



Public Choice at the Intersection of Environmental Law and Economics

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Abstract

Management of environmental assets begins with a commons and ends with various legal institutions that assign property rights and control. Each step in the evolution of these legal institutions involves collective decision making. Public Choice analysis helps to explain the decision making process and institutional characteristics that emerge. A survey of Public Choice literature that addresses environmental issues illustrates how Public Choice sheds light on outcomes for the U.S. experience. In the absence of Public Choice theory, law and economics scholars would be hard pressed to explain why costly forms of environmental regulation seem preferred to apparently more efficient institutions and why the body politic seemingly accepts a high-cost, low-output outcome.

Keywords: Public Choice, environmental regulation, property rights, political economy, law and economics

JEL Classification:

1. Introduction

On the frontispiece of Rachel Carson's 1962 epoch-making book, *Silent Spring*, we find the following quotation from Albert Schweitzer: "Man has lost the capacity to forestall and foresee. He will end by destroying the earth." Exactly one hundred years earlier, John Stuart Mill (1900, 7) saw things differently. In an early comment on air pollution, Mill surmised that "if from any revolution in nature the atmosphere became to scanty for the consumption... air might acquire a very high marketable value." Schweitzer saw catastrophe in the offing. Mill predicted that market solutions would address environmental scarcity.

What are we to make of these apparently contradictory forecasts? Schweitzer's gloomy vision of a vast tragedy of the commons does not seem to recognize man's institution-building abilities. As a physician/philosopher/musician, he apparently did not understand how property rights and markets enable man to foresee and forestall. Mill seemed to understand these things. Alternately, and what might be a more reasonable assessment, Schweitzer understood these things full well, but based his forecast on what he had observed in a remote region of Africa where he spent his life as a "barefoot doctor." In contrast, Mill's market expectations were

based on his observations of life in Victorian England. For Mill, there was plenty. For Schweitzer, poverty.

Empirical research on the relationship between income and various measures of environmental quality, now called “environmental Kuznet’s curves,” tells us that both Mill and Schweitzer may be correct, but not for the entire earth.¹ Mill’s forecast applies to communities where incomes are moderately high and rising. The data show that communities somehow take actions to ration and conserve environmental assets. Schweitzer’s forecast is accurate when incomes are quite low and falling. These communities will trade environmental assets for food, shelter and clothing. On the one hand, there is a race to the top in conserving environmental assets. On the other, a race to the bottom.²

The two observations, one from Mill, the other from Schweitzer, describe theoretical boundaries that contain the law and economics of the environment. At one pole, nothing is done to avoid environmental decay. At the other, evolved market mechanisms and property rights institutions link benefits to costs and provide security for what might otherwise be a commons. In between, one finds a rich array of institutions, formal and informal, that provide environmental protection. A major part of the institution building takes place when the polity defines the details of regulatory institutions that manage environmental quality. It is here, at the intersection of law and economics, that public choice economics explains the principle features of environmental regulation.

Of course, the environment is not a new item of discussion for economists. From the very beginning of the discipline, economists have focused on environmental issues. After all, the availability of land, rivers, and harbors is fundamental to the wealth of nations. In his review of North America’s promising prosperity, Adam Smith (1937, 538) spoke glowingly about the availability of good harbors and “plenty of good land” in the American colonies. Later, land, a catch-all term that included all common features of nature, was commonly listed as one of the factors of production, and neoclassical economist Nassau Senior (1938, 92) even went to far as to identify “proprietors of natural resources” as a component of the economic order.

The environmental revolution that began in the late 1960s for the developed world refocused the economists’ microscope. Air and water quality, pollution, and related concepts of externalities and public goods captured the attention of the discipline (Cropper and Oates, 1992). The count of articles on the environment published in economics journals is one proxy that illustrates the attention devoted by the discipline. As seen in Figure 1, the count of all environmental articles rises from near zero in 1966 and reaches a peak of 81 in 1995. Clearly, the environment made its way into the economists’ workshop.

While the number of all articles on environmental economics rose sharply, the count shown for those that took a Public Choice approach was much fewer in number. Though fewer, in the absence of Public Choice thinking, it is impossible to explain major features of decisions taken by government in apparent pursuit of environmental quality. Today, whether the topic is global warming, ozone depletion, hazardous waste, or emissions of sulfur and nitrogen oxides, economists and

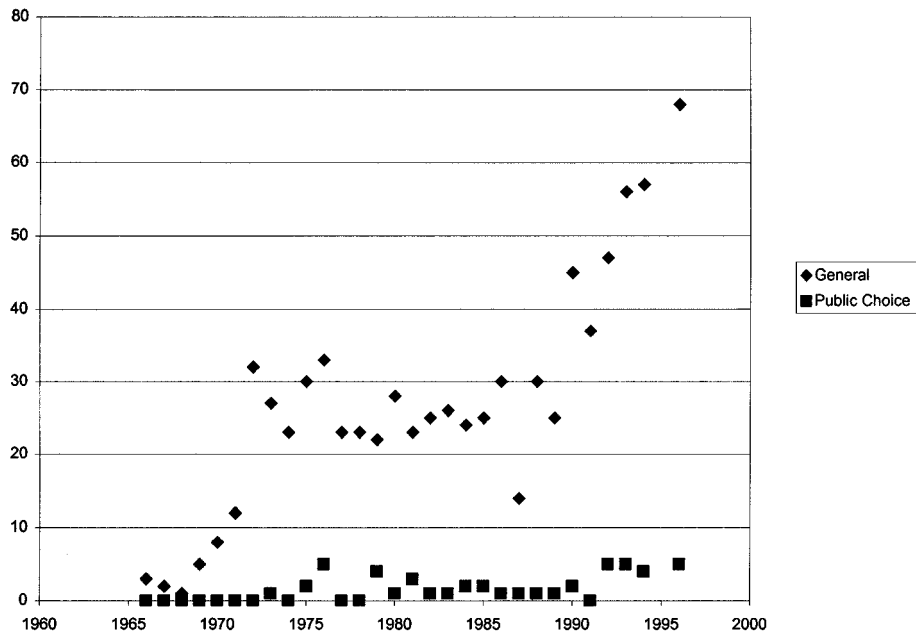


Figure 1. General and Public Choice Articles: 1966–1996

policy analysts know that political institutions have to be considered when explaining regulatory outcomes.

