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# *The Political Economy of Property Rights*

Even though formal property rights are the most obvious response to externalities involving the environment and natural resources, they typically are not the first action taken. Indeed, they often are the last, coming only after a crisis. Why is that? One reason is that property rights are costly to define and enforce so that they are not always a feasible solution. But likely of more importance is the political economy of property rights. Property rights involve political costs because they define ownership and hence a distribution of wealth, status, and political influence. As a result, they often are controversial and political risk leads politicians to delay in assigning rights. A crisis can resolve distributional disputes by making the benefits of taking action or the costs of not doing so clearer. For this reason, it may be efficient and politically understandable why property rights are adopted late.

*Jabetza-eskubide formalak ingurumenari eta natura-baliabideei eragiten dieten kanpo-eraginen irtenbide nabariak diren arren, normalean ez dira izaten hartzen diren lehenengo neurriak. Izan ere, azken neurria izan ohi da, eta sarritan krisi baten ondoren hartutakoa. Zer dela-eta? Garestia da jabetza-eskubideak definitzea eta abiaraztea eta, ondorioz, beti ez dira egiteko moduko irtenbideak izaten. Jabetza-eskubideek kostu politikoak dakartzate, jabetza definitzen dutelako eta, horrenbestez, aberastasunaren, estatusaren eta politika-eraginaren banaketa. Horrek dakartzan arrisku politikoen ondorioz, politikariek atzeratu egiten dute eskubideen esleipena. Hala eta guztiz ere, krisi batek banaketa-gatazkak ebatz ditzake, erabaki bat hartzearen ala ez hartzearen onura eta kostuak argi eta latz adierazten direlako. Hori dela eta, eraginkor eta politikoki ulergarriak izan daitezke jabetza-eskubideak berandu hartzeko arrazoiak.*

Aunque los derechos de propiedad formales son la solución más obvia a las externalidades que afectan a medio ambiente y los recursos naturales, normalmente no constituyen la primera medida tomada. De hecho, suele ser la última, y con frecuencia tras una crisis. ¿Por qué? La razón es que los derechos de propiedad resultan costosos de definir y de llevar a cabo, de modo que no siempre resultan ser una solución factible. Los derechos de propiedad implican costes políticos porque definen la propiedad y por lo tanto una distribución de la riqueza, del estatus y de la influencia política. Los riesgos políticos que ello supone llevan a que los políticos retrasen la asignación de derechos. Sin embargo, una crisis puede resolver los conflictos distributivos al hacer más claros los beneficios y los costes de tomar una decisión o no de hacerlo se manifiestan clara y crudamente. Por esta razón, puede ser eficiente y políticamente comprensible por qué los derechos de propiedad se adoptan tarde.

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### References

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## 1. INTRODUCTION

In 1960, Ronald Coase published “The Problem of Social Cost” (Coase, 1960). The arguments in this famous paper not only illustrated the reciprocal nature of most externalities (who is the source of the problem, the factory or the people living near it?), but suggested that they could be solved through bargaining among the parties if the transaction costs were low enough (Coasian bargaining). “The Problem of Social Cost” (Coase, 1960) and “The Nature of the Firm” (Coase, 1937) were the bases for Coase’s receipt of the Nobel Prize in Economics in 1991. These papers remain among the most cited in economics and Coase’s legacy through the so-called Coase Theorem may be greater than any other Nobel Prize winner in Economics.

Coasian bargaining presupposes that property rights exist to define who has the right for a particular action and associated welfare stream—the factory has the right to pollute or the home owners have the right for clean air. A property rights assignment is critical because otherwise there is no basis for bargaining—who would be the participants; on what basis would they bargain; what would be traded and at

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\* This paper builds on arguments developed in Libecap (2007) and Libecap (2008).

what price; and how would the agreement be enforced? Absent a property rights regime, there would be nothing to prevent a third party from intervening and demanding a payment or a change in behavior after the original agreement was concluded. With the potential for open, potentially unlimited, entry like this, there can be no Coasian agreements to address environmental and natural resource problems. The definition of property rights defines the bargaining parties and underscores why they must exist for trading to take place.

