Illiquid Homeownership and the Bank of Mom and Dad*

Eirik Eylands Brandsaas

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Abstract

Housing is the largest asset in U.S. household portfolios, and first-time homebuyers increasingly rely on parental transfers. This paper quantifies the contribution of parental transfers to the homeownership rate of young households. I build and estimate a life-cycle overlapping generations model with housing, where adult children and parents interact without commitment. I find that parental transfers account for 14 percentage points (29%) of young households' homeownership. Transfers from wealthy parents not only help households overcome borrowing constraints, but also help sustain homeownership, mitigating the drawbacks of illiquidity. Surprisingly, policies lowering entry barriers to homeownership generally increase the reliance on parental wealth, whereas increased liquidity reduces it. Finally, I show that children of wealthy parents strategically use the illiquidity of housing as a commitment device to encourage transfers, resulting in a preference for illiquidity.

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*Federal Reserve Board of Governors. E-mail: eirik.e.brandsaas@frb.gov. I have benefited from the comments of Dean Corbae, Erwan Quintin, Ananth Seshadri, Corina Mommaerts, Corina Boar, Manuel Amador, Hamish Low, Patrick Moran, Dionissi Aliprantis, David Sturrock, Mike Eriksen, Aradhya Sood, Margaret Jacobson, William Gamber, Claudia Sahm, and Joel McMurry, as well as seminar participants Oxford Saïd, Federal Reserve Board, Cal State Fullerton, Boston Fed, ECARES/Université libre de Bruxelles, Santa Clara, University of Lugano, NYU Furman, Norges Bank, BI Norwegian Business School, UW-Madison, and conference participants at NASEMS, AREUEA National, ReCapNet, Minneapolis Fed/OIGI, UEA EU, CFPB, CEF, SAET, Oxford NuCamp Macro Workshop, YES 2020 at UPenn, and Minnesota-Wisconsin Macro/International Workshop. Code and replication instructions are available at the author's website and Github.

1 Introduction

Housing is the largest asset in U.S. households portfolios. While homeownership is seen as central to the "American Dream" (Goodman and Mayer, 2018), households face different barriers to ownership. Between 2009 and 2016, around 30% of American first-time homebuyers received parental assistance for their down payment, with such assistance averaging $48,000 per receiving household.[1] This assistance highlights disparities in access, as only those with sufficiently wealthy parents can expect substantial transfers.

This paper quantifies the importance of parental transfers for young adults' homeownership and investigates how policies lowering homeownership barriers interact with parental transfers. Previous empirical studies highlight that parental transfer receipt is associated with an increase in the probability of becoming a homeowner, mainly by relaxing credit constraints (see e.g., Lee, Myers, Painter, Thunell, and Zissimopoulos, 2020; Blickle and Brown, 2019; Wold, Aastveit, Brandsaas, Juelsrud, and Natvik, 2024). Additionally, parental transfers help households maintain homeownership, a mechanism that has received less attention (see e.g., Bond and Eriksen, 2021). However, while these studies show that transfer receipt increases the probability of renters becoming homeowners, they do not address the overall importance of parental transfers. For example, households may anticipate future transfers and subsequently save less. In this case, even if transfers increase the likelihood of homeownership, all else being equal, they may not affect aggregate homeownership. Furthermore, this is the first paper quantifying the importance of parental transfers as a determinant of homeownership; the existing literature has primarily focused on family formation and credit constraints (see e.g., Chang, 2024; Paz-Pardo, 2024; Mabille, 2022).

I first present empirical evidence indicating that parental wealth helps not only in the transition to ownership, but also in maintaining ownership. I show that, controlling for a wide set of household and parental characteristics, households with wealthier parents are less likely to fall behind on mortgage payments after becoming homeowners, even though they buy more expensive homes. Finally, using a variation of the event study in Chetty and Szeidl (2007), I show that while most households downsize their housing during unemployment spells, those with wealthy parents retain their current homes.

[1] All data from the Survey of Household Economic Decisionmaking and the Panel Study of Income Dynamics (see Section 2).

To quantify the impact of parental transfers on homeownership, I then combine two distinct models: housing models, which ignore parental transfers, and models of parental transfers, which ignore housing. I build a life-cycle overlapping generations model with altruistic parents and a rent-or-own decision. Parents and children interact without commitment through both inter-vivos transfers and end-of-life bequests. In models of altruism without housing (e.g., Altonji, Hayashi, and Kotlikoff, 1997; Barczyk and Kredler, 2014), the transfer motive is to increase the child's consumption when they are borrowing constrained, thus having high marginal utility of wealth. The inclusion of a frictional housing market generates two new transfer motives. First, transfers can directly alleviate credit constraints, enabling wealthier parents to help their children meet down-payment requirements. Second, future transfers provide partial insurance against future income shocks, reducing risks associated with the large illiquid investment of homeownership. Moreover, the illiquidity of housing serves as a commitment device enabling children to secure future transfers. As in all transfer models, the expectation of future transfers reduces children's saving motives, potentially lowering the homeownership rate.

Allowing for parental transfers in all periods highlights that transfers are critical not only for entering homeownership—the main focus of empirical literature—but also for maintaining homeownership. Specifically, the prospect of future transfers mitigates the downsides of homeownership for liquidity-constrained households. Ameliorating illiquidity turns out to be as important as relaxing borrowing constraints. Crucially, the model rationalizes the previously discussed empirical pattern that households with wealthy parents do not downsize during income losses, which would not be possible without allowing transfers in all periods.

I estimate the model by matching data on homeownership, wealth, and transfers from the Panel Study of Income Dynamics (PSID). To quantify the importance of transfers, I find the counterfactual homeownership rate without parental transfers. Without parental transfers, the model simplifies to a standard life-cycle model with housing. I find that parental transfers account for 14 percentage points (29%) of the homeownership rate among young households.

I then use the model to evaluate policies aiming to increase homeownership. I find that such policies disproportionately benefit households with wealthy parents. Relaxing mortgage constraints—for example, by lowering minimum down payments—strengthens the link between parental wealth and children's housing outcomes, since more households with wealthy parents are on the margin to become homeowners.

Nonmortgage policies that lower barriers to entry, such as reducing prices or purchase costs, increase homeownership for all households, though disproportionately among those with wealthier parents. However, increasing liquidity by reducing sales costs weakens the link between parental wealth and children's housing outcomes, as the partial insurance provided by parental wealth becomes less important.

I then study how illiquidity affects the strategic behavior arising in the absence of commitment. I find that 27% of young households prefer illiquid housing—due to sales costs—to liquid housing. These households have wealthy parents and use the sales costs as a commitment device to maintain low liquid wealth in the next period, effectively becoming "wealthy hand-to-mouth." Lower liquid wealth implies higher marginal propensities to consume (MPC) and, hence, more parental transfers. As an illustrative example, consider a child who buys a house and brings no liquid wealth to the next period. If the parent does not transfer in the next period, the child will either face very low consumption (with a correspondingly high marginal value of wealth) or be forced to liquidate the house and incur sales costs. The parent dislikes both outcomes and may find it optimal to transfer enough to keep the child in the home. This driver of preference for illiquidity differs from those studied in the literature, such as temptation or time inconsistency (Attanasio, Kovacs, and Moran, 2024; Laibson, 1997). Furthermore, parental wealth generating preference for illiquidity provides a novel explanation for the existence of high-MPC households (see e.g., Kaplan and Violante, 2022). That children with wealthy parents find illiquidity less problematic—or even prefer it—is consistent with the empirical results in Choukhmane, Colmenares, O'Dea, Rothbaum, and Schmidt (2023). They find that households with wealthy parents are more likely to invest in illiquid retirement accounts and less likely to make costly early withdrawals, even after controlling for a wide set of characteristics.

Finally, I quantify the contribution of parental transfers to the Black-White homeownership gap of 50% among young adults. I adapt the methodology of Ashman and Neumuller (2020) and Aliprantis, Carroll, and Young (2022), who study the racial wealth gap, and recalibrate the income process to capture racial differences. I find that parental transfers account for 7 percentage points (14%) of the Black-White homeownership gap. For context, the Black-White homeownership gap has remained roughly constant since the passing of the Fair Housing Act in 1968.

My paper first contributes to the literature studying the determinants of homeownership over the life cycle. Recent papers focus on marriage and family formation (Fisher and Gervais, 2011; Chang, 2024; Khorunzhina and Miller, 2022), housing demand in old age (McGee, 2021; Barczyk, Fahle, and Kredler, 2022), and changing borrowing constraints (Paz-Pardo, 2024; Mabille, 2022). These studies highlight the importance of credit constraints and minimum down payments in constraining demand for owner-occupied housing. By considering parent-child interactions, I show how parental wealth affects the relative importance of constraints. For households with poorer parents, the sales and purchase costs decrease ownership by making it riskier to own. This risk is smaller for households with richer parents, making mortgage credit constraints relatively more important. My results highlight that policies increasing ownership through subsidies to first-time buyers—a common approach in many cities—will lead to increased housing inequality. My model-based results also complement some of the empirical research on the effect of parental resources and housing outcomes (see e.g., Wold et al., 2024; Daysal, Lovenheim, and Wasser, 2023; Benetton, Kudlyak, and Mondragon, 2022, for recent work) by quantifying the contribution of transfers to homeownership.

My paper also contributes to the literature on altruistic households interacting without commitment by studying how illiquid housing affects the commitment problem. In these models, children have an incentive to undersave to increase parental transfers (e.g., Altonji et al., 1997; Boar, 2020; Barczyk and Kredler, 2014; Chu, 2020). Illiquid housing imposes future expenditure commitments (Chetty and Szeidl, 2007; Shore and Sinai, 2010), which children of wealthy parents strategically exploit to encourage future parental transfers. The paper most closely related to mine is Barczyk et al. (2022), who study how the homeownership of retired parents affects the economic behavior of the elderly and their adult children. In their model, the parents' home serves as a commitment device, encouraging wealth bequests from the parent and informal care from the adult offspring. My contribution is to study the complementary problem: how parental transfers affect the homeownership decisions of young adults. Finally, while Kaplan (2012) studies cohabitation with parents among individuals under the age of 25, my focus is on homeownership decisions for households from age 25 onwards.

Finally, the paper contributes to the literature on parental transfers and life-cycle outcomes by focusing on how parental transfers to young adult households influence their wealth accumulation through homeownership. My results show that households with wealthier parents are willing to buy sooner, take on higher leverage, and hold less liquid precautionary savings. The previous literature has generally focused on parental investment in children's human capital (e.g., Lee and Seshadri, 2019;

Daruich, 2023; Gilraine, Graham, and Zheng, 2023), transfers from adult children to retired parents (e.g., Mommaerts, 2025; Barczyk and Kredler, 2018; Barczyk et al., 2022), or smoothing income shocks (e.g., Boar (2021); Fagereng, Guiso, Pistaferri, and Ring (2023); Andersen, Johannesen, and Sheridan (2020)) instead of the effect of parental wealth on household portfolio choices.

The paper proceeds as follows. In Section 2, I describe the data sources and summary statistics, and I document that parental wealth is associated with better housing outcomes. Section 3 describes the quantitative model, and Section 4 discusses the structural estimation. Section 5 performs the main quantitative exercise and robustness tests. Finally, Section 6 studies how policies intended to increase homeownership also affect the role of parental wealth and housing illiquidity.

2 Data on Transfers, Family, and Housing

I first present time trends in parental transfers for down payments, before describing the estimation sample taken from the PSID. Finally, I use the estimation sample to show that parental wealth is positively associated with better housing outcomes, both before and after purchase.

2.1 Parental Transfers for Owners Over Time

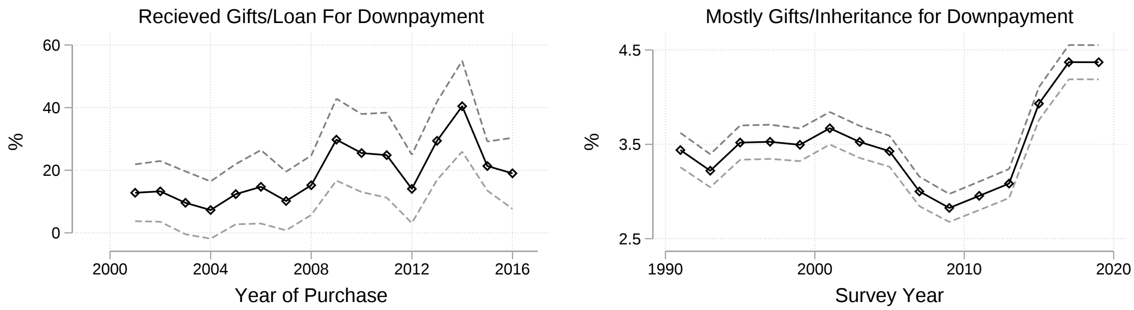
I use the Survey of Household Economics and Decisionmaking (SHED) and American Housing Survey (AHS) datasets to show the time trends in parental housing transfers.

SHED: I use SHED, an annual cross-sectional survey conducted by the Federal Reserve, to observe the share of households who funded the down payment with a loan or gift from family or friends, by year of purchase. The results are plotted in the left panel of Figure 1. The main observation is the large increase in the role of inter-vivos transfers for homeowners since 2001. From 2001 to 2007, only 10% to 18% of first-time buyers received transfers, while 20% to 40% received transfers after 2009.[2]

AHS: I use the AHS, which surveys occupants of owner-occupied units, to obtain a time series on whether the down payment was mostly funded by gifts or inheritances (right panel of Figure 1). We observe a flat pattern in the 1990s, followed by a sharp

[2]The question was only included in the 2015 and 2016 waves. In the 2015 wave, first-time ownership and down-payment source is only reported for those who bought in 2001 to 2015, while in the 2016 wave it is only reported for 2015 to 2016.

Figure 1: Increased Reliance on Parental Transfers for Down Payments



Notes: The left panel uses data from the SHED with the sample restricted to current owners who report this being their first home. The right panel uses data from the AHS with the sample restricted to all owner-occupied units that did not indicate the sale of a previous home as the main source of funding. Note that the left figure has year of purchase on the horizontal axis while the right figure has survey year. Dashed lines denote 95% confidence intervals.

decline from 2005 to 2009, coinciding with the prevalence of mortgages featuring very low down payments (e.g., Corbae and Quintin (2015)), and a stark increase from 2013 to today. Minor fluctuations in the percentage of homeowners relying on gifts or inheritances reflect significant shifts among new homeowners, who comprise a small fraction of all homeowners. This is because the horizontal axis denotes the survey year, not the year of purchase.

