

Stock Market Participation and Exit: The Role of Homeownership

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- Estimate life cycle model of portfolio choice to the US
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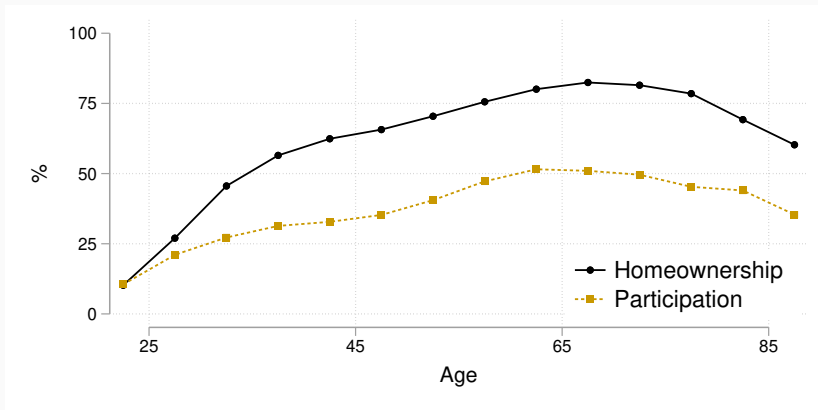
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Mechanism

- Renters save for downpayment - *'T is close'*
- New owners have low liquid wealth
- House transactions increases exit frequency

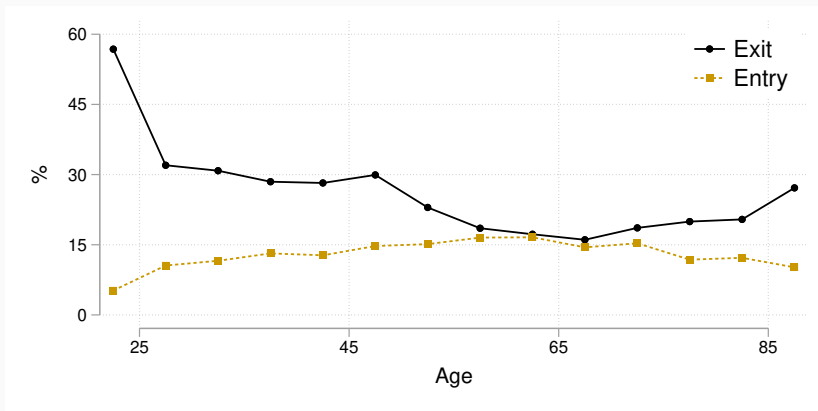
Homeownership and Stock Market Participation Rates



PSID 1999-2015. Binned age-dummies controlling for year effects.

- Ownership > Participation
- Peak participation rate at 50%

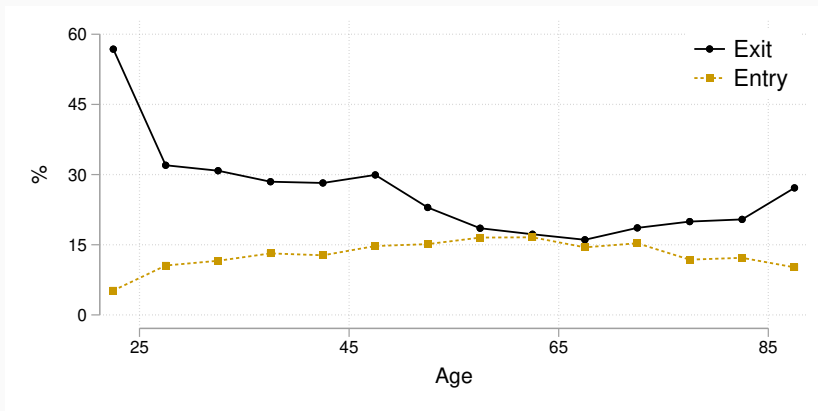
Two-Year Entry and Exit in Stock Markets



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Two-Year Entry and Exit in Stock Markets



PSID 1999-2015. Binned age-dummies controlling for year effects.

