Replication of Homeownership and Portfolio Choice over the Generations*

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1 Abstract

This study examines declining rates of home ownership across generations, focusing on changes in income risk and economic conditions between the 1940s, 1960s and 1980s. By using a life-cycle model with housing and portfolio choices that includes risks in earnings and asset prices, we show that changes in earnings dynamics relate to a large part of reductions of homeownership across generations. We found that changes in income mobility contribute significantly to the decline in homeownership rates. This trend particularly affects low-income

*Code and data are available at: https://github.com/QPP123/Replication-of-Homeownership-and-Portfolio-Choice-over-the-Generations DOI: 10.1257/mac.20200473

households, preventing them from buying a home and saving money. Our findings highlight the significant impact of the financial status and economic environment on the different generations' home-ownership and portfolio choices.

2 Introduction

The landscape of American household ownership and financial stability has changed dramatically in recent decades (1940s to 1960s to 1980s), with rising income inequality and notable changes in savings choice at birth series have been marked. By using a cyclical model of household decisions in construction policy management under different economic conditions, we examine the effects of labor market development and financial market development on different groups. Our research reveals significant differences in the number of households, particularly affecting younger generations, which face greater income risk and adverse financial market conditions. The core of our analysis focuses on the hypothesis that changes in labor market earnings dynamics account for a substantial proportion of the decline in inter-generational homeownership. This study not only marks important gaps in understanding the relationship between income risk, investment decisions, and homeownership, but also sheds light on the broader implications of wealth inequality and monetary policy also on the. Through this study, we aim to provide insight into the mechanisms by which these changes are brought about, and thus create policy interventions that can mitigate adverse effects for future generations under the customs.

3 An Overview of Intergerational Changes: Explained with Related

Literature Individuals born in the 1960s and 1980s experienced greater income inequality, higher income volatility, and higher average housing costs relative to the 1940s cohort has led to a decline in the number of homeowners but there has been a rise in savings but the increased participation of female workers has offset this trend somewhat, maintaining or increasing the middle income a are obtained for younger groups after 30 years. This reflects the rightward shift of the income distribution, with higher earners seeing larger gains, as opposed to stagnant or declining incomes at the lower end This change implies economic differences will widen in new groups from an early age. Moreover, younger groups face greater earnings volatility, attributed to labor market changes that differentially affect working hours and employment stability, suggesting subtle effects across labor force groups. De Nardi, 2004) All of these economic differences between generations had caused inequality in savings and wealth accumulations in households, leading directly to difference in homeownership rates and differences in other investment behaviors such as stock market participation. (De Nardi et al, 2017)

4 Estimated

In this study, our paper replicates the population that was used in "Homeownership and Portfolio Choice over the Generations" (Paz-Pardo 2023) which mentions that the population differs between different datasets. According to the data retrieved from the paper, the generations born in the 1960s and 1980s, when compared to that of the 1940s, have faced more earnings inequality, volatility, and on average more expensive housing costs. Showing that these people are less likely to become homeowners, but are more suited and likely to participate in the stock market.

