system, overwhelming multilateralism and its central tenet of nondiscrimination."

The wisdom of regional and bilateral agreements is one of the few subjects that can sharply divide free-trade economists, and here, I believe, the great free-trade economist doth protest too much. PTAs are not optimal, but they are not the scourge on global free trade that Bhagwati makes them out to be. Evidence of trade diversion is small, and the benefits from major PTAs such as the European Union and NAFTA are palpably large. Regional and bilateral trade agreements provide a kind of safety valve in case the multilateral track becomes blocked, as seemed all too likely during the tortuous Uruguay Round and after the 1999 WTO ministerial in Seattle. As long as external tariffs are kept from rising, most PTAs seem to be incremental steps toward freer trade, not away from it.

But on the fundamental question of whether free trade is good policy, Bhagwati could not be on more solid ground. His sophisticated, far-ranging, and practical defense of free trade places the doctrine on a more solid footing than ever. When we consider that government officials often lack sufficient information or pure motives, free trade becomes the first, best policy—even if a higher state of domestic welfare could be reached in theory if just the "right" policies were implemented. Two centuries after Adam Smith, free trade remains a broad, secure, and accessible ledge high up the mountainside of good government policy. Jagdish Bhagwati wisely warns us in *Free Trade Today* that those final icy feet to the summit are not worth the risk.

Daniel T. Griswold
Cato Institute

Free Market Environmentalism
Terry L. Anderson and Donald R. Leal
New York: Palgrave, 2001, revised ed., 241 pp.

In the first edition of *Free Market Environmentalism*, Terry Anderson and Donald Leal of the Political Economy Research Center sketched an environmental vision that eschewed government mandates in favor of markets, and replaced regulatory prohibitions with property rights. At the time, 1991, this was radical stuff. Ostensibly conservative policymakers had controlled federal environmental agencies for over a decade with little to show for it. Though the authors were reluctant to admit it, free market environmentalism (FME) was still a fringe idea. Environmentalists remained wedded to the use of government, and the federal government in particular, to achieve environmental goals. Some economists and policymakers used the language of economics in discussing environmental problems, or professed fealty to "market incentives," but few were prepared to unleash unfettered markets on the ecology. Genuine free market environmentalism—that is, the use of market institutions, particularly property rights, voluntary exchange, and common law liability

rules to protect environmental resources—existed mostly in the minds of a handful of scholars and think tank researchers.

During the intervening decade, free market environmentalism has come of age. The failure of centralized regulatory systems has sent analysts searching for alternatives. Dissatisfaction with existing regulations has produced gradual experimentation with market approaches, while ecological entrepreneurs, what Anderson and Leal call "enviro-capitalists," have sought ways to make environmental protection pay. In 1991, FME may have been "more theoretical than applied" (p. ix). Now there are models that illustrate the FME paradigm in practice. The authors take advantage of this fact, providing numerous examples of FME principles put to practice in the real world. The result is a blend of theory and implementation that provides a highly useful introduction to the power of market institutions to advance environmental protection.

From the start, "free market environmentalism" may have been a bit of a misnomer. FME is not so much about "markets" as it is about institutional arrangements. As Anderson and Leal explain, "At the heart of free market environmentalism is a system of well-specified property rights to natural and environmental resources" (p. 4). Property rights provide the foundation for markets, and so establishing property rights in environmental resources enables individuals and organizations to pursue environmental goals in the marketplace. Pigouvian economists seek to alter human behavior by levying taxes and imposing regulations to correct for the "failure" of market prices to account adequately for environmental concerns. FME, on the other hand, seeks to create and expand markets in environmental resources through the extension of market institutions to cover environmental resources that were heretofore external to market processes.

Anderson and Leal center their analysis on two concerns: incentives and transaction costs. Recognizing that people tend to act in their own self-interest, whether enlightened or otherwise, Anderson and Leal emphasize the importance of institutional arrangements that generate positive incentives for environmental stewardship. "The question is not whether the right solution will always be achieved, but whether good decisions are rewarded and bad ones penalized" (p. 6). No doubt this candid refusal to promise ecological nirvana may dissatisfy some environmentalists. The question, however, is not which environmental paradigm is perfect—none is—but which offers the greatest potential for continuing environmental progress.