Drawing on lessons from Public Choice, this paper focuses on collective choice and environmental control, an activity in the law and economics intersection. The paper begins with a discussion of the simple analytics of pollution control and related policy prescriptions. Two paths are described that might be taken in dealing with environmental problems. Traditional notions of efficiency first hold sway in this discussion. Later, the normative analysis that presumes a search for efficiency gives way to early notions of Public Choice that seek to explain rather than criticize and compare. The theoretical contributions of Public Choice scholars provide the theme of section three. It is here that major scholarly contributions are identified. Then, armed with theory, the paper moves to consider the results of empirical work based on Public Choice theory. The paper ends with some final thoughts.

2. Pigou, Coase, and the Rise of Public Choice

Economists searching for efficient solutions to environmental control take two fundamentally different approaches (Yandle, 1997). A first approach, historically related to the work of A. C. Pigou (1920), introduces the problem of social cost. The Pigovian problem can be couched simply in terms of an industrial plant belching clouds of soot that fall on freshly washed clothes drying on the lines of a nearby laundry. Without explaining why the laundry would locate so close to the

factory, or vice versa, or if the location was based on pollution-adjusted land costs, Pigou indicates how the factory's emissions impose costs on the laundry not accounted for by the factory decision makers. In Pigou's world, management cannot accurately account for the external or social costs imposed on neighbors. (There are no rules of property, custom, tradition, or other institutions that typically internalize some, if not all, social cost.) Focusing on these external costs, Pigou calls on government to remove the divergence between social and private costs:

It is however, possible for the State, if it so chooses, to remove the divergence in any field by 'extraordinary encouragements' or 'extraordinary restraints' upon investment in that field" (Pigou 1920, 192).

Pigou asserts:

No "invisible hand" can be relied on to produce a good arrangement of the whole from a combination of separate treatments of the parts. It is therefore necessary that an authority of wider reach should intervene to tackle the collective problems of beauty, of air and light, as those other collective problems of gas and water have been tackled (Pigou 1920, 195).

Pigou saw government as an environmental manager, a benevolent agent, unaffected by special interest demand for government favors. Always efficiency bound, the legislative body is asked to calculate dispassionately and apply pollution taxes to internalize external costs. While Pigou later concluded that corrective taxes could never be applied effectively in the real world, his prescription nonetheless provided an apology for government enterprises worldwide where elected and other officials have seized the opportunity to gain revenues through the use of environmental taxes (Yandle 1998, 127–128).

A vast externalities literature followed on the heels of Pigou's analysis. Indeed, in the 1960s and 1970s, environmental economics was largely concerned with the development of analytical engines for the purpose of correcting perceived "market failures," those Pigovian situations where private costs did not account fully for social costs (Bator, 1958). Baumol and Oates major work, *The Theory of Environmental Policy* (1975), captures the essence of these explorations. All along, government was viewed implicitly as being beneficent at best or simply uninformed at worst in efforts to maximize welfare. In the eyes of many analysts, any unpleasant effect that accompanied production was viewed as an externality to be internalized. Legal and other institutions that force economic agents to take account of the costs of their actions were largely overlooked or not fully understood.

Taking the externalities model to task, Buchanan and Stubblebine (1962) explained the difference between "relevant externalities," where the cost of dealing with them was less than the gains from doing so, and those termed "irrelevant," meaning that the costs imposed were less than the cost of removing them. Their

piece supported Ronald Coase's (1960) seminal explanation of how market forces could deal effectively with Pigou's social cost problem, if property rights were defined and interested parties could transact at low cost.

The mention of Nobel laureate Ronald H. Coase (1960) introduces the second analytical approach for managing environmental use. An industrial plant discharging unwanted pollution is seen as evidence of a violated property right, if the rights exists in the first place. Recognizing traditional common law rules that provide redress to receivers of unwanted pollution, Coase called for a different solution. Instead of urging involvement by government in calculating and imposing complex taxes or managing technologies, permits, and controls, Coase looked to contracting and reinforcement of property rights. Environmental problems could be seen as private matters that involve contracting between affected owners and occupiers of land. When bargaining costs are high, market forces deliver environmental liability insurance, inspire the formation of river basin associations and environmental clubs, and assist the prior purchase of easements or the affected land by the polluter. Coase's prescription laid the foundation for free market environmentalism, an approach to environmental management that minimizes government intervention and emphasizes the role played by property rights and markets (Anderson and Leal, 1991).

The academic response to Pigou and Coase is shown in Figure 2, which contains the citation count to Coase (1960) and Pigou (1920) superimposed on the count of pages of new and revised regulations in the U.S. *Federal Register*, a government daily publication that reports all proposed and final regulations. Of course, not all the *Federal Register* pages involve environmental matters, though many do so. The data suggest that scholars turned to Coase and responded systematically to the rise of regulation. References to Pigou rose somewhat during the same period but reveal no particular sympathy for the rising count of regulations. The chart suggests that Coase was far more influential than Pigou as economists reacted to the growth of regulation. While this may be the case, it is clearly not the case that property rights and markets dominated the regulatory solutions proffered by government. Indeed, Pigou seems to have won the political influence battle. But while Pigovians may appreciate this small kudo, it is improper to credit Pigou's analytical thinking as the stimulus that caused the expansion of taxation and regulation of environmental use. Pigovian-type intervention existed well before Pigou. And while academic cover may be welcomed, politicians never lack for reasons to seek additional revenues and authority.

