NO PERFECT SOLUTIONS FOR MARKET IMPERFECTIONS

Jeremy Kidd[*]

ABSTRACT

Markets are imperfect, and the suboptimal results are frequently used to justify government regulation. Government regulation, however, is also imperfect, and the suboptimal results are, less-frequently, used to justify deregulatory efforts. Located between those poles is industry self-regulation, in which the industry is tasked with effectuating regulatory goals. Unfortunately, but perhaps not surprisingly, industry self-regulation is also imperfect. Industry members, when called on to engage in self-regulation, will face what Austrian economists call the knowledge problem, but at lesser severity than full government regulation. Industry members will also face a variety of public choice pressures, and those pressures may be more disruptive than under full government regulation. There are, therefore, no perfect solutions, and policy makers seeking solutions must weigh the relative tradeoffs on a case-specific basis, if they wish to obtain optimal outcomes.

INTRODUCTION

"[T]here are no solutions, there are only tradeoffs."[1]

We live in an imperfect world. As a result, there will always be opportunities for improvement, large and small. The question is how best to make those improvements. For decades, the preferred method for large improvements has been to use the mechanism of government regulation. By one measure, total restrictive regulation in the United States has increased by 164% in the five decades between 1970 and 2020.[2] Some economic measures normally increase over time, particularly given positive rates of inflation, but a significant theory would be needed to justify an assumption that the need

[*] Professor of Law, Drake Law School. I am grateful for the financial support of the Law and Economics Center at George Mason University Antonin Scalia Law School, as well as the helpful comments from participants at the Research Roundtable on Industry Self-Regulation.

[1] THOMAS SOWELL, THE VISION OF THE ANNOINTED: SELF-CONGRATULATION AS A BASIS FOR SOCIAL POLICY 113 (1995).

[2] The RegData database was utilized for starting and ending values. Quantgov.org/download-data (last accessed Apr. 12, 2022). *See* https://www.quantgov.org/new-regdata-us-release for a description of RegData 4.0 and a downloadable use guide.

for corrective regulation has such a natural upward slope.

The world is certainly more complicated than in 1950, arguably by orders of magnitude, and that complexity may have introduced new levels of risk that would justify increased restrictive regulation. As an introductory matter, however, notice that the increased complexity is the result of dramatic technological innovations, and that many of those innovations have made the world much *safer*. Increased risk argues in favor of more regulation, but increased safety militates against demands for increased regulation, at least to the extent that restrictive regulation is aimed at creating a safer world.

Further diminishing the strength of the pro-regulation side of the debate are two lines of economic research. First, the knowledge problem, identified by Austrian economists like Hayek and Mises, which is the innate impossibility of government agents to collect, assimilate, and utilize sufficient knowledge to properly correct identified problems. The more complex the mechanism, the more difficult to predict any particular outcome, and there is no mechanism more complex than human society,[3] with human emotions rendering impossible any reasonable precision in predicting the future. Regulators are tasked with developing rules that will govern the behavior of hundreds of millions of individuals—in effect, they are asked to predict the unpredictable.

Second, the public choice problem, which is the aggregation of various concepts from the public choice school of economics. In essence, these problems arise from the fact that regulators are human beings, complete with personal preferences that will affect policy decisions, even though regulators are *supposed* to be considering only the public interest. The effectiveness of government regulation will be impacted by phenomena like rent-seeking and regulatory capture, with resulting harms to market participants and society, as a whole.

The following section will establish the standard justification for government intervention, followed by important caveats to that theory. Specifically, it will show how the knowledge problem and the public choice problem will reduce the effectiveness of government regulation, perhaps to zero. Section I will then circle back to the unregulated market and show how markets, although susceptible to certain imperfections, do not suffer from the knowledge problem or the public choice problem.

[3] *E.g.*, F. A. HAYEK, INDIVIDUALISM AND ECONOMIC ORDER, 72 (1980) ("The social complexes, the social wholes which the historian discusses, are never found ready given as are the persistent structures in the organic (animal or vegetable) world").

This kind of analysis is nothing new, and some scholars and industry leaders have suggested that industry self-regulation could address the imperfections of unregulated markets while providing marginal improvements over government regulation. Section II of this article will test that hypothesis against the knowledge problem and public choice problem. Involving industry participants marginally ameliorates the knowledge problem, enlisting the profit motive to incentivize self-regulators to utilize market signals when setting regulatory policy. Industry self-regulators will also have stronger incentives to remain nimble, allowing regulatory policy to change with market conditions. Unfortunately, self-regulation also marginally worsens the public choice problem. If the industry is to regulate itself, it is far more likely to regulate in a way that will protect industry incumbents from existing and future competition.

As part of this analysis, it will be necessary to properly situate industry self-regulation between one extreme of full regulation, a centrally planned economy, and an unregulated market—whose imperfections lead individuals to seek government intervention. Between those extremes, there is a significant amount of territory. Every point on the spectrum need not be defined, but certain important signposts will need to be established and examples of boundary conditions explored.

With a range of imperfect solutions available, the optimal solution may not be readily apparent or easily ascertainable. Section III confronts that reality, accepts it, and offers basic advice to guide what will inevitably be a flawed process, but can also be a productive endeavor if approached with caution, humility, and an eye towards the self-interest and adaptability of human beings.

I. WHETHER AND WHITHER TO REGULATE?

The demand for government regulation is understandable in an imperfect world. Hobbes famously referred to the state of nature as "solitary, poor, nasty, brutish, and short,"[4] and posited that individuals seek government as a way of preserving life within that world. This view is pervasive in society,[5] and it is certainly true that the world is, and has always been, one with

[4] THOMAS HOBBES, LEVIATHAN 11-13 (1967).

[5] *E.g.*, United States Declaration of Independence ("We hold these truths to be self-evident, . . . that to secure these [inalienable] rights, Governments are instituted among men.")

significant risks. As technological innovations mitigate or eliminate some risks, other risks are exacerbated, and entirely new risks emerge.

Risks exist because we cannot control the actions of other people and because we cannot control the consequences of our own actions. In the first category are such well-known concepts as externalities and commons problems, arising when private incentives do not align with the public welfare. As an introductory matter, this desire to better align incentives can be overstated because, as Adam Smith so memorably stated, the "invisible hand" of the market order often aligns the private incentives with those of others.[6]

The second category is filled with all the ways in which our choices end badly for us. Generally, we take actions where we anticipate that the benefits will outweigh the costs. Sometimes, we are mistaken about the magnitude of either benefits or costs, and occasionally those scenarios arise when the magnitude of the costs is unknowable prior to the costs being imposed.[7] The individual will not typically request external constraints ex ante; when predicted risk is high enough, the individual will voluntarily refrain from the behavior. In the long run, however, regulation is still likely. The individual for whom the risk became reality may insist upon societal remediation or others may paternalistically decide that the individual is incapable of adequately calculating the risk.

The case for regulation, though not unfounded, is often overstated. The reason for this is two-fold. First, regulatory advocates overestimate the ability of government intervention to make the situation better and underestimate the cost of the regulatory process. Government regulators are all but guaranteed to arrive at the wrong regulatory conclusion, given the quantity of information and knowledge necessary to make the kind of decisions that regulators must make. Aggregation on the scale necessary for most government regulation is impossible through any mechanism of conscious design. Likewise, even if the socially optimal outcome were achievable, public choice concerns like regulatory capture, rent seeking, and resulting

[6] 1 ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 16 (Edwin Caanan ed., Methuen & Co. 1904) (1776) ("("[M]an has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and shew them that it is for their own advantage to do for him what he requires of them. . . . It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our diner, but from their regard to their own interest.").

[7] The "Black Swan" is an example of this phenomenon. NASSIM NICHOLAS TALEB, THE BLACK SWAN xxi-xxii (2010).

barriers to entry mean that regulators are far more likely to choose outcomes that benefit well-connected industry incumbents.

Second, regulatory advocates underestimate the power of existing market incentives to ameliorate the perceived problems. It is understandable that politicians, regulators, and activists of many stripes will be loathe to "do nothing," given that their continuing in their jobs requires being seen to do something. Markets, however, are never truly unregulated, and several forces will, at least in part, counter the problems identified by market critics.

A. The (Qualified) Case for Regulation

Proponents of government regulation span a wide range in their views on markets. Some believe markets are, by their nature, destructive and exploitative.[8] This is the foundation of much Marxist thought, and it views market mechanisms as per se bad. Other proponents of regulation see markets as useful but flawed tools for achieving the goal of human flourishing.[9] For this group, government regulation is necessary to make sure that markets' inherent failings don't overwhelm the good that can come from using market forces to seek the welfare of individuals and society. A final group that advocates for government regulation is made up of those who believe that markets are not only useful but also that markets, generally, work well. To this group, government regulation would be harmful if broadly applied, but can be useful in specific circumstances, because "[insert area of concern] is different."

In each of these groups, markets are viewed with skepticism, although the scope of that skepticism necessarily varies. There is an extensive literature arising from that skepticism, focusing on apparent failures of markets to achieve optimal outcomes. Some of the more common "market failures" are externalities, public goods, commons, and information asymmetries, though there are multiple variations on each general category.

1. Externalities

Externalities are used to justify regulation because, according to theory, either too much or too little of a good or service will be produced, depending

[8] *E.g.*, MATTHEW DESMOND, EVICTED: POVERTY AND PROFIT IN THE AMERICAN CITY (2016).

[9] *E.g.*, House Comm. on Interstate and Foreign Commerce, H.R. Doc. No. 73-9323, at 5 (1934) (declaring the need for legal intervention to promote investor confidence in financial markets).

on whether the externality is positive (too little will be produced) or negative (too much).[10] Market transactions are efficient when the parties to the transaction bear all of the costs and capture all of the benefits, and externalities exist when those conditions fail. With negative externalities, the imposition of costs on third parties not only yields suboptimal outcomes for society, but also for the third party who gains nothing from the transaction but must bear some of the cost.

In the context of externalities, arguments for regulation will therefore invoke both the third-party victim and society, at large. And, while economic theory tells us that regulation, in theory, can yield a more efficient outcome, economic theory also cautions that the story is not that simple. For example, establishing with certainty the likely existence of spillover costs and benefits is not a trivial matter, and even that task is simple compared to establishing the magnitude of the spillovers.

More foundational, however, is the critique of standard regulatory arguments offered by Ronald Coase, in *The Problem of Social Cost*. There, Coase pointed out that economic analyses of what he referred to as "reciprocal"[11] harms almost always presumes, rather than proves, the existence of a victim. Instead, Coase argued, what economists call externalities is nothing more than competing interests, demanding analysis, rather than summary conclusions about who is to blame. Rather than being a justification for regulation, these reciprocal harms can be resolved through bargaining—when transaction costs[12] are low—or through tort law. Coase's formulation does allow for the possibility of government intervention, but only when transaction costs are high, and only after neutral analysis of all claims.[13]

Tort law deserves additional consideration when addressing the role of government regulation in curbing externalities. The purpose of our tort regime is to correct wrongs imposed on others, making the tort victim

[10] Bryan Caplan, *Externalities*, LIBR. OF ECON. & LIBERTY, http://www.econlib.org/library/Enc/Externalities.html.

[11] R.H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 2 (1960).

[12] The theory of transactions costs can cause a lot of consternation. For a simplified explanation, *see* Jeremy Kidd, *Kindergarten Coase*, 17 GREEN BAG 2D 141, 144-45 (2014).

[13] One underappreciated Coaseian argument is that, on occasion, the conflict arising from reciprocal harms often has its genesis in prior government action. *Id.* at 28. A neutral analysis of claims might therefore allow resolution of the claims simply by reversing the prior action.

whole.[14] While not every case of reciprocal harms will be resolvable in tort law, and not every tort arises from reciprocal harms, the existence of a functioning system of tort law reduces the need for government regulation. Proponents of government regulation should—but rarely do—explain why the problem that regulation would purportedly solve cannot be remediated under tort law. Furthermore, to the extent that existing tort doctrines do not provide a remedy, some consideration should be given for whether the appropriate solution is more government regulation or, instead, modifications to tort law.

2. The Not-So-Tragic Commons

Another scenario in which markets are presumed to fail is in the presence of a common pool resource. Originally referred to as "The Tragedy of the Commons" by Thomas Hardin,[15] commons problems arise when there is a resource that is open to everyone but has a finite rate of regeneration.[16] According to economic theory, the common resource will be inexorably depleted, as everyone with access will know that there are too many potential users and will seek to gain as much value from the resource before its inevitable depletion. The nature of the resource, therefore, creates such strong assumptions about the inevitability of depletion that users make it happen, in a tragic self-fulfilling prophecy. If the resource is valuable in more than the short run, protection and management are valuable, but only government intervention and regulation can halt the degradation and preserve value.

The story of the tragedy of the commons is well known to advocates of government regulation. Sadly, those same advocates rarely seem to be as familiar with the work of Nobel Laureate Elinor Ostrom, who showed that, under certain circumstances, the commons problem is solved without government intervention.[17] Essentially, if there is value to be preserved, individuals will often recognize it on their own and take steps to preserve it, without needing the coercive power of government. This even occurs when there is no individual profit to be obtained.

Ostrom's work does not necessarily negate the argument for government

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[14] Jules L. Coleman, *Tort Law and the Demands of Corrective Justice*, 67 IND. L.J. 349, 361-62 (1992).

[15] Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

[16] In economic terms, being open to everyone means that the resource is not excludable, and having a finite rate of regeneration means that the resource is rival, that use of the resource by one person negatively impacts the ability of others to use the resource.

[17] ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990)

regulation in areas where common pool resources are present. It does, however, caution against accepting any blanket assertion that a commons *needs* government regulation. Government regulation can be helpful in resolving a common pool resource problem, but there are other potential solutions.

