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U.S. CLIMATE POLICY AND THE
GREENHOUSE GAS EMISSIONS OF LESS
DEVELOPED COUNTRIES

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Executive Summary

The opportunities to make cost-effective reductions in the emissions of greenhouse gases that cause climate change are concentrated in a relatively few fast-developing countries, while most of the political demand for reductions is concentrated in the affluent countries of the Organization for Economic Cooperation and Development (OECD). This strategic reality dictates a different course of action than has prevailed in the handling of past environmental issues. Indeed, many of the traditional strategies may be counterproductive.

The developing world is not only the location of the fastest growth in emissions, but also the place where emission reductions are cheapest. Developing countries, were they to adopt appropriate policies, could reduce their projected growth in greenhouse gas emissions without the high costs of retrofitting or even prematurely scrapping existing infrastructure, capital, or consumer durables. In countries where economic growth is rapid and little modern infrastructure is yet in place, replacing an old plant with a new one is likely to produce both emission reductions and economic benefits. Raising the energy efficiency of future investments above what they otherwise would have been, although not costless, would be much cheaper than retrofitting or scrapping already existing but relatively late-vintage plants that would be the only option in a developed country.

Another reason why it is cheaper to slow the growth of emissions in developing countries is that the developed countries often have very high taxes on energy. Developing countries often do not. In fact, they often subsidize energy use.

The costs of achieving any given level of emission reductions would fall dramatically if fast-developing countries could be induced to control emissions. Economic modeling has shown that the savings are large. For example, the Energy Modeling Forum comparison of the results of 15 different models showed that the inclusion of emission reductions from developing countries would have reduced the cost per ton of carbon emissions controlled by between 29 and 75 percent. The average result was a reduction of 55 percent. In other words, the cost per ton of emissions avoided was cut by more than half by the ability to draw on the low-cost emission abatement opportunities potentially available in the fast-developing countries.

The lower cost per ton of emissions would also translate into greatly diminished harm to the economies of the OECD countries. The Energy Modeling Forum results indicate that had the United States been able to tap the emission reductions potential of fast-developing countries, the harm done by Kyoto to its economy would have been greatly ameliorated. The models showed that the reduction in GDP caused by Kyoto would have been more than halved. Estimates of the reduction in economic harm ranged from 35 percent to 81 percent. The average estimate was 53 percent.

Prospects of making near and mid-term progress on restraining climate change depend crucially on inducing a relatively few fast-developing countries to impose greenhouse gas emission control policies. To succeed in this persuasion, the OECD countries will need to impose moderate emission domestic emission controls, largely as a matter of political symbolism.

It will also be necessary to provide economic assistance to the fast-developing countries to compensate them for the losses in economic development that emission controls would otherwise occasion. The process of offering this aid without creating perverse incentives or overtaxing OECD willingness to transfer income will be difficult and may cause the effort to fall short of the full potential for making cost-effective emission reductions.

Because of these difficulties, it may be prudent to supplement the aid for emission controls program with other inducements. These could take many forms, but one option would be to actually condition some parts of development aid on the imposition of emission controls by fast-developing countries. Doing so would leverage the available resources. But the feasibility of this strategy depends crucially on whether the publics of the various OECD countries are actually willing to pay the economic and political costs without which climate change cannot be restrained.

A military victory in Iraq, should it occur, would give the Bush Administration a unique political opportunity to revisit its earlier judgment about climate policy. In the wake of a possible military victory in Iraq, such an initiative would be a gesture of good will to the alienated publics of Europe. That the Administration would not have to make the gesture would make it all the more effective as the opening of an effort at political reconciliation. Reconciliation is important because the United States still needs its European allies, and the underlying trends in security policies seem to suggest that many future stresses will prove unavoidable.

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NEED FOR AN INTERNATIONAL STRATEGIC VISION ON CLIMATE

The opportunities to make cost-effective reductions in the emissions of greenhouse gases that cause climate change are concentrated in a relatively few fast-developing countries, while most of the political demand for reductions is concentrated in the affluent countries of the Organization for Economic Cooperation and Development (OECD). This strategic reality dictates a different course of action than has prevailed in the handling of past environmental issues. Indeed, many of the traditional strategies may be counterproductive.

REDUCING GREENHOUSE GAS EMISSIONS FROM OECD COUNTRIES

The productivity of fossil fuels

The goal of stabilizing greenhouse gas concentration levels conflicts with the continued and growing massive reliance on fossil fuels. Combustion of fossil fuels is the leading source of anthropogenic greenhouse gases. Fossil fuels, however, are the basis of much of the economic infrastructure, broadly defined, on which humanity's current wealth and numbers depend.

Moreover, fossil fuels hold their dominant economic role because they are cheaper -- often much cheaper -- than alternative energy sources. Because of this fact, large reductions in greenhouse gas emissions will be extremely expensive wherever they are undertaken. The high costs are exacerbated wherever the prospect of reducing the use of fossil fuels entails replacing much existing economic infrastructure.

The high costs of Kyoto

This common sense conclusion is confirmed by economic modeling. For example, Nordhaus and Boyer, using the RICE 99 model, estimate that the Kyoto Protocol, even if implemented with rules that allowed emission trading within Annex 1 countries -- industrialized nations who have agreed to cap their emissions under the Kyoto Protocol -- would have cost nearly \$280 billion (in present discounted value measured in 2002 dollars).¹ (Analysis in this paper is of the original pre-Hague version of the Kyoto Protocol, not the current version that may enter into force this year.)

