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Dynastic Home Equity*

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Abstract

Using a nationally representative panel of consumer credit records for the US from 1999 to 2021, we document a positive correlation between child and parent homeownership. We propose a new causal mechanism behind this relationship based on parents extracting home equity to help finance their child's home purchase and quantify this mechanism in several ways. First, controlling for cohort, zip code, age, and the creditworthiness of parents and children, we find that children whose parents extract equity are 60% more likely to become a homeowner than children whose homeowner-parents do not extract equity. Second, using an event study approach, we find that the increase in child homeownership occurs almost entirely in the year when parents extract equity. Third, using variation in equity extraction induced by households near leverage constraints, we find parental equity extraction increases the child's probability of becoming a homeowner by about five times. Our results highlight the importance of familial wealth for household wealth accumulation and housing wealth in particular. A back-of-the-envelope calculation suggests that dynastic home equity increases housing wealth inequality among young adults by 20%.

Keywords: Home equity, intergenerational wealth, inequality, mortgages, housing, household finance.

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1 Introduction

Wealth is highly correlated between parents and their children, but the relative importance of wealth itself versus unobserved factors, such as shared ability or networks, in explaining this intergenerational persistence is the subject of an active debate with important policy implications (Charles and Hurst (2003), Black, Devereux, Lundborg and Majlesi (2015), Fagereng, Mogstad and Ronning (Forthcoming)). In this paper, we focus on the intergenerational correlation in *housing* wealth, which represents the largest component of wealth for middle-income households in developed countries (Campbell (2006)) and plays a prominent role in the current debate about inequality (Piketty and Zucman (2014), Piketty, Yang and Zucman (2019), Kuhn, Schularick and Steins (2020)) and the housing affordability crisis (Chetty, Hendren and Katz (2016), Favilukis, Mabille and Van Nieuwerburgh (2019)).

Our main contribution is isolating a new causal channel for the persistence in housing wealth across generations: parents who own a house extract equity from their house to help their children purchase a home. We label this channel "*dynastic home equity*" and quantify its importance using a nationally-representative panel of consumer credit records in the US from 1999 to 2021. We use these credit records data to construct a unique panel linking children and parents, which allows us to measure their homeownership status and equity extraction. Using several empirical strategies, we quantify the importance of the dynastic home equity channel in intergenerational wealth persistence. This mechanism has important implications for the policy discussion as it emphasizes the role played by wealth itself in facilitating wealth accumulation and potential inequality.

We start the analysis by documenting an economically and statistically significant positive correlation in homeownership across generations. This correlation holds conditional on a rich set of borrower-level factors as well as business cycle and zip-code level economic conditions. We find that children with parents that are homeowners are about one percentage point (16%) more likely to be a homeowner by the age of 25 relative to children living in the same zip code at the same time whose parents are not homeowners. When examining the flow of children into homeownership we find that, on average, children whose parents are homeowners have a 0.13 percentage point higher probability of becoming homeowner at age 25 relative to children whose parents are not homeowners. Given the average flow into ownership rate of 2.1 percent, this implies that having a homeowner parent increases the transition probability into ownership for children at age 25 by about 6% of the average.

We then isolate the role of parents' home equity extraction in this intergenerational correlation in homeownership. We focus on the sample of children whose parents are homeowners and exploit variation in equity extraction by parents to measure the transfer of wealth to children through the housing market. We employ three alternative empirical approaches to measure the effect of parental equity extraction on the probability of children becoming a homeowner—fixed effects, event study, and an instrumental variables approach.

First, controlling for the effects of cohorts, zip code, age, and credit quality of parents and children, we find that children whose parents extract equity are about 0.6 percentage point more likely to become a homeowner than children whose homeowner parents do not extract equity. Given the average flow into ownership rate of about one percentage point, having a parent who extracts equity increases the probability a child becomes a homeowner by about 60%. Second, a model estimated with leads and lags of parent's equity extraction shows that almost the entire increase in child homeownership occurs in the year when parents extract equity and the effects in the years before or after parental equity extraction are statistically insignificant and close to zero. This implies that the equity extraction event itself is driving the transition in ownership status for the children. We also explore how the dynastic home equity channel varies: (i) across areas with different house prices; (ii) over time during the housing boom-bust-rebound; (iii) with the number of siblings; and (iv) with children's age. These results suggest that dynastic home equity is relatively more important in areas with more expensive housing, in the financial crisis and post-crisis periods, when there are fewer children, and when the children are younger.

The potential endogeneity of intergenerational transfers is one of the main limitations of the existing literature studying the persistence in wealth across generations (Englund, Jansson and Sinai (2014)). To address the endogeneity of equity extraction, we employ our third empirical approach—an instrumental variable estimator where we use the *parents'* mortgage leverage constraints, measured by the current loan-to-value (LTV) ratio, to identify the causal effect of equity extraction on the *children*'s homeownership. These leverage constraints reflect the household's original loan size, the amount paid, and the behavior of local house prices, and are key determinants of equity extraction (Mian and Sufi (2011), Bhutta and Keys (2016)). Estimating the reduced-form effects on the children's transition to homeownership, we find that the parental liquidity constraints have a significant negative effect on the likelihood of a child becoming a homeowner, consistent with equity extraction increasing transitions to homeownership. Turning to the IV itself, in the first stage, we regress parental equity extraction on liquidity constraints and find that the households close to the constraints are significantly less likely to extract equity. Using liquidity constraints as an instrument for parents' equity extraction, we find that children whose parents recently extracted equity are 5 percentage points more likely to become a homeowner than children whose parents are homeowners but who do not extract equity. Given the average flow into ownership of one percentage point, having a parent extracting equity the previous year increases the probability that a child becomes a new homeowner by five times. The results are robust to controlling for a broad set of time-varying local economic factors, including local house price growth for both children and parents.

Next, we explore the mechanisms through which parents' equity extraction affect children homeownership. First, we estimate the effect of the amount of the equity extracted versus just the extraction event. We find that an additional $10,000 of equity extraction at the median increases new homeownership transitions by about 10 basis points, or 10 percent of the mean. This suggests much of the effect of equity extraction we recover is driven by the extensive margin of extraction. Second, we look at children's leverage at origination. We find that children whose parents extract equity have lower LTVs at origination, consistent with parental equity relaxing leverage constraints for the children. Children whose parents extracted equity are about 4.4 percentage points (6%) less likely to have an LTV greater than 80%, above which borrowers are typically required to buy costly mortgage insurance. Thus, our results suggest that parental help not only increases the likelihood of children becoming new homeowners, but also lowers the cost of homeownership for children. Third, we study how parents take on auto debt at the time of their equity extraction depending on whether their children become homeowner. Parents whose children did not transition to homeownership exhibit large increases in the likelihood of new auto activity in the periods around equity extraction. By contrast, there is little evidence of similar behavior by parents whose children have transitioned into new homeownership, consistent with parents using the amount extracted primarily to help their children finance the home, rather than engage in other kinds of equity-financed activity.

In the last part of the paper, we present back-of-the-envelope calculations of the effect of parental equity extraction on their children's wealth accumulation to give a sense of the economic importance of the dynastic home equity channel. To perform the calculation, we combine the historical real returns on housing wealth from the literature (Flavin and Yamashita (2002), Eichholtz, Korevaar, Lindenthal and Tallec (2021), and Chambers, Spaenjers and Steiner (2019)) with our new estimates of the effect of parents homeownership and equity extraction on children homeownership. Using the estimated transition probabilities of children into homeownership, we compute the fraction of homeowners by age 30 and their housing wealth.[1] In our preferred specification based on the instrumental variable estimates, we find that the dynastic home equity channel contributes to an increase in children's housing wealth by age 30 of about 29% relative to the children of non-homeowners (renters) and by 14% relative to the children of homeowners who do not extract equity. Overall, dynastic home equity increases housing wealth inequality among young adults by 20%. As housing continues to become even more expensive, it may be the case that parents' ability to extract this additional equity will be even more important to helping children enter into

[1] We make two simplifying assumptions in our calculation: (i) all children at age 18 are renters and that once they become homeowners, they do not transition back to renting (i.e., homeownership is an absorbing state); and (ii) the probability of a renter child becoming a homeowner each year is a constant function of the parental homeownership status and equity extraction behavior.

homeownership.[2]

The rest of the paper is organized as follows. The remainder of the section discusses the relevant literature. Section 2 describes the data. Section 3 presents results on the relationship between parents' homeownership and children homeownership. Section 4 presents the main result on the effects of parents' equity extraction on child homeownership. Section 5 explores the mechanism. Section 6 shows results by various sub-samples. Section 7 shows a back-of-the-envelope calculations of the implications of dynastic home equity for housing wealth inequality. Section 8 concludes.

1.1 Related Literature

Our paper contributes to two main strands of the literature. First, our work speaks to the literature on the mechanisms behind intergenerational persistence of wealth (for a review, see Black and Devereux (2010)). There is a broad consensus that parent and child well-being and status are related, but an open debate on the different mechanisms behind this correlation. Several papers explore whether wealthy parents have wealthy children because parents invest in their children's education, thereby indirectly raising their children's income and wealth; or because parents give their children financial gifts, which raises children's wealth directly, or provide children with credit and insurance, which enables children to undertake potentially risky investments; or because parents pass on similar propensities to save or access to networks of income accumulation and employment (see Charles and Hurst (2003), Piketty (2011), Black et al. (2015), Adermon, Lindahl and Waldenström (2018), Bauluz and Meyer (2021), Hubmer, Krusell and Smith Jr (2021), Boar (2021), Fagereng et al. (Forthcoming), among others).

Within the vast literature on intergenerational persistence, several papers have focused on the housing market, given its importance of housing for wealth-building (Piketty and Zucman

[2]Our calculations are about the housing wealth and not about the total household wealth. However, given the importance of housing wealth for middle-income households it is likely that persistence in housing wealth is a large factor in the intergenerational transmission of total household wealth.

(2014), Sodini, Van Nieuwerburgh, Vestman and von Lilienfeld-Toal (2016), and Bernstein and Koudijs (2020)). Engelhardt and Mayer (1998) show that transfers to first-time home-buyers in the US lead to shorter time to save for down-payments, higher down-payments and more expensive houses. Charles and Hurst (2002) find a strong positive association between parental wealth (used as a proxy for available financial assistance) and homeownership in the US. Guiso and Jappelli (2002) show that bequests, gifts and other inter vivo transfers shorten the saving period before homeownership and increase the value of the house purchase in Italy. More recently, Blanden and Machin (2017) document a large persistence in homeownership rates in the UK; while Brandsaas (2021) estimates a rich life-cycle overlapping generations model with altruistic parents and children housing decision and finds that transfers account for 31% of the homeownership rate of young adults in the US.

Existing papers are mainly based on survey data (usually, the PSID for the US) and typically do not explicitly address the endogeneity of intergenerational transfers. A notable exception is Blickle and Brown (2019) who uses intra-family deaths as an instrument for the exogenous receipt of wealth transfers. While important, this approach rules out inter-vivos transfers, the objects of analysis in our paper. Englund et al. (2014) use administrative data and show that in Sweden the intergenerational correlation in net worth is largely due to housing wealth, but conclude that the causality of the relationship requires further investigation. In contrast to these papers, we use rich administrative data in the US to examine parental equity extraction as a specific channel of the total (unobserved) inter-vivo intra-family potential transfer, and link it directly to child homeownership. We also introduce a novel identification strategy in this literature by exploiting variation in parental housing leverage to instrument for parental equity extraction and its effect on child homeownership.

