International organization and
the theory of property rights

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Introduction

A specter haunts the world's bureaucrats: the specter of small government. Skepticism about the expanding role of government in most industrial nations has encouraged political economists to go back to some fundamental questions about what we really need government to do for us, whether it be for reasons of efficiency or equity. The aim of this paper is to suggest that some of the theories attacking "big" government are equally applicable in the realm of international organization (IO).

The IO field has attracted scholars of widely differing intellectual perspectives, and yet a survey of the literature does reveal some characteristics which one can attribute to the "ideal type" IO theorist. The traditional, and still dominant, IO view of the world is that we should aspire to create supranational, federal structures which will directly allocate the world's resources. The classic texts all follow this theme.\(^1\) IO theorists differ in their opinions as to the practicality of different mechanisms for achieving world government. Yet federalists, functionalists, neofunctionalists, and pluralists all agree as to the inherent desirability of world government. The recent emphasis on "interdependence" in the IO literature has supported the traditional

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policy prescription. International interdependence, it is argued, results in a loss of control of policy instruments by domestic governments and hence the politicization of most international transactions.\textsuperscript{1} IO theory has also drawn on the public choice literature, particularly the theory of public goods; though it will be argued that this approach offers a much more limited role for IO than is believed by its advocates. It would not be an unfair caricature to infer from the modern IO literature a clear prescription that the world needs more supranational authority to manage interdependence, public goods, and international externalities in general. Brown and Fabian, for example, modestly call for "a comprehensive ocean authority; an outer space projects agency; a global weather and climate organization; and an international scientific commission on global resources and ecologies."

It is the theme of this paper that such aspirations are not only impractical, but also undesirable. This paper sets out to outline the property rights theory behind the argument, suggest how these criteria for providing efficient non-governmental solutions to problems have been incorporated into international law, and offer further IO applications in areas not traditionally considered by public choice theory. It will then deal with the international implications of the problems usually raised in discussions of property rights theory, and finally draw together the range of policy choices implied by the PR approach.

Externalities and property rights

\textit{Market failure and the role of government}

Many political scientists tend to take for granted the efficiency, if not the legitimacy, of government intervention in market transactions. Most, therefore, simply classify policy according to the scope and aims of governments. Economists are more interested in examining the conditions under which it may be efficient for governments to directly affect the allocation of resources in society. A major focus of this interest has been on the role of governments in correcting market failures or, more particularly, externalities.\textsuperscript{4} For most economists, market failure and equity are the only rationales for government intervention.

Externalities occur where there is a discrepancy between private and social marginal product or cost. They involve unavoidable and unintended side effects directly on the production of goods and services or the enjoyment derived from their consumption. The existence of technical or ownership externalities has provided a powerful economic rationale for the expansion of the role of


government on purely efficiency grounds, even without considering equity arguments. These are externalities which we normally refer to as spillover effects (e.g., the polluting factory, the noisy freeway, the view-obstructing high-rise apartment block). The rationale for government intervention in these cases is to force the actors to internalize the externality; for example, by taxing the polluting factory in order to reduce production to the point where private marginal cost plus social damage (i.e., social marginal cost) is equal to the competitive price of its product.

The classic exposition of the externality correcting role of government is that of Pigou, who suggested that a major role for government should be to effect an efficient allocation of resources by inducing private actors to internalize externalities (e.g., by taxing the polluter), and in particular, by making producers of externalities liable for harmful effects. Prior to the 1960s the only serious economic theory limits to this argument related to the theory of the second best (viz., that eliminating one, or some, but not all externalities will not necessarily make society better off) and the existence of inframarginal (i.e., Pareto irrelevant) externalities.  

The Coase theorem

Since 1960 an area of social theory bridging the fields of law, political science and economics and known as "public choice- property rights" has evolved. Following a seminal article by Coase, the property rights (PR) branch of the school has been elaborated in various ways by, among others, Buchanan, Demsetz, Furubotn and Pejovich, Goldberg and Ostrom. The PR school provides an argument that the Pigovian rationale for government directly allocating resources is unnecessary and inequitable. First, Coase shows that, in the absence of government intervention, a market system will lead to the internalization of externalities. Where transaction costs are zero, the ultimate allocation of resources will be the same regardless of which party has a property right in creating or preventing the externality. Second, he argues


that to presume that the producer of an externality should automatically be liable cannot be justified on grounds of social utility and appears to him to be an arbitrarily inequitable rule. Thus, Coase attacks the two basic Pigovian arguments for government intervention—viz., that the government should automatically make producers of externalities liable for their effects, and that it should intervene to force the producer to internalize the externality.

The Coase argument is illustrated in Figure 1. Consider the case of liability for pollution control. AA represents the marginal cost of control to the polluter; BB the marginal value to the pollutee. If the polluter has a property right in pollution, the initial situation will be one of zero pollution control. Since the marginal value of control is greater than the marginal cost, the pollutee will pay the polluter up to the point where the polluter would require payment in excess of the marginal value of abatement to the pollutee (i.e., X percent). If the property right is vested in the pollutee, bargaining commences at 100 percent pollution control, but the equilibrium remains at X percent. Hence Coase's theorem, that the allocation of resources is invariant over differing assignments of property rights.

Coase also dealt with the more realistic case where transaction costs (detection, information, communication, negotiation, monitoring, etc.) are positive. In this case, an allocation of resources closer to the social optimum will be achieved if the party with the lower transaction costs is assigned liability. In Figure 1, the lines AA' and BB' represent marginal values adjusted for transaction costs. The marginal cost saving to the polluter is reduced
when he must pay the transaction cost of inducing the pollutee to relinquish his property right in pollution freedom, and the marginal value of pollution freedom to the pollutee is reduced where the assignment of property rights is reversed. The new equilibrium is \( X'' \) (where pollutee has the property right) or \( X' \) (where polluter has the property right). The net welfare gain is largest where the pollutee has the property right, since this party has the higher marginal transaction costs (i.e., \((X'' - X) < (X - X')\)). The welfare loss at equilibria \( X' \) and \( X'' \) is determined by the size of the shaded triangles Q and R, which (in the case of continuous functions) are a result of marginal transaction costs at \( X' \) and \( X'' \). The loss, for example, in being at \( X'' \) rather than \( X \) is the marginal cost increase to the polluter, less the marginal value gain to the pollutee (i.e., AA minus BB over the range \( X \) to \( X'' \)). The critical factor is not who actually pays the transaction cost, but whether the welfare loss at \( X' \) differs from that at \( X'' \). This loss is determined by the marginal transaction cost at \( X' \) and \( X'' \), regardless of who actually pays the transaction cost. It is usually assumed for simplicity that the possessor of the property right does not pay the transaction cost.

