



Robustness of Carbon Markets and the Role of Market Oversight

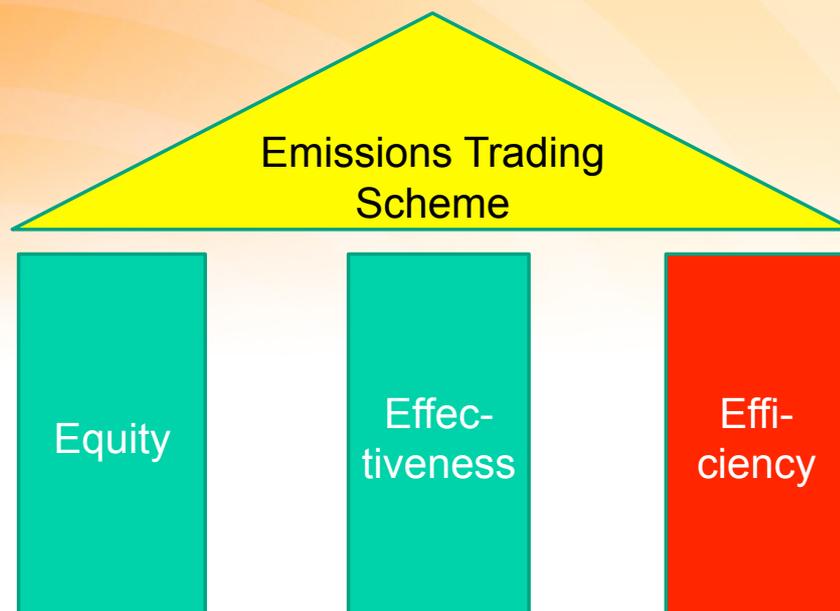
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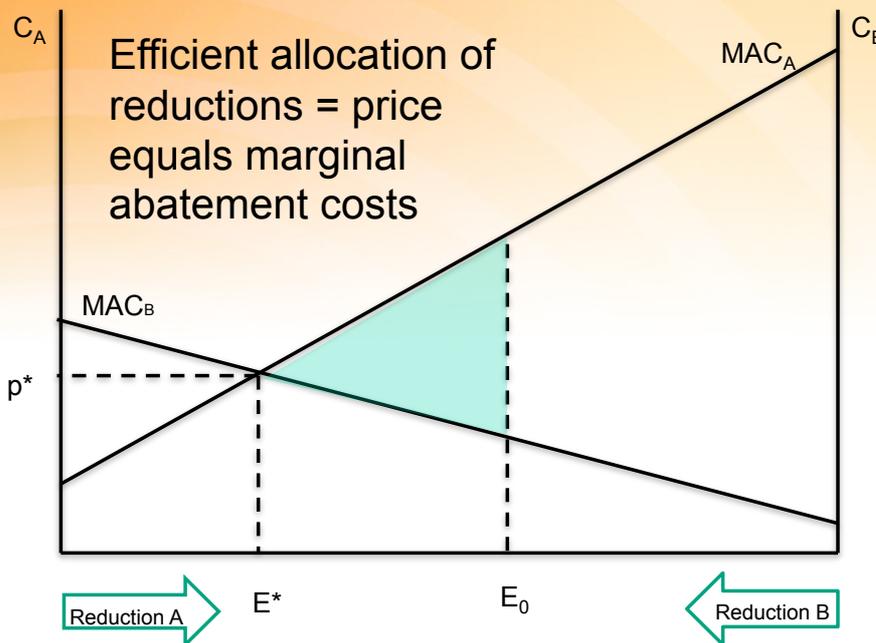
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Robust ETS



Efficiency of the ETS



Factors which influence efficiency

1. Market structure
2. Type of market players
3. Transaction costs
4. Information
5. Market trust through market oversight

Factors are interrelated!

