The Exchange Motive and Informal Long-Term Care: Evidence from the HRS Exit-Interviews

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September 2nd, 2014

Research Question

Can we detect evidence, that parents compensate their children for providing informal long-term care?

Motivation

- Informal Care by children is most important care-arrangement in the US
- Is ist altruism that drives peoples decision to give care or do people get compensated for it that is comparable to a market wage?
- Very detailed data available: HRS-Exit Data contains information about care arrangements and bequests

Aim of this Paper

- Provide statistics on Informal Care and Bequests
- Test strategic bequest/exchange motive while controlling for altruism
- Focus on informal long-term care sector at end-of life

Outline

HRS Exit Interview

- Extensive longitudinal study of persons above the age of 50 years
- Conducted with close relative after respondents death
- Pooled data 2002 - 2010, merge data from original HRS (e.g. wealth)
- Sample size: 1 363 single respondents with 5 625 children

Family Members and Care

Table: Shares of Respondents who received Help from various Family Members or other Persons

	Sample
Any IADL Limits.	0.694
Any ADL Limits.	0.558
Informal Care Only	0.476
Formal Care Only	0.229
Informal Care by	
Spouse	0.005
Children	0.720
Pers. same Generation	0.010
Relative	0.066
Other Indiv.	0.123
Formal Care by	
Pers. of Organization	0.155
Pers. of Institution	0.377
Respondents	1363

Distributions of Bequest

Table: The Distribution of Bequests over Any Informal Care

	p50	p75	p90	p95	p99	Mean	Sd	Max
Inf. Care								
No	0	746	37 450	102 400	384 000	19 383	83 273	1 337 500
Yes	0	23 540	105 000	210 000	603 750	43 151	147 462	2 625 000

Notes: Distribution of bequests at various percentiles over caring/No caring by children.

Outline

Estimation Strategy

Binary Care

$$\$\ Amount\ Bequest_{r,c} = Any\ Care_{r,c} + Controls + \epsilon_{r,c} \quad (1)$$

Continuous Care

$$\$\ Amount\ Bequest_{r,c} = Hrs.Care_{r,c} + Controls + \epsilon_{r,c} \quad (2)$$

Omitted Variable Bias

Unobserved Variables:

- Altruism: positive bequest, more to the "needy" children
- Quality of relationship
- Direction of bias: upward

1st Strategy: Use Proxy

- Altruism: Any Donations
- Quality of Relationship: Frequency of contact

2nd Strategy: 2sls (Instrumental Variables Approach)

- Instruments: Female, Number of Sisters
- Relevance condition: Gender affects Care
- Exclusion restriction: Gender does not influence bequest decision

Simultaneity bias

Problem:

- Higher (expected) bequest also induces more care
- Direction of bias: Unknown

1st Strategy: 2sls (Instrumental Variables Approach)
2nd Strategy: Within Family Fixed Effects (FE):

- Identifying Variation: Differences of care within all children of one respondent
- Main assumption: (Expected) bequest influences all children equally, ceteris paribus

Outline

Results - Intensive Margin with binary care

Continuous bequest - binary care:

$$\$\ Amount\ Bequest_{r,c} = \alpha Any\ Care_{r,c} + Controls + \epsilon_{r,c} \quad (3)$$

$ Bequest	Tobit Coef. / (SE)	IV-Tobit Coef. / (SE)	FE Coef. / (SE)
Any Care	13 427*** (2 261)	37 965*** (11 260)	51 424*** (14 506)
Any Donations	26 151*** (9 475)	26 479*** (4 953)	
Freq. of Contact	-0.37 (1.36)	-3.70 (2.77)	49.39 (40.19)
Controls Resp.	yes	yes	no
Controls Child	yes	yes	yes
Observations	5 625	5 625	794

Results - Intensive Margin with cont. care

Continuous bequest - continuous care:

$$\$\ Amount\ Bequest_{r,c} = \alpha Hours\ Care_{r,c} + Controls + \epsilon_{r,c} \quad (4)$$

