Three Essays on Housing and Social Stratification

By
Qian He

A dissertation submitted in partial fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Sociology)

at the

UNIVERSITY OF WISCONSIN-MADISON

2019

Date of final oral examination: August 7th, 2019

With the following members of the Final Oral Committee:

Theodore P. Gerber, Professor, Sociology (Committee Chair)

Christine Schwartz, Professor, Sociology

Jenna Nobles, Professor, Sociology

Eric Grodsky, Professor, Sociology

Paul Dower, Assistant Professor, Agricultural and Applied Economics

Table of Contents

Acknowledgements

I am deeply indebted to my dissertation committee members for their time and help at various stages of my graduate career, not limited to this dissertation project: Ted Gerber, Christine Schwartz, Jenna Nobles, Eric Grodsky, and Paul Dower.

I remember that I asked Ted to be my advisor after two months into graduate school. Today, I still think he is one of the few scholars in this department with whom I can talk about almost every topic that I am interested in. He has been a very open-minded advisor and tolerated the unpredictable evolvement of my research interests. He has read several drafts of my chapters and given me invaluable comments since the very beginning of my dissertation. I especially thank him for not giving up on me and making me an intellectually and mentally stronger person over the six years.

Christine Schwartz has been a great source of knowledge. Her seminar on marriage & family is one of my favorite classes in graduate school. For someone who does not like in-classroom learning that much, I found her discussions with us super engaging and inspiring. I have benefited from many spontaneous conversations with her by knocking at her open door. I respect her scholarship and dedications to students.

Jenna Nobles is a brilliant thinker. She has always been quick to detect any weak spots in your arguments, and you know that is the constructive criticism you will need no matter how challenging it sounds at first. I also thank her for being a responsible administrator of CDE who truly cares about students' wellbeing and professional development.

Eric Grodsky was my RA supervisor for one and a half years. He taught me lots of hand-on research skills, generously shared many graduate-school tips with me (as well as with other graduate students) and supported me to participate in group meetings and academic conference. I am always grateful for his mentoring at some of the lowest moments in my graduate career.

I thank Paul Dower for agreeing to join my committee at a later stage of this project. I thank other scholars in UW sociology department who are not in this committee but have spent their precious time talking with me, including Myra Ferree, Jim Raymo, Monica Grant, Chaeyoon Lim, Felix Elwert, Marcy Carlson and other professors. Outside UW, I thank Yao Lu for guiding me to empirical sociological research since Day 1 of the master's program at Columbia. Her resourcefulness and positive thinking have enduring influence on me. I thank Yu Xie for inspiring me to start Chinese studies and offering me a great postdoc position.

I appreciate the peer support I have received from my fellow CDE students, including Yiyue Huangfu, Jia Wang, Jingying He, Jinho Kim, Jessica Polos, Ariane Ophir, Catherine Doren, Nathan Seltzer, Mike King and many others. Lunch time, prelim prep, ice cream at the sunset Terrace, and office chats are all good memories from graduate school.

Lastly, I thank my parents for always allowing me to pursue whatever goals I want. My mom has been a great listener in good or bad times and my unlimited source of encouragement. My dad, who enjoys challenging almost every major decision I make, has made me a critical thinker and always had my back. My PhD completion would be impossible without their consistent support.

Abstract

Traditional studies of social stratification have written extensively on the standard educational, occupational and earnings outcomes. Housing outcomes are relatively underexplored but play key roles in reproducing socioeconomic inequalities. This dissertation focuses on the overarching relationship between housing and social stratification, using UK and China as two national contexts for my three empirical chapters.

The first chapter finds that various housing tenure processes individuals experience during young adulthood are persistent predictors of their midlife wealth disparities in UK. The second chapter further explores the earlier origins of life-course housing trajectories (as observed in Chapter 1) as outcomes, which are fundamentally structured by individuals' extended family class backgrounds spanning multiple generations. My third chapter instead focuses on China, a semi-authoritarian country currently undergoing rapid market transitions and urbanization, which offers huge contrasts to typical capitalist contexts like UK. The chapter incorporates powerful government bodies into the broader social stratification system to assess housing as citizens' property rights, a key dimension of economic wellbeing, and a potential source of political grievance.

Chapter 1: Housing Careers into Adulthood and Midlife Wealth Disparities

Abstract

Existing studies have provided ample empirical evidence that homeowners have many wealth advantages over renters. However, most homeownership studies to date generally make binary distinctions, cover limited time spans, and regard homeownership transitions as outcomes *per se*. It remains unclear as to how the processes through which young adults leave parental homes and acquire homeownership differ among individuals, and whether these processes themselves indicate individuals' later-life socioeconomic wellbeing. Drawing upon five decades of longitudinal cohort survey data, this study uses sequence analysis to identify the typical housing tenure trajectories in young adulthood, which differ systematically by parental housing tenure of departure, permanence of rental housing, timing as well as the pace of homeownership acquisition (if at all). This study finds consistent path dependency between earlier housing trajectories and midlife wealth accumulation, for housing and non-housing wealth alike. The findings demonstrate the long reach of youth housing careers on economic wellbeing across the life course.

Key Words: Housing Careers; Residential Transitions into Adulthood; Wealth Inequalities; Life Course

Introduction

Homes constitute a key dimension of individuals' living wellbeing and a major component in ordinary households' asset portfolios (Pfeffer and Killewald 2017; Pfeffer 2018). While many studies find that wealth disparities across racial, ethnic, and socioeconomic groups are largely explained by homeownership gradients along these lines, they focus on the divides between owners and renters or distinguish owners by property values (Krivo and Kaufman 2004; Kuebler and Rugh 2013; Lersch and Dewilde 2018). On the other hand, studies of homeownership as outcomes emphasize the chances of becoming homeowners, differentiating socioeconomically advantaged individuals or groups that are more likely from those who are less likely to make it (Henretta 1984; Henretta 1987; Clark, Deurloo and Dieleman 1994; Kurz 2004; Lersch, Philipp and Luijkx 2015). However, what is often overlooked in most existing studies is that homeowners actually make a highly heterogeneous group that not only differ in their socioeconomic outcomes, but also in terms of when and how they acquire properties with potentially far-reaching implications for the compounding wealth disparities across the life course.

This study refines the binary view of homeownership and reassesses the commonly perceived wealth benefits of homeownership by examining young adults' long-term housing tenure careers. While it is widely believed that homeownership helps accumulate wealth and thus spending more years in homeownership is associated with greater wealth appreciations (Di et al. 2007; Killewald and Bryan 2016), the chances of and durations in homeownership are just two out of many facets of housing equity disparities. Timings and pathways toward homeownership, about which we know much less, may reveal extra nuanced differences among owners. For instance, early and later home buyers may be different in the first place, or the financing process

may expose individuals to various housing choices and disparate structural positions in the housing market. Higher-leverage and lower-leverage ownerships may persistently subject individuals to different investment and consumption constraints. All of them are potentially linked to individuals' long-term housing as well as non-housing wealth outcomes. Therefore, this study firstly asks what the conventional housing tenure trajectories into adulthood are. This serves to identify the diversity of youth housing trajectories toward homeownership, captured by various timings and pathways of homeownership transitions as distinctive dimensions of housing inequalities during young adulthood. As the present analysis conceptualizes home ownership attainment as an unfolding process, it adopts a broader time window than typical homeownership studies to seamlessly cover the earlier phase of home-leaving, which often marks one's housing market entry and precedes first home purchase. In this way, the study bridges the residential transitions to adulthood literature with the homeownership literature to holistically investigate the youth housing inequalities ranging from late adolescence to young adulthood.

This study also provides a life-course perspective on wealth inequalities as they are often cumulative in nature. The second research question asks if some housing trajectories predict more (less) favorable wealth outcomes in midlife than others, in other words, whether earlier housing trajectories are indicative of long-term wealth accumulation. It thus evaluates the long reach of youth housing trajectories for later-life wealth disparities between home renters and home owners, as well as those between owners that have undergone various trajectories toward homeownership, the latter of which can be especially insightful for contexts with people have greater access to homeownership. Rather than directly model changes or growths in quantities of wealth, this study takes an indirect approach to model the patterns of earlier homeownership transitions as predictors of wealth quantities in mid-life, anticipating that various pathways

would correspondingly predict divergence of wealth over time.

To address the questions, the study draws upon five decades of longitudinal cohort survey data from the British National Child Development Study ("NCDS" thereafter) 1958 Cohort. The NCDS 1958 Cohort provides rich information on the entire life history of a cohort born in 1958, who have been followed up for over 50 years via multiple survey waves after birth. This is a cohort who came of age during a unique period of homeownership expansion, which occurred in the UK between 1980s and early 2000s (Department for Communities and Local Government 2015; Forrest 1987). While there have been some life course studies on housing and wealth focusing on the US (Clark and Mulder 2000; Clark, Deurloo and Dieleman 2003; Killewald and Bryan 2016), the UK offers an alternative peer context to examine housing wealth inequalities in young adulthood and their long-term implications for later-life wealth. The British households had a relatively high concentration of wealth in housing equity, for the specific time period covered by this study (Banks, Blundell and Smith 2003) and relative to the US in general (Pfeffer and Waitkus 2019).

This analysis first uses sequence analysis to chart the cohort's conventional housing tenure trajectories into adulthood for as long as 18 years between ages 18 and 33. The mid-life wealth outcomes considered in this study encompass both housing and non-housing wealth outcomes measured in the cohort members' fifties. The second step of the analysis involves predicting the different wealth outcomes with housing careers as key explanatory variables of interest, while taking into account extended family background, socioeconomic attainments, family formation, and a variety of other control variables.

Home-leaving and Transitions to Adulthood

Home-leaving marks individuals' first step towards residential independence and is primarily situated in the contexts of transitions to adulthood (Buchmann and Kriesi 2011; Furstenberg 2010; Billari, Philipov and Baizán 2001; Goldscheider and Goldscheider 1999; Goldscheider, Thornton and Young-DeMarco 1993). Existing studies on young adults' home-leaving processes have examined the routes and motives of leaving parental homes, whereby these routes and motives are defined by residence-sharing patterns or examined in relation to other transitions to adulthood. This type of research often distinguishes leaving home to live independently from leaving to live with nonfamily members, to live with a partner, to enter a marriage, or to complete education (Goldscheider and DaVanzo 1989; Gierveld, Liefbroer and Beekink 1991; Avery et al. 1992; Goldscheider, Thornton and Young-DeMarco 1993).

Previous studies have also studied the various timings of home-leaving and the predictors. They find substantial variations in timing of home departures across national contexts (Furstenberg 2010; Schwanitz, Mulder and Toulemon 2017), by cultural norms (Billari and Liefbroer 2007; Zorlu and Mulder 2011), as well as by parental resources (Gierveld, Liefbroer and Beekink 1991; Whittington and Peters 1996). In particular, empirical evidence regarding parental resources is mixed (Schwanitz, Mulder and Toulemon 2017). Some studies suggest that young adults of better socioeconomic origins leave homes earlier as more resourceful parents place greater emphasis on children's independence and human capital formation and may extend timely parental assistance (Gierveld, Liefbroer and Beekink 1991). On the contrary, other research indicates more privileged children may be more reluctant to step out of the comfort zones provided by parents so that their home-leaving is delayed (Whittington and Peters 1996; Mulder and Clark 2002).

Overall, this stream of research is mainly interested in young adults' changing living arrangements, with a small number of studies attending to geographic mobility or housing quality (Zorlu and Van Gaalen 2016; Leopold, Geissler and Pink 2012; Sharkey 2012; Garasky 2002). Alternatively, nest-leaving processes can also be understood as the beginning of household wealth accumulation prior to first home purchase that provide various points of departure for the ensuing housing careers or subsequent housing tenure choices.

Literature search along this line has yielded only one existing study that shares this theoretical perspective. Using data from the Panel Study of Income Dynamics (PSID), Clark and Mulder (2000) examined whether nest-leavers become renters or owners upon home-leaving. They find that young adults' own resources, relative to the parental resources, are stronger predictors of the years taken to become first-time homeowners as well as the types of owned homes (i.e. a residence versus a mobile home). Their study connects the nest-leaving literature with studies of homeownership, revealing disparities in time to first-time homeownership transitions. As with other abovementioned research, however, it sees home-leaving as an outcome by itself. The current study is instead interested in knowing whether home-leaving, as part of young-adulthood housing careers, is indicative of other socioeconomic inequalities in later life, and whether this hypothesized relationship persists beyond one's 30s.

Transition-based and Trajectory-based Perspectives of Homeownership

Having experienced nest-leaving, the majority of adults will proceed to purchase their own homes sooner or later. An owned home provides a stable residence for families, and is often a symbol of socioeconomic status, consumption potentials, and one's position on the socioeconomic ladder (Spilerman 2000). Housing equity actually makes a major component of

household wealth for ordinary families, which is true for the US, the UK, and many other countries (Bastagli and Hills 2012; Karagiannaki 2017; Wolff 2006). Home values thus can be seen as a crude proxy for individuals' or households' overall wealth, as data on non-housing assets are often limited (Pfeffer 2018).

Scholars have broadly examined the individual- or family-level predictors for transitioning to first-time homeownership. Studies consistently find that more privileged family origins and household formation strongly predict individuals' transitions to first-time homeownership (Henretta 1984; Henretta 1987; Clark, Deurloo and Dieleman 1994; Kurz 2004; Lersch, Philipp and Luijkx 2015). Rather than measure first-time homeownership as one-time transitions, a small number of studies have taken a different approach to identify the long-term housing tenure careers as preparatory steps towards the transitions.

To the best of my knowledge, Clark, Deurloo and Dieleman (2003)'s study on the US is one of the few studies to analyze housing tenure trajectories. Using 26 waves of longitudinal data from Panel Study of Income Dynamics (PSID) between 1968 and 1993, they analyzed the sequences of household housing careers by simultaneously distinguishing renter-occupied households from owner-occupied ones, and between low-priced and high-priced housing units (an indicator of housing quality). They find 26 typical sequencing patterns for household housing careers, most of which are characterized by one- or two-stage structures signaling stability, and upward mobilities in both tenure and quality over time. Their analyses disaggregated by income groups provide suggestive evidence that richer households are more likely to end up with homeownership and higher-priced housing, and those who experienced greater income growths over the years tend to approach the higher ends faster than those who did not.

Another study by Pollock (2007) investigated housing careers in the UK with 10 years' data from the British Household Panel Study (BHPS 1991-2000). Unlike Clark et al. (2003), however, Pollock (2007) operationalized the housing sequences with more housing tenure types (such as outright owners, mortgage owners and various types of renters) and applied multichannel sequence analysis to jointly consider the co-occurring patterns in housing tenure, employment and marital status. The study yielded 15 types of clustering patterns, with different housing tenure types emerging as the distinctive characteristics for several clusters.

Both studies contribute to looking beyond the dichotomous view of homeownership, shedding light on how individuals and their families acquire housing equity as well as the relative prevalence among housing careers. Nonetheless, there are limitations. Their use of panel datasets might underestimate the variety of housing tenure experiences for younger households, as the stable trajectories are more likely to be driven by older households that had already settled down. On the other hand, lumping younger and older households might otherwise overestimate the diversity by conflating cohort-specific patterns. Thus, longitudinal cohort datasets focusing on the less settled life stages may illustrate a clearer picture for youth housing experiences.

Housing Tenure Trajectories and Unfolding Wealth Disparities

Existing works on housing and wealth inequalities highlight the cumulative wealth disparities across the life course. The conventional perspective is to look at the relationship between age and *quantity* of wealth, such as measured by net worth or savings. Studies find that wealth tends to increase as individuals age and peak around/after retirement age before slow declines (Keister and Moller 2000; Killewald et al. 2017). Some other studies look into the *quality* of housing wealth in particular, exemplified by crowding and other environmental

hazards (Zavisca and Gerber 2016). This study instead emphasizes that the *patterns* of wealth accumulation offers another angle to observe how wealth disparities develop over the life course. While homeowners tend to have more favorable asset holdings in the long run compared to renters, I argue that when and how homeownership is achieved could make additional difference in accumulated wealth.

Home-leaving Patterns

Wealth disparities may emerge upon one's home leaving and housing market entry. Individuals' families of origin tend to vary in terms of socioeconomic resources, so that nest-leaving adolescents or young adults could depart from owner-occupied or renter-occupied parental homes. Those growing up in owned and rented homes may hold various levels of material aspirations for their independent living (Lersch and Luijkx 2015) and may also receive different amounts of parental assistance, for instance, as down payment or as lines of credit when establishing their own households (Albertini and Radl 2012; Spilerman and Wolff 2012).

Timing of Homeownership Transition

During the process of establishing their own households, wealth accumulation could be associated with the *timing* of first home purchase in countervailing ways. Home purchases are no small decisions for most families. There are two possible explanations for the relationship between timing of first home purchase and wealth. One explanation focuses on the preexisting

socioeconomic disparities among individuals who transit to homeownership at different timings. By contrast, the other explanation assumes the timing variations might cause wealth gaps later.

The timing selectivity hypothesis posits that earlier first-time home owners might end up with less wealth than those who delayed home purchase because the timing of first-time home purchase may be positively associated with timings of labor market entry and family formation but negatively associated with educational attainment. It follows that earlier first-time home buyers tend to be of relatively lower earnings potentials than later first-time home buyers. That would lead to the expectation that earlier home buyers may have later-life wealth disadvantages compared to later home buyers.

Hypothesis 1a (timing and selection): earlier first-time homeowners are associated with midlife wealth disadvantages relative to later first-time homeowners.

The wealth-generating hypothesis instead suggests that the process of financing an owned residence is key to enhancing savings by helping individuals and their families avoid unnecessary spending and motivating hard work (Boehm and Schlottmann 2008). Existing studies suggest that first-time homeowners often make the home purchases with mortgages (Mulder and Wagner 2001). Ordinary first-time homeowners therefore need to make regular mortgage payments for years, if not decades. In that case, an earlier home purchase may help bolster more consistent savings behaviors and thus wiser spending habits than does a later home purchase, so that more years spent in homeownership are translated into greater wealth (Di et al. 2007; Killewald and Bryan 2016).

Hypothesis 1b (timing and wealth-formation): earlier first-time homeowners are associated with midlife wealth advantages relative to later first-time homeowners.

Pace of Homeownership Transition

The outcomes of wealth accumulation might as well vary by the *paces* or specific *forms* of homeownership acquisition. Similar to the two alternative scenarios for timing, fast-track and slow-track home purchases, as exemplified by outright ownership (i.e. home purchases without mortgages) and mortgage ownership, would be point to their respective later wealth outcomes in opposite directions.

The pace selectivity hypothesis reasons that compared to mortgage owners, outright owners tend to have greater wealth to begin with (even before first home purchase), either stemming from their own hard work or due to family endowments bestowed upon them. The outright owners' initial wealth advantage may further compound across the life course (Diprete and Eirich 2006) so that outright ownership could be associated with increasingly greater later-life wealth compared to mortgage ownership.

Hypothesis 2a (pace and selection): outright homeowners enjoy midlife wealth advantages over mortgage homeowners.

Skeptics could argue that there might not be substantial later-life wealth differences between outright and mortgage owners in the long run. For one thing, despite outright owners' initial wealth advantage, over the years they may not save as much as the mortgagers do, partly because outright owners are free to fulfil consumption desires without palpable home-financing pressure. For another, the mortgagers may later take timely advantage of property appreciations to refinance larger houses, gradually catching up with the outright owners. In both cases, the presumed wealth advantage of first-time outright owners may just be transitory or small.

Hypothesis 2b (pace and wealth-formation): there is little midlife wealth difference between outright homeowners and mortgage homeowners.

In sum, despite the admitted difficulty of disentangling selection from causation, the contrasting hypotheses laid out above share the common understanding that there should be at least some kind of path dependency between timing or pace of housing careers and later wealth outcomes. The following sections test the hypothesized relationships to see which scenarios receive more empirical support.

Data, Measurements and Methods

Data

This study draws on longitudinal survey data spanning 55 years from the NCDS 1958 Cohort, whose members have recently become 60 years old as of 2018. The UK context makes an ideal case for investigating housing wealth inequalities in young adulthood because the British young households had a comparably high concentration of wealth in housing equity both for the time period covered by this study (Banks, Blundell and Smith 2003) and in terms of general comparisons to the US peers. This particular birth cohort came of age in the midst of the homeownership expansion [1] until their mid-40s, notably due to the deregulation of mortgage markets and government policies that encouraged homeownership (Department for Communities and Local Government 2015; Forrest 1987). The 1958 baseline survey, which took place around

---

[1] The British homeownership rate increased for two decades since the early 1980s, reaching a peak of 71% in 2003 before it declined.

cohort members' birth, started out with parent surveys only. The follow-up waves then included cohort-member surveys in data collection.

The NCDS 1958 Cohort is well suited for this study for several reasons. Linking data from various life stages allows assessment of the associations between young adulthood inequalities and mid-life wealth disparities while considering confounding variables from earlier childhood. A unique strength of this dataset is its retrospective housing history module at the 1991 wave. This design makes it possible to chart cohort members' 18-year housing history between 16 and 33 years old, casting a sufficiently wide age range to study housing transitions into adulthood and first-time homeownership. Analyzing a single-year birth cohort also has the advantages of improving comparability among housing careers and taking out the influence of temporal variations in macroeconomic conditions such as fluctuations in housing price.

This analysis incorporates the baseline survey (at age 0) and multiple follow-up surveys. The analytic sample consists of cohort members who were present in the sample during the baseline survey, and at the follow-ups for ages 7, 11, 33, 50, and 55. The latter two waves collected different wealth outcomes of interest, covering both housing and non-housing assets at midlife. The main analytic sample focusing on the number of rooms at home and total amount of savings and investments at age 50 has a size of the 8161, and a second analytic sample focusing on estimated value of property outcome at age 55 has a size of 7688.

Measurements

The housing careers serve as both the outcomes of the sequence analysis and the key explanatory variables for predicting later-life wealth disparities. Housing tenure states are the

building blocks of the housing careers. Cohort members' housing careers into young adulthood are coded based on housing tenure types for each age between 16 and 33 years old. Because the housing-history section of NCDS asked when the respondents moved in and out of each residence within the age range of interest, I transform the address-specific information into age-specific housing tenure states for each individual throughout the 18 years[2]. I define housing tenure states into seven categories, including (1) owned parental home, (2) rental parental home, (3) rental housing [3], (4) purchased with mortgages (i.e. buying); (5) outright ownership, (6) others[4], and finally, (7) a category for missing information. The first two housing tenure categories reflect wealth disparities in the nuclear families of origin around home-leaving, whereas the remaining five categories mainly differentiate housing tenures types post home-leaving as well as the different routes towards homeownership. I follow this scheme when coding individuals' entire 18-year tenure trajectories, whose characteristics are extracted, analyzed, and visually compared using sequence analysis (Gabadinho et al. 2011), with the details to be discussed later.

The outcomes of interest, midlife wealth, are gauged by three transformed measures of housing and non-housing assets at 50 and 55 years old respectively. At age 50, the 2008 follow-up asked the cohort members the total number of rooms at their current residence. The respondents were also asked to estimate the total value of savings and investments in the same wave. Five years later, the 2013 follow-up then asked them to assess the market value of their

---

[2] For years during which an individual did not experience a move, I assign housing tenure for the address where he/she lived throughout the year. For years during which an individual experienced residential move, I assign housing tenure for the address at the end of year. The coding for age-specific tenure states could be more accurate had the months for moving in and out contained fewer missing values.
[3] Including both social and private rental housing.
[4] "Others" refer to circumstances not applicable to the first five categories; examples of this category include living with other relatives, stay at friends', and living in school dorms, just to name a few.

property if sold then. Examining the three wealth measures together provides a fuller picture for

quantities and values of housing equity, as well as values of non-housing assets. For the two

monetary wealth measures, individuals without savings or investments were coded "0", and non-

owners of property were similarly coded "0". Furthermore, as scholars have noted that extreme

values in wealth measures tend to create influential biases in results (Killewald et al. 2017), I

apply inverse hyperbolic sine (IHS) transformation to reduce the skewness in the raw measures

of savings/investments and property values[5] (Friedline et al. 2015; Pence 2006).

The analysis considers cohort members' family background, the set of variables that

might jointly predict housing tenure sequences and later wealth disparities. The father's

occupation is a key indicator of socioeconomic status for the family of origin. It measures the

highest occupational class of the fathers during cohort members' early childhood (between 0 and

7 years old), including professional (reference group), managerial-technical, skilled, partly

skilled, unskilled, and a separate category for those without a father figure or whose father was

persistently unemployed during early childhood. Housing tenure of the parental homes in

childhood (by age 11) differentiates those growing up in owner-occupied parental homes from

those growing up in renter-occupied parental homes. In addition, the models include the highest

amount of inheritance they ever received by age 33 (denominated in 1000 British pounds) to net

out any substantial intergenerational wealth transfers from earlier generations.

The analysis additionally considers cohort members' socioeconomic status, which affects

their overall life chances, and a variety of sociodemographic characteristics related to household

formation. Their latest occupational class at 50 years old is used as a proxy for their highest

[5] The IHS transformation in this analysis is $\sinh^{-1}(x) = \ln \left(x + \sqrt{x^2 + 1} \right)$, which is close to $\ln(2x)$ where x is at least six. Sensitivity analysis using log-transformation yielded consistent results.

socioeconomic status. It is categorized by professional (reference group), managerial-technical,

skilled nonmanual, skilled manual[6], partly skilled, unskilled, and the unemployed. Their highest

educational attainment is coded into four groups, ranging from less than high school (reference

group), high school graduation, vocational school or some college, to bachelor's degree or

above. Their latest housing tenure, measured at age 50, differentiates renters from mortgage

owners and outright owners. Their latest marital status distinguishes the never married (reference

group) from the currently married, divorced/separated, and the widowed. The variable for

respondents' sex is a dummy variable indicating "male" (reference category) or not. The total

number of biological children they ever have is also taken into account due to concerns about

childrearing-related consumptions and investments (Kornrich and Furstenberg 2013).

Methods

     I use sequence analysis followed by cluster analysis to develop typologies of housing

careers that share similar housing pathways. After applying the seven housing tenure states to

characterize the diverse housing experiences throughout the 18-year period, the next step

involves defining the substitution costs between any pairs of tenure states (i.e. how different they

are). Rather than arbitrarily assign distances between pairs of tenure states, the 7 by 7

substitution-cost matrix is derived from the NCDS 1958 data, whereby two tenure states are

conceptualized to be more similar if they share a common future [7] (Studer and Ritschard 2016).

---

[6] The differentiation between skilled nonmanual and skilled manual occupations for cohort members'
occupational class is more detailed than the fathers' occupational class, as the latter is coded based on more
rough descriptions.
[7] Sensitivity analyses using other data-driven substitution costs (for instance, transition-rate-based costs that
assign a smaller distance if the transitional rate from one state to another is higher, vice versa) yield highly
consistent clustering patterns.

Based on the substitution-cost matrix between pairs of housing tenure states, the Optimal Matching algorithm (Abbott and Tsay 2000) proceeds to compute the least number of transformational operations needed to convert one sequence into another, through substitution, insertion or deletion. Consistent with the conceptual framework, I use a variant of OM algorithm that is highly sensitive to the timing differences and thus focuses on position-wise mismatches[8].This procedure yields a distance matrix for all pairwise comparisons among the equal-length (i.e. 18 years) housing tenure sequences. After that, the agglomerative hierarchical clustering algorithm is applied to reveal the clustering structures amongst all sequences. Additional tests of clustering quality demonstrate the 8-cluster solution optimally maximizes within-cluster homogeneity and minimizes across-cluster heterogeneity (Studer and Ritschard 2016).

The identified clusters are then used as key predictors of wealth disparities in midlife using linear regressions. The cluster indicators enter the models as dummy variables with the most commonly found cluster as the reference category. Other covariates, including family background indicators, cohort members' own socioeconomic attainments, and demographic characteristics, are additionally controlled for in a stepwise fashion.