Second, our paper contributes to the vast literature analyzing mortgage and housing markets and focusing on borrowing constraints, equity extraction and affordability. Several papers study mortgage refinancing and equity extraction and document the important role of interest rate and house prices changes (Hurst and Stafford (2004), Bhutta and Keys (2016)). Since the 2008 financial crisis, several papers have studied the rise and fall in household leverage and its implications for house prices and homeownership (Mian and Sufi (2011), Acolin, Bricker, Calem and Wachter (2016), Fuster and Zafar (2016)). Mian and Sufi (2011) show how home equity-based borrowing contributed to the increase in household leverage from 2002 to 2006. Bhutta and Keys (2016) and Kumar (2018) show, using different identification strategies, that equity extraction is associated with higher default risk. Chen, Michaux and Roussanov (2020) find that extraction of home equity contains a strongly countercyclical component consistent with household demand for liquidity. Our work complements these studies on direct effects and cyclical implications of equity extraction by providing an intergenerational perspective.

In the last decade, the combination of stricter lending standards, stagnating income and increasing house prices have led to a large debate about the trade-offs between tighter credit markets regulation and limited access to homeownership, especially for credit-constrained or lower-income households (DeFusco and Mondragon (2020), DeFusco, Johnson and Mondragon (2020) Mabille (2020), Benetton (2018)). A booming literature has explored, using both cross-country and administrative micro-level data, the heterogeneous effects of macroprudential policies, which have been adopted by more than 60 countries since 1990 (for a review, see Claessens (2015) and Alam, Alter, Eiseman, Gelos, Kang, Narita, Nier and Wang (2019)). Our results emphasize how existing research, which focuses on the impact of leverage regulations at the individual and household level, may give an incomplete picture of the effects of these interventions, particularly if the impact vary with the household family background and can have repercussions across generations.

2 Data

2.1 Construction of Intergenerational Records in the FRBNY Consumer Credit Panel/Equifax Data

The primary data for our analysis are from the New York Federal Reserve Bank Consumer Credit Panel/Equifax (CCP). The CCP is an individual-level panel dataset that contains detailed records of borrowing on a quarterly basis from the first quarter of 1999 to the fourth quarter of 2019, and on a monthly basis thereafter. The data we use cover the period from 1999 to October 2021. The core of the CCP is a five percent random sample of all U.S. consumers with a credit record. These individuals constitute the "primary sample". In addition, for each reporting period (quarterly prior to 2020, and monthly thereafter), the CCP has information about individuals who reside at the same address as individuals in the primary sample.[3] Using this information, we link individual records to a household and then use individuals' ages to identify children's and parents' records as we describe below. Despite the need to reconstruct family relationships, the advantage of the CCP relative to survey data (for example, the PSID, Health and Retirement Study, or NLSY) is its large sample size and accurate measurement of credit outcomes.

To construct the data records of children and parents, we combine individual records that correspond to the same mailing address into household records. The earliest age an individual is included in the CCP is typically 18. We refer to the individuals for whom we have records at age 18 as children. We refer to an individual who resides in a household with an 18-year-old child and is 36 years or older as a parent (18 years or older than the "child"). The adult might not be a genetic parent of the child.[4] To decrease the probability of capturing nontraditional living arrangements (for example, military bases), we restrict our analysis to the individuals who at the age of 18 live in households with at most 10 members. We further

[3] Lee and van der Klaauw (2010) provide an excellent description of the CCP data with additional details.

[4] Dettling and Hsu (2018) use the household dimension of the CCP data to study debt and parental co-residence among young adults.

restrict the sample to children who at age 18 reside with at most two parents. The resulting dataset contains 1,083,176 records for individuals whom we define to be children. Having identified children and their parents from the household identifiers at the time when children are 18 years old, we follow the individual records over time even when children and their parents no longer reside in the same household. While our identification limits us to children that live with their parents at age 18, a high fraction of young adults do live with their parents at age 18.[5] Admittedly, our data do not contain information on individuals without any credit activity, which likely leads to under-representation of lower-income individuals.

For the part of our analysis that exploits leverage constraints, we rely on the Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data. These data match consumers in the CCP data to mortgage servicing data that allow us to measure an individual's loan-to-value (LTV) ratio at both the loan's origination and contemporaneously as long as the loan is reported in the servicing data. While this match reduces the size of our sample, it allows us to construct an accurate measure of the leverage constraint faced by a borrower in the mortgage market. We construct the contemporaneous LTV using county-level house price indexes from Corelogic and the borrower's reported loan balance.

We also use county-level unemployment rates, employment growth, and wage growth from the Bureau of Labor Statistics. We measure house prices with the Corelogic house price index at the zip-code level.

2.2 Definition of Variables

We classify an individual (parent or child) as a homeowner in the data if one of the following is true: the number, payment amount, total balance or high credit of mortgages, home equity installment or home equity revolving loans is greater than 0 and takes a non-missing value. If an individual owns the house without a mortgage and does not have an equity line

[5]In 2015, a third of young people, or 24 million of those aged 18 to 34, lived under their parents' roof. (See: https://www.census.gov/library/stories/2017/08/young-adults.html). In 2020, more than half (58%) of adults ages 18 to 24 lived in their parental home. (See: https://www.census.gov/newsroom/press-releases/2020/estimates-families-living-arrangements.html).

of credit, our analysis will erroneously classify such individuals as non-homeowners.[6]

We identify equity extractions in the data as instances when a borrower's outstanding mortgage debt increases by more than 5 percent over a one-year period, with a minimum increase of $1,000, as in Bhutta and Keys (2016). Additionally, we group the parents within a household into a single parental entity, aggregating variables if appropriate. If two parents no longer live in the same location, we assign the parental location between the two at random.

Finally, we construct an annual panel of CCP variables by collecting data for households only at the last month of each year. So any debt balances, for example, are appropriately interpreted as the debt value at the end of the reported year. The resulting dataset is an annual panel where the basic unit of observation is a child where all of the child's credit bureau information is tracked along with the relevant variables from the identified parents. Thus, we can observe if parents extract equity and at the same time their child transitions into homeownership.

When we match these data to the loan servicing data, we collect loan variables from the earliest reported month in that calendar year, typically January. We take this approach because we want to minimize the likelihood that we have debt variables from the CCP but loan observables are missing because a matched loan was paid off earlier in the year but the new loan was not matched. Since we focus on equity extraction as an important outcome this risk is not trivial.

2.3 Sample Description

Table 1 presents summary statistics for our CCP sample. Panel A shows the summary statistics at the children level. First, only five percent of children are homeowners by the age of 25. The rate of homeownership rises rapidly, with about 16 percent of children having a mortgage by the age of 30. Overall, the children in our sample have an annual probability

[6]The ACS reports that about 63% of homeowners currently have a mortgage, but this does not include the fraction of homeowners who ever had a mortgage, both of which will be captured in our measure.

of becoming a homeowner of about one percentage point. The average child in our sample is 22 years old and has a credit score of 660. Conditional on buying, the average value of a new home is about $270,000 and the LTV at origination is about 86%.

Panel B of Table 1 shows the summary statistics at the parent level. The average homeownership rate at the parent level is about 65%, which is in line with aggregate statistics for the US population (See also Figure A1 in the Appendix). The average parent in our sample is 52 years old and has a credit score of 708. Conditional on owning a house, the average lagged LTV is about 60%. About 8 percent of identified parents report extracting equity in an average year, comparable to estimates from Bhutta and Keys (2016) despite our longer window. Conditional on extracting, the average amount extracted is about $74,000, while the median amount is about $33,000. Panel C of Table 1 reports summary statistics for the additional macro variables that we use as controls in our empirical analysis.

3 Intergenerational Homeownership

In this section, we document the positive link between parental and children homeownership. We begin by examining correlations between homeownership rates of children and the homeownership status of their parents. Figure 1 shows the fraction of children that are homeowners at ages 25, 27, and 30 as a function of the homeownership status of the parents over 2006-2021.[7] The solid lines show the homeownership rate of children whose parents are homeowners, and the dashed lines show the homeownership rate of children whose parents are not homeowners.

Three patterns emerge. First, homeownership increases with the child's age monotonically, as expected. Second, homeownership rates among young adults have been falling since the housing boom in the early 2000s. In 2006, the average homeownership rate of children at age 25 was about 8-9%, but by 2013 it had fallen to below 5%. This large decline is consistent

[7] Figure A5 shows fraction of children that are become new homeowner at ages 25, 27, and 30 as a function of the homeownership status of the parents over 2006-2021.

Table 1: Summary Statistics

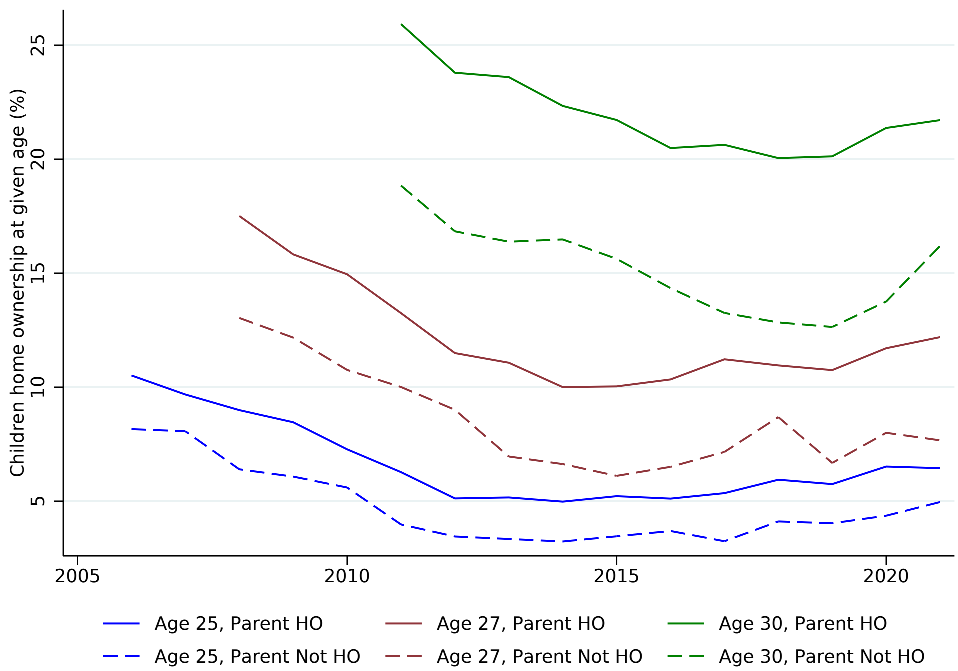
	Mean	SD	p10	p50	p90
Panel A: Child level					
Homeowner by 25	0.05	0.22	0.00	0.00	0.00
Homeowner by 27	0.09	0.29	0.00	0.00	0.00
Homeowner by 30	0.16	0.37	0.00	0.00	1.00
New Homeowner	0.01	0.11	0.00	0.00	0.00
Age	22.16	4.21	18.00	21.00	28.00
Credit score	659.29	82.67	542.00	671.00	754.00
New home value	270385	284202	105995	214996	475155
LTV at origination	86.27	16.48	69.57	90.23	98.19
Panel B: Parent level					
Homeowner	0.65	0.48	0.00	1.00	1.00
Age	51.93	6.38	43.00	52.00	61.00
Credit score	707.95	105.19	553.00	736.00	821.00
lagged LTV	59.77	34.44	21.09	57.49	96.27
lagged LTV (2 period MA)	60.79	32.64	22.52	58.91	98.19
Equity extraction	0.08	0.27	0.00	0.00	0.00
Extraction amount	5347	41635	0	0	0
Extraction amount (> 0)	74152	137616	7309	32728	178888
Panel C: Macro level					
Parent HP growth 3yr	3.66	6.75	-4.75	4.13	11.15
Child HP growth 3yr	3.67	6.74	-4.72	4.14	11.14
Child county unemployment rate	6.03	2.53	3.35	5.43	9.57
Parent county unemployment rate	6.04	2.54	3.36	5.43	9.57
Child county 3yr employment growth	0.60	2.16	-2.09	0.68	3.07
Parent county 3yr employment growth	0.59	2.16	-2.11	0.67	3.07
Child county 3yr wage growth	2.73	1.89	0.61	2.64	4.88
Parent county 3yr wage growth	2.73	1.89	0.60	2.64	4.87

