

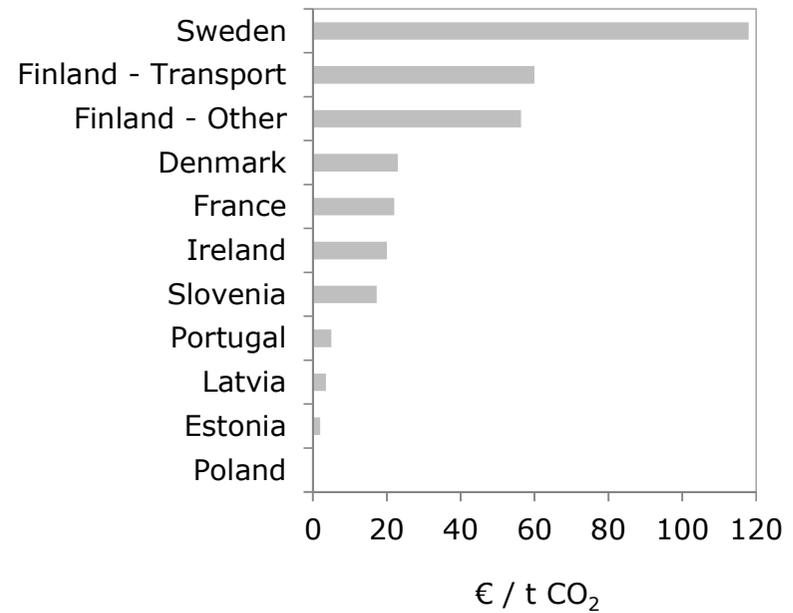
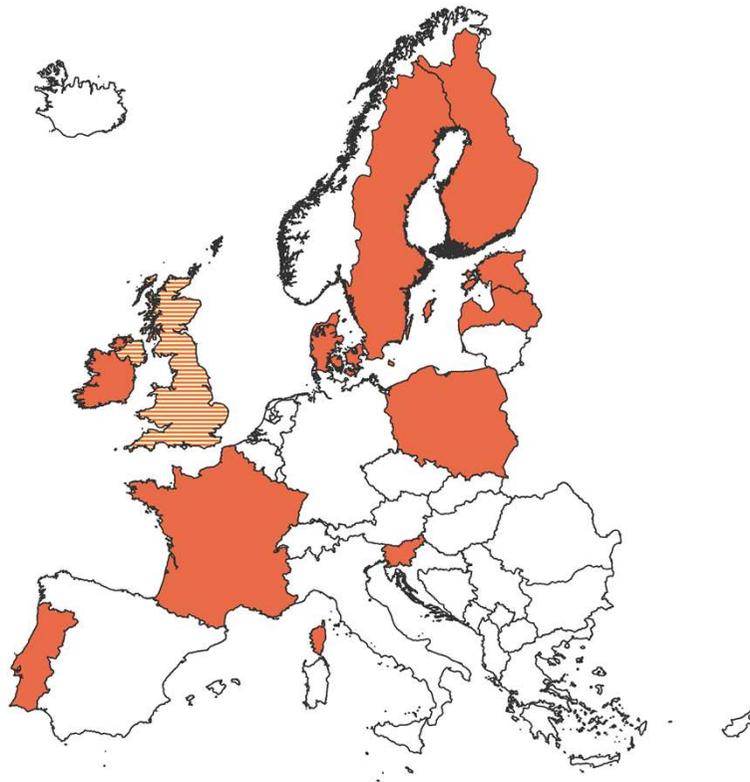
# Carbon Taxes and Income Distribution: Simulation Results for Austria

