

# Incorporating economic modeling results into energy efficiency ex ante evaluations

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Capturing the multiple benefits of energy efficiency capturing the multiple benefits of energy efficiency  
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# What I'll try and cover in 12 minutes

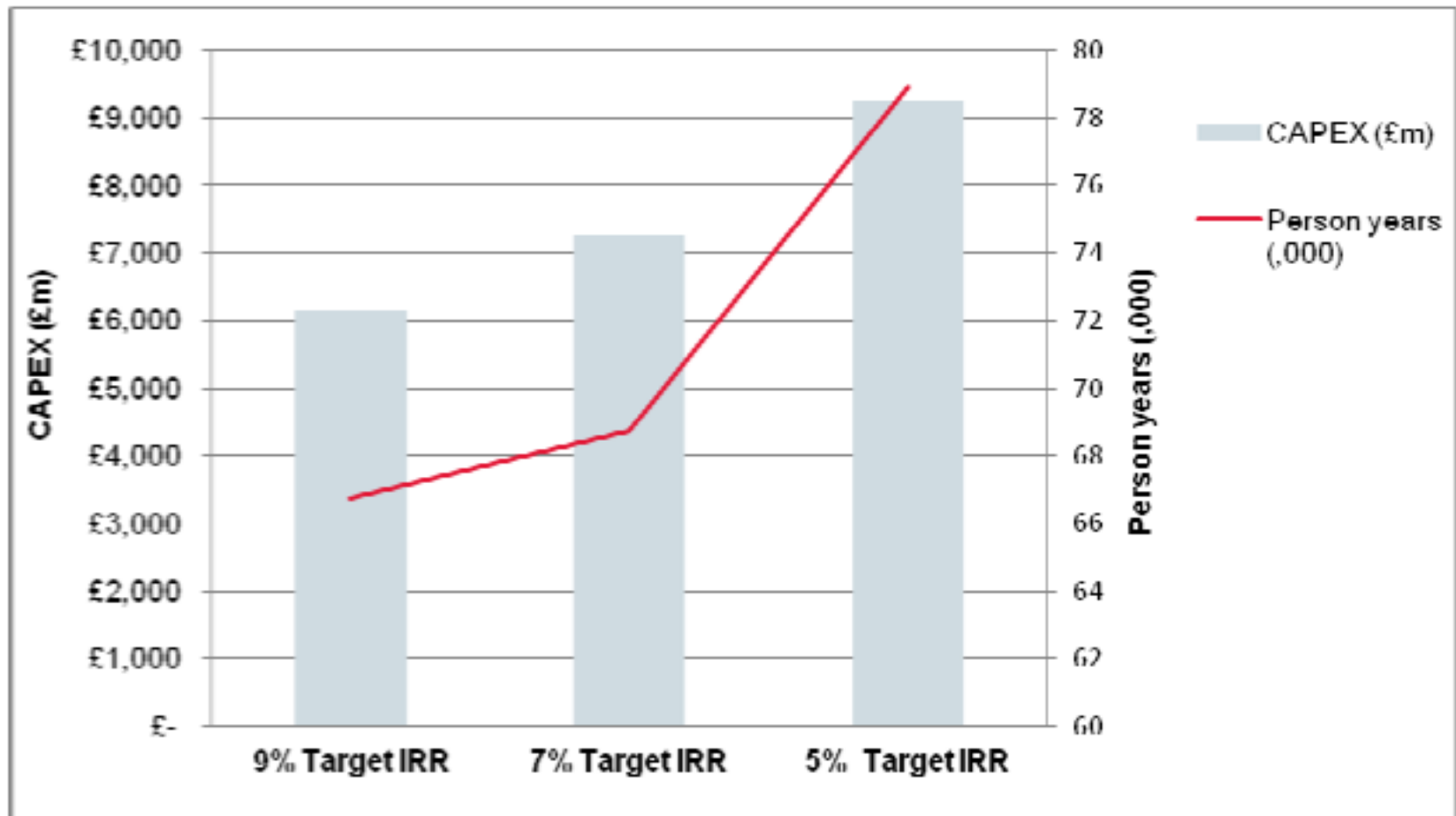
- Why do we use macro-economic arguments when making the case for energy efficiency
- What a single market model can show
- Why this isn't enough
- What 'extensions' are possible and useful
- What are the gaps in the current discourse

