



Overview of CEEM Emissions Trading Design Research

CEEM China- Australia Carbon Market Design Workshop

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CEEM ETS Research: Main Methods

Methods to test design *before* ETS introduction

- Theoretical Analysis
- Simulations
- Experiments

排放交易计划实施前, 机制设计的测试方法

- 理论分析
- 模拟仿真
- 实验

Methods to evaluate design *after* ETS implementation

- Data Analysis based on
European Union CITL
Data

排放交易计划执行后, 机制设计的评价方法

- 数据分析
(基于欧盟 CITL数据)

CEEM ETS Research

Experiments

- Compliance mechanism
- Auction design
- Market design
- Monitoring, reporting, and verification

Data Analysis (EU ETS)

- Coverage
- Winners and losers
- Role of banks

实验

- 规则遵守的机制设计
- 拍卖机制设计
- 市场机制设计
- 监测, 报告和审核设计

数据分析 (欧洲排放交易机制)

- 政策的覆盖范围
- 政策的赢家和输家
- 银行的角色

Compliance mechanisms: Experiment

Theory:

- When the penalty is higher than market price of permits, firms will choose to be compliant.

Research question:

- Will penalty design have effect on compliance rates and market performance?

Sanction types

- Fixed penalty rate, make-good provision, mix of both
- Level: independent, or related to permit price

Results

- Contradicts theory
- Trade-off: make-good provision higher compliance but lower efficiency than fixed penalty

理论依据:

- 当罚金高于市场交易价格, 企业会选择遵守规则。

研究问题:

- 处罚的机制设计会对遵守规则的比率和市场的业绩有影响吗?

奖惩类型

- 固定的处罚额度, 履行职责的奖励, 两者相结合
- 标准: 独立设置, 或者与市场价格关联

结论

- 与理论相矛盾
- 权衡: 相对于固定处罚, 履行职责的奖励有更高的遵守比率但是效率相对更低

Coverage: Simulation and data analysis

Theory:

- Broader coverage will make emissions trading more efficient, because more variety in mitigation costs.

Research question:

- What are the costs and benefits of covering companies in an ETS compared to an alternative policy, taking transaction costs into account?

Transaction costs

- Trading costs, monitoring, reporting, and verification costs...

Results

- Efficient coverage depends on cap stringency, transaction costs, and distribution of mitigation costs
- Trading costs may prevent participation (Analysis of expired EUAs)
- Phase-in of sectors may be efficient

理论依据：

- 因为减排成本的多样化，更宽泛的覆盖范围会使得排放交易的效率更高。

研究问题：

- 就交易成本而言，与其他政策相比，对于包括在排放交易计划中的企业，它们的成本和收益分别都是什么？

交易成本

- 买卖成本、监测、报告和审核成本

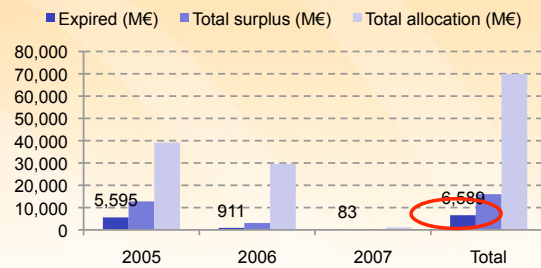
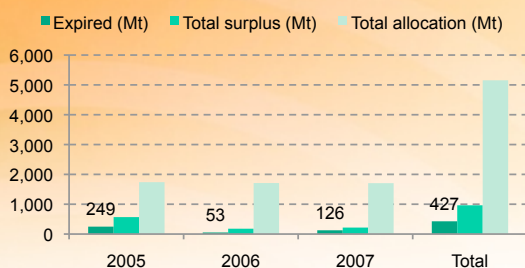
结论

- 有效率的实施范围取决于总体限制的严格程度、交易成本和减排成本
- 买卖成本或许会限制交易的参与（基于对早前欧盟配额的分析）
- 行业的逐渐引进或许是有效的

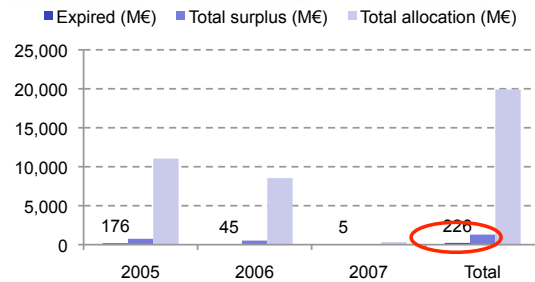
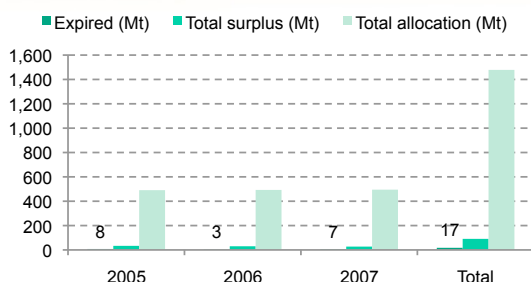
Betz, Regina / Sanderson, Todd / Ancev, Tihomir 2010, In or out: Efficient inclusion of installations in an Emissions Trading Scheme?, *Journal of Regulatory Economics*, vol. 37, Issue 2, pp 162-179.

Overall Expired EU Allowances (EUAs)

Installations



German companies



Trading Costs per Installation/Firm

	Aggregate Trading Costs (M€)	Installations that did not trade	Per installation (€)	Aggregate Trading Costs (M€)	German firms that did not trade	Per German firm (€)
upper bound (individual years, yearly prices)	6,589	7,912	832,828	226	702	322,001
middle bound (all years, yearly prices)	2,600	3,111	835,770	62	264	235,698
middle bound (all years, 2005-07 av. price)	2,092	3,111	672,492	66	264	248,542
lower bound (all years, 2007 av. price)	102	3,111	32,877	3	264	12,151

- Very high as compared to bottom-up studies
- There might be additional factors that inhibit trade, e.g. uncertainty

Source: Own calculations based on CITL data

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New CEEM Project: The Rise of Carbon Markets in China

Aim:

- Foster collaboration between CEEM and universities in China working on carbon market design

Process:

- Exchange of researchers and postgraduates
- Set up working groups on different design elements
- Host two symposia in China, one in Shanghai, and another in Beijing

Potential topics:

- Coverage of electricity production
- State-owned companies
- Allocation rules for new entrants

目的:

- 促进能源与环境市场中心与中国从事碳市场设计的大学的合作

进程:

- 学者与研究生交换
- 根据不同设计要素建立研究组
- 分别在中国北京和上海主办两场学术研讨会

可能的研究课题

- 电力生产企业的实施范围
- 国有企业
- 市场新进入者的配额分配规则

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