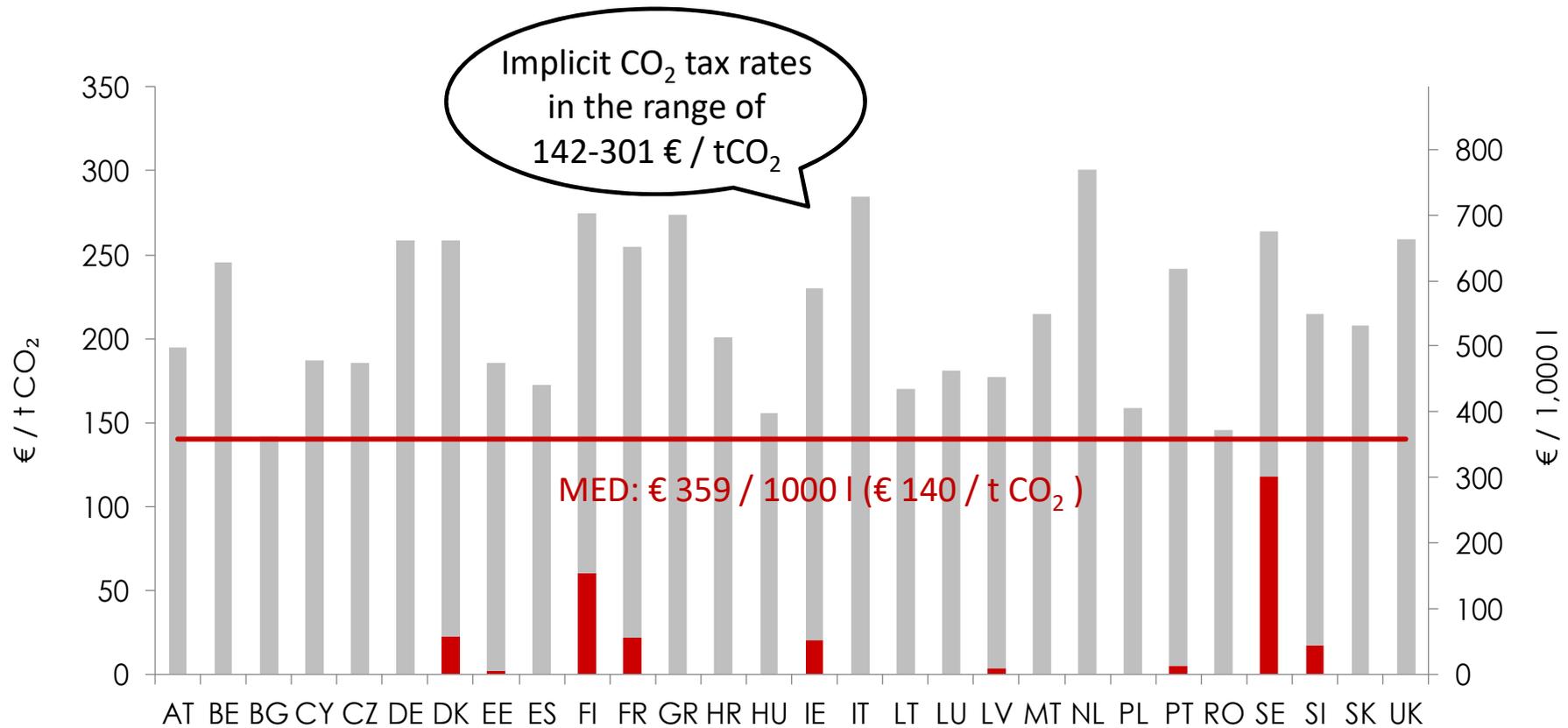
November 15<sup>th</sup>, 2018

Claudia Kettner, Daniela Kletzan-Slamanig, Mathias Kirchner,  
Mark Sommer, Kurt Kratena, Stefan E. Weishaar, Irene Burgers

# CO<sub>2</sub> taxes in EU Member States

2016





Source: EC Excise Duty Tables January 2017.

- Modelling of CO<sub>2</sub> tax scenarios with the WIFO.DYNK model
- Focus on non-ETS sectors (households, transport, services, non-ETS industry)
- Analysis of *short-term*
  - environmental effects
  - macroeconomic effects
  - distribution effects

