

RESEARCH REPORT

Millennial Homeownership

Why Is It So Low, and How Can We Increase It?

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July 2018



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Acknowledgments

The Housing Finance Policy Center (HFPC) was launched with generous support at the leadership level from the Citi Foundation and John D. and Catherine T. MacArthur Foundation. Additional support was provided by The Ford Foundation and The Open Society Foundations.

Ongoing support for HFPC is also provided by the Housing Finance Innovation Forum, a group of organizations and individuals that support high-quality independent research that informs evidence-based policy development. Funds raised through the forum provide flexible resources, allowing HFPC to anticipate and respond to emerging policy issues with timely analysis. This funding supports HFPC's research, outreach and engagement, and general operating activities.

This report was funded by Better Mortgage, a digital mortgage company focused on improving access to home finance for the next generation of homeowners. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

Executive Summary

Millennials, born between 1981 and 1997, make up the largest generation in US history. Compared with earlier generations, millennials are tech-savvy, are racially and ethnically diverse, are more educated, and marry later in life. Millennials also become homeowners later (Goodman, Pendall, and Zhu 2015). Because homeownership is an important channel for building long-term wealth (Goodman and Mayer 2018), a failure or a delay of homeownership might exacerbate already-growing inequalities among millennials.

This report is a comprehensive study of millennial homeownership. The key findings are the following:

- Millennials are less likely to be homeowners than baby boomers and Gen Xers. The homeownership rate among millennials ages 25 to 34 is 8 percentage points lower than baby boomers and 8.4 percentage points lower than Gen Xers in the same age group.
- Millennials have different characteristics and preferences from earlier generations, which explains why their homeownership rate is lower.
 - » Millennials are more racially and ethnically diverse, and minority households have homeownership rates almost 15 percentage points lower than white households.
 - » Although millennials are more highly educated, even the homeownership rate among highly educated millennials has fallen 5 percentage points compared with the prior two generations.
 - » Millennials are more likely to delay marriage and childbearing, life changes that frequently lead to homeownership. The marriage rate among young adults has fallen from 52.3 percent in 1990 to 38.5 percent in 2015. Millennials also delay household formation and are more apt to live with their parents.
 - » Even for white households married with children and with substantial household income, the homeownership rate is 2 to 3 percentage points lower than for similar households in the previous two generations, suggesting an attitudinal shift toward homeownership.
 - » Millennials prefer living in high-cost cities, where housing supply is inelastic. Within a city, millennials prefer living in counties with a more urban environment, where the house prices have increased more than in the surrounding areas. The shift in geographic preference is mostly observed among highly educated millennials.
- External barriers have also deterred millennials from owning a home.

- » Increasing education debt has reduced millennials' likelihood of owning a home, as debt increases their debt-to-income ratios and lowers their remaining income to save for a down payment.
 - » High rental costs make it difficult for millennials to save for a down payment.
 - » Obtaining a mortgage has become more challenging since the housing market crisis because of an unstable labor market and tightening credit standards.
 - » The supply of affordable housing has declined over the past decade, especially in areas where millennials prefer living.
- We provide the following policy recommendations. These policies could increase millennials' access to homeownership and bridge the homeownership gap between different racial and ethnic groups:
 - » Enhance financial knowledge and homeowner awareness by providing accessible and engaging online training and well-designed financial education at the high school and college levels.
 - » Streamline and increase the efficiency of the mortgage process using financial technology.
 - » Include rental and utility payment history data to comprehensively evaluate millennials' creditworthiness and fully capture income in the underwriting process.
 - » Change land-use and zoning regulations to allow for more construction, particularly in areas with tight housing supply.

Our special study on intergenerational patterns indicates that young adults are more likely to be homeowners if their parents are homeowners. Parental wealth also increases the likelihood of homeownership among young adults. Because minorities are less likely to be homeowners and have less wealth, differences in intergenerational transfer of homeownership provides an additional explanation for the persistent disparities in homeownership across racial and ethnic groups. It also illustrates the need to increase the minority homeownership rate, as homeownership allows not only the current generation but future generations access to what has been the best way to build wealth.

Millennial Homeownership

Millennials Are Less Likely to Be Homeowners Than Baby Boomers and Gen Xers

Millennials, born between 1981 and 1997, make up the largest generation in US history. Yet the millennial homeownership rate is significantly lower than that of the two earlier generations: Generation X and baby boomers. Gen Xers were born from 1965 to 1980, and baby boomers were born from 1946 to 1964. In 2015, the average homeownership rate among millennials was 32.2 percent, 28.2 percentage points lower than that of Gen Xers and 42.8 percent lower than that of baby boomers.

TABLE 1
Homeownership among Baby Boomers, Gen Xers, and Millennials in 2015

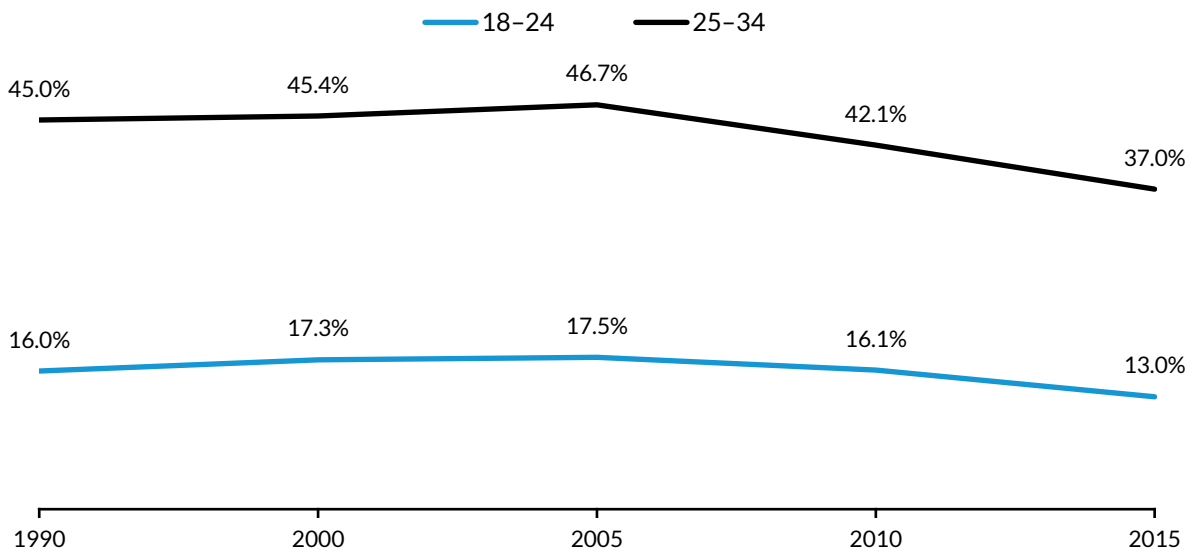
Generation	Years born	Age	Population	Current homeownership (%)	Homeownership at age 25-34 (%)
Millennials	1981-97	18-34	75,170,263	32.2%	37.0%
Gen Xers	1965-80	35-50	66,441,487	60.4%	45.4%
Baby boomers	1946-64	51-69	74,649,971	75.0%	45.0%

Sources: 1990 and 2000 Decennial Censuses and the 2015 American Community Survey.

More importantly, millennials have a lower homeownership rate than the two previous generations in the same age group. Figure 1 presents homeownership rates for the same cohorts since 1990.¹ It divides the youngest age group in two: those ages 18 to 24 and those ages 25 to 34. The older group can be directly compared with the two previous generations at the same age: baby boomers in 1990 and Gen Xers in 2000.² Compared with prior generations at ages 25 to 34, the millennial homeownership rate is 8 to 9 percentage points lower (figure 1). Also, the homeownership rate started to drop after 2005, when the US housing market experienced a crisis.

FIGURE 1

Homeownership Rate among Household Heads Ages 18 to 34



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Sources: The Decennial Census and the American Community Survey.

We explore why the millennial homeownership rate is so low by first investigating how millennials' demographic and socioeconomic characteristics and their preferences differ from prior generations. We then examine external barriers millennials face that impede their access to homeownership.