One way to put the costs in perspective is to relate them to GDP. The multi-model comparison organized by the Energy Modeling Forum, which included the RICE model among many others, found that by the year 2010, assuming Annex I emission rights trading, the Kyoto Protocol would have reduced the GDP of the United States by .24 to 1.03 percent. The mean result of the eight models was a GDP reduction of .59 percent.² Thus, in comparison with total economic output, the cost of Kyoto would have been neither trivial nor catastrophic.

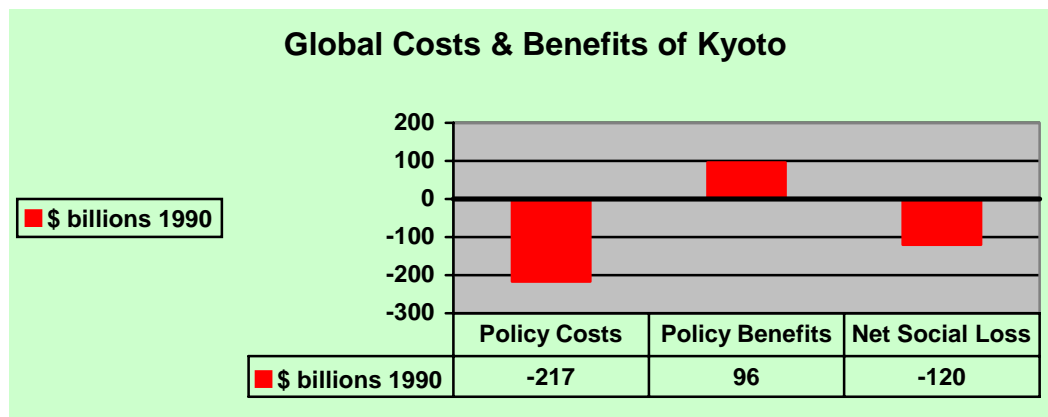
The United States would have borne by far the biggest share of the costs had the Kyoto Protocol been implemented with emission allowance trading largely confined among Annex I countries. In fact, in that case, the present value costs of Kyoto for the United States would have exceeded the costs for the world as a whole by nearly \$140 billion

(again in 2002 dollars). This seeming paradox was possible because Kyoto would have compelled the United States to purchase large quantities of emission allowances from the rest of the world. The revenue from selling these allowances to the United States would have made the rest of the world, taken as a whole, a net beneficiary of the Kyoto system quite independently of any gains from reduced greenhouse gas emissions.³

Kyoto’s paltry benefits

What is, however, more shocking is how small the benefits would have been. Partly because Kyoto concentrated so much of the emission reductions effort in the developed world, where the costs are relatively high, the Protocol would have produced few benefits in the form of emission reductions despite its substantial costs. According to Nordhaus and Boyer, “[the] Kyoto Protocol is expected to have very modest impact on CO₂ concentrations and on global warming.”⁴

Figure 1



Thus the projected costs would have exceeded the benefits by a huge \$120 billion in 1990 dollars, the equivalent of slightly more than \$150 billion in 2002 dollars. This analysis predated the modifications of Kyoto made at The Hague and Marrakech -- modifications which would have reduced both the costs and the benefits presented in the Nordhaus-Boyer analysis. The salient point is not that Kyoto was an inefficient agreement, although it clearly was. It is that it was inefficient because it confined the emission reductions to the OECD, where they are most costly.

Why control OECD emissions at all?

The low benefits relative to costs exhibited by Kyoto raise a reasonable question about the role of emission reductions from OECD countries. Economic analyses invariably show that the more the total emission reductions could be drawn from outside the OECD, the lower the expense per ton of abated emissions.⁵ Why then, at least initially, when only very limited resources are available to control emissions, institute any controls in the OECD?

The reason is political rather than economic. It is, nonetheless, extremely important. To persuade developing countries to participate in emission controls, the OECD had first to demonstrate a willingness to undertake domestic control efforts. In this sense, the

domestic controls of OECD countries are symbolic, but absolutely necessary, to open discussion of more substantial reductions in the growth of emissions -- reductions that would be affordable only if they came substantially from the developing countries.

By inference, the fatal flaw of Kyoto was not that it entailed expensive reductions in OECD emissions. It was that it failed to leverage those reductions with the far more cost-effective emission reductions that are available in the fast-developing countries. Without this link, the OECD emission reductions would, themselves, achieve little. The fact that this was so played a key role in the arguments of the treaty's opponents in the United States.

Why initial OECD emission reductions should be moderate

The OECD countries must reduce their own emissions to gain political credibility. These reductions cannot be seen as trivial, or they are valueless as credibility builders. Yet there are three strong reasons for seeking moderate rather than steep initial reductions in the OECD economies.

First, insisting on steep gains initially is likely to delay the process of putting controls in place. But the much higher payoff efforts to reduce emissions abroad cannot begin until domestic controls are in place. Every year in which the incentives for emission reductions are not in place, new investments are made abroad, locking in long-lived high emission technology.

Second, imposing severe controls within the OECD before the fast-growing developing countries have joined the control regime is likely to entail high costs and small benefits. This strategy would waste what are very scarce resources available for emission reductions. An economically rational emission reduction regime would, however, seek to pay as little as possible for political credibility in order to conserve scarce resources for use outside of the OECD, where each dollar would buy more emission reduction. The least-cost path to reducing emissions is to seize the opportunity to reduce developing country emissions before these countries have invested in less-than-optimal technologies that already dominate the economic infrastructures of the developed world. Developed world emission reductions should be phased in more gradually to accommodate the retirement of these countries' large and valuable existing capital stocks.

