Dynastic Home Equity

Matteo Benetton[1]   Marianna Kudlyak[2]   John Mondragon[2]

[1]Berkeley Haas

[2]San Francisco Fed

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Intergenerational Wealth Persistence

- A large, active area of research documents persistent intergenerational linkages in income, wealth, and consumption

- Candidate explanations include genetic traits, environmental and institutional factors, inheritances, in-vivo transfers, etc

"Our broader view of resources and wellbeing shows that even in a generous welfare state such as Denmark, with substantial social insurance and redistribution through taxes and transfers, there is strong intergenerational dependence ... These findings call for a deeper examination of the sources of inequality and its persistence across generations."

— Eshaghnia, S, J J Heckman, R Landers and R Qureshi, NBER WP September, 2022

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This paper:

- Focus on intergenerational correlation in homeownership and housing wealth

- Propose a new mechanism that operates via the housing credit market

This Paper

- **Mechanism:** Parents who own a house extract home equity to help their children purchase a home - Dynastic Home Equity

- **Data:** Nationally-representative panel of consumer credit records in the US, 1999-2021, linking parents and their children

- **Identification:** Rely on timing and multiple approaches to isolate the role of parents' home equity extraction in the intergenerational correlation in homeownership

  - Fixed effects specification (Zip code $\times$ age $\times$ year; individual)

  - Propensity score matching on broad set of observables

  - Event study around parental equity extraction

  - Linear projection difference-in-differences (LP-DiD)

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- **Findings:**
  - Strong correlation in homeownership across generations
    - Young adults at age 25 are 16% more likely to be a homeowner if a parent is also a homeowner
  - Dynastic home equity
    - Equity extraction events associated with a sharp increase in transition to homeownership: 80% increase relative to the mean
    - Common: about 10% of children's new home purchases are associated with parent equity extraction
    - Children with help buy younger, bigger houses, less leveraged loans, stay in their houses longer
    - Back-of-the-envelope scenario: accounts for about 10% of the white-black wealth gap

- **Implications:**
  - Unequal impact of housing macro-prudential regulations
  - Role of in-vivo transfers well before inheritance happens (property taxes as complement to inheritance taxes)

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Related Literature

1. **Homeownership, mortgage market and equity extraction, leverage regulation**
   ▸ Hurst and Stafford (2004); Campbell (2006); Mian and Sufi (2011); Bhutta and Keys (2016); Sodini et al. (2017); Berger et al. (2018); De Fusco et al. (2018); Greenwald (2018); Beraja et al. (2019); Favilukis et al. (2019); Benetton (2020); Boar et al. (2020); Mabille (2020); Guren et al. (2021); Kermani and Wong (2021)

   → Equity extraction not only important for business cycle / monetary policy, but for persistence of housing wealth inequality across generations

2. **Intergenerational persistence in wealth, role of family**
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Outline

- Data and Preliminary Facts

- Dynastic Home Equity
  - Identification and Mechanism

- Conclusions

Data and Preliminary Facts

Data

- **Main:** Federal Reserve Bank of New York Consumer Credit Panel/Equifax (CCP)
  - Individual-level quarterly panel dataset with detailed records of borrowing
  - 5% random sample of all U.S. consumers with a credit record, plus everyone in the household during a given quarter
  - Our sample: Q1-1999 to Q3-2021

- **Additional data:**
  - CRISM and McDash: Loan-to-value
  - Bureau of Labor Statistics: county-level unemployment rates, employment growth, and wage growth
  - Corelogic: house price index

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Definitions of Key Variables

- **Homeowner:** number, payment amount, or total balance of mortgage, home equity installment or home equity revolving loans is > 0
    - If no mortgage AND no line of credit we classify as a non-homeowner
    - ACS: 63% of homeowners currently have a mortgage

- **Equity extraction:** borrower outstanding mortgage debt increases by more than 5% over a one year period, with a minimum increase of \$1,000
    - Same definition as in Bhutta and Keys (2016); McCully, Pence and Vine (2019)