# Bottom-up models to assess investment need in archetypes

**Table 1: Examples showing variation in level of subsidy required for fuel poor households**

Dwelling example	Starting SAP score	Target SAP score	Subsidy required	Measures
Semi-detached, gas-heated, cavity wall	53	65	£2,400	Hot water cylinder insulation, heating controls, double glazing, draught proofing Assumes dwelling already has loft and cavity insulation installed
Terrace, gas-heated, cavity wall	60	69	£3,525	Hot water cylinder insulation, heating controls, double glazing, draught proofing, high efficiency condensing gas boiler Assumes dwelling already has loft and cavity insulation installed
Flat, gas-heated, cavity wall	65	74	£710	Cavity wall insulation, primary pipework insulation, hot water cylinder insulation
Semi-detached, gas-heated, solid wall	42	60	£3,660	Double glazing, draught proofing and reduced infiltration, high efficiency condensing gas boiler

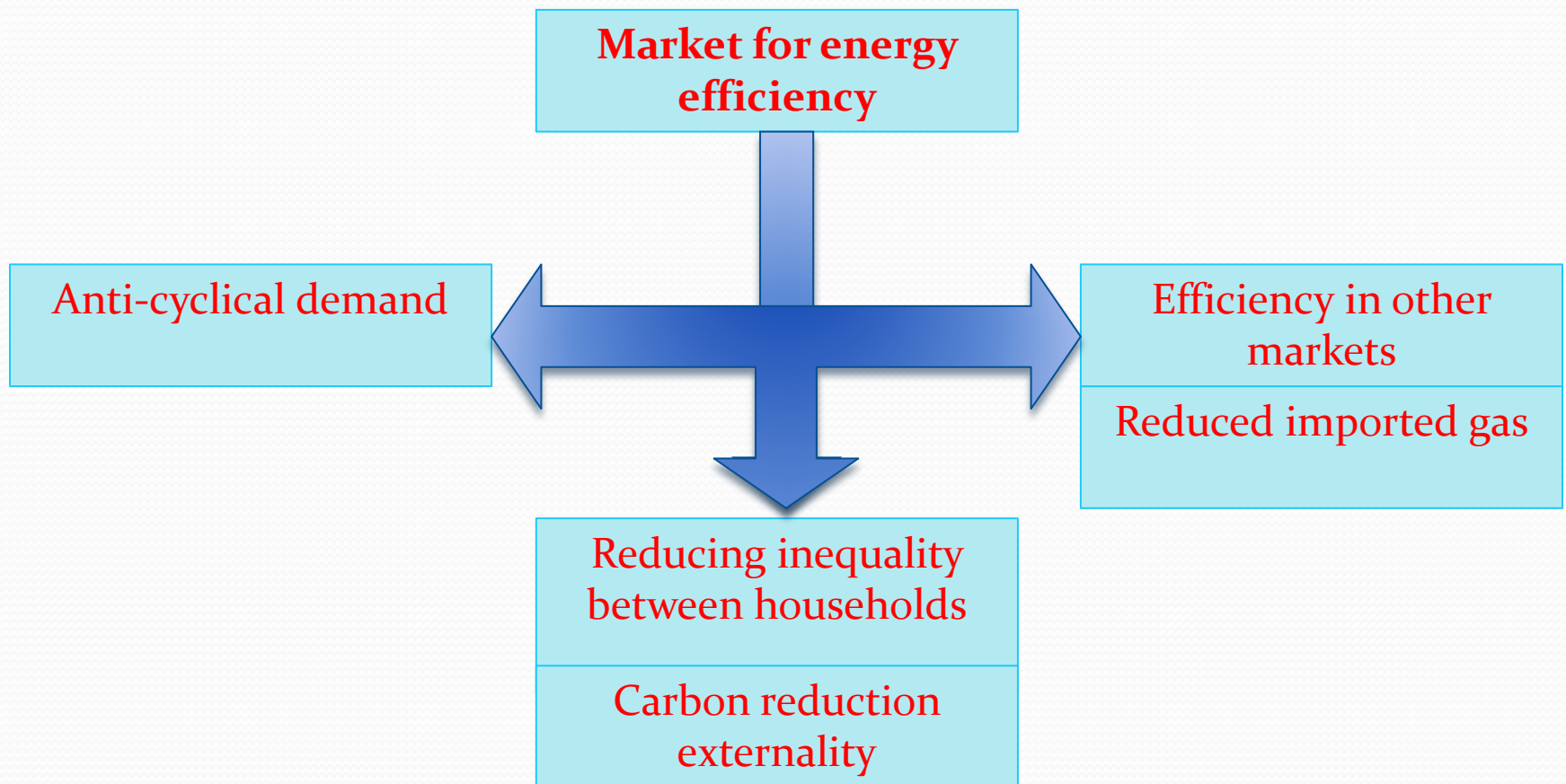
# House scale models can be scaled up to see 'macro' consequences



