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# House price growth when children are teenagers: A path to higher earnings?

Daniel Cooper [a,*], María José Luengo-Prado [a,b]

[a] Federal Reserve Bank of Boston, United States
[b] Northeastern University, United States

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ABSTRACT

This paper examines whether rising house prices immediately prior to children entering college have an impact on their earnings as adults. Higher house prices provide homeowners with additional funding to invest in their children's human capital but also raise housing costs. The results show that a 1 percentage point increase in house prices, when children are 17 years-old, results in roughly 0.9 percent *higher* annual income for the children of homeowners, and 1.5 percent *lower* annual income for the children of renters. House price appreciation at age 17 also leads to higher college enrollment rates at age 19 and an increased likelihood of attendance at higher ranked post-secondary institutions for children of homeowners, as well as lower college enrollment rates for children of renters.


## 1. Introduction

The United States has long been a country that promotes homeownership through the federal tax deduction for interest paid on mortgages, Federal Housing Administration loans, and the non-taxability of imputed rental income. Encouraging homeownership is often viewed as a public policy mechanism for improving households' economic stability and generating increased community investment. For example, homeowners can use the accumulated equity in their homes as collateral for loans (or lines of credit) to finance home improvements or other needed expenditures. Studies by Cooper (2013), Hryshko et al. (2010), and Lovenheim (2011), among others, consider the role of housing wealth as borrowing collateral. According to the Survey of Consumer Finances, housing wealth comprises over 70 percent of net worth for the median U.S. household.[1] Understanding how fluctuating house values impact consumer behavior has become an important topic for economists, especially given the housing boom and bust in the mid-2000s.

This paper investigates whether local-area house price changes that occur just before most children usually make college enrollment decisions impact their future earnings. House price gains when children are teenagers increase homeowners' housing equity and their ability to invest in their children's human capital and/or to finance other expenditures. Children who start college following a run-up in house prices and whose parents are homeowners may have greater educational opportunities than homeowners' children who start college following a period of flat or falling housing prices, or than the children whose parents rent their home. Better educational opportunities typically translate into higher lifetime earnings. With additional parental financing available for college, students also potentially benefit by needing to work less to finance their schooling and/or by being able to attend a better quality institution. Both outcomes should improve student achievement and result in potentially higher earnings for these students as adults.

We analyze whether house price fluctuations when children are 17 years-old impact their earnings as adults by using data from the Panel Study of Income Dynamics (PSID)—a dataset that provides detailed demographic and financial information on parents and their offspring over time. We also have access to restricted geographic identifiers that enable us to use the house price growth for the MSA in which households lived when their children were age 17 years-old. We can therefore investigate the impact of what

* Corresponding author.
[1] See, for example, Wolff (2010).

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arguably are exogenous house price fluctuations for owners and renters during their children's teenage years on their children's future earnings holding parental income and other relevant factors fixed.

To our knowledge, this paper is the first to examine the link between house price growth during individuals' teenage years and their earnings as adults, and how this link varies based on parents' homeownership status. Our results show that house price appreciation during children's teenage years has an effect on these children's future earnings conditional on parental resources and other demographic factors. House price growth is beneficial for the children of homeowners but not for the children of renters living in similar locations. In particular, when children are 17 years-old, a 1 percentage point increase in house prices results in roughly 0.9 percent *higher* average annual income for owners' children (later in life) and 1.5 percent *lower* average annual income for renters' children. These findings are robust to controlling for local economic conditions that might be correlated with house prices as well as with children's educational and economic opportunities. In our baseline specification, we measure house price growth as a two-year change from when children are age 15 to age 17. Using different measures of house price appreciation (one-year, four-year, or cumulative) yields similar results—house price growth when children are about 17 years-old matters for their future adult earnings. Examining the effect of house price growth at different ages confirms that homeowners' cumulative house price gains prior to their children entering college matter the most for their children's future earnings, while the earnings of children whose parents are renters were most impacted by short-term house price changes around the time these children were 17 years-old.

