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Governance Challenges in Financing Green and Sustainable Energy Policies

MICHAEL T. CLARK
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- The Copenhagen climate summit in December 2009 confirmed that there is broad international agreement on tasks to be accomplished. However, the summit ended by presenting UN Member States with a fundamental choice between two incompatible forms of agreement: the »grand coalition« approach that has evolved for nearly two decades under the UNFCCC, aiming at a comprehensive legal agreement arrived at by consensus among all UN Member States (G192), or the more limited »plurilateral« approach and voluntary commitments of the Copenhagen Accord. A third approach is also possible and would emerge from a broader »grand bargain« that bundled systemic reforms in global financial governance for broader sharing of commitments to climate stabilization.

- The key to understanding all three approaches is the underlying funding mechanism that each strategy relies upon to enable worldwide public and private investment in climate mitigation and adaptation. The Copenhagen Accord relies upon, and can support little more than a »tax and transfer« mechanism. The UNFCCC grand coalition approach is required to enable a powerful alternative mechanism: raising the price of atmospheric carbon to reflect its true social costs and also, thereby, incentivize strong market responses, including private investment and international offsets trading. The »Grand Bargain« approach opens the door to a third mechanism - emissions of IMF Special Drawing Rights in order to finance abatement and adaptation in the developing and emerging countries.

- There are vital differences between the three approaches, and the goal of this paper is to demonstrate how and why the choice of frameworks will have profound consequences for the efficiency and effectiveness of governance and for the development of sustainable energy policies at the national level.

Dialogue on Globalization

Table of content

»The time for talk is over, this is the bottom line: We can embrace this accord, take a substantial step forward. We can do that and everyone in this room will be part of an historic endeavor or we can choose delay. We will be back here making the same stale arguments, year after year, perhaps decade after decade, all until the danger of climate change grows until it is irreversible.« – President Barack Obama, Copenhagen, December 2009

»The underlying thought is that the ultimate goal is a safe planet, and that absent a top-down global treaty, that goal is probably best achieved by aggressive, bottom-up national strategies to reduce emissions. Not that these are a sure thing; the United States, embarrassingly, has no national strategy. Until it gets one, it can hardly lecture anyone else. Nor will the world stand a ghost of a chance of bringing emissions under control.« – New York Times editorial, February 22, 2010

Introduction: The Specific Challenges of Climate Change Governance

»A global crisis requires a global solution.« Thus said the G20 leaders outlining their response to the world financial crisis in their final communiqué at the London Summit in April 2009. The same generic statement can be, and routinely is, made about the global climate crisis. The statement begs many questions, and the issue of global response to global climate crisis requires that we first unpack the notion of »global« and ask: In what sense is climate change a »global« crisis, in what sense does it »require« a global solution, and in what sense is a global solution »global«?

The existence of the atmosphere as a global commons, from which no nation may be excluded and by whose warming all nations will be affected; the limited carbon or GHG carrying capacity of the atmosphere; the fast-approaching thresholds of total carbon load; the increasingly high likelihood of catastrophic effects from global warming above a mean temperature of 2 degrees Celsius; and the near certainty of failure to contain global warming without large-scale up-front investments across the globe to capture rapidly disappearing abatement opportunities – all these factors combine to make global warming a truly global crisis. The challenge lies in the fact that the burden of responsibility for the current carbon load lies decisively with the developed countries, while the cost-efficient opportunity for (or burden of) abatement and adaptation lies largely with the developing countries. Time sensitivity places a heavy premium on early investments in abatement using currently available, relatively high-cost technologies, which heavily shifts the costs of abatement to the most heavily affected developing countries that, by definition, are far-more resource constrained than the developed countries. While considerations of equity and efficiency converge around finding the right balance of interests and commitment that would permit a truly global solution, there is as of yet no agreed agency to guarantee or, better put, mobilize effective collective action.

In the remainder of this paper, we (1) examine three competing frameworks for establishing a global regime for climate governance, including mobilization and governance of international finance for green and sustainable energy; (2) demonstrate that under any effective and sustainable scenario, the primary responsibility for governance activity lies with the Member States of the United Nations and cannot and will not be delegated to a supranational authority; and (3) analyze the current and potential contributions of existing institutions and mechanisms for strengthening national capacities and international coordination. Specific instruments and facilities will not be analyzed in detail here. The aim of this paper is to highlight the powerful relationship between the overall global framework and the institutions, mechanisms, and instruments under which cooperation will be organized and conducted.