Anglo-Saxon common law has, Coase points out, long recognized these principles in judgments assigning property rights. It only remains, he suggests, for economists to recognize that the most government intervention that is needed to correct technical externalities is to assign property rights to the party with higher transaction costs. If correct, the message of the PR school should be doubly emphasized to political scientists, for many of whom even the Pigovian role for government would seem too little. The relevance of the PR approach to the IO literature should be obvious: do the ever increasing number of international externalities require supranational governments to directly allocate resources? In its more severe forms, the traditional IO approach goes far beyond even the Pigovian prescription for governmental regulation of markets, advocating complete government control of externality creating activities. Consider, for example, recent demands for international governmental ownership and control of the resources of the seabed.

The PR school has pushed out in a number of directions, several of which are of particular relevance to IO theory, including speculation on the origin of property rights, the distinction between property rights and liability rules and the institutional implications of Coase’s conclusions. Demsetz has suggested reasons why property rights have evolved out of communal rights. Under conditions of unlimited resources, there is no need for anything but unrestricted communal ownership, since there are no significant externalities. As scarcities develop and externalities become more severe (e.g., there is no incentive for any one person to limit his consumption of communal resources), it becomes more efficient to develop a system of market-regulated property rights. This efficiency derives partly from the externality associated with the

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overuse of resources (i.e., you will not overuse resources to which you have a property right) and the ease of bilateral bargaining over unanimity with regard to the remaining externalities (i.e., the kinds of externalities to which Coase referred). Demsetz cites, as an example, the development of property rights among the Montagne Indians of Quebec as a result of the fur trade in the eighteenth century.¹

There are some salient applications of Demsetz's point to modern day communal ownership problems at an international level. The resources of the sea, for example, have long been considered as a global communal asset. As these resources have become more subject to scarcity, property rights have been asserted. This is not, by itself, a surprising observation. What is interesting, however, is that Demsetz's approach would suggest that such a development is the most efficient way of internalizing the externalities associated with resource use. This places the PR school at a considerable distance from the mainstream IO school which argues that the sea must be "owned" by a centralized, global institution (i.e., a more tightly controlled form of communal ownership).

Buchanan and others extended PR theory into the field of institutional structures, and in doing so provided an additional reason (though not one of which political scientists have been entirely unaware!) against governmental correction of externalities. As Buchanan points out, if government policy is determined by a majority, that majority is just as likely to impose externalities as it is to correct them. More recently, he has qualified his argument, suggesting that efficient outcomes will still ensue if there are no transaction costs to making side payments (i.e., the minority will pay the majority in the same way that pollutee pays polluter in the Coase example). This also holds true if society is ruled by a dictator.² However, since transaction costs are rarely zero, it is Buchanan's earlier conclusion which is of most relevance to IO—viz., that the IO is just as likely to impose externalities as to correct them.

Property rights and liability rules

Calabressi and Melamed have extended Coase's analysis in their typology of different methods of protecting entitlements: property rights (entitlements which must be purchased in voluntary transactions), liability rules (a party wishing to destroy an entitlement must pay an objectively determined value for it), and inalienable entitlements (rights which cannot be subject to market transactions). The importance of the article is in the attention they focus on the type of common contingencies in municipal tort and property law where

the specification of property rights is insufficient to ensure socially optimal outcomes due to the objective structure of the situation or to problems of moral hazard.\(^\text{10}\)

Liability rules may be adopted where transaction costs are high or of uncertain magnitude, where strategic behavior (e.g., extortion, non-revelation of preferences, free-riding) might constrain socially optimal outcomes, where externalities involve accidents, and to meet equity or distributional goals. Consumers are protected by product liability rules for transaction cost reasons. Pedestrians are protected from vehicle drivers by liability rules because injury to them is normally accidental (i.e., we cannot buy in advance the right to run down a specific pedestrian). Home owners are protected from state land procurement policies by liability rules (the rule of eminent domain) to preclude strategic behavior (e.g., if my house is in the path of a freeway I would demand a price far in excess of its market value). Public facilities of benefit to the whole community might be financed by way of a liability rule (e.g., a compulsory tax levy) to prevent free-riding. Liability rules in the above examples might also be justified on equity grounds. Inalienable rights serve similar purposes, though are more often used to protect equity goals involving basic norms and values (e.g., we cannot sell our children into slavery).

Liability rules involve a higher degree of state intervention than do property or inalienable rights, since the state must determine the value of an entitlement in the former. Again there are obvious parallels in the IO sphere. We need, for example, liability rules for oil tanker spills and compensation for nationalization of foreign assets. More important is that even liability rules involve less government control than is often advocated by IO scholars and practitioners. One may arrange mechanisms of resource allocation along a continuum, ranging from unrestrained communal ownership, to property rights, to liability rules and finally to direct governmental allocation of resources. Even admitting the need for state determination of liability rules, the PR school still falls far short of the latter end of the continuum where one finds the major part of the IO school.

### Externalities and the development of international law

As Coase pointed out that municipal tort law has long recognized the utility of market solutions to externalities, it may further be shown that international law has also developed in such a way as to obviate the kind of supranational powers envisaged by the IO school. This development is most salient in international environmental law where the delimitation of an ex-

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ternality is clearest. More generally, there exist multiple legal remedies under European and North American law for the pursuit of tort actions. Many of these remedies are obtainable precisely in those areas where the IO school argues that we most need a supranational regime (e.g., uses of the sea). The development of international environmental law has shown that insofar as nations can agree upon efficient entitlement rules (liabilities or property rights) that the IO approach is unnecessary, arbitrary, and inefficient.

During the past two centuries international tort law has developed concepts of entitlement which appear to reflect the basic principles of the Coase theorem. International environmental law has developed from doctrines of absolute sovereignty (i.e., no limits on the use of communal resources) to a doctrine of strict liability (i.e., liability on the creators of externalities), and finally to principles of reasonable apportionment of liability.

Prior to the twentieth century the doctrine of absolute sovereignty dominated most international environmental issues. The most explicit statement of this doctrine was that of U.S. Attorney General Harmon in 1895, who declared that “the rules, principles and precedents of international law impose no liability or obligation upon the U.S.” The case in question was a Mexican claim for damages due to diversion of the waters of the Rio Grande. The doctrine of strict or absolute liability for externalities imposed on another state was established by a series of cases in the first half of the twentieth century. The Trail Smelter case (1935) established the liability of a Canadian iron ore smelter for damages to U.S. farmers. The Corfu Channel decision (1949) assigned liability to Albania for damage to British warships in Albanian waters. Recent development of international law has focused on criteria of equitable apportionment. The Lake Lanoux case (1960) enjoined states involved in creating externalities to “take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests.”

