Does owning your home make you retire early?

A comparative analysis of Germany and the UK

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Why study housing?

From a **social stratification perspective**:

- Housing is a major driver of inequality and (re-)distribution of life chances in the advanced economies [Pfeffer and Waitkus, 2021, Ansell, 2014]
- Is housing becoming a determinant of class and economic well-being over and above employment? [Adkins et al., 2020, Fuller et al., 2020]

From a **social policy perspective**:

- Housing as a field for 'social policy by other means' through tax exemptions or subsidies for homeowners [Howard, 1999, Seelkopf and Starke, 2019]
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Why study housing and retirement?

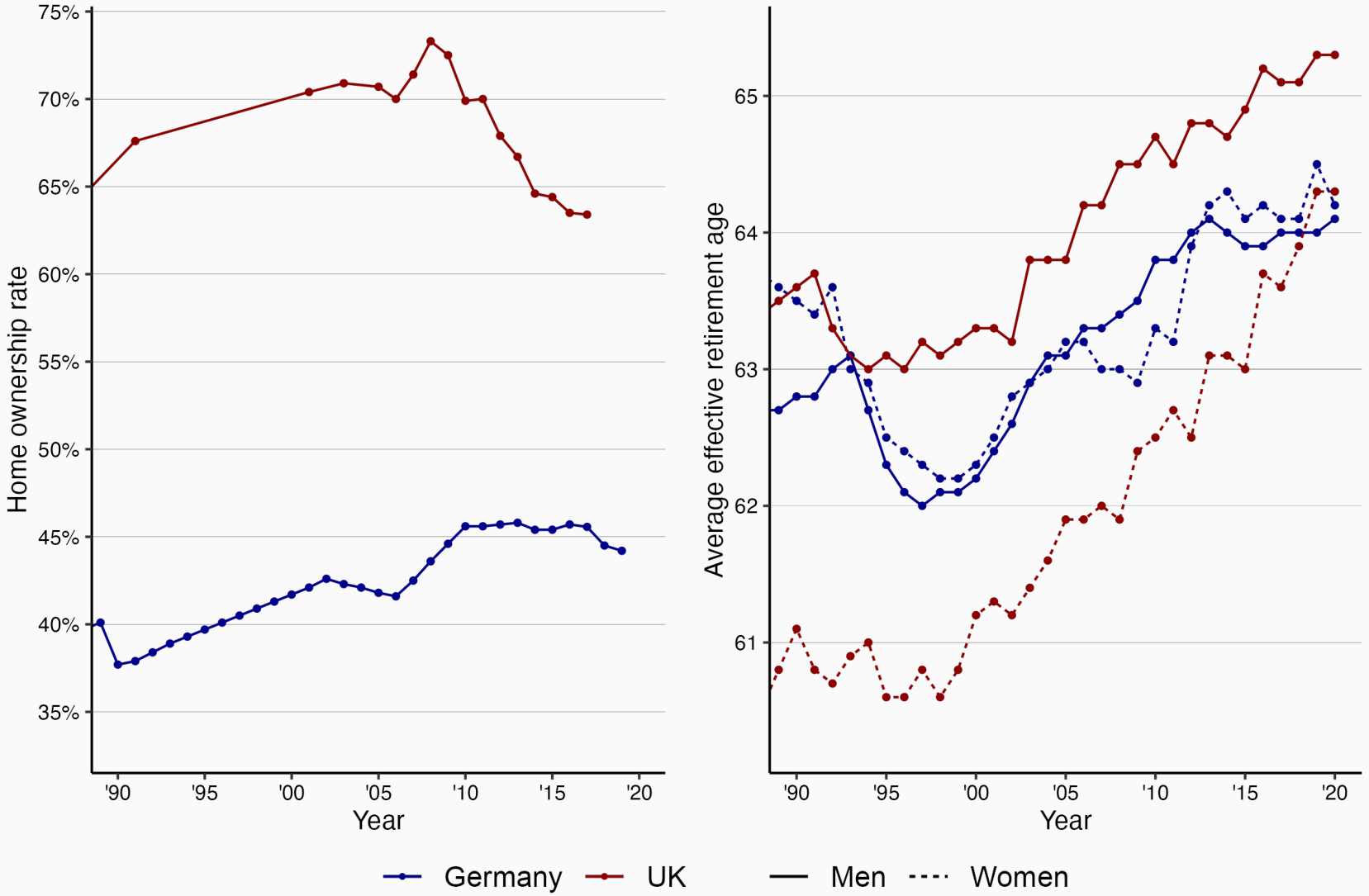

Figure 1: Home ownership rates and average retirement ages (1990-2020)

Mechanisms

Three **mechanisms suggest a causal link** between individuals' housing tenure and their retirement behaviour:

1. **Permanent income** [Doling and Ronald, 2010b, Friedman, 1957]
   - Home ownership may be a reliable source of in-kind or in-cash income independent of labour market participation
2. **Reduced geographical mobility** [Brunet et al., 2024, Wolf and Caruana-Galizia, 2015, Beugnot et al., 2019]
   - Owners' reduced mobility may limit their re-employment chances
3. **Subjective security** [Zavisca and Gerber, 2016, Elsinga and Hoekstra, 2005]
   - Ownership may be a source of predictability of life on a pension

H1: *Compared to renting, home ownership increases the risk of retirement throughout later life.*

H2: *The effect of home ownership is larger for outright owners than for owners with outstanding mortgage debts.*

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Institutional context

Institutional **context conditions likely moderate the causal effect** of individuals' housing tenure on their retirement behaviour:

1. **Property-based welfare** [Doling and Ronald, 2010a, Doling and Ronald, 2010b]
   - Government welfare provision can be focused on and closely tied to home ownership, e.g., through tax exemptions for mortgages