Multiple imputation with chained equations is used to fix nonresponse missingness in the explanatory variables. The percentage missing for savings and investments is 8.5% and that for property values is 6.0% in their respective analytic samples. Other variables have less than 5% missing values. Sensitivity analysis comparing results with and without imputation suggests that despite small changes in coefficient size, the results regarding key explanatory variables hold robust.

---

[8] I experimented with alternative algorithms for generating sequence distances, which yielded highly stable clustering typologies.

Results

Identifying Conventional Housing Trajectories

[Figure 1 about here]

Figure 1 plots the tenure state distributions between age 16 and age 33 for the eight

clusters identified from sequence analysis. It shows that steady owners, self-made owners, and

steady renters are the most prevalent trajectories, which altogether account for 72% of the

respondents. Steady owners are the most prevalent tenure trajectory (32%), characterized by an

owner-occupied parental home, followed by a brief rental period, and subsequently mortgage

ownership. It is called "steady owners" as both parents and respondents are homeowners, with a

very transient rental period in between. Self-made owners account for 22% of the sample,

characterized by leaving from a rental parental home early and soon transitioning to

homeownership through mortgage. These "self-made owners", originated from renter families,

experience upward mobility in homeownership. Notwithstanding growing up in different

parental housing tenures, steady owners and self-made owners similarly become mortgagers that

lead to homeownership, with self-made owners transitioning to homeownership at a noticeably

earlier timing. On the contrary, the trajectory of "steady renters" indicates that 18% of

respondents actually take a route of stable rental housing throughout the eighteen years, with a

very small percentage of them make it to homeownership by the end of the observation window.

Two clusters of late home-leavers emerge. Compared to other clusters, late home-leavers

with homeowner parents (9%) and those with renter parents (9%) have delayered home-leaving,

with comparably smaller proportions later moving out to become mortgagers in the late 20s and early 30s. Both trajectories exemplify later transitions to homeownership in terms of timing, with main difference in the tenure types of parental homes they respectively depart from. The rich late-leavers enjoy an extended period of staying in their parent-owned homes while poor late-leavers co-reside with their renter parents.

Two clusters are less substantively clear. The "unspecified" cluster (3%) represents a housing career dominated by "other" housing tenure states, a residual category that aggregate living in the school dormitory, staying with other relatives/friends and some other unspecified tenure arrangements. The "missing" cluster, on the other hand, is characterized by missingness and comprises about 5% of the sample.

Finally, the trajectory of outright owners captures the least common tenure pathway during young adulthood, which accounts for less than 3% of the sample. Individuals typical of this cluster acquire first-time homeownership on a fast track, that is, they become homeowners without years of mortgage payments that most young homeowners would actually experience. This trajectory uniquely undergoes a much faster homeownership transition than the other seven trajectories and seems to be a privileged path that very few young adults could afford.

Summary Statistics across Housing Trajectories

Descriptive statistics for the Covariates

To facilitate an overall view of cohort characteristics, Table 1 displays descriptive statistics for explanatory variables by housing trajectories using the main analytic sample.

[Table 1 about here]

Trajectory-wise comparisons indicate large disparities in family backgrounds exist among cohort members. Out of the eight housing trajectories, fathers of outright owners, steady owners, and rich late-leavers respectively have the highest, second highest, and third highest concentrations in professional, managerial and technical occupations, the more prestigious types. By contrast, fathers of poor late-leavers and steady renters are least likely to be occupational elites and more likely to be found at the lower end of the occupational ladder, as semi-skilled or unskilled workers. Members of other trajectories tend to fall somewhat in between the two extremes. For instance, fathers of self-made owners are most likely to be skilled or partly skilled workers that typify working-class family backgrounds.

Childhood housing tenure largely mirror fathers' occupational class inequalities. Almost all rich late-leavers and steady owners grow up in parent-owned homes, so are the majority of outright owners (79%). The opposite is true for poor late-leavers, who all grow up in renter-occupied homes as children. Parental homeownership is likewise uncommon among self-made owners (12%) and steady renters (16%). But the cluster featuring missing housing tenure information and the one with unspecified other tenure types similarly have mid-range parental homeownership rates hovering around 40~50%.

The average values of largest inheritance received (as measured by age 33) across trajectories offer a slightly different but coherent picture. Outright owners and rich late-leavers tend to receive the largest amounts of inheritance on average, but their larger standard deviations also reveal way more within-group variations. They pose stark contrasts to the average

individuals in the unspecified cluster and the steady renters, who tend to receive the least values of gifts from families of origin.

Cohort members' own socioeconomic statuses further demonstrate the most salient educational and occupational advantages enjoyed by steady owners, as opposed to the steady renters' highest chances of being the least educated, unemployed or working as unskilled workers. As for midlife housing tenures measured by age 50, unsurprisingly lower fractions of the young steady owners, self-made owners, and outright owners have remained renters, whereas the earlier disadvantages seen among steady renters have similarly persisted. Note that although outright ownership becomes more accessible in the 50s than in the early 30s, it is still more common among the younger outright owners and the younger steady owners, suggesting their enduring advantages over other types of owners.

The demographic characteristics also very systematically across trajectories. In terms of sex differences, individuals who have delayed nest-leaving, whether from richer or poor family backgrounds, are generally more likely to be men, whereas steady-renters and self-made owners are more likely to be women. Marital status and childbearing profiles consistently suggest the two groups of late home-leavers are correspondingly late in marriage and fertility as well, when compared to self-made owners and steady owners. The steady renters, on the other hand, tend to have comparably high fertility but lower chances of maintaining intact marriage.

At a minimum, the summary of explanatory variables suggests large disparities exist in family backgrounds, demographic profiles, and individuals' own socioeconomic attainments. But to what extent do the disparities in explanatory variables mirror individuals' later wealth disparities? Figure 2, 3, and 4 visualize the disparities in our dependent variables of interest, the cohort members' wealth outcomes in their 50s.

Descriptive statistics for the Outcomes

[Figure 2, 3 and 4 about here]

Figure 2 looks at the quantity of housing wealth, the average number of rooms in respondents' residence at 50 years old (N=8161). Outright owners outperform individuals of all other trajectories in average number of rooms, followed by steady-owners, self-made owners and rich late-leavers. When the 95% confidence intervals are considered, however, the gap between outright owners and steady owners substantially narrows, although the relative advantages of these two groups over the other six groups remain highly unequivocal.

Figure 3 focuses on trajectory-wise differences in average savings and investments by age 50. The advantage of outright owners on average holds still, but the extremely wide 95% confidence interval makes it challenging to make any decisive judgments by inspection alone.

Lastly, Figure 4 presents the average property values by trajectories using the age-55 analytic sample (N=7688). It resembles the overall patterns found in Figure 2, suggesting a high degree of consistency between inter-cluster disparities in the quantities and market values of housing equity.

Taken together, mid-life wealth disparities substantially mirror inequalities in explanatory variables discussed earlier. As far as visual inspection is concerned, patterns in wealth outcomes and explanatory variables offer suggestive evidence for the relative advantages enjoyed by outright owners and steady owners, in contrast to the stark disadvantages facing steady renters. However, little can be said about the trajectories that fall between the two extremes and whether

the outright owners are indeed more advantageous compared to the steady owners (typical

mortgagers). To provide more insights into how well the in-between trajectories fare, as well as

to test the hypothesized path dependency between earlier housing trajectories and mid-life

wellbeing, the next section discusses results from linear regression models predicting housing

and non-housing asset holdings in their 50s.

Housing Tenure Trajectories and Midlife Wealth

Table 2 shows results from regression models predicting total number of rooms and the

IHS-transformed savings and investments respectively, when cohort members were 50 years old.

For both outcomes, the baseline models only control for the key explanatory variables of interest,

the seven housing-career dummies, with steady owners (the most prevalent pathway) as the

reference category. The second set of models jointly control for indicators of family

socioeconomic resources. The full models (Model 3) additionally consider individuals' own

socioeconomic status and demographic characteristics.

[Table 2 about here]

To start with, Model 1 for total number of rooms indicates significant room

disadvantages that most other trajectories relative to steady owners. The two groups showing

greatest disadvantages are steady renters and poor late-leavers, who on average live in residences

that are 1.5 and 1.2 rooms smaller respectively. The relative disadvantages are moderate for self-

made owners (0.6 rooms) and rich late-leavers (0.9 rooms). Meanwhile, the missing group and

the unspecified group exhibit roughly 1-room disadvantage. The outright owners stand out again as the only group having a slightly significant ($p < 0.10$) advantage over steady owners by a pretty narrow margin (0.25 room).

The abovementioned gaps generally decline when Model 2 factors family socioeconomic conditions into the consideration. The previously moderate difference between self-made owners and steady owners further become statistically insignificant. Against this trend, however, the marginal difference between outright owners and steady owners previously seen in Model 1 has become more clear-cut ($p < 0.05$).

Model 3 then nets out individuals' own socioeconomic status and demographic attributes. This step further reduces the gaps approximately by half, except a widening gap between outright owners and steady owners that has gained extra statistical strength ($p < 0.001$).

The results regarding savings and investments resonate with the observed patterns regarding room numbers. As with total number of rooms, most other groups (except outright owners) display initial savings-investments disadvantages relative to steady owners. For instance, the raw difference in savings and investments between steady renters and steady owners is about two thirds of a standard deviation, whereas the original savings-investments gap is about one eighth of a standard deviation between self-made owners and steady owners. Family background variables explain away part of the inter-group gaps, especially for the differential between self-made owners and steady owners. Individuals' own socioeconomic attainments and demographic characteristics additionally explain 33~74% of the remaining gaps, to the point where the difference between unspecified and steady owners becomes ambiguous.

One noticeable departure from the findings on room numbers, however, is that the difference in savings-investments between outright owners and steady owners are minimal

throughout the models. Consistent with Hypothesis 2a, outright owners enjoy relative advantages in room numbers (as information on area space is unavailable) compared to steady owners, the typical ownership pathway via mortgages.

The lack of difference in non-housing wealth between outright and mortgage owners on the other hand lean towards Hypothesis 2b (minimal difference between these two groups). It is probably because the outright owners' initial housing wealth advantages are not essentially translated into savings or investments. Alternatively, it might be more driven by mortgage owners' wiser savings and investment behaviors, which presumably are reinforced by recurrent mortgage payments. Either way tends to blur the difference in non-housing wealth between debt-free homeowners and mortgagers.

Of course, readers might cast doubts over an "arbitrary" housing trajectory chosen to be the reference group for the findings presented above. It is understandable as comparisons could lose their interpretability when two trajectories under comparison differ in multiple aspects, be it parental home environment, timing of home leaving, or whether becoming homeowners at all. To demonstrate robustness of the findings, Panel A-C draw upon pairs of trajectories that mainly differ in one aspect to enhance comparability.

Panel A contrasts self-made owners with poor late-leavers, who mostly differ in timing of home-leaving. The results for number of rooms and those for financial wealth consistently indicate the persistent wealth disadvantages associated with poor late-leavers, congruent with existing findings that lack of economic independence is a key determinant of young adults' protracted coresidence with parents (Furstenberg, Rumbaut and Settersten 2005; Sironi and Furstenberg 2012). But it remains unclear as to whether undergoing the processes itself also cumulatively exacerbates their initial disadvantages.

Panel B singles out the influence of family background by comparing two types of late home-leavers whose housing trajectories primarily differ by earlier home environments. The baseline models validate parental homeownership's positive effects of on one's midlife wealth. The fact that the pair's dissimilarity wanes after further controlling for family backgrounds and individuals' own sociodemographic characteristics suggests that parental homeownership may facilitate children's socioeconomic attainments and family formation (Charles, Hurst and Killewald 2013; Pfeffer 2018).

Panel C takes on steady renters and poor late-leavers to test the differences mainly due to homeownership attainment. The homeowners' housing wealth advantage turns out highly resilient and goes beyond the explanatory power of family background and sociodemographic outcomes, whereas the homeowners' financial wealth advantage is largely explained by those factors.

In brief, Panel A to C highlights the wealth disadvantages associated with late home-leaving and parental tenancy (versus parental homeownership), as well as wealth premiums associated with cohort members' own homeownership (over tenancy).

[Table 3 about here]

Using respondents' estimated property values at age 55 as a proxy, Table 3 then examines the market *worth* of housing, in addition to the *quantity* of housing measured by number of rooms. The main findings (including Panel D-F) highly resemble Table 2 findings regarding savings and investments.

As with total savings and investments, the largest two contrasts are still observed between steady owners and steady renters, and between steady owners and the missing category. Compared to the most popular pathway undertaken by one third of cohort members (steady owners), the small initial disadvantage in housing values for self-made owners gradually vanish as more variables enter the models. For outright owners, there is no distinguishable difference to start with, even the baseline model [9].

Unlike savings or investments, however, those whose housing trajectories are dominated by unspecified accommodations also show a more sizeable disadvantage in property-value (than in savings and investments) relative to steady owners. That is plausible because staying at other relative's, friend's or dormitories do not encourage housing wealth accumulation, although such residential choices do not necessarily interfere with individuals' savings or investments. Another noticeable difference from savings and investments lies in the gap between poor late-leavers and steady owners. While poor late-leavers' disadvantage in savings and investments persist beyond the covariates, their disadvantage in property values are almost entirely explained with these variables.

All things considered, results from linear regression models indicates that even when controlling for other factors that affect long-term well-being, trajectories still matter. The consistent findings emerging from Table 2 and Table 3 reaffirm that youth housing tenure trajectories persistently predict midlife wealth disparities.

It is surprising that the two trajectories with most outstanding wealth advantages, the outright owners and steady owners, are neither the earliest home purchasers (i.e. the self-made

---

[9] Sensitivity analysis indicates that outright owners tend to have greater property values than steady owners, if the untransformed property values are used instead. The different results suggest the property-value differentials between outright owners and steady owners could be primarily driven by the outliers.

owners) nor the latest home purchasers (i.e. the rich and poor late-leavers), but in-between the extreme timings. The empirical evidence turns out much more complicated than hypothesized, with little support for hypotheses 1a or 1b. To put it another way, it shows that at least for this particular cohort, the homeowners who made the earliest transitions (or at youngest ages) are not necessarily the wealthiest at midlife, but those who become the homeowners late are apparently less wealthy than peers who made the transitions early and those who made it at conventional times.

Meanwhile, the presumed wealth advantage of outright owners over steady owners (Hypothesis 2a) are only applicable to quantities of housing wealth as measured by number of rooms, whereas the differences in property values or savings-investments are far from clear-cut, as Hypothesis 2b predicted. Therefore, the comparisons between outright owners and typical mortgagers depends on whether housing or non-housing assets are of interest and how the assets are measured (quantities versus monetary values).

Discussion

Bridging recent literatures on housing disparities, transitions to adulthood, and wealth disparities, this study investigates young adults' diverse housing trajectories toward homeownership and their enduring associations with midlife wealth outcomes. With data from the NCDS 1958 Cohort, sequence analysis identifies the typical housing experiences between ages 16 and 33 for this birth cohort. The results indicate more privileged pathways are generally characterized by taking off from owner-occupied (as opposed to renter-occupied) parental

homes, followed by temporary rental housing, before making a timely homeownership transition via mortgage ownership or outright ownership. Of the eight conventional housing careers identified from this study, outright owners (less than 3% of the sample) and steady owners (the more popular trajectory, account for about 1/3 of the sample) exemplify the more privileged trajectories. Relative to other groups, these two tend to accumulate greater amounts of housing and non-housing wealth in their 50s. By contrast, steady renters unambiguously represent the least privileged pathway. Further analysis looking into the in-between trajectories reveals that self-made owners and rich late home-leavers exhibit relatively small wealth disadvantages compared to steady owners, whereas poor late home-leavers, the missing category, and the unspecified/other category exhibit greater wealth disadvantages.

The findings support that individuals' young-adulthood housing careers strongly predict midlife wealth disparities. Such life-course path dependency is pretty consistent across various types of wealth outcomes, whether measured by total number of rooms, values of owned property, or total values of savings and investments. Nevertheless, the relationships between specific timings and paces of homeownership transitions and wealth accumulation seem more complicated than previously anticipated. Results based on this particular cohort indicate that neither the earliest nor the latest homeownership transitions are associated with most favorable wealth outcomes, and that the hypothesized wealth advantage of outright owners over mortgagers is empirically supported by number of rooms only.

This study makes several contributions. Substantively, the findings demonstrate the unfolding processes of housing-wealth disparities matter. While the conventional approach to study housing inequalities mainly focuses on the binary distinctions between owners and renters, this study displays that people take a variety of pathways to arrive at the same end point,

homeownership, if at all. What is more, the findings highlight that *how* people acquire homeownership actually have far-reaching implications on asset build-up, which is often overlooked by existing studies. Though life course wealth studies on the US or other contexts abound, many of which have fully acknowledged the importance of housing on overall wealth disparities (Pfeffer and Killewald 2017; Pfeffer 2018), to the best of my knowledge, one of our unique contributions lies in evaluating the long-term relationships between specific characteristics of home-financing processes and the wealth disparities.

This study also communicates with the existing studies on residential transitions to adulthood. The results regarding timing of home-leaving support the established findings on the relationship between extended intergenerational coresidence and youth economic difficulties. However, contrary to the mixed existing findings on parental background and home-leaving timing, the results for rich and poor late home-leavers in particular, indicate that an unvarying relationship between parental resources and timing of home-leaving seems inadequate to capture full reality, consistent with Clark and Mulder (2000). In a similar vein, the rich late home-leavers and the self-made owners additionally suggest that it is worthwhile to further examine the socioeconomic and demographic contingencies underlying the upward or downward housing mobilities.

Although this study does not claim a causal relationship between earlier housing careers and later socioeconomic wellbeing, it points out a direction for future studies: to more clearly distinguish between whether those associations merely capture a self-selecting mechanism for the winners that thrive from early on, or the diverse home-financing processes by themselves exacerbate inequality reproduction across time. The mixed results regarding timing/pace of homeownership transition and wealth offer suggestive evidence that there might be some levels

of selectivity into different timings/paces of home purchase, and it is also difficult to reject the perceived savings-enhancing benefits related to mortgage financing. The answer might be both, but it is beyond the scope of the current paper to disentangle one mechanism from the other, as well as to evaluate their relative importance.

The uncovered associations between housing careers and wealth disparities also have great potentials to be extended to other social disparities. One avenue is to examine individuals' health outcomes, including their mental and physical health, considering the possible effects of cumulative exposures to certain living environments on the human body. From a policy-perspective, researchers may also want to better understand other possible benefits of targeting youth housing disparities.

Despite the abovementioned contributions, this study has limitations. First of all, the findings are based on a British cohort that are now in their early 60s, so it is unclear whether the results can be generalized to other settings or cohorts. Admittedly, the housing trajectories could vary across cohorts. For instance, the younger British cohorts are likely to have been hit harder by the Great Recession that occurred in the late 2000s so that the younger cohorts may experience relatively more difficulties in launching their own households. Nevertheless, the persistent intertemporal linkages between earlier housing careers and later-life wealth disparities presented in this study are likely to stand the test, although the strong associations between housing careers and wealth disparities found by this study are not necessarily causal in nature and that the underlying mechanisms that compound such disparities need further investigations.

Second, some of the measurements used in this analysis are less than ideal. For one thing, the information on intergenerational influence is very limited. Although I control for inheritances ever received and various socioeconomic backgrounds for families of origin, these controls may

only grasp a small percentage of extended-family influences, considering that family wealth could resemble across multiple generations (Pfeffer and Killewald 2017). Theoretically speaking, ancestors, especially those of most privileged families, could possibly confer advantages to their descendants in more disguised ways.

For another, information on current property value is available but the cost of initial home purchase is not, making it harder to further understand the extent to which the wealth gaps in midlife are due to asset appreciations after home purchase, or the disparities are instead rooted in the very beginning of first-time home acquisition. One possible way to overcome the limitation in individual property-value measurements is to acquire more restricted data on the local housing market conditions based on the cohort members' home address across time. Such community-level housing market characteristics potentially provide approximations of individual-level property values, as well as gain more insights into understanding how intertemporal housing market dynamics might interfere with individuals' investment and consumption alternatives.

With these caveats in mind, I encourage future works to conduct cohort comparisons or cross-country comparisons to test the generalizability of the study's findings, to overcome limitations in measurements, and to use causal methods to disentangle the different mechanisms.

References

Albertini, M. & Radl, Jonas. (2012). Intergenerational transfers and social class: Inter-vivos
transfers as means of status reproduction? *Acta Sociologica,* 55(2), 107-23.

Avery, R., Goldscheider, F., & Speare, A. (1992). Feathered nest/Gilded cage: Parental income and leaving home in the transition to adulthood. *Demography,* 29(3), 375-88.

Banks, J., Blundell, R., and Smith, J. P. (2003). Understanding differences in household financial wealth between the United States and Great Britain. *Journal of Human Resources,* 38(2), 241-79.

Bastagli, F. & Hills, J. (2012). Wealth accumulation in Great Britain 1995-2005: The role of house prices and the life cycle." Accessed online

https://core.ac.uk/download/pdf/16379905.pdf

Billari, F. C., & Liefbroer, A. C. (2007). Should I stay or should I go? The impact of age norms on leaving home. *Demography*, *44*(1), 181-198.

Billari, F. C., Philipov, D., & Baizán, P. (2001). Leaving home in Europe: The experience of cohorts born around 1960. *International Journal of Population Geography*, *7*(5), 339-356.

Boehm, T. P., & Schlottmann, A. (2008). Wealth accumulation and homeownership: Evidence for low-income households. *Cityscape 10(2)*, 225-256.

Buchmann, M. C., & Kriesi, I. (2011). Transition to adulthood in Europe. *Annual Review of Sociology*, *37*, 481-503.

Charles, K. K., Hurst, E., & Killewald, A. (2013). Marital sorting and parental wealth. *Demography*, *50*(1), 51-70.

Clark, W. A., Deurloo, M. C., & Dieleman, F. M. (2003). Housing careers in the United States, 1968-93: Modelling the sequencing of housing states. *Urban Studies*, *40*(1), 143-160.

Clark, W. A., & Mulder, C. H. (2000). Leaving home and entering the housing market. *Environment and Planning A*, *32*(9), 1657-1671.

Clark, W. A., Deurloo, M. C., & Dieleman, F. M. (1994). Tenure changes in the context of micro-level family and macro-level economic shifts. *Urban Studies*, *31*(1), 137-154.

Conley, D. (2001). A room with a view or a room of one's own? Housing and social stratification. *Sociological Forum,* 16(2), 263-280.

Department for Communities and Local Government. 2015. English Housing Survey, Headline Report 2013-14.

Di, Z. X., Belsky, E., & Liu, X. (2007). Do homeowners achieve more household wealth in the long run? *Journal of Housing Economics*, *16*(3-4), 274-290.

DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. *Annu. Rev. Sociol.*, *32*, 271-297.

Forrest, R. (1987). Spatial mobility, tenure mobility, and emerging social divisions in the UK housing market. *Environment and Planning A,* 19(12), 1611-30.

Furstenberg, F. F., Rumbaut, R. G., & Settersten, R. A. (2005). On the frontier of adulthood: Emerging themes and new directions. *On the frontier of adulthood: Theory, research, and public policy*, 3-25.

Furstenberg, F. F. (2010). On a new schedule: Transitions to adulthood and family change. *The future of children*, 67-87.

Friedline, T., Masa, R. D., & Chowa, G. A. (2015). Transforming wealth: Using the inverse hyperbolic sine (IHS) and splines to predict youth's math achievement. *Social Science Research*, *49*, 264-287.

Gabadinho, A., Ritschard, G., Mueller, N. S., & Studer, M. (2011). Analyzing and visualizing state sequences in R with TraMineR. *Journal of Statistical Software*, *40*(4), 1-37.

Garasky, S. (2002). Where are they going? A comparison of urban and rural youths' locational choices after leaving the parental home. *Social Science Research*, *31*(3), 409-431.

Gierveld, J. D. J., Liefbroer, A. C., & Beekink, E. (1991). The effect of parental resources on patterns of leaving home among young adults in the Netherlands. *European Sociological Review*, *7*(1), 55-71.

Goldscheider, F. K., & DaVanzo, J. (1989). Pathways to independent living in early adulthood: Marriage, semiautonomy, and premarital residential independence. *Demography*, *26*(4), 597-614.

Goldscheider, F., Thornton, A., & Young-DeMarco, L. (1993). A portrait of the nest-leaving process in early adulthood. *Demography*, *30*(4), 683-699.

Goldscheider, Francis and Calvin Goldscheider. 1999. *The Changing Transition to Adulthood*, Vol. 17: Sage.

Henretta, J. C. (1984). Parental status and child's home ownership. *American Sociological Review*, 49(1), 131-140.

Henretta, J. C. (1987). Family transitions, housing market context, and first home purchase by young married households. *Social Forces*, *66*(2), 520-536.

Karagiannaki, E. (2017). The Impact of inheritance on the distribution of wealth: Evidence from Great Britain. *Review of Income and Wealth*, 63(2), 394-408.

Keister, L. A., & Moller, S. (2000). Wealth inequality in the United States. *Annual Review of Sociology*, *26*, 63-81.

Killewald, A., Pfeffer, F. T. & Schachner, J. N. 2017. Wealth inequality and accumulation. *Annual Review of Sociology* 43, 379-404.

Killewald, A., & Bryan, B. (2016). Does Your Home Make You Wealthy? *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *2*(6), 110-128.

Kornrich, S., & Furstenberg, F. (2013). Investing in children: Changes in parental spending on children, 1972–2007. *Demography*, *50*(1), 1-23.

Krivo, L. J., & Kaufman, R. L. (2004). Housing and wealth inequality: Racial-ethnic differences in home equity in the United States. *Demography*, *41*(3), 585-605.

Kuebler, M., & Rugh, J. S. (2013). New evidence on racial and ethnic disparities in homeownership in the United States from 2001 to 2010. *Social Science Research*, *42*(5), 1357-1374.

Kurz, K. (2004). Labor market position, intergenerational transfers and home-ownership: a longitudinal analysis for West German birth cohorts. *European Sociological Review*, *20*(2), 141-159.

Leopold, T., Geissler, F., & Pink, S. (2012). How far do children move? Spatial distances after leaving the parental home. *Social Science Research*, *41*(4), 991-1002.

Lersch , P.M. & Dewilde, C. (2018). Homeownership, saving and financial wealth: A comparative and longitudinal analysis. *Housing Studies*, 33(8), 1175-1206, DOI: 10.1080/02673037.2018.1424803

Lersch, P. M. & Luijkx, R. (2015). Intergenerational transmission of homeownership in Europe: Revisiting the socialization hypothesis. *Social Science Research,* 49, 327–342.

Lersch, P. M., & Vidal, S. (2014). Falling out of love and down the housing ladder: A longitudinal analysis of marital separation and home ownership. *European Sociological Review*, *30*(4), 512-524.

Lesnard, L., Cousteaux, A. S., Chanvril, F., & Le Hay, V. (2016). Do transitions to adulthood

    converge in Europe? An optimal matching analysis of work–family trajectories of men

    and women from 20 European countries. *European Sociological Review*, *32*(3), 355-369.

Mulder, C. H., & Wagner, M. (2001). The connections between family formation and first-time

    home ownership in the context of West Germany and the Netherlands. *European Journal*

    of Population/Revue europeenne de demographie, *17*(2), 137-164.

Mulder, C. H., & Clark, W. A. (2002). Leaving home for college and gaining

    independence. *Environment and Planning A*, *34*(6), 981-999.

OECD. 2006. Glossary of Statistical Terms: Housing Tenure. Accessed online

    https://stats.oecd.org/glossary/detail.asp?ID=2697

Pence, K.M. (2006). The role of wealth transformations: an application to estimating the effect of

    tax incentives on saving. *The BE Journal of Economic Analysis & Policy*, *5*(1).