We also show that house price growth when children are 17 years-old leads to higher college enrollment rates when they are 19 years-old, and results in increased attendance at higher ranked post-secondary institutions for the children of homeowners, while housing appreciation at age 17 lowers the likelihood that renters' children enroll in college at age 19. All of these findings are consistent with the hypothesis that homeowning parents are able to invest more in their children's human capital when house prices rise. For renters' children, higher housing costs due to rising house prices likely reduce college enrollment because these parents have fewer resources to help finance their children's eduction.

The paper proceeds as follows. The next section discusses the existing literature on homeownership and various economic outcomes. Section 3 discusses our empirical approach and Section 4 describes the data. Section 5 presents our results. Section 6 discusses our results and provides some suggestions for future related work.

## 2. Existing literature

Our paper relates to an extensive literature examining the impact of parents' homeownership status on children's outcomes. The most frequently cited studies include Green and White (1997), Aaronson (2000), Haurin et al. (2002), and Harkness and Newman (2003). Green and White (1997) analyze whether the children of homeowners are more likely to stay in school longer than the children of renters and also whether the female children of homeowners are less likely to give birth as teenagers than renters' daughters. The authors find that the children of homeowners end up with better outcomes both in terms of years of schooling and rates of teenage parenthood. This is especially true within the group of low-income parents. Similarly, Harkness and Newman (2003) find that homeownership has a positive impact on a number of childhood-related outcomes—including educational achievement, unwed births, and wage rates—especially for low-income families. Aaronson (2000) considers whether parental homeownership impacts children's educational attainment and finds that the residential stability associated with homeownership favorably affects education. Haurin et al. (2002) analyze the impact of homeownership on the cognitive and behavioral outcomes of children. They find that compared to the children of renters, the children of homeowners grow up in a more stimulative and emotionally supportive environment than renters, which improves their cognitive ability and reduces behavioral problems.

Other relevant papers include Lien et al. (2008) who use census data from Taiwan to examine the link between one's home environment and educational attainment. They find that increases in living space, parental homeownership, and residential stability are positively related to children's educational achievement. Dietz and Haurin (2003) review the literature on the economic and social consequences of homeownership.

Our paper contributes to the literature on the relationship between homeownership and children's outcomes by analyzing the impact of house price fluctuations on children's future earnings—an outcome that likely works through the education channel. We also examine how the impact of house price appreciation differs for the children of homeowners versus renters. Even though parents who are renters do not have claim to any equity in their home, they may benefit or suffer based on the costs of housing associated with fluctuating house prices. Local conditions associated with changing house prices, such as higher or lower property tax bases and revenues, may also impact renter parents and their children.

There is also a broad and related literature examining factors that impact children's educational achievement. Two particularly relevant papers are Boehn and Schlottmann (1999) and Lovenheim (2011). Boehn and Schlottmann (1999) examine the relationship between parents' homeownership status and children's educational attainment. They find that the children of homeowners, on average, are more likely to have completed higher levels of schooling compared to the children of renters. The authors, however, only consider the impact of parents' housing tenure choice on educational outcomes and not the role that house price fluctuations may play in decisions about post-secondary education.

Lovenheim (2011) investigates how changing house prices during children's teenage years impact their college enrollment decisions. The motivation behind his research is similar to ours—rising house prices increase homeowners' equity and thus parents have an additional funding source they can tap to help pay for their children's college education. Lovenheim (2011) finds that after the year 2000, house price growth raised college attendance—especially among households with limited income. Lovenheim's research, however, does not consider the longer-term impact of house price growth on children's earnings as adults and his analysis focuses primarily on the most recent housing boom and bust. Moreover, he assumes that renters are a control group and are not affected by house price appreciation, while we show that this is not the case.

Other related research includes Dynarski (2003), who examines the relationship between parents' financial liquidity and their children's college attendance. In particular, she exploits a 1992 rule change that exempted parents' home equity from being considered in calculations of a family's need for financial aid, which made many students newly eligible for federal college loan programs. She finds that these students are more likely to go to college, and they also shift toward attending four-year institutions.[2]

[2] According to the Department of Education, home equity was included in federal financial aid need analysis until the Higher Education Amendments of 1992 eliminated home equity from the federal aid calculations beginning with the 1993–94 academic year. Colleges are still allowed to incorporate parents' home equity in calculating students' eligibility for *nonfederal* financial aid programs, although many eliminated home equity from their private financial aid calculations in the early 2000s.