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Regulation and the Wealth of Nations: The Connection between Government Regulation and Economic Progress

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Abstract: Adam Smith's main message is that when unregulated, undistorted rewards are higher in one activity than another, economic progress is usually promoted if resources flow toward the high-return use. And resources would flow that way if we are left alone to pursue our happiness. When regulators do things that change those market signals or prevent us from responding to them the nation as a whole usually ends up poorer. There is much wisdom in Smith's view, but I shall argue that it gives an incomplete picture of the connection between regulation and the progress of opulence. Smith is emphasizing the conflict between regulation and economic progress. I would propose to add to Smith's view an analysis of a way in which market forces and prosperity often undermine the effects of regulation. I shall discuss two ways in which this happens. One is that the regulation often induces changes in behavior that go against the intended effects of the regulation. The other, more subtle kind of undermining occurs because unregulated progress often produces the intended benefits of regulation, though more slowly and quietly. The last part of my paper tries to answer a question about the wealth-destroying regulation that troubled Smith. How does such regulation survive politically? The answer is that progress can often hide the bad effects for a long time and thereby immunize the regulation politically.

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I am deeply honored by your recognition of me and by your invitation to speak about economic regulation. This talk poses considerable challenges that give me some hesitation. I have spent my professional life studying and analyzing regulation. Many of my distinguished predecessors in this award have actually done something about regulation in the political arena. Further, most of what I know is about regulation within a democratic market economy. Indeed, the specific examples I will discuss and the academic research behind these examples are all from the United States. Many of you have experienced regulation in a much different historical and institutional context than I have. Let me then apologize for my focus on American examples and American academic research. However, my talk will be about broad principles that apply in your country as well as mine. So, I hope you will find some of what I have to say useful.

My title, of course, alludes to Adam Smith and his great work *An Inquiry into the Nature and Causes of the Wealth of Nations.* Smith was deeply curious about the conditions that foster economic progress. And my talk tonight will be about the interaction between government regulation and economic progress. Smith waits until Book 3 of his great work to confront this interaction directly. He does so in the first chapter of Book 3, entitled "Of the Natural Progress of Opulence." Even to a native English speaker of today this title sounds strange. "Opulence" means "wealth" in today's English. If he were writing today perhaps the title would be something like "How Do Economies Become Wealthy."

The specific subject of this chapter is the allocation of capital between cities and the countryside. Smith tells us that a nation's economic progress would be faster and more durable if its capital were at first mostly invested in agriculture and then followed by a gradual development of industry and trade in towns and cities. Moreover, he argues that just such a sequence of development would emerge if investors were left alone to seek the greatest return on their investments.

He observes, however, that in the Europe of his day "this natural order of things" is "entirely inverted." It is the towns that grow first and the countryside that develops only later. So how does he explain this inversion? Smith has no doubt about the answer – it's because of those regulators in London whose rules and taxes artificially raise rates of return on non-agricultural investments.

As in much of the *Wealth of Nations*, the point Smith is making here is more general than the specific issue he is talking about. The larger question Smith is addressing is about long-run economic growth. Why does per capita income gradually grow in some societies and stagnate in others? He understood, as did few before him, that the key to opulence is progress – that nations achieve lasting prosperity not by discovering a pile of gold but by establishing conditions that foster steady growth.

The 'natural' part of his chapter title conveys an important part of Smith's answer to the mystery of steady growth. His message is that when unregulated, undistorted rewards are higher in one activity than another, economic progress is usually promoted if resources flow toward the high-return use. And resources would flow that way if we are left alone to pursue our happiness. When regulators do things that change those market signals or prevent us from responding to them the nation as a whole usually ends up poorer.

There is much wisdom in Smith's view, but I shall argue that it gives an incomplete picture of the connection between regulation and the progress of opulence. Smith is emphasizing the conflict between regulation and economic progress. If he were writing an essay for the Liberalni Institute on this topic, the title might be *Regulation: the Enemy of Progress*.

However, I would propose that the Institute should think about publishing two more essays, and I will use this talk to describe them.

Progress: the Enemy of Regulation would be an essay about the way in which market forces and prosperity often undermine the effects of regulation. I shall discuss two ways in which this happens. One is that the regulation often induces changes in behavior that go against the intended effects of the regulation. The other, more subtle kind of undermining occurs because unregulated progress often produces the intended benefits of regulation, though more slowly and quietly.