3. If the State Chooses: Public Choice Enters the Analysis

The discussion thus far has focused almost exclusively on economic efficiency with occasionally reference to the body politic. To the extent that politics entered, the imaginary politicians were dedicated to finding efficient solutions to environmental problems. Pigou innocently set the stage for a more complete analysis when he

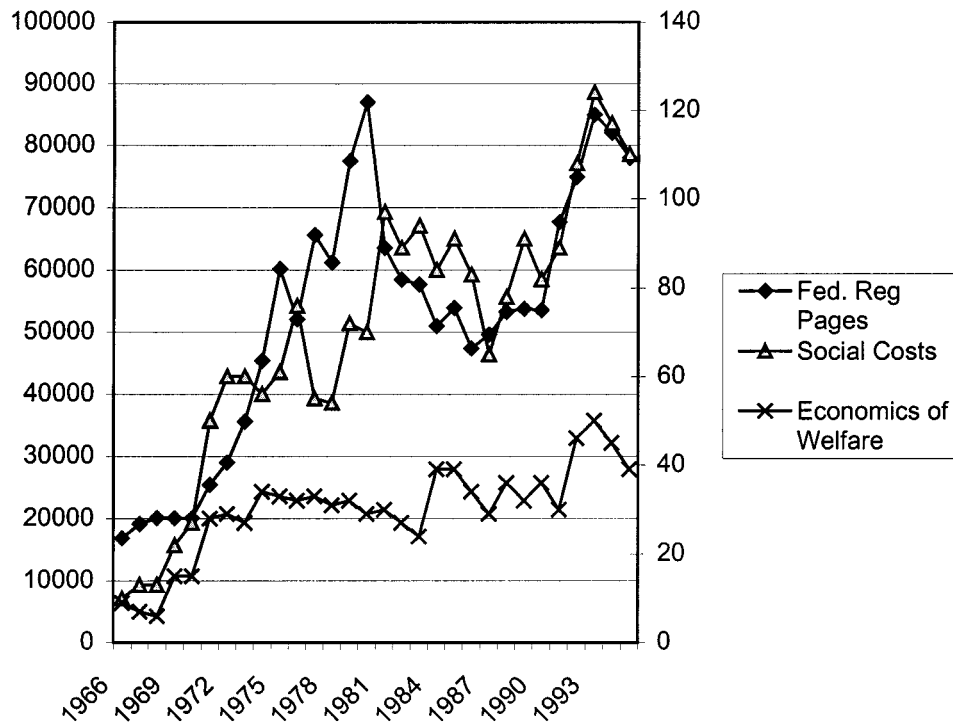


Figure 2. Coase, Pigou, and Federal Register Pages

said: “It is possible for the State, if it so chooses . . .” (Pigou 1920, 192). If we are to focus on choosing, the normative assumption of welfare maximization must be replaced with a positive analysis of political choice.

Three major treatises, by Anthony Downs (1957), James M. Buchanan and Gordon Tullock (1962), and Mancur Olson (1965), form a Public Choice foundation to assist in the investigation. Downs placed political decision making in an economics context and analyzed some of the difficulties that emerge when votes replace dollars. Olson taught several fundamental Public Choice lessons. First, small, organized interest groups can sway the political will to gain specialized benefits while spreading costs across a large group of unorganized citizens. Second, public goods provision is fraught with problems, whether by collective or private means. Pure public goods that provide nonexcludable benefits to an open-ended number of people provide opportunities for nonpayer benefits, the free rider problem. He argued that public goods will tend to be under-provided.

Buchanan and Tullock applied the individualistic lessons of the market to collective decision making and provide fundamental Public Choice axioms that show how rules of majoritarian politics can impose high costs on minorities. Their

market-based explanation of political behavior assumes self-interested politicians dominate the political process. This seminal work forms a major foundation stone that supports the later development of Public Choice, which goes on to suggest that contrary to Olson's earlier conclusion, public goods can easily be over-provided.

Forgoing the notion that political behavior is best explained by a public interest theory that expects to find efficiency in politics, these contributors set in motion an analytical engine that would scrutinize political decisions as diverse as taxation and deficits, welfare reform, military casualties, antitrust action, and Federal Reserve monetary policy. In all cases, political agents were assumed to have the same incentives as other normal human beings. They were motivated to improve their own well being, which generally meant keeping their voter-determined jobs while maximizing expected life-time earnings. With the arrival of the environmental revolution that brought massive government intervention in markets, Public Choice economists used their new tools to explain political actions, predict outcomes, and analyze implications.

The Lessons from Public Choice

In an early examination of the pollution control problem, Nobel laureate James M. Buchanan and Gordon Tullock (1975)—the two founders of the Public Choice School in economics—asked why command and control seemed to be favored over such things as performance standards that allow the polluter to choose technologies or emission fees and marketable permits that induce cost effective control. Their article had an insightful title: "Polluters' 'Profit' and Political Response." Arguing strictly in theoretical terms, and applying a heavy dose of politics, Buchanan and Tullock demonstrated that a competitive industry has something to gain from federally-mandated output restrictions, which in practice meant command-and-control regulation, that can never be obtained by any other legal means. The industry can be cartelized.

Command-and-control regulation sets an output constraint and actually mandates methods and standards for individual plants to meet the constraint; the approach restricts expansions and entry. There are no firm-level gains from discovering and applying lower cost technologies, since all producers will use the same technology. New entrants that might bring lower cost pollution control are ushered away from the industry door. In a growing economy, the constrained industry experiences demand increases and higher profits. Government regulators stop all producers who seek to expand their output. In actual practice, more costly new source performance standards make the restriction even more binding. Profitable stagnation follows.

As applied by the U.S. Environmental Protection Agency, command-and-control, technology-based standards are best suited to accomplish this result, since performance standards and emission fees do not limit expansions and entry. Playing to bureaucratic incentives, the technology-based standards require no air and water

quality monitoring. The bureaucrat must simply specify the engineering standard and then make certain the technology is installed and operated. The lower relative cost of command-and-control from the standpoint of the bureaucrat helps to explain the limited use of market-like instruments (Hahn, 1989).

The Buchanan-Tullock story introduces a key industry group that logically supports a particular form of regulation at the national level. Industries with plants nationwide can cartelize, simplify the legal environment within which they operate, and obtain that much sought after “level playing field” mentioned so often by industry spokesmen. On this basis, national regulation is much preferred to community, state and regional management of environmental quality. One suits that fits all economic agents seems better than struggling with 50 tailors for a different fit in each state.