Pfeffer, F. T. and N. Waitkus. (2019). "The Wealth Inequality of Nations" Working Paper

    Retrieved from http://theinequalitylab.com/discussion-papers/

Pfeffer, F. T. (2018). Growing wealth gaps in education. *Demography*, *55*(3), 1033-1068.

Pfeffer, F. T., & Killewald, A. (2017). Generations of advantage. Multigenerational correlations

    in family wealth. *Social Forces*, *96*(4), 1411-1442.

Pollock, G. (2007). Holistic trajectories: A study of combined employment, housing and family

    careers by using multiple-sequence analysis. *Journal of the Royal Statistical Society:*

    Series A (Statistics in Society), 170(1), 167-83.

Schwanitz, K., Mulder, C. H., & Toulemon, L. (2017). Differences in leaving home by

    individual and parental education among young adults in Europe. *Demographic*

    Research, *37*, 1975-2010.

Sharkey, P. (2012). Temporary integration, resilient inequality: Race and neighborhood change in the transition to adulthood. *Demography*, *49*(3), 889-912.

Sironi, M. & Furstenberg, F. F. 2012. Trends in the economic independence of young adults in the United States: 1973–2007. *Population and Development Review,* 38(4), 609-30.

Spilerman, S. & Wolff, F-C. (2012). Parental wealth and resource transfers: How they matter in France for home ownership and living standards. *Social Science Research,* 41(2): 207-23.

Spilerman, S. (2000). Wealth and stratification processes. *Annual Review of Sociology* 26, 497-524.

Studer, M., & Ritschard, G. (2016). What matters in differences between life trajectories: A comparative review of sequence dissimilarity measures. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, *179*(2), 481-511.

Whittington, L. A., & Peters, H. E. (1996). Economic incentives for financial and residential independence. *Demography*, *33*(1), 82-97.

Wolff, E.N. (2006). *International Perspectives on Household Wealth*: Edward Elgar Publishing.

Zavisca, J. R., & Gerber, T. P. (2016). The socioeconomic, demographic, and political effects of housing in comparative perspective. *Annual review of sociology*, *42*, 347-367.

Zorlu, A., & Mulder, C. H. (2011). Ethnic differences in leaving home: Timing and pathways. *Demography*, *48*(1), 49-72.

Zorlu, A., & Van Gaalen, R. (2016). Leaving home and destination of early nest leavers: Ethnicity, spaces and prices. *European Journal of Population*, *32*(2), 267-291.

Tables and Figures (to follow)

Table 1. Descriptive Statistics for Explanatory Variables by Housing Trajectories[a]

	Type 1 Self-made Owners	Type 2 Steady Owners	Type 3 Rich Late-Leavers	Type 4 Poor Late-Leavers	Type 5 Steady Renters	Type 6 The Missing	Type 7 The Unspecified	Type 8 Outright Owners	Total Overall Sample
Number of Observations (n)	1,753	2,640	710	712	1,484	389	274	199	0
Percentage in All Observations (%)	21.5	32.4	8.7	8.7	18.2	4.8	3.4	2.4	100.0
Father's Highest Soc Class in CM's Childhood (%)									
Class I: Professional	1.9	8.9	5.5	1.7	2.3	5.4	7.3	9.1	5.1
Class II: Managerial-technical	8.1	22.1	23.2	5.6	6.5	12.1	17.5	25.6	14.4
Class III: Skilled	62.4	56.6	55.5	61.1	58.0	56.0	56.6	47.2	58.1
Class IV: Partly skilled	15.4	6.7	8.3	16.6	16.4	13.1	11.3	8.0	11.8
Class V: Unskilled	9.0	3.5	4.2	11.0	13.0	8.5	5.8	4.0	7.5
No Father Figure	0.8	0.4	0.9	0.7	1.8	1.3	0.4	0.5	0.9
Missing	2.5	1.9	2.4	3.4	2.1	3.6	1.1	5.5	2.4
Parental Homeownership in CM's Childhood (%)									
Renters	84.1	0.3	0.0	96.6	81.5	53.0	55.5	18.6	46.2
Owners	12.0	99.7	100.0	0.0	15.8	44.5	43.4	79.4	51.9
Missing	3.9	0.0	0.0	3.4	2.7	2.6	1.1	2.0	1.9
Average Value of Largest Inheritance (in 1000s)	2.4	4.1	6.4	3.3	2.3	2.5	1.9	15.6	3.7
(s.d.)	(30.9)	(28.4)	(53.2)	(43.5)	(31.5)	(12.4)	(8.2)	(76.9)	(34.9)
Male (%)	43.0	45.6	62.8	62.5	41.9	51.4	54.7	45.7	47.9
Marital Status (%)									
Never Marred	2.3	5.1	27.5	20.7	12.1	17.5	11.3	10.1	10.0
Married	78.9	76.3	56.2	63.8	64.3	62.5	65.3	71.9	70.7
Divorced/Separated	17.2	17.2	15.4	14.9	21.6	19.8	21.2	17.1	17.9
Widowed	1.7	1.4	1.0	0.7	2.0	0.3	2.2	1.0	1.4
Average Number of Children	1.9	2.0	1.3	1.4	2.0	1.6	1.8	1.7	1.8
(s.d.)	(1.0)	(1.1)	(1.2)	(1.2)	(1.3)	(1.2)	(1.2)	(1.3)	(1.2)
Highest Educational Attainment (%)									
Less than High School	12.9	5.3	11.4	19.5	27.4	24.9	16.1	9.6	14.1
High School	67.0	58.7	65.2	65.5	56.8	54.2	58.8	61.8	61.1
Some College	5.3	5.5	4.9	3.0	3.2	4.4	5.8	5.0	4.7
Bachelor's Degree or Higher	14.8	30.6	18.5	12.1	12.6	16.5	19.3	23.6	20.0
Social Class (%)									
Class I: Professional	3.8	8.1	6.6	3.9	2.9	3.6	5.8	4.5	5.4
Class II: Managerial-technical	39.0	43.6	33.0	29.4	25.3	24.9	34.7	40.7	35.9

Class IIIa: Skilled Nonmanual	18.3	18.2	18.6	16.2	15.4	15.4	20.1	16.1	17.5
Class IIIb: Skilled Manual	16.0	11.3	18.5	19.4	17.9	19.0	16.8	14.6	15.4
Class IV: Partly skilled	9.8	7.1	7.3	11.9	12.3	12.3	7.7	9.6	9.4
Class V: Unskilled	1.7	1.0	1.3	2.8	4.2	3.1	1.5	0.0	2.0
Unemployed	11.3	10.5	14.5	16.0	22.0	21.3	13.5	14.1	14.3
Missing	0.3	0.3	0.3	0.4	0.1	0.3	0.0	0.5	0.3
Housing Tenure (%)									
Renter	7.2	5.5	17.6	19.7	31.9	24.7	31.0	7.5	14.8
Outright Owner	27.5	29.0	26.2	19.1	14.6	20.6	16.4	43.2	24.5
Mortgage Owner	65.3	65.4	55.8	61.1	53.2	54.5	52.6	49.3	60.6
Missing	0.1	0.1	0.4	0.1	0.3	0.3	0.0	0.0	0.2

a. Showing the main sample for total number of rooms, and total savings and investments at age 50

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.10$

Table 2. OLS Regression Models Predicting Cohort Members' (CM's) Total Number of Rooms at Home and Total Savings/Investments at Age 50

Variables	Total Number of Rooms			Total Savings and Investments[a]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Housing Careers (ref. Steady Owners)						
Self-made Owners	-0.55***	-0.07	-0.09	-0.44***	0.06	-0.03
	(0.05)	(0.08)	(0.07)	(0.11)	(0.17)	(0.15)
Rich Late-leavers	-0.87***	-0.86***	-0.30***	-1.02***	-0.99***	-0.55***
	(0.07)	(0.07)	(0.07)	(0.15)	(0.15)	(0.14)
Poor Late-Leavers	-1.20***	-0.65***	-0.23*	-1.52***	-0.95***	-0.64***
	(0.07)	(0.10)	(0.09)	(0.15)	(0.20)	(0.19)
Steady Renters	-1.49***	-1.00***	-0.59***	-2.36***	-1.82***	-0.76***
	(0.06)	(0.08)	(0.07)	(0.11)	(0.17)	(0.15)
The Missing	-1.05***	-0.74***	-0.23*	-1.70***	-1.37***	-0.59**
	(0.10)	(0.10)	(0.09)	(0.19)	(0.20)	(0.19)
The Unspecified	-0.97***	-0.70***	-0.28**	-1.25***	-0.99***	-0.26
	(0.11)	(0.12)	(0.11)	(0.22)	(0.24)	(0.21)
Outright Owners	0.25†	0.28*	0.44***	-0.20	-0.20	-0.29
	(0.13)	(0.13)	(0.12)	(0.26)	(0.26)	(0.24)
Father's Soc Class in CM's Childhood (ref. Class I: Professional)						
Class II: Managerial-technical		-0.08	0.07		-0.49*	-0.28
		(0.10)	(0.09)		(0.21)	(0.19)
Class III: Skilled		-0.63***	-0.37***		-1.17***	-0.65***
		(0.09)	(0.08)		(0.19)	(0.17)
Class IV: Partly skilled		-0.73***	-0.40***		-1.11***	-0.47*
		(0.11)	(0.10)		(0.22)	(0.20)
Class V: Unskilled		-0.84***	-0.50***		-1.78***	-0.94***
		(0.11)	(0.10)		(0.24)	(0.22)
No Father Figure		-0.90***	-0.55**		-2.07***	-1.47***
		(0.23)	(0.20)		(0.46)	(0.42)
Homeowner Parents in CM's Adolescence (ref. Yes)		0.39***	0.24***		0.34*	0.05
		(0.07)	(0.06)		(0.15)	(0.14)
Value of Largest Inheritance Received (in 1000s)		0.00***	0.00***		0.00**	0.00*
		(0.00)	(0.00)		(0.00)	(0.00)
Sex of CM (ref. Male)			-0.02			0.30***
			(0.04)			(0.08)
Marital Status (ref. Never Married)						
Married			0.67***			0.99***
			(0.07)			(0.13)
Divorced/Separated			-0.14*			-0.08
			(0.07)			(0.15)
Widowed			0.10			0.03
			(0.16)			(0.32)
Total Number of Children			0.30***			-0.32***
			(0.02)			(0.03)
Highest Educational Attainment (ref. Less than High School)						
High School			0.23***			0.98***
			(0.05)			(0.11)
Some College			0.48***			1.08***
			(0.10)			(0.20)
Bachelor's Degree or Higher			0.69***			1.60***
			(0.07)			(0.14)
Social Class (ref. Class I: Professional)						
Class II: Managerial-technical			-0.15†			-0.09
			(0.08)			(0.16)
Class IIIa: Skilled Nonmanual			-0.61***			-0.55**
			(0.09)			(0.18)
Class IIIb: Skilled Manual			-0.59***			-0.67***
			(0.09)			(0.18)
Class IV: Partly skilled			-0.66***			-0.97***
			(0.10)			(0.19)

Table 2 （Continued）

Variables	Total Number of Rooms			Total Savings and Investments		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Class V: Unskilled			-0.78***			-1.27***
			(0.15)			(0.30)
Unemployed			-0.42***			-1.69***
			(0.09)			(0.19)
Housing Tenure (ref. Outright Owner)						
Renter			-1.07***			-3.21***
			(0.06)			(0.13)
Mortgage Owner			-0.12**			-1.52***
			(0.04)			(0.09)
Constant	6.00***	6.07***	5.03***	9.84***	10.42***	10.57***
	(0.03)	(0.12)	(0.16)	(0.07)	(0.25)	(0.33)
Panel A: Poor Late-leavers (ref.)						
Self-made Owners	0.65***	0.58***	0.13†	1.08***	1.01***	0.61***
	(0.08)	(0.08)	(0.07)	(0.16)	(0.16)	(0.15)
Panel B: Poor Late-leavers (ref.)						
Rich Late-Leavers	0.32***	-0.21†	-0.08	0.51**	-0.04	0.08
	(0.09)	(0.11)	(0.10)	(0.19)	(0.23)	(0.21)
Panel C: Poor Late-leavers (ref.)	-0.29***	-0.35***	-0.36***	-0.84***	-0.88***	-0.12
Steady Renters	(0.08)	(0.08)	(0.07)	(0.16)	(0.16)	(0.15)
Observations	8,161	8,161	8,161	8,161	8,161	8,161
Adjusted R-Squared	0.10	0.12	0.29	0.06	0.08	0.27

a. Total value of savings and investments is transformed using the Inverse Hyperbolic Sine method.
Standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.10$ (two-tailed tests)

Table 3. OLS Regression Models Predicting Cohort Members' (CM's) Estimated Property Value at Age 55

Variables	Value of Property [a]		
	Model 1	Model 2	Model 3
Housing Careers (ref. Steady Owners)			
Self-made Owners	-0.65***	0.38†	0.14
	(0.15)	(0.22)	(0.15)
Rich Late-leavers	-1.78***	-1.77***	-0.44**
	(0.20)	(0.20)	(0.14)
Poor Late-Leavers	-2.26***	-1.08***	-0.24
	(0.21)	(0.28)	(0.18)
Steady Renters	-3.78***	-2.77***	-0.55***
	(0.16)	(0.22)	(0.15)
The Missing	-3.48***	-2.81***	-0.95***
	(0.27)	(0.29)	(0.19)
The Unspecified	-3.01***	-2.43***	-0.19
	(0.31)	(0.33)	(0.22)
Outright Owners	-0.53	-0.45	-0.28
	(0.38)	(0.38)	(0.24)
Father's Soc Class in CM's Childhood (ref. Class I: Professional)			
Class II: Managerial-technical		-0.39	-0.18
		(0.27)	(0.19)
Class III: Skilled		-0.70**	-0.42*
		(0.25)	(0.17)
Class IV: Partly skilled		-0.97***	-0.36†
		(0.29)	(0.20)
Class V: Unskilled		-1.21***	-0.40†
		(0.32)	(0.23)
No Father Figure or Father Unemployed		-1.11†	-0.75†
		(0.66)	(0.44)
Homeowner Parents in CM's Adolescence (ref. Yes)		1.03***	0.43**
		(0.20)	(0.13)
Value of Largest Inheritance Received (in 1000s)		0.00*	0.00
		(0.00)	(0.00)
Sex of CM (ref. Male)			0.23**
			(0.08)
Marital Status (ref. Never Married)			
Married			0.48***
			(0.14)
Divorced/Separated			-0.07
			(0.15)
Widowed			-0.51
			(0.32)
Total Number of Children			-0.02
			(0.03)
Highest Educational Attainment (ref. Less than High School)			
High School			0.73***

(0.12)

Table 3 （Continued）

Variables	Value of Property [a]		
	Model 1	Model 2	Model 3
Some College			0.73***
			(0.21)
Bachelor's Degree or Higher			1.22***
			(0.15)
Social Class (ref. Class I: Professional)			
Class II: Managerial-technical			0.08
			(0.16)
Class IIIa: Skilled Nonmanual			-0.11
			(0.19)
Class IIIb: Skilled Manual			-0.31
			(0.20)
Class IV: Partly skilled			-0.62**
			(0.22)
Class V: Unskilled			-0.94**
			(0.31)
Unemployed			-0.90***
			(0.19)
Housing Tenure (ref. Outright Owner)			
Renter			-10.47***
			(0.13)
Mortgage Owner			-0.41***
			(0.09)
Constant	12.64***	12.20***	12.28***
	(0.09)	(0.32)	(0.33)
Panel D: Poor Late-leavers (ref.)			
Self-made Owners	1.62***	1.47***	0.38*
	(0.22)	(0.22)	(0.15)
Panel E: Poor Late-leavers (ref.)			
Rich Late-Leavers	0.48†	-0.68*	-0.21
	(0.26)	(0.32)	(0.21)
Panel F: Poor Late-leavers (ref.)			
Steady Renters	-1.52***	-1.68***	-0.31*
	(0.23)	(0.23)	(0.15)
Observations	7,688	7,688	7,688
Adjusted R-Squared	0.09	0.10	0.63

a. Value of property at age 55 (if sold then) is transformed using the Inverse Hyperbolic Sine method.
Standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.10$ (two-tailed tests)
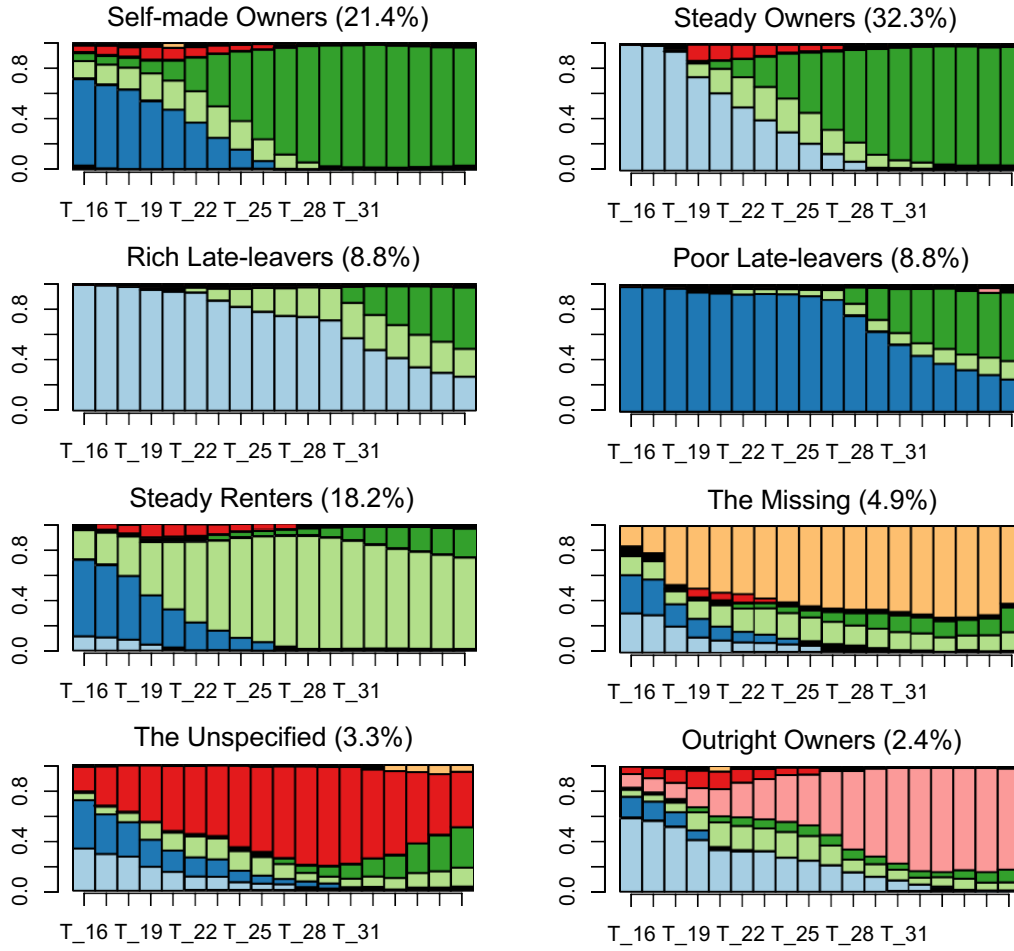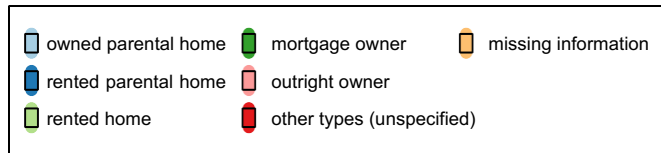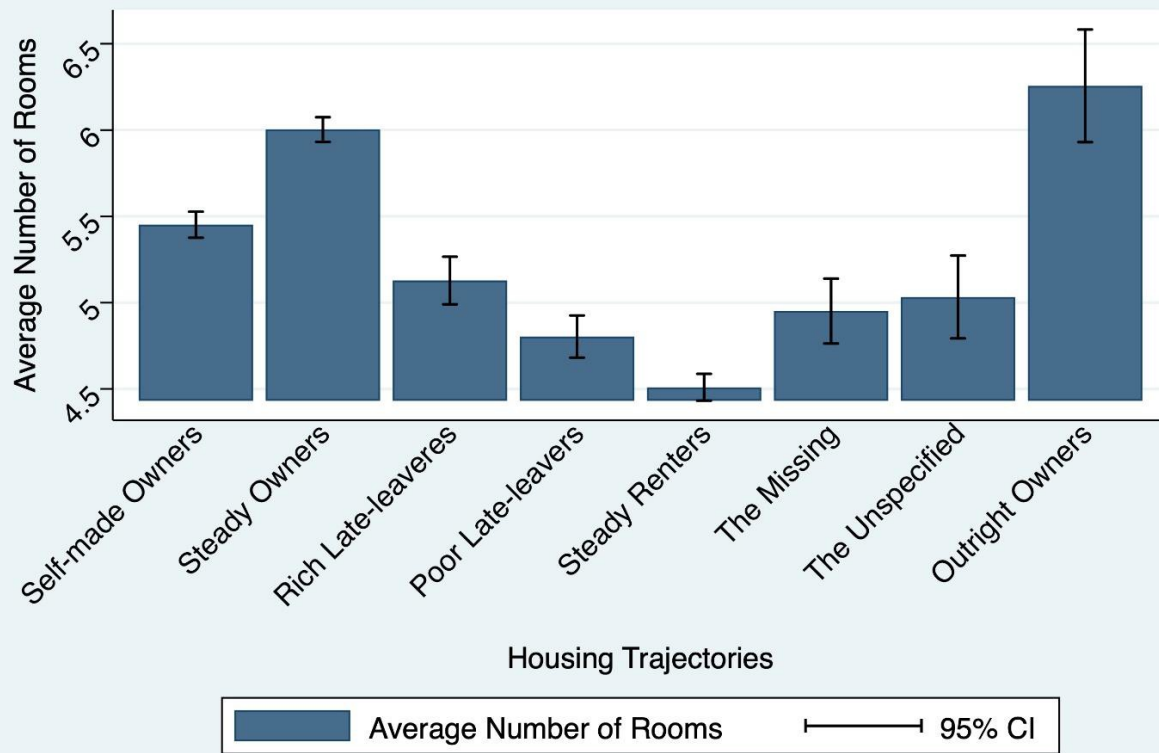
Figure 1: State Distribution Plots by Clusters

Figure 2. Average Number of Rooms at Age 50 by Trajectories

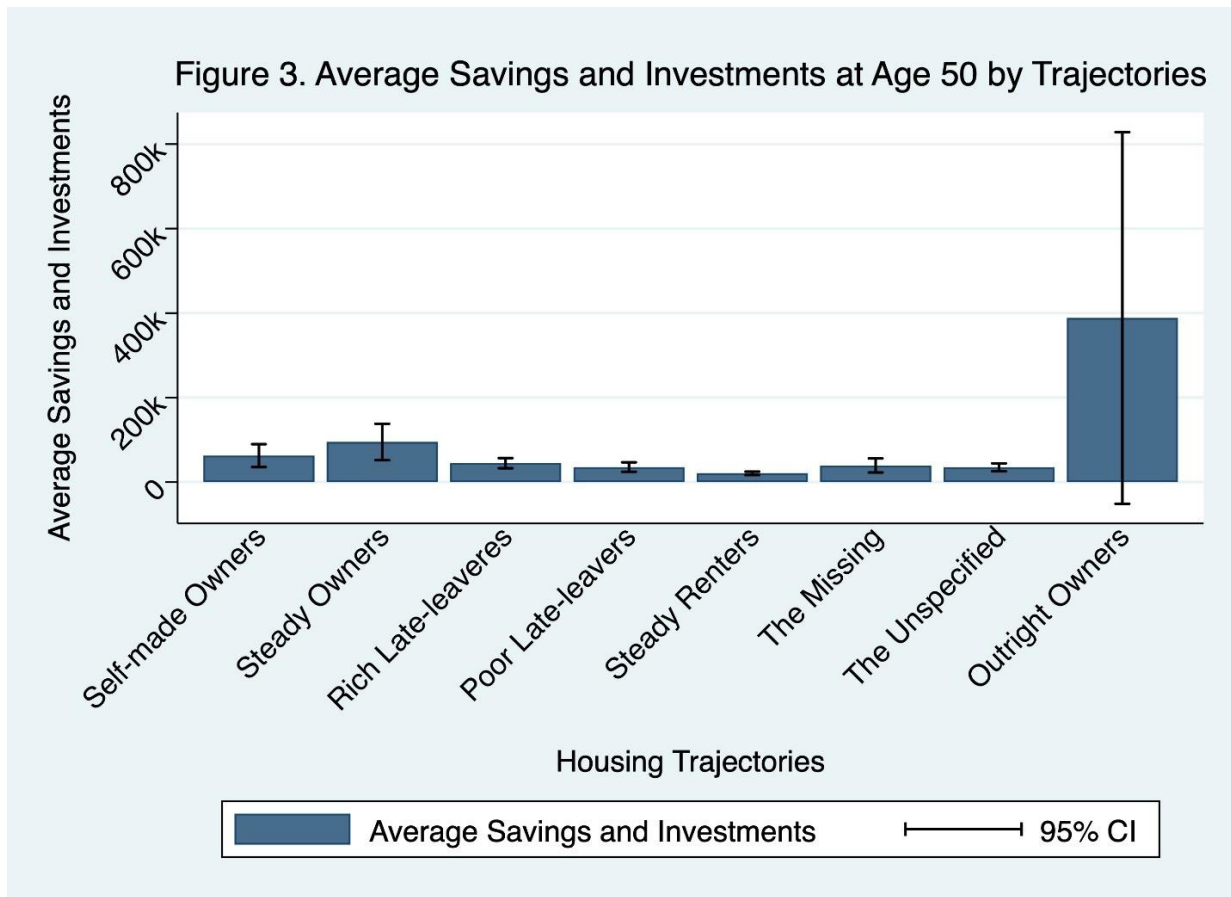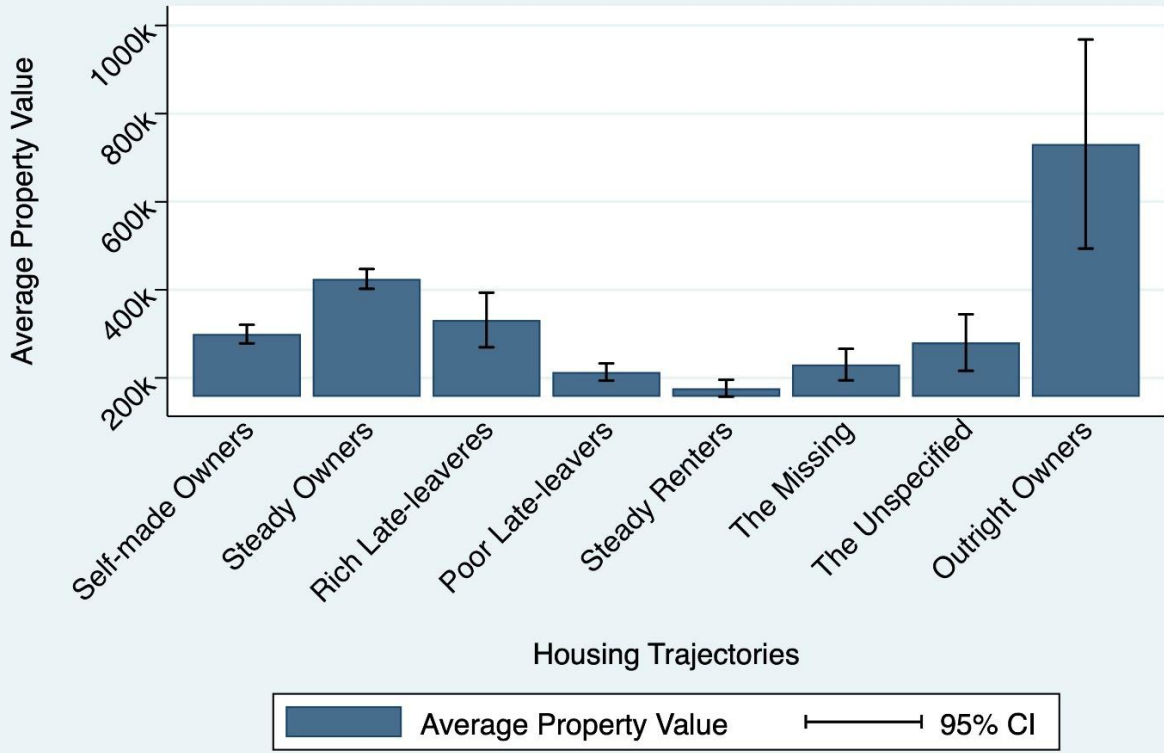Figure 3. Average Savings and Investments at Age 50 by Trajectories

Figure 4. Average Property Value at Age 55 by Trajectories

Chapter 2. Multigenerational Class Gradients in Housing Careers in Young Adulthood

Abstract

Prior research shows that parental socioeconomic background positively predicts young adults' transitions to first-time homeownership. Yet it remains unclear whether and how the processes of residential transitions to adulthood differ by one's *multigenerational* class backgrounds. This paper employs a four-generation framework to examine the patterns and determinants of housing careers in young adulthood for a British birth cohort. Sequence analysis of housing tenure trajectories identifies diverse housing trajectories in young adulthood. These diverging housing trajectories represent another dimension of socioeconomic inequalities, with significant implications for housing quality and wealth formation. While multigenerational class gradients are largely explained by one's childhood housing environments for the majority of housing trajectories, they remain much more persistent for the most and least privileged trajectories.