Coase's legacy also has been the basis for much of the rise of market-based environmentalism. Property rights and Coasian trades explain why ITQs (Individual Transferable Quotas) in fisheries have been so effective where they have been adopted (Costello *et al.*, 2008). They also underlie the use of water rights trading to promote more efficient water allocation and use in the U.S., Chile, and Australia (Grafton *et al.*, 2009). And they are the basis for efforts to address air pollution through the trading of pollution rights that have been extremely useful in addressing the control of SO<sub>2</sub> and acid rain in the U.S. (Kehoane, 2007).

Despite the clarity of Coase's message and the successes indicated in these examples, market solutions to environmental and natural resource problems have been much more limited, slow, and contentious than one might otherwise anticipate. The reason lies in the "Political Economy of Property Rights."

Property rights are costly to define in two ways. First there are resource costs in measuring the asset, demarcating ownership to it, and in policing compliance. These costs can be high or low depending on the physical nature of the resource. If it is large, mobile, and unobservable, like some fish stocks, then the costs of defining property rights are usually high. If the asset is smaller, stationary, and observable, like land parcels, then the costs of defining property rights are usually low.

Second, there are political costs in defining property rights. Property rights are ownership, and they include the rights to investment and use privileges; to the stream of income and costs associated with them; and to transfer ownership to another or pass it on to heirs. As such, the assignment of property rights has clear distributional implications.

Any pattern of ownership brings an associated allocation of wealth and political and social standing. Any property right with meaning requires exclusivity. Some parties (non owners) will be denied, whereas others (owners) will be granted access to an asset. Initially at least, ownership institutions create clear winners and losers. If as is expected, more definite property rights result in greater efficiencies so that the overall economy expands, all parties may be made better off. But early on, these long-term benefits are uncertain, while the distributional consequences are very apparent.

Politics is largely about distribution. Because they are immediate and clear, the initial distributional implications of a property rights assignment will critically

influence the political benefits and costs facing politicians and the feasibility of their support for rights-based environmentalism.

The record indicates how important both resource and political costs can be in the adoption of property rights. Consider fisheries. In a famous article published in 1954 by H. Scott Gordon, "The Economic Theory of A Common-property Resource: The Fishery," the problem of overfishing due to the absence of property rights was effectively laid out (Gordon, 1954). About 20 years later, in 1973 Francis Christy (1973) outlined the use of individual transferable quotas as a solution. Yet, it was not until over ten years later, in 1986 in New Zealand and 1989 in Iceland that property rights systems in fisheries were adopted after their near collapse. Even today, only perhaps between 2 and 5 % of the world's fish stocks have a property rights regime.

Similarly, consider air pollution. Air pollution concerns became most apparent in the U.S. in the 1940s and 50s in Los Angeles. Thomas Crocker (1966) and J.H. Dales (1968) outlined the use of tradable emission permits. Nevertheless it was about 30 years later that trading permits were finally put into place in the U.S. SO<sub>2</sub> program and in the Los Angeles regional smog control program.

The question is, if property rights are so obvious a solution to environmental and natural resource problems, why does it take so long for them to be implemented? As suggested above, the answer lies in the politics and the distributional implications of the definition of property rights.

## **2. DELAY IN THE ASSIGNMENT OF PROPERTY RIGHTS**

For Coasian trades to be a solution to environmental or resource challenges, formal property rights are needed. These are property rights that are recognized by law and can be the basis for enforceable contracts and market trades. Unfortunately, early or precautionary property rights involve the highest resource and political costs relative to their expected gains. They have formidable information and input requirements in allocation, measurement, bounding, and compliance. Perhaps more importantly, they have substantial, generally clear distributive effects when there often is too much uncertainty as to their benefits and costs for influential interests.

Under these circumstances, it is hard for politicians to craft political trades between constituencies to build a political consensus for early adoption. The size of the environmental problem is not clearly understood, nor is the means of addressing it. This makes the preemptive assignment of formal property rights too risky for politicians. For this reason, it often makes political (and economic) sense for politicians to delay in taking action until the problem becomes bigger and better understood.

Over time as the environmental or resource issue becomes more serious and turns into a crisis, information is generated about both the size of the problem and the resource and political benefits and costs of confronting it. At that time more parties will come to see that they will be made better off from the clearer definition of property rights so that distributional conflicts can be addressed.