The evolution of international externality law illustrates the ability of states operating in a market exchange environment to develop a system of property rights and liability rules consistent with global welfare, in the absence of any overarching supranational IO directly intervening to force states to internalize the effects of externalities. There exist today legal mechanisms for dealing with marine, freshwater, air, space, and radioactivity externalities. Hence, the development of international environmental law illustrates the point made by Coase with regard to municipal law: recognized rules regarding

property rights and liability rules may not require direct governmental intervention in order to achieve an optimal allocation of resources.

A large number of treaties have, since the nineteenth century, determined property rights with regard to inland rivers and boundary waters. The high seas are covered by agreed liability rules for pollution and property rights regarding national regulation of territorial waters. The Amoco Cadiz oil spill (1978), for example, has invoked calls for direct supranational IO management, despite the fact that international tort law has shown itself well capable of adjusting itself to the risks associated with large oil tankers (e.g., by recent moves to increase liability limits on oil spills). Similar conventions determine liabilities regarding nuclear ships and aircraft. There even exists a Convention on International Liability for Damage Caused by Space Objects, article II which states that “A launching state shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.”

This brief survey of international law should serve to make it clear that, despite the difficulties in developing a workable system of market regulated entitlements in international externalities, such rules are not inherently any more unfeasible than in municipal law. While it is true that states might be more concerned with position and relative welfare than with absolute pecuniary gain, they will still have a long-term interest in preserving a working system of international tort and property law. The application of PR theory to international externalities need not assume that states are interested in global rather than national welfare, but only that they see an interest in developing a stable settlement procedure for internalizing externalities.

Applications of PR theory beyond conventional tort law

The foregoing argument may appear to be unfair to the supranationalists in the IO school, since they reserve their greatest efforts in the call for world government in areas considered to be more highly politicized (e.g., nuclear proliferation, tariff wars, drug trafficking, refugee settlement and multinational corporations). The following section will suggest that in some areas the existing situation is already globally efficient, and that in others efficient solutions could be reached by clearer delineations of property rights and liabilities. This is not to say that IOs may not play a useful role. On the contrary, there are a large number of IOs performing important information-gathering tasks.

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What PR theory does suggest is that their role might be limited to the providing of information and a forum for agreements on entitlements.

The contemporary literature on international politics emphasizes the complexity of issues. Hence, the critical need for efficient information processing and the structuring of policy issues in a way which facilitates resolution. The supranational IO approach, in attempting to aggregate and centralize these functions, inhibits issue resolution under conditions of complex interdependence. The PR approach, emphasizing bilateral market transactions, focuses on the agreement on rules which can disaggregate complex issues.

The operative question in the PR approach is: upon whom should property rights or liability be conferred, in order to achieve socially efficient solutions. PR theory suggests that, ceteris paribus, entitlements should be vested in the party with the higher marginal transaction costs. The determination of the absolute pecuniary value of transaction costs may be difficult in many areas; yet it may not be hard to estimate relative transaction costs. The uncertainties in such calculations are no more intractable in international than in municipal law, which, as Coase points out, has been able to develop appropriate criteria. Considering some of the more contentious issues in international politics there appear to be some areas where PR criteria are already well established.

International finance

The history of the international monetary system since 1945 has been a history of attempts to impose an IO solution on market forces. The breakdown of fixed exchange rates in 1971 has forced governments toward solutions more consistent with PR criteria. Where exchange rate movements are constrained, as in the European Monetary System, rules have been established to identify liability to intervene to keep currencies within the agreed band width. Under the old "snake" system of exchange rate management, strong currencies pulled the snake upward, forcing weak currency countries to intervene in the foreign exchange markets. Unless these small or weak currency countries had a zero marginal valuation on having to adjust macroeconomic policies or use foreign exchange reserves, the system tended to produce a suboptimal corner solution (viz., small or weak states being forced to absorb the entire adjustment cost of maintaining the snake). Drawing an analogy with the pollution case in Figure 1 (i.e., the small country as the polluter, the large country as the polluter and the 0 to 100 percent on the x-axis measuring the degree of large country foreign exchange market intervention), the optimal amount of large power absorption of adjustment costs (presumably more than 0 percent) was not being attained. This was perhaps due to the transaction cost to the smaller powers of bribing the large powers to accept a more interventionist role. The new EMS has attempted to distribute intervention liabilities so as to put more of the burden onto strong currency members. The liability rule
approach was adopted in this case not only because of transaction costs, but also to meet demands for equity and limitations on strategic behavior, such as competitive exchange rate practices. In a wider context, the International Monetary Fund attempts to monitor rules for orderly exchange rate movements, having failed in its earlier role as a supranational IO directly controlling exchange rate changes.

Another major problem in the system is the offshore currency market, principally the $500 billion Eurocurrency market, which imposes externalities on governments via its unintended effects on money stocks and exchange rates. Since individual international banks are likely to have more information about their activities than the governments of the many countries in which they operate, they should bear liability for externalities. National laws regulating financial transfers have long taken this for granted (though not for the reasons postulated by PR theory!).

International trade

The General Agreement on Tariffs and Trade (GATT) has long operated by rules consistent with PR principles. The Most Favored Nation clause is a recognition that transaction costs would be very high in the case of a large number of countries attempting to induce a country with discriminatory tariffs to reduce them. Hence, GATT confers a prohibitive liability on geographically discriminatory tariffs, though the rule breaks down in the case of customs unions or free trade areas. Country A may discriminate against B by offering zero tariffs to C if A forms a customs union or free trade area with C. Principles of liability for externalities created by preferential trading blocs have yet to be established.

Anti-dumping regulations, at least in the United States, are also broadly consistent with PR principles. The U.S. Trade Act of 1974 defines liability rules for dumping: the U.S. International Trade Commission must show that increased imports have been a substantial cause of serious injury to a U.S. industry. Put in the terms of PR theory, the United States pays the transaction costs but places liability on the dumper (i.e., the dumper must “pay” in the form of tariffs or quotas). The dumper’s detection costs are likely to be less (since it knows where it is dumping, the U.S. government does not), though bargaining and enforcement costs should be less for the government. Relative transaction costs do not provide a clear criterion for an efficient assignment of entitlements. The uncertainty in assessing the relative magnitude of transaction costs suggests the appropriateness of a liability rule. In this case, however, since transaction costs may be nearly equal, and since the United States automatically pays all transaction costs (i.e., its choice of an optimal supply of dumping is independent of transaction costs), the Coase theorem suggests that it does not matter who has liability. Both parties then revert to operating on
their original marginal value and cost curves, not adjusted for transaction costs, and the United States treats transaction costs as an "overhead" variable cost of having an anti-dumping policy.

