# The housing channel of intergenerational wealth persistence*

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**Abstract**

We use Norwegian administrative data to study how parental wealth affects children's homeownership, documenting large differences in housing access across the parental wealth distribution. Observable characteristics explain roughly half of this gap, suggesting an important role for parental wealth itself. Instrumental variable estimates based on international stock market exposure provide evidence of a causal effect. We document several mechanisms, including financial support, co-purchasing, and discounted intra-family transactions. A calibrated life-cycle model shows that housing substantially amplifies the effect of parental transfers on household wealth accumulation over the life cycle, with leverage operating as a key propagation channel.

**Keywords:** Housing market, intergenerational wealth, wealth inequality
**JEL Codes:** D31, E24, G51, R21

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# 1 Introduction

Housing is a central component of household portfolios, combining sustained capital gains with access to high leverage. As a result, relatively small differences in housing access early in life may translate into large differences in wealth accumulation over the life cycle. At the same time, access to homeownership is shaped not only by a household's own financial resources, but also by those of its *parents*. Among households whose parents are in the bottom quintile of the wealth distribution, roughly 40% are homeowners by age 30, compared to nearly 70% among those with parents in the top quintile (Figure 1). These large differences arise precisely at the stage of the life cycle when borrowing constraints are most binding and when access to leveraged housing investment is most valuable.

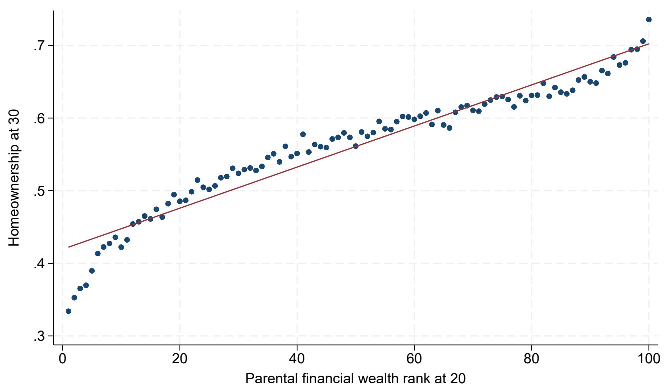



Figure 1: Homeownership at age 30 by parental wealth rank (1-100)

Notes: Parental wealth rank from 1 to 100 is calculated based on the year-specific distribution of parental financial wealth when the child is aged 19-21. Rank is 1 for parents with wealth in the bottom 1%, and 100 for parents with wealth in the top 1%.

This paper studies the sources of this gradient in homeownership by parental wealth and its implications for wealth accumulation over the life cycle. While a growing literature documents strong correlations between parental resources and children's housing outcomes, less is known about the causal role of parental wealth, the mechanisms through which it operates, and how early-in-life differences in housing access translate into later-in-life wealth accumulation.

We address these questions by combining administrative data from Norway with an instrumental variable strategy, an online survey, and a life-cycle model of housing and savings. The administrative data allow us to link children to their parents and observe detailed balance sheet information, including financial assets and housing transactions, for the full population. This enables us to study both housing market entry and homeownership over the life cycle with minimal measurement error.

Empirically, we document large differences in housing outcomes by parental wealth. Households with wealthier parents are substantially more likely to enter the housing market and to become homeowners early in adulthood. To understand the sources of these differences, we conduct a statistical decomposition based on observable characteristics. Observable household characteristics – such as income, income growth, education, financial wealth, and cohabitation status – account for roughly half of the homeownership gap. In contrast, parental attributes other than wealth – such as parental income, education, and location – play a limited role once parental wealth is controlled for. As a result, a substantial share of the gap remains unexplained by observables, pointing to an important role for parental wealth itself.

To assess whether the parental wealth component reflects a causal effect, we exploit variation in parental financial wealth driven by differential exposure to international stock market returns. Specifically, we use a shift–share instrument that interacts predetermined parental stock market exposure with global equity returns, generating plausibly exogenous variation in parental financial wealth. Using this approach, we find that increases in parental wealth causally raise the probability that children enter the housing market. The effects are economically large and concentrated among households with low own wealth, consistent with parental resources operating by relaxing borrowing constraints at the time of entry.

We next examine *how* parental wealth translates into housing outcomes. We document several channels of parental support that directly relax constraints at the time of home purchase. First, we provide novel evidence on intra-family housing transactions: wealthier parents are substantially more likely to co-purchase homes with their children or sell properties directly to them. These transactions occur at significant discounts relative to comparable market transactions. Second, we find strong evidence of direct financial transfers, some of which appear to be financed through parental home equity extraction. Taken together, these channels account for a large share of the differences in housing market entry associated with parental wealth.

Motivated by these empirical findings, we develop a life-cycle model with housing and exogenous parental support. The model allows us to quantify how differences in housing access early in life translate into differences in wealth accumulation over the life cycle – which is hard to identify in the data due to the long time horizon – and to isolate how housing affects intergenerational wealth persistence.

The model reveals that housing acts as a powerful *amplifier* of intergenerational wealth persistence. Parental transfers relax borrowing constraints and enable earlier access to homeownership, which in turn generates higher long-run wealth through leveraged exposure to house price growth and the accumulation of housing equity over time. In a counterfactual economy without homeownership, the effect of parental wealth on midlife wealth is reduced by more than a factor of four, highlighting the central role of housing in amplifying the transmission of wealth from one generation to the next.

We use the model to conduct two counterfactual experiments that help isolate the forces underlying this amplification mechanism. First, we analyze a scenario with lower house price growth than observed during our sample period. Lower house price appreciation reduces the returns to homeownership and weakens the intergenerational transmission of wealth from parents to children. This effect is particularly pronounced when the lower house price growth is anticipated ex ante, as the early entry into the housing market enabled by parental transfers becomes less valuable.

Second, we study the role of regulating mortgage credit through loan-to-value (LTV) caps. The impact of such regulation can go in both directions. In line with conventional wisdom, stricter LTV caps make parental support more needed in order to enter the housing market early, which increases the advantage of having wealthy parents. On the other hand, however, a lower maximum LTV ratio reduces the value of having a given amount of equity early in life, since this equity amount may not be sufficient to allow for entry and because the leverage multiplier on returns mechanically falls. In our baseline calibration, the latter force dominates, meaning that stricter mortgage regulation slightly *reduces* intergenerational wealth persistence.

This paper makes three main contributions. First, we provide causal evidence that parental financial wealth affects children's housing outcomes, using variation driven by international stock market movements. Second, we document and quantify multiple mechanisms through which parental wealth operates, including novel evidence on intra-family housing transactions and discounted sales. Third, we show that housing can act as a central amplification mechanism, linking early-in-life differences in housing access to persistent differences in wealth accumulation through leverage and capital gains.

**Related literature** While several studies have shown that parents matter for their child's housing market outcomes, most of these studies – including Engelhardt and Mayer (1998), Guiso and Jappelli (2002), Luea (2008), Kolodziejczyk and Leth-Petersen (2013), Blickle and Brown (2019), Brandsaas (2021) and Boileau and Sturrock (2023) – focus on the impact of parental *transfers* on housing market entry. Relatedly, Benetton et al. (2022) study the importance of transfers financed by parental home equity extraction. Halvorsen and Lindquist (2017), Lee et al. (2020) and Bond and Eriksen (2021) document a positive correlation between parental wealth and entry into the housing market, while Daysal et al. (2023) show that additions to parental housing wealth pass through to child housing wealth.

We contribute by taking a broader approach, focusing not only on parental transfers or one single mechanism, but on unpacking the causal influence of parental wealth in general. We also document novel mechanisms such as intra-family sales, and we assess the quantitative importance of each mechanism.

The paper is also related to two literatures which study i) the importance of housing for wealth accumulation, and ii) intergenerational wealth persistence. In case of the former, Di et al. (2007), Turner and Luea (2009), Bach et al. (2020), Bernstein and Koudijs (2020) and Eggum and Larsen (2023) show how housing choices and mortgage contracts are critical for wealth accumulation. We contribute by focusing on housing wealth gaps caused by parental wealth. In case of the latter, Chiteji and Stafford (1999), Charles and Hurst (2003), Boserup et al. (2016), Black et al. (2017), Adermon et al. (2018) and Fagereng et al. (2021) study how and why wealthy parents tend to have wealthy children. We contribute by focusing on *housing* as a key driver of wealth persistence across generations. We believe this is important because policy makers influence this channel through several instruments, such as building restrictions, mortgage regulation and taxation.

# 2 Data

In this section we present the register data which form the basis of our empirical analysis, and briefly discuss an online survey conducted to complement the register data.

## 2.1 Register data

We use Norwegian administrative data from Statistics Norway, merged with housing transactions data from the Land Registry. The former provides household balance sheet information and allows us to link parents and children. The latter gives us accurate information on housing transactions and allows us to follow the ownership of houses over time.

**Sample construction** We start out with a sample of 3.4 million individuals aged 18 or older, for whom we know the identity of their parents. We keep only individuals with observed parental wealth when the child household is 19-21 years old, meaning that both parents are alive and file taxes in Norway. Because our tax data start in 1992, the oldest (child) individual included in our sample will be born in 1972. This reduces the number of individuals in our sample quite substantially.

We proceed by collapsing the data to the household level, using the household identifiers available since 2004. Household age and household education are defined as the average value across all (adult) household members. Most other variables – such as income and wealth – are defined as the sum across all households members. For parental variables, we define parental wealth and income as the sum across the mother and father. For households with two adult members, we take the average of parental wealth and income across the two sets of parents when collapsing to the household level. We define parents as living in a big city if at least one household member has parents living in one of the four biggest cities in Norway. Collapsing the data to the household level leaves us with 1.5 million households in the period 2004-2017.

**Measurement of main variables** Our main dependent variables are house purchase and homeownership. We classify a household as entering the housing market in year $t$ if i) the household purchases a home in year $t$, and ii) the household was not a homeowner in year $t-1$. House purchases, as well as purchase prices, are precisely measured in the housing transactions data. The estimated market value of non-transacted primary housing wealth is included in the tax data since 2010. Prior to this we rely on the tax value of real wealth. Due to the improvement in data quality from 2010 onward, we focus on post-2010 results.

We measure parental wealth using gross financial assets, which are precisely recorded in the tax data for the full population. Because a child's home purchase can mechanically affect parental wealth in the same year, our baseline measure uses one-period lagged parental wealth. From this measure, we construct an indicator for whether parental wealth is above or below the median among all parents in that year. This variable, denoted $p^w_{i,t-1}$, captures each child's relative position in the contemporaneous parental wealth distribution. As an alternative, we also use parental wealth measured at the time the child enters adulthood. Specifically, we compute average parental wealth when the child is aged 19–21 and construct a corresponding above-median indicator within child-cohort. This cohort-normalized measure, denoted $p^{w20}_i$, captures the relative parental wealth of individuals born in the same year.

Several control variables are included in the analysis. In terms of household characteristics, we control for income, education, location[1], number of adult household members (i.e. co-habitation), and age.[2] In some specifications we further control for household financial wealth, risky asset share and two-year future income growth.[3] In terms of parental character-

[1]For indicator variables such as education and location, we use dummy variables such as '"big city" and "higher education". The reason is that in the upcoming mediation analysis, these variables will also enter on the left hand side in the regressions. The results are robust to controlling for more fine-grained measures of location and educational outcomes.

[2]The age control is superfluous when the dependent variable is homeownership at age 30.

[3]Housing wealth and financial wealth could be mechanically correlated (Chetty et al., 2017), but this seems unimportant in our analysis as whether financial wealth is included as a control or not has virtually no impact on our results.

istics, we control for total income, average maximum education obtained, current location, number of children (number of siblings for the (child) household), and the risky asset share.

**Summary statistics** Summary statistics for the last year in our sample are provided by parental wealth status when the child household is 20 in Table 1. Wealthy parents on average have financial wealth of $292,861 per person, compared to $11,119 for non-wealthy parents. In terms of household characteristics, those with wealthy parents have about five times as much financial wealth as those with non-wealthy parents. They are also eleven percentage points more likely to be homeowners, and they earn about $18,000 more. The number of siblings does not differ by parental wealth.

| | Full sample | Low parental wealth | High parental wealth |
|---|---|---|---|
| $p^{w20}$ | 0.5 | 0 | 1 |
| Parent financial wealth$^{20}$ (USD) | 120,594 | 11,119 | 292,861 |
| Financial wealth$_t$ (USD) | 57,091 | 20,162 | 94,263 |
| Homeowner$_t$ (%) | 47 | 41 | 52 |
| Total income$_t$ (USD) | 58,901 | 49,744 | 68,128 |
| Siblings | 1.7 | 1.7 | 1.7 |
| N | 838,532 | 420,639 | 417,893 |

Table 1: Summary statistics in 2017.

Notes: Low (high) parental wealth means parental financial wealth at household age 19-21 is below (above) the median. The homeownership indicator takes a value of one if at least one household member owns housing wealth and zero otherwise. Household members include the number of adult household members, siblings is the average number of siblings across all adult household members. All prices are in 2015-values, with USDNOK=8.5.

## 2.2 Survey data

Our main empirical analysis relies exclusively on the register data discussed above. However, we also ran an online survey targeted towards Norwegian parents above 40 in 2023, asking various questions about providing offspring with housing support. The sample consists of 240 individuals. The exact survey questions and response shares are reported in Appendix C.1.

# 3 The impact of parental wealth on housing

## 3.1 Mediation analysis

We begin by quantifying the role of parental wealth for housing outcomes using a mediation analysis. The objective is to decompose the relationship between parental wealth and housing outcomes into components that reflect different economic channels.

Specifically, we separate the overall relationship into three observable components: (i) a direct effect of parental wealth, (ii) other parental attributes, and (iii) household attributes of the child. This decomposition allows us to assess the extent to which differences in housing outcomes reflect intergenerational transmission of observable characteristics – such as income, education, and household formation – versus parental wealth itself.

**Framework** Let housing outcomes $h_{i,t}$ depend on one-period lagged parental wealth $p^w_{i,t-1}$, other parental attributes $p^o_{i,t}$, and household attributes $x_{i,t}$:

$$h_{i,t} = \beta_0 + \beta_1 p^w_{i,t-1} + \beta_2 p^o_{i,t} + \beta_3 x_{i,t} + \eta_{i,t}. \tag{1}$$

This specification provides a convenient decomposition of the unconditional relationship between housing outcomes and parental wealth. In particular, the coefficient from a regression of $h_{i,t}$ on $p^w_{i,t-1}$ without controls can be written as:

$$\begin{aligned} \frac{\mathrm{cov}(h_{i,t}, p^w_{i,t-1})}{\mathrm{var}(p^w_{i,t-1})} = & \overbrace{\beta_1}^{\text{i) parental wealth}} + \overbrace{\beta_2 \frac{\mathrm{cov}(p^o_{i,t}, p^w_{i,t-1})}{\mathrm{var}(p^w_{i,t-1})}}^{\text{ii) parental attributes}} \\ & + \underbrace{\beta_3 \frac{\mathrm{cov}(x_{i,t}, p^w_{i,t-1})}{\mathrm{var}(p^w_{i,t-1})}}_{\text{iii) household attributes}} + \underbrace{\frac{\mathrm{cov}(\eta_{i,t}, p^w_{i,t-1})}{\mathrm{var}(p^w_{i,t-1})}}_{\text{iv) unobservables}}. \end{aligned} \tag{2}$$

This decomposition separates the housing gap by parental wealth into three observable components. The first term captures the direct association between parental wealth and housing outcomes conditional on controls. The second and third terms capture indirect channels operating through other parental characteristics and the child's own household characteristics, respectively.