- High exit rate \implies low participation rates
- Satisfactory theory of participation also explains entry/exit

Model

Model Overview

- Extends Cocco, Gomes, & Maenhout (2005, RFS) and Fagereng, Gottlieb, & Guiso (2017, JF)
 - Life-cycle model
 - Persistent and transitory uninsurable income risk
 - Portfolio choice between risky stocks and safe bonds
 - Decision problems (no market clearing)
 - Per-period participation costs
 - Small probability of very low stock return (tail event)

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- I add housing

Housing Market

- Housing is a consumption good and an asset
- Households can rent 'small', own 'small' or 'large'
- Purchase cost on owner-occupied housing
- Stochastic house prices
 - Renters face expenditure risk
 - Owners face wealth risk
- One-period risk-free mortgages
 - Loan-to-value requirement
- Written to nest Fagereng et al. (2017)

Estimation

Estimation

- Most parameters calibrated externally
- Estimate models separately
- Estimate **five/six** parameters internally
 - discount factor, risk aversion, participation cost, prob(tail event), bequest motive, **ownership preference**

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 - **Financial assets/Net worth**
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 - Conditional portfolio weight

Estimation

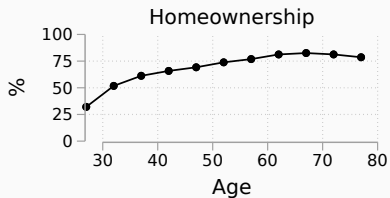
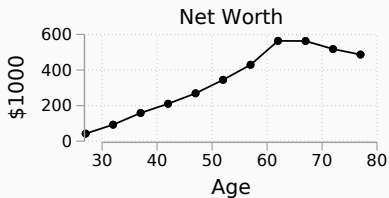
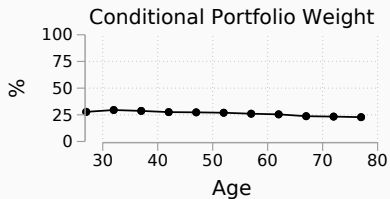
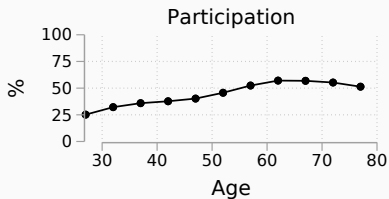
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 - **Financial assets/Net worth**
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 - **Homeownership rate**
- Housing decreases participation cost from \$441 to \$124

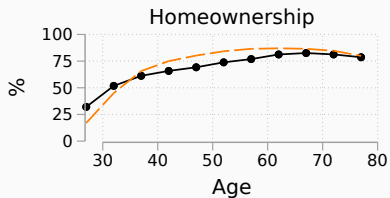
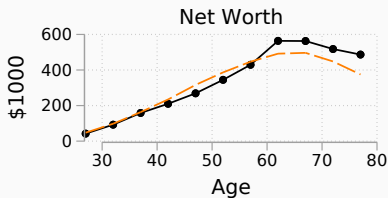
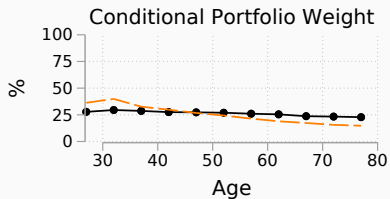
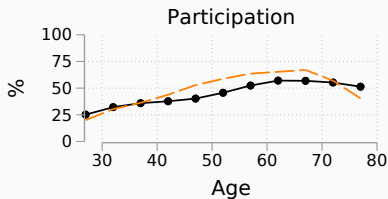
▶ Table

Model Fit



● Data — Model + Data w/o housing - - - Model w/o housing

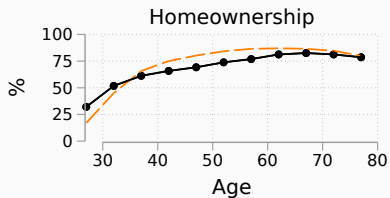
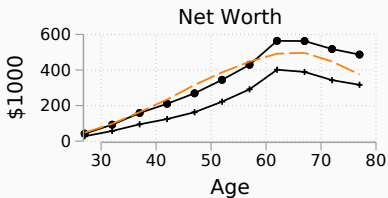
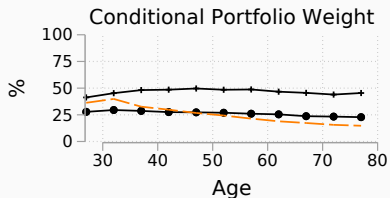
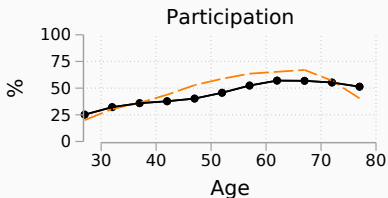
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● Data — Model + Data w/o housing - - - Model w/o housing