Third, such an approach is likely to drive energy-intensive industries to relocate to developing countries, with the consequence that these countries would become increasingly resistant to participate in an emission control regime. Three MIT climate policy experts have described the resulting dilemma:

If rich nations do not control their emissions, poorer ones are unlikely even to consider slowing theirs. But carbon dioxide emission controls will raise the cost in participating countries of manufacturing those goods whose production requires substantial energy. For these products, industries in developing countries will gain an advantage over industries in countries that abide by Kyoto. Once they have invested in production

facilities, nonparticipating nations will be more reluctant to take emission control measures that threaten these activities.⁶

CONTROLLING DEVELOPING COUNTRY GREENHOUSE GAS EMISSIONS IS CRITICAL

Controlling developing country emissions: a possible way forward

The developing world is not only the location of the fastest growth in emissions, but also the place where emission reductions are cheapest. Developing countries, were they to adopt appropriate policies, could reduce their projected growth in greenhouse gas emissions without the high costs of retrofitting or even prematurely scrapping existing infrastructure, capital, or consumer durables. In countries where economic growth is rapid and little modern infrastructure is yet in place, replacing an old plant with a new one is likely to produce both emission reductions and economic benefits. Raising the energy efficiency of future investments above what they otherwise would have been, although not costless, would be much cheaper than retrofitting or scrapping already existing but relatively late-vintage plants that would be the only option in a developed country.

Another reason why it is cheaper to slow the growth of emissions in developing countries is that the developed countries often have very high taxes on energy. Developing countries often do not. In fact, they often subsidize energy use.⁷

Dramatic reductions in emission costs possible

The costs of achieving any given level of emission reductions would fall dramatically if fast-developing countries could be induced to control emissions. Economic modeling has shown that the savings are large. For example, the Energy Modeling Forum comparison of the results of 15 different models showed that the inclusion of emission reductions from developing countries would have reduced the cost per ton of carbon emissions controlled by between 29 and 75 percent. The average result was a reduction of 55 percent. In other words, the cost per ton of emission avoided was cut by more than half by the ability to draw on the low-cost emission abatement opportunities potentially available in the fast-developing countries.

The lower cost per ton of emissions would also translate into greatly diminished harm to the economies of the OECD countries. The Energy Modeling Forum results indicate that had the United States been able to tap the emission reductions potential of fast-developing countries, the harm done by Kyoto to its economy would have been greatly ameliorated. The models showed that the reduction in GDP caused by Kyoto would have been more than halved. Estimates of the reduction in economic harm ranged from 35 percent to 81 percent. The average estimate was 57 percent.⁸

It is important to recognize that this analysis assumed that the United States would pay a competitive market price for the privilege of counting any developing country emission reductions against the U.S. emission reduction targets. In other words, under this analysis, there was absolutely no cost to the economies of the developing countries. The

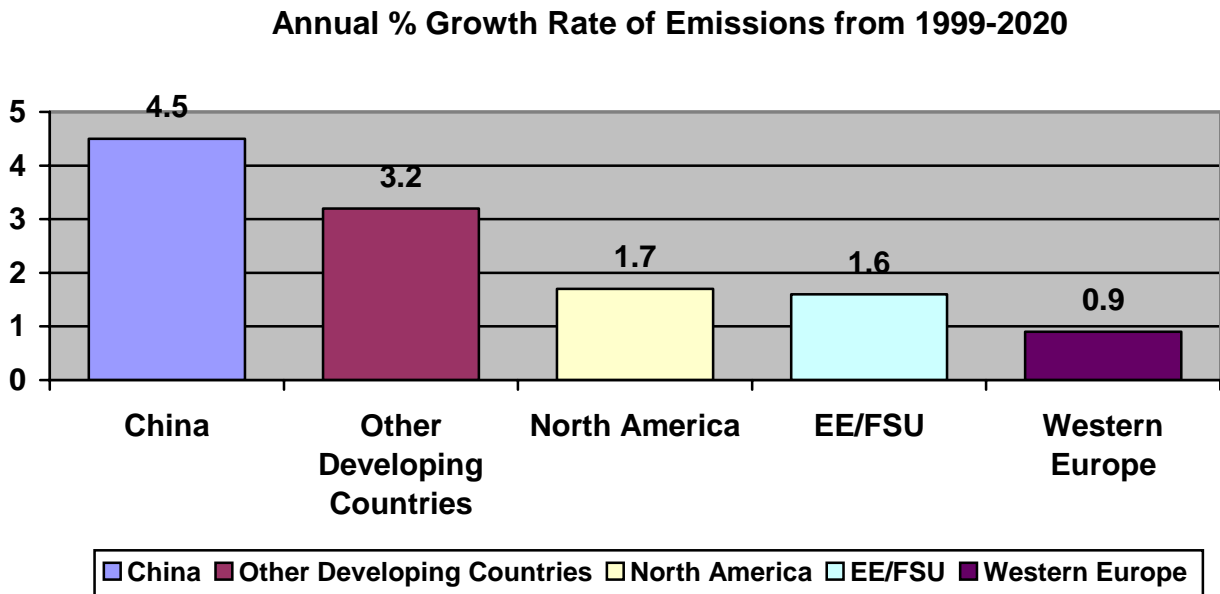
United States alone bore all the costs of the emission reductions, even the ones that occurred in the developing countries. The reductions in abatement costs and in economic harm occurred solely because achieving emission reductions in developing countries would be so much cheaper than achieving comparable reductions in America.