### 3. **THE POLITICAL ECONOMY OF PROPERTY RIGHTS**

Politicians are concerned about constituencies. For most environmental and resource issues, there are numerous constituencies who are affected differently by externalities. As a result, politicians must balance competing constituent interests in a manner described by Sam Peltzman (1976) and Gary Becker (1983). To maximize overall political support politicians direct benefits to influential parties and attempt to reduce the overall costs to taxpayers.

These efforts usually involve side payments—subsidies, favorable tax treatment, preferential quotas or property rights—from those who expect to gain to those who expect to lose. If these transfers are controversial because they are too obvious or perceived as too unfair, politicians will camouflage them by linking them to popular public goods or by tying them to broad distributional objectives. These actions, however, as described below can lower the overall effectiveness of the political response to the externality.

When the aggregate costs and benefits of addressing an externality as well as their distributions across constituencies are uncertain, the crafting of side payments by politicians is difficult. There are likely to be disputes over the size, nature, and direction of compensation, and these disputes increase political risk and reduce the expected benefits to politicians of taking action.

As a result, when an environmental or natural resource externality is first observed politicians select policies that lower uncertainty and raise the expected net gains for influential groups of addressing it. These include postponing any action; encouraging research in information about the externality; promoting new technology that lowers costs; investing in resource stock enhancement, including restricting access by non citizens or other politically-weak groups; and adopting standardized regulations that are supposed to reduce the externality while appearing to be neutral and not changing the existing distribution of wealth and political power.

At this time, the early assignment of formal property rights to confront the externality entails too many hazards for politicians. They entail a direct and transparent assignment of benefits and costs that may not be broadly supported. Further, if it is a natural resource problem, like over fishing, property rights may lead to the rebound of the stock and greater wealth, status, and political influence to

owners. This will upset *status quo* rankings, and bring opposition. Indeed, constituencies that benefit from the *status quo* are apt to be disadvantaged by a new rights system. Inefficiencies generate their own constituencies for keeping things as they are. These groups will want any new rights system to incorporate their historic benefits or compensate them for losing them. Otherwise they will oppose the change. Some examples from fisheries, air pollution control, and water illustrate the political economy issues at hand in the assignment of property rights.

#### 4. A FIRST CASE OF ANALYSIS: FISHERIES

As noted above, for fisheries the response to over harvest has not been the preemptive adoption of property rights. Rather it has been the adoption of generalized season, vessel, and equipment regulations. With diverse interests, ranging from inshore and offshore fishers, large and small boat owners, fishers from different locales, sports and commercial fishers, processors, equipment sellers, labor groups, and regulatory officials, there often can be early agreement only on standardized rules and not on the more difficult task of assigning and monitoring individual property rights. These regulations, however, generally are not successful. Witness the continued decline in many fish stocks (Myers and Worm, 2003; Devine et al. 2006).

Eventually, as fish stocks plummet and the problem of overfishing becomes a crisis, then there is a turn to property rights regimes, such as ITQs. Under ITQs, regulators set the total annual allowable catch based on assembled biological information, anticipated environmental conditions, and expected harvest impacts. Each authorized fisher or vessel is granted a share in the annual catch based on the allocation rule, and the quotas generally can be traded, although with varying restrictions.

A key political economy issue is the method by which property rights are assigned. The most common allocation rule is first-possession or historical catch. Past investment in vessels and equipment also often is taken into account. Economists often call for the use of auctions as a means of eliciting revenue for the auctioneer (usually, the state) and for generating information on the value of the fishery through auction bids. However, auctions transfer funds from fishing firms that could be used to finance investment; encourage rent seeking among politicians and interest groups in seeking access to auction-generated funds; and they do not reward the information developed over time by incumbent fishers (Anderson *et al.*, 2009). Having the support and insights of incumbents in determining annual harvest totals can be a major advantage in successful ITQ systems.

The benefit of ITQ's, as with all property rights, is that they better align the harvest practices of fishers with practices that protect or enhance the stock. The

value of their quotas, which often can be major sources of wealth, depends upon the long-term health of the stock. Hence, there are incentives for self and group monitoring of compliance, and importantly, ITQ's, as a property right, are the basis for further bargaining among fishers to reduce fishing pressure.

Political economy issues, however, arise, also as with all property rights. The advantages of ITQs depend upon the strength of the property right, but this varies across countries. ITQ's in the U.S. and Canada are clearly specified as being *use privileges only* and not property rights, revocable without compensation. By contrast in Iceland, New Zealand, and Australia, ITQ's are considered to be more secure property rights.

