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Carbon pricing: indispensible – charging 180€/t now: inconsiderate

Impulse to the panel discussion

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INREC 2020 | Essen, 09. September 2020

Global coordination is crucial for ultimate success

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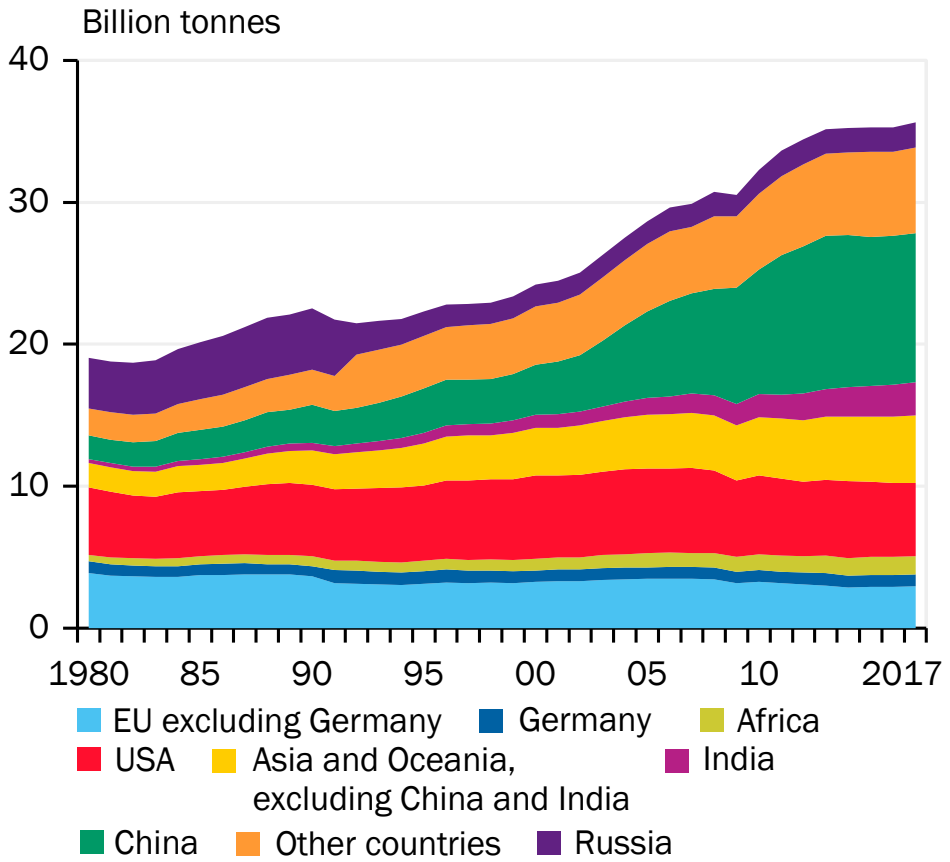
CO_2 emissions in selected countries and country groups



Sources: EIA, own calculations

- EU and Germany can only make very small direct contribution to curb global warming
- EU needs a strong negotiation position to influence global climate policy
  - reciprocity / efficiency / side effects
- Prices as coordination devices
  - CO_2-price sets incentives for investments
  - CO_2-price strengthens incentives for innovations
  - Complementary: Promotion of (basic) research and development at EU level

