

The Joy of Giving or Assisted Living? Using Strategic Surveys to Separate Bequest and Precautionary Motives

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 - ...but, no solid empirical evidence to discard bequest motives
- Separation tough behaviorally (Dynan, Skinner, & Zeldes, 02):

*It is **not possible** to parse net worth into life-cycle and bequest components on an ex-ante basis, because **each dollar can effectively serve both purposes**.*

Disentangling Motives: Two Contributions

- ① Long-term care (LTC) expenses crucial driver of precautionary motives
 - before: longevity risk (Yaari, 65)
 - more recently: medical expenses (Palumbo, 99 and DFJ)
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 - we let individual decide how to pay for LTC based on personal preferences
- 2 Strategic survey as conceptual natural experiment
 - adds new moments to be matched by dynamic programming models
 - passes revealed preference test of Gul & Pesendorfer
 - similarly motivated: Kimball & Shapiro (03)

- ④ Adding strategic survey questions delivers much-improved inference on relative strength of motives!
 - without them, we can only pin down the bequest and precautionary motives within wide ranges
 - with them, we obtain point estimates for most respondents
 - and much narrower ranges for the others

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 - without them, we can only pin down the bequest and precautionary motives within wide ranges
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 - and much narrower ranges for the others
- ② Tremendous **heterogeneity** in motives
 - substantial group with large bequest motive: 25% of respondents want to provide heirs with 40 or more years of consumption;
 - median bequest motive is 10.5 years
 - another group has very low bequest motive
 - substantial group has both bequest and precautionary savings motives operative

Contributes to Debate on Retirement Spending

- 1 Anderson, French, and Lam (2004): no asset run-down
- 2 Kotlikoff and Summers (1981): high actual bequests
- 3 Hurd (1987): precautionary motives, accidental bequest
- 4 French and Jones (2004) and DeNardi, French, and Jones (2006): medical expenses central
- 5 But no direct evidence on bequest motives

- Long-term care risk is huge
 - 40% of men and 54% of women will need LTC
 - Average stay: 2.9 years for men and 4.2 years for women
 - Conditional probability of 5-yr + stay: 17% for men and 31% for women
 - *2002 data from Brown & Finkelstein (04)*

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 - 1 Private LTC facility
 - 2006 MetLife survey: \$75,190 for private and \$66,795 for semi-private room (national average)
 - Out-of-pocket (after Medicare): \$64,110 and \$58,015 resp.
 - some areas and some facilities a lot more expensive, e.g., semi-private high in New York \$501 per day vs. average \$183

LTC, Medicaid and Medicaid Aversion

- Long-term care risk is huge
- When need arises, three LTC options are available:
 - 1 Private LTC facility
 - 2 Ward of the state (Medicaid)
 - Eligibility requirements: singles must deplete wealth, couples only keep house, 3-5 yr look-back
 - Anecdotal evidence of poor(er) quality of care

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- Long-term care risk is huge
- When need arises, three LTC options are available:
 - 1 Private LTC facility
 - 2 Ward of the state (Medicaid)
 - 3 Private LTC insurance
 - Contractual incompleteness, risk of bankruptcy, ...
 - See New York Times article of March 26, 2007

LTC, Medicaid and Medicaid Aversion

- DeNardi, French, & Jones argue high wealth elasticity of medical expenses
 - 95-yr old sick woman: \$16K (5th) vs. \$2.7K (1st quintile)
 - Difference largely reflects how LTC is paid for (options 1, 2, or 3)
 - Implicit assumption: Medicaid is poor substitute for private care b/c not available for high-wealth
 - We are the first to **document** such **Medicaid aversion** systematically
 - c^{MED} is first key parameter in identification question

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- Hershey, NY Times, February 2007:

A couple with \$1 million may want to be sure that they have a legacy large enough to put a grandchild through college, rather than risk draining all their funds if they need care for a long time.