Two Models of Global Governance: UNFCCC vs. the Copenhagen Accord

At Copenhagen in December 2009, parties to the UNFCCC were presented with two alternative pathways to reaching an international agreement to guide the global response to climate change. The first approach aims at a comprehensive legal agreement developed through a multifaceted negotiating structure and ultimately grounded in consensus among all 192 United Nations Member States (and others) party to the Convention. The cornerstones of this approach are to achieve legally binding commitments to emission reductions on the part of Annex I (developed countries), and to advance new proposals to develop a consensual framework for strengthening international cooperation to mobilize fi-

nancing for developing countries to implement complementary strategies for emission reduction. The second approach, the Copenhagen Accord, which was outlined in the agreement negotiated by a self-selected group of 29 Parties on the sidelines of the formal negotiations at Copenhagen, defines an alternative pathway to global agreement marked by open-ended adherence (a.k.a., a coalition of the willing), voluntary and non-binding commitments to emissions reductions by all parties, no overall targets for global emissions reduction linked to the agreed objective of preventing a rise in average temperatures beyond 2 degrees Celsius, and a process of periodic review.

We can analyze the introduction of these alternatives as an exercise in strategic bargaining by some of the main parties to redefine the rules of the game. The insights of game theory are particularly helpful in such an undertaking. Shorn of its formal apparatus, game theory allows us to construct a simple but revealing and cogent narrative about what happened at Copenhagen.

Most analysts agree that a comprehensive solution that commits all parties to aggressive climate mitigation goals, and that provides for substantial financial transfers, directed towards, and split evenly between, developing countries' mitigation and adaptation needs provides the optimal solution in two important senses: the agreement maximizes the potential for abatement, and every party is made better off by the deal.

Game theorists recognize this possibility, and call this type of comprehensive solution the »grand coalition« approach. They also acknowledge that bargaining takes place among different coalitions of actors, each with different configurations of interests, and they also assume that each party will seek the agreement that best suits its needs and priorities. In order to achieve a viable deal, in circumstances where there are many unknowns, bargaining parties use different negotiating strategies to discover the possible terms of a deal through an iterative process. The pursuit of self-interest does not, in itself, prevent a grand coalition from succeeding. Because certain features of an optimal solution can be hypothesized in advance, depending on how the terms of the game are framed, it is possible to seek the formula of the grand coalition by following a cooperative »core strategy« that seeks the welfare maximizing (and Pareto optimal) solution. The core strategy is »dominant« or wins out over other solutions because the welfare trade-offs it offers to the parties are superior to all other solutions.

The UNFCCC process is an instance of grand coalition bargaining, and its inclusive, transparent, iterative, and legally binding procedures are intended to permit Parties to follow a core strategy. Given the range and complexity of the issues to be sorted out, the varying particular interests of the participants, and the learning and discovery processes involved, as well the inevitable and still appreciable unknowns about the behavior of the environment and the effectiveness of proposed policy responses, grand coalition bargaining is, unavoidably, complex and slow.

In the real world, because no one knows in advance what specific bargaining outcome is required to achieve an agreement that effectively balances the needs and interests of all parties, it is an essential aspect of the process that the bargaining parties will test the range of possibilities by floating different concepts and principles. The optimal solution is normally not the only possible solution; different solutions meet the needs of different subgroups and coalitions better. And because different solutions are possible that can satisfy the interests of at least a stable majority of parties, it is always likely that some actors will be tempted to »game the game« by proposing and negotiating toward solutions that leave themselves better off than they would in the optimal solution that leaves everyone better off.

When would a large player or coalition abandon a cooperative core strategy and instead opt for a non-cooperative negotiating strategy? Game theory gives a straightforward answer: when one or more of the parties feel that an alternative solution would allow them to capture more of the benefit of the solution, or to lower the costs to themselves of providing it. In the context of climate change, it is not possible for any party to capture more of the benefit of emission reductions for themselves, so the primary driver would be a belief that one can avoid being bound to shoulder more of the cost or force others to seek financial or technical support on commercial terms. The alternative negotiating strategy, then, is to »defect« or »deviate« from the grand coalition and to try to establish an alternative coalition that includes enough of the other parties to achieve enough of the desired benefits from emission reductions, while substantially lowering the costs to oneself.

Is this what happened at Copenhagen with the U.S. decision to spike the UNFCCC process and present the Conference with a take-it-or-leave-it alternative proposal? There are more than a few indications that this is in fact the strategy selected. In the first place, the U.S. would receive in the alternative bargain a major change in the agreed premises of the international agreement: it would be permanently excused from any binding commitments – an issue that had been unresolved since the U.S. opted out of the Kyoto Protocol. It was also clear that the U.S. negotiators also sought upfront commitments by countries with developing and especially emerging economies, and wished to decisively break with the Kyoto Protocol's requirement that developed (Annex I) countries commit first. Whether the U.S. government also scaled back its expectations about what could and must be achieved to minimize the threat of global climate change is uncertain.