EU: Different approach for ETS and non-ETS sectors

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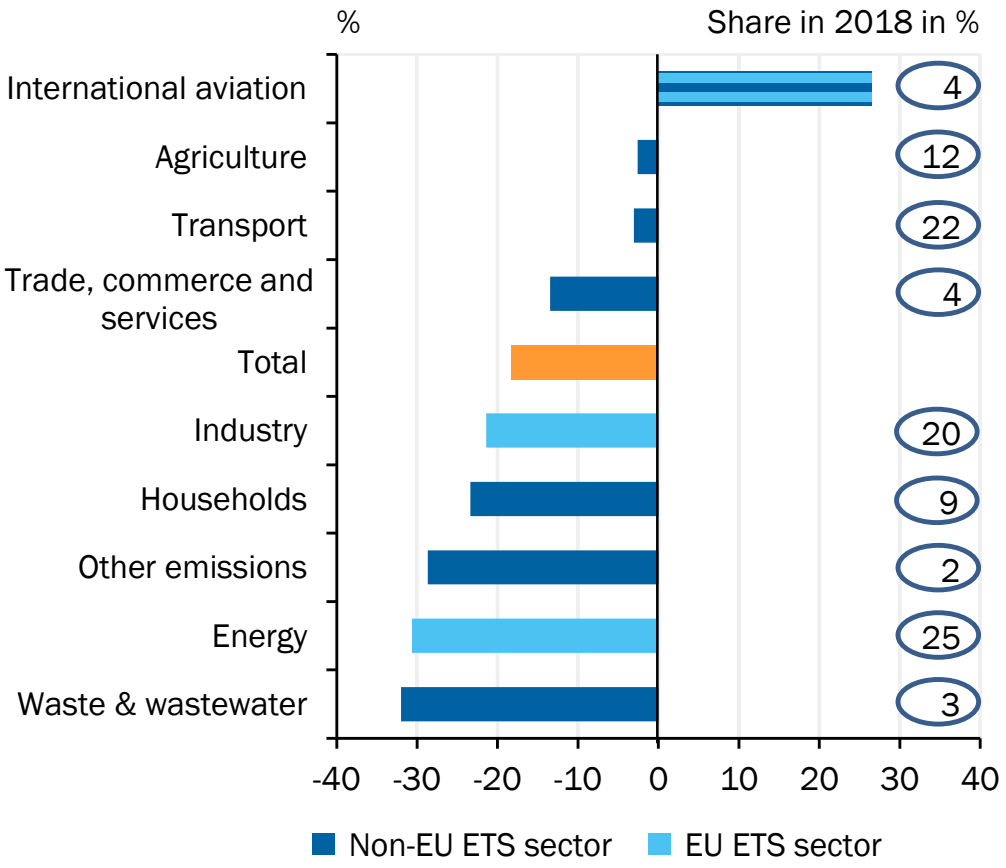
Greenhouse gas emissions in the EU by sector
Change from 2005 to 2018



Sources: European Environment Agency, Eurostat, own calculations

- EU-wide Emissions Trading System (EU ETS): around 45% of EU emissions
  - Energy
  - Industry
  - Intra-EU flights
- Emissions outside EU ETS (non-ETS): “effort-sharing“, specifying separate reduction targets for each member state
  - Transport
  - Households
  - Agriculture

Reliable emissions reduction in the EU ETS sectors

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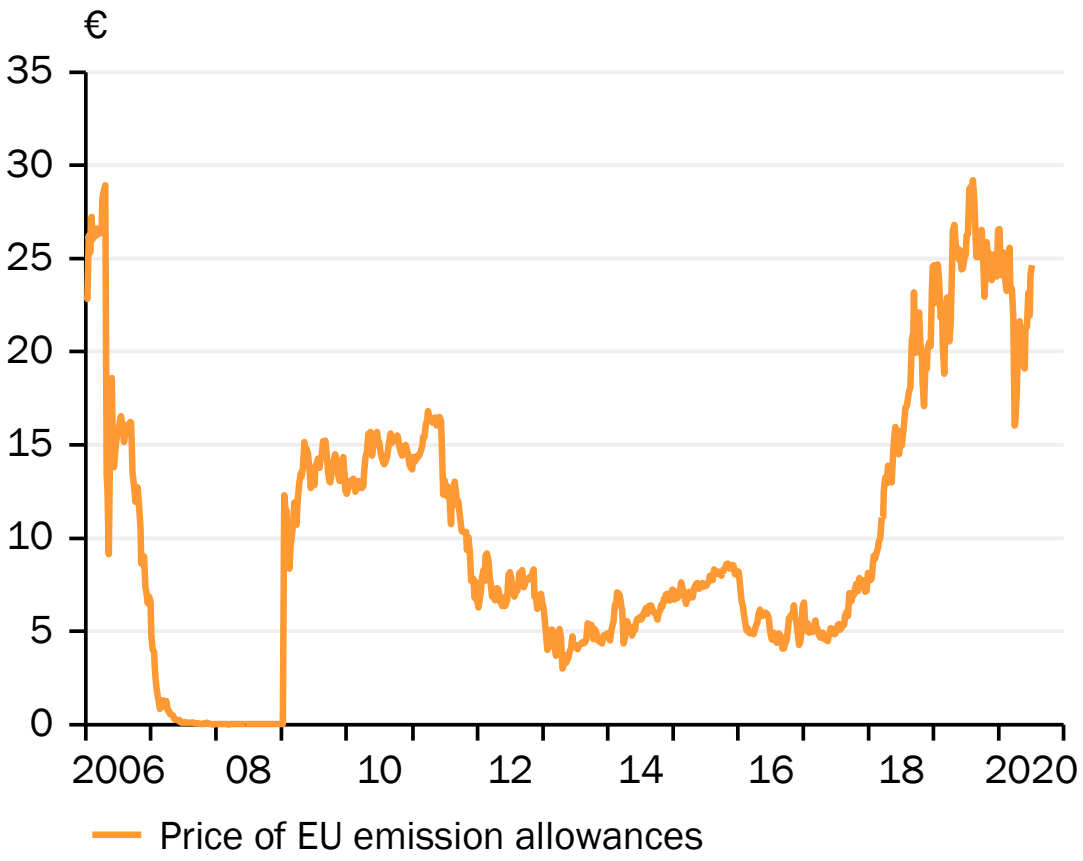
Carbon price of emission allowances in the EU ETS