Anderson and Leal's focus on incentives leads ineluctably to their aforementioned emphasis on property rights. As they explain, the key to getting incentives right in private affairs is "to establish property rights that are well defined, enforced, and transferable" (p. 22). Each element is important. Property rights create powerful incentives to preserve the value of that which is owned. As a result, "discipline is imposed on resource users because the wealth of the property owner is at stake if bad

decisions are made" (p. 4). Fail to steward a resource, and its value in the marketplace will decline. In this fashion, "Human ingenuity is switched on by market prices that signal increasing scarcity and provide rewards for those who mitigate resource constraints by reducing consumption, finding substitutes, and improving productivity" (p. 3). Where property rights are poorly defined, unenforced, or nontransferable, the incentive for stewardship is greatly reduced.

Consideration of economic incentives in environmental policy is nothing new. Traditional economic analyses of environmental policies, however, stress incentive problems in private markets, but "ignore them in the context of political processes" (p. 11). To address the substantial failing in much of the environmental literature, Anderson and Leal devote substantial space to documenting the many failings of "public" (i.e. political) resource management. Their analyses show how bureaucratic waste, economic rent-seeking, and inefficiency are endemic to political control of natural resources because of the incentives that such arrangements create. Good intentions are not enough to protect environmental resources. To expect government officials "to set aside self-interest and objectively weigh the benefits and costs of multiple use management is to ignore the information and the incentives that confront them" (p. 50). Regulators are people too, and they are no less subject to the rules of economics and seductions of self-interest than corporate officers.

Incentives are not the only focus of *Free Market Environmentalism*. Drawing upon the work of Nobel laureate economist Ronald Coase, Anderson and Leal also highlight the role of transaction costs. Such costs are "pervasive," not only in private markets, but in the political sphere as well (p. 13). While both private and political arrangements have their inefficiencies, Anderson and Leal suggest that market processes are substantially more adept at identifying and processing information as well as at greasing the skids for voluntary exchange. Market competition provides a powerful incentive for traders to acquire needed information and to facilitate exchange by lowering transaction costs.

To explicate FME in theory and practice, Anderson and Leal largely concentrate on Western land and resource issues. This makes eminent sense, as both authors are known for their pioneering work in that field. Anderson is the author or co-author of several seminal articles on the evolution of property rights in the West; Leal has conducted noteworthy studies on the failings of federal land management. In the context of land and natural resources the case for FME is also at its strongest. It is easier to use property rights to safeguard environmental values in the natural resource area than it is to control pollution; "pollution concerns challenge the paradigm" (p. 8). Therefore, Anderson and Leal explain the use of property rights to solve commons problems, alleviate resource scarcity, and improve the management of forests and rangelands.

"Priming the Invisible Pump" is a particularly valuable chapter on water markets. In the past decade, FME approaches to water have made

substantial progress, and this chapter is significantly expanded from the first edition. Twenty years ago when Anderson presented his ideas on water to federal officials he was derided as a "kiddie-car economist." Today, it is incontrovertible that water markets are the most efficient way to allocate water. As in any market, price signals facilitate the allocation of water resources to their most highly valued uses, and encourages conservation by discouraging inefficient use. Moreover, the creation of water rights for instream flows furthers environmental protection by enabling environmentalists to purchase water from willing farmers and ranchers to increase water levels in rivers and streams. This encourages ranchers and farmers to improve the efficiency of irrigation—leaving them water to sell—and facilitates voluntary exchanges for the benefit of endangered species.

Similar gains have been made in the context of fisheries. The deficiencies of regulatory measures, such as limited fishing seasons or restrictions on fishing gear, have prompted experimentation with property-based conservation schemes. New Zealand and Iceland, for example, have adopted individual transferable quotas, or "ITQs." Under this system, quota holders are entitled to catch a set percentage of the total allowable catch in a given season. Quotas are held as property, and are freely transferable. The success of ITQs at increasing efficiency and catch quality may facilitate a shift to more complete property rights in fisheries—a possibility Anderson and Leal entertain in the revised edition.

