Does owning your home make you retire early?

A comparative analysis of Germany and the UK

WFRN Annual Conference
Montréal, 22/06/2024

Jan Einhoff
PhD Candidate
DYNAMICS Research Training Group
Humboldt University and Hertie School Berlin

DYNAMICS Research Training Group · Humboldt-Universität zu Berlin · Hertie School · DFG Deutsche Forschungsgemeinschaft

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]
- Has housing become 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]
- Where conventional welfare provision is weak, home ownership is common and acts as insurance against social risks

[Doling and Ronald, 2010b, Van Gunten and Kohl, 2020]

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Why study housing and retirement?

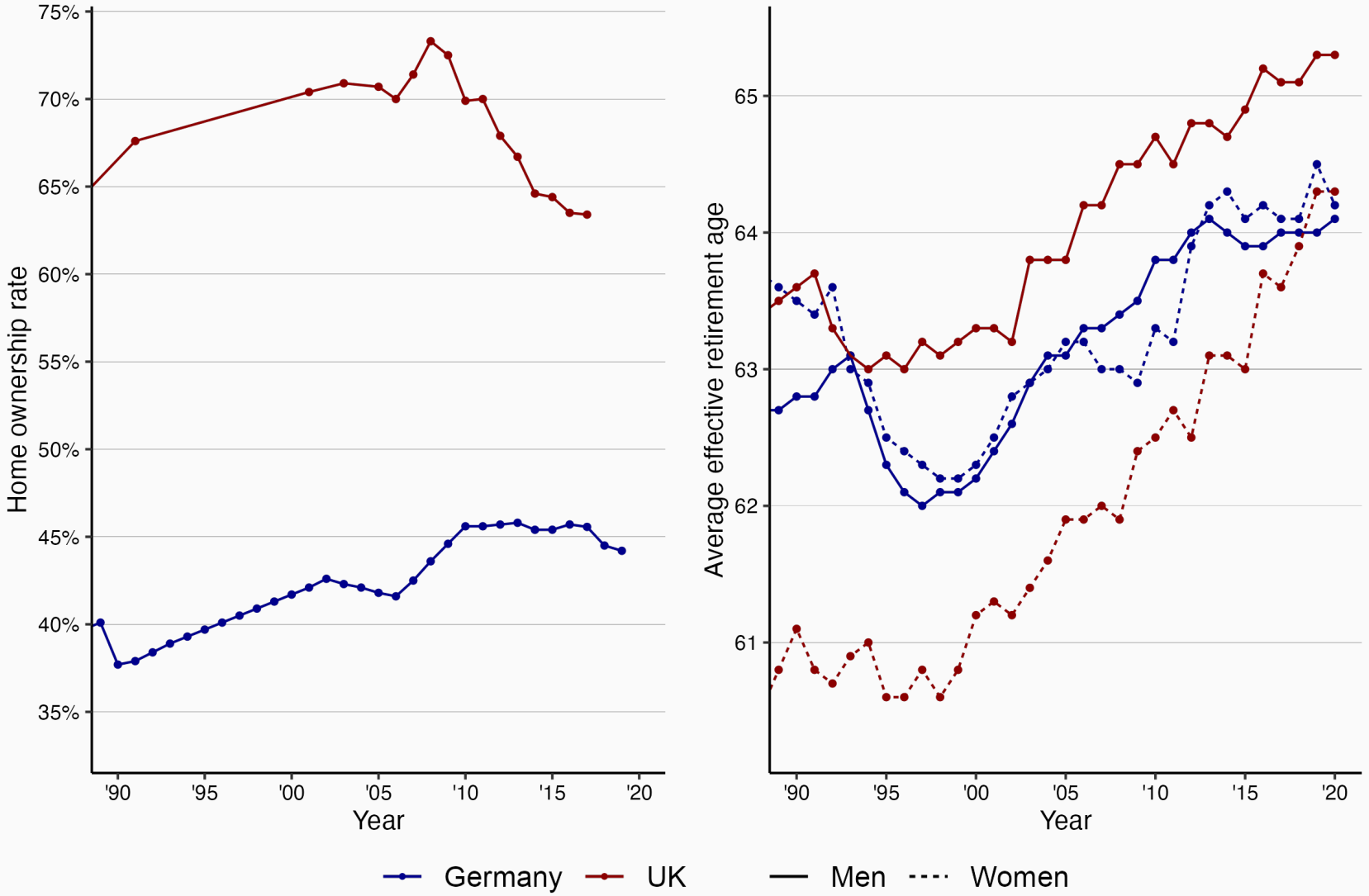

Figure 1: Home ownership rates and average retirement ages (1990-2020)