- **Child:** individual for whom we have a record at age of 18 (typical age to enter CCP)

- **Parent:** individual who resides in the same address with an 18-year-old child and is 36 years or older
    - High fraction of young adults live with their parents at age 18 (2010 Census: 57% of men and 48% of women aged 18-24 lived with their parents)

- The resulting dataset contains >1M children and assigned parents

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Preliminary Fact: Intergenerational Homeownership
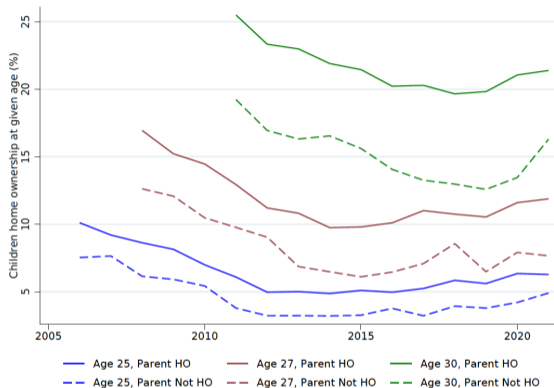
- Controlling for zip code × time f.e. and credit score of both parents and children, young adults at age 25 are 16% more likely to be homeowner if parents homeowner
- Several explanation for this intergenerational <u>correlation</u>: Selection (ability, preferences,...) VS Treatment (education, direct transfers,...)

Dynastic Home Equity: Identification

Empirical Strategy: Fixed Effect and Event Study

- Linear probability model for young adult i living in location l becoming homeowner for the first time in period t at age a

$$NewHO_{ilat}^{Child} = \alpha Extract_{ilat}^{Parent} + \theta X_{ilat} + \gamma_{lat} + \epsilon_{ilat}$$

  - $Extract_{ilat,t-1}^{Parent}$: dummy $= 1$ if any of the parents of individual i extract equity from the housing in year t
  - γ_{lat}: location, age and time fixed effects (also interaction, individual fixed effects)
  - X_{ilat}: children and parent level controls (e.g., credit scores)

- Look at discountinuous increase in *children* inflow into homeownership if *parent* extracted home equity ($k = 0$ in the same year; $k < 0$ k years ago; $k > 0$ k years in the future)

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Empirical Strategy: Fixed Effect Model - Results

	(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.		Yes	Yes	Yes	Yes		Yes
Age F.E.		Yes	Yes	Yes	Yes		Yes
Controls		Yes	Yes	Yes	Yes	Yes	Yes
State F.E.			Yes				
County F.E.				Yes			
Zipcode F.E.					Yes		
Group F.E.						Yes	
Child F.E.							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

▸ Parents' equity extraction is associated with a higher flow into homeownership by ≈ 0.6pp (60%) within year, age, zipcode, fico ▸ Fixed effects

▸ Survey evidence: wealth transfer ↑ transition to homeownership by 15-35%

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Empirical Strategy: Event Study - Results
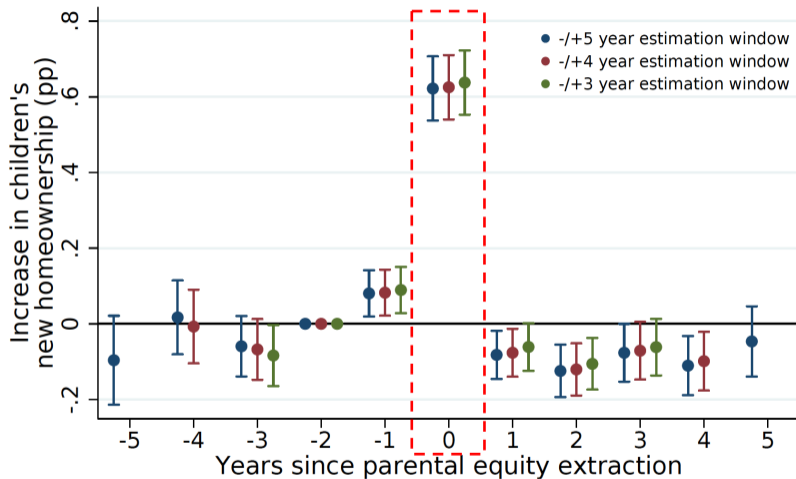
▶ Large jump in children homeownership probability if parents extract same year