# CATs Scenarios

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## Tax rate

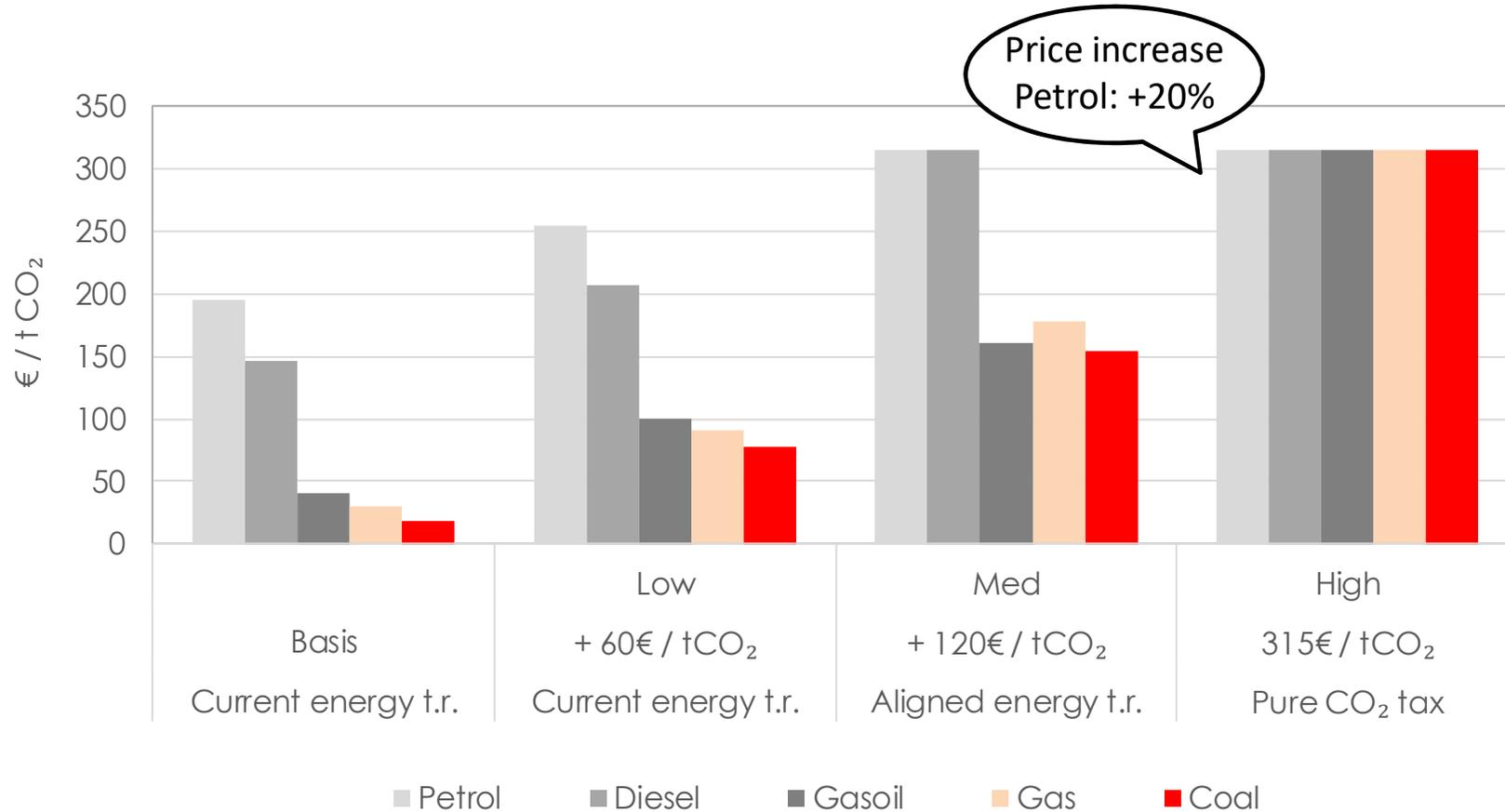
- *Current* energy tax rates  
Plus €60 per ton of CO<sub>2</sub> (*Low*)
- *Alignment* of energy tax rates  
[€/energy unit]  
Plus €120 per ton of CO<sub>2</sub> (*Med*)
- *No energy taxes, pure CO<sub>2</sub> tax*  
€315 per ton CO<sub>2</sub> (*High*)

## Recycling of taxes for Non-ETS sectors

- No recycling (*NoRec*)
- Direct eco-payments to households (*Rech*)
- Reduction of employer contributions to social security (*RecQ*)
- Eco-payments & reduction of employer contributions (*RecQH*)
- Reduction of value added tax (*RecVAT*)