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. **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]
   - Liberalised financial and housing markets make it easier to access mortgages and to sell or 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 secure than renting, thus providing greater value to homeowners

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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

Table 1: Data and samples

Germany	UK
SOEP	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 = 10)
- Informative right-censoring accounted for in estimation
- No weighting (design variables included + higher precision)

▸ Descriptive statistics

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Estimand

Average treatment effect (ATE) at age t defined as:

$$E\left[Y_t(D_{50}, ..., D_{t-1} = Homeowner)\right] - E\left[Y_t(D_{50}, ..., D_{t-1} = Renter)\right] \quad (1)$$

Difference between the expected risks of being retired for each individual (*counterfactually* and *continuously*) renting or owning their home from age 50.

Risk differences are more meaningful and less statistically arbitrary than other quantities in survival analysis, esp. hazard ratios. [Hernán, 2010]

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Identification

Positivity, **SUTVA**, and **Sequential ignorability** must be given to identify ATE from observed data.

Figure 2: DAG illustrating the assumed causal model

*Time-varying covariate measured at *t-1*

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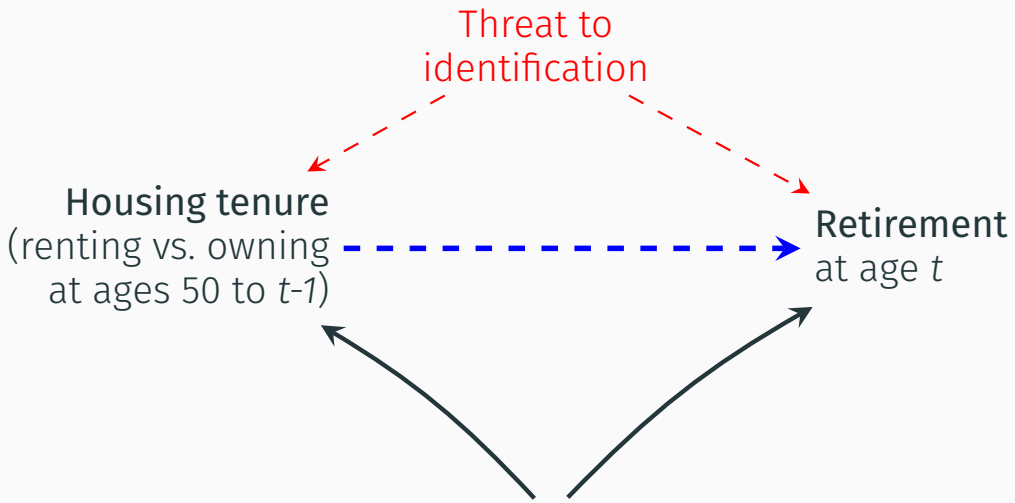

Adjustment set:
gender, year of birth, first gen. migrant, level of education, occupation group*, equiv. HH income*, public sector*, region*, self employment*, family status*, any children*, partner in HH*, HH size*, employment status*, partner employment status*, poor self-assessed health*, unemployment rate*, inflation rate*

Figure 2: DAG illustrating the assumed causal model

*Time-varying covariate measured at *t-1*

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 treatment and censoring models (IPW) through "targeting" step
- Double robustness and non-parametric estimation improve bias and efficiency compared to conventional time-to-event models
- Assign well-defined longitudinal treatments [Díaz et al., 2023]

Modelling choices:

- SuperLearner ensemble (GBM, RF, MARS, LASSO) with 5-fold CV
- PSs trimmed at .99 percentile with additional sensitivity checks