We estimate these components by first obtaining $\hat{\beta}_1$, $\hat{\beta}_2$, and $\hat{\beta}_3$ from equation (1), and then combining them with the corresponding covariance terms. In practice, both $p^o_{i,t}$ and $x_{i,t}$ are vectors of characteristics, and each component is constructed as the sum of contributions across variables.

The final term reflects unobserved factors correlated with parental wealth. As such, the decomposition is descriptive and does not have a causal interpretation. In particular, if $cov(\eta_{i,t}, p^w_{i,t-1}) \neq 0$, the estimated coefficients will be biased. For this reason, we expand the analysis with an instrumental variables strategy in Section 3.2 that exploits plausibly exogenous variation in parental wealth.

**Measurement** We divide households into two groups based on parental wealth – those with wealthy parents and those with non-wealthy parents – to provide a transparent representation of housing gaps. While this coarse split abstracts from potential nonlinearities, Figure 1 shows that the relationship between parental wealth and homeownership is approximately linear over most of the distribution, with deviations concentrated in the tails. Hence, this grouping captures the relevant variation for the majority of households.

Our baseline measure of parental wealth is one-period lagged financial assets. This captures the parents' financial position at the time housing decisions are made. As an alternative, we use financial assets measured when the child is aged 20, which reflects parental resources prior to housing market entry and is less likely to be affected by contemporaneous shocks.

Our primary housing outcome is entry into the housing market, defined for households that are not yet homeowners. We also consider homeownership at age 30 as a complementary stock measure. Household attributes, $x_{i,t}$, include income, financial wealth, education, location, household size, and age. In extensions, we incorporate forward-looking measures such as expected income growth (proxied by two-year income changes) and the risky asset share, which captures differences in portfolio choice and risk tolerance. Parental attributes, $p^o_{i,t}$, include parental income, education, location, and family size, with extensions that incorporate parental portfolio composition.

We implement the mediation analysis separately by year, allowing the housing gap and its decomposition to vary over time.

**Results** Figure 2 presents the decomposition of housing market entry by parental wealth. On average after 2010, households with wealthy parents have an annual entry probability of 5.9%, compared to 3.7% for those with non-wealthy parents – a gap of 2.2 percentage points or approximately 60%. Household attributes account for a substantial share of this difference. As shown by the pink area in Figure 2, observable household characteristics explain 59% of the entry gap. This value reflects both systematic differences in characteristics across groups and the strong predictive power of these characteristics for housing market entry. Appendix Figure A.1a shows that income, education, and cohabitation status are the dominant contributors.

In contrast, other parental attributes than wealth – education, income, location, and family size – play a limited role. Their contribution is small and stable over time (the gray area). The remaining portion of the gap is captured by the parental wealth component, which accounts for nearly half of the entry gap on average. That is, even after controlling for a rich set of characteristics, a gap of 1.1 percentage points (31%) remains.

Entry rates are computed for all households not currently participating in the housing market. This group includes older households, which tend to exhibit lower entry rates; conditional on remaining outside the market at a given age, the probability of entry declines. As a robustness check, Appendix Figure A.2 reproduces Figure 2 restricting the sample to households aged 25–30. This restriction raises average entry rates while preserving the qualitative pattern.

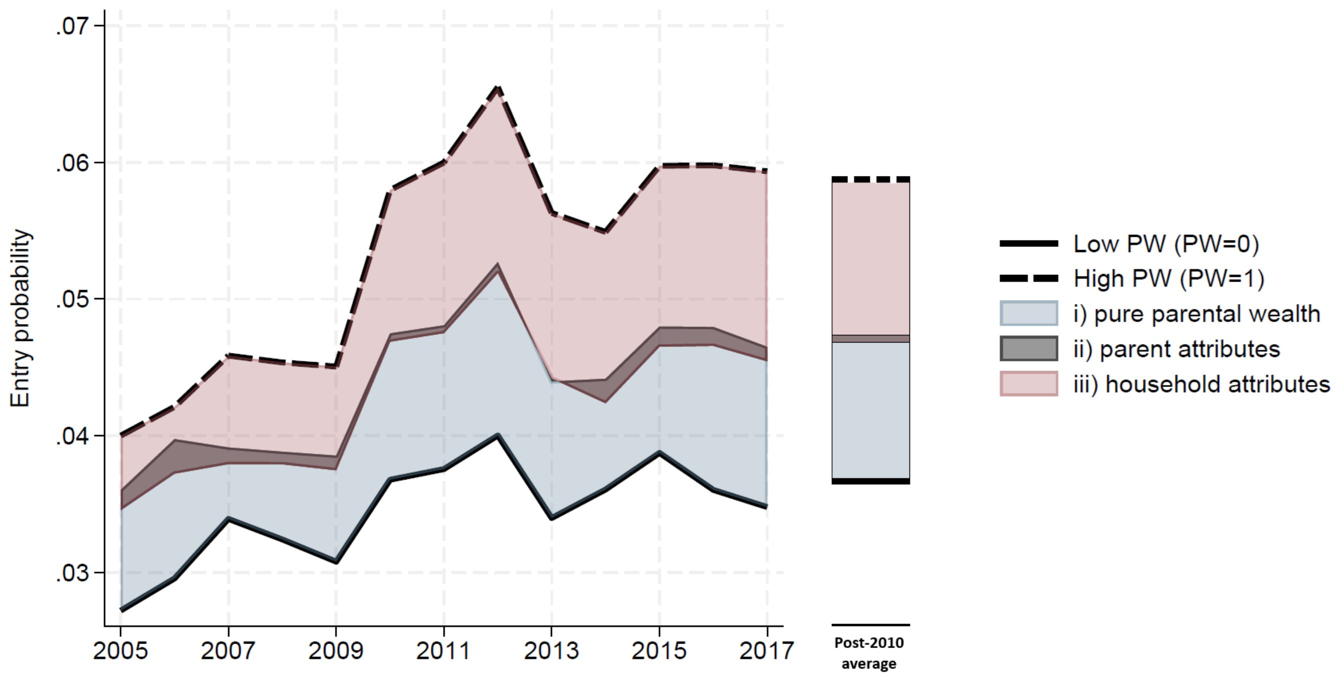



Figure 2: Entry probability by parental wealth: decomposed into channels i)-iii) as in equation (2).

Notes: The entry probability gap is decomposed into three observable components, pure parental wealth, parental attributes and household attributes, in accordance with equation (2). $h_i$ is the probability of entering the housing market. $p^w_{i,t-1} = 1$ if average parental financial wealth at time $t-1$ is above the year-specific median, $p^o_i$ includes parental income, education, location and number of children, and $x_i$ includes household income, financial wealth, education, location, number of household members and a polynomial in age. The sample consists of households not in the housing market in year $t-1$.

Figure 3 shows a similar pattern for homeownership at age 30. After 2010, 65% of households with wealthy parents own a home at age 30, compared to 49% among those with non-wealthy parents—a gap of 16 percentage points (33%). As with entry, household attributes explain roughly half of the gap, with income playing the dominant role. Again, other parental attributes contribute little.

The component associated with parental wealth itself remains substantial. For homeownership at age 30, nearly half of the gap – around eight percentage points (49%) – is not accounted for by observable household or other parent characteristics. Taken together, these results indicate that while differences in households' own observable resources explain a large share of housing gaps, a sizable component remains that is directly associated with parental wealth. This effect serves as a key calibration target for our life-cycle model in Section 5.2.2.

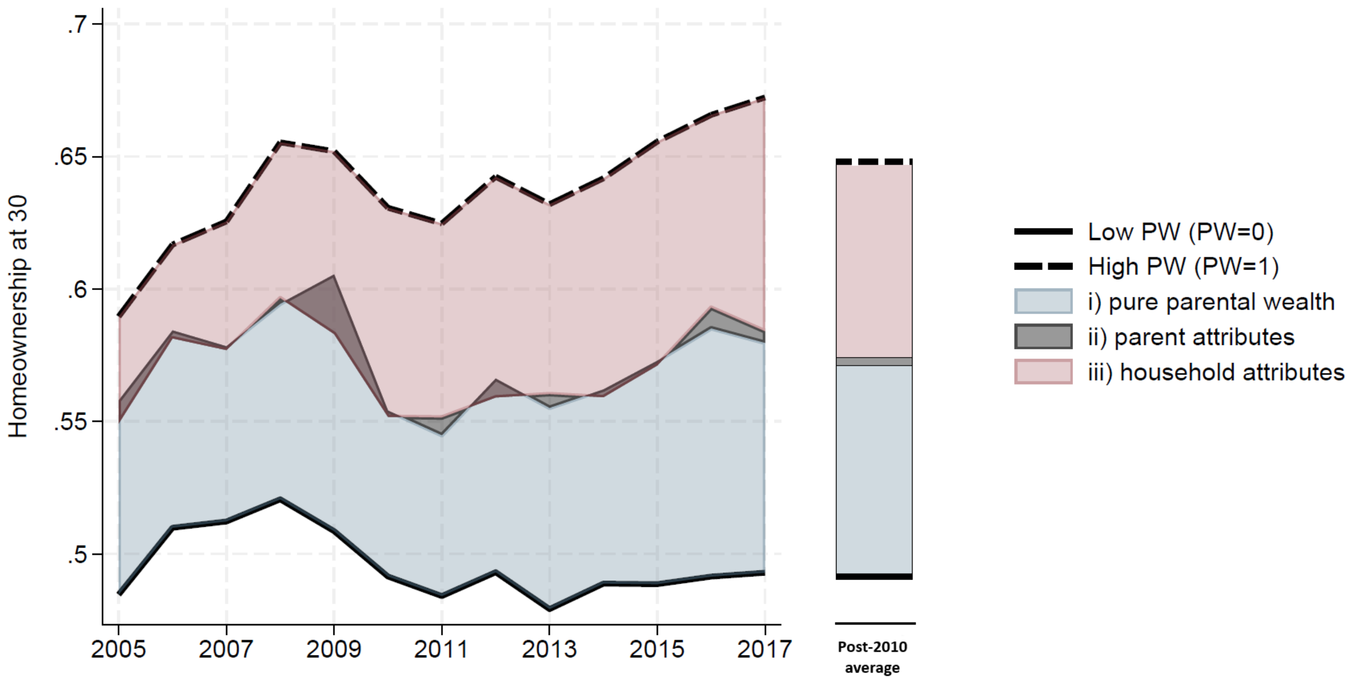



Figure 3: Homeownership rate at age 30 by parental wealth: decomposed into channels i)-iii) as in equation (2).

Notes: The homeownership gap at age 30 is decomposed into three observable components, pure parental wealth, parental attributes and household attributes, in accordance with equation (2). $h_i$ is homeownership at age 30. $p^w_{i,t-1} = 1$ if parental financial wealth is above the year-specific median. $p^o_i$ includes parental income, education, location and number of children, and $x_i$ includes household income, financial wealth, education, location and household size. Sample consists of households aged 30.

We next examine the robustness of these findings. Adding forward-looking measures of household income growth and portfolio risk has little effect on either the size of the gaps or their decomposition (Appendix Figures A.3a and A.3b). Similarly, measuring parental wealth earlier in the life cycle – around age 20 – slightly reduces the overall gaps but leaves the relative contributions largely unchanged (Appendix Figures A.4a and A.4b).

Overall, the decomposition reveals two key patterns. First, a substantial share of housing differences reflects the intergenerational transmission of observable economic resources.

Second, even after accounting for these factors, a large component remains, consistent with an additional role for parental wealth beyond other observable characteristics.

## 3.2 IV analysis

To estimate the causal effect of parental wealth on children's housing outcomes, we exploit variation in parental financial wealth induced by international stock market movements. Differences in equity exposure imply that common shocks to global equity returns generate heterogeneous and plausibly exogenous changes in parental wealth.

We construct an instrument by interacting predetermined parental stock market exposure with international stock market returns:

$$Z_{i,t-1} = \text{stock-share}_{i,t-2} \times r_{t-1}. \tag{3}$$

This shift–share design isolates variation in parental wealth arising from global returns interacted with pre-existing portfolio choices.[4][5] The distribution of $Z_{i,t-1}$ is depicted in Appendix Figure A.5.

We implement the instrument in a standard two-stage least squares framework. The first stage relates parental wealth to the instrument:

$$p^w_{i,t-1} = \alpha + \beta_1 Z_{i,t-1} + \beta_2 p^o_{i,t} + \beta_3 x_{i,t} + \epsilon_{i,t}. \tag{4}$$

The second stage estimates the effect of predicted parental wealth on housing outcomes:

$$h_{i,t} = \alpha^{IV} + \beta_1^{IV} \hat{p}^w_{i,t-1} + \beta_2^{IV} p^o_{i,t} + \beta_3^{IV} x_{i,t} + \epsilon^{IV}_{i,t}. \tag{5}$$

### 3.2.1 Identification

The instrument is relevant if variation in stock returns interacted with portfolio exposure predicts variation in parental wealth. This is strongly supported in the data: first-stage F-statistics are around 50 (Table 2), well above conventional thresholds.

The exclusion restriction requires that the instrument affects children's housing outcomes only through parental wealth. The key identifying assumption is therefore that, conditional

[4] We use international rather than domestic returns to mitigate concerns that the instrument captures local economic conditions. Norwegian households have substantial international exposure through mutual funds.

[5] We proxy stock exposure as non-deposit financial wealth, which consists primarily of stocks and mutual funds (Fagereng et al., 2020).

on controls, variation in parental wealth induced by international stock market returns is orthogonal to other determinants of children's housing outcomes.

We consider two main threats to this assumption. First, parental stock market participation may proxy for financial sophistication that is transmitted to children independently of wealth. To address this concern, we construct an analogous instrument for the child household and include it as a control in both stages. This control absorbs any direct effect of the child's own stock market exposure and financial sophistication on housing outcomes.

Second, international stock market returns may proxy for global macroeconomic conditions that affect households heterogeneously and in a way that correlates with parental wealth. We address this concern by controlling for the child's labor market outcomes, including wages, and for geographic characteristics such as urban versus rural residence. In addition, we include a rich set of household and parental controls, capturing socioeconomic characteristics that may shape exposure to macroeconomic shocks.

With this design, the identifying variation comes from differential exposure to global equity returns across parents with otherwise similar observable characteristics. This variation captures changes in parental balance sheets that are plausibly unrelated to children's housing outcomes except through parental wealth.

Finally, the IV estimates can be interpreted as local average treatment effects for households whose parents' wealth responds to stock market fluctuations. These are precisely households for whom financial wealth is an important component of the balance sheet and for whom marginal changes in parental resources are likely to relax borrowing constraints at the time of housing market entry.

#### 3.2.2 Results

**Baseline results** Table 2 presents the baseline estimates. Columns (1)–(3) report OLS results, indicating that having parental wealth above the median increases the probability of housing market entry by 0.7–0.8 percentage points, corresponding to roughly 18% of the baseline entry rate.

Columns (4)–(6) report IV estimates. The coefficients are larger in magnitude – around 1.3 percentage points – and quite precisely estimated. They imply that exogenous increases in parental wealth substantially raise the probability of housing market entry.

