

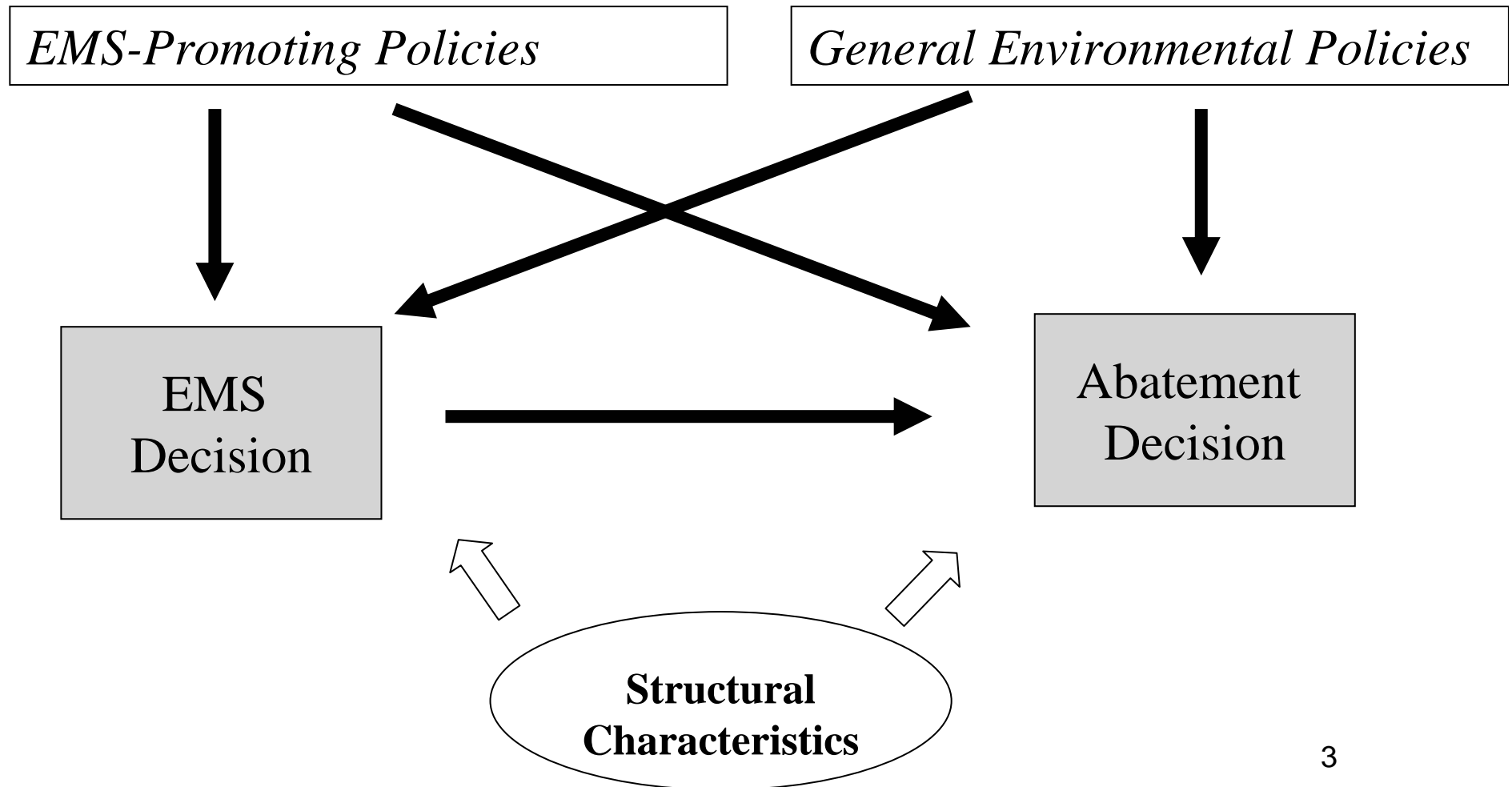
Many a Slip 'Twixt the Cup and the Lip:  
Direct and Indirect Policy Incentives to Improve  
Environmental Performance

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# Authorship

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# Direct vs Indirect Effects of policy variables



# The questions

- What policy variables do affect environmental performance?
  - Including EMS-promoting policies. Ex: granting regulatory relief to EMS certified companies having potentially adverse effects on performance
- Does the introduction of an EMS improve performance?
- What policies do promote EMS adoption?
  - Relevant to the extent that EMS has an effect on env'l performance

# Main methodological concerns

- Endogeneity of the EMS variable
  - *Problem* : Some non observed factors (e.g. corporate culture) may influence both the EMS decision and the abatement decision
  - *Solution* : Bivariate probit models, endogenous selection models
- Self assessment of the performance
  - *Problem* : potentially biased answers on the part of respondents
  - *Solution* : using binary performance variables

# Performance/action variables

- In fact, two indicators
  - "Significant concrete actions to reduce environmental impacts in your facility?"
  - "Decrease in environmental impacts per unit of output?"
- Binary variables = 1 if yes, 0 otherwise
  - The scope for subjectivity is less with a binary choice
- For three types of environmental issues
  - Air pollution, water pollution, solid waste

# Results (1)

- What policy variables do affect actions/performance ?
  - Both perceived policy stringency and the frequency of inspections have a positive effect
  - Instrument choice only has an impact on env'l actions – not on performance
    - Interpretation?
    - performance standards and pollution taxes have a positive effects
    - Input taxes have a negative influence (??)
    - Voluntary agreements have no statistically significant impacts

## Results (2)

- Does the presence of an EMS significantly improve actions/performance?
  - Yes, according to most estimations
  - In particular, for waste
  - Certification is a plus
  - Impact increases with the length of time which EMS has been in place

# Results (3)

- What policies promote EMS adoption ?
  - Non specific policies have an effect
    - Positive effect: inspection frequency, performance standards, voluntary agreements (??)
    - Negative effect: input taxes
  - Policies targeting EMS
    - Only the reduction of inspection frequency and the provision of financial support have a positive effect

## Results (4)

- Do we observe perverse effects on performance of certain policies promoting EMS diffusion, e.g. reduced inspection frequency?
  - Only weak evidence for expediting environmental permits programmes
  - Others are statistically not significant => the question is still open

# Policy conclusions (1)

- EMS is an effective tool providing environmental benefits and certification is a plus
- Do the EMS in place pass a "cost-benefit" test?
  - Don't know. EMS implementation costs are not taken into account in our analysis
- However, EMS should probably be promoted by public agencies
  - Without government support, the EMS public good is under-provided because companies do not internalize environmental benefits
  - It should not be too strong; otherwise some companies can implement EMS that do not pass the cost-benefit test

# Policy conclusions (2)

- How?
  - See Irene's presentation
  - Non specific environmental policies have an effect on their own which is comparable to specific tools
  - Among specific tools, the most effective is the reduction of inspection frequency ; but perverse effects?
  - The provision of financial support is also possible, has no potential perverse effects on performance but is less effective