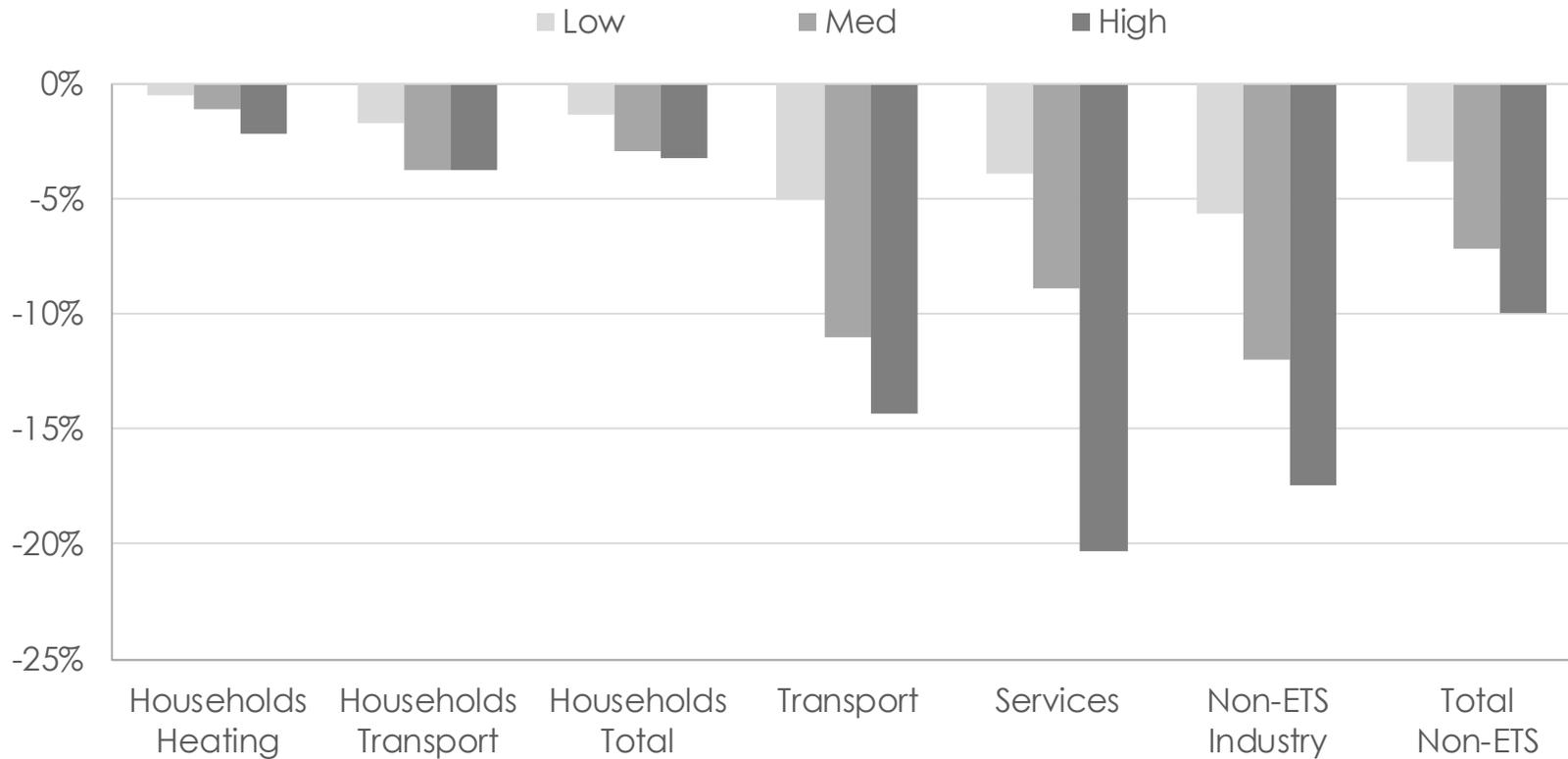
# CO<sub>2</sub> tax rate scenarios

## Implicit CO<sub>2</sub> tax