The last essay, called *Progress: Friend of Regulation*, would try to answer a question about the wealth-destroying regulation that troubled Smith. How does such regulation survive politically? The answer would be that progress can often hide the bad effects for a long time and thereby immunize the regulation politically.

It is entirely understandable that Smith would have emphasized the clash of regulation and the natural progress of opulence. The conflict between the two is almost definitional. We might have different opinions about the wisdom of a specific regulatory policy. But all economic regulations were created to reject and disrupt the natural part of the progress of opulence – regulation looks for the gold mine instead of accepting the results of the gradual progress produced by unregulated choices. How then, precisely, does natural progress overcome this rejection?

I have mentioned one method – that regulation creates incentives for behavior that offsets some or all of the intended effect of the regulation. This is sometimes called "offsetting behavior," and I will provide three examples of it.

These are based on the work of many different economists, including me. My examples are drawn from what has come to be called "social" regulation. But, as I will indicate, the principles apply to other forms of regulation as well.

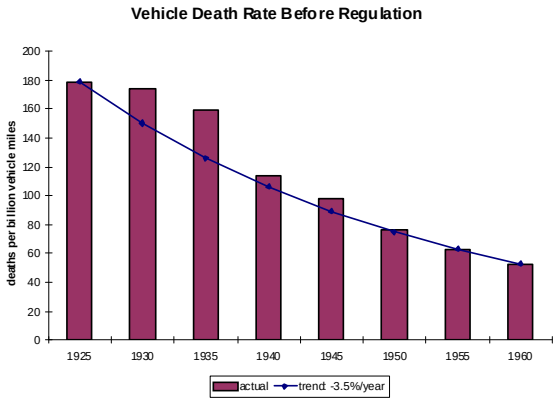
The three regulatory changes I will discuss are the auto safety legislation that began in the 1960s, the Endangered Species Act of the 1970s and the Americans with Disabilities Act of the early 1990s. They seem on the surface very different, but I hope to show you that a powerful common current runs through all of them. And it is that offsetting behavior has undone some, all or in one case more than all of their intended effects.

The general point about offsetting behavior has been around a long time. One of the first lessons we give to beginning students is about government price controls, a subject which this audience perhaps has more experience with than our young students. We tell the students that if the government enforces a price below the market clearing price, there will be an excess demand. Buyers will then have to spend time waiting in line or spend other valuable resources to move themselves to the head of the line. These expenditures are, in economic terms, just like a price increase, and thus they offset the government's desired price. Indeed, in this case, simple economics suggests that the full price – the bargain regulated price plus the value of the time spent waiting or perhaps the bribes paid not to wait – can exceed the unregulated price. That is, the behavior of buyers can more than completely offset the effects of the regulation.

This simple story tells us something important about all kinds of regulation. Regulation seldom changes the basic forces that were producing the particular result the regulators seek to change. So we need to ask whether regulation really changes the result or only the form in which market forces assert themselves.

1 Auto Safety Regulation

Let us see some answers to this question. I begin with auto safety regulation – more specifically with a number: 3.5 percent. I want you to remember that number, because I will come back to it later. As you can see, it is the annual rate of decrease in deaths per mile driven on US highways from 1925 to 1960. This period begins when the mass market for automobiles developed, and it ends just before the political agitation for safety regulation began.



This number -3.5 percent is important, because it tells you that there was considerable progress in auto safety before there was comprehensive regulation of it. That early progress was not marked by any dazzling breakthrough. It was more the product of small advances on many fronts – auto and road design, drivers' knowledge, medical techniques and so forth. In other words, you might say that the advances came from the working of the natural progress of opulence: our growing wealth was producing growing demand for personal health and safety, and markets were finding ways to meet the increased demands.

This particular example of natural progress had a regulatory or governmental component. Governments, after all, built the highways and streets, made the rules of the road and policed them. Those areas of government activity were also evolving over this pre-regulatory period. I want to mention this because neither Smith's concept of natural progress nor my borrowing of it excludes a role for government, even a role for government regulation. Instead the concept of natural progress that I, and I think Smith, would favor is one in which matters like auto safety are mainly led by the steady evolution of market forces in a world that gradually becomes wealthier and also smarter. In such a world the government role is mainly to complement or complete these market forces, and this government activity evolves gradually as the market forces change. I think that fairly describes the pre 1960s world in which the auto fatality rate was declining steadily.