Socioeconomic and Demographic Shifts

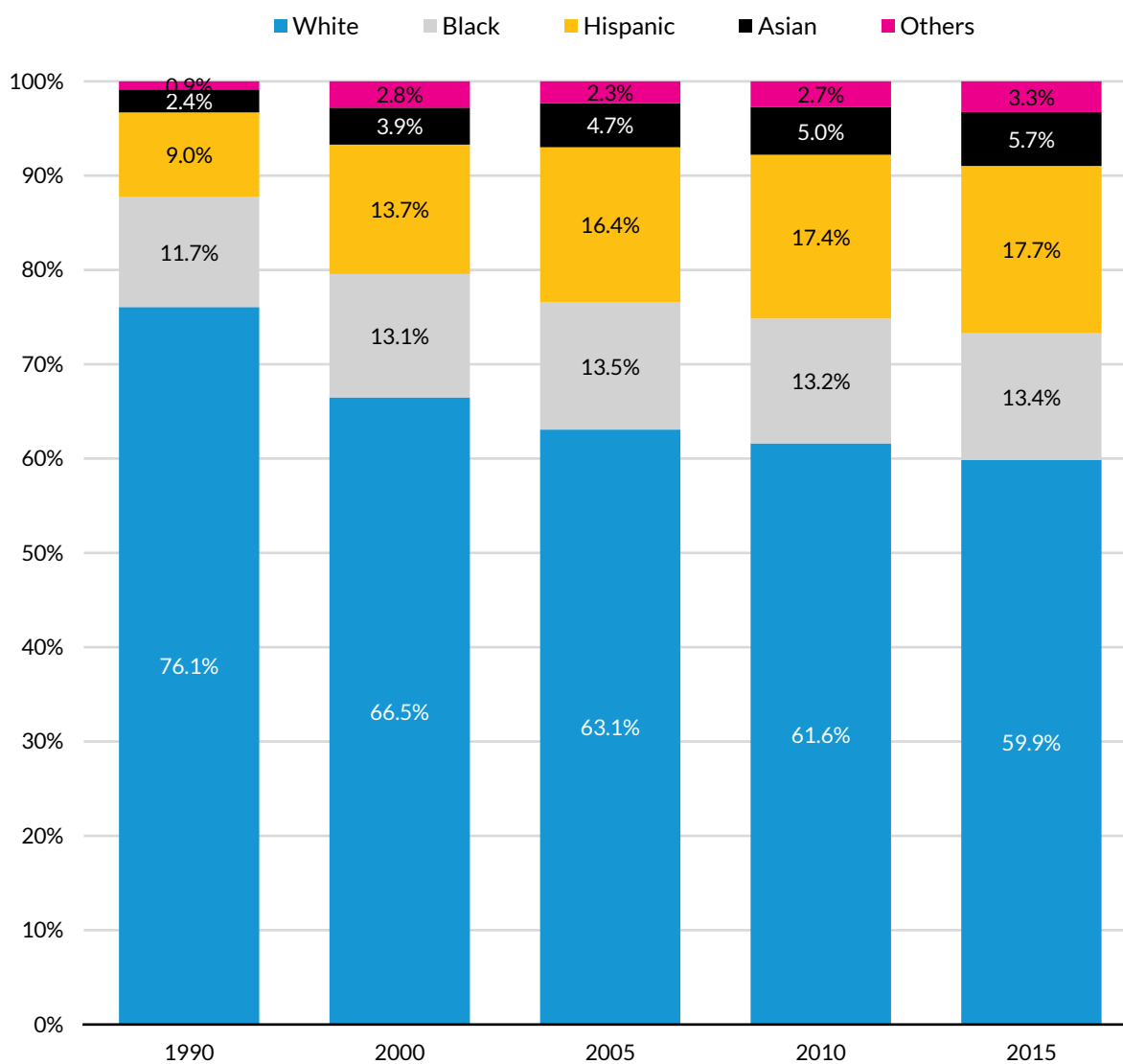
Millennials differ from earlier generations in (1) racial and ethnical diversity, (2) educational attainment, and (3) marriage and childbearing. We examine how these shifts have affected homeownership.

Millennials Are Racially and Ethnically Diverse

Compared with earlier generations, millennials are more racially and ethnically diverse (Frey 2018). Studies have long documented the differences in the homeownership rate across racial and ethnic groups (Painter, Gabriel, and Myers 2001; Wachter and Megbolugbe 1992). An increasing share of minorities, who, on average, have a lower homeownership rate, could have contributed to the drop in the millennial homeownership rate.

Figure 2 presents the racial and ethnic composition of household heads ages 18 to 34. Between 1990 and 2015, the share of non-Hispanic white households (hereafter referred to as white) dropped from 76.1 percent in 1990 to 59.9 percent in 2015. The Hispanic population showed the greatest increase, 8.7 percentage points, followed by Asian households, who experienced a 3.3 percentage-point increase. The share of households from non-Hispanic black (hereafter referred to as black) and other racial and ethnic groups increased 1.7 and 2.4 percentage points, respectively.

FIGURE 2
Racial and Ethnic Composition of Household Heads Ages 18 to 34



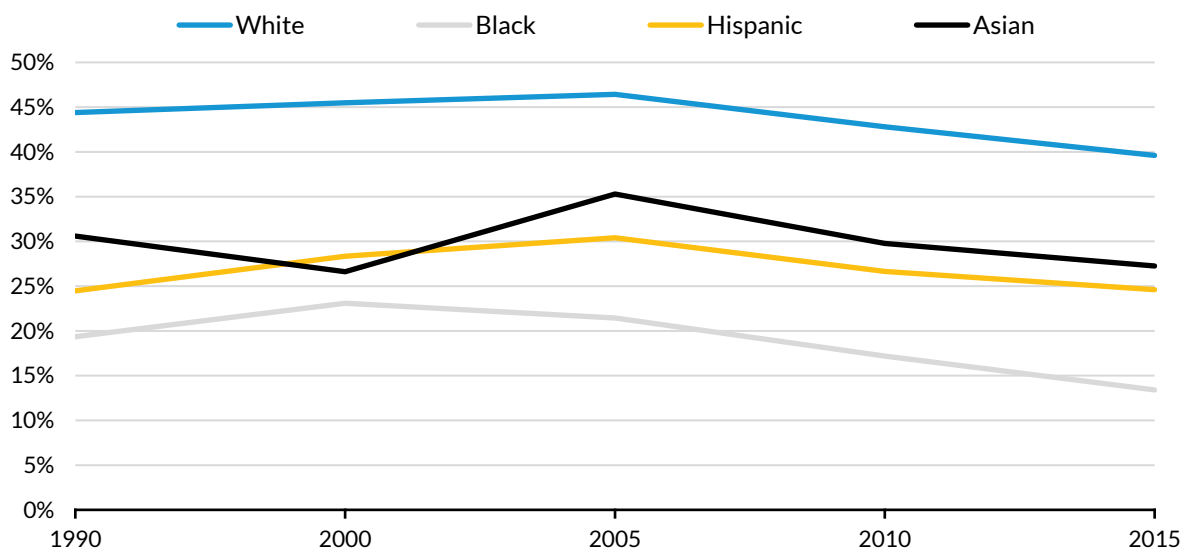
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Sources: The Decennial Census and the American Community Survey.

The homeownership rate differs persistently and substantially across racial and ethnic groups (figure 3). Compared with black, Hispanic, and Asian households, the homeownership rate of white households is higher in all years. The homeownership rate among white households was around 45 percent and was almost flat between 1990 and 2005 but has dropped since, reaching 39.6 percent in 2015. The homeownership rate among Asian households dropped between 1990 and 2000 from 30.6 to 26.6 percent, when the number of households increased sharply. The Asian homeownership rate increased almost 8 percentage points between 2000 and 2005 when access to credit eased but dropped below the 1990 level to 27.2 percent by 2015. The Hispanic homeownership rate increased from 1990 to 2005 but decreased after that, falling to 24.6 percent in 2015. The black homeownership rate shows a continuous decline since 2000, falling to 13.4 percent in 2015. Between 2000 and 2015, the black homeownership rate fell 9.7 percentage points, significantly greater than the drop among other racial and ethnic groups. Only black households did not experience an increase in homeownership during the housing boom.

Figure 3 also shows that the homeownership rate has dropped for all racial and ethnic groups since 2005. Except Hispanic households, whose homeownership rates in 1990 and 2015 are almost the same, the current homeownership rate of the three other groups is significantly below that of 1990.

FIGURE 3
Homeownership by Race and Ethnicity among Household Heads Ages 18 to 34



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Source: The Decennial Census and the American Community Survey.

To further examine how changes in racial and ethnic composition explain the decline in the young adult homeownership rate, we estimate two hypothetical homeownership rates assuming racial and ethnic composition did not change. These numbers are calculated by fixing racial and ethnic composition in 1990 and 2000 and using the 2015 homeownership rate to identify what the homeownership rate would be in these scenarios. If the racial and ethnic composition in 2015 were the same as that in 1990, the homeownership rate for 18-to-34-year-old households would be 34.8 percent. If racial and ethnic composition were the same as in 2000, the 2015 homeownership rate for the same age group would be 33.2 percent. Both rates are higher than the actual 2015 homeownership rate of 32.2 percent but lower than actual homeownership rates in 1990 and 2000. This indicates that changes in racial and ethnic composition provide a partial explanation for the decline in millennial homeownership.

The continuing racial and ethnic disparities in homeownership need further examination. Although an in-depth analysis of this phenomenon is beyond the scope of this study, in the final section, we provide an additional analysis that shows how the intergenerational transfer of wealth and homeownership has contributed to the persistent homeownership gap across race and ethnicity.