2.2 Panel Study of Income Dynamics

My main data source is the PSID, which follows a nationally representative sample of U.S. households and their descendants over time since 1968. The PSID is the only publicly available U.S. dataset that satisfies this paper's three requirements. First, it has detailed wealth, income, and housing data for both parents and adult children. Second, it has information about inter-vivos transfers from parents to children, unlike most register data. Third, it follows households over time, so we can observe the transitions from renting to owning and how these transitions relate to parental wealth.

I use data from 1999 to 2021. In 1999, the PSID started to collect detailed wealth data every other year. In most waves of the PSID, there is limited transfer data, and the main question is whether households received gifts or bequests over $5,000 in the last two years. In 2013, the PSID collected more detailed transfer data in the Family Roster and Transfer Module. They asked parents how much they gave their children in the last calendar year and how much they had given over their lifetime for school, house purchases, or other purposes. Household characteristics such as age, gender, and education refer to the household head. I classify top-coded values as missing observations. All monetary variables are expressed in constant 2016 U.S. dollars (in thousands). Table A2 in the Appendix provides variable code of the main variables.

Sample Selection: Throughout this paper, the sample includes all households aged 25 to 84 in the PSID, excluding the Survey of Economic Opportunity and the Latino subsamples, to obtain a representative sample. All summary statistics are calculated using the provided family weights. I drop all observations with missing housing values (which is set to zero for renters) or wealth.

Matching Parents with Children: I use the Parent/Child file from the PSID's 2013 transfer supplement. I can observe each household's reported transfers to and from parents and children. This leads to discrepancies, where the child and parent do not agree on the amount given from the parent to the child. I only use the parent's reported transfer. First, there may be some stigma about receiving transfers, which may induce receiving children to underreport. Second, in the model, parents determine the size of the transfer they give to their child.

Definition of Transfers: The transfer supplement asked all parent households whether they gave money, gifts, or loans of $100 or more to their children in 2012. I follow the literature (e.g., McGarry, 2016) and treat all transfers as gifts. Since this paper focuses on transfers that (a) relate to housing and (b) are quantitatively meaningful, I set transfers below $500 to $0. About 25% of transfers are below this threshold, and ignoring them increases the mean transfer from $2,921 to $3,960.

2.2.1 Descriptive Statistics: Who Receives Transfers?

!! [[rewrite this]] !! I now discuss descriptive statistics from the PSID sample in 2013 for households aged 25 to 44 with an observed parent household. Table 1 contains the means of variables, by age, wealth, homeownership, and transfer receipt.

There are several main takeaways from the subgroup analysis. In 2013, 22% of young households received a transfer, and transfers averaged $3,950. Receivers have significantly richer parents, have similar wealth and income as nonreceivers, and are less likely to own. Receivers are more likely to transition from renting to owning, especially in the age groups where households are most likely to buy. The key determinant of transfer receipt seems to be parental wealth.

In panel a), the first two columns compare the whole sample, by transfers receipt in the last calendar year. The mean transfer is relatively high at $3,950, and 22% of households received transfers in the last year. The largest difference is parental wealth: transferring parents are 2.5 times as wealthy as nontransferring parents ($1,029,000 vs. $410,000). Perhaps surprisingly, receivers are slightly richer than nonreceivers ($108,000 vs. $78,500), are more likely to be college-educated and white, and are one year younger. Receivers are slightly less likely to be homeowners (39% vs. 43%), reflecting the age difference and the tendency for college attendance to delay homeownership.

Next, I break the sample down by ownership. Homeowners have 10 times the wealth of renters and also significantly wealthier parents. Renters and owners receive transfers at about the same rate and size. Receivers are more likely to switch from renting to owning: 21% of receiving owners rented two years ago, compared to 14% of nonreceiving owners.

Next, I break the sample into three age groups from 25 to 44. We see that households' wealth, income, and homeownership rates increase with age. Notably, among 29-to-32-year-olds, homeownership is more common among transfer recipients (40%) than nontransfer recipients (32%). Furthermore, receivers are not only more likely to own, but also to be recent homeowners: 21% of receiving owners are new homeowners versus 13% of nonreceiving owners.

2.3 Parental Resources and Housing Outcomes in the Data

I now utilize microdata from the PSID to examine the correlation between parental financial resources and housing outcomes.

I use the sum of parental net worth and income (denoted as wealth) as a statistic to measure parents' financial resources in all specifications for two reasons. First, this is consistent with models of altruism, as the one I use later. Second, since parents' wealth and income are highly correlated and I have few observations—under 1,000 for most specifications—the standard errors are large when both are included. The sample is limited to households aged 25 to 44.

2.3.1 Households with Wealthier Parents Buy More Expensive Houses

I first show that households with wealthier parents buy more expensive homes, controlling for household characteristics.

I run an ordinary least squares (OLS) regression on house purchase values for first-time owners and test whether lagged parental wealth (logged) is positively associated

Table 1: Descriptive Statistics (Means), Households Aged 25-45

	All		Renter		Owner	
Receiver	No	Yes	No	Yes	No	Yes
Transfer	0.00	3.96	0.00	3.91	0.00	4.03
Wealth	78.51	108.31	13.42	42.02	164.57	211.82
Wealth Parent	410.44	1028.89	245.28	1033.03	625.38	1022.51
Income	72.71	74.33	46.79	52.84	106.99	107.88
College	0.35	0.51	0.28	0.47	0.45	0.58
White	0.73	0.85	0.65	0.81	0.84	0.92
Owner	0.43	0.39	0.00	0.00	1.00	1.00
Owner t-2	0.41	0.37	0.06	0.06	0.86	0.79
Age	33.98	32.91	32.22	31.33	36.30	35.38
Observations	2388	653	1453	400	935	253
Age	25-31		32-38		39-44	
Receiver	No	Yes	No	Yes	No	Yes
Transfer	0.00	4.37	0.00	3.48	0.00	3.78
Wealth	32.85	55.15	74.26	138.07	151.64	174.30
Wealth Parent	356.50	1281.21	373.93	778.87	537.72	869.39
Income	50.62	55.02	77.92	88.66	98.74	93.42
College	0.34	0.56	0.34	0.55	0.38	0.38
White	0.69	0.82	0.74	0.86	0.79	0.90
Owner	0.25	0.22	0.48	0.48	0.64	0.60
Owner t-2	0.20	0.19	0.44	0.44	0.63	0.55
Age	28.05	27.64	34.82	34.43	41.67	41.42
Observations	996	309	891	228	501	116
Wealth Tertile	Tertile 1		Tertile 2		Tertile 3	
Receiver	No	Yes	No	Yes	No	Yes
Transfer	0.00	2.77	0.00	2.68	0.00	5.54
Wealth	-33.44	-38.57	9.84	10.12	228.15	269.26
Wealth Parent	179.99	377.15	233.00	529.05	743.59	1791.25
Income	48.65	48.08	48.51	49.47	112.64	107.41
College	0.34	0.47	0.22	0.39	0.47	0.62
White	0.64	0.80	0.72	0.82	0.82	0.91
Owner	0.20	0.17	0.23	0.18	0.79	0.67
Owner t-2	0.22	0.13	0.22	0.22	0.72	0.60
Age	32.92	31.90	32.57	31.51	36.01	34.45
Observations	807	220	786	171	795	262

Notes: Data from the PSID Transfer, Individual, and Family modules. Weighted using family weights. Transfer, wealth, and income measured in 1000s of 2016 USD.

Table 2: Housing Choices and Parental Wealth

	(1) House Value	(2) Behind First	(3) Ever Behind	(4) Behind RE	(5) Behind FE
Parent					
Wealth(t-2)	0.057**	-0.010**	-0.016*	-0.005+	-0.005
	(0.018)	(0.004)	(0.007)	(0.003)	(0.006)
Child					
Net Worth(t-2)	0.074***	-0.006+	-0.007	0.001	0.006+
	(0.015)	(0.003)	(0.006)	(0.002)	(0.003)
Income(t-2)	0.226***	0.003	-0.004	-0.008	-0.006
	(0.030)	(0.006)	(0.011)	(0.005)	(0.008)
High School=1	0.252***	-0.019	-0.005	-0.005	0.050
	(0.067)	(0.016)	(0.025)	(0.014)	(0.058)
College=1	0.579***	-0.011	-0.032	-0.026+	0.095
	(0.079)	(0.018)	(0.029)	(0.015)	(0.063)
White=1	-0.008	0.032**	-0.026	-0.005	0.000
	(0.057)	(0.012)	(0.021)	(0.010)	(.)
Family Size	0.092*	0.012	0.017	0.012+	0.008
	(0.045)	(0.009)	(0.016)	(0.007)	(0.015)
N	1,065	640	971	3,205	3,205

Notes: Standard errors in parentheses. 'Behind' refers to whether the household is behind on a mortgage. Wealth, income, parental wealth, mortgage, family size, and house values are logged. All regressions include year and state fixed effects and control for age and age-squared of both the child and parent. Specifications 1-3 use ordinary least squares while specifications 4 and 5 use random and fixed effects, respectively. $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

with larger house purchases (β_1), controlling for lagged log income, lagged log net worth, education, age, log household size, regions, time, and race:

$$\ln HVal_i = \beta_1 \ln(Wealth)_{p(i),t-2} + \beta_2 \ln(Inc_{i,t-2}) + \beta_3 \ln(NetWorth_{i,t-2}) + \gamma X_{i,t} + \varepsilon_i.$$

Parents' wealth, as well as household income and net worth, are log-transformed. Households are denoted by i and their parents by $p(i)$. First-time buyers are households who have never been observed as homeowners before.

Column 1 of Table 2 reports the results. Households with wealthier parents buy larger houses: A 1% increase in parental wealth is associated with a 0.049% increase in the purchase value of the child's house, and the effect is significant at the 5% level. The effect of parental wealth is about the same as the child's own net worth (0.065%).

2.3.2 Households with Wealthier Parents Are Less Likely to Be Behind on Mortgages

To realize the benefits of homeownership, households must be able to maintain their mortgage payments, since failure to do so can lead to distressed and forced sales. I now show that households with wealthier parents are less likely to be behind on their mortgages, even though they buy more expensive houses. The PSID has collected this data since 2009, and 3.9% of owners aged 25 to 44 are behind, on average, while 9.2% have been behind at least once.

The sample is limited to the first time a household is observed as owners, and the control variables are the same as in the previous regression:

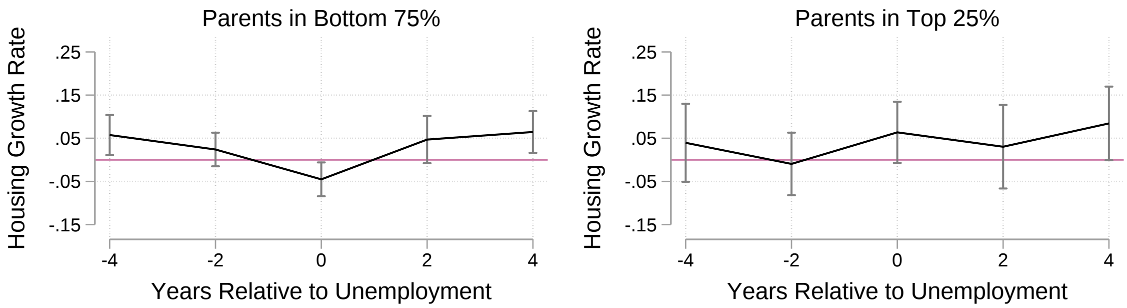
$$Behind_i = \beta_1 \ln(Wealth)_{p(i),t-2} + \beta_2 \ln(Inc_{i,t-2}) + \beta_3 \ln(NetWorth_{i,t-2}) + \gamma X_{i,t} + \varepsilon_i.$$

In Column 2 of Table 2, the outcome variable is whether households are behind on the mortgage payments the first time they are observed as owners. Parental wealth in the period before purchase decreases the probability that a household will ever be behind: A 1% increase in parental wealth decreases the probability of being behind by 0.016 percentage points and is significant at the 1% level. Parental wealth has a larger effect than the child's net worth. In Column 3, the outcome variable is whether first-time homeowners will ever be observed to be behind on their mortgage, and coefficients and significance levels are virtually unchanged. The sample size increases in these regressions, since households who bought before 2009 are now included.

I also report the results from two specifications where I follow households post-purchase, using random effects and household fixed effects regressions (Columns 4 and 5). Once we follow households over time, the effect of parental wealth decreases. With household fixed effects, the effect is no longer significant. However, the fixed effects regressions must be interpreted with caution, since there is little within-parent variation in wealth over time. Indeed, the random and fixed effects coefficients are almost the same (-0.008 vs -0.006). Overall, the results support the hypothesis that parental wealth decreases the probability of being behind on mortgage payments.

The probability of being behind on mortgages is decreasing in parental wealth, highlighting that parental resources appear to help new homeowners maintain ownership after purchase—in addition to relaxing borrowing constraints.

Figure 2: Event Study: Housing Consumption at Unemployment by Parental Wealth



Notes: Solid lines denote means, and bars denote the 95% confidence interval. The sample consists of households aged 25-45 with exactly one unemployment spell and without changes in head and/or spouse in the four years before and after unemployment.

2.3.3 Households with Wealthier Parents Are Less Likely to Downsize during Unemployment Spells

Distressed and forced home sales are costly and frequently driven by unemployment (Kermani and Wong, 2024; Hsu, Matsa, and Melzer, 2018). If parental wealth provides insurance, households with wealthier parents should be less likely to downsize after income losses. I perform a simple event study on the effect of unemployment on housing consumption to test this hypothesis.