Key Words: Housing and Social Inequalities; Multigenerational Inequalities; Sequence Analysis; Residential Transitions to Adulthood

Introduction

Housing plays critical roles in intergenerational transmission of social inequalities by providing a shelter for individuals, offering space for day-to-day family interactions, forming a key component of household assets, and shaping future outcomes of children (Conley 2001;

Spilerman 2000). Established scholarship on intergenerational transmission of social inequalities mostly focus on the reproduction of educational and occupational inequalities (Hout and DiPrete 2006; Hout 2015), leaving the roles of housing in the social stratification system less explored. However, whether in the form of the divides between owners and renters, of various levels in housing quality, or of divergent housing transitions, housing inequalities have great potential to transcending generations.

Despite a burgeoning body of literature examining the associations between parental social attainments and adult children's homeownership transitions (Helderman and Mulder 2007; Henretta 1984; Kurz 2004; Mulder and Smits 1999; Öst 2012), we have little knowledge of *how* individuals become homeowners. The dichotomous view of homeownership alone might be inadequate, as it overlooks the processes leading to diverging attainments later. It is likely that individuals endowed with privileged early housing conditions enjoy a head start in later housing transitions, and persistent exposures to rental or owned housing could also cultivate different savings or investment strategies of lasting influence (Boehm and Schlottmann 2008). Therefore, a "processual" view (Abbott 2016) towards housing inequality may capture another distinctive dimension of cumulative inequalities, with important implications for housing quality and wealth accumulation in the long run.

Research on residential transitions to adulthood overwhelmingly focus on shifts in living arrangements between home-leaving and establishing those of their own (Goldscheider, Thornton and Young-DeMarco 1993; Goldscheider and Goldscheider 1999; Zorlu and Mulder 2011). An underexplored facet of residential inequalities during young adulthood lies in the diversity of housing tenure trajectories during this less settled life stage, which are potentially structured by socioeconomic positions of multiple generations. That is partly because

individuals' family origins profoundly shape their tastes and life styles (Bourdieu 2013), and partly because many young adults have too limited lifetime savings to be completely economically independent from their families of origin, especially when it comes to significant purchases like homes (Kurz 2004). An early transition to rental housing may be a temporary solution for some young adults but a permanent destination for others. Even those who become owners may take different routes towards home ownership, depending on their financial situations, which, in turn, may independently influence the long-term wellbeing of individuals and their families.

Considering the cumulative nature of housing wealth and the growing evidence on multigenerational wealth persistence (Killewald, Pfeffer and Schachner 2017; Pfeffer and Killewald 2017), housing tenure trajectories in young adulthood provide an innovative lens to understand how extended family backgrounds are associated with widening socioeconomic inequalities across the life course. This study refines understanding of intergenerational housing transmissions and brings processual perspectives to studies of residential transitions to adulthood by examining the multigenerational determinants of housing tenure trajectories in young adulthood. More specifically, I ask the following three research questions. (1) What are the typical housing tenure trajectories into young adulthood? (2) What are the more or less privileged trajectories respectively? (3) Are disparities in undertaking different housing tenure trajectories embedded in one's extended families of origin?

I use data from the British National Child Development Study 1958 Cohort ("NCDS1958 Cohort" thereafter) to address the questions. The results suggest that more and less privileged housing tenure trajectories differ by their parental homes of departure, durations of rental housing, as well as the forms of homeownership acquisitions (that is, via mortgages versus via

outright ownership). Furthermore, more favorable housing tenure trajectories positively predict lower levels of housing crowding and greater net worth towards one's early 30s, independent of homeownership status and a host of other control variables. As hypothesized, great-grandparent, grandparent and father class positions to some extent structure one's chances of experiencing specific housing trajectories, especially for individuals undergoing the least and the most privileged trajectories.

Housing Outcomes and Social Reproduction

Conceptually speaking, one's family of origin can predict individuals' housing outcomes in many ways. One mechanism is socialization, as parents and other family members often act as role models of children (Schwanitz, Mulder and Toulemon 2017). Individuals reared in various socioeconomic and cultural environments may hold different norms and values for ideal housing conditions and life styles. For example, compared to children of renters, children of home owners may aspire more to become homeowners themselves, and those growing up with their own rooms may place higher values on privacy and freedom when making decisions about their own housing.

Another mechanism is the transmission of socioeconomic resources, whether through intergenerational resemblance of socioeconomic positions or through resource infusion from older generations to younger ones. To the extent that class positions are positively aligned with homeownership statuses (Chan and Boliver 2013), intergenerational reproduction of class positions could simultaneously reproduce homeownership statuses. There is also empirical evidence on class differences in inter-vivos transfers from parents to children. According to a comparative study of 11 European countries, upper-class parents tend to transfer more financial

resources to children than lower-class parents do, which consequently reinforces the preexisting social inequalities (Albertini and Radl 2012). In particular, assisted home purchase constitutes a primary channel of parents' inter-vivos transfers to adult children, especially for working and middle class families (Spilerman and Wolff 2012).

Existing studies provide consistent evidence that various indicators of parental resources positively predict individuals' homeownership status, whether operationalized by parents' homeownership, income, education, wealth, or class positions. Henretta (1984) finds that parental homeownership increases children's chances of becoming homeowners in the United States, and parental income is positively associated with children's home values among the child-generation homeowners. Similarly, a recent Swedish study suggests parental educational attainment as another positive predictor of young adults' odds of becoming first-time homeowners (Öst 2012). Parents' favorable wealth and class positions also predict children's elevated chances of becoming homeowners. Studies of various European contexts show that children of self-employed and homeowner parents are more likely to become homeowners, partly due to parent-to-child gifts, exposures to similar housing markets for both generations, and socialization (Albertini, Tosi and Kohli 2017; Helderman and Mulder 2007; Mulder and Smits 1999).

Another strand of research demonstrates that disparities in housing tenure and quality exacerbate inequalities in education, health, and wealth outcomes, among others (Zavisca and Gerber 2016). For example, homeownership, a simple measure of economic consumption, significantly predicts lower chances of being high-school dropouts net of other standard variables in socioeconomic status, including parental income, occupation, education (Hauser 1994). Living in crowded childhood homes is associated with children's worse academic, behavioral,

and health outcomes (Conley 2001; Solari and Mare 2012). Lopoo and London (2016) further show that higher levels of housing crowding experienced in early life exerts enduring adverse influence on adults' highest educational attainments. Moreover, since an owned residence constitutes a pillar component of household wealth for the majority of households in many countries (Bastagli and Hills 2012; Karagiannaki 2017; Wolff 2006), there has been studies on the contribution of homeownership to wealth accumulation. According to Killewald and Bryan (2016), more years of homeownership are associated with greater returns to non-housing wealth.

A joint consideration of the intergenerational transmissions of housing inequalities and that housing inequalities further perpetuate other forms of social inequalities leads to the expectation that the *socioeconomic divides (or: class differences) in housing conditions could persist beyond two generations*. Given the importance of housing wealth for household wealth in general, recent studies have shed light on the roles of homes in multigenerational transmission of wealth, which tend to be passed down to multiple generations (Mare 2011; Pfeffer 2014). Pfeffer and Killewald (2017) identify educational attainment and homeownership attainment in early adulthood as the two most important channels for multigenerational wealth persistence. However, there is still a dearth of empirical evidence beyond the US context so far, challenging the generalizability of this finding. Furthermore, as Pfeffer and Killewald (2017) also point out, grandparents' socioeconomic resources often peak during grandchildren's childhood. Therefore, it is highly likely that multigenerational gaps in homeownership as adults may have already taken roots in individuals' early childhood housing experiences.

An Alternative View: Housing Inequalities as Processes

Early classic stratification research by Blau and Duncan (1967) highlight the importance

of understanding occupational attainment as a dynamic process, and they control for first job in their foundational model of the status attainment process rather than only focusing on how parental occupation and education affect current job. Their path analysis demonstrates continuities in terms of socioeconomic status between one's first job and the one they currently hold, suggesting cumulative (dis)advantages developed over the course of one's career. Analogically, when residential attainment is the outcome of interest, rather than treat housing inequalities as levels of attainments at a certain time (exemplified by homeownership and housing crowding), housing inequalities could be seen as gradually unfolding processes that differ by points of departure, timing and sequencing of housing transitions, as well as ending states. To some extent, disparities in current housing conditions may be predicted by one's past housing history.

The transitions-to-adulthood literature investigates young adults' living arrangements from a processual perspective, centering on the shift from parent-child coresidence to children's residential independence. The "feathered-nest" hypothesis posits that young adults with better-off parents tend to delay home-leaving, based on the reasoning that parental resources provide safety nets for grownup children (Avery, Goldscheider and Speare 1992). Following this logic, an early transition to home ownership (like marriage) may not necessarily be the most advantageous, as young adults who wait before transiting to ownership may acquire better housing as a result. However, existing studies offer mixed findings regarding the roles of family of origin in structuring children's home-leaving process. Empirical evidence suggests that the timing of home-leaving also hinges on the specific types of parental resources considered, whether home-leaving is immediately followed by union formation or premarital residential independence, as well as the younger generation's financial needs (Murphy and Wang 1998;

Pilkauskas, Garfinkel and McLanahan 2014; Whittington and Peters 1996; Wiemers 2014).

Apart from the transition to residential independence literature, several life course studies explicitly model housing history as a key aspect of diverging life paths. Several articles have explored the sequences of individuals' long-term housing histories in US or Europe, capturing the patterns of residential mobility across urban and rural areas (Stovel and Bolan 2004) and across different dwelling types such as single-family house, terraced house, and apartment (Kulu and Steele 2013).

With two exceptions, few studies have scrutinized housing *tenure* trajectories, which might be consequential for later housing quality and wealth formation. The key motivation for doing so is that contemporary gaps in wealth and housing quality could result from cumulative inequalities over time, whereby earlier gaps fuse into later gaps[1]. Using data from Panel Study of Income Dynamics, Clark, Deurloo and Dieleman (2003) define housing career states by concurrently differentiating housing prices (low vs. high) and housing tenures (rented vs. owned), suggesting that households' housing sequences are generally characterized by upward trends in both dimensions. Another study by Pollock (2007) uses multichannel sequence analysis to consider the co-occurring patterns in employment status, housing tenure, and marital status with data from British Household Panel Study.

While both studies make pioneering attempts to illuminate the wealth formation process, the use of panel datasets undermines the conclusions drawn from comparing housing sequences of various age ranges, which might inadvertently mask meaningful variations across the life course. Also, to the best of my knowledge, no existing studies have explored the family origins

---

[1] However, it is hard to disentangle the respective contributions of housing price appreciation, changes in saving or investment behaviors among renters and owners, or characteristics that select individuals into homeownership.

of diverging housing tenure trajectories. With little attention paid to preexisting housing disparities in the parent generation, the results may obscure the continuities and turning points within the housing wealth accumulation process.

Hypotheses

While the literature on intergenerational transmission of housing conditions and the literature on housing processes respectively examine the intergenerational determinants and life course developments of housing disparities, they remain largely isolated with their own limitations. By bridging these two streams of works, this study is well positioned to unravel the links between multigenerational and life course housing inequalities, and those between housing processes and housing outcomes across life stages. More specifically, this study tests the following four hypotheses.

Hypothesis 1: Some housing tenure careers are associated with more favorable socioeconomic outcomes at age 33 than others.

To distinguish between more and less favorable tenure trajectories between ages 16 and 33, I will compare across trajectories: (1) the average years spent in owner-occupied housing; (2) the percentages of individuals experiencing the trajectories that end up in a) homeownership or b) managerial-professional occupations; (3) levels of housing crowding at age 33; as well as (4) net worth at age 33.

Without knowing exactly what housing tenure trajectories look like, it is imaginable that some trajectories are associated with prior socioeconomic (dis)advantage whereas other trajectories are associated with (dis)advantage produced later in life. It is an open question whether the two aspects of trajectory can be modeled. From the social reproduction perspective,

however, I posit that:

Hypothesis 2: More privileged housing tenure careers predict less crowded housing and greater net worth at age 33, net of homeownership.

The last hypothesis moves beyond the two-generation framework of studying housing inequalities to show that housing tenure careers manifest social inequalities in four consecutive generations. In light of the existing findings on mediating mechanisms of multigenerational inequalities (Hällsten and Pfeffer 2017; Pfeffer and Killewald 2017), I test the robustness of ancestral class gradients by taking into account early childhood housing conditions (i.e. tenure and crowding) and adulthood sociodemographic outcomes.

Hypothesis 3: Great-grandfather, grandfather, and father class positions persistently predict individuals' housing tenure trajectories, even when childhood housing conditions and individuals' adulthood attainments are controlled for.

The main analysis proceeds in three steps. The first step applies sequence analysis to characterize the conventional housing tenure trajectories into adulthood for this cohort. The second step uses the abovementioned criteria to distinguish between privileged and disadvantaged trajectories, plus demonstrating the distinctive roles of trajectories in predicting housing crowding and net worth at age 33 using OLS regression models. The last step uses logistic regression to estimate the multigenerational class gradients in undertaking different tenure trajectories, assessing the extent to which the ancestral class effects are robust to inclusion of childhood housing conditions and life course sociodemographic outcomes.

Data, Measurements, and Methods

Data

      This study draws on the first six waves of data from the NCDS 1958 Cohort. The NCDS1958 Cohort datasets follow the lives of a cohort born in March 1958. The baseline survey and the five follow-ups took place when cohort members were 0, 7, 11, 16, 23 and 33 years old (Ferri 1993). UK provides an ideal context for studying this topic because British households tend to start accumulating housing wealth at relatively younger ages and in a more rapid fashion, compared to their American counterparts, with similar homeownership rates across these two countries (Banks, Blundell and Smith 2003). Analyzing a single-year birth cohort makes it easier to compare individuals' housing careers with those of peers that came of age during the same period characterized by homeownership expansion to incorporate lower-income families (Forrest 1987), and facilitates identifying the commonalities and variations within a cohort. Importantly, this approach takes out the influence of temporally variable structural conditions such as market fluctuations.

      The NCDS 1958 Cohort is uniquely suited for addressing the research questions owing to its multigenerational occupational class measures, indicators of housing tenure and housing quality across multiple waves, and more importantly, a retrospective design at the fifth follow-up asking about cohort members' housing history between ages 16 and 33. The baseline survey starts out with parent interviews for 18558 new births; subsequent waves include both cohort-member interviews and parent interviews. Thirty-three years after the 1958 baseline survey, 9815 observations remain if restricting the cases to cohort members that participate in *all* six waves. When 500 observations of completely missing housing history are further discarded, the analytic sample consists of 9315 longitudinal records.

Measurements

Housing Tenure States

Housing tenure states are the building blocks of the sequence analysis. Cohort members' housing careers into young adulthood are coded based on housing tenure types for each age between 16 and 33 years old. Because the housing-history section of NCDS asks when the respondents moved in and out of each residence within the age range of interest, I transform the address-specific information into age-specific housing tenure states for each individual throughout the 18 years[2]. I define housing tenure states into seven categories, including (1) owned parental home, (2) rental parental home, (3) rental housing, (4) purchased with mortgages (i.e. buying); (5) outright ownership, (6) others (i.e. unspecified by the previous five categories), and finally, (7) a category for missing information. The first two housing tenure categories reflect wealth disparities in the nuclear families of origin around home-leaving, but the remaining five categories mainly differentiate housing tenures types post home-leaving as well as the different routes towards homeownership. I follow this scheme when coding individuals' entire 18-year tenure trajectories, whose characteristics are extracted, analyzed, and visually compared using sequence analysis (Gabadinho et al. 2011), with the details to be discussed later.

---

[2] For years during which an individual did not experience a move, I assign housing tenure for the address where he/she lived throughout the year. For years during which an individual experienced residential move, I assign housing tenure for the address at the end of year. The coding for age-specific tenure states could be more accurate had the months for moving in and out contained fewer missing values.

Occupational Class Categories

Occupational class categories are the explanatory variables of key interest. The four generations' class positions are consistently measured by three-category occupational classes. The 1958 baseline survey asked mothers of the newborn babies "her father's occupation when she left school", that is, the maternal-grandpa's occupations of the cohort members when their mother was around school-leaving age [3]. Similarly, in the first follow-up, fathers of cohort members were asked about *his* grandpa's occupations "when he left school", that is, the occupations of cohort members' paternal great-grandpa. Father's occupation is measured during child's early childhood (before 7 years old). Respondents' own occupations are measured by their most recent occupations at 33 years old. As all of the four abovementioned occupational variables are similarly coded in the raw datasets, whose coding scheme consistently collapses the variables into (1) managerial-professional occupations, (2) skilled occupations, and lastly, (3) semi-skilled or unskilled occupations.

Childhood Housing Conditions

The measures of childhood housing outcomes encompass housing tenure and childhood housing crowding levels. I focus on those during cohort members' first 7 years of life to examine

---

[3] The variable on paternal grandpa's occupations (in the first follow-up) contains over 80% missing values in the publically available dataset, so I use the maternal grandpa's occupations only. Because it is the cohort members' mothers that answered the question about the grandpa's occupational class, using maternal grandpa's occupational class also introduces fewer measurement errors into the analysis. Chan and Boliver (2013) also adopted this strategy using the same dataset.

potentially persistent influences of childhood housing on adulthood housing trajectories, and to assess the extent to which ancestral class effects are susceptible to this potential mediating mechanism (Hypothesis 3). I distinguish childhood parental homes that are owner-occupied or renter-occupied. The original variable indicating multiple housing crowding categories for childhood homes is collapsed into two categories, due to the small number of observations at the lowest and highest extremes. To approximate the scenario in which parents share a bedroom and children have their own separate bedrooms, the binary threshold for housing crowding is set at 1.5 persons per room, above which is deemed more crowded.

Housing Crowding and Net Worth at Age 33

I create two dependent variables to be used in OLS regression models (Hypothesis 2). The measure for housing crowding at age 33 is made available by dividing the number of individuals in the household by the number of rooms. Net worth at 33 years old is first calculated by subtracting total debts from total assets at that time, which is a couple-level measure if currently married, otherwise it is computed for the respondents alone. However, net worth in monetary terms has a highly right-skewed distribution and includes negative values and zeros, making it prone to biases from outliers (Killewald, Pfeffer and Schachner 2017). To reduce the potential biases, I convert the monetary terms into percentile ranks, and then normalize the ranks to map into z-scores ($z \sim N(0,1)$) in a standard normal distribution. In this way, the effect sizes for net worth can also be easily interpreted in "the number of standard deviations".

Control Variables

  The baseline logistic regression models for predicting housing tenure trajectories incorporate several control variables including characteristics of cohort members' nuclear families of origin, besides the class positions of great-grandfather, grandfather, and father. The dummy variable for cohort members' gender is coded as "1" if male and "0" if female. Because children born to unmarried mothers are often socioeconomically disadvantaged in later life compared to marital births (Manlove 1997; Pogarsky, Thornberry and Lizotte 2006), I control for mother's marital status at birth (coded as "1" if born to a married mother and "0" if born to an unmarried mother). Individuals' sibship size (measured at age 16), a potential dilutor of parents' material support (Downey 1995), is specified as no siblings (the reference category), one sibling, two siblings, and three or more siblings.

  Another set of covariates are introduced into the full logistic regression models, encompassing early-life and present-day predictors of young adults' socioeconomic resources, family formation, and childbearing statuses. Present-day socioeconomic resources are operationalized by individuals' highest educational attainments at age 33. As existing studies suggest that marital status and childbearing are closely tied to timing of first-time homeownership acquisition (Holland 2012, Kulu and Steele 2013), I control for marital status and age at first childbearing as key events in family life course. Because the age-at-first-marriage variable derived from respondents' partnership and relationship histories is missing in approximately 70 percent of all cases, I control for their current marital statuses instead, separating those who are never married (the reference category) from currently married or ever married (i.e. divorced or separated or widowed). Age brackets at first childbearing serve as the

proxy for fertility timings, distinguishing among (1) those who gave birth at 18 years old or younger (the reference category), and (2) those whose first child arrived between 19 and 23 years old, (3) between 24 and 28 years old, (4) between 29 and 33 years old, and (5) who remain childless. The largest value of inheritance they ever received (in 1000s) is also controlled for, but the original variable unfortunately does not specify whether it came from the parent generation or from earlier ancestors.

Methods

Consistent with Chapter 1, I use sequence analysis followed by cluster analysis to identify the eight conventional housing careers that share similar housing pathways (please refer to Chapter 1 "Methods" section for more details). The identified clusters are then used as key explanatory variables to predict housing crowding level and net worth at age 33 using OLS regression models. The cluster indicators enter the models as dummy variables with the most commonly found cluster as the reference category. Other covariates include the binary indicator for current homeownership status, and all covariates discussed earlier.

The logit models finally predict each of the clusters to trace their multigenerational social origins. The baseline model includes great-grandpa's, grandpa's and father's occupational class categories, along with gender, mother's marital status at time of birth, and the number of siblings. Model 2 tests the robustness of ancestral class gradients by additionally controlling for respondent's early-childhood housing crowding and tenure. Model 3 further adds in respondents' socioeconomic resources, family formation and childbearing statues, including highest

educational attainment so far, most recent occupational categories, current marital status, age at first childbearing, as well as value of the largest inheritance ever received.

Multiple imputation with chained equations is used to fix nonresponse missingness in the explanatory variables for both OLS and logit models. Except for occupation of great-grandpa, the number of siblings and occupation of grandpa, of which the percentages imputed are 28%, 26%, and18% respectively, the imputed cases for all other variables comprise less than 5% of the sample. Sensitivity analysis comparing results with and without imputation suggests that despite small changes in coefficient size, the results regarding key explanatory variables are generally stable.

Results

Identifying Conventional Housing Trajectories

[Figure 1 about here]

As detailed in Chapter 1, eight typical youth housing careers between ages 16 and 33 are identified. "Steady owners" account for about one third of the sample (32.4%), characterized by consistent homeownership for one's adolescent parental home and their own home after home-leaving. This poses stark contrasts to "steady renters" (18.2%), whose young-adulthood housing experiences highlight consistent rental housing for both the parental home they depart from and for their own home afterwards. Rather than a continuity of parental homeownership status and that of one's own, as indicated by "steady owners" and "steady owners", the category of "self-made owners" (21.5%) marks an upward housing career in terms of housing tenure, typical for children of renters that transit to mortgage-based homeownership soon after nest-leaving.

As previously mentioned, two types of housing careers similarly indicating late home-leaving are discovered for children of homeowners and children of renters respectively, which are called "rich late-leavers" (8.7%) and "poor late-leavers" (8.7%).

While the majority of individuals who make it to homeownership by 33 years old undergo the homeownership transitions through mortgages, about 2.4% of the total sample enjoy a fast-track homeownership pathway characterized by outright ownership, meaning that they earn their homeownership clean upon initial home purchase.

Aside from the six aforementioned housing trajectories, a residual housing career also emerges for housing tenure types not previously enumerated, which are conveniently coined as "the unspecified" (3.4%). Finally, a housing career called "the missing" (4.8%) consists of largely missing housing tenure states.

Privileged and Disadvantaged Trajectories

[Table 1 about here]

To determine housing careers typical of more or less favorable socioeconomic outcomes at age 33, Table 1 displays four key socioeconomic outcomes by those trajectories.

The first characteristic features time spent in owner-occupied housing, assuming owner-occupied housing is superior to renter-occupied housing. Within the 18-year window, steady owners (15.1 years), rich late-leavers (15.0 years) and outright owners (14.1 years) top the average years spent in owner-occupied housing, in contrast to steady renters (2.0 years) and poor late-leavers (3.5 years). With regard to average years spent in self-owned housing alone, self-

made owners (10.9 years), outright owners (9.9 years), and steady owners (9.1 years) are more advantaged, but steady renters remain the least disadvantaged (1.6 years).

The second broad category of criteria assesses the individuals' trajectory-wise homeownership and occupational attainments at age 33. Over 90% individuals undergoing three trajectories become homeowners by then, including steady owners (95.4%), self-made owners (94.2%) and outright owners (91.6%). The occupations at age 33 consistently show that steady owners (45.4%) and outright owners (42.8%) have the two highest percentages in managerial or professional occupations. The Chi-square tests indicate high statistical significance for both outcomes (p<0.001).

Housing crowding at age 33 measured by persons per room, the third criterion, tells a largely coherent story. It shows that outright owners, rich late-leavers and steady owners enjoy slightly less crowded housing, especially when compared to steady renters. The last criterion, net worth in 1000s adjusted for household size at 33 years old, reflects that outright owners (15.1) are the wealthiest on average, appreciably outperforming the second wealthiest on average, the steady owners (7.6). Meanwhile, the average steady renters unequivocally hold the least wealth (2.4).

In sum, the four socioeconomic outcomes at the end of the observation window consistently prefer outright owners and steady owners as more advantaged pathways over other housing tenure trajectories. At the other extreme, steady renters are clearly the least privileged. To provide more nuanced insights into how the in-between trajectories respectively compare to the most prevalent pathway as well as to demonstrate the significance of adopting a processual perspective, OLS regression models predict housing crowding and normalized net worth percentiles at age 33.

[Table 2 about here]

As the descriptive variations in housing trajectories discussed previously may reflect

variables that jointly predict sequences and current housing tenure, the regression models control

for multigenerational class positions, highest educational attainment, marital status, and a series

of other demographic controls (not fully shown due to space limitation) to isolate the

independent effects of housing trajectories. As Table 2 shows, in terms of crowding, most

trajectories predict more persons per room in the current residence relative to steady owners,

with the largest gap found for steady renters. However, outright owners are not significantly

different from steady owners in terms of crowding.

Furthermore, the wealth gaps between steady owners and members of other trajectories

resemble those found for housing crowding, posing strong contrasts to steady renters, poor late-

leavers, and self-made owners. Net of all other factors, rich late-leavers are non-distinguishable

from the steady owners in household-size adjusted net worth, whereas outright owners

marginally outperform the baseline category by 0.12 standard deviations ($p<0.10$), ceteris

paribus. Lastly, net of housing tenure trajectories and homeownership status, great-grandfather

and grandfather occupational disadvantages still significantly predict lower current net worth but

not current housing crowding.

All things considered, Table 2 indicates that even when controlling for other factors that

affect long-term well-being, trajectories matter. More disadvantaged housing trajectories mostly

predict worse housing crowding and wealth outcomes, independent of current homeownership.