Model of Retirement Period

- Annual model, ages 62-100
- **Preferences**

$$E_0 \sum_{t=0}^T \beta^t \left(\prod_{j=0}^{t-1} (1 - \delta_j) \right) \{ (1 - \delta_t) u(c_t) + \delta_t v(b_t) \}.$$

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- Utility from consumption: $u(c_t) = \frac{(c_t - c^{SUB})^{1-\gamma}}{1-\gamma}$
- Utility from bequest: $v(b) = \frac{\omega}{1-\gamma} \left((\phi - c^{SUB}) + \frac{b}{\omega} \right)^{1-\gamma}$.
 - Warm glow specification (Andreoni 89, DeNardi 04)
 - Bequest parameters:
 - ω : number of years of children's consumption
 - ϕ : extent to which bequest is luxury good
- ω is second key parameter in identification question

Model of Retirement Period (2)

- **Health State**
- Four health states s_t :
 - ① good health
 - ② with medical problems but not in LTC
 - ③ in LTC
 - ④ death (absorbing)

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- Parameterized to match 12 moments of LTC use and mortality

- cond. prob. of ever using LTC, age of first LTC spell, number of years in LTC, probability of spending more than 1, 3, 5 yrs in LTC, chance of ever leaving LTC, number of LTC spells, ...
- Life expectancy at ages 62, 75, 85, 95

Model of Retirement Period (2)

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- 3 in LTC
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- Deterministic costs associated with each state

- 1 \$0
- 2 \$6 (NCHS, out-of-pocket health expenses of the non-institutionalized)
- 3 \$46
- 4 \$0

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- Simulations imply:

- 85% of health costs due to LTC
- 25% (39%) chance of lifetime health costs exceeding \$100K for men (women)
- 8% (18%) chance of lifetime health costs exceeding \$250K for men (women)

Model of Retirement Period (3)

- **Technology:** single risky asset
 - Portfolio of 50% stocks (CRSP portfolio) and 50% bonds (3-month T-bill)
 - Mean return = 5%, standard deviation = 11%
 - Normally distributed (Gaussian quadrature methods)

Model of Retirement Period (3)

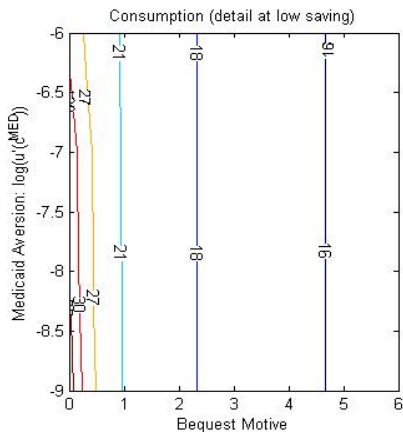
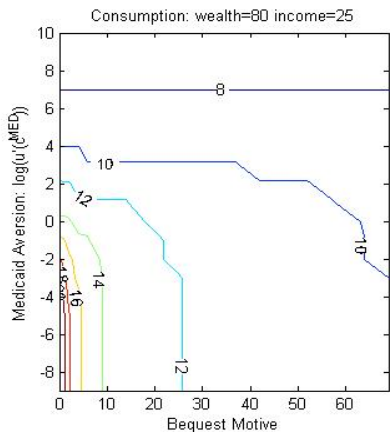
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 - in health state 3: consumption = c^{MED}
- Other calibration ingredients: $\beta = .96$, $\gamma = 3$, $c^{SUB} = 5$, $\phi = 6$.
- Permanent income, initial wealth, age, sex, health: from survey

The Identification Problem: Median Wealth

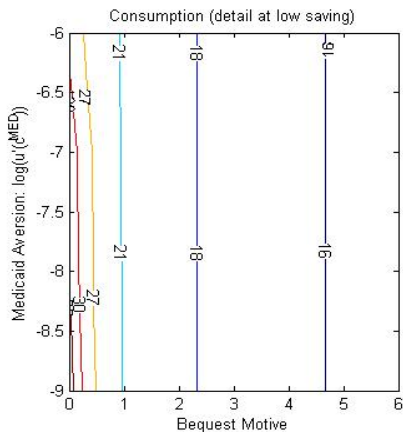
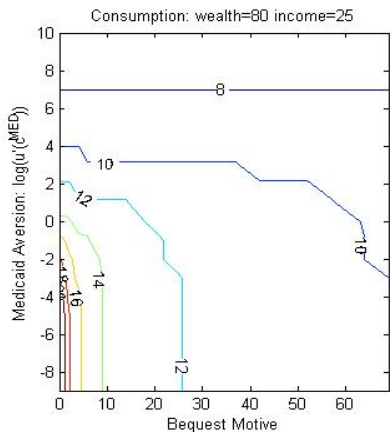
- Single woman at age 65, in good health, with disposable income of \$25K, and with net wealth equal to \$80K (median respondent)