The larger IV estimates relative to OLS are consistent with attenuation bias in the latter, as well as with the IV capturing a margin of variation in parental wealth that is particularly important for housing support. The IV isolates the effect of variation in parental stock market wealth, and it is possible that parents have a particularly high propensity to use exactly this asset class to support children in the housing market, leading to larger effects in the IV than in the OLS.

| | (1) Entry$_{i,t}$ | (2) Entry$_{i,t}$ | (3) Entry$_{i,t}$ | (4) Entry$_{i,t}$ | (5) Entry$_{i,t}$ | (6) Entry$_{i,t}$ |
|---|---|---|---|---|---|---|
| $p^w_{i,t-1}$ | 0.00800*** | 0.00834*** | 0.00670*** | 0.0129*** | 0.0129*** | 0.0129*** |
| | (0.000709) | (0.000718) | (0.000544) | (0.00148) | (0.00147) | (0.00147) |
| N | 3,954,474 | 3,954,474 | 3,038,322 | 3,063,527 | 3,063,527 | 3,029,746 |
| Clusters | 1,043,298 | 1,043,298 | 846,680 | 846,895 | 846,895 | 844,482 |
| Mean | 0.0437 | 0.0437 | 0.0437 | 0.0437 | 0.0437 | 0.0437 |
| Model | OLS | OLS | OLS | IV | IV | IV |
| Robust F-stat | | | | 50.6 | 42.6 | 41.7 |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | Yes | Yes | No | Yes | Yes |
| HH-IV control | No | No | Yes | No | No | Yes |

Table 2: The impact of parental wealth on housing market entry

*Notes:* Entry$_{i,t}$ = 1 if household $i$ purchases a house in year $t$, and 0 otherwise. $p^w_{i,t-1} = 1$ if parental financial wealth is above the year-specific median. Columns (4)–(6) instrument parental wealth using the interaction of lagged parental stock share and MSCI World returns. Controls include parental characteristics (income, education, location, family size) and household characteristics (age, income, financial wealth, location, education, household size). Standard errors clustered at the household level.

**Heterogeneity by household wealth** If parental wealth operates primarily by relaxing financial constraints, its effect should be strongest for households with limited own resources. To assess this mechanism, we estimate the IV specification separately by quartiles of own household wealth.

Figure 4 shows that the effect of parental wealth is stable across the lower three wealth quartiles but declines sharply and becomes statistically insignificant for households in the top quartile. This pattern is consistent with a credit constraint channel: parental wealth matters most for households with limited liquidity and plays little role once households have sufficient own resources to access the housing market.

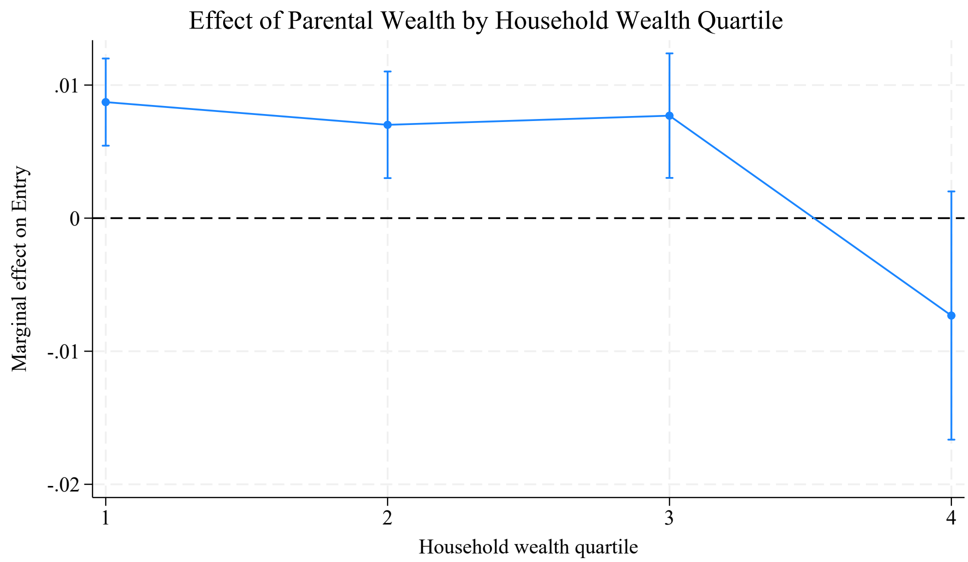



Figure 4: Effect of parental wealth on housing market entry by child household wealth quartile

*Notes:* The coefficients are IV estimates corresponding to Table 2, column (4), estimated separately by household wealth quartile.

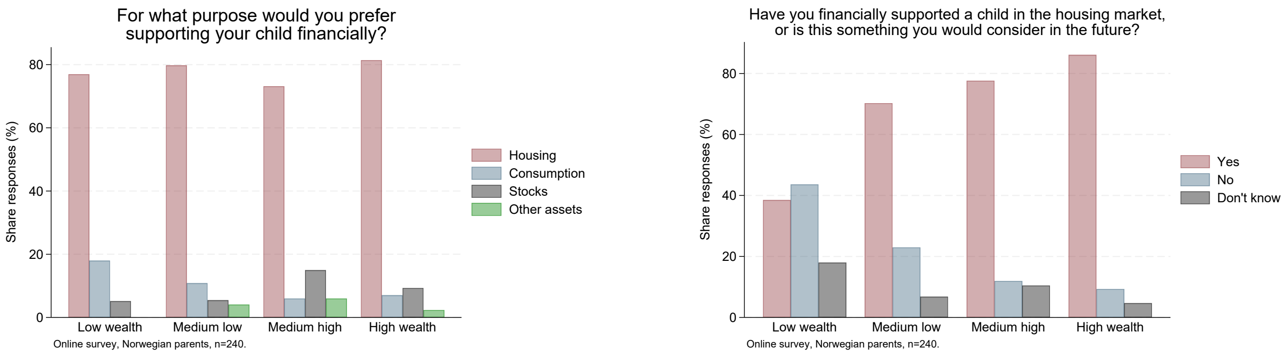
## 3.3 Survey Evidence

While our main analysis relies on administrative data on realized behavior, we complement it with survey evidence on parental preferences and willingness to provide financial support to children in the housing market. This evidence provides insight into whether our observed patterns reflect differences in preferences or constraints.

We focus on two survey questions. The first asks: “For what purpose would you prefer supporting your child financially?” As shown in Figure 5, nearly 80% of parents report housing as their preferred purpose of financial support, rather than consumption or financial investments.[6] Notably, this preference varies little across the wealth distribution.

The second question asks whether parents have provided, or would consider providing, financial support for housing. Here, a strong wealth gradient emerges: fewer than 40% of low-wealth parents report they have provided or plan to provide such support, compared to nearly 90% among high-wealth parents.

[6]Higher education is generally free and accessible to all in Norway. Hence, it is not included as a separate support form in the survey question. Interestingly, the share of homeowners who report receiving financial support from parents or grandparents when buying a home is almost identical in Norway and the US – see Appendix Figure A.6.




(a) Preferred financial support form

(b) Providing housing support

Figure 5: Survey responses by self-reported wealth

Notes: The figure reports responses from an online survey of 240 individuals in Norway aged 40+ with children. Panel (a) shows preferred forms of financial support. Panel (b) shows whether respondents have provided or would consider providing housing support. Wealth groups are based on self-reported financial wealth.

Taken together, these responses suggest that differences in housing support across households are not primarily driven by preferences. While parents across the wealth distribution express a similar willingness to support their children in the housing market, only wealthier parents have the financial capacity to do so. Instead of preference heterogeneity, this pattern points toward mechanisms where parental wealth affects housing outcomes by relaxing financial constraints.

# 4 Parental Support Mechanisms

The previous sections establish that parental wealth has a causal effect on children's housing outcomes. We now turn to the mechanisms underlying this relationship. In particular, we ask how parental resources are translated into access to the housing market.

A natural interpretation is that parental wealth operates by relaxing financial constraints at the time of housing entry. Parents may support their children through a range of channels, including direct transfers, co-ownership arrangements, or favorable intra-family transactions. While survey evidence suggests that such forms of support are widespread, our administrative data allow us to directly measure several of these channels.

We focus on the support mechanisms that can be identified in the data and quantify their contribution to housing market entry. These include intra-family housing transactions, co-purchases, and direct financial transfers inferred from balance sheet changes. Taken together, these channels provide a detailed picture of how parental wealth facilitates homeownership.

## 4.1 Home equity extraction and liquidity support

We begin by examining how parental wealth translates into liquidity available at the time of housing purchase. In the mechanism analysis, we use the cohort-based parental wealth measure $p_i^{w20}$ to avoid contemporaneous feedback from housing transactions to parental wealth. Appendix Figure A.7 shows that liquid assets increase sharply in the period leading up to entry. While part of this increase may reflect savings or portfolio rebalancing, the magnitude is difficult to reconcile with these channels alone.

Inter-vivos transfer income is only required to be reported above certain thresholds, and it is self reported, so we take an indirect approach and identify two complementary channels through which parental resources may be transferred: (i) home equity extraction and (ii) direct financial transfers inferred from balance sheet changes.

**Parental equity extraction** If parents extract equity from their own housing to support their children, we should observe a correlation between parental equity extraction and children's housing entry. Table 3 reports estimates from regressions of housing entry on an indicator for parental equity extraction.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ |
| $\text{Equity}_{i,t}$ | 0.0153*** | 0.0175*** | 0.0117*** | 0.00999*** | 0.0127*** | 0.00936*** |
| | (0.000246) | (0.000245) | (0.000266) | (0.000352) | (0.000350) | (0.000375) |
| $\text{Equity}_{i,t} \times p_i^{w20}$ | | | | 0.00842*** | 0.00947*** | 0.00461*** |
| | | | | (0.000492) | (0.000489) | (0.000530) |
| Observations | 4,112,920 | 4,092,485 | 3,842,848 | 4,112,920 | 4,092,485 | 3,842,848 |
| Mean | 0.0438 | 0.0438 | 0.0438 | 0.0438 | 0.0438 | 0.0438 |
| Controls | No | Yes | Yes | No | Yes | Yes |
| HH FE | No | No | Yes | No | No | Yes |

Table 3: Parental equity extraction

Notes: $entry_{i,t} = 1$ if household $i$ purchases a house in year $t$ and did not own housing in $t-1$. $\text{Equity}_{i,t} = 1$ if parents increase debt by at least 10% and \$2,000. Parental wealth: $p_i^{w20} = 1$ if parental wealth at ages 19–21 is above the median. Standard errors clustered at the household level.

We find that housing entry is significantly more likely in years when parents extract equity. In our baseline specification (column 3), equity extraction is associated with a 1.2 percentage point increase in entry probability, which constitutes 27% of the mean entry rate.

The effect is stronger for households with wealthier parents, as seen by the positive and significant interaction terms in columns (4)–(6). This result could reflect that richer parents have larger equity withdrawals, or are more effective in facilitating entry for a given equity extraction. Overall, the results indicate that parental housing wealth can be converted into liquidity at the time of children's entry, and more so for wealthier parents.

**Financial transfers** We next identify direct financial transfers using balance sheet changes. Specifically, we define a transfer as a simultaneous decrease in parental financial wealth and increase in the child's bank deposits above a threshold. By construction, this measure captures transfers financed out of financial assets and excludes those financed through housing wealth.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ | $\text{Entry}_{i,t}$ |
| $\text{Transfer}_{i,t-1}$ | 0.0402*** | 0.0273*** | 0.0160*** | 0.0408*** | 0.0302*** | 0.0155*** |
| | (0.000496) | (0.000498) | (0.000546) | (0.000839) | (0.000837) | (0.000918) |
| $\text{Transfer}_{i,t-1} \times p_i^{w20}$ | | | | -0.00577*** | -0.00448*** | 0.00081 |
| | | | | (0.00104) | (0.000455) | (0.00114) |
| Observations | 3,209,946 | 3,192,924 | 2,974,061 | 3,209,946 | 3,192,924 | 2,974,061 |
| Mean | 0.0438 | 0.0438 | 0.0438 | 0.0438 | 0.0438 | 0.0438 |
| Controls | No | Yes | Yes | No | Yes | Yes |
| HH FE | No | No | Yes | No | No | Yes |

Table 4: Parental transfers

Notes: $entry_{i,t} = 1$ if household $i$ purchases a house in year $t$ and did not own housing in $t-1$. $\text{Transfer}_{i,t-1} = 1$ if parental financial wealth decreases and child deposits increase above NOK 30,000. Standard errors clustered at the household level.

Table 4 shows that transfers are strongly associated with subsequent housing entry. Receiving a transfer in year $t-1$ increases entry probabilities by 1.6 percentage points (37% relative to the mean).

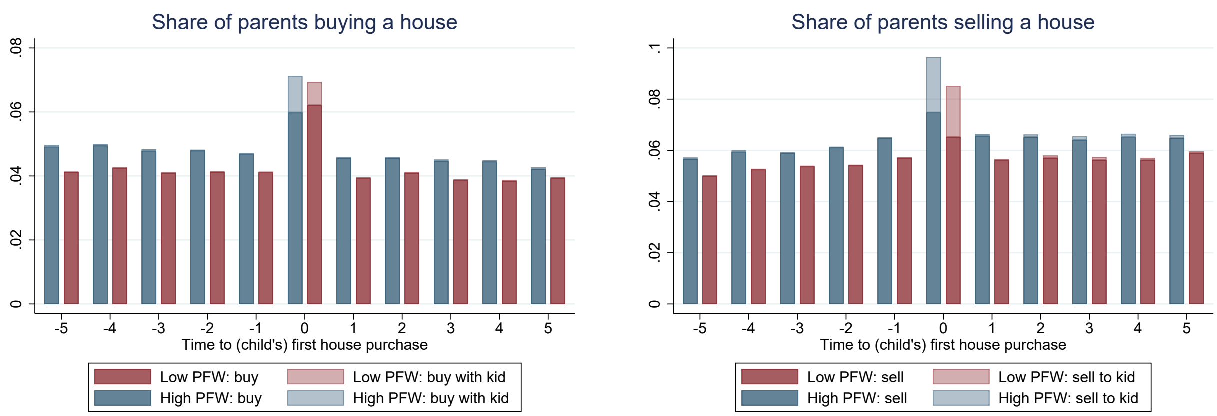
In contrast to equity extraction, the effect of transfers does not vary systematically with parental wealth once controls are included. This suggests that conditional on receiving a transfer, its impact on housing entry is similar across households. Differences across the wealth distribution are therefore more likely to arise from differences in the frequency and scale of transfers rather than differences in their marginal effect.

Taken together, these results provide direct evidence that parental resources are translated into liquidity at the time of housing entry. Both channels – equity extraction and financial transfers – operate by relaxing borrowing constraints and enabling households to meet downpayment requirements.

## 4.2 Intra-family housing transactions

We next examine direct housing transactions between parents and children. These transactions provide a particularly transparent mechanism through which parental wealth can affect housing outcomes, as they combine both financing and asset transfer at the time of entry.

Figure 6a shows the share of parents purchasing a home around the time their child enters the housing market. In the year of entry, this share increases from approximately 4% to 7% for both high and low financial wealth parents. Using housing unit identifiers, we identify cases where parents co-purchase a home with their child. These are indicated by the incremental lighter bars. Co-purchases are substantially more common among wealthier parents, who are nearly 60% more likely to co-purchase at the time of entry than poorer ones are.