Relative to steady owners, the unspecified and the rich late home-leavers exhibit less sizeable

differences, whereas steady renters show largest disadvantages. The differences in steady owners and outright owners are discernable in wealth but not in housing crowding.

Predicting Trajectories: Descriptive Statistics for Explanatory Variables

[Table 3 about here]

Having shown that trajectories matter for housing crowding and net worth at age 33, the next step is to examine the social origins and childhood antecedents of different trajectories. Descriptive statistics for the key explanatory variables demonstrate that outright owners are most likely to have great-grandfathers (21.2%), grandfathers (24.0%), and fathers (31.6%) that are in managerial-professional positions. Compared to the outright owners, steady owners and rich late-leavers have lower percentages of great-grandfathers being occupational elites (17.0% and 14.3% respectively), but they have similar percentages of grandfathers (22.1% and 19.7% respectively) and fathers (30.3% and 27.1% respectively) that are managers or professionals. On the other hand, the three ancestors of steady renters are always more concentrated at lower rungs of the multigenerational occupation ladder.

Disparities in childhood housing conditions largely mirror the disparities in housing conditions at age 33. In terms of childhood housing crowding, while 73.3% of steady renters enjoy no more than 1.5 persons per room, the percentages are 88.5% for steady owners, rich late-leavers (87.1%), and outright owners (81.6%). Early childhood parental housing tenure similarly shows that 72.3% of steady owners and 71.8% of rich later-leavers enjoy parent-owned housing,

but the percentages are merely 4.0% for poor late-leavers, 13.0% for self-made owners, and 14.4 % for steady renters.

The indicators for one's socioeconomic resources mirror the more or less privileged trajectories. The cohort members' highest educational attainments and occupational holdings as of age 33 indicate that steady owners and outright owners have the highest concentrations in the most educated category as well as in the managerial-professional occupations, in contrast to poor late-leavers and steady renters. The values of inheritance received indicate that outright owners top the list, partly explaining their financial capacity of paying off the home purchase right away.

Young adults' own family circumstances also vary across housing careers. Marital statuses indicate that late home-leavers are generally least likely to be married (33.8~43.8%), while the married proportions reach high levels of 84.6% for self-made owners and 79.7% for steady owners. For age brackets of one's first childbirth, late home-leavers have the highest percentages of being childless by 33 years old, whereas only 13.8% of self-made owners and 16.6% of steady renters remain childless, and the latter group also tends to initiate fertility early.

Looking at the demographic control variables, the gender distributions reveal that men are generally more likely to be late home-leavers than women (whether growing up in owner-occupied or renter-occupied housing), but the opposite is true for steady renters. Regarding sibship size, rich late-leavers tend to have the least number of siblings, while steady renters tend to have the largest sibling size. Although the vast majority of cohort members were born to married mothers, the share of married mothers upon cohort members' birth was surprisingly low for outright owners (88.8%).

At the minimum, the descriptive statistics provide suggestive evidence that individuals' ancestral class backgrounds, socioeconomic resources, and family formation statuses vary

substantially by housing trajectories. Next section discusses results regarding ancestral class

gradients from logit models.

Determinants of Housing Trajectories

[Table 4 about here]

The Roles of Ancestral Class Backgrounds

With respect to ancestral class backgrounds as determinants of specific trajectories, three

major patterns emerge from Model 1, Table 4. The first pattern is that class positions of great-

grandpa, of grandpa, and of father each significantly predict one's housing career, which is

applicable to self-made owners, steady owners, and steady renters. For both self-made owners

and steady renters, their baseline models similarly suggest that ancestors' occupational

disadvantages are associated with greater chances of undertaking either pathway, whereby the

top-bottom gaps are consistently wider than the top-medium gaps for each of the three ancestral

generations. Auxiliary analysis indicates this seems to be because ancestors' occupational

disadvantages predict lower odds of living in an owned residence in early childhood. The

magnitudes of class differences are intuitively largest for the father's generation and smallest for

the great-grandfather's generation, implying greater influence from one's nuclear family relative

to that from the extended family. For steady owners, however, the ancestral class disadvantages

work in an opposite direction. Lower grandpa- and father classes are associated with reduced

chances of experiencing this trajectory, indicating a housing career of multigenerational class privilege.

The second pattern observes class gradients of two consecutive generations, for grandpa and father class positions but not for that of great-grandpa. This works for the rich and poor late-leavers. Having a grandpa ever holding unskilled occupations is a marginally positive predictor of undergoing the pathway of poor late-leavers ($p<0.10$), relative to having a grandpa holding managerial-professional positions. The opposite pattern is observed for rich late-leavers. The class gradients in the father's generation are more robust by comparison.

The third pattern points to the significant effects of great-grandpa and father's classes only, which is applicable to the outright owners. Compared to individuals from other groups, not only are the positive class gradients more persistent in the great-grandpa's generation (throughout the three models), the magnitudes of great-grandpa class gradients are of comparable magnitudes with those in the father's generation. Sensitivity analysis reveals that, the baseline model without controlling for great-grandpa's class positions actually demonstrates marginally significant grandpa effects (at least for the top-bottom contrast) and stronger father class effects. That means for outright owners in particular, great-grandpa's class positions entirely explain grandpa's class positions and partially explain father's class positions. Considering the financial challenges outright ownership poses for ordinary families and the rare occurrence of this route (2.4%), these individuals most likely come from very wealthy families with solid socioeconomic foundations, so that ancestral advantages manage to transcend four generations or beyond.

Taken together, the emerging patterns from the baseline models show that great-grandparent and grandparent's class positions hold various degrees of predictive power over the majority of respondents' housing tenure trajectories and are more robust for outright owners,

steady owners and steady renters, whose trajectories are the most and least privileged respectively. The gradients in father's class positions are generally more sizeable and more persistent than those of the earlier two generations, but the outright owners represent the exceptional cases that deviate from this stylized finding, whose great-grandpa class effects turn out to be quite robust and the largest in terms of magnitudes. Family legacies show up most for the most privileged descendants.

Childhood Housing Conditions

Model 2 in Table 4 additionally controls for one's childhood housing tenure, childhood housing crowding to see if the ancestral class gradients still hold when childhood housing exposures are considered.

Childhood homeownership status is a statistically significant predictor for seven housing trajectories (except for the missing trajectory). Resembling observed parental-home housing tenures during one's adolescence (refer to Figure 1), living in owner-occupied parental homes as preschoolers predict greater chances of later becoming steady owners, richer late-leavers, and outright owners. What these three groups share in common is an owned parental home around the cohort members' home-leaving ages. By contrast, owned childhood parental homes indicate lower chances of being self-made owners, poor late-leavers, steady renters, as well as the unspecified, the majority of whom live in rental parental homes immediately before nest-leaving. Both aspects point to continuities in individuals' parental housing tenure across the family life course.

Compared to childhood housing tenure, childhood housing crowding is a significant predictor for four out of eight trajectories only. Growing up in a less crowded home is positively associated with trajectories characterized by smooth and fast transitions to homeownership, namely, self-made owners and steady owners. It follows that one lasting influence that an early experience of less crowded housing has on individuals' value systems is probably to make them expect a comfortable home with ownership. On the other hand, early childhood experience of less crowded housing is inversely related to trajectories of prolonged tenancy, for instance, poor late-leavers and steady renters.

Contrary to Hypothesis 3, the class gradients are *not* robust to including childhood housing conditions, which mediate substantial shares of great-grandparent, grandparent, and father's class gradients. Most of the ancestral class gaps in baseline models lose statistical significance in Model 2. Using the KHB method to illustrate, for steady renters, childhood housing environments mediate 95~100% of great-grandparent class effects, 62~65% grandparent class effects, and 45~47% of father class effects. However, childhood housing environments account for substantially lower percentages of class gaps for the outright owners, with the corresponding shares mediated being 11~15%, 21~39%, and 10~12% respectively (Breen, Karlson and Holm 2013).

The contrasts between the two extremes demonstrate much greater mediating roles early childhood housing conditions play in perpetuating multigenerational class disparities for the least advantaged group than the most advantaged group. The only ancestral class gradients that remain resistant to childhood housing conditions are those for outright owners. One possible explanation is that housing wealth constitutes a less important component in the household asset portfolio for

the richest than for the poorest. Therefore, more privileged (great-)grandpas have more means to pass down their advantages to their (great)-grandchildren in addition to help the latter's parents.

Socioeconomic Resources and Family Formation

Model 3 of Table 4 further controls for indicators of one's socioeconomic resources and their family formation characteristics to see if the ancestral class gradients for outright owners persist. It turns out that these additional variables lead to minor changes to the coefficients of interest, as outright owners' great-grandfather class gradients stay robust at least for the top-medium class gradients.

Nevertheless, one's occupational and educational attainments (or achievements) significantly predict housing pathways, which should be interpreted with caution due to endogeneity concerns. Model 3 findings generally imply that being educationally high-achieving is at least partly responsible for the successes of steady owners, whereas being occupationally or educationally low-achieving exemplify the rich late-leavers or those who do not launch their own households in a timely manner (i.e. the two types of late home-leavers). The latter is consistent with existing studies arguing lack of economic independence as a key determinant of young adults' protracted coresidence with parents (Furstenberg, Rumbaut and Settersten 2005; Sironi and Furstenberg 2012). However, the role of inheritance seems negligible.

Another look at marital status and timing of first childbearing are congruent with existing findings. More favorable housing trajectories are often positively associated with being ever married (compared to the never married), adding another dimension to the existing findings on

socioeconomic gradients in marriage entry (Kalmijn 2013; Schneider 2011). Moreover, late home-leavers tend to stay single and childless till their late 20s and early 30s.

Other Control Variables

Several other demographic control variables are also present throughout Model 1~3. As with descriptive statistics, late home-leavers are more likely to be men, making protracted parent-child coresidence a gendered phenomenon. Self-made owners and steady renters instead tend to be women. Following the reasoning that lack of socioeconomic success makes adult children more reliant on parents' material assistance, it seems parents are more likely to provide coresidence as a form of in-kind subsidy for sons than for daughters. However, it is beyond this study's capacity to ascertain whether this has changed for later cohorts.

The coefficients regarding sibship size are consistent with the resource dilution theory that having more brothers or sisters tend to reduce parental resources available per child (Downey 1995). There is evidence that children growing up with more siblings tend to leave parental homes early (whether voluntary or forced by greater economic pressure) and soon establish those of their own (i.e. quick upward movers); but the economically disadvantaged from large families are also inclined to get trapped in permanent rental housing (i.e. steady renters). Late home-leavers, who enjoy the privilege of extending their home stay, often have fewer siblings.

Conclusion

Bridging recent literatures on intergenerational transmission of homeownership and life course housing disparities, this study identifies the conventional housing tenure trajectories into young adulthood and their multigenerational determinants, using data from the NCDS 1958 Cohort. Sequence analysis identifies a diverse range of housing experiences between ages 16 and 33. I find that more privileged pathways are generally characterized by taking off from owner-occupied (as opposed to renter-occupied) parental homes in late adolescence, subsequently experiencing rapid home acquisition process, spending higher percentages of time in owned housing, ending up with better-quality housing and greater amount of wealth by the early 30s. Of all the trajectories identified, outright owners (about 2.4% of the sample) and steady renters (the more popular trajectory, about 1/3) exemplify the two most privileged trajectories, which do not visibly differ in other socioeconomic indicators but net worth. On the other hand, the steady renters unambiguously represents the least privileged pathway. Further analysis into the in-between trajectories reveals that, as far as housing crowding and net worth are concerned, rich late home-leavers and self-made owners exhibit smaller disadvantages relative to the most popular trajectory, whereas downward movers and slow upward movers show larger disadvantages.

Equally important, housing tenure trajectories are largely structured by multigenerational class positions. Results from logistic models indicate that great-grandfather, grandfather, and father class positions intuitively predict the housing trajectories. Consistent with existing findings on multigenerational social inequalities (Chan and Boliver 2013; Hällsten 2014; Mare 2011), ancestral class gradients in housing careers are more sizeable for the most and the least privileged trajectories. However, the ancestral class gradients in the baseline models are generally sensitive to controlling for childhood housing environments, suggesting the roots of

housing gaps in adulthood are largely traceable to childhood housing exposures. More specifically, childhood homeownership and crowding mediate the lion's share of ancestral class gradients for the steady renters, but only a small share for outright owners. This stark contrast implies that ancestors of various class positions could influence one's life trajectories through significantly different channels, possibly attributable to the class differences in the composition of household asset portfolios.

This study makes several important contributions to the existing literature. First, it extends the two-generational paradigm of intergenerational housing transmissions to a four-generation framework via processual lenses, showing that parental influence becomes smaller once earlier generations are introduced into the picture. I demonstrate that housing inequalities do not only manifest as "stock" outcomes, such as homeownership and various levels of housing quality that we often see in existing studies, but also unfold as "flow" outcomes or processes that are characterized by both continuities and discontinuities across the life course, rendering far-reaching consequences on individuals' long-term wellbeing.

Second, it offers new insights into the various forms of multigenerational inequalities outside the US context, showing the intertwined links between class inequalities, housing inequalities, and wealth inequalities. Also, a practical question facing scholars of multigenerational inequalities is "how many generations do we need to take into account". Although this study does not directly answer this question, it nonetheless suggests that three might be enough if the population is neither extremely poor nor extremely rich, whereas four or more generations of data would be more desirable for the most privileged group. Thus, it requires researchers of multigenerational inequalities to better understand their subjects of interest for higher-quality research designs.

Third, the emerging findings provide more nuanced understandings of the different timings of home-leaving. While this study generally agrees with conventional wisdom that earlier homeownership attainment is generally associated with better socioeconomic attainments, this study indicate the *earliest* homeownership acquisitions (as exemplified by the self-made owners) are not necessarily associated with the *best* socioeconomic outcomes. The moderately early home purchasers turn out to be most privileged, partly due to timing and partly due to route. Besides, my demographic portraits of rich and poor late home-leavers also add empirical qualifications to existing studies of residential transitions to adulthood (Furstenberg et al. 2005; Sironi and Furstenberg 2012). Lower educational and occupational attainments are indeed positively associated with protracted parent-child coresidence, signaling the younger generation's economic immaturity at least to some degree.

This study also has several limitations that future works could improve upon. Occupational class categories are just crude proxies for multigenerational socioeconomic foundations, due to limited information available for the ancestors in this dataset, and this first attempt indicates it might be promising for future works to try out more refined measures of ancestral backgrounds along this line. It is also beyond the data's capacity to distinguish between paternal and maternal ancestral effects or between female and male ancestral effects, which I suspect could be more different in patriarchal societies. Biases could also arise due to the use of retrospective datasets to study multigenerational social inequalities, as childless individuals are underrepresented in the present datasets and that differential fertility rates across different social groups, if available from external datasets, may additionally be used to further adjust for such biases. Furthermore, while this paper applies a descriptive perspective to understand multigenerational determinants of housing trajectories, researchers interested in causal inference

could further study the causal mechanisms behind multigenerational housing disparities, with suitable data and methods. Last but not the least, this study is based on a particular birth cohort in UK, but there remain open questions as to whether housing experiences have changed for more recent cohorts and how trajectories might differ across countries. Future works therefore could conduct cohort comparisons and cross-country comparisons to test the generalizability of the findings.

References

Abbott, Andrew and Angela Tsay. 2000. "Sequence Analysis and Optimal Matching Methods in Sociology: Review and Prospect." *Sociological Methods & Research* 29(1):3-33.

Abbott, Andrew. 2016. *Processual Sociology*. University of Chicago Press.

Albertini, Marco and Jonas Radl. 2012. "Intergenerational Transfers and Social Class: Inter-Vivos Transfers as Means of Status Reproduction?". *Acta Sociologica* 55(2):107-23.

Albertini, Marco, Marco Tosi and Martin Kohli. 2017. "Parents' Housing Careers and Support for Adult Children across Europe." *Housing Studies* 33(2):1-18.

Avery, Roger, Frances Goldscheider and Alden Speare. 1992. "Feathered Nest/Gilded Cage: Parental Income and Leaving Home in the Transition to Adulthood." *Demography* 29(3):375-88.

Banks, James, Richard Blundell and James P Smith. 2003. "Understanding Differences in Household Financial Wealth between the United States and Great Britain." *Journal of Human Resources* 38(2):241-79.

Bastagli, Francesca and John Hills. 2012. "Wealth Accumulation in Great Britain 1995-2005: The Role of House Prices and the Life Cycle." Accessed online https://core.ac.uk/download/pdf/16379905.pdf

Blau, Peter M. and Otis D. Duncan. 1967. *The American Occupational Structure*. Hoboken, NJ, US: John Wiley & Sons Inc.

Boehm, Thomas P and Alan Schlottmann. 2008. "Wealth Accumulation and Homeownership: Evidence for Low-Income Households." *Cityscape* 10(2):225-56.

Bourdieu, Pierre. 2013. *Distinction: A Social Critique of the Judgement of Taste*: Routledge.

Breen, R., Karlson, K. B., & Holm, A. (2013). Total, Direct, and Indirect Effects in Logit and Probit Models. *Sociological Methods & Research 42*(2): 164-191.

Chan, Tak Wing and Vikki Boliver. 2013. "The Grandparents Effect in Social Mobility: Evidence from British Birth Cohort Studies." *American Sociological Review* 78(4):662-78.

Clark, William AV, Marinus C Deurloo and Frans M Dieleman. 2003. "Housing Careers in the United States, 1968-93: Modelling the Sequencing of Housing States." *Urban Studies* 40(1):143-60.

Conley, Dalton. 2001. "A Room with a View or a Room of One's Own? Housing and Social Stratification." *Sociological Forum* 16(2): 263-280.

Diaz, Christina J and Jeremy E Fiel. 2016. "The Effect (S) of Teen Pregnancy: Reconciling Theory, Methods, and Findings." *Demography* 53(1):85-116.

Downey, Douglas B. 1995. "When Bigger Is Not Better: Family Size, Parental Resources, and Children's Educational Performance." *American sociological review*:746-61.

Ferri, Elsa. 1993. *Life at 33: The Fifth Follow-up of the National Child Development Study*: National Children's Bureau London.

Forrest, Ray. 1987. "Spatial Mobility, Tenure Mobility, and Emerging Social Divisions in the Uk Housing Market." *Environment and Planning A* 19(12):1611-30.

Furstenberg, Frank F, Rubén G Rumbaut and Richard A Settersten. 2005. "On the Frontier of Adulthood: Emerging Themes and New Directions." *On the Frontier of Adulthood: Theory, Research, and Public Policy*:3-25.

Furstenberg Jr, Frank F. 2003. "Teenage Childbearing as a Public Issue and Private Concern." *Annual Review of Sociology* 29(1):23-39.

Gabadinho, Alexis, Gilbert Ritschard, Nicolas Séverin Mueller and Matthias Studer. 2011. "Analyzing and Visualizing State Sequences in R with Traminer." *Journal of Statistical Software* 40(4):1-37.

Goldscheider, Frances, Arland Thornton and Linda Young-DeMarco. 1993. "A Portrait of the Nest-Leaving Process in Early Adulthood." *Demography* 30(4):683-99.

Goldscheider, Francis and Calvin Goldscheider. 1999. *The Changing Transition to Adulthood*, Vol. 17: Sage.

Hällsten, Martin and Fabien T Pfeffer. 2017. "Grand Advantage: Family Wealth and Grandchildren's Educational Achievement in Sweden". *American Sociological Review* 82(2), 328-360.

Hällsten, Martin. 2014. "Inequality across Three and Four Generations in Egalitarian Sweden: 1st and 2nd Cousin Correlations in Socio-Economic Outcomes." *Research in Social Stratification and Mobility* 35(March):19-33.

Hauser, Robert M. 1994. "Measuring Socioeconomic Status in Studies of Child Development." *Child development*:1541-45.

Helderman, Amanda and Clara Mulder. 2007. "Intergenerational Transmission of Homeownership: The Roles of Gifts and Continuities in Housing Market Characteristics." *Urban Studies* 44(2):231-47.

Henretta, John C. 1984. "Parental Status and Child's Home Ownership." *American Sociological Review* 49(1):131-40.

Holland, Jennifer A. 2012. "Home and Where the Heart Is: Marriage Timing and Joint Home Purchase." *European Journal of Population/Revue Europeenne de Demographie* 28(1):65-89.

Hout, Michael and Thomas A. DiPrete. 2006. "What We Have Learned: Rc28's Contributions to Knowledge About Social Stratification." *Research in Social Stratification and Mobility* 24(1):1-20.

Hout, Michael. 2015. "A Summary of What We Know About Social Mobility." *The Annals of the American Academy of Political and Social Science* 657(1):27-36.

Kalmijn, Matthijs. 2013. "The Educational Gradient in Marriage: A Comparison of 25 European Countries." *Demography* 50(4):1499-520.

Karagiannaki, Eleni. 2017. "The Impact of Inheritance on the Distribution of Wealth: Evidence from Great Britain." *Review of Income and Wealth* 63(2):394-408.

Killewald, Alexandra, and Brielle Bryan. 2016. "Does Your Home Make You Wealthy?" *RSF: The Russell Sage Foundation Journal of the Social Sciences 2*(6), 110-128.

Killewald, Alexandra, Fabian T Pfeffer and Jared N Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43:379-404.

Kulu, Hill and Fiona Steele. 2013. "Interrelationships between Childbearing and Housing Transitions in the Family Life Course." *Demography* 50(5):1687-714.

Kurz, Karin. 2004. "Labour Market Position, Intergenerational Transfers and Home-Ownership: A Longitudinal Analysis for West German Birth Cohorts." *European Sociological Review* 20(2):141-59.

Lopoo, Leonard M and Andrew S London. 2016. "Household Crowding During Childhood and Long-Term Education Outcomes." *Demography* 53(3):1-23.

Manlove, Jennifer. 1997. "Early Motherhood in an Intergenerational Perspective: The Experiences of a British Cohort." *Journal of Marriage and the Family* 59(2):263-79.

Mare, Robert D. 2011. "A Multigenerational View of Inequality." *Demography* 48(1):1-23.

Mulder, Clara H and Jeroen Smits. 1999. "First-Time Home-Ownership of Couples the Effect of Inter-Generational Transmission." *European Sociological Review* 15(3):323-37.

Murphy, Mike and Duolao Wang. 1998. "Family and Sociodemographic Influences on Patterns of Leaving Home in Postwar Britain." *Demography* 35(3):293-305.

Öst, Cecilia Enström. 2012. "Parental Wealth and First-Time Homeownership: A Cohort Study of Family Background and Young Adults' Housing Situation in Sweden." *Urban Studies* 49(10):2137-52.

Pfeffer, Fabian. 2014. "Multigenerational Approaches to Social Mobility: A Multifaceted Research Agenda." *Research in Social Stratification and Mobility* 35:1-12.

Pfeffer, Fabian T and Alexandra Killewald. 2017. "Generations of Advantage. Multigenerational Correlations in Family Wealth." *Social Forces* 96(4):1411-42.

Pilkauskas, Natasha V, Irwin Garfinkel and Sara S McLanahan. 2014. "The Prevalence and Economic Value of Doubling Up." *Demography* 51(5):1667-76.

Pogarsky, Greg, Terence P Thornberry and Alan J Lizotte. 2006. "Developmental Outcomes for
    Children of Young Mothers." *Journal of Marriage and Family* 68(2):332-44.

Pollock, Gary. 2007. "Holistic Trajectories: A Study of Combined Employment, Housing and
    Family Careers by Using Multiple-Sequence Analysis." *Journal of the Royal Statistical
    Society: Series A (Statistics in Society)* 170(1):167-83.

Schneider, Daniel. 2011. "Wealth and the Marital Divide." *American Journal of Sociology*
    117(2):627-67.

Schwanitz, Katrin, Clara H Mulder and Laurent Toulemon. 2017. "Differences in Leaving Home
    by Individual and Parental Education among Young Adults in Europe." *Demographic
    Research* 37(63):1975-2010.

Sironi, Maria and Frank F Furstenberg. 2012. "Trends in the Economic Independence of Young
    Adults in the United States: 1973–2007." *Population and Development Review*
    38(4):609-30.

Solari, Claudia D and Robert D Mare. 2012. "Housing Crowding Effects on Children's
    Wellbeing." *Social science research* 41(2):464-76.

Spilerman, Seymour. 2000. "Wealth and Stratification Processes." *Annual Review of Sociology*
    26:497-524.

Spilerman, Seymour and Francois-Charles Wolff. 2012. "Parental Wealth and Resource
    Transfers: How They Matter in France for Home Ownership and Living Standards."
    Social Science Research 41(2):207-23.

Stovel, Katherine and Marc Bolan. 2004. "Residential Trajectories: The Use of Sequence
    Analysis in the Study of Residential Mobility." *Sociological Methods & Research*
    32:559-98.

Studer, Matthias. 2013. "Weightedcluster Library Manual: A Practical Guide to Creating Typologies of Trajectories in the Social Sciences with R." Accessed online https://cran.r-project.org/web/packages/WeightedCluster/vignettes/WeightedCluster.pdf

Whittington, Leslie A and H Elizabeth Peters. 1996. "Economic Incentives for Financial and Residential Independence." *Demography* 33(1):82-97.

Wiemers, Emily E. 2014. "The Effect of Unemployment on Household Composition and Doubling Up." *Demography* 51(6):2155-78.

Wolff, Edward N. 2006. *International Perspectives on Household Wealth*: Edward Elgar Publishing.

Zorlu, Aslan and Clara H Mulder. 2011. "Ethnic Differences in Leaving Home: Timing and Pathways." *Demography* 48(1):49-72.