The contrasting case is one in which the government role becomes central, both in the political and operational sense. The matter is deemed too important to permit market forces or even the lower levels of government to figure out what might best suit their local circumstances. Rather a unified view of how best to promote the desired goal is articulated by the central government and then imposed on the market. That I think fairly describes the world we have been living in with regard to auto safety in the US since our Congress passed the Motor Vehicle Safety Act of 1966, and most of the rest of the developed world has copied this system since then. It is the suddenness and comprehensiveness of the institutional change that I will be mainly referring to when I use the term "regulation" and contrast it to the natural progress of opulence.

The unified view that has inspired auto safety regulation since 1966 is very clear. It is that safety depends critically on design features of cars that protect occupants from the consequences of accidents and that the discovery and deployment of these features is to be centrally determined. There is some room for market forces in this system – for example, to determine the precise packaging of the mandated design features and to exceed minimum standards. But for the past 40 years or so most of the significant decisions about auto safety in the US are initiated in Washington.

Over 30 years ago, I decided to study the first few years' experience with the first motor vehicle safety standards. They mandated installation of seat belts and of steer-

ing columns and windshields that would give way if someone in the car was thrown against them.

I argued that some of the potential benefits of these devices could be offset, because the regulation would encourage greater risk taking, because the greater protection from the required devices had, in effect, reduced the price of risky driving. Let me explain: when you are in a hurry and tempted to drive faster or more aggressively, there is a price to be paid. It is the extra risk of getting into an accident and then suffering injury or even death. The mandated safety devices would reduce this price by reducing the severity of the consequences you could expect if you got into an accident. If those consequences had been sufficiently severe to deter you from fast or risky driving before the regulation came along they were now less likely to do so. So simple economic logic suggested that, in the aggregate, the mandated devices would encourage more risky driving behavior, and this greater risk taking would offset to some degree the safety benefits these devices seemed to promise.

Unfortunately, basic economics cannot tell you more than this. Importantly, economic reasoning cannot answer the crucial question: by *how much* will the potential safety benefits be offset? It could be partial, complete or even more than complete. So, most of my old paper on the subject focused on the facts as best they could be ascertained in the mid 1970s. And I suggested that some of the facts seemed consistent with a complete offset of the benefits. Specifically, occupant deaths per accident did indeed fall substantially compared to what might otherwise have been expected. But this was entirely offset by a combination of more accidents and more fatalities to non-occupants such as pedestrians, bicyclists and motorcyclists whom the devices did not protect.

This finding met with considerable skepticism from economists and non-economists. Unlike most non-economists, most of my fellow economists accepted the underlying logic and reserved their skepticism for whether the facts fit the logic. This is the healthiest kind of skepticism, and it has led to a substantial and ongoing empirical literature on auto safety that examines a variety of regulatory changes in a variety of places.

On the whole, I believe that this literature has been kind to the offsetting behavior hypothesis. The studies differ on whether the offset is complete, as it was in my study

or on the specific responses – for example, on whether significant offset is coming from increased non-occupant deaths or from some more general change. But the typical finding is that the actual effect of the safety regulation on the death rate is substantially less than it would be if real people behaved like crash dummies.

A recent example of this research is a paper by Liran Einav and Alma Cohen (2003). It is representative of much of this 30 year research enterprise. They studied the effects of laws requiring the use of seat belts. They did not find increased non-occupant deaths to be an important part of this particular story. However, they did find what most of this literature seems to find: the real world effect of these laws on highway mortality is substantially less than it should be if there was no offsetting behavior. The laws did increase the usage of seat belts. And they are able to estimate that this increased usage should, in the absence of any behavioral response, have saved over three times as many lives as were in fact saved.

It is important to understand that this disappointing result has nothing to do with any technical deficiency of the devices. These devices do seem to work as well as advertised. If you are involved in a serious accident you are much better off wearing your seat belt than not. Rather the auto safety literature is attributing the shortfall of lives saved, either implicitly or explicitly, to an offsetting increase in the likelihood of serious accident.