Note: Summary statistics for the main variables from the main sample used in the analysis constructed from the FRBNY Consumer Credit Panel/Equifax data as described in the text. Credit score is the Equifax credit score. Extraction amount is the total of parents' individual amounts of equity extracted, and extraction amount (alternate construction) is the total household extraction amount, where extraction is identified by the change in parents' aggregate mortgage balance.

with the aggregate patterns for young homeowners more broadly.[8] Third, Figure 1 shows

[8] Figure A1 in the Appendix shows home ownership rate for individuals below 35 years old has declined

Figure 1: Relationship between Children's Homeownership and Parent Homeownership Status



Note: The figure shows the fraction of children that are homeowners as a function of the homeownership status of their parents. The solid lines show the average homeownership rate of children whose parents are homeowners. The dash lines show the average homeownership rate of children whose parents are not homeowners. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

that children of parents who are homeowners are more likely to be homeowners themselves across all age groups and across all years, consistent with existing evidence on intergenerational wealth for the US (Lee, Myers, Painter, Thunell and Zissimopoulos (2020)) and other countries (Guiso and Jappelli (2002), Englund et al. (2014)). The difference between the two groups seems to increase as children become older and the overall rate of homeownership increases, suggesting that families may play a critical role in facilitating the transition to homeownership as children age.

over time in the Census data.

There are several factors that can explain the correlation in homeownership across generations including location, education, or wealth transfers. In the next section, we examine the link between parental and children homeownership controlling for a broad set of potential factors to demonstrate the robustness of this relationship.

We estimate two linear probability models of the relationship between child and parent homeownership using individual-level data. First, we estimate the relationship between children being homeowners at a given age and their parents' homeownership status. This model is directly comparable to our descriptive evidence in the previous section. Second, we estimate a linear probability model of the effect of parental homeownership on the probability that children transition into homeownership in a given year conditional on not being a homeowner before. The first model studies the stock of children's homeownership in a given year while the second model studies the flow into new homeownership. The stock model allows us to quantify the cumulative effect of parental homeownership on child homeowernship, while the flow perspective will allow us to exploit the timing of transitions into homeownership and help us identify the effects of equity extraction on those transitions, which we explore in Section 4.

3.1 Stock Model

We begin by studying the relationship between children being homeowners at a given age and their parents homeownership status. Specifically, we estimate the relationship between parental homeownership status and the probability that children are homeowners at a certain age a, using the following linear probability regression:

$$HO_{ialt}^{Child} = \alpha HO_{ialt}^{Parent} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \tag{1}$$

where HO_{ialt}^{Child} is the indicator equal to one if child i of age a living in location l at time t is a homeowner; HO_{ialt}^{Parent} is the indicator equal to one if any of the parents of individual i own a house in period t; X_{ialt} is the vector of children and parental controls; γ_{lat} captures location, age and time fixed effects. Our main coefficient of interest is α, which captures the correlation between parents' homeownership and child homeownership. We estimate equation (1) separately for different children's age, pooling across multiple years.

Panel A of Table 2 presents the results for age $a = 25$.[9] In column (1) we show the estimate of the model without any controls. We find a positive and significant relationship between parent and child homeownership. Children whose parents are homeowners have a 1.63 percentage points higher probability of being homeowners than children whose parents are not homeowners. Given the average homeownership rate of about 6% at age 25, the estimate implies that having a homeowner parent is associated with a 27% higher probability of being a homeowner at age 25.

In the remaining columns of Table 2, we control for a variety of factors that can affect homeownership. In column (2) we add year fixed effects and controls for deciles of children and parent credit scores, which proxy for access to credit. The coefficient on parents' homeownership remains significant and is similar in magnitude. In columns (3) and (4) we add fixed effects for the children's location (state fixed effects in column (3) and zip code fixed effects in column (4)). Previous studies have documented significant variation across US states and zip codes in house prices and affordability, which are key determinants of homeownership (Quigley and Raphael (2004), Saiz (2010)). The coefficient on parental homeownership remains significant and broadly similar in magnitude, although it does decline by about a third relative to the specification without controls. These changes in the estimates are consistent with the need to isolate plausibly exogenous variation, which we address below.

Finally, in column (5) of Table 2 we add interacted fixed effects for year and zip code. This way we are comparing two children both at age 25 in the same year living in the same zip code. The key observable difference between these two individuals is that the parents of one individual are homeowners, while the parents of the other individual are not. We still find a large and significant coefficient on parental homeownership. Children of the same age

[9] In the Appendix, we replicate the analysis at ages 27 and 30, reported in Table A1.

Table 2: Intergenerational Home Ownership

	(1)	(2)	(3)	(4)	(5)
Panel A: "Stock" model	Dep Var: Child is home owner by age 25				
Parent homeowner	1.649***	1.323***	1.139***	1.038***	0.948***
	(0.142)	(0.190)	(0.131)	(0.091)	(0.110)
Controls (parent age, parent and child credit)	No	Yes	Yes	Yes	Yes
Year f.e.	No	Yes	Yes	Yes	Yes
State f.e.	No	No	Yes	No	No
Zipcode f.e.	No	No	No	Yes	No
Group f.e.	No	No	No	No	Yes
Mean Y	6.01	6.01	6.01	6.01	6.01
Observations	505502	505502	505502	505502	505502
Adjusted R^2	0.00	0.02	0.03	0.04	0.06
Panel B: "Flow" model	Dep Var: Child becomes home owner at age 25				
Parent homeowner	0.490***	0.166**	0.146**	0.114*	0.130*
	(0.059)	(0.073)	(0.060)	(0.062)	(0.069)
Controls (parent age, parent and child credit)	No	Yes	Yes	Yes	Yes
Year f.e.	No	Yes	Yes	Yes	Yes
State f.e.	No	No	Yes	No	No
Zipcode f.e.	No	No	No	Yes	No
Group f.e.	No	No	No	No	Yes
Mean Y	2.12	2.12	2.12	2.12	2.12
Observations	430059	430059	430059	430059	430059
Adjusted R^2	0.00	0.01	0.01	0.02	0.03

Note: The table reports the estimates of equations (1) and (2). In Panel A the dependent variable is the dummy equal to one hundred if the individual is a homeowner at age 25 and zero otherwise. In Panel B the dependent variable is the dummy equal to one hundred if the individual becomes an homeowner at age 25 and zero otherwise. Parent homeowner is the dummy equal to one if the parents of the individual are homeowners. Controls are parents age and age squared, and deciles of credit score for both children and parents. Group f.e. are interacted fixed effects for year and zip code. Standard errors are clustered at the state level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

in the same year living in the same zip code whose parents are homeowners are approximately one percentage point more likely to be a homeowner than children whose parents are not homeowners. Given the average homeownership rate of about 6% at age 25, the estimate implies that having a homeowner parent is associated with 16% higher probability of being a homeowner.[10]

3.2 Flow Model

Next, we study the relationship between children becoming first-time homeowners at a certain age a and their parents' homeownership status. We estimate the following specification:

$$NewHO_{ialt}^{Child} = \alpha HO_{ialt}^{Parent} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \tag{2}$$

where $NewHO_{ialt}^{Child}$ is the indicator equal to one if individual i living in location l becomes homeowner for the first time in period t at age a, and all other variables are as in equation (1). Our main coefficient of interest is α which captures the correlation between parents' homeownership status and a child's inflow into homeownership.

Panel B of Table 2 shows the results of estimating model (2) for individuals becoming first-time homeowners at age 25.[11] In column (1) we show the unconditional estimates of the relationship between children's inflow into homeownership and their parents' homeownership status. Children whose parents are homeowners have a 0.48 percentage point higher probability of becoming a homeowner than children whose parents are not homeowners. Given the flow rate into ownership is 2.1%, having a homeowner parent increases the likelihood a child transitions into homeownership by about 23%. The relationship declines somewhat as we control for other characteristics and location fixed effects in the additional columns. As in Panel A of Table 2, column (5) shows the estimate from the most restrictive specification

[10] Our estimates are in line with the findings of Englund et al. (2014) for Swedish households. Controlling for a rich set of parental and children characteristics, Englund et al. (2014) find that children of homeowning parents are about 10 percentage points more likely to own their own house, which corresponds to a 20% increase relative to an average homeownership rate of 50% in their sample.

[11] Figure A4 in the Appendix shows the results for each age from 19 to 30.

with interacted fixed effects for year and zip code. Within this more homogeneous group, we find that children whose parents are homeowners have a 0.13 percentage point higher probability of becoming a homeowner than children whose parents are not homeowners, or a 6% increase relative to the average flow into ownership. Together, these results show there is a robust correlation in homeownership rates across time, even when conditioning on a broad set of controls.

4 Dynastic Home Equity

In this section, we study the causal effect of parent equity extraction on child homeownership. First, we present the results from a linear probability model where we relate the probability of a child becoming a new homeowner to the timing of parental equity extraction. Second, we estimate an event study of parental equity extraction and transitions to homeownership. Then, we present results from an instrumental variable strategy where we use parental leverage constraints as an instrument for parents' equity extraction.

4.1 Equity Extraction and Child Homeownership

We first compute two summary measures of the importance of parents' equity extraction for children flow into homeownership. For this, we look at the total number of periods in which children become new homeowner and parents extract equity relative to: (i) all periods in which children become homeowner; and (ii) all periods in which parents extract equity. We observe parents extract equity in about 17% of the events in which children become homeowners, and we observe children becoming home owners in about 15% of the parental equity extraction events. These simple statistics suggest that parental equity extraction may be a quantitatively important factor in child homeownership rates.

In this section, we focus on the sample of children whose parents are homeowners and exploit variation in parental equity extraction to study the causal effect of parental homeownership on children's homeownership.

We estimate the following linear probability model of the children's inflow into homeownership as a function of parental equity extraction:

$$NewHO_{ialt}^{Child} = \alpha Extract_{ialt}^{Parent} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \tag{3}$$

where $NewHO_{ialt}^{Child}$ is the indicator of whether individual i living in location l becomes a homeowner for the first time in period t at age a; $Extract_{ialt}^{Parent}$ is the indicator equal to one if any of the parents of individual i extract equity from the housing in year t;[12] and all other variables are as in equation (1). We also estimate a version of (3) with children fixed effects, to capture all unobservable time-invariant children-level characteristics. Our main coefficient of interest is α, which captures the correlation between recent parental equity extraction and children transitioning into homeownership in year t.

Table 3 presents the results. In column (1), we show the unconditional correlation between parental equity extraction and the child's transition rate into homeownership. Children whose parents extract equity are about 0.46 percentage point more likely to become a homeowner in the subsequent period than children whose parents are homeowners that do not extract equity. Given the average flow into ownership rate of about 1 percentage point, having a parent who extracts equity increases the probability for the children to become homeowner by about 46%. The effect is very robust as we add controls for child's and parents' characteristics and granular fixed effects for locations in the additional columns. In column (6), we estimate equation (3) with interacted fixed effects for year, age and zip code. Within these more homogeneous groups, we find that children whose parents extract equity are 0.60 percentage point more likely to become a homeowner than children whose homeowner parents do not extract equity, slightly larger than the unconditional estimate in column (1).