(a) Parents buying (b) Parents selling

Figure 6: Intra-family housing transactions by parental wealth

Notes: Share of parents who buy (panel a) or sell (panel b) a house around the child's entry into the housing market (year $t = 0$). Light bars indicate transactions involving the child.

Figure 6b shows the timing of parental sales. At all horizons relative to entry, wealthier parents are more likely to sell a house. The probability that parents sell a home increases at the time of entry, from around 6% to around 9%, and a large share of this increase reflects direct sales to offspring as seen by the lighter bars in year 0 of the figure.

**Transaction prices** While co-purchasing relaxes borrowing constraints directly, intra-family sales can only involve implicit transfers through low pricing. If parents sell homes to their children at below-market prices, this constitutes a direct transfer of wealth at the time of entry.

To assess the magnitude of sales discounts, we estimate predicted transaction prices based on housing characteristics:

$$hprice_{i,t} = \alpha + \beta_1 sqm_{i,t} + \beta_2 rooms + \beta_3 bathrooms + \delta_k municipality_k + \delta_t year_t + \epsilon_{i,t}. \quad (6)$$

Using the residuals from this regression as a measure of price deviations, we compare intra-family transactions to the distribution of market transactions. For intra-family sales, the average transaction price is approximately \$87,000 below the predicted value, corresponding to a discount exceeding 25%.


Figure 7: Estimated house sale discounts (USD)

Notes: The residual house price is the difference between the transaction price and the predicted market value from equation (6). The dashed line shows the average residual for intra-family sales. The distribution is based on 1,000 random samples of market transactions.

Figure 7 shows that these discounts are large relative to the distribution of residuals in arm's-length transactions, where deviations are tightly centered around zero. The magnitude and distinctiveness of these discounts indicate that intra-family sales involve substantial implicit transfers to the buying child.

Taken together, these findings show that intra-family housing transactions operate through two channels: co-purchases relax borrowing constraints directly, while discounted sales transfer wealth at the time of entry. Both mechanisms provide access to housing under more favorable conditions and reinforce the role of parental wealth in shaping housing outcomes.

### 4.3 How important are the mechanisms considered?

We conclude by quantifying how much of the parental wealth gradient in housing entry can be accounted for by the mechanisms identified above. This exercise focuses only on the portion of the entry gap that is attributed to parental wealth, not the total entry gap between households with high- versus low- wealth parents.[7] These estimates are approximate, as mechanisms may overlap.

For each mechanism we combine (i) the share of parents engaging in the activity and (ii) its estimated impact on housing entry. Both components are allowed to differ by parental wealth. Table 5 summarizes the results.

| | (1) Share of parents $p_i^{w20}=1$ | (2) $p_i^{w20}=0$ | (3) Impact on entry $p_i^{w20}=1$ | (4) $p_i^{w20}=0$ | (5) Entry accounted for $p_i^{w20}=1$ | (6) $p_i^{w20}=0$ | (7) Share of gap accounted for |
|---|---|---|---|---|---|---|---|
| Equity extraction | 24% | 19% | 1.40 pp | 0.94 pp | 0.34 pp | 0.18 pp | **29%** |
| Transfer | 8.5% | 3.9% | 1.55 pp | 1.55 pp | 0.13 pp | 0.06 pp | **13%** |
| Co-purchase | 0.012×0.052 =0.062% | 0.007×0.037 =0.026% | 100 pp | 100 pp | 0.062 pp | 0.026 pp | **7%** |
| Direct sale | 0.022×0.052 =0.114% | 0.020×0.037 =0.074% | 100 pp | 100 pp | 0.114 pp | 0.074 pp | **7%** |
| Sum | 33% | 23% | | | 0.65 pp | 0.34 pp | **56%** |

Table 5: Mechanisms: assessing the magnitudes

Notes: Columns (5)–(6) are the product of columns (1)–(2) and (3)–(4). Column (7) reports the share of the parental-wealth-related entry gap (0.55 pp) accounted for by each mechanism.

The results indicate that the mechanisms we observe account for more than half of the parental wealth portion of the entry gap. Among these mechanisms, parental equity extraction is the single most important channel, explaining 29% of the gap. This reflects both its relatively high prevalence and its sizable impact on entry probabilities. Financial transfers account for an additional 13% of the gap. Although transfers have a large effect on entry, their lower frequency limits their aggregate contribution. Co-purchases and direct sales each account for around 7% of the gap. Hence, intra-family housing transactions combined are approximately as important as financial transfers.

Taken together, these findings highlight that the primary channel through which parental wealth affects housing outcomes is the provision of liquidity at the time of entry. Equity extraction and financial transfers account for the majority of the explained gap, while intra-family transactions provide additional, though less prevalent, pathways. The remaining

[7] On average, the entry gap is 1.5 percentage points, of which approximately 0.55 percentage points are attributed to parental wealth.

unexplained share likely reflects transfers that are not directly observable in the data, as well as other forms of parental support not captured by our measures, in particular mortgage guarantees.

# 5 A Model of Housing Support and Wealth Accumulation

Our empirical findings suggest that the key role of parental wealth is to affect access to leveraged housing exposure early in life. Because the consequences of these differences unfold dynamically over the life cycle, we develop a life-cycle model with housing and exogenous parental support. The model is calibrated to replicate the key empirical patterns documented above: (i) the relationship between parental wealth and housing market entry, (ii) differences in homeownership over the life cycle, and (iii) the role of parental support in easing borrowing constraints at entry.

Households make consumption, savings, and housing decisions over the life cycle in the presence of borrowing constraints and stochastic income. Housing both provides consumption services and is an investment vehicle, with returns shaped by house price growth and leverage. Parental support is treated as exogenous.

We focus on two key factors. House price growth determines the returns to housing investment, while mortgage regulation shapes access to leverage through borrowing constraints. By varying these factors, we assess how the strength of the housing channel depends on the broader economic environment. In the next subsection, we describe the model and its calibration, followed by its quantitative implications and counterfactual results.

## 5.1 Model set-up

We build on a standard life-cycle model of housing and savings (e.g., Cocco (2005); Vestman (2019)) and extend it to incorporate parental support at the time of housing entry. The aim is to isolate the role of parental resources within a transparent and well-understood framework.

The key departure from the benchmark model is the introduction of parental transfers, which enter as exogenous cash support received early in the life cycle. This formulation is motivated by the empirical evidence presented in Section 4, which shows that parental support primarily operates through transfers, equity extraction, and intra-family transactions that effectively provide liquidity at the time of entry.

We model parental support as either a one-time transfer at the point of housing market entry or as a sequence of transfers over time. This reduced-form approach captures the timing and magnitude of parental support without requiring explicit modeling of parental optimization. In Appendix D.1, we show that allowing for alternative bequest motives yields similar qualitative implications.

We begin by describing the baseline environment without parental support in Sections 5.1.1–5.1.2. We then introduce parental support in Section 5.1.3. Computational details are provided in Appendix D.5.

#### 5.1.1 Environment

A household is born at age $T^s$, retires at age $T^r$, and dies at age $T^d$. Each period is one year, and we do not consider mortality risk or bequest motives for the child household. The expected lifetime utility of a household is given by

$$\mathbb{E}\left[\sum_{a=T^s}^{T^d} \mathcal{B}^{a-T^s} u\left(c_a, h_a, s_a\right)\right], \tag{7}$$

where $\mathcal{B} > 0$ is the discount factor, $c > 0$ is non-housing consumption, $h \in \mathcal{H}(s) \subset \mathbb{R}^2$ is housing consumption, and $s \in \{0, 1\}$ is the ownership status equal to 0 for renters and 1 for owners. The feasible set of housing depends on whether the house is renter- or owner-occupied. The expectation $\mathbb{E}$ is taken over sequences of idiosyncratic shocks which we specify below. In what follows, we omit age $a$ from our notation, except where it is misleading. Households have CRRA preferences with a Cobb-Douglas aggregator over housing and consumption

$$u(c, h, s) = \frac{\left(c^{1-\eta} h^{\eta} \chi(s)\right)^{1-\gamma}}{1-\gamma}, \tag{8}$$

where $0 < \eta < 1$ is the weight on housing, $\gamma$ measures risk aversion, and $\chi(s)$ is the homeownership premium. The ownership premium is 1 for renters and $1 + \chi$ for owners.

Households are endowed with an uncertain labor income stream during working age

$$\log y_{i,a} = f(a) + \nu_{i,a} + \varepsilon_{i,a},\ a = T^s, \ldots, T^r. \tag{9}$$

We let $f(a)$ denote the deterministic component, $\nu$ is a persistent income shock, and $\varepsilon \sim \mathcal{N}\left(0, \sigma_{\varepsilon}^2\right)$ is a transitory shock. The persistent shock follows an AR(1) process

$$\nu_{i,a} = \rho \nu_{i,a-1} + u_{i,a}, \tag{10}$$

where $\rho$ is the persistence parameter and $u \sim \mathcal{N}(0, \sigma_\nu^2)$. In retirement, income is constant and equal to a fixed share ($\phi_{ret}$) of the household's income in the last year of work $T^r$

$$\log(y_{i,a}) = \log(\phi_{ret}) + f(a = T^r) + \nu_{i,T^r},\ a = T^r + 1, \ldots, T^d \tag{11}$$

Social welfare systems provide a consumption floor $\underline{c}$ after rent of the cheapest unit. Households are endowed with an initial level of net worth $x_{T^s}$.

The market value of a house is linear in house size $h$. The house price follows a stochastic process with drift $\mu_h$ and volatility $\sigma^h$

$$\log(p_{a+1}) = \log(p_a) + \mu_h + \epsilon^h_{a+1}, \epsilon \sim \mathcal{N}(0, \sigma_h^2). \tag{12}$$

The rental price is assumed to be a constant fraction $\kappa$ of the market value $ph$. Households can rent, $s = 0$, or own, $s = 1$, in order to consume housing services. Houses are characterized by their sizes, which belong to discrete finite sets $\mathcal{H}(s)$ that depend on ownership status. Buying and selling owner-occupied housing entails adjustment and transaction costs that are proportional to the market value of the house. We denote these proportional costs by $m_b$ and $m_s$, respectively. We let $tc(p, s, h, s', h')$ denote the total transaction cost for a household who switches housing tenure from $s$ to $s'$ and house size from $h$ to $h'$.

Households can save in a one-period risk-free bond with return $r^f$. Borrowing against collateral (owner-occupied housing) is allowed, subject to a loan-to-value (LTV) and a loan-to-income (LTI) constraint. To simplify, we model borrowing as a one-period mortgage that is rolled over each period.[8] The mortgage has an interest rate of $r^f + r^m$, where $r^m \geq 0$ is the mortgage premium. We let $b$ denote the net position in bonds. The effective interest rate is $r^f$ for net savers and $r^f + r^m$ for borrowers.

### 5.1.2 Household optimization

We now outline the decision problem for households with non-wealthy parents. For readability, we denote all one-period-ahead variables with primes ($'$).

All households choose consumption $c$ and a net bond position $b$. Renters pay rent while homeowners have the value of their house on their balance sheet. For a household with

[8] This simplifying assumption allows us to drop state variables for mortgage balances or term lengths. The downside is that homeowners must satisfy the borrowing constraints each period – a problematic assumption after negative price shocks. But for our purposes of studying a prolonged period of high price growth, the calibrated price process has high growth and relatively low volatility rendering this concern minor in practice.

wealth $x$ and income $y$, the budget constraint is

$$x + y = c + b + tc(p, s, h, s', h') + (1 - s')\kappa p h' + s' p h' \tag{13}$$

Next-period wealth is given by the net position in bonds and the stochastic market value of owner-occupied housing net of depreciation

$$x' = b'(1 + r(b')) + s' p' h'(1 - \delta) \tag{14}$$

There are five discrete choices. Current renters choose between renting or owning, and current owners choose between selling and renting, selling and buying, or remaining in the current house. A household solves

$$V(x, h, s, \nu, p, a) = \max_{c, h', b', s'} \{u(c, h', s') + \mathcal{B}\mathbb{E}\left[V(x', h', s', \nu', p', a + 1)\right]\} \tag{15}$$

subject to

$$c > 0 \tag{16}$$
$$h' \in \mathcal{H}(s') \tag{17}$$
$$s' \in \{0, 1\} \tag{18}$$
$$b' \geq -LTV p h' s' \tag{19}$$
$$b' \geq -LTI s' y \tag{20}$$

and the budget constraint (13) and the law of motion (14). If the household chooses to rent ($s' = 0$), the last two constraints collapse to a single no-borrowing constraint.

### 5.1.3 Parental support

To align the model with the empirical strategy, we assume that half of the households have wealthy parents. Parental support is exogenous and takes the form of both an initial transfer early in life and an annual transfer during early adulthood.

Households with wealthy parents receive a one-time transfer at the beginning of adulthood, denoted $\tau_{T^s}$. This transfer is modeled as an additional cash endowment at age $T^s$. For households with non-wealthy parents, $\tau_{T^s} = 0$. Modeling intergenerational transfers as an initial wealth endowment is a standard approach to capture intergenerational persistence (see, e.g., Lee and Seshadri (2019)).

The second form of parental support is an annual transfer $\tau$ received each year from age

25 through 34, corresponding to the prime years of housing entry. For households with non-wealthy parents, $\tau = 0$. Frequent transfers are a common feature of models with altruistic parents and children (see, e.g., Altonji et al. (1997); Barczyk et al. (2022)).

A key element of our approach will be to jointly calibrate the size of early and late transfers by matching the model to empirical moments. This allows us to quantify the relative importance of each form of parental support in shaping housing outcomes. To isolate the effect of parental wealth, we simulate households with and without wealthy parents using identical realizations of income and house price shocks.

## 5.2 Parameterization

Our parameterization strategy consists of three steps. First, we fix parameters that can be set directly from the data (e.g., interest rates) or based on standard values in the literature (e.g., risk aversion). Second, we internally calibrate the ownership utility premium $\chi$ to match the homeownership at age 30 for households with non-wealthy parents (solid black line in Figure 3) to ensure the model generates realistic ownership motives. Third, we jointly calibrate the parental support parameters to match the empirical association between parental wealth on homeownership and entry rates. We relegate the details of the first step to Appendix D.2 and Table D.1.

### 5.2.1 Calibrating homeownership preferences

We calibrate the utility shifter for homeownership $\chi$ to match the homeownership rate at age 30. The parameter is well identified, as it monotonically increases homeownership. For details on the numerical implementation and identification, see Appendix D.6. The results are reported in Panel A of Table 6. We find that $\chi = 0.0376$ matches the homeownership rate exactly.