rate



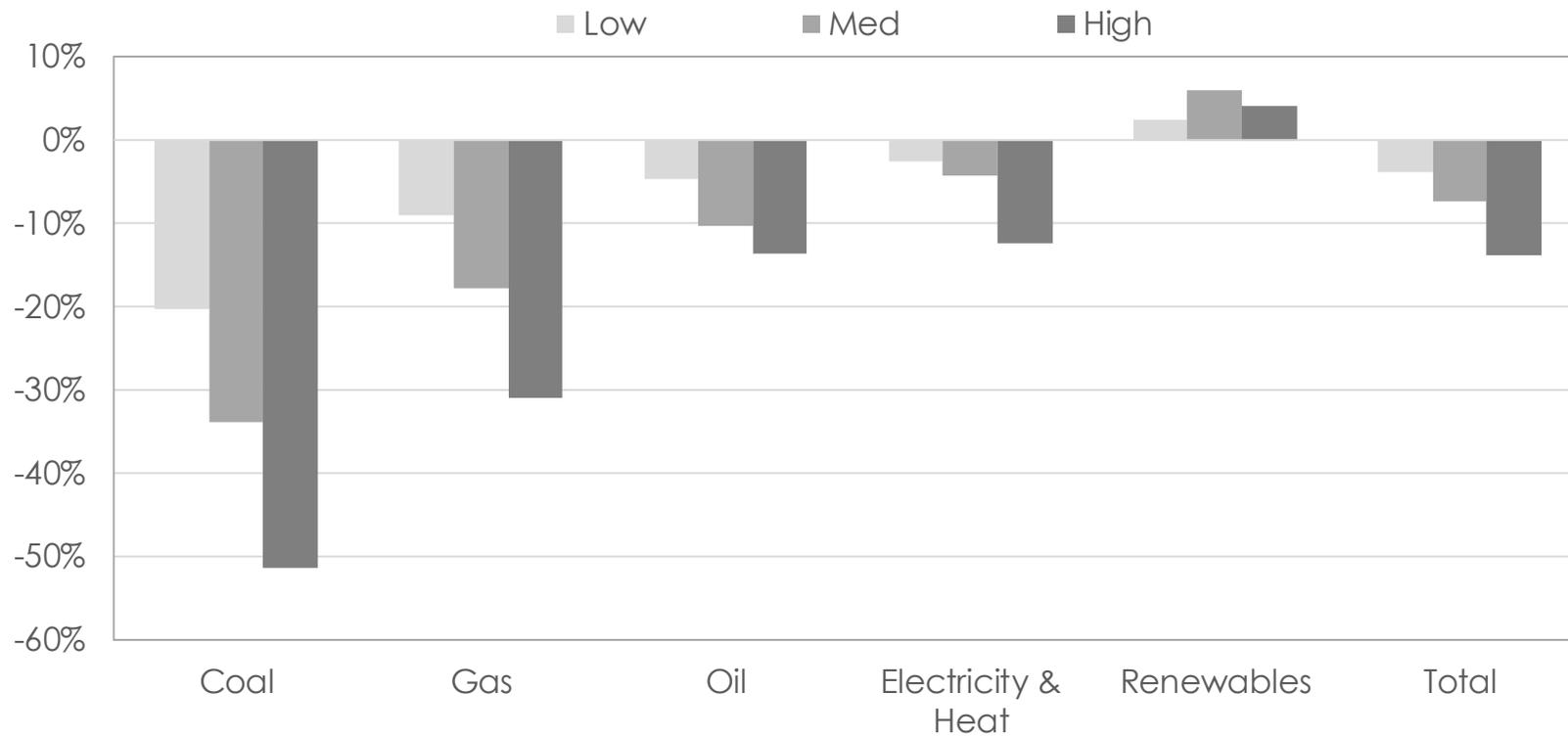
# Energy-related CO<sub>2</sub> emissions