TABLE 2

Actual and Hypothetical Homeownership Rate Using Fixed Racial and Ethnic Composition

Actual Homeownership Rate			Hypothetical Homeownership Rate	
1990	2000	2015	2015 (Base year: 1990)	2015 (Base year: 2000)
39.3%	39.5%	32.2%	34.8%	33.2%

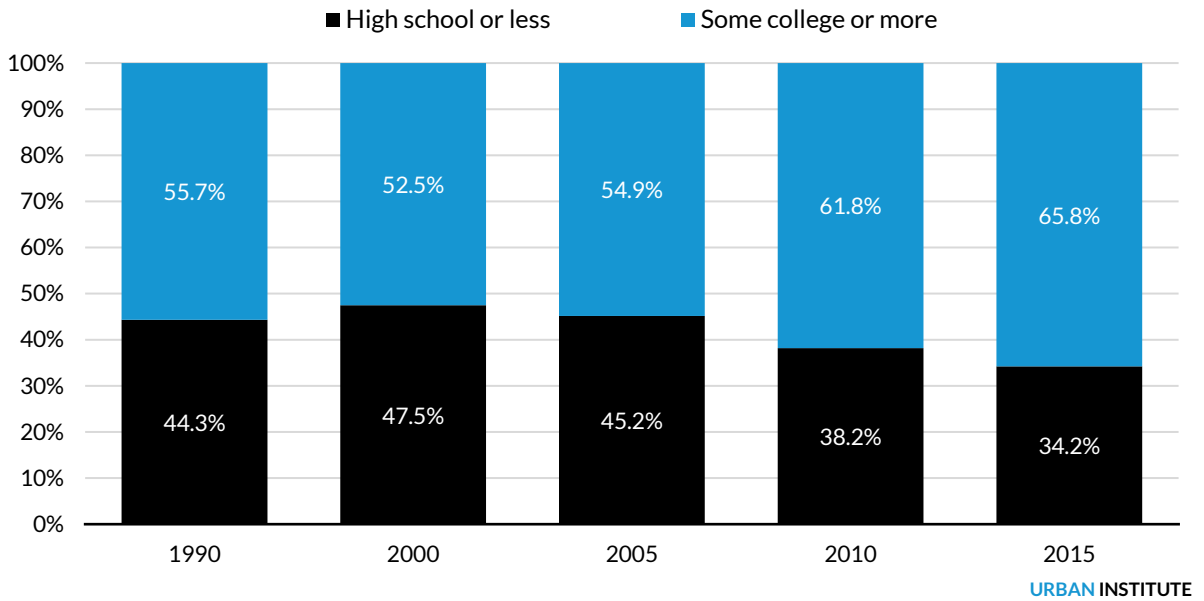
Sources: The Decennial Census and the American Community Survey.

Note: Household heads ages 18 to 34.

Millennials Are Highly Educated

Young adults have become more educated. In 2015, 65.8 percent of millennials who are household heads received at least some level of college education. This is a 10.1 percentage-point increase from 1990 and a 13.3 percentage-point increase from 2000.

FIGURE 4
Educational Attainment among Household Heads Ages 18 to 34

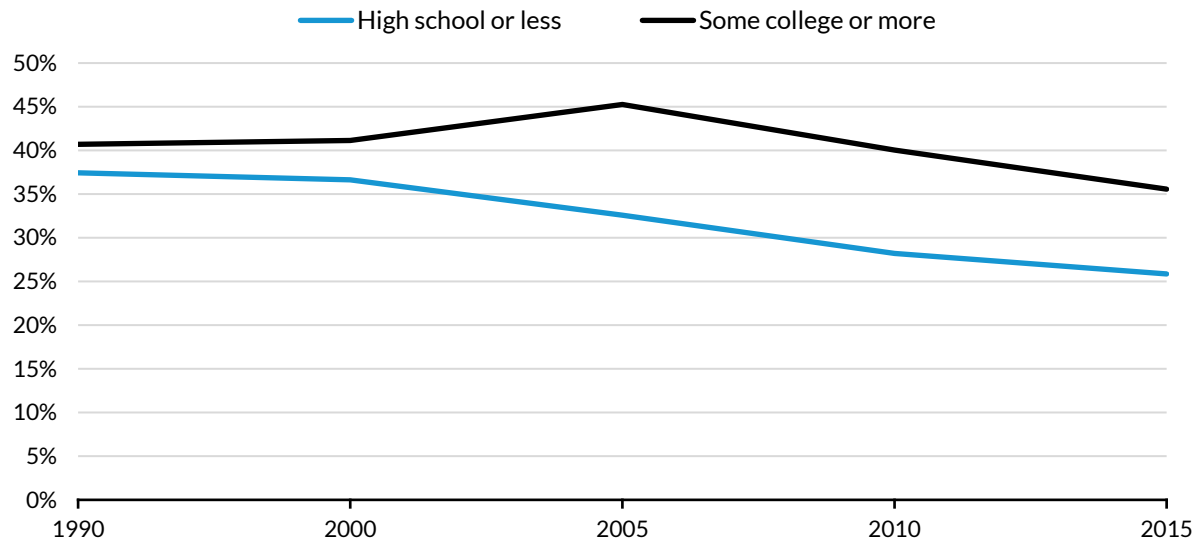


Sources: The Decennial Census and the American Community Survey.

Higher educational attainment generally leads to higher homeownership rates (figure 5). But the 2015 homeownership rate among young adults who are college graduates or high school graduates is lower than the 1990 and 2000 homeownership rates for the same education buckets. The gap in homeownership between high school graduates and college graduates is wider today than in 1990, as young adults with a high school education or less have experienced a greater decline in homeownership. If we assume that millennials in 2015 have the same educational attainment as in 1990 (i.e., less college education), the average homeownership rate would be 31.3 percent, only slightly lower than the current homeownership rate of 32.2 percent (table 3). This suggests that educational attainment is not a major determinant of millennial homeownership.

FIGURE 5

Homeownership Rate by Educational Attainment among Household Heads Ages 18 to 34



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Sources: The Decennial Census and the American Community Survey.

TABLE 3

Actual and Hypothetical Homeownership Rate Using Fixed Educational Attainment

Actual Homeownership Rate			Hypothetical Homeownership Rate	
1990	2000	2015	2015 (Base year: 1990)	2015 (Base year: 2000)
39.3%	39.5%	32.2%	31.3%	30.3%

Sources: The Decennial Census and the American Community Survey.

Note: Household heads ages 18 to 34.

