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REPORT ON GLOBAL WARMING AND ASSOCIATED IMPACTS

(PHASE V)



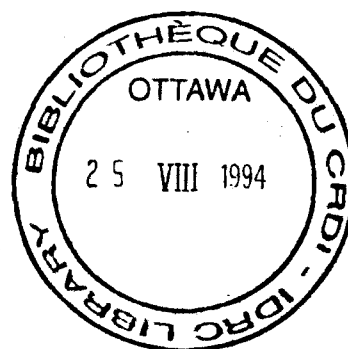
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(PHASE V)

Submitted to the
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**Examining the Replacement of coal by
natural gas in utility and industrial
application**

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**Legal Liability versus Administrative
Regulation: The Problem
of Institutional Design in Global
Environmental Policy**

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1. Introduction

The salient features of environmental damage are first, that they are external effects of the activities of others, and therefore a potential adversarial relationship exists between the agents responsible for the activity and the victims experiencing the externality. Second, that it is often extremely difficult, if not scientifically impossible, to categorically link a particular impact (e.g., degradation of a resource, onset of a disease) to a particular environmental cause (e.g., elevated GHGs concentrations, toxic water pollution). Further, even when damage can be definitely linked to specific environmental causes (e.g., "signature diseases" such as mesothelioma caused by asbestos exposure), it is frequently extremely difficult to identify which of many polluting agents bear responsibility. This is particularly true when the (variable) natural environment (e.g., "background radiation") is itself a significant source of environmental risk.

This characterization does not deny the fact that there may indeed exist environmental damage situations in which the cause as well as the party at fault can be unambiguously identified (e.g., the large scale toxic release at Bhopal). The point is that institutional design for regulating environmental risks should concentrate on situations of risk which are spatially and temporally diffuse, both in cause and in effect, because such cases are ubiquitous.

This paper seeks to contrast two distinct regimes for regulating environmental harms. The rival regimes are, first, a legal liability system, in which agents with claims to compensation¹ for injury confront alleged injurers in (environmental) courts. Second, and alternatively, an administrative regulation regime which seeks to regulate the activities themselves by means of policy instruments, which may be fiat or incentive based. In the latter regime, compensation (or adaptation costs) to victims may be provided, relying on resources generated by the application of the regulatory instruments. However, administrative regulation may employ such revenues for other policy objectives as well, or instead. While the administrative regulation regime may involve the oversight of courts by way of review of agency action and enforcement of regulatory requirements, the principal regulatory institution is administrative in character, rather than a court. The regimes are considered to be rival in the global environmental domain by

¹We exclude from this discussion the question of criminal liability from environmental harm.

assumption, i.e. an institutional structure embodied in protocols for a given environmental problem would involve one and not both regulatory regimes. Employing both concurrently would place polluters in double jeopardy and, as a matter of judgement, would probably be acceptable. However, this assessment is tentative and future negotiations could possibly look at various combinations of the two regimes.

This paper is structured as follows: Sections 2 and 3 respectively discuss the fundamentals of legal liability and administrative regulation regimes. Section 4 looks at externality pricing, Section 5 at behavioral norms, and Section 6 at markets for rights, in each case, under both regimes. Section 7 reviews the international practice of legal liability, while section 8 does the same for the administrative regulation, in each case in relation to the environment. The last section discusses the feasibility of the alternative regimes for multilateral regulation of Global Warming.

2. Fundamentals of Legal Liability

Legal liability is the concern of civil disputes in courts. The defendant is liable when a court awards damages against him for harm or loss caused to a plaintiff. Legal scholars view liability law as pursuing three distinct objectives: compensating victims, deterring harmful actions, and spreading risk in society. Economists, by contrast, tend to analyze liability law in terms of (economic) efficiency in incentives and risk-bearing (Cooter: 1991). In liability law the term "perfect compensation" refers to a payment to the victim which restores him to his pre-harm level of welfare. In actual liability awards, compensation may equal, be lower than, or exceed the perfect compensation level. (In the latter case, the award is said to contain a "punitive" element). In some situations courts award an "injunction" i.e., an order to the defendant to perform a specific act, e.g., restore the previous condition of the property of the plaintiff. The device of injunctions avoids the necessity of making a monetary determination of harm, but clearly applies to a limited set of liability situations.

Three distinct concepts of legal liability figure in law. "Strict liability" requires the injurer to compensate the victim even if the injurer is not at fault in any moral or legal reckoning.² "Negligence rules" impose a legal norm of reasonable behaviour, and

²It is an established legal principle that liability can be imposed even for damage caused as a result of actions not necessarily prohibited by law. This is expanded upon below.

injurers are liable only when they fail to comply with the norm. Finally, "exchanges of liability rights" refers to a strategy enabling trades in such rights (in the context of a legal rule conferring such rights), as if they were property.

Legal institutions for determining legal liability are characterized by a focus on resolving individual disputes between particular parties, requiring each plaintiff to establish a reasonably clear cause and effect linkage between a defendant's activity and the plaintiff's harm.³ The process is adversarial and the perspective is post-hoc, i.e., after the injury has occurred.

3. Fundamentals of Administrative Regulation

Administrative regulatory regimes, though backed by law, rely mainly on administrative institutions. The administrative agency typically seeks to regulate the level of activity causing environmental harm, either directly, by fiat type instruments, or indirectly, by incentive based instruments. (Net) revenues may be yielded in the application of the regulatory instruments, and may be employed in either compensating (actual or potential) victims, or as accretion to general revenues, or both. Revenues may exceed, equal, or fall short of the valuation of aggregate damage.

Three main classes of regulatory instruments which have been discussed in the literature, (and also employed in conventional environmental situations) are "pollution taxes", "standards", and "tradeable permits". Pollution taxes are levied on each unit of a specified pollutant discharged, thus pricing the external effect of the discharge to the polluter. Standards represent a norm of pollution emissions, (e.g., tonnes of TSPs that may be emitted by a given power plant in a year). This norm may be violated only at a cost, representing a penalty which may be an actual monetary payment, or some other (e.g., shutting down the offending plant). Tradeable permits are rights to pollute (by a given agent, over a defined region in a year) assigned by, or purchased from the regulator, which may be traded in a market for such rights.

Intuitively speaking, the three classes of regulatory instruments bear correspondence with the three legal liability doctrines. Strict liability and pollution taxes both price the externality to the polluter, while negligence rules and standards both

³In certain case involving significant damage, courts have shifted the burden of proof to the damage causing party.

impose behavioral norms whose violation results in a penalty. On the other hand, markets for liability rights and tradeable permits, both refer to voluntary exchanges of property rights over the externality.