3. Black Swans and Other High-Risk Creatures

Government intervention might also be helpful in reducing the likelihood of Black Swans, a category of high impact, low probability events.[18] The fact that they occur with low probability limits the ability of individuals or businesses to take steps to avoid Black Swans, as well as the ability of ex post legal remedies (tort law and criminal law) to deter the behavior that could lead to them. The fact that they are high impact means that standard modes of compensation are unlikely to make the victim whole. When both characteristics are present, ex ante intervention may be the only way to minimize the emergence of these events.

If one or both characteristics do not manifest, or do so only weakly, a Black Swan may not be present, but there may be sufficient related risk to justify regulation. Whether properly categorized as Black Swans or not, if the harms from an activity are not easily predicted or remediated, then tort law and criminal law will struggle to properly address these risks. Government regulation may be able to provide, ex ante, a reduction of risk that ex post remedies cannot.

The difficulty with Black Swans is that their apparent utility in the pro-regulation argument makes them almost irresistible to pro-regulation advocates. When a category becomes a per se justification for regulation, that category rapidly expands to include more and more things. This trend is a product of the natural human desire for the easy path to the desired outcome. If that which is a Black Swan requires ex ante regulation, then whatever we desire to regulate must surely be a Black Swan, because that will make our desired policy outcome a foregone conclusion. Unfortunately, this trend also directly contradicts the very nature of a Black Swan—exceptional uncertainty about if and when it will occur.

This phenomenon is not unique to Black Swans; any legitimate concern that turns out to be emotionally attractive to the electorate will be stretched far beyond its reasonable bounds to achieve ancillary, or even unrelated,

[18] NASSIM NICHOLAS TALEB, THE BLACK SWAN xxi-xxii (2010).

goals. Consider how, in the wake of the 9/11 attacks on the United States, far more foreign policy debates became tied up in the "War on Terror," or how nearly every reform of financial markets in the wake of the Great Recession of 2007-08 became necessary to combat "systemic risk." Similar patterns can be seen with climate change and systemic racism, as well. This overuse can cause a backlash, making it more difficult to combat climate change, or to reduce the likelihood of real Black Swans. Pro-regulation advocates must therefore be cautious with their favorite toy, lest they break it and lose it forever.

4. Information Asymmetries

A final characteristic of some market transactions that motivates demands for government regulation is the inequality of information between counterparties. Our confidence that voluntary transactions are value-enhancing when one or both parties do not have access to important information. When party A has exclusive access to information pertinent to party B's decision, government regulations can force party A to disclose, improving the efficiency of any agreement that arises between the parties.

Notice, however, that not all information disparities are harmful and in need of remediation. For one thing, many information disparities are voluntary, in that both parties have access to the same information, but one party chooses not to aggregate the information. Although completely misunderstood by some scholars,[19] the point is straightforward. In a world where immense amounts of information—about ourselves, about our friends and family, about our politics, about our consumer choices, about the natural world, etc.—are at our fingertips, it is simply not possible to process even a fraction of it. We process the information that yields the greatest marginal benefit.

The fact that someone has aggregated different information into a useful form is not only not harmful to the individual consumer but provides a strong motivation for the consumer to *not* do the same, but instead to rely on whoever has expended the resources necessary to make the information useful. In such a case, the disparity of information is often the kind of specialization that generates value from the transaction.[20] While some

[19] *E.g.*, Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623, 1649 (2017).

[20] ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 16 (Edwin Caanan ed., Methuen & Co. 1904) (1776).

regulatory regimes are aimed at equalization of information,[21] success in the endeavor would eliminate the value from exchange.

Another potential complication with efforts to regulate based on the purported market failure of "information asymmetries" is that collection and disclosure of information, in addition to reducing the value of exchange, has costs—sometimes very high ones.[could do footnote to costs of SEC disclosures] Parties to a transaction are always free to demand whatever information they find relevant to their calculating the net value of the proposed transaction. At best, regulation in the area of information could provide value by identifying areas where valuable information might exist, as doing so would signal to the counterparties that they should inquire into those areas.

For each of the foregoing categories, economic theory provides both the basis for advocates' arguing in favor of government regulation of certain behaviors, but also strong caveats about the strength of those arguments. To be clear, the claim is not that markets are perfect, but that advocates for intervention often overstate the strength of their arguments. The rationale for government regulation is weakened further by the difficulty of even the best-intentioned government regulators to do the job they are assigned, as well as the perverse incentives that cast doubt on their ability to approach their job in a neutral fashion.

B. Wait a Minute, Part I: The Knowledge Problem

Government regulation offers to intervene to fix problems that arise in the normal functioning of the market. In a very real sense, that is a promise that simply cannot be kept, even if the promisor has all the best intentions. The reason is that the promisor cannot know enough to comprehend, much less fix, all the complexities of the market. The famous essay, *I Pencil*,[22] illustrates how it is impossible for any individual to assimilate all the information necessary to plan for the production of a simple product—the pencil. And not a late-20th Century mechanical pencil, but the basic, straightforward, graphite-and-wood form of the ages-old writing instrument. It is only through the miracle of prices that markets provide the correct signals to millions of individuals, in a vast array of industries, that allows a pencil to be produced.

[21] For example, the Securities and Exchange Commission has, for years, attempted to enforce Rule 10b-5 against insider trading based on a principle that all traders should have equal access to all information.

[22] LEONARD READ, I, PENCIL (1958).

Other critiques go even further, pointing out that it is not just a question of how complicated are the processes that, combined, yield the products and services that we use. That critique is certainly important, but there is a deeper concern associated with government regulators asserting that they can fix problems that arise in the market. It is that the information needed to make the kind of decisions that advocates of regulation promise does not exist in any form that can be aggregated for the use of regulators.[23] Drilling down one level further, much of the information that would be necessary for regulators to do their assigned job is not even consciously known by the individuals whose actions the regulators seek to regulate.[24]

Understanding this critique of regulation requires comprehending the magnitude of the complexity of the problem regulators purport to solve. As an initial step, it is important to dispose with the traditional concept of "markets." For far too many people, use of the term invokes images of physical locations, with four walls and a ceiling. It is unfortunate that the lay term for the place where we go to buy eggs—a market or supermarket—is the same as the term economists use to describe the complex system of voluntary transactions that produce not only the eggs purchased at a local store, but coordinate the production and sale of untold trillions of eggs worldwide. When regulators promise to fix markets, therefore, the promise is not akin to repairing a light switch, but rather identifying the needs and desires—conscious and subconscious—of billions of individuals who are seeking to make their lives better in ways that even they barely understand.

Upon that magnitude of complexity, regulators promise to impose an order imagined by themselves and put into place using other finite human plans. Doing so would require finite minds to properly diagnose not only the source of the problem, but also the magnitude. Next, regulators must identify a solution that will not make the problem worse and, preferably, make the situation better by at least the same value as the cost of regulators' arriving at and implementing the solution. And, even if all of that could be achieved, regulators would still face the unfortunate reality that we live in a world that is not only unfathomably complex, but also dynamic, so that any solution

[23] F. A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 521 (1945) ("there is beyond question a body of very important but unorganized knowledge which cannot possibly be called scientific in the sense of knowledge of several rules: the knowledge of the particular circumstances of time and place.").

[24] F. A. HAYEK, THE CONSTITUTION OF LIBERTY 27 (U. Chi. Press 1960) ("Man is generally ignorant not only of why he uses implements of one shape rather than of another but also of how much is dependent on his actions taking one form rather than another.").

must not also be reasonably correct but also flexible enough to account for future variations.

1. Diagnosis

There is value in solving problems, and the desire to do so is laudable. Often, however, the desire to implement solutions runs before the accurate diagnosis of the problem. That is concerning because what are called "solutions" are nothing more than speculative interventions unless they are tailored to a diagnosed problem. As such, solutions in search of a problem are just as likely to make any perceived problem worse. It is therefore essential that diagnosis of the problem precede application of a solution.

Diagnosis is difficult enough in scientific endeavors, where the confounding factors are significant. The knowledge problem increases the difficulty by orders of magnitude in the context of markets because the source of the problem is individual choice, which involves not only the interaction of natural forces but the unpredictability of human motivations and desires.

Consider, as an example, air pollution in Salt Lake City, Utah. Utah's capitol regularly fails to attain federal attainment levels for ozone and PM2.5 pollution, and neighboring cities to the north and south face similar problems. Air pollution is a classic example of a negative externality, calling for government regulation to stop the behavior leading to the imposition of spillover costs. Clearly, then, regulators should intervene to stop pollution and improve public health above the outcome achieved by market forces, right? Not so fast.

The first problem is identifying the scientific reality of the situation. Salt Lake City has a lot of really bad air quality days, yet the long-term averages for the city are actually quite good, meaning that there are a lot of really good days and a smaller number of really bad days. A blanket regulation—such as expensive fuel requirements[25] or bans on letting a vehicle idle[26]—will impose significant costs even during times when air quality is good. It is not even clear that cars are to blame, since Salt Lake and surrounding areas are quite suburban, with limited public transportation, meaning that use of automobiles is high on both good air quality days and bad air quality days. Without being

[25] Certain counties along the western edge of Utah's Wasatch Range—Davis and Salt Lake—are subject to reformulated gasoline (RFG) regulations, setting the Reid Vapor Pressure (RVP) at 7.8 psi, rather than 9 psi for areas that are in attainment with federal air quality standards. 40 C.F.R. § 1090.215(a)(2).

[26] See https://afdc.energy.gov/fuels/laws/IR?state=ut (collecting sources).

able to identify cars as a persistent source of the problem, regulations aimed at cars may have no impact or a negative impact.

Similarly, Salt Lake City has a unique topography and geography that confounds diagnosis of the *scientific* problem of air pollution. Salt Lake City sits next to a very steep rise from the valley floor to the tall mountains of the Wasatch Range of the Rocky Mountains. Atmospheric movement is different with this topography, and during certain days of the year, cold air masses get stuck in the valleys, unable to work their way past the mountains. This phenomenon, known as an "inversion,"[27] leads to some pleasant outcomes, such as being able to escape the frigid valleys in the dead of winter and rapidly be in the mountains to go skiing in warm-ish sunshine. However, it also leads to days with very high pollution levels in the valleys. The topography, rather than any human activity, holds strong explanatory power for why Salt Lake City's pollution is high on certain days, and it is not clear that regulatory intervention has any hope of convincing masses of air to please move along so the air quality can get better.

The geography of Utah also contributes to the air quality puzzle. Situated to the east of heavily-populated California, pollution from urban centers and wildfires wend their way towards Utah on the wings of prevailing winds. In other areas of the world, air pollution is mitigated as it passes over forests, oceans, and other pollution sinks.[28] Unfortunately for Utah, the only thing standing between it and California is Nevada, and Nevada has only limited forested areas and essentially no large bodies of water. Without a pollution sink between pollution sources in California and the mountains of the Wasatch Range, much of California's pollution becomes Salt Lake City's pollution.[29] Exactly how much? That will depend on the direction of the prevailing winds and the location of the jet stream. Pollution in Salt Lake is, therefore, almost always tied, to a greater or lesser extent, to events happening two states away, although separated by a time lag sufficient for the pollution to cross Nevada.

These scientific factors are known to scientists and are, therefore, available to regulators, yet regulatory debates about how to remedy the

[27] https://www.weather.gov/source/zhu/ZHU_Training_Page/Miscellaneous/inversion/inversion.html.

[28] https://www.eea.europa.eu/help/glossary/gemet-environmental-thesaurus/pollution-sink.

[29] This general problem is exacerbated every year with the advent of California's wildfire season, as smoke from forest fires joins other forms of air pollution moving eastward.

situation in Utah begin and end with how to reduce unnecessary pollution from cars. Given the task assigned to regulators—lower pollution levels on bad days—this is understandable, since regulators can do nothing to change Utah's geographical location or topography. There is only one button that regulators can push, and so they do, regardless of whether it is likely to yield lasting solutions to the problem.

Regulators have little incentive to admit the complexity of the problem—their job is to provide solutions within some pragmatic range. Politicians, likewise, have little incentive to concede complexity, since voters seem to want to vote for those who promise easy answers. And yet, complexity does not disappear simply because advocates of intervention pretend it does not exist. The disconnect between reality and policy proposals is problematic because the diagnostic step is the easy portion of the regulatory task. Failure to acknowledge confounding factors when they are more easily measured and accounted for eliminates any confidence that regulators will acknowledge the even greater complexity that enters as soon as the regulated individuals' behavior becomes relevant.

Consider, again, the human factors that play a role in curbing air pollution along the Wasatch Front. Specifically, why do individuals in Utah—and California, on many occasions—make choices that lead to air pollution? Why do they drive their cars as they do? Why do they exhibit the electricity use patterns that they do which, depending on the time and duration, might require coal-fired power? How do the choices of some affect the actions of others, in terms of their consumption choices? How do the relative prices of alternative activities impact individuals' actions and the pollution that results?

Without answers to these and many other questions about the heart and mind of millions of individuals in Utah, California, and elsewhere, regulators cannot hope to fully understand why pollution levels fall out of federal attainment on certain days throughout the year. This is so even if every scientific question were satisfactorily answered for, as discussed previously, markets are simply the aggregated choices of billions of individuals. Market problems are people problems, and people—individually and aggregated—are much harder to understand than natural forces.

