

Are homeowners irrational investors? The effect of housing tenure on household investment allocation in the United Kingdom

Marco Felici

Franz Fuerst

University of Cambridge - Department of Land Economy

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Introduction

- Housing represents both a consumption and an investment good (Henderson and Ioannides, 1983)
- The consumption side of housing constrains its use as an investment (Grossman and Laroque, 1990)
- In a portfolio optimisation framework, holding of housing may affect the allocation of risky assets (Brueckner, 1997; Flavin and Yamashita, 2002; Chetty and Szeidl, 2007)
- As holdings of housing characterise primarily homeowners, do they differ from renters when it comes to investing in other assets?

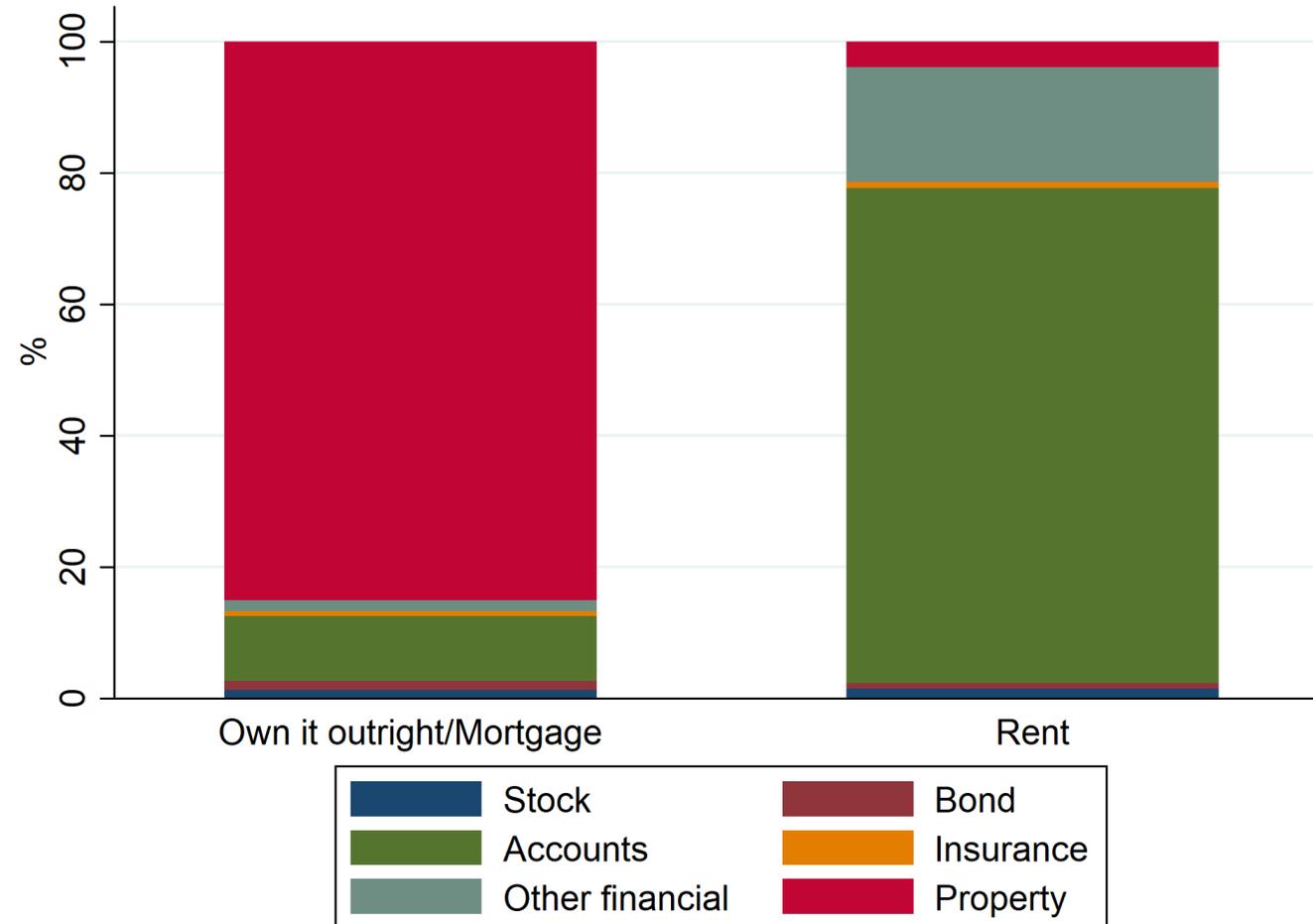
Data: Wealth and Assets Survey \1

- Repeated cross-section of British households with a panel component
- Five waves: 2006-2016
- Insight specifically on the distribution of assets within a household
- Entire sample: around 111,000 observations
- Number of unique households: around 49,000

