

POLICY INSTRUMENTS AND ACHIEVEMENT OF GLOBAL GREENHOUSE GAS EMISSIONS: THE CASE FOR CARBON TAXES

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DIFFICULTY IN ACHIEVING GLOBAL CONSENSUS IN LIMITING GREENHOUSE GAS EMISSIONS

- **Scientific uncertainty concerning effects and magnitude of damages**
- **Perceived high opportunity cost of limiting emissions**
- **Conflict between developed and developing nations**

FOCUS ON CONFLICT BETWEEN DEVELOPED AND DEVELOPING NATIONS WITH RESPECT TO EMISSION LIMITATIONS

- **Many developed countries (such as US) want limitations on developing countries**
- **Developing countries think this is unfair and may hurt their prospects for growth**

POSITION OF HIGH ENERGY USING DEVELOPED COUNTRIES SUCH AS UNITED STATES

- **Developed country GHG limitations are meaningless unless developing countries limit their emissions**
- **In fact, if countries such as China increase emissions per capita to US levels we aren't talking about global warming we are talking about global inferno, *no matter what the developed countries do.***

Alternative Policies

- Direct Controls
- Economic Incentives
 - Carbon trading systems
 - Carbon taxing systems
 - Carbon annuity systems

**As we approach target time of convergence,
tax can be adjusted to move towards
convergence**

Advantages of Environmental Taxes

- **Can be used to displace income taxes**
- **Can be structured to be neutral to firms**
- **Will give continual incentive to reduce pollution**
- **Will give greater incentives for technological innovation**

ALTERNATIVE LIMITATION SCHEMES

- **Current limitations on both developed and developing nations**
- **Current limitations on developed nations and future limitations on developing nations**
- **Current limitations on developed nations and future limitations on developing nations**
 - **Joint implementation**
 - **Clean Development Mechanism (*we will show that the CDM is more consistent with a tax system than a permit system*)**

THERE IS A SEEMING PARADOX IN THE DISCUSSION OF GLOBAL LIMITATIONS

- **Economists emphasize the global gains to be made from trading greenhouse gas emissions**
 - **Cheaper opportunities for reducing emissions in developing countries in to developed countries**
 - **Trading allows developed countries to lower the cost of meeting emissions limitations**
 - **Trading allows developing countries to accumulate capital by receiving payments greater than the cost of reducing emissions**

However, there is no enthusiasm for any type of trading system

WHY IS THERE OPPOSITION TO A TRADING SYSTEM DESPITE THE POTENTIAL WIN-WIN SITUATION

- **Developing countries view global warming as a problem created by developed countries, developed countries should be responsible for the solution**
- **Systems such as joint implementation (JI) or jointly implemented activities (JIA) are perceived as potentially substituting for traditional development aid**
- **Developing countries are afraid that emission limitations may constrain their future growth opportunities**

LOOK AT SYSTEMS AND THEIR POTENTIAL SUITABILITY FOR OVERCOMING OBJECTIONS OF DIFFERENT COUNTRIES

- **Definition of emission limitations**
- **System for achieving reductions**
- **System for transferring capital (physical or financial) to developing countries**

A COMPLETE TRADING SYSTEM: MARKETABLE CARBON PERMITS

- **Complete trading system requires immediate restrictions on both developed and developing countries**
- **Emissions from burning fossil fuels are relatively easily handled by such a system but there is less guidance concerning biomass reserves of carbon.**

A COMPLETE TRADING SYSTEM: MARKETABLE CARBON PERMITS

- **How are biomass reserves of carbon handled?**
 - Both preventing deforestation and reforestation give credit, deforestation gives debit
 - Preventing deforestation gives no credit, reforestation gives credit, deforestation gives debit
 - No credit for reforestation or preventing deforestation, deforestation gives debit
 - Biomass reserves are not part of the system

Developing countries are not likely to agree to present or future limitations associated with a trading system.

A QUASI -TRADING SYSTEM: PERMITS AND JOINT IMPLEMENTATION

- **Developed nations face emissions restrictions and participate in a marketable permit system**
- **Developing nations face no restrictions on emissions (at current time)**
- **Joint implementation is allowed**
 - **Developed nations and developing nations enter into agreements on a project-by-project basis**
 - **If the project generates an emissions reduction in the developing nation, the developed nation receives credit towards meeting its emission reductions**
 - **Agreements can be made at the governmental or firm level**

THERE IS VERY STRONG OPPOSITION TO JOINT IMPLEMENTATION

- **Clean Development Mechanism is being brought forward by developing countries, led by Brazil**
 - **Emissions limitations placed on developed countries, but not developing countries**
 - **Countries who exceed their limitations pay a penalty into a fund**
 - **These funds are used for development projects in developing nations which result in emissions reductions**
- **Removal of bilateral trades (such as with joint implementation) relieves the fear that joint implementation will reduce conventional development aid**

CHARACTERISTICS OF THE CLEAN DEVELOPMENT MECHANISM

- **Clean Development Mechanism is a good mechanism for capital transfer**
- **Direct environmental benefit of cleaner technology**
- **Direct economic benefit of increased productivity**
- *No direct incentive for additional carbon emissions reductions in developing countries*

CONTRACTION AND CONVERGENCE

- **Contraction - World emissions decline each year to give us desired atmospheric concentrations at a point in the future (60 years, 100 years)**
- **Convergence - Per country emissions per capita converge to a common level at some time in the future**
- **Global Commons Network is among the organizations arguing for a system of permits to achieve contraction and convergence**
- **However, using a permit system for contraction and convergence requires an agreement on emissions limitations in each country in each year for the next 60 or 100 years**

CONTRACTION AND CONVERGENCE WITH A CARBON TAX SYSTEM

- **Two part tax on developed country emissions**
 - Some of tax revenue will go to Clean Development Mechanism
 - Some of tax revenue will remain within developed country (use for reducing income tax, R&D, or other purposes)
- **Tax on developing country emissions-all of tax revenue stays within developing country**
- **A constant (inflation-adjusted tax) will bring continual reductions in emissions**
- **Tax can be implemented gradually to reduce macroeconomic shocks**
- **As we approach target time of convergence, tax can be adjusted to move towards convergence**