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Will European Industry Escape the Kyoto Protocol?

Ton Manders

CPB Netherlands Bureau

for Economic Policy Analysis

26th IAEE Annual Conference

June 4-7, 2003 - Prague

3 June, 2003

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Climate policy = energy policy

'Dirty'energy is taxed ⇩ rising cost of energy

- Substitution away to other inputs
- Loss of competitiveness

  ⇩ relocation
- Carbon leakage

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From the literature

- Environmental policy is just one of the factors
- How bad is relocation?
- Do not overestimate effects of environmental policies

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Model analysis - WorldScan

- 16 regions, 16 sectors
- Applied general equilibrium model
- Welfare analysis

- No adjustment costs
- CO_2 only

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Variants

Benchmark case

- Emission trading
- Without USA
- Banking hot air

Sensitivity analysis

- Baseline
- Model parameters

Policy variants

- Restrictions on emissions trade
- Participation USA
- Exemptions
- Tax reform

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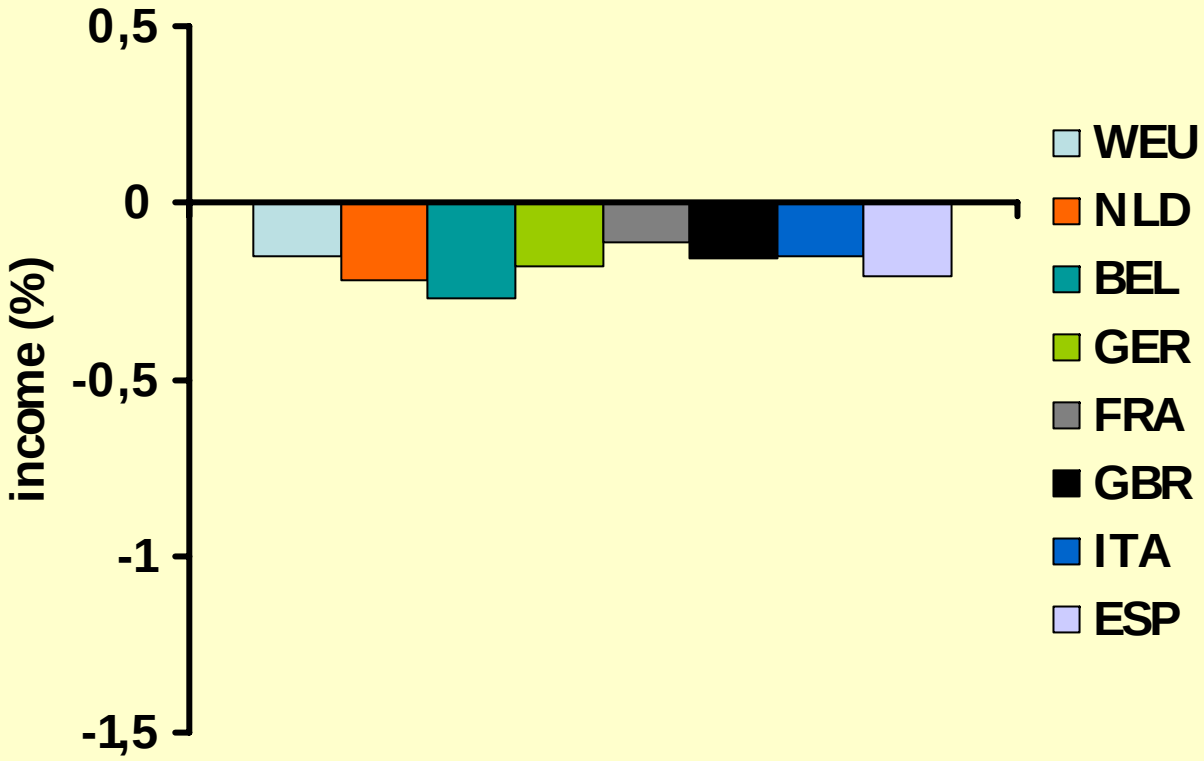
Effects differ by region