## Changes in Non-ETS sectors



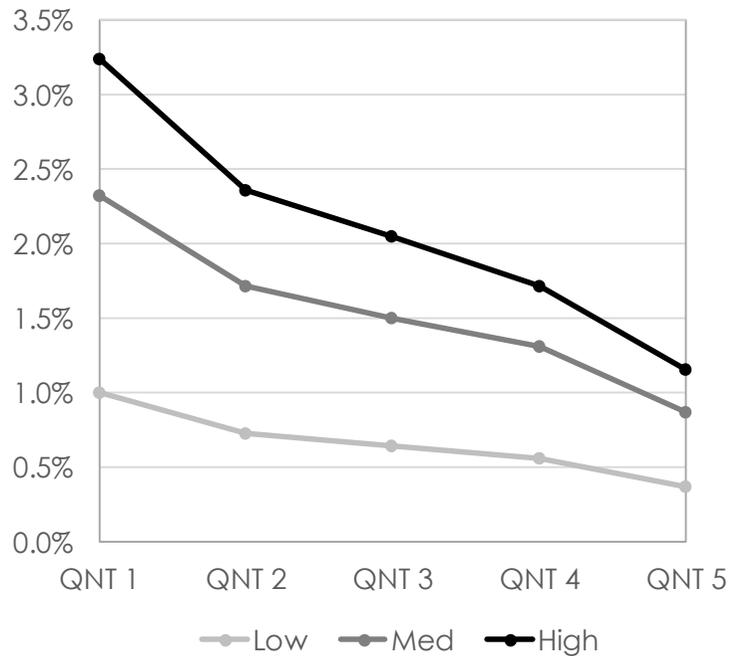
# Final energy consumption

## Changes in Non-ETS sectors

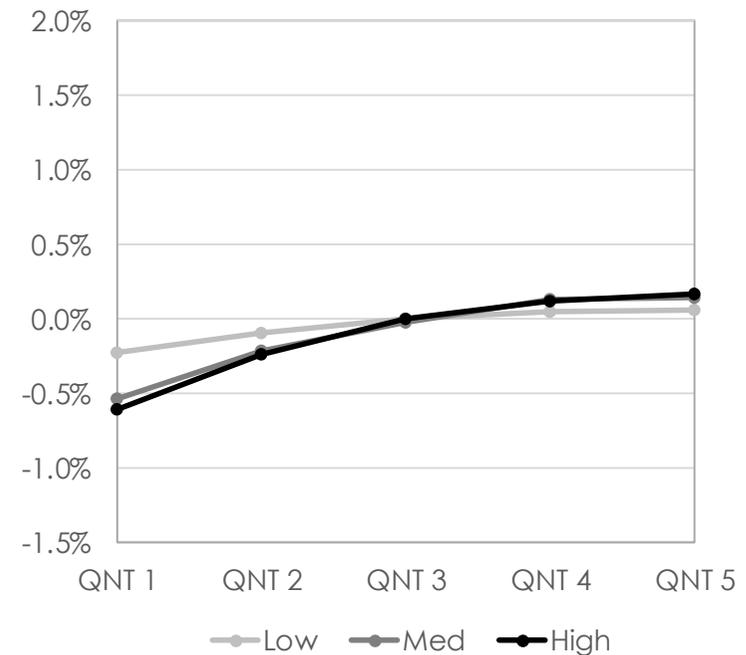


# CO<sub>2</sub> tax burden on households relative to income

**NoRec**  
No Revenue Recycling

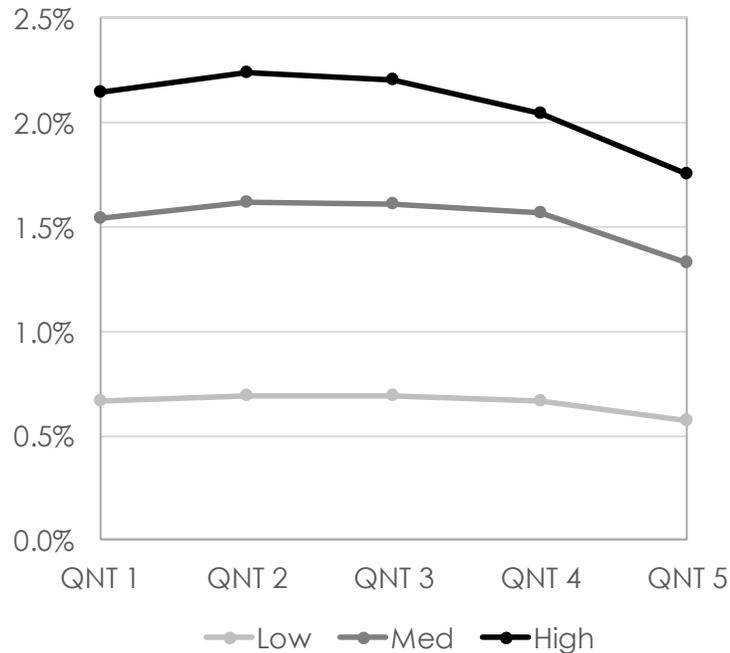


**RecQH**  
Eco-Payments & Reduction of Employers' Social Contribution

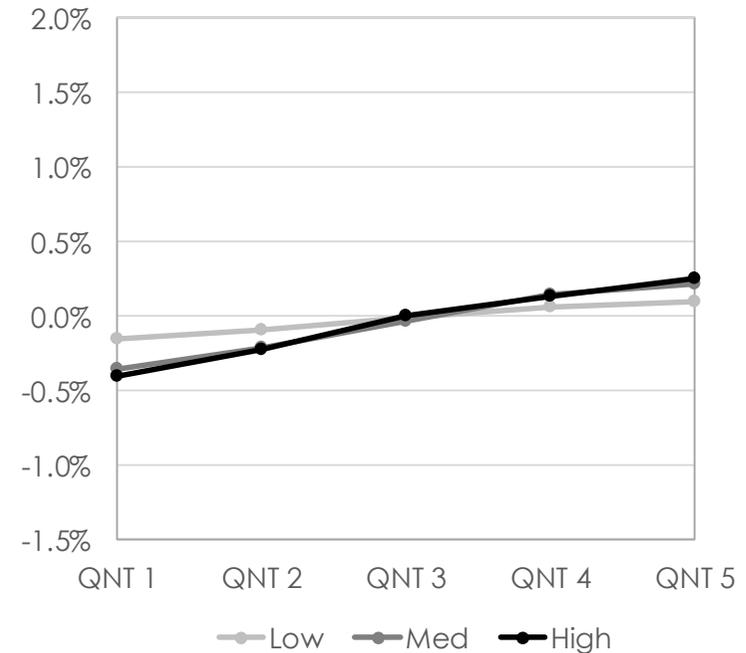


# CO<sub>2</sub> tax burden on households relative to expenditure

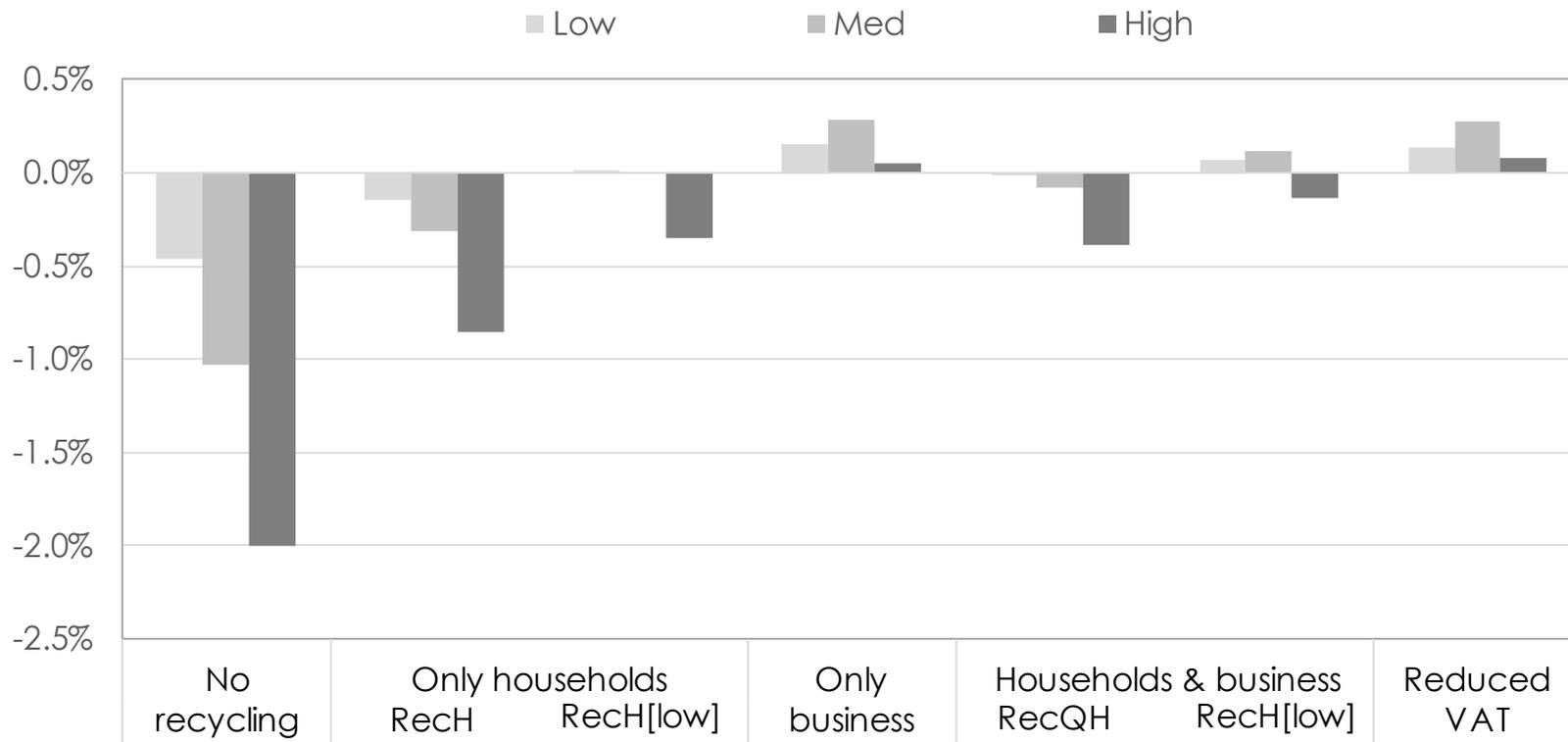