Finally, in column (7) of Table 3 we show the results of a specification with children fixed effects. In this way we control for all observable and unobservable characteristics at the child

[12] Specifically, we check if the parent extracted equity in the period between between $t-1$ and t.

Table 3: Parental Equity Extraction and Children's Probability of Becoming a Homeowner

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Parent Equity Extraction	0.457***	0.597***	0.613***	0.617***	0.626***	0.600***	0.606***
	(0.059)	(0.064)	(0.063)	(0.028)	(0.018)	(0.073)	(0.080)
Year F.E.	No	Yes	Yes	Yes	Yes	No	No
State F.E.	No	No	Yes	No	No	No	No
County F.E.	No	No	No	Yes	Yes	No	No
Zipcode F.E.	No	No	No	No	No	No	No
Group F.E.	No	No	No	No	No	Yes	No
Child F.E.	No	No	No	No	No	No	Yes
Age F.E.	No	Yes	Yes	Yes	Yes	No	Yes
Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Mean Y	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Observations	3978941	3978941	3978941	3978941	3978941	3978941	3969759
Adjusted R^2	0.00	0.01	0.01	0.02	0.02	0.10	-0.02

Note: The table shows the estimates of equation (3) on the sample of children whose parents are homeowners. The dependent variable is the dummy equal to one hundred if the individual becomes a homeowner and zero otherwise. Parent equity extraction is the dummy equal to one if the parents extract equity in the current year. Controls are parents age and age squared, lagged deciles of credit score for both children and parents, and 3-year parent-county home price growth. Group f.e. are interacted fixed effects for year, children age, and zip code. Standard errors are clustered at the state of the parents level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

level and only exploit the variation jointly across children and over time in parent equity extraction and transition into homeownership. We find that children whose parents extract equity are 0.60 percentage point (or 60% relative to average flow into homeownership) more likely to become a homeowner than children whose homeowner parents do not extract equity, almost identical to the estimates in column (6).[13]

4.2 Event Study

We next estimate a version of equation (3) with leads and lags for parent's equity extraction focusing only on the sample of parents who extracted equity during our sample period. This allows us to test more directly if the timing of parental equity extraction coincides with the timing of children becoming homeowners or if children whose parents extract equity tend to exhibit higher homeownership rates in general. We estimate the following linear probability model:

$$NewHO^{Child}_{ialt} = \sum_{k=-K}^{K} \alpha_k Extract^{Parent}_{ialt+k} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \quad (4)$$

where $Extract^{Parent}_{ialt \pm k}$ is the indicator equal to one if any of the parents of individual i extract equity from the house in year $t+k$; and all other variables are as in equation (3). We set the period two-years prior to equity extraction as the omitted category, so all estimates can be interpreted as relative to the two years before we measure the extraction event.

We plot the coefficients α_k in Figure 2, for $K = 3, 4, 5$. We find that the child's transition to homeownership is only positively and statistically significantly associated with parental equity extraction in the same or preceding year. The slight increase in the year prior to equity

[13]The magnitudes of our estimates are larger than the ones from previous work that studies intergenerational transfers. For example, Lee et al. (2020), using US survey data, find that young adults between 25 and 44 year old who receive a transfer of over $5000 from their parents are about 15% more likely to buy a home. Our larger effect may be due to our focus on younger adults - 18 to 30, for whom parental help may be even more important. Guiso and Jappelli (2002) study Italian households and find that the average transfer to recipients increases the hazard rate of becoming a homeowner by about 20% relative to the mean. Blickle and Brown (2019) study Swiss households and find that receipt of a wealth transfer increases the propensity of consumers to transition from renters to homeowners by about 35% relative to the mean.

extraction may just reflect that noise in estimating mortgage payoffs and equity extraction relative to new mortgages. Specifically, we only record a cash out refinance once the credit bureau mortgage balances have been updated, which can often be several months after the extraction event actually took place. The coefficients on the equity extraction in previous and subsequent years do not exhibit any pre-trend. The effects on homeownership in the year when parents extract equity are comparable to those from our specification above, with equity extraction associated with a 0.6 percentage point increase in the likelihood of the child becoming a new homeowner. The sharp timing of these effects is strong evidence in favor of parental equity extraction having a causal effect on the transition into homeownership for their children since most other mechanisms would not have any clear association with the timing of equity extraction.[14]

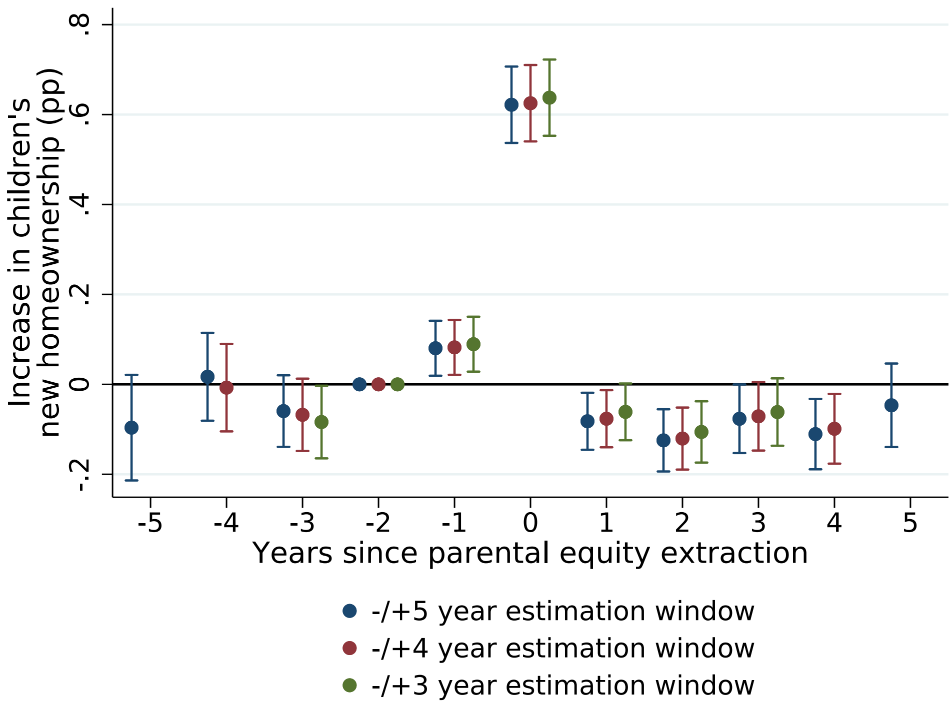
4.3 Parental Leverage, Equity Extraction and Children Homeownership

Our analysis has shown a statistically significant and economically large effect of parental equity extraction on the probability that their children become homeowners at the time when parents extract equity. While equity extraction is a decision by the parents, it may still be correlated with unobservable variables that also affect children's homeownership decision. Suppose, for example, that parents that are more likely to extract equity are also more likely to have children with higher savings and so a higher propensity to buy a house. Similarly, the choice by parents to extract equity may be correlated with the propensity of parents to help their children in general or with the value that both parents and children attribute to homeownership.

In this section, we address these endogeneity concerns. Specifically, we exploit variation in equity extraction caused by the *parents'* mortgage leverage, which reflects both local house

[14]For example, a correlation between parents' propensity to extract equity and children propensity to save and buy a house can explain the average relation between parent extraction and children new homeownership, but not the correlation in the timing between the two events. We provide further evidence supporting our mechanism based on inter-vivos transfers in Section 5.

Figure 2: Parental Equity Extraction and Children's New Homeownership



Note: The figure shows the coefficients α_k^{lag} and α_k^{lead} for $K = 3, 4, 5$ estimated from equation (4). Controls are 3-year child zip code home price growth, 3-year child county and parent county wage growth 3-year child county and parent county employment growth, child county and parent county unemployment, child age fixed effects, and interacted child zip code and parent zip code fixed effects. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

price growth and the household's debt levels. Intuitively, the loan-to-value (LTV) directly constrains the ability of a borrower to extract equity from their home, with access to credit traditionally falling steeply at high levels of leverage (Bhutta and Keys (2016)).[15] This approach allows us to use variation within a location where all households are exposed to the same kind of house price growth, but access to equity may still vary due to differences in initial leverage. Our ability to control for a broad set of local and individual characteristics also helps support the exclusion restriction.

The first-stage regression of our instrumental variable approach is:

$$Extract_{ialt}^{Parent} = \mu HighLTV_{ial,t-1}^{Parent} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \tag{5}$$

where $Extract_{ialt}^{Parent}$ is the indicator equal to one if any of the parents of individual i extract equity from the house in period t; $HighLTV_{ial,t-1}^{Parent}$ is the indicator equal to one if the lagged LTV for the parents of individual i is greater than 80%; and all other variables are as in equation (3) except we now also include a quadratic function of lagged LTV as a control. Intuitively, lagged LTV may be correlated with various other household factors that may affect child homeownership. By controlling for LTV, we rely on just the variation caused by having a very high LTV.[16] We use the threshold of 80% because this has traditionally been an important underwriting threshold above which lenders are less willing to underwrite loans extracting equity or it becomes substantially more expensive.

We then estimate the following IV model of the causal impact of parental equity extraction on children's homeownership:

$$NewHO_{ialt}^{Child} = \alpha \widehat{Extract_{ialt}^{Parent}} + \theta X_{ialt} + \gamma_{lat} + \epsilon_{ialt}, \tag{6}$$

where $\widehat{Extract_{ialt}^{Parent}}$ is the instrumented equity extraction by the parents of individual i in

[15] The left panel of Figure A3 shows that parents with higher LTVs are much less likely to extract equity.

[16] Notice that we do not adopt a true regression discontinuity or kink design because our measure of LTV is quite noisy relative to what households likely observe directly.

period t; and all other variables are as in equation (3). We estimate models (3) and (6) on the sample of children whose parents are homeowners as in Section 4.1.

Table 4 presents the results. In column (1) we report estimates from the OLS specification in equation (3) on the sample of households for which we have measures of LTV. We include the controls and county fixed effects as in column (4) of Table 3. The coefficient on equity extraction in column (1) differs from column (4) of Table 3 due to the different sample, but is very similar.

Column (2) of Table 4 shows the results from the reduced form regression of child transitions into homeownership on the lagged parent LTV indicator.[17] The estimate shows that children whose parents have high LTVs are significantly less likely to become a new homeowner, consistent with our mechanism. The magnitude suggests having a high LTV reduces child homeownership transitions by about 10 basis points, or ten percent of the base rate.

Column (3) turns to the first-stage regression of equity extraction on the high-LTV indicator. Parents likely to be constrained are also much less likely to extract equity, about 1.9 percentage points or about 20% of the baseline rate. Finally, column (4) reports the instrumental variable estimate where we instrument for equity extraction with the lagged high LTV indicator. The very large F-statistic on the first-stage indicates that high LTV has a quantitatively significant effect on equity extraction (consistent with column (3)). The coefficient is statistically significant and very large in magnitude. Children whose parents extract equity have a five percentage points higher probability of becoming homeowners relative to children whose parents are homeowners that did not extract equity. The difference between the IV and OLS estimates potentially highlights the role of endogeneity in the OLS estimates (column (1)). In particular, equity extraction not driven by leverage appears to be particularly likely to reflect ommitted variables negatively correlated with child homeownership. For example, if parents extract equity as a cheaper way to pay for schooling for their children than student loans, then almost by definition the child is unlikely to be

[17]The raw binscatter of the relationship between lagged LTV and child transitions to homeonwership are reported in Figure A3. The results show, as expected, that tighter liquidity constraints reduce equity extraction and child homeownership.