Long before Buchanan and Tullock wrote about polluters’ profit, Ralph Turvey (1963) explained what might happen when polluters are confronted by environmentalists seeking to reduce the cost imposed by unwanted pollution. Turvey’s theoretical story focused on emission fees that might be imposed on polluters to reduce their discharge to some efficient level, that being the point where the marginal benefits to society of improved environmental quality are just equal to the marginal pollution control cost imposed at that point. Turvey pointed out that fees or penalties imposed on polluters address half the problem. This set the stage for possible overproduction of a public good. If those who value environmental quality for its own sake pay nothing for additional units, they will lobby for even higher pollution taxes or stricter controls. Turvey fortified Coase’s point that efficiency requires that all demanders of environmental quality must face market-determined opportunity costs, a point that formed the basis of the work by Macaulay and Yandle (1977).

Turvey’s analysis identifies another key interest group—environmental organizations—that will favor rules that impose cost on polluters, but not on themselves. Command and control offers yet another attraction to environmentalists. The more dedicated environmentalists see pollution fees and taxes as a way for rich polluters to buy licenses to pollute, which in the extreme view was seen as the equivalent of selling permits to commit a felony (Nelson, 1993).

Environmental organizations obviously played a crucial role in the environmental saga. Armed with statutory provisions to bring suits against violators of the growing list of rules and regulations, and thereby serving as “policemen” in the Buchanan-Tullock cartel, environmentalists lifted the importance of their cause to religious proportions (Nelson, 1993). R. C. Lowery (1998) analyzed the determinants of membership in major environmental organizations and found strong empirical support of the notion that membership in those groups was indeed a substitute for membership in traditional religious organizations. Public Choice scholarship explained why government command-and-control always seemed to prevail over market solutions to environmental problems.

In his work on environmental policy, Paul Downing (1984) explained how federal legislation provides advertising for a national marketing opportunity for environ-

mental organizations. From the standpoint of attracting new members and revenues, national programs and the accompanying publicity are far better than state or regional debates about environmental rules. Then, as a larger bureaucracy is formed, opportunities surface for environmentalists to become entrenched in government. Niskanen's (1975) model of bureaucratic expansion, which explains how government bureaus become involved in all-or-nothing legislative trades when bargaining for budgets, has the bureaucracy producing more than the efficient level of output. Downing (1981) explains how, once entrenched in the bureaucracy, environmentalists work to provide grants and other taxpayer support to assist environmental organizations in their lobbying efforts. Calling attention to bureaucratic incentives for expanding budgets and operations, Stroup and Baden (1983) explain how agencies involved in land management engage in environmentally destructive practices while producing timber and other agency revenue-generating activities.

Taking a later look at the connection between environmental groups and legislators, Farber (1992) explains how the nationally organized groups articulate a national demand for environmental improvements, serving as information brokers during the legislative period and as enforcers when laws are implemented. Like Downing, Farber then identifies the political payment received by environmental organizations when politicians provide standing and payment for environmental litigators.

With industry, environmental organizations, and the bureaucracy connected by command-and-control regulation, we now have the famous "iron triangle" of politics. But the iron triangle is one that focuses on inputs, not outcomes. Public Choice explains why so little attention is devoted to monitoring and reporting environmental outcomes and so much effort is exerted on writing detailed rules, limiting entry, and identifying new margins for applying command-and-control regulation.

Political Favor Seeking Enters

This brief outline of key Public Choice insights, while overlooking a vast amount of significant related research, sets the stage for discussing some watershed thinking that crystalized the Public Choice problem encountered by efficiency-bound politicians. This came when James M. Buchanan, Robert D. Tollison and Gordon Tullock (1980) published a collection of articles under the title *Toward a Theory of the Rent-Seeking Society*, a book that coincided with the release of a companion volume by Terry L. Anderson and P. J. Hill (1980), *The Birth of the Transfer Society*. The former volume focuses on Public Choice theory, the latter on history and institutions. Both tell similar stories. In a political system where votes determine outcomes, special interest groups have operational incentives to seek favors or rents in the resulting political economy. Political competition ensues, and efficiency loses out to restrictions that assist or protect successful special interest groups.

An especially insightful piece by Gordon Tullock (1967) included in the rent-seeking collection explains how the social cost of rent-seeking activities can far exceed the orthodox measure of deadweight loss normally used by economists to assess social cost. Tullock points out that resources used to seek rents are specialized and nonproductive, which is to say they produce output restrictions, not new goods and services. In the extreme, the expected special interest gains from rent-seeking can be exhausted in the struggle to gain the rents.

Nobel laureate George J. Stigler (1971) and Sam Peltzman (1976) also explored the nature of competition in the political market place where regulations are being devised and implemented. While Stigler described the politician strictly as a broker auctioning off favors to the highest bidder, and never seeking efficiency for its own sake, Peltzman visualized a richer competition, where interest groups matter a lot, and the mass of consumers and unorganized voters also matter. Their combined stories tell us that tradeoffs will be made. After all, as Robert McCormick and Robert Tollison (1981) explain the story, one group will bear the burden of benefits obtained by another, and politicians bear the burden of pleasing both. Efficiency, on the one hand, is traded away partly for special interest benefits on the other hand. Neither group holds sway completely.

Yet a third Nobel laureate in economics, Gary Becker (1983), added another component to the theory of regulation and Public Choice. Becker's theoretical story accepts existing constitutional constraints, voting rules, and congressional committee assignments, along with all the other political trappings, and argues the following line: If politicians could find a lower cost, more effective approach to environmental or any other kind of regulation, wouldn't they do so? In these restricted terms, what politicians do is efficient. Responding systematically and balancing all meaningful pressures imposed on them, the politician designs rules that though compromising efficiency in some more narrow sense of the word are indeed efficient when all political costs are considered. Becker's argument suggests that if we desire more effective pollution control, we might best seek constitutional remedies.