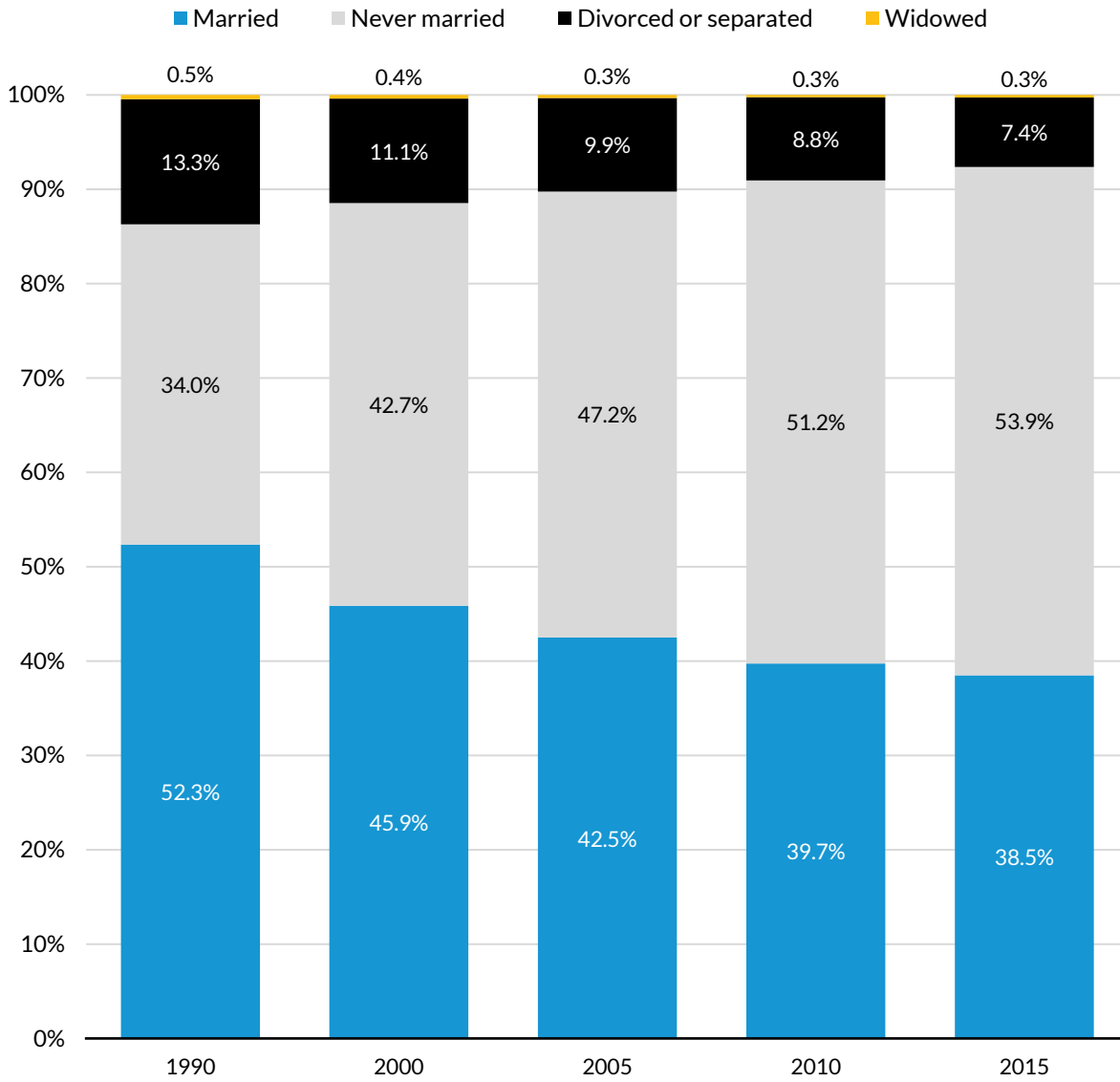
Millennials Delay Major Life Events

DELAYED MARRIAGE

Another prominent characteristic of millennials is their delay of marriage (Goodman, Pendall, and Zhu 2015). Less than 40 percent of millennials are married, according to the 2015 American Community Survey. This marriage rate is 7.5 percentage points lower than the rate of similar age cohorts in 2000 and 13.8 percentage points lower than the rate in 1990. Although the magnitude of the drop is smaller, the marriage rate has continued to fall since 2005. Between 1990 and 2015, the proportion of 18-to-34-year-olds who have never been married increased almost 20 percentage points, from 34.0 percent to 53.9 percent (figure 6).

FIGURE 6

Marital Status among Household Heads Ages 18 to 34



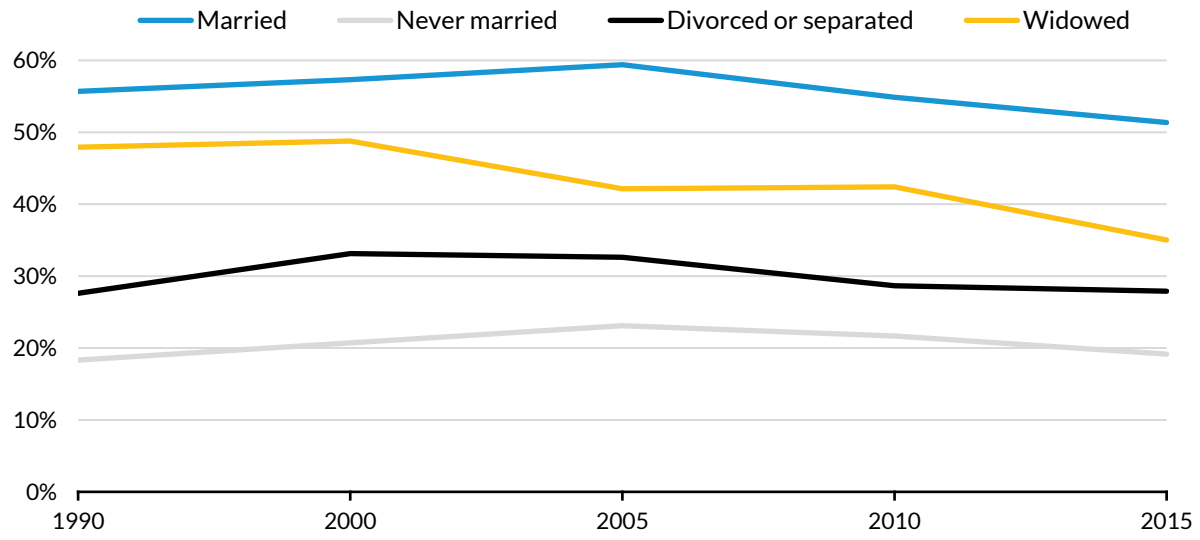
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Sources: The Decennial Census and the American Community Survey.

Eighteen-to-34-year-olds who are married or have experienced marriage are more likely to be homeowners than those who are single. This suggests that changes in marital composition could be a major contributor to the drop in the millennial homeownership rate. Table 4 examines the hypothetical 2015 homeownership rate assuming the marital composition in 2015 was the same as in 1990 and 2000. If the marital composition in 2015 were the same as in 1990, the hypothetical homeownership rate would be 37.2 percent, and the hypothetical rate would be 35.2 percent if the marital composition

remained as it was in 2000. Both numbers are higher than the 2015 millennial homeownership rate of 32.2 percent, resulting in a 5 percent difference (for 1990 marital composition) and a 3 percent difference (for 2000 marital composition).

FIGURE 7
Homeownership Rate by Marital Status among Household Heads Ages 18 to 34



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Sources: The Decennial Census and the American Community Survey.

TABLE 4
Actual and Hypothetical Homeownership Rate Using Fixed Marital Composition

Actual Homeownership Rate			Hypothetical Homeownership Rate	
1990	2000	2015	2015 (Base year: 1990)	2015 (Base year: 2000)
39.3%	39.5%	32.2%	37.2%	35.2%

Sources: The Decennial Census and the American Community Survey.

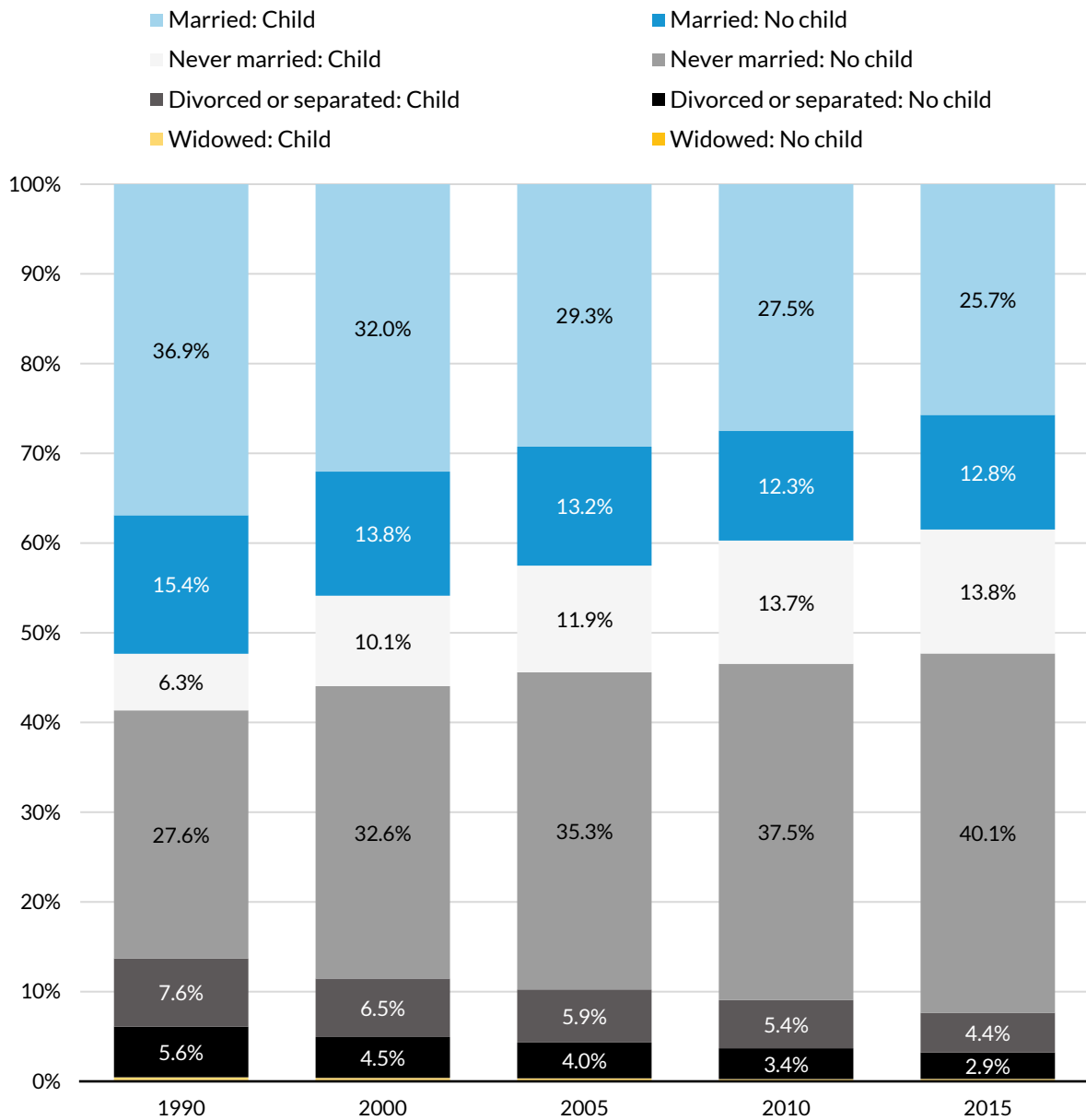
Note: Household heads ages 18 to 34.