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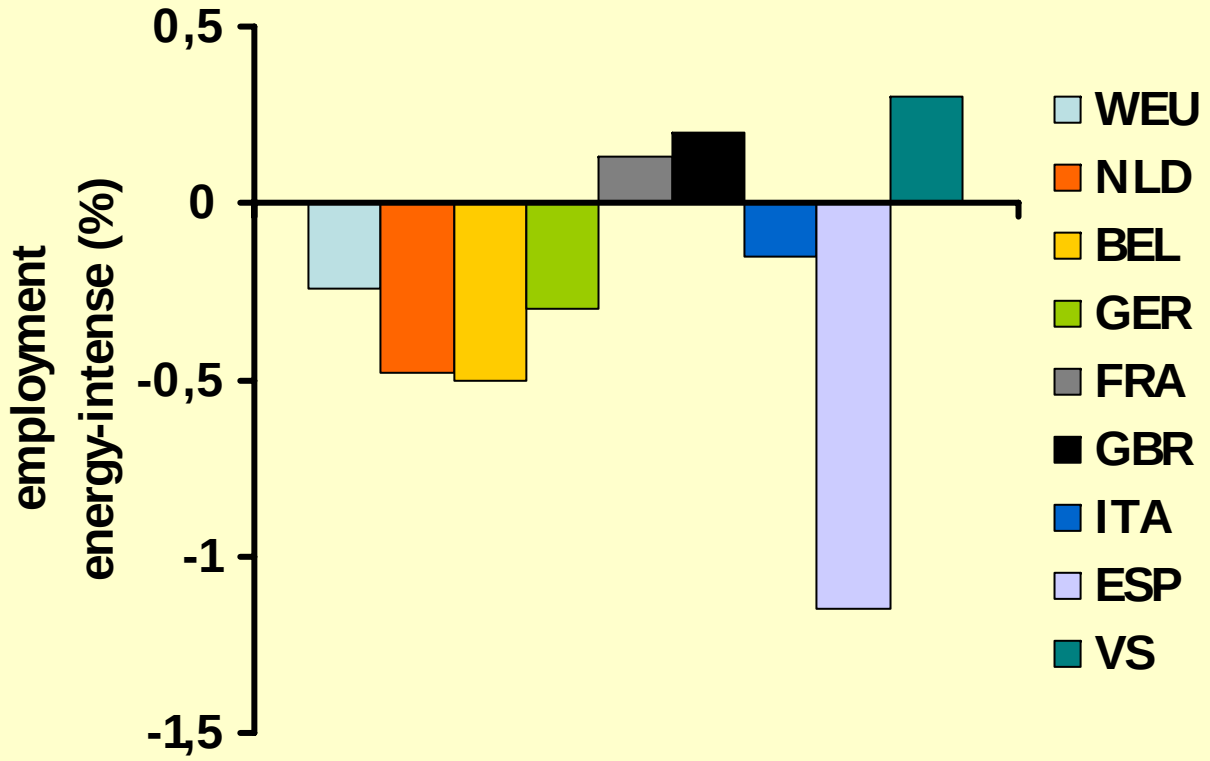
Sectoral impacts are larger



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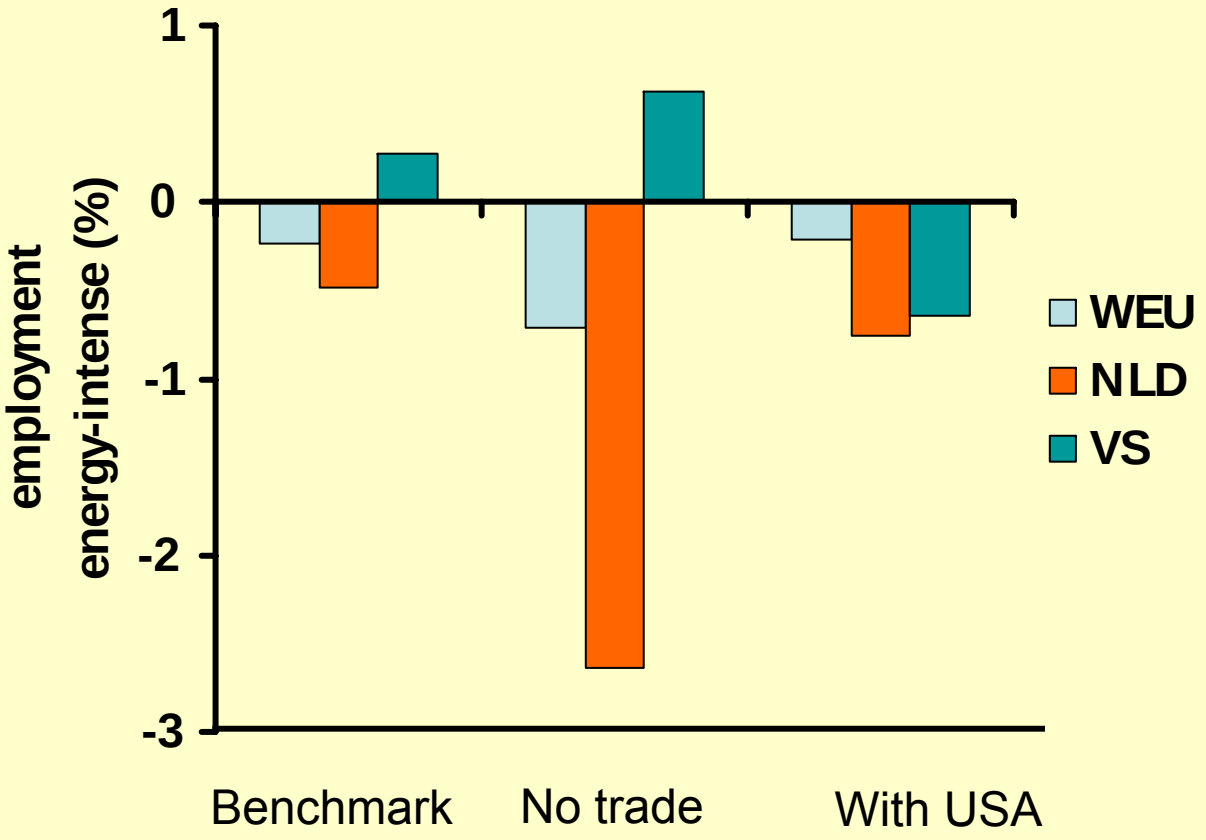
Restrictions on trade and participation USA