### 5.2.2 Calibrating parental parameters

We jointly calibrate the initial transfer $\tau_{T^s}$ and the annual transfer $\tau$ to match the effects of parental wealth on children's housing outcomes. Specifically, we target the estimated $\beta_1$'s from equation (1), with $h_{i,t} = entry_{i,t}$ for households aged 25-30 ($\beta_{1,entry}$) and $h_{i,t} = homeownership_i$ at age 30 ($\beta_{1,home30}$) respectively. These coefficients correspond to the parental wealth effect, i.e. the blue area, depicted in Figures A.2 and 3.[9] Note that we

[9] We target entry rates of households aged 25-30 (Figure A.2) instead of the full sample (Figure 2) to better align the age profile of potential entrants in the model with that observed in the data, where younger households are more prevalent than older ones. To compute the model-generated coefficients, we simulate the

| Parameters | | Model Fit | | | |
|---|---|---|---|---|---|
| Parameter | Value | Moment | Target | Data | Model |
| **Panel A: Second Step** | | | | | |
| $\chi$ (ownership utility) | 0.038 | Homeownership rate | Y | 0.488 | 0.488 |
| **Panel B: Third Step** | | | | | |
| Annual transfer ($\tau_{T^s}^{PW}$) | 3.5 | $\beta_{1,home30}$ | Y | 0.078 | 0.078 |
| Initial transfer ($\tau^{PW}$) | 25.3 | $\beta_{1,entry}$ | Y | 0.016 | 0.016 |

Table 6: Internal Calibration of Model Parameters

Notes: For the external calibration, the first step, see Table D.1. $\beta_{1home30}$ is the estimated coefficient from equation (1), with $h$ =homeownership at age 30. $beta_{1,entry}$ is the estimated coefficient form equation (1) with $h$ =entry rate for households aged 25-30.

restrict entry rates to households aged 25–30 to better align the age profile of potential entrants in the model with that observed in the data.

The identification is intuitive. The initial transfer leads to a persistent increase in homeownership throughout the life cycle, thus having a large effect on $\beta_{1,home30}$ but a relatively small effect on the entry rate $\beta_{1,entry}$. In particular, small initial transfers have little effect on the entry rate at age 25-30. Conversely, larger annual transfers primarily boost the entry rate by helping young households overcome downpayment constraints during the prime homebuying years, but have a smaller effect on the homeownership rate at age 30. Although both moments are increasing in either transfer, this differential sensitivity provides a clear identification of the two parameters. Figure D.3 plots how moments vary by parameter values. To match the data, the annual transfers between ages 25 and 34 equal 3.5 (35,000 NOK or approximately \$3,500) and the initial transfer equals 25.3 (about 225,300 NOK or approximately \$25,000). The discounted value of all transfers is about \$45,000.

The calibrated transfers are broadly consistent with empirical estimates in the literature. For example, Brandsaas (2021) use the PSID to estimate transfer sizes among renters who transition to homeownership, finding that transfers are large. Conditional on receipt, the average inter-vivos transfer is about \$4,000 (2016 dollars) and inheritances about \$75,000. Benetton et al. (2022) find that parents who extract home equity extract on average \$73,000, though the share ultimately transferred to children is unobserved. Comparing these numbers with our own empirical estimates from the previous section, we find that the average transfer (via a discounted sales price) is almost \$90,000 during intra-family sales. On net, our calibrated transfers are large, but well within the range of empirical estimates. Moreover,

model twice—once with and once without parental transfers—and run the same regressions on the simulated data as we did on the actual data (details in Appendix D.4). Panel B of Table 6 reports the calibrated values and resulting model fit.

we target the *total* impact of parental support, while direct transfers in practice are only one of many support forms.

### 5.3 The Housing Accelerator of Intergenerational Wealth Persistence

In this section, we use simulated model data to quantify intergenerational wealth persistence and isolate the role of housing in amplifying it. Let $ParentWealth_i$ be an indicator equal to one if parental wealth is above the median, and let $Wealth_i^{43}$ be an indicator equal to one if household wealth at age 43 is above the median. We focus on age 43 as a proxy for midlife, when homeownership has largely converged to its long-term level.[10]

We measure intergenerational wealth persistence by estimating

$$Wealth_i^{43} = \beta + \beta_1 \times ParentWealth_i + \epsilon_i. \tag{21}$$

The coefficient $\hat{\beta}_1$ captures the difference in the probability of being above median wealth at midlife between households with and without wealthy parents. Since the two groups are identical along all other dimensions in the model, this difference is entirely driven by parental transfers.

In the baseline economy, $\hat{\beta}_1$ is approximately 4.5 percentage points (Figure 8, leftmost bar). This implies that having wealthy parents increases the probability of being above median wealth at midlife by 4.5 percentage points, all else equal. While this binary measure is not directly comparable to rank-based measures used in the empirical literature, it provides a transparent and economically meaningful measure of intergenerational persistence within the model.

To assess the role of housing, we compare the baseline economy to a counterfactual in which homeownership is not available. In this rent-only economy, households face the same income process and rental prices but are restricted to renting throughout the life cycle. Parental transfers are unchanged, allowing us to isolate the role of housing as an amplifier of wealth transmission rather than its source.

The results are shown in Figure 8. In the absence of homeownership, $\hat{\beta}_1$ falls to approximately 1 percentage point. Thus, access to housing increases intergenerational wealth persistence by more than a factor of four. This large difference implies that housing strongly amplifies the importance of parental wealth for offspring wealth.

[10] Varying the age at which wealth is measured by a few years in either direction has negligible effects on the results.

The mechanism operates through both leverage and capital gains. Housing allows households to convert parental transfers into a leveraged asset, increasing exposure to house price growth. Early access to homeownership – facilitated by parental support – extends the period over which these returns accrue. In contrast, renters accumulate wealth solely through saving, limiting both the level and dispersion of wealth outcomes. We therefore refer to this amplification mechanism as the *housing accelerator of intergenerational wealth persistence*.

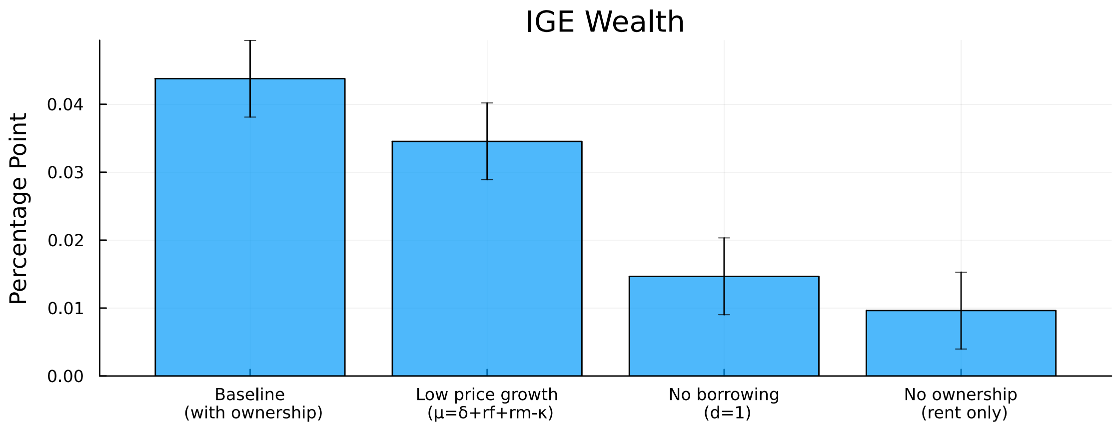



Figure 8: The housing accelerator of intergenerational wealth persistence

Notes: This figure shows the intergenerational persistence of wealth, measured as the difference in probability of being above median wealth at age 43 between children with wealthy vs. non-wealthy parents (in percentage points). Bars show: (1) Baseline model with housing and parental transfers; (2) Lower price growth equating user costs; (3) No borrowing allowed; (4) Counterfactual with rental housing only. All models include identical parental transfers to isolate housing's amplification effect.

We next disentangle the roles of capital gains and leverage in this amplification mechanism using two additional counterfactual exercises, the results of which are also reported in Figure 8. First, we lower capital gains by reducing house price growth, $\mu_h$, so that the user cost of owning equals that of renting.[11] This reduction in price growth lowers the return to housing investment and leads to a moderate decline in intergenerational persistence.

Second, we consider an economy with homeownership but no access to borrowing. Eliminating borrowing reduces intergenerational wealth persistence by nearly as much as removing homeownership altogether. This reflects both the loss of leverage—which dampens returns to housing equity—and the fact that borrowing constraints limit market entry. Taken together, these findings highlight that the interaction of capital gains and leverage is central to the role of housing in amplifying intergenerational wealth persistence.

[11] For renters, the one-period user cost is $\kappa p$. For owner-occupiers, it is approximately $p(r^f + r^m + \delta - \mu_h)$, abstracting from adjustment costs and mortgage heterogeneity.

## 5.4 The impact of house price growth and lending regulation

The previous section demonstrated that housing amplifies intergenerational wealth persistence through capital gains and leverage. This raises two key questions. First, how important is the realized house price trajectory in our sample period for housing access and intergenerational wealth persistence? Second, how would tighter mortgage credit regulation affect these outcomes?

To address these questions, we conduct a series of counterfactual experiments that vary house price growth and mortgage lending regulation. In each case, all other model components—including parental transfers—are held fixed, allowing us to isolate the effects of these factors.

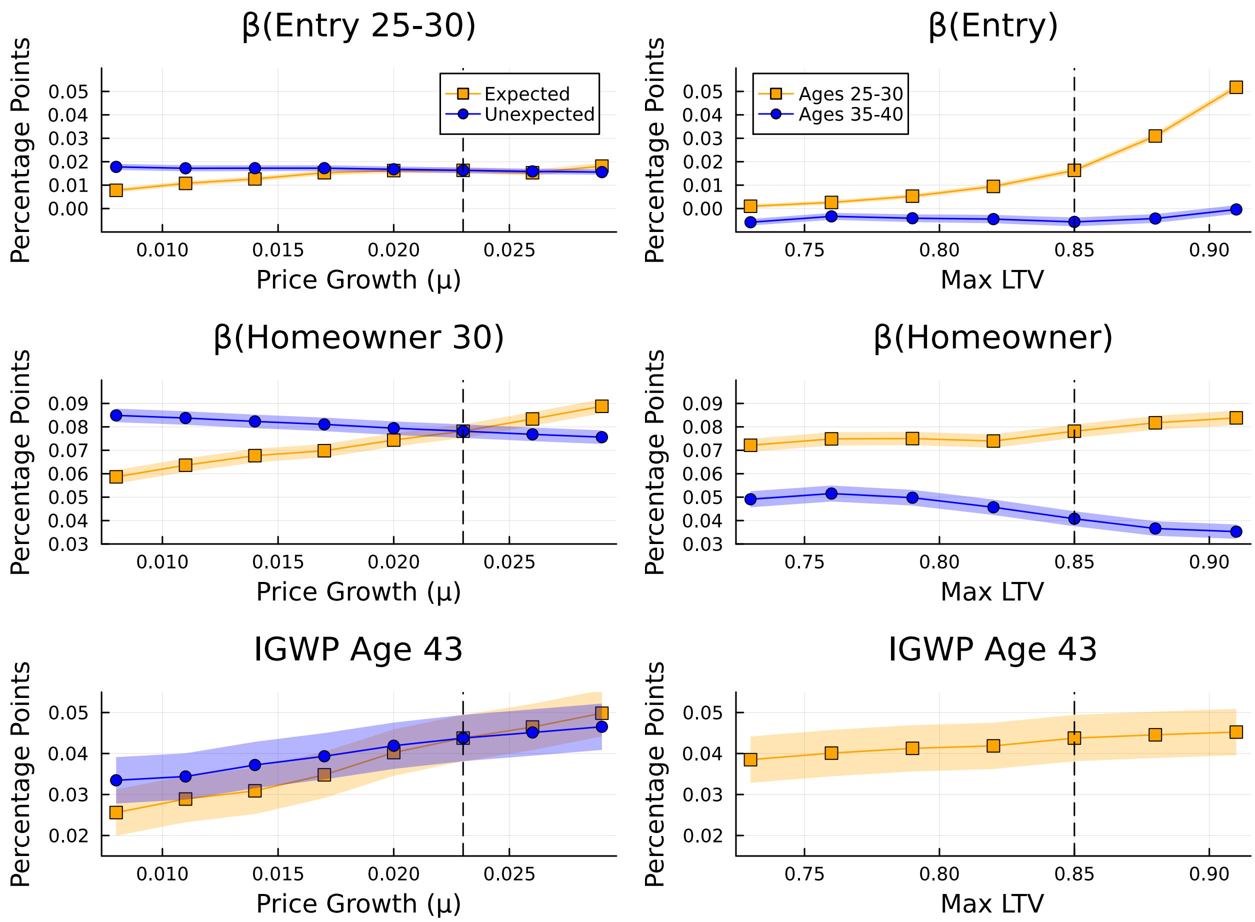
### 5.4.1 The effect of house price growth

Understanding how house price growth affects intergenerational wealth persistence is important for two reasons. First, house price growth in Norway has been relatively high in recent decades, and considering lower growth provides a useful check on the external validity of our results. Second, house price growth is influenced by policy – for example through land-use regulation and tax incentives – making its impact on wealth persistence policy-relevant.

We consider counterfactual scenarios in which average house price growth $\mu_h$ varies over a grid from approximately 0.8% to 2.8%. This range includes our calibrated baseline as well as lower values commonly used in the literature (e.g., Cocco (2005)). We consider two scenarios. In the first scenario, households expect baseline price growth but a different trajectory is realized. This exercise isolates the effect of realized capital gains while holding behavior fixed. In the second scenario, the alternative price growth is both expected and realized, and the model is re-solved to allow for behavioral adjustment. By comparing the two scenarios, we can gauge how important it is that parental transfers allow households to adapt to the economic outlook.

Figure 9a reports the effects of parental wealth on entry rates ($\beta_{entry}$), homeownership ($\beta_{homeowner}$), and intergenerational wealth persistence (IGE) across these scenarios.

We begin with the effects on entry and homeownership, captured by the $\beta$-coefficients. For given expectations, the relationship between price growth and these coefficients is non-monotonic. When housing is very expensive, few households can enter the market, and parental wealth plays a limited role. A reduction in effective housing costs can then increase the importance of parental transfers by enabling constrained households to enter if they get transfers from their parents. Conversely, when housing is already broadly accessible, further reductions in housing costs primarily benefit households without parental support, reducing




(a) Price Growth Experiments

(b) LTV Experiments

Figure 9: Experiments

Notes: These figures show the effects of parental wealth on children's housing outcomes and wealth across different house price growth scenarios (left panels) and LTV requirements (right panel). Dashed lines indicate the calibrated baseline value.

the importance of parental wealth.

Consistent with this intuition, the upper panels of Figure 9a show that unexpectedly lower price growth leads to a modest increase in $\beta_{entry}$ and $\beta_{home30}$. Since expectations remain unchanged, households continue to base decisions on optimistic beliefs about future returns, and borrowing constraints remain binding at the time of entry. Lower effective housing costs then relax the entry margin primarily for households with parental support, increasing the gap in entry and homeownership outcomes.

In contrast, when lower price growth is anticipated, the $\beta$-coefficients decline. Lower expected returns reduce the attractiveness of homeownership, leading fewer households to attempt to enter the market. As a result, borrowing constraints bind less frequently, and parental transfers become less important for entry and ownership decisions.

Turning to wealth persistence in the bottom panel, the intergenerational elasticity declines as price growth falls, regardless of whether the change is expected or unexpected. This gradient reflects the central role of capital gains in the housing channel: lower price growth reduces the return to housing investment and weakens the link between early access to homeownership and midlife wealth. When lower growth is anticipated, both reduced selection into homeownership (lower $\beta$) and lower returns contribute to the decline in wealth persistence. When growth is unexpectedly low, the increase in $\beta$ is small and dominated by the reduction in capital gains, leading to an overall decline in intergenerational wealth persistence.

### 5.4.2 The effect of mortgage regulation

We next quantify the impact of mortgage regulation, focusing on loan-to-value (LTV) constraints, on housing outcomes and wealth inequality. The effects of LTV regulation on the importance of parental support turn out to be highly age-dependent.