Empirical Strategy: LP-DiD

- Local projection model to estimate the equal-weighted dynamic treatment effects of equity extraction (Dube, Girardi, Jorda, Taylor 2023)

- Estimate *series* of regressions indexed by horizon h

$$NewHO_{ilat+h}^{Child} - NewHO_{ilat-1}^{Child} = \alpha^h Extract_{ilat-1}^{Parent} + \theta^h X_{ilat-1} + \gamma_{lat-1}^h + \epsilon_{ilat-1}^h$$

  - Restrict sample to newly treated or not treated yet (clean control)
  - Restrict to once-treated
  - Estimate weights to recover equally-weighted treatment effects

- Advantages
  - Linear: no convergence issues and very fast
  - Transparent
  - Flexible: can easily handle controls, non-absorbing and/or continuous treatments

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Equal-weighted
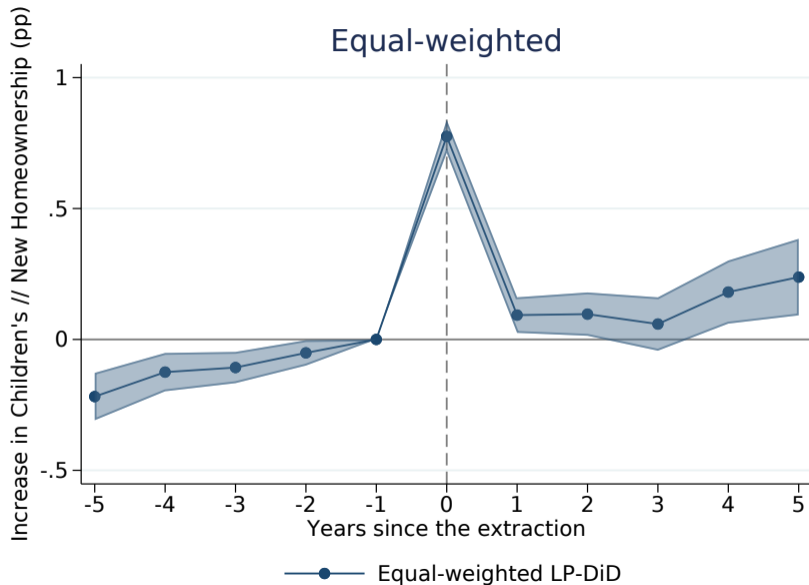
Fleshing out the Mechanism

- Parental equity extraction is more important for homeownership when children are younger, if they have more siblings, and if local housing is expensive.

- Parental equity extraction appears more important after the global financial crisis when access to easy mortgage credit collapsed

- Children whose parents extract equity buy homes at younger ages and take out loans with much lower leverage

- The home match quality appears higher: they buy larger homes and are less likely to move.

- **Overall**: Dynastic home equity more important when financial constraints likely binding for children and parents can relax them accessing their home equity → home equity begets home equity

Dynastic Home Equity: Implication for Persistence in Disparities in Homeownership Rates

Back-of-the-envelope Calculation

- **Question:** How much dynastic home equity affect persistence in disparities in homeownership rates?