Despite the increasing prominence of FME analyses, efforts to develop property rights solutions to pollution concerns have met with less success. Economic language is used to describe many pollution problems, and policymakers trumpet "market-oriented" solutions, but few such policies live up to their billing. There are many private forests, parks, and wildlife preserves, but few privately managed rivers, let alone airsheds. As a result, the authors have fewer examples to draw from and are forced to make more speculative arguments than in the earlier chapters.

Anderson and Leal note that most pollution problems are essentially waste disposal problems. Pollution is a residual or byproduct of economic activity that is disposed of in a fashion that imposes costs on others; in the authors' words, "The problem with waste disposal is that it creates a competing use for disposal media" (p. 126). So long as there are clearly defined property rights to the waste streams and the relevant disposal media, there is no problem. Company A contracts with Service B to place its residuals on B's land. So long as B contains the residuals, there is no problem. At the other extreme, however, Company A emits smoke into the air, either hurting Child C's lungs, killing Gardener D's flowers, dirtying Homemaker E's laundry, or at least obstructing Artist F's view.

Anderson and Leal identify three potential approaches to such problems: 1) traditional regulation; 2) "market-oriented" policies, such as tradable permits; and 3) property rights (p. 126). Regulatory approaches

have several obvious deficiencies, including their inherent inefficiency and susceptibility to rent-seeking, which Anderson and Leal briefly survey. Tradable permits are slightly better, as they can allow regulated entities to meet government-set goals at the lowest cost. In practice, such programs are more often used to supplement existing regulatory regimes than to replace them, so the actual efficiency gains are smaller than one might suppose. Moreover, tradable permit schemes do not solve the problems caused by political management and determination of environmental priorities. Making the trains run on time is not such an accomplishment if they travel to the wrong stations.

"The free market approach to pollution is to establish property rights to the pollution disposal medium and allow owners of those rights to bargain over how the resource will be used" (p. 132). This may sound fanciful—property rights in air and water are rarely well-defined, and transaction costs for bargaining may be high—but the authors suggest several reasons why many (though not all) pollution concerns could be addressed through property rights more readily than through regulation. "There is a rich history of common law cases that illustrate how people have protected themselves from pollution" in the absence of federal regulation (p. 138). The problem is often that "regulation has pushed the property rights approach into the background" (p 140). Common law liability rules can provide a powerful incentive for companies to reduce pollution, at least in those circumstances in which it is possible to identify the sources and effects of polluting activity. That is not always possible, but imposing regulatory controls does not solve this problem, nor does it ensure a more efficient or equitable result. Many environmental problems, by their very nature, pose problems of causation and proof, irrespective of what solution is adopted. While Anderson and Leal do not believe the combination of property rights and common law liability rules can solve every problem, they caution that policymakers "should not be too quick in assuming that the transaction costs for property rights approaches to pollution cannot be overcome" (p. 141).

Among the completely new chapters in the revised edition is "Calling on Communities," a discussion of community-based conservation efforts. As presented in this chapter, the traditional debate over commons problems has focused on two options: government regulation and privatization. Anderson and Leal suggest that not all commons problems can be resolved through one of those approaches. Government regulation has obvious inefficiencies, and private property may be impractical or "socially unacceptable" in some contexts (p. 144). Thus, they endorse a third way, community-based management under which "a nongovernmental community of users" acts to control use and limit entry to the commons, often through custom and social pressure. As described by Anderson and Leal, however, the factors that facilitate community management of the commons seem to describe a form of nonindividuated property ownership—a subset of private property much like that which is found in

condominiums or cooperatives. That such property is communal does not mean it is not—or cannot be—privately owned. Culture, custom, and other social interactions impact the management of common areas in a high-rise condominium just as they do in a primitive fishery. In each case, what ultimately facilitates management is the mutual recognition of rules that define interrelationships in property terms, whether or not the label "private property" is used. Yet Anderson and Leal do not make this link, nor do they explain how community management fits into the larger picture of FME. The unnecessary skepticism of privatization voiced in this chapter cuts against the grain of *Free Market Environmentalism*—enough to undermine arguments presented elsewhere in the book.

