Rising Energy Costs of Private Households: Analysis of Efficient Relief Measures for the Case of Germany

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Energy prices for private households in Germany have risen sharply

Motivation: Whereas households in Germany spent an average of around 7.0% of their income on energy (including car fuel) before the Corona crisis, this figure has now risen to 9.4%. Although the rise in energy prices significantly reduces the purchasing power of all private consumers, individual households are likely to be affected to different degrees.

Approach: In our study, we examine the expected income and consumption effects for private households as a result of the (1) price increases and (2) regulatory relief measures for the respective energy carriers electricity, natural gas, heating oil, gasoline, and diesel.

Household source data:
- Income and consumption sample of the German Research Data Center
- Quota-based micro survey
- More than 40,000 households

Household energy price data:
- Extrapolation of procurement prices of energy suppliers based on the development of base futures over a period of one year.

Price and income effects:

Financial relief effect of the measures

<table>
<thead>
<tr>
<th>Income decile</th>
<th>Additional required income (Jan 2020 – Sep 2022)</th>
<th>€400 per student (helicopter)</th>
<th>€400 per student (targeted)</th>
<th>€300 per household</th>
<th>€300 per household (students)</th>
<th>€150 per household</th>
<th>€150 per household (students)</th>
<th>€300 per household (working and retired persons)</th>
<th>€300 per household (working and retired persons) (students)</th>
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<th>€220 per household (on average)</th>
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Costs of the relief measures

- Total cost of measure
- Energy consumption
- Poverty

Methodology

Micro sample-based simulation of electricity consumption changes

Definition of relief measures
- Price discounts
- Direct payments (helicopter/targeted)
- Minimum wage increases

Simulation of consumption changes
- As a reaction to price changes and relief measures
- Using price and income elasticities of demand

Evaluation
- Poverty
- Total cost of measure
- Energy consumption

Results