DELAYED CHILDBEARING

Millennials also tend to delay childbearing. The share of millennials who are married and have children has steadily declined since the 1990s. The proportion of married households with children with a household head ages 18 to 34 dropped from 36.9 percent in 1990 to 25.7 percent in 2015 (figure 8). Among married households, 66.8 percent had children in 2015, 3.7 percentage points lower than the share of married households with children in 1990. Among unmarried households, 30 percent had children in both 1990 and 2015, suggesting that the delay in having a child occurred mainly for those

who are married. Households with children declined from 51 percent in 1990 to 44 percent in 2015. Having a child increases the probability owning a home 6.2 percentage points, after accounting for other factors (box 1).

FIGURE 8
Marital Status and Childbearing among Household Heads Ages 18 to 34



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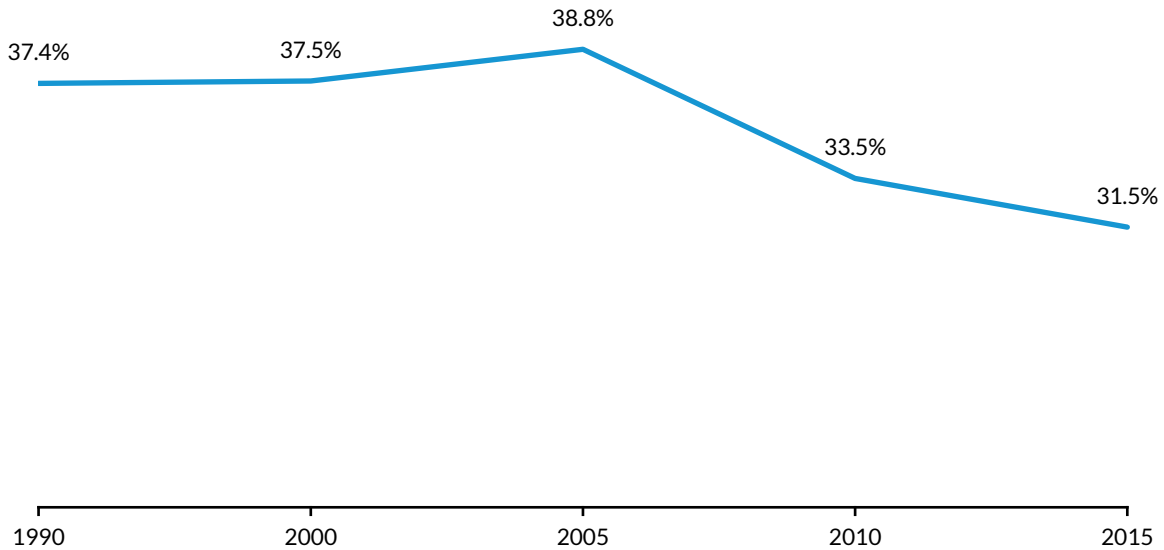
Sources: The Decennial Census and the American Community Survey.

Note: The data for the widowed categories are less than 0.2 percent each.

DELAYED INDEPENDENT HOUSEHOLD FORMATION

Millennials not only delay homeownership but delay moving out and forming their own households. The homeownership rate estimates the share of households that are owners, but it does not capture those who live under someone else's roof and are therefore not included in the household count. Figure 9 shows the headship rate, which estimates the share of people who are household heads. The millennial headship rate is below those in the same age group in earlier years. Figure 10 shows that the share of young adults living with their parents (where the parents are household heads) increased continuously, especially since 2005.

FIGURE 9
Headship Rate among 18-to-34-Year-Olds

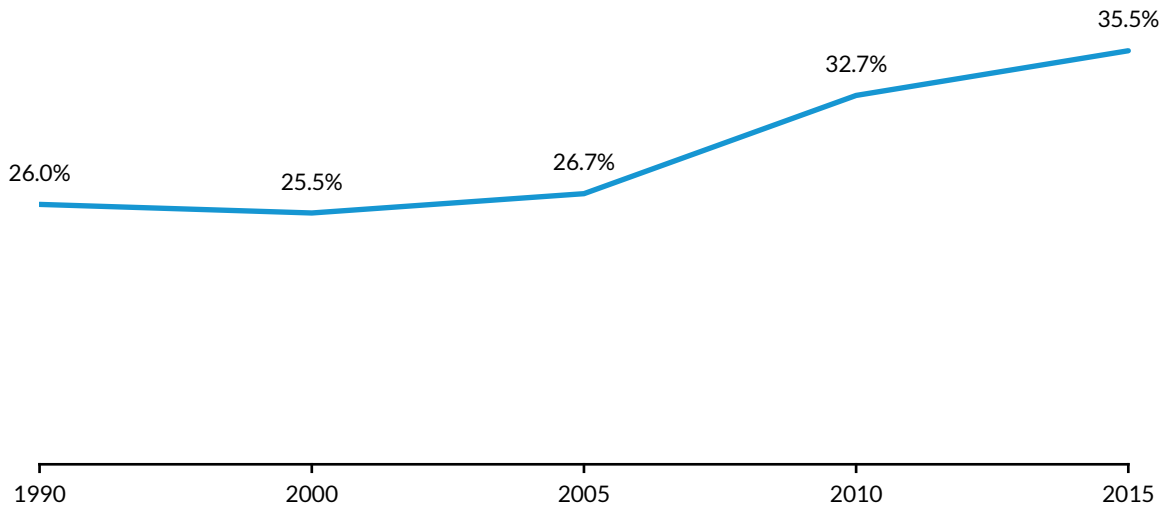


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Sources: The Decennial Census and the American Community Survey.

FIGURE 10

18-to-34-Year-Olds Living with Their Parents



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Sources: The Decennial Census and the American Community Survey.

BOX 1: A REGRESSION ANALYSIS APPROACH

What Characteristics Influence Millennial Homeownership?

The socioeconomic and demographic characteristics of young adults have changed. We combine all the factors into a regression analysis to understand the relative impact of the various factors on millennial homeownership. In addition to race or ethnicity, education, marital status, and child existence, we include immigrant status and employment.

The table below presents the results of a logit regression that examines factors that affect the likelihood of owning a home. The results show that minorities (especially black and Hispanic households) are less likely to purchase a house, even after controlling for other characteristics, suggesting they face additional difficulties accessing homeownership. Marriage and childbearing increase the possibility of owning a house by 17.9 and 6.2 percentage points, respectively. Once differences in the observable characteristics are controlled for, the millennial homeownership rate remains 1.7 and 4.3 percentage points lower than the homeownership rate among young adults in 1990 and 2000, respectively. This is because of a myriad of factors outside the scope of the regression, including where millennials live, the burden of education debt and rental costs, tight credit conditions, and limited affordable housing supply, as well as a shift in attitudes toward homeownership, topics we explore in the next two sections.

Logit Results: The Likelihood of Owning a Home

Variable	Own
Age	0.019 (160.54)***
Black	-0.149 (100.15)***
Asian	-0.081 (30.32)***
Hispanic	-0.092 (59.28)***
Others	-0.084 (27.60)***
Married	0.179 (152.47)***
Divorced or separated	0.022 (13.93)***
Widowed	0.197 (24.39)***
Child exist	0.062 (62.42)***
At least some college	0.003 (3.64)***
ln(household income)	0.129 (185.35)***
Employed	0.026 (18.99)***
Immigrant	-0.106 (61.42)***
Year: 2000	0.026 (42.00)***
Year: 2005	0.059 (45.01)***
Year: 2010	0.025 (19.78)***
Year: 2015	-0.017 (13.09)***
Observations	2,807,737

Sources: The Decennial Census and the American Community Survey.

Notes: All regressions are weighted by household weights. The coefficients are marginal effects, and the numbers in the parenthesis are t-statistics.