3.1. Comparing the Institutions

In typical environmental harm situations with long periods of latency, transactions costs under legal liability regimes may be high, in relation to individual harms. Individual victims may, therefore, desist from suing, particularly if the burden of proof in such cases is on the plaintiff. While class action suits may reduce individual litigation costs, "sufficient" evidence still needs to be adduced to prove the fact of harm in respect of each plaintiff, that the harm was due to the particular environmental externality, which in turn is attributable to the activity of the defendant. The evidentiary burden is non-trivial even in the "clearest" of cases, and may be impossible where a cause and effect relationship cannot be scientifically established. Further, in the case of long latency periods, an identifiable, solvent defendant may not even exist, having declared bankruptcy or been long dissolved. Finally, given that liability damages are finally awarded, the defendant(s) pockets may not be deep enough, so that the plaintiffs remain (partly) uncompensated.

An administrative regulation system, on the other hand, relies on public institutions to reduce transactions costs in regulating environmental harms. Further, by exacting penalties, taxes, or collecting the proceeds of auctioned tradeable permits, at the time the activity causing harms is undertaken, it protects victims' interests from the possibility of injurers disappearing or being unable to meet liability obligations after the harm is manifest.

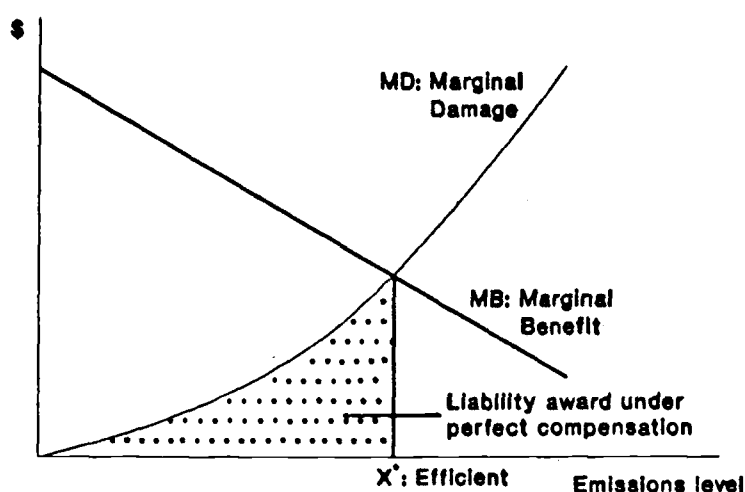
In addition, administrative regimes furnish an important source of flexibility in public policy. Since penalties etc. are not linked directly to harms, the revenues may be employed for policies which maximize societal welfare, rather than to simply compensate the specific harms. This may be especially relevant where victims are hard to identify, e.g., where lung cancer is contracted by non-smokers through exposure, among other things, to cigarette smoke exhaled by smokers. A pollution tax on cigarettes may yield incremental general revenues. These may be spent, for example, on infant care schemes, or sanitation, which may mean a large reduction in statistical deaths in society. This may

be preferable from a societal welfare perspective in comparison to compensating by money a group of older lung cancer patients, whose condition is uncertainly (statistically) related to their exposure to cigarette smoke.

4. Externality Pricing : Strict Liability and Pollution Taxes

Both strict liability and pollution taxes are viewed by economists as devices to achieve efficiency by internalizing to the injurer the external social costs of the polluting activity. In the case of strict liability, if perfect compensation prevails, enforcement by courts is perfect and there are no transactions costs, (aggregate) marginal damage (MD) to victims equals the marginal benefit (MB) to the injurer. In this case the activity (pollution) level is efficient, assuming further that the polluter is risk neutral and rational. The situation is depicted in Figure 1.

Fig 1: Efficiency in a Strict Liability Regime

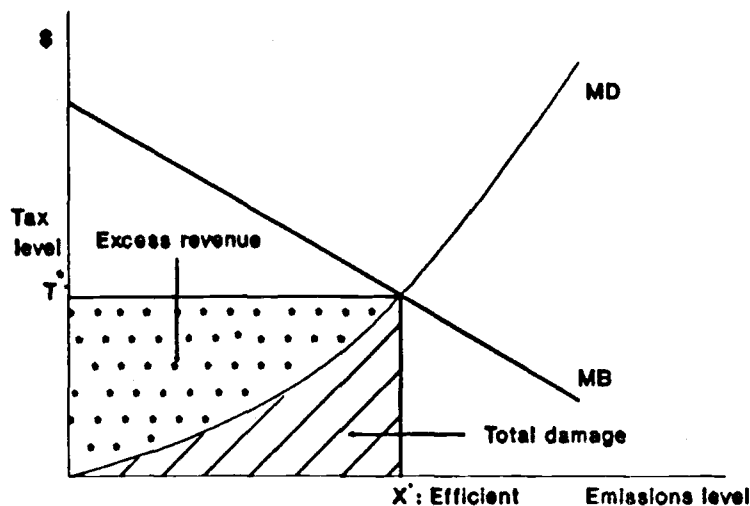


Note that compensation to the victims flows directly from the liability award, and no payment in excess of the value of damage is extracted from the polluter, if compensation and enforcement are perfect.

A pollution tax regime, similarly achieves efficiency if the regulator has perfect knowledge of the MD and MB curves, and fixes the tax rate at the level where they are equal. Once again, we need to assume the absence of transactions costs and perfect enforcement, and that the polluter minimizes costs. In this case, revenues in excess of

the total damage to victims is yielded, given conventional shapes of the MD & MB curves. The situation is shown in Fig. 2.

Fig 2: Efficient Pollution Tax



In the case of pollution taxes, compensation to victims requires a separate action of the regulator, and is not automatic. Determination of compensation amounts on the basis of valuation of actual damage may be costly.

4.1 Relaxing Some Assumptions

We now relax a few of the above assumptions. In the case of strict liability, actual compensation awards may be lower or higher than the efficient (perfect compensation) level. Under compensation may result from the practice of courts to disallow "ephemeral" harms (e.g., fear of injury), or "speculative" losses (e.g., lost economic opportunities) or where the harms are "too remote" to have been foreseen by the injurer as a probable effect of his actions. Over compensation may result if the court neglects preexisting risk, and attributes all of the harm to the polluting activity. In particular, courts frequently adopt a "50% rule" i.e., full compensation when the probability of a given injury from an activity exceeds 50%, and nothing if the likelihood is lower. Clearly the result will be either over compensation or under compensation. In each instance, the level of pollution will be inefficient. See Figs. 3 & 4 below:⁴

⁴It is interesting to note that in the case of undercompensation (overcompensation) the compensation paid to the marginal victim is less (greater) than the "true amount," whereas the aggregate compensation paid out may exceed (be less than) its "true" counterpart.