2. **Financial and rental market regulations** [Hulse and Haffner, 2014, Kemeny, 2002, Stephens, 2020]
   - Large financial markets make it easier to build housing equity, benefit from rising home prices, and release housing equity
   - Weaker tenant protections reduce housing security for renters
3. **Home ownership ideology** [Kemeny, 2011, Kohl, 2020]
   - Home ownership may be seen as more desirable and more secure than renting, thus raising the utility drawn from ownership

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Analytical strategy

Target population and data

Target population: Homeowners and renters at risk of retirement in Germany and the UK during 1991 to 2021

Data: Three harmonised longitudinal household surveys

Samples: All respondents continuously observed from age 50 to age 65, retirement or censoring, separately by country

Table 1: Data and samples

Germany SOEP	UK BHPS/UKHLS
12,601 individuals	12,549 individuals
80,794 person-years	78,706 person-years
2,437 retirement events	2,061 retirement events

- Multiple imputation of missing covariate values (m = 5)
- Informative right-censoring accounted for in estimation
- Sampling weights applied to match target population

Descriptive statistics

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Estimand

Average treatment effect (ATE) defined as:

$$\begin{aligned} ATE_t = \frac{1}{n}\sum_{i=1}^{n} E[Y_{i;t} \mid D_{i;50}, ..., D_{i;t-1} = \text{Homeowner}] \\ - \frac{1}{n}\sum_{i=1}^{n} E[Y_{i;t} \mid D_{i;50}, ..., D_{i;t-1} = \text{Renter}] \end{aligned} \tag{1}$$

Average difference in the risk of being retired at each age from 51 to 65 for each individual (*counterfactually* and *continuously*) renting or owning their home from age 50.

Risk differences are more meaningful and less statistically arbitrary than more common effect measures such as hazard ratios. [Hernán, 2010]

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(Sequential) ignorability, **Consistency**, and **Positivity** assumptions must hold to identify ATE from observed data.