Stabilizing concentrations absolutely requires developing country emission reductions

No amount of emission controls by Annex 1 countries could stabilize global greenhouse gas concentrations without an active emissions reduction effort from developing countries.

Using the MIT integrated climate model, Zili Yang and Henry D. Jacoby found that to stabilize global greenhouse gas concentrations at 550 ppmv while developing countries' emissions continued to grow at a business-as-usual pace, the Annex 1 countries would have to somehow achieve negative carbon emissions, that is, net storage, by 2035.⁹ Assuming less ambitious targets for stabilization would only postpone the date at which the impossible would become imperative. Easier targets would not change the inherent unrealism of the approach.

Figure 2.¹⁰



Another illustration of the same point is that current projections show that although the United States is currently the world's leading source of carbon emissions, by 2020 emissions from the rapidly developing Asian countries will likely be almost half as large as those of the United States.¹¹ Emissions from Mexico and the major economies of South America will be growing at between two and three times the annual rate of U.S. emissions.¹²

WILL FAST-DEVELOPING COUNTRIES INSTITUTE GREENHOUSE GAS EMISSION CONTROLS?

Although extending emission controls to fast-developing countries is immensely important to the task of slowing climate change, it is not a politically easy task. On the contrary, it is dauntingly difficult. This section explains why.

The general incentive to “free ride”

In the simplest terms, fast-developing countries are subject to the same disincentives that cause other countries to shy away from greenhouse gas controls. Climate change mitigation requires individual countries to make sacrifices for the global good:

Climate change is truly a global commons problem. Because the location of greenhouse gas emissions does not affect the global distribution of damages, free riding problems plague unilateral or multilateral “solutions.” Further, nations will not benefit proportionately from greenhouse gas abatement policies. In fact some countries – such as Canada and Russia - might experience no benefits from control since they actually stand to gain from climate change (due to the effects of increased temperature and precipitation on agricultural production.) Thus for some countries, costs of control may exceed benefits. This means that for a voluntary international mechanism to be successful, it must include a mechanism for transferring gains to countries that would otherwise not benefit from joining an agreement.¹³

In any negotiation to forge such an agreement, however, each country would have an incentive to shift the costs of emissions reductions onto others.

Economists call this behavior “free riding.” A country hopes to reap the benefits of others’ reductions in greenhouse gas emissions while, itself, continuing to enjoy the economic benefits of continued emissions. So far, the fast-developing countries have followed this approach. The question is why have they so uniformly resisted cooperation when OECD countries have seemed to make more progress in overcoming the free rider tendency.

The structure of Kyoto

To some degree, this reluctance of the developing countries reflects the unfortunate structure of the Kyoto Protocol with its emphasis on hard caps based on historical emission levels. This structure was especially unsuitable for fast-developing countries, which quite naturally fear that Kyoto-style emission controls would lead to self-imposed limitations on future economic growth. At a deeper level, though, greenhouse gas emission controls are inherently problematic for a rapidly developing country.

Development versus emission controls

Most fundamentally, however, mitigating climate change is, for these countries, just not a high enough priority given the more pressing necessities of economic development. It is probably true that climate change may eventually pose much harder challenges for

developing countries than for richer ones.¹⁴ Nevertheless, developing countries' reticence about emission reductions is rational. In part, it is rational because these countries have more urgent problems than climate, a problem that may be serious in the future but is not a current crisis.

Moreover, for a poor country, economic development may be a better response than emission reductions to the risks of climate change. Economic development diminishes a country's dependence on agriculture, forestry, and other outdoor-oriented activities. In so doing, development can reduce economic vulnerability to climate change. It may also provide additional resources that would allow new public works, enhanced public health infrastructure, or other investments that would assist in coping with the ill effects of climate change. However, economic development would also yield more ancillary benefits than would greenhouse gas emission reductions. The protection afforded by economic development, unlike that provided by emission reductions, does not depend for its efficacy on many other nations also agreeing to mutually sacrifice their short-term economic interests.

By inference, developing country governments are acting rationally in their reluctance to reduce greenhouse gas emissions. Because their reluctance is rational, it will persist until developing countries' concerns about climate change become so intense as to rival their concerns about economic development, which will not be likely for a very long time.

WILL INTERNAL TRENDS ALLEVIATE THE RELUCTANCE OF THE FAST-DEVELOPING COUNTRIES?

Fast-developing countries will evolve toward a more active stance on climate

In some sense, the reluctance of the fast-developing countries to participate in an emission control regime is likely to be self-correcting. As these countries become more affluent, they may develop the same aesthetic attitudes toward nature and the same averseness to long-term ecological risks that characterize many of the OECD countries. Such attitudes would presumably encourage greater concern about global climate change. As domestic concerns about climate grow, governments would presumably become more willing to enter into international agreements on climate change.

But slowly

The obvious disadvantage of this process is that it would not become effective until the fast-developing countries became rich enough for the new climate concerns to become socially important. It is probable that a good deal of time is available to solve the climate problem. But the long life of capital stocks also means that there is a long lag between the time that serious policies are instituted and large emission reductions result. This fact makes a passive strategy risky.