The exercise follows Chetty and Szeidl (2007) closely. The outcome of interest is the change in log housing consumption, which is set to zero for households who do not move. For households who do move, housing consumption is defined as yearly rent while renting and 5% of the market value for owner-occupied housing (Davis, Lehnert, and Martin, 2008). The sample is limited to household heads who are unemployed only once between ages 25 and 45. I divide the sample by whether a household's parents were in the top parental wealth quartile (of parents with children aged 25 to 44) at the time of unemployment and compare the two groups' housing consumption growth rates at unemployment. The results are displayed in Figure 2. Among households with nonwealthy parents, housing consumption decreases by about 5% during unemployment (significant at the 95% level). In contrast, among households with wealthy parents, housing consumption even grows slightly at unemployment. Moreover, I replicate this event study using simulated data from the quantitative model and show that the results are similar (see Section 4.3.1 and Figure 5).

2.4 Taking Stock of the Data

Taking stock, we have seen that parental transfers have become more important for young homeowners over the past two decades. About 30% of young households receive transfers from their parents in a given year, and recipients' parents are wealthier. Recipients are also more likely to transition from renting to owning. Moreover, households with wealthier parents buy more expensive houses, are less likely to be behind on their mortgages, and are less likely to downsize during unemployment. These results suggest that homeowners with wealthy parents find illiquidity of homeownership less problematic.

2.5 Transfers and Taxes

In the United States, transfers and bequests are subject to taxation due to the estate tax. Taxes are paid by the giver, not the recipient. In 2024, an individual can give \$13.61 million before they start owing gift taxes. However, individuals have to file if they give transfers above \$18,000 (in 2024) to any one individual within a calendar year. Thus, the gift tax is irrelevant for the vast majority of households, as it only applies if lifetime transfers—including bequests—exceed \$13.61 million.

3 A Quantitative Model of Parental Transfers and Homeownership

This section describes my life-cycle model of housing choices with overlapping generations, idiosyncratic earnings risk, and altruistic inter-vivos transfers from parents to their offspring ("children"). To answer how important parental transfers are for housing outcomes, I combine two models: altruism without commitment and illiquid housing.

Altruism without commitment is a standard model of intergenerational family interactions (e.g., Altonji et al. (1997); Barczyk and Kredler (2018)). Altruistic parents, deriving utility from their child's utility, influence their child's consumption and housing choices through nonnegative transfers. The lack of commitment aligns with empirical transfer patterns and generates strategic behavior, as both children and parents internalize the effect of their choices on each other's future choices. The central theoretical prediction is that wealthy parents transfer to children with high marginal utility of wealth, typically poor or borrowing-constrained households (Chu, 2020; Barczyk and Kredler, 2021).

The second model component is illiquid homeownership. Without illiquidity, transfers mainly relax mortgage constraints, as has been the focus in empirical literature (e.g., Blickle and Brown (2019); Engelhardt and Mayer (1998); Guiso and Jappelli (2002); Lee et al. (2020)). With illiquidity, we get a two-asset model where portfolio composition matters for transfers. Specifically, homeowning children with low liquid wealth ("house rich but cash poor") have high marginal utility of wealth, strengthening parental transfer motives and, thus, the child's homeownership motive. Finally, while illiquid housing makes selling costly, wealthy parents can offer partial insurance, thus reducing the risk of costly liquidation or downsizing.

These two housing frictions—borrowing constraints and illiquidity—are not only theoretically important, but also empirically relevant. In the SHED, 57% of renters could not afford a down payment or did not qualify for a mortgage, while 26% said that renting was more convenient and 23% cited planning to move as reasons for renting.

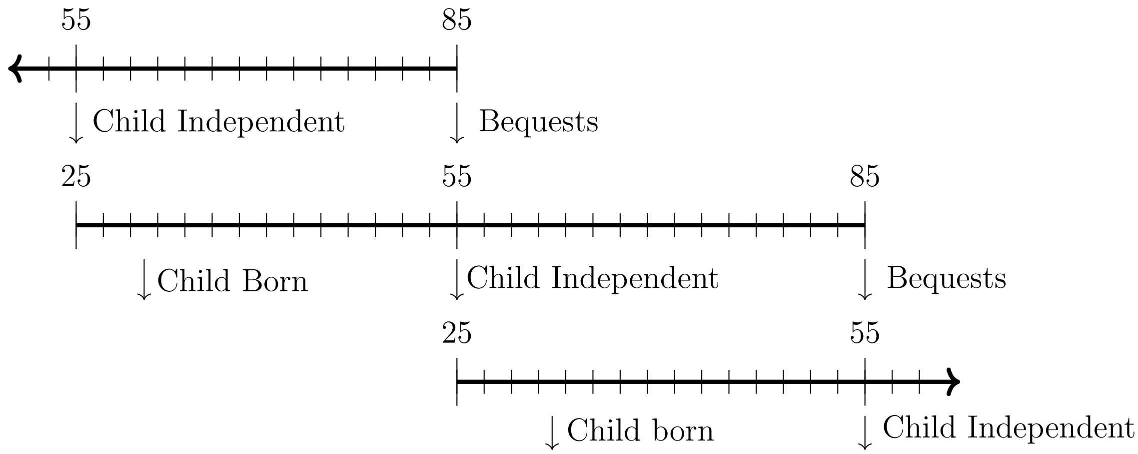
3.1 Demographics, Preferences, and Technologies

Time is discrete and finite. Each period consists of two years. At the beginning of each period, a constant mass of new households enters and exits the economy. The only economic agents in the model are households.

Demographics: Households are economically active from age $a \in \mathcal{A} = \{25, 27, \dots, 83\}$. The life cycle is illustrated in 3. A family consists of one adult child c household (age 25 to 53) and a parent p household (age 55 to 83) with an age gap of 30. Thus, children have new children at age 30, but new children are economically inactive until age 25. Each parent-child pair overlaps for 15 periods (30 years), and only two households are economically active in any dynasty at a time. Three events happen simultaneously when a child household becomes 55. First, the household's parent dies (at age 85). Second, the child transitions to become a parent household. Third, the child of the child becomes economically active as a child household.

Preferences and Altruism: Parents and children have time-separable expected utility with a discount factor of β. Households maximize expected utility, and the

Figure 3: Life Cycle of Three Generations in a Dynasty



per-period utility function for children is

$$U_c(c_c, h_c) = u(c_c, h_c) = \frac{\left(c^{\xi} s(h)^{1-\xi}\right)^{1-\gamma} - 1}{1-\gamma}, \tag{1}$$

where c is consumption, h is housing, γ is the coefficient of relative risk aversion, and ξ measures the relative importance of consumption to housing services. The within-period Cobb-Douglas aggregator imposes a constant desired expenditure share on housing services, roughly consistent with empirical evidence (e.g., Davis and Ortalo-Magné (2011)). The function $s(h)$ allows utility to depend on ownership:

$$s(h) = \begin{cases} h & \text{if renting,} \\ \chi h & \text{if owning.} \end{cases} \tag{2}$$

The parameter χ measures the owner-occupied utility premium, reflecting any additional benefits derived from owner-occupation, such as stability or ownership rights.

The parent's utility also depends on the altruistic utility derived from the child:

$$U_p(c_p, h_p, c_c, h_c) = u(c_p, h_p) + \eta u(c_c, h_c), \tag{3}$$

where η measures the intensity of the parent's altruism towards the child.

Intergenerational Transfers: In the last period before death, the parent can leave a bequest, which the child receives in the next period. In all other periods, the parent can give inter-vivos transfers of a nonnegative amount, t_p, that the child receives immediately.

Housing: Households can obtain housing services by renting or owning. They can rent housing of size h_r or own houses of size h_o. The unit price of housing is p, and q denotes the rent-to-price ratio. I assume that prices are constant for tractability, but I model aggregate house price risk as in Corbae and Quintin (2015) in Appendix C.2 and find that the quantitative results are almost unchanged. Homeowners incur proportional maintenance and depreciation costs δ. Illiquidity is captured by proportional adjustment and moving costs on owner-occupied housing, as in Yang (2009):

$$adj(h_{a+1}, h_a) = \begin{cases} m_b p h_{a+1} & \text{if } h_a = h_r \ \& \ h_{a+1} = h_o, \\ m_s p h_a & \text{if } h_a = h_o \ \& \ h_{a+1} = h_r, \\ 0 & \text{if } h_{a+1} = h_a, \end{cases} \tag{4}$$

where m_s and m_b denote selling and buying costs, respectively. A household enters the period house h_a, while h_{a+1} is the house chosen in this period.

Financial Market: Households can save in one-period bonds that pay the risk-free rate r. Households can also borrow in one-period risk-free bonds ("mortgage") at an interest rate $r + r^m$, where r^m is the mortgage premium. However, only owners may borrow, subject to a loan-to-value (LTV) constraint:

$$\begin{cases} b \geq -LTV \times p h_{a+1} & \text{if } h_{a+1} = h_o, \\ b \geq 0 & \text{if } h_{a+1} = h_r. \end{cases}$$

In the U.S., borrowers making low down payments typically pay for private mortgage insurance (PMI) until their home equity surpasses a threshold (Goodman and Kaul, 2017). I model this as an extra fee r^{pmi} that households must pay until they reach the $\overline{PMI}$ threshold. Since the mortgage premium is positive, households never hold both a mortgage and savings in the bond, and the interest rate on the net bond b is given by

$$r(b) = \begin{cases} r & \text{if } b \geq 0, \\ r + r^m & \text{if } b < 0, \\ r + r^m + r^{pmi} & \text{if } b < \overline{PMI} \times p \times h_o. \end{cases} \tag{5}$$

Income Endowment: Households are endowed with an income process with a deterministic life-cycle profile l_a. Children face persistent idiosyncratic age-dependent productivity shocks $y_{i,a} \in \mathcal{Y}_a = \{y_1, \ldots, y_{N_y}\}$, which follow a Markov chain, where

$\pi_a(y'|y)$ is the probability of switching from state y to y' at age a. Parents face no income uncertainty. Consequently, income of household i at age a is given by

$$w_{i,a} = l_a y_{i,a} \; \forall a \in \{25, 27, \ldots, 53\}, \tag{6}$$
$$w_{i,a} = l_a \; \forall a \in \{55, 57, \ldots, 83\}. \tag{7}$$

I assume that parents face no income risk for simplicity, consistent with the decrease in income risk with age (Sanchez and Wellschmied, 2020). Furthermore, this paper focuses on the role of parental transfers for children' housing choices, where parental income risk is not a first-order concern. However, in Appendix C.1, I show that parental income and health expenditure risks do not meaningfully change my results.

Initial Conditions of the New Child: Households' initial wealth and productivity levels are stochastic yet correlated with the parent's wealth and productivity at age 53: $x_{25}, y_{25} \sim F(x_{53}, y_{53})$. While this paper does not consider parental investment in their child's human capital, such investments are an important factor in intergenerational persistence of economic outcomes (Daruich, 2023; Lee and Seshadri, 2019). The function F allows me to match the intergenerational correlation in initial wealth and income levels, so the transfer motives are not over- or understated. Finally, all households begin as renters.

Timing: The child's productivity is realized first. If the dynasty has a newly economically active child, they also realize their initial wealth. Next, the decision problem is separated into two stages. First, the parent chooses consumption c_p, housing h_p, savings position b_p, and nonnegative inter-vivos transfers t_p. After observing the parent's choices, the child in the second stage chooses consumption c_c, housing h_c, and savings b_c. The parent acts first to align with U.S. mortgage regulations, which mandate that gifts be deposited before approving mortgages.

3.2 Household Decision Problems

I now present the recursive formulation and the decision problems. For clarity, I omit individual subscripts and apply a prime superscript to all $a + 1$ variables.

State Variables: A parent p's state variables are child's wealth $x_c \in X = [0, \infty)$, parent's wealth $x_p \in X$, child's housing $h_c \in H = \{h_r, h_o\}$, parent's housing $h_p \in H$, child's productivity $y_c \in Y_a = \{y_1, \ldots, y_{N_y}\}$, and age $a_c \in A_c \in \{25, 27, \ldots, 53\}$. The parent's state variable vector is $\mathbf{s}_p \equiv (x_c, x_p, y_c, h_c, h_p, a_c)$.

The child's state space differs because the parent's choices influence the child's decisions. The child is indifferent to receiving an additional unit of wealth or transfers, focusing only on total wealth (including transfers), $\tilde{x}_c \equiv x_c + t_p$. Furthermore, the parent's wealth and housing at the beginning of the period is redundant; the child only cares about the parent's bond and housing choices. The child's state variable vector is $\mathbf{s}_c = \left(b'_p, h'_p, x_c + t_p, y_c, h_c, a_c\right)$.

Decision Problems: I now show the decision problems for a dynasty at age $a_c = 25$. For simplicity, I assume the child is a renter choosing to become an owner, while the parent remains a renter. Appendix A.1 describes the decision problems in the final period of the current parent's life.

Child - Second Stage: The child, conditional on becoming a new owner ($h_c = h_r, h'_c = h_o$), chooses consumption and bonds to maximize expected utility:

$$
\begin{aligned}
V_c(\mathbf{s}_c)^{own} = \max_{c_c, b'_c, h'_c = h_o} \; & u(c_c, h'_c) + \beta \mathbb{E}\left[V_c(\mathbf{s}'_c)\right] \\
\text{s.t.} \quad & b'_c = x_c + t_p + w_c - c_c - ph'_c - m_b ph'_c \\
& x'_c = b'_c(1 + r(b'_c)) + ph'_c(1 - \delta) \\
& b'_c \geq -LTV\, ph'_c.
\end{aligned} \tag{8}
$$

The first constraint is the budget constraint, which determines the net bond position as available resources (net worth, transfers, and income) minus expenditures (consumption, purchase price, and purchase cost). The second constraint is the law of motion for net worth, which is the sum of the bond position and housing wealth after depreciation. The third constraint is the LTV constraint. We see that a transfer t_p can move the child away from the LTV constraint by increasing the bond position b'_c, holding consumption and housing fixed.