*** $p < 0.01$.

Changing Locational Preferences and Attitudes Toward Homeownership

Change in geographic preferences is another often-cited reason³ for the decline in millennial homeownership. More educated millennials have moved to cities with low housing supply elasticity,

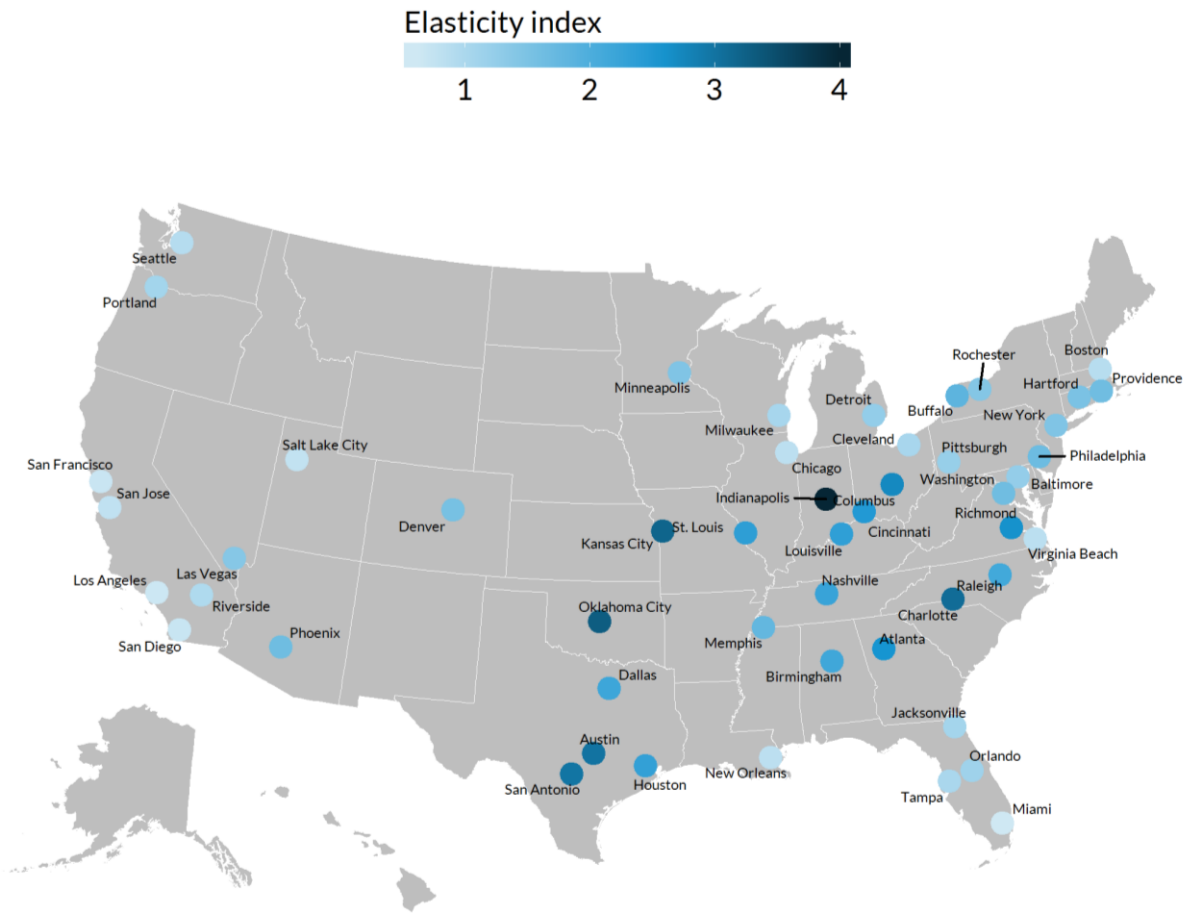
where housing prices are high. Millennials have also moved to areas within cities where house prices have increased. Attitudes toward homeownership also might have changed for millennials after experiencing the housing market crisis.⁴ We explore how shifts in preferences and attitudes explain the decline in millennial homeownership.

Millennials Tend to Move to Cities with Inelastic Housing Supply

Research finds evidence of increasing skill divergence across US cities (Berry and Glaeser 2005; Glaeser et al. 2004) as more educated households move into cities that already have a highly skilled population. This mobility pattern is strong among young, educated adults.⁵ The high-skilled cities (e.g., New York City and San Francisco) where many young millennials prefer living tend to be expensive with low housing supply elasticity. The homeownership rates in these cities are lower. The figures in appendix A show changes in the share of the population ages 18 to 34 and their homeownership rates in 2000 and 2012–16 for the 50 largest US cities.

Figure 11 presents a measure of housing supply elasticity. This measure is estimated by Saiz (2010), who integrates the share of land unavailable for development and the Wharton Residential Urban Land Regulation Index into a single measure, in which a higher number indicates that the city has greater housing supply elasticity. Many cities on the West Coast, including Los Angeles, San Francisco, and San Jose, have the lowest supply inelasticity. On the East Coast, housing supply elasticity is low in Boston, Miami, and New York City. The cities with lower elasticity also tend to have greater urban amenities and job opportunities (Davidoff 2016) and are thus more desired by millennials.

FIGURE 11
Housing Supply Elasticity



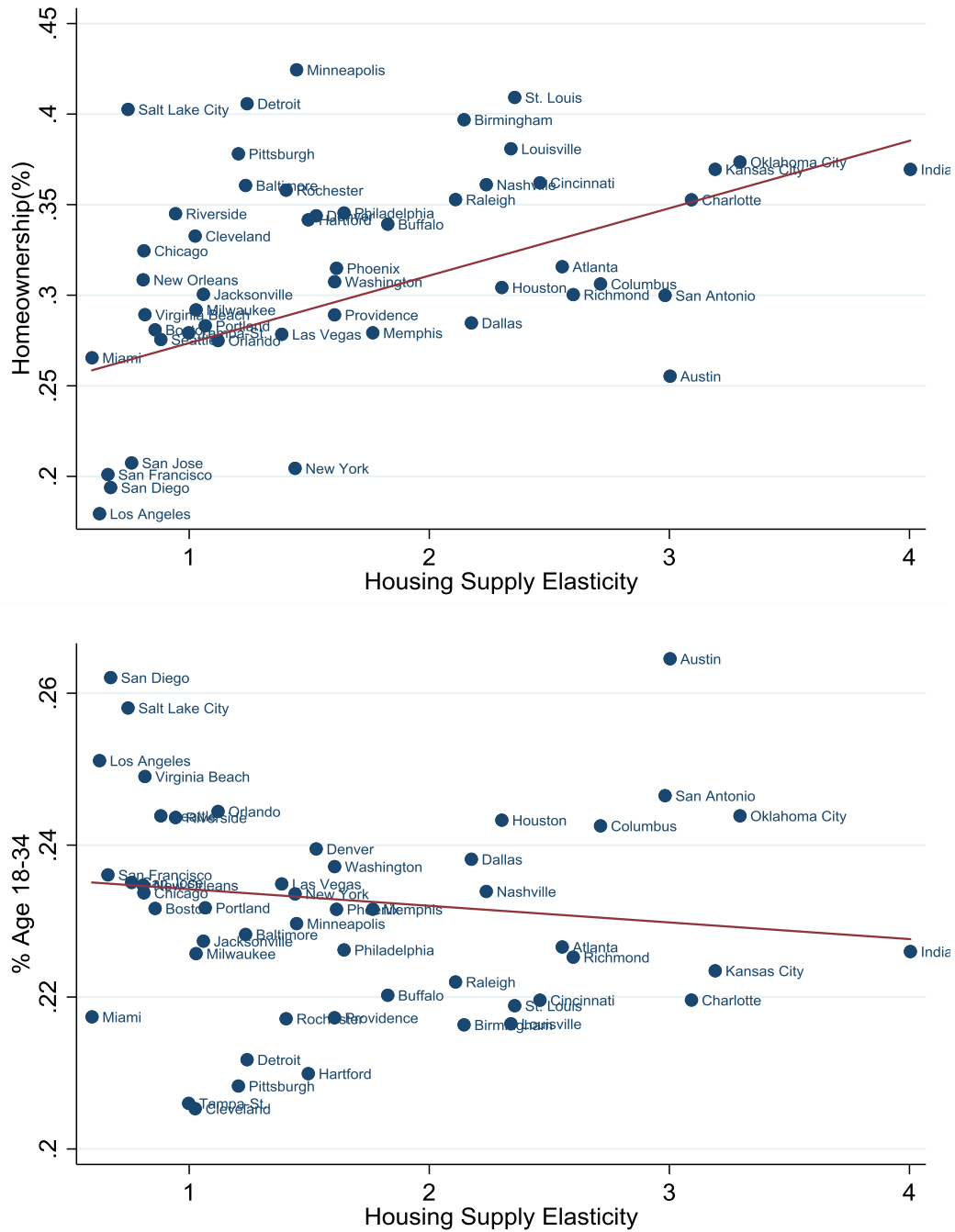
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Source: Albert Saiz, "The Geographic Determinants of Housing Supply," *Quarterly Journal of Economics* 125, no. 3 (2010): 1253–96.

Figure 12 shows the relationship between homeownership among young adults and housing supply inelasticity in the 2012–16 American Community Survey.⁶ Cities with lower housing supply elasticity have lower homeownership rates. The figure also shows that the share of young adults is slightly higher in cities where housing supply is inelastic, suggesting that young adults prefer living in these cities. Inelastic cities are expensive and are likely most attractive to those who expect to earn high incomes.