The application of PR theory to tariff policy needs to be treated with care, since an ordinary case of injury from import competition need not constitute justification for an anti-dumping rule based on externality criteria. The decline of an industry losing its comparative advantage to foreign competitors does not involve any dead weight loss, and hence there is no externality. It is only in the case of genuinely predatory dumping that the liability rule could be justified purely in terms of PR theory. In such a case, the foreign dumper lowers the price of its product only until the domestic competitors are eliminated, and then raises its price so as to extract monopoly rents, thereby creating the dead weight loss normally associated with monopoly.

*Multinational Corporations (MNCs)*

Certain effects of MNCs upon host countries may be thought of as positive (e.g., technological spinoff) or negative (e.g., political subversion, dual economy) externalities. The transaction costs, on an inter-country basis, of correcting the negative externalities are probably less for the United States (since it has administrative economies of scale in the enforcement of global behavioral criteria on its corporations) than for host countries, who would have to act in concert to limit certain forms (e.g., transfer pricing). In some areas (e.g., illegal payments to foreign officials or politicians) the United States recognizes this rule of liability (though perhaps for the wrong reasons).

In MNC-host bargaining, transaction costs are also likely to be less for the MNC (except those in the primary and parts of the secondary sector), which can more easily shift operations to other parts of the globe (i.e., it is hard for the host country to move away). An MNC with a low level of fixed capital investment might easily shift to another country, whereas the cost to the host of detecting, monitoring, and enforcing rules on a footloose corporation may be prohibitively high. The attempts which some nations have made to regulate foreign banks may be a case in point, since the transaction cost to the bank of moving to a more congenial domicile is minimal. Thus, it may be appropriate that MNCs should "pay" host countries to tolerate negative externalities; payment in these cases consisting of taxes, exchange controls, local equity rules, expropriation risk, and other penalties imposed by host nations. However, where the MNC's fixed investment is high (e.g., consumer goods industries), it is desirable that the host country's property right be limited in some part by rules of liability (e.g., the U.S. Hickenlooper Amendment invoking sanctions against countries which expropriate U.S. assets without due compensation). Liability rules here can also be justified by the need to deter extortion. Also, because some of the negative externalities have characteristics analogous to accidents, and because liabilities may not be fully acknowledged, the Organization for Economic Cooperation and Development (OECD) and the United Na-
tions have put forward codes of conduct which home countries of the MNCs should impose on their corporations.

**Law of the sea**

Communal ownership of the sea's resources produces numerous externalities (e.g., over-fishing, pollution). The sea is often cited as an example of the problem which Hardin has called "the tragedy of the commons," where everyone has an incentive to overuse a communal resource. The typical IO solution is to call for complete governmental regulation of the uses of the sea. PR theory suggests that the establishment of property rights (e.g., expansion of territorial seas) and agreement on liability rules (e.g., for oil spills) will more efficiently lead to the internalization of these externalities. Prior to the establishment of 200 mile limits there was no incentive for countries to limit their exploitation of fishing and other resources close to other nations' shores. The only limits were loose agreements on the permissible sizes of catches in the fishing, sealing, and whaling industries. Introducing property rights internalizes externalities in a more easily enforceable manner than catch limits and forces fishing nations to pay for the externality of fishing beyond their territorial waters. Canada, Australia and New Zealand, for example, seek trade concessions in return for access to fishing areas.

More recently, the United Nations conference on the law of the sea has turned its attention to the Antarctic. Predictably, the call has been for UN control of the area as a "common heritage of mankind." Not surprisingly, the original signatories to the 1959 treaty allocating property rights in the Antarctic, have moved to both reaffirm their rights and to offer the UN some equivalent to a liability rule relating to minerals and living resources in the area.

**Drug traffic**

Countries exporting drugs inflict an externality upon the importing nations. The externality is not the consumption of drugs, per se, since consumption is voluntary and, therefore, not a true externality, but it is rather the social costs of drug-taking (crime, health costs, lower productivity, etc.). Transaction costs are clearly lower for the intelligence networks and satellite surveillance facilities of the importing countries, since all they need do is identify the source country and monitor production. Producer countries would have the far harder task of identifying market destinations and monitoring consumption. It is entirely appropriate that the United States should pay Turkey to pass laws forcing poppy farmers to produce other crops, and to pay for Mexico's marijuana spraying operations. The same argument could be extended to cigarettes and alcohol, where the property right operates in a similar fashion:

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cigarette and alcohol producers have to buy the right to impose an externality, the payment being that part of indirect taxation on consumption which is paid by the producer. These taxes partly compensate the government for higher health costs, etc.

Nuclear proliferation

The traditional IO approach of persuading countries to sign a Non-Proliferation Treaty and to be monitored by the International Atomic Energy Agency has been of questionable benefit. This may be explained in terms of the failure of the NPT to offer any sidepayment to the potential proliferator to induce it to give up its property right to acquire nuclear weapons. The Carter administration’s policy, initially put forward early in 1977, has been to buy from countries their right to plutonium technology (viz., fuel reprocessing and fast breeder technology) by assuring them of supplies of slightly enriched uranium for peaceful uses. The problem with the Carter policy seems to have been that the payment being offered did not approximate the value which other nations place on indigenous nuclear capabilities. In any case, the transaction cost criteria suggest that this is more efficient than having a large number of countries “paying” the United States for the right to develop weapons grade technology, assuming that such a reassignment of property rights existed.

The externality in the more general case is the finite risk of war imposed on the global system as a result of any one nation acquiring nuclear weapons. In terms of Figure 1, the AA curve might measure the marginal cost to the world of proliferation, the BB curve the marginal value to the proliferator and the x-axis the degree of proliferation. Should this nation pay the rest of the world for the externality it creates, or should the world pay it to remain non-nuclear? The transaction costs are likely to be prohibitively high for either party, with the exception of the previous case where the United States itself pays the transaction costs (as well as the side payment), giving the rest of the world a free good. Barring this exceptional case (and Carter’s anti-proliferation policy has had little success), global liability rules (e.g., test bans) might be the only feasible policy to avoid a no-trade situation arising out of mutually high transaction costs.