Table 4: Parental Leverage, Parental Equity Extraction and Children's Homeownership

	(1) OLS	(2) RF	(3) FS	(4) IV
Parent Equity Extraction	0.874***			5.060**
	(0.066)			(2.404)
Lagged Parent LTV > 80		-0.099**	-1.953***	
		(0.047)	(0.154)	
Controls	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
Age F.E.	Yes	Yes	Yes	Yes
County F.E.	Yes	Yes	Yes	Yes
Mean Y	1.02	1.02	9.52	1.02
Observations	978140	978140	978140	978140
F-stat				161.14

Note: Column (1) reports estimates from equation (3). Column (3) reports estimates from equation (5). Column (4) reports estimates from equation (6). The dependent variable in columns (1), (2) and (4) is the dummy equal to one hundred if the individual becomes an home owner and zero otherwise. The dependent variable in column (3) is the dummy equal to one hundred if a parent extracts in the current year. Parent equity extraction is the dummy equal to one if the parents extract equity in the current year. Controls are child age, parent age, parent age squared, 3-yr child county house price growth, 3-yr parent county house price growth, child county unemployment rate, parent county unemployment rate, 3-yr child county wage growth, 3-year parent county wage growth, 3-year child county employment growth, 3-year parent county employment growth, lagged parent and child credit score deciles, and a quadratic in lagged LTV. Standard errors are clustered at the parent county level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data.

transitioning to homeownership. Alternatively, it may be the case that variation in leverage constraints isolates a particular local average treatmenet effect on among a set of children for whom parental equity is extremely important.

It is important to note that endogeneity of intergenerational transfers is one of the main limitations of the literature studying persistence in wealth across generations (Englund et al. (2014)). The limited number of studies that also account for endogeneity find similarly large effects. For example, Blickle and Brown (2019) find that instrumenting for wealth transfer using family death increases the propensity of consumers to transition from renters to homeowners following a wealth transfer by about four times. Relative to that work, our primary contributions are to isolate the role of housing and to examine inter-vivo transfers, which are both relevant for a broader share of the population.[18]

5 Exploring the Mechanism

5.1 Amount of the Parental Equity Extraction

In this section, we examine the effect of parental equity extraction on children's homeownership using a continuous measure of the amount of the equity extracted versus the indicator for equity extraction. Because the data contain many households that do not extract equity, we use the inverse hyperbolic sine transformation of the amount of equity extracted (Pence (2006), Bellemare and Wichman (2020)). Given this transformation, the interpretation of the coefficient on equity extraction at the average level of equity extraction is given as:

$$\frac{\partial NewHO_{ialt}^{Child}}{\partial Extract_{ialt}^{Parent}} = \frac{\alpha}{\sqrt{(\overline{Extract}_{ialt}^{Parent})^2 + 1}}. \tag{7}$$

[18]Figure A2 in the Appendix shows that the probability of receiving an inter vivos transfer peaks for individuals in their mid-20s, as compared to inheritance which is more likely for individual in their 60s. Transfers early in life can play an important for wealth accumulation from a young age.

In our case, the vast majority of households are not extracting, which implies that our estimates can be directly interpreted as the treatment effect of equity extraction for households that are not extracting any equity. Since this effect is essentially already summarized in Table 4, we focus on evaluating the effects at a point close to the median level of equity extraction conditional on extraction, which is about $43,000.

Table 5 presents the estimates.[19] Column (1) gives the OLS estimate of the effect of the (transformed) amount of equity extraction on the child's probability of becoming a homeowner. The estimate of 0.08 implies that, for a household already extracting about $43,000 of equity, an additional $10,000 of equity extracted would increase the probability of the child becoming a new homeowner by about 2 basis points, a small effect considering the baseline rate is about 1 percentage point. This effect increases when evaluated at smaller levels of equity extraction, although that is likely just approximating the extensive margin response better reflected in Table 4.

Column (2) of Table 5 shows the results from the reduced form regression, which gives identical results as Table 4. Column (3) turns to the first stage regression of transformed equity extraction on the high-LTV indicator. We see that the (transformed) amount of extraction falls with liquidity constraints, as expected. At large values of equity extraction (which would be the vast majority in our setting), this estimate implies that having high LTV reduces the quantity of equity extracted by about 23% (or almost $10,000 in dollar terms).[20].

Column (4) reports the IV specification where we instrument for the amount of equity extracted with the high-LTV indicator. The estimate is about four times as large as the OLS estimate and implies that an additional $10,000 of equity extraction at the median increases new homeownership transitions by about 10 basis points. It is possible that our instrument is operating primarily through the extensive margin, so that evaluating this estimate at

[19] We also repeat this analysis using a different transformation, adding one and taking the natural log, with similar results reported in Table A2.

[20] bellemare2020elasticities show that at large values the marginal effect becomes approximately $\hat{\alpha} * \overline{Extract}$, or in percentage terms relative to the mean, just $\hat{\alpha}$.

Table 5: Amount of Equity Extracted

	(1) OLS	(2) RF	(3) FS	(4) IV
Parent Extraction Amount (asinh)	0.080***			0.436**
	(0.005)			(0.207)
Lagged Parent LTV > 80		-0.099**	-0.227***	
		(0.047)	(0.017)	
Controls	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
Age F.E.	Yes	Yes	Yes	Yes
County F.E.	Yes	Yes	Yes	Yes
Mean Y	1.02	1.02	1.06	1.02
Observations	978140	978140	978140	978140
F-stat				169.87

Note: Column (1) reports estimates from equation (3). Column (3) reports estimates from equation (5). Column (4) reports estimates from equation (6). The dependent variable in columns (1), (2) and (4) is the dummy equal to one hundred if the individual becomes an home owner and zero otherwise. The dependent variable in column (3) is the total amount of equity extracted, transformed by the inverse hyperbolic sine (Pence (2006), Bellemare and Wichman (2020)). Parent extraction amount is the total of all parents' individual amounts of equity extracted, transformed by the inverse hyperbolic sine. Controls are child age, parent age, parent age squared, 3-yr child county house price growth, 3-yr parent county house price growth, child county unemployment rate, parent county unemployment rate, 3-yr child county wage growth, 3-year parent county wage growth, 3-year child county employment growth, 3-year parent county employment growth, deciles of lagged child and parent credit score, and a quadratic in lagged LTV. Standard errors are clustered at the parent county level. Standard errors are clustered at the parent county level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data.

the median of equity extraction gives a poor approximation to the true treatment effect. Regardless, these results again suggest that access to equity plays an important role in facilitating child homeownership, but that the extensive margin is likely to be the critical margin at play.

5.2 Parental Equity Extraction and Children's Downpayment

We next explore the mechanism through which parents' equity extraction affects child homeownership. We do not observe the actual transfer of money from the parents to the children, but one potential implication of our proposed channel is that children receiving help from their parents are likely to be less leveraged than children not receiving help, conditional on actually purchasing a home. This contrasts with some other potential explanations of the relationship between children's homeownership and parental equity extraction. For example, if both parents and children experience a booming housing market, it may induce them to leverage housing wealth through equity extraction and new homeownership. This could lead to the behavior we discuss in Section 4, even absent an inter-vivo transfer of money from the parents to their children. However, under these kinds of alternative stories, we would *not* expect the equity extraction of parents to be associated with less leverage by the children becoming new homeowners.

Figure 3 shows the distribution of the child LTVs at origination, dividing the sample into children whose parents extract equity and children whose parents do not extract equity. We show the full sample (left panel) and when children are 25 years old (right panel). The distribution for both children whose parents extract and those who do not display spikes at LTVs equal to 80%, 90%, 95%, and 98%, consistent with these being important underwriting thresholds in the mortgage market.[21] From a visual inspection, children whose parents extract in the year before they become new homeowners tend to have a higher mass at relatively lower LTVs (for example, 80%) than children whose parents do not extract.

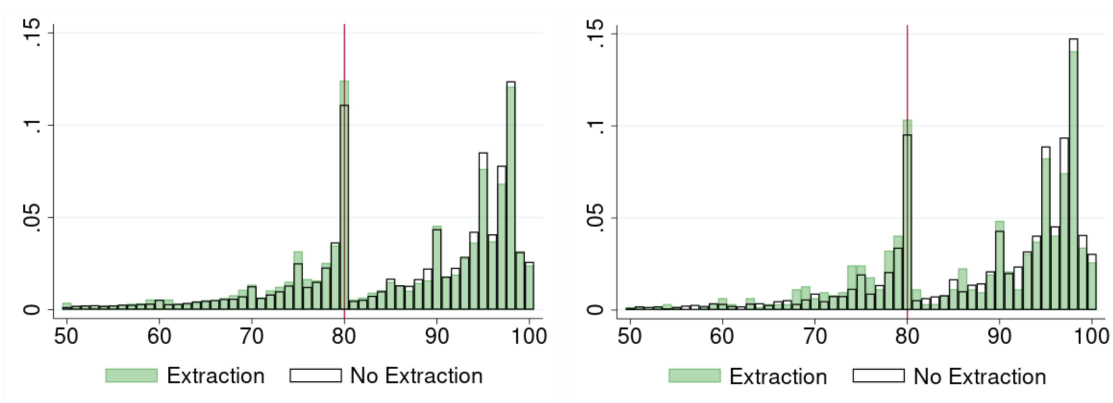
We explore this relationship more formally using the following specification:

$$LTV_{ialt}^{Child} = \alpha Extract_{ialt}^{Parent} + \theta X_{ialt} + \gamma_l + \gamma_a + \gamma_t + \epsilon_{ialt}, \tag{8}$$

where LTV_{ialt}^{Child} is: (i) the child's LTV at origination; (ii) the indicator equal to one if the

[21] This sample is substantially smaller than our other samples as it relies on: (i) the child becoming homeowner; and (ii) the child's mortgage being present in the mortgage servicing data.

Figure 3: Children's Loan-to-Value at Origination and Their Parents Home Equity Extraction



(a) Child LTV at origination

(b) Child LTV at origination at age 25

Note: The figure shows the distribution of children's LTV at origination by whether their parents extract equity or not, 2006-2021. The plot on the left is the distribution over all ages and the plot on the right is the distribution for only 25 year-old children. The green area is the distribution for children whose parents extract equity, and the black-outlined area is the distribution for children whose parents do not extract equity. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data and the Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data.

Table 6: Parental Equity Extraction and Children's Leverage

	Continuous LTV		LTV> 80		LTV> 70	
	(1)	(2)	(3)	(4)	(5)	(6)
Parent Equity Extraction	-1.712***	-1.522***	-0.051***	-0.044***	-0.025***	-0.023***
	(0.325)	(0.311)	(0.009)	(0.008)	(0.006)	(0.006)
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Age F.E.	Yes	Yes	Yes	Yes	Yes	Yes
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes
Mean Y	86.00	86.00	0.65	0.65	0.90	0.90
Observations	26948	26948	26948	26948	26948	26948
Adjusted R^2	0.11	0.14	0.12	0.16	0.05	0.05

Note: The table shows the estimates of equation (8) for children who becomes homeowners. Parent equity extraction is the dummy equal to one if a parent extracts equity in the current year. Controls parents age and age squared, deciles of lagged credit score for both children and parents, unemployment rate for both children and parents, 3yr zip code home price growth for both children and parents, 3yr wage growth for both children and parents, 3yr employment growth for both children and parents. Standard errors are clustered at the parent county level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data and Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data.

child has an LTV>80%; and (iii) the indicator equal to one if the child has an LTV>70%; γ_l, γ_a γ_t are county, age and year fixed effects and all other variables are as in equation (3). We estimate models (8) on the sample of children who becomes homeowners and whose parents are homeowners.

