

# Kyoto Protocol Assessment Collapse?

# Crisis and Opportunity

- Time to implement easy changes has past (4/5 of US generating capacity for 2020 already built in 2000)
- Trading only way to meet Kyoto caps at reasonable cost
  - Emission trading
  - Joint implementation (JI)
  - Clean development mechanism (CDM)
- With trading cost could be reduced by a factor of 10 in the US
- Trading is keystone of Kyoto architecture

# Kyoto's Political Economic and Technical issues

- Main element left out of Kyoto protocol:
  - Compliance
  - Reporting
  - Independent certification and verification
- Very demanding if not impossible time table
- Credit for carbon sinks have been added (land-use change and forestry credits?)
- Ratification of protocol or construction of a different framework?

# Credits Issues?

- Credit for sinks of CO<sub>2</sub>
  - Land-use change and forestry
  - Difficulty with definitions, methods and data for counting sinks
- Credits through CDM
  - Rules, investors' hesitance, time needed to understand use of CDM
- Emission trading
  - Difficult technical problems
  - Significant political problems (Russia and Ukraine)
  - Creation of emission permits worth hundreds billions\$\$

# Emission regulation

- Kyoto = Strict targets and timetables for regulating the quantity of greenhouse gases emitted
- Emission quantity determined by technological changes and economic growth difficult to control and anticipate
- Emission permits must be allocated

# Allocation Problem

- Trading magnifies the stakes – Emission permits are semi-permanent property rights
- Difficult to gain consent of firms and government that must pay the cost of acquiring permits – “grandfathering” permits + accommodation of new entrants
- economic efficiency of trading depends on integrity of emission permits – strong states may impose rule of law
- International diplomacy magnifies difficulty – long ratification times and potential withdrawal from treaty

# Sequence of issues to address

- Allocation problem
- Monitoring of compliance
  - Accurate flux measurements
  - Possible restriction to CO<sub>2</sub> initially
- Enforcement
  - Buyer or seller liability ( integrity of permits)
  - Strong compliance mechanism prohibited by Kyoto protocol unless governments formally amend it

# Possible solutions

- If objective to avert catastrophe triggered by certain level of emission=> cap emissions OK but what is the threshold value?
- Coordination of emission taxes – makes it easier to contain cost but difficult to monitor and enforce – differences among countries
- Hybrid tax and trade system – targets for emission quantities and emission prices – first limit quantity then initiate trading system