Tables and Figures (to follow)
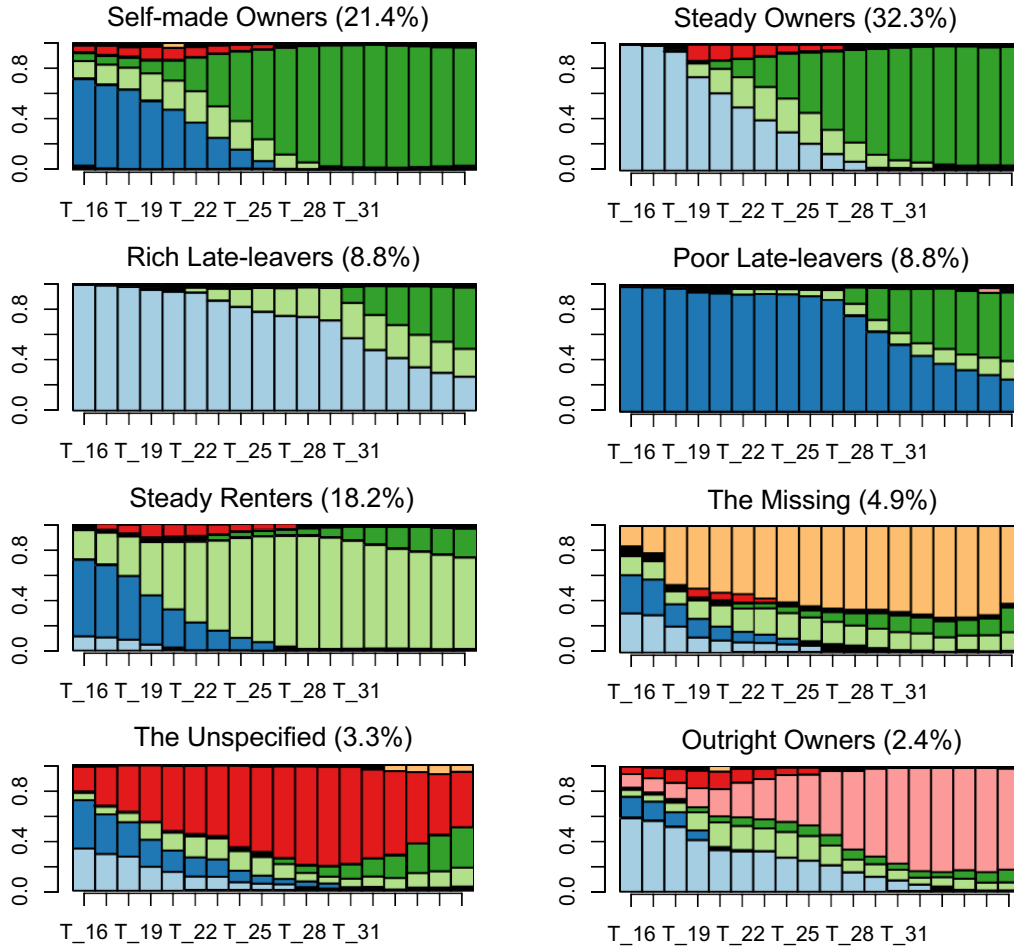
Figure 1: State Distribution Plots by Clusters
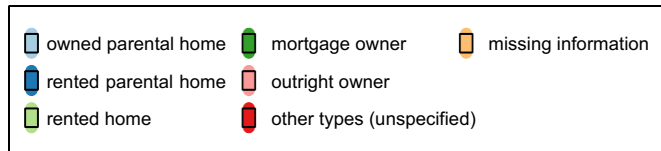
Table 1. Key Characteristics by Housing Tenure Trajectories

	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8
	Self-made Owners	Steady Owners	Rich Late-leavers	Poor Late-Leavers	Steady Renters	The Missing	The Unspecificed	Outright Owners
(1) *Time spent in owner-occupied housing:*								
a. Average years spent in owner-occupied housing between ages 16 and 33	11.0	15.1	15.0	3.5	2.0	2.9	3.4	14.1
Standard deviations in parentheses	(2.8)	(3.4)	(4.1)	(3.2)	(2.6)	(3.8)	(3.6)	(3.5)
b. Average years spent in self-owned housing between ages 16 and 33	10.9	9.1	2.1	3.5	1.6	1.5	1.7	9.9
Standard deviations in parentheses	(2.8)	(2.8)	(2.3)	(3.2)	(2.5)	(2.5)	(2.4)	(4.0)
(2) *Individual characteristics at age 33:*								
a. Home owners (%)	94.2	95.4	75.8	57.8	23.5	21.0	34.7	91.6
Chi-square test statistic	9500***							
b. Managerial-professional occupations (%)	28.9	45.4	33.9	26.5	21.5	26.4	34.7	42.8
Chi-square test statistic	703***							
(3) Housing crowding at age 33: (unit: persons per room)	1.0	0.9	0.9	1.0	1.2	1.1	1.0	0.9
Standard deviations in parentheses	(0.3)	(0.3)	(0.4)	(0.3)	(0.4)	(0.5)	(0.4)	(0.4)
(4) Household-size adjusted average net worth at age 33 (unit: 1000 pounds)	6.5	7.6	7.2	3.8	2.4	4.4	7.4	15.1
Standard deviations in parentheses	(47.4)	(50.7)	(51.9)	(33.2)	(26.1)	(28.4)	(43.4)	(56.8)

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.10$

Table 2. OLS Regression Models Predicting Housing Crowding and Net Worth at 33 Years Old [a]

	Housing Crowding	Net Worth [b]
Housing Trajectories (ref.Steady Owners)		
Self-made Owners	0.02**	-0.07**
	(0.01)	(0.03)
Rich Late-leavers	0.03**	-0.04
	(0.01)	(0.04)
Poor Late-Leavers	0.03*	-0.09*
	(0.01)	(0.04)
Steady Renters	0.09***	-0.22***
	(0.01)	(0.03)
The Missing	0.06***	-0.09†
	(0.02)	(0.05)
The Unspecified	0.01	-0.07
	(0.02)	(0.06)
Outright Owners	0.01	0.12†
	(0.02)	(0.06)
Homeownership by Age 33	-0.18***	0.17***
	(0.01)	(0.03)
Great-grandpa's occ. (ref.managerial-professional occ.)		
Skilled occ.	0.01	-0.06†
	(0.01)	(0.03)
Semi-skilled or unskilled occ.	0.02	-0.08*
	(0.01)	(0.03)
Grandpa's occ. (ref.managerial-professional occ.)		
Skilled occ.	0.01	-0.06*
	(0.01)	(0.03)
Semi-skilled or unskilled occ.	0.01	-0.01
	(0.01)	(0.03)
Father's occ. (ref.managerial-professional occ.)		
Skilled occ.	0.04***	-0.08**
	(0.01)	(0.03)
Semi-skilled or unskilled occ.	0.04**	-0.09*
	(0.01)	(0.03)
R's latest occ. (ref.managerial-professional occ.)		
Skilled occ.	0.05***	-0.09***
	(0.01)	(0.02)
Semi-skilled or unskilled occ.	0.05***	-0.15***
	(0.01)	(0.03)
Observations	10,870	10,870

Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, † p<0.10

a. To save space, other demographic control variables are not shown.

b. The dependent variable is generated by transforming household-size adjusted net worth percentile rank scores into z-scores with a standard norm distribution.

Table 3. Descriptive Summary for Explanatory Variables by Housing Trajectories

	Overall Sample	Type 1 Self-made Owners	Type 2 Steady Owners	Type 3 Rich Late-leavers	Type 4 Poor Late-Leavers	Type 5 Steady Renters	Type 6 The Missing	Type 7 The Unspecified	Type 8 Outright Owners
Great-grandfather's occupational class (%)									
Professional-managerial	11.8	8.2	17.0	14.3	6.9	7.9	8.1	16.1	21.2
Skilled	35.8	34.4	40.4	40.3	34.7	31.1	32.4	30.7	30.8
Semi-skilled or unskilled	24.3	27.6	18.6	20.8	28.4	28.4	26.9	26.1	20.8
Unknown	28.2	29.8	24.0	24.7	30.1	32.6	32.6	27.2	27.2
Grandfather's occupational class (%)									
Professional-managerial	14.9	9.8	22.1	19.7	9.0	8.5	12.3	21.8	24.0
Skilled	44.8	45.0	46.7	46.7	41.6	44.3	42.9	38.7	40.4
Semi-skilled or unskilled	22.2	25.6	14.9	16.4	30.5	28.4	25.1	20.7	17.6
Unknown	18.1	19.7	16.2	17.2	18.9	18.9	19.7	18.8	18.0
Father's occupational class (%)									
Professional-managerial	18.1	9.9	30.3	27.1	6.9	8.1	14.5	23.1	31.6
Skilled	58.2	62.1	56.8	55.7	61.7	57.2	57.5	57.5	48.0
Semi-skilled or unskilled	20.3	24.4	10.6	13.5	27.1	30.8	23.7	17.2	13.6
Unknown	3.4	3.6	2.4	3.7	4.3	3.9	4.3	2.2	6.8
Childhood housing <= 1.5 persons per room (%)	81.3	79.4	88.5	87.1	76.5	73.3	78.3	77.7	81.6
Childhood housing parent-owned home (%)	38.2	13.0	72.3	71.8	4.0	14.4	32.0	33.9	56.4
Highest educ. attainment at age 33 (%)									
No qualification	12.0	9.4	2.6	8.5	16.7	25.5	23.7	14.5	8.0
CSE 2-5/equiv NVQ1	12.3	14.1	7.6	11.3	13.4	16.9	14.1	13.4	12.0
O Level/equiv NVQ2	34.1	40.0	32.0	32.4	38.8	31.4	31.7	28.5	31.6
A Level/equiv NVQ3	13.9	13.9	16.2	17.1	13.8	9.4	9.6	15.6	15.2
Higher qual NVQ4	14.1	14.1	19.1	17.2	10.7	7.6	9.4	14.3	16.0
Degree/higher NVQ5,6	12.5	7.2	22.0	12.8	5.3	s	10.3	12.4	16.8
Unknown	1.2	1.3	0.6	0.7	1.3	2.0	1.3	1.3	0.4
Occupational class at age 33 (%)									
Professional-managerial	33.0	28.9	45.4	33.9	26.5	21.5	26.4	34.7	42.8
Skilled	41.0	46.8	38.5	43.0	46.2	37.3	36.0	35.2	41.2
Semi-skilled or unskilled	18.9	18.6	10.7	16.9	20.3	30.5	28.4	19.6	11.2
Unknown	7.1	5.6	5.5	6.2	6.9	10.8	9.2	10.5	4.8
Mean value of largest inheritance (in 1000s)	3.4	2.1	4.3	5.5	2.7	1.8	2.0	2.6	15.0
Standard errors (in parentheses)	(33.3)	(27.0)	(34.8)	(46.0)	(37.1)	(26.6)	(10.8)	(11.5)	(72.7)
Marital status at age 33 (%)									
Never married	17.6	4.9	10.3	43.8	33.8	19.4	29.7	19.1	20.4
Currently married	70.4	84.6	79.7	49.3	56.8	61.8	55.0	66.1	65.2
Divorced/separated/widowed	11.3	10.1	9.5	6.1	8.4	17.9	13.2	13.7	13.6
Unknown	0.8	0.5	0.5	0.8	0.9	0.9	2.2	1.1	0.8
Age at first childbirth									
14 to 18 years old	4.5	3.7	1.6	1.0	1.7	12.3	6.5	4.3	3.6
19 to 23 years old	21.5	24.6	15.4	9.9	7.5	39.9	22.1	18.8	17.6
24 to 28 years old	28.0	39.6	36.0	12.7	16.4	18.1	21.5	28.5	21.2
29 to 33 years old	17.2	15.4	21.4	19.0	24.7	8.7	16.8	16.9	15.2
Childless	23.9	13.8	20.4	50.7	44.3	16.6	26.8	26.9	33.2
Unknown	4.9	3.0	5.1	6.7	5.4	4.5	6.3	4.6	9.2
Male (%)	48.8	44.5	46.3	63.1	62.6	43.2	52.3	54.6	46.4
Sibship Size (%)									
No sibling	5.1	3.9	6.3	7.6	4.2	3.5	4.5	5.7	8.4
1 sibling	22.6	19.0	30.2	29.1	18.1	14.6	18.6	23.4	26.4
2 siblings	18.8	18.4	21.5	19.5	16.4	16.2	18.1	18.6	18.0
3(+) siblings	27.2	29.5	19.8	21.1	32.3	36.3	28.9	29.3	21.2
Unknown	26.3	29.1	22.3	22.8	29.1	29.4	29.8	23.1	26.0
Mother married at CM's birth (%)	92.0	92.0	93.5	91.9	92.7	90.4	90.6	91.7	88.8
No. of Observations	10,870	2,317	3,277	964	984	2,153	553	372	250

Table 4: Logistic Regression Models Predicting Housing Tenure Trajectories: Type 1 through Type 4 (To Be Continued)

	Self-made Owners			Steady Owners			Rich Late-leavers			Poor Late-Leavers		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Great-grandpa's occ. (ref. managerial-professional occ.)												
Skilled occ.	0.13	0.03	0.03	-0.13†	-0.01	0.02	0.07	0.16	0.17	0.16	0.03	0.03
	(0.09)	(0.09)	(0.09)	(0.07)	(0.08)	(0.08)	(0.11)	(0.11)	(0.11)	(0.14)	(0.14)	(0.14)
Semi-skilled or unskilled occ.	0.22**	0.02	0.04	-0.45***	-0.18*	-0.11	-0.07	0.16	0.17	0.25†	0.00	0.00
	(0.09)	(0.09)	(0.10)	(0.08)	(0.09)	(0.10)	(0.13)	(0.13)	(0.14)	(0.15)	(0.15)	(0.15)
Grandpa's occ. (ref. managerial-professional occ.)												
Skilled occ.	0.27***	0.09	0.05	-0.25***	-0.03	-0.02	-0.10	0.06	0.10	0.16	-0.09	-0.03
	(0.08)	(0.08)	(0.08)	(0.06)	(0.07)	(0.07)	(0.10)	(0.10)	(0.10)	(0.12)	(0.13)	(0.13)
Semi-skilled or unskilled occ.	0.36***	0.09	0.08	-0.61***	-0.23**	-0.18*	-0.36**	-0.05	-0.04	0.44***	0.08	0.11
	(0.08)	(0.09)	(0.09)	(0.08)	(0.08)	(0.09)	(0.12)	(0.12)	(0.13)	(0.13)	(0.14)	(0.14)
Father's occ. (ref. managerial-professional occ.)												
Skilled occ.	0.62***	0.27**	0.26**	-0.61***	-0.20**	-0.12†	-0.38***	-0.06	-0.04	0.86***	0.35*	0.42**
	(0.08)	(0.09)	(0.09)	(0.06)	(0.06)	(0.07)	(0.09)	(0.09)	(0.10)	(0.14)	(0.14)	(0.15)
Semi-skilled or unskilled occ.	0.72***	0.23*	0.25*	-1.25***	-0.59***	-0.41***	-0.65***	-0.07	-0.06	1.05***	0.36*	0.48**
	(0.09)	(0.10)	(0.10)	(0.08)	(0.09)	(0.10)	(0.12)	(0.13)	(0.14)	(0.15)	(0.15)	(0.16)
Male	-0.21***	-0.23***	-0.23***	-0.19***	-0.24***	-0.29***	0.63***	0.65***	0.47***	0.64***	0.67***	0.40***
	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)	(0.07)	(0.07)	(0.08)	(0.07)	(0.07)	(0.08)
Mother was married when CM was born	0.26†	0.26†	0.19	0.44**	0.44**	0.31†	-0.17	-0.21	-0.14	0.24	0.27	0.19
	(0.15)	(0.16)	(0.16)	(0.15)	(0.16)	(0.17)	(0.19)	(0.19)	(0.21)	(0.21)	(0.22)	(0.23)
Sibship size (ref. no sibling)												
1 sibling	0.10	0.09	0.07	0.00	0.04	0.04	-0.17	-0.16	-0.12	-0.02	-0.04	0.08
	(0.12)	(0.12)	(0.13)	(0.10)	(0.10)	(0.11)	(0.15)	(0.14)	(0.15)	(0.17)	(0.17)	(0.18)
2 siblings	0.24†	0.16	0.15	-0.22*	-0.09	-0.05	-0.34*	-0.24	-0.18	0.03	-0.11	0.09
	(0.13)	(0.13)	(0.14)	(0.09)	(0.11)	(0.11)	(0.16)	(0.16)	(0.17)	(0.18)	(0.18)	(0.20)
3 or more siblings	0.27*	0.09	0.17	-0.68***	-0.34**	-0.23*	-0.62***	-0.33*	-0.25	0.25	-0.05	0.19
	(0.12)	(0.13)	(0.14)	(0.10)	(0.10)	(0.11)	(0.15)	(0.15)	(0.16)	(0.18)	(0.18)	(0.19)
Childhood crowding (ref. >1.5 persons per room)												
<= 1.5 persons per room		0.22**	0.14†		0.48***	0.40***		0.22	0.22		-0.11	-0.16
		(0.08)	(0.08)		(0.10)	(0.10)		(0.15)	(0.16)		(0.10)	(0.11)
Childhood housing tenure (ref. renter-occupied)												
owner-occupied		-1.44***	-1.52***		1.91***	1.92***		1.57***	1.68***		-2.08***	-2.20***
		(0.07)	(0.07)		(0.06)	(0.06)		(0.10)	(0.10)		(0.15)	(0.15)
Latest occupation (ref.managerial-professional occ.)												
Skilled occ.			-0.05			-0.06			0.39***			0.04
			(0.07)			(0.07)			(0.10)			(0.10)
Semi-skilled or unskilled occ.			-0.25**			-0.39***			0.41**			0.02
			(0.08)			(0.09)			(0.13)			(0.13)
Highest educ.attainment (ref. CSE 2-5//equiv NVQ1)												
No qualification			-0.47***			-0.77***			-0.15			0.13
			(0.10)			(0.14)			(0.17)			(0.14)
O Level / equiv NVQ2			0.13			0.33***			-0.19			0.12
			(0.08)			(0.09)			(0.13)			(0.12)
A Level / equiv NVQ3			0.06			0.54***			-0.15			-0.20
			(0.10)			(0.11)			(0.15)			(0.15)
Higher qual NVQ4			0.12			0.59***			-0.09			-0.33*
			(0.10)			(0.11)			(0.15)			(0.16)
Degree / higher NVQ5,6			-0.17			0.92***			-0.77***			-0.87***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			(0.13)			(0.12)			(0.17)			(0.20)
Marital status (ref. never married)												
Currently married			1.50***			1.07***			-0.95***			-0.45***
			(0.11)			(0.09)			(0.10)			(0.10)
Divorced or separated or widowed			1.11***			0.83***			-1.22***			-0.53***
			(0.13)			(0.11)			(0.16)			(0.14)
Age at first childbirth (ref. age 18 or younger)												
Ages 19-23			0.42**			0.59***			0.48			-0.01
			(0.13)			(0.17)			(0.36)			(0.28)
Ages 24-28			0.83***			0.93***			0.30			0.75**
			(0.13)			(0.17)			(0.36)			(0.27)
Ages 29-33			0.34*			0.60***			1.16**			1.92***
			(0.14)			(0.17)			(0.36)			(0.27)
Childless			0.34*			0.41*			1.45***			2.00***
			(0.15)			(0.18)			(0.36)			(0.27)
Value of largest inheritance (in 1000s)			-0.00			-0.00			0.00			0.00
			(0.00)			(0.00)			(0.00)			(0.00)
Constant	-2.60***	-1.58***	-3.14***	0.20	-2.14***	-3.90***	-1.70***	-3.50***	-3.89***	-4.19***	-2.56***	-3.43***
	(0.20)	(0.23)	(0.30)	(0.17)	(0.21)	(0.30)	(0.24)	(0.29)	(0.49)	(0.29)	(0.32)	(0.45)
Observations	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, † p<0.10

Table 4: Logistic Regression Models Predicting Housing Tenure Trajectories: Type 5 through Type 8 (To Be Continued)

	Steady Renters			The Missing			The Unspecified			Outright Owners		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Great-grandpa's occ. (ref.managerial-professional occ.)												
Skilled occ.	0.08	-0.01	-0.06	0.17	0.15	0.14	-0.26	-0.28†	-0.29†	-0.46*	-0.42*	-0.41*
	(0.10)	(0.10)	(0.11)	(0.15)	(0.15)	(0.15)	(0.17)	(0.17)	(0.17)	(0.19)	(0.19)	(0.19)
Semi-skilled or unskilled occ.	0.24*	0.06	-0.02	0.32†	0.29†	0.24	-0.04	-0.09	-0.11	-0.42*	-0.33	-0.31
	(0.10)	(0.10)	(0.11)	(0.17)	(0.17)	(0.17)	(0.16)	(0.17)	(0.17)	(0.21)	(0.21)	(0.21)
Grandpa's occ. (ref.managerial-professional occ.)												
Skilled occ.	0.34***	0.19*	0.16†	0.02	0.00	0.00	-0.37*	-0.41**	-0.42**	-0.26	-0.19	-0.18
	(0.09)	(0.09)	(0.09)	(0.14)	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)	(0.18)	(0.18)	(0.18)
Semi-skilled or unskilled occ.	0.49***	0.26**	0.20†	0.13	0.10	0.05	-0.28	-0.35†	-0.37*	-0.28	-0.16	-0.13
	(0.09)	(0.10)	(0.10)	(0.16)	(0.16)	(0.17)	(0.18)	(0.18)	(0.18)	(0.21)	(0.21)	(0.22)
Father's occ. (ref.managerial-professional occ.)												
Skilled occ.	0.67***	0.35***	0.19†	0.09	0.05	-0.01	-0.14	-0.23	-0.23	-0.50**	-0.36*	-0.36*
	(0.09)	(0.10)	(0.10)	(0.14)	(0.14)	(0.15)	(0.15)	(0.15)	(0.15)	(0.17)	(0.17)	(0.18)
Semi-skilled or unskilled occ.	1.12***	0.66***	0.41***	0.19	0.13	-0.03	-0.30	-0.45*	-0.48*	-0.65**	-0.42†	-0.39
	(0.10)	(0.11)	(0.11)	(0.16)	(0.17)	(0.18)	(0.18)	(0.19)	(0.20)	(0.23)	(0.23)	(0.24)
Male	-0.27***	-0.28***	0.00	0.15†	0.16†	0.19*	0.23*	0.24*	0.22*	-0.12	-0.12	-0.14
	(0.05)	(0.05)	(0.06)	(0.09)	(0.09)	(0.09)	(0.11)	(0.11)	(0.11)	(0.13)	(0.13)	(0.13)
Mother was married when CM was born	-0.53***	-0.50***	-0.33*	-0.41†	-0.40†	-0.30	-0.20	-0.16	-0.16	0.31	0.29	0.24
	(0.13)	(0.13)	(0.14)	(0.22)	(0.22)	(0.22)	(0.28)	(0.28)	(0.28)	(0.43)	(0.43)	(0.43)
Sibship size (ref. no sibling)												
1 sibling	0.08	0.07	0.00	0.04	0.04	0.02	-0.04	-0.05	-0.06	-0.44†	-0.44†	-0.40
	(0.13)	(0.13)	(0.14)	(0.21)	(0.21)	(0.21)	(0.25)	(0.25)	(0.25)	(0.26)	(0.26)	(0.26)
2 siblings	0.36**	0.27*	0.12	0.09	0.08	0.03	-0.04	-0.07	-0.08	-0.56*	-0.52†	-0.47†
	(0.13)	(0.14)	(0.15)	(0.22)	(0.22)	(0.22)	(0.27)	(0.27)	(0.27)	(0.27)	(0.28)	(0.27)
3 or more siblings	0.77***	0.53***	0.22	0.24	0.20	0.04	0.04	-0.06	-0.10	-0.69**	-0.58*	-0.52*
	(0.13)	(0.12)	(0.14)	(0.20)	(0.20)	(0.21)	(0.24)	(0.25)	(0.25)	(0.25)	(0.26)	(0.26)
Childhood crowding (ref. >1.5 persons per room)												
<= 1.5 persons per room		-0.34***	-0.22**		-0.11	0.00		-0.29†	-0.27		0.08	0.06
		(0.07)	(0.08)		(0.13)	(0.13)		(0.17)	(0.17)		(0.26)	(0.26)
Childhood housing tenure (ref. renter-occupied)												
owner-occupied		-1.15***	-1.08***		-0.14	-0.06		-0.29*	-0.27*		0.60***	0.60***
		(0.07)	(0.07)		(0.11)	(0.12)		(0.13)	(0.13)		(0.16)	(0.16)
Latest occupation (ref.managerial-professional occ.)												
Skilled occ.			-0.03			-0.03			-0.17			-0.08
			(0.08)			(0.13)			(0.15)			(0.16)
Semi-skilled or unskilled occ.			0.28**			0.29*			-0.05			-0.56*
			(0.09)			(0.15)			(0.18)			(0.25)
Highest educ.attainment (ref. CSE 2-5//equiv NVQ1)												
No qualification			0.32***			0.46**			0.07			-0.24
			(0.09)			(0.15)			(0.21)			(0.30)
O Level / equiv NVQ2			-0.22**			-0.14			-0.32†			-0.27
			(0.08)			(0.14)			(0.18)			(0.22)
A Level / equiv NVQ3			-0.24*			-0.43*			-0.12			-0.26
			(0.11)			(0.19)			(0.21)			(0.26)
Higher qual NVQ4			-0.40***			-0.44*			-0.26			-0.30
			(0.12)			(0.20)			(0.22)			(0.27)
Degree / higher NVQ5,6			0.16			-0.25			-0.38			-0.41

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			(0.13)			(0.21)			(0.24)			(0.28)
Marital status (ref. never married)												
Currently married			-0.81***			-0.90***			-0.02			0.17
			(0.09)			(0.13)			(0.17)			(0.20)
Divorced or separated or widowed			-0.26*			-0.55***			0.26			0.40
			(0.11)			(0.17)			(0.21)			(0.25)
Age at first childbirth (ref. age 18 or younger)												
Ages 19-23			-0.49***			-0.21			-0.02			-0.03
			(0.11)			(0.20)			(0.28)			(0.37)
Ages 24-28			-1.54***			-0.25			0.16			-0.34
			(0.12)			(0.21)			(0.28)			(0.38)
Ages 29-33			-1.72***			-0.02			0.11			-0.28
			(0.13)			(0.22)			(0.30)			(0.39)
Childless			-1.77***			-0.37			0.18			0.24
			(0.13)			(0.23)			(0.30)			(0.39)
Value of largest inheritance (in 1000s)			-0.00			-0.00			-0.00			0.00***
			(0.00)			(0.00)			(0.00)			(0.00)
Constant	-2.35***	-1.00***	0.83**	-3.08***	-2.85***	-1.99***	-2.73***	-2.19***	-2.01***	-2.52***	-3.18***	-2.92***
	(0.19)	(0.21)	(0.27)	(0.30)	(0.35)	(0.44)	(0.36)	(0.40)	(0.53)	(0.47)	(0.57)	(0.72)
Observations	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870	10,870

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, † p<0.10

Chapter 3: Property Expropriations and Individuals' Economic and Political Wellbeing in Contemporary China

Abstract

Property expropriations in contemporary China are ongoing mass phenomena that affect millions of individuals each year. Using the nationally representative longitudinal survey data, this study offers the first comprehensive country-level assessment of how property expropriations affect individuals' economic and political wellbeing over time. We find that the economic impacts of property expropriation on the affected individuals vary by the specific forms of expropriation (i.e. land seizures or housing demolitions) and outcomes of interest and are actually less persistent in the long run than previous studies have indicated. However, analysis of political attitudes and behaviors consistently suggests that property expropriations are lastingly associated with individuals' deteriorating local government perceptions, higher chances of having conflicts with government officials, and increasing levels of participation in grassroots-level elections. Broader implications for the findings and suggestions for future studies are also discussed.

Key Words: Land Seizures; Demolitions; Property Expropriations; Socioeconomic Inequalities; Political Attitudes/Behaviors; Contemporary China

Introduction

China's market reform started in the late 1970s with land reform that allowed the farmers to use the state-owned land for households' private production. Forty years later, in today's rapidly urbanizing China, millions of rural households in the countryside experience land grabs every year to give way to public facilities or private developments. Similarly, in the urban peripheries and dilapidated inner-city communities, housing demolitions are not uncommon, which often involve destructing existing housing units so that local government or private developers can re-purpose the land underneath. Both forms of property expropriation by state authorities are often referred to as the exercise of "eminent domain". As a matter of fact, the sales of use rights from the appropriated land and housing properties constitute a vital share of local governments' fiscal revenue in recent years, contributing about half a trillion US dollars annually to the state (Chinese Land Resources Reports 2010-17). Meanwhile, tens of millions of individuals have been forced to become landless or displaced over the last decade alone, and the huge number will most likely increase in the foreseeable future[1].

Disputes from land seizures and demolitions therefore have been a major source of mass disturbances in China since the 2000s and there have been growing scholarly interests in studying citizens' resistance against property expropriations, how the governments handle such challenges, as well as the interactions among different interest parties (Lee and Zhang 2013; Chuang 2014). Existing works indicate that land or housing properties are often forcefully taken away from the owners, who usually receive paltry one-time compensations in return, and that local government officials and land developers sometimes find leeway for rent-seeking behaviors

---

[1] According to the Chinese Land Resources Report (2010-17), between 2010 and 2017, 280,000 hectares of land are redistributed from farmers to the state per year on average, generating an annual revenue equivalent to 0.51 trillion US dollars. Conservatively approximated by 1 peasant per 1/10 hectare, the total number of displaced farmers accumulated over this eight-year period adds up to 22.4 million.

(Cai 2008a; Chen and Kung 2018). The lack of transparency in policy implementations, witnessed corruptions, and worries about future economic subsistence due to property expropriations have left many affected individuals and families aggrieved (Ong 2014). As a result, there has been empirical evidence showing that property expropriations are often associated with lower public trust in the Communist government (Cui et al. 2015), increasing numbers of justice claims or petitions from citizens (Whiting 2011), as well as the emergence of grassroots-level collective resistance (Lu and Tao 2017).