Source: Refinitiv Datastream

- EU ETS is functional market-based instrument, after all
  - Targeted emissions reduction is met reliably by construction of system
  - Prices have been stabilized by introducing market stability reserve
- Germany: EEG and discretionary coal phase-out work in EU ETS sectors
  - No additional emissions reduction through national measures in this area without accompanying measures

Fragmented approach in the non-ETS sectors

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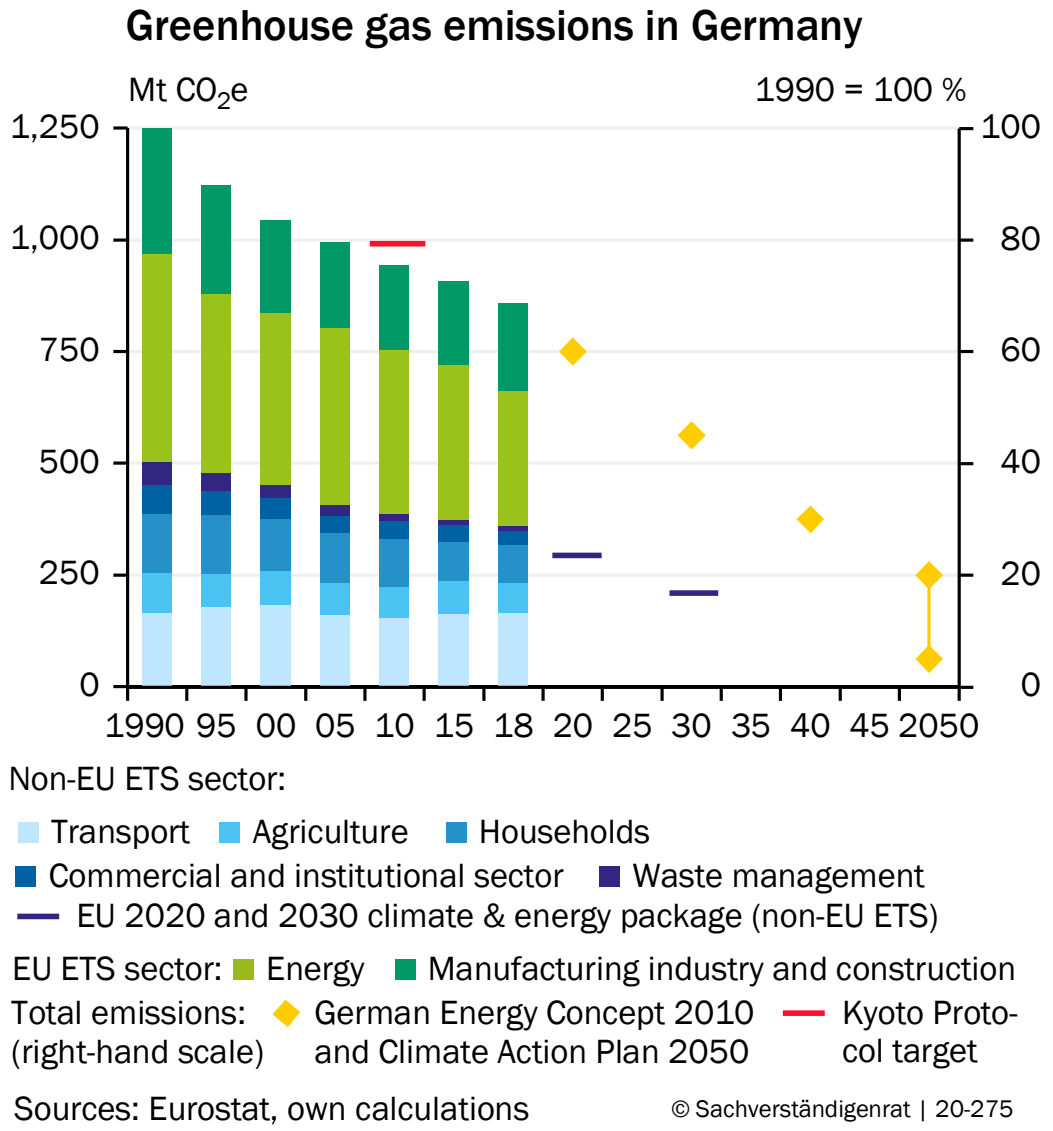