Payoffs from Protection Against Regulation

The focus on political decision making described thus far puts a bright light on the demand side of the political market. The politician-broker plays a somewhat passive role. Interest groups that have something to gain, be they environmentalists, industrialists, or members of the bureaucracy, organize efforts to communicate and bid for legislation. The unorganized and rationally ignorant, play a minor role in all this (Downs, 1957). Consumer/taxpayers end up bearing a substantial part of the cost of restrictions delivered by politicians, but the costs are spread thinly over a thick set of people. Until and unless the collective burden becomes large and burdensome, the unorganized, by definition, have little incentive to make their voices heard.

But Fred S. McChesney (1991), (1997) describes another component to the Public Choice story that sheds a different light on interest group behavior. Politicians can orchestrate responses from groups that feel threatened by the prospects of burdensome regulation. Instead of simply announcing a write-up on proposed clean air legislation, for example, the politician can indicate that electric utilities are being targeted for dramatic decreases in sulfur dioxide emissions. Then, instead of the industry organizing to seek favors or rents derived from regulation, the industry organizes to deflect or soften the pending rules. McChesney describes the politician's strategy as "rent extraction," where the politician receives "money for nothing," which is the title of McChesney's 1997 book on the topic. In contrast, the Buchanan-Tullock, Stigler, Peltzman and other stories relate to "rent-seeking behavior."

Efforts to defend against extractions of wealth can be as important as efforts to gain political favors outright. Consider the struggle over fuel economy standards that were first justified as a means to reduce dependence on imported crude oil and to reduce harmful tailpipe emissions from automobiles. (Crandall, Gruenspecht, Keeler, et al., 1986) In 1975, the congress announced a 1985 endpoint goal and instructed the U.S. Department of Transportation to define goals for corporate fleets for intervening years. From that point on, a struggle ensued with some firms seemingly using the regulation to advantage and others struggling to deflect it (Yandle, 1980). As fuel prices rose and fell, auto producers took different positions. Some argued that they had followed the will of congress and downsized their fleets. They were prepared to produce even more fuel-efficient vehicles. Others argued the reverse. Consumers wanted larger vehicles, which the auto companies were prepared to produce, and failing to do so would require large worker layoffs. The two competing parties engaged in lobbying activities as they sought to keep rules on the one hand and deflect them on the other.

Along these lines, the 1997 Kyoto Protocol on global warming offers a pending episode worth watching. This evolved agreement is rooted in the notion that developed countries, which are automatically large energy users and greenhouse gas producers, should bear the brunt of reducing emissions in the name of avoiding costly climatic changes. This idea, discussed formally in Toronto in June, 1988, and addressed by the U.S. Congress in 1989 in a proposed bill—the Global Warming Prevention Act, was fundamental to commitments reached in 1992 when representatives of 160 nations attended the Rio De Janeiro Conference on Environment and Development (Manne and Richels 1991, 88).

Efforts to contain greenhouse emissions were bolstered further at a second Conference of Parties to the Rio De Janeiro Agreement held in Berlin in 1995, yielding the Berlin Mandate, which stressed the importance of gaining national commitments to greenhouse gas reductions. Then, an ad hoc group meeting in Geneva in 1995 and again in 1996 called for binding mandates for developed countries, 38 in number known as Annex I and including primarily the OECD and Eastern European states. Meaningful cooperation and emission reporting were

expected of developing countries, but no quantifiable emission reduction commitments were called for.

Just what are the relative emission magnitudes involved here? In 1990 the Annex I countries, with the United States leading the pack, produced roughly 64 percent of all greenhouse gases, which then totaled six billion tons annually (Antonelli and Schaefer 1997, 18). The developing countries, led by China, produced the remaining 36 percent. Forecasts of emissions for the year 2015 predict total emissions to be 8.45 billion tons, with the developing countries producing 52 percent of the total. By then, the developed countries will be minority players. By the year 2100, the forecast calls for 19.8 billion tons of greenhouse emissions, with the developing world producing 66 percent of the total. With developing countries agreeing to reduce 1990 level emissions by varying amounts yielding roughly five percent over the next 20 years and developing countries expanding emissions at roughly three percent per year, it is impossible to see how 1990 targets can ever be achieved overall. Obviously, there is far more to Kyoto than reducing the threat of global warming. Can Public Choice help us?

Initially, European Union states pushed for heavier reductions for themselves and the U.S. than those finally accepted. With heavy use of nuclear energy in France and significant adjustments from coal having occurred in the U.K., The Netherlands, and Germany, Europe's low carbon stance appeared relatively easy. But even the seven percent reduction agreed to by U.S. delegates to Kyoto translates into a 40 percent reduction carbon and other greenhouse gas emissions below trend. In other words, the Kyoto strategizing can be viewed partly as a European effort to raise competitors' costs.

Some 40 countries, including all of Europe, have now ratified the Kyoto. It is highly doubtful that U.S. Senate will ratify the agreement. In any case, there are winners and losers to consider. Coal producers will lose. They seek to deflect the regulations. Indeed, West Virginia, a major coal producing state, has enacted a statute prohibiting state agencies from enforcing Kyoto-based directives. Owners of natural gas and alternative energy sources win. Already, ethanol producers in the U.S. have achieved success in keeping a large subsidy for their fuel, based partly on Kyoto discussions (Yandle, 1998). Production facilities that can reduce emissions at lower cost will sell permits to higher cost operators. Each organized interest group will spend resources to influence the politicians. Some will seek to deflect costs and prevent rent extraction. Others will seek to impose costs on competitors in the hopes of gaining additional profits or rents.

Bootleggers and Baptists

Public Choice theory tells us that addressing environmental or any other perceived social problem by political means is never simple. But as logical and sound as these theories may be, the matter of just how the political message is communicated needs to be addressed. How do messages get organized and transferred from special

interests to politicians? How are the messages packaged? As Olasky (1987) tells us, packaging matters a lot in political markets.

Almost systematically it seems, two otherwise diverse interest groups emerge together calling for the same outcome when the fine print in environmental rules is being developed. Notice the focus on the construction of the rules, not the urge to write rules in the first place. These two groups always include some economic interest groups, such as certain manufacturers, labor unions, or trade associations, and environmental organizations. One group takes a publicly perceived high road calling for a cleaner world. The other is simply looking for improved profits and wealth. Both groups are seeking rents.