For the other three possible housing choices (remain renting, remain owning, and own to rent), the problem is similar, but with appropriate changes to the budget equation, law of motion, and borrowing constraint. Finally, the child must choose between the two housing options:

$$
V_c(\mathbf{s}_c) = \max_{h'_c} \left\{ V_c(\mathbf{s}_c)^{rent}, V_c(\mathbf{s}_c)^{own} \right\}. \tag{9}
$$

Parent - First Stage: The parent, conditional on remaining a renter ($h_p = h'_p =$

h_r), chooses consumption, transfers, and bonds to maximize expected utility:

$$
\begin{aligned}
V_p(\mathbf{s}_p)^{rent} = \max_{c_p, b'_p, t_p} \; & u(c_p, h'_p) + \eta u\left(c_c^*(\mathbf{s}_c), h_c'^*(\mathbf{s}_c)\right) + \beta \mathbb{E}\left[V_p(\mathbf{s}'_p)\right] \\
\text{s.t.} \quad & b'_p = x_p + w_p - c_p - t_p - qph'_p \\
& x'_p = b'_p(1 + r(b'_p)) \\
& t_p \geq 0, \\
& b'_p \geq 0.
\end{aligned} \tag{10}
$$

The first constraint is the budget constraint, which determines the net bond position as available resources (net worth and income) minus expenditures (consumption, transfers, and rent). The law of motion of net worth is simply the bond position for renters. The third and fourth constraints impose that transfers be nonnegative and that renters may not borrow, respectively. Finally, the parent chooses whether to rent or own.

Next-Period States: When making decisions, households consider how their choices will impact future states, as we can see from the next-period state vectors. For example, the parent internalizes that their next-period state includes the child's next-period wealth and housing, which are functions of the child's current choices, which in turn depend on the parent's current choices:

$$
\mathbf{s}'_p = \left(x_c'^*(\mathbf{s}_c), x'_p, y'_c, h_c'^*(\mathbf{s}_c), h'_p, a'_c\right). \tag{11}
$$

Similarly, the child knows that their next-period state includes the parent's next-period bond, housing, and transfer choices, which depend on the parent's next-period state, which in turn depends on the child's current choices:

$$
\mathbf{s}'_c = (b_p''^*(\mathbf{s}'_p), h_p''^*(\mathbf{s}'_p), x'_c + t_p'^*(\mathbf{s}'_p), y'_c, h'_c, a'_c). \tag{12}
$$

3.3 Markov Perfect Equilibrium Definition

A stationary equilibrium, which is Markov Perfect, consists of value functions $V_c(\mathbf{s}_c)$ and $V_p(\mathbf{s}_p)$; policy functions of the child $c_c'^*(\mathbf{s}_c)$, $b_c'^*(\mathbf{s}_c)$, $h_c'^*(\mathbf{s}_c)$; and the parent $c_p'^*(\mathbf{s}_p)$, $b_p'^*(\mathbf{s}_p)$, $h_p'^*(\mathbf{s}_p)$, $t_p'^*(\mathbf{s}_p)$; and a distribution of households $\psi(\mathbf{s}_p)$ such that i) in each repetition of the parent-child game, the parent's policy functions are optimal given the child's policy functions; ii) the child's policy functions are optimal given the parent's policy functions; and iii) the measure of households is invariant. I derive the measure ψ of households in Appendix A.2.

Finally, given that this is an infinitely repeated game, the equilibrium may not be unique. However, experiments with various starting positions have consistently led to the same equilibrium. I discuss the computational algorithm in Appendix D.

3.4 Intuition - Transfers and Homeownership

Before turning to estimation, there are several points to highlight about how housing interacts with altruistic transfers. For a thorough discussion of how transfers can lead to overconsumption, see Altonji et al. (1997) and Barczyk and Kredler (2014), and for insights on how a lack of commitment limits risk sharing, see Attanasio, Meghir, and Mommaerts (2015) and Mommaerts (2025).

3.4.1 When Do Parents Transfer?

Due to nonconvexities introduced by housing, the policy and value functions are not differentiable everywhere. To focus on the underlying intuition, I will sidestep the technical issues and refer to Barczyk and Kredler (2021) and Chu (2020) for a formal derivation.

Consider a a wealthy parent with a poor, borrowing-constrained child. This implies that the child does not save and must rent and, thus, consumes any additional wealth. By assumption, the child's policy functions are locally differentiable, with $\frac{\partial c_c'(\cdot)}{\partial t_p} = 1$ and $\frac{\partial x_c'(\cdot)}{\partial t_p} = \frac{\partial h_c'(\cdot)}{\partial t_p} = 0$. We can ignore the nonnegativity constraint on transfers, since the parent is wealthy. The optimality condition (from Eq. 10) is

$$u'(c_p, h_p) = \eta u'(c_c + t_p, h_c). \tag{13}$$

This is the classic first-order condition from Altonji et al. (1997) and says that the parent transfers until their own marginal utility equals the altruism-weighted marginal utility of the child. This is the fundamental driver of the transfer motives in the model and, as we will see, interacts with housing choices in interesting ways. As discussed extensively in Barczyk et al. (2022) and Chu (2020), other transfer motives exist, such as "pushes to autarky", though these do not appear in my parameterization.

3.4.2 Transfers and Homeownership

In the model, homeownership is determined by a threshold rule: Households become homeowners once their wealth is sufficiently high. The presence of transfers both moves the threshold (direct effect) and shifts the wealth level (indirect effect). I now discuss each effect in isolation, though they interact in equilibrium.

First, for a child with a given state, a transfer increases wealth, potentially pushing the child above the threshold, increasing homeownership indirectly.

Second, altruism reduces the child's savings motive, and so fewer children accumulate enough wealth to cross the threshold, lowering homeownership indirectly.

Third, transfers alleviate the LTV constraint in two ways. First, the parent give transfers to alleviate the borrowing constraint for a child who would otherwise be unable to buy. Second, the parent give transfers to a borrowing-constrained child, who can only afford very low consumption, shifting the ownership threshold down. The first increases homeownership directly and the second indirectly.

Fourth, transfers mitigate the costs of illiquid housing. Consider an owning child who receives a series of bad income shocks. Without transfers, the child optimally downsizes and pays the sales cost to better align consumption and housing expenditures. This creates a strong transfer motive, as transfers can save the dynasty from paying the sales cost. This increases homeownership directly by shifting the ownership threshold down.

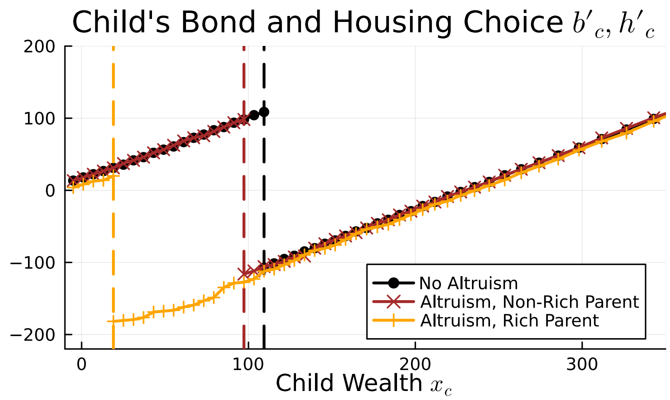
3.4.3 Policy Functions and Strategic Behavior

Notably, both the child and the parent strategically internalize these effects. For example, a child can use illiquid housing to commit to having low liquid wealth, thereby increasing the marginal utility of wealth and, consequently, the transfer. Conversely, a parent can tie up wealth in illiquid housing, increasing the marginal utility of wealth and, consequently, decreasing transfers. These strategic considerations are illustrated in the child's policy functions for homeownership and savings (Fig. 4). The vertical dashed lines denote the homeownership thresholds and the solid lines the bond position.

First, altruism lowers the threshold for homeownership among households with some parental support: Wealthier parents make homeownership more attractive. An increase in parental wealth shifts the threshold further down.

Next, we observe the child's savings choices. Altruism reduces saving in two ways.

Figure 4: Policy Functions for Homeownership and Savings



Notes: The dashed vertical lines indicate the threshold where the child switches from renting to owning. The horizontal dotted lines indicate the PMI and LTV thresholds. The child states $\mathbf{s}'_c$ are $h'_p{=}h_r$, $y_c{=}1.9$, $h_c{=}h_o$, and $a_c{=}25$. The poor and rich parent have $b_p{=}0$ and $b_p{=}400$. The figure plots the policy functions in the estimated model. I discuss the estimation in Section 4. The qualitative patterns remain consistent across parameterizations.

First, the shift in the ownership threshold means that the child switches from saving to borrowing sooner. Second, even in regions where the child makes the same ownership choice, they save less. For example, on the far left where all households rent, the child saves less if the parent is richer. On the right, where all households own, the child takes out a larger mortgage, holding wealth fixed. Note that once the child becomes sufficiently wealthy, they behave as if there is no altruism. Comparing the orange and dark red lines, we find that an increase in parental wealth decreases saving at all wealth levels.

More generally, the child's savings choices show that with altruism, households are more likely to choose to be liquidity constrained, often called hand-to-mouth, as they become homeowners with less wealth and are closer to the borrowing constraints. Altruism reduces the downside of liquidity constraints—namely, the inability to smooth income shocks through partial insurance—while creating the advantage of receiving larger transfers. Given the importance of hand-to-mouth households in aggregate consumption responses (see, e.g., Kaplan and Violante, 2014; Boar, Gorea, and Midrigan, 2021), this is an important result.

4 Parameter Selection

To quantify the impact of parental transfers on homeownership and to perform policy evaluations, I estimate the model using data from the PSID and a standard two-step estimation procedure. First, parameters independent of the model structure are estimated from the data or sourced from the literature. Second, I estimate the remaining parameters using simulated method of moments (SMM). I validate the model using nontargeted moments from the PSID as well as experimental evidence from empirical studies.

For details on the PSID sample selection, see Section 2.2. Income, wealth, and housing values are winsorized at the 1st and 99th percentiles to control for extreme values. All calculations use family weights.

4.1 First Stage: External Parameters

I report all externally calibrated parameters and their values in Table 3.

Period Length: Each period corresponds to two years, matching the PSID interview frequency. I report all parameters in biennial form (e.g., β measures how much households discount two years).

Income Process: The income process consists of a deterministic life-cycle component l_a for all ages and a persistent shock y_a for children.

To calibrate the deterministic component, I first find the average income for each age by year and then average over all years. I then regress average income on a fourth-order polynomial of age. The fitted values give the deterministic component for households aged 25 to 65. I find retirement income by dividing the average income for households aged 67 to 83 by the predicted income at age 66 (Figure A3a).

To calibrate the stochastic income process $y_{i,a}$, I first set $N_y = 3$ to create a three-state Markov Chain. The sample is divided into age-specific income tertiles. Within each age, I set $v_{i,a}$ as the ratio of the median income for that tertile to the overall median income (Figure A3b). The empirical age-dependent transition matrices provide the transition matrix (Figure A3c).

Housing Parameters: I set the rental rate $q = 0.10$ (Davis et al., 2008), housing depreciation $\delta = 0.05$ (Harding, Rosenthal, and Sirmans, 2007), and sales cost $m_s = 0.075$ and purchase cost $m_b = 0.02$ (Yang, 2009). I set the price level to $p = \$232,918/h_o$ to match the average market value of owner-occupied houses for households aged 25 to 44 in my sample. The size h_o is estimated internally.

Financial Parameters: Based on Goodman and Kaul (2017), I set $\overline{PMI} = 0.8$ so that households with LTVs above 80% must pay a PMI premium $r^{PMI} = 0.03$. I set $LTV = 0.90$, broadly in line with the literature, to account for the mass of loans with LTVs above 80%. The interest rate on savings is set at $r = 0.04$ (2% per annum), while the mortgage premium is set at $r^m = 0.03$ (1.5% per annum). Both parameters vary in the literature, but both are typically set around 1% to 2% per annum (see e.g., Cocco, 2005; Kaplan, Mitman, and Violante, 2020; Paz-Pardo, 2024).

Risk Aversion, Discount Factor, and Housing Expenditure Share: I set risk aversion $\gamma = 2.0$ and the discount factor $\beta = 0.92$ (annualized to ≈ 0.96), standard values in life-cycle models without portfolio choice (see e.g., Kaplan et al., 2020; Boar, 2020). The parameter ξ pins down the desired expenditure share of housing consumption and is set to 0.2. This parameter is typically set around 0.15 to 0.25 (e.g., Kaplan et al., 2020; Chatterjee and Eyigungor, 2015; Paz-Pardo, 2024; Davis and Ortalo-Magné, 2011) based on the share of housing expenditures in personal consumption expenditures. Due to minimum house sizes, low-income households generally spend more on rent than implied by ξ.

Initial Conditions of the Young $y_{c,25}, x_{c,25} \sim F(x_{c,53}, y_{c,53})$: The initial distribution is set to match the intergenerational correlation in wealth and income. I estimate it nonparametrically for transparency. First, I limit the sample to households aged 24 to 26 with parents 16 to 40 years older. I then divide wealth and income into four and three quantiles, respectively, for both parents and children. The PDF $F(\cdot)$ is then given by the empirical probability of each parent-child combination. The wealth level of a quartile is defined by its median value.

4.2 Moments and Identification

The remaining three parameters $\theta = \{\eta, \chi, h_o\}$ are estimated internally to minimize the distance between four simulated and empirical moments.

Identification and Moment Estimation: I derive all empirical moments from the PSID sample discussed in Section 2.2. I calculate moments by aggregating over all years, assigning equal weight to each year.

The two most important moments to match are the homeownership and transfer receipt rates of young households, since this is a paper about ownership and transfers. Homeownership pins down the strength of the homeownership utility premium χ (with a higher premium, more households are homeowners, Fig. A1c), while the transfer

Table 3: Summary of Externally and Independently Estimated Parameter

Parameter		Value	Source
Period Length	–	2 years	PSID Frequency
Discount Factor†	β	0.92	Literature (see text)
Risk Aversion	γ	2.0	Literature (see text)
Expenditure Share Housing	ξ	0.2	Literature (see text)
Rental Price†	q	0.1	Davis et al. (2008)
Deprecation†	δ	0.05	Harding et al. (2007)
Risk-free Rate†	r^f	0.04	Literature (see text)
Mortgage premium†	r^m	0.03	Literature (see text)
PMI premium†	r^{pmi}	0.03	Goodman and Kaul (2017)
PMI limit	$\overline{PMI}$	0.78	Goodman and Kaul (2017)
House Price	p	$87.96 \times h_o$	Data (see text)
Max Loan-to-Value	LTV	0.9	Literature/data (see text)
Selling & Buying Cost	(m_s, m_b)	(0.075,0.02)	Yang (2009)
Rental Size	h_r	1.0	Normalization
Deterministic Income	l_a	Fig. A3a	PSID
Productivity Shocks for Kids	$y, \Pi(y'\|y)$	Fig. A3b,A3c	PSID
Initial Distribution	$F(x_{53}, v_{53})$	Fig. A3d	PSID

Notes: Superscript † denotes parameters that are bi-annualized.

rate pins down the strength of altruism η (with stronger altruism, more households receive transfers, Fig. A1b). I exclude transfers below $500, as they are unimportant for homeownership and including them would increase the transfer rate.