Figure 2: DAG illustrating the assumed causal model

*Time-varying confounder

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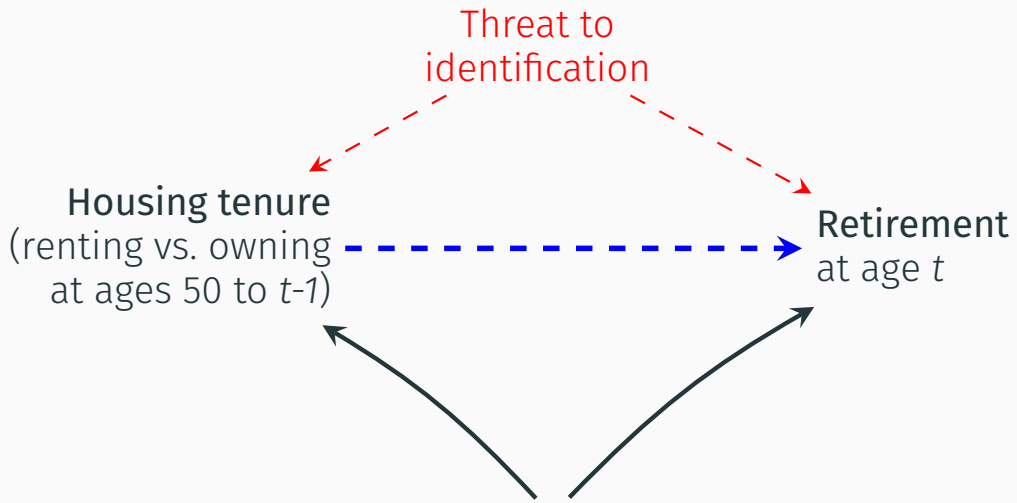

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Estimation

Targeted Maximum Likelihood Estimation (TMLE)

- Method from epidemiology that links well with potential outcomes framework [Van der Laan and Rose, 2011, Schuler and Rose, 2017]
- Combines estimation of an outcome model (G-computation) and a treatment model (IPTW) through additional targeting step
- Double robustness and non-parametric estimation improve bias and efficiency compared to conventional time-to-event models
- Assign clearly defined longitudinal treatments (since individuals' housing tenure may change at each age) [Díaz et al., 2023]

Modelling choices:

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Results

Results (1/4):
Do homeowners retire earlier?