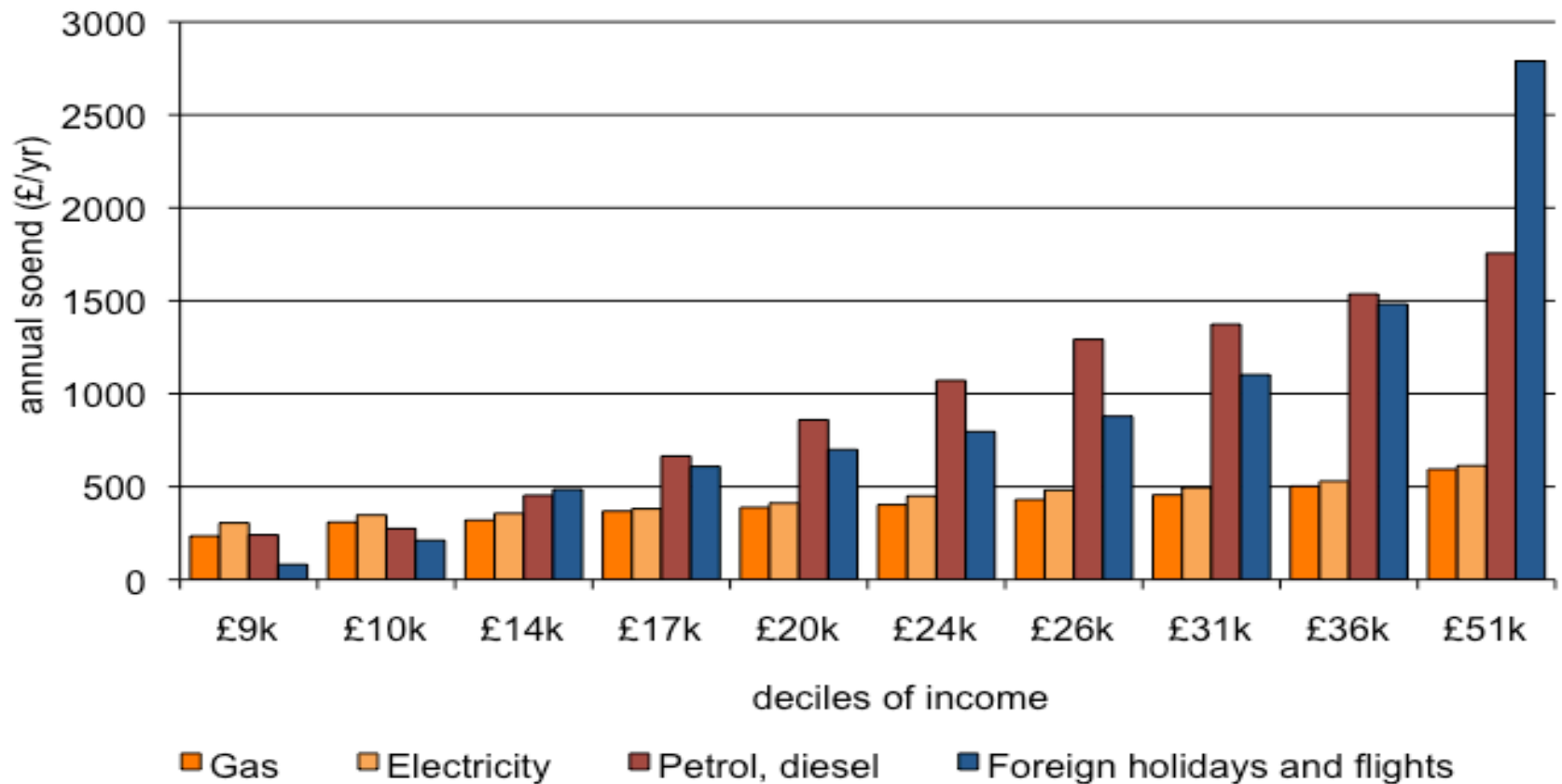
# But is this catching the zeitgeist?

