

Alternative Approaches to Modelling Work Incentives: Comments on the issues

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Dear Santa

- How working patterns respond to changes in the structure of individual incentives?
 - Income and substitution effects
 - Intertemporal substitution
 - Temporary vs permanent
 - Anticipated vs unanticipated
 - We want “lifetime” effects
 - We want to know MORE than the average effect
- Interdependent/reference dependent preferences
 - Within household
 - Peer effects
 - Is it *relative* or *absolute* rewards that matter?
- Other complications
 - Wages, childcare, fertility, education all simultaneous
 - General equilibrium effects

Alternative approaches

- Questionnaire method
 - CV Brown's accountants
- Social experiment
 - SIME/DIME, ETU in UK
- Structural econometric modelling
 - Continuous hours (Hausman)
 - Discrete choice methods (Duncan, van Soest, Moffitt etc)
- Natural experiment
 - EITC expansion, tax rate reductions
- Field experiment
 - Taxi drivers, Stadium vendors, Strawberry pickers, PGA players
- Experiments
 - Pidgeons, students

Questionnaire method

- “Would you worker harder if the tax rate were lower?”
 - Difficult to distinguish between income and substitution effects
 - Fails to isolate peer effects
 - Can’t capture lifetime effects
 - Hard to extrapolate to population
- Difficult design issues
 - Difficult to design questions that illicit true response to hypothetical situations.
- C. V. Brown **Economic Journal** 1981

Social experiments

- Treatment and controls, before and during (not often after)
 - Focus is on the effects of what has been implemented
 - Rather than on learning what to implement
- Probably estimates the effects of a temporary change
- Doesn't capture peer effects
- Or GE effects
- Estimates sensitive to measurement error
- Failure of random assignment
 - Hard to control for selection/attrition
- O. Ashenfelter **JASA** 1983

Structural econometric modelling

- Calibrate preferences using non-linear budget constraint
 - Needs simple parametric functional forms
 - Needs explicit distributional assumptions for unobservables and optimising errors
- Computationally difficult
 - Especially for highly non-convex constraints
 - lone mums, disabled ...
- Ignores interdependent preferences
- Can't capture GE effects
- Needs large samples
 - So may not be good for disabled, lone mums

Natural experiments

- Compares h of “treatment group” of (low education) taxpayers with h of “control group” of similar non-taxpayers
 - Before and after some tax/wage rate changes
 - Doesn’t separate I and S effects
 - Sensitive to measurement error
 - Undone by interdependencies in preferences
 - Only tells us about the effect of reform
 - Can we extrapolate?
 - Ashenfelter “dip” – treatment may be anticipated
- Blundell, *et al.* (**Econometrica** 1998)
- Eissa and Leibman (**QJE** 96)
 - EITC

Field experiment

- Taxi drivers
 - Wages (earnings per hour) stochastic
 - Usually able to vary hours
 - Now good, GPS-based, data is (in principle) available (Tim Barmby, Aberdeen taxis)
 - Camerer *et al* **QJE** 97 *negative* elasticity
 - But study flawed for several reasons
 - Tells you the effect of transitory change in wages
- Strawberry pickers
 - Vary the contract terms, the monitoring arrangements, the mix of workers
 - Barankay *et al* CEPR WP 2004
 - Shows that productivity of workers can be doubled at zero cost!

Lab experiments

- Some strong advantages
 - Good for testing simple hypotheses in controlled situations – GARP
 - May be able to capture peer effects
- Obvious difficulties
 - Small samples, small “stakes”, artificial environment
 - Probably hard to capture GE effects
 - Pidgeons (students) are not people
- More fundamental difficulties
 - Subjects only take the experiment seriously when serious amounts of money are at stake (Holt & Laury **AER** 2002)
 - Is it possible to conceive of work disutility in a hypothetical situation?
 - And is this disutility big enough to be taken seriously?
 - Probably needs REAL work to be done
 - Can we capture intertemporal effects in a short duration session?
 - Measurement error - especially when the outcome is continuous
 - Disequilibrium
 - Does this capture the treatment effect of interest?

Combine methods

- Can we validate experimental methods?
 - Take strawberry pickers into the computer lab
- Apply structural modelling to evaluation databases or panel data
 - Brewer and Duncan IFS 2003 using FACS
- Ask hypothetical questions of treatment and control groups
 - In ERA?
- Ensure that case workers add responses to hypothetical questions (like reservation wage) to admin databases