2 American with Disabilities Act

My second example of offsetting behavior comes from the American with Disabilities Act (which I will call "ADA" for short) of 1990. As with auto safety laws, the US is far from alone in having such a law.

This law prohibits discrimination against the disabled in hiring, pay, promotion, and firing, and it requires the "reasonable accommodation" of disabled workers by adapting the workplace to their disabilities. Thus the law is trying to increase the employment and well being of the disabled.

While I have no precise figures, it is reasonably clear that the natural progress of opulence was producing this desirable result long before the ADA. The gradual

shift of economic activity from muscle power to brain power – from producing goods to providing services – virtually guarantees that employment opportunities for the disabled were increasing over time. As with the highway safety act, the ADA rejects the adequacy of this sort of gradual improvement.

However, two recent studies on the effects of this law, one by Tom De Leire (2000) and the other by Daron Acemoglu and Josh Angrist (2001) show that the ADA did not, in fact, improve employment opportunities for the disabled. Indeed, both studies conclude that employment rates for the disabled fell perceptibly after the ADA was implemented. How could this be? According to both studies the answer lies in the incentives created by the ADA for not hiring disabled workers.

Consider the incentives of a prospective employer, Jan, who is thinking of hiring Jana, who is disabled. Prior to the ADA, Jan might have hired Jana and then watched to see if her productivity compared to her wage plus any special costs of accommodating her disability justified her continued employment. Sometimes Jana would turn out to be a good hire, sometimes not.

After the ADA, the relative costs of hiring and firing change. If Jan does not hire Jana, he is, to be sure, now susceptible to penalties for discrimination. But in our legal system Jana will have to prove that discrimination was the reason for Jan's decision. And if Jan is sufficiently careful about how he looks for employees, disabled people like Jana will not find out about the job in the first place. But if Jan does hire Jana, Jan now faces two kinds of costs he didn't face before. First, the regulators, not Jan, will determine what costs have to be incurred to accommodate Jana and whether her wages are too low. Second, if he fires her now to avoid those costs, he is surely subject to penalties for discrimination. Now it is Jan who would have to prove that the accommodation costs were "unreasonable." So, in a prospective sense, the ADA imposes new costs both for hiring Jana and not hiring her, but the hiring costs (or more accurately, perhaps, the subsequent firing costs) arguably are larger. On balance it is better to avoid hiring Jana than to hire her and face those new costs imposed by the ADA.

The evidence is consistent with this tale. Not only did employment rates for the disabled fall after the ADA, they fell more for young workers who would be more likely

to be seeking employment than older established workers. The fall is concentrated in new hires rather than any increase in separations. And it is heaviest for the less educated, who are now prevented from offering lower costs to prospective employers to offset their lack of skills.

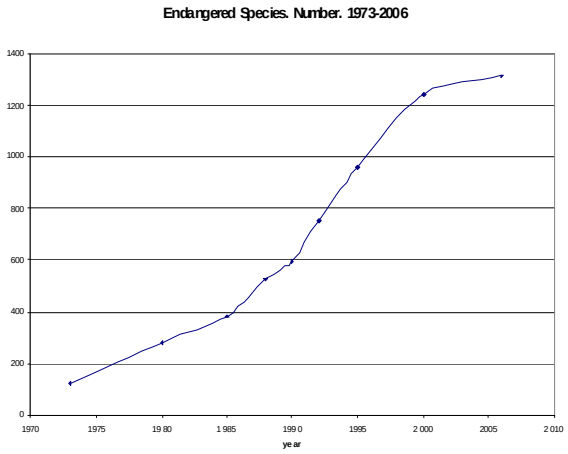
Since employment opportunities for the disabled have been reduced by the ADA, this is a case where the offsetting response is more than complete. You might think the disabled would be pressing for repeal. But the law does benefit some of them. Disabled Martina, who was already working for Jan in 1992, clearly gains – better working conditions, no lower pay, and the possibility of bringing an anti-discrimination complaint before the regulatory agency. Beneficiaries like Martina know who they are. The victims – the Janas who are not hired – often do not know that they are victims. This kind of asymmetry may help explain some of the political appeal of this and similar legislation.