2. Remedies

It need not be presumed that regulators must achieve perfection in their understanding of a problem, but even reaching a reasonable assessment of the

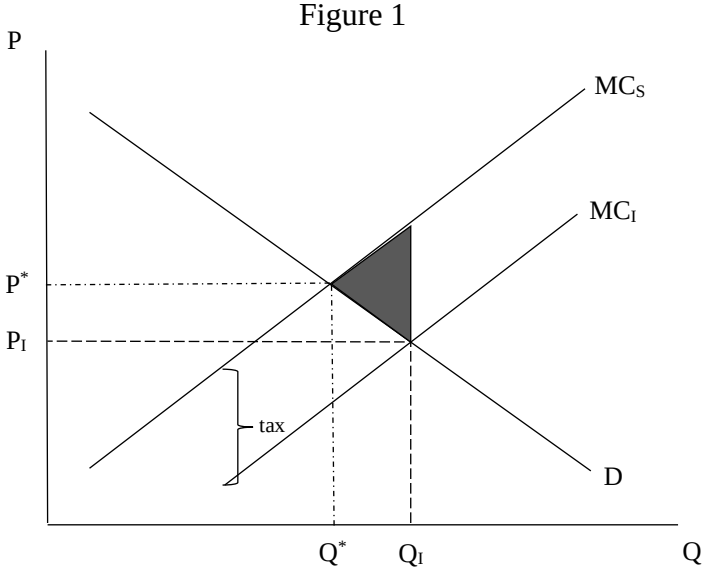
problem is far more difficult than regulatory advocates are willing to concede. Even if a satisfactory diagnosis were achieved, it remains to formulate a solution that responds to the problem at hand. This process, like that of diagnosis, is incredibly complex and yet, unfortunately, it is inevitably approached in simplistic ways.

Let us return, for example, to the case of air pollution. Standard economic analysis of air pollution—or any other negative externality—begins with something like Figure 1. Because there is a spillover cost that the parties to the transaction do not fully bear, the marginal cost to society, or MC_S, is always higher than the marginal cost to the individual, MC_I. As a result, the individual will choose to consume a higher quantity of the good, Q_I, than the socially optimal amount, Q^*, and society will suffer because of deadweight loss—the shaded area—the loss associated with every transaction beyond Q^*. Each of those transactions is one in which the cost exceeds the benefit and would not occur if the individual had to bear the whole cost. Because the individual can foist off on society a part of that cost, the transaction occurs but is welfare-reducing.

Regulatory proposals for rectifying this problem take one of two forms. First, regulators propose to simply limit production or consumption to Q^*. If achieved, that outcome would, according to standard economic theory, eliminate the deadweight loss and maximize societal well-being. Second, the Pigouvian solution[30] requires taxing the transaction in the exact amount of the difference between the marginal cost to the individual and the marginal cost to society. This solution also theoretically results in production at Q^*, eliminating deadweight loss and maximizing societal well-being.

[30] Arthur C. Pigou, THE ECONOMICS OF WELFARE (1920).

Figure 1



Whichever path a regulator takes, crafting an efficient solution to a negative externality will inevitably stumble against the obstacle of the knowledge problem. Economists use graphs, like Figure 1, to teach important principles to students, but the tidy and neat representation in a standard graph is far removed from the reality of markets. The regulator would first need to derive the demand curve, which is a symbolic representation of the relationship between all possible prices and the quantity that a consumer will buy at those prices. To accomplish that task, the regulator would need to know a myriad of factors, including the psychic benefit each consumer receives from each unit. This is knowledge that the individual consumers likely cannot adequately express, even if the regulator could communicate effectively with each one. The amount of data needed to generate a single demand or supply curve would be immense, which is why not a single, functional demand curve has ever been derived.

If the regulator could derive the demand curve, however, there would remain the task of obtaining a reasonable estimate of the marginal private cost curve. Marginal private cost curves are also known as supply curves, but supply curves, though forming the basis of all production decisions, are not even know in their entirety by the producers. Producers make decisions based on imperfect information, combined with intuition. When that intuition is grounded in the reality of the industry, the business succeeds; when the intuition is off, so is the business. Those making production decisions have

strong incentives to get it right, to learn what intuitive urges to obey and which to ignore. Regulators do not have the same incentives and may be completely divorced from the industry being regulated. There is, therefore, little reason to suspect that they will be sufficiently in tune to make accurate determinations.

Each of these obstacles would beset the regulator under normal circumstances, but the search for a solution to an externality raises one additional problem. That is, that correcting the externality requires measuring the externality. The regulator will need to derive the marginal spillover cost to derive the marginal social cost curve. As with the previous obstacles, this will require knowledge of a number of factors, not least of which is the marginal spillover cost imposed on each individual consumer by each unit of production. Some of these costs will be partially known to the consumer, such as increased medical bills, though the consumer may not know which portion of medical bills are attributable to the externality. Other costs will be purely psychic, however, rendering them largely unquantifiable and, therefore, unable to be transmitted in meaningful form to the regulator.

Even the smartest regulator will face these obstacles, rendering it nearly impossible for the regulator to remedy the problems arising from market imperfections. A wise regulator will recognize this reality, acknowledge it, and seek not to avoid the knowledge problem, but to reduce it in some way. One way to do so is to use market mechanisms, such as the price mechanism, to transmit information to the regulator much as they do in purely market circumstances. "Cap and trade" methods of pollution reduction have taken this route in recent decades.[31] These programs require regulators to set the maximum allowable level of environmental harm, but then recipients of the degradation credits are free to trade those credits to whomever they choose. The program creates an incentive for every market participant to identify ways to reduce her own degradation in a cost-effective way, so that the remainder may be sold to another market participant, increasing the environmental innovator's profit margin.

Pollution taxes can achieve the same goal of utilizing market innovation to achieve the ultimate policy goal at the lowest possible cost. If all emitters of a pollutant face a tax for their emissions, they will all have an incentive to reduce pollution. Some will find particularly cheap methods of reducing pollution, and those producers will have a production cost over their rivals, since they will be able to lower their pollution further and bear a lower tax

[31] For a concise summary of cap and trade systems, plus useful examples, see Albert C. Lin, *Making Net Zero Matter*, 79 Wash. & Lee L. Rev. 679, 738-44 (2022).

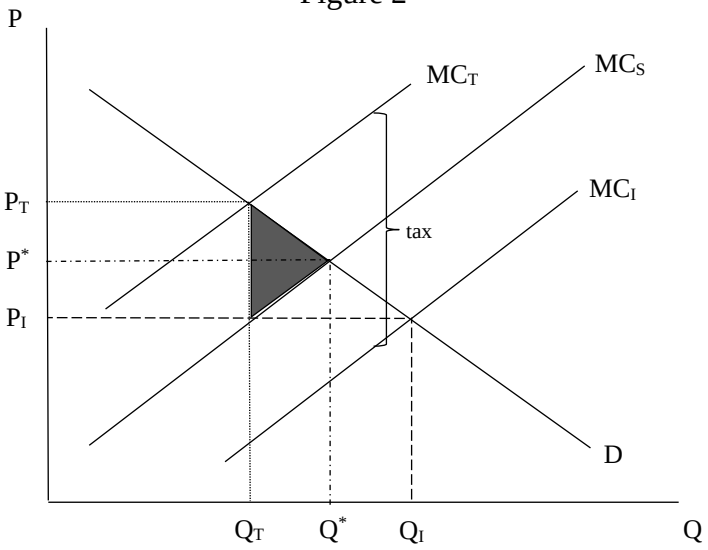
burden.

It is a very positive development that regulatory advocates have begun to acknowledge the parts of economic theory that go beyond simply justifying their desire to regulate. It is a positive development that some regulatory efforts now include an intentional recourse to markets in order to determine the best way to achieve the determined policy goal. More of the same—acknowledgement of the knowledge problem by regulators—would be a positive development. And yet, this solves only one aspect of the knowledge problem in crafting a solution that will resolve the underlying problem. Market forces are more often utilized in obtaining the desired end, but regulatory bodies still insist on setting the goals to be obtained, and that process is subject to very high levels of complexity.

In fairness to those tasked with regulatory goals, these obstacles do not mean that regulators cannot make a good faith attempt at counteracting an externality or other market imperfection. It does mean that regulation is not going to obtain the optimal outcome—Q* in Figure 1—any more than the unregulated market did. Given the complexity of the problem set before the regulator, it is impossible to know, ex ante, whether the regulator will be able to obtain a reasonable approximation of the optimal solution. Likewise, it is difficult to determine, ex post, whether the externality is actually being corrected. If the regulator restricts production too little, the problem will not be fully solved, but there may be an overall improvement of societal well-being.

However, if the regulator restricts production too much, entirely new costs will be imposed, as demonstrated in Figure 2.

Figure 2



Without a tax, as in Figure 1, deadweight loss results in too many transactions where the cost outweigh the benefits. If the tax is too high, price rises well above the efficient level, and the amount sold will drop below Q^*. The deadweight loss will therefore represent transactions that could have made individuals' lives better off because the individuals could purchase this good. The tax turned those transactions into value-negative transactions, so the transactions never occurred. The outcome would be the same if regulators chose to cap production and set the cap too low. Considering both ends of the analysis, it is clear there are potential gains from intervention, but they can be negated, and welfare losses increased, if regulators overestimate the severity of the problem.

Returning to the nature of deadweight loss, society loses value and individuals are hindered from flourishing when the government either does nothing or overshoots in its regulatory guesses. Individuals and society can maximize their well-being when they make choices that balance the marginal cost and marginal benefit. If marginal benefits are higher than marginal costs, then some individual and/or society can gain value by purchasing one more unit. If marginal costs are higher, then some individual and/or society could gain value by giving back the last unit bought, using the resources for something for which the marginal benefit is higher. This simple bit of economic logic provides the justification for regulatory intervention, but it also provides the warning against intervention, if that intervention is likely to

overshoot.

So, whether government regulation is advisable depends, in part, on whether there is reason to suspect that regulators will systematically overshoot or undershoot in their estimation of the corrections needed to resolve market imperfections.[32] If undershooting is more likely, then even imperfect regulation will decrease deadweight loss and increase social welfare. If overshooting is more likely, however, intervention will not only harm regulated individuals but also society, at large.

Which is more likely will depend on a number of different variables, and those variables will differ across industries and regulations. For example, mandated reduction in production in an industry with economies of scale will inure to the benefit of the largest players in the market, as a pro-rata reduction will increase their costs less than smaller, perhaps newer competitors. Players with larger market share also happen to be those most likely to have influence over the regulator,[33] making it more likely that regulation will overshoot and increase the competitive advantage bestowed on influential incumbents.

Unfortunately, these and other key questions—those that would be essential to any impartial analysis of regulatory proposals—are never asked. These and other complications arising from the knowledge problem are simply ignored, in favor of broad presumptions of perfect information and easily accessible solutions. Interestingly, the economist most credited with pointing out the harms caused by externalities, A.C. Pigou, recognized the immense difficulty in achieving what he suggested as a possible response.[34] Modern adherents to his solution rarely acknowledge, as he did, that the task before them is nigh on impossible.

3. The Ceteris is Never Paribus

The knowledge problem imposes high hurdles for the pro-regulatory

[32] It is tempting to conclude that government agents, faced with the desire for more tax revenues, will systematically err on the side of too high a tax, in order to generate greater tax revenues. If so, then regulation would always be a suboptimal choice. However, as shown by the Laffer Curve, Arthur Laffer, *The Laffer Curve: Past, Present, and Future*, The Heritage Foundation (June 1, 2004), tax revenue maximization will never occur at the highest possible tax rate. If regulators are aware of this fact, and if revenue maximization plays a significant role in the regulatory decision, it is possible that the revenue maximizing tax rate will lead to a chosen tax rate that lowers deadweight loss below the level that existed pre-regulation.

[33] *See infra*, at I.A.C.1.

[34] ARTHUR C. PIGOU, THE ECONOMICS OF WELFARE 329-336 (1920).

advocates at both the diagnosis and remedy stage, but those hurdles pale in comparison to the final hurdle before regulation can meaningfully be said to "fix" a purported market inefficiency. It is that market mechanisms are not only deeply complex but also dynamic, so that any apparent solution will not be durable for any significant period of time. Standard economic arguments that provide the justification for regulation are, almost without exception, based on the *ceteris paribus* assumption, or that all other factors will be held constant. In the world that regulators must actually fix, however, very little remains constant.

For example, in both Figure 1 and Figure 2, the efficient market outcome is reached at the point where the supply and demand curves cross; at that point, known as market equilibrium, marginal benefit and marginal cost are equal. Both supply and demand curves, however, represent only the relationship between price and quantity for the good or service being analyzed. A dizzying array of other factors are held constant—price of complements, price of substitutes, income, and so on—to make a visual representation of supply or demand possible. Even non-visual, theoretical models of supply and demand must make some concessions to the complexity of real life to make the models tractable. The complexity and dynamism of the real world does not disappear, however, just because economists must assume it away for computational reasons.

Regulatory interventions, assuming they can overcome the significant knowledge problem obstacles to diagnosis and crafting a remedy, are supposed to allow markets to reach equilibrium, but that rests on the assumption that equilibrium is a point that can be reached. Instead, given the complexity and dynamism of markets, equilibrium is just a target towards which markets move. And, that target is constantly moving, as the vast number of underlying factors continually change. The concept of equilibrium is still a useful construct—if prices are falling we know that prices were too high because demand has fallen or supply has increased, for example—but it does not represent the kind of stable goal that regulators would need before a miraculous guess could be correct for more than moments.

Combining the many hurdles raised by the knowledge problem, the task for government regulators is daunting. It need not be impossible, but the circumstances in which government regulation will be *unequivocally* preferable to the unregulated market will be small. The nature of the problem must be one that involves only minimal human elements, so that the process of diagnosis is significantly more a matter of collecting observations from the natural world. The nature of the problem must also be one in which regulation

will either interact with humans only indirectly, or in ways where human behavior is unlikely to change in response to regulatory efforts. This will assure that the remedial process will not be grossly confounded by those pesky humans doing unexpected things. The nature of the problem must be such that we have confidence that the regulatory response will systematically undershoot in its prescriptions and proscriptions. And, finally, the nature of the problem must be one that is relatively stable, in the long term. If any of these requirements are not met, regulatory efforts are likely to impose substantial costs on society, and those costs must be carefully weighed against the cost of doing nothing before it will be possible know whether regulatory intervention is preferable.

