

Defining Limits: An Institutional Development Approach to Cap and Trade Programs¹

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In the last two decades, cap and trade programs have become an increasingly common institution of resource management, and some analysts have touted them as the ideal solution for sustainable governance of scarce natural resources and overloaded pollution sinks. Cap and trade programs are generally attractive because they offer the potential to achieve both sustainable resource use and economic growth on a long-term basis. Despite this potential, however, the effectiveness of actual cap and trade experiments has been mixed and social scientists are still struggling to explain why these programs are successful in some instances but not others. This paper addresses this question and will argue that the effectiveness of cap and trade programs is primarily determined by their political economic origins. The political economic origins of cap and trade programs are crucial because they determine the amount of political resistance that these programs will face in their introduction and implementation. The larger the relative difference between an established political economy and the cap and trade political economy that is intended to replace it, the more political resistance will be faced, and the more problems that will develop in the design and administration of cap and trade programs. In this brief paper, the essential features of cap and trade programs are outlined and the political economic origins of cap and trade policies are explored as a means of outlining the broad structure of this argument.

Cap and Trade Programs in Theory and Practice

Cap and trade programs come in various forms, but are defined by three essential features: 1) the establishment of an aggregate limit (or 'cap') on resource use; 2) the nesting of individual resource entitlements within the established cap; and 3) the trading of resource entitlements in regulated markets. Cap and trade programs are often categorized as 'market-based' or 'privatization' policies, but these labels are somewhat misleading because they obscure the fact that these programs actually combine a significant degree of state regulation with the establishment of private, and in some cases collective, resource entitlements. In fact, in some cap and trade programs, ownership of the resource is vested entirely in the state and the private entitlements that are allocated and traded amongst resource users constitute nothing more than basic usufructory rights. Furthermore, even though market trading of resource entitlements is a major feature of cap and trade policies, it is certainly not the only feature and, in some cases, entitlement trading is highly circumscribed by state rules (Rose

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2002, 236; Tietenberg 2002, 197, 204). Thus, to characterize cap and trade programs as market-based or privatized is to perpetuate a half-truth as state ownership and/or regulation are basic features of most cap and trade programs.

Cap and trade programs are also commonly confounded with credit programs, and although these two types of programs share some features, they are fundamentally distinct. Tietenberg makes a useful distinction between credit policies and cap and trade policies:

With a credit program, an individual access baseline is established for each resource user. The user who exceeds legal requirements (say by harvesting fewer fish than allowed or emitting less pollution than allowed) can have the difference certified as a tradable credit. The cap-and-trade program involves an absolute baseline and trades allowances rather than credits. In this case a total resource access limit is defined and then allocated among users (Tietenberg 2002, 204).

For resource management, the key difference between credit policies and cap and trade policies is the limitations each imposes on resource access and use. In credit programs, the limitations are individually based and open-ended in the aggregate, while cap and trade policies establish an aggregate limit bounding the collective use of individual rights holders. This means that if the number of users in a credit program increases, aggregate resource use will also increase (in the absence of any extraneous regulatory constraints); however, a similar increase in the number of users in a cap and trade program will result in the same aggregate use with some or all users getting a smaller slice of the resource pie (Tietenberg 2002, 204). Socially, this difference is significant because it means that relations between users are inherently zero sum in cap and trade policies but not in credit policies, significantly shaping the conflicts that underpin their formation and implementation. In this paper, the focus is exclusively on cap and trade programs and the unique political, social and economic challenges involved with their introduction and implementation.

In their ideal conception, cap and trade policies combine the policy goals of sustainability and economic efficiency and offer the potential to achieve both simultaneously. The achievement of sustainability is most closely linked with the “cap” part of cap and trade policies while the achievement of efficiency is most closely linked with the “trade” part. By implementing a cap, stakeholders and regulators are afforded an opportunity to limit aggregate resource use to a level within the bounds of sustainability, allowing the resource to be preserved and used far into the future. In the case of pollution control regimes, such as cap and trade policies to control carbon dioxide, nitrogen oxide and sulfur dioxide, the resource in question is the environment’s assimilative capacity, its finite ability to absorb pollutants without causing damage (Farrell and Morgan 2003, 169, 183). In economic theory, the allocation and trading of resource rights – within the bounds of a cap – should ensure that resource rights continuously “...flow to their highest valued uses,” thereby resulting in the most efficient aggregate use of the resource (Tietenberg 2002, 200). In combination, an ecologically sustainable cap and economically efficient resource trading should maximize the value of

available resource flows without unduly impairing resource stocks, offering an elegant management solution for stressed and scarce resources.