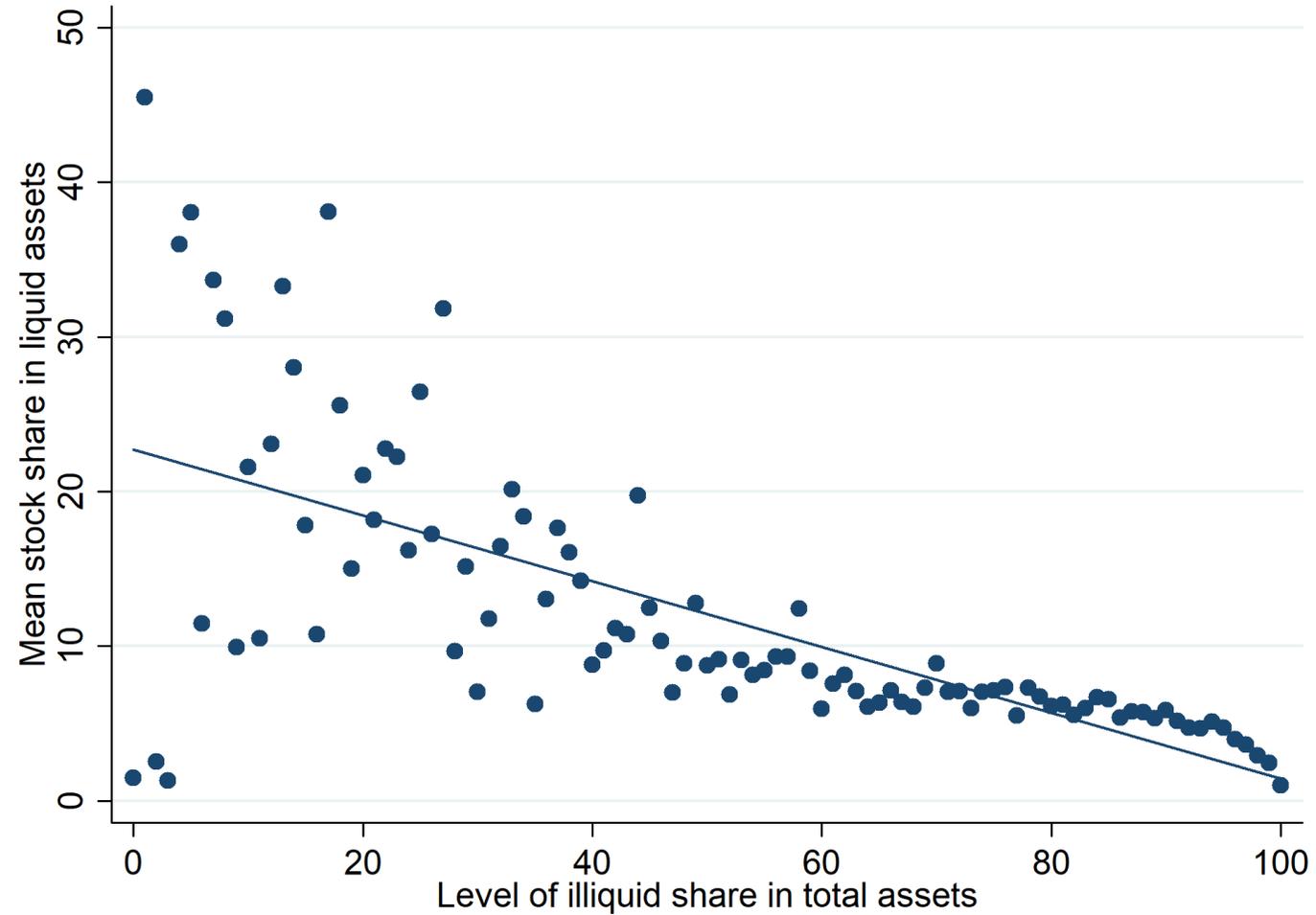
Data: Wealth and Assets Survey \2

	Renting (N=14,384)		Owning (N=43,356)	
	Mean	St. Dev.	Mean	St. Dev.
Illiquid share in total assets (%)	3.92	18.07	85.04	16.51
Illiquid share in total assets excluding the Main Residence (%)	3.92	18.07	9.67	25.79
Share of stocks in liquid assets (%)	1.61	10.05	5.30	15.92
Illiquid assets (£100,000)	.08	.64	2.98	3.83
Illiquid assets excluding the Main Residence (£100,000)	.08	.64	.40	2.40
Liquid assets (£100,000)	.14	.90	.87	12.06
Mortgage debt (£100,000)	.02	.25	.61	1.16
Home equity (£100,000)	.06	.51	2.38	3.51
Income (£100,000)	.24	.18	.39	.56
Number of children	.66	1.04	.51	.89
Below age 35 (%)	25.86	43.79	9.65	29.53
In employment (%)	51.69	49.97	63.52	48.14
Education at degree level or above (%)	16.26	36.90	31.58	46.48
Female (%)	50.56	50.00	34.44	47.52

Patterns in the data \1



Patterns in the data \2



A simple model of portfolio choice with housing \1

- Share of illiquid assets (housing primarily) determined by tenure and other household characteristics: $\bar{h}_{0,i} = m r_{i,i} (P_{i,i}) \varphi_{i,i} + p_{i,i} (\varphi_{i,i}, P_{i,i}) + r_{i,i}$
- Pelizzon and Weber (2008): Market with 1 riskless asset, n unconstrained risky assets and 1 constrained risky asset (housing)

Investor problem: $\min_{\tau, Z} \Omega(Z) \text{ s.t. } \{ Z \uparrow m + r_{i,i} \Omega h_{i,i} = \bar{h}_{i,i} = m \uparrow^*$

A simple model of portfolio choice with housing \2

Solving we find:

$$x \downarrow 0 = \gamma \Sigma \uparrow^{-1} \mu - h \downarrow 0 \Sigma \uparrow^{-1} \Gamma \downarrow b P$$

- The first term is the traditional efficiency w.r.t. the risky financial assets, taking account of the risk aversion
- The second term introduces hedging w.r.t. the housing asset
- Second term disappears if there is no correlation between housing and the other risky assets ($\Gamma \downarrow b P = 0$)

What determines the share of illiquid assets? \1

	Pooled
Renter	-80.855*** (0.226)
Prop equity	0.127*** (0.028)
