Discussion of Ho and Zhou: "Housing and Tax-deferred Retirement Accounts"

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Motivation

- Since the 1980s, defined contribution TDAs have become a major asset in U.S. families' portfolios. In 2007, $>$ 50 per cent of all U.S. families had savings in TDAs.
- At the same time, around 68 per cent of families owned their main residence.

		TDA		All HH
		no	yes	
HMR	no	22.1%	9.3%	31.2%
	yes	24.9%	43.7%	68.8%
	All HH	47%	53%	100%

Motivation

- Homeowners who also have TDAs hold roughly 60% of their net wealth in home equity, 25% in TDAs and 15% as liquid (taxable) assets.
- The composition of net wealth changes over the life cycle. As households age
  - TDA/net wealth increases
  - TA/net wealth increases
  - home equity/net wealth decreases
- Households are using TDAs and home equity jointly as saving instruments, and they change their portfolios over the life cycle.

Objective of the paper

- Develop a quantitative LC model with joint decision of tenure choice and retirement saving to answer the following questions:
  1. What are the mechanisms that jointly determine home equity and retirement savings in TDAs?
  2. How does the composition of net wealth vary over the life cycle?
- Compare model's predictions to HH balance sheet data

Key elements of the life cycle model

- Housing: is lumpy, provides consumption services in utility function.
  - If own: costly to adjust, but can be used as collateral. Interest payments and property tax are deductible. In order to buy, HH need to make a down payment (which they choose).
  - If rent: less quality and costly.
  - Chambers et al (2009), Attanasio et al (2012), Bajari et al (2013), Campbell and Cocco (2007), Li and Yao (2007).
- Financial wealth:
  - TA: liquid, fully taxable account. Constant return.
  - TDA: illiquid. Employer matching, contributions and returns tax-deferred, penalty if below eligibility age. Constant return.
  - Amromin (2003), Dammon et al (2004), Garlappi and Huang (2006), Amromin et al (2007).
- HH face (persistent) aggregate and idiosyncratic earnings risk and house price risk.
- Progressive income tax system.

Mechanics of the model

- Why do HH buy?
  - Use as collateral
  - Offers more quality/size
  - Mortgage interest payments and property tax are tax deductible
  - Growth rate of house prices
- Why do they save in TDAs?
  - Higher returns due to employer matching
  - Tax deferral of returns and contribution rates up to a max contribution rate
- Why do households who save in TDAs **also** own houses? (Despite similar characteristics)
  - Take advantage of combined preferential tax treatment.
  - HH endogenously decide to buy earlier and use high leverage to invest in high yielding asset.
  - Tax arbitrage: as long as pre-tax return from TDA $r + \tilde{q} >$ after tax rate from mortgage $(1 - \tau)r_m$ optimal to save in TDA rather than pay down debt. **TDAs promote ownership and debt.**

Results and empirical fit

- Home ownership rates matched well: increases before retirement.
- Homeowners have higher incomes than renters.
- Life cycle pattern of homeowners' net worth composition:
  - Housing equity share decreases over the life cycle
  - TDA share increases over the life cycle
  - TA share constant and small
- Housing equity share for youngest age group too high in model (stricter borrowing constraints than in data).
- TDA share for oldest age group too high in model (TDA availability).

Policy Experiments

- Change institutional environment of TDAs
  - No employer matching
  - Eliminating TDA
  - Higher contribution limit
- Change attractiveness of home ownership
  - Increase in down payment,
  - No tax benefits for home ownership
  - Decrease in rental cost
- As long as relative price of renting $>$ relative price of owning, save in TDA rather than pay down.

Comment I: welfare analysis

- Complement experiments with a welfare analysis. Difficult to understand who benefits more/less from policies.
- Welfare metric: certainty equivalent consumption. What would be a necessary compensation in terms of durable and non-durable consumption to households in each policy experiment with respect to benchmark. (Li and Yao (2007) for a negative house price shock, Cocco et al. (2005) for asset allocation rules.)
- For example: introduction of TDA at a certain time.

Comment II: computation and calibration

- Computation
  - In each t, HH decide on extensive and intensive margin of housing and on saving in TA and TDA.
  - Computation is hard! Life cycle model with 10 states and discrete tenure choice. Explain it!
- Parameters
  - Parameters are taken from models on housing (without TDAs).
  - What if savers in TDAs who are also home owners are different from renters who may be debt-averse?
  - Papers with structural estimation often find very different parameter values (Li et al. (2015) using SMM estimate β =0.91, γ= 7.15, ω=0.01, Landvoigt (2015)).
  - Sensitivity analysis would help.
  - Possible improvement: isolate and estimate key parameters (β, γ, ω) for the benchmark model.

Comment III: risk, return, liquidity

- Data: Home ownership and take up rates of TDAs are down from their 2007 values, as are their shares in net wealth.
  - Returns to retirement accounts are risky.
  - Mortgage interest rates depend on chosen down payment.
  - HH default on mortgages.
  - Include a crisis scenario.
- How would liquidity needs change the mechanics?
- Can you capture what falling house prices did during the crisis to both home ownership rates and TDAs?
- Can you predict what falling TDA take up rates will do to the home ownership rates?
- Transitory shocks: affect wealth accumulation (Deaton 1991), dispersion of income and wealth for HH with same permanent income. Have effects on house transactions (Yao et al. (2015)).

More comments: policy implications

- Who does not have a home? Could be useful to shed light on household heterogeneity.
- How differently do less and more educated behave?
- Policy implications: should we promote TDAs further to increase home ownership at the cost of increasing HH leverage?

To conclude

- Very careful quantitative work in a complex setting that addresses important stylized facts of households' balance sheets.
- Combines two strands of literature to understand the joint decision on two key assets.
- Model performs well with respect to US data. Any lessons for other countries?

What the HFCS would say

	DE	TDA		All HH
		no	yes	
HMR	no	28.1%	27.7%	55.8%
	yes	18.4%	25.8%	44.2%
	All HH	47.5%	53.5%	100%

- Conditional on having a TDA 48 per cent own their HMR.

	ES	TDA		All HH
		no	yes	
HMR	no	14.9%	2.3%	17.2%
	yes	59.4%	23.3%	82.7%
	All HH	74.3%	25.6%	100%

- Conditional on having a TDA 91 per cent own their HMR.