While the theory of cap and trade programs remains attractive – these programs are becoming increasingly common in the management of a wide range of resources around the world – their empirical record has been mixed. In some places, cap and trade programs have been a resounding success, putting overexploited resources on a sustainable footing and increasing the prosperity of the users relying on them. New Zealand fisheries are a commonly cited example of such success. In other places, though, the effects of cap and trade policies have been disappointing, in terms of sustainability, efficiency, or both. Some disappointing examples include fisheries in Iceland, Chile and Norway (Hannesson 2006, chapter 5; Yandle and Dewees 2003; Eythorsson 2003). This mixed record of success is both frustrating and perplexing. How can the same program be effective in some cases, but not others? What accounts for this variance and can measures be taken to ensure the effectiveness of cap and trade programs in all circumstances?

Thus far, cap and trade analysts – mostly resource economists – have treated this problem as a question of program design; more specifically, ineffective cap and trade programs are ineffective because they deviate too far from the ideal typical program design envisioned in economic theory. For instance, cap and trade programs are unsustainable because caps have been set too high or too many resource users have been exempted from the program, and cap and trade programs are inefficient because there are too many regulatory barriers to entitlement trading or the price of entitlements has been artificially inflated or deflated. However, while design deviations such as these are a plausible proximate cause of the ineffectiveness of some cap and trade programs, the current literature provides little more than a general explanation of the design deviations themselves, and, therefore, does not really identify the ultimate causes for the ineffectiveness of some cap and trade programs.

For the most part, analysts have attributed cap and trade design deviations to the general phenomenon of ‘politics’ and have treated politics as an unfortunate complication to be avoided rather than a social reality to be further investigated and understood. Illustrative, in this regard, is Hannesson’s analysis in the Privatization of the Oceans:

...even if a new institution such as property rights to fish would bring an overall gain to society it does not necessary [sic] benefit all and harm no one. While those who expect to gain will promote and support the new institution, those who expect to lose will fight it with equal or greater vigor. Sometimes the gainers prevail, but at other times the losers do (Hannesson 2006, 2)

While Hannesson’s characterization of the politics involved in introducing cap and trade programs is insightful, his suggestion is to try to avoid such political conflicts either by “...defining stakeholders narrowly and in such a way that their interests are well aligned” or by developing policies in “greenfield” situations where vested interests have had little chance to develop (Hannesson 2006, 108, 173). Both of these suggestions are intended to avoid or minimize political

conflicts that may produce deviations in cap and trade programs, but neither suggestion is realistic. Cap and trade policies are most needed and are most likely to be introduced in situations of resource scarcity and overexploitation where political conflict is ripe and virtually unavoidable. So, it is unrealistic to try to avoid politics in the introduction of cap and trade programs, and the focus, instead, should be on understanding how politics shapes cap and trade programs and what implications this has for program design and effectiveness.

The Political Economic Origins of Cap and Trade Programs

There are many distinctive types of resource management institutions, of which cap and trade programs are only one example. These institutions are fundamentally important because they establish an overarching web of rules that determine the amount of resource flows appropriated from a resource stock and how these resource flows are allocated amongst resource users. Cap and trade programs, for example, impose a regulatory limit on the aggregate amount of resource flows that can be taken from a resource, but many resource management institutions do not impose such limits, leaving aggregate use more open-ended. Similarly, cap and trade programs tend to allocate resource flows to the highest value and most efficient resource users, but other resource management institutions impose much different resource allocation regimes that prioritize or protect resource access for various users or communities. Although resource management institutions are not the only factor shaping the appropriation and allocation of resource flows, these institutions establish rights, obligations, prohibitions, and incentives that substantially affect the behaviour of resource users. Accordingly, they are probably the single most important determinant of resource use, and the great variety of institutional designs that exist can lead to much different patterns of resource use.

When the influence of resource management institutions on resource users and resource use is examined in totality, it becomes clear that resource management institutions essentially create their own distinctive political economies. This occurs in a number of ways, but all of them relate to the fact that resource management institutions inevitably privilege some resource-related interests over others. One of the basic functions of resource management institutions, for instance, is the recognition and legitimation of claims to resource flows through a system of resource rights or entitlements. Because most renewable resources are scarce, not all resource claims can be accommodated, and institutions shape a political economy by recognizing and legally sanctioning some classes of potential resource users while rejecting or ignoring others. At the same time, many resource management institutions also contain rules on the distribution of state rents, as governments often become involved in shaping resource-based political economies through subsidies and other forms of state largesse. Even the general values and priorities reflected in a resource management institution can have a formative influence on a political economy, such as, for example, whether a conservation or exploitation ethic is the norm amongst resource users. Just as there is great variety in the design of resource

management institutions, so is there great variety in resource-based political economies, with cap and trade political economies being only one distinctive type.