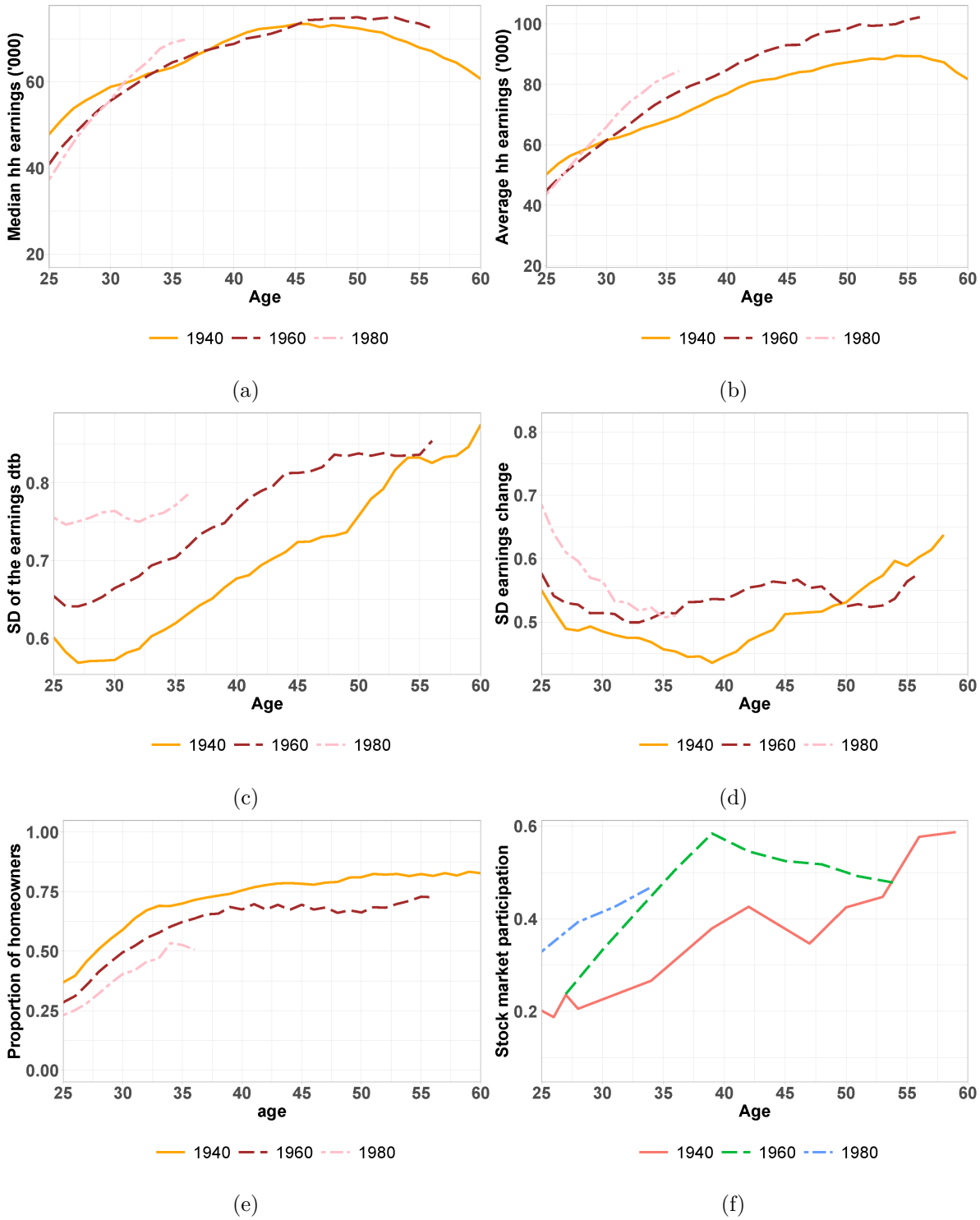
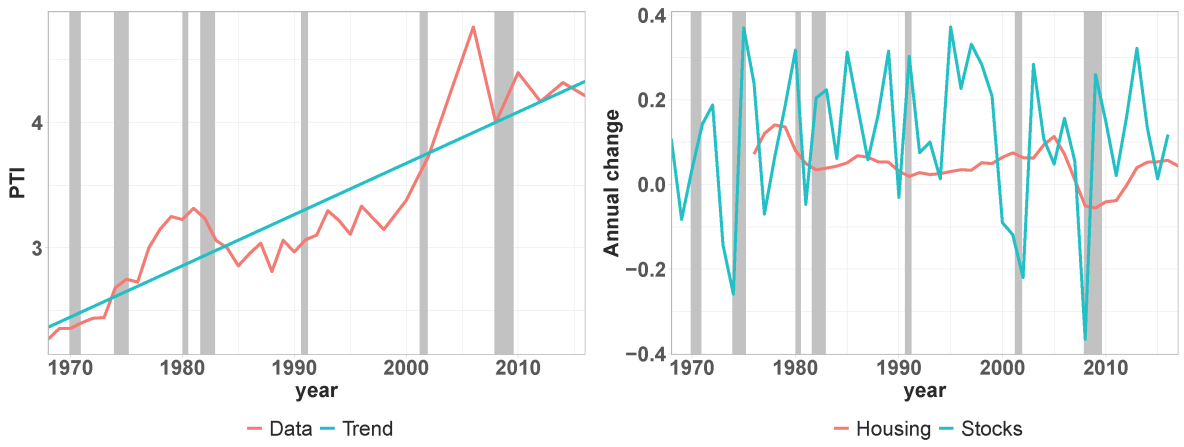


Figure 1: Intergenerational changes. Top: median (left) and average (right) household earnings. Middle: standard deviation of the log earnings distribution (left), and standard deviation of log earnings changes (right). Bottom: homeownership (left) and stock market participation (right). PSID data (Panel Study of Income Dynamics, 2017), deflated using the CPI, stock market participation from SCF (Survey of Consumer Finances (2019) and Survey of Consumer Finances (1960 to 1986)).