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Results

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

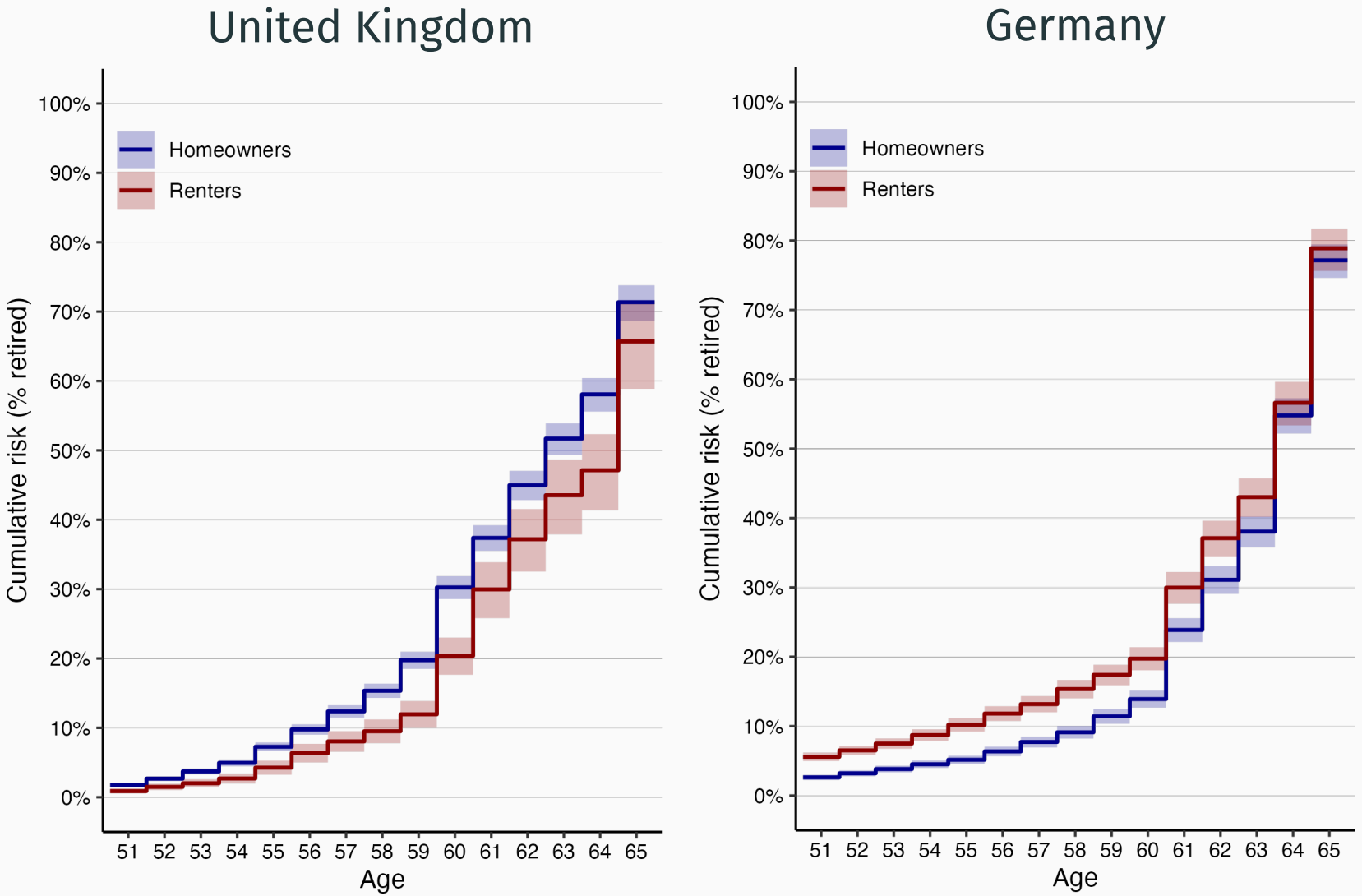

Figure 3: Observed cumulative risks of retirement (Kaplan-Meier estimates)

