The Natural Wealth of Nations: Harnessing the Market for the Environment. **David Malin Roodman. WW Norton & Company, NY, 1998. ISBN 0-393-31852-4, pp. 303**

David Malin Roodman has written an informative policy oriented book outlining the role of both government intervention and free market economics in causing environmental degradation, then summarizing several of the market mechanisms that can be used to curb it. His title is obviously a play on Adam Smith s The Wealth of Nations, with the explanation that the inclusion of the word natural is unfortunately required, since natural resources are often excluded from the definition of wealth. Concisely put, the book proposes reforms that would *replace private profit from unsustainable abuse of our natural inheritance with collective profit from sustainable use* (p. *25*). The author supports theory with abundant and well-documented empirical evidence and case studies showing that his suggested reforms can work. While he introduces few original ideas, he uses solid economic reasoning to present a plausible policy package, and his clear exposition and avoidance of obfuscating mathematics makes the applied economic theory accessible to the broader public. Moving beyond economic analysis, Roodman addresses the political obstacles to the implementation of the policies presented in the book, and proposes credible means of overcoming them. Like much of what comes out of the WorldWatch press, Roodman discusses serious problems and presents feasible solutions.

The first section examines existing government subsidies which promote unsustainable use of natural resources and ecological damage, calculates their direct costs, and shows how they result in economic inefficiencies and environmental degradation. Stepping back from the free market critique that all subsidies are market interventions and should be removed, Roodman explains why subsidies remain such popular government policies. He also explains why subsidies can be a blunt instrument that cause significant collateral damage when welded to achieve a specific goal. Roodman documents annual global government expenditures on these subsidies of $650 billion, with few real public benefits and substantial environmental costs.

The second section presents market oriented policies which can address the problems previously laid out, using numerous examples to show that the suggested policies work in practice as well as theory. First, governments should reform subsidies for polluting industries, which Roodman estimates represent 8% of global tax revenues. Second, Roodman proposes increased royalties on resource extraction, and third, subsidies for environmentally beneficial technologies. He argues that the well-known Pigouvian taxes and tradable quotas for environmentally harmful activities and resource depletion are also essential. Taxes on undesirable activities could potentially generate more revenue than either ending subsidies or capturing resource windfalls, and all three policies together would allow a dramatic reduction in taxes on desirable activities, such as employment and income tax.

I have three relatively minor criticisms on this section. First, Roodman s claim that low resource royalties have no negative environmental outcome is simply not true for resources with variable extraction costs. For example, in Brazil, transportation comprises a substantial part of timber extraction costs. Loggers will remove timber as long as the extraction, transportation, processing costs and royalties are less than the sale price. As transportation costs increase steadily with distance from the market, higher royalties will reduce timber extraction from less accessible locations.

Second, a discussion of public goods would improve Roodman s analysis of subsidies. Many environmental goods and services are public goods- that is, they are non-excludable (one person can t keep another from using the good in question) and non-rival (one person s use does not prevent another person from using the good). Since public goods are non- excludable they cannot be sold, and the market will not provide them. Instead, extra market institutions, such as the government, must do so. A subsidy for a clean industry that can replace one which causes environmental degradation is essentially one way for a government to provide a public good. In addition, technologies themselves have some attributes of public goods. While patent laws can make technology excludable, knowledge by its very nature is non-rival. The marginal cost of providing existing information to another user is essentially zero, and economic efficiency calls for a zero price. Rather than simply subsidizing private companies to invest in environmentally friendly technologies then patent and sell them, a more economically efficient approach might be for the government to pay for the research directly (for example through greater funding to Universities) then make the technology available to all free of charge.

Third, while both environmental taxes and emission/extraction quotas are theoretically efficient, Roodman fails to explicitly discuss how they relate to the issue of scale. Taxes still allow natural resource use to be price determined. For example, if Indonesia places a large tax on deforestation, the rate of deforestation should slow, ceteris paribus. However, depreciation of the rupiah could cause the rupiah denominated tax to drop substantially compared to the dollar value of the timber from deforestation and the palm oil from the plantation which follows it, and deforestation will again increase. A quota on the other hand is price determining- no matter what happens to the price of timber or palm oil, the level of deforestation is set. Price must adjust to balance supply and demand. While taxes may be a great first step towards sustainability, quotas more explicitly address the issue of scale (Daly, 1996).

In the third section Roodman confronts the obstacles and objections to his policy recommendations: that they are impractical, unfair, sure to raise taxes, destructive of jobs or the economy, or a political dead end. While acknowledging substantial problems, Roodman presents numerous case studies where his policy recommendations have been shown to work. Careful planning and complementary policies can help reduce the regressive nature of environmental taxes. Rather than increasing taxes, the policies Roodman lays out can offset tax cuts on income, employment and sales, and by taxing activities we don t want rather than those we do, actually increase economic efficiency. Concerning destruction of jobs or the economy, Roodman claims that ecological tax reform will instead stimulate a new eco- industrial revolution. Some industries will be hurt, others will gain, but the great economic benefits of a cleaner environment means that on the whole the economy should be better than in the business as usual case.

The final chapter confronts what is perhaps the most serious obstacle to harnessing the market for the environment- the political marketplace in which votes, campaign money and kickbacks (p. 225) are the tender. Essentially, many industries have gotten rich by ignoring environmental costs and resource depletion, and wealth translates into power. These industries then use that power to maintain the policies that benefit them. If we are to implement ecologically sound fiscal reform, Roodman argues, the best weapons are education and democracy. He makes no claims that the change will be easy, only that it is essential.

This analysis is particularly interesting in the light of current events. On the one hand, in the United States Republican presidential candidate John McCain and his Democratic ally Senator Russ Feingold are pushing hard for campaign finance reform, which would decrease the ability of special interest groups to fight environmental fiscal reform. On the other hand, the powerful World Trade Organization has threatened or struck down environmental legislation in the US, Europe and Japan as barriers to trade. The OECD came dangerously close to passing a Multilateral Agreement on Investment (MAI), which could interpret environmental taxes or quotas as trade barriers threatening corporate profits, and the developed nations are still pushing for such an agreement within the WTO. Such an agreement could prove a formidable obstacle to the policies Roodman proposes.

In summary, this book offers little new to environmental or ecological economists except well researched empirical support for familiar policies. However, the book is an excellent resource for students, non-economists, policy makers and the general public, and as Roodman argues, at this point public education is what is required to make these ideas a reality.

Reference: Daly, Herman E., 1996. Beyond growth: the economics of sustainable development. Beacon Press, Boston