Hidden Costs - Discussant

John German

University of Michigan Conference

Transportation Economics, Energy and the Environment

October 30, 2015

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Vehicle Miles (Not) Traveled
Conclusions supported by analyses

- Well structured analysis that found a way to directly assess the fuel economy rebound effect, instead calculating it indirectly through the fuel price rebound effect:
  - "there are several reasons why the impact of fuel prices on consumption may differ from the rebound effect for *fuel economy*"
- "Results indicate that households induced to purchase more fuel efficient (but cheaper, smaller, and lower-performing vehicles) do not drive any additional miles after purchase. Thus, we find no evidence of a rebound effect in response to improved fuel economy."

Vehicle Miles (Not) Traveled
Conclusions not supported by analyses

- "We argue that this is consistent with a shifting in of the VMT demand curve due to changing vehicle characteristics, coupled with a movement down the demand curve for VMT because improved fuel economy reduces the price-per-mile of driving."
  - There is no statistical basis for this argument – "As we discuss above, we are not able to decompose the two components of the elasticity".
  - Thus, it is entirely possible, perhaps even likely, that the lack of a rebound effect would hold whether or not vehicle vehicle characteristics changed.

Vehicle Miles (Not) Traveled
Improper assumption

- "Second, our finding of no rebound effect from increased fuel economy is directly relevant for policies such as CAFE, given that auto manufacturers are likely to "downsize" the new vehicle fleet by selling smaller cars than they otherwise would, in order to comply with the new set of CAFE standards (Knittel [2011])."
  - No benefit to downsizing with footprint system
  - Knittel's findings "that improvements in fuel economy requires sacrificing vehicle characteristics such as horsepower, size, and weight" were based on historical vehicles and flat CAFE standards. It is inappropriate to apply Knittel's findings to a footprint-based system and vehicles with improved efficient technology.

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Searching for Hidden Costs

- Innovative approach to a very difficult question
- Report accurately identifies limitations of approach
- While results should be treated as suggestive, rather than definitive, due to limitations, they strongly support the idea that there are no hidden costs – that technology is delivering overall improvements in all features desired by consumers
- Analysis could be improved by examining differences in implementation of a given technology by different manufacturers

Searching for Hidden Costs
Example: Dual-Clutch Automated Trans

Car and Driver Reviews

- 2012 Ford Focus
  - "We now find ourselves writing again about the lethargic starts, clunking noises, slow upshifts, and harried downshifts of Ford's dual-clutch automatic."
- 2015 VW Jetta
  - "the available six-speed DSG dual-clutch automatic is a particularly eager partner in play, making self-shifting all but unnecessary in its intuitive Sport mode"
- Is the problem the hardware or the calibration?

F150 Aluminum Body

- Hidden benefits, not hidden costs
  - Improved acceleration, handling, braking, and cargo and towing capacity
- F150 sales up 17%
  - Sept 2015 v Sept 2014
- Average F150 transaction prices up $2,000
  - 2015 Q3 v 2014 Q3

Other Consumer Benefits from Technology

- Turbocharging, GDI, FFV, hybrid – low rpm torque
  - F150 buyers aren't spending an extra $595 for the V6 turbo over the V8 in order to improve fuel economy - they want the low-rpm torque.
  - Hybrids provide instant torque response from the electric motor
- 7+ speed transmissions – better acceleration and less noise
- Lightweighting – better acceleration, braking, and handling
  - Ford isn't touting the improved efficiency from the aluminum body on the 2015 F150 as much as the improved acceleration, handling, and braking and the increased payload and towing capacity.
- High-strength steel and aluminum – better crash properties
- Aluminum – does not rust