While the model and the PSID have the same two-year frequency, households were asked about transfers in the last calendar year. In my cleaned sample, the annual transfer rate is 24%. Thus, the two-year transfer rate could range between 24% and 48%. To be very conservative, I assume that the two-year transfer rate equals the one-year transfer rate. My estimate of altruism η should be viewed as a lower bound.[3]

Finally, I target two moments that govern the selection and timing of ownership—the rent-to-income ratio of renters and wealth at first purchase—to ensure the appropriate selection into homeownership based on income and that marginal first-time owners have the correct wealth levels. The rent-to-income ratio is largely pinned down by the size of the owner-occupied house h_o (larger owner-occupied houses mean that more high-income households rent, reducing the rent-to-income ratio). The wealth

[3] I have experimented with targeted higher transfer rates. This requires stronger altruism, which, in turn, increases homeownership motives, lowering the estimated utility premium χ. Overall, the results are qualitatively similar to my conservative estimate, which understates the role of altruistic transfers.

at purchase decreases with altruism η and the utility premium χ, as they lower the wealth threshold for ownership. For a further discussion of the identification, I refer to Appendix B and Figure A1.

4.3 Model Fit

I estimate the remaining parameters $\theta = \{\eta, \chi, h_o\}$ as follows. First, let $\hat{m}$ denote the vector of targeted empirical moments. Given a parameter vector θ, let $\hat{m}(\theta)$ denote the corresponding model-simulated moments. The estimated parameters minimize the distance between the empirical and simulated moments:

$$\theta^\star(\Omega) = \arg\min_\theta \left\{[\hat{m}(\theta) - \hat{m}]'\Omega[\hat{m}(\theta) - \hat{m}]\right\}, \tag{14}$$

where Ω is a diagonal weighting matrix with elements equal to the inverse of the squared empirical moments, $1/\hat{m}^2$. This normalization ensures that no moment receives disproportionate weight due to its units. For details on the estimation procedure, see Appendix B, where I also discuss how the global estimation procedure is used to verify identification and calculate standard errors.

The estimated parameters, reported in Table 4, are consistent with previous literature. The altruism parameter η is roughly in the middle of the range in the related literature (see e.g., Boar, 2020; Barczyk et al., 2022; Mommaerts, 2025; Lee and Seshadri, 2019). The utility premium of ownership χ means that the consumption bundle feels about 30% larger for owners than renters, roughly in line with previous estimates based on life-cycle models (see e.g., McGee, 2021; Fisher and Gervais, 2011). The size of the owner-occupied unit relative to the rental is model-dependent, but my estimate falls near the middle of the range in Kaplan et al. (2020), where the ratio varies from 0.78 to 4.4. The model matches all targeted moments well, though it is overidentified, with no moment being particularly poorly matched.

4.3.1 Nontargeted Moments

To validate the model, I show that it also matches nontargeted moments.

First, with a calibrated discount factor of $\beta = 0.92$, the model matches the wealth levels of both young and old households. Second, the model replicates the correlation between parental wealth and children's homeownership. In the PSID, young homeowners' parents are 2.5 times wealthier as young renters' parents. The model

Table 4: Model Estimation

Parameter	Value	Standard Error
Altruism (η)	0.132	0.007
Ownership Pref. (χ)	1.288	0.055
Size Ratio ($\frac{h_o}{h_r}$)	2.648	0.049
Moment	Data	Model
Owner (25-44)	0.49	0.49
Rent / Income (25-44)	0.23	0.23
Wealth at Purchase (25-44)	33.09	33.20
Transfer Rate (55-74)	0.24	0.24
Sum Squared Distances ($\times$100)		0.01

Notes: Standard errors calculated by estimating the model to 100 bootstrapped empirical samples.

predicts a similar, though slightly lower, ratio of about 2. This parental wealth gradient of homeownership captures the correlation between parental wealth and children's homeownership.

Next, the model aligns with other moments related to homeownership and housing decisions. First, it matches the age of first homeownership well, overshooting it slightly. Second, it somewhat overpredicts the aggregate homeownership rate of 65%, primarily due to an excess of homeowner parents, partly due to their lack of income risk (see Appendix C.1). Third, households hold slightly smaller mortgages than in the data, as their flexibility allows households to pay down debt quickly and borrow later if necessary. Fourth, the model also matches the LTV ratio for buyers well.[4]

Finally, I report the share of households that received a transfer in the two years before, during, and after a house purchase. The model matches this number well, indicating that not only are the right households purchasing at the right time, but also that buyers are receiving transfers at the right time.

4.3.2 Household-Level Responses to Income Shocks by Parental Wealth

As a final external validation, I repeat the exercise in Section 2.3.3 (see Figure 2), where we saw that households with wealthy parents do not downsize during unem-

[4]Note that this is not the LTV at origination but the first time the household is observed as an owner. If a household bought just after the previous survey, the LTV would decrease due to price appreciation, improvements, and mortgage paydown.

Table 5: Non-Targeted Moments

Moment	Data	Model
Median Wealth (25-44)	22.89	27.64
Median Wealth (55-74)	197.08	207.75
Parent Wealth Gradient (med)	2.61	1.94
Age First Own (25-44)	32.11	33.89
Owner (25-73)	0.65	0.74
Mortgage (25-44)	143.95	100.32
LTV at Purchase (25-44)	0.66	0.66
Transfers Around Purchase (25-44)	0.25	0.21

Notes: Wealth is measured in 1000s of 2016 US dollars.

Figure 5: Event Study: Housing Consumption at Unemployment by Parental Wealth

Notes: Lines denote means, and shaded areas indicate 95% confidence intervals. The light orange area denotes the empirical estimates (Section 2.3.3), and the darker grey areas denote the results from the simulated panel. The sample consists of households aged 25-45 with exactly one unemployment spell and no changes in head or spouse in the four years before and after unemployment.

ployment spells. Since the model lacks an explicit unemployment state, households are considered unemployed if their productivity drops to the lowest level for a single period. Otherwise, I replicate the exercise exactly. Figure 5 shows that the model matches both the qualitative and quantitative patterns from the empirical data: Housing consumption falls for households without wealthy parents during "unemployment," while it grows for those with wealthy parents.

Taking stock, this section shows that the model can match targeted moments regarding homeownership, transfers, and the transition to homeownership with realistic preference parameter values. The model also matches a set of untargeted moments. Perhaps more importantly, the model replicates the household-level associations between parental wealth and downsizing during income losses.

5 Homeownership Rates Without Transfers?

How important are parental transfers for homeownership? I simulate the model without altruism ($\eta = 0$), holding all other parameters constant—the standard model without parent-child interactions. In the main exercise, I assume a perfectly elastic housing supply, meaning that changes in homeownership have no effect on rental or house prices. In Section 5.2, I show that the results remain robust even with endogenous housing supply and varying elasticities.

5.1 The Effect of Parental Transfers on Homeownership

Table 6 reports how the moments change without altruism and transfers. Homeownership rates decline by 14 percentage points from 49%, a decrease of 29% for households aged 25 to 44. This is a large decrease, since households endogenously choose to save more without transfers. By comparison, homeownership only decreased by about 8 percentage points during the financial crisis.

The reduction in homeownership cannot be attributed to an inability to afford buying: Without altruism, median wealth of the young increases (increasing homeownership, in isolation) to the average wealth level at purchase with altruism. The main driver is that the ownership threshold shifts out in wealth without altruism, as we saw in the policy functions (Section 3.4.3). Without transfers then, the average wealth at purchase increases by about $12,500 (about 33%), the age of first ownership is delayed by about 2.5 years, and the LTV at purchase falls by 13 percentage points. Although homeownership of young households declines sharply, the overall homeownership rate of all households (ages 25 to 74) only falls by 6 percentage points (8%). Hence, the main aggregate effect of parental transfers is that they induce earlier homeownership. Finally, without altruism, the parental wealth gradient in homeownership decreases from 1.94 to 1.14, with the remaining effect driven by persistent productivity through initial conditions $F()$.

5.2 Endogenous House Prices

I previously assumed that the supply of homes would fully adjust without affecting prices or rents, reflecting perfectly elastic supply. I now show that the results are similar even when housing supply is endogenous and under different elasticities.

Table 6: Homeownership Decreases while Wealth Increases Without Altruism

Moment	Data	Altruism $\eta = 0.132$	No Altruism $\eta = 0$
Targeted Moments			
Owner (25-44)	0.49	0.49	0.35
Rent / Income (25-44)	0.23	0.23	0.22
Wealth at Purchase (25-44)	33.09	33.20	45.78
Transfer Rate (55-74)	0.24	0.24	0.00
Non-Targeted Moments			
Median Wealth (25-44)	22.89	27.64	31.67
Median Wealth (55-74)	197.08	207.75	225.09
Parent Wealth Gradient (med)	2.61	1.94	1.14
Age First Own (25-44)	32.11	33.89	36.80
Owner (25-73)	0.65	0.74	0.68
Mortgage (25-44)	143.95	100.32	60.99
LTV at Purchase (25-44)	0.66	0.66	0.53
Transfers Around Purchase (25-44)	0.25	0.21	0.00

Notes: Wealth is measured in 1000s of 2016 US dollars.

I assume that housing supply (H^S) is log-linear in the house price:

$$\ln H^S = \alpha_0 + \alpha_1 \ln p, \tag{15}$$

where α_1 is the aggregate elasticity of supply to prices. I use a closed-form supply function because the model is too complex to introduce a construction sector. The rent-to-price ratio is unchanged, as in Kaplan et al. (2020), where rental units are supplied by deep-pocketed landlords who convert rentals to owner-occupied units if the price deviates from the present value of rents. Letting $\alpha_1 \to \infty$ yields a perfectly elastic supply function, leaving prices constant, as in the previous section. I first set the elasticity to 3, a typical estimated value for the United States (see e.g., Saiz, 2010; Aastveit, Albuquerque, and Anundsen, 2023). Finally, I set the elasticity to 1 as a reasonable lower bound for the long-run aggregate elasticity.

Table 7 reports the results. Allowing house prices to adjust does not meaningfully decrease the contribution of transfers to homeownership or other aggregate outcomes. This is due to the small difference in homeownership rates (ages 25 to 74) with and without altruism. Prices decline by just 7% even with a supply elasticity as low as 1. Thus, transfers account for between 10 and 13 percentage points of the homeownership rate, depending on the supply elasticity.

Table 7: Housing Supply Elasticities Not Quantitatively Important

	Altruism	Without Altruism		
Moment	Benchmark	Elastic	Middle	Low
Aggregate Moments				
Supply Elasticity (α_1)		∞	3.00	1.00
House Price	87.96	87.96	86.01	82.10
Owner (25-73)	0.74	0.68	0.70	0.71
Targeted Moments				
Owner (25-44)	0.49	0.35	0.38	0.39
Rent / Income (25-44)	0.23	0.22	0.22	0.21
Wealth at Purchase (25-44)	33.20	45.78	42.09	41.08
Transfer Rate (55-74)	0.24	0.00	0.00	0.00

Notes: I calibrate the housing supply elasticity from equation (15) as follows. For any elasticity α_1, I set α_0 to be such that housing supply would equal housing demand in the benchmark model with altruism: $\alpha_0(\alpha_1) = \ln(H^d) - \alpha_1 \ln p$, where p is the benchmark price level (Table 3). The "Elastic" column is the same as in the benchmark specification (Table 6).

6 Policy, Illiquidity, and Racial Gaps

I have three main results regarding parental wealth and children's homeownership: (1) its relationship with housing-related policies, (2) how housing illiquidity amplifies its impact, and (3) its role in exacerbating the Black-White homeownership gap.

6.1 Policies and the Importance of Parental Transfers

Many countries have policies aimed at increasing homeownership, and housing affordability and delayed homeownership is at the forefront of economic policy and research (see e.g., Mabille, 2022). I now evaluate how five different policy levers influence the role of parental wealth in housing outcomes. The results are reported in Table 8. For each policy, I change the relevant parameter and solve the model before simulating a new distribution.

Relaxing Mortgaging Regulation: Down-payment requirements are widely seen as a barrier to homeownership (e.g., Lee et al., 2020; Guiso and Jappelli, 2002). I tighten the LTV requirement by 3 percentage points to explore how mortgage regulation affects the parental wealth-housing channel. The tighter LTV limit decreases homeownership among the young by 5 percentage points (10%), as households must have larger down payments. Homeownership falls more among households with parents in the middle of the wealth distribution, reducing the parental wealth gradient. While at first counterintuitive, the borrowing constraint is more binding for these households, all else being equal, since homeownership is more attractive when you have access to some parental wealth and a small transfer pushes you into ownership. However, the parents aren't wealthy enough to render the borrowing constraint irrelevant. This result suggests that relaxing borrowing constraints increases not only homeownership for all households, but also the role of parental wealth. Indeed, Wold et al. (2024) find that households with poorer parents have lower LTV ratios at origination, suggesting that the LTV constraint is less binding for households with poorer parents.

Lowering PMI: Conventional mortgages require that mortgages with down payments below 20% have PMI Goodman and Kaul (2017). I relax the PMI limit by 7 percentage points to explore how PMI affects the parental wealth-housing channel. The relaxed PMI limit increases homeownership by 2 percentage points (4%). Similar to the LTV regulation, homeownership among households with parents in the middle of the wealth distribution rises more, further widening the parental wealth gradient. This result suggests that relaxing the PMI limit increases not only homeownership for all households, but also the role of parental wealth.