Table 6 shows the results. Columns (1) and (2) reports the results with the child's LTV as dependent variable. Parents equity extraction is associated with a 1.7 percentage-point lower LTV, controlling for year, age, and county fixed effects. After adding our rich set of additional time-varying controls, parents equity extraction is associated with a 1.5 percentage-point lower LTV, essentially identical to the previous estimate. The effects are statistically significant and correspond to a little more than a 1% reduction in the average child LTV.

Columns (3) to (6) of Table 6 shows the results when using as dependent variable the indicator of children with an LTV>80% and LTV>70%. In our most restrictive specification, we find that parents equity extraction is associated with a 4 percentage point lower probability that the child's LTV is greater than 80%. The effect is statistically significant and, relative to the mean, represents about 6% decrease in the probability of having leverage greater than 80%.

Interestingly, when we repeat the same analysis using the the indicator for the child's LTV being greater than 70% as the dependent variable, we find smaller effects. Parent extraction is associated with about a 2 percentage point (or about 3% relative to the mean) lower probability that the child's LTV is greater than 70%. This suggests that parental help allows children to increase their down payment to the "standard" LTV of 80%, above which borrowers are required to buy costly mortgage insurance. For this reason popular financial advise websites encourage borrowers to use a 20% down payment.[22] This would be consistent with the idea that dynastic home equity is more important for child borrowers that are on the margin of new homeownership, so that the additional equity is needed to qualify for a mortgage with significantly lower payments.

5.3 Parental Equity Extraction and Other New Debt

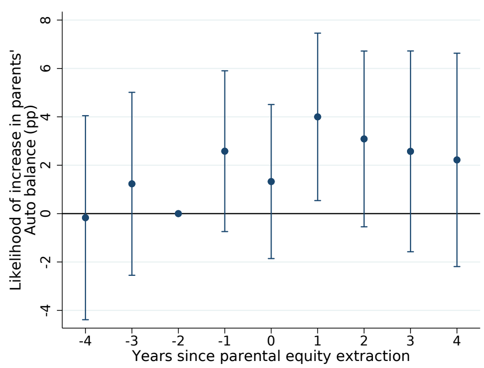
To shed further light on our hypothesis that parental home equity extraction helps finance children's homeownership, we study how parents' other large purchases at the time of equity extraction vary with whether or not their children purchase a home. Under the hypothesis that parents extract equity to help their children finance homeownership, we expect that parental home equity extraction is less likely to be associated with any significant increases in parents' likelihood of purchasing a car.

We estimate versions of the event study regressions similar to equation (4), but now we look at auto credit activity of the *parents* as our outcome of interest, reported in Figure 4.

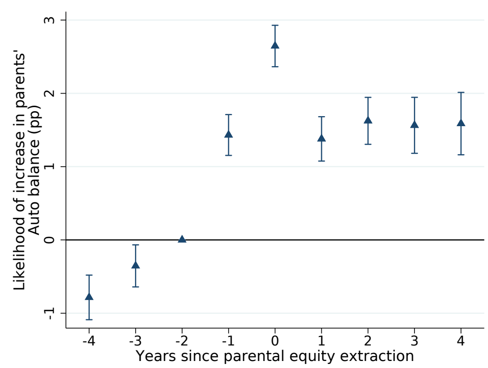
[22] For example Nerdwallet suggests: "Try to clear at least the 80% LTV hurdle. Mortgage insurance premiums usually kick in if your LTV is above 80%. If you're close, try to make up the difference so that you clear the 80% mark. You'll save a good deal of money in the long run." (https://www.nerdwallet.com/article/mortgages/loan-to-value-calculator).

This outcome is an indicator for whether or not parental auto balances increase by at least $1,000 or if a new line of credit is reported (this follows McCully, Pence and Vine (2019)). The left panels restrict the sample only to parents of children who became new homeowners at the time of extraction, while the right panels look only at parents whose children did not transition to homeownership at the time of extraction. We set $t-2$ as the omitted category to be consistent with Figure 2.

Figure 4: Parental Equity Extraction and Auto Debt



(a) Current auto balance, child buys home



(b) Current auto balance, child doesn't buy home

Note: The figure shows the coefficients α_k^{lag} and α_k^{lead} for $K = 4$ estimated from equation (4) for sub samples where children do and don't buy a home when parents extract. Estimates are relative to the extraction period t=-2. Controls are 3-year child zip code home price growth, 3-year child county and parent county wage growth 3-year child county and parent county employment growth, child county and parent county unemployment, child age fixed effects, and interacted child zip code and parent zip code fixed effects. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

These results show several interesting dynamics. First, parents whose children did not transition to homeownership exhibit large increases in the likelihood of new auto activity in the periods around equity extraction, consistent with some fraction of equity extraction being used to finance large purchases (McCully et al. (2019)). By contrast, there is little evidence of similar behavior by parents whose children have transitioned into new homeownership. This is especially noticeable at $t = 0$, when we observe a large and significant positive coefficient for parents whose children do not buy a house and an insignificant and close-to-zero coefficient for parents whose children become homeowner at the same time.[23] This is consistent with the idea that parents extracting equity while children are purchasing a home are likely to be using that equity to help their children finance the home. Parents whose children are not purchasing a home are more likely to be engaged in other kinds of debt-financed activity.

6 Heterogeneity Analysis

In this section, we explore various dimensions of heterogeneity in our OLS estimates. We rely on the OLS in part due to sample size concerns, but also because variation in the size of the OLS effects is still informative about variation in the importance of the dynastic home equity channel.

We first split counties into quartiles based on the median house price for children's counties and then re-estimate our baseline regressions (equation (3)) within each of these quartiles. These results are reported in Table 7. The first row below the estimates reports the estimated effect scaled by the mean of the outcome in the subsample, followed by mean of the median home values. Estimated effects are large and positive across all of the subsamples, but appear to increase monotonically with the price of housing. This suggests that access to parental home equity may becomes important as housing becomes more expensive and children become constrained by downpayment requirements.

We then split our sample into three periods based on the recent housing cycle: boom (pre-2007), bust (2007-2012), and recovery (post-2012), following Chodorow-Reich, Guren and McQuade (2021). We re-estimate our baseline regressions (equation (3)) within each of these period and also fixing the age of the children, to separate the effect of time-series variation from child's cohort effect, due to the construction of our merged children-parent dataset.

[23] The large confidence intervals for the latter group are due to the lower number of instances in which parents extract and children become homeowner, as supposed to the number of times parents extract.

Table 7: Heterogeneity by Median County-Level Home Value Quartile

	Qtl. 1	Qtl. 2	Qtl. 3	Qtl. 4
Parent Equity Extraction	0.513***	0.523***	0.678***	0.741***
	(0.034)	(0.038)	(0.050)	(0.067)
Scaled effect	0.494	0.497	0.646	0.813
Mean cty. median home val.	155,752	230,983	316,731	579,105
Controls	Yes	Yes	Yes	Yes
County f.e.	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes
Mean Y	1.04	1.05	1.05	0.91
Observations	1004448	968054	983971	981397
Adjusted R^2	0.02	0.02	0.02	0.02

Note: The table shows the estimates of equation (3) on the sample of children whose parents are homeowners. The dependent variable is the dummy equal to one hundred if the individual becomes a homeowner and zero otherwise. Parent equity extraction is the dummy equal to one if the parents extract equity in the current year. Controls are parent's age and age squared, unemployment rate for both children and parents, 3yr zip code home price growth for both parents and children, 3yr wage growth for both children and parents, 3yr employment growth for both children and parents, and deciles of lagged child and parent credit scores. Standard errors are clustered at the parent-state level. Scaled effect is the parent equity extraction coefficient divided by the mean dependent variable in the regression sample. Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

Table 8 shows the result for children at age 22 (Panel A) and 25 (Panel B). For both age groups we find that dynastic home equity matters relative less in the pre-2007 boom period, when credit was abundant and low-downpayment mortgages widely available (Mian and Sufi (2011)).[24] The scaled effects of column (2) Table 8 shows that parent equity extraction became more important for children homeownership after the housing bust, perhaps as a result of the tightening in credit standards following the crisis. Finally, column (3) of Table 8 shows that dynastic home equity has continued to play an important role in recent years, as increases in house prices (relative to income) have reduced housing affordability for young adults and credit standards have remained high.

[24] The results are less precise given the low number of observations. For example, to be 25 before 2007 an individual must be 18 not later than in 2000 and our dataset starts in 1999.

Table 8: Heterogeneity Business-Cycle Heterogeneity

Panel A: Home Purchase at Age 22	Pre-2007	2007 - 2012	Post-2012
Parent Equity Extraction	0.407***	0.478***	0.607***
	(0.096)	(0.065)	(0.074)
Scaled effect	0.48	1.02	1.30
Controls	Yes	Yes	Yes
County f.e.	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes
Mean Y	0.85	0.47	0.47
Observations	77404	193639	212900
Adjusted R^2	0.01	0.01	0.01

Panel B: Home Purchase at Age 25	Pre-2007	2007 - 2012	Post-2012
Parent Equity Extraction	0.640	1.289***	1.182***
	(0.568)	(0.181)	(0.155)
Scaled effect	0.22	0.70	0.57
Controls	Yes	Yes	Yes
County f.e.	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes
Mean Y	2.91	1.85	2.08
Observations	5057	92120	141376
Adjusted R^2	0.01	0.01	0.01

Note: The table shows the estimates of equation (3) on the sample of children whose parents are homeowners. The dependent variable is the dummy equal to one hundred if the individual becomes a homeowner and zero otherwise. Parent equity extraction is the dummy equal to one if the parents extract equity in the current year. Controls are parent's age and age squared, unemployment rate for both children and parents, 3yr zip code home price growth for both parents and children, 3yr wage growth for both children and parents, 3yr employment growth for both children and parents, and deciles of lagged child and parent credit scores. Standard errors are clustered at the parent-state level. Scaled effect is the parent equity extraction coefficient divided by the mean dependent variable in the regression sample. Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

We next explore if the importance of equity extraction varies with the number of children in the family. Intuitively, if there are multiple children present in the family then the same amount of home equity will be less useful for helping transition into homeownership. To explore this dimension, we classify children as an only child, with one sibling, and with more than one sibling. Importantly, these definitions are subject to the limitations of our algorithmic identification of siblings in the credit bureau data, which is likely to have substantial measurement error. Panel A of Table 9 reports the results. Only-child and children with one sibling have similar estimates of the effects of equity extraction on new homeownership. However, cases in which we identify more than one sibling show a much smaller relationship between equity extraction and child homeownership, despite the fact that transitions to home ownership occur at about the same rate for all groups. This suggests that housing wealth is less helpful for financing homeownership for children if it is going to be spread across larger numbers of children, consistent with our mechanism of equity extraction helping to finance homeownership.

Finally, we explore how the role of parental equity extraction changes with the age of the child by splitting the sample into three groups: when children are younger than 26, between 26 and 30, and older than 30. These results are reported in Panel B of Table 9. The effect of parent equity extraction increases with children age. Parent equity extraction increase children transition into homeownership by 0.5 percentage points for children younger than 26 and about 1.6 percentage points for children older than 26. Scaling these effects by the mean transitions into homeownership, we see that equity extraction is relatively more important when children are younger. Having a parent who extracts equity increases the probability that a child below 26 becomes a homeowner by about 90% of the mean, while the effect is about half has large for older children. Hence, the ability to access financing via parent equity extraction is relatively more important for younger children who are likely to have less savings available for a downpayment.

Together, these results suggest that dynamic home equity is particularly important when financial constraints are more likely to be binding, whether for macroeconomic reasons (like the financial crisis) or because the children are too young to have accumulated substantial assets.

