Behavioral Economics in BCA: Measuring Unrecognized Benefits

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BCA with consumer error different

- Textbook BCA depends on revealed preference equaling actual preference
  - Consumer surplus as area under demand curve
  - Measure of benefit
- BE rejects underlying assumption
  - Consumer failure to make privately optimal choice implies revealed preference is not actual preference
- Modify BCA
- Repeal and replace BCA (Brennan, JCBA 2014)

Other approaches

- Sunstein (2000)
  - Advocate of both BE and BCA
  - But argues that BE justifies substituting government choice to private choice
  - No guidance on modification
- Bernheim and Rangel (2009)
  - Provides bounds defined by ancillary demand context conditions (e.g. possibility of error)
  - Doesn't restrict outcomes
- Not WTP/WTA endowment issue

A tentative idea

- Assume those who change behavior following a policy adopt the preferences underlying that policy
- Buying a subsidized LED changes preferences in favor of the LED
- Brennan on electricity "decoupling" (JRE 2010), rationalizing standard "manual" for evaluating EE policy (Energy Policy, 2010)
- No idea if correct psychology finding

Illustration: AC efficiency standards

- Assume two kinds of AC systems, high efficiency (H) and low efficiency (L)
- Prices respectively P_H, P_L; both equal cost (no producer surplus at stake)
- Absent policy, some would buy H, some L, some neither (detail to come)
- BE-based claim that purchase of L is in error
- L pulled off market; options H or none

Notation (Brennan 2018)

- N_{BH}, N_{BL}, N_{B0} buy H, L, or none before (B) efficiency policy
- V_H, V_L value of *AC* to consumers
  - Differs across consumers
  - Assume $V_0 = P_0 = 0$
- N_{AH}, N_{AL}, N_{A0} buy H, L, or none after (A) efficiency policy

Conditions for buying

- H: $V_H - P_H > \max \{V_L - P_L, 0\}$
- L: $V_L - P_L > \max \{V_H - P_H, 0\}$
- None: $0 > \max \{V_H - P_H, V_L - P_L\}$

What happens

- $N_{AH} \geq N_{BH}$
- $N_{AO} \geq N_{BO}$
- $N_{AL} = 0 < N_{BL}$
- $N_{BL} = [N_{AH} - N_{BH}] + [N_{AO} - N_{BO}]$
- Policy has no effect on prior buyers of H, O
  - No effect on their optimal choice
- L buyers have to switch to H, none
  - Depends on whether $V_H - P_H > 0$

Standard BCA (ignoring externalities)

- H, none buyers unaffected
- Former L buyers lose
- Those who switch to H lose average for them of

$$[V_L - P_L] - [V_H - P_H]$$

$$= [P_H - P_L] - [V_H - V_L]$$

- Those who stop buying lose for them average of $[V_L - P_L]$
- No winners => just loss

What can get math to go other way?

- BE claim that for those who buy L,

$$[V^*_H - P_H] > [V^*_L - P_L]$$

where the asterisk is the "real" but not revealed consumer preference

- $V^*_H > V_H$; perhaps $V^*_L < V_L$
- Substituting these in can boost benefits for those who switch to H, and possibly those who don't buy
- But where do V^*_H, V^*_L come from?

Should the math go the other way?

- Proposed methodological principle: *A repeated "mistake" following provision of information or experience isn't a mistake*
- Ex post test: Would former L buyers prefer to go back to cheaper, less efficient AC?
  - Are there field experiments on EE?
  - If not, BE-rationalized EE policy did something
- What about those who left the market?