All resource-based political economies are fundamentally defined by the relative priority they confer to the ecological, economic, and social dimensions of resource use. The ecological dimension involves such things as resource sustainability and the preservation of nature; the economic dimension involves such things as resource-use efficiency and the maximization of profit; and, the social dimension involves such things as the preservation of culturally significant resource users or resource-dependent communities (Clover 2006, 224-225). Any resource-based political economy can be geared towards the maximization of one, two, or all three of these dimensions, reflecting the great variety of resource-based political economies in the real-world. In this regard, cap and trade political economies are geared toward the simultaneous maximization of the ecological dimension (through the 'cap' element) and the economic dimension (through the 'trade' element), distinguishing them from other political economies geared toward other objectives. This also provides some sense of the relative difference between cap and trade political economies and various other political economies that may share some or none of the underlying objectives of cap and trade programs.

Because resource management institutions are intertwined with established political economies, the introduction of cap and trade programs involves nothing less than the fundamental displacement of one political economy with another. Displacing an established political economy is a formidable undertaking for many reasons. First and foremost, all political economies create vested interests that benefit disproportionately from the established political economic order, and these vested interests are highly motivated to protect the status quo. Due to their advantaged position, vested interests are also often politically influential and well placed to undertake substantial political resistance to reform. Furthermore, established political economies can be resilient due to the substantial political and financial investments made in their establishment. Even those who are not personally vested in the established political economy, such as government officials, may be reluctant to abandon past investments that will be lost or stranded if a new political economic order is embraced, helping to perpetuate the established political economy. Finally, established political economies can be difficult to displace because the thresholds of political agreement required for the necessary institutional reforms – such as intergovernmental unanimity, consensus of legislative veto players, or both – are very difficult to achieve in even the most favourable conditions. In combination, these factors (vested interests, investments, and thresholds of agreement) suggest that there is a gauntlet of potential barriers to the introduction of cap and trade programs, many of them rooted in the established political economies that these programs are intended to replace (Pierson 2004, chapter 5).

Ultimately, this means that the nature of established political economies plays a formative role in the introduction of the cap and trade programs that are

intended to replace them. More specifically, the relative difference between an established political economy and its intended cap and trade successor is crucial because the greater this distance, the more likely that vested interests will resist, the more likely that past investments will be threatened, and the less likely that high thresholds of political agreement will be reached. For instance, an established political economy that is geared toward the maximization of the social dimensions of resource use would undergo nothing less than a paradigmatic political economic change with the introduction of a cap and trade program. In such a transformation, the vested interests of the established political economy are clearly threatened, longstanding investments are clearly jeopardized, and political resistance to the introduction of cap and trade would be substantial. If, however, cap and trade policies are introduced in an established political economy that already shares at least some of the underlying ecological and economic objectives of cap and trade programs, vested interests and investments are much less threatened, sparking much less political resistance.

Political resistance is a crucial factor in the functioning of cap and trade programs because it affects both their design and implementation. When vested interests and longstanding investments are threatened by the introduction of a cap and trade program, pressures immediately develop to create exemptions or exceptions in the new cap and trade system that will protect these interests and investments in the new political economic order. Given the substantial political power of many vested interests, the incorporation of exemptions and exceptions may be necessary for any resource management reforms to be introduced. So, for instance, a cap may be set at a relatively high level to protect historic users or entitlement trading restrictions may be instituted to protect lower value users who would otherwise come under pressure to sell their entitlements. Even after a cap and trade reform is formally introduced, holdovers from the old political economic order who are unable or unwilling to adapt to the new cap and trade system may continue to resist its implementation, collectively undermining the program. In short, the more political resistance to a cap and trade program, the more likely it is to deviate from the ideal typical cap and trade model in design and implementation, and the less successful it will be in achieving its basic ecological and economic objectives.

Ultimately, the effectiveness of a cap and trade program depends substantially on the nature of the established political economies into which these programs are introduced. Established political economies that are not geared toward at least some of the underlying ecological and economic objectives of cap and trade programs will produce considerable political resistance to the program, undermining its design and implementation. Conversely, established political economies that share some of cap and trade's underlying objectives will engender less political resistance, allowing for a much smoother and more successful transition to a cap and trade political economy. If this is the case, then a number of other questions are raised that are in need of further investigation. Should the use of cap and trade programs be restricted to resource-based political economies that are already geared toward the maximization of the ecological and/or economic dimensions of resource use,

where they are most likely to be effective? Are there instruments at governments' disposal that can facilitate the transition to cap and trade in established political economies that do not share the underlying objectives of the program? When cap and trade programs are only partially introduced, do they tend to remain partial, or do the partial reforms create inexorable forces that push toward a full cap and trade system?

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