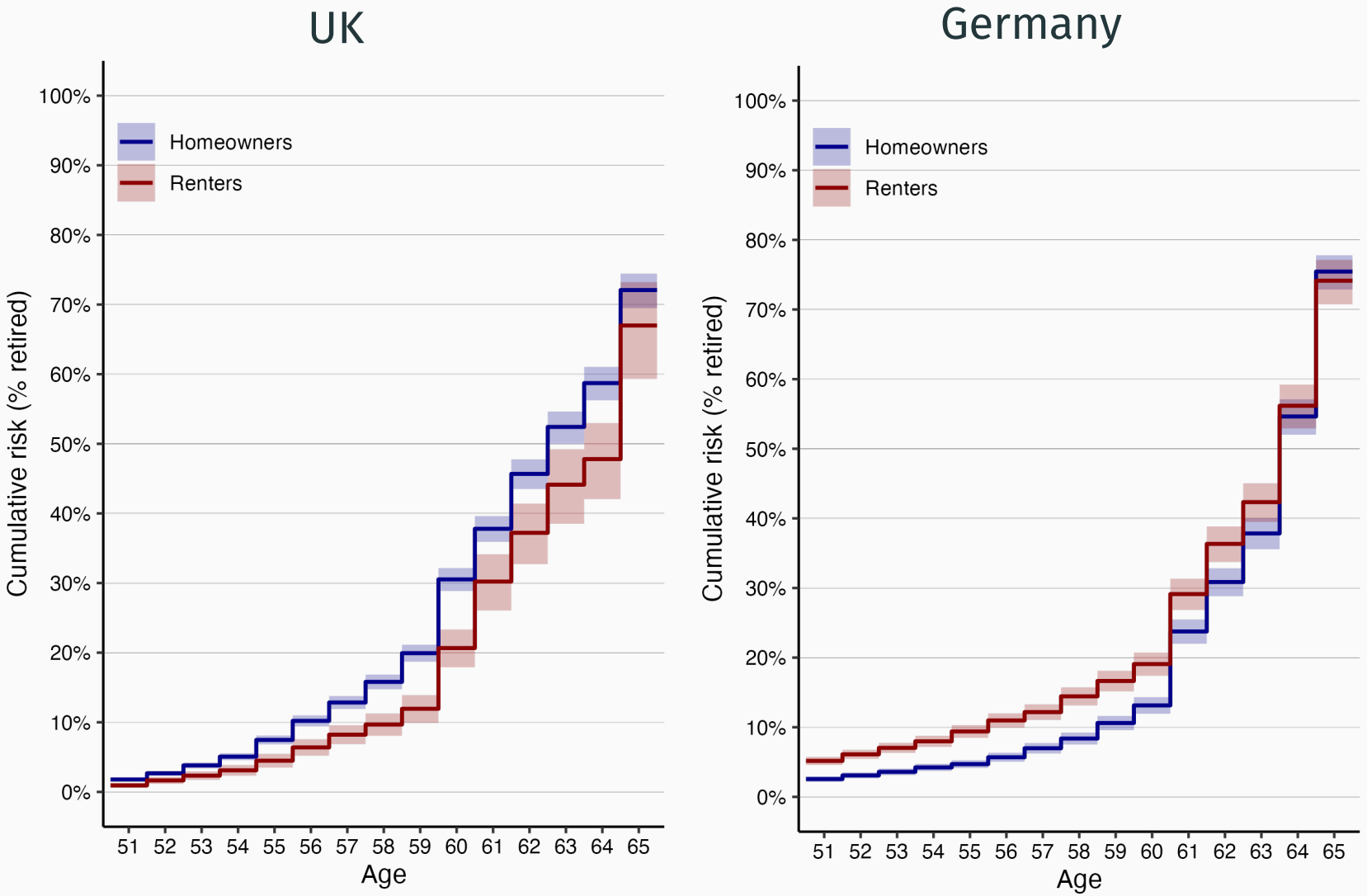

Figure 3: Observed cumulative risk of retirement (Kaplan-Meier estimates)

Results (2/4):
Does owning your home make you retire early?