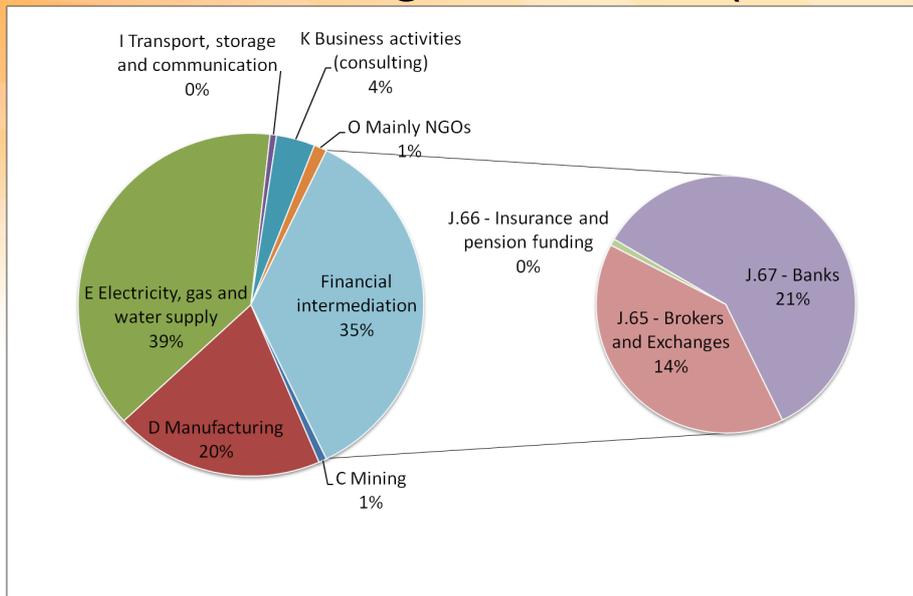
Market Structure

- Theoretically **dominant firms** may have an incentive to manipulate permit prices up by holding permits above compliance level
- Necessary conditions
 - Dominant in both market: permits and good market
 - Free allocation up to a certain level
 - Pass-through of permit price on good price
- Preliminary empirical analysis for electricity sector in 1st phase of EU ETS support that dominant firms are holding / banking permits above compliance

Type of Market Players

- Regulated players
 - Phase 1: 12,844 Operational Holding Accounts (OHAs)
 - Free allocation
 - Compliance incentive
 - Information about own emissions and abatement costs
- Non-regulated players
 - Around 5,000 PHAs
 - Phase 1: 650 active PHAs almost half belong to non-regulated players including 140 banks
 - Have to buy permits first in order to take part in market

Personal Holding Accounts (Phase 1)



Source: Own calculations based on CITL data and NACE code classification

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Role of non-regulated players

- Pro
 - Provide hedging products
 - Intermediation
 - Exploit arbitrage
 - Increase liquidity
 - Reduce market concentration
- Cons
 - Increase risk:
 - Extensive risk taking
 - Through new products such as Collateralised Debt Obligation
 - Moral hazard
 - Money laundering, VAT fraud, theft
 - May reduce liquidity by holding
 - May increase volatility through speculation
 - Conflict of interest: intermediation & own account trading

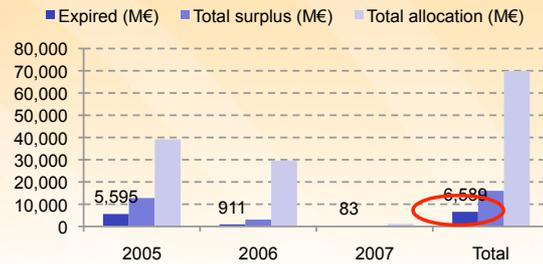
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Transaction costs

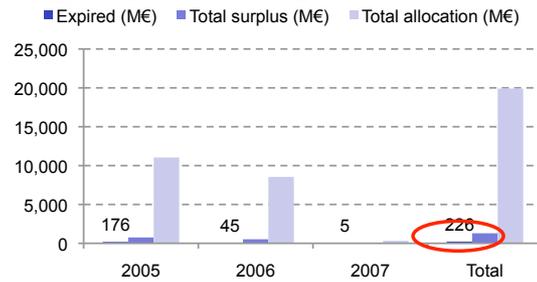
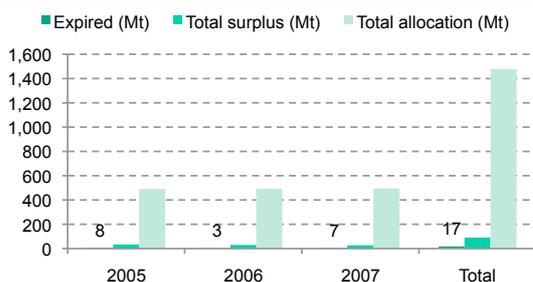
- Differentiate between trading transaction costs (searching, negotiating, enforcing) and other transaction costs (monitoring, reporting and verification)
- Trading transaction costs may reduce incentive to trade as well as trading volume (impact equilibrium).
- Analysing transfer patterns of Phase 1 based on CITL shows that:
 - Transfers have increased over time. Indicates that trading transaction costs have decreased over time.
 - Number of expired permits may reflect transaction costs. Share of inactive small emitters significantly higher. Trading transaction costs have high share of fixed costs.

