High Electricity Use Among Low Income Households and Liquidity Constraints

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Some low-income households have high levels of electricity use.

- There is a strong positive correlation between income and electricity consumption.
- At the same time, a significant portion of low-income households (ca 27%) have very high levels of electricity use (top quartile of all households).
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A matter of liquidity constraints...?

• More than 75% of dwellings in Northern Ireland have an oil central heating...

• ... If households cannot afford the purchase of heating oil upfront/in bulk, they may be forced to use oil for heating instead.
Testing for the role of liquidity constraints...

- If low-income households use electricity for heating because they cannot afford to purchase heating oil upfront/in bulk...
- ... we should find that households switch from using electricity to oil as soon as they can afford doing so.
Testing for the role of liquidity constraints...

- We use the payment of Winter Fuel Payment to identify the effect of a cash transfer on the use of heating oil:
  - Winter Fuel Payment is paid to all households with at least one household member age of 60 or over.
  - The idea: Within a small interval around the cut-off age the allocation of Winter Fuel Payment is very similar to a randomised experiment.
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Testing for the role of liquidity constraints...

- There is a large discontinuous jump in the probability of low-income households using oil/electricity for heating at age 60.

- Low-income households that receive Winter Fuel Payment are...
  - ... 40 percentage points more likely to use oil for heating and
  - ... 30 percentage points less likely to use electricity.
Testing for the role of liquidity constraints continued...

• In line with our hypothesis, the effect disappears if we focus on high income households.
There is no evidence for selection bias...

• Similarly, the effect disappears if we repeat our analyses for the 1996/1997 sample – i.e. Before Winter Fuel Payment was introduced.
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First, help households purchase heating oil...

• Findings suggest that there might be ways to reduce energy bills of low-income households (by appr. £500 p.a.) – such as by helping them finance the purchase of heating oil.

• Findings also suggest that – before addressing liquidity constraints – a two part tariff will hurt (rather than help) low income households.