Although many studies indicate property seizures tend to worsen the material wellbeing of the affected individuals and their families (Jiang, Waley and Gonzalez 2018; Wilmsen 2018; Chuang 2014; Ong 2014; Siciliano 2014), there has been surprisingly little empirical evidence attesting to the degrees of economic losses for average landless peasants and owners of demolished housing units. To the best of our knowledge, existing studies, mostly qualitative case studies and regional surveys, have not yet offered a systematic national-level assessment of the affected population's wellbeing over time, which can be accomplished using quantitative methods based on nationwide longitudinal data. It is important to quantify the presumed economic sufferings due to land grabs and demolitions primarily because if expropriations caused persistent material hardships, there would be an increasingly larger population prone to mass grievances in future decades. As the affected population and their offspring are incorporated into urban contexts, their socioeconomic successes or failures could matter for social stability at large.

Regardless of short or long-term economic loss, individuals who are expropriated may feel a sense of injustice linked to the inconvenience and other subjective elements of their property loss, which could give rise to emerging political demands in terms of shifting political

sentiments or behaviors. Current research on property expropriations shed light onto the collective actions and state-citizen interactions in rural China (Deng and O'Brien 2013; Li and O'Brien 2008), but large lacunae remain in understandings individuals' attitudinal and behavioral reactions to these highly disruptive events in both urban and rural contexts, which probe into the hidden ideological terrains of regime support or opposition in semi-authoritarian contexts. Despite the overwhelming scholarly and media attention to those who have expressed their political discontents through citizen-state bargaining, petitions, and protests, actually these outspoken individuals only make a small fraction of all those affected (Wright 2010). Therefore individual-level attitudinal and behavioral analysis can bring the majority of the affected individuals into focus, who seldom voice their attitudes or take any manifest actions under media spotlight but are nonetheless at such risks.

To address the abovementioned research gaps, we use the nationally representative longitudinal survey data from the Chinese Family Panel Studies (CFPS 2010-16) to examine whether and the extent to which property expropriations (as exemplified by land expropriations and housing demolitions) bring about changes in the affected individuals' living standards, as well as the relationships with individuals' perceptions of and engagements in local politics. We offer the first comprehensive country-level longitudinal assessment of how two major forms of property expropriation might distinctively affect rural as well as urban individuals' material and political wellbeing. Whereas land grabs are more prevalent in rural areas, housing demolitions are common at both the rural-urban fringe and within urban communities undergoing renewal processes. By examining both forms of property expropriation, we can identify their respective implications for economic and political wellbeing (that is, two broadly defined risk factors of

regime support/opposition), while attending to the urban-rural disparities in the unique Chinese contexts.

The present analysis proceeds as follows. We start with descriptive statistics from CFPS panel data to provide an overall picture for the prevalence of property expropriations across China today, for land grabs and housing demolitions respectively. For our analysis on economic wellbeing over time, we use fixed effects models to assess the impacts of property expropriations on individuals' housing wellbeing and income. We then analyze the relationships between property expropriation and various aspects of political attitudes/behaviors using logistic models and linear probability fixed-effects models, depending on the specific outcomes of interest and cross-wave data comparability. We conclude by discussing the findings' broader implications for China's socioeconomic inequalities and political stability at large, with suggestions for future research along this line.

Property Expropriations and Local Governance in Contemporary China

While property expropriations are common in developing countries, China has been experiencing one of the largest waves of property seizures in history throughout the last few decades, partly due to its unprecedented pace of urbanization. Over the past four decades, the urban share of its national population has tripled, increasing from 18% in 1978 to over 57% in the 2016 (National Bureau of Statistics 2017). The opening-up policy allowed rural households to use the collectively-owned farmland for household production since the country's market reform that began in the late 1970s, creating phenomenal increases in agricultural productivity over the 1980s. Since the late 1990s, however, the acceleration of urbanization has prompted

numerous demolitions and involuntary land losses, which may or may not require individuals' displacements. The expropriated farmland and demolished housing properties are later incorporated into urban communities or replaced by newly constructed public transportation systems, commercial real estates, factories, and among other public or private land uses. Despite that statistics on property expropriations' overall prevalence are strikingly scant, they are undoubtedly nationwide mass phenomena in contemporary China.

Existing studies indicate that property expropriations have become major sources of social unrest since the 2000s, as the ways local authorities handle them tend to aggravate state-society tensions (Walder et al. 2013; Whiting 2011). While the Central government issues broad guidelines for property expropriations, which are believed to be well-intentioned policies by many citizens (Wright 2010), the local governments implement the policies with much discretion. The local state officials are heavily involved in making the specific action plans, dealing with the dispossessed individuals in person, and having highly flexible means at their disposal for conflict resolutions. The mandates to confiscate land or demolish homes often are *de facto* decided amongst the local elites, with insufficient prior communications with the rest of the community (Mattingly 2016; Song, Wang, and Lei 2016). The compensations to the expropriated by local governments are highly controversial, as they are often below the market price, highly discretionary, and delivered as lump sums (Ong 2014).

As a matter of fact, the local governments find themselves increasingly reliant on land revenues to finance local fiscal budgets after China's 1994 tax reform. The tax reform resulted in fiscal decentralization that reduced the local governments' own tax retention and consequently pressured them to generate more local revenue (Han and Kung 2015). Therefore, local policy-makers have incentives to grab more land to increase non-budgetary fiscal revenue as well as to

retain a higher share of the land revenues by channeling lower payments to the dispossessed citizens. Some self-interested officials collude with businessmen to line their pockets, however, rent-seeking behaviors in land requisitions are gradually recognized by the public, beefing up the recent anti-corruption crackdowns (Chen and Kung 2018).

The local governments' approach to solving land disputes generally involve a combination of forces, strategic negotiations, and maneuvers. Dissenters who refuse to vacate the properties and those who bargain for higher prices can be forcefully expropriated while enforced by the local police, who are tactically mobilized by local state officials to maintain stability during disputes (Walder et al. 2013; Wang and Minzner 2015). Meanwhile, the local governments are willing to make targeted concessions by compensating more generously to defiant individuals who stand to cause public disturbances or petition to higher-level governments, in exchange for the latter's compliance (Lee and Zhang 2013). In addition, earlier study indicates that local state officials and village cadres sometimes coercively convert individuals' rural Hukou status into urban Hukou status (Chuang 2014). Under the existing Household Registration System, rural-to-urban Hukou conversions would confer lucrative structural-socioeconomic advantages on the converters (Wu and Treiman 2004), but this practice necessarily deprives the farmers of land rights, sometimes even without their full knowledge.

Property Expropriations and Political Wellbeing

Existing works by sociologists, political scientists, and urban geographers have provided some evidence regarding the impacts of property expropriations in China. Many studies on property dispossessions are highly interested in the political implications for the incumbent

regime, exemplified by the aforementioned efforts to illuminate how the Chinese government manages to stay resilient and how the society remains stable in spite of numerous property disputes (Mattingly forthcoming; Chuang 2014; Lee and Zhang 2013; Cai 2008a; Cai 2008b). Other studies alternatively seek to understand the political ramifications upon the affected individuals, such as individuals' justice claims (Michelson 2007; Whiting 2011), perceptions or attitudes toward the Chinese Communist government (Cui et al. 2015), and the contingencies for collective actions to emerge or succeed (Lu and Tao 2017).

Findings show that problems with land acquisitions constitute a major type of social grievances as of the late 2000s and early 2010s (Whiting 2011; Michelson 2007). In such cases, individuals tend to resort to higher-level government offices or make justice claims in court to guard their property rights, especially when the local state officials have treated them unfairly or broke the promises. When land grabs render a large number of aggrieved individuals in a community and under certain organizational contexts, individual grievances would escalate into destabilizing collective actions (Lu and Tao 2017). These collective actions are frequently seen in the countryside, where groups of villagers gather to engage in collective bargaining with the local state representatives, protests, or occasionally physical confrontations with the cadres if furious villagers lose control (Guo 2001; Ren 2017).

Of course, not all who undergo property expropriations would participate in collective actions, but such experiences could potentially influence citizens' perceptions of the government institutions or state officials. While potential deteriorations in public opinions in one-party states like China may not directly threaten the survivals of the regime and its leaders, the configurations of public sentiments and their political behaviors could still undermine social stability, to the extent that the awakening of citizens' property rights consciousness may cause

individual- or collective actions that defend their rights and raise further demands for democracy (Lorentzen and Scoggins 2015). To date, however, there has been surprisingly few empirical studies of how property seizures alter public opinions in China, exception for Cui et al. (2015).

The study by Cui et al. (2015) uses data from two regional cross-sectional surveys to analyze how one's household experience of land grabs (over the 2000-2008 period) predict respondents' current trust in the local (county/township) state officials and that in the Central government leaders respectively. Specifically, their 2009 survey involves 1,195 villagers living in suburban peripheries of twelve Chinese cities and the 2008 rural survey involves 2,210 villagers from six provinces. Findings from ordered logistic regression models suggest the experience of land dispossessions strongly predict declines of trust in local government leaders but is not significantly associated with trust in Central government leaders. The results intuitively indicate that relative to the Central leaders, the local leaders lie at the nexus of the contentious relationships between citizens and the state, probably due to the local leaders' powerful yet discretionary decision-making in land seizures.

While Cui et al. (2015) provides valuable insights into the Chinese public attitudes, the causal relationship between land taking and trust is not firmly established given the data and methods. The large discrepancy in the prevalence of land takings between these two datasets is also perplexing: 12% of respondents have experienced land requisitions in the rural survey whereas the percentage in the suburban survey is a whopping 64%. In other words, future studies would benefit from contrasting and comparing property seizures in both rural and urban contexts using samples of higher consistency. Moreover, longitudinal analysis into the relationships between property dispossessions and various kinds of attitudes or behaviors would better reflect their short- and long-term political implications.

Property Expropriations and Economic Wellbeing

Unlike the political attitudes or behaviors, economic wellbeing *per se* has been of less interest to traditional studies of property expropriations. Rather, individuals' economic wellbeing is primarily used to illustrate the motivations of citizen resistance or depicted as the focus point of state-citizen negotiations in the existing literature. A small stream of relevant works that do focus on the economic outcomes have consistently suggested the adverse economic impacts on individuals are the main drivers whereby property seizures undermine social stability. For instance, a case study on a rural island in eastern China finds that land grabs expose villagers to higher risks of unemployment and food insecurity, and the post-expropriation resettlements are often mismanaged (Siciliano 2014). Following 145 households that were relocated due to the construction of the Three Gorges Dam in southwestern China, Wilmsen (2018) finds that many relocated households suffer from lower incomes, especially for those who are displaced from rural to urban areas. A longitudinal regional survey of 11,000 villagers in Shanghai who experienced demolitions suggests that the loss of rental income and the feelings of being unfairly treated are the most common economic grievances (Jiang et al. 2018). Some qualitative interviews again echo the displaced individuals' dissatisfactions with livelihood and housing issues (Ong 2014).

In sum, the existing findings on individuals' economic wellbeing mostly come from case studies, regional surveys and qualitative interviews, which often cover a handful of provinces or a small number of cases. While arguments of these existing studies unvaryingly imply chronic economic plight caused by property dispossessions, the empirical evidence supporting these

claims are often based on individuals' descriptive accounts with little population-level insights. On the other hand, findings from current quantitative studies fall short of investigating the dynamics of the affected individuals' economic wellbeing over time.

The Current Study

Apart from the previously identified research gaps, existing studies of political and economic consequences alike suffer from the conceptual ambiguity in the specific forms of property expropriations, which better characterize rural-urban disparities and yield potentially different implications. Relatedly, there is lack of attention to understanding property seizures in urban settings, as most existing studies discuss the rural settings alone.

To capture the rural-urban disparities in contemporary China, we examine two separate forms of property expropriations, land grabs and housing demolitions respectively. In doing so, we grasp a clearer understanding of the specific property losses to individuals and their family. We primarily distinguish between rural and urban *Hukou* rather than *residency*. That is because Chinese citizens' land use rights are mainly divided by their household registration status, whereby only rural Hukou holders are entitled to land use rights. To illustrate, for individuals with rural Hukou, property expropriations could take the form of land grabs or housing demolitions and sometimes both, depending on whether the residences are impacted. By contrast, property expropriations of urban Hukou holders mainly take the form of housing demolitions.

The meanings attached to the two forms of property seizures can be quite distinctive. Land embodies a way of life for farmers: it not only accounts for their major source of agricultural income or income in general, but also functions as their social safety net in times of

economic volatility, when non-agricultural economic opportunities become less available for supplementary income. On the other hand, demolitions, which more frequently occur to urban individuals affiliated with the non-agricultural sectors, imply the encroachment of household wealth, the loss of potential rental income, as well as various issues with home relocations.

Hypotheses of Economic Wellbeing: Considering the landless farmers' vulnerable structural positions in the non-agricultural sectors and the abrupt changes in their means of livelihood following land grabs, we anticipate that land grabs will impair individuals' incomes more than housing conditions. By contrast, as demolitions often involve costly housing relocations to recuperate the homeowners' destructed properties (due to the skyrocketing urban housing prices) without necessarily undermining their prior employment relationships, we anticipate that demolitions would have greater adverse impacts on individuals' housing outcomes than on incomes. That is, *we anticipate land grabs to impact one's livelihood sustainability more than their property rights, and the opposite is expected from demolitions.*

Hypotheses of Politic Wellbeing: In terms of political wellbeing, there are at least two analytically distinctive mechanisms that are potentially related to post-expropriation anti-government mobilization. One mechanism operates through the presumed short- and long-term economic losses, and the other operate through various psychological processes, which may include attachment to one's lost land/property/community, sense of injustice/powerlessness, as well as feelings of disrespect on the part of the authorities. In light of the economic and psychological mechanisms, *we anticipate that both land grabs and demolitions lead to deteriorations in individuals' perceptions of the local government, heightened tensions between the state and citizens, and increased participation in local politics,* which can either be motivated

by property rights protection or emerging demands for local government accountability (or democracy).

To test these hypotheses, the current study offers the first ever (nearly) country-level comprehensive assessments of how land grabs and housing demolitions respectively impact individuals' economic and political wellbeing over time, by incorporating rural and urban individuals into the same picture.

Data and Methods

The study's main analysis draws upon data from the baseline and all the existing biennial follow-up surveys of Chinese Family Panel Studies (CFPS 2010, 2012, 2014 and 2016). The CFPS is a panel social survey based on a nearly nationwide sample of Chinese households from 25 provinces or administrative equivalents, representative of 95 percent of the Chinese national population (Xie and Lu 2015). Its longitudinal design, comprehensive coverage of individual-, household- and community-level information, and the consistent designs with respect to property expropriations across waves make it an ideal dataset to undertake this study. Our analysis adopts individuals as the unit of analysis, including all respondents in the 2010 baseline adult sample that are consistently followed up throughout the ensuing waves. Out of the 33,484 adults that were present in the 2010 baseline, 26,260 were re-interviewed in 2012 (78.4% of the baseline total), and a total of 19,418 individuals remain in the survey for all four waves of data collection (that is, 58% of the baseline total and 74% of those ever re-interviewed), upon which the analytic sample is based. To adjust for the survey's over-sampling design in some regions and

individuals' attritions across waves, we apply the CFPS panel sampling weights to ensure national representativeness.

Housing Conditions and Income

The analysis of economic outcomes covers various aspects of housing wellbeing and personal income, with their respective emphases on property rights and livelihood sustainability. All the economic measures are available and comparable throughout survey waves.

Housing is a logical outcome to analyze, given that residences are key to household wealth, and that demolitions explicitly require vacating the housing property and a move (though often with lump-sum compensation). Land grabs sometimes co-occur with housing relocations, as land seizures can expropriate both farmland and residential land ("zhaijidi" in Chinese). For dependent variables indicating individuals' housing wellbeing, we focus on (1) housing space (measured by total square meter within the household residence); (2) housing crowding (a household per-capita measure of housing space); (3) market values of the residence (log-transformed to reduce distribution skewness); and (4) homeownership status. The multi-dimensional housing outcomes encompass the quantity, monetary worth and tenure of individuals' residences.

Individuals' annual personal income serves as a key indicator of individuals' livelihood sustainability. This is because land grabs tend to deprive landholders (mostly farmers) of income from agricultural production and disproportionately expose them to unemployment or underemployment in non-agricultural sectors once becoming landless. In addition, demolitions can also dispossess some property owners of rent income. Though it would be more ideal to

analyze various sources of income separately, for instance, by parsing the total income into earned income, government transfers and other income, the datasets only permit us to study the lump sum, which arguably captures the overall resource inflows to sustain individuals' year-round living. The annual personal incomes are adjusted for year-specific inflation levels to make them consistently measured by the year 2010 RMBs and are also log-transformed to minimize biases resulted from extreme incomes.

Political Attitudes and Behaviors

We also examine dependent variables regarding political attitudes and behaviors, but their availabilities differ by specific outcomes of interest. Measures of political attitudes and behaviors include:

First, state-individual confrontations ("whether [you] had conflicts with government officials within last year"), which is available across all data waves. This is because expropriations are proximately carried out by the state (regardless of the backstory behind them, which may involve interested private actors), it stands to reason that resistant victims will first and foremost address their objections to local government officials, which is likely to lead to conflicts when, as is usually the case, the objections lead nowhere.

Second, individuals' perceptions of local government achievements (measured by five ordinal categories, ranging from 1"worse than before" 2"no achievements at all" 3"no big achievements" 4"some achievements" to 5"substantial achievements"), which are available across all waves. The main rationale for emphasizing *local* politics instead of the central government is that it is the former that are usually at the nexus of contentious relationships

between the state and citizens. The local governments' discretionary decision-making power in

land grabs and demolitions often breeds corruption and injustice, and they are also heavily

engaged in the so-called "stability maintenance", underperformance of which will put the local

officials' chances of career promotion at risk (Wang and Minzner 2015).

Third, individuals' perceptions of government corruption (measured by eleven ordinal

categories, ranging from 0 to 10 in ascending levels of corruption), which are available for 2012,

2014, and 2016 follow-ups. We anticipate that increased perceptions of local government

corruption could form regardless of individual-level economic losses, as witnessing unfair

practices or rent-seeking behaviors in the larger community suffices to make this happen.

Finally, individuals voting participation at grassroots-level elections ("whether voted in

the latest village/neighborhood-community election"), which is available for the 2014 follow-up

only. Voting is a measure of political efficacy/empowerment, even in a semi-authoritarian

context (Gandhi and Lust-Okar 2009). We reason that individuals might use voting as an

institutional tool to ensure better property rights protection and local government accountability.

Analytic Strategy

We use within-person, person- and period-fixed effects models to analyze all indicators

of economic wellbeing as well as the political behavior regarding whether ever had conflicts with

government officials. This analytical decision takes into account that those variables are

consistently available across waves so that each individual contribute to multiple person-years.

Two outcomes of interest, one's homeownership status and whether ever had conflicts with

government officials, are estimated using fixed-effects linear probability model as they are both

binary categorical measures. The within-person fixed-effects models can estimate changes in individuals' outcomes over time by netting out time-invariant unobserved confounders that are individual- and period-specific. These time-constant confounders may otherwise cause omitted variable biases due to their simultaneous associations with property expropriations and the outcomes of interest, if OLS regression models were used.

Political attitudes and behaviors are analyzed using either ordered logit (for perceived government achievements and corruption) or binary logit models (for voting and conflicts), due to these outcomes' limited availabilities across survey waves. These political attitudes and behaviors are all measured in the latest survey waves where information is available for each outcome of interest.

We model the behavior of "having conflicts with officials" in both ways, as its consistent measurements across survey waves allow more modelling flexibility. That is, "whether having conflicts with individuals" is modelled as a time-varying outcome for the fixed-effects linear probability models, whereas it is modelled using the latest 2016 outcome for the binary logistic models. This two-way approach is aimed to test the robustness of results under alternative specifications for both predictors and outcomes.

Explanatory Variables

Our key explanatory variables of interest are individuals' experiences of land grabs and demolitions, which are flexibly coded in three alternative ways. We first code these two events using contemporaneous measures in the fixed-effects models, which are specified as (1) "whether the respondent's household experienced land grab within the past year", and (2)

"whether the respondent's household experienced housing demolition within the past year".

Information on both questions are accessible at the 2010, 2014 and 2016 waves (except for the

2012 wave). The contemporaneous measures are tailored to capture the short-term implications.

Alternatively, past expropriations may have lingering effects on one's economic and

political wellbeing today, so we consistently specify two lagged measures for the two predictors

as of respondents' experiences in the previous survey wave, which respectively indicate

"whether experienced landgrab three years ago" and "whether experienced demolitions three

years ago". Taken together, the contemporaneous and lagged measures of property

expropriations allow us to examine their short-term and medium-term implications for

individuals' wellbeing.

In a third scenario, one might instead argue that the temporality of the events is of

secondary importance when compared to whether having experienced property seizures at all

(that is, opposite to having not experienced yet). Proponents of this perspective hold the belief

that property expropriations would generate persistent and fundamental changes in individuals'

economic and political life spheres, regardless of when such events occurred. To test this

possibility, we create two more cumulative measures to denote "whether one has ever

experienced land grabs to date" and "whether ever experienced demolitions to date", both of

which are time-varying measures as of the specific person-years.

For the ordered/ binary logit models predicting one's political attitudes and behaviors,

and measures of the outcomes come from the latest waves where information is available. We

create two dummy variables respectively indicating one's experiences with "land grabs" and

"demolitions" within the past three years, which are consistently coded as "1" if the respondents'

household experienced the respective event at either the 2014 or the 2016 follow-up and as "0" otherwise, primarily due to data limitations.

Control Variables

Control Variables for Fixed-effects Models

We specify a set of time-varying control variables for the within-individual fixed-effects models, in addition to the alternative measurements of the core predictors. Age is used to capture life-course changes in one's wellbeing as they get older. Household size is introduced to the models due to the concerns that composition of household members often changes over time, either due to births/deaths or shifts in living arrangements caused exactly by property losses. Household income (denominated in 1000 RMBs) is controlled for to account for the income volatilities before and after land grabs or demolitions. A dummy variable indicating whether respondents currently hold rural or urban Hukou is additionally included to attend to the Hukou conversions related to property seizures (Chuang 2014). Besides the abovementioned control variables, our fixed-effects models also individual and year dummies to remove potential biases because of time-constant individual- and year-specific confounders.

Controls Variables for Logistic Regression Models

As our logistic regression models predicting political attitudes and behavior specify the two core events using one's experiences within the last three years, we consistently control for

whether one experienced any relocations beyond one's local community during the same time span, that is, whether one experienced any inter-county relocations within 3 years. We include a measure of per capita economic compensations derived from the lump-sum payments received by the respondents' households to see if variations in compensation make any difference in individuals' opinions and behaviors related to politics.

The models additionally include a wide array of demographic and socioeconomic control variables, most of which are measured by their values from the 2010 baseline survey. Respondents' gender is coded as a dummy for being "male" or not. Age is specified as 10-year age ranges as of the 2010 baseline, using the youngest group (16-25 years old) as the reference category. Hukou status in 2010 is coded as rural Hukou or not. Relatedly, respondents' baseline rural (reference category) versus urban residency status is also accounted for to further distinguish any differences due to rural or urban areas of residency. Marital status in 2010 separates the unmarried (reference group) from the married, the cohabiters, the divorced/separated, and lastly, the widowed.

The logistic models also take into account various indicators of one's socioeconomic status. Educational attainment at baseline distinguishes those with less than primary education (semi-illiterate to illiterate, the reference group) from those with primary school education, those who just finished junior high schools, the high school graduates, those who hold associate degrees or having some college experiences, and finally, the most educated group --- bachelor's degree holders or above. Homeownership status in 2010 serves as a proxy for wealth disparities between homeowners and renters. We group the specific types of one's primary employment in 2010 into seven broadly defined categories, by incorporating both employment statuses and sectoral affiliations. That is, we classify individuals' into (1) those who work for government

organization or institutions affiliated with the state sector (the political elites), (2) those who are unemployed, (3) the self-employed persons, (4) the farmers, (5) employees of state-owned enterprises (SOEs) or collectively-owned enterprises, (6) employees of private enterprises, and finally, (7) a residual category for any other unspecified organizations.

To capture potential ideological variations with respect to one's ties with the Chinese Communist Party (CCP), we control for a binary indicator for individuals' baseline CCP membership (yes=1, no=0). For a similar reason, we consider whether any one of respondents' spouse, parents/siblings and the in-law counterparts work for the government or hold managerial positions, based on the assumptions that having family members or close relatives in those positions tend to make one's own political interests more aligned with the state sector (Cui et al. 2015).

Last but not the least, the models also incorporate province fixed effects, which help remove time-constant reginal heterogeneities, and test the sensitivity of results with respect to alternative model specifications by either including or excluding lagged dependent variables.

Results

Descriptive Summary

[Table 1 about here]

Table 1 shows the cumulative percentages of adult respondents ever experiencing land grabs and demolitions respectively by the three survey waves, where information on property expropriation was inquired about (i.e. 2010, 2014, and 2016). It presents the descriptive statistics for the overall sample and for those disaggregated by individuals' initial Hukou status. At the onset of the CFPS survey in 2010, only 2.7% of individuals from the overall sample had ever experienced land grabs, but the percentage more than quadrupled in merely six years (12.9%). A closer look into the separate statistics by rural and urban Hukou statuses reveals that the rapid nationwide increase in land grabs over the six-year period is primarily driven by land losses to rural individuals, whose 2016 percentage increased to almost five times of its initial level.

Meanwhile, similar to the illustrated scenario for land grabs, the cumulative percentages of individuals ever experiencing demolitions over quadrupled within 6 years, increasing from merely 0.9% in 2010 to 3.7% in 2016. Unlike land grabs, however, urban and rural and urban individuals contribute more or less equally to the increasing overall prevalence of demolitions for the same period. This is consistent with our earlier anticipation that demolitions not only occur to renew urban communities, but also to incorporate the rural households into the urban contexts.

Furthermore, for land grabs and demolitions alike, the increases in their respective percentages appreciably accelerated since the 2014-2016 period, when compared to the previous four years. In other words, the more recent decade has been undergoing an even greater wave of property expropriations for both rural and urban individuals. While more recent data for the post-2016 era are not yet available, it is foreseeable that their prevalence across the country will continue growing for some years.

The descriptive statistics also reiterate the necessity of distinguishing between rural-urban Hukou status and rural-urban residency. Although 72% of all respondents had rural Hukou in 2010, the comparable percentage for rural residency in that year was 51.1%. While the majority of urban Hukou holders (89%) live in urban areas (which include cities and towns), approximately one third of rural Hukou holders live in urban contexts, primarily due to the famous phenomenon of "floating populations", that is, massive internal migration flows into cities of labor shortages from the countryside (Liang and Ma 2004). For more detailed information regarding other covariates, please refer to the rest of Table 1 content.

Economic Wellbeing

[Table 2 about here]

Table 2 shows results from fixed-effects models predicting individuals' various dimensions of economic wellbeing. For all outcomes of interest listed here, we estimate Model 1 using both contemporaneous and lagged measures property expropriations. Model 2 includes the contemporaneous measures only to see if the results in Model 1 still hold. Last but not the least, we estimate Model 3 using the measures of "ever" experiencing either event, as previously discussed in the section for explanatory variables. Regardless of the alternative model specifications, the results are strikingly robust.

When it comes to housing wellbeing, after netting out individual- and time-invariant confounders, individuals' experiences with demolitions consistently predict the declines in their housing space, increased housing crowding, lower property values, and dampened chances of

being homeowners over time. By contrast, their experiences with land grabs are not significantly associated with apparent changes in any of the housing conditions.