International Air Traffic Authority (IATA)

This attempt to regulate externalities with a supranational IO has failed, as the major airlines resign (e.g., Pan Am) and governments negotiate air traffic routes largely on a bilateral basis. IATA had attempted to regulate the market by way of inalienable rights (the so-called “six freedoms” involving carriage rights) and price fixing. An externality was created through the need to ensure the survival of the least efficient airlines, usually the flag carriers. The externality was the welfare loss to the air traffic consumers resulting from
a restricted output and higher prices. The market solution of having air travelers or nations with high efficiency airlines pay the low efficiency airline countries to close down their flag carriers never eventuated, for reasons of transaction cost and distributional equity (e.g., one may doubt the political feasibility of, say, the United States paying Australia to close down Qantas). The recent action of the United States in initiating the breakdown of IATA is resulting in a market bargaining situation, as nations pursue bilateral negotiations which should internalize the externalities resulting from the existence of low efficiency flag carriers.

There are other areas where PR principles are not explicitly recognized, but may usefully be applied:

Refugees

Countries like Vietnam, which deliberately encourage or force the emigration of politically undesirable residents, are imposing an externality on the rest of the world. The problem of coordination among potential host governments should alone be enough to make the transaction costs significantly higher if, say, the rest of the world were to pay Vietnam to reduce its forced emigration. Relative transaction costs would be less if Vietnam were to "buy," through bilateral negotiations, places for emigrants. It is indirectly doing this through the loss of World Bank financial aid and delayed diplomatic recognition by aid-giving nations such as the United States.

New International Economic Order (NIEO)

The range of trade and development issues on which the less developed countries (LDCs) seek redress involve, in the broadest sense, "imperialism" as an externality: the "dependencia" phenomenon, development aid, control of the world shipping market, tariffs, external debt, and commodity price fluctuations. All of the phenomena which allegedly constitute imperialism may be considered externalities insofar as they constitute unavoidable and unintended side effects imposed on the LDCs by the developed nations in the pursuit of their own national goals. As the polluter harms the pollutee, so the industrial policies of the developed country (e.g., tariff protection of a declining textile industry) may have unintended harmful side effects upon the LDC. The NIEO may be seen as an attempt by the LDCs to seek recognition of the property right and compensatory payments. Their motive is equity, but PR theory suggests that their claims could equally be made on efficiency grounds.

One reason why the LDCs have had so little success in their demands is that their policy includes seeking a supranational IO solution to the problem, via the UN Conference on Trade and Development (UNCTAD). Results of negotiations seem to be more encouraging when issues are broken down into more manageable components (e.g., EEC aid to former colonies, US tariff
preferences for developing countries). In these cases, the transaction costs, as well as the marginal values of the issues, are clearer and more negotiable. On most of these individual questions, the transaction costs are less for a developed country negotiating with a group of LDCs, and payment to the latter is the frequent and appropriate result. Consolidating their interests in UNCTAD may reduce the developing countries' transaction costs, but also obscures assessment of the component issues, making negotiation and payment more difficult. In addition, UNCTAD raises the question that if transaction costs are thereby made less for LDCs, their claim to an entitlement may have a weaker justification on efficiency grounds.

**Weather modification**

The IO approach is to recommend global control by the World Meteorological Organization (WMO) or by some similar supranational institution. PR theory would suggest that applying the existing body of international environmental law to this area would produce better results.  

**Some difficulties with the PR approach**

**Income effects**

Coase's conclusion that the allocation of resources will be invariant over differing assignments of property rights, with zero transactions costs, assumes that there are no significant income effects changing the transactors' marginal preference functions.  If differing assignments of property rights affect a transactor's wealth, they will also affect the amount he is willing to pay for the internalization of the externality. Consider the case where country B causes pollution which seriously affects the wealth of country A. If a property right to pollute is assigned to B, A will be willing to pay $X for B to stop the polluting activity. However, if A has a property right in not being subjected to pollution, it might require $(X + Y)$ in order to tolerate pollution. This is because the property right raises A's wealth enough to make it value non-pollution more highly than it would if B had the property right (i.e., A's marginal utility for income decreases as income rises). In this case, the assignment of property rights affects the allocation of resources under zero transaction costs, and adds a further distortion where transaction costs are present. In terms of Figure 1, the marginal value of pollution freedom is higher where the starting point is zero pollution and the marginal cost of pollution control is higher where the starting point is freedom to pollute.

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Income effects are not a serious theoretical problem. The optimal assignment of property rights can be adjusted for income effects, in the same way as it is adjusted for transaction costs. In any case, few of the types of externalities discussed in this paper would be of sufficient magnitude to significantly affect the wealth of a nation. Those externalities which are of such importance (e.g., an externality imposed by a large country upon a small country) are likely to be resolved by means other than agreement on property rights. Furthermore, wealth effects will frequently be offset by adjustments in market prices.  

_Ethics and equity_

Coase's original approach dismissed the equity problem on the grounds that there is no greater ethical imperative to give property rights to an externality receptor than to the creator. PR theorists are not generally interested in how property rights have come to be allocated, or in distributional justice, but only in whether or not the existing distribution of entitlements is efficient. However, PR theory does not, as Furniss asserts, assume the legitimacy of the existing distribution of property rights. Equity can be taken into account in assigning property rights, and where transaction costs are zero there is no conflict between efficiency and equity. The usual method of introducing equity is by means of liability rules, already an accepted practice in international law. The statute of the International Court of Justice, for example, cites poverty of the tortfeasor as grounds for reducing damages. A Rawlsian approach might offer some minimal standards of wealth that would determine liability rules for international externalities. The recent cancellation of the official external debt of some of the poorest LDCs appears to be an implicit application of this principle. In the area of international pollution control, certain LDCs (such as Brazil) have argued that they should have a greater right to pollute the globe by virtue of being less developed.

_Issue linkage_

Keohane and Nye hypothesize that complex interdependence will lead small powers to attempt to compensate for weakness by making unsuccessful attempts to link together issue areas so as to achieve results closer to their preferred outcome (e.g., Australia's attempt to link EEC agricultural tariffs and Australian uranium sales). Empirically, one can explain the prevalence of

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linkage among weaker powers by the observation that weak states are often forced to accept liability for correcting externalities and have higher transaction costs vis-à-vis strong states; hence, they have an incentive to alter their transaction costs or the other party’s marginal valuations.