Income	-1.892** (0.950)
Num children	0.481*** (0.095)
<i>N</i>	58087
adj. R^2	0.792

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Additional controls: age bands, employment status, educational level, gender, wave

What determines the share of illiquid assets? \2

	Pooled	Panel
Renter	-80.855*** (0.226)	-76.044*** (3.459)
Prop equity	0.127*** (0.028)	0.567 (1.334)
Income	-1.892** (0.950)	1.651 (18.291)
Num children	0.481*** (0.095)	-8.284 (6.791)
Regional HPI		0.095 (0.537)
<i>N</i>	58087	446
adj. R^2	0.792	0.746

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Additional controls: age bands, employment status, educational level, gender, wave, region

What determines the share of risky assets? \1

	Panel
Illiquid share	-0.190*** (0.026)
Renter	-18.504*** (2.574)
Illiquid share*Renter	0.185*** (0.031)
Prop equity	0.287* (0.169)
Income	1.860 (1.454)
Num children	0.104 (0.479)
Regional HPI	0.013 (0.028)
<i>N</i>	27260
adj. R^2	0.486

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Additional controls: age bands, employment status, educational level, gender, wave, region

What determines the share of risky assets? \2

	Panel	Dynamic panel
Lag stock share		0.099*** (0.032)
Illiquid share	-0.190*** (0.026)	-0.181*** (0.022)
Renter	-18.504*** (2.574)	-15.979*** (2.348)
Illiquid share*Renter	0.185*** (0.031)	0.188*** (0.037)
Prop equity	0.287* (0.169)	0.180 (0.120)
Income	1.860 (1.454)	0.082 (1.120)
Num children	0.104 (0.479)	-0.587 (0.426)
Regional HPI	0.013 (0.028)	
<i>N</i>	27260	14001
adj. R^2	0.486	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusions and further research

- Economic theory predicts that a rational investor would adjust risky financial assets based on housing (illiquid assets) holdings
- Share of illiquid assets determined primarily by tenure
- Evidence in the direction of homeowners adjusting stock holdings based on housing (Hu, 2005; Chetty et al., 2017; Vestman, 2019)
- Further research: assess if adjustment means better investment outcomes