In struggles years ago over whether or not to allow the Sunday sale of alcoholic beverages in rural America, the local bootleggers saw opportunities to expand markets, if legal outlets were shut tight. (Yandle, 1983) The bootleggers could count on the Baptists, who officially opposed the consumption of alcoholic beverages at any time, to raise their voices in opposition to Sunday sales. The bootleggers and Baptists worked the political aisles to gain passage of Sunday closing laws. It is worth noting that none of the alcohol strictures limited consumption of spirits on Sunday, just the legal sale of such. Limits on consumption would lose bootlegger support.

As described by Yandle (1989) and Greve and Smith (1992), a similar blending of voices is found in the demand for environmental regulation. Determined to prevent polluting activities, environmentalists oppose the use of emission fees and markets for allocating environmental use by polluters. They favor command-and-control. Industries seeking cartelization join the chorus. Put in terms of the 1977 Clean Air Act, which mandated sulfur-reducing scrubbers for electric utilities even if low-sulfur coal was burned (Ackerman and Hassler, 1981), producers of high-sulfur coal gained while environmentalists fought to suppress the use of sulfur-dioxide taxes. Members of Europe's Green Party support eco-labels giving detailed information of the environmental consequences of specified consumer goods (Thomas, 1998). Domestic producers who can use the label requirements to exclude foreign goods support them as well. Organized labor in U.S. manufacturing opposed the North American Free Trade Agreement, for environmental reasons. Environmentalists welcomed the support.

We can see how the blending of disparate voices to form harmonious support of command-and-control regulation makes it easier for politicians to trade off efficiency for future political support. But what about rank and file voters? Will they catch on to all this and deny support to politicians that restrict output, raise costs, and actually limit environmental protection?

Recent work by Geoffrey Brennan and Loren Lomasky (1993) explains why voters in general stick with less than effective and inefficient environmental programs. Their theory is based on the notion of expressive voting, the idea that voters with no financial interest in an outcome will choose to support what appear to be morally or socially important issues when they are uncertain about the facts involved. If, for example, voters are asked to indicate support for something with

high sounding titles like the Resource Conservation and Recovery Act or the Clean Air Act, they will more likely than not vote yes. Burrowing beneath the concept of rational ignorance and apathetic citizens, Brennan and Lomasky argue that technically uninformed citizens still have a logical basis for pulling the voting booth level. Otherwise disinterested voters will more likely support properly packaged command-and-control regulation, never knowing about outcomes nor asking for a report card on past successes.

4. What Does the Evidence Tell Us?

A significant body of empirical work focuses on political decisions involving various aspects of environmental control and how politics affects outcomes. Some of this work examines the incentives of politicians and bureaucrats to consider the longer run and regulation cost-effectiveness. In the private sphere, these goals are generally reinforced by transferable property rights and capital markets, but these incentives are not present in political markets.

Public Choice and the Bureaucracy

Looking at incentives, Congleton (1992) examines the horizon problem in political decisions involving the control of pollutants that could affect the ozone layer. His analysis shows that democratic regimes, which have longer term stability than autocratic ones, tend to be more active in regulating emissions. In related work, Schap (1988) examines the environmental record for the Soviet Union and explains how environmental protection declined and flourished with the rise and fall of communism. As shown by Congleton and Schap, Public Choice economists generally assume that bureaucrats will be less sensitive to economic incentives than their private sector counterparts, since the reward prospects differ.

Using data on publicly owned treatment works (POTWs), Lyon (1990) tests this hypothesis by observing actual data on pollution permit trading across a sample of POTWs and by simulation. Lyon finds that the public sector managers are sensitive to the prospects of converting pollution control cost savings to other activities they value, and are more inclined to sell than to purchase discharge rights. Their self-interest matters. His research indicates that POTWs are inclined to engage in “too much” direct pollution control, an overproduction of public goods. Riggs and Yandle (1997) report related findings in their examination of decisions made by POTW operators to join a cost-minimizing river basin management association; they indicate that incentives do matter to easily monitored local bureaucrats who face budget pressures. Close monitoring tends to yield more cost-effective behavior.

Public Choice scholars have examined the bureaucracy to see if lobbying activities influence such things as EPA enforcement activities or U.S. Forest

Service management of forests. Mixon (1995) searched to see if lobbyist influence could somehow seep into the EPA bureaucracy and affect the number of penalty citations issued in the struggle over global warming. Mixon examined data on urban area carbon emission violations in regions experiencing rising ambient temperatures. The results indicated that lobbyists per capita significantly reduced the magnitude of fines and the probability that EPA would issue carbon violation citations.

Donald R. Leal (1993) examined the management state and federal government of similar forest lands in the northwestern states. Leal found a key difference in underlying incentives. The net revenues from state managed forest lands are dedicated to public education, which means that citizens in general and teachers in particular closely monitor the gains when cutting rights are sold and roads and other necessary components of forest management are built and purchased. On federal land, the revenues from U.S. Forest Service operations do not redound fully to the states, are not dedicated to some highly visible functions, and therefore are not closely monitored. U.S. Forest Service personnel are generally moved from place to place and do not have generationally deep ties to the people in the communities where they reside.

On the basis of these incentives alone, Public Choice theory predicts different outcomes for similar forests. After examining data on operating costs, net revenues generated, and actions that reflect efforts to maximize net revenues, Leal found dramatic differences between state-operated and federally-managed forests. Roads built for timber cutting in state land are crude, inexpensive, and less environmentally intrusive; similar roads in federal forests are more numerous, wider, and more permanent. Transportation system and other operating costs are higher in federal forests. Bureaucratic and other incentives matter.

