Do Tax Deferred Accounts Improve Lifecycle Savings? Experimental Evidence

John Duffy and Yue Li

Department of Economics, University of California, Irvine. Email: duffy@uci.edu
Department of Economics, University at Albany, SUNY. yli49@albany.edu

Objective

Tax deferred accounts (TDAs) are an increasingly popular method of saving for retirement, and have become common across many developed countries. Nevertheless, it is unclear whether TDAs actually improve a household's lifecycle savings behavior and retirement preparedness because it is difficult to perform a counterfactual analysis. We resort to laboratory experiments to address the question of whether TDAs improve lifecycle savings.

Experimental Design

Our experiment is designed to mimic important features of real-world, lifecycle savings decisions with or without TDAs. Subjects face income profiles that are hump-shaped over the lifecycle along with progressive income taxes. They supply labor inelastically until an exogenous retirement date. Subjects always have access to a regular savings account regardless of whether or not they have access to a TDA. Subjects also face uncertainty about the duration of their lives.

- T1 ("TDA"): Current U.S. system with TDAs
- T2 (no TDA, "Old tax"): Eliminates the TDA but is otherwise identical to T1
- T3 (no TDA "New tax"): Eliminates the TDA and taxes interest income at a lower rate to produce the *same* expected government revenue as does T1

(a) Consumption (b) Payoff

(c) Net worth (d) Tax collection

Figure: Theory predictions and experimental means

Findings

Estimating equation:

$$y_{is} = Const. + \delta T2_i + \zeta T3_i + X_i\theta + \sigma S2_s + \epsilon_{is}$$

- y_{is}: the outcome for subject i in sequence s.
- $T2_i$ ($T3_i$): 0-1 indicator for treatment $T2_i$ ($T3_i$).
- X_i: individual level controls, i.e., female, CRT, FL, RA
- $S2_s$: sequence indicator

	Consumption			Net worth		
	(1)	(2)	(3)	(4)	(5)	(6)
	1-15	16-25	26-35	1-15	16-25	26-35
Cons	65.59***	95.69***	72.94***	219.70***	414.95***	241.98**
	(2.10)	(7.71)	(8.76)	(27.60)	(63.73)	(118.12)
T2	12.36***	-40.78***	-13.55***	-161.69***	-338.32***	-222.74
	(1.01)	(3.56)	(4.36)	(13.02)	(45.02)	(135.19)
T3	12.50***	-35.74***	-11.64**	-146.42***	-305.17***	-205.87*
	(1.08)	(3.87)	(4.66)	(13.81)	(44.82)	(107.30)
CRT	0.70*	0.16	-2.58	-4.82	-34.37**	-54.96
	(0.42)	(1.36)	(1.59)	(5.61)	(15.19)	(41.76)
FL	-1.63***	4.17**	4.05**	18.41**	54.84***	38.35
	(0.53)	(1.85)	(1.88)	(7.43)	(17.19)	(30.43)
RA	0.01	0.35	-0.62	1.28	-2.72	10.55
	(0.20)	(0.66)	(0.73)	(2.72)	(7.12)	(18.67)
Female	2.36**	-13.17***	-6.69*	-40.75***	-57.16*	49.80
	(0.93)	(3.11)	(3.92)	(11.52)	(31.88)	(81.62)
S2	-0.12	1.76	-5.26	4.04	-14.54	-45.29
	(0.80)	(2.78)	(4.41)	(10.28)	(30.64)	(62.63)
R^2	0.55	0.52	0.14	0.54	0.35	0.04
N	184	184	97	184	184	97

We observe similar treatment effects using the MTurk sample.

Conclusion

- The introduction of TDAs encourages savings in the early periods of life, making the consumption profile closer to the unconditional optimum in the working periods relative to two no TDA treatments.
- Subjects in our TDA treatment reach retirement with a significantly larger net asset position than subjects in our no TDA treatments
- However, after retirement, subjects in our TDA treatment tend to decumulate TDA assets at a much faster rate than the rational choice model predicts, resulting in overconsumption in the early periods of retirement and large tax liabilities.