and Competition in Routine Legal Service Markets: An Empirical Investigation," *The Journal of Industrial Economics* 36, no. 1 (September 1987): 49–60.

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