C. Wait a Minute, Part II: The Public-Choice Problem

Most pro-regulation arguments are implicitly based on the assumption that regulators may approach their task with a singular view to maximize social welfare. The previous section illustrated how complexity and dynamism render the neutral regulator's task difficult, if not impossible; at the risk of appearing to pile on, public choice economics offers another reason to suspect that government regulation will not operate as planned. Known as "politics without romance,"[35] public choice illustrates the various ways that regulators are not neutral. Instead, they make their decisions based on their own self-interest, which may—but need not—include considerations of the public welfare.

At a high level of generality, this means that failure to meet regulatory goals may be just as likely the result of active regulatory mismanagement—acting for the benefit of the regulator or special interests—as it is the knowledge problem. Of course, the two are not mutually exclusive, and self-interested regulators may fail because they can not know enough to fashion the perfect remedy, and because they would prefer to enrich themselves and their friends than solve society's problems. Public choice economics has much to say about the incentives that face regulators, but this article will focus on two related concepts, rent-seeking and regulatory capture, along with the costs they impose.

1. Rent-Seeking and Regulatory Capture

The assumption underlying the theories of rent-seeking and regulatory capture is nothing more than the foundational principle of economics—

[35] James M. Buchanan, *Politics Without Romance*, 19 PUBLIC CHOICE 13 (2003).

people respond to incentives. The principle applies whether the individuals in question are government agents or those who will be affected by government policies. Those to be regulated will want to minimize the losses inflicted by the regulations or, if possible, to turn regulation into an opportunity for gain. The regulator will also seek to maximize gains—a combination of personal enrichment, power and influence, regulatory budget, and advancement of regulatory goals—and minimize the cost of achieving those ends.

Key to understanding the nature of the relationship between the regulator and the regulated is the principle of rent-seeking. Drawing its name from the ages-old notion that rents (as payments to the owners of land) are not a reward for productive effort, rent-seeking is the pursuit of above-market returns. [footnote distinguishing these Ricardian rents from Schumpeterian rents] That doesn't sound so bad, but the implication is that above-market returns are not possible in a competitive market, so rents are only available in non-competitive markets. In other words, rent-seeking is the pursuit of returns that do not come from satisfying the needs and desires of consumers. Instead, rents are either directly bestowed by government, or else they are obtained in a market that becomes non-competitive through government regulation.

Even apart from the ethical objections to rent-seeking—government policy in a constitutional republic should not be sold to the highest bidder—rent-seeking should be opposed because it inflicts high costs. Rent-seeking results in winners who would not have won if consumers got to choose, and that usually means higher prices or lower quality than the competition. Government regulation creates additional hurdles that market competitors must overcome, and rent-seeking results in those hurdles being favorable to the successful special interests, giving them advantages they would not have had solely from the products that they produce.

Perhaps more intrinsically, rent-seeking, itself, is wasteful. It is wasteful because time, money, and effort expended in the effort to sway a government agent are not available to create new or improved products, including innovations that reduce prices and allow consumers to increase the quantity and range of goods and services they can afford.

When government announces its intent to regulate, it is the starting gun for the rent-seeking race. The short-run effects will be that many individuals and entities that face regulation will begin rent-seeking in earnest, diverting resources from efforts that might actually improve the lives of consumers—research and development, or efforts to reduce production costs, for example.

Importantly, not all competitors in this race will be participating in a fully voluntary manner. Some will be engaged in rent-seeking because they believe that it is the only way to avoid their competitors obtaining an extra-competitive advantage.[36] Others will choose to become involved because of implied threats made by the regulators.[37]

In the long run, the effects will be more than just the accumulation of rent-seeking expenditures, though these will be bad enough. The longer the race extends, the more resources will be diverted from satisfying consumer demand, meaning that human flourishing will stagnate. But an even more profound distortion will arise in the long run—regulatory capture. Regulatory capture, as originally theorized, is the tendency of a regulatory body to be eventually controlled by the regulated industry.[38]

Building on a foundation of rent-seeking, this should be easily understood; eventually, the regulator will respond to the persuasive efforts of the rent-seekers. Some of those efforts will be straightforward, contributing to the campaigns of key politicians, who will then be able to exercise oversight—or direct control, in the case of the chief executive—over the regulator. Some rent-seeking efforts will be more subtle, providing key industry data rather than fight disclosure. And, if that data is useful to the regulator and just happens to tell a story conducive to the industry's goals, who's to second-guess it?[39]

Over time, a symbiosis will develop between the regulators and the regulated industry. Possibly the most obvious example of this phenomenon is the revolving door between the U.S. Securities and Exchange Commission and Goldman Sachs, the largest investment bank in the U.S., responsible for helping companies navigate the sometimes-absurd requirements for issuing securities. The symbiosis will serve the interest of the regulating body and

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[36] Gordon Tullock, *The Welfare Costs of Tariff, Monopolies, and Theft*, 5 WESTERN ECON. J. 224, 228-30 (1967) (explaining the wastefulness of rent-seeking through an analogy to theft and prevention of theft).

[37] Fred S. McChesney, *Rent Extraction and Rent Creation in the Economic Theory of Regulation*, 41 J. LEG. STUD. 101, 103-06 (1987) (describing the process of politicians' and regulators' creating rents through threats of burdensome regulation).

[38] George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT SCIENCE 3 (1971) ("as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit").

[39] As Ronald Coase was reported to have said, "numbers don't lie, but if you torture them long enough, they'll confess to anything." This attribution may be urban legend, as no written source confirms it, but the content of the statement is certainly true, and were often stated by Mark Twain, when he referred to "lies, damned lies, and statistics." Paul F. Velleman, *Truth, Damn Truth, and Statistics*, J. STATISTICS ED., Vol. 16 n.2 (2008).

the regulated industry well enough, but it does not necessarily serve the public interest. The reason is that the interests of the regulator, the industry, and the public are all different. The regulator seeks largely to increase its budget and power.[40] The industry seeks rents. The public seeks efficient markets. Achieving any two of those three is a difficult but manageable task. Bringing all three into harmony is effectively impossible, because industry rents must come at the expense of efficient markets and, therefore, at the expense of consumers.[41]

Some critics of Stigler's theory and its progeny have argued that the theory is too small in its scope, that it ignores the possibility of capture by forces other than the regulated industry.[42] That critique is almost certainly true, but not in the way that most critics propose. Stigler's theory still applies if we consider the "industry" to include all who have a financial or other material interest in the outcome of the regulatory process. For example, the electric power industry will, of course, involve coal and nuclear generation, but it will also include those who promise generation of electricity from other sources. Whether the technology is at a sufficiently advanced stage to replace coal, nuclear, or natural gas as base load power, those that promise electricity from solar, wind, geothermal, or other sources will have a financial stake in the regulatory choices of electricity regulators. Similarly, environmental advocacy groups will see their fortunes—monetary or otherwise—impacted by electrical regulation and will join the rent-seeking race.

Minority producers in the industry would not normally be expected to win in a rent-seeking contest against entrenched incumbents, but certain modern trends may have changed the landscape enough that it is possible. The first and most important trend is that, as society becomes increasingly wealthy,[43] relative preferences change, including the preference for environmental quality. Environmental groups make plausible claims to represent those preferences and will therefore attract a larger portion of the rising discretionary income of the population. These additional resources will empower these organizations to have a legitimate shot at winning a rent-seeking contest.

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[40] WILLIAM A. NISKANEN, BUREAUCRACY AND PUBLIC ECONOMICS 36-42 (1994).

[41] *See infra* at I.C. 2.

[42] E.g., STEVEN K. VOGEL, MARKETCRAFT: HOW GOVERNMENTS MAKE MARKETS WORK (2018).

[43] Complaints by critics of capitalism to the contrary, the vast majority of residents of developed nations live at a standard of living far beyond anything that has been experienced in human history.

The second modern trend will serve to augment the strength of environmental groups' rent seeking, albeit indirectly. The trend is a shift in the relative risk preferences of society. Once again, as incomes rise, greater risks can be taken without threat of catastrophe, especially by those at the very high end of the socioeconomic ladder. These will also be those for whom the marginal unit of income has very little value but the marginal unit of other amenities, such as environmental quality, will have a high value. Combining an increased risk preference—or at least a decreased risk aversion—with an increased preference for environmental quality, you generate a new class of entrepreneur that will seek out speculative investments, if they also promise to benefit the environment. That some of the rents available in the rent-seeking contest are direct payments to speculative environmental technologies certainly doesn't hurt.[44]

Given the increased probability of winning the rent-seeking contest, alternative suppliers will enter the rent-seeking contests, aligned politically and economically with groups that cater to non-monetary preferences of some in society.[45] Over time, these coalitions can just as easily develop the same kind of symbiotic relationship with regulators that standard regulatory capture theory predicts for the regulated producers. To the extent that these advocacy groups represent a true shift in societal preferences, there is some value in this. On the other hand, "society" is just an aggregation of millions or billions of individuals, all of which with their own preferences. While those at the top of the socioeconomic ladder may have strong non-monetary preferences, those at the bottom may still be sufficiently concerned with more basic needs—housing, food, clothing. If regulatory priorities shift too quickly towards non-monetary goals, it may impose significant harm on those at the bottom. Those harms are imposed in ways that are not obvious, except to those who know to look for the impacts on competition in markets.

2. Broad Impacts of Barriers to Entry

When regulatory capture occurs, either on behalf of entrenched incumbents or upstarts with support from advocacy groups, regulation will serve to protect the winners of the rent-seeking contest. This outcome need not be consciously aimed at by regulators, since rent-seekers can package protectionist measures as serving the public interest, rather than the private

[44] *E.g.*, Joe Stephens & Carol D. Leoning, *Solyndra: Politics infused Obama energy programs*, THE WASHINGTON POST (Dec. 25, 2011), available at https://www.washingtonpost.com/solyndra-politics-infused-obama-energy-programs/2011/12/14/gIQA4HllHP_story.html.

[45] Bruce Yandle, *Bootleggers and Baptists in Retrospect*, 22 REGULATION 5, 5 (1999).

interests of the rent-seeker. Even a well-meaning regulator, faced with an ambiguous statutory assignment and a budget constraint, will find it difficult to resist what appears to be a cost-effective solution.[46]

Whether intentional or not, regulatory capture will result in the erection of barriers to competition in the industry, typically raising the cost of new and existing competitors. Regardless of their form, the regulations will be designed, at least in part, to protect the rent-seeking winner(s) from competition. This has two significant impacts, one immediate and one long-term. The immediate effect is to bestow market power, allowing the protected incumbent to extract monopoly rents from consumers. The long-term effect is derivative—stymied innovation and slower economic growth—and will be discussed in the next section.

The short-run impact—bestowal of market power—changes the nature of the market into one in which the rent-seeker has greater control over the price it charges and the profits it collects. Specifically, a producer with market power will sell a lower quantity at a higher price—selling where marginal cost equals marginal revenue, rather than where marginal cost (supply) equals demand. The outcome is deadweight loss, similar to what was observed in figure 2, where output is artificially restricted. In a very real sense, the scenarios are equivalent—in both, government action leads to an artificially-low level of production, with consumers being deprived of value-enhancing transactions they would otherwise enter into, absent government intrusion into the market.

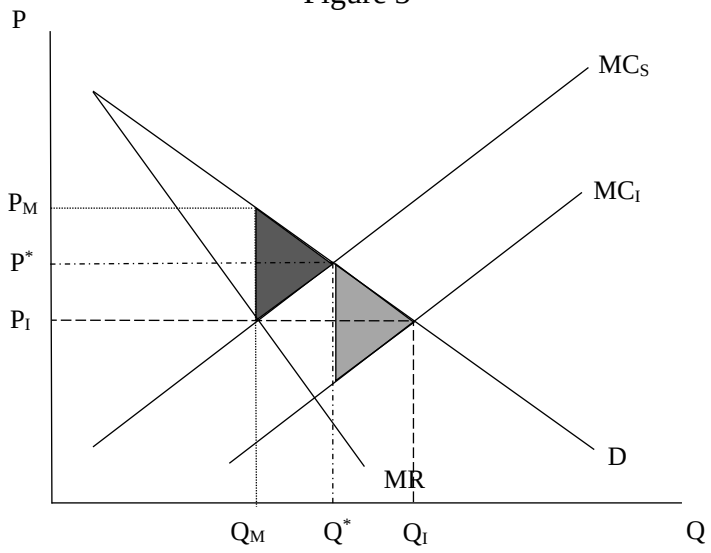
When this deadweight loss is the result of regulatory attempts to correct a previous market imperfection, additional questions arise. Specifically, the market began with a market imperfection and ended with another, and the regulatory process aimed at correcting market imperfections will generate other, potentially greater, imperfections. Figure 3 illustrates how the scenario could play out. First, as shown in Figure 1, the presence of an externality would yield deadweight loss represented by the lighter-shade triangle. These are the transactions that impose net costs on society. After regulatory intervention[47] has led to regulatory capture, granting market power to the successful rent-seeker, production falls to Q_M, price rises to P_M, and deadweight loss is created. In this case, the darker-shade triangle, represents

[46] Bruce Yandle, *Bootleggers and Baptists—The Education of a Regulatory Economist*, REGULATION, May-June 1983, at 13.

[47] For the sake of illustration, Figure 3 assumes away the knowledge problem and assumes that the regulator is able to determine the policy which will exactly counter the externality.

value-enhancing transactions that are foregone, due to market power.

Figure 3



Which deadweight loss will be greater is a question that depends, again, on numerous variables, which will differ across not only industries but also the regulatory intervention that is chosen. That it is not clear that the post-regulatory deadweight loss will always be less is one more reason to be cautious when deciding *whether* to intervene with regulatory power.