Moreover, under this scenario, the next stage of these countries' economic development will take place using relatively high emission technology. In a real sense, delay implies a

missed opportunity. By the time new attitudes begin to develop, much of the wrong kind of capital stock will have already been put in place.

OECD PAYMENTS TO FAST-DEVELOPING COUNTRIES: USEFUL TOOL, NOT A PANACEA

Separating who should pay from where abatement occurs

Growth in emissions can most cheaply be achieved in the developing countries. But developing nations will not, without external encouragement, incur the cost of foregone economic development that would be entailed by controlling emissions. The solution becomes obvious *in principle*, if not necessarily in practice. The developed countries could transfer enough income to developing countries to offset the economic sacrifices associated with emission reductions. In this way, the developed countries could reduce emissions much more cheaply than they could by confining their abatement initiatives within their own borders, and developing countries could be compensated for any sacrifice of economic growth.

Professor Robert Stavins of the John F. Kennedy School of Government at Harvard University has summarized the issue perfectly. The developing countries must assume an equal footing with regard to targets in the global emissions control regime. But they cannot be expected to pay the high costs of their own participation. “They must get on the train, but need not pay for their tickets.”¹⁵

Why OECD subsidies will only partially solve the problem

Without OECD subsidies to encourage greenhouse gas emission controls in fast-developing countries, such controls are unlikely to happen. But as long as fast-developing countries are unconstrained by domestic political pressure to act on climate, their incentive would be to extract the maximum payment from the OECD for the minimum acceptable emission reductions. Currently, the publics of developing countries are not generally demanding action on climate. Transnational survey results and voting patterns both confirm that environmental concerns are highly correlated with income.¹⁶ Thus, these concerns are weakest in poorer countries. Furthermore, the example of India (where environmental concerns are highly localized) suggests that such environmental constituent pressures that do emerge in developing countries tend to be of a local nature.¹⁷

There are four reasons for believing that this political reality may cause a subsidy program, if not supplemented with other incentives, to fall short of its theoretical potential:

1. Any scheme to compensate fast-developing countries for their emission reductions depends on defining baseline emissions, a process that typically leads to exaggeration of actual emission reductions and high transaction costs.
2. The OECD countries will have only limited resources to bring to the task of paying subsidies for emission reductions.

3. Some of the most important barriers to instituting emission control policies are the political costs of these policies for the governments of fast-developing countries, and OECD countries are unlikely to offset these political costs with side payments.
4. For technical reasons, an emissions trading system cannot yet encompass the fast-developing countries and cannot, in any case, be brought into existence until the political problems have somehow been resolved.

It is worth briefly describing the logic behind each of each of these concerns.

The developing country advantage in defining emission baselines

The fast-developing countries have a bargaining advantage in establishing the arrangements for subsidizing their emission reductions. In reality, though, any system that rewards developing countries for reducing emissions below a baseline creates an incentive to overstate the baseline emissions in order to increase the size of the payments. In a recent analysis, three economists have described the reasons for skepticism about proposals under which developed countries pay the incremental costs of emissions reductions:

This proposal, which looks like a win-win strategy for the developing and the industrialized countries without harming the environment, is actually inefficient. The reason is that this implicitly penalizes ‘good’ behavior and subsidizes ‘bad’ behavior. Hence, host countries gain from pretending not to care at all about energy efficiency. As a consequence, the net effect of actually reducing global CO₂ emissions will be small compared with the reported reduction. The likelihood of misrepresenting the true willingness to invest in energy efficiency by developing countries is increased by the fact that the industrialized country benefits from this cheating too. As a consequence, this proposal will presumably trigger little actual factual reduction in global CO₂ emissions.¹⁸

Other studies have reached very similar conclusions.¹⁹

A country, or an agency overseeing the transfers, would presumably seek to curtail this strategic behavior, but it will always be at a disadvantage about what would have happened without the subsidy. Thus, controls will work imperfectly by excluding some valid transactions and including some bogus ones. By the very act of attempting to control fraud, the agency will increase the transaction costs, reducing the attractiveness of the program as a whole.

Limited OECD willingness to transfer income

The developed countries’ willingness to transfer income to the developing world is demonstrably limited. Richard Cooper has noted that the sense of international community is not great enough to sustain large international wealth transfers, “[I]ndeed it is not that great within the United States today.”²⁰

The problem of developed countries' willingness to transfer income to developing countries is especially acute in the most important case, China. It would be very difficult to win political acceptance in the United States for any program that transfers substantial amounts of wealth to China. After all, China is a country whose regional and perhaps global ambitions conflict with those of the United States. Its regime has characteristics inimical to American values on such issues as human rights, and its large and persistent current accounts surpluses with the United States seem guaranteed to generate persistent friction.

To a degree, this limited willingness to transfer income represents a check on the bargaining power of the fast-developing countries. For this reason, it should tend to hold the subsidy per ton reduced to lower levels. But, of course, a lower price per ton controlled would also mean that fewer reductions would ultimately be purchased.

Side payments unworkable for handling political costs

Difficulties are compounded, moreover, by the likelihood that much of the developing countries' resistance to the introduction of policies to control emissions is likely to be based on politics, not economics. For example, removing energy subsidies and other policies to reduce greenhouse gas emissions implies a degree of interference with the lives of very large numbers of individual citizens.²¹ Yet especially in developing countries, “[s]tates often lack the capacity and legitimacy to effectively intervene at the local level.”²² Even with the help of money from abroad, these regimes may have insufficient governmental capacity and inadequate political legitimacy to impose effective emission controls.