- UK has a budget deficit of £80bn this year
- The energy efficiency lobby argues that energy efficiency has +ve NPV, shooting itself in the foot
- Government policy is to address market failures: e.g. household access to capital → Green Deal
- Why should government pick up £5 notes lying on floor and hand them to able-to-pay customers
- Indeed present UK Government doesn't want to pay for fuel poor either.

# Arguments for public interventions



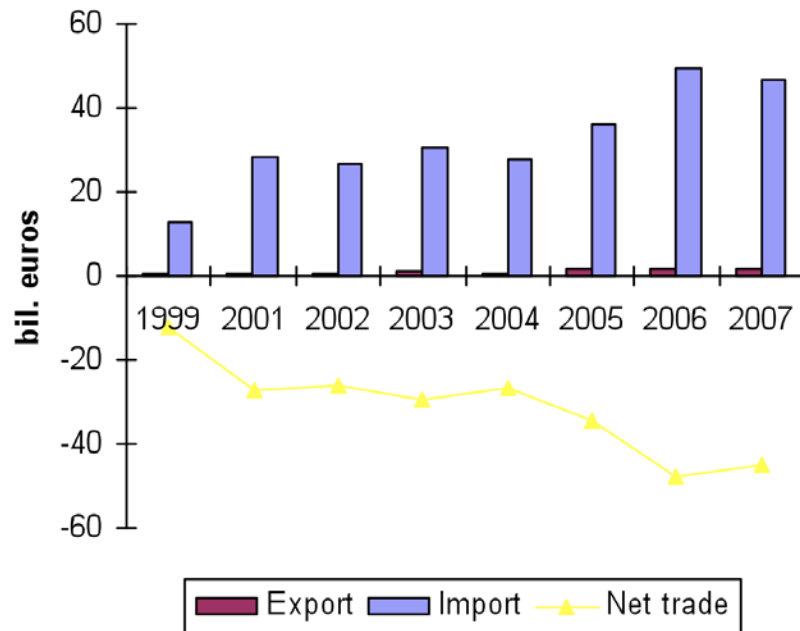
# Reducing gas use reduces inequality and boosts local consumption