(a) (b)

Figure 2: Evolution of house prices and asset returns. Left: median Price to Income (PTI) ratios for housing (PSID data). Right: Stock returns, S&P 500, vs. growth in Federal Housing Finance Agency (FHFA) house price index. Shaded areas correspond to NBER recessions.

5 Data Analysis

The article presents a comprehensive analysis of intergenerational changes in homeownership, earnings inequality, and financial portfolio choices, utilizing data from the Panel Study of Income Dynamics (PSID) and Survey of Consumer Finances (SCF). Figures 1 and 2 in the paper illustrate key empirical findings:

Figure 1 depicts median and average household earnings by age and cohort, alongside the standard deviation of earnings and changes in earnings, showcasing the increased earnings inequality and volatility across generations. It also illustrates trends in homeownership and stock market participation rates, highlighting a decline in homeownership and an increase in stock market participation among younger cohorts.

Figure 2 focuses on the evolution of house prices and asset returns, specifically the median Price to Income (PTI) ratios for housing and the comparison between stock returns and Federal Housing Finance Agency (FHFA) house price index growth. This figure underscores the growing challenge of housing affordability and the cyclical nature of asset returns, which have varied implications across different cohorts.

The paper thoroughly discusses the broader context of these datasets, explaining the construction and cleaning of variables while emphasizing the destination of the analysis rather than the methodological journey. It acknowledges alternative datasets that could have been used but justifies the chosen data sources based on their relevance and comprehensiveness for the

study's objectives. Summary statistics and discussions on the relationship between variables provide insights into the underlying trends and shifts in the economic landscape affecting homeownership and portfolio choices across generations.

6 Measurements

This paper replicates the life-cycle structural model that was created to evaluate the changes in earning and financial conditions with different age groups. This model evaluates the changes in earnings and financial conditions described in each demographic and can account for different intergenerational contrasts in homeownership and portfolios. The life-cycle model shows that the economy is populated by a continuum of households and the perspective of a cohort, and time is indexed in a period of two years.The demographic measurements retrieved from the paper shows that households born in the model at age 25, end up retiring at the age of 60 and results in them facing positive and increasing death probabilities starting at the age of 25. Concluding that people in these demographics certainly die at the age of 86. An average demographic profile at each age is introduced in the model with a taste shifter, which represents the average OECD equivalence scale at each age and generates age-varying marginal utility from nondurable housing consumption.

7 Results

In figure 1, people's average and median household earnings, standard deviation of earnings distribution and earnings change, proportion of homeownership, and stock market participation are all presented in line graphs.

According to our findings, in graph (a) and (b) of figure 1, for people aged 25, people in the 1940s have the highest median household earrings and average household earnings among the six decades (1940s, 1960s, and 1980s). The average and median household earnings for eople aged 25 in the 1960s and 1980s were both less than those people in the 1940s.

For graph (c), people at all ages, people living in the 1940s had the lowest standard deviation of earnings distribution, which implies that during this period, there was less variability or disparity in the amounts of money people earned.

Also, for graph (d), people aged 25 to 35, those who lived in the 1940s had the lowest standard deviation of earnings earnings change, meaning that the year-to-year fluctuations in income for individuals or households during that period were relatively small. In other words, the amount of money people earned from one year to the next tended to remain more consistent, with less variability in earnings increases or decreases, compared to later periods. This suggests a more stable economic environment for earnings during the 1940s, with fewer dramatic changes in individuals' financial situations from year to year. People aged 25 to 35 who lived in the 1940s

had the lowest possibility of experiencing sudden significant loss or gain of income, same-age people lived in the 1960s had a higher possibility, and same-age people lived in the 1980s had the highest possibility.

For graph (e), in the 1940s the proportion of home owners is the highest among the six decades (1940s, 1960s, 1980s). The proportion of homeownership across all ages decreased from 1940s to 1960, meaning that in the three decades more and more people were either not able to afford homeownership or they rather not to be a home owner.

As for stock market participation, the graph (f) became more interesting: people lived in the 1940s did not have much interest in stock market at the age of 25, however their interests in stock market significantly increase as they aged. People in the 1960s, on the other hand, had greater interests in the stock market at 25 and their interests continue to significantly increase, however, their interests suddenly decrease at the age of around 40.

In figure 2, it is about the evolution of house prices and asset returns. Graph (a) shows median Price to Income (PTI) ratios for housing (PSID data). Graph (b) shows stock returns, S&P 500, vs. growth in Federal Housing Finance Agency (FHFA) house price index. Shaded areas correspond to NBER recessions. It is obvious that the PTI ratios for housing has been steadily increasing, while the stock growth change is very unstable over the decades. This suggests that during the documented time (1970s to 2010s), real estate is a safer long-term investment choice for steady growth than stock markets.