Fig 3: Effect of Under Compensation in a Strict Liability Regime

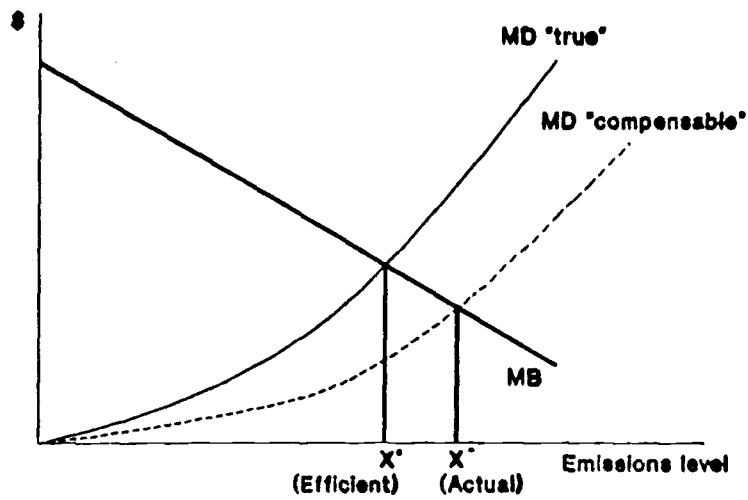
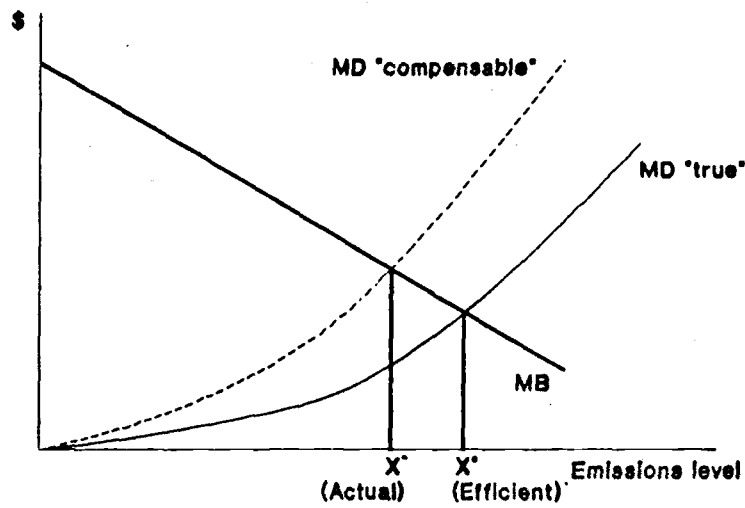
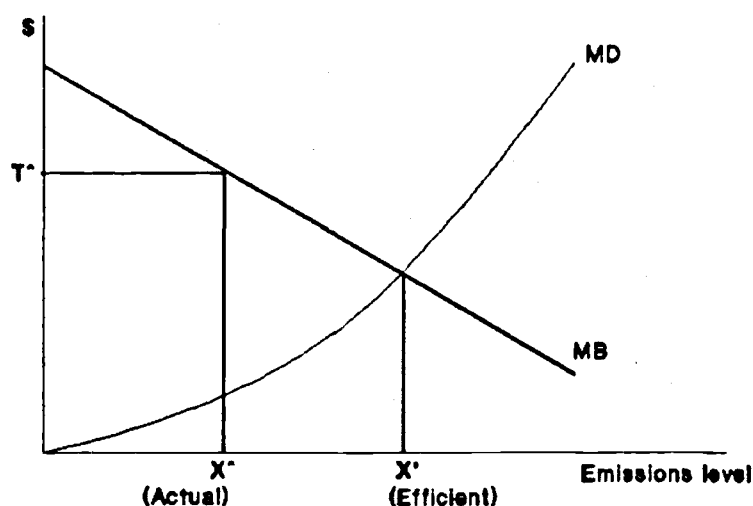


Fig 4: Effect of Over Compensation in a Strict Liability Regime



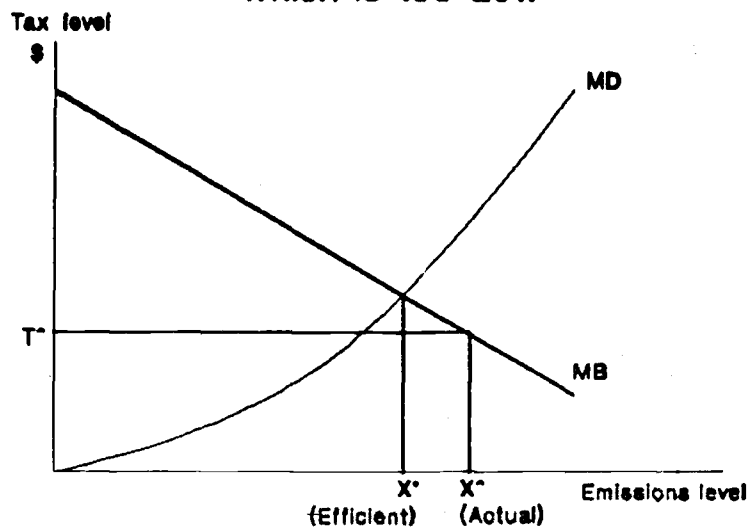
The corresponding situation in the case of pollution taxes is that the regulator may not (indeed is unlikely to) know the exact shapes of the MD & MB curves.⁵ In consequence, the pollution tax may be set too high or too low, and the level of polluting activity achieved will be inefficient. These situations are shown below in Figs. 5 & 6.

Fig 5: Effect of a Pollution Tax which is too High



⁵Indeed, a similar situation could arise in the case of strict liability where the victim may not correctly perceive the level of harm inflicted, or be able to "prove" a level of harm which is different (perhaps higher) than the actual.

Fig 6: Effect of a Pollution Tax which is too Low



Further, enforcement in liability trials may be imperfect, perhaps because of the difficulty of establishing causation. In such cases, while prior to trials the pollution level may be efficient, a succession of court verdicts (or one seminal verdict) disallowing damages for a given class of harms would induce increased polluting activity.