Under these circumstances, the governments of rapidly developing countries are probably unwilling to spend scarce political capital introducing unpopular climate mitigation policies. OECD payments that offset the economic costs of emission abatement would likely be of limited efficacy in alleviating political barriers to the introduction of developing country greenhouse gas emissions. Making such policies acceptable to developing country governments would require extra inducement, large enough to offset the loss of governmental popularity and legitimacy that is implied by imposing costs and interference on citizens who have no actual interest in climate change mitigation.

In fact, such a strategy is probably unworkable. All of the problems with defining a baseline and of creating perverse incentives in order to be bribed to abandon them would be many times compounded if governments were to be rewarded for “political pain and suffering,” so to speak. One can imagine the political acceptability in the OECD of taxes going to maintain the political legitimacy of the government of China.

Emission rights trading is not a solution

It is important to recognize that these are not problems that are susceptible to solution by the economists' favorite hobby horse of creating a market for emission rights and letting it work. Emission rights trading schemes, under some circumstances, have great virtues.

Theoretically, an emission rights trading scheme could be a mechanism by which the subsidies from the OECD to the fast-developing countries could be effected. In practice, most economists have concluded that it is not yet possible to institute an emission rights trading system that extends to developing countries.²³ But more importantly, an emission rights trading scheme is only a means to implement a political consensus. In this case, the consensus that subsidies should be created and under what terms does not yet exist.

CONDITIONING DEVELOPMENT AID ON EMISSION CONTROLS

Both strategic behavior on the part of fast-developing countries and the OECD's limited willingness to transfer income to developing countries restrict the ability to realize the potential for emission reductions from fast-developing countries. One obvious question is whether conditioning aid on emission control policies represents an attractive additional strategy. Such approaches would, if combined with an OECD policy of subsidizing emission reductions, appear to increase the leverage for obtaining emission reductions.

Advantages of increasing the range of available incentives

The OECD could employ a broad array of tools to discourage obstructionism among fast-developing countries. The available tools include expressions of symbolic disapproval in areas such as the Olympics and other kinds of cultural exchanges. Government backing for actions such as consumer boycotts could both impose some costs and send signals about the prospects of other actions. International aid organizations such as the International Monetary Fund and the World Bank could be used to threaten the flow of non-climate related aid as a sanction for climate non-cooperation. Finally, some recent developments in the World Trade Organization seem to open a way for trade sanctions as well.²⁴

In this array, the option of conditioning the continuation of development aid on emission controls is perhaps the most powerful tool. If OECD countries were willing to use development aid in this manner, they would considerably increase their bargaining power for achieving emission reductions. In 2001, China received almost \$1.5 billion in development assistance from OECD countries and from multilateral aid institutions. It also received an additional \$750 million in official development loans that year. In the same year, India received \$1.7 billion in grants and \$870 million in loans. For Brazil, the comparable figures were \$350 million and \$370 million. For OECD countries, such transfers would represent a way to considerably leverage their resources.²⁵

Disadvantages of conditioning aid on emission controls

The OECD may eschew the use of sanctions, despite their potential usefulness, because sanctions impose costs on the countries that impose them as well as those subject to them. Trade sanctions are the perfect example of the double-edged nature of a sanction strategy. If OECD countries were to impose tariffs on exports from fast-developing countries that remained recalcitrant on climate, it is OECD consumers who in the first instance would bear the cost in the form of higher import prices. It seems quite probable that the damage to the international trade regime caused by trying to use trade to promote emission reductions would outweigh the climate policy benefits.

Not all of the costs are likely to be economic. The most important developing country emitters, China and India, are typically very important to the United States and the other developed countries for many reasons other than climate. Presumably the United States and other OECD countries support bilateral and multi-lateral development aid in part because it pays dividends in some of these policy areas. Thus, before deciding to condition aid on emission reductions, one would need to assess how the importance of the climate issue compares with the value of more economic development and less international aggression, arms proliferation, and human rights abuses.

An international climate policy is important as a way of making emission reduction affordable. But even if OECD countries are willing to use development aid to leverage their emission reduction efforts, those reductions would still not be free.

WHY SHOULD THE UNITED STATES PURSUE INTERNATIONAL CLIMATE POLICY?

Why the U.S. should initiate an international climate policy

An OECD policy to encourage emission reductions by fast-developing countries would clearly entail political and economic costs for the OECD. The whole-hearted participation by the United States would improve the prospects of such an effort. In this area, as in so many others, the United States, given its global influence, fits Madeleine Albright's description as "the indispensable superpower."

Why, though, should the Bush Administration, an Administration that has so far shown little enthusiasm for confronting the climate issue, incur the costs of launching a climate policy? In particular, why should it do so in the near future rather than wait until after the 2004 election? In fact, there are good foreign policy reasons for acting on climate soon after the resolution of the current Iraq crisis.

Continuing strains in the U.S./European relationship

The current troubled state of the transatlantic alliance suggests one reason why the Bush Administration should adopt a more activist climate policy. Climate policy is not forged in a political vacuum. Transatlantic political stresses, which have reached unprecedented levels during the current Iraq crisis, are a crucial part of the context of U.S. climate policy.