The Copenhagen Accord accepts the international consensus that the goal must be to hold GHG to levels below the threshold that would cause temperatures to rise over 2 degrees Celsius. But it is silent on interim targets to meet that goal and has no requirement that Parties' commitments should sum up to levels that achieve that goal, and does away even with the Bali Action Plan's requirement that national commitments should be comparable. Several developing country negotiators indicated at Copenhagen that they tried to set ambitious goals of 50 per cent emission reductions by 2020 compared to 1990, and a target of 80 per cent by developed countries in the same period. The problem, they asserted, was China, which refused to accept its fair share of the burden. China's resistance, and that of many other developing and emerging countries, is easy to understand. As the South Centre's Martin Khor has pointed out (2010), these proposed commitments »imply that developing countries would have to commit to cut their emissions overall by about 20 per cent in absolute terms and at least 60 per cent in per capita terms. The acceptance of the 50 per cent global cut and 80 per cent developed countries' cut would also have locked in the most unfair sharing of the remaining global carbon budget.«

In fact, it is unclear whether the U.S. negotiators supported the aggressive targets; official U.S. policy as articulated by President Obama sets no more specific target than that agreed by the G8 in July 2009, a goal of reducing global emissions by 50 per cent by 2050. The U.S. pledge for emission reduction from 1990 levels that was submitted in conjunction with the Copenhagen Accord is a lowball 5 per cent. This level of commitment has immediate spillover effects, since the average developed country commitment has now fallen to between 13 and 19 per cent (the higher figure reflects previous pledges made by countries in other contexts). This is well below the aggregate target levels of 25-40 per cent agreed at Bali in December 2007, which in turn were based on IPCC projections of levels that are required to assure global warming is limited to less than 2 degrees.

Despite these limitations, it is important to recognize that the Copenhagen Accord represents a politically viable framework for achieving (suboptimal) global coordination on climate change and is therefore a serious contender to displace the UNFCCC grand coalition framework. It has this potential in part because it proceeds on alternative assumptions that are distant outliers to mainstream expert global consensus on the necessity of globally coordinated response, on the large scale of the effort required, including for financial flows for developing countries, and on the limited potential role of market forces, absent powerful government intervention, in providing cost-efficient and scalable solutions that work for developing as well as developed countries. It also has the potential to work as a political strategy because it plays on a powerful factor not captured in most standard game-theoretic models of climate bargaining: the non-climate status or recognition goals of the large emerging or transition states – Brazil, China, India, Indonesia, Mexico, Russia, South Africa, and South Korea. The substitute process proffered by the U.S. at Copenhagen trades on the ambivalence that these countries have about being clubbed with the developing countries, and proceeds from a shared recognition that these relatively few countries combined with the core of advanced industrial countries in North America, Europe and Japan have the capacity to provide most of the means for, as well as the benefits from, emission reduction and GHG abatement.

It is also important to recognize, however, that the alternative path suggested by the Copenhagen Accord comes at a substantial price, implying not only acceptance of substantially increased climatic risks, especially for the most vulnerable, loss of precious time in developing the strategy for achieving timely abatement, and also substantial weakening in the potential for future collec-

tive action should the risks prove to be greater than anticipated. As we have already noted, the Copenhagen Accord reduces the ambitions of the developed countries, not only by removing the legally binding nature of the UNFCCC process, but also by substantially lowering the targets. It is founded on a dramatically reduced sense of urgency. It reverts to processes of negotiation and policy decision that are inherently non-transparent, and it all but eliminates any hope that an accountable institutional framework can be established to assure effective representation of all affected parties. The Accord markedly shifts expectations concerning global coordination, and thereby lowers the incentives for private as well as public actors to adopt more ambitious policies: to take just one important measure of expectations, the price of carbon fell after the Copenhagen Accord was announced. The Copenhagen Accord also substantially lowers the bar for self-binding, and thus lowers the incentives, and the sense of obligation, for non-participating Parties to prioritize climate reduction over competing national development goals.

Last, it has to be said, the Copenhagen Accord all but kills prospects for a collective strategy seeking »self-enforcing agreements, « that is, the kind of agreements that arise from grand coalition bargaining procedures and from a negotiating outcome that is widely perceived as legitimate owing to its commitment to inclusiveness, transparency, perceived fairness in the balance of effort, and national ownership of all agreed principles, procedures, and responsibilities. Instead, the Copenhagen Accord re-establishes a well-worn pattern of global governance that has one set of rules and procedures for a small subset of powers, and a different set of rules backed by, usually, coercive procedures for enforcing compliance by non-parties to the rule-making process. This prospect of increased reliance on coercion was more than hinted at when the U.K. Environment Minister declared at Copenhagen that his country's interest in providing financial support for developing countries was conditioned on those countries' acceptance of the Accord. And it is reflected in the statements of several U.S. government officials, both before and after the Copenhagen conference, that the U.S. has instruments, including unilateral denial of trade access, to enforce compliance on recalcitrant states.

In this respect, the Accord recreates the hierarchy and special privileges that the United States and sometimes a few others enjoy in the other major arenas of institutionalized global collective action: the veto status accorded to the United States and the four other putative winners of World War II in the Security Council; the formal unilateral veto power enjoyed by the U.S. in the IMF, and de facto dominant decision-making influence at the World Bank; and the discriminatory principles and double-standards of the Nuclear non-Proliferation Treaty (NPT) and international nuclear regulatory framework. While efforts at reform are on-going in each of these areas, the UNFCCC strategy for climate change had – one can hope it still has – the advantage of not being burdened by the powers of incumbency that the developed countries enjoy in each of those other processes. In sum, there is a great deal at stake for climate governance in the choices presented at conclusion of the Copenhagen conference.