- Model with housing matches data well

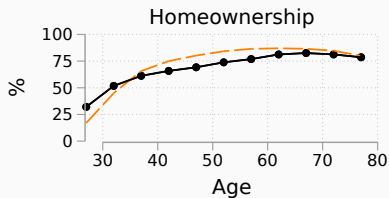
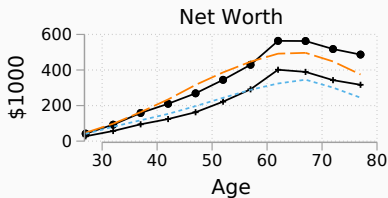
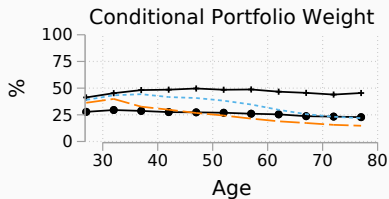
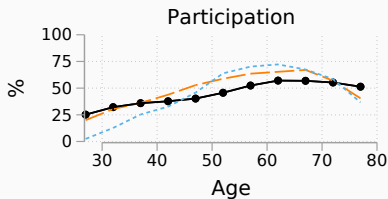
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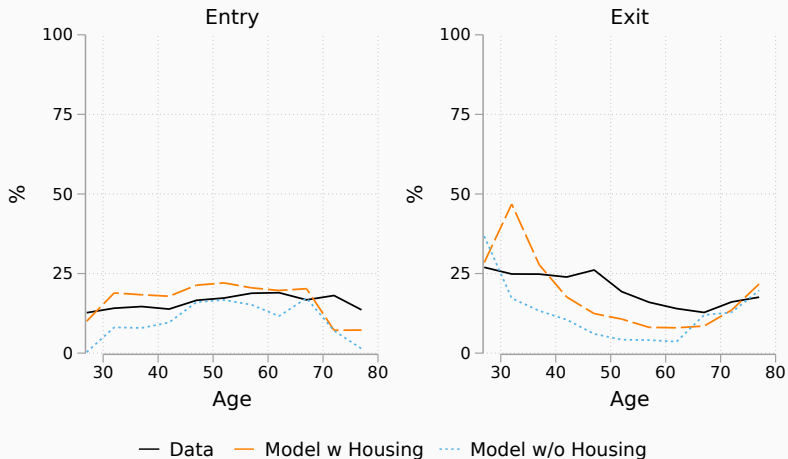
Model Fit



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- Housing decreases squared error of participation by 71%

Model Fit: Entry and Exit Rates



- Need housing to generate significant exit

Conclusion

- Data show that high exit rates drive low participation rates
 - Standard model has too little exit
- I show that exit is associated with house purchases
 - New owners are 16 percentage points more likely to exit
- Extend work horse model to include housing
 - Improves model fit
 - Housing reduces MSE on participation rates 71%

Appendix

Estimation

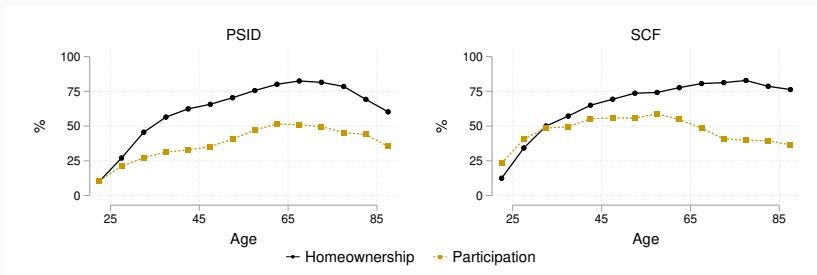
	Parameter	Housing	No Housing	Identifying Moments
q	Participation cost	0.124	0.441	Participation
β	Discount Factor	0.937	0.907	Net Worth, Participation
γ	Risk Aversion	4.518	4.111	Portfolio W., Net Worth
p_{tail}	Tail Events	0.041	0.044	Portfolio W., Participation
χ_1	Owner Preference	1.16	—	Homeownership
ψ	Bequest Motive	706.57	171.74	Net Worth (old households)
	# of Moments	44	33	
	Obj. Function	119.23	187.03	
	Part. Error	17.62	60.50	