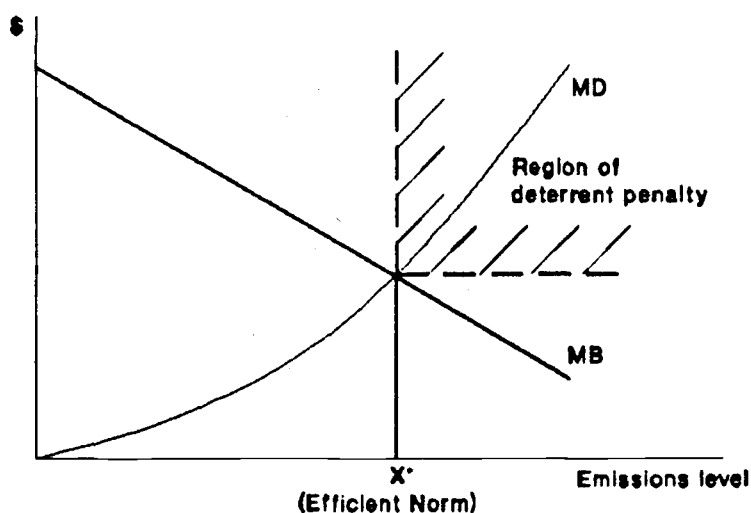
In some situations, courts may shift the burden of proof to a class of defendants where it is difficult to establish which member is responsible for a given damage. Even so, the victim must establish a clear link between his condition and an activity. Similarly, imperfect monitoring and/or enforcement of a pollution tax may be expected to result in inefficiently high pollution levels:

Strict liability is often employed simultaneously with the doctrine of "Joint and Several Liability", i.e., any one member of a class of defendants is liable to the full extent of damage. The advantage is that it may ensure that a "deep pocket" is available to compensate victims. However, the effect of joint & several liability on polluters' behaviour is uncertain. One effect could be that smaller polluters become reckless in their polluting behaviour, and at the first signs of being called to liability, retreat into bankruptcy.

5. Behavioral Norms: Negligence Rules and Standards

Each of these regimes impose a penalty when some norm of pollution discharge is violated. Economic efficiency, in either case, requires that the norm should be set at the level at which marginal benefits equals (aggregate) marginal damage. Further, if the polluter is rational and risk averse, deterrence requires that the penalty for discharges above the norm exceed the marginal benefit at that point. Fig. 7 illustrates these principles:

Fig 7: Efficient Pollution Norm and Deterrent Penalty



Note that as long as the emissions norm is adhered to, no payment, either as compensation or as penalty, is due from the polluter. Accordingly, if efficient, the entire social cost, if any of pollution is borne by the victims under the normative regimes.

The trick under negligence rules as well as under standards, is of course, to determine an efficient norm. In liability regimes when a community based norm exists, courts often adopt it. As long as no externalities befall third parties (i.e., apart from the injurers and victims), such community based standards may be efficient, owing to the structure of the incentives of the actors in which the norm emerges (Cooter: 1990).

Courts have formalized the notion of an efficient norm in the so called "Hand rule". In effect this rule states that an act is impermissible if the benefit to the injurer from the act is less than the expected (i.e. in a statistical sense) marginal damage to the victims.

In the case of administrative regulation attempts to determine the normative standard by reference to the locations of marginal cost & marginal damage curves, are likely to fail, owing to the rather intensive nature of the information required on the part of the regulator.

5.1 Relaxing Some Assumptions

If the probability of enforcement is too low, a rational injurer may violate a pollution norm, under both legal liability and administrative regulation regimes. Enforcement may be imperfect in the case of a legal liability regime if the victims are unaware of the injury, unable to prove its occurrence, unable to prove who caused it, or unable to prove that the negligence standard was violated. Enforcement may be imperfect in administrative regulation if monitoring is ineffective or expensive.

In either regime, the extent of compliance may be increased if the penalty for violation of the norm includes an element of punishment. This is calculated by imposing a penalty at least $(1/p)$ times the perfectly compensatory level, where p is the (subjective, Bayesian) probability of enforcement, whether as liability award, or as administratively imposed penalty. Suppose, on the other hand, the norm and/or penalties are not sharp but fuzzy. In this case, under either regime, one may expect that if polluters are better organized and have greater resources than potential victims, considerable effort involving transactions costs would be expended by the polluters to ensure that quantitative interpretations of the standard or penalty are liberal.⁶ Clearly, there is scope for rent-seeking by the regulator (legal or administrative) when the statute possesses this feature.

6. "Exchanges in Rights": Markets for Liability Rights and Tradeable Permits

In a legal liability regime, liability rights may be viewed as property, and a legal framework for voluntary exchanges in such rights creates a market in liability rights. In

⁶In the context of global environmental issues, it is possible that reverse might also hold true in the case where the victims -- represented by nation-states -- are well organised. In that case, the victims might spend resources to "establish higher levels of damage than the actual.

such a framework, a victim may be said to possess a liability right, and if he sells the right and suffers harm, the injurer owes damages to whoever owns the liability right at that time.

Similarly, an administrative policy instrument for pollution regulation is the "tradeable permit", in which an initial assignment of pollution rights (by auction, political largesse, or howsoever) may be traded in a market for such rights. The tradeable permits assigned must sum to the aggregate pollution emissions envisaged.

Both regimes will achieve economic efficiency, given some assumptions. These are first that in the case of liability rights perfect compensation may be claimed, and in the case of pollution permits the aggregate quantity of emissions allowed conforms to the efficient level. Further, that the markets in such rights are competitive, there is symmetry in transactions costs (or that these are absent), and in the case of a legal liability regime, that damages are perfectly compensated by the courts. By the Coase Theorem (Coase: 1960), as long as transactions costs do not block exchange, the initial assignment of property rights is irrelevant from the efficiency standpoint. Thus, the fact that under a legal liability regime the traded property is the victims' (matured or potential) liability rights, while in an administrative regulation regime it is the injurers right to pollute, makes no difference to the efficiency outcome. Of course, the initial assignment of such property rights will affect the distributive consequences of regulation. Figures 8 and 9 illustrate these cases.