Climate Governance and the Locus of Primary Responsibility

Under any foreseeable global agreement, the primary locus for climate governance will be and must remain with the nation-states, including the developing countries. This is so in part because the international system is, by definition, a system of nation-states. Today no international institution can lay claim to the same levels of legitimacy, institutional development, democratic accountability, capacity for authoritative decision-making that even fairly weak governments have today. If governance is fundamentally about participation, transparency, and accountability, then no other large-scale institution competes with the nation-state on all three grounds, even where national governance leaves much to be desired. But there is more to it than that.
It is important to understand the nature of the issues and tasks involved in formulating and implementing a national strategy for response to climate change, especially in the circumstances faced by most developing and emerging countries.

Conceived, properly, as a »big push« to set an entire economy on a low-carbon pathway, the development of a comprehensive national strategy for response to climate change involves making hard decisions about large-scale public investments; tradeoffs between immediate and pressing development needs and less palpable and easily discounted future needs; exposure to

additional international financial flows and, almost certainly, significant increases in public as well as private indebtedness; and investments in new, often unproven technologies. In all these ways, a climate strategy increases risk, which constitutes a major cost and adds a large layer of economic and political uncertainty to an already daunting task of formulating and supporting an effective national development strategy.

In a crucial sense, it is all about the money. First, the opportunity presented for relatively low-cost mitigation in developing countries comes from the fact that most developing countries enjoy high or rising growth prospects and therefore have more degrees of freedom to select emission reducing energy sources and infrastructure, efficient transportation systems, and a climate friendly built environment. But this places a premium on sophisticated policy formation and government planning, and on highly skilled technocrats and officials. Regulation and its handmaiden, tax policy, both play a vital role in structuring incentives. But regulation must be carefully adapted to local circumstances, to national and local priorities, and to the specific array of private and public interests whose interplay constitutes the »stuff« of national politics and policy formation and that must be carefully balanced by astute but always vulnerable national political leaders.

Introducing tax or licensing procedures to achieve more ambitious or complex strategies, such as increasing the price of carbon, calls for special expertise, and will not prove sustainable unless a finely balanced system of financial rebates is implemented to offset the highly regressive impact of raising the carbon price. Effective design and implementation, monitoring and enforcement of regulations is also expensive; developed countries frequently overlook this fact and so underestimate both the financial and political opportunity costs of regulations of developing countries. This has been a major, continuing factor contributing to the weakness of the global intellectual property regime, where the economic and political costs of implementing an effective IPR regime are far more expensive to implement and sustain than lowering a tariff rate. The incentives for providing a public good, for example by constraining consumption of the atmosphere, in these circumstances are lop-sided against a major national commitment since the immediate economic and political payoffs are marginal, diffuse, and difficult to demonstrate, while the costs appear far more certain and immediate.

But behind the money issue is another, deeper reason why great deference must be paid to nation-states in the development of climate mitigation strategies. The choices involved in effective governance are often recalcitrant to standard welfare accounting because they involve normative or evaluative decisions (Rodrik, 2007). Economists, Carlos Diaz-Alejandro (himself an internationally prominent economist) once quipped, know the shadow prices of everything, but the value of nothing. Deciding how to value development here and now, say through the construction of large coal-burning power plants to provide immediate energy access to millions of poor people, against the benefits owed to generations unborn involves profound ethical judgments and normative decision-making. Because national and local political institutions, whatever their weaknesses and often patent failings, have developed in organic relationship with the civil society they are meant to serve and to whom they remain most intimately accountable, respect for the peoples they serve requires a substantial deference to the autonomous decision-making authority of nation-states.

This moral insight explains why respect for national sovereignty is more than a practical necessity, but is also the fundamental normative principle of the international system. The goal of developing more vital international institutions for collective action is not to depart from or alter this fundamental norm, but instead to strengthen it by increasing the effectiveness of nation-states as providers of national security and of the general welfare. This is perhaps the most compelling reason why climate governance resides principally, and legitimately, with nation-states, and why the goal of collective action is not to restrict the sovereignty of nation-states but ultimately to enhance it.

A global regime with low legitimacy and weak incentives to effort, such as that embedded in the Copenhagen Accord, increases the financial and political burdens and dramatically lowers both the capacities and the incentives for developing countries to prioritize ambitious climate mitigation. It thereby also increases the pressure on developing country governments to seek concessional transfers while also undermining the sense of national ownership and obligation felt by national leaders. To this extent, the choice of international regime may constrain or ease the burden of national decision-making; but it does not in anyway shift the primary locus of responsibility.