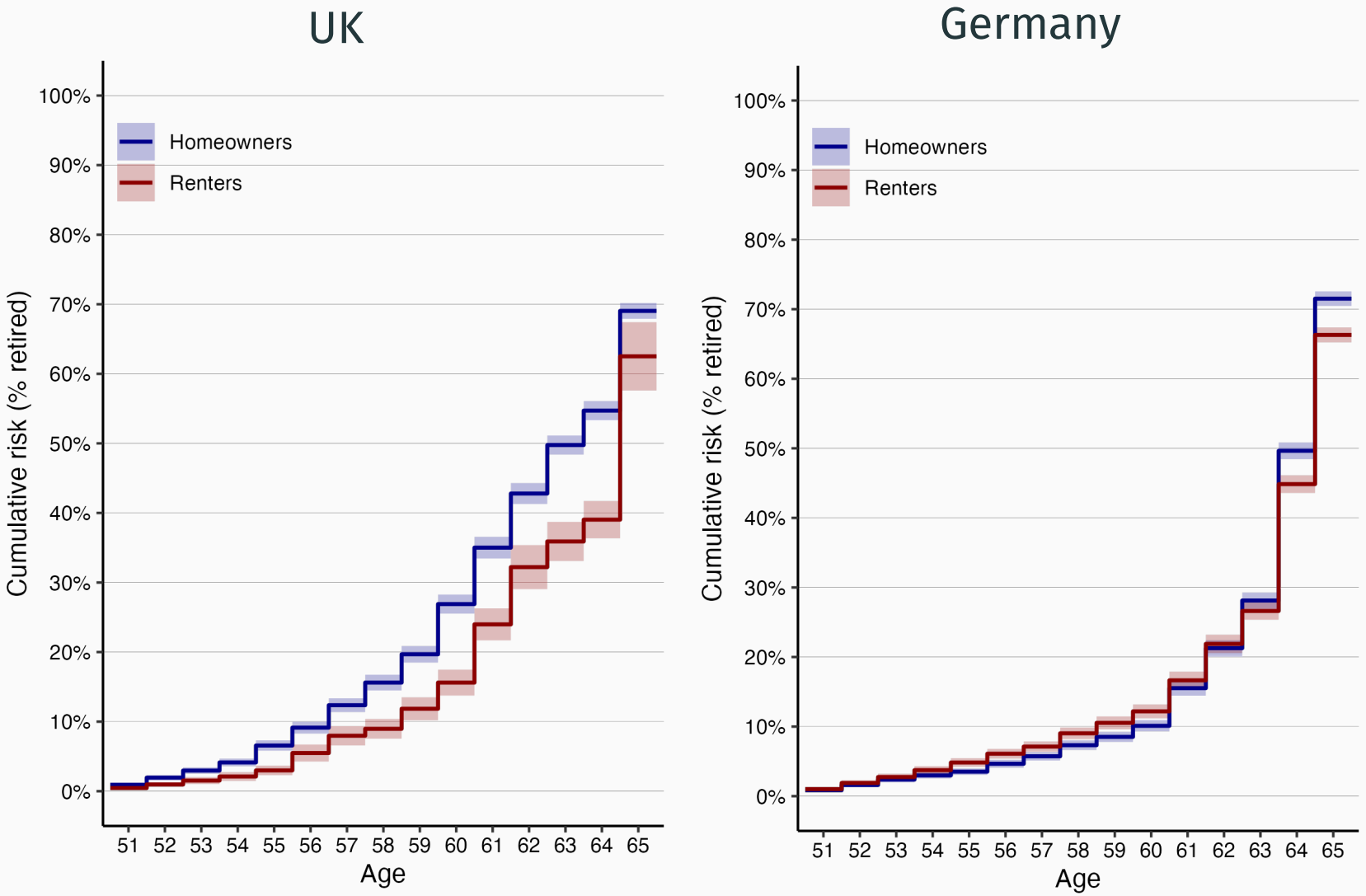

Figure 4: Confounder-adjusted cumulative risk of retirement (TML estimates)