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Restrictions on trade and participation USA

	Benchmark	No trade	With USA
Emission price (US$/tC)	27	variable	75
Leakage rate (%)	22	27	14
Welfare (%)	–0.15	–0.35	–0.30
Employment energy-intense (%)	–0.23	–0.71	–0.21

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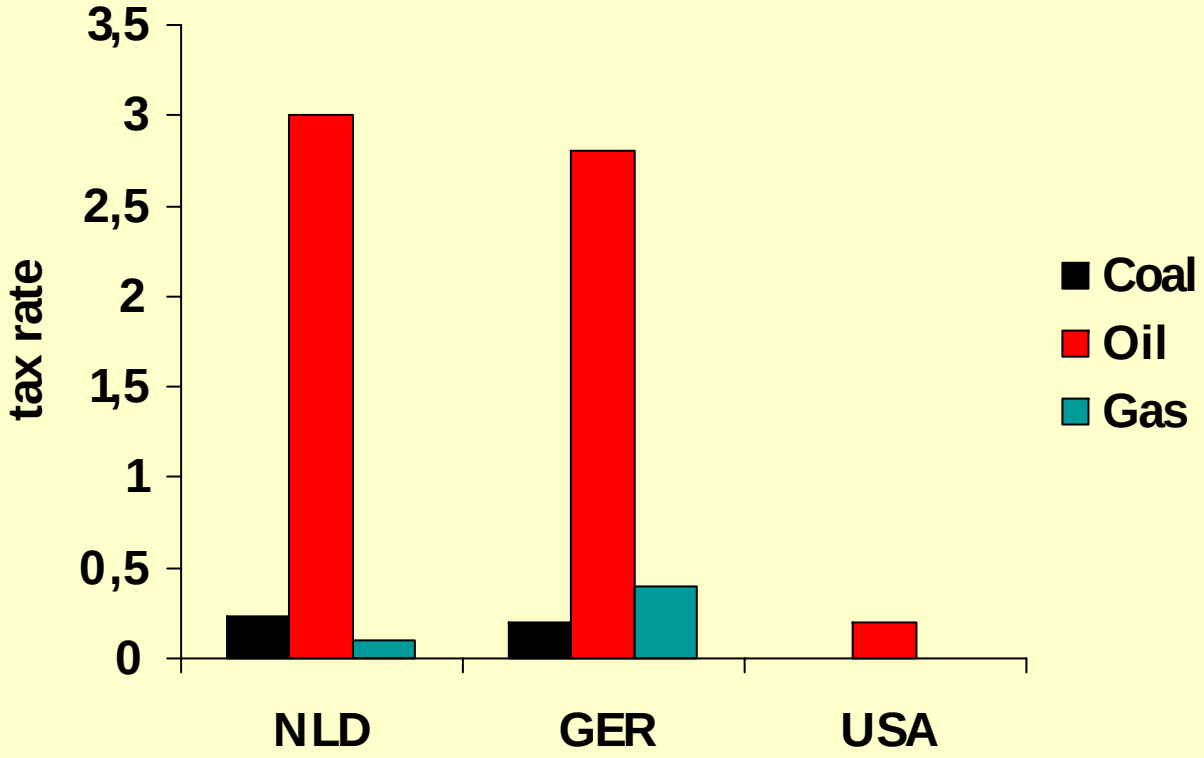
Energy tax ≠ Carbon tax