D. What About the Long-Term?

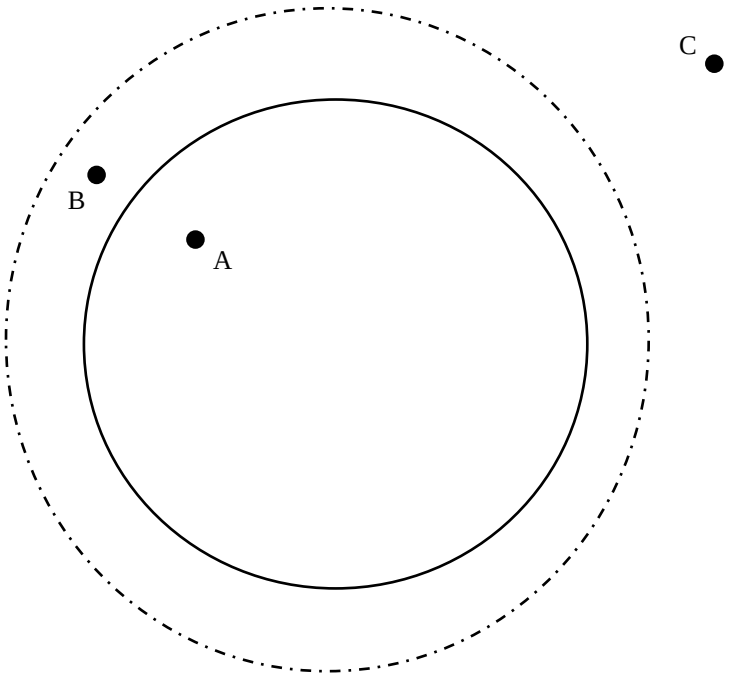
There are two separate ways in which regulation ostensibly aimed at reducing deadweight loss can increase it—overshooting the solution, as a result of the knowledge problem, and granting market power because of regulatory capture. Regulation might still be the optimal solution to market imperfections, but it cannot simply be assumed to be so. If these concerns were not sufficient to establish a presumption against regulation, the long-term public choice problem might be.

In the long run, the market power bestowed upon rent-seeking winners will inflict even greater costs on society, by curbing innovation. Once the barriers to competition are in place, industry incumbents will not need to fear upstart innovators. Some innovation will still occur, to the extent that it can increase incumbents' profits, but without the constant threat of new competition, consumer-driven innovation will fade away. That means not

only fewer new goods and services, but also fewer improvements to existing goods and services. Figure 4 is one way of illustrating how this will happen.

When the regulatory apparatus has been captured by industry, there will be a sphere in which the regulators act on behalf of the incumbents, shielding them from competition. This sphere is represented by the smaller, inner circle. Any innovation which threatens to occur within that sphere (point A) will be immediately stymied by regulation, allowing incumbents to gain the benefits. Knowing this, potential upstarts will choose not to innovate within the regulated sphere. Incumbents still wish to maximize profits, so if the innovation at point A will increase profits, it may still occur, but only if and when the incumbent recognizes the opportunity. Potential upstarts having been deterred, there will be far fewer eyes watching for profit opportunities,[48] and the likelihood of innovation within the existing sphere of regulation—existing goods and services—will be lower.

Figure 4



Some innovation is likely to take place just outside the regulated sphere, largely because the boundaries will be imprecise. The uncertainty about

[48] E.g., Israel M. Kirzner, Competition and Entrepreneurship 11-13 (Liberty Fund, Inc. 2013) (1973).

whether a particular space has been captured will deter some upstarts, but where there are no express regulations, an opportunity exists. That opportunity, however small, will eventually be seized upon by some upstart innovator. Unfortunately, this new competition will reduce the anti-competitive profits that protected incumbents are expecting. The incumbents will then exercise their control over regulators and expand the regulated sphere to capture the space where the new competitor has been successful, regaining their rents. In Figure 4, this is represented by the larger circle, shifted outward to encompass point B.

Upstart innovators will know there is a strong likelihood that their position will be recaptured, and that will provide additional deterrence to new competition, reducing innovation in new but related goods and services. However, some innovations will be sufficiently profitable in the short run that it still makes sense to innovate and compete for the brief time that will be allowed. Other innovators will create new goods and services that are complementary to those provided by the incumbents, hoping that the incumbent will simply buy them out, rather than forcing them out through regulatory pressure.

An industry that has been captured will therefore see only limited innovation in new goods and services, and even less in existing goods and services. Over time, even the protected incumbents can become trapped in this scenario, acting more to avoid losses than to protect any remaining rents to be captured.[49] Society, however, will bear heavy costs through forgone innovations that would have made consumers' lives better. Only a truly disruptive innovation, one that jumps completely free from the regulated sphere (point C), can break this destructive condition. The greater the distance from the regulated sphere, the more it will initially appear to be something different, and the longer it will take for protected incumbents to realize their rents are being dissipated. By the time they do, the upstart innovator may be too well established with consumers for the regulators to be successful in expanding the regulated sphere far enough to recapture.[50]

Innovations of this sort offer some hope for a society that wishes to progress, but that hope is fleeting because these kind of innovations are inherently more costly, and therefore more rare. To achieve such an innovation, someone must significantly diverge from extant technologies, norms, or practices. That kind of divergence imposes monetary and

[49] Gordon Tullock, *The Transitional Gains Trap*, 6 BELL J. ECON. 671 (1975).
[50] *E.g.*, Jeremy Kidd, *Who's Afraid of Uber*, 20 Nev. L.J. 581, 602-06 (2020).

psychological costs, not only on the innovator but, at times, on the consumers. Because society can not expect such disruptive innovations to happen with any frequency, the only hope for avoiding an artificially-imposed famine of innovation is to avoid the regulation that gives rise to it.

This section has painted a grim picture of regulation, its ability to get answers right, and particularly its ability to be flexible and dynamic enough to ever hope to keep up with reality in a complex world. Nevertheless, that does not mean that there is no justification for regulation. The economic concerns about regulation are merely the counterpoint to the economic concerns that argue in favor of regulation. Advocates of regulation regularly draw on the latter while ignoring the former, entirely. An honest assessment of regulation might still conclude with the opinion that regulation must occur, but it would do so with a much stronger sense of humility for what human intervention into complex systems can achieve. After all, "the curious task of economics is to demonstrate to men how little they really know about what they imagine they can design."[51] Regulation, informed by the entirety of economic theory, would tread lightly, rather than "rush[ing] in where angels fear to tread."[52]

E. Circling Back to Consumers

As previous sections have described, the concerns of pro-intervention advocates are not entirely unjustified, but they are mitigated by the various ways that consumers act to correct market imperfections. These largely uncoordinated actions can be thought of as a counterpart to government regulation—consumer regulation. Referring to the normal operation of competitive markets as consumer regulation flies in the face of the standard terminology of regulatory debates—as defined by politicians and regulators. In common parlance, "regulation" is what one does *to* markets, not something that happens *in* markets, but a more straightforward understanding of "regulate" easily encompasses the activities of consumers as they change their own behavior and the behavior of others in markets.

Markets, as described *supra*, are merely the name that we give to the ordered chaos created by untold numbers of voluntary transactions between individuals. The order arises out of institutions like the price mechanism, and those institutions have arisen, over time, for the purpose of facilitating those transactions. Markets are, in other words, infinitely decentralized, with each individual making choices that improve their own lives but also provide

[51] FREDRICH A. HAYEK, THE FATAL CONCEIT; THE ERRORS OF SOCIALISM (1991).
[52] Alexander Pope, *An Essay on Criticism* (1711).

information to billions of other individuals, by means of market institutions. Because market transactions must be voluntary, every market participant must regulate his or her own behavior, tailoring it to the needs of others, so that others will provide things of value in return.[53] Individuals also constrain their own behavior to fit within existing cultural norms.[54]

Market participants regulate by choosing with whom to transact. Abusive, fraudulent, or other bad behavior will be punished by a refusal to do business with the offending individual. At the very least, those who are willing to transact with the offending individual will demand a premium for the abuse they will take. Bad actors will, therefore, pay more for their bad behavior. Even outside of the context of transactions, violation of community norms of any type may lead to a reputation that will make transactions more expensive for the violator.

Consumer regulation does leave gaps through which bad actors or inefficient results can sneak. Those gaps provide opportunities for government interventions to be considered, subject to a clear-minded appraisal of the potential costs of doing so. The pro-consumer-regulation stance is a difficult one to defend in such a debate, in part because there has been a significant amount of anti-market propaganda presented to the public for decades. Much of that propaganda has been presented by economists, for the same reason that politicians are wary of defending consumer regulation—there is little advancement to be had, in academia or politics, from "doing nothing."

This "do something" bias in both academia and politics is rational. Academics receive rewards by publishing, publication comes from interesting results, and "do nothing" doesn't sound very interesting, even if it happens to be the right answer. Politicians face similar incentives, since voters want politicians to make life better, and "do nothing" doesn't sound like a recipe for getting better, though it might avoid things getting worse. In reality, of course, there is a great deal of "something"—consumer regulation—occurring continuously within the market structure, although its effects might not be recognizable as quickly as government regulation.

If left alone, some perceived market imperfections would turn out to be

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[53] ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS (Edwin Caanan ed., Methuen & Co. 1904) (1776).

[54] ADAM SMITH, THEORY OF MORAL SENTIMENTS (1757). Individual firms, likewise, constrain their inherent desire to raise prices due to market realities—raise the price above competitors' and you will make zero profits.

transitory, being solved through consumer regulation. The difficulty is that the effects of consumer regulation often take longer to appear than those of government regulation, due to their decentralized nature. Acting quickly—doing "something"—abandons the opportunity to utilize consumer regulation fully, but it is the rational choice for academics and politicians. As described *supra*, the choice to use government regulation holds the potential to ameliorate market imperfections, but can also increase the harms to society, above and beyond those caused the imperfections themselves.

The difficulty is that it is difficult to discern, at the time the imperfection is recognized, whether consumer regulation offers a better alternative to government regulation. Without some certainty regarding the ability of consumer regulation to respond to the imperfections, individuals in positions to make regulatory decisions will find it difficult to trust consumer regulation. Choosing government regulation in the face of that uncertainty, however, runs a separate risk—that market imperfections will become permanent as government-erected barriers to competition arise as part of the purported solution.

Choosing wisely between consumer and government regulation requires weighing all of their costs and benefits. This section will therefore explore how consumer regulation does in the face of the knowledge problem and the public choice problem

1. Knowledge Problem

Application of the knowledge problem to consumer regulation requires a slight change in perspective. The reason is simple: no single consumer is attempting to diagnose or remedy any of the larger problems that regulation attempts to correct. At first glance, this may seem to be an admission that consumer regulation is not capable of addressing these problems, but Coase,[55] Ostrom,[56] and others have proven that market imperfections are, in fact, opportunities to capture value that would otherwise be left on the table.[57] The question, then, is not whether any single consumer can know enough to diagnose and remedy market imperfections, and then remain nimble enough to adapt to change. Instead, the correct question is whether market institutions provide effective avenues for market actors to ameliorate the problem while seeking their own self-interest.

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[55] *Supra*, note 9 and accompanying text.

[56] *Supra*, note 15 and accompanying text.

[57] Israel M. Kirzner, Competition and Entrepreneurship 24-69 (Liberty Fund, Inc. 2013) (1973).

A rational consumer is not driven to solve large problems, but to flourish. Part of this will be psychic, as individuals "naturally desire not only to be loved but to be lovely,"[58] but much of human motivation centers around assuring material survival. Financial motives will motivate entrepreneurs to create value from market imperfections. Externalities, for example, are often the byproduct of a wasteful production process, and value can be captured by the producer who finds a way to use inputs more efficiently. The Bingham copper mine in the Oquirrh Mountains near Salt Lake City, Utah, is an example of how this can happen. Mining has been ongoing there since 1863, when copper began to be extracted, but the remaining earth was tossed aside. Other minerals and metals made the leftover dirt dangerous at first, but the entrepreneurs running the mine have, over time, discovered cost effective means of extracting silver, gold, lead, molybdenum, platinum, palladium, molybdenite, iron, sulfur, sulfuric acid, and copper in various forms. Once all those valuable resources have been extracted, what is left over is far safer for humans and the environment.

Other market imperfections can create similar opportunities for capturing value. One example is the case of asymmetric information. Information is valuable, but not always easily available to all parties. That value incentivizes third party intermediaries to specialize in gathering and aggregating information, then packaging it for sale to those who would otherwise not have access to it.

Any of these efforts to diagnose or remediate problems in the market will be incorrect and insufficient, because they will be attempted by individual market actors, making use of the limited information available to them. That information will give them the best chance of localized success, but it will do very little, at the outset, to improve general market imperfections. Their relative success or failure, however, will not only provide them with additional information, allowing them to adjust and improve, but it will also provide signals to other market actors, who can then attempt to create substitutes and/or complements to the initial efforts. Over time, the combined efforts of all market actors will move the market toward a more efficient outcome.

Consumer regulation cannot achieve the immediate effects of

[58] ADAM SMITH, THEORY OF MORAL SENTIMENTS. Boycotts of polluters might be seen as a form of consumer regulation, punishing those who engage in bad behavior. However, boycotts might also be motivated by things such as partisan rancor, spite, or other unhelpful emotions, so the psychic aspect of humanity's desire to flourish confounds the analysis.

government regulation, but it has two advantages in the knowledge-problem space. The first is that it does not require any individual to know all that would be needed to organize the market in any meaningful way. Instead, every individual can apply both general knowledge and specific "knowledge of time and place"[59] to address localized issues, allowing the knowledge problem to be ameliorated through the experimentation of many market actors. The aggregating and coordinating institutions of the market—such as the price mechanism—lead to positive outcomes that could never have been achieved by a single, concentrated planning or regulatory effort.[60]

The second advantage of consumer regulation in the knowledge-problem space is that the decentralized nature of the process allows for near infinite substitution of problem solvers. In other words, if a particular attempt at solving the problem turns out to be ineffective or inefficient, another entrepreneur can begin an alternative attempt without waiting for the first attempt to be abandoned. The second entrepreneur might even use the failing first attempt as springboard to get the second attempt off the ground. In a regime of government regulation, one approved path forward will be declared, and while that path might be altered if it turns out to be ineffective or inefficient, the individual or group that chose the original path will have to acknowledge the error, fighting against confirmation bias the entire way.