Fig 8: Efficiency under a Tradeable Permits Regime

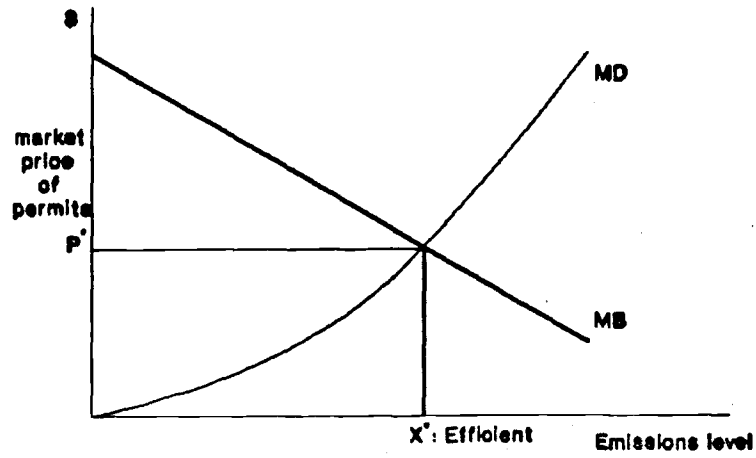
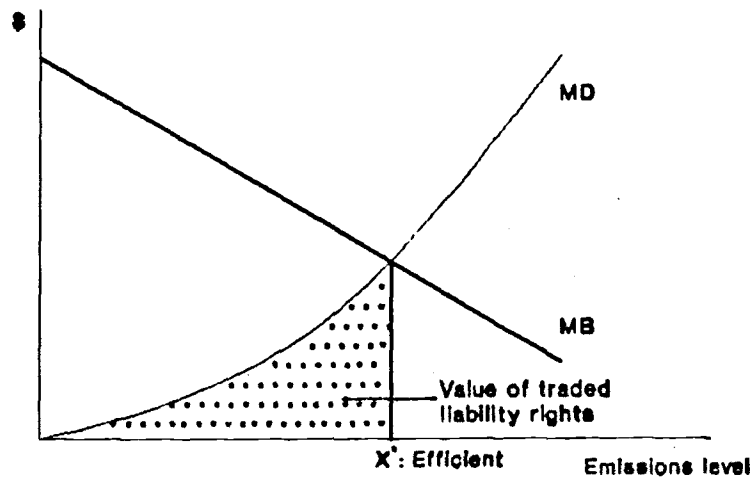


Fig 9: Efficiency under a Regime of Exchanges in Liability Rights



6.1 Relaxing Some Assumptions

Efficiency may result from exchanges in externality rights, but only when the markets for such rights are competitive. Causes of market failure may include market power: monopolies (monopsonies), or cartelization, as well as ineffective monitoring & enforcement. Additionally, some legal doctrines may, for example, by forbidding the plaintiff from assigning the entire value of a liability claim to his attorney as a contingency fee ("rule against champerty"), block the formation of efficient markets. Alternatively, the regulated agents may not conform to the paradigm of cost minimization, for example in the case of price regulated utilities, or nation states subject to an international regulatory regime. These sources of market failure are common to both regimes.

7. International Practice of Legal Liability

The basic principle that guides much of international environmental law arises from three main cases: the Trail Smelter Arbitration, the Lac Lenoux Case and the Corfu Channel Case. Of these the Trail Smelter Case is the most important. The Arbitration grew out of air pollution from sulphur dioxide fumes from a smelter in Trail, British Columbia, owned by a Canadian corporation. The United States claimed compensation from Canada on the basis that the fumes had caused damage in the State of Washington. Canada was held responsible by the Special Arbitral Tribunal appointed for the case and was directed to pay injunctive relief and an indemnity. The main principle on which the judgement was based was that a state has a duty to protect other states against injurious acts by individuals from within its jurisdiction. The Lac Lenoux case arose out of a treaty between France and Spain of 1866, relating to the flow of boundary water which safeguarded the right of Spain to the natural flow of water into the river Carol, an outlet of Lac Lenoux. A French proposal to use the waters for hydro generation was objected to by Spain, because it would change the natural flow. The arbitral award, in favour of France, held that the new use would still provide the previous quantity of water and therefore did not violate the treaty. The principle relevant to environmental law was that the state making the change from the norm was required to ensure that the new situation did not leave the other affected parties worse off. In the Corfu Channel Case, the United Kingdom sought to hold Albania responsible for damage caused to warships

by mines moored in the Corfu Channel in Albanian territorial waters. The International Court of Justice decided in 1949 that Albania had a responsibility to notify shipping in general of the existence of a minefield in its territorial waters and in warning the approaching British warships of the imminent danger, something that it had failed to do. In other words, nothing was done by Albania to prevent the disaster, which made it responsible. The case established a duty to inform of activities (here these were past activities) that were likely to cause serious harm to the nationals of another country.

The principle that emerges from the three cases is that states are obliged to take measures, to the extent possible, to conform to international principles and standards and to prevent or reduce injury to the environment of another state or areas beyond its jurisdiction. They are obliged to conduct activities so as not to cause injury to such states or areas. States are held responsible for the violation of this principle and of injury caused by such violation.

The causing of injury naturally leads to the question of reparation for damages suffered i.e. liability. As indicated earlier, this paper concentrates on civil aspects of liability.

The history of international liability for environmental harm and the current status of the law indicates that such liability is an extremely problematic area of international law. The Stockholm Conference recognised it as an area that required development, but all that could be ultimately agreed upon was an undertaking to "further develop the international law of liability and compensation." The effort since has been to develop general principles, something that has proved extremely difficult in the absence of state practice and international adjudication. The Trail Smelter remains the main arbitral award.

The main problem of attaching liability in international law is that much of the external harm is caused by activities performed in the exercise of their legal rights by states or agents within states.

Two doctrines address the situation.

(a) The first doctrine addresses the case when rights are abused i.e. when a person makes use of his/her property rights solely to cause harm to another person. This is not usually the situation in international environmental harm, because the person causing

harm is not motivated by the desire to harm persons injured beyond international frontiers.

(b) The second doctrine makes an otherwise rightful use of one's property rights wrong if it causes harm, unless the user compensates the person injured by the use.

The International Law Commission (ILC) has been studying the problem of international harm under the rubric of "international liability for injurious consequences arising out of acts not prohibited by international law." It has provisionally considered whether a state's obligation in connection with transboundary injury to other states should include a duty to prevent, to inform, to negotiate and to repair. Thus far, it has concluded, that only the failure to "repair" the injurious consequences would result in international liability.

Apart from general principles, specific liability arrangements have been provided for in various treaty arrangements in international environmental law. These in turn have had an effect on the progressive development of these principles. An examination of some of these frameworks illustrates the type of treaties that allow for different interpretations of the liability rule and the related problems of making states agree to open themselves to claims for compensation.