- **Setting:** Black-white homeownership gap
  - Well established in the literature, active debate about mechanism and policy options (Charles and Hurst, 2002; Derenoncourt et al., 2022; Kermani and Wong, 2022; Gupta et al., 2022)

- **Approach:**
  - All children at age 18 are renters; once homeowners, no transition back to renting
 - Probability renter child i transitions to owner in period t:

$$P_{it}^{\text{Renting} \to \text{Owning}} = \underbrace{Baseline_{it}^{\text{Parent renters}}}_{\substack{\text{Calibrate to match} \\ \text{white ownership in} \\ \text{the data at age 35}}} + \underbrace{\theta_{it}^{\text{Parent owner}} + \gamma_{it}^{\text{Parent extract}}}_{\substack{\text{Empirical frequency} \\ + \text{causal estimates}}}$$

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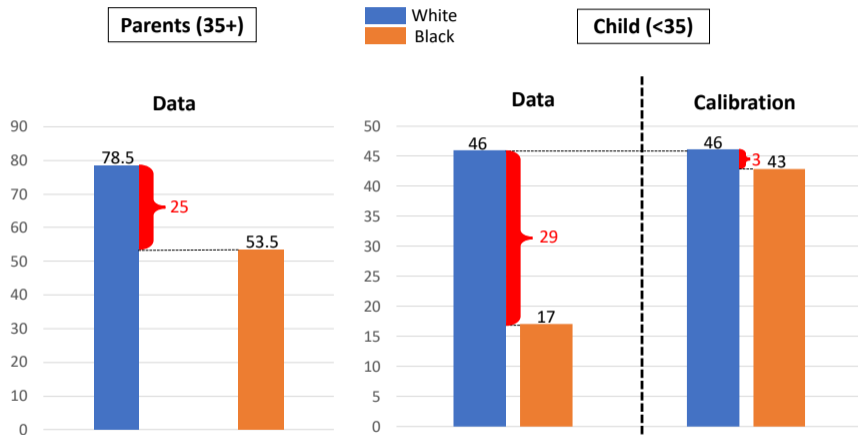# Dynastic Home Equity and Racial Disparities in Homeownership Rate
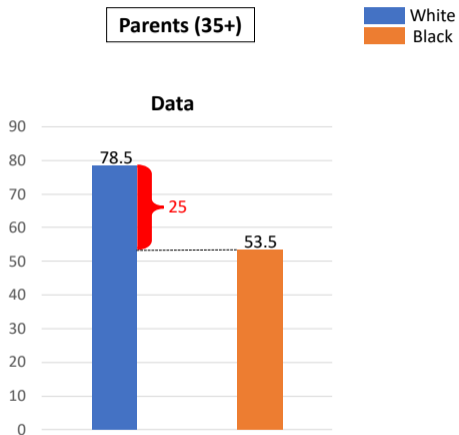
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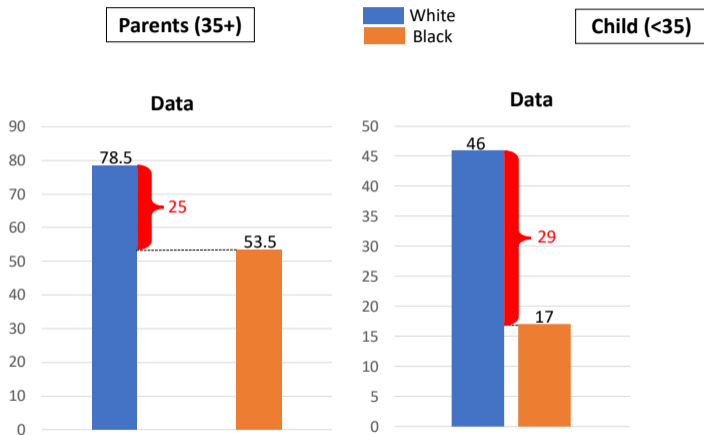
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Dynastic Home Equity and Racial Disparities in Homeownership Rate

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- We document a strong **correlation in homeownership across generations** in the US

- We propose and identify a new causal channel to explain correlation: **"Dynastic Home Equity"**
  - Parents extract home equity to finance child home purchase (within housing wealth) → increase transition to homeownership; lower leverage of children; children buy "better" homes
  - Channel can explain ≈10% of the homeownership gap between black and white young adults

- **Policy Implications:**
  - Unequal impact of macro-prudential regulations (LTV, LTI, etc) for homeownership and wealth accumulation
  - Role of in-vivo transfer well before inheritance happens (Property taxes as complement to inheritance taxes)