The effect of linkage is to reduce the marginal value of the externality to one linker (since he is getting a “free” gain on another issue) and to raise the marginal value to the other (since he must gain on this issue to compensate for taking a loss on another issue). The linkage must result in a Pareto optimal trade (i.e., one linker gains more on the current issue than he loses on the concessionary issue, and vice-versa for the other). The result is to shift the outcome further toward that which would exist initially with the linker’s preferred assignment of property rights.

Linkage may also be examined in terms of logrolling (or vote trading, when it occurs in real time) where there are more than two parties. The literature in this area suggests that logrolling may lead to Pareto optimal trades and improve on bilateral Coasian transactions. Problems occur with cyclical majorities and costs imposed on nondomining coalitions. However, this literature does not discuss multiparty linkage in the context of positive transaction costs and so is of limited use in considering prescriptive rules for the optimal assignment of property rights. The assumption of zero transaction costs means that there is no optimal assignment of property rights; if welfare gains are possible from multiparty linkage, they are possible for any assignment of property rights. If linkage carries transaction costs, the optimal assignment of property rights may change for different logrolling combinations.

**Blackmail or Extortion**

Any property right may induce the party without liability to threaten to produce an externality for the purpose of extorting gains in excess of those which would be made in the ordinary course of Coasian bargaining. France might threaten to test more nuclear weapons in the Pacific unless paid not to do so by Australia. Turkey might threaten to export more opium unless paid not to do so by the United States. How does one distinguish extortion from legitimate transactions?

Demsetz suggests that there is no useful economic distinction between the two, and that extortion is merely monopoly in reverse (viz., maximizing rent by producing too much of a good rather than too little). The distinction between extortion and legitimate bargaining, he says, is a purely legalistic one. If this were the case, there would be no need to regard extortion as a problem for the Coase theorem, since the polluter and pollutee in Figure 1 are in a bilateral monopoly relationship. However, Demsetz is mistaken. As Oye has

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pointed out in another context, English common law provides an economic
definition of extortion: "One test whether there was a lawful [non-
extortionary] business interest is whether some material advantage would
come to the accused through carrying out his threat." The U.S. Model Penal
Code defines extortion more explicitly as a threat to "inflict any other harm
which would not benefit the actor." The marginal value of the externality to
the blackmailer is always equal to or less than zero. As Daly and Gertz note,
the aggregate social utility effect of extortion is zero, when compared with the
situation which would prevail under independent behavior (i.e., no extortion).
All that is achieved is a redistribution of income. Social utility is negative if
there is a transaction cost in making, executing, or resisting the threat. This
distinguishes extortion from conventional bargaining where there is an im-
provement in social utility.

In applying PR theory to international externalities there is some need to
proscribe extortionate threats. This would include blackmail where there is no
specific issue linkage (e.g., France wanting payment not to perform nuclear
tests of no benefit to it) or where linkage of no benefit to the linker is present
(e.g., ASEAN threats of trade sanctions against Australia unless Australian air
traffic policies are changed). International property rights must be limited by
the prohibition of threats to create externalities which would not otherwise
benefit the actor.

**Coercion and enforcement**

A higher propensity to deny the rule of law (euphemistically called the
principle of "self-help" in international law) and to resort to coercion is a
characteristic distinguishing international from domestic politics. Analyti-
cally, the use of force or coercion (in Dahl's sense of threatening severe losses
for noncompliance) poses the same problem as does extortion, since the coer-
cing state is usually threatening to perform an act which in itself would be of no
benefit. Without mechanisms to enforce property rights, states creating nega-
tive externalities will automatically retain property rights. Albania ignored the
ICJ judgment in the Corfu Channel case, as did France in the more recent nu-
clear test case brought by Australia before the ICJ. The United States refused
to limit nuclear testing during the 1950s on the grounds that the costs were
"reasonable," given the necessity of nuclear weapons to defend the free
world. Organs of state are, international lawyers remind us, immune from

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16 K. A. Oye, "On Blackmail and Backscratching," paper presented to the International Studies
Association (West), Los Angeles, 21 April 1977. (typewritten.) The summary of English law is that
reference to extortion may be found in Section 223.4(g), 1954.

17 G. Daly and J. F. Gertz, "Externalities, Extortion and Efficiency," *American Economic

18 A. A. D'Amato, "Legal Aspects of the French Nuclear Tests," *American Journal of Interna-
international law. Powerful states may not only deny liability but reverse it. The United States for example, can force host countries to accept liability for compensating nationalized U.S. corporations, regardless of whether such an allocation of property rights is globally optimal. Similarly, Japan has been forced to accept "voluntary" quotas on some exports to the United States.

This problem may not be as serious as it appears. An emerging feature of the current "muted bipolar" system is that resort to force is an illegitimate instrument of policy. Adding to this change in global values, norms of reciprocity make resort to force more costly, particularly when force is used to violate entitlements generally regarded as inalienable (e.g., the right to political self-determination). These norms and values reinforce the physical difficulties of actualizing military and economic coercion. As Knorr notes, "Since the utility of both military and economic power has been diminishing in the modern world, the substitution of one for the other . . . does not generally offer appreciable opportunities . . . . The present limitations besetting the actualization of military and economic national power would seem to make the cultivation of noncoercive forms of international influence more attractive. . . ."

Even where force is used, property rights are implicitly recognized, if not observed, and violators go to great lengths to assert that they are not infringing legitimate entitlements (e.g., the recent Chinese invasion of Vietnam). It would be difficult for the United States to defend nuclear tests as "reasonable" to the extent that it did in the 1950s. Thus, one might expect that instances where property rights are appropriated by force should decline for all issues save those that are still so highly politicized that force is still the only mechanism for determining outcomes. Most of the kinds of externalities considered in this paper do not involve coercion or unilateral assertion of property rights. States are more frequently waiving sovereign immunity and submitting tort actions to international tribunals. In any case, many international torts involve private parties where immunity is not at issue.

Nevertheless, the use of force or coercion is a limit to the application of PR theory. One might argue that, if a state is prepared to incur the high cost of using force, it must place such a high value on the externality that a corner solution (i.e., externality control totally in favor of the coercing state) is Pareto optimal. Indeed, David Friedman's fascinating public choice explanation of the size and shape of nations makes precisely this assumption. Such an interpretation dissolves the distinction between force and legitimate bargaining. One might be tempted to conclude that the only force which would be  

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inconsistent with PR principles would be force which did not reflect the actor’s valuation of the externality. However, as Calabressi and Melamed point out in their discussion of the relationship of PR theory to criminal law, the use of force allows the unilateral conversion of all property rights into liability rules. Hence municipal law must have criminal sanctions rather than simply charging, say, a thief for the value of the article stolen. Similarly, the maintenance of international property rights requires a prohibition on the use of force, regardless of whether or not the force reflected the actor’s true valuation of the good.