In some ways, the essential problem is that the foreign policies of the United States and the European Union are designed primarily to solve different kinds of problems. Phillip Gordon has recently noted:

U.S. leadership of NATO largely absolved the Europeans of having to think much about international security beyond Europe's borders. Global military strategy was something to be handled primarily by the United States, leaving Europeans to focus on the difficult task of building an unprecedented zone of internal peace and prosperity. The result is a

paradoxical division of labor: whereas Americans are in the habit of worrying about Iraq, North Korean missiles, or a Chinese invasion of Taiwan, Europeans are generally more worried about food safety and global warming.²⁶

Partly as a result of concentrating on different spheres of activity, the United States and Europe have developed conflicting strategic visions about the use of force as an instrument of foreign policy. This difference has led to a series of foreign policy conflicts that predate the current U.S. presidential administration and are likely to persist.

The global security interests of the United States lead it into conflicts, which may entail more costs than benefits for America's European allies. Indeed, some Europeans may feel that American use of armed force is *inherently* threatening to Europe's interests and national ideologies. American use of force underscores the limitations of the instruments of what Joseph Nye has termed "soft power" -- international law, financial inducements, negotiations, and international peacekeeping efforts. Yet many European nations base much of their claim to international importance and the "European mission" on the universal applicability and superiority of soft power.²⁷

This analysis suggests that the differences between the United States and the European Union are deeply rooted in the realities of power, geography, and historical experience. They are, therefore, likely to arise repeatedly, although with varying degrees of intensity. The question for the United States is what to do about the continuing problem.

A U.S. choice about multilateralism

The likelihood of continuing disagreements on security issues argues for extra efforts to reach accommodations in other policy areas:

Thus there is no doubt that the United States and Europe have different attitudes toward power, military force, and sovereignty, or even that the divide is growing. The question, however, is whether those differences are now so fundamental that the United States can or should dismiss its alliance with Europe as irrelevant, concluding either that it does not need allies or that it might find better ones elsewhere. And the answer is no.²⁷

The United States still has much to gain from the soft power assistance of Europe. European soft power remains important in the war on terror and to the achievement of many other major U.S. national objectives.²⁸ If this view is accepted, the United States should not accept bad climate policy just to be nice to the Europeans. But American policymakers should consider the impact of their actions on European opinion as an important aspect of the issue.

American recognition of Europe's inability to block the United States on vital security interests should liberate the United States to use multilateralism in other areas. Thus:

If the United States could move past the anxiety engendered by this inaccurate sense of constraint, [i.e. if we recognize Europe's inability to block American military action] it could begin to show more

understanding for the sensibilities of others, a little generosity of spirit. It could pay its respects to multilateralism and the rule of law and try to build some international political capital for those moments when multilateralism is impossible and unilateral action is inevitable. It could, in short, take more care to show what the founders called a “decent respect for the opinion of mankind.”²⁹

Implications for U.S. climate policy

Continuing to slight the climate issue would erode important relationships with countries that take climate most seriously, in particular, Germany. Although Germany would not have supported the United States on Iraq even if President Bush had proposed a meaningful alternative to Kyoto, the lack of responsiveness on climate affects the tone of relations.

For example, the refusal to act on the issue of climate lends an unwarranted credibility to the claim that the United States’ invasion of Iraq is somehow motivated by U.S. alleged (but largely illusory) profligacy in energy use.³⁰ It is true that the American action on Iraq would have stimulated a strong resistance in Europe whatever the United States had done on climate. But the failure to propose an alternative to Kyoto reinforces an “image problem” that is especially unhelpful given the intractable differences in strategic vision and the incongruities in U.S.- European national interests.

A window of opportunity?

A successful resolution of the Iraq crisis of 2002–2003 would present President Bush with the opportunity to free himself from the foreign policy impasse on climate. Although no one knows how the Iraq crisis will ultimately be resolved, the probability that the United States will achieve regime change is high enough to make it worthwhile to sketch out some of the implications of such an outcome should it occur. Whatever the outcome, it seems clear that the crisis has exposed and deepened the growing rift between the United States and Europe, particularly Germany.

Because the Bush Administration would, after a victory in Iraq, be under no strong pressure to make a conciliatory gesture to its European critics, such a gesture would be an especially strong signal of good will. It must be conceded that victory in Iraq would somewhat heighten the need for international garrison troops; so to this extent, there would be a need for conciliation.

Victory in Iraq could create a unique moment of opportunity. If President Bush had reversed course on climate under European pressure at the Genoa G-8 meeting in the summer of 2001, the impression might have been one of weakness. Reengagement after victory in Iraq would carry no such connotations. In sum, if the Iraqi crisis ends in an American military victory, President Bush should use the immediate aftermath of that victory to demonstrate on the subject of climate policy a “decent respect for the opinion of mankind.”

CONCLUSION

Climate change is an important issue of global significance. Restraining climate change is likely to be an enormously expensive effort. Prospects of making near and mid-term progress depend crucially on inducing a relatively few fast-developing countries to impose greenhouse gas emission control policies. To succeed in this persuasion, the OECD countries will need to impose moderate emission domestic emission controls, largely as a matter of political symbolism.

It will also be necessary to provide economic assistance to the fast-developing countries to compensate them for the losses in economic development that emission controls would otherwise occasion. The process of offering this aid without creating perverse incentives or overtaxing OECD willingness to transfer income will be difficult and may cause the effort to fall short of the full potential for making cost-effective emission reductions.