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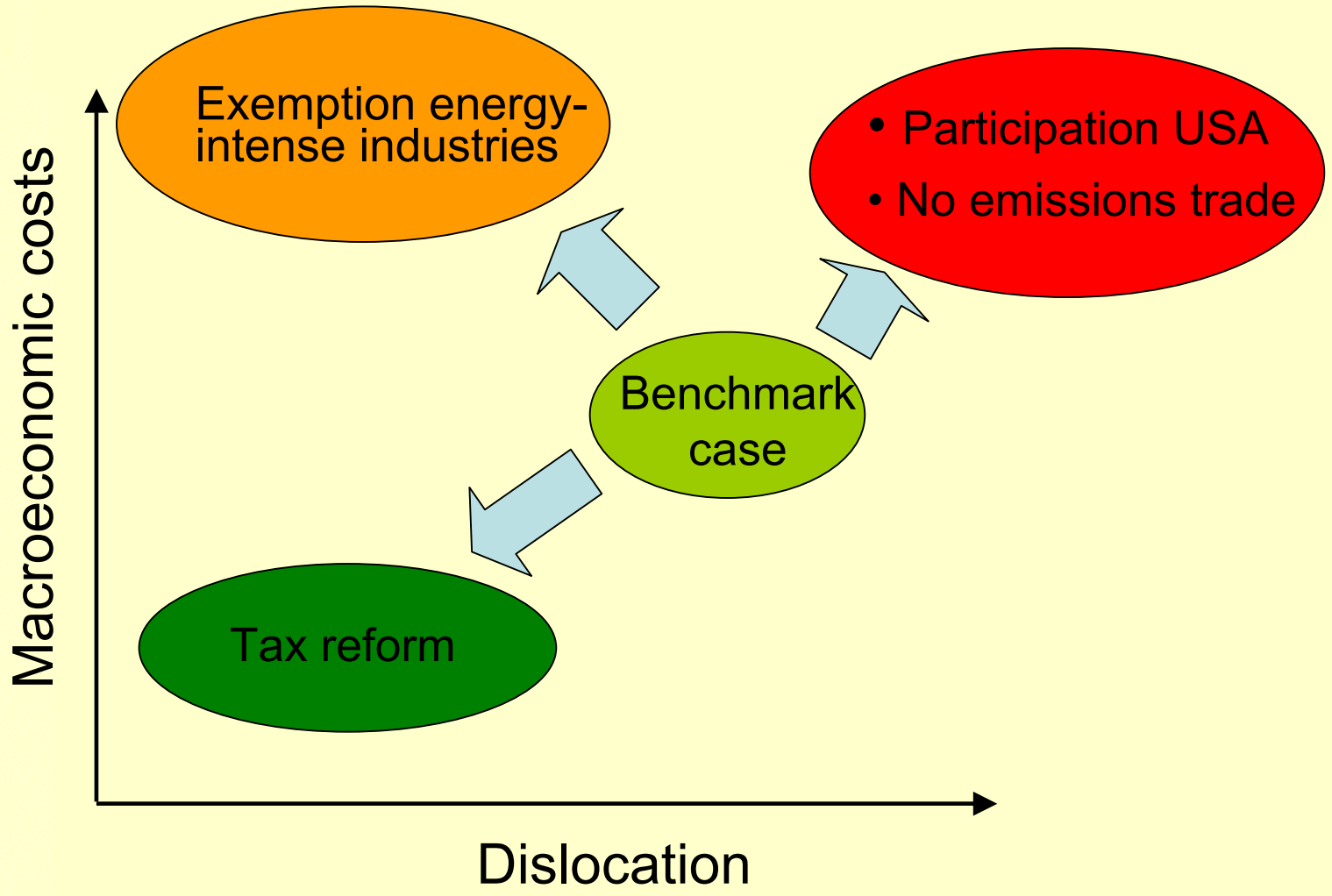
Exemptions and tax reform

	Benchmark	Exemption	Tax reform
Emission price (US$/tC)	27	32	351
Leakage rate (%)	22	18	56
Welfare (%)	–0.15	–0.17	0.70
Employment energy-intensive (%)	–0.23	–0.00	–0.23

Trade-off between costs and dislocation



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Conclusions

- Impacts 'Kyoto' are moderate
  - Welfare loss
  - Dislocation
  - Carbon leakage
- Impacts differ by region and sector
- Policy design is important
  - Emission trading, participation USA
  - exemptions, taxes

Will European Industry escape the Kyoto Protocol?

No fear of flying

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