These differences in the nature of property rights follow from controversies over allocation and how some parties might fare under an unrestricted market system. Distribution concerns have resulted in various constraints on ITQ's, and they are most severe in countries where fishing is a tiny portion of GNP, such as the U.S. In the U.S. with its relatively few ITQ systems, there has been an effort to preserve the relative position of regions, communities, fleets, capital, and crew by limiting the assignment and trading of ITQ's. Some U.S. ITQs are reserved for community development and not granted to individuals. There also are formal limits on the size of individual quota holdings and their transferability. In the Alaska halibut fishery, for example, only transfers from larger to smaller vessel classes are permitted, and no individual is allowed to own more than 0.5 percent of the total quota (Doyle *et al.*, 2006). There are other controls on share consolidation to limit holdings and to maintain a targeted number of vessels in the halibut fleet. Further, in 1996 the Magnuson Act placed a four-year moratorium on the adoption of further ITQ's in U.S. fisheries.

## 5. A SECOND CASE OF ANALYSIS: AIR POLLUTION

As described above, we have seen that in air pollution control, property rights come late. The problem of smog became apparent in the 1940s and 50s, especially in Los Angeles, which earlier had been viewed as an environmental paradise. By the early post WWII period, however, smoke was clogging the LA basin. Krier and Ursin (1977) describe the sluggish pace of government response to air pollution in Southern California (Krier, 1994).

It took approximately 35 years before regulations were enacted to directly attack the major source of the problem—auto exhaust. The primary regulatory response was not property rights, however, but technological adjustments to reduce emissions as a condition for licensing new vehicles and some used cars, and the establishment of uniform emissions standards for stationary sources. Even the Federal Clean Air Acts of 1963, 1967, and 1970, relied on regulation not a cap and

trade regime. Air quality targets generally were not met in California and elsewhere in the country.

It was not until 1994, some 50 years after the first concerns about smog, that California implemented a property rights approach to reduce NO<sub>x</sub> and SO<sub>2</sub>, the major sources of smog, in the Los Angeles Basin with the Regional Clean Air Incentives Market, RECLAIM. Unfortunately, RECLAIM applied only to certain stationary facilities—utilities, refineries, and manufacturing plants and not motor vehicles due to political opposition.

There is a similar pattern of delay in the assignment of property rights for national efforts to lower SO<sub>2</sub> pollution. In the 1960s there was growing awareness of the damage caused to lakes and forests from acid rain downwind from power plants that released SO<sub>2</sub> into the atmosphere. The 1970 and 1977 Clean Air Act Amendments set national maximum concentrations of SO<sub>2</sub> and the states were charged with meeting those standards. The regulations specified the equipment to be used, such as types of scrubbers, even if the utility used low-sulfur coal, and setting new source performance standards that applied to new plants (Joskow and Schmalensee, 1998).

Nevertheless, acid rain continued to be a problem. Existing uniform rules generally did not recognize that the costs of controlling emissions varied across and within firms. Since traditional regulation gave advantages to old plants and technology, there were few incentives for those firms to develop new technologies to reduce emissions at lower cost. Newer units were forced to adopt the technology specified by the regulator, rather than that which might have been more cost effective.

Finally, Title IV of the 1990 Clean Air Act Amendments authorized the use of tradable emission permits so that electric utilities could trade allowances to emit SO<sub>2</sub> while reducing total allowed emissions by approximately 50 percent. This was the first large-scale, long-term U.S. environmental program to rely on property rights. Under the permit system, an annual targeted level of emissions was set and prorated across permit holders, who were allowed to discharge a specified amount of the gasses. Emission permits were allocated to utilities through first-possession rules, based on past electricity production, heat generation, fuel use or emissions, free of charge, and hence grandfathered in existing utilities (Joskow and Schmalensee, 1998, p. 38).

Adoption of tradable emission permits has been viewed as a successful means of lowering overall air pollution with a cost savings of over \$1 billion relative to what might have been possible under previous regulation. But as with similarly successful ITQ's in fisheries, tradable emission permits were not adopted until existing regulation proved both to be too costly and too ineffective in mitigating externality. Moreover, by that time the benefits and costs of adopting property rights were sufficiently clear to allow side payments in the allocation property rights to address distributional demands.