Lowering House Prices: Although policymakers cannot directly control house prices, they can implement policies to lower them, such as by incentivizing supply. For example, both presidential candidates in the 2024 U.S. election promised to increase new construction. I lower house prices by $6,000 (7%) to explore how the price level affects the parental wealth-housing channel. As prices decline, homeownership increases for all households, though more so for households with the richest parents, slightly increasing the role of parental wealth.

Reducing Purchase Costs: Another way to lower entry barriers is to reduce the costs of buying a house, and policymakers have lowered government fees and closing costs for first-time buyers. For example, in 2017, the stamp duty was lowered for first-time buyers in England. I decrease the purchase cost (m_b) by 2 percentage points (equivalent to a grant of about $6,250) to understand how purchase costs affect the parental wealth-housing channel. While lower purchase costs increase homeownership, the gains are concentrated among households with wealthy parents, amplifying the parental wealth gradient. For these households, purchase costs were a key barrier to homeownership, because they are less likely to downsize after income shocks (Figure 5). This suggests that grants or credits for first-time buyers primarily benefit households with the wealthiest parents.

ratio

Table 8: Homeownership Policies on the role of Parental Wealth

Moment	Bench.	LTV	PMI	$Price$	m_b	m_s
Old Parameter value		0.9	0.78	87.962	0.02	0.075
New Parameter value		0.87	0.85	86.203	0.0	0.055
Targeted Moments						
Owner (25-44)	0.49	0.44	0.51	0.51	0.53	0.47
Rent / Income (25-44)	0.23	0.22	0.23	0.23	0.23	0.23
Wealth at Purchase (25-44)	33.20	37.02	32.74	32.38	31.50	34.86
Transfer Rate (55-74)	0.24	0.22	0.25	0.24	0.24	0.22
By Initial Parent Wealth						
Owner (25-44), Top 33%	0.66	0.64	0.71	0.72	0.75	0.68
Owner (25-44), Middle 33%	0.49	0.39	0.51	0.49	0.50	0.40
Owner (25-44), Bottom 33%	0.32	0.30	0.32	0.32	0.33	0.32

Notes: The results are from stationary distributions and ignore transition dynamics. Wealth is measured in 1000s of 2016 US dollars.

Reducing Sales Costs: The earlier empirical results have highlighted how parental wealth may ameliorate housing illiquidity. I lower the sales cost m_s from 0.075% to 5.5% to understand how sales costs affect the parental wealth-housing channel. Strikingly, the homeownership rate decreases by 2 percentage points (4%). This counterintuitive result is explained by selection into ownership. Homeownership among children with the wealthiest and poorest parents increases just a touch. In contrast, homeownership declines by 9 percentage points for households with moderately wealthy parents, leading to a net decline in homeownership. Homeownership decreases for households with moderately wealthy parents, as it is harder to use housing to extract transfers. For households with the poorest parents, who rarely get transfers, and the wealthiest parents, who frequently get transfers, there is no need to use the sales cost to "extract" future transfers.

These experiments highlight two main results. First, parental wealth is an important determinant of homeownership, and having richer parents makes households more likely to prefer owning to renting. Some common policies intended to increase homeownership rates change the role of parental wealth in housing outcomes. Relaxing credit constraints increases not only homeownership, but the role of parental wealth, since housing is more attractive to households with wealthier parents.

However, increasing liquidity, either through reducing purchase costs or sales costs, decreases the role of parental wealth. Increasing liquidity can lower homeownership,

Table 9: Household Observables and Support for Keeping Adjustment Cost

	Dislike Costs	Prefer Costs	All Children
Fraction of Children	0.73	0.27	1.00
Age	36.21	31.65	35.00
Child Wealth	35.67	24.87	29.85
Parent Wealth	128.72	410.31	183.42
Child Ownership Rate	0.47	0.61	0.51
Transfer Rate	0.13	0.48	0.22
Transfer Size	0.66	6.45	2.20
Parents Prefering Costs	0.00	0.00	0.00

Notes: Only includes dynasties where the child household is aged 25-44. Wealth is measured in 1000s of 2016 US dollars.

as children of wealthy parents can no longer use housing as a commitment device to receive larger transfers.

6.2 Illiquidity Preference

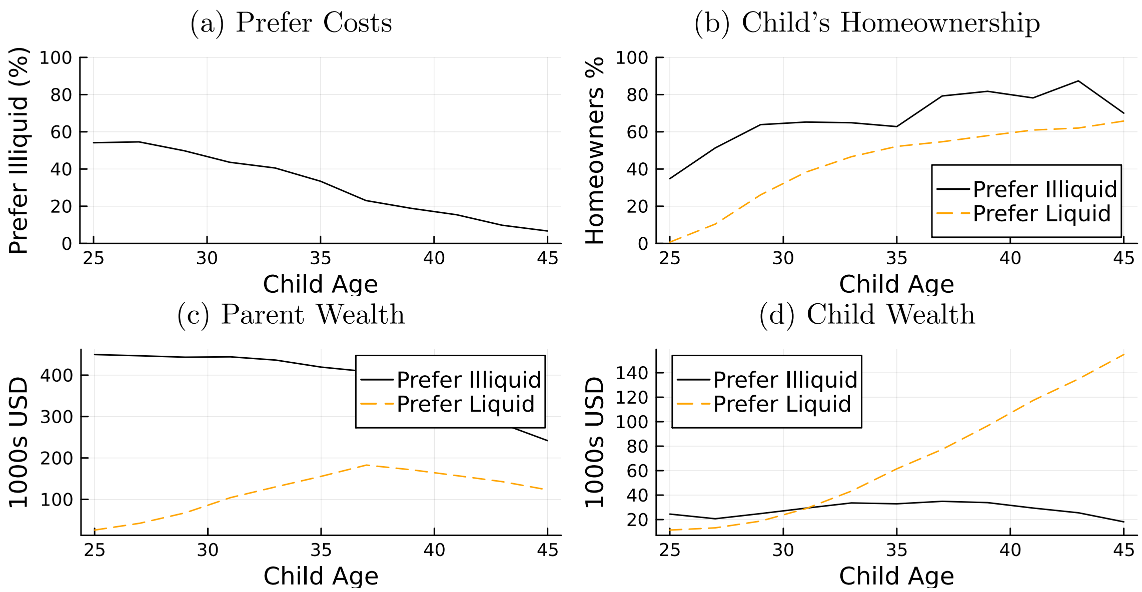
The previous section established that higher sales costs can increase ownership among households with wealthy parents. Here, I present a more surprising result: Households with wealthy parents prefer illiquidity.

I solve the model both with and without sales costs ($m_s = 0$). For each household in the stationary distribution with sales costs, I assess whether they would prefer that neither they nor future generations in their dynasty face sales costs. This hypothetical corresponds to each member in the dynasty deciding whether they would prefer that a benevolent agent pays the sales costs for current and future generations. The results are reported in Table 9.

Without altruism, all households prefer to remove sales costs. I find that while all parents prefer to remove sales costs, roughly one-quarter of children prefer them. The key determinant is parental wealth: Parents of children who prefer sales costs are approximately three times wealthier. Children who prefer sales costs are also more likely to receive transfers (48% vs. 13%) and, conditional on receiving transfers, receive three times larger transfers. Notably, households that own their homes are more likely to prefer sales costs on their housing.

To explore why some households prefer illiquidity, I break the sample down by liquidity preference and age in Figure 6. Figure 6a plots the share of children who would prefer to keep housing illiquid. Illiquidity preference decreases with age as reliance

Figure 6: Liquidity Preference over Age



Notes: These figures break down the sample of households by whether they prefer illiquidity.

on parental transfers decreases, and roughly 50% of the youngest households prefer illiquidity. The next figures plot average homeownership, parental wealth, and child wealth by liquidity preference. To use illiquid housing to extract transfers, households must be homeowners, so households who prefer illiquidity have higher homeownership (Figure 6b). To extract transfers, parents must have wealth, so households who prefer illiquidity have wealthier parents (Figure 6c). Finally, Figure 6d plots the child's wealth, and we see that households who prefer illiquidity are initially wealthier, but this relationship flips at age 33. The relationship flips because households only benefit from having their housing subject to sales costs if they are homeowners, which requires some wealth. To continue benefiting, they must remain liquidity-constrained (i.e., homeowners with limited wealth) to induce transfers.

To summarize, this section shows that altruism generates illiquidity preference. This is similar to models of behavioral biases, where households use the illiquidity of housing as a commitment device Attanasio et al. (2024). In both settings, households use illiquidity to keep their marginal utility of wealth high in future periods. With altruism, this is done to induce future transfers. With time inconsistency, this is done to ensure that households will save in the future.

Table 10: Black-White Homeownership Rate

	White			Black		
Moment	Data	Altr.	No Altr.	Data	Altr.	No Altr.
Owner (25-44)	0.54	0.54	0.40	0.27	0.26	0.22
Rent / Income (25-44)	0.22	0.22	0.21	0.24	0.27	0.26
Wealth at Purchase (25-44)	36.72	33.07	43.17	16.53	47.76	57.65
Transfer Rate (55-74)	0.27	0.25	0.00	0.14	0.26	0.00

Notes: Wealth is measured in 1000s of 2016 US dollars. See main text for details.

6.3 Black-White Homeownership Gap

Racial disparities in economic and financial outcomes are receiving increased attention. In the United States, young White households are nearly twice as likely to own homes as young Black households.

Several structural papers have used life-cycle models with overlapping generations to study differences in economic outcomes by race. Ashman and Neumuller (2020) find that the Black-White income gap accounts for most of the 90% wealth gap. Similarly, Aliprantis et al. (2022) find that closing the income gap is the most effective mechanism to reduce the wealth gap. While these papers account for racial differences in inheritances, they do not include endogenous inter-vivos transfers and ignore housing.[5] While the structural papers have omitted housing, many empirical papers have looked at racial differences in housing outcomes. For example, Charles and Hurst (2002) find that differences in parental wealth account for 25% of the Black-White mortgage application gap, and Bond and Eriksen (2021) find that parental wealth accounts for 28% of the gap in maintaining homeownership. I now use my model to bridge the gap between the structural and empirical papers and to quantify the contribution of parental wealth to the Black-White Homeownership gap.

I aim to bridge the gap between these structural approaches and empirical results by using my model to quantify the contribution of parental transfers to the Black-White homeownership gap. I follow the methodology in Ashman and Neumuller (2020) and Aliprantis et al. (2022) closely. I shift the income level (l_a) according to racial differences: In the matched parent-child household, White households have 8%

[5] Aliprantis et al. (2022) include a form of inter-vivos transfer receipt: Households leave pooled bequests at death, primarily to middle-aged households. There are no strategic considerations, since the bequests are stochastically distributed and parents do not transfer directly to their children.

higher income and Black households 42% lower than the average. I then solve the model for White households. For Black households, I reduce house size by 25% to match observed homeownership rates. I then solve the models both with and without altruism. The results are reported in Table 10.

The observed Black-White homeownership gap is $\frac{0.54-0.27}{0.54} = 50\%$ and 52% in the model with altruism. Without altruism, the Black-White homeownership gap decreases to 45%. Transfers account for 7 percentage points (14%) of the Black-White gap. Though Black and White households receive transfers at similar rates in the model, transfers are less important for Black households' homeownership, as they receive smaller amounts due to lower parental wealth. My results show that racial differences in parental income, which affect parental wealth and transfers, are significant contributors to racial gaps in housing outcomes. Combined with the previous policy analysis, these results suggest that policies such as tax rebates or down-payment assistance for low-income or first-time buyers may widen the Black-White homeownership gap rather than narrow it. However, the model omits many other factors beyond income, such as discriminatory lending and appraisal bias, that affect the Black-White homeownership gap (e.g., Shapiro (2004)).

7 Conclusion

In this paper, I demonstrate that parental transfers play a large role in households' homeownership decisions. I build and estimate a dynamic life-cycle model of homeownership where altruistic parents may transfer to their adult children in every period. I use the model to quantify the importance of parental transfers for young adults' homeownership and to understand how policies that lower barriers to homeownership interact with these transfers.

Using a counterfactual experiment without altruism (a standard life-cycle model), I find that transfers account for 14 percentage points (29%) of the homeownership rate. I show that policies that lower entry barriers to homeownership amplify the importance of parental wealth on housing outcomes, while those that lower the downsides of illiquid homeownership reduce the importance of parental wealth. Finally, I study the role of housing illiquidity and parental transfers. My paper thus contributes to a better understanding of the determinants of homeownership and to the growing literature on the role of family economics in shaping macroeconomic outcomes (e.g., Doepke and Tertilt (2016); Daruich (2023)).

The second contribution of the paper is to include an illiquid asset in the altruism framework. With altruistic parents, transfers generally flow to borrowing-constrained households, since they have a large marginal utility of wealth (Barczyk and Kredler, 2021; Chu, 2020). With a single asset, this framework implies that households who receive transfers are poor. In the data, around 20% of all households are "wealthy hand-to-mouth" and have positive wealth but no liquid wealth (Kaplan and Violante, 2014; Attanasio et al., 2015). My paper bridges these two strands of the literature. First, I show that some households with wealthy parents choose to be liquidity-constrained to receive larger transfers. Second, I show that the lack of commitment generates preferences for illiquidity, even when households are rational and without behavioral biases (see e.g., Attanasio et al., 2024).

I made several simplifying assumptions to keep the model tractable. Adding richer housing dynamics and equilibrium effects would allow one to study other interesting questions, such as the extent to which transfers contribute to house price growth. My model omits a feedback loop, in which transfers raise demand and, thus, house prices, boosting the wealth of homeowning parents and, thus, higher transfers, and so on. Another potential extension could examine whether illiquidity may reduce the commitment problem in the family. Additionally, my preferences-for-illiquidity results have implications for the literature on high-MPC households (see e.g., Kaplan and Violante, 2022). In particular, we are likely overestimating the average MPC of liquidity-constrained households with wealthy parents, since these households use parental transfers to smooth shocks. For example, following a negative shock, consumption may fall less due to transfers, while for positive shocks, consumption may rise less as parents reduce transfers.

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A Quantitative Model Details

A.1 Decision Problems at Age 53 and 83

As depicted in Figure 3, several transitions occur between age 53 and 55: The 'old' parent dies, the 'old' child becomes a 'new' parent, and the 'new' child becomes economically active.