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

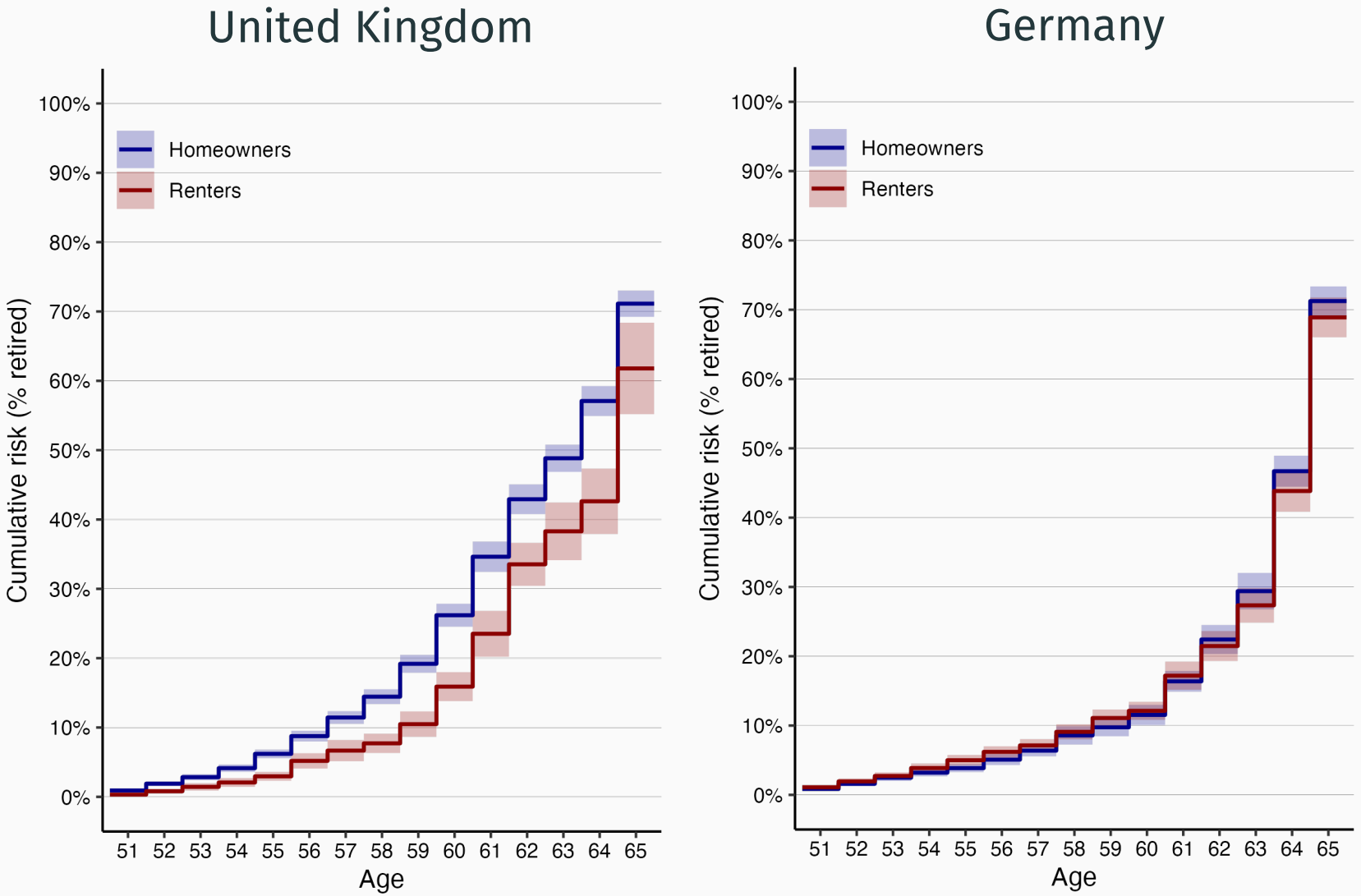

Figure 4: Adjusted cumulative risks of retirement