Table 9: Heterogeneity by Family Composition and Age

Panel A: Number of siblings	Only Child	1 Sibling	Many Siblings
Parent Equity Extraction	0.620***	0.670***	0.433***
	(0.032)	(0.040)	(0.071)
Scaled effect	0.61	0.66	0.42
Controls	Yes	Yes	Yes
County f.e.	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes
Mean Y	1.01	1.01	1.03
Observations	2702651	1031537	204314
Adjusted R^2	0.01	0.02	0.02

Panel B: Age group	Younger than 26	Between 26 and 30	Older than 30
Parent Equity Extraction	0.565***	1.651***	1.761***
	(0.034)	(0.126)	(0.229)
Scaled effect	0.91	0.56	0.50
Controls	Yes	Yes	Yes
County f.e.	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes
Mean Y	0.62	2.93	3.51
Observations	1617847	461329	120800
Adjusted R^2	0.01	0.01	0.01

Note: The table shows the estimates of equation (3) on the sample of children whose parents are homeowners. The dependent variable is the dummy equal to one hundred if the individual becomes a homeowner and zero otherwise. Parent equity extraction is the dummy equal to one if the parents extract equity in the current year. Controls are parent's age and age squared, unemployment rate for both children and parents, 3yr zip code home price growth for both parents and children, 3yr wage growth for both children and parents, 3yr employment growth for both children and parents, and deciles of lagged child and parent credit scores. Standard errors are clustered at the parent-state level. Scaled effect is the parent equity extraction coefficient divided by the mean dependent variable in the regression sample. Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

7 Implications for Housing Wealth Inequality

In this section, we use our estimates to provide back-of-the-envelope calculations of the potential long-run effects of the dynastic home equity mechanism that we document in the paper.

We proceed in several steps. First, we assume all children at age 18 are renters and that once they become homeowners, they do no transition back to renting (i.e., homeownership is an absorbing state). The latter simplifying assumption allows us focusing on the transition from renting to owning as a function of parental homeownership status and equity extraction behavior.

Second, we compute the probability of a renter child becoming a homeowner each year as a function of the parental homeownership and equity extraction status. In our sample, we find that children between 25 and 30 whose parents' are non-homeowners have the probability of becoming an owner in a given year of 2.37%. Children whose parents' are homeowners but do not extract equity have a slightly higher probability of becoming a homeowner—2.72%. To compute the probability for children whose parents extract equity, we proceed in two steps. First, we add to the probability of children whose parents are homeowners but do not extract the effect of parents extracting equity estimated in Section 4. We use both the OLS estimates from column (1) and the IV estimates from column (4) of Table 4. Second, we look at the average annual probability parents extract equity, which among children of homeowners is 8.97%.

Combining these two steps, we find that children whose parents are homeowners have the expected probability of becoming homeowners in a given year of 2.8% based on the OLS estimates and 3.17% based on the IV estimates.

Third, using the transition probability from the second step we compute the fraction of home owners by age 30 as a function of parental homeownership and equity extraction behavior. The second row of Table 10 shows the result. We find that if parents are homeowners and do not extract equity, the children's homeownership rate by age 30 would be 28.2%,

Table 10: Housing Wealth Accumulation

	Parents Status			
	Renters	Homeowners		
		Do not extract	Dynastic home equity	
			OLS	IV
	(1)	(2)	(3)	(4)
Transition probability (%)	2.37	2.72	2.8	3.17
Age 30 home owner (%)	25.0	28.2	28.8	31.9
Age 30 housing wealth:				
Housing wealth (Annual return 4.0%)	63	71	73	81
Housing wealth (Annual return 6.6%)	74	84	86	96
Age 30 relative housing wealth:				
Relative to parent renters (%)		+13	+16	+29
Relative to parent home owners not extracting (%)			+3	+14

Note: The table reports several variables for children as a function of the parents' homeownership status and equity extraction behavior. Transition probabilities if the percentage of renters becoming homeowners each year as a function of the parental homeownership and equity extraction status. The transition probabilities for children of renters and homeowners not extracting are computed as sample averages. The dynastic home equity transition probabilities are computed using also the OLS estimates from column (1) and the IV estimates from column (4) of Table 4. Homeowner is the fraction of home owners by age 30 as a function of parental homeownership and equity extraction behavior. Housing wealth is the expected housing wealth at age 30 as a function of net returns on housing and transition probabilities.

relative to 25.0% for children of renters. If homeowner parents extract equity at the average probability of 8.97%, the probability of homeownership at age 30 rises to 28.8% based on the OLS estimate and to nearly 32% based on the IV estimate.

Finally, we compute the effects on housing wealth. An important input into any calculation of this type is the typical returns to housing wealth. Estimates of this return vary substantially across time and countries, with Flavin and Yamashita (2002) providing an estimate of the real, net return of about 6.6% in the US, but Eichholtz et al. (2021) and Chambers et al. (2019) both provide detailed, long-run estimates of about 4% based on micro data in Europe. We provide a range of calculations using these two estimates. We assume a starting house value of $200,000, which is approximately the median in our sample of children (See the summary statistics in Table 1), and compute the expected level of housing wealth at different ages, multiplying the housing equity given the net returns from the literature by the probabilities of being a homeowner at each given age from the estimated transition probabilities.

Children whose parents are renters have an expected housing wealth at age 30 ranging between $63,000-74,000, depending on the returns on housing. If the parents are homeowners and don't extract equity, their children have approximately $8,000-$10,000 more home equity by age 30. This represents a 13% increase relative to the equity of children whose parents are renters.

Moving to our dynastic home equity channel, we find that children whose parents extract have an expected housing wealth at age 30 between $73,000-86,000, depending on the returns on housing. Hence, the dynastic home equity channel increases the children's housing wealth by age 30 by about 16% relative to the children of renters and by 3% relative to the children of homeowners who do not extract equity. The IV estimate implies even larger results. By age 30, the expected housing wealth of children whose parents extract equity is about $22,000 (29%) higher than children whose parents are renters and $12,000 (14%) higher than children whose parents are homeowners but do not extract equity. Taking a weighted average of the two numbers (where weights are the corresponding shares in the renters plus homeowner non-extractor population), we find that dynastic home equity increases housing wealth inequality among young adults by about 20%.[25]

8 Conclusions

We provide novel evidence that homeownership across generations is strongly positively correlated within a household. We then show that the positive relationship between parental

[25] We also compute the weighted average implied by the OLS estimate. The mean of the IV- and OLS-implied weighted sums is about 16%.

homeownership and their children homeownership can partly be explained by the role of housing wealth itself. Households with access to liquid housing wealth in the form of equity extraction can use their wealth to help their children enter into the housing market.

Our results have implications for the persistence of housing wealth and inequality across generations. To the extent that access to housing wealth is distributed unequally across socioeconomic groups, housing wealth helps perpetuate the unequal distribution of wealth by enabling earlier access to housing markets for the children of parents with housing wealth. Further work is needed to understand the importance of housing wealth relative to other sources of financial wealth. However, the fact that many households hold most of their wealth in housing (to the extent that they have wealth), suggests that this is an important channel for the perpetuation of wealth inequality.

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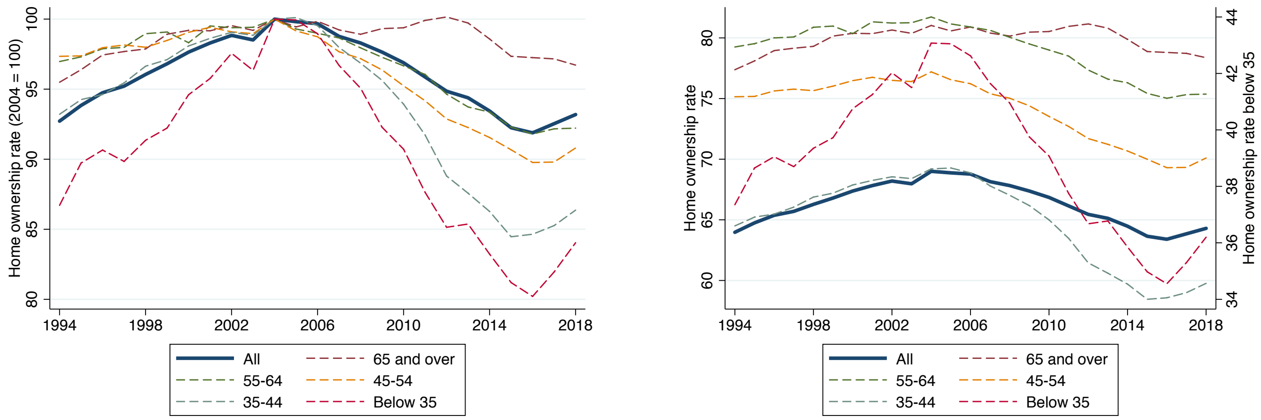
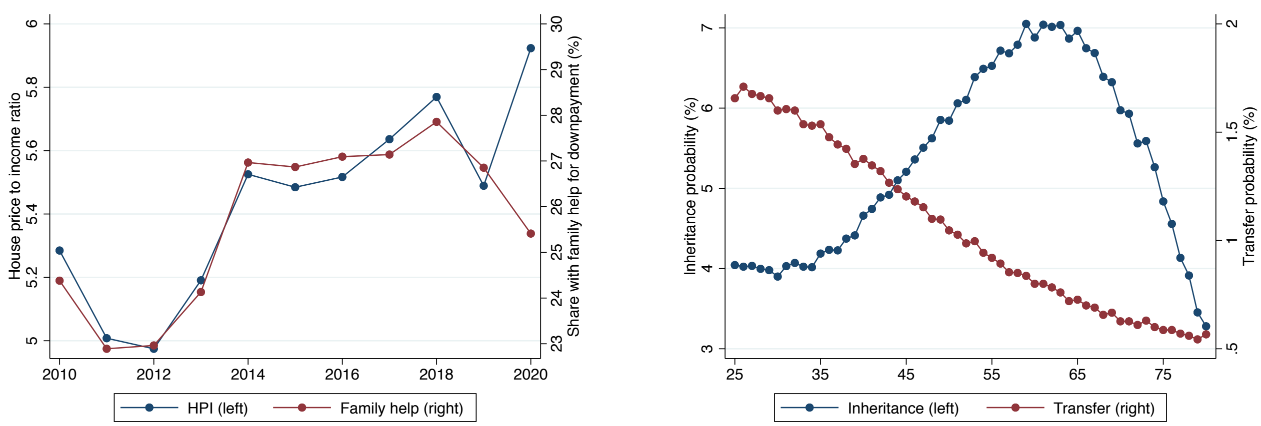
Appendix

Figure A1: Home Ownership across Ages and Over Time



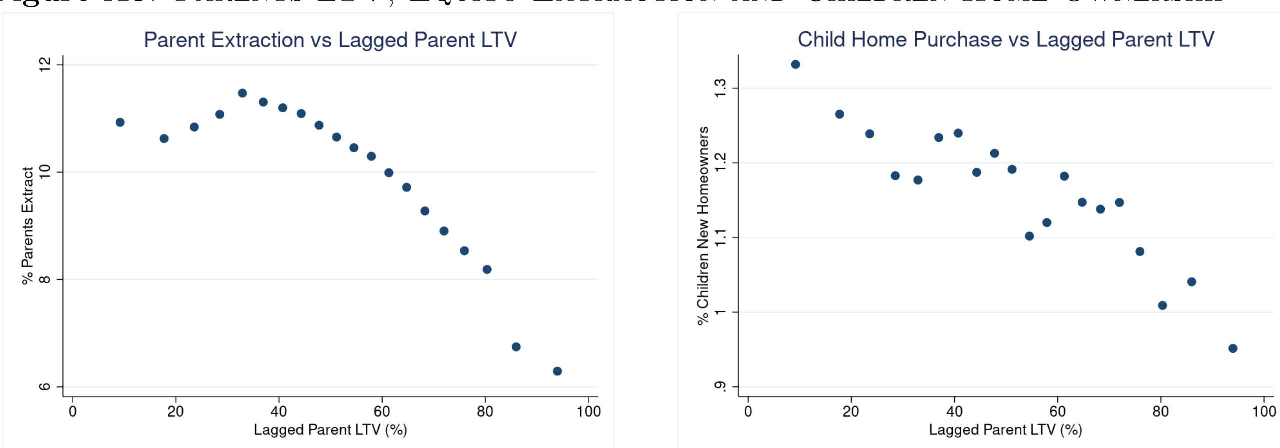
Note: The left panel shows the normalized home ownership rate for different age group. The right panel shows the home ownership rate for different age group. Authors' calculations using data from the U.S. Census Bureau, Current Population Survey/Housing Vacancy Survey.