These transitions mean that the child's decision problem at age 53 is very different from earlier ages (Eq. 8). First, the continuation value is now the parent's value function at age 25 of the new child ($V_p(\mathbf{s}'_{p,25})$). Second, the expectation is over the new child's initial productivity and net worth ($x_{c,25}, v_{c,25} \sim F(x_{c,53}, y_{c,53})$), instead of the old child's productivity. Third, the law of motion now includes bequests from the old parent instead of a transfer. Fourth, it is necessary to map next-period variables for the old child into variables for the new parent. The problem, for a child aged 53 who choose to own, becomes:

$$
\begin{aligned}
V_c(\mathbf{s}_{c,53})^{own} = & \max_{c_{c,53}, b'_{c,53}, h'_{c,53}=h_o} u(c_{c,53}, h'_{c,53}) + \beta \mathbb{E}\left[V_p(\mathbf{s}'_{p,25})\right] \\
\text{s.t.} \quad & b'_{c,53} = x_{c,53} + w_{c,53} - c_{c,53} - ph'_{c,53} - adj(h_{c,53}, h'_{c,53}) \\
& x'_{p,25} = b'_{c,53}(1 + r(b'_{c,53})) + x'_{p,53} \\
& b'_{c,53} \geq -LTVph'_{c,53}, \\
& h_{p,25} = h'_{c,53},
\end{aligned}
$$

where $c, 53$ and $p, 53$ denote the variables associated with old child and old parent in this period, and $c, 25$ and $p, 25$ denote the variables associated with the new child and new parent in the next period. The last equation maps the old child's housing choice into the new parent's—the same household one period later—housing state. The same mapping applies to the law of motion (third equation).

The dying parent's decision problem undergoes similar changes. First, the continuation value is now the new parent's value function at age 25 of the new child, weighted by altruism ($\eta V_p(\mathbf{s}'_{p,25})$). The remaining changes (expectation, law of motion, and mapping of next-period variables) are the same as for the child and hence the decision problem is changed in the same way as for the child.

A.2 Measures of Households

The state-space of a parent is $S_p = X_c \times X_p \times Y_c \times H_c \times H_p \times A_c$, with $\mathbf{s}_p$ denoting generic elements therein and $\mathcal{S}_p$ the associated Borel-σ algebra. The state space of a child is $S_c = B_p \times H_p \times X_c \times Y_c \times H_c \times A_c$, where $B_p = \mathbb{R}$. For conciseness, I omit further definitions for the child. Let $\psi_p(\mathbf{s}_p)$ be a probability measure over $(S_p, \mathcal{S}_p)$ so that $\psi(\mathbf{s}_p)$ denotes the measure of households with state $\mathbf{s}_p$ (i.e., after the shock is realized but before choices are made). Finally, Ψ_p denotes the corresponding cumulative distribution function. The mass of households for each age is normalized to 1/15.

Law of Motion for Dynasties with Children Aged 25-51: The mass of households in state $\mathbf{s}_p$ is the mass of families adopting housing and savings policies that lead them to this state, adjusted by the probability of experiencing a given income shock:

$$\begin{aligned}\psi(\mathbf{s}_p') = \int_{\mathbf{s}_p \in \mathcal{S}_p} &\mathbf{1}_{\left\{x_p'=x_p'^*(\mathbf{s}_p)\right\}} \mathbf{1}_{\left\{h_p'=h_p'^*(\mathbf{s}_p)\right\}} \mathbf{1}_{\{x_c'=x_c'^*(\mathbf{s}_c(\mathbf{s}_p))\}} \mathbf{1}_{\{h_c'=h_c'^*(\mathbf{s}_c(\mathbf{s}_p))\}} \times \\ &\pi(y_c'|y_c)\, \mathrm{d}\psi(\mathbf{s}_p).\end{aligned} \tag{16}$$

Note that the child's state $\mathbf{s}_c(\mathbf{s}_p)$ in these expressions depend on the choices of the parent which depend on their state. For example,

$$h_c'^*\left(\mathbf{s}_c(\mathbf{s}_p)\right) = h_c'^*\left(b_p'^*(\mathbf{s}_p), h_p'^*(\mathbf{s}_p'), x_c' + t_p'^*(\mathbf{s}_p'), y_c', h_c', a_c + 2\right). \tag{17}$$

Law of Motion for Children Aged 53: In this special case, the distribution will depend on the choices of the new parent (old child), the now deceased parent and the stochastic initial conditions of the new child.

$$\begin{aligned}\psi(\mathbf{s}_p'; a_c = 25) = \int_{\mathbf{s}_p \in \mathcal{S}_p} &\mathbf{1}_{\left\{x_p'=x_p^*(\mathbf{s}_p)+x_c^*(\mathbf{s}_c(\mathbf{s}_p))\right\}} \mathbf{1}_{\left\{h_p'=h_p^*(\mathbf{s}_p)\right\}} \mathbf{1}_{\{h_c'=h_r\}} \times \\ &F(x_c', y_c'|x_c, y_c)\, \mathrm{d}\psi(\mathbf{s}_p; a_c = 53),\end{aligned} \tag{18}$$

where we limit s_p to only include the subset of the state-space where $a_c = 53$. The initial wealth and productivity of the child depends on the wealth x_c and productivity y_c of the new parent at age 53. Further, all children start out as renters, and the next-period wealth of the new parent is savings plus bequests.

Finally, the function $\mathcal{H}$ operates on the distribution $\psi(\mathbf{s}_p)$ and policy functions and maps them into a new distribution in accordance with equations (16, 18):

$$\psi_{n+1} = \mathcal{H}(\psi_n, g^*), \tag{19}$$

where the subscript denotes the iteration of the distribution. A stationary distribution is then a fixed point of equation 19.

B Estimation

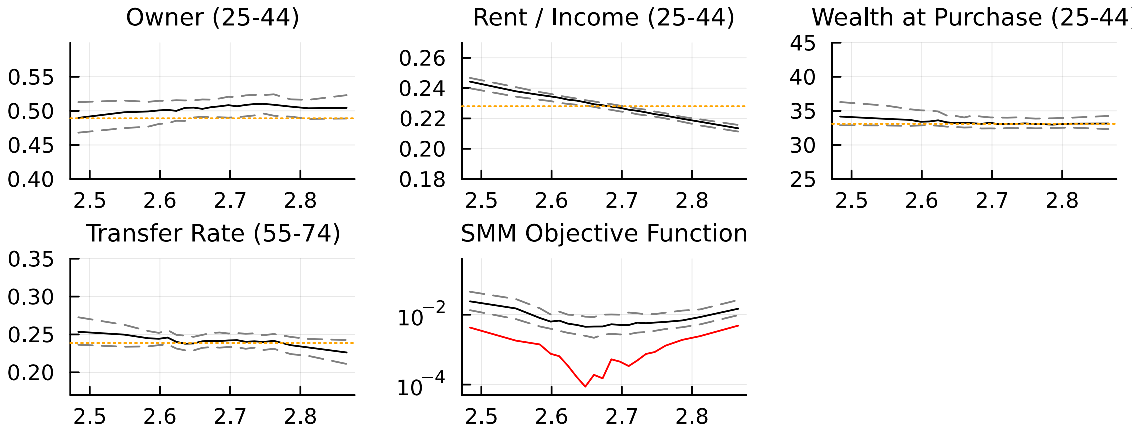
In the internal estimation, I first draw $N = 1500$ 3-dimensional candidate parameter vectors θ, using Sobol sequencing. I then rank the vectors by the objective function, and use the top 5% to set the bounds of a new Sobol sequence, from which I draw another 1500 candidate parameter vectors. I shrink the search space 2 times.

The global optimization procedure facilitates verifying identification. First, pick a parameter, say h_o, and divide it into 20 quantiles. The remaining parameters are uniformly distributed within each quantile. Next, find the 25th, 50th, and 75th percentiles within each quantile for a moment. We can then plot how the moment depends on the parameter by plotting the percentiles over quantiles. A moment is informative for a parameter if the percentiles shift as we move across the parameter's quantiles. A steeper slope indicates a more informative moment for the parameter. A parameter is relatively more important when the spread between the 25th and 75th percentiles is smaller.

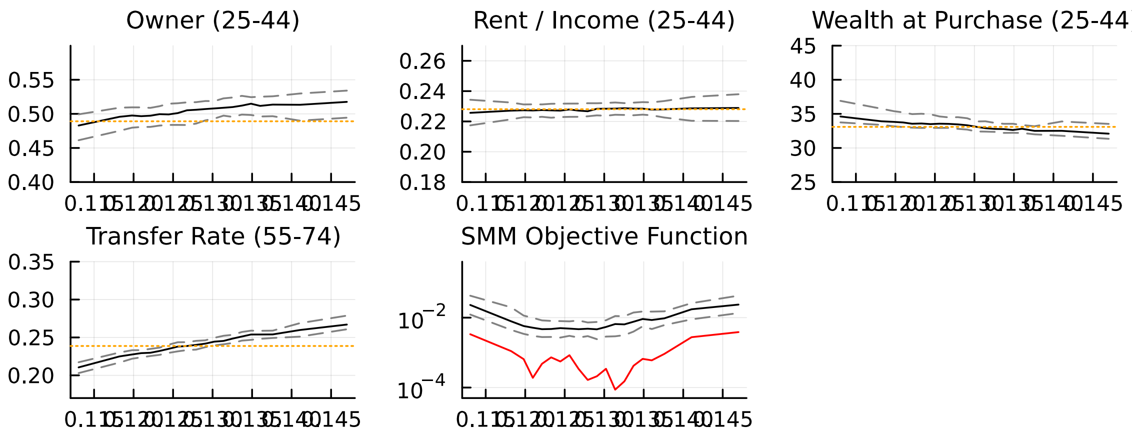
The results of this exercise are plotted in Figure A1. For example, take the house size h_o (Fig. A1a), where we see that the rent-to-income ratio decreases with the size of owner-occupied housing. The tightness of the 25th and 75th percentiles indicates that the other parameters have little effect on the rent-to-income ratio. The other moments are not sensitive to the house size. Finally, I also plot the SMM objective function (Eq. 14) over η, showing that the global search space is wide enough. The results for the remaining parameters are shown in the other panels of Figure A1.

Figure A1: Identification of η, h_0, χ.

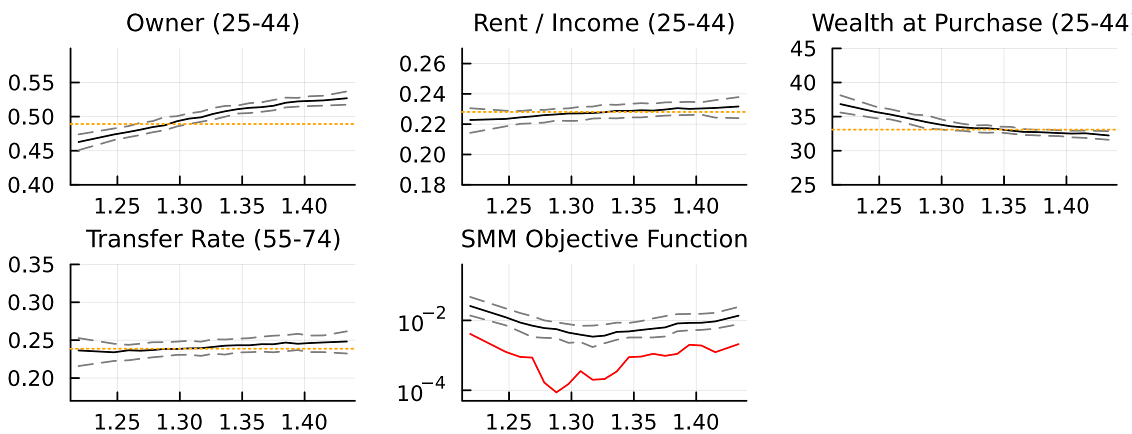
(a) Identification of h_o



(b) Identification of η



(c) Identification of χ



Notes: Dashed grey lines denote the 25th and 75th percentiles, the solid black line the median, the solid red line the minimum (only used for the SMM objective function value), and the dashed orange horizontal line the empirical moment (not applicable for the SMM objective function).

C Robustness Exercises

C.1 Parental Income Risk

In the benchmark model, households face no income risk after age 55. I now show that the results are robust to this assumption. To do so, I perform the following modifications. First, the labor income of parents is now assumed to be the product of a transitory productivity shock:

$$w_{i,a} = l_a \nu_{i,a} \, \forall a \in \{55, 57, \ldots, 83\}.$$

The process is calibrated as follows. First, I keep households aged 55-85. I subtract healthcare expenditures from household income as healthcare expenditure risk is a significant risk for older households (De Nardi, French, Jones, and McGee, 2024). Next, I divide the sample into year-age specific income tertiles, find the median income within each age, and average over years to find the parent productivity shifter $\nu_{i,a}$. The results, fitted to a cubic trend, are plotted in Figure A2. The shock is transitory, and the PDF $\Pi(\nu)$ takes the value 1/3 for any outcome.

The results are reported in Table A1. We see that the introduction of income risk for the old has neglible effects and leaves the main findings intact. Income risk for parents lower their homeownership rate a touch while increasing their wealth a wee bit. Parental transfers still account for 14 percentange points of the homeownership rate of young households.