8 Discussion

1. An interesting finding from both figure 1 and 2 is that although the younger generations (1960s generations in particular) had a greater risk of experiencing earnings changes, they still tended to put their money in the stock market, which is statistically proven to be more unstable and thus riskier than the housing market. In comparison, the 1940s generation were less likely to experience earnings change, and they were more likely to put their money in the real estate market (be homeowners), and less likely to participate in the stock market.
2. Correlation: The information replicated from the paper shows that the graphs are successful in determining the replications of portfolio patterns by wealth, showing that a standard portfolio choice would yield stock holding patterns which are mildly decreasing rather than increasing it with wealth and profit. The role of housing and the correlation of labor income and stock returns end up reducing the incentive of the income-poorer to participate in the stock market. In contrast, with richer individuals who have sufficient resources available even after buying their homes and use these resources for investing purposes in the stock market, in which they yield a greater return that results in them being wealthier.

3. Strengths: The paper that was replicated does a fantastic job of showing how the changes in earnings dynamics in different cohorts of demographics have affected homeownership portfolio choice decisions. By providing evidence that was retrieved from PSID and SCF data dating all the way back to the 1960s, the strengths of the data can determine that there has been a significant increase in household earnings inequality and risk. Which both

4. Weaknesses: The paper's findings suggest that intergenerational changes are important for studies of household incomes in terms of earnings, consumption, and wealth accumulation. In which, the paper tries to show that the distribution of the economy is formed by many different households who have lived through different events in the past that impacted their personal economic growth in different stages in their life. However, in terms of demographics, the paper retrieves a significant portion of the data and information from the older generation as the youngest household owner age in the paper is the age of 25. In the current generation, homeownership is becoming more common in North America beginning at the age of 18 which is the legal age to own a house in both Canada and the United States. As many young adults are becoming homeowners whether it would be through the finances of their family or purchasing a house by themselves when they move off to college or university in another part of their country, becoming a homeowner is becoming more relatively common as the new and current generations have access to resources that allow them to become homeowners at a young age. Which is something the paper could improve on in terms of expanding the age group of homeowners in the current generation.**

9 Conclusion

In conclusion, homeownership rate and portfolio choices varied significantly between different generations in the 1940s, 1960s, and 1960s. We found that people in the 1940s were the generation that had the least possibility of experiencing earnings change and they could own their home at the earliest age, while people in the 1980s were the generation that could experience the most earnings change and they were the oldest ages when owning their homes. We also found that people in the 1940s did not have much interest in the stock market - which is statistically proven to be riskier than the housing market, while people in the 1980s had a greater interest in stock markets before they were 40. It is safe to suggest that people in the 1940s were in a more steady economic environment and thus they tend to be more conservative when it comes to money and investment, while people in the 1980s were in a more ever-changing environment and thus were more likely to become risk-takers when they were younger.

Since housing is a necessity for all people, future monetary and housing policies should be introduced so that more young generations could afford to own their own houses at an earlier age. Since there are many resources that can allow for anyone to learn more about housing

and stock market policies, it makes it much easier to become a homeowner at a young age. Concluding our findings by replicating the paper which shows that homeownership rate and portfolio choices vary in different generations and shows growth and decline depending on the homeowners income and economic situation at that time.

10 References

R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: https://www.R-project.org/.

(**Manual?**){citeR, title = {R: A Language and Environment for Statistical Computing}, author = {{R Core Team}}, organization = {R Foundation for Statistical Computing}, address = {Vienna, Austria}, year = {2022}, url = {https://www.R-project.org/%7D, }

Paz-Pardo, G. (2021). Homeownership and Portfolio Choice Over the Generations. SSRN Electronic Journal. url= {https://doi.org/10.2139/ssrn.3797142/%7D, }

(**misc?**){url = {https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2522~7ad2cdbbb5.en.pdf%7D,journal={Homeownership and portfolio choice over the generations}}

De Nardi, M. (2004). Wealth inequality and intergenerational links. Review of Economic Studies, 71, 743–768.

De Nardi, M., & Fella, G. (2017). Saving and wealth inequality. Review of Economic Dynamics, 26, 280–300.

De Nardi, M., Fella, G., & Paz-Pardo, G. (2020). Nonlinear household earnings dynamics, self-insurance, and welfare. Journal of the European Economic Association, 18(2), 890–926.

ECB Working Paper Series. (n.d.). Homeownership and portfolio choice over the generations. Retrieved from https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2522~7ad2cdbbb5.en.pdf url= {https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2522~7ad2cdbbb5.en.pdf%7D, }