- Lack of spending indicates strong bequest **or** strong precautionary motive

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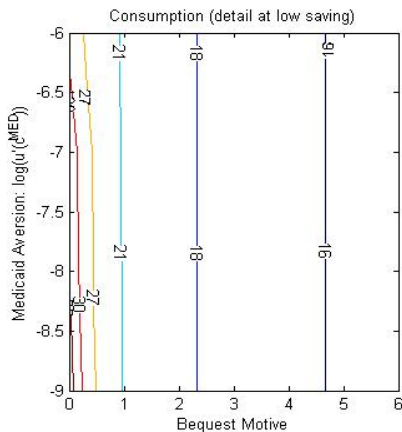
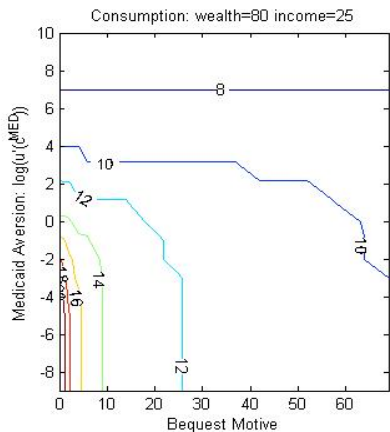
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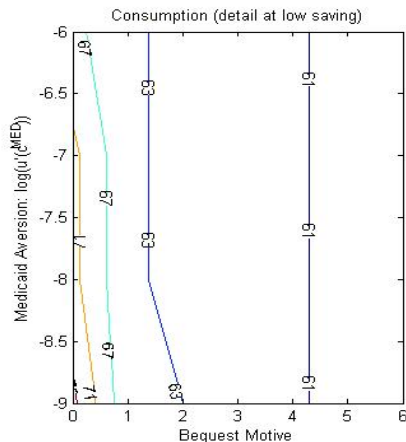
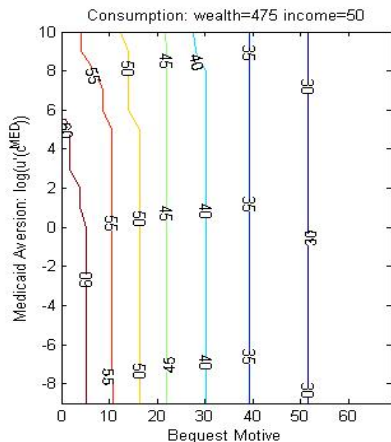
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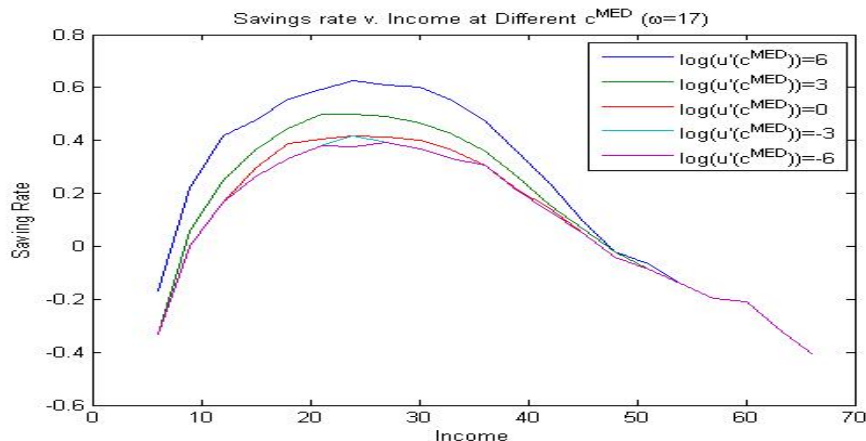
The Identification Problem: High Wealth



- Very wealthy: low consumption implicates bequest motive

Non-Monotonicity in Saving Rate

- Low wealth: private LTC is out-of-reach; save for bequest
- High wealth: LTC risk is not an issue; save for bequest
- Middle class saves to avoid Medicaid; **save for both reasons**



The Survey: Philosophy

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- \Rightarrow Strategic survey questions to alleviate the identification problem

The Survey: Sample

- Online survey conducted in September 2006 through Greenfield Online

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- Retirement population
 - 54 years of age or older
 - not working full-time or looking for work - idem for partner
 - earned \$25,000 or less in earnings from work in 2005 - idem for partner
 - no children or grandchildren at home
 - not in long-term care facility (LTC)
 - Median response time 21 minutes

The Survey: Sample

- Online survey conducted in September 2006 through Greenfield Online
- Retirement population
- Final sample size of 938

This reflects 147 exclusions:

- non-homeowners who spend nothing on rent [57]
- homeowners with home value less than \$10K [32]
- homeowners with mortgage debt more than twice home value [9]
- with zero financial wealth and income below \$2.4K [23]
- with living expenses less than \$0.5K per year [38]
- spending the same on all spending categories [6]

The Survey: Sample

- Online survey conducted in September 2006 through Greenfield Online
- Retirement population
- Final sample size of 938
- Basic demographic profile
 - median age is 64, 90% between 56-76
 - 65% female
 - 55% single
 - 2/3 healthy, 1/3 medical condition
 - 44% college or more
 - 76% home owners

The Survey: Wealth, Income, and Consumption

1000s of \$	Our survey (2005)			SCF (2004)		
	25 th %	50 th %	75 th %	25 th %	50 th %	75 th %
Retirement income	10	16	29	11	18	30
Total income	16	26	39	12	19	32
Retirement assets	0	13.8	115	0	0	20
Liquid financial assets	0.5	15	125	1.5	23	130
Home equity	5	90	210	20	100	200
Total assets	54	241	681	64	203	510
Total net worth	36	225	648	55	183	505
Living expenses (food)	4.1	8.9	15.5	(2.6)	(3.6)	(5.8)
NDS consumption	8.9	14.9	26.1	×	×	×

The Survey: Strategic Question 1

Place respondents in hypothetical **end-of-life** situation in which they were:

- of age 85 and knew that they had exactly one year left to live
- and would need to spend it in a long term care facility;
- yet had absolutely no long term care insurance;
- the sole surviving member of their household;
- had sold their home and had total wealth of \$200K at today's prices;
- and final year income net of taxes worth \$25K at today's prices.

We are interested in your choice between LTC that is **privately financed** and **government-provided LTC** that is financed through **Medicaid**.

The Survey: Strategic Question 1

Place respondents in hypothetical **end-of-life** situation in which they were:

This choice impacts your LTC options and the bequest that you leave to your beneficiaries as follows.

Option A : Use Medicaid funded LTC. The government will pay for your LTC, allowing you to leave all \$200,000 as a bequest. However, using Medicaid restricts your choice of facility, on average results in inferior care, and requires you to surrender all income to the government.

Option B : Use private LTC. Pay \$50,000 for private LTC. You would only leave \$150,000 as a bequest but would have your choice of facility and would have your income available for spending as you wish during that year (unspent income would be forfeited).

Which of these two options would you choose?

The Survey: Strategic Question 1

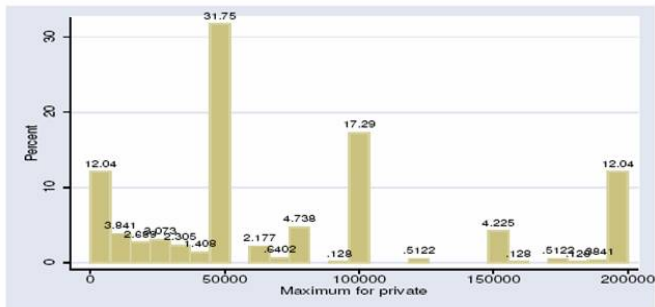
Place respondents in hypothetical **end-of-life** situation in which they were:

Follow-up: In the same scenario, what part of a possible bequest of \$200,000 would you choose to forgo to avoid long term care in a Medicaid facility?

The Survey: End-Of-Life Question

Figure 2: Trading off Long-Term Care and Bequests at the End-of-Life

This graph shows a histogram of responses to survey question 20b. The question asks what fraction of \$200K in remaining wealth the respondent would forgo to avoid a medicaid facility when LTC in his/her last year of life were unavoidable.



- Some would give up nothing, many others everything to avoid Medicaid

The Survey: Strategic Question 2

- An **immediate wealth shock** with a commitment technology to limit continuation strategy changes
- Scenario involved winning a prize (either \$100,000 or \$250,000) that must immediately be divided up between a bequest locked box and a long-term care locked box.
- Money in the bequest box could not be accessed during the lifetime, but would be passed on in whole to beneficiaries (who could not be told of this) upon death.
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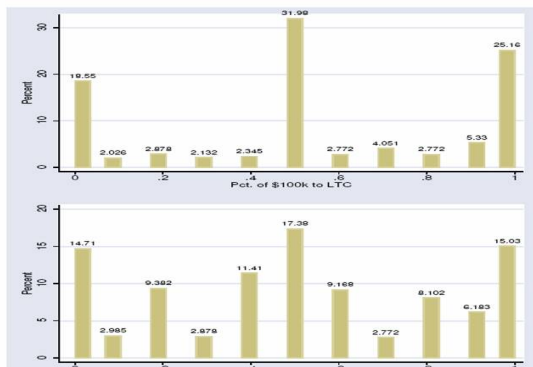
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What fraction of \$100,000 (\$250,000) would you put in the LTC box?