3 Endangered Species Act

My last example of offsetting behavior comes from the Endangered Species Act (ESA) of 1973. As with the other examples, many countries have similar laws. This law is intended to protect wildlife that faces threat of extinction. It is by far the least well-studied of my examples, and so I will not be able to tell you how important the offsetting behavior is in this case. Nor will I have much to say about what was happening to wildlife preservation before the law was passed.

The law tells a regulator, in our case an agency called the Fish and Wildlife Service (FWS), to determine which species are endangered or threaten to become so. Once a species is put on the Endangered Species List private owners of land inhabited by this species cannot alter their land in a way that "harms" the protected species. Why do all this? According to the FWS, "The law's ultimate goal is to "recover" species so they no longer need protection under the ... Act."

Let me compare what has actually happened since 1973 to this stated goal. First look at the number of species on the list.



In 1973 there were 119 species on the list that had gotten there under previous legislation. In the next 30+ years an average of 40 species per year has been added to the list, so that something over 1300 species became listed. (Apparently, there has been an astonishing explosion of zoological knowledge in the last 30 years.) How many species have been removed from the list?

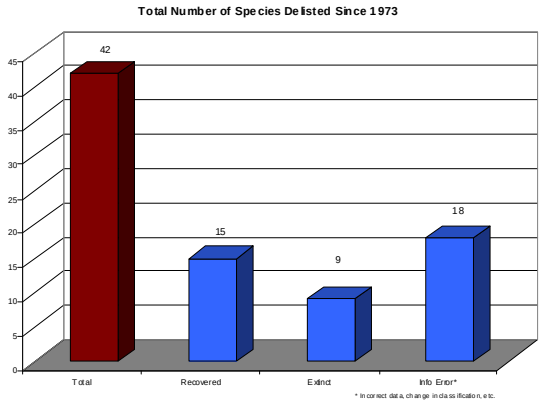
It is 42 – not 42 per year but a total of 42 in 33 years. Of these, 18 were removed for information reasons (a change in taxonomy or erroneous information), 9 became extinct and 15 were recovered. Thus, judged by its own stated goal, this regulatory enterprise has been a colossal failure, having thus far produced a net recovery rate of under ½ percent (6 of 1300+) of listed species. You might conclude that the real purpose of this act is the production of ever longer lists.

Now let me describe the offsetting behavior that is responsible for some part of this failure. It is sometimes called "preemptive development."

There are many stories about this phenomenon. But, as a professional economist, I am here to tell you about two studies that analyze this behavior more systematically.

One is a study of the red cockaded woodpecker by Lueck and Michael (2003) and the other by Margolis, Osgood, and List (2007) is about the pygmy owl. I'll use the first of these to illustrate how preemptive development works to offset the intent of the ESA.

The red cockaded woodpecker is an endangered species that inhabits forests with commercial value. In an unregulated market, such forests are allowed to grow until it becomes economical to cut trees down. Some such forests might ultimately be cut down completely – what is called "clear cutting". Others will be thinned gradually. Some of the clear cut forests will be replanted, others not. The ESA changes all these calculations. If you own a forest which is inhabited by the red cockaded woodpecker you cannot cut down trees. That is good for the woodpecker. But these birds move around, and if you own forest land that is near where the woodpecker lives, your incentive is very clear – cut down all those trees now! If you wait and the woodpecker moves onto your land your chance to sell any wood will be forever lost. This is not good for the woodpecker, but Lueck and Michael find that this is systematically what happened in the North Carolina forests they studied. Forests that market forces suggested would only be partly cut down or allowed to grow a while longer were clear cut when they became potential woodpecker habitat.



The other study by Margolis, Osgood, and List is about developing land for houses near the city of Tucson, Arizona. But the message is the same. Here the endangered species was an owl (the pygmy owl), and the economic decision was whether to develop land now or let it sit for a while. Again, the offsetting behavior was that land which might have been allowed to sit was developed for housing when pygmy owls moved near.

4 The Irony of Smith's Opulence

You may have noticed the irony in my examples of offsetting behavior: the highway safety act promotes reckless driving; the disabilities act disemploys the disabled; the Endangered Species Act promotes environmental destruction. This ironic aspect, I think, accounts for some of the appeal of the concept to economists as well as some of the controversy about it. We economists tend to prefer unexpected results to expected, especially if they illustrate the power of the simple logic of our discipline. But we are also skeptical of unexpected new results, and politicians have resisted new economic insights forever – or at least since Adam Smith was promoting free trade over 200 years ago.