Greater reliance upon community management need not be in conflict with a move toward FME. Markets, by their nature, are tremendously decentralized. Granting greater leeway to local groups and organizations to manage local resources is a means of decentralizing decisionmaking about resource use. Local decisionmakers are more able to take advantage of time and location-specific information and to align resource management decisions with local concerns. As such, community-based management is one way to reduce the failings of centralized governmental control of natural resources. Local governments and communities will make mistakes, of course, but the consequences will be localized and therefore not as great as those made by a centralized bureaucracy for a nation as a whole. With interjurisdictional competition, local communities will also compete with one another to maximize the welfare of local residents. Devolution of authority over environmental resources to local level can be a significant step toward more widespread privatization.

Anderson and Leal do make an effort to respond to FME's critics. They explain that reliance upon markets and voluntary exchange does not exclude the use of environmental or moral values. It does, however, require individuals and groups to support their moral preferences with economic activity. If developers outbid environmentalists for a given tract of land, then allowing the developers to purchase the land is efficient. "Turning moral values into political issues" does not solve the problem, rather it makes environmental policy "another form of rent seeking wherein people with one set of moral values get what they want at the expense of others" (p. 24). It would be wrong, however, to assume that property rights inherently advantage economic interests. Individual property owners have ample opportunity to advance noneconomic values on their own land, irrespective of whether economists (or politicians) believe it is wasteful. Thus, if Rosalie Edge placed a higher value on preserving Hawk Mountain as raptor habitat than as hunting grounds or a development site, she had the power to realize her preference. Such is the power of property ownership.

Free Market Environmentalism closes with a call for incremental reforms that "link self-interest with responsible use of environmental assets" (p. 172). Specifically, Anderson and Leal call for institutional re-

forms that align incentives with environmental conservation, encourage the generation and dissemination of ecological information through market exchange, and "strengthen property rights where possible" (p. 172). Among the steps "short of privatization" (p. 181) that they endorse are user fees for government-run parks and reserves, making park managers more accountable and responsible to the visiting public, and localized efforts at pollution control, such as watershed-based effluent trading. While such approaches will not satisfy all free-market devotees, they are pragmatic steps toward adopting property rights in environmental resources and developing market institutions to address environmental concerns. More far-reaching institutional change will not occur overnight. Yet upon completing *Free Market Environmentalism* one cannot help but be optimistic that more widespread adoption of FME principles is only a matter of time.

Jonathan H. Adler
Case Western Reserve University
School of Law

The Big Problem of Small Change
Thomas J. Sargent and François R. Velde
Princeton: Princeton University Press, 2002, 405 pp.

Thomas Sargent of Stanford University and the Hoover Institution and François Velde of the Federal Reserve Bank of Chicago have expanded their article of the same title from the *Journal of Money, Credit, and Banking* of May 1999. They tell the fascinating story of how monetary authorities groped slowly over many centuries toward the ultimate solution to recurrent shortages of small change. The solution is to issue minor coins as mere tokens with no pretense at metallic contents worth anywhere near their face values and, further, to keep those tokens interconvertible at fixed rates with the definitive money (e.g., full-bodied gold coins under a gold standard). This "standard formula", as the authors call it, following Carlo Cipolla, may seem trivially obvious nowadays, but it was not always so. Furthermore, it became a stage in an intellectual process that eventuated in the rationale for modern fiat money.

Sargent and Velde attribute perhaps the first clear statement of the formula to Sir Henry Slingsby, master of the London Mint, in a 1661 memorandum to King Charles II; but Slingsby's proposal was not implemented for over a century. The long delay was not due merely or especially to intellectual failure. Implementing the solution had to await advances in the technology of coinage. Mere token coinage would have offered great profit opportunities to counterfeiters, and identifying counterfeits would have been difficult when primitive minting techniques produced crude and irregular coins. Counterfeiters could reap no special profit, however, by using gold or silver to imitate official coins.