Evaluating the Separate Contributions of Institutions, Mechanisms and Instruments to Governance

If governance is essentially national and climate change adds important new challenges to economic strategy formulation and implementation, what is the appropriate role for international institutions? What mechanisms exist for mobilizing resources? And what instruments exist to make financial support available on terms that substantially improve the feasible set of options for developing countries? How do these institutions, mechanisms and instruments contribute to governance? The goal of this section is to connect the themes of the first two sections to the way that governance works in alternate global governance regimes.

Although this is not the normal practice, it is helpful to think of instruments, facilities, mechanisms, and institutions linked to financial flows in the language of financial services. Instruments are similar to financial products (specifically, different types of contracts between the parties defining the terms on which funding is provided and the purposes for which it may be used). Facilities serve as channels, through which products are distributed or accessed. Mechanisms can refer to the manner of funding, or resource mobilization. And institutions in the context of international financial flows serve the purpose of regulations: they include both rules (norms, principles, best practices, legal framework, and policy) and organizations (agencies through which the rules are made, and through which compliance is monitored and enforced).

The principal thesis of this paper is that while there is a nearly infinite plenitude of potential instruments, facilities, and institutions for climate finance, there are relatively few true funding mechanisms, and that the availability of different funding mechanisms depends critically on the nature of the international agreement that governs international cooperation. To be more direct, there are essentially three mechanisms on offer today: tax and transfer; raising the carbon price, which allows for international offsets and carbon trading to finance international transfers; and issuance of new financial resources through the creation of international money. Each of these mechanisms enables a bewildering variety of instruments, facilities, and institutions. But each mechanism also requires a substantially higher intensity and scope of policy coordination. The paradox is that the mechanism that requires the lowest levels of »bottom up« international coordination – tax and transfer – tends to be associated with the most coercive forms of governance, while the mechanism that enables and enforces the highest levels of coordination – allocations of IMF special drawing rights (SDRs) – is the least coercive and most governed by rule of law.

Most of the instruments and facilities available today to encourage and support international financial flows to developing countries, and most of the so-called new and innovative sources of finance for sustainable development, rely on a single mechanism: tax and transfer. Reliance on this mechanism as a means of mobilizing support for developing country investment in climate mitigation has important implications for governance that affect all instruments and facilities that rely on the tax and transfer mechanism.

First, more than fifty years of international experience demonstrates that there are clear global limits to the total sums that can be mobilized through this mechanism for all development purposes. The target rate of 0.7 percent of developed country GDP to be dedicated to concessional development assistance was first established in the 1950s, and while commitments are routinely renewed, the target date for achievement of that goal seems to continually recede. It is extremely difficult to see how, even in the unlikely possibility that this target is met, that the 0.7 per cent target is sufficient to meet agreed Millennium Development Goals and agreed climate mitigation resources. Given this brutal reality, it is highly unlikely that »new and additional« assistance to cover »agreed incremental costs« of mitigation and adaptation will be forthcoming through the tax and transfer mechanism. Instead, the emphasis on climate mitigation will naturally compete with development goals; for the foreseeable future, in which the costs of alternative sources of energy are expected to remain substantially higher than most readily available carbon-fuel technologies, »building a consensus« with developing countries on the need to focus on climate change means, in practice, forging agreements to prioritize climate mitigation over development goals. As noted above, the means of building consensus are not limited to moral suasion, but also include conditionality that reflects developed country preferences, and modes of coercive bargaining that include unilateral trade sanctions.

A second limitation of the tax and transfer mechanism is that the political linkage between taxation for transfers to developing countries sets up a major governance mismatch between the parties that provide the funding and those that need to make the decisions about whether and how to use the funds. The governments that provide the funding are accountable to a different civil society than the governments that receive it. The result is the well-known tendency of official development assistance to reflect donor policy preferences and prescriptions – and for donor governments to insist on assuring themselves a dominant voice in the governance institutions and rule-making processes. Multilateral and regional development banks, which rely heavily on the tax and transfer mechanism, have a similar governance mismatch. The extreme expression of this mismatch, of course, was the Washington Consensus, which enshrined in lending instruments policy principles that reflected the ideological preferences and prescriptions of the few donor countries that dominate governance of the World Bank and IMF. The strongest evidence of a profound governance mismatch, as has often been observed, is that on average the countries that fared best during the reign of the Washington Consensus were those, located mostly in East and South Asia, that most conspicuously violated its precepts.

The »bottom up« approach favored by the Copenhagen Accord appears to permit broad scope for experimentation with instruments and has allowed for experimentation with governance of funds and facilities, in some cases allowing developed and developing countries to participate on equal terms. This formal symmetry in governance is salutary to the extent that genuine dialogue and greater transparency is enabled between donors and recipients. But it would be naïve to assume that the underlying asymmetry in the political economy of the funding mechanism will not reassert itself, not least in the on-going push and pull of whether to increase or decrease successive rounds of funding.

