Command-and-Control Approaches to Climate Change

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Limiting Carbon Emissions: The Regulatory Choices

- Carbon Tax—Taxing emissions to the point where desired emissions level are achieved
  - Pigovian taxes
- Emissions Trading—Permits required for emitting carbon dioxide
  - Emissions are capped at the desired level
  - Coasean trading made explicit

Choosing Among the Options

- Taxation-
  - Strengths: Easy to implement
  - Weaknesses: Uncertain effects
- Cap-and-trade
  - Strengths: Easy to set levels
  - Weaknesses: Difficult enforcement issues

- Both are thought to be superior to "command-and-control" regulation

Command-and Control Regulation

- Setting a standard of performance, or demanding a specific technology

- Example (for automobiles):
  - "on board [vapor recovery] systems [shall be required in all] new light-duty vehicles manufactured [after 1994]"
  - "such systems [must] provide a minimum evaporative emission capacity of 95%"
  - 42 U.S.C. § 7521(a)(6)

Inefficiencies of Command-and-Control Systems

- What if a different technology (other than on-board vapor recovery) would achieve greater reductions at less cost?
- Even if this technology were efficient, how can we tell whether “95%” is the cost-effective level of pollution that this mechanism can achieve?

Performance-Based Standards

- Statutory Mandate: Set a standard of performance “which reflects the degree of emission limitation achievable through the best system of emission reduction . . . Adequately demonstrate” (so called” Best Available Control Technology”) 42. U.S.C. §7411(a)(1).

- Sulfur Dioxide Emission Standard (for new facilities):

  “520 nanogram/Joule heat input”

  40 C.F.R. §60.43Da(1)

The Inflexibility of Command-and-Control is Overstated

- Performance-based standards allow for alternative technologies
- Performance-based standards facilitate innovation
  - Often called “Technology-Forcing”

Command-and-Control and Carbon

- Vehicles
  - Would mean mandating fuel efficiency
  - Letting automakers invent new technologies
- Stationary Sources
  - Mandating maximum carbon per kilowatt
  - Letting utilities invent ways to achieve the standards

Regional Command-and-Control

- Maximum carbon emissions per capita, by region
- In the United States, akin to ambient air quality standards
  - Standards set nationally
  - States develop plans to achieve the standards

Virtues of Command-and-Control Regulation

- They are effective—they achieve emissions reductions
  - Unlike some trading schemes
- They are enforceable
- They are familiar
- They have a psychological appeal

The Real Choice

- Taxation
- Cap-and-Trade (Permitting)
- Command-and-Control Regulation