The blue lines in Figure 9b trace out regression coefficients $\beta_{1,entry}$ and $\beta_{1,home}$ for middle-aged households (ages 35-40) across different values of the LTV constraint, where lower LTV caps imply stricter regulation. As expected, looser LTV constraints reduce the importance of parental wealth for middle-aged households, consistent with the conventional intuition in Blickle and Brown (2019). When down payment requirements are lower, households without parental transfers can more easily accumulate sufficient savings from their own income to meet entry thresholds.

The yellow lines show the same coefficients for young households (ages 25-30). Here, looser LTV caps *increase* the importance of parental wealth for housing outcomes. While looser regulation raises homeownership and entry rates for all young households, as one would expect, the effect is stronger for young households who have wealthy parents. As a result, the effect of parental wealth on housing outcomes is increasing in the LTV cap.

This perhaps surprising result reflects the mechanism in Balke et al. (2024): When down payment requirements are high relative to young households' savings capacity, individuals without parental support are so far from entry that they optimally give up saving for homeownership and consume instead. Relaxing LTV constraints has limited effect on these non-recipients, who based on their own income trajectory alone remain too far from the entry threshold. In contrast, parental transfers bring recipients within reach, making homeownership an achievable goal worth saving for. This creates a complementarity between transfers and credit access at young ages that diminishes as households age and accumulate their own wealth.

The bottom panel of Figure 9b shows that stricter LTV constraints reduce intergenerational wealth persistence (IGWP), although the magnitude is limited. This operates through two channels: tighter constraints compress the ownership gap at young ages (reducing the early-entry advantage of transfers), and they limit leveraged returns from early entry by capping loan-to-value ratios. Critically, the timing of entry matters more than eventual homeownership rates. Early entry generates leveraged returns that compound over many years, resulting in wealth advantages that persist even as homeownership rates converge later in life.

# 6 Conclusion

This paper studies how parental wealth shapes children's access to homeownership and how these early housing outcomes translate into wealth accumulation later in life. Using Norwegian administrative data, we document large differences in housing market entry and homeownership by parental wealth. Households with wealthy parents are substantially more likely to enter the housing market and to own a home by age 30. Observable household characteristics, especially income, education, and household formation, explain an important share of these gaps. Yet a large residual component remains, pointing to an independent role for parental wealth.

To assess whether this relationship is causal, we exploit variation in parental financial wealth induced by international stock market returns. The instrumental variable estimates show that increases in parental wealth raise children's probability of entering the housing market, with effects concentrated among households with limited own wealth. This pattern is consistent with parental resources operating by relaxing borrowing constraints at the time of entry.

We also document several mechanisms through which parental wealth facilitates housing access. Parental equity extraction and financial transfers provide liquidity that helps children meet down payment requirements. Intra-family housing transactions provide an additional channel: wealthier parents are more likely to co-purchase homes with their children or sell properties directly to them, often at substantial discounts. Taken together, the mechanisms we observe account for more than half of the parental wealth gap in housing market entry.

Finally, we use a calibrated life-cycle model to quantify the implications for wealth accumulation. The model shows that housing strongly amplifies the effect of parental support on later-life wealth. By enabling earlier access to homeownership, parental transfers provide exposure to leveraged house price growth and facilitate the accumulation of housing equity over time. In a counterfactual economy without homeownership, the effect of parental wealth on midlife wealth is reduced by more than a factor of four. Additional counterfactuals show that both capital gains and leverage are central to this amplification mechanism.

The results highlight housing as an important channel of intergenerational wealth persistence. Parental wealth matters not only because it provides direct financial support, but because it affects access to a leveraged asset whose returns compound over time. This also implies that policies shaping house price growth, housing supply, taxation, and mortgage credit conditions can influence the strength of wealth transmission across generations. In our model calibrated to Norway, lower house price growth weakens the wealth consequences of early homeownership and thus weakens the advantage of having wealthy parents. More surprisingly, tighter LTV regulation also *reduces* intergenerational wealth persistence. It does so by limiting the effect of parental wealth on early-in-life housing entry and the (leveraged) returns that such early entry give later in life. More broadly, the findings show that housing market institutions play a central role in determining how parental resources translate into long-run inequality.

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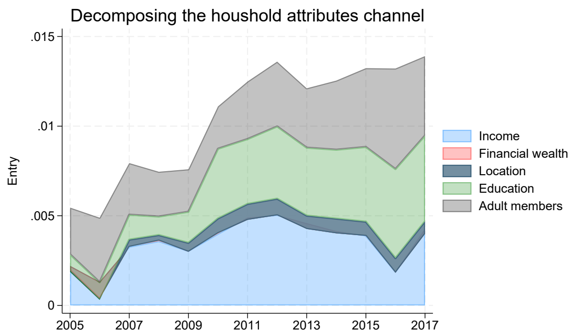
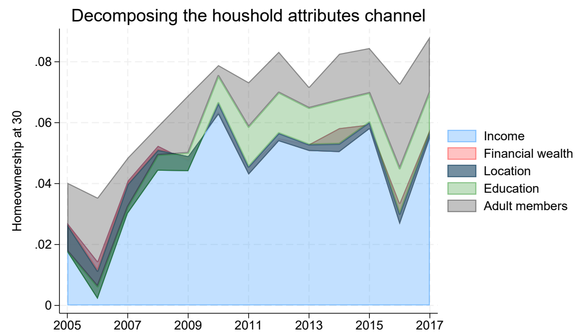
# A Additional figures




(a) Entry




(b) Homeownership at 30

Figure A.1: Decomposing the household attributes channel

Notes: The figure decomposes the household attribute component in equation (2). Household attributes are decomposed into household income, location, number of adults in the household, the household education level and household financial wealth.

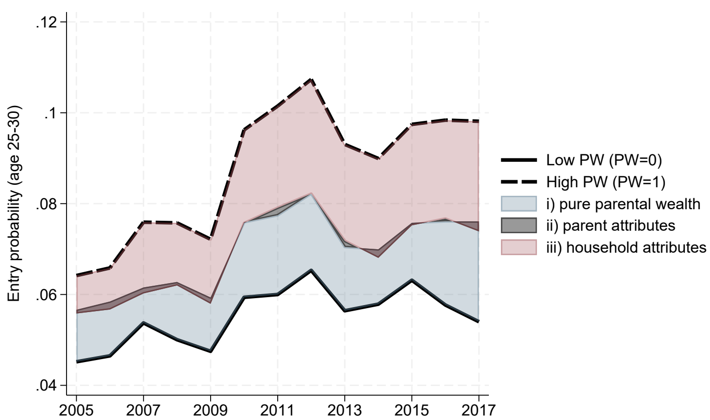
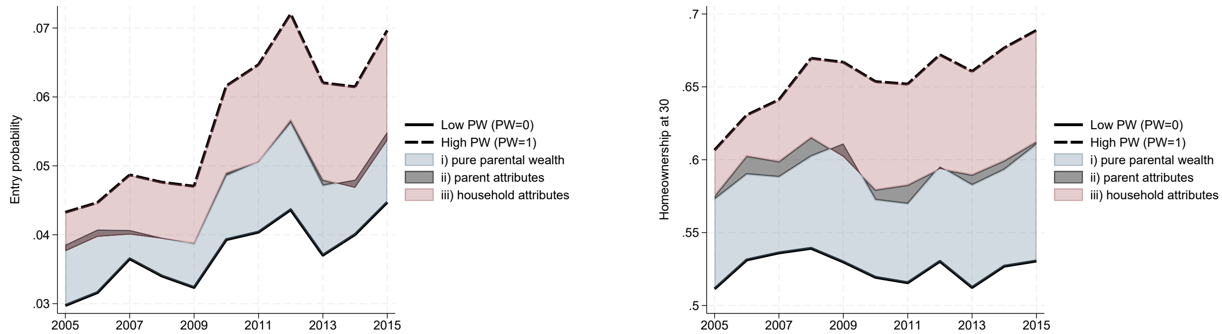



Figure A.2: Entry rate for households aged 25-30

Notes: This figure replicate Figure 2, except only households aged 25-30 are included in the sample.

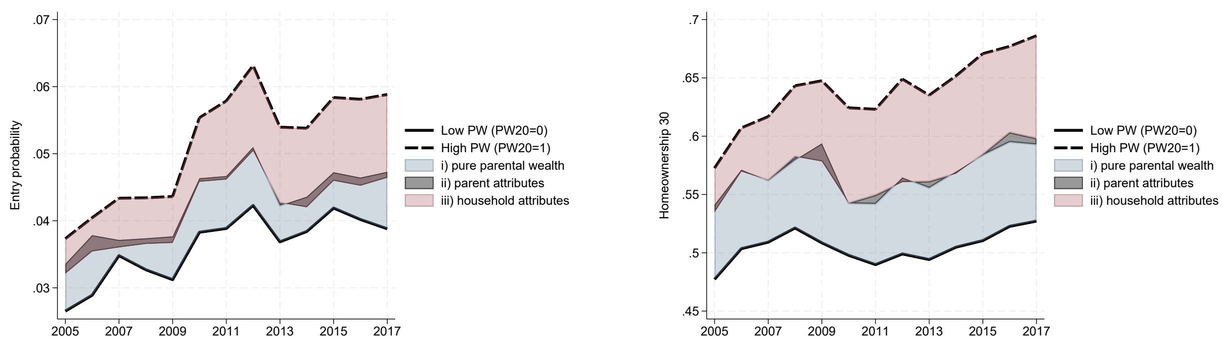



(a) Entry

(b) Homeownership at 30

Figure A.3: Adding risky asset share and 2-year future income growth as control variables.

Notes: These figures replicate Figures 2 and 3 while adding three extra control variables: two year future household income growth, household risky asset share and parental risky asset share.




(a) Entry

(b) Homeownership at 30

Figure A.4: Using parental wealth indicator when child is 20.

Notes: These figures replicate Figures 2 and 3 while using parental wealth when the child household is twenty ($p_i^{w20}$) as the parental wealth measure.

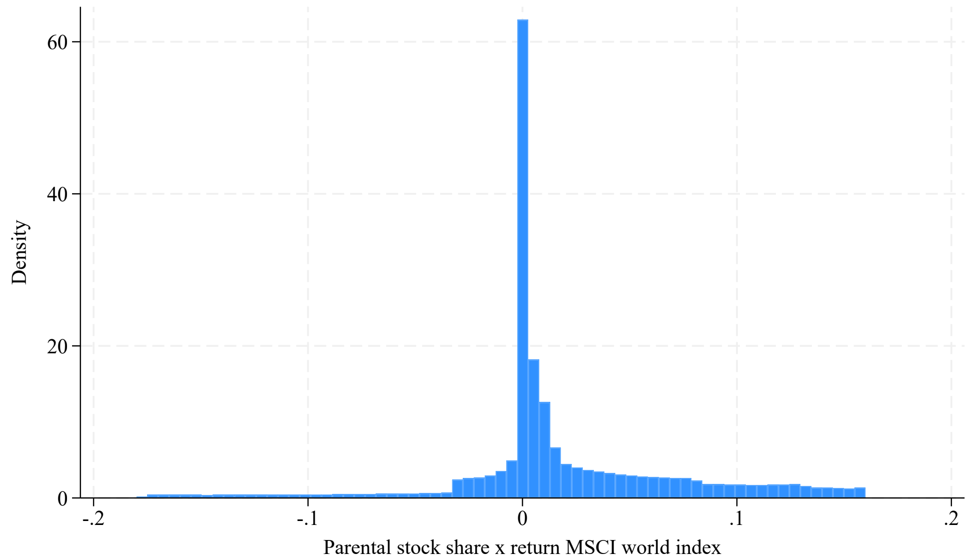



Figure A.5: Distribution of $Z_{i,t} = \text{stock-share}_{i,t-2} \times r_{t-1}$ from equation (3).

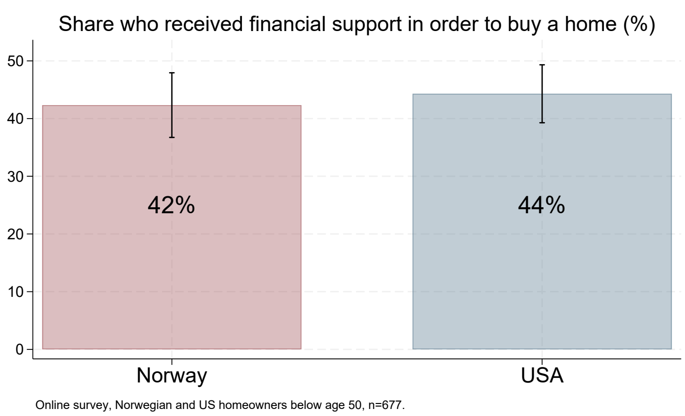



Figure A.6: Share of homeowners who report receiving financial support from parents or grandparents when buying a home (%). Online survey.

Notes: The figure shows results from an online survey conducted on the survey platform Survey Monkey. The sample consists of 300 respondents in Norway and 377 respondents in the US. All respondents are homeowners below age 50. The figure shows the share (%) of respondents receiving financial support from parents or grandparents when buying a home.

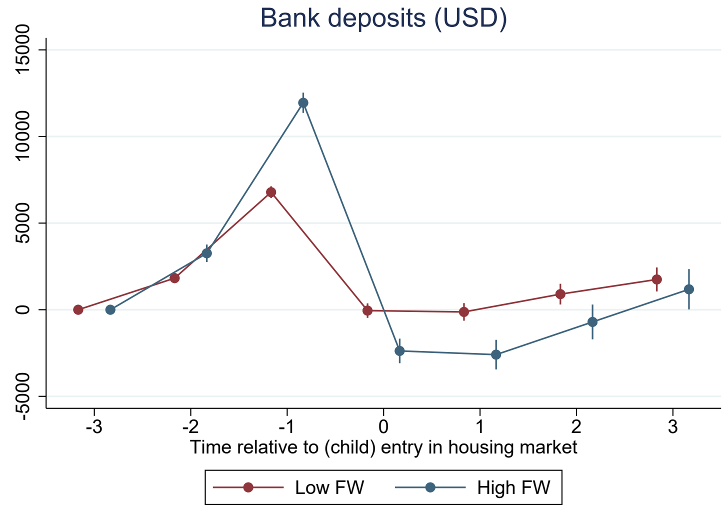



Figure A.7: Bank deposits (USD). Event study around housing market entry (t=0)

Notes: This figure shows the evolution of bank deposits around time of entry into the housing market. $entry_{i,t} = 1$ if household $i$ purchases a house in year $t$ and did not own housing in year $t-1$, while $entry_{i,t} = 0$ if household $i$ did not purchase a house in year $t$ and did not own housing in year $t-1$. "Low FW" ("High FW") means average parent financial wealth when the household is aged 19-21 is below (above) the year-specific median.

# B Additional tables

| | (1) House purchase price |
|---|---|
| Square meters | 1,557*** |
| | (15) |
| Number of rooms | 12,417*** |
| | (473) |
| Number of bathrooms | 39,587*** |
| | (1,549) |
| N | 98,809 |
| Municipality FE | Yes |
| Year FE | Yes |
| $R^2$ | 0.28 |

Table B.1: Predicting house prices (USD) based on equation (6).

Notes: Estimates from regressing the house purchase price on household attributes. Sample: only houses reportedly sold at market value and excluding sales from parent to child. *p<.10, **p<.05, ***p<.01.