The developed countries that have formally associated with the Copenhagen Accord have committed to provide new and additional resources »approaching« $30 billion for the period 2010 – 2012, and set a goal of mobilizing $100 billion per year in new resources »to address the needs of developing countries.« The funds would come from »a wide variety of public and private sources.« And the commitment is conditional: The sentence containing the pledge starts with the phrase (para. 8): »In the context of meaningful mitigation actions and transparency in implementation.« The amounts proposed are in line with the constraints of the tax and spend mechanism. The funds are expected to be split evenly between adaptation and mitigation, and of the $50 billion that would be dedicated to climate mitigation, $10 billion would be available on concessional terms. This sum, arguably, would be negotiable – isn't everything in life? But the net $10 billion in concessional finance for mitigation sets an extremely low starting point for any future discussions.

The most important test of any governance regime, of course, is the outcomes it produces. Can $50 billion in targeted official development assistance flows for climate change mitigation, $10 billion of which is concessional, catalyze a global shift toward a low-carbon pathway and do so in time to limit global warming to 2 degrees Celsius? While most experts that have participated in the international debate would probably be skeptical, the Obama administration has advanced a theory under which relatively low public financing that is intelligently targeted can trigger large changes in economic and market behavior. As outlined by the Council of Economic Advisers (CEA) in their Annual Report of February 2010, the theory holds that President Obama's goal of reducing U.S. emissions by 80 per cent by the year 2050 can be reached through a smart strategy that relies on small public investments designed to overcome market failures and rigidities, especially in the R&D leading to testing and commercialization of new and cost-efficient clean technologies, in combination with economic rationalization of tax policies (eliminating subsidies on hydrocarbon fuels, creating tax incentives for private investment) and modest efforts to raise the price of carbon through a cap on emission allowances calibrated to keep overall costs as low as possible.

Economists, doubtless, would debate endlessly whether the theory that underlies the Obama strategy is robust in light of real world experience. Much of the argument would be directed toward the unstated assumptions on which the theory rests and toward analyzing the timing of the impact – specifically whether the real impact is front-loaded, or back-loaded, within the 40-year period of 2010 – 2050. The latter issue is critical for determining whether the U.S. strategy is compatible with what most experts believe is required for timely GHG abatement.

For the present purpose, it is enough to state that the Copenhagen Accord would commit its adherents to the (unproven, and probably unprovable) economic theory underlying U.S. climate strategy.
The approach outlined by President Obama's Council of Economic Advisers is described as »market-based,« presumably because it relies upon altered market behavior to achieve the large shift in mobilization of finance and new investment that is required to produce a secular shift onto a new carbon path. Yet the Report of the CEA is decidedly squishy on the one step that virtually all economists agree can catalyze a major market response: raising the price of atmospheric carbon to those who produce it.

There are at least three major problems with raising the carbon price. The first is that the larger and more urgent the desired effect, the larger and more economically costly and politically risky the intervention required. Given the large and vital role of installed carbon-based energy in most vital real economic activity, raising the carbon price can have potentially large micro- and macro-economic dislocational impacts. Set the price too high and a recession can result – this is the downside of truly market-based mechanisms. More challenging to the political system are the distributional effects. A carbon tax or a restrictive allocation of emissions permits is bound to raise the price of energy to individual consumers and therefore almost everywhere will be highly regressive, as most consumers will not in the short run be able to shift to lower cost alternatives.
There is a relatively simple solution to the distributive issue: a direct payment to all citizens in the form of a rebate, or »feebate«. One advantage of such a scheme is that to extent the rebates are progressive – as they would be in circumstances where revenue collections are based on carbon consumption, but »dividends« are paid out on a per capita basis – they would help to build a constituency for public intervention to address climate change. This is the compelling logic behind U.S. »cap and dividend« proposals now emerging as the U.S. Senate begins consideration of climate policy.

Raising the carbon price is often associated with a related scheme intended to improve the allocational efficiency of investment: trading of offsets for emissions-reducing investments. A second major challenge with raising the carbon price is that, as noted earlier, low-cost energy investment opportunities are distributed on a nearly two-to-one basis in the developing world. An efficient emissions trading facility, accordingly, requires a relatively high carbon price to overcome the higher transaction costs associated with international trading as well as a robust and harmonized regulatory regime to assure the proper accounting for emissions as well as a somewhat flexible, but generally consistent and efficient pattern of incentives across international boundaries.

The third problem with the carbon price cum emissions trading approach is that it requires a consistent international regulatory regime, that is, a regulatory regime that operates at the national level in the vast majority of countries, including all major countries, in ways that assure consistent and comparable accounting, limited variability in rules, high and consistent standards of transparency, and well-defined and circumscribed opt-out rights. Such an international regime is not feasible within the limited terms and ambitions of the Copenhagen Accord, but is only imaginable within the UNFCCC process with all the developing conceptual and institutional resources associated with that process – and, to be sure, with the complexities that »grand coalition« bargaining entails.