Figure A2: Family Help



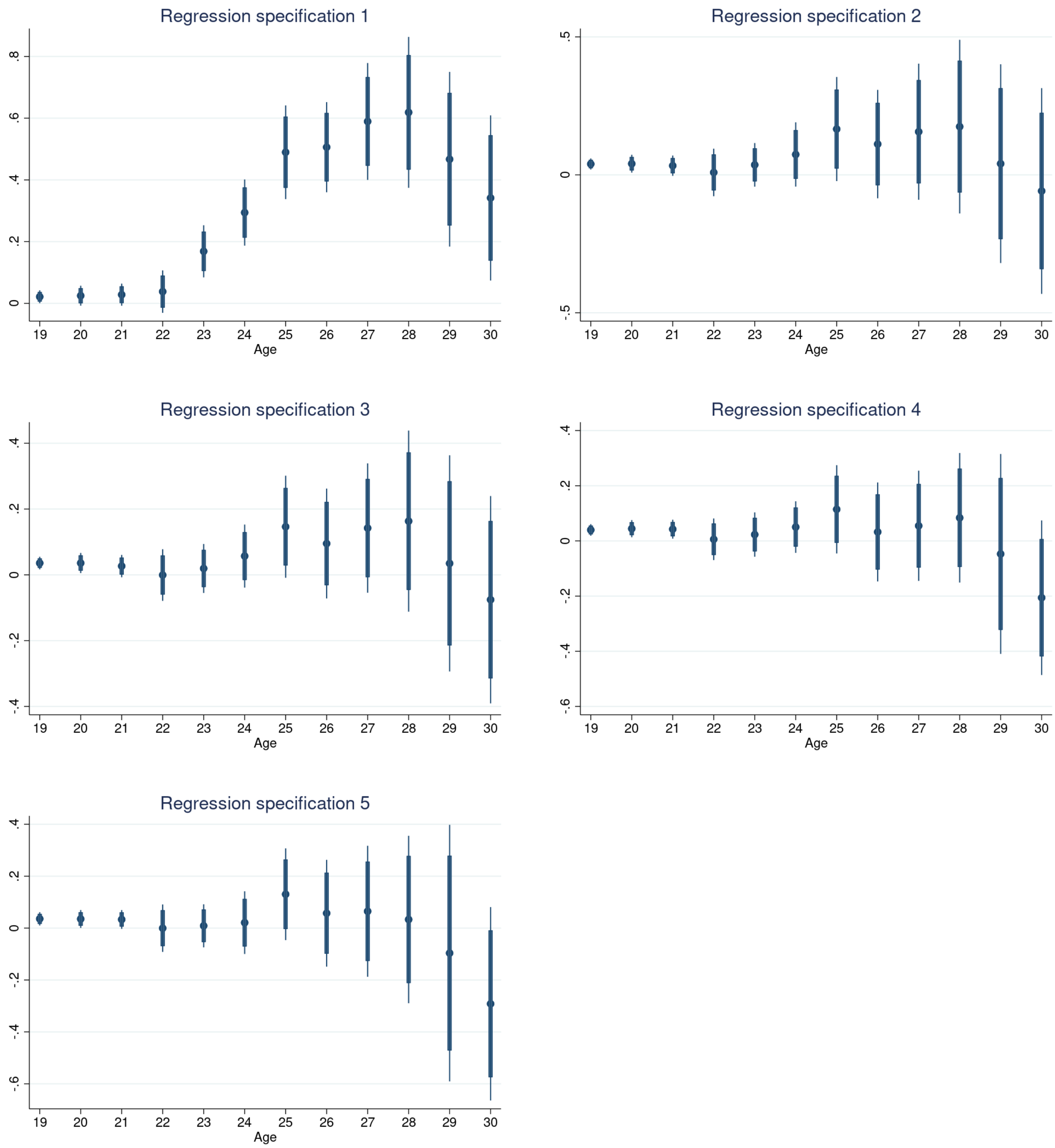
Note: The left figure shows the fraction of total FHA mortgages receiving some form of help from relatives for the mortgage down payment. The right figure shows inheritance and inter-vivos transfer by age. Source: https://www.hud.gov/program_offices/housing/rmra/oe/rpts/sfsnap/sfsnap and https://www.federalreserve.gov/econres/notes/feds-notes/how-does-intergenerational-wealth-transmission-affect-wealth-concentration-20180601.htm.

Figure A3: Parents LTV, Equity Extraction and Children Home Ownership



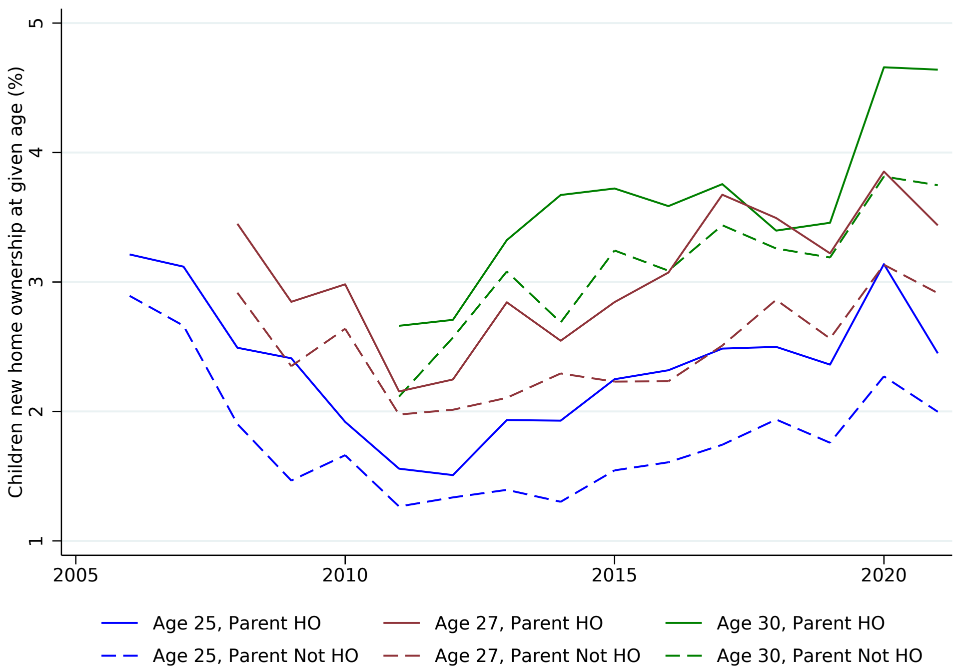
Note: The left panel shows the fraction of parents extracting equity as a function of the parents lagged LTV. The right panel shows the fraction of children becoming new homeowners as a function of the parents lagged LTV. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

Figure A4: Intergenerational Home Ownership Across Ages



Note: This figure shows the estimates of the models equation (2) estimated separately for each age from 19 to 30. The figure also shows 90% and 95% confidence intervals (the lines extending from the points). Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

Figure A5: Relationship between Children's Flow into Homeownership and Their Parents Homeownership Status



Note: The figure shows the fraction of children that become homeowners as a function of the homeownership status of their parents. The solid lines show the average share of children who become new homeowners and whose parents are homeowners. The dash lines show the average share of children who become new homeowners and whose parents are not homeowners. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

Table A1: Intergenerational Home Ownership, "Stock" Model, Ages 27 and 30

	(1)	(2)	(3)	(4)	(5)
Panel A: Homeowner by 27	Dep Var: Child is home owner at age 27				
Parent homeowner	3.253***	2.263***	1.940***	1.556***	1.519***
	(0.254)	(0.289)	(0.191)	(0.156)	(0.216)
Controls (parent age, parent and child credit)	No	Yes	Yes	Yes	Yes
Year f.e.	No	Yes	Yes	Yes	Yes
State f.e.	No	No	Yes	No	No
Zipcode f.e.	No	No	No	Yes	No
Group f.e.	No	No	No	No	Yes
Mean Y	11.26	11.26	11.26	11.26	11.26
Observations	325298	325298	325298	325298	325298
Adjusted R^2	0.00	0.04	0.05	0.07	0.08
Panel B: Homeowner by 30	Dep Var: Child is home owner at age 30				
Parent homeowner	6.064***	3.318***	2.727***	1.921***	1.664***
	(0.310)	(0.456)	(0.228)	(0.188)	(0.286)
Controls (parent age, parent and child credit)	No	Yes	Yes	Yes	Yes
Year f.e.	No	Yes	Yes	Yes	Yes
State f.e.	No	No	Yes	No	No
Zipcode f.e.	No	No	No	Yes	No
Group f.e.	No	No	No	No	Yes
Mean Y	21.07	21.07	21.07	21.07	21.07
Observations	175740	175740	175740	175740	175740
Adjusted R^2	0.00	0.08	0.10	0.11	0.12

Note: The table reports the estimates of equations (1). In Panel A the dependent variable is the dummy equal to one hundred if the individual is an homeowner at age 27 and zero otherwise. In Panel B the dependent variable is the dummy equal to one hundred if the individual is an homeowner at age 30 and zero otherwise. Controls are parents age and age squared, and deciles of credit score for both children and parents. Group f.e. are interacted fixed effects for year and zip code. Standard errors are clustered at the state level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data.

Table A2: Dynastic Home Equity, Conditional on Equity Extraction

	(1) OLS	(2) RF	(3) FS	(4) IV
Parent Extraction Amount (ln + 1)	0.085***			0.463**
	(0.006)			(0.219)
Lagged Parent LTV > 80		-0.099**	-0.214***	
		(0.047)	(0.016)	
Controls	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
Age F.E.	Yes	Yes	Yes	Yes
County F.E.	Yes	Yes	Yes	Yes
Mean Y	1.02	1.02	1.00	1.02
Observations	978140	978140	978140	978140
F-stat				170.34

Note: Column (1) reports estimates from equation (3). Column (3) reports estimates from equation (5). Column (4) reports estimates from equation (6). The dependent variable in columns (1), (2) and (4) is the dummy equal to one hundred if the individual becomes an home owner and zero otherwise. The dependent variable in column (3) is the (log + 1) total amount of equity extracted. Parent extraction amount is the (log + 1) total amount of parents' individual equity extracted. Controls are child age, parent age, parent age squared, 3-yr child county house price growth, 3-yr parent county house price growth, child county unemployment rate, parent county unemployment rate, 3-yr child county wage growth, 3-year parent county wage growth, 3-year child county employment growth, 3-year parent county employment growth, deciles of child and parent credit scores, and a quadratic in lagged LTV. Standard errors are clustered at the parent county level. Standard errors are clustered at the parent county level. Authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax Data Equifax Credit Risks Insight Servicing McDash and Black Knight McDash Data.