7.1 Strict Liability

The number of treaties/international arrangements that have provided for strict liability are extremely limited, with not much expected in the future that would pull the law in that direction. The 1972 Convention on International Liability for Damage Caused by Objects Launched into Outer Space is the only multilateral convention open to all states that imposes full liability on launching states. Other conventions that provide for "strict liability" do so in respect of the private operator of the damage causing facility and some of these provide that the operators's state is liable on a subsidiary basis if the operator or his insurer cannot pay. An example of this is the Vienna Convention on Civil Liability for Nuclear Damage, 1963.

The imposition of strict liability would therefore imply a major shift from classical principles of state responsibility under international law, under which responsibility and consequent liability for compensation arises only in the case of a violation of a rule of international law. The ILC has framed the problem in terms of primary and secondary

norms. The primary norm has traditionally been the violation of a rule of international law and secondary norms include the imputation of responsibility to the state and the obligation to compensate damage. Strict liability would make the payment of reparation the primary norm.

This principle finds expression in domestic legal systems, which recognise that the activity in question need not be illegal for the injurer to be held liable. Strict liability regimes evolved to regulate activities that were considered inherently extremely dangerous. The argument was that since the operator benefited from the activity s/he should bear the cost of injury, especially since s/he was in a better place to manage the risks. In many countries this has been extended to cover many acts involving general (not necessarily ultra-hazardous) risks.

These reasons for the imposition of strict liability have been modified and translated into the international arena. Strict liability has been called for in cases of disastrous accidents involving ultra-hazardous technologies. The argument is that the problems victims would face to prove negligence would be far too great and would make compensation unlikely or meaningless. There are problems with this doctrine, evidenced by the failure of affected states to claim compensation in cases that could have involved the above principles, as in Chernobyl and Basel.

7.1 Qualified Versions of Strict Liability

These have evolved as a consequence of government intransigence on the subject. The regime being developed by the ILC would have the state of origin compensate an affected state for appreciable harm caused by its (or its agents') activities. This would apply to internationally lawful activities and the harm must *in principle* be fully compensated (Barboza: 1990). The qualifications are as follows. First, reparations would be decided by negotiation between the state of origin and the affected state. Second, states are required to be guided by equity based criteria in determining the reparation. Compensation might be reduced if the nature of the activity and the circumstances of the case would mandate or imply equity through cost sharing. These special circumstances could arise when significant amounts have already been spent by the injurer on risk reduction, when damage in the affected state is less than other beneficial side effects or when states are limited in their ability to take preventive

measures. In essence the ILC proposal would impose strict liability for all transboundary injury, but would leave it to the states involved to decide reparation in each individual case, on the basis of equity and balance of interests. A refusal even to negotiate would be considered a dereliction of international obligation.

The main problem with such a formulation would be the setting up of an institutional arrangement to oversee these cases. Experts consider it likely that the ILC draft articles will be adopted by the Commission as a recommended basis for either an international convention or simply to guide state practice (Schachter: 1990). It is improbable that they will become a binding treaty, but they may become a model for specialised treaty regimes applicable to well-defined activities involving a significant risk of transboundary injury.

7.2 Negligence Standards

State liability under negligence standards fits in more closely with classical notions of state responsibility for wrongful conduct. Certain environmental impacts that have international consequences are dealt with under different treaty arrangements. These establish rules and standards for activities that create risks of transboundary harm. Such rules and standards vary from detailed ones such as those established for nuclear plants to broad, general formulations of due diligence/due care. In these situations, a failure to comply with such rules or standards could be wrongful international conduct, with state responsibility and consequent liability arising from it.

There are two interpretations of the negligence standard formulation. The first is the obvious one that if a state is party to a convention that establishes or agrees to follow certain standards, it would be responsible and liable for damage arising out of a violation of the rule. The second is that generally adopted standards by international organizations would be a basis for liability even though the standards were not legally or otherwise binding for the violating state.

7.3 Due Care

Negligence standards have been further adapted into approaches that would give effect to standards adopted by international organizations not as law but as a criteria of the due diligence or due care required of all states in regard to activities that create an

appreciable risk of transborder injury (Schachter: 1990). This can be thought of as going beyond a system that would use internationally binding rules and standards.

An advantage of following a due care standard is that it focuses on the specific activity and its circumstances, while not condemning the activity. In addition, it would probably allow the activity to be balanced against foreseeable injurious circumstances. Going along the same path is a proposal to shift the burden of proof from the victim to the source of injury, something that has been established by Japanese courts in the domestic context.

7.4 International Legal Persons

An issue that queers the pitch in international law (unlike in domestic legal systems) is the question of identifying an "international legal person".⁷ Such an entity is capable of possessing rights and duties and has the capacity to bring certain types of cases in the international sphere. In the traditional view only sovereign states could be subjects of international law, though in practice, many other entities have at various times been recognised as legal persons of a qualified nature for specific purposes. As in any legal system, not all categories of subjects of international law have identical rights.

Contemporary international law has seen a widening of the concept of international personality beyond the sovereign nation state. This has been necessitated in part by the entry into the international sphere of entities such as public international organizations, multinational corporations, international NGOs, regional organizations and movements of insurgent communities and national liberation.

The extension of legal personality to individuals is a further issue. The progressive internationalization of human rights and the development of a body of law around this issue has pushed the law towards increasing (albeit qualified) acceptance of the individual as an occasional subject of international law. Some institutional arrangements specifically allow individuals to bring complaints against their own governments, following the exhaustion of domestic remedies. Examples of such arrangements are found in the Optional Protocol to the International Covenant on Civil and Political Rights and in the European Convention for the Protection of Human Rights

⁷Also known as a subject of international law.

and Fundamental Freedoms. A small body of case law has developed under the latter convention.

Forums for individual redress for transfrontier environmental damage have also developed most in Europe. The emerging principle here is that in so far as states recognise an international duty to prevent or reduce transfrontier environmental damage, a case can be made for rights of redress by injured parties who are not residents or nationals of the originating state. Several West European countries afford citizens of neighbouring states access to their courts and administrative proceedings on the same footing as citizens. Under the Nordic Convention on the Protection of the Environment of 1974, Norway, Sweden, Denmark and Finland handle national pollution discharges causing damage beyond national frontiers in the same way that they handle discharges causing local damages. In environmental suits for compensation or injunctive relief, the Nordic Convention guarantees citizens of the four countries equal access to their countries courts (World Resources 1987). In 1976, the European Court of Justice decided that within the EC, the victims of transboundary pollution may sue either in their own national courts or in the tribunals of polluter states.