The Survey: Lock Box Questions

Figure 1: Trading off Long-Term Care and Bequests at the Current Moment

The top (bottom) panel of this graph shows a histogram of responses to survey question 18a (18b). The question asks what fraction of \$100K (\$200K) prize the respondent would devote to a locked LTC box. The complementary fraction would go to the bequest box.



- Again a lot of heterogeneity!

The Survey: Other Interesting Facts

- Features of strategic survey answers
 - Respondents without children dedicate 57% of \$250K to the LTC box.
 - Respondents without children dedicate 39% of \$200K at the end-of-life to avoid Medicaid.

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 - Respondents without children dedicate 57% of \$250K to the LTC box.
 - Respondents without children dedicate 39% of \$200K at the end-of-life to avoid Medicaid.
 - Each child reduces these propensities by almost 3% and 2.2%, resp.
 - Each grandchild reduces it by almost 1% and 0.8%.

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 - median estimate for out-of-pocket expense for 1 year in LTC facility: \$35K.
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 - median estimate for out-of-pocket expense for 1 year in LTC facility: \$35K.
 - 10% think it will cost more than \$100K
 - **First evidence documenting Medicaid aversion!**

Inference without Strategic Survey Questions

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- Responses to consumption question alone are insufficient to identify bequest motive
- We study 268 single respondents with an interesting identification problem
 - We have 498 single respondents
 - We exclude 51 with consumption below subsistence level
 - We exclude 26 with consumption below what is implied by maximum saving for both motives
 - We exclude 104 with consumption above what is implied by no saving for either motive
 - We exclude 38 whose consumption would primarily be driven by our treatment of non-Medicaid bankruptcy ($c < 6$ or $y < 6$)
 - We exclude 11 with extremely high income and wealth ($y > 73$ or $x > 1,200$)

Inference without Strategic Survey Questions

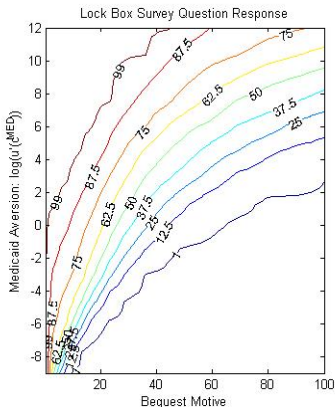
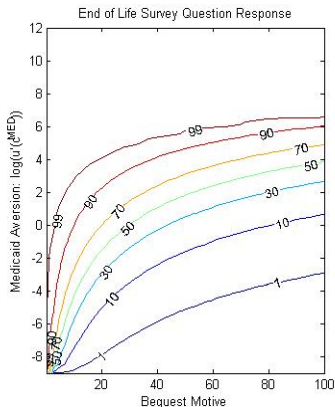
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- Need more evidence to separate motives: bring in the strategic survey questions

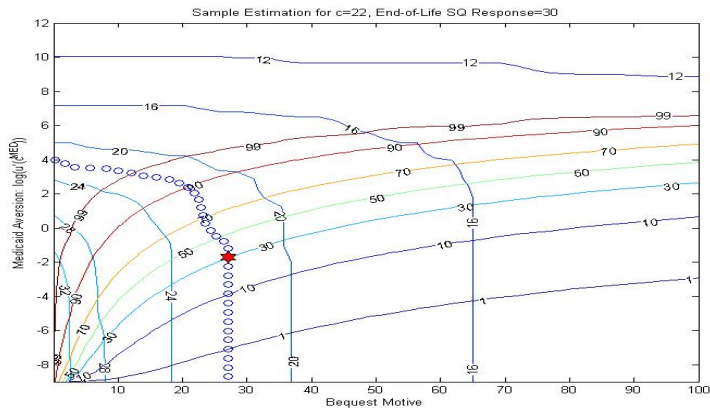
Inference with Strategic Survey Questions: Principle

- Answers for hypothetical 65 year old woman in good health, with annual income of \$40K, and wealth of \$230K in our model (end-of-life question is independent of demographics)
- iso-response lines