Identifying moments are listed in approximate order of importance.

▶ Back to estimation

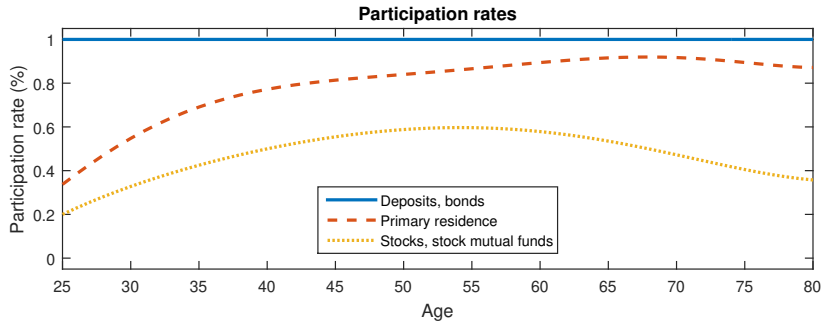
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Participation rates in the US



▶ [Back to participation rates](#)

Portfolio Choices in Norway



Stocks: stocks, mutual funds w. stocks etc; Bonds, deposits: checking, savings, mortgage, bonds.

Sources: Fagereng, Gottlieb and Guiso (2017), Statistics Norway (2018)

► [Back to participation rates](#)

Entry-Exit Rates in Norway

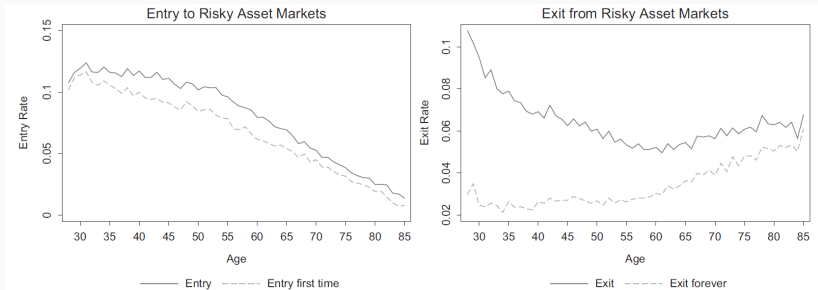


Figure 2. Entry and exit rates to/from risky asset markets. These figures plot entry and exit rates to/from risky asset markets. The left panel depicts entry and exit frequencies, allowing for reentry/exits, whereas the right panel depicts frequencies of first-time entry and once-and-for-all exits.

Source: Fagereng et al. 2017

[▶ Back to Entry and Exit in the US](#)

Empirical Contribution - Housing and Participation Dynamics

- Use PSID 1999-2017
- Regressions show that, all else equal:
 - Homeowners are 2-6 p.p. less likely to participate
 - Homeowning participants are 3-4 p.p. more likely to exit
 - New owners are 12-16 p.p. more likely to exit
 - Controls include wealth, income, family size, education, fixed effects (year, state, household), marriage
- Not causal - only conditional correlations!
- **Take away:** Housing correlate with stock market exit

Recent Related Literature

- Models of stock market participation without housing
 - Cocco (2005, RFS), Fagereng, Gottlieb, Guiso (2017, JF), Athreya, Ionescu, Neelakantan (R&R RED), Catherine (R&R RFS)
- Vestman (2019, RFS)
 - With housing, but no exit.
 - Preference heterogeneity allows great match of participation gap between renters and owners
- My contribution
 - **Two** extensive margins (rent/own) and (entry/exit)
 - Focus on **exit**

▶ [Back to contribution](#)