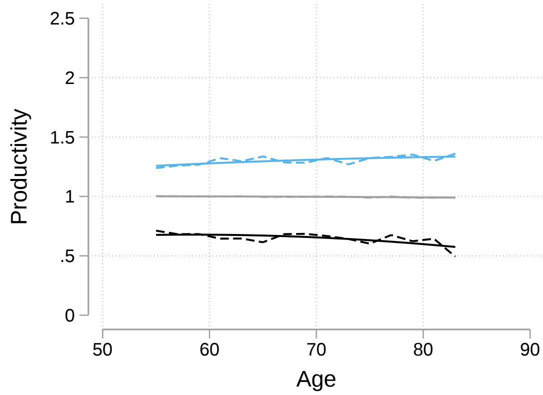
C.2 Aggregate Price Risk

In the benchmark model house prices are certain. I now show that the results are robust to introducing price risk in the manner of Corbae and Quintin (2015). This introduces a new state variable z that denotes the aggregate price level, and the house price is either low, normal, or high depending on the value of z. The transition matrix for z follows

$$\Pi(z'|z) = \begin{bmatrix} 0.90 & 0.10 & 0.00 \\ 0.02 & 0.96 & 0.02 \\ 0.00 & 0.25 & 0.75 \end{bmatrix}. \tag{20}$$

The aggregate house prices are set to be $(p_l, p_n, p_h) = (0.7, 1.0, 1.3)p_{bench}$, where p_{bench} is set to be the estimated value from Table 4. I then solve the model with price

Figure A2: Calibration of Parental Income Shocks



Notes: Dashed lines are the empirical age-medians, and solid lines are fitted second-order polynomials used in model calibration. The lines denote the value of $\nu_{i,a}$ in the first tertile (black), middle (gray), and top (blue) by age.

uncertainty, but simulate the economy when house prices are at the normal level.

The results are reported in Table A1. We see that the introduction of aggregate price uncertainty increases savings for old households, with and without altruism. It also induces households to buy housing slightly later, with lower LTV's and higher wealth at purchase. However, the main quantitative finding remains: Parental transfers now account for 11pp (25%) of the homeownership rate. I have also perform robustness checks where I allow for transitory idiosyncratic dividend/return shocks as in Chang (2024) for homeowners, and find that, as expected, idiosyncratic price risk have even smaller quantitative effects.

D Numerical Details

I now briefly discuss some details in the numerical solution of the model. Due to the nonconvex nature of the decision problems—due to discrete housing choices, noncontinuous transfer choices, and occasionally binding constraints—I use grid search. That is, I define a grid of possible choices for each choice variable, and for each state I loop over all possible choices, and the optimal policy is the one that maximizes the utility. The value and policy functions are linearly interpolated over child and parental wealth, conditional on the discrete choices. This solution algorithm satisfies both criteria established by (Barczyk and Kredler, 2021, p.30): "algorithms should be able to deal with locally convex and even discontinuous value functions". Naturally,

Table A1: Results Robust to Old-Age Risk and Uncertain House Prices

Moment	Data	Benchmark $\eta > 0$	Benchmark $\eta = 0$	Old Risk $\eta > 0$	Old Risk $\eta = 0$	Price Risk $\eta > 0$	Price Risk $\eta = 0$
Targeted Moments							
Owner (25-44)	0.49	0.49	0.35	0.49	0.35	0.45	0.34
Rent / Income (25-44)	0.23	0.23	0.22	0.23	0.22	0.22	0.21
Wealth at Purchase (25-44)	33.09	33.20	45.78	35.64	45.83	34.91	50.30
Transfer Rate (55-74)	0.24	0.24	0.00	0.24	0.00	0.21	0.00
Non-Targeted Moments							
Median Wealth (25-44)	22.89	27.64	31.67	28.89	31.68	27.68	31.67
Median Wealth (55-74)	197.08	207.75	225.09	212.72	229.21	213.50	218.36
Parent Wealth Gradient (med)	2.61	1.94	1.14	1.66	1.12	1.71	1.12
Age First Own (25-44)	32.11	33.89	36.80	33.65	36.61	34.87	37.31
Owner (25-73)	0.65	0.74	0.68	0.72	0.66	0.72	0.67
Mortgage (25-44)	143.95	100.32	60.99	99.28	60.85	93.40	57.29
LTV at Purchase (25-44)	0.66	0.66	0.53	0.65	0.53	0.63	0.51
Transfers Around Purchase (25-44)	0.25	0.21	0.00	0.26	0.00	0.18	0.00

the solution accuracy improves with denser grids. I use 65 nodes in the state vectors and 145 nodes in choice variable grids.

Solving Decisions Problems: The parent's choice can be written as a three-stage problem, which increases computational speed dramatically. First, the parent makes their housing choice. Second, the parent then chooses how much to consume. Third, the parent allocates the remainder between transfers and savings. Chu (2020) shows how the consumption-transfer-savings choice can be separated into a two-stage problem, which is straightforward to extend to include housing.

Value Function Iteration Procedure: I use the following procedure for value function iteration. The initial guess is set to zero for all functions, except for consumption, set to 1.0, and housing, set to renting.

1. Next, I solve the decision problem of the child at age 53, that is the final period before he becomes a parent. This yields $V_c(\cdot; a_c = 53)$ and $g_c(\cdot; a_c = 53)$. The solution to this problem depends on the value function of a new parent ($V_p(\cdot; a_p = 55)$, which is set to 0), the intentional bequest left by the parent ($x_p^*(\cdot; a_p = 83)$, aslo set to 0), but not the next-period transfer since then this child has become a parent and thus moves first and decides the transfer. The initial state of the new child is given by the joint distribution of initial productivity and wealth.

2. Next, I solve the parent's decision problem in the terminal age of 83, when the child is 53. This yields $V_p(\cdot; a_c = 53)$ and $g_p(\cdot; a_c = 53)$, which depend on the policy functions for the child at age 53 ($g_c(\cdot; a_c = 53)$)—found in the previous step—and the new parent's value function $V_p(\cdot; a_c = 25)$—which we still haven't found and is set to 0.

3. Next, I solve the child's decision problem at age 51. This yields $V_c(\cdot; a_c = 51)$ and $g_c(\cdot; a_c = 51)$, and depends on the value function we found in the first step ($V_c(\cdot; a_c = 53)$) and the parent's policy function we found in the previous step ($g_p(\cdot; a_c = 53)$).

4. Next, I solve, the parent's decision problem at age 81. This yields $V_p(\cdot, a_c = 51)$ and $g_p(\cdot, a_c = 51)$, and depends on the policy function for the child we found in the previous step ($g_c(\cdot; a_c = 51)$) and the value function we found in the second step ($V_p(\cdot; a_p = 83)$).

5. This is repeated backwards in age until the child is 25.

6. Repeat these steps until the value functions converge.

Fixed Point Convergence: The parent-child interaction forms an infinitely repeated game within a dynasty, meaning the equilibrium may not be unique. In practice, value function iterations generally converge to a unique fixed poin, but when the altruism parameter is high, the equilibrium can become cyclical, with the solution alternating between iterations. For example, in iteration n one solution appears, in $n+1$ another, and in $n+2$ the cycle returns. These behavioral differences are minor: the child homeownership rate varies by less than 0.3 percentage points, and average child wealth differs by less than 0.1 percent. While this cyclical behavior does not occur in the reported results, it sometimes occurs during the structural estimation, when the model is solved with higher altruism parameters η. In such cases, I simulate each dynasty once for every candidate solution.

Intuitively, this cyclical behavior can arise from the interaction between the discrete rent-or-own choice and strategic interactions. For example, a renting child may decide to buy given the parent's policy functions at a certain state. In the next iteration, the parent observes this and adjusts savings to discourage the child from buying, prompting the child to reoptimize. The cycle then repeats, with the child buying in one iteration and not buying in the next. When I solve the model without homeownership (reducing it to a standard altruistic consumption-savings model as in Barczyk et al. (2022) and Chu (2020)), the value function iterations consistently converge to a unique fixed point. Similarly, removing transaction costs, making housing more liquid and no longer a state variable, reduces the likelihood of cyclical fixed points. Denser grids also decreases the likelihood of cyclical behavior. In practice, the largest differences in policy functions within cycles are at the upper edges of the parental wealth grid. Since the upper edge is set so high that no households are close to it, this has little impact on the solution.

Interpolation Details: The policy functions for consumption and savings are non-continuous in both child and parental wealth which makes interpolation unattractive. However, the policy functions, conditional on choosing a specific house quality are smoother, and do not display large jumps in the quantitative model. Therefore, I use the following procedure. I first find the interpolated policies for each housing choice, and then find the probability that the parent/child makes this choice. This probability comes from the interpolated discrete choice function, which is binary $0, 1$, while the interpolated policy itself (with flat extrapolation) is continuous over the interval $[0, 1]$. The probability is between 0 and 1 only when the decision changes in one of the four nodes used in the interpolation. If the interpolated consumption choice of the child c_c leads to a net bond position b_c that violates the borrowing constraint I set b_c equal to the constraint and reduce c_c to make it hold.

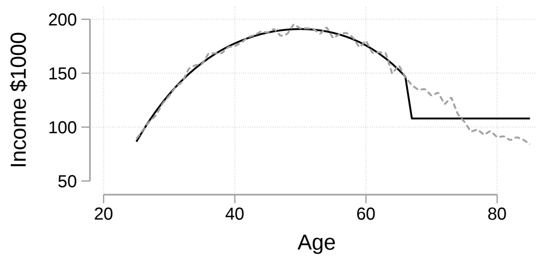
Simulation of Households: I simulate N=40000 dynasties. The initial states of each dynasty (initial child and initial old) $(x_p, h_p, x_c, v_c, h_c, a_c = 25)$ is drawn from a five-dimensional joint uniform distribution. I then simulate all dynasties for 40000 generations, since the distribution, as measured by average homeownership, wealth, and, productivity levels stabilizes after four generations. I discard observations from the first four children and parents in each dynasty.

Computational Packages: The program to solve the model is written in Julia v1.10.4. I rely on the `interpolations.jl` v0.15.1 package for numerical interpolation routines. The Stata code used for the empirical analysis and the Julia code for the model is available through the author's website and Github.

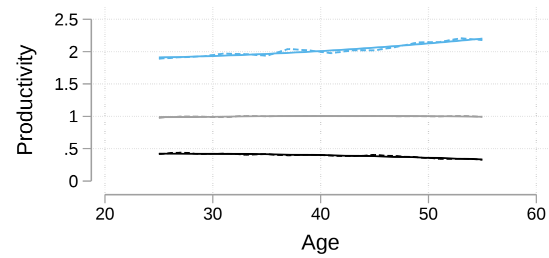
E Supplementary Figures and Tables

Figure A3: Calibrated Income Process

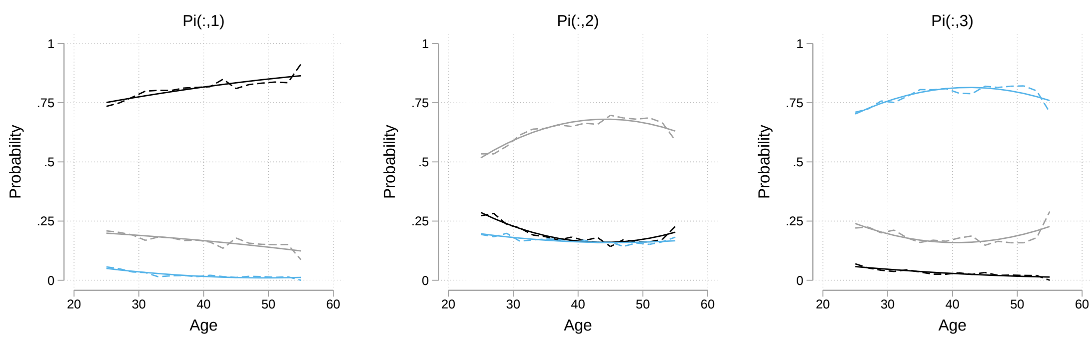
(a) Deterministic Income Profile y_a



(b) Productivity Shifter $y_{i,a}$

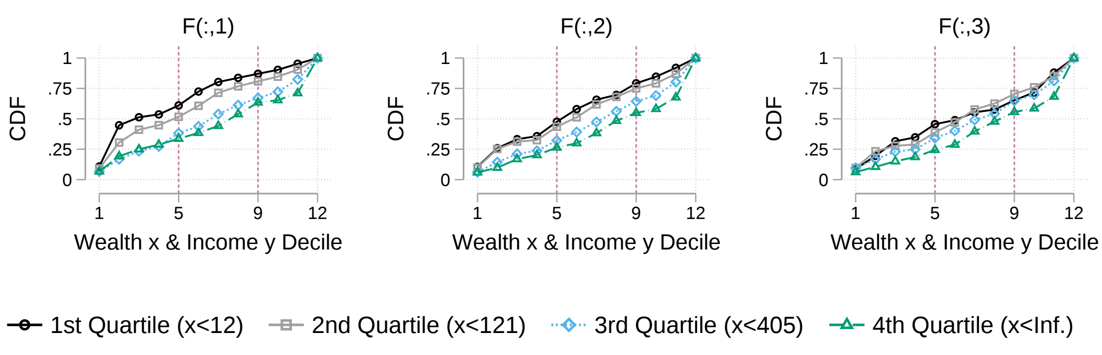


(c) Age-State Dependent Transition Probabilities $\Pi(y_{i,a+2}|y_{i,a})$



Notes: Dashed lines are the empirical age-means and solid lines are the fitted third order polynomials used in the model calibration. Each line gives the probability of moving to the bottom tertile (black), middle (gray), and top (blue) income tertiles by the income tertile the child is currently in, by age.

(d) Initial Distribution $F(x_{53}, y_{53})$ by wealth x_{53} and productivity y_{53}



Notes: The vertial lines denote the first, second, and third productivty level for the child. Within each interval each point denotes a wealth quartile. For example, the first point on the black line in the left-most panel gives the probability that a new parent who are in the first wealth quartile (black line), in the first income tertile (left panel), has a child in the lowest income tertile and lowest wealth tertile. The second point gives the probability that the child is in the second wealth quartile but first income tertile.

Table A2: Variable Definitions in the PSID

Variable	PSID code	Description	Note
Transfer Related			
Received Transfer	ER67962	2/5years, gift/inherit $10,000+	Changing def.
Gave Transfer	RT13V125	Loans/gifts to child in 2012	2013 prnt/chld file
Transfer Amount	RT13V125	Amount given in 2012	2013 prnt/chld file
Other			
Behind Mortgage	ER66062	Behind on mortgage payments	
Income	ER65349	Total Household Income	
Employment	ER66164	Working, Unemployed etc.	
House Value	ER60031	Reported Market Value	
Dollars Rent	ER66090	Monthly Rent	
Family Weight	ER71570	Weight of family unit	

Notes: This table lilsts the main variables I use from the PSID, as well as their variable code in the 2017 Main family level data set or the 2013 Transfer supplement.