2. Public Choice Problem?

The public choice problem arises from the natural tendency of humanity to seek personal benefits. By itself, that tendency isn't destructive, because it can be channeled into productive behavior, as it is in markets. It becomes destructive when personal benefit is sought at the expense of others. Many of our criminal prohibitions are attempts to curtail any incentive to extract value from others by force. A number of our legal defenses to contract enforcement operate on the same motivation. When the government uses force to enrich some at the expense of others, we call it rent-seeking, and it is just as wrong, if not always illegal.

Rent-seeking and regulatory capture are possible only when the government announces an intent to centralize regulatory power in the hands of certain individuals. The distortions that arise and the costs that are imposed on society are derivative of that initial decision to identify a locus of power that will make regulatory decisions. It matters little which group receives that concentration of power, for the result will largely be the same. In the case of

[59] F. A. Hayek, *The Use of Knowledge in Society* 35 AM. ECON. REV. 519, 522 (1945).
[60] *See, generally*, LEONARD READ, I, PENCIL (1958).

consumer regulation, there is no locus of power, and therefore no decision maker to capture.

In order to contrive an outcome in markets, one would need to capture every market participant—an impossible task. In order to erect barriers to entry, one would need agreement from not only all existing producers but every potential producer.[61] It is possible for barriers to entry to emerge in markets, but only when the fixed costs of production are extremely high.[62] Because consumers, in their regulatory role, are willing to reward producers who defect from collusive agreements, there will always be strong incentives to defect and provide consumer regulators with lower prices, new and better products, or other innovations.

Barriers to entry are rare when consumers are trusted to regulate; if competition is meager in a particular market, a useful first step would be to look for existing regulations that may have kept out potential new competitors. If no prior government action can be found which has led to barriers to competition, government regulation might be capable of breaking down those barriers and improving competition. In doing so, it is worthwhile to consider aiming not at some point of theoretical efficiency, but merely to free up consumer regulation, by removing barriers. Innovation will be higher, with consumers well-rewarded for their regulatory efforts.

Consumer regulation requires accepting existing market imperfections, and that comes with costs—sometimes significant ones. At the same time, consumer regulation has the potential to mitigate or avoid the knowledge problem and the public choice problem, which impose their own costs. It is impossible to state, generally, whether consumer regulation or government regulation will achieve the superior results for society, and the question becomes increasingly complex when we consider that there is significant space between the extremes of pure consumer regulation—competitive markets—and pure government regulation—command and control. In that space lives industry regulation, the subject of the following section.

II. INDUSTRY SELF-REGULATION

Individual firms, operating in a competitive market, will regulate their behavior in response to consumer demand and other market signals. For

[61] WILLIAM J. BAUMOL, JOHN C. PANZAR, & ROBERT D. WILLIG, CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE (1982).

[62] David R. Henderson, *Natural Monopoly*, LIBR. OF ECON. & LIBERTY, http://www.econlib.org/library/Enc/Monopoly.html.

example, firms do not charge the highest price possible, but only what consumers will pay. Likewise, firms generally spend more than the bare minimum of resources on their products' quality because consumers demand higher levels of quality and will reward those firms that provide it with greater sales and profits. Because even competitive markets can exhibit imperfections, however, this basic form of firm self-regulation may be insufficient, and some form of collective action may be value-enhancing. The previous section described the benefits and costs of choosing that route, but it is possible to have collective regulatory action that does not utilize the full coercive power of government. Instead, firms may act collectively, independently or in collaboration with government, to curtail market imperfections.

As a preliminary matter, we should dispense with some confusion around the idea of collective action. Many readers, when seeing that term, will assume that means government must act,[63] but that need not be the case. Some readers will recognize that collective action often occurs without government involvement in the context of labor negotiations, going by the related term of "collective bargaining." Groups of various sizes, ranging from intimate—the family—to global, act collectively to achieve common goals. Proponents of government action may claim that only government can overcome the free-rider problem, but the incentive for free riders need not be fatal to private collective action.[64] Moreover, given the high costs that government regulation can generate,[65] government regulation may be the least efficient and effective form of collective action, and that reality should motivate a sincere search for alternatives. The following discussion begins that search.

A. A Self-Regulation Taxonomy

In order to begin considering alternatives to government regulation, we must first map out some of the territory that spans the gap between government regulation and consumer regulation in competitive markets. At one end of the spectrum, just a step removed from government regulation, members of a regulated industry might be enlisted to help enforce the regulatory regime which governs them. This choice could be made for the

[63] Offering government as the vehicle for collectively solving problems need not be motivated by a desire to actually solve problems. FREDERIC BASTIAT, THE LAW ("The state is the great fictitious entity by which everyone seeks to live at the expense of everyone else").

[64] ANTHONY DE JASAY, SOCIAL CONTRACT, FREE RIDE: A STUDY OF THE PUBLIC-GOODS PROBLEM (Liberty Fund, Inc. 1989); Ronald H. Coase, The Lighthouse in Economics, J. L. & ECON. 357 (1974).

[65] *Supra*, at I.B and I.C.

purpose of economizing on scarce government resources that would otherwise be needed for enforcement. Regulatory choices have been made by government, but enforcement will be left to those most directly impacted by the regulations.

On the other end of the spectrum, nearest to consumer regulation, is where localized collective action may arise to deter inefficient behavior. For example, certain producers might perceive that one of their colleagues in the industry has begun harming consumers in a way that will not only harm the wrongdoer but will generate negative reputational pressures on every industry participant. Rather than accept the costs which the wrongdoer seeks to impose on the industry, members of the industry can band together to freeze out the wrongdoer before too much damage can be inflicted. If industry members can act collectively to curb the socially-undesirable behavior at a sufficiently low price, then each incumbent's gain—from removal of negative reputational pressures—would outweigh each incumbent's pro-rata share of the cost of collective action.

Moving inwards from the ends of the spectrum will eventually lead to areas of overlapping characteristics but, as a general proposition, those interventions closest to government regulation will have, as a defining characteristic, the ability to use the coercive power of government. This power will diminish as the regulatory regime moves away from government regulation and towards consumer regulation. Closest to government regulation, therefore, industry participants who engage in the regulatory process will be collaborating with the government in achieving the government's regulatory aims. In the case of negotiated rulemaking, members of the industry will take an active role in determining how the regulations will be written,[66] but may not have a role to play in actual enforcement. Alternatively, the government might rely heavily on industry for enforcement, as with the Financial Industry Regulatory Authority, or FINRA.

Closest to consumer regulation, industry participants will be engaged in cooperative ventures among themselves, but largely without access to government authority. One form of cooperative effort is the standard-setting organization, or SSO,[67] which establishes minimum standards for an industry.

[66] Cary Coglianese, *Assessing Consensus: The Promise and Performance of Negotiated Rulemaking*, 46 Duke L.J. 1255, 1256 (1997).

[67] One such organization is Underwriters' Laboratories, which is most well-known for its certifying that electrical equipment meets safety standards. *See* ul.org. Just look at the

Generally, these organizations exist primarily as an informational aid to consumers, since no producer is required to submit its products to the SSO for approval. Other self-regulatory organizations—sometimes known as SROs—establish standards and grant membership only to those industry participants who meet those standards. Similar to an SSO, membership in an SRO—the Better Business Bureau, for example—is intended to signal certain characteristics to consumers. The primary distinction between the two is the enforcement power available to the SRO.

Before proceeding, it is important to note that not every use of government authority will necessarily fall on the far extreme of our spectrum. That is reserved for direct government regulation, but government may be involved in other ways. Some ways that government can become involved will be passive, such as the use of the judiciary in tort lawsuits, forcing tortfeasors to internalize externalities. Other areas of government involvement will be quite active, such as antitrust interventions to prevent accumulation of harmful market power. Tort lawsuits are brought by individuals and will therefore be further removed from government regulation than antitrust enforcement, which might be triggered by a private complaint but will bring to bear a good deal of the government's coercive power.

B. Industry Self-Regulation and the Knowledge Problem

The knowledge problem arises from the complexity of the world in which regulators, of any sort, must operate. Merely understanding the natural world is often a challenge that occupies scientists for decades, as they search for answers. When understanding the motivations of individuals who operate within the natural world, science can no longer offer definitive answers, and good solutions may be impossible to identify. Replacing government regulators with industry participants does not make the natural world any easier to understand, and it certainly does not change the nature of human motivations. The knowledge problem, therefore, persists, though it may be possible market participants have advantages over an external enforcer of rules—the government—when it comes to diagnosing or remedying problems, or in remaining sufficiently nimble to react to the world's inherent dynamism.

1. Diagnosis

plug on most electronic devices, and you'll see the stylized UL, indicating that the device meets minimum safety standards.

Problems with diagnosis of any problem can arise from one of two sources. First, the problem itself can be of sufficient complexity that diagnosis is inherently difficult. Second, the diagnostic method may be incapable of assimilating information relevant to the diagnosis. The problems that give rise to a demand for regulation remain complex, regardless of who is tasked with correcting any market imperfections. The diagnostic process, however, may be marginally improved by removing it from the seeming order that is promised in the halls of government and returning it to the apparent chaos of the market. This may seem counterintuitive if one believes that order may be externally imposed on the complexity of the market, but that is merely an illusion.

Industry participants operate inside the complexity of markets. Their ability to make a profit and stay solvent requires that they accept the nature of the apparent chaos of their environment. To be clear, the complexity does not become less for their being inside it. Nor does being an industry participant grant a greater capacity for understanding the complexity. Rather, their advantage over government regulators arises from their willingness to accept the complexity and remain observant for those actions that seem to offer marginal improvements, over time.[68] Accepting the nature of market complexity also allows participants to make use of signals within the chaos—the price mechanism being the most obvious.

Industry participants, unlike government agents, also have strong incentives to understand the nature of the industry to be regulated, including how other market participants—consumers and producers—are likely to react to regulatory changes. To survive, they must develop an ability to anticipate consumer desires and shifting costs. They must, in other words, be accustomed to recognizing and utilizing market signals.

Market signals transmit information to market participants on a continual basis. This provides an advantage over government regulators, who largely rely on aggregate measures, provided intermittently through mandated disclosures from regulated entities or the government's own data collection. Even with this continuous stream of signals, market participants will regularly fail to accurately diagnose their individual problems and will be forced out of business. Fewer incentives exist for a single market participant to diagnose problems that extend beyond the ability of the individual participant to solve. Nevertheless, access to market signals is a powerful

[68] According to Kirzner, *supra* note 48, entrepreneurs are not a separate class of individuals, but include all market participants, each of whom is capable of identifying opportunities for gain.

advantage. If market participants were tasked with identifying and diagnosing market problems, market signals would allow them a marginal advantage over government regulators.

Marginal improvements in diagnosis may therefore be possible as the regulatory regime shifts away from government regulation. Collaborative self-regulation, because it implements government policy preferences and uses government's coercive power, will see minimal, if any, improvement in diagnostic reliability. To the extent that society is willing to countenance a shift all the way to cooperative self-regulation, however, improvements in diagnosis should be possible.

2. Remedy and Reaction

Once diagnosis has occurred, the regulator must attempt to remedy any existing problems. Industry participants have a marginal advantage over government regulators in diagnosis because they receive feedback from market signals, but does that advantage carry over to the remedial process? In the short run, the answer is no, due to the nature of market processes. However, in the long run, market signals will again give collaborative or cooperative self-regulation an advantage over pure government regulation.

The advantage of market processes over central control is the feedback mechanisms that allow market participants to alter course when meaningful change occurs within the market system. If the price is too high, for example, there will be greater supply than demand—a surplus—which will cause suppliers to cut back on production and lower their prices to sell off inventory. So, prices being too high results in prices being lowered, even if the market participants are completely unaware of the glut in the market. The converse will be true if prices are too low, with demand exceeding supply—a shortage—which will result in greater production at a corresponding higher marginal cost.

A government regulator and industry self-regulator will occupy the same space upon primary implementation of a suggested remedy. Both will make their best guess as to the appropriate remedy, and then wait for market feedback. An industry self-regulator may have a slight advantage derived from a more accurate diagnosis of the problem, but if diagnosis is taken as given, and remedy considered independently, there will be no inherent advantage to the industry self-regulator at the moment of primary implementation, because feedback mechanisms may take some time to provide their signals.

Once past that initial implementation, however, the advantage of the industry self-regulator returns. The self-regulator—collaborative or cooperative—is in a position to receive market signals on a continual basis. Government regulators, standing outside the market, will not receive market signals in a timely manner, if at all. All initial regulatory solutions, including those from consumer regulation,[69] are virtually certain to be wrong at the beginning. The question, therefore, is which form(s) of regulation are most capable of receiving and reacting to feedback regarding how the initial regulations were wrong, and in what direction.

Government regulators are largely insulated from market feedback, while consumer regulators are steeped in it. Self-regulators receive market feedback to the extent that they are free to do so, which means that collaborative self-regulators, being limited by the constraints of the government regime with which they collaborate, will have a natural disadvantage. Nevertheless, cooperative self-regulators are free to fashion their regime however they wish and may choose to do so in a way that will insulate them from market signals.

C. Industry Self-Regulation and Public Choice

The public choice problem arises when collective decisions are capable of being subverted to private ends. The greater the power of the decision maker, the greater the rents to be sought. The greater the disconnect between the people and the decision maker, the more likely rents can be bestowed without consequences. Government regulation is subject to strong public choice pressures because of: 1) government's monopoly on coercive force; and 2) the fact that regulatory choices are typically made by decision makers at least two steps removed from the electorate. Conversely, consumer regulation is decentralized, individualized, and voluntary, making rent-seeking a wild goose chase. Industry self-regulation requires more complex analysis, given the broad spectrum of self-regulatory regimes that can be adopted.