A third mechanism is available, at least in principle, through which substantial resources might be mobilized to permit a large-scale, coordinated global effort to shift the world economy onto a low-carbon path. This mechanism entails the creation of new monetary resources ex nihilo under international agreement. Such a mechanism already exists at the international level in the form of SDRs, and one year ago the Board of Governors agreed to a one-time emission of additional SDR worth $250 billion as part of the response to the world financial crisis, bringing the total stock of the international »money« to just over SDR 204 billion, which is worth about $321 billion. There are a number of technical aspects of the IMF's rules that make SDRs an unwieldy financial instrument, and the current rules assign SDRs on the basis of current quotas, meaning that developing and emerging countries receive only small share of the allocations. But the IMF staff (2010) recently developed a proposal for a »green fund« that would overcome these difficulties and that relies upon special or recurring annual emissions to provide a reliable and predictable source of low-cost funding that developing countries could access for climate change adaptation and mitigation purposes.

WHAT WILL IT TAKE TO RAISE THE PRICE OF ATMOSPHERIC CARBON?

The IMF (2008) summarized the requirements of an efficient effort to raise the carbon in a way that highlights the need for a strong international regime:

- »An effective mitigation policy must be based on setting a price path for the greenhouse gas (GHG) emissions that drive climate change. The overall costs of such carbon-pricing policies – a global carbon tax, a global cap and trade system, or a hybrid policy – could be moderate, provided the policies are well designed.
- Carbon pricing should be credible and long term. If it is, even small and gradual increases in carbon prices will be sufficient to induce business and people to shift away from emission-intensive products and technologies.
- Carbon pricing should be global. It is not feasible to contain climate change unless all major GHG emitters start pricing their emissions.
- Carbon pricing should seek to equalize the price of GHG emissions across countries to maximize the efficiency of abatement. Emissions would then be reduced more where it is cheaper to do so.
- Carbon pricing should be flexible, allowing firms to adjust the amount of abatement in response to economic conditions, to avoid excessive volatility in carbon prices. High carbon price volatility could augment macroeconomic volatility and generate spillovers across the world. Policy frameworks should also provide scope to adjust policy parameters in response to new scientific information and experiences with policy implementation.
- Carbon pricing should be equitable. No undue burdens should be placed on countries least able to bear them.«

The proposed Green Fund would not reside at the IMF, and so need not be burdened by the history of IMF conditionality. But other serious IMF governance issues would have to be addressed for this mechanism to work. First, the political leaders would have to weigh in to overcome inertia of the central bankers and treasury secretaries who regard the IMF and its resources as their sacred preserve. A more serious issue is that a multi-year program of recurring SDR emissions would lead to a significant expansion of the world supply and would require that a few national governments – those that currently supply the world's reserve currencies, accommodate the growing stock of SDRs or risk inflation. Both effects – the emergence of the SDR as a true reserve currency, and its displacement of other reserve currencies – may be desirable in their own right. The matter is now being hotly debated. The vital point, however, is that scaling this mechanism would require not only a fully developed, UNFCCC-centered grand coalition agreement, but it would require expanding the scope of the agreement, and of bargaining and ongoing governance beyond climate issues to include broader rules of international monetary governance. It would require, in other words, commitment to a level of cooperation significantly more ramified than what is under discussion in the UNFCCC process so far.

The negotiating task could be broken into parallel and converging processes, and the climate governance payoff would be a far more substantial, flexible, and resource rich set of mutual commitments and obligations than can result from the current process. It would likely also bring far higher levels of investment, transparency and self-directed national compliance than either the Copenhagen or even the UNFCCC process.

Seen in the light of this possible future, the logic of global cooperation for climate change and the logic of global cooperation for international financial and monetary reform are not competing, but complementary. And it is at least possible, if not likely, that issues that cannot be resolved in one context alone can be more effectively resolved when climate finance governance and global financial governance reform are treated in juxtaposition. The vexed issue of how to mobilize large-scale resource transfers to developing countries to achieve development and climate goals, for example, is almost insoluble in the context of either the Copenhagen Accord or UNFCCC framework, but has a reasonable prospect of being addressed if the bargaining context is expanded to include international monetary cooperation.

Conclusion: The Case for Leadership to Enable More Effective Governance for Clean and Sustainable Energy

The case argued in this brief has repeatedly pointed to a simple but important paradox: Even though the primary responsibility for governance remains, and will continue

to remain, with self-interested nation-states, the quality and effectiveness of that governance depends crucially on the development of strong institutionalized multilateral cooperation. The aim of global governance, and of the global bargaining that is an essential element of that governance, should be to achieve »self-enforcing agreements,« by which we mean agreements that do not require strong measures of external coercion to work. Instead, the forces that account for the higher levels of effective governance in a self-enforcing agreement are the self-binding that occurs in a process that is perceived as legitimate, fair, and effective in leading to desired outcomes.