Office for National Statistics data from 2006



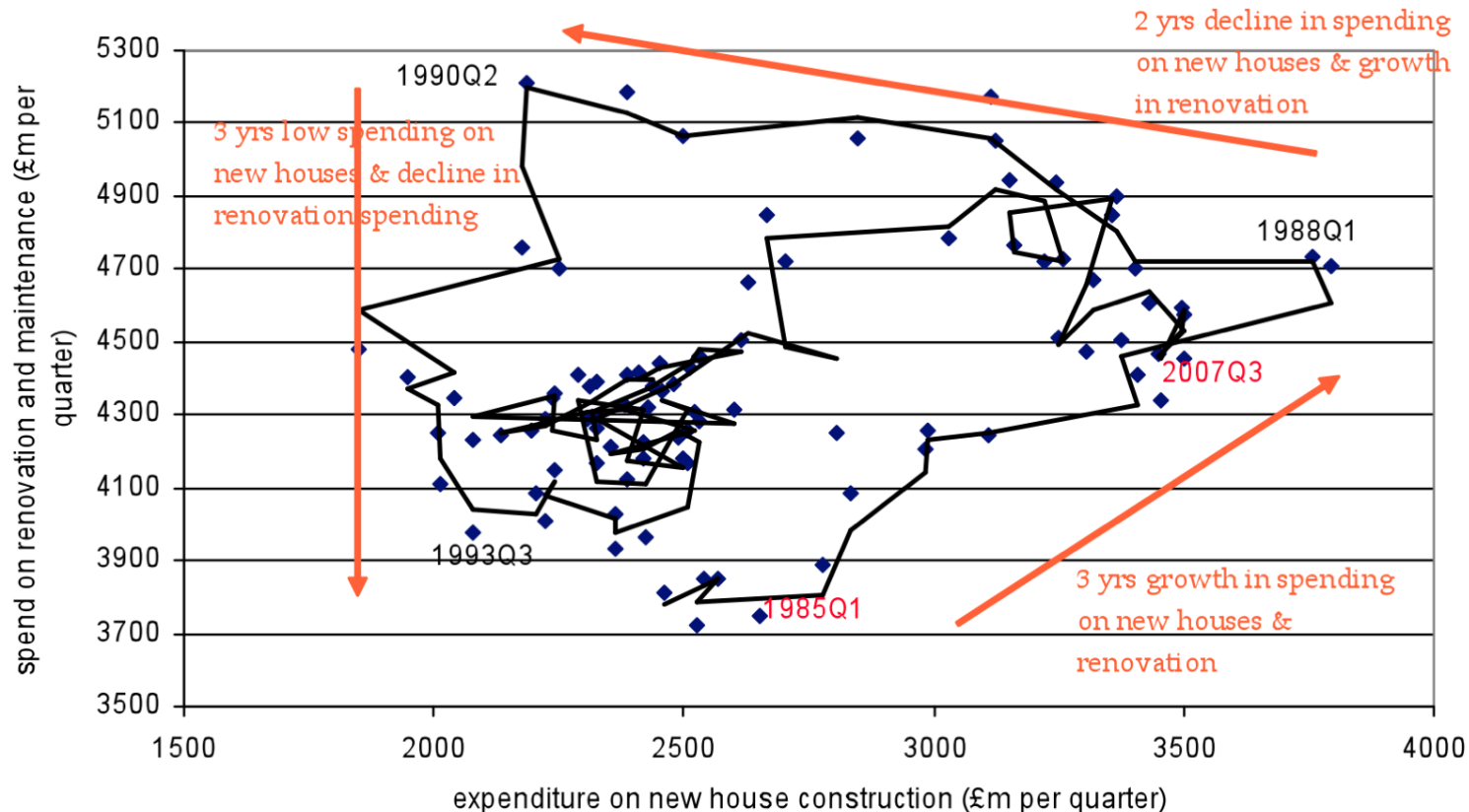
# Imports of gas have grown and raise security of supply worries