Utilities in certain states such as Illinois, Indiana, and Ohio were allocated an additional 200,000 allowances annually during the first phase of regulation. Those states had important coal interests and all had ranking members or chairs of key Congressional subcommittees (Ellerman, 2000; Joskow and Schmalensee, 1998, p. 42). These preferential quotas were adopted, in part, to make the new property rights program politically viable for incumbent firms, and to encourage investment in new and renewable energy technology by newer utilities that had more limited quotas.

## 6. A THIRD CASE OF ANALYSIS: FRESH WATER

Increasingly, the supply of fresh water has become of concern, especially in semi arid regions, such as the western U.S. and Australia where demands are stretching available supplies. In the western U.S. water is dominantly used in agriculture, 60 percent or more in most states. Water is not owned technically, but rather individuals have *use* rights to it, under the doctrine of prior appropriation. Under this doctrine, individuals have the right to divert surface water or withdraw groundwater based on the timing of their claim. Those parties whose claims came later, have lower priority. In drought years, those with the highest priority get their water first, but it can be traded.

Short term trades among farmers are easy and routine. But longer term trades, especially those that are out of a water basin, such as from farmers to urban consumers, require state regulatory approval. States vary in their permissiveness of water trading. Further, there are many parties involved in any trading decision—besides the rights holder, irrigation district officials, government water supply agency officials, such as the Bureau of Reclamation, as well as any other parties who can assert that a trade would harm them. This harm can happen for example, because not all water that is diverted is consumed. As much as 50 percent might percolate back to the stream for subsequent use by a lower priority water rights holder downstream. Transfers of the full amount diverted out of the river basin would mean that it would not be available for sequential use. There are important measurement issues in any regulatory decision.

An important issue is that most water rights have not been quantified. In the past when water was cheap, it did not matter. It now does. But opposition from those who have historically used more than their rights authorize, as well as resistance from groups who believe that water is a “public resource” has meant that many water rights remain undefined. The process to do so is called adjudication, and it can be so contentious that it might take 20 years or more to adjudicate rights in some places.

For all of these reasons, in the U.S. there is less trading of water than one might expect—possibly as low as 2 % of annual water consumption in the West. For this

reason, prices for similar water in adjacent uses often can be remarkably different--\$27 per acre foot (326,000 gallons) for water cotton farming versus from \$479 to \$3,267 per acre-foot for water from the same well for urban use in Tucson, Arizona for example (Brewer *et al.*, 2008).

In contrast, in Australia, water rights typically are firmer. This may make sense because Australia on the whole is much drier than the western U.S. Drought crises may swamp distributional concerns that are so prevalent in the U.S. Water rights in Australia are similar to cap and trade in emission permits. Rights holders have a share of the annual amount allowed for consumption and these shares can be traded. As much as 50 % of water diverted for consumption is traded, a sharp difference from the U.S. Given the political contention over water rights in the western U.S. more severe droughts may be necessary before further refinements in property rights and more market trading take place.

## 7. CONCLUDING REMARKS

The definition of an externality is that third parties are affected from decisions made by individuals who consider only their private costs and benefits and not broader impacts. The solution is to define property rights more completely so that social benefits and costs of decisions coincide with private benefits and costs. But property rights tend to come late. Why is this?

There are resource costs in defining property rights. In some cases "it costs too much to put the matter right" as Coase argued in 1960 (p. 39). This may apply for example to highly migratory wild ocean fish that cross many jurisdictions. The other, and perhaps greater problem, lies in the political economy of property rights. Property rights are ownership and the assignment of ownership raises distributional concerns. Politicians are keenly sensitive to this issue. Constituent groups are very aware that any assignment of property rights to address environmental and natural resource externalities will be an assignment of wealth as well as political and social standing. Accordingly, they compete for favorable distributions and this political process complicates and delays the use of property rights in environmental and natural resource policy.

As shown in the empirical examples provided here, it is generally the case that only when problems become crises can these distributional issues be overcome with the clearer assignment of property rights. A crisis clarifies the size of the problem and the benefits of addressing it. Until that time, politicians have incentives for delay and for subsequent adoption of policies that involve the least cost and minimize distributive effects. This suggests that despite their theoretic appeal, property rights often are the solution of last resort and not the first response to the tragedy of the commons.

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