Public goods: are they a special case?

The Coase theorem breaks down, it has been said, where the externality has the characteristic of a public good to one of the parties. A public good is one which has the property of nonappropriability (i.e., nonexcludability, because it cannot be withheld from those who do not contribute) and indivisibility (i.e., jointness of supply, since consumption by one person does not reduce the amount available to anyone else). As a result, there may be a strong rational incentive for any one actor to be a free rider, reducing his contribution to the provision of the good. The extreme case is where there is a large number of actors, each of whose benefit from the public good is infinitely small relative to the total social benefit. In game-theoretic terms the situation becomes a Prisoners’ Dilemma game, where each player’s dominating strategy is non-cooperation, regardless of what he thinks anyone else will do. If everyone else contributes, the public good will be provided anyway; if no one else contributes, his contribution would be too small to make any difference. Olson calls this the logic of collective action problem.

Figure 2 illustrates this problem in the context of the previous pollution example. The marginal value of abatement may be broken down into component benefits for three hypothetical pollutees. If the polluter has the property right, the level of abatement which will occur will be $X_1$, where the marginal incentives for each beneficiary will have been satisfied. The amount of abatement supplied is socially suboptimal by amount $(X-X_3)$. The vertical distance between BB and BB, may be considered the transaction cost of collective action.

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17 Calabressi and Melamed, pp. 1123-27.


19 M. Olson, *The Logic of Collective Action* (Cambridge, Mass.: Harvard University Press, 1965), pp. 9-16. The following argument assumes that the concept of the public good is relevant to interstate behavior. This assumption has recently been questioned on the grounds that the state’s preference for collective goods is not necessarily related to aggregate national welfare, and that Pareto optimality may be an inappropriate optimality criterion where there is distributional injustice. See J. Oppenheimer, “Collective Goods and Alliances,” *Journal of Conflict Resolution* 23(1979): 387-407.
The next step in this line of argument is to suggest that public goods must be provided directly by governments. A major thrust of the IO approach is the argument that most international problems are of a public good nature and are therefore inherently unsolvable by market forces. IOs have an obvious bureaucratic interest in seeing public goods everywhere. IO theorists also predictably argue that international interdependence requires more supranational government to provide for an increasing number of public goods needs (i.e., interdependence creates more collective action problems).  

The PR approach is not so easily demolished, and a number of points should be made in connection with the public goods critique:

a. The problem of providing public goods is simply a case of high transaction costs, which might be prescriptive solved simply by assigning a property right to the party with the higher transaction costs. Thus, when a large power is negotiating with a number of small powers, the issue may assume the character of a public good for the latter, raising their transaction costs to a level that would produce no trade if the large power has the property right. Some of the major international public goods problems could be dealt with in this manner (e.g., uses of the sea, nuclear proliferation, pollution). A genuine problem arises where there is no counterpart upon whom liability can be assigned (e.g., the International Year of the Child as a public good).

b. It is not necessarily true, as Olson argues, that the larger a group is, the farther it will fall short of providing an optimal supply of a public good. Chamberlin shows that as group size increases, the reduction in individual contributions is at a slower rate than the increase in group size (due to income effects of the provision of the public good); hence the total amount of the public good increases with group size, up to an absolute limit. Suboptimality in the supply of the good will only necessarily occur as the number of beneficiaries (n) exceeds n₂, the value of which depends on the limit value of X and the rate of increase in the optimum. The results of Chamberlin’s analysis are illustrated in Figure 3.

If the supply function for the public good is that shown by curve A in Figure 3, the divergence between actual and optimal supply will occur at a low level of group size (e.g., at size n₁ suboptimality is X₃-X₁), and where n > n₂ suboptimality must itself tend to infinity, since the actual supply of the good is asymptotically approaching the limit. However, for n < n₂ the actual supply may not be significantly different from the optimum (e.g., if the supply function is closer to curve B suboptimality at n₁ is X₁-X₂). In the case of a domestic public good, where the magnitude of n may be in the many millions, the probability of suboptimality may be high. In international affairs, where n is of

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necessity much smaller (e.g., 150 nation states), there is clearly a better chance that suboptimality will not be significant.

Under what conditions may we expect a low level of suboptimality to obviate the need for governmental supply of the public good? The degree of suboptimality resulting from the supply functions in Figure 3 depends on the form of the reaction functions determining each actor’s contribution. Chamberlin implicitly assumes an uncooperative Nash-Cournot reaction function (i.e., purely independent behavior), his results being due to the incorporation of an income effect. The public goods literature offers several basic behavioral sources of cooperative reaction functions.

Some international public goods are supplied by virtue of “norms of reciprocity” (e.g., contributions to UN peacekeeping operations). McMillan alludes to this factor in his survey of the free rider problem. Gutman demonstrates that where two actors with identical payoff functions adopt norms of matching contributions in a Nash-Cournot framework the supply of the public good will be Pareto optimal, even without introducing income effects. More than two actors may result in an inefficient equilibrium, but the degree of suboptimality will still be far less than that predicted by Olson’s model. Experimental evidence suggests that norms of reciprocity may develop even in situations as severely non-cooperative as the Prisoner’s Dilemma game, particularly when the game is played on multiple occasions, as are most public good games. The likelihood of cooperative Prisoners’ Dilemma public good games has been noticed by Hardin, who pointedly concluded that Olson’s generalization about large latent groups being unable to supply a public good “... is a function of statistics on, for example, the social distribution of distrust; but in any case it is not a derivation from the logic inherent in the group interactions.”

Many collective action problems are solved by the desire of the beneficiaries to contribute so that they will be able to influence the exact form of the public good: “... if they are not represented in the coalition, they may find that their cheap ride is to a destination they do not favor.” The point was made in connection with domestic interest groups, but is equally applicable to international public goods. A nation which free rides in a military alliance, for example, cannot expect to influence the size, structure, or deployment of military forces.