Results (3/4):
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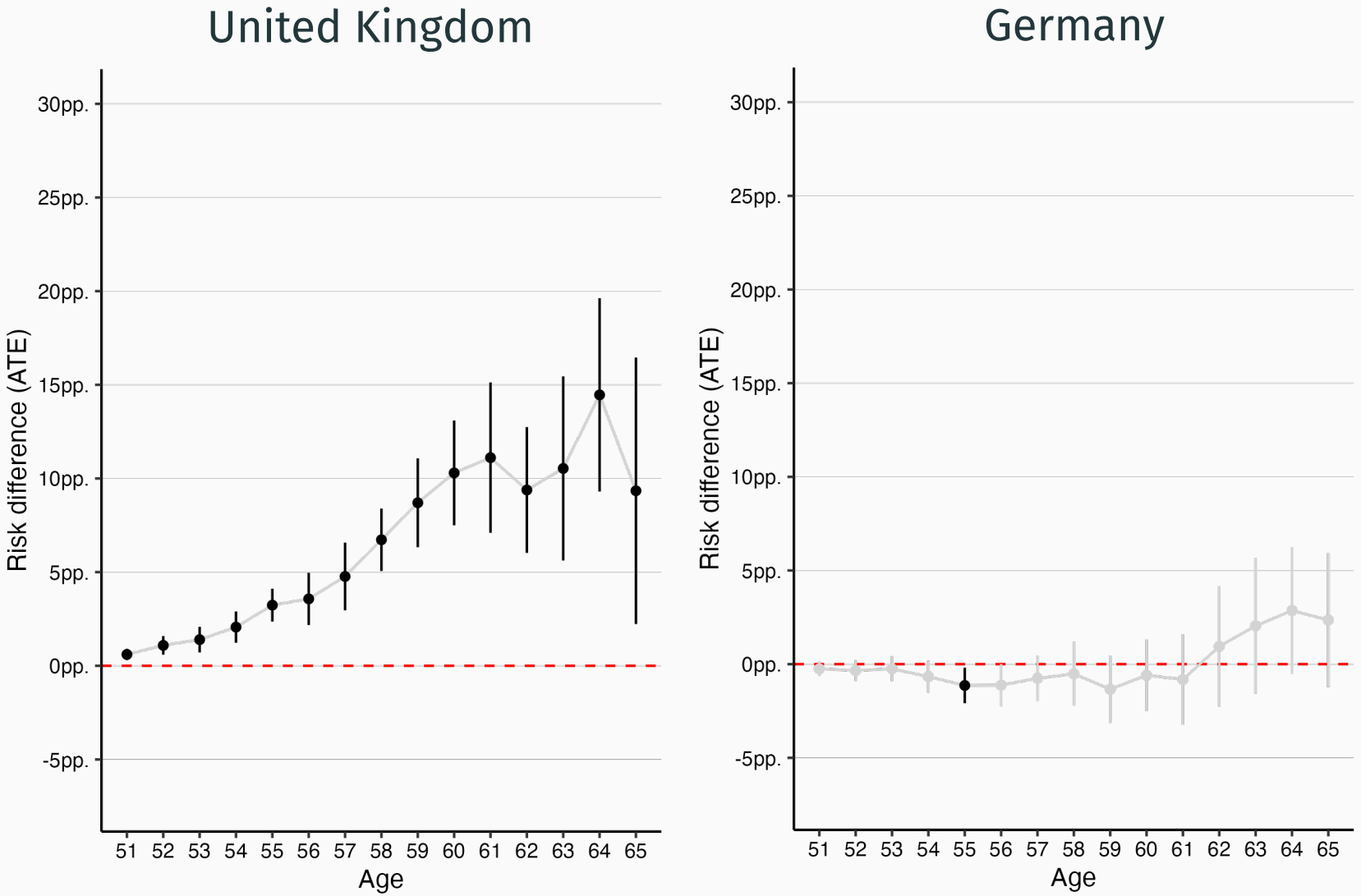