- Fragmented national approaches in Non-ETS sectors
  - Separate national targets in sub- and sub-sub-sectors; small-scale action plans
  - Unsystematic taxes and duties regarding climate effects
- Non-compliance with effort sharing targets could lead to high costs or infringement proceedings
- Main goal: expansion of EU ETS to all sectors in all member states
  - Short-term interim solution necessary

Credibility of the system is the key for its impact

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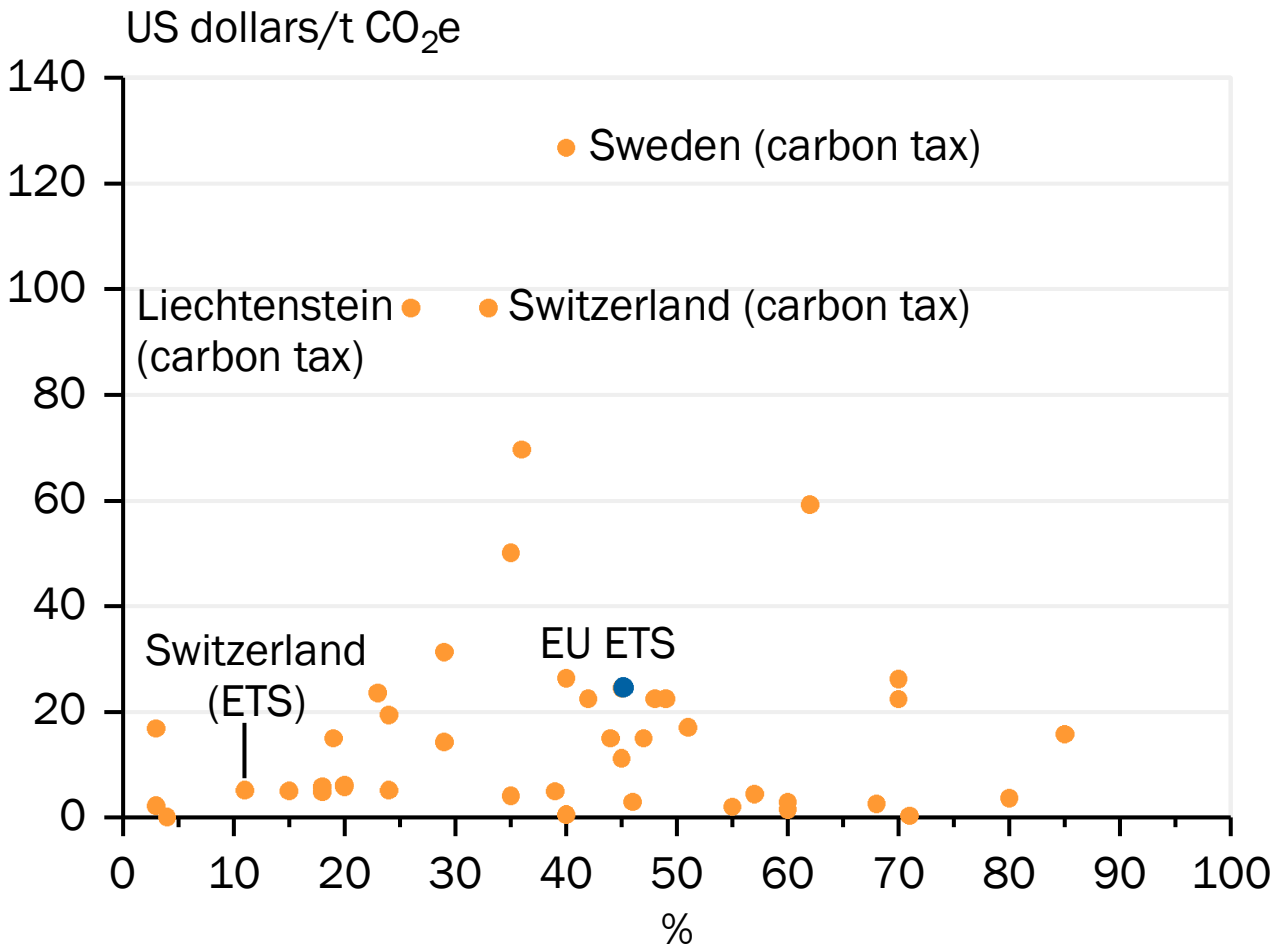

Sources: World Bank, own calculations