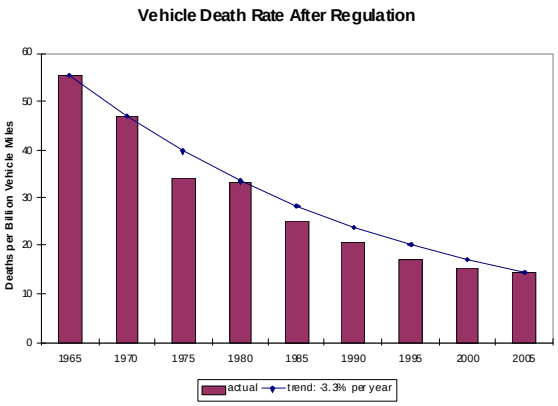
And you should be skeptical. Here I am telling you how offsetting behavior has compromised three significant attempts to improve our lives. Yet each of them is a sacred political cow. Not one is in any serious danger of substantial alteration. Indeed, as I have indicated, all 3 have a world-wide appeal. How can that be? In the case of the ADA I looked to the difference between beneficiaries who know who they are and victims who do not for part of an answer. Perhaps deeper analysis of what we call "political economy" can help us understand the durability of the other cases. But these cases are merely illustrative. It has become routine, especially in this area of social regulation, for economists to find that the benefits of regulation are smaller than expected and often less than the associated costs. There must be a very powerful force that protects such inefficient regulation.

I think I have found the guilty party. It is Smith's natural progress of opulence – the tendency for unregulated markets to contribute to steady growth: I will argue that this very force, which these kinds of regulation reject, also sustains them politically.

This sounds paradoxical. But let me now take you back to the beginning of my talk, and I think you will soon see where I am headed. I asked you to remember a number. If you have forgotten, it is 3.5 percent, the annual rate of decline in highway deaths per mile in the era before regulation.

Now, I want you to guess what the comparable number is in the period since regulation.

The precise answer is that from 1965 to 2005 highway fatalities per vehicle mile declined at 3.3 percent per year. That is, there is essentially no difference from one period to the next. I cannot think of a better way to convey to you the basis for skepticism about the effectiveness of this regulatory enterprise than the essential identity of these two numbers.



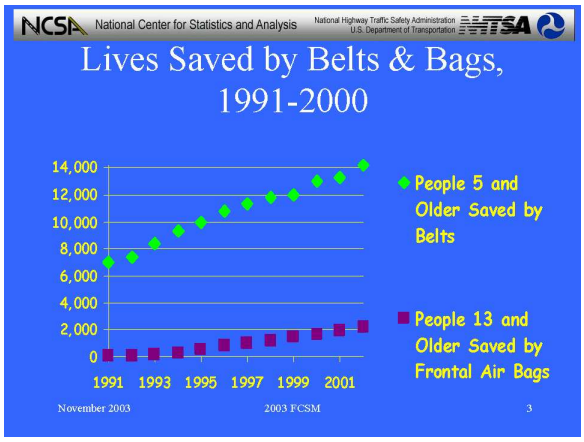
I have given you one reason why highway safety regulation didn't improve safety-offsetting behavior. But I believe that the power of the natural progress of opulence is probably even more important. Progress in auto safety would likely have continued whether or not it became regulated from Washington, and it would not surprise me if the vehicle mile death rate falls at 3-4 percent per year for many years to come, not only in the US but here as well. Indeed, even in vehicle design, Washington's rules may have only speeded up some changes that would otherwise have occurred more slowly. It is, of course, unimaginable that a 1965 car would have a 1925 design. It is also unbelievable that a 2007 model will have only 1960s safety technology. We'll never be able to know, but it is likely that many of the design features mandated by the regulators would have been introduced anyway, perhaps later.

This pattern of gradual progress prior to a major regulatory innovation is common to many areas of social regulation, such as worker and product safety and environmental quality. Careful study may or may not show that the regulation accelerated the progress. The important point is that, in most cases, the gradual progress would

likely have continued whether or not regulation had intervened. In this sense progress promotes many of the same goals as regulation.