Because of these difficulties, it may be prudent to supplement the aid for emission controls program with other inducements. These could take many forms, but one option would be to actually condition some parts of development aid on the imposition of emission controls by fast-developing countries. Doing so would leverage the available resources. But the feasibility of this strategy depends crucially on whether the publics of the various OECD countries are actually willing to pay the economic and political costs without which climate change cannot be restrained.

A military victory in Iraq, should it occur, would give the Bush Administration a unique political opportunity to revisit its earlier judgment about climate policy. In the wake of a possible military victory in Iraq, such an initiative would be a gesture of good will to the alienated publics of Europe. That the Administration would not have to make the gesture would make it all the more effective as the opening of an effort at political reconciliation. Reconciliation is important because the United States still needs its European allies, and the underlying trends in security policies seem to suggest that many future stresses will prove unavoidable.

ENDNOTES

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²Jean-Charles Hourcade, Priyadarshi Shukla (Coordinating Lead Authors) *Climate Change 2001 Mitigation; Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, “Global, Regional, and National Costs and Ancillary Benefits of Mitigation” (New York: Cambridge University Press, 2001) Table 8.8 p. 537

³Ibid, Nordhaus and Boyer, p.161

⁴Ibid, p.154

⁵Ibid, Hourcade and Shukla, p. 537

⁶ Henry D. Jacoby, Ronald G. Prinn, and Richard Schmalensee, “Kyoto’s Unfinished Business,” *Foreign Affairs*, July/August 1998, Volume 77, Number 4 (New York: Foreign Affairs) p. 60

⁷ Ibid, Nordhaus and Boyer p.135

⁸ Ibid, Hourcade and Shukla, p. 537

⁹ Zili Yang and Henry D. Jacoby, “Necessary Conditions for Stabilization Agreements,” (Cambridge: MIT Press, 1997), p.4

¹⁰ Energy Information Administration, *Energy Outlook 2002*, (Washington, DC: U.S. Department of Energy, 2001), p.189

¹¹ Ibid, p.189, Table A10

¹² Ibid

¹³ Robert N. Stavins “Policy Instruments for Climate Change: How Can National Governments Address a Global Problem?” (Chicago: University of Chicago Legal Forum, 1997), p.298

¹⁴ Thomas C. Schelling “What Makes Greenhouse Sense: Time to Rethink the Kyoto Protocol” *Foreign Affairs*, (May /June, 2002), p.3

¹⁵ Robert N. Stavins “After Kyoto: Global Climate Change Strategies” (Briefing for H.E. Kofi Annan Secretary-General of the United Nations), p.8

¹⁶ Axel Michaelowa, “Übertragung des Demokratiemodells der Neuen Politischen Ökonomie auf die Klimapolitik” (Hamburg: Institute für Wirtschaftsforschung, 1998), p.17

¹⁷ Detlef F. Sprinz and Martin Weiss “Domestic Politics and Global Climate Policy” in *International Relations and Global Climate Change* (Cambridge: MIT Press, 2001), p.86

¹⁸ Franz Wirl, Claus Huber, and I.O. Walker, “Joint Implementation: Strategic Reactions and Possible Remedies” (Netherlands: Kluwer Academic Publishers, 1998), p. 218

¹⁹ Frank Grundig, Hugh Ward, and Ethan R. Zorick “Modeling Global Climate Negotiations” in *International Relations and Global Climate Change*, (Cambridge: MIT Press, 2001), p.155

²⁰ Richard Cooper, *International Approaches to Global Climate Change* (Boston: Harvard University Press, n.d.), p.24

²¹ Ibid, p.11

²² Ibid, Grundig, Ward, and Zorick, p.154

²³ John P. Wyant and Jennifer N. Hill “Introduction and Overview” *The Costs of the Kyoto Protocol: A Multi- Model Evaluation* Special Issue of *The Energy Journal*, (1999), pp.xxviii-xxix

²⁴ Joseph E. Aldi, Peter R. Orzag, and Joseph E. Siglitz, “Climate Change: An Agenda for Global Collective Action,” (Washington, DC: Pew Center on Global Climate Change, 2001), p.15

²⁵ Development Assistance Committee, OECD, “Geographical Distribution of Financial Flows to Aid Recipients,” (Paris: OECD Source, 2003), pp. 11,120,154

²⁶ Philip Gordon, “Bridging the Atlantic Divide,” *Foreign Affairs* vol. 82 (New York: Council on Foreign Relations, 2003), p. 74

²⁷ Robert Kagan, “Power and Weakness,” *Policy Review*, No. 113 (Washington DC: Hoover Institution, 2002), p.11

²⁷ Ibid, Gordon, p. 74

²⁸ Ibid, p.81

²⁹ Ibid, Kagan, p. 18

³⁰ Nathan Rosenberg, *Technology and American Economic Growth*, (New York: Harper & Row, Publishers, Inc., 1972), pp 27-31. The claim that the American economy, the most productive in the world, has a systematic blind spot that causes it to waste energy on a massive scale was always implausible on its face. The real explanation is that differences in factor prices and geography make higher energy use more

efficient in America than it would be in Europe. Economic historian Nathan Rosenberg has shown that in the late 18th and early 19th centuries, Europeans criticized Americans for “profligate” use of lumber, in terms like those used today with respect to energy. As Rosenberg explains the “profligacy” was entirely economically rational given American economic conditions and that European critics simply misunderstood American economic realities.