8. International Practice of Administrative Regulation

There are extremely few examples of administrative regulation in the international sphere. The only international arrangements that establish regulatory regimes for environment related issues are the Convention on Long Range Transboundary Air Pollution and the Montreal Protocol on Substances that Deplete the Ozone Layer.

The former, signed in Geneva by 34 countries under the framework of the Economic Council for Europe was the first multilateral agreement on air pollution, as also the first environmental accord involving all the nations of East and West Europe and North America. The subsequent Thirty Percent Protocol to the Convention (1985) in which the signatories pledged to reduce sulphur emissions by thirty percent is one of the few instances involving multilateral acceptance of a specific quantitative environmental goal.

Problems related to increased acidity of lakes and streams were brought to the Stockholm Convention by Norway and Sweden, since these countries asserted that the problem emanated from beyond their borders. The agreement was a compromise

between the insistence of Norway and Sweden on "standstill" and "rollback" clauses and the reluctance of West Europe's largest polluters, West Germany and the United Kingdom to commit themselves to *any* formal agreement. Norway and Sweden argued for a number of years that the benefits of abatement outweighed the costs, and finally, by the time of the Stockholm Conference on the Acidification of the Environment in 1982, most countries were convinced of the advantages of following the treaty provisions.⁶ Subsequent conferences in Ottawa, Munich and Amsterdam built international consensus for concerted action and led to the Thirty Percent Protocol.

The other international agreement involving specific timetables and standards for environmental protection is the Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer. The purpose of the Protocol is to inhibit production, consumption and trade in some of the compounds that deplete stratospheric ozone. Ozone depleting compounds are divided into two groups of "controlled substances," Group I (certain CFCs) and Group II compounds (specific halons), each subject to different limitations. The Protocol makes a distinction between two groups of countries, the first with relatively high levels of consumption of ozone depleting substances and the second, developing countries with relatively low levels of consumption.

The principal difference between the developed and the developing countries is the timing of production and consumption limitations. From mid-1989, the developed countries have had to freeze production and consumption at 1986 levels. Group I compounds must be cut to 50% of 1986 levels over the next 10 years; Groups II substances may remain at 1986 levels. The developing countries are given a 10-year grace period (beginning in 1989) during which they are free to increase production and consumption within certain limits. Then, they too must cut production and consumption of Group I compounds over a further 10-year period and freeze consumption and production of Group II compounds. These obligations of developing countries are conditional on prior fulfilment of transfers of finances and technology by industrialized countries. The Montreal Protocol can (and may have has started to) significantly inhibit the worldwide growth in the consumption of compounds that deplete stratospheric ozone around the earth.

⁶West Germany and Canada by now were facing their own acid rain problems and had a greater interest in the successful conclusion of the treaty.

10. Regulating Global Warming

We now briefly look at the problem of designing a multilateral regulatory framework for Climate Change.

The issue of Climate Change is characterized by first, the global, multigenerational spread of potential injurers and victims. Secondly, by great uncertainty in the extent, nature, and spatial and temporal distribution of the impacts. Since the implicated emissions result from major economic activities: manufacturing, transport, agriculture, domestic heating, etc., significant costs are involved in any contemporary regulation of the sources of emissions. On the other hand, if emissions are unabated, actual damages may be high, possibly catastrophic, and even adaptation measures to preclude harm may involve large resources. However, great scientific uncertainty attaches to causal links between emissions and actual impacts.

The nature and choice of regime will involve a prior equity determination. There is therefore an underlying value judgement in all approaches to global environmental regulation, especially since the damages are unlikely to be symmetrical over space and time. Equity can be involved in both an initial formulation which allocates differential responsibilities, and by the choice of a particular regime/instrument. In the case of the former, equity may be determined by a tentative formulation that requires states to contribute negotiated amounts to, say, a global environment fund that would then be used to mitigate the effects of global warming, or for abatement measures. In the case of the latter, the choice of instrument will be deeply intertwined with the equity outcome or determination.

In this case, equity could be implicated in two different ways. First, there is an issue of justice or fairness in the sense of legal torts issue between those causing the damage and those who suffer from it. While in this case, the parties involved could be individuals or other entities within states, in this paper we assume that the regulating regime recognises sovereign nations as parties or agents. Second, there are equity considerations between nations or groups of nations, in the sense of sharing of global resources, implying real resource flows. The structure of the regime will have to be so devised that it will affect equity at the particular level that is desired. This can be illustrated by comparing equity under strict liability and under carbon taxes.

A strict liability regime, by definition, would address only the first level of equity identified above. As pointed out in an earlier section, one of the main legal rationales for liability is to compensate victims *vis à vis* those causing the damage, i.e. to perform compensatory justice. Figure 1. shows the liability award under perfect compensation. There, the dotted area under the marginal benefit curve is the amount paid out to those suffering the damage. Note the entire remaining area under the curve remains with the producer.

Note further that in the case of a carbon tax (Figure 2), a greater portion of the excess revenue collected (the dotted area) can be used for effecting distributional objectives, after victims suffering damage have been compensated. In the global context, therefore, a tax can be used to fulfil both equity objectives, provided the excess revenues are converted into flows to countries that are entitled to such funds, and therefore is more flexible. Similarly, different equity outcomes can be realised under each of the other instruments, whether legal or administrative. We now go on to examine more specific equity implications of the rival regimes.

Consider first, the possibility of a legal liability regime, imposed through global environmental courts established by international agreement, whose awards are binding. Since the actual victims and injurers (individuals, economic agents) are likely to be numerically very large, such a regime would need to recognize sovereign states as legal representatives of the actual victims and injurers, by analogy with class action suits. A problem at the outset would be that of enforcement, since the institutional mechanism for international enforcement is poor, short of coercive, adversarial measures such as sanctions and war.

In such a regime, irrespective of the actual legal doctrine adopted (i.e., strict liability, standards, or markets for rights), states with claims for damages would first need to prove before the court that the damages are indeed attributable to Global Warming. Because of great uncertainty and complexity of climatic processes, it is unlikely that scientific standards of proof would be forthcoming. Thus, for example, desertification of a region could be claimed as resulting from Global Warming. On the other hand, in a particular instance, it may also have more proximate anthropogenic causes, e.g., deforestation, livestock grazing, etc. Science may be unable to apportion responsibility for the damage in such cases to different antecedent causes. In addition, global climate

is not constant in any case, and is subject to natural variability. The question of whether a particular impact is attributable to crossing of a natural threshold by anthropogenic interventions may be hard to determine.