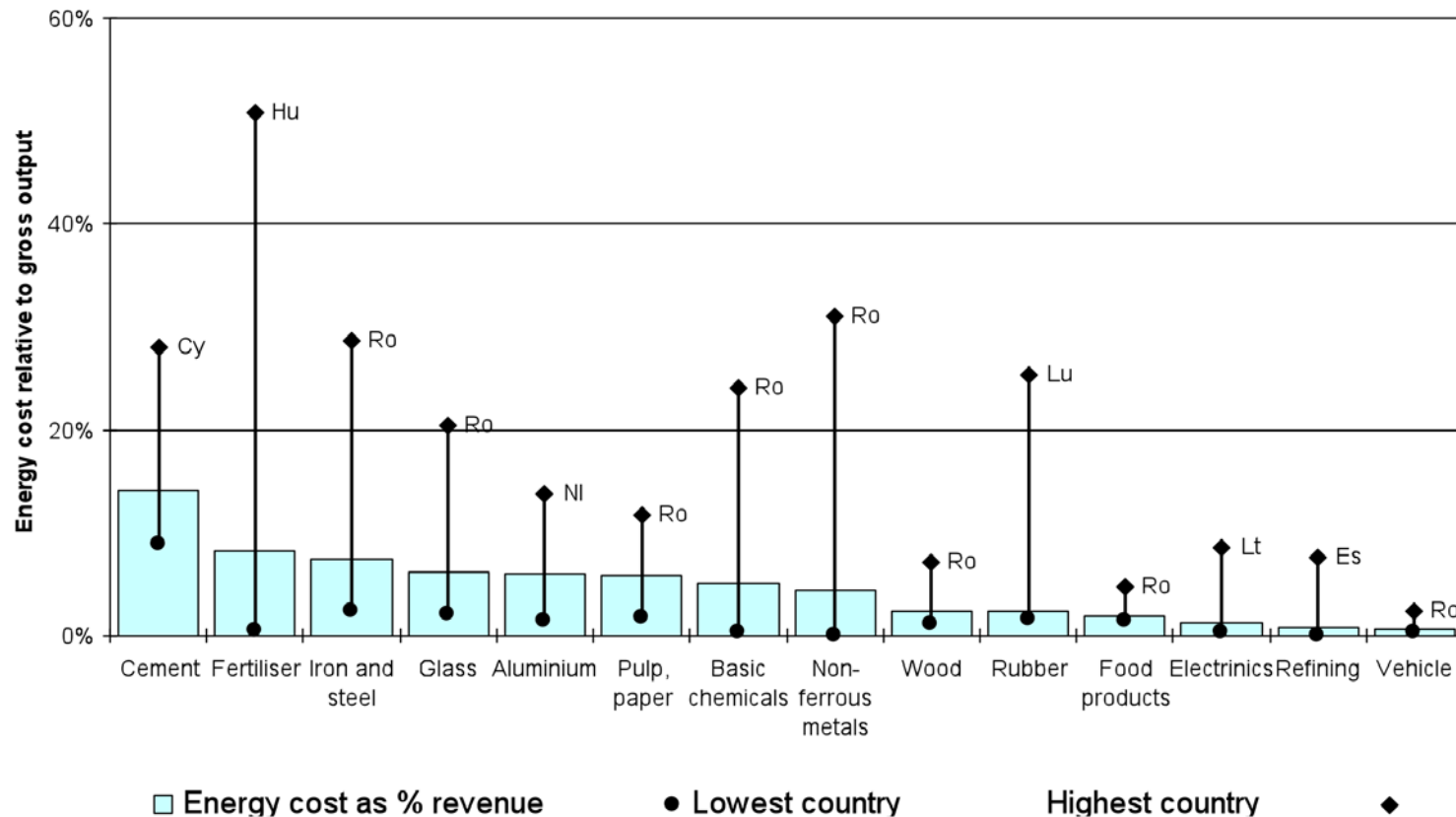


# Spending on energy efficiency can be counter cyclic with economic cycle

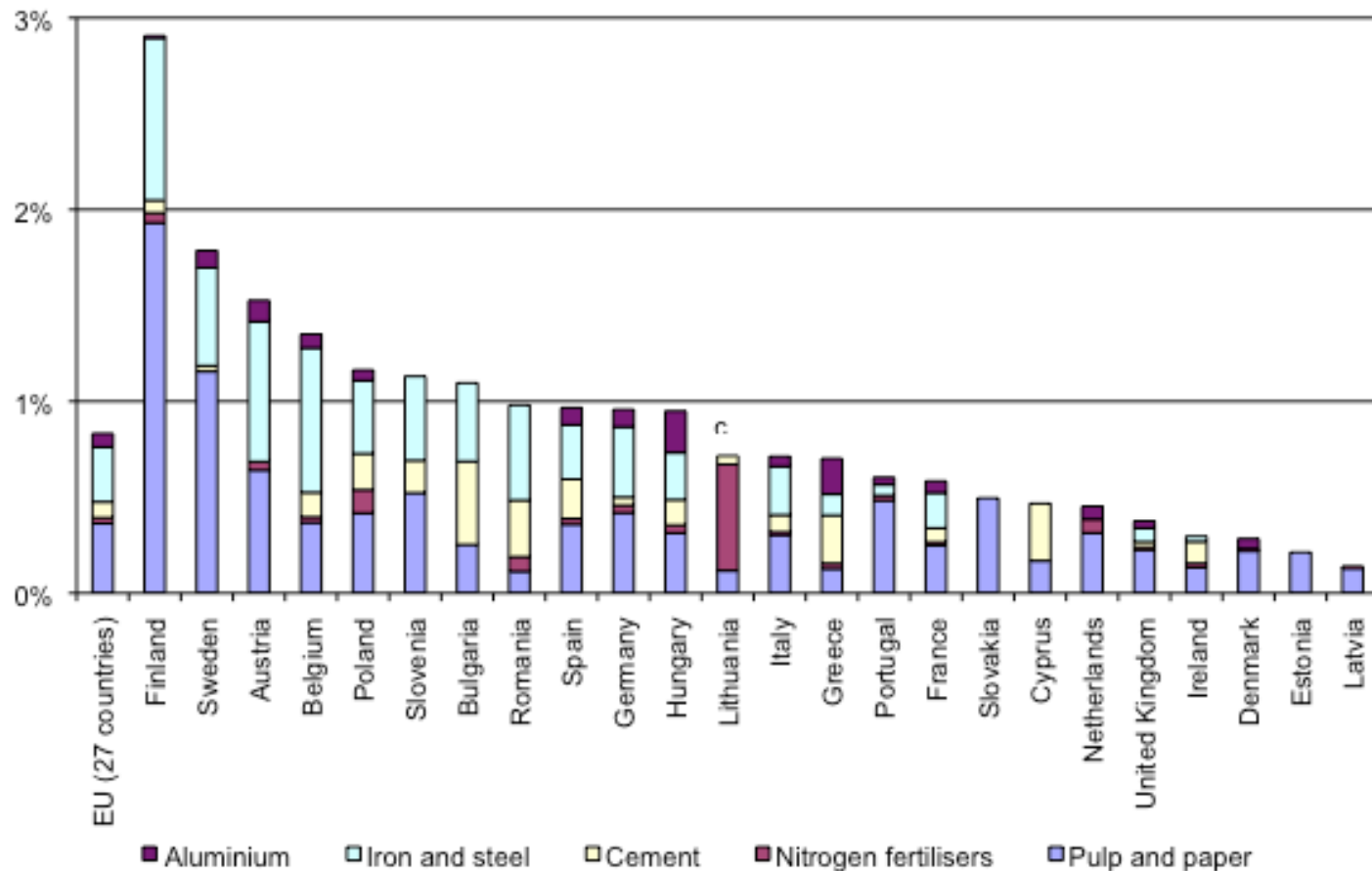
UK spending on new house construction (X-axis) and renovation and maintenance (Y-axis) between 1985-Q1 and 2007-Q3 (£m - constant 2000 prices)



# Improved energy efficiency aids global competitiveness



# But energy intensive industries not a major employer



# Possible gaps in our thinking

- Effects of improved efficiency on prices of finished goods and services
- Use of short-term programmes of energy efficiency to address lack of aggregate demand
- Use of energy taxes to correct the rebound effect