# C Survey

## C.1 Survey on parents in Norway

The survey was conducted through the survey platform Survey Monkey in October 2023, and consisted of 240 respondents. All respondents were parent above the age of 40, residing in Norway.

1. For what purpose would you prefer supporting your child financially?
    - Invest in housing (n=186)
    - Invest in stocks (n=21)
    - Invest in other assets (n=9)
    - Cover general expenses (n=24)
2. Have you financially supported a child in the housing market, or is this something you would consider in the future?

- Yes (n=165)
- No (n=50)
- Don't know (n=25)

3. To what extent do you agree with the following statement: "It is a goal in and of itself that my child is a homeowner"?
   - Fully agree (n=140)
   - Partly agree (n=71)
   - Neither agree nor disagree (n=25)
   - Partly disagree (n=3)
   - Fully disagree (n=1)
4. To what extent do you agree with the following statement: "The most important reason to financially support my child in the housing market is the high return on housing"?
   - Fully agree (n=119)
   - Partly agree (n=73)
   - Neither agree nor disagree (n=36)
   - Partly disagree (n=8)
   - Fully disagree (n=4)
5. To what extent do you agree with the following statement: "Supporting my child financially is more important than what the support is used for"?
   - Fully agree (n=46)
   - Partly agree (n=54)
   - Neither agree nor disagree (n=35)
   - Partly disagree (n=73)
   - Fully disagree (n=32)
6. To what extent do you agree with the following statement: "The most important reason to financially support my child in the housing market is tax advantages"?
   - Fully agree (n=46)
   - Partly agree (n=63)

- Neither agree nor disagree (n=74)
- Partly disagree (n=25)
- Fully disagree (n=32)

## C.2 Survey on homeowners in Norway and the US

The survey was conducted through the survey platform Survey Monkey in November 2023, and consisted of 300 respondents in Norway and 377 respondents in the US. All respondents were homeowners below the age of 50.

1. Have you ever received financial support (such as help with a down payment requirement) in order to buy a home?
    - Yes, from parents or grandparents ($n_{USA} = 167$, $n_{NOR} = 127$)
    - Yes, from other sources ($n_{USA} = 58$, $n_{NOR} = 56$)
    - No, never ($n_{USA} = 152$, $n_{NOR} = 117$)
2. If you have received financial support from parents or grandparents in order to buy a home, what type of support was this?
    - Financial transfer, such as gift or inheritance ($n_{USA} = 118$, $n_{NOR} = 70$)
    - Having someone guarantee for the mortgage ($n_{USA} = 50$, $n_{NOR} = 63$)
    - Having someone co-own the house and/or co-sign the mortgage ($n_{USA} = 42$, $n_{NOR} = 25$)
    - Received house as gift/inheritance ($n_{USA} = 5$, $n_{NOR} = 15$)
    - Bought the house from your parents/grandparents (potentially at a discount) ($n_{USA} = 7$, $n_{NOR} = 10$)
    - Not applicable ($n_{USA} = 155$, $n_{NOR} = 113$)

# D Model Appendix

| | Parameter | Value | Source |
|---|---|---|---|
| *Externally Calibrated* | | | |
| $\sigma^2_\nu$ | Var. pers. inc. shock | 0.012 | Fagereng et al. (2017) |
| $\sigma^2_\nu$ | Var. trans. inc. shock | 0.023 | Fagereng et al. (2017) |
| $\rho$ | Shock persistence | 0.95 | Standard |
| $\phi_{ret}$ | Replacement Ratio | 0.842 | Fagereng et al. (2017) |
| $f(a)$ | Life-cycle income | Fig. D.4d | Fagereng et al. (2017) |
| $\underline{c}$ | Consumption Floor | NOK100,000 | Welfare system |
| $n/a$ | Initial Wealth | Fig. D.4c | Own calculation |
| $p_{ini}$ | Initial house price | 89.78 | Own calculation |
| $T^s$ | Starting age | 20 | |
| $T^r$ | Retirement age | 67 | Fagereng et al. (2017) |
| $T^d$ | Final age | 100 | |
| $m_b$ | Purchase cost | 0.025 | Tax code |
| $m_s$ | Sales cost | 0.025 | Agent commission + fees |
| $\kappa$ | Rent-to-price ratio | 0.044 | Own calculation |
| $r^f$ | Risk-free rate | 0.0143 | Fagereng et al. (2017) |
| $r^m$ | Mortgage premium | 0.0195 | Own calculation |
| $LTV$ | Maximum loan-to-value | 0.85 | Regulation |
| $LTI$ | Maximum loan-to-income | 5.0 | Regulation |
| $\delta$ | Depreciation | 0.027 | Cappelen et al. (2017) |
| $\mu_h$ | Price growth | 0.023 | Own calculation |
| $\sigma_h$ | Price std dev | 0.0566 | Own calculation |
| $\mathcal{H}(0)$ | Rental sizes | $[1.0, 1.75]$ | Own calculation |
| $\mathcal{H}(1)$ | Owner-occupied sizes | $[1.75, 2.27, 3.25]$ | Own calculation |
| $\eta$ | Weight on housing | 0.3 | Yao et al. (2015) |
| $\gamma$ | Risk Aversion | 2.0 | Standard |
| $\mathcal{B}$ | Discount factor | 0.944 | Brandsaas and Kvaerner (2026) |
| *Internally Calibrated* | | | |
| $\chi$ | Ownership utility shift | 0.0376 | Internal estimation (5.2.1) |
| $\tau_{T^s}$ | Initial transfer | 25.3 | Internal estimation (5.2.2) |
| $\tau$ | Annual transfer | 3.5 | Internal estimation (5.2.2) |

Table D.1: Calibrated Parameter Values

## D.1 The implications of endogenizing parental support

In the model, parental support is treated as exogenous. In this appendix, we briefly discuss how our conclusions would be affected if parents instead chose support endogenously.

Consider a stylized setting in which parents care about their adult children and can provide financial support either for housing-related purposes or for other purposes. Let $b^h$

denote support that facilitates homeownership, and let $b^o$ denote other forms of support. Housing support may be especially productive because entry into homeownership is subject to borrowing constraints and down payment requirements. Hence, a marginal unit of housing support may have a larger effect on housing access than other transfers have on comparable non-housing outcomes.

This distinction matters because housing has a particular role in wealth accumulation. By enabling entry into homeownership, parental support provides access to a leveraged asset and to potential capital gains over the life cycle. Thus, support tied to housing can have a larger effect on children's later-life wealth than equally sized support that is not connected to housing.

We consider three simple motives for parental support:

1. *Warm-glow motive*: parents derive utility from the act of giving.
2. *Altruistic motive*: parents derive utility from their child's later-life wealth.
3. *Homeownership motive*: parents derive utility from their child becoming a homeowner.

We ask how parental support would change if homeownership were no longer available. This is not meant as a policy-relevant counterfactual in itself, but as a useful benchmark that nests more realistic cases in which homeownership becomes less attractive or less financially rewarding.

Under a warm-glow motive, parents care about the amount they give rather than the specific outcome it generates. Removing homeownership therefore need not change total support, although it may change the form that support takes. Under an altruistic motive, support is likely to decline because transfers become less effective at raising the child's later-life wealth when they can no longer be used to access housing. Under a homeownership motive, support may fall sharply, since the outcome parents value directly is no longer attainable.

These cases imply that allowing parental support to respond endogenously would not overturn the main conclusion of the model. In the baseline exercises, parental support is held fixed when homeownership is removed, so the model isolates the amplification effect of housing conditional on a given level of support. If parental support were endogenous, the removal of homeownership would likely reduce not only the return to parental support but also the amount of support provided. The resulting decline in intergenerational wealth persistence could therefore be larger than in our fixed-support counterfactuals. In this sense, the model estimates should be interpreted as capturing the direct housing amplification channel and, if anything, as conservative with respect to the total effect of removing or weakening this channel.

## D.2 External Calibration

Whenever possible, we take parameters from previous work, and thus only briefly explain how those parameters are estimated. For more details, we refer to the original source.

**Transaction costs** In Norway, home buyers pay a transaction tax ('document fee') of 2.5% of the purchase price. We therefore set $m_b = 0.025$. The main direct cost of selling is the real estate agent commission, which averages 2% (Yao et al., 2015). We set the cost to be slightly higher, $m_s = 0.025$, since sellers additionally usually pay for advertisement and other costs associated with home sales.

**Income Process** For the stochastic component we use the parameter values from Fagereng et al. (2017) on Norwegian data. They estimate $\sigma_\nu^2 = 0.012$, $\sigma_\varepsilon^2 = 0.023$, and $\phi_{ret} = 0.842$. We set $\rho = 0.95$, a standard value in the literature. Since income and parental wealth is positively correlated, with adjust their income profile down, as follows: We first take their life-cycle income profile $f(a)$, which is the average across parental wealth, and adjust it down by the difference in income between households with non-wealthy parents and the average, see Figure D.4d. Since we cannot calculate the income gap for old households, we assume that the income gap ratio is constant after age 45. For simplicity, we assume that income risk does not depend on parental wealth.[12]

Finally, we set the consumption floor $\underline{c} = NOK100,000$ (≈ $12,000), roughly matching what is left after subtracting rental payments from after-tax minimum disability payments.

**Housing Parameters** We find the growth rate and volatility of real house prices from the nominal house price and wage indexes since year 2000. Figure D.4b plots the time trends of nominal and real- and income-deflated house prices in Norway, as well as the mean growth rates and standard deviations. We deflate the nominal price index by median household income, after tax, since income is stationary in the model. We then use mean price growth to set $\mu_h = 0.023$. Since individual house prices are about twice as volatile as aggregate price indices, we double the empirical volatility and set $\sigma_h = 0.0566$.

We calibrate house sizes to match the 5th, 25th, 50th, and 75th percentiles of square meters of residential units, which correspond to 44, 77, 100, and 143 square meters, respectively. We normalize the smallest unit to have a size of 1. We assume that the two smallest

[12] Fagereng et al. (2017) find that income risk is almost independent of education. Since education is strongly correlated with parental wealth, this suggests that any difference based on parental wealth is of limited size.

units can be rented, so that $\mathcal{H}(0) = [1.0, 1.75]$. We then assume that only the 3 largest units can be owned, such that $\mathcal{H}(1) = [1.75, 2.27, 3.25]$.

We estimate rent-to-price ratios $\kappa$ in Norway in two steps. First, we use statistics on yearly rent per square meter, by rooms in the unit and price per square meter, by type (single-family, small multifamily, and multifamily). We then divide the rent per square meter for units with 5 rooms by the single-family square meter price, the 4 room rental price by the small multi-family price, and the 3 and 2 rooms prices by the multifamily price. In the years we have data, 2012-2022, the ratios are relatively stable. We set $\kappa$ equal to 0.044, the average rent-to-price ratios of these four units' series over all years, see Figures D.4e and D.4f.[13]

Finally, we set depreciation $\delta$ to 0.027. Cappelen et al. (2017) report an estimate for gross depreciation between 1.9 and 2.7 percent. We set it to the upper limit, to also include property taxes. This value is comparable to the estimates for other countries, see e.g., (Kaplan et al., 2020; Greenwald and Guren, 2021; Barczyk et al., 2022) and somewhat higher to what is reported in Yao et al. (2015), who do not rationalize their calibrated value..

**Preference Parameters** We set the preference weight on housing $\eta$ to 0.3, roughly equal to the average for households aged 27-45 in Yao et al. (2015), who estimate the parameter internally in the model. The estimate is somewhat higher than conventional estimates in other countries, typically around 0.15-0.25. That said, the high homeownership rate and high house prices together suggest high preference weights on housing in the utility function. We set the risk aversion parameter $\gamma$ to 2.0 a standard values in life-cycle models. Finally, we set $\mathcal{B}$ to 0.94. While this value is somewhat lower than values commonly estimated, it is set to match Brandsaas and Kvaerner (2026) who estimate a similar model based on Norwegian data in 2018.[14]

**Initial Conditions** To find a household's initial financial wealth, we draw from the empirical distribution of households with non-wealthy parents, estimated non-parametrically (see Figure D.4c). We sort the net worth of households aged 20-23 with non-wealthy parents and divide them into 10 equally sized bins by gross financial wealth. Households are randomly allocated to bins and receive an initial endowment equal to the average of their bin.

[13]For similar models calibrated to the United States, a standard value is 0.05, based on Davis et al. (2008). Our somewhat lower estimate could be driven by difference in tax regulation – rental income in duplexes are tax exempt if the owner lives in one unit – and other institutional differences.

[14]We have experimented with estimating the parameter internally and typically find values ranging from 0.92 to 0.95, depending on the moment we target. However, our data does not include accurate market values of primary residences (only the taxable assessed value, which is lower). For context, Yao et al. (2015) estimate a value of 0.93.

We draw the households' initial productivity shock from the stationary distribution implied by equation (10). All households start as renters, but are allowed to choose to become homeowners in the first period.

Households draw the initial house price $p_s$ from a uniform distribution. We calibrate the mean of the initial price in the following way. In the early 1990s, the average market value of a 'starter home', was about 3.5 times the average household income. Using our calibrated income process, the average income for households aged 20-80 is NOK 449,000 ($\approx$ \$53,000) and so we set the average initial price equal to 89.78 for one unit of housing, so that the price of the smallest owner-occupied unit is 3.5 times the average income. The edges of the distribution are set at $\pm 20\%$, so that $p_s \sim \mathcal{U}_{[0.8 \times 89.78, 1,2 \times 89.78]}$.

**Remaining External Parameters** We set the risk-free rate $r^f$ to 0.0143 as in Fagereng et al. (2017), based on historical data. We set the mortgage premium $r^m$ to 0.0195, by taking the effective average spread between the loan and deposit rate since 2000 of 2.6% (see Figure D.4a), and then subtracting the tax deduction of mortgage interest payments of approximately 25% in our sample period. The borrowing constraints are set to match regulation throughout most of our sample period, and so we set the maximum $LTV$ to 0.85 and the maximum $LTI$ to 5.0.

## D.3 Modeling Parental Support

To model the initial and the annual transfers without introducing additional state variables we modify the income process. We add an age-dependent transfer to the level of income

$$y_{i,a} = \exp(f(a) + \nu_{i,a} + \varepsilon_{i,a}) + \tau(a). \tag{22}$$

For the initial transfer we define

$$\tau(a) = \begin{cases} \tau_{T^s} & \text{if } a = T^s, \\ 0 & \text{else.} \end{cases} \tag{23}$$

And similarly for the annual transfer

$$\tau(a) = \begin{cases} \tau & \text{if } 25 \leq a < 35, \\ 0 & \text{else.} \end{cases} \tag{24}$$

In regressions, we control for income ex transfers, to mimic the empirical regressions.

## D.4 Mimicking Empirical Regressions in the Model

To calibrate the parental support parameters in Step 3, we mimic the empirical regressions using simulated panel data from the model. We first simulate households without wealthy parents (the parental wealth dummy $p^w = 0$). We then simulate the same households, giving them the same shocks, but this time with wealthy parents ($p^w = 1$) who provide transfers.