But, even if the rate of progress is no different under regulation, as with auto safety, there is a crucial difference. One era of progress happened after the regulatory enterprise was created. That permits the regulators to point with pride to the progress and to claim credit for it.

As you can see, an economist looking at the entirety of the historical record may say, "Regulation has nothing to do with the progress. It would have happened anyway" But this is much too subtle. The fact is there was regulation; there was progress, so why change anything?



There is then a supportive link between the progress of opulence and much regulation, even ineffective or counterproductive regulation. As long as the thing being regulated is seen to be working tolerably well – and that will often be the case in a growing economy – then the regulation is usually safe politically. This would be the argument of my second imaginary monograph, *Progress: Friend of Regulation*.

If I were writing such a work, I would emphasize an important difference between the way economists and most others analyze the effects of regulation. The economic analysis begins by posing what is called a "counterfactual": it means that the economist first asks "What would the world have been like without the regulation?" Then you compare the actual world to this counterfactual. Regulation is deemed success-

ful only if its intended effects are realized to a greater degree than could reasonably have been expected according to the counterfactual benchmark. This is the procedure economists have followed since Adam Smith. Indeed in the brief chapter that inspires this talk Smith does not simply assert the virtues of investment in the countryside, or require you to believe it as a matter of logic. Instead, he compares what mercantilist policy is doing in the England of his day to a counterfactual drawn from the history of places like the North American colonies and ancient Egypt. Smith's descendants use more powerful techniques, but their analytical method is the same as his.

It is hard to think of a significant regulatory enterprise in our time that has been placed in political jeopardy just because it fails to stack up well against a plausible counterfactual. Rather the political process seems to require evidence of malfunction in some absolute sense before there is serious pressure for change. I can illustrate the point with two examples with which I was involved early in my career.

5 The Politics of Reforms

My one brief time in Washington goes back to the early 1970s. I was part of an effort to reform our system of regulating the transportation of freight. I was joined by a large and talented group of professional colleagues. We economists were nearly unanimous about the need for reform. We could show that the regulation, whose main effect was to suppress market forces of all kinds, had been seriously counterproductive probably since our first highway network was built in the 1920s, if not before. We got absolutely nowhere with our reform initiative.

Within five years, however, this regulatory establishment, which had lasted for nearly 100 years, began to crumble. In another decade it would be gone entirely. It sounds like a small version of the events in Eastern Europe 20 or so years ago. And, looking back, the reasons for the sudden change are similar. In the case of our transportation regulation, a major chunk of the railroad industry – which carries around half the freight traffic in the US – collapsed financially in a time of general prosperity. This made continued regulatory-business-as-usual unviable. In this case market

forces had to destroy the foundation of the regulatory system before there was fundamental change.

Consider now the quite different recent history of another regulatory enterprise that I have studied – the Food and Drug Administration's (FDA) regulation of new drug introductions. In our system a manufacturer cannot sell a new drug until it proves not only that the drug is safe but also that it is "efficacious." This means that the manufacturer must prove that the drug will do the things the manufacturer wishes to claim it will do. This "proof-of-efficacy" requirement was added in 1962, and I studied the effects of this legislation a decade or so later. I concluded that the proof-of-efficacy requirement was a public health disaster, in fact promoting much more sickness and death than it prevented. As with my auto safety research, I would not bring this old study up if the conclusion had not been subject to further test by other analysts. But nothing I have seen since has moved me to change that radical conclusion – the disaster of our new drug regulation continues. Nevertheless, there is no realistic chance that this regulation will share the fate of our freight regulation anytime soon.

Let me try to explain how I came to so stark a conclusion, what has happened since, and what I believe to be the surces of this regulation's political urvival.

The intent of the regulation is n ely laudable: ineffective drugs can waste money and the precious time for more beneficial treatments. But the tests that are required to prove efficacy to the FDA take time, whether the drug ultimately passes those tests or not. In fact, this extra time cost is mean ed in years, rather than months or weeks.