$ Bequest	Tobit Coef. / (SE)	IV-Tobit Coef. / (SE)
Hrs. Care /month	0.64	479**
	(13)	(234)
Any Donations	21 010*	33 273**
	(11 584)	(16 727)
Freq. of Contact	-1.85	-2.34
	(2.38)	(5.46)
Controls Resp.	yes	yes
Controls Child	yes	yes
Observations	1490	1490

Conclusion

- Strongly significant effect of caring on the bequest decision of parents
- Extensive and intensive margin of Care
- Detailed data allowed us to measure precisely
- Various strategies applied to tackle the biases

Thank you for your attention!

Empirical Literature

- Attention Variables: Bernheim et al. (1985), Perozek (1998), Alessi, Angelini, Passini (2011), Angelini (2007)
- LTC sector: Brown (2006), Norton and Van Houtven (2006), Norton and Taylor (2005)
- Inter-vivos transfers: Norton, Nicholas, Huang (2013), Cox and Rank (1992)

Sample restriction

Restrictions	Original sample	Single respondents	Nonresident children	At least two biological children	Nonmissing values
Children	22 984	12 642	11 565	9 331	5 625
Respondents	6 406	3 707	3 180	2 075	1 311

Results - Extensive Margin

Any Bequest	OLS Coef. / SE	Logit Coef. / SE	Logit FE Coef. / SE	2sls Coef. / SE
Any Care	0.1008***	0.0930***	1.4834***	0.1782***
	(0.0143)	(0.0134)	(0.3167)	(0.0652)
Any Donations	0.1659***	0.1331***		0.1657***
	(0.0566)	(0.0497)		(0.0261)
Freq. of Contact	-0.0000	-0.0000	0.0024***	-0.0000
	(0.0000)	(0.0000)	(0.0009)	(0.0000)
Controls Resp.	yes	yes	no	yes
Controls Child	yes	yes	yes	yes
R^2 / Pseudo R^2	0.2518	0.2386	0.2355	0.2470
Adjusted R^2	0.2452			0.2404
Part. R^2				0.0395
Adj. Part. R^2				0.0311
F-Stat.				114.6739
Durbin chi2				1.4770
p-val. Durbin				0.2243
Observations	5625	5625	468	5625

Results - Intensive Margin

Bequest	Tobit Coef. / (SE)	IV-Tobit Coef. / (SE)	FE Coef. / (SE)	IV-FE Coef. / (SE)
Any Care	13 427*** (2 261)	37 965*** (11 260)	51 424*** (14 506)	87 819 (65 947)
Any Donations	26 151*** (9 475)	26 479*** (4 953)		
Freq. of Contact	-0.37 (1.36)	-3.70 (2.77)	49.39 (40.19)	5.50 (87.48)
Controls Resp.	yes	yes	no	no
Controls Child	yes	yes	yes	yes
R^2 / Pseudo R^2	0.0346		0.1131	
Adjusted R^2			-0.5663	
K chi2		12.0705		
p-val. K		0.0005		
J chi2		6.3347		
p-val. J		0.0118		
AR chi2		18.4052		
p-val. AR		0.0001		
Observations	5625	5625	794	794

Results - Intensive Margin with cont. care

Bequest	Tobit Coef. / (SE)	IV-Tobit Coef. / (SE)
Hrs. Care /month	0.64	479.41**
	(13.84)	(234.56)
Any Donations	21 010*	33 273**
	(11 584)	(16 727)
Freq. of Contact	-1.85	-2.34
	(2.38)	(5.46)
Controls Resp.	yes	yes
Controls Child	yes	yes
R^2 / Pseudo R^2	0.0279	
Adjusted R^2		
K chi2		5.2729
p-val. K		0.0217
J chi2		1.9144
p-val. J		0.1665
AR chi2		7.1873
p-val. AR		0.0275
Observations	1490	1490