Suppose that in a given suit, despite these problems of proof, a court accepts the plea of a particular impact having resulted from Global Warming. Assume further that anthropogenic emissions of GHGs from different countries over time are well documented. In that case, the further question of assigning responsibility for the damage would arise, which would be fundamentally affected by the initial equity determination. This is because of the concept of "excess emissions," i.e., not GHGs emissions as such, but their excess over the share of global natural sinks assigned to the polluter should be the basis of apportioning responsibility. The question of equity is involved in sharing these sinks. The problem is made more complex by the fact that the capacity of the sinks is not constant, but at least up to a limit, increases with increase in emissions. Further, since different countries emit different proportions of individual GHGs species, and relative environmental impacts of different GHGs depend on the period of integration, a further equity issue is involved in choosing the integration period.

Additional problems with a legal liability regime arise from the fact that since states are considered as legal representatives of classes of agents, the long time periods involved in Global Warming may seriously undermine such representative roles. States themselves may undergo fundamental political change, including of their borders, in a few decades while the identities of polluters may be erased in the same time spans. Major evolution in "successor state" doctrines would thus be necessary for any legal liability regime to work.

Further problems may be anticipated in applying each of the three legal liability doctrines to Global Warming regulation. Strict liability cannot be enforced by injunctions to restore the pristine condition of the damaged resource, because the impacts of Global Warming are likely to be irreversible. On the other hand, adaptation costs are likely to seriously undervalue the damage suffered. Some impacts (e.g., changes in cropping cycles) may entail lifestyle and cultural changes, and thus, be essentially uncompensable. Applying an international version of the "joint and several" liability doctrine (together with strict liability) may be grossly iniquitous, as damages may be awarded against the most vulnerable, rather than the largest polluters. Also, as described

in the previous section, precedents for the imposition of strict liability in the international sphere are few and treaty framers are unlikely to accept a formulation that would constitute a major departure from current positions in international law.

If, on the other hand, a negligence standard is adopted, the issue of emissions entitlements of different countries cannot be avoided. Unless the (aggregate) standard were fixed at a threshold only over which damages would be perceptible, this would mean that all of the costs of damage would be borne by the victims. This threshold, if it exists, is likely to be highly uncertain in location, and a globally risk averse strategy may entail too low an (aggregate) standard, meaning that polluters may encounter unduly (i.e., inefficiently) high abatement costs.⁹ Negligence standards, however, score in the sense that they are where current international law doctrines and state practice seem to be at, and would therefore be more acceptable to international lawyers.

Given that large uncertainties would prevail regarding causation and in the actual Climate Change impacts in different times and on different regions, it is unlikely that markets for liability rights from Climate Change would be efficient. Further, since asymmetry of information on impacts between ICs and DCs is likely, and also because ICs are better organized, have greater resources, and are fewer in number, cartelization of the liability rights market is likely and thus the distributive effects may also be regressive.

A frequent criticism of liability regimes of any sort is that they often involve disproportionately high transactions costs. However, in the case of global warming, this might not be a significant issue, since the transactions costs may be small relative to the value of possible damage.

Consider now the alternative of administrative regulation of GHGs emissions by a multilateral agency under a negotiated Protocol. Carbon taxes and tradeable permits for GHGs would constitute market based instruments, while emissions standards would be a fiat based approach. In each case, the regulated agents would be the contracting states. Considerations of sovereignty would require that the regulation of domestic

⁹In the case of a regime based on standards, an interesting situation might arise if an global negligence standard nevertheless allows for serious *local* environmental impacts. For example, a state might choose to fulfil its international commitment by regulating only in a part of the country, and may leave industries in other areas to continue to pollute, with harmful local effects.

agents (firms, consumers) to ensure compliance with national obligations under the protocol, be left to domestic authorities.

Standard environmental economics results are that market based instruments ensure cost minimization for achieving any given environmental quality (or aggregate emissions).¹⁰ This result, however, hinges critically on the assumption that the regulated agents minimize costs, and additionally, in the case of tradeable permits, that the markets for permits are competitive. Neither assumption can be reasonably considered to be valid in the Global Warming context. Sovereign states are not profit maximizing firms, and these are good (positive as well as normative) reasons why they would not minimize costs (Ghosh: 1991). Further, cartelization of tradeable permits markets (whether during initial auctions or in subsequent exchanges) is clearly feasible for reasons similar to the liability rights market. One may conclude, therefore, that without further research, it is imprudent to suppose that market based instruments would minimize (global) costs of abatement.

The focus on efficiency in the environmental (and indeed in the neoclassical) economics literature generally is based on the premise that governments have at their disposal a suite of policy instruments (direct taxes, subsidies, etc.) which enable the country to ensure that its equity objectives are met, corresponding to any level of national income (efficiency). In that case, increases in efficiency are unambiguously desirable.

In the global context, this assumption is clearly untenable because, as stated above, the choice of any regulatory regime would involve a prior determination of the equity issue. Considerations of convenience would suggest that the choice of policy instruments is restricted to those which would yield significant revenues to the regulator. This would enable funds to be kept aside for adaptation strategies or compensation, as well as meeting the requirements of equity. These instruments are carbon taxes, and auctioned tradeable permits.

The likelihood of cartelization of permits market may, however, result in financial resource flows from poor to rich countries, and would impede equity. On the other hand

¹⁰If, additionally, there is no uncertainty about the locations of the MB & MD curves, each of these classes of instruments (market based as well as fiat) may be adjusted for efficiency. This requirement of information is so stringent, that at least in the global warming context it may be a non sequitur.

a permits system has the advantage of ensuring a pre-determined level of aggregate emissions. This cannot be accomplished by carbon taxes, although over time, the level of aggregate emissions for a given level of tax, would be fairly predictable. Carbon taxes also allow the possibility of different tax rates for different (classes of) countries, as another means for equity, although the effects of such a scheme have not been analyzed in the literature.

The discussion in this section is premised on monitoring and enforcement in multilateral regulation being perfect, under both legal liability and administrative regulation. The feasibility of at least effective monitoring and enforcement is a critical question, and needs sustained research.

Combinations of different policy instruments (e.g. pollution taxes combined with standards) have also been discussed in the environmental economics literature. Quite likely, one may also devise liability regimes which combine different doctrines (e.g. strict liability with markets for rights). The present study must however terminate at this point, and these possibilities for Global Warming regulation left for future research.

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