In some cases, it is a cost well spent. Some ineffective drugs are screened out, and the extra testing catches some drugs that are dangerous as well. But every effective drug that ultimately makes it to market also incurs the time cost, including n that can save lives or relieve the suffering of illness. In these cases, the extra time means that n potential beneficiaries of the drug will die or suffer while the FDA evaluates the test results. My reading of the available evidence was simply that this latter cost far outweighs any benefit. Indeed, the death toll from this regulatory delay can easily number in the thousands per year. By contrast the benefits were small. I found that

the unregulated market was very quickly weeding out ineffective drugs prior to the imposition of the regulation. Their sales declined rapidly within a few months of introduction, and there was thus little room for the regulation to improve on market forces.

The first reaction to this work from the regulatory establishment in Washington was similar to the Soviet reaction to the Prague Spring of 1968 – hostile and defensive. Any change was unnecessary and dangerous. Ultimately, this hard line softened. For one thing, most of the subsequent academic research tended to reach conclusions similar to mine. The regulators ultimately acknowledged that the process should be speeded up. And some changes were made that have made the process a little faster. However, there has never been any real political pressure for really fundamental change, like eliminating the efficacy requirement entirely. I would still have to describe the regulation as one that kills more people than it saves.

I think this harmful regulation survives politically because it is protected by the natural progress of opulence. Medical progress of all kinds continues. Beneficial new drugs, however delayed, ultimately do make it to market. Mortality rates decline on the order of one percent per year, as they have for over 100 years. In this broad context a few thousand extra deaths a year is hard to notice.

And perhaps more important, the deaths of which I speak are counterfactual deaths, not deaths that can be directly connected to any regulatory malfeasance. Imagine what would happen if somehow dangerous poisons were frequently marketed as new drugs, and thousands were killed each year by them. This would be a major scandal. You could directly connect the deaths to the regulatory process, and this process could never survive politically. But the actual victims of this regulation did not swallow a bad pill wrongly approved by the regulator. They merely failed to swallow a good one in time, and they never knew what they had missed. As long as medical progress continues a case for reform built on anonymous victims of regulation, change is going to be difficult politically. Indeed the defenders of the status quo make good use of the progress. They will tell you how much regulation has contributed to the progress and what bad consequences would follow from any meaningful regulatory change.

6 Conclusion

I will conclude with two suggestions about how you might think about the connection between economic progress and regulation. The first suggestion is about old regulation and the second about proposed new regulation:

Regulation usually will be hard to get rid of, even if it is counterproductive. It may require some crisis, either in the regulated industry or in the broader economy, before there is significant change. The recent history of this region is a possible example. You had a crisis that produced profound change, and then more recently, perhaps some reduction in the pace of reform. Both of these are connected to Smith's concept of natural progress. The crisis owed much to the then unrealized promise of natural progress, and the difficulty of further reform owes much to the partial fulfillment of that promise. If you are moving broadly in the right direction it is harder to make the political case for substantial reform.

Proposals for new regulation often seem attractive superficially. They promise to solve public problems without substantial public spending or new taxes. My suggestion here is to be both skeptical and patient when encountering such proposals. Be skeptical that the problem will really be solved, because you should expect people to behave in ways that offset the intent of the regulation. Be patient because natural progress will often do much what the regulation wants to do, perhaps more slowly, but often more effectively and completely.

Bibliography

[1] Acemoglu, Daron, and Joshua Angrist. 2001. "Consequences of Employment Protection? The Case of the Americans with Disabilities Act." *Journal of Political Economy,* Vol. 109, No. 5, October, pp. 915-957.

[2] Cohen, Alma, and Einav, Liran. 2003. "The Effects of Mandatory Seat Belt Laws on Driving Behavior and Traffic Fatalities." *Review of Economics and Statistics*, Vol. 85, pp. 828-843.

[3] DeLeire, Thomas. 2000. "The Wage and Employment Effects of the Americans with Disabilities Act." *Journal of Human Resources*, Vol. 35, No. 4, pp. 693-715.

[4] List, John A., Margolis, Michael and Osgood, Daniel E. 2006. "Is the Endangered Species Act Endangering Species?" *NBER Working Paper No. W12777*.

[5] Lueck, Dean, and Jeffrey A. Michael. 2003. Preemptive Habitat Destruction under the Endangered Species Act. *Journal of Law & Economics*, Vol. 46, No. 1, pp. 27-60.