

Energy, expenditure and consumption aspects of rebound part II

This paper applies a framework for analysing rebound effects to the adoption of a fuel-efficient car and an energy-efficient lamp, disaggregating them into the original energy saving with no change in behaviour, the emplacement effect from embodied energy in a different technology, substitution effects from greater consumption of a cheaper energy service, income effects from a higher real income (given the lower “price” of energy services) and macroeconomic effects. It’s the second part of two, giving a better length compared to the original paper that I refereed last year. A lot of my general comments on the framework are in my report on part I.

I think the paper could be shortened slightly if the diagrams were not given a separate introduction, but just applied for the first time with numbers from the lamp example, as I think they’re “close enough” to the pattern of the theoretical example to do its job. I realise the first two lines are almost superimposed on the energy diagram, but you could do the expenditure one first – that actually has some logic, since consumers are allocating money and the energy consequences stem from those decisions. The consumption diagrams are arguably also “causal”, but they won’t be as easy for any reader who hasn’t done intermediate micro, so I’d keep them last.

In table 2, which author thought it important to say that income was neither \$27,929.82 nor \$27,929.84? “\$27,930” is easier to read and surely accurate enough.

Tables 8 and 10 would be clearer if the headings were “original”, “non-behavioural”, “plus substitution”, “plus income” and “total” (or something similar).

I’m very worried about your calibration of k in section 4. You’re using it as a kind of Keynesian multiplier, but you’ve decided to calibrate to replicate the results of CGE models in which employment is often full (I have no idea what these particular models are assuming) and I suspect a lot of the “action” comes from changes in relative prices for energy (per MJ) and other goods – which you don’t study. That feels like a very dangerous mismatch. Since you have some other numbers you could use for k , taken from a more compatible literature, I’d recommend you do so. On the other hand, it’s great to see the table comparing your results with those of other studies (but worrying to see such a wide range of numbers).