FIGURE 12

Homeownership, Share of Young Adults, and Housing Supply Elasticity (Ages 18 to 34)



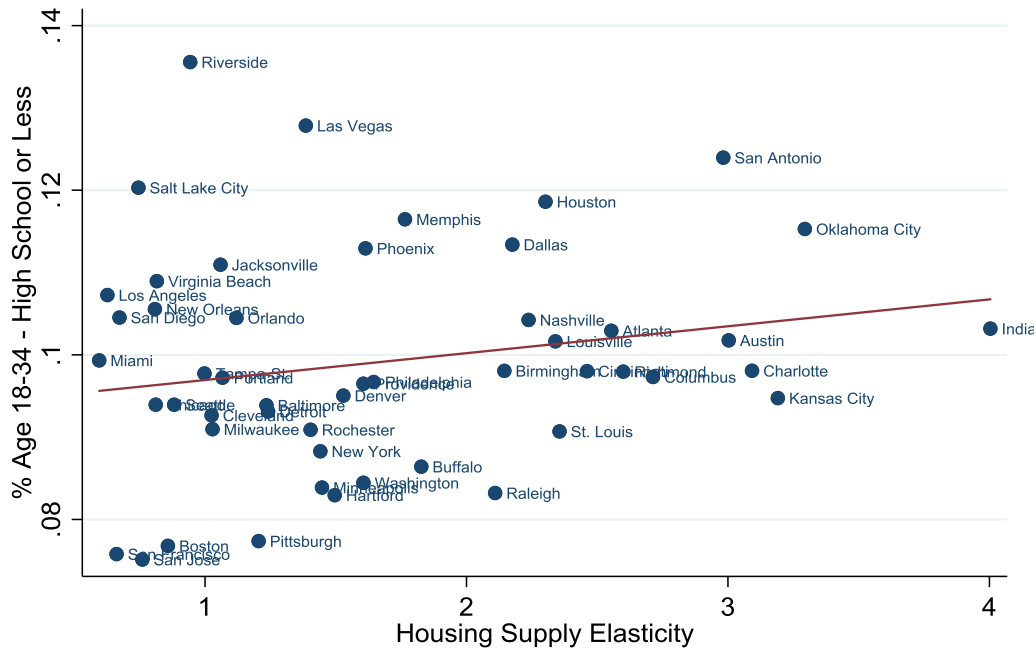
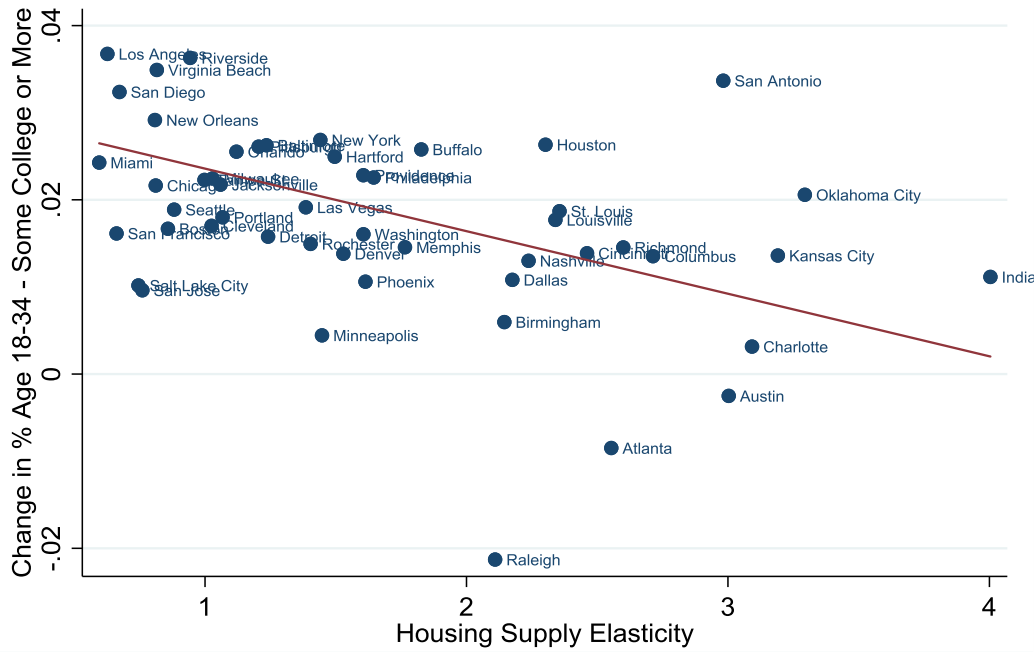
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Sources: The Decennial Census, the American Community Survey, and Albert Saiz, "The Geographic Determinants of Housing Supply," *Quarterly Journal of Economics* 125, no. 3 (2010): 1253–96.

Figure 13 further examines where young adults moved between 2000 and 2012–16 to explore whether their migration patterns can explain the decline in homeownership. We look at the migration pattern separately for those who received at least some college education and the share of young adults who received a high school diploma or less.⁷ The share of young adults with greater educational attainment increased more in cities with low housing supply elasticity. In contrast, the relationship between the share of less educated young adults and housing supply elasticity is positive, suggesting that less educated young adults did not (or could not) migrate to inelastic cities. This is consistent with inelastic cities attracting young adults who are more likely to have high earning capacity. The share of millennials increased in inelastic cities, as the relative share of population increased significantly in these cities, while the share of less educated young adults did not change much relative to more elastic cities.

FIGURE 13

Changes in the Share of 18-to-34-Year-Olds and Housing Supply Elasticity



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Sources: The Decennial Census, the American Community Survey, and Albert Saiz, "The Geographic Determinants of Housing Supply," *Quarterly Journal of Economics* 125, no. 3 (2010): 1253–96.

Millennials' location preferences partially explain their decline in homeownership. Over the past decade, a greater share of millennials with higher educational attainment chose to live in cities where the housing supply is inelastic. Because these cities are less affordable, their homeownership rate would have been negatively affected by this migration pattern. But for less educated millennials, locational preference does not explain the decline in homeownership, as they are slightly more likely to live in elastic cities than young adults in the previous decade.

It is important to put this into context. Since 2000, the homeownership rate among young adults has declined in 95 percent of US cities. Further, living in inelastic cities does not mean millennials are less interested in becoming homeowners. Housing supply inelasticity is highly correlated with employment opportunities and urban amenities. These factors increase demand and lower affordability in less elastic cities. Millennials are making a trade-off, at least temporarily, by living in these inelastic cities.

Millennials Tend to Move to Expensive Inner Cities with High Home Prices

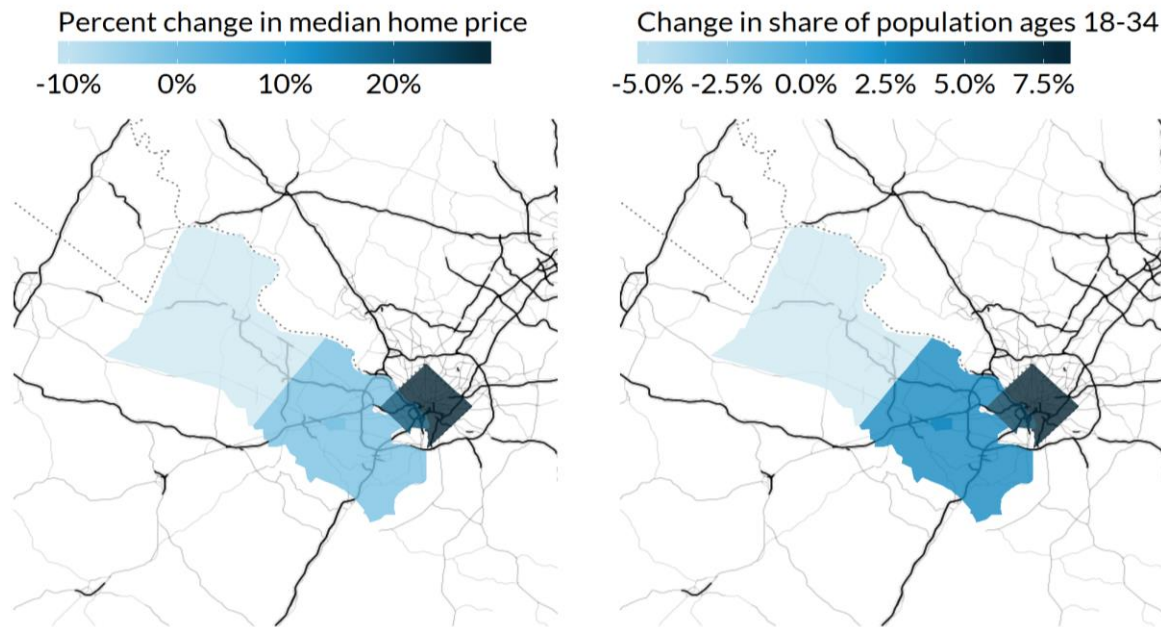
As the largest generation in history, millennials can have a significant effect on the urban landscape and the housing market. Millennials are more inclined than previous generations to live in urban cores, as opposed to outlying suburbs (Lee 2018; Moos 2016). The choice to live in a more expensive neighborhood, where it is more difficult to purchase a home, could be one factor holding down millennial homeownership.