Respondent level control variables - 1

	Houshold Data			
	Mean	(SD)	Min.	Max.
Rspndnt: General				
Age	83.460	(9.97)	53.00	105.00
Female	0.696	(0.46)	0.00	1.00
Nr. of Children	3.948	(2.19)	2.00	15.00
Years of Schooling	10.691	(3.54)	0.00	17.00
Rspndnt: Limitations				
ADL	0.558	(0.50)	0.00	1.00
IADL	0.694	(0.46)	0.00	1.00
Rspndnt: Insurance and LTC				
Ins. by Employer	0.120	(0.33)	0.00	1.00
Ins. by Spouses Employer	0.095	(0.29)	0.00	1.00
Long Term Care Insurance	0.065	(0.25)	0.00	1.00
Medicaid Elegibilty	0.377	(0.48)	0.00	1.00
Payed Helper OOP	0.240	(0.43)	0.00	1.00
Had Profess. Helper	0.627	(0.48)	0.00	1.00
Total OOP Health Expend.	6313.748	(20967.36)	0.00	328100.00
Rspndnt.: Wealth and Income				
Log Total Wealth	8.511	(4.59)	0.00	16.07
Log Income	9.477	(1.20)	0.00	13.33

Respondent level control variables - 2

	Child Data			
	Mean	(Std. Dev.)	Min.	Max.
Rspndnt: Race and Religion				
White/Caucasian	0.830	(0.38)	0.00	1.00
Black	0.145	(0.35)	0.00	1.00
Other	0.025	(0.16)	0.00	1.00
Hispanic	0.085	(0.28)	0.00	1.00
Catholic	0.266	(0.44)	0.00	1.00
Protestant	0.649	(0.48)	0.00	1.00
Jewish	0.032	(0.17)	0.00	1.00
None	0.045	(0.21)	0.00	1.00
Other	0.006	(0.08)	0.00	1.00
Religion Missing	0.002	(0.05)	0.00	1.00
Rspndnt: Education				
No Degree	0.450	(0.50)	0.00	1.00
GED	0.034	(0.18)	0.00	1.00
Highshool	0.278	(0.45)	0.00	1.00
Some College	0.158	(0.36)	0.00	1.00
College and above	0.081	(0.27)	0.00	1.00
Observations	1363			

Child level control variables

	Child Data			
	Mean	(Std. Dev.)	Min.	Max.
Age	54.156	(10.64)	3.00	86.00
Number of Children	2.246	(1.69)	0.00	14.00
Years of Cducation	12.839	(2.64)	1.00	17.00
Child: Income				
Below 10k	0.078	(0.27)	0.00	1.00
10k - 35k	0.199	(0.40)	0.00	1.00
35k - 70k	0.182	(0.39)	0.00	1.00
Above 35k	0.071	(0.26)	0.00	1.00
Above 70k	0.145	(0.35)	0.00	1.00
Missing	0.326	(0.47)	0.00	1.00
Child: Employment				
Unemployed	0.313	(0.46)	0.00	1.00
Parttime	0.078	(0.27)	0.00	1.00
Fulltime	0.606	(0.49)	0.00	1.00
Missing	0.002	(0.05)	0.00	1.00
Child:Financial Measures				
Owns Home	0.664	(0.47)	0.00	1.00
Owns Home Missing	0.001	(0.03)	0.00	1.00
Contributes to Resp. Finances	0.032	(0.18)	0.00	1.00
Contributes to Resp. Finan. missing	0.948	(0.22)	0.00	1.00
Paid OOP for Informal Care	0.206	(0.40)	0.00	1.00
Child: Marital Status				
Married	0.654	(0.48)	0.00	1.00
Partner	0.043	(0.20)	0.00	1.00
Single	0.268	(0.44)	0.00	1.00
Other	0.025	(0.16)	0.00	1.00
Missing	0.009	(0.10)	0.00	1.00
Observations	5625			