Entering the self-regulatory spectrum from the realm of government regulation, the regulatory process is more likely to be a delegation of government power to the industry.[70] The regulatory power of the government

[69] *Supra*, at I.E.1.

[70] That delegation can serve many purposes. The government might view it as a cost-saving measure, for example, or it may be an attempt to avoid unnecessary antagonism between regulatory body and regulated industry. One interesting, and undertheorized,

is still in effect, and the industry members who would be making regulatory decisions are still disconnected from voters, so rent seeking is still likely. Entering the field from the opposite end, nearest to consumer regulation, industry self-regulation may be an attempt to forestall government regulation. Without the coercive power of government, the opportunities for rent-seeking will be lower, but industry self-regulation can still erect barriers to competition.

Regulation, of any sort, erects barriers to certain behaviors—typically the most preferred[71]—so regulatory intervention will raise the cost of doing business. The regulatory process, if it extends beyond a single individual or firm, will provide opportunities to raise the cost of doing business more for others than for those making the regulatory decisions. In that way, regulations can give rise to barriers to entry, even when the coercive power of government is absent.

1. Regulatory Capture

When considering regulatory capture in the context of industry self-regulation, it is important to reconsider the meaning of the term "capture." Depending on the regime adopted, there may not be an official regulatory body to be captured. At the collaboration end of the spectrum, for example, the industry is likely to be working with the government, exercising the government's coercive power to make regulatory determinations. At the cooperation end of the spectrum, however, there may be only a handful of industry participants working together to achieve some end. Calling it regulatory "capture" may be partially misleading, but the fact remains that, irrespective of the mode of regulation, the outcomes can always be tailored to benefit a subset of the regulated industry, typically at the expense of consumers.

The rent-seeking efforts will be roughly proportional to the size of the potential rents. In turn, the potential rents will be proportional to the amount of power possessed by the decision maker. That power will generally be at its maximum where government coercive power is exercised to the fullest extent allowed under governing law, both statutory and constitutional.[72] It

possibility is that delegation of regulatory power might be the price extracted by the industry in exchange for more accurate information.

[71] After all, it is unlikely that anyone will voluntarily choose their least-preferred path or, in the case of a business, the most expensive path.

[72] One argument in favor of strict constitutional limitations is the derivative limitation on the size of rents and, therefore, the distortions arising from rent-seeking.

will diminish as the regime moves away from coercive power, through collaborative self-regulation to cooperative self-regulation, and eventually to consumer regulation. At the point where markets are competitive and voluntary, there is no coercive power and, therefore, no potential rents to be sought.

Though rent-seeking efforts will be roughly correlated with the power of the decision maker, the overall level of rents extracted need not be similarly correlated. The reason why is that the dynamics of the regulatory process change immediately upon leaving the province of pure government regulation. As a general rule, each industry participant would prefer its individual preferences be adopted by the regulator. In an industry with high market concentration in a single producer, the dominant producer might even get its wish. In all other circumstances, however, some amount of coalition building will be required, and those dynamics will affect the total rents extracted.

Suppose a captured government regulator is faced with a policy decision, and the regulator is considering adopting a regulation that commands support from industry participants that, combined, possess less than a majority of the industry's total market share. If adopted, that regulation will face significant opposition from within the industry,[73] which could lead to reduced cooperation from disgruntled industry participants and make the regulator's job more difficult. Disharmony within the industry also creates the potential for public controversy, which could bring attention to the captured status of the regulatory body, disrupting the benefits of capture for the entire industry. Knowing the potential costs of such a policy, the industry will avoid proposing regulation unless it garners at least a majority of the industry's total market share.

The costs associated with disruptions and dissent within the regulated industry will be diminished for regulations that capture larger and larger majorities of the industry. A regulation that garners the support of a bare majority of the industry, therefore, will not be proposed or adopted, because the costs to the regulator and the industry will be too high.[74] Regulations that

[73] This opposition can take many forms, from disputes between competitors in the end-product market, to disputes between suppliers and end-producers.

[74] The one exception to this rule would be a case where log-rolling, or vote trading, is present. It is possible that multiple policies that command approval from sizeable minorities, but which are not strongly opposed by any, might be included in order to build a larger coalition, increasing the power of the industry over the captured regulator and the resulting rents to the industry.

have the support of 75-90% of the industry, however, are far more likely to be promulgated.

The range of policies, then, that can practically be adopted by the government regulator, upon the command of the regulated industry, is a subset of the entire range of policies that the regulator is empowered to promulgate. The more fractured the industry, the smaller the practical range of captured regulations, while on the other extreme, a monopolist would simply command its entire set of policy preferences to be promulgated. Furthermore, a greater range of captured regulations translates into higher barriers to competition for the industry, which means that an industry with meaningful market concentration will be better able to use government regulation to further cement its advantage over consumers.

A shift in the regulatory regime to collaborative self-regulation will lower the threshold for adoption of policy preferences to something closer to a bare minimum because the industry will have a formal role in the regulatory process. Understanding how this works requires remembering that, when we say that "the industry" is involved in a formal way, we are utilizing a figure of speech, because there is no single entity that controls all portions of the industry. Instead, there are likely any number of end-producers, along with a host of firms that provide key inputs, transportation providers, retailers, and so on. When the government lends its coercive power to "the industry" for the purpose of formulating regulatory policy, it is lending its power to some subset of the industry.

Returning to the analysis above, we can see that, so long as the subset is less than the full industry—as it must be, given the difficulty of aggregating the will of the full industry—the percentage of the industry that must approve of the regulation will be smaller. From a pure numerical perspective, if a bare minimum is required for promulgation, pure government regulation will choose from those regulatory options that command at least 50%. If the industry subset participating in collaborative self-regulation is only 60%, then the range of regulatory options changes to those approved by a majority of the subset, or 30% of the industry. From the previous analysis, something greater than a bare majority will be required, but even unanimity of the subset might be a smaller group than the threshold approval needed from the entire industry.

Now consider that, under certain forms of collaborative self-regulation, the government passes all of its regulatory power to the industry for at least some regulatory functions. In that circumstance, there is no risk associated

with the public discovering that the regulatory process has been captured. After all, for collaborative self-regulation to be implemented, lawmakers and/or regulatory leadership must have already contrived explanations for why the industry should oversee the regulations.[75] When the decision maker—in this case, the industry subset—need not fear public controversy about a captured regulatory process, the decision maker need not limit its choices to those commanding a sizeable majority. Instead, the acceptable range begins with something closer to a bare minimum.

Lowering the threshold will increase the range of regulatory barriers to competition, increase the rents to the industry—particularly those who stand to gain from the narrowed range of regulatory choices—and augment the imposed market imperfections. In the long run, all these effects could be magnified, as the majority that has imposed its preferences uses the regulatory power to force out of the industry subset some of the dissenting minority. Doing so will increase not only the regulatory power of those remaining but, in the long run, the market power, as well. What begins as a smaller majority of the industry subset can easily become an absolute majority in the industry, as the barriers to competition drive out existing market participants and deter future potential entrants.

On the other end of the self-regulation spectrum, the cooperative model will exhibit less—but not zero—rent seeking. Industry participants will have banded together to correct perceived problems. Without the government's legal power to coerce behavior, there is less opportunity to turn collective action into private gain. Of course, cooperative self-regulation is, by definition, collusion between members of the same industry. Unless our antitrust theories are completely mistaken, that collusion raises the risk of anti-competitive behavior.

2. Barriers to Entry

Barriers to entry, as described *supra*,[76] are anti-consumer and anti-human-flourishing. As such, they should be avoided wherever possible, and they should be considered a factor mitigating against adoption of a regulatory regime that makes their creation more likely. Is self-regulation that kind of regime? The answer appears to be yes, although with important caveats. Moving from consumer regulation to cooperative self-regulation increases the amount of external regulation, at least marginally, and so will increase

[75] The knowledge problem, *supra* at I.B, provides one possible justification, but not the only one.

[76] At I.C.2.

barriers to entry. Perhaps more surprisingly, a shift from full government regulation to collaborative self-regulation also increases the likelihood of barriers to entry, both quantitatively and qualitatively.

a. Cooperative Self-Regulation

Consumer regulation is inherently decentralized, with individuals and firms regulating themselves and others through their choices of transaction counterparties. Any individual—we'll call her market participant #1, or MP_1—acting alone, has power only to withhold her own transactional power, severely limiting her ability to impact the entire market. MP_1 has no ability to tell a potential counterparty—we'll call her market participant *n*, or MP_n—how to operate; MP_1 can only send indirect signals by refusing to transact if MP_n doesn't operate as MP_1 prefers. MP_1 has no ability to impose taxes or other fees on MP_n; MP_1 can only express her preferences, which might include higher-priced goods, but MP_n is free to eschew a higher-value transaction for any reason. Just as importantly, MP_n is also a market participant, free to exercise her transactional power according to her own preferences. If MP_n is spurned by MP_1 without cause, MP_n can simply move on to the next available counterparty, of which there will be many in a competitive market.

We leave the realm of consumer regulation behind, however, when market actors begin to work together to solve some perceived problem. As MP_1 begins to work with another market participant (MP_2), their ability to affect the market increases at least proportionally to their combined purchasing power, and could increase at an increasing rate, if the cooperation occurs between members of the same industry. This last effect occurs, to the extent that it does, because cooperation between industry members makes it marginally less likely that there will be an available counterparty for MP_n to turn to. In the past, if MP_1 spurned MP_n, the latter could simply buy from, or sell to, MP_2. Now that MP_1 and MP_2 have joined forces, MP_n has one less option. As the group of coordinating industry members grows, the options available to MP_n continue to shrink. This, in turn, begins to allow the industry members to impose some additional burdens on MP_n and other similarly situated individuals.

It is easy to envision the kinds of burdens which will be imposed by sellers on buyers, in this circumstance. Higher prices, for example, or lower quality, are two common complaints about industry collusion. Setting aside those legitimate concerns for a moment, consider instead how the ability of industry participants to impose burdens on others includes burdens on

potential competitors in the market. As the colluding group grows, it can begin to declare standards for the industry, and the public perception that those standards *must* be the right way to do things will place pressure on all industry members to adopt them. Even if those standards are motivated purely by a desire for the public welfare—and the natural self-interestedness of human beings makes that unlikely—those standards will disincentivize innovation, because something that runs counter to industry standards will be disfavored.

It is important to note, therefore, that while cooperative self-regulation lacks the coercive power of the state, there are reputational factors that function in parallel manner. Those reputational factors vary, but they all share the characteristic that a reputational penalty can be imposed—or a reputational benefit withdrawn—if an industry member diverges from the prescribed path. Some examples would be: 1) a voluntary certification that is perceived by the public as representing best practices in the industry; or 2) membership in a group[77] that has public respect. Obtaining—or avoiding losing—either one is costly, and therefore can operate as a barrier to entry.

This should not come as a surprise, as these reputational factors are a primary component of consumer regulation, and one of the reasons that consumer regulation works as well as it does. In the realm of cooperative self-regulation, those reputational factors cease to be decentralized and organic, however, and begin to be part of a planned response to perceived problem. Centralized planning increases the speed at which changes can be realized, but it is also subject to rent-seeking and other distortionary forces, so coordinated self-regulation will begin to suffer from a milder version of the maladies inherent in government regulation.

Before proceeding to a discussion of collaborative self-regulation, it may be helpful to illustrate the way in which self-regulation can transition from cooperative to collaborative. As discussed in this section, voluntary standards have a form of enforcement power. Imagine, for example, an industry group that defines a set of standards for electrical devices, intended to establish best practices. Upon meeting these standards, a firm's products will be certified by the industry group, providing consumers with information relevant to their purchasing decisions.

Now consider the decision that must be made by a firm that wishes to enter the industry. Before the certification, a firm wishing to enter the

[77] The Better Business Bureau, for example.

industry would need to identify a product that consumers would be willing and able to purchase, then find a way to produce it with a combination of price and quantity that would match consumer preferences and budget constraints. Most of that calculation remains unchanged after the advent of the certification, but not all. The production decision now includes one additional constraint—that of the certification. If that constraint is binding, then the firm cannot choose the most profitable path, reducing the incentives to enter the industry. As a result, competition will be lower, consumer surplus reduced, and profits higher for those whose production process already included that which allows them to obtain the certification at a low cost.

It might be argued that the certification is voluntary, and so should not meaningfully obstruct new competition. This argument, however, fails for two reasons. First, even relatively small barriers to entry will keep out the marginal entrant and, over time, even small reductions in competition can have meaningful impacts on competition and consumer welfare. Second, that voluntary certification just means that it will not be imposed by the coercive power of government, but an industry majority can use the asymmetry of information to impose a de facto mandate. If consumers are convinced that the certification is the bare minimum required for consumer safety, failure to obtain the certification will reduce demand for a firm's products, lowering the price that can be charged for them. This is the primary mechanism for reducing firm's profits, even when the certification is voluntary.

That barrier to entry might be an appropriate tradeoff in the presence of certain types of information asymmetry. Specifically, if consumers cannot independently identify the baseline level of safety, they may assume a level of risk that they never sought or expected, in a market without certification. Certification provides needed information, allowing consumers to make an efficient decision about not only product price and quality, but also risk.

That information asymmetry argument, however, cuts both ways. If consumers are incapable of assessing risk and safety, then they will never be certain that the certification standard is set at a good-faith estimate of a baseline level of safety. Instead, standards might be set where industry incumbents will be protected from potential entrants. Notice, too, that true information asymmetries, as presented by this argument, increase the likelihood that innovation will be stymied. Even if set in good faith, the certification will be set at the industry standard, something that a disrupting innovator will not follow. Any new technology will therefore face a disfavoring public and will, therefore, be slower to come to market, if it comes at all. This harms consumers, especially if the innovation was one that

implicated safety. Indeed, in this way, baseline safety standards can inhibit improvements in safety.