- CO_2 pricing only takes full effect with credible commitment by government
  - CO_2 tax rate needs to credibly react
  - Risk of reduction of targeted quantity if prices rise quickly/ to high levels
- Price floor to address regulatory uncertainty / waterbed effect / international negotiations
  - Market stability reserve in EU ETS already implements type of price floor and ceiling

Regressive effect can even be reversed completely

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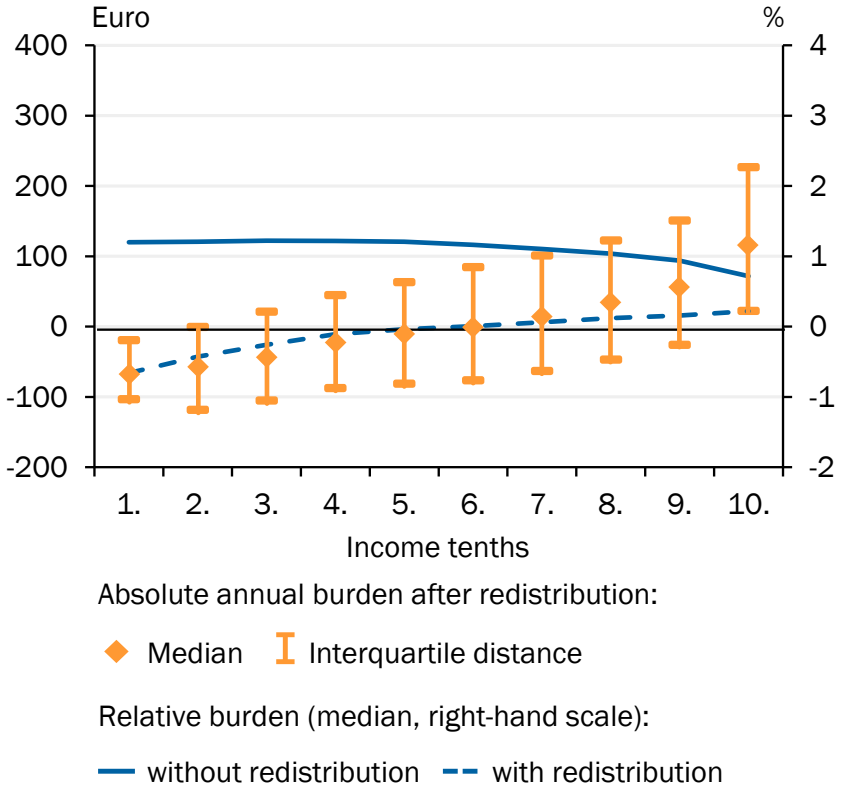
Absolute and relative burdens at a uniform carbon price of €35 per tonne of CO_2
by income tenths