Results (3/4):
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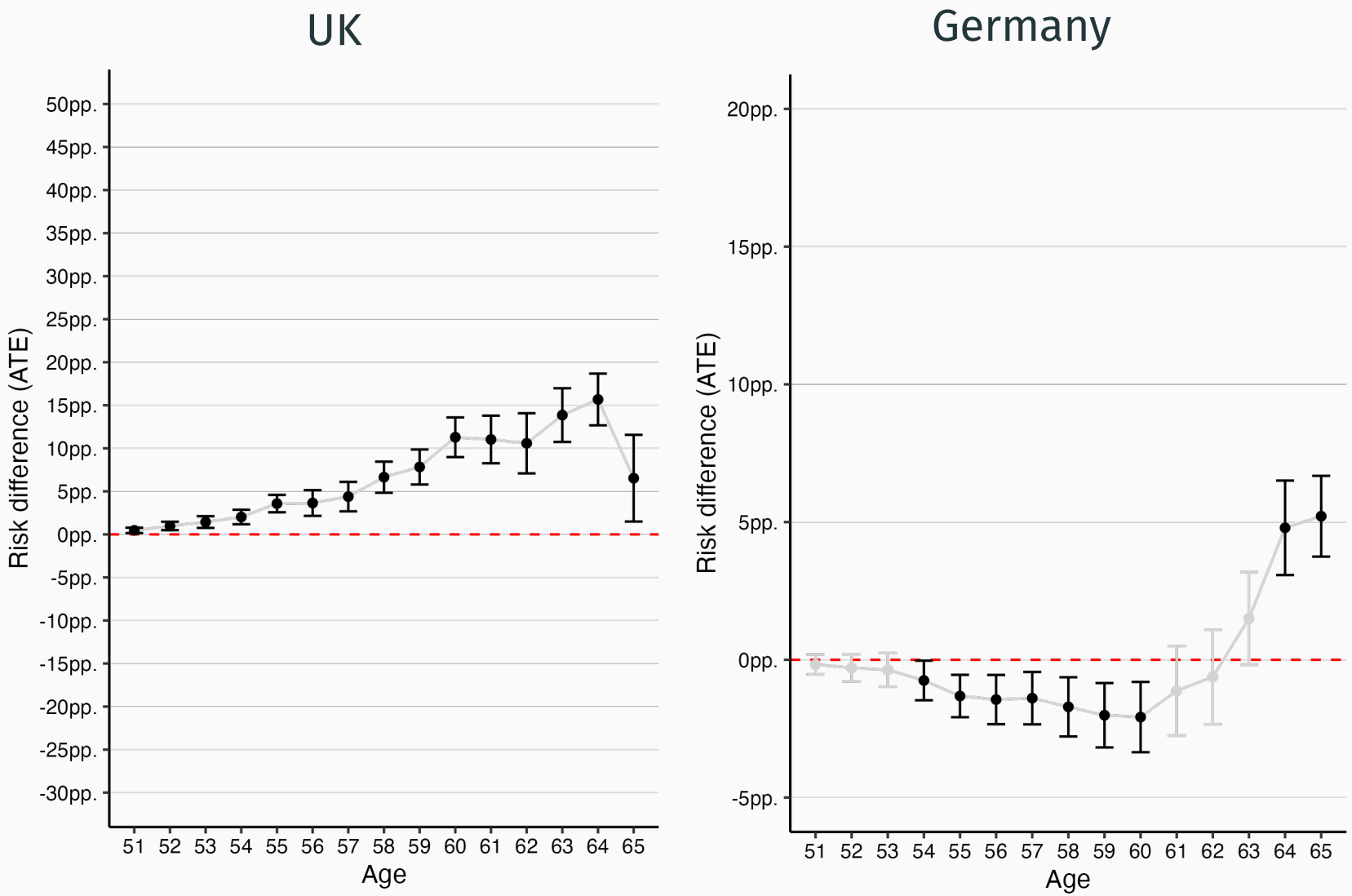

Figure 5: Causal differences in retirement risk

Results (4/4):
What about owners with outstanding mortgage debt?