Politics and Clean Air

To support the broader Public Choice story, empirical studies must show evidence that environmental regulations provide identifiable benefits to special interest groups, which include industrial firms, environmentalists, and others who can appropriate gains from command-and-control regulation. A study by Peter Pashigian (1985) examined congressional voting patterns on the 1977 amendments to the Clean Air Act that had to do with setting stricter standards for regions with cleaner air. The amendment examined was for Prevention of Significant Deterioration (PSD), which required expanding plants in cleaner PSD regions to meet newly specified stricter technology-based standards than similar plants in industrialized and dirtier regions.

We might expect a vote based on human health and public interest to favor stricter standards in the more populous dirty regions. This was not the case. After adjusting for a number of other variables, such as income, population density and manufacturing concentration, Pashigian found that representatives from the older

industrialized regions systematically supported tighter standards for competing regions that were beginning to attract new industrial plants.

Robert Crandall (1983) analyzed votes cast by U.S. congressmen on major environmental statutes for each of the years from 1975 to 1980 and for three aggregated and pooled votes by U.S. senators for the same period. Crandall used the League of Conservation Voters (LCV) index for each of the politicians as the dependent variable, counting the share of a state's delegation that voted "favorably" in terms of the LCV index and the actual index for each of the senators. To explain the voting pattern, Crandall included as independent variables four orthodox measures of environmental quality, which included air and water pollution, income, income growth, the share of state land owned by the public sector, and two indicator variables that adjust for political party and the older frostbelt states. The model enabled Crandall to discriminate between environmental, economic, political, and regional forces that could influence the outcome.

Crandall's estimate confirmed Pashigian's findings. Environmental factors were not associated with votes supporting environmental legislation. Income and particularly, income growth mattered a lot. Where income growth was lower, support for federal environmental legislation was higher. When income growth was removed from the model, the frostbelt dummy variable became significant and positive in its association with legislative votes. The share of politicians that were members of the Republican party was negatively associated with votes favoring environmental regulation, as was the share of land owned by government, which is a strong proxy for western states.

Crandall concluded his analysis by noting that the results could not support an environmental quality theory of environmental legislation. The estimates could not reject the theory of efforts by an older industrialized region to restrict industrial development and income growth in the expanding sunbelt region. Having used the LCV as the measure of voting outcomes, Crandall's results imply that environmentalists joined hands with industrialists and others in the frostbelt to limit competition in the sunbelt, which confirms a bootleggers and Baptists theory of regulation.

In 1984 Yandle (1984) investigated the determinants of the LCV index in his research on congressional votes on an amendment that gave state governors veto power over certain aspects of federal sulfur dioxide regulations. Using the LCV as a dependent variable, he regressed the share of state population living in areas with SO₂ emissions that exceeded the national standard, the percentage of state workers employed in the five major polluting industries, and the percentage change in value added in manufacturing across 1972–77. The coefficient on sulfur dioxide was not significant. Employment in polluting industries was not a significant variable. Industrial growth was the powerful variable, and it was negatively signed. The results implied that the environmental movement is more about reducing industrial development than reducing SO₂.

Following the prediction of Buchanan and Tullock (1975), Maloney and McCormick (1982) examined portfolios of stocks of U.S. copper producers to see if the portfolios rose significantly at the precise time when EPA announced its strict

emission guidelines for copper smelters. As noted at the time of EPA's announcement, the stricter standards would preclude the construction of additional U.S. capacity. The portfolios showed significant positive returns in association with the announcement.

Public Choice analysis also suggests that a shift from state and local environmental control to federal control would bring different outcomes for identifiable interest groups. Quinn and Yandle (1986) examined regulatory expenditures on air pollution control across the 50 U.S. states both prior to and following the time of federal regulation of air pollution. They found a significant shift in the allocation of regulatory expenditures. In the pre-federal period, expenditures were higher in association with private investment in real property and human exposure to air pollution. In the post-federal period, expenditures were explained by the presence of federally owned land and other national landmarks. Private investment in residential property and human exposure did not seem to matter.

Meyer and Yandle (1987) examined House and Senate votes on acid rain amendments to the Clean Air Act that ultimately required reductions in sulfur dioxide emissions. Their models adjusted for population exposure to sulfur dioxide, tons of sulfur dioxide emitted by electric utilities, the economic presence of other industries that might be adversely affected, and whether or not the politician represented states in the eastern acid rain control region. The results showed that senators were less likely to vote in favor of sulfur dioxide emissions the greater the presence of forest products industries and federal lands. The more deteriorated a state's water quality, the more likely a senator would vote yes. Population exposure to emissions did not seem to matter, nor did the amount of sulfur dioxide emitted from electric utilities. In other words, as Peltzman's (1976) theory of regulation predicts, the senators provided some environmental benefits and some industry protection.

While some empirical research provides evidence of special interest influence and bootlegger and Baptists coalitions, only a few studies indicate that federal regulation may have actually harmed the environment. A study by Maloney and Brady (1988) falls into this category. Maloney and Brady examined capital turnover in electric utility generating capacity in conjunction with EPA regulations that set higher standards for new plants than older ones. All else equal, economists would predict that plant operators would delay rebuilding or replacing generating capacity, if the regulatory penalty was significant. Using vintage data on generators nationwide, Maloney and Brady determined a steady-state trend for capital replacement prior to the implementation of EPA new source performance standards for utilities. As theory predicts, they found a significant slowdown in capital turnover. Going further, the two researchers estimated the amount of emissions that would come from older technologies versus newer ones. They found that stricter new source standards increased the level of air pollution from the industry.

The Maloney-Brady study is the empirical counterpart of the Ackerman-Hassler (1981) episode described earlier that involved scrubbers and high-sulfur coal. The scrubber requirement emerged as a way to protect the interests of unionized coal

workers and owners of eastern coal mines against the competition that was emerging from nonunionized producers of clean coal in the western states. The significant cost of scrubbers apparently was enough to encourage electric utility operators to postpone replacement of older vintage, and dirtier, capital.