Sources: Federal Statistical Office, Pothen and Tovar Reaños (2018), RDC of the Federal Statistical Office and Statistical Offices of the Länder, Einkommens- und Verbrauchsstichprobe 2013 Grundfile 5 (HB), own calculations

- Lower income groups have to pay larger share of income due to CO_2 pricing
  - Large heterogeneity within groups
  - Lump-sum reimbursement per capita would on average in total lead to higher income up until fifth decile
- Reducing electricity costs would have strengthening effect on sector coupling
  - Reduction of direct taxes or social security payments could have positive effects on production and employment
  - Existing mechanisms in transfer system already address hardest hit cases

Effect of CO_2 pricing on households

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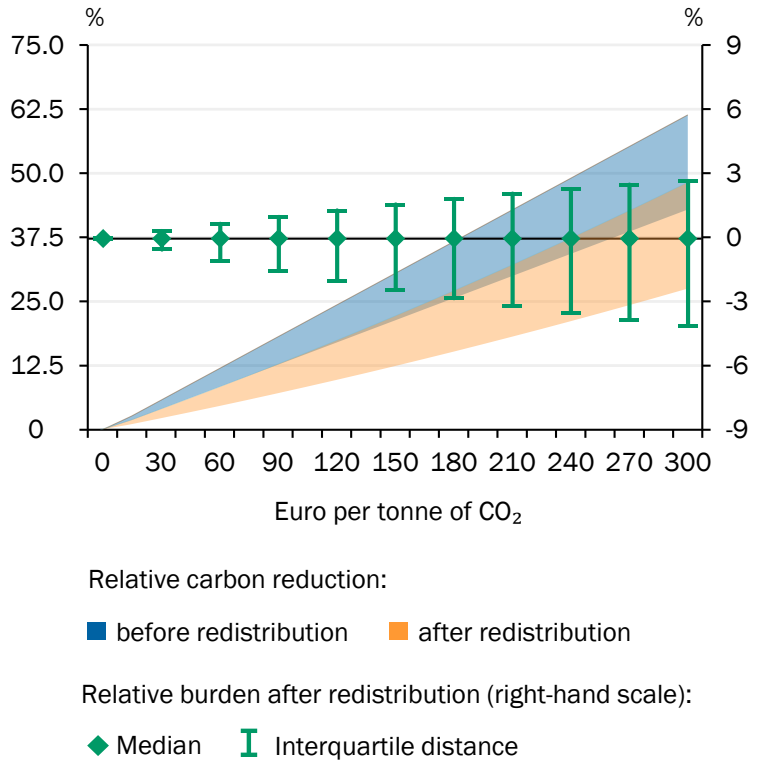
Relative reduction in CO_2 emissions according to different price and elasticity scenarios and the corresponding relative annual burden after lump-sum return
for different carbon prices



Sources: Federal Statistical Office, Pothen and Tovar Reaños (2018), RDC of the Federal Statistical Office and Statistical Offices of the Länder, Einkommens- und Verbrauchsstichprobe 2013 Grundfile 5 (HB), own calculations

- Price sets incentives for behavior and investment in equipment and durable goods
  - Level of CO_2 price and price sensitivity of households determine total CO_2 reduction
- Targeted accompanying measures to intensify adjustment
  - Subsidies for low-emission equipment
  - Incentives for landlords to invest in rental objects
  - Infrastructure investments, e.g. local transportation or grid and storage infrastructure
- Disruptive implementation: counterproductive