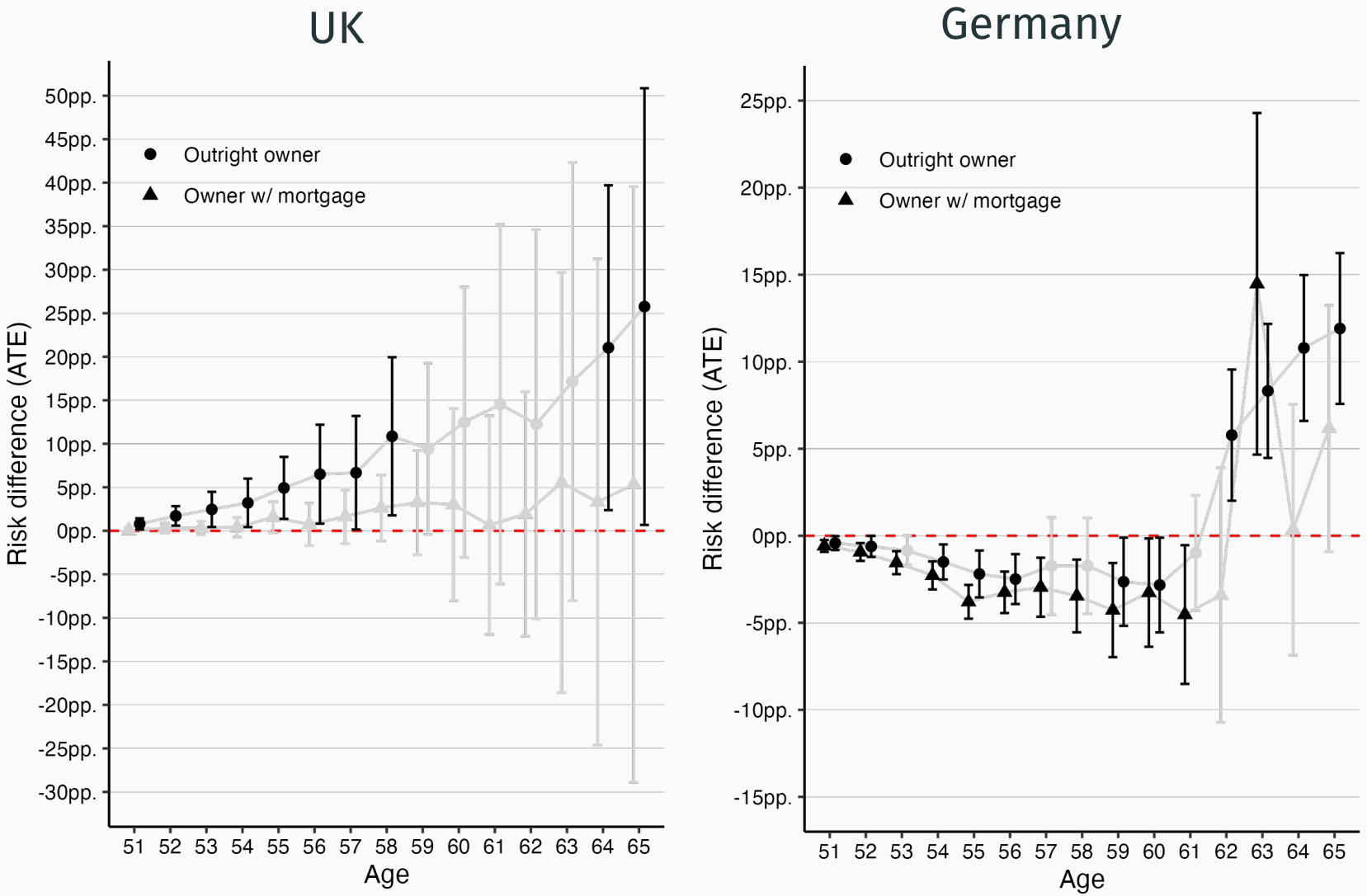

Figure 6: Causal differences in retirement risk by ownership status

Discussion

Summary of results

H1 ✓ Home ownership raises retirement risks by up to 15pp. in the UK and up to 7pp. in Germany, up until statutory retirement ages.

H2 ✓ However, in both countries, this effect is only present for outright ownership (in line with theorised mechanisms).

H3 ✓ The effect home ownership is larger in the UK than in Germany.

Limitations

Further stratification limited by low observation numbers (e.g., by period or cohort, gender, location, rent and house price levels).

Causal interpretation of results may be challenged by:

- Violation of ignorability assumption, e.g., due to components of wealth not directly observed (e.g., pension assets, debt)
- Violation of consistency assumption because private and social renting as well as different owner categories are collapsed
- Violation of positivity assumption because some individuals may be very un-/likely to own/rent their home (extreme PS scores)

▸ Robustness checks

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Key take-aways

1. Housing can be an important dimension of social stratification in work-to-retirement transitions (and probably LM outcomes more generally)
2. Most likely in contexts that privilege ownership, with high rental insecurity, and strongly income-stratified retirement pathways
3. Institutionalised age thresholds moderate the effects of housing; this may not be the case in more flexible retirement regimes

Thank you!