Finally, cooperation may arise from some of the very factors referred to by Olson: "selective incentives" in the form of sidepayments, persuasion, or unilateral supply by a major beneficiary. In the same vein, Coase has pointed out that public goods may often be made private to the extent necessary to ensure their supply. He cites the example of a classic "public" good, the lighthouse, showing how in seventeenth century Britain lighthouses were provided by the marketplace because port facilities could be withheld from non-contributors.44

Thus, it is not clear that public goods will be suboptimally supplied by the market. Yet many IO theorists assume that the mere existence of a public good is grounds for supranational resource allocation. Ruggie suggests that pure international public goods require IOs for "the introduction of elements of collective decision making and collective ownership into a particular activity." Even an impure public good, such as the exploitation of the seabed, warrants the establishment of an IO "introducing and representing definitions of collective ownership and jurisdiction."45 Yet this problem, it has been argued above, has already been largely solved by introducing appropriability via property rights, which will induce the internalization of externalities without the need for the kind of IO Ruggie recommends.

Despite the arguments cited above, there are undoubtedly some areas where the public good or free rider problem is severe enough to justify supranational management. However, several further caveats are in order. First, the problem may well be dealt with by means far short of the direct provision of the good by a supranational IO. Liability rules have already been suggested as a means of dealing with high transaction costs. In such cases, liability rules would be the legalistic equivalent to marginal cost sharing as a solution to the non-supply of a public good.46

Second, the IO solution may produce welfare losses in excess of the value of the public good. The theory of fiscal federalism suggests that unless the jurisdiction which provides the public good includes the entire set of consumers, inefficiencies will result. In the case of a global IO, inefficiencies result if the entire world is not effectively a consumer of the good. Even where this correspondence exists, there are other reasons why global IO provision of the public good may not be optimal. Differences in income and preferences among consumers of the good, or a lack of economies of scale in its provision, may reduce the optimal size of government to one person (or one state in the IO case).47

Even if a global IO is the optimal size of government unit, one must also consider the costs of non-market resource allocation by bureaucratic organizations. The IO solution by itself raises transaction costs. Further costs may be introduced by what Wolf calls "non-market failure," including monopoly, inefficiency, inequity, and non-optimal supply. Niskanen, for example, has argued that government bureaus have a strong incentive to maximize budgets, resulting in overproduction of public goods. These arguments follow from that of Buchanan, referred to above; viz., that government is just as likely to impose externalities as to correct them.

Finally, the IO solution tends to ignore two more fundamental problems: information and ethics. The ultimate rationale for a non-market solution is the argument that governments have better information about costs and preferences than the market, presumably because their marginal cost of acquiring information is thought to be less than that of a private actor. IO solutions implicitly assume that governments have this information, a premise which is the basis for their larger assumption that governments have lower transaction costs in correcting externalities than does the market. The IO approach also incorporates an ethical perspective increasingly under question by the new philosophers of distributional justice, who argue that the cost of making actors "forced riders" is unacceptable. Hence Nozick's case that the functions of government be limited to minimal police protection.

Synthesis: from communal ownership to government allocation

It would be unreasonable to characterize the policy options in dealing with transnational externalities as a dichotomous choice between market regulated property rights and total allocation of resources by an IO. What is needed is a delineation of the policy continuum between the two extremes, allowing some specification of the best solution for each type of externality. The typology below offers the rudiments of such a plan:

a. Unrestrained communal ownership, where the goods involved in the externality are effectively in unlimited supply, so that no usage externalities can arise. Extraterrestrial space is a contemporary example of such a case.

b. The allocation of property rights, where there is resource scarcity and conventional externalities occur (i.e., externalities not having any of the characteristics referred to below). IOs might play a useful role as a forum for

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47 Buchanan, "Politics."
48 R. Nozick, Anarchy, State and Utopia (New York: Basic, 1974).
the adjudication of property rights, as do contemporary international public and private arbitral tribunals.

c. Liability rules agreed to by states and administered by an IO, where problems arise that cannot be solved by altering property right assignments (e.g., accidents, high transaction costs for all parties, strategic behavior). Some of the problems mentioned above (e.g., income and equity) may often be dealt with by property right allocations.

d. Inalienable rights, or a prohibitive liability rule for forms of behavior which would destabilize the system (e.g., the use of force or coercion), result in zero or negative utility trades (e.g., extortion), or be in some sense irreversible (e.g., a nation should not be able to sell itself into slavery).

e. The establishment of an IO to directly allocate resources where the externality involves a public good which satisfies all of the conditions below:

i. There is no definable counterliability or property right reassignment which would result in market provision of the good.

ii. The parties to the public good have sufficiently uncooperative reaction functions that for the relevant group size, the public good will be significantly undersupplied.

iii. The IO solution does not itself produce welfare losses in excess of the value of the public good, as a result of higher transaction costs or further externalities introduced by government. Welfare losses may arise as a result of the non-optimal size of the IO (the fiscal federalism argument), “non-market failure,” governmental knowledge inferior to that of the market, a high level of community aversion to being “forced riders” and externality control problems relating to the theory of the second best.

One might object to a PR-based taxonomy on the grounds that the assumed goal is some combination of efficiency and equity. Governments, the “realist” would argue, are concerned with neither goal but, rather, with maximizing power. The obvious, unoriginal response to such an objection is to ask “power for what?” The most casual observation of state behavior in IOs suggests that nations use power to seek outcomes which reflect their preference for efficiency (e.g., U.S. policies toward IATA) or equity (e.g., LDC policies in UNCTAD).

Conclusion

The property rights area of public choice theory provides some new light on the proper role of government with respect to market exchange transactions. It is a helpful antidote to that part of political science generally, and the supranational stream of IO theory in particular, that offers direct government allocation of resources as the panacea for the world’s ills. The role for government, PR theory suggests, is smaller than most of us would like to think. The
main conclusions of PR theory derive from Coase's original proposition that property rights should be allocated on the basis of relative transaction costs, and that this role may well be the normal limit to our need for government intervention. There are some theoretical and practical objections to this principle (e.g., problems of equity, extortion, public goods). Most of these can be dealt with by means far short of direct resource allocation by an IO. Public goods theory, which appears to have become the last refuge of the supranationalists, is more limited in application than its advocates have hitherto conceded.

International law has incorporated PR principles more than one might expect, though there is clearly room for further improvement in the international assignment of property rights and liabilities. The residual role of force in bargaining over externalities remains an obstacle to the optimal assignment of entitlements, particularly when larger nations with lower transactions costs are prepared to use their greater power to deny optimal liabilities or to enforce non-optimal property rights. However, this problem is not the overwhelming obstacle to market solutions that the IO school would have us believe, as the number of externalities resolved in highly politicized power or military exchanges diminishes. Finally, one might observe that if nations cannot agree about rules regulating entitlements, they certainly could not agree to create a supranational IO with any genuine allocative powers.