Investigations of the political economy of clean air do not always result in outcomes that neatly support Public Choice theories. For example, Joskow and Schmalensee (1998) probed almost endlessly in their examination of congressional decisions that set the amount of tradable sulfur dioxide emission allowances provided to public utilities in conjunction with the 1990 Clean Air Act. Examination of the variation in the amounts of bonus allowances provided across states seemed to offer an ideal setting for revealing the power of interest group politics. Would the number of potentially displaced coal workers explain the allocation? The conditions of air quality? Pending elections of state senators? Or what? The statistical modeling did not reveal a consistent pattern. Joskow and Schmalensee suggest that the allocation process was made more complex by the number of political contracts covered by the allocation process.

Public Choice and Hazardous Waste

The U.S. Superfund program designed to clean hazardous waste sites has also been scrutinized by Public Choice scholars. Recognizing that Superfund seems to have much to do with administrative and litigation expenditures and less to do with cleaning up sites, J.A. Hird (1993) examined a series of congressional votes on the initial 1980 legislation and the later 1986 amendment process. Exploring the notion that Superfund was simply a pork barrel program used by politicians to funnel more cleanup funds to their states and districts, Hird found no evidence to support that proposition. Instead, the evidence suggests that Superfund was an environmental icon; voting patterns favoring Superfund were strongly influenced by the concentration of members in environmental groups in a politician's region, while negative influence came from the oil and chemical industry in those regions. The environmental influence to maintain the low-output program was so strong that politicians were unwilling to put their political careers at risk by opposing the program.

Other work on Superfund (Barnett, 1985) (McNeil, Foshee and Burbee, 1988) probed EPA's internal Superfund decision making, looking to see if, among other things, the agency assigned key importance to the protection of groundwater when choosing to list a site on the agency's priority listing. Barnett (1985) found that EPA decision making was strongly influenced by state regulatory efforts and surface water and air pollution issues but that threats to groundwater were not significant in explaining agency choice.

McNeil, Foshee, and Busbee (1988) studied EPA data to see if the Superfund taxes paid by chemical using-industries were significantly related to Superfund

expenditures in the states where the tax receipts originated. Superfund supporters sometimes argued that the program was about collecting revenues in contaminated regions and applying the funds for cleanups in those regions. The research showed just the opposite. Taxes were collected in one region, where chemical use was high, and spent in other regions. On this basis, Superfund was a pork barrel.

Dalton, Riggs, and Yandle (1997) examined the legislative process that produced the first Superfund statute focusing on competing bills considered in committee and on the legislative floor. Using portfolios of stocks for the oil, chemical, waste management, and insurance industries, the investigators sought to identify winners and losers in a rent-seeking struggle as various legislative packages were considered. As expected, the waste management portfolio gained significantly when bills were considered that expanded the size of the Superfund program. However, little in the way of significant effects was discovered for the other portfolios.

Summary

The empirical work on environmental control provides strong support of the basic Public Choice theory that has developed across the last three decades. More often than not, outcomes generated by the political process are conditioned by special interest struggles best explained by rent-seeking and bureaucratic behavior. In the light of Public Choice, environmental legislation and regulation can be understood. In the absence of Public Choice considerations, legislative content and regulatory outcomes would remain a puzzle.

5. Final Thoughts

To a large extent, environmental economics is a study of regulation and policy. It is therefore a study of Public Choice. If tradable property rights protected environmental assets, such as air and water quality, as with land and other features of nature, environmental economics would lose its distinctive flavor. The environmental problem would be no different from other scarcity-driven problems that people face in their daily lives.

Public Choice warns of the pitfalls when decisions are made collectively. The warning suggests we should not expect efficiency to be the driving force that determines political outcomes. The greater the political involvement in allocating and managing a resource, the less efficient the outcomes will be. Given the status of environmental decision making, we can expect low efficiency, high cost results.

This paper has provided a three-part analysis of public choice and the environment. The first component traced major lines of economic inquiry for environmental issues. A division of thought was presented on how communities of people might deal with the spillovers that come from otherwise productive activity. One

approach called for government intervention and politics. The other called for markets, property rights, and contracts.

For the last three decades, U.S. environmental policy has relied primarily on government intervention and politics. Such things as economic incentives and tradable pollution permits have occupied the basement of the regulatory structure. The major statutes that have been enacted and the host of specialized regulations spawned have provided almost endless opportunities for special interest groups to seek political favors. The high emotional content of environmental matters has galvanized the interests of vast numbers of people nationwide. In short, environmental protection could be called a politician's paradise.

The second part of this paper reviewed contributions of Public Choice scholars who established a theoretical framework for understanding the behavior, actions taken, and results to be expected when politicians respond to environmental control opportunities. Rent seeking becomes a major force in the theories, and the massive wealth to be affected and transferred through environmental control is the plum that has generated so much command-and-control regulation.

With background and theory provided, the paper's final section surveyed empirical work that has examined the Public Choice experience with environmental matters. As scholars examined various statutes, regulations, and the operations of bureaus many theory-based predictions were confirmed. Indeed, were it not for Public Choice theory, it would be impossible to understand the environmental saga.

The rise of the global economy and with it more intense levels of competition and transaction facilitating technologies sets the stage for yet another chapter in environmental saga and also another challenge for Public Choice scholars. When competition is global, it is much more difficult for one nation to provide meaningful cartel protection to domestic industries. When ordinary people can gain accurate, low cost, information on environmental outcomes, rational ignorance is reduced. Public Choice suggests that new global environmental issues will replace those faced by smaller regions and nations. The latter will become a more routine part of smaller government and market activity. But for rent seekers to be successful at a global scale, a global government is required. Public Choice predicts that news efforts will be made to form a governing process that will address issues of global proportions. As always, cost is a rationing mechanism. Most likely, the cost of governing a global environment will be so large that rent seekers will retreat and market forces will engage environmental protection.

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Notes

1. On this, see Cole, Rayner, and Bates (1997), Griffiths (1998), Grossman and Krueger (1995), Lopez (1995), McConnell (1997), Norton (1998), Selden and Song (1995), and Yandle and Xiang (1998).
2. Recent cross-country Kuznet's curve research that adjusts for property rights enforcement, shows that nations with greater property rights certainty provide a cleaner environment (Yandle-Xiang, 1998), holding income levels constant. In short, institutions seem to matter a lot when providing environmental quality.

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