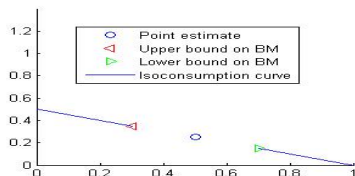
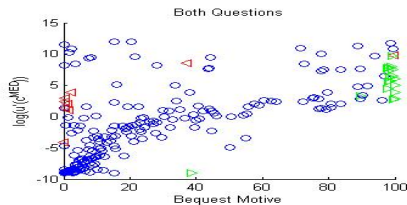
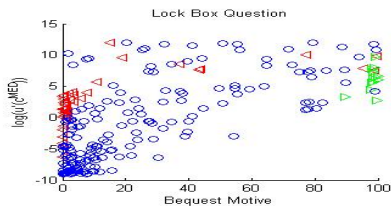
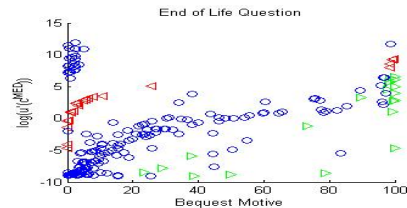
Inference with Strategic Survey Questions: Principle

- Now combine with answer to consumption question for same person
- **intersection** of iso-consumption and iso-response lines delivers identification



Inference with Strategic Survey Questions: Estimation

Maximum likelihood procedure that combines consumption and survey question 1, 2, or both, for each respondent



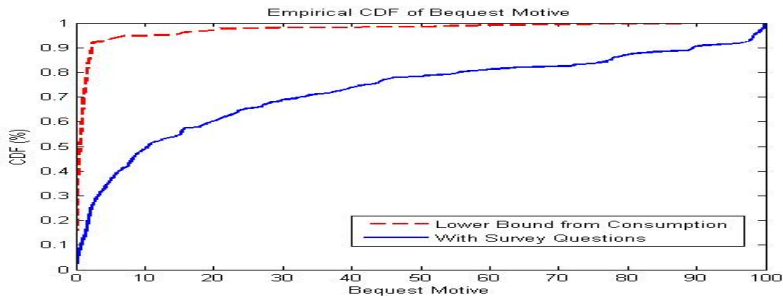
- Sanity check on estimation
 - Additional \$10K of bequest forgone to avoid Medicaid decreases estimated ω by 2.1, and increases c^{MED} by 0.10
 - Additional \$25K in bequest lock box increases ω by 4, and increases c^{MED} by 0.24

Inference with Strategic Survey Questions: Main Findings

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- Adding strategic survey question very useful to separate motives
 - Consumption data alone insufficient: we only estimate wide intervals for ω and/or c^{MED}
 - With strategic survey questions: 238 out of 268 observations are **point estimates**
 - For the other 30 respondents, the intervals narrow considerably

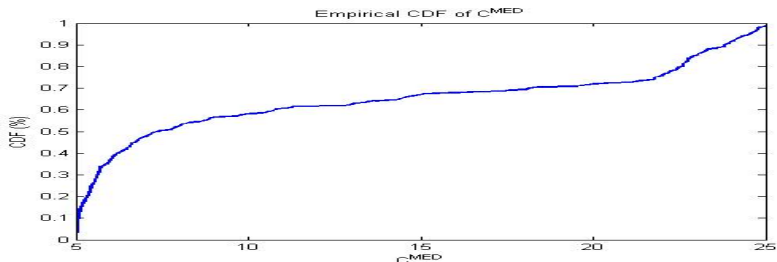
Inference with Strategic Survey Questions: Main Findings

- Little support for current default to zero out bequest motives
 - Median bequest motive is $\omega = 10.5$, or about 10 years worth of consumption for heirs
 - 131 of 268 have relatively weak bequest motive ($\omega < 10$),
 - 75th percentile is 43, and 10% have very large bequest motive: $\omega > 90$



Inference with Strategic Survey Questions: Main Findings

- Little support for current default to zero out bequest motives
- Substantial heterogeneity in Medicaid aversion
 - 25% of respondents think Medicaid is really bad: exceeds subsistence of \$5K by \$1K or less
 - Consumption equivalent $c^{MED} < 10K$ for 50% of respondents
 - But 30% display little or no Medicaid aversion



Conclusion

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 - This is especially relevant savings motive for the middle-class: non-monotonicity
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- Important for the usefulness of annuities, LTC insurance, hybrid products ⇒ guide to financial innovation in retirement planning