Overall Expired Permits

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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Information

▪ Supply side

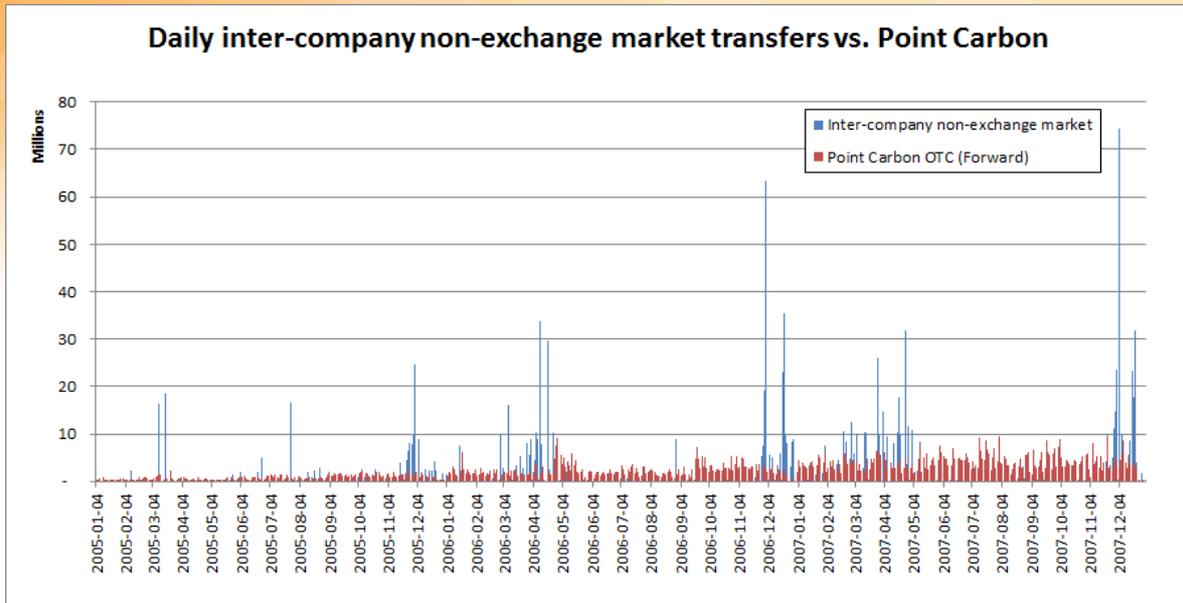
- Transparency of total volume of available permits (includes e.g. New Entrant Reserves and Banking rules)
- International credits

▪ Demand side

- **Verified emissions:** Revealed annually with high impact on price, may lead to asymmetric information
- **Abatement costs:** KfW -ZEW study shows only 60% of companies do not know their abatement costs

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Market transparency



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Market trust through market oversight

- Phase 1: only market oversight for derivate market, spot market and forward trading excluded
- Suggestion to create a Survaillance body (like for EEX in Leipzig):
 - Daily monitoring of all transactions of all market platforms and registry to detect missuse / non-compliance trading early on
 - Authorisation system for all players and products
 - Indicators:
 - Volume of derivatives compared to real market transactions
 - Holdings above compliance level

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Final thoughts

- Simple system with focus on compliance will enhance robustness in the long run
- High share of auctioning may reduce risk of price manipulation
- Mandatory open trading platform may reduce transaction costs and enhance transparency
- Frequent public reporting of emission (through Continuous Monitoring Systems) may reduce information asymmetry and increase transparency
- Ensure registry security
- Surveillance body which regulates participants, products and monitors all transaction data and with a mandate to intervene

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Thank you.



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