Working paper and replication materials available on my website (https://jeinhoff.github.io).

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Table A1: Descriptive statistics (1/5)

Variable	Germany % / Mean (SD)	UK % / Mean (SD)
Retired	x	x
Housing tenure		
Renter	x	x
Owner	x	x
Ownership status		
Mortgagor	x	x
Outright owner	x	x
Female	x	x
Year of birth	x (x)	x (x)
First gen. migrant	x	x
Level of education		
Primary	x	x
Secondary	x	x
Tertiary	x	x
Poor health	x	x

Statistics refer to person-years and are averaged over imputations.

Table A2: Descriptive statistics (2/5)

Variable	Germany % / Mean (SD)	UK % / Mean (SD)
Marital status		
Single	x	x
Married/Partnered	x	x
Divorced/Separated	x	x
Widowed	x	x
Partner in HH	x	x
Any children	x	x
HH size	x (x)	x (x)
Equiv. HH income	x (x)	x (x)
Employment status		
Employed	x	x
Unemployed	x	x
Inactive	x	x
Unemployment rate	x (x)	x (x)
Public sector	x	x
Self employed	x	x

Statistics refer to person-years and are averaged over imputations.

Table A3: Descriptive statistics (3/5)

Variable	Germany % / Mean (SD)	UK % / Mean (SD)
Occupation group		
Managers and professionals	x	x
Technicians and associate professionals	x	x
Clerks and service workers	x	x
Agricultural, elementary, and armed forces occupations	x	x
Craft workers, machine operators and assemblers	x	x
Out of LM	x	x

Statistics refer to person-years and are averaged over imputations.

Table A4: Descriptive statistics (4/5)

Variable	Germany % / Mean (SD)	UK % / Mean (SD)
Region		
Baden-Württemberg	x	
Bayern	x	
Berlin	x	
Brandenburg	x	
Bremen	x	
Hamburg	x	
Hessen	x	
Mecklenburg-Vorpommern	x	
Niedersachsen	x	
Nordrhein-Westfalen	x	
Rheinland-Pfalz	x	
Saarland	x	
Sachsen	x	
Sachsen-Anhalt	x	
Schleswig-Holstein	x	
Thüringen	x	

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Table A5: Descriptive statistics (5/5)

Variable	Germany % / Mean (SD)	UK % / Mean (SD)
Region		
East England		x
East Midlands		x
East West		x
London		x
North East		x
North West		x
Northern Ireland		x
Scotland		x
South West		x
Wales		x
West Midlands		x
Yorkshire and the Humber		x

Statistics refer to person-years and are averaged over imputations.

Table A6: Sensitivity of results to PS trimming (UK)

	.95 perc.		*.975 perc.*		*.99 perc.*	
Age	ATE	SE	ATE	SE	ATE	SE
51	17.2	3.2	15.3	5.6	18.3	2.3
52	x	x	x	x	x	x
53	x	x	x	x	x	x
54	x	x	x	x	x	x
55	x	x	x	x	x	x
56	x	x	x	x	x	x
57	x	x	x	x	x	x
58	x	x	x	x	x	x
59	x	x	x	x	x	x
60	x	x	x	x	x	x
61	x	x	x	x	x	x
62	x	x	x	x	x	x
63	x	x	x	x	x	x
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65	x	x	x	x	x	x

Table A7: Sensitivity of results to PS trimming (Germany)

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54	x	x	x	x	x	x
55	x	x	x	x	x	x
56	x	x	x	x	x	x
57	x	x	x	x	x	x
58	x	x	x	x	x	x
59	x	x	x	x	x	x
60	x	x	x	x	x	x
61	x	x	x	x	x	x
62	x	x	x	x	x	x
63	x	x	x	x	x	x
64	x	x	x	x	x	x
65	x	x	x	x	x	x