Students of international bargaining remind us that sustainable grand coalitions require that all parties must feel that they are made better off by the agreement, and that before an agreement is concluded, all parties must be persuaded that they cannot get a better deal by creating an alternative collation or by simply opting out. With 192 sovereign countries engaged on matters that are both highly salient and consequential, it should be no surprise that the bargaining has been complex, protracted, and that progress has been uneven, and occasionally retrograde. When negotiators and leaders from developing and emerging countries began to make it clear last summer that they were not willing to enter into an agreement without prior commitments from the developed countries, this was not necessarily an assertion that no agreement would be forthcoming, but only that the developing and emerging countries had come to appreciate the enormity of the investments that a truly effective global climate stabilization strategy would require, and a determination to avoid being railroaded into commitments that they could not financially or politically sustain. Knowing that even in the best of circumstances, any feasible deal would impose large new costs for climate mitigation and adaptation on the developing countries, they dug in and prepared for some tough bargaining.

That negotiating process should be allowed to resume. But for that to occur, the United States will have to decide whether the Copenhagen Accord is a measure to buy time while the Administration and Congress jointly develop a more realistic and credible national climate strategy, or whether it is intended to refine the bargaining process in ways that better serve its own national interests. In any case, it will take deft national and international leadership to turn things around and forge a new international consensus in favor of coordinated action for climate stabilization.

Appendix 1: Shared Premises

In recent years, large accumulations of data have been collected and robust, sophisticated models have been constructed to examine the impact of different contingencies and decisions on the evolution of the global climate. These vary widely in their focus – ranging from pure models of climate change, to messier models of macroeconomic performance, microeconomic analyses of costs and projections of private actor responses to alternative incentives, and game-theoretic models of international bargaining frameworks. Despite the variation in focus and method, results of multiple iterations and tests of the models have yielded results and insights that are sufficiently consistent to have allowed a broad international consensus to form around the essential factors shaping the interaction of climate change, policy framework, and policy choice.

The common elements can be summarized as follows:

- At December 2009 levels of 387ppm, the atmospheric load for carbon dioxide and other greenhouse gases (GHG) is rapidly approaching defined limits of 450ppm and 550ppm , beyond which the likelihood of accelerated climate change becomes not only predictably more certain, but beyond which nonlinear effects significantly increase the likelihood of severe or catastrophic impacts. The impacts will be widely, but not evenly, distributed. Small and less developed nations that are least responsible for global warming are expected to be most affected.

- On current trends, or business as usual (BAU), use of carbon-based fuels can be expected to increase very rapidly, accelerating the increase of atmospheric carbon to levels that dramatically increase the probabilities of damages and dislocations across the globe. To take but one example, the projected increase in CO2 emissions from coal-burning power plants projected to be built in the next 25 years would match the contribution of all other coal-burning activities since the beginning of industrialization. Any excess atmospheric load is likely to be of extreme duration, with atmospheric carbon having a life of approximately 1,000 years.

- The costs of climate mitigation increase rapidly in time, along with the risks and uncertainties arising from non-linear effects. A widely accepted McKinsey analysis found that the up-front incremental investment costs of abatement to maintain GHG levels below the 2 degree Celsius threshold rise from €530 billion annually in 202 to €810 billion annually in 2030. More important, McKinsey analysis found that a ten-year delay in achieving targeted carbon emission reductions would make it virtually impossible to maintain global warming below the 2 degree threshold.

- The opportunities for low-cost abatement are widely distributed across developed and developing countries, but with rapid growth taking place in the developing countries, lowest costs options for mitigation are distributed roughly 35per cent in the developed countries and 65per cent in the developing countries.

- Macroeconomic, microeconomic and game-theoretic models agree that total global welfare increases substantially if abatement efforts are distributed widely with all developed and large emerging economies participating. Exclusion of any region or major country from the global effort would substantially diminish the likelihood of achieving minimal international community goals and would also substantially increase the costs to participating nations.

- Given the persistence of GHG in the atmosphere, achieving abatement levels to limit emissions below the threshold for 2 degrees Celsius requires a reduction in global emissions of at least 50 per cent by the year 2050, and 90 per cent by the year 2100.

- Achieving these levels of abatement on a lowest costs basis requires that the largest effort be made in developing and emerging countries where climate objectives compete with fundamental development goals for attention and resources, especially finance.

- Considerations of climate justice and economic efficiency independently support a strong assertion that large-scale transfers of financial resources from developed to developing countries are required to achieve short- and long-term mitigation goals.

With these essential points of consensus, the challenges of crafting an effective world-wide system of climate governance can be stated with some precision.

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About the author

Michael Clark is currently on Special Research Assignment for the United Nations Conference on Trade and Development (UNCTAD). Formerly, he has been a Senior Advisor in the U.S. House of Representatives and also to the 63rd President of UN General Assembly. Mr. Clark was also formerly Executive Director, US-India Business Council. The views expressed in this essay are personal and do not necessarily reflect the views of UNCTAD.

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Friedrich-Ebert-Stiftung | Global Policy and Development
Hiroshimastraße 28 | 10785 Berlin | Germany
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747 Third Avenue | Suite 22B | New York, NY 10017 | USA

Responsible:
Dr. Werner Puschra, Executive Director, FES New York

Tel.: ++1 (212) 687-0208 | Fax: ++1 (212) 687-0261
www.fes-globalization.org/new_york/index.htm

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