Figure 5: Causal differences in retirement risks

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

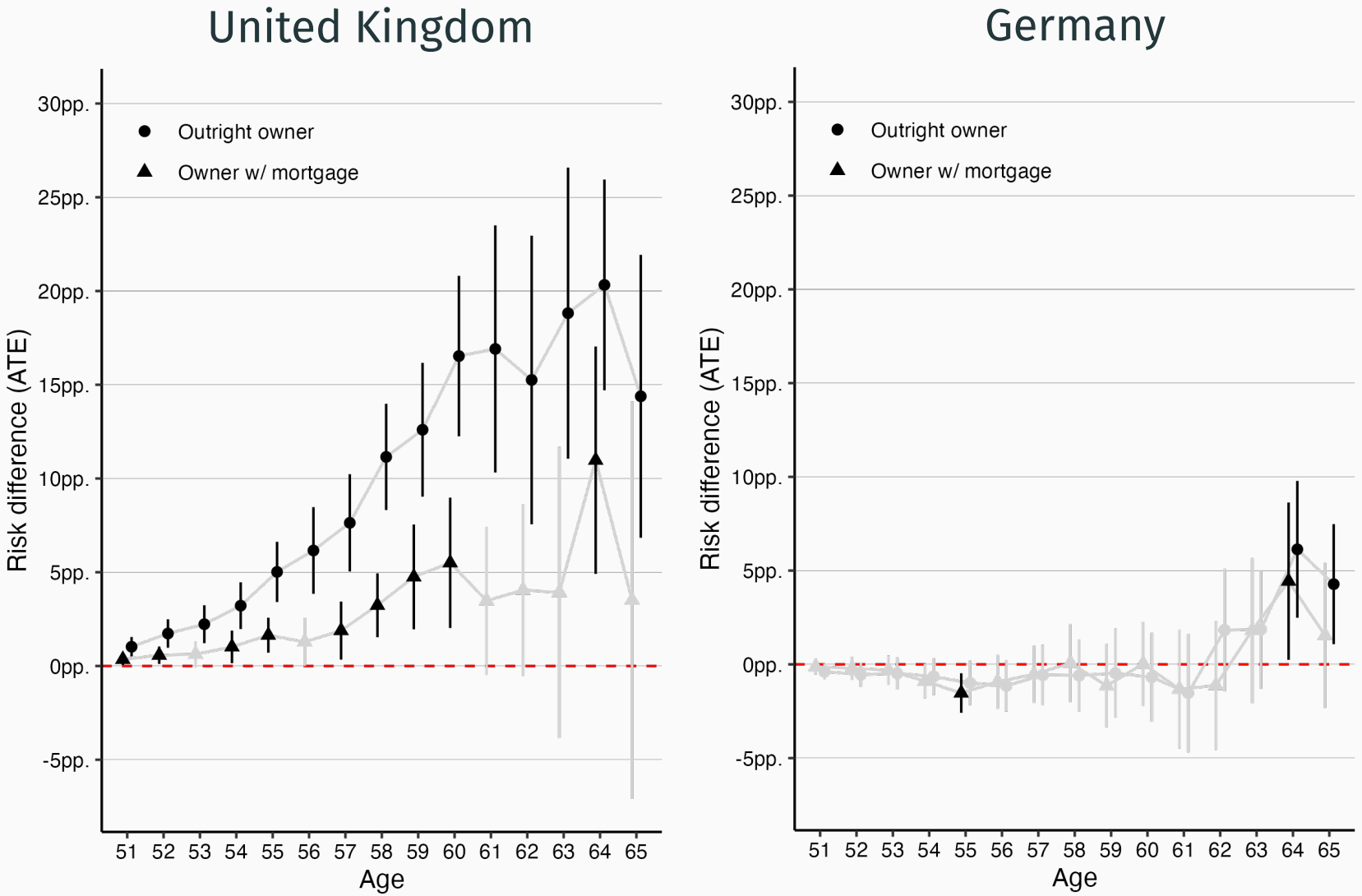

Figure 6: Causal differences in retirement risks by ownership status

Discussion

Summary of results

H1 ✓ Home ownership raises retirement risks by up to 15pp. in the UK and 6pp. in Germany, especially at key age thresholds

H2 ✓ The effect is larger / only present for outright homeowners.

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., financial assets, debt)
- Violation of positivity assumption because some individuals may be very un-/likely to own/rent their home (extreme PS scores)
- Violation of STUVA due to spill-overs or because private and social renting as well as different owner types are collapsed

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Key take-aways

1. Housing can be an important dimension of social stratification in work-to-retirement transitions, especially in contexts that privilege home ownership and with high rental insecurity
2. Policymakers must consider the unintended consequences and spill-overs from housing to other domains
3. New quantitative methods can provide more nuanced and robust evidence on causal effects across the life course

Thank you!

Working paper and replication materials will be 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	

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

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
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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

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

	.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
64	x	x	x	x	x	x
65	x	x	x	x	x	x