We run two regressions to capture the key treatment effects of parental wealth on children's housing outcomes:

**Entry Rate Regression (Ages 25-30):** We regress an entry indicator $e_i$ (transition from renting to owning) on a parental wealth dummy and household characteristics for households aged 25-30:

$$e_{it} = \beta_0 + \beta_1^{ea} p_i^w + \beta_2 x_{it} + \eta_{it}$$

where $x_{it}$ includes the initial house price level when the household enters the economy, the price level , income ($w_{it}$), lagged financial wealth ($b_{i,t-1}$), age, and dummies for both permanent and transitory income shocks ($\nu_i$ and $\epsilon_{it}$). The first house price level controls are included to capture regional and year fixed effects in the empirical regressions. The coefficient $\beta_1^{ea}$ captures the effect of parental wealth on the probability of entering homeownership during the critical ages 25-30.

**Homeownership Regression (Age 30):** We regress a homeownership indicator $h_i$ on parental wealth and household characteristics for households at age 30:

$$h_i = \alpha_0 + \beta_1^{ho} p_i^w + \alpha_2 x_i + \epsilon_i$$

where $x_i$ includes the same controls as above. The coefficient $\beta_1^{ho}$ captures the effect of parental wealth on the probability of being a homeowner at age 30.

## D.5 Numerical Details

As is well known, the discrete housing choices and occasionally binding borrowing constraints generate jumps in the policy functions, and so the Euler equations have multiple solutions. We solve the model in the standard way robust to these issues. The problem is solved backwards, by first solving the value function of a retiree at age $T$, when death is certain.

For a given state, we then find the conditional value functions for each housing choice by finding optimal consumption—the choice that maximizes the sum of contemporaneous utility and the continuation value given the housing choice—using Brent's root-finding algorithm. Subsequently, we find the optimal choice from the best conditional value function. This process is repeated for all states within each age, going backwards in age until age $a = T^s$.

The nodes and transition matrix of the persistent income shock are discretized using the Rouwenhorst method. The house price shock and transitory income shock are discretized using equal probability basis quadratures. That is, for a grid with $n$ points, nodes are positioned at the midpoints of intervals defined by the $n-1$ quantiles. The probability of each node is $1/n$. For example, with three nodes, the probability of each node 1/3, positioned at the 16.66th, 50th, and 83.33rd percentiles, the midpoints of the intervals defined by 33rd and 66th percentiles.

The persistent income shock $\nu$ follows a 4-state Markov chain process, the transitory income shock has 3 nodes, while the house price shock has 7 nodes. The net worth $x$ and price $p$ grids have higher density at lower values, with 101 and 12 nodes, respectively. We use bilinear interpolation over wealth and house prices.

The model is solved in Julia `1.12.3`, and in addition to standard packages we use `Interpolations.jl v0.16.2` and `Optim v1.13.3` for interpolation and optimization routines.

## D.6 Parameter Identification Plots and Numerical Details

### D.6.1 Second Step: Homeownership Preference

To find the parameter value of the homeownership preference shifter $\chi$ that matches homeownership, we first solve the model on a grid of 20 values of the parameter and find the homeownership rate at age 30 for each solution. We then linearly interpolate the function and find the parameter value that generates a homeownership rate that exactly matches the empirical pattern.

### D.6.2 Third Step: Parental Transfer Parameters

In the third step, we first solve the model over a parameter space of the two transfer variables defined by two grids, with 15 nodes in each. We then solve the model for each of the $15 \times 15$ parameter combinations. We then shrink the grids around the best parameter candidate and repeat the process, as illustrated in Figure D.2. The calibrated parameter vector is the one with that minimizes the objective function.

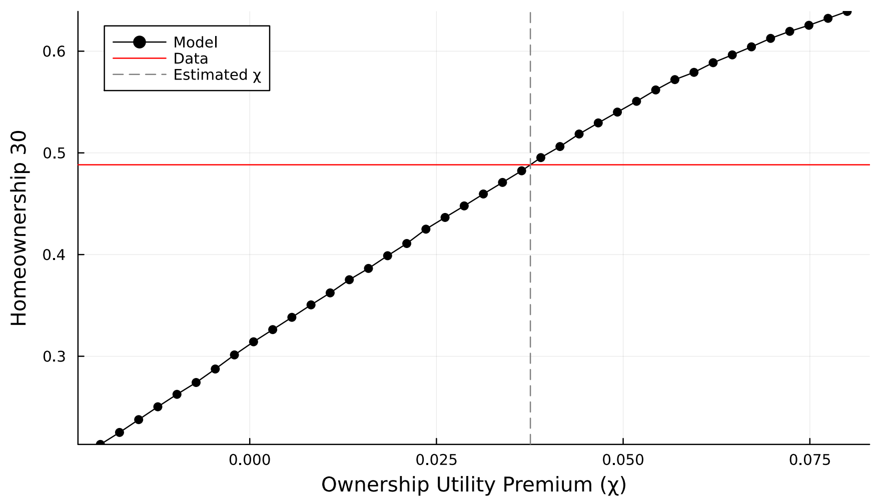



Figure D.1: Step 2: Identification.

Notes: The black line denotes the simulated homeownership rates across different values of the homeownership preference shifter $\chi$. The red line denotes the empirical value. The dashed gray line marks the estimate value of $\chi$.

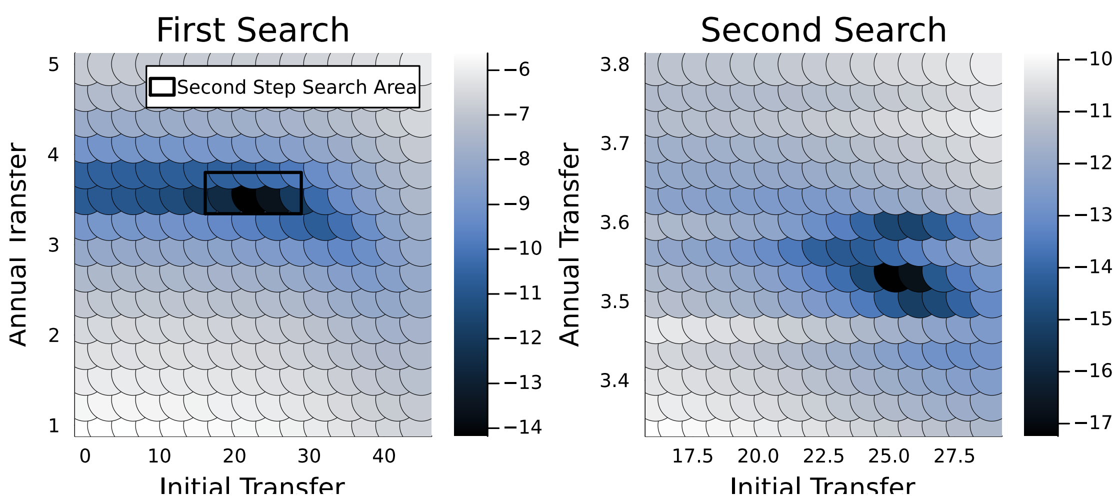



Figure D.2: Third Step Calibration

Notes: The colors represent the objective function (squared errors) on a log scale. Darker colors indicate better fit.

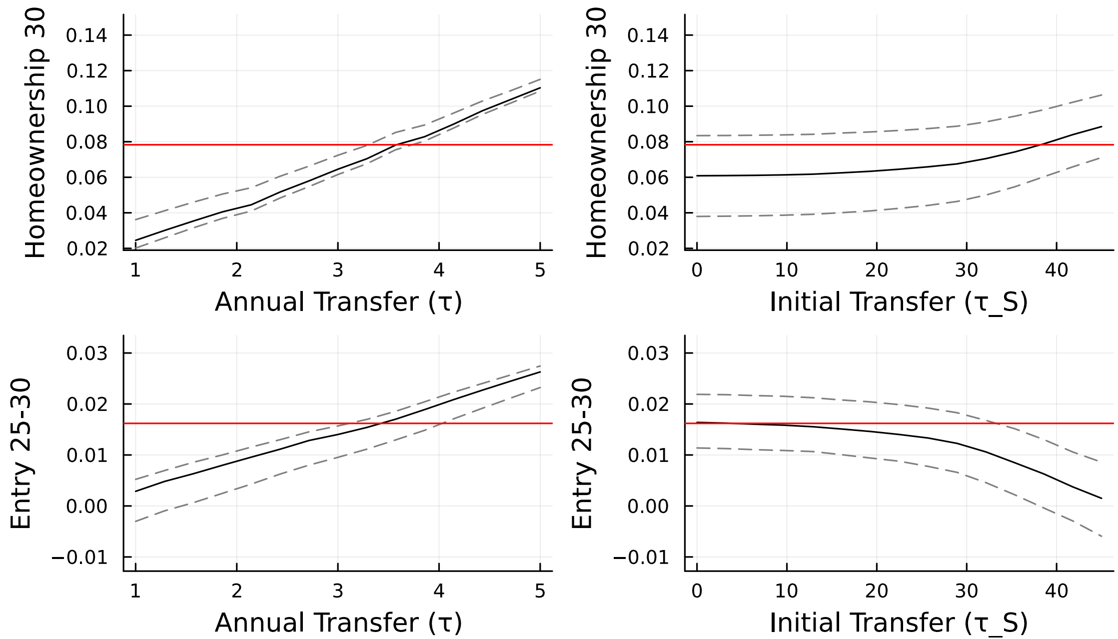


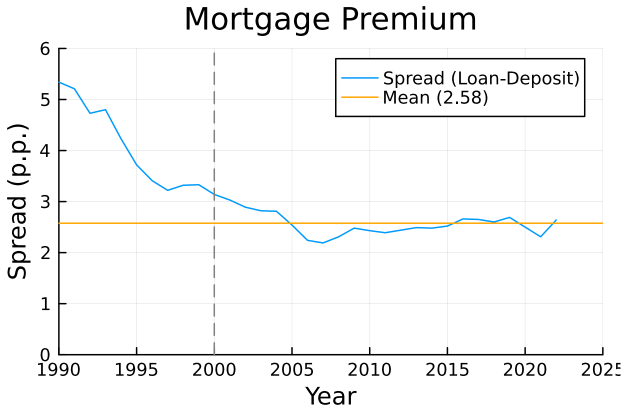

Figure D.3: Step 3: Internal Calibration Identification.

Notes: The red line denotes the empirical value of the moment. The black line and the dashed grey lines denote the mean and the interquartile range of moment values across parameter values, holding the distribution of other parameters constant.

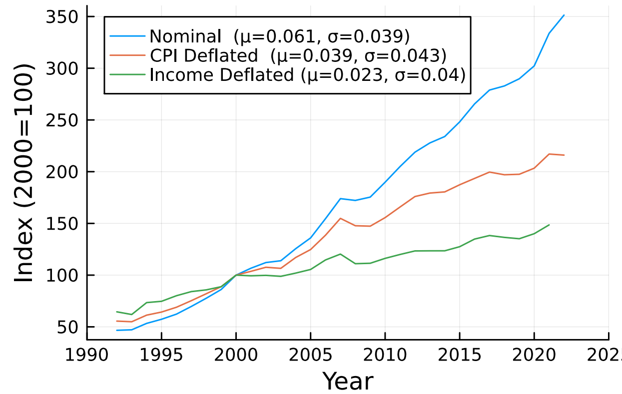
To visualize parameter identification in the internal calibration, we construct plots showing how each moment varies with each parameter while integrating over the other parameter. For each value of parameter $\theta_i$ (e.g., $\beta_i$ or $\tau_i$), we compute the 25th, 50th (median), and 75th percentiles of each moment across all values of the other parameter.

The resulting plots display three lines showing the distribution of moment values at each parameter value, with a horizontal red line indicating the empirical target. We see that initial transfers $\tau_{TS}$ have a larger effect on the homeownership stock at age 30, while annual transfers $\tau$ primarily boost the entry rate during ages 25-30.

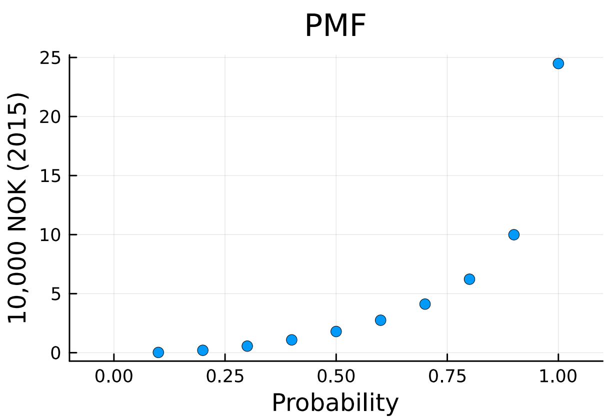
## D.7 Supplementary Model Figures



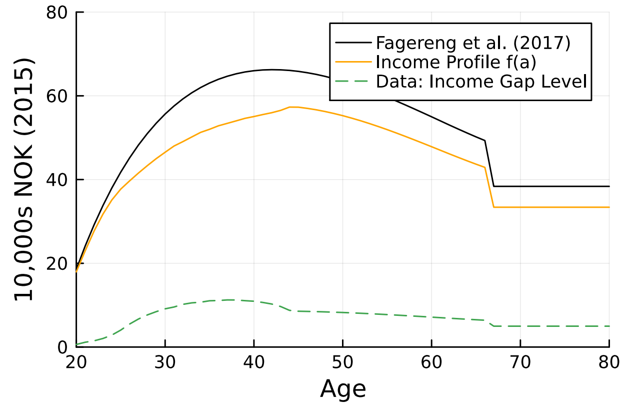

(a) Mortgage Premium $r_m$



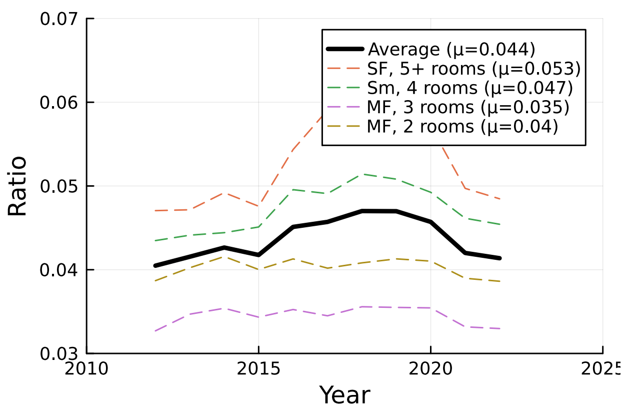

(b) House Prices



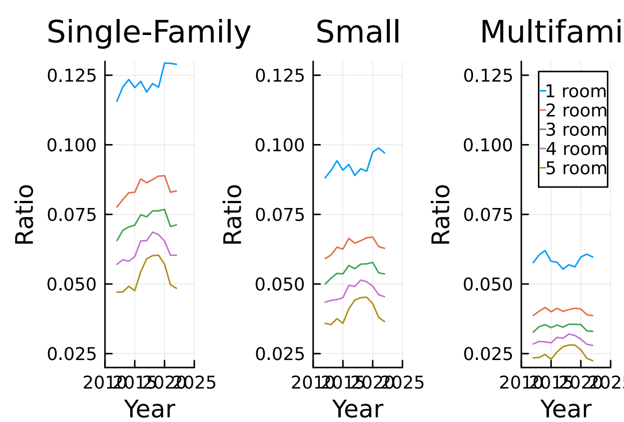

(c) Initial Wealth




(d) Calibrated Income Process




(e) Rent-to-Price Ratios, Select Sizes and Units




(f) Rent-to-Price Ratios, All Sizes and Units

Figure D.4: Calibration Figures