The results illustrate more complicated scenarios for individuals' personal income. Throughout Model 1-3, land losses are consistently associated with income declines, as we previously hypothesized. By contrast, both Model 2 and Model 3 suggest that individuals whose properties underwent demolitions tend to experience gains in personal income over time. Although we did hypothesize that the deterioration in income levels due to land losses might be more sizeable than that due to demolitions (considering that farmers may go through more fundamental changes in life styles and the natures of their employment), it is perplexing at first sight. However, it becomes pretty straightforward if related to the owners' deteriorating housing conditions. To put it another way, property owners generally experience temporary income increases following demolitions, mainly due to the cash compensations they received, but such income increases are in part realized at the costs of lost property rights or worsened housing conditions (i.e. money for houses).

Nevertheless, the results from Model 2 for all the economic outcomes of interest indicate that within-individual changes in housing outcomes and personal incomes associated with property expropriations tend to be significant only in the short term, as we find little evidence of lingering effects in the medium term (that is, after three years) based on coefficients of the lagged predictors. When the predictors are alternatively measured by "ever "experiencing property expropriations, as seen in Model 3, we see this set of results are highly consistent with those of Model 1. In other words, the within-person changes in economic wellbeing over time seem to be mostly driven by individuals with more recent experiences with such events. Sensitivity analysis using fixed-effects models that control for lagged predictors of

expropriations but not the contemporaneous measures also consistently indicate the lack of

persistent economic deteriorations, and that individual income levels even experience slight

increases over time (see Appendix 1). This is indeed a bit surprising, given that numerous

previous studies have implied that property seizures produce persistent or long-term economic

difficulties. Although we should avoid over-interpreting the results, our empirical evidence to

some extent questions this often taken-for-granted claim and appeals to more future research on

the long-term economic implications of property seizures.

Political Wellbeing

[Table 3 about here]

Table 3 displays results from logistic regression models predicting individuals' political

attitudes or behaviors. The analysis focuses on two political attitudes of interest, rating of local

government achievements and the perceived government corruption. Both attitudes are predicted

using ordered logit models, as the dependent variables have multiple categories. We also analyze

two political behaviors, that is, whether individuals had conflicts with government officials and

whether they voted in the most recent local elections. The two behavioral outcomes are similarly

predicted using binary logit models. Furthermore, for each political outcome of interest except

for voting (due to data limitations), we test the robustness of findings by including or excluding

lagged outcomes. For the behavior of state-citizen conflicts in particular, we additionally

estimate fixed-effects linear probability models (as our data allow), which have the advantage of

netting out time-invariant individual- and year-specific confounders compared to binary logit

models but nonetheless produce highly reliable results (Table 4). It is reassuring that the results hold still regardless of all the above-mentioned alternative model specifications.

[Table 4 about here]

Our findings demonstrate that land grabs tend to be more lastingly associated with individuals' perceptions of the local government achievements, perceptions of government corruption, having conflicts with government officials, and voting at grassroots levels. While the relationships between past demolitions and current perceptions of government corruption or state-individual confrontations are sensitive to model specifications, experiences with demolition predict lower perceptions of local government achievements and increased likelihoods of voting in local elections. Taken together, results regarding political attitudes and behaviors suggest that land grabs and housing demolitions are associated with increases in citizens' rights consciousness and their engagements in local politics. Although the identified relationship between property seizures and voting is not strictly causal, increased voting participation can be seen as reflections of individuals' actions to protect one's property rights and possibly also greater demands for democracy in local policy-making in general.

Conclusion

Property expropriations are nationwide mass phenomena in contemporary China that affect millions of Chinese citizens every year. While research on property expropriations and

social stability in China have flourished in recent years, there has been lack of systematic studies on how property expropriations actually affect one's economic and political outcomes over time, which are mostly taken for granted by existing studies. This study fills in this gap by offering the first national-level estimates of how two major forms of property seizures, land grabs and demolitions, systematically affect individual-level housing wellbeing, income, political attitudes and political behaviors. Our results illustrate a more complicated picture than do previous studies, most of which unvaryingly argue that property seizures harm the affected individuals' economic outcomes. We find that land seizures do threaten individuals' livelihood sustenance, as numerous studies have claimed, but they are not significantly related to individuals' housing wellbeing. On the other hand, housing demolitions counterintuitively boost the owners' incomes a bit, but at the costs of worsening housing wellbeing. However, there is little empirical evidence that the economic deteriorations would persist in the long run. Previous studies might have overstated the long-term economic adversities for average individuals who have experienced housing demolitions or land losses.

Despite that the material degrading for individuals experiencing property expropriations seems short-lived, the adverse political repercussions are lasting. Past experiences with land seizures or demolitions are similarly associated with individuals' lower ratings of local government achievement and higher voting participation in local elections. But the shifts in political attitudes and behaviors toward regime opposition are even more salient after land grabs (compare to after demolitions), as being landless are also significantly associated with increased perceptions of corruption and more confrontational behaviors with government officials. This is probably because the landless farmers tend to undergo more abrupt life changes and suffer from more pressing livelihood issues due to the events, and therefore are probably at greater risks of

anti-government mobilization. The implications are that policy-makers should provide better suited career counselling and skill-based trainings for landless farmers, a structurally vulnerable group whose size is rapidly increasing especially after the 2010s, to help improve the latter's labor market competitiveness in non-agricultural sectors.

We offer suggestive evidence for different natures of political grievances and the distinctive mechanisms by comprehensively examining the economic and political implications of property expropriations. While economic losses unequivocally provoke political discords, it seems that various psychological mechanisms are also partially responsible for individuals' attitudinal and behavioral changes, regardless of the persistence of economic suffering or not. For instance, subjective government evaluations and political behaviors can largely be influenced by individuals' sense of injustice/powerlessness, feelings of disrespect on the part of authorities, as well as strong attachment to their lost home/property/community. We encourage future works to look further into the distinctive mechanisms underlying shifting public sentiments and to disentangle the various driving forces. Although it is beyond the capacity of this study, future works could examine whether the prevalence of property expropriations at the community level suffices to alter individuals' political opinions (due to group contagion) even without one's personal experiences. Since not all individuals are influenced by such events to the same extent, future studies could also explore how variations in economic consequences might accordingly predict variations in attitudinal and behavioral changes.

This study has several limitations. First of all, our analysis on political implications are only preliminary, mainly due to data limitations. With more comparable, longitudinal measures on political outcomes, one can better assess the causal effects of property losses on political wellbeing. Second, the lump-sum personal income is far from the perfect measure of livelihood

sustenance as it cannot reflect the overall compositional structure. By analyzing different sources of income separately, researchers could obtain more insights into how personal efforts, government compensation and other social welfare provisions differentially contribute to individuals' post-expropriation economic wellbeing. Third, by solely focusing on individual-level outcomes, we may have neglected the larger households' collaborative strategies to help overcome the economic challenges imposed by property seizures. By incorporating both individual-level and household-level analyses, studies may gain a deeper understanding of how families survive as adaptive units facing stressful events.

Notwithstanding these limitations, by shedding light on how property expropriations affect socio-economic inequality and the corresponding political implications of these actions, we push research on stratification in China in the direction of incorporating the actions of powerful government bodies – as well as the economic elites who benefit from arrangements with local governments – into the broader understanding of key factors shaping well-being and political attitudes in a dynamic market transition society. Although land and property expropriations are particularly common in China, they take place all over the world, especially in other post-socialist countries. By pointing the way toward understanding their economic and political impacts at the individual level, we hope to spark interest in studying the phenomenon of expropriations in other national contexts.

References

Cai, Y. (2008a). Local governments and the suppression of popular resistance in China. *The China Quarterly*, *193*, 24-42.

Cai, Y. (2008b). Power structure and regime resilience: contentious politics in China. *British Journal of Political Science*, *38*(3), 411-432.

Chinese Land Resources Report [Zhongguo Guotu Ziyuan Gongbao]. (2010-2017). Technical Report from the Ministry of Natural Resources of the People's Republic of China. Accessed online at http://www.mnr.gov.cn/sj/tjgb/

Chen, T., & Kung, J. K. S. (2018). Busting the "Princelings": The campaign against corruption in China's primary land market. *The Quarterly Journal of Economics*, *134*(1), 185-226.

Chuang, J. (2014). China's rural land politics: bureaucratic absorption and the muting of rightful resistance. *The China Quarterly*, *219*, 649-669.

Cui, E., Tao, R., Warner, T. J., & Yang, D. L. (2015). How do land takings affect political trust in rural China? *Political Studies*, *63*(1_suppl), 91-109.

Gandhi, J., & Lust-Okar, E. (2009). Elections under authoritarianism. *Annual Review of Political Science*, *12*, 403-422.

Guo, X. (2001). Land expropriation and rural conflicts in China. *The China Quarterly*, *166*, 422-439. https://doi.org/10.1017/S0009443901000201

Han, L., & Kung, J. K. S. (2015). Fiscal incentives and policy choices of local governments: Evidence from China. *Journal of Development Economics*, *116*, 89-104.

Jiang, Y., Waley, P., & Gonzalez, S. (2018). 'Nice apartments, no jobs': How former villagers experienced displacement and resettlement in the western suburbs of Shanghai. *Urban Studies*, *55*(14), 3202-3217.

Lee, C. K., & Zhang, Y. (2013). The power of instability: unraveling the microfoundations of bargained authoritarianism in China. *American Journal of Sociology*, *118*(6), 1475-1508.

Li, L., & O'brien, K. J. (2008). Protest leadership in rural China. *The China Quarterly*, *193*, 1-23.

Liang, Z., & Ma, Z. (2004). China's floating population: new evidence from the 2000 census. *Population and Development Review*, *30*(3), 467-488.

Deng, Y., & O'Brien, K. J. (2013). Relational repression in China: using social ties to demobilize protesters. *The China Quarterly*, *215*, 533-552.

Lorentzen, P., & Scoggins, S. (2015). Understanding China's rising rights consciousness. *The China Quarterly*, *223*, 638-657.

Lu, Y., & Tao, R. (2017). Organizational structure and collective action: Lineage networks, semiautonomous civic associations, and collective resistance in rural China. *American Journal of Sociology*, *122*(6), 1726-1774.

Mattingly, D. C. (2016). Elite capture: How decentralization and informal institutions weaken property rights in China. *World Politics*, *68*(3), 383-412.

Mattingly, D. C. Forthcoming. *The Art of Political Control in China.* Cambridge Studies in Comparative Politics. New York: Cambridge University Press.

National Bureau of Statistics. (Jan 2017). "China's Urbanization Rate Reaches 57.35% by 2016." Accessed online http://www.ciudsrc.com/new_chengshihualv/gedi/2017-01-23/110677.html

Ong, L. H. (2014). State-led urbanization in China: Skyscrapers, land revenue and "concentrated villages". *The China Quarterly*, *217*, 162-179.

Ren, X. (2017). Land acquisition, rural protests, and the local state in China and India. *Environment and Planning C: Politics and Space*, *35*(1), 25-41.

Siciliano, G. (2014). Rural-urban migration and domestic land grabbing in China. *Population, Space and Place*, *20*(4), 333-351.

Song, Y., Wang, M. Y., & Lei, X. (2016). Following the Money: Corruption, Conflict, and the Winners and Losers of Suburban Land Acquisition in China. *Geographical Research*, *54*(1), 86-102.

Walder, A. G., Luo, T., & Wang, D. (2013). Social stratification in transitional economies: property rights and the structure of markets. *Theory and Society*, *42*(6), 561-588.

Wang, Y., & Minzner, C. (2015). The rise of the Chinese security state. *The China Quarterly*, *222*, 339-359.

Whiting, S. (2011). Values in land: fiscal pressures, land disputes and justice claims in rural and peri-urban China. *Urban Studies*, *48*(3), 569-587.

Wilmsen, B. (2018). Damming China's rivers to expand its cities: the urban livelihoods of rural people displaced by the Three Gorges Dam. *Urban Geography*, *39*(3), 345-366.

Wright, T. (2010). *Accepting authoritarianism: state-society relations in China's reform era*. Stanford University Press.

Wu, X., & Treiman, D. J. (2004). The household registration system and social stratification in China: 1955–1996. *Demography*, *41*(2), 363-384.

Xie, Y., & Lu, P. (2015). The sampling design of the China Family Panel Studies (CFPS). Chinese Journal of Sociology, 1(4), 471–484. https://doi.org/10.1177/2057150X15614535

Tables and Appendix (to follow)

Table 1. Descriptive Statistics

	Total	Baseline Hukou	
		Urban	Rural
Ever experienced land grabs by survey years (%)			
2010	2.7%	1.0%	3.4%
2014	8.8%	2.3%	11.2%
2016	12.9%	3.4%	16.6%
Ever experienced demolitions by survey years (%)			
2010	0.9%	1.3%	0.8%
2014	2.1%	2.9%	1.8%
2016	3.7%	5.3%	3.1%
Rural Hukou (%)	72.0%	---	---
Urban residency in 2010	48.9%	89.8%	33.1%
Average household income in 2010 (in 1000 RMBs)	32.3	43.7	27.8
Average household size in 2010 (persons)	4.1	3.5	4.3
Average Age in 2010 (years old)	48.3	52.2	46.8
Male (%)	48%	52%	47%
Educational attainment in 2010 (%)			
(Semi-)illiterate	29.2%	15.8%	34.4%
Primary edu	24.1%	14.4%	27.8%
Junior high	29.4%	30.1%	29.2%
High school	12.6%	25.5%	7.7%
Associated degree or some college	3.3%	9.7%	0.8%
Bachelor's or above	1.4%	4.6%	0.2%
Marital status in 2010 (%)			
Unmarried	6.3%	4.9%	6.8%
Married	86.5%	86.7%	86.5%
Cohabiting	0.2%	0.3%	0.2%
Divorced/Separated	1.2%	2.3%	0.7%
Widowed	5.8%	5.9%	5.8%
Homeownership rate in 2010	88.3%	82.7%	90.5%
Any relatives work for the state or in managerial positions in 2010 (%)	15.8%	25.8%	11.9%
Communist Party Membership in 2010	8.7%	19.0%	4.7%
Primary Employment in 2010 (%)			
Government and the affiliated institutions	4.8%	10.4%	2.6%
Unemployed	50.9%	64.3%	45.8%
Self-employed	6.3%	5.4%	6.6%
Farming	27.0%	1.7%	36.9%
SOE/Collective enterprises	3.1%	8.1%	1.2%
Private enterprise	6.5%	8.6%	5.7%
Other organizations	1.3%	1.5%	1.3%

*Notes: individuals' panel weights are applied

Table 2. Fixed Effects Models Predicting Housing Outcomes and Personal Income

	Total Housing Space [a]			Housing Space Per Capita			Logged Housing Market Value [b]			Homeownership [c]			Logged Personal Income		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Experienced landgrab within last year	4.10	1.54		0.19	-0.26		-0.05	0.06		-0.01	0.00		-0.26**	-0.08**	
	(5.46)	(2.87)		(1.66)	(0.85)		(0.19)	(0.12)		(0.02)	(0.01)		(0.11)	(0.04)	
Experienced housing demolition within last year	-39.88***	-33.02***		-10.71***	-8.46***		-2.49***	-2.18***		-0.23***	-0.20***		0.14	0.18**	
	(9.56)	(6.29)		(2.64)	(1.78)		(0.47)	(0.32)		(0.04)	(0.03)		(0.21)	(0.08)	
Experienced landgrab three years ago	-0.12			0.43			0.10			0.02			-0.02		
	(4.61)			(1.33)			(0.14)			(0.01)			(0.10)		
Experienced housing demolition three years ago	4.07			-1.15			-0.50			-0.02			-0.17		
	(8.15)			(2.88)			(0.48)			(0.04)			(0.21)		
Ever experienced landgrab			1.95			-0.52			0.17			0.01			-0.14***
			(4.15)			(1.15)			(0.14)			(0.01)			(0.04)
Ever experienced housing demolitions			-38.55***			-11.22***			-2.31***			-0.23***			0.42***
			(7.26)			(2.24)			(0.44)			(0.04)			(0.09)
Age	-5.39**	-2.68	-2.56	0.09	0.55	0.58	-0.45**	-0.27**	-0.26**	-0.05***	-0.03**	-0.03**	0.44***	0.07*	0.07*
	(2.66)	(1.71)	(1.69)	(0.59)	(0.47)	(0.47)	(0.18)	(0.12)	(0.12)	(0.02)	(0.01)	(0.01)	(0.10)	(0.04)	(0.04)
Household Size	4.26***	3.58***	3.62***				0.30***	0.31***	0.31***	0.03***	0.03***	0.03***	-0.05***	-0.04***	-0.04***
	(1.42)	(0.90)	(0.90)				(0.03)	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)
Household Income in 1000 RMBs [d]	0.01	0.01*	0.01*	0.05**	0.06**	0.06**	-0.00	0.00	0.00	-0.00	-0.00	-0.00			
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			
Rural Hukou	4.74	4.45	3.97	1.97	1.36	1.19	0.41**	0.45***	0.42***	0.05***	0.04***	0.03***	-0.28**	-0.12**	-0.11**
	(4.98)	(3.25)	(3.26)	(1.57)	(1.05)	(1.05)	(0.17)	(0.12)	(0.12)	(0.01)	(0.01)	(0.01)	(0.13)	(0.05)	(0.05)
Constant	350.98***	230.55***	225.00***	27.53	6.97	5.60	29.41***	20.81***	20.50***	2.87***	2.09***	2.06***	-18.02***	-1.36	-1.37
	(121.88)	(78.49)	(77.49)	(26.94)	(21.57)	(21.67)	(8.12)	(5.54)	(5.46)	(0.73)	(0.53)	(0.52)	(4.77)	(1.85)	(1.86)
Number of Person Years	34,983	52,346	52,351	34,983	52,346	52,351	36,393	54,585	54,590	36,393	54,581	54,586	21,954	40,952	40,958
Number of Individuals	19,117	19,239	19,239	19,117	19,239	19,239	19,312	19,403	19,403	19,312	19,403	19,403	18,896	19,397	19,398
Individual & Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: Only key covariates are shown; individuals' panel weights are applied

Robust standard errors in parentheses

a. Results based on housing space per capita (i.e. housing crowding) are highly consistent.

b. The values are logarithm transformed (the results are similar if using Inverse Hyperbolic Sine transformation)

c. Estimated as fixed-effects linear probability model

d. Household income per capita is used in the models predicting housing space per capita

*** p<0.01, ** p<0.05, * p<0.1

Table 3. Ordered/Binary Logit Models Predicting Political Attitudes and Behaviors

	Rating of the Local Gov't Achievements (2016) [a]		Perceived Government Corruption (2016) [b]		Having Conflicts with Government Officials (2016)		Voting in the Most Recent Local Elections (2014) [c]	
	Version 1	Version 2	Version 1	Version 2	Version 1	Version 2	Version 1	Version 2 [d]
Type of Model	Ordered Logit Model		Ordered Logit Model		Binary Logit Model		Binary Logit Model	
Experienced landgrab within the past three years	-0.22*** (0.06)	-0.19*** (0.06)	0.16*** (0.06)	0.21*** (0.06)	0.78*** (0.13)	0.81*** (0.13)	0.36*** (0.09)	
Experienced housing demolition within the past three years	-0.31*** (0.11)	-0.31*** (0.12)	0.12 (0.11)	0.19* (0.11)	0.20 (0.28)	0.15 (0.27)	0.87*** (0.30)	
Cross-county relocation	0.15* (0.08)	0.15** (0.07)	-0.15** (0.07)	-0.18** (0.07)	0.51*** (0.17)	0.53*** (0.17)	-0.95*** (0.11)	
Per capita compensation for expropriations	0.00*** (0.00)	0.00*** (0.00)	-0.00 (0.00)	-0.00** (0.00)	0.00* (0.00)	0.00* (0.00)	-0.00 (0.00)	
Male	-0.06 (0.04)	-0.05 (0.04)	0.19*** (0.04)	0.22*** (0.04)	0.22** (0.11)	0.30*** (0.11)	0.33*** (0.05)	
Age range in 2010 (ref. 16-25 years old)								
26-35 years old	0.14 (0.09)	0.23*** (0.09)	-0.34*** (0.09)	-0.21** (0.09)	0.40 (0.31)	0.44 (0.31)	0.48*** (0.11)	
36-45 years old	0.13 (0.09)	0.21** (0.08)	-0.47*** (0.09)	-0.37*** (0.09)	0.65** (0.31)	0.73** (0.31)	0.71*** (0.11)	
46-55 years old	0.24*** (0.09)	0.33*** (0.09)	-0.59*** (0.09)	-0.54*** (0.09)	0.62** (0.31)	0.73** (0.31)	1.03*** (0.11)	
56-65 years old	0.58*** (0.10)	0.67*** (0.09)	-0.74*** (0.10)	-0.68*** (0.09)	0.17 (0.34)	0.29 (0.33)	1.13*** (0.12)	
66+ years old	0.71*** (0.12)	0.82*** (0.11)	-1.06*** (0.11)	-1.00*** (0.11)	0.22 (0.36)	0.29 (0.36)	1.00*** (0.13)	
Rural hukou in 2010	-0.08 (0.06)	-0.08 (0.06)	-0.18*** (0.06)	-0.22*** (0.06)	0.25 (0.16)	0.21 (0.16)	1.17*** (0.07)	
Urban residency in 2010	-0.13*** (0.05)	-0.12** (0.05)	0.19*** (0.05)	0.16*** (0.04)	-0.10 (0.13)	-0.11 (0.12)	-0.29*** (0.05)	
Marital status in 2010 (ref. Unmarried)								
Married	-0.18** (0.09)	-0.24*** (0.09)	0.28*** (0.09)	0.18** (0.09)	-0.12 (0.31)	-0.11 (0.31)	0.27** (0.11)	
Cohabiting	0.68** (0.30)	-0.01 (0.45)	-0.19 (0.40)	-0.32 (0.44)	1.12 (1.01)	1.20 (0.97)	0.12 (0.51)	
Divorced/Separated	-0.20 (0.21)	-0.25 (0.21)	0.42** (0.20)	0.32* (0.19)	0.45 (0.47)	0.46 (0.47)	0.37 (0.25)	
Widowed	-0.34**	-0.33**	0.26*	0.12	-0.01	0.01	0.27*	

	(0.15)	(0.15)	(0.15)	(0.14)	(0.42)	(0.41)	(0.16)
Educational attainment in 2010 (ref. (Semi-)illiterate)							
Primary edu	0.12*	0.07	0.16***	0.10*	0.02	-0.02	0.12**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.14)	(0.14)	(0.06)
Junior high	0.24***	0.20***	0.10*	0.10*	-0.25*	-0.32**	0.14**
	(0.06)	(0.06)	(0.06)	(0.05)	(0.15)	(0.15)	(0.06)
High school	0.25***	0.20***	0.20***	0.22***	-0.03	-0.10	-0.02
	(0.08)	(0.08)	(0.07)	(0.07)	(0.19)	(0.19)	(0.09)
Associated degree or some college	0.47***	0.43***	0.10	0.11	0.18	0.10	0.14
	(0.11)	(0.11)	(0.12)	(0.11)	(0.33)	(0.33)	(0.15)
Bachelor's or above	0.30*	0.23	-0.00	0.10	-0.02	-0.11	-0.03
	(0.17)	(0.17)	(0.13)	(0.13)	(0.42)	(0.42)	(0.23)
Homeownership in 2010	-0.08	-0.07	0.02	0.01	-0.22	-0.27*	0.24***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.15)	(0.15)	(0.07)
Employment Type in 2010 (ref. gov't or gov't affiliated institutions)							
Unemployed	-0.34***	-0.40***	0.14	0.16*	0.27	0.26	0.13
	(0.10)	(0.10)	(0.09)	(0.09)	(0.28)	(0.28)	(0.12)
Self-employed	-0.34***	-0.40***	0.06	0.07	0.51	0.51	0.27**
	(0.12)	(0.12)	(0.11)	(0.11)	(0.32)	(0.32)	(0.14)
Farming	-0.18*	-0.25**	0.02	0.02	0.38	0.38	0.23*
	(0.10)	(0.10)	(0.10)	(0.09)	(0.29)	(0.29)	(0.12)
SOE/Collective enterprises	-0.30**	-0.36***	0.18	0.24**	0.18	0.24	-0.39**
	(0.13)	(0.13)	(0.12)	(0.12)	(0.38)	(0.37)	(0.17)
Private enterprise	-0.36***	-0.40***	0.25**	0.26**	0.12	0.10	0.16
	(0.12)	(0.11)	(0.10)	(0.10)	(0.34)	(0.34)	(0.13)
Other organizations	-0.15	-0.19	0.08	0.09	-0.75	-0.77	0.77***
	(0.18)	(0.18)	(0.17)	(0.17)	(0.64)	(0.66)	(0.22)
Communist Party Membership in 2010	0.36***	0.39***	-0.19***	-0.19***	-0.15	-0.13	0.44***
	(0.08)	(0.08)	(0.07)	(0.07)	(0.23)	(0.23)	(0.09)
Any relatives work for the state or in managerial positions	0.08	0.11**	-0.20***	-0.17***	0.10	0.10	0.05
	(0.06)	(0.06)	(0.05)	(0.05)	(0.16)	(0.16)	(0.06)
Number of Observations	16,819	18,002	16,495	18,071	18,406	18,456	18,048
Controllig for Province	YES	YES	YES	YES	YES	YES	YES
Controlling for Lagged Outcome	YES	NO	YES	NO	YES	NO	NO

Notes: Only key covariates are shown

Robust standard errors in parentheses

a. Ratings of local government achievements in 2016, which range from 1"worse than before" 2"no achivements at all" 3"no big achievements" 4"some achievements" to 5"substantial achievements"

b. Perceived governemnt corruption in 2016, which is a categorical variable with 11 ordinal cateogories, with 0 indicating no corruption at all and 10 indicating extremely corrupted.

c. Voting outcome at latest village/neighborhood-community election in 2014, which is available for the 2014 wave only. So, the land seizures and demolitions variables are also 2014-specific.

d. As there is not a lagged voting outcome, only Version 1 model is estimated.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

*Notes: individuals' panel weights are applied

Table 4. Fixed-Effects Linear Probability Models Predicting Having Conflicts with Government Officials

	Conflicts with Government Officials		
	Model 1	Model 2	Model 3
Experienced landgrab within last year	0.06***	0.03***	
	(0.01)	(0.01)	
Experienced housing demolition within last year	0.01	0.00	
	(0.02)	(0.01)	
Experienced landgrab three years ago	-0.01		
	(0.01)		
Experienced housing demolition three years ago	-0.00		
	(0.02)		
Ever experienced landgrab			0.03***
			(0.01)
Ever experienced housing demolitions			0.01
			(0.01)
Age	0.01**	0.01**	0.01**
	(0.01)	(0.00)	(0.00)
Household Size	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Household Income in 1000 RMBs ᶜ	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Rural Hukou	0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)
Constant	-0.57**	-0.42**	-0.43**
	(0.25)	(0.20)	(0.20)
Number of Person Years	36,298	53,548	53,553
Number of Individuals	19,302	19,371	19,371
Individual & Year FE	YES	YES	YES

Notes: Only key covariates are shown; individuals' panel weights are applied
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Appendix 1. Fixed Effects Models Predicting Housing Outcomes: Lagged Expropriations Only

	Total Housing Space	Housing Space Per Capita	Housing Market Value[a]	Homeownership [b]	Personal Income
	Lagged Predictors Only	Lagged Predictors Only	Lagged Predictors Only	Lagged Predictors Only	Lagged Predictors Only
Experienced landgrab within last year					
Experienced housing demolition within last year					
Experienced landgrab three years ago	-3.49	-0.46	0.14	0.00	0.07*
	(2.83)	(0.86)	(0.12)	(0.01)	(0.04)
Experienced housing demolition three years ago	-1.48	-0.92	-0.28	0.04	0.13*
	(6.36)	(1.83)	(0.31)	(0.02)	(0.07)
Individual & Year FE	YES	YES	YES	YES	YES

Notes: Only key covariates are shown; individuals' panel weights are applied

Robust standard errors in parentheses

a. The values are logarithm transformed (the results are similar if using Inverse Hyperbolic Sine transformation)

b. Estimated as fixed-effects linear probability model

*** p<0.01, ** p<0.05, * p<0.1