**NoRec**  
No Revenue Recycling



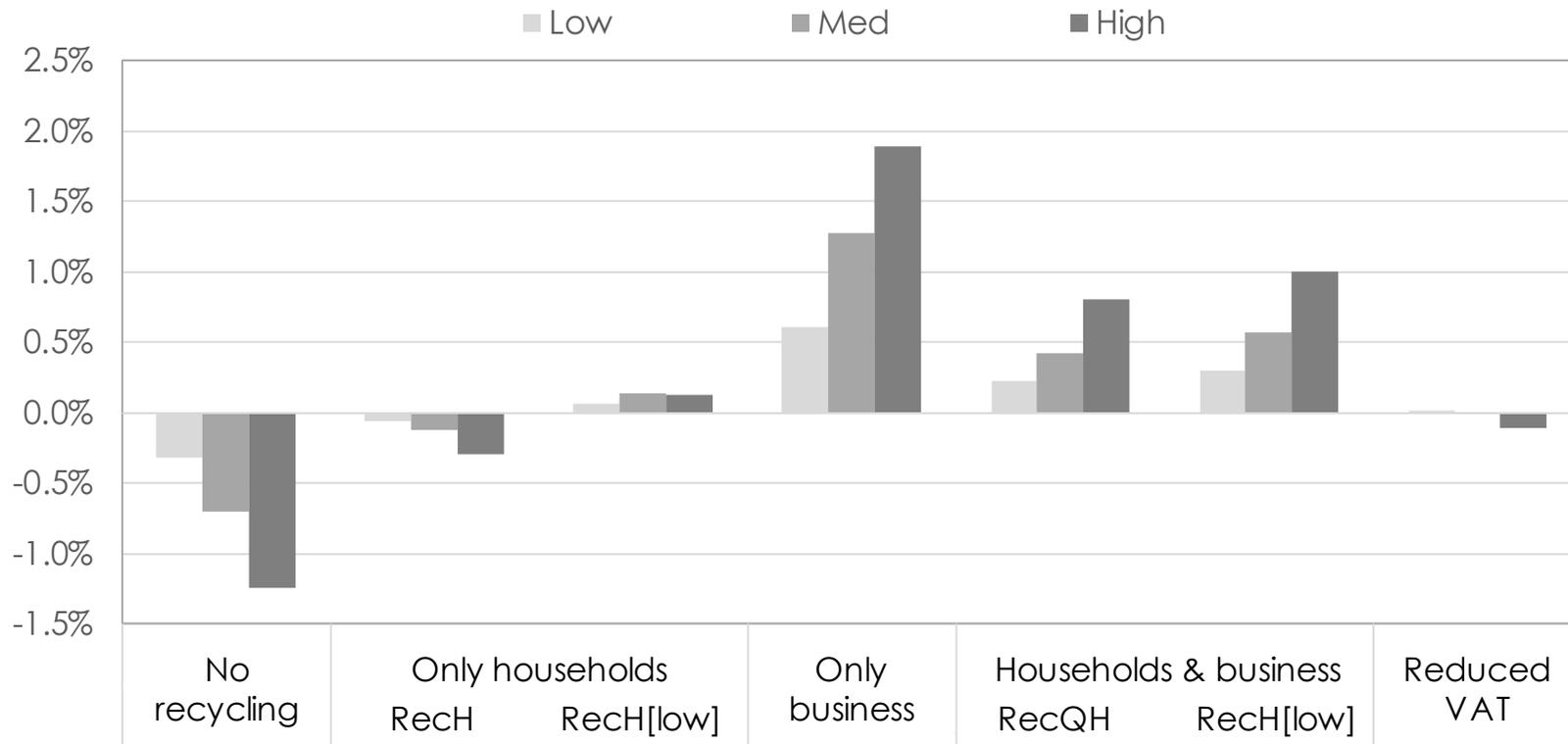
**RecQH**  
Eco-Payments & Reduction of Employers' Social Contribution



# Effects on real GDP by recycling option



# Effects on Employment by recycling option



- Action at national level is needed – especially for sectors not covered by the EU ETS
- For Austria the model results show:
  - Effects on CO<sub>2</sub> emissions are significant (esp. in transport, services)
  - Macroeconomic effects are small  
**But:** revenue recycling is crucial
  - Regressivity and competitiveness effects must be alleviated to ensure acceptance of CO<sub>2</sub> taxes

- Necessity of structural changes of the tax system – introduction of CO<sub>2</sub> tax allows reducing the tax burden on labour (double dividend) and addressing equity issues
- Adjustment requires a long-term strategy to deal with the effects of decarbonisation
- Transparent and evidence-based discussion is required to reach broad social and political consensus

**Thank you!**

<http://cats.wifo.ac.at>  
[claudia.kettner@wifo.at](mailto:claudia.kettner@wifo.at)