If the standard were not set in good faith, but were intended to raise barriers to entry, the harm would be even greater. The same barriers to competition and innovation would exist, but they would not be countered by improvements in efficiency, arising from a reduction in information asymmetries. Consumers may not be able to discern the motivation behind the standards, but there are characteristics that, if extant in the cooperative self-regulatory regime, will make it more likely that the standards are set in good faith, rather than out of rent-seeking self-interest. As described by one then-FTC Commissioner, "it is critical that self-regulatory organizations are funded from a range of sources, with governance and enforcement mechanisms independent from member companies."[78] In other words, a standard-setting organization will be less likely to participate in rent-seeking if it does not rely on any industry members, or the industry as a whole, for anything.

Independent standard-setting bodies are more likely to operate in a competitive marketplace—that is, a marketplace for standard-setting organizations. This marketplace is parallel to that in which industry members operate, allowing competitive forces to discipline the standard-setters. Reputation in that market will rise and fall with the accuracy of information, and multiplicity of standard-setters will provide competing information to consumers about the various standards by which to judge consumer goods. Standard-setters will have no incentive to cater to any industry incumbent or incumbents, and could even gain a boost in reputation if they could catch a powerful industry incumbent in wrongdoing.

Finally, it is worth considering how even a voluntary certification standard might eventually become something else. Public officials, recognizing that the industry standard has both consumer and industry support, and wishing to appear responsive to both, will have a strong incentive to codify the previously-voluntary standards, such as by requiring the standard to be met in all new buildings.[79] The milder form of rent-seeking

[78] Maureen K. Ohlhausen, *Success in Self-Regulation: Strategies to Bring to the Moblie and Global Era*, Comments to the BBB Self-Regulation Conference, at 4 (June 24, 2014). Available at https://www.ftc.gov/system/files/documents/public_statements/410391/140624bbbself-regulation.pdf

[79] *E.g.*, New York City Building Code Reference Standards, Appendix to Title 27, Chapter 1, at 9 (referencing Underwriters Laboratory). Available at https://www.nyc.gov/html/dob/downloads/bldgs_code/rs01_rs03.pdf

that arises in cooperative rent-seeking would then begin to transform into the more potent version that pertains to government regulation.

b. Collaborative Self-Regulation

Perhaps surprisingly, and as discussed *supra*,[80] the apex of rent-seeking behavior may not be full government regulation, but collaborative self-regulation. The reason is that, as government turns to industry for assistance in achieving its regulatory goals, dominant players in the industry have an easier time amassing influence over regulatory goals. Eventually, those dominant players will be able to erect barriers to competition, perhaps even expelling existing market players.

As collaborative self-regulation increases the barriers to entry, dominant industry incumbents will be positioned to inhibit innovation, just as they would have been in the case of government regulation. Because the level of rent-seeking will be higher, so will the barriers to competition, which will lead to greater and more rapid market distortions and deadweight loss. In the medium to long run, the higher upper bound of rent-seeking and barriers to entry mean that there will be greater barriers to innovation.

As a quantitative matter, higher barriers to entry will inhibit innovation more than lower barriers to entry, but there are reasons to suspect that collaborative self-regulation will lead to greater qualitative barriers to innovation, as well. The first is the ability of an industry majority to choose regulations that punish dissenting members. Not only does that lead to a faster winnowing of the industry, but it also provides an enforceable punishment against defecting cartel members.[81] An industry member who chooses to compete against the industry will find itself regulated out of the industry.

Similarly, an industry member who chooses to innovate within the regulated sphere may find that regulatory interventions require adoption of the innovation by all industry members. By itself, that could benefit not only the industry but also consumers. The problem is that potential innovators will be less likely to pursue innovations if they bear all the costs while the benefits

[80] Notes 72-74 and accompanying text.

[81] Christopher R. Leslie, *Trust, Distrust, and Antitrust*, 82 TEX. L. REV. 515, 524-25 (2004) ("Cartel arrangements represent a classic Prisoner's Dilemma"); Anotol Rapoport, *Prisoner's Dilemma*, in 3 THE NEW PALGRAVE DICTIONARY OF MONEY & FINANCE 192 (Peter Newman et al. eds, 1992).

are spread across all industry members.[82]

Collaborative self-regulation will also inhibit more innovation than government regulation because of the ability to react quickly to market signals. That which reduces the knowledge problem for self-regulation may therefore increase the public choice problem. Under government regulation, insurgent innovators could rely on the impediments to government regulation, whether informational or structural—U.S. administrative law, for example—to create a period in which the innovation would be profitable for the insurgent. Collaborative self-regulation eliminates both informational and structural impediments to regulation, as the industry will receive market signals and need not abide by the restrictions of the Administrative Procedures Act and related judicial doctrines.

As the benefits to insurgent innovators is reduced, fewer close innovations will be pursued. These innovations were likely to be recaptured by the regulator, eventually, but their introduction to the industry would lead to their adoption. While not as valuable to consumers as the kind of constant innovation driven by robust competition, this process would provide at least some of the innovation benefits of markets. The shift to collaborative self-regulation further reduces both internal and external innovation, arising out of more significant competitive barriers than under government regulation. Finally, the increased agility of the collaborative regime will reduce the opportunities for even disrupting innovators to escape the regulated sphere.

How severe these costs to innovation will be depends on the exact nature of the relationship between government regulators and the collaborating industry. The more directly involved the government regulators, the greater the coercive power, which would tend to increase the size of the available rents. However, direct involvement by government regulators will often mean that there will remain some feedback mechanisms that will increase the cost of the collaborative regime's choices to adopt policies with a narrower base of industry support. Society will bear the highest costs if government regulators bestow coercive power but are otherwise removed from decision-making processes. In that case, public choice pressures will be at their peak, as government will have turned over the reins of power to the special interests seeking to capture that power.

D. There Are Only Tradeoffs

[82] Russell Hardin, *The Free Rider Problem*, in STANFORD ENCYCLOPEDIA OF PHILOSOPHY (2003).

Markets are imperfect, and so are governments, and each can theoretically be improved with regulation. However, regulations have their own costs, and it is not possible, a priori, to anticipate whether the regulation will yield a net gain or a net loss. That is because there are always tradeoffs. Sometimes, those tradeoffs include unintended consequences, and sometimes the consequences are fully intended, as in the case of rent-seeking and regulatory capture. Adding to the list of possible regulatory solutions increases the likelihood of finding a solution that can be achieved at minimal cost. The introduction of industry self-regulation as an alternative regulatory path, therefore, is a potential improvement. It does not, however, change the foundational reality that there is no single solution, and that tradeoffs must be considered.

Even the generic term, "industry self-regulation," is misleading, as there are at least two major categories *within* the larger self-regulation path. Each of those categories, moreover, has wide variety in how to organize the regulatory process, the means of enforcement, and many other factors. Each of an almost infinite number of possible paths differs in terms of its benefits and costs. What all have in common is the certainty that, once consumer regulation has been abandoned, the knowledge problem and the public choice problem will make solving market imperfections much more difficult and complicated than advocates will admit.

III. WHAT CAN WE DO?

What, then, should society do when faced with apparent market imperfections? The short version is "be careful and be humble," because the problem is far more complex than is readily apparent. The path for the cautious decisionmaker a Coaseian one. Not the misunderstood "Coase Theorem," which relies on low transaction costs, but on Coase's actual recommendation in *The Problem of Social Cost*, that when a decision must be made, the decisionmaker should be extremely careful in determining the proper outcome, since future changes will be difficult and any harmful effects from a bad choice will linger.[83]

First and foremost, default presumptions must be set aside so that decision-makers can have a serious discussion of the costs and benefits of each regulatory possibility. Each scenario will have characteristics that make it more suitable for different regulatory paths, so the final choice should be determined by the overall cost-benefit analysis. Regardless of which

[83] R.H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 19 (1960); Jeremy Kidd, *Kindergarten Coase*, 17 GREEN BAG 2D 141, 154 (2014).

regulatory path is ultimately chosen, society will be better off if it carefully considers how to empower consumers and lower barriers to competition.

Regulation is often viewed as a means of protecting consumers, yet consumers are not often empowered by government or industry self-regulation. In the long run, regulatory barriers to competition end up hurting the very consumers that regulation allegedly sought to protect. A deliberate consideration of all available avenues for regulation might conclude that government or industry self-regulation will lead to a greater net gain than consumer regulation, but it would be a mistake to ignore the power of consumers to reward productive, value-creating behavior and punish abusive behavior. That power should be utilized more frequently in more traditional regulatory schemes.

One way to empower consumers is to facilitate consumers' access to information. Unfortunately, most regulatory disclosure regimes are like those imposed by securities laws, mandating a host of information without any evidence that consumers either care or can use that information. Mandatory disclosure regimes are therefore more likely to be the kind of barriers to entry that stifle innovation and harm consumers, rather than empowering them. One need only look to the investment banking industry, dominated by Goldman Sachs and a handful of other firms, to see the very accumulation of market power predicted by public choice theories. The fact that there is a well-known revolving door between Goldman Sachs and the Securities Exchange Commission—providing SEC employees with lucrative post-government careers and providing Goldman Sachs with a bevy of special connections within the agency—is evidence that industry incumbents, not consumers, are the beneficiaries of the SEC's disclosure regime.

A reasoned deliberation over regulatory alternatives should always give strong consideration to the potential that barriers to entry will be created. If regulation gives rise to barriers to entry, it will curb competition and generate further market imperfections, perhaps even greater ones than the regulation is intended to correct. Government regulation creates a point of friction between government and the regulated industry, and the industry will exploit that point of friction to enrich itself at the expense of consumers and society, at large. Industry self-regulation should be considered just as seriously as other forms of regulation, but with an appreciation of its diversity. Cooperative self-regulation is fundamentally different from collaborative self-regulation, for example, with the latter having a much higher cost, resulting from handing regulatory control directly to those who wish to use regulation to enrich themselves at the expense of consumers. Irrespective of

the regulatory form chosen, care should be taken to craft the regulatory delegation in a way that will limit the potential for regulatory capture. Doing so might offer some hope that regulation will not choke off innovation and progress.

One final word of caution regarding innovation and any attempt to impose order on the complexity of markets. That word is adaptation, since the history of humanity is replete with examples of innovation disrupting the most detailed analyses of the world as it then stood and the future as it is then likely to become. There is no functional crystal ball, though many economists and politicians make a fine living pretending that they possess one. For centuries, most notably starting with Thomas Malthus[84] but likely predating him, prognostications of humanity's impending demise have been rendered moot by the ability of mankind to adapt. To be fair to Malthus, a prediction of impending starvation would have been perfectly in line with the data available at the time. And yet, humanity did not face massive starvation because agricultural innovations allowed humanity to increase agricultural production dramatically.

Similarly, when Karl Marx argued that capitalism would lead to the immiseration of humanity,[85] his prediction might have tracked well with a best-fit line through the data of then-recent history. However, he underestimated the ability of markets to unlock the innovative capacity of humanity, which allowed it to adapt in a variety of ways. Because of that capacity for adaptation, humanity has experienced an unprecedented improvement in the quality of life across all socioeconomic strata.

Humanity's adaptability should encourage caution when advocating for traditional government regulation, or even industry self-regulation. Regulation can divert self-interested individuals from their optimum path, but they will adapt to those restrictions in ways that are not only unknowable to the regulator, but also to the regulated individual, ex ante, who had no need to consider suboptimal paths prior to the regulation. Similarly, if left alone, individuals would have found a way to adapt to the market imperfection. Post regulation, the optimum path will have changed, and the original adaptation may no longer be optimal. It is possible, however, that the original adaptation would have been more effective and less costly.

Adaptation is a concern parallel to, but separate from, the knowledge

[84] THOMAS ROBERT MALTHUS, AN ESSAY ON THE PRINCIPLE OF POPULATION (1798).

[85] KARL MARX, DAS KAPITAL (1867); KARL MARX & FRIEDRICH ENGELS, THE COMMUNIST MANIFESTO (1848).

problem, but it operates in the same direction—advising caution in choosing a regulatory path. The potential for adaptation should not paralyze us into complete indecision regarding the proper response to market imperfections, but it should lead us to a greater sense of humility about humanity's ability to plan solutions to complex orders.

CONCLUSION

There are simply no perfect solutions when it comes to market imperfections. The dominant choice for "fixing" markets is government regulation, but it is an imperfect solution, at best, given its susceptibility to the knowledge problem and the public choice problem. Regulators simply cannot know enough to diagnose or remedy the problem, even in a static world. That the world is dynamic, not static, makes government regulation even more problematic. Unfortunately, all available alternatives—primarily collaborative self-regulation and cooperative self-regulation—offer mixed results when judged by the same criteria. Industry participants are less subject to the knowledge problem, as they are part of the market and, therefore, privy to market signals. Industry participants are also less constrained in their ability to react to those signals, so they are better able to keep pace in a dynamic environment. Unfortunately, the factors that alleviate the knowledge problem exacerbate the public choice problem, as industry members are both prone to seek barriers to competition and, when empowered by government or internal cooperation, well positioned to do so when engaged in self-regulation.

Because of these realities, any regulatory solution is likely to not only be wrong, but to lead to strong barriers to entry that will curb competition and innovation. Consumers and broad societal interests—usually the justification for regulation—are harmed as well as aided, and it is impossible to know whether the net effect is positive or negative.

That returns us to the markets whose imperfections led to demands for regulation, in the first place. Those imperfections are real and may not be entirely countered by consumer regulation. Consumer regulation is far more robust than is commonly understood, as well as being less subject to the knowledge problem and immune to the public choice problem. Nevertheless, markets continue to experience imperfections, and those imperfections impose costs on society. Deciding whether to intervene and, if so, how, is not a search for a perfect solution, but a choice between imperfect options. The decision is one that deserves far more deliberate care and humility than is traditionally exhibited in our rush to regulate.