To determine if there is a spatial trend in millennial home preferences, we looked at Boston, San Francisco, Seattle, and Washington, DC, which each have a high share of 18-to-34-year-olds. In each city, we looked at several counties to compare how the millennial population and home price appreciation changed from 2005 to 2015.

There is a stark difference between counties that have seen an increasing share of residents ages 18 to 34 and counties that have not. In Washington, DC, urban counties have seen a greater influx of 18-to-34-year-olds and have had sharper home price appreciation (figure 14).

FIGURE 14

Millennial Location Preferences and Median Home Prices in Washington, DC



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Sources: Black Knight Financial Services property records and the American Community Survey.

In Loudoun County, a suburban county an hour outside the city center, the share of 18-to-34-year-old residents decreased 5.8 percentage points, from 25.5 percent in 2005 to 19.7 percent in 2015. The county saw median home prices decline from \$499,900 to \$441,000. In contrast, both DC proper and Arlington County, denser counties toward the city center, saw their 18-to-34-year-old population share increase 8.2 and 6.6 percent, respectively. In DC proper, the median home price rose 29 percent between 2005 and 2015, and in Arlington County, home prices rose 22 percent. Other cities show similar patterns (appendix B).

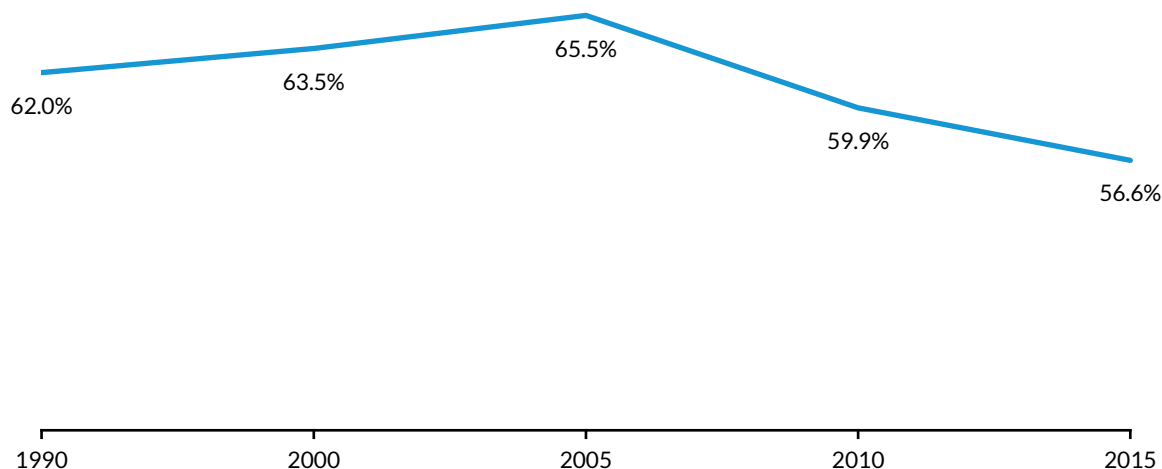
These results suggest that within-city migration provides an additional explanation for the declining homeownership rate among young adults. But this migration pattern is mostly observed among the more educated population⁸ and does not explain why the homeownership rate among less educated people declined.

Changes in Attitudes toward Homeownership: Prime Homebuyer Analysis

Millennials recently experienced the housing market crisis, and their attitudes toward homeownership might have deviated from prior generations'. To examine how attitude toward homeownership is associated with the millennial homeownership decline, we rely on American Community Survey and Decennial Census data and focus on household heads ages 25 to 34 who were married with children. We define these households as "prime homebuyers," as they are most likely to buy a house.

Figure 15 shows a decline in homeownership over the past 10 years among prime homebuyers. The homeownership rate in this sample was 62.0 percent in 1990, 63.5 percent in 2000, and 56.6 percent in 2015.

FIGURE 15
Homeownership Rate among Prime Homebuyers



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Sources: The Decennial Census and the American Community Survey.

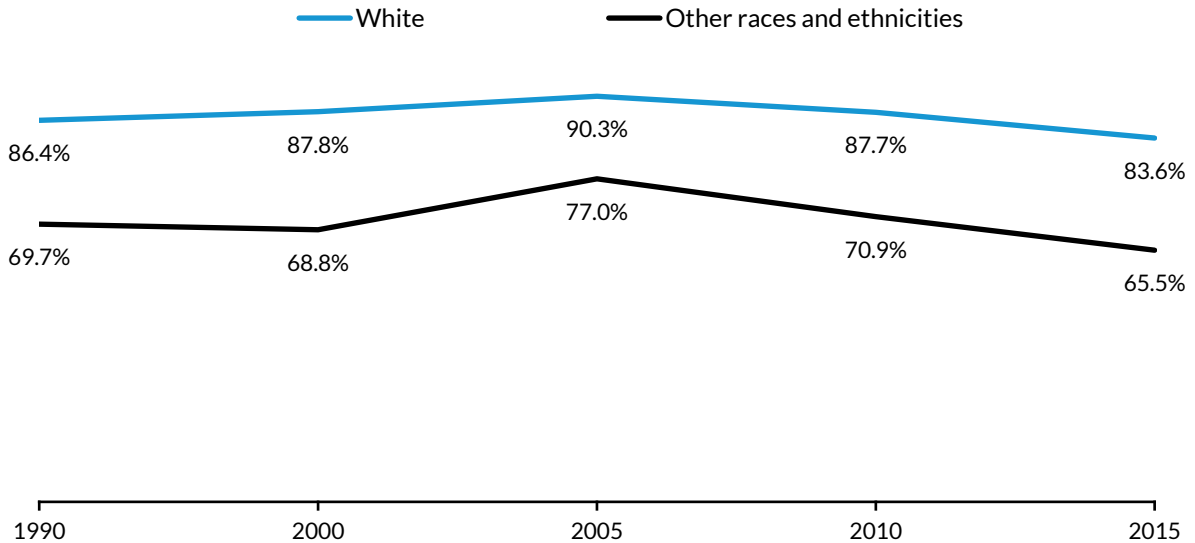
Note: Prime homebuyers are young adults ages 25 to 34 who are married and have children.

In figure 16, we further restricted the sample to households that make more than \$100,000 a year to identify how the homeownership rate changed for those who are likely to have minimal financial constraints. This analysis enables us to identify whether attitudes toward homeownership have changed for millennials. For prime white households with high incomes, the homeownership rate decreased 2.8 percentage points between 1990 and 2015. For minorities, the homeownership rate

decline from 1990 to 2015 is 4.2 percent.⁹ These declines are in stark contrast to the 8 percent decline in homeownership for all household heads ages 18 to 34 between 1990 and 2015.

This suggests that millennials' preferences for homeownership might not have changed as significantly as some have suggested, but there has been a shift in attitudes. This subtle shift is likely because of millennials' experiences during the Great Recession. Baby boomers and Gen Xers saw homeownership as a place to live and as a store of value and the best way to build wealth, but millennials, whose formative years occurred during the Great Recession, are unlikely to take the wealth-building assumption as a given.¹⁰ Stated differently, millennials become homeowners when it meets their needs but are not sold on the idea that sacrificing today to save for a down payment is the best strategy, in large part because they see their home as a place to live and are at least unsure about homeownership's wealth-building opportunity. Millennials' desire for homeownership is likely to recover as the economy continues to strengthen and home prices continue to rise. Combined with diminishing memories of the Great Recession, a stronger economy and higher house prices might lead prospective buyers to see homeownership as a wealth-building opportunity.

FIGURE 16
Homeownership among Prime Homebuyers Earning at Least \$100,000 a Year



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Sources: The Decennial Census and the American Community Survey.

Note: Prime homebuyers are young adults ages 25 to 34 who are married and have children.

Additional Barriers to Homeownership

Millennials' characteristics and preferences do not fully explain the substantial decline in their homeownership rate. Therefore, we examine additional barriers that have impeded millennials from owning a home: (1) education debt, (2) rent burden, (3) tight credit, and (4) limited housing supply.

Education Debt

In a recent survey by American Student Assistance and the National Association of Realtors, 76 percent of respondents said education debt had affected their decision to purchase a home, and 55 percent said it delayed starting a family (ASA and NAR 2017).

Compared with baby boomers and Gen Xers, millennials are more likely to pursue higher education, but they have significantly greater education debt than the two prior generations because the costs of higher education have risen faster than incomes. The Federal Reserve Bank of New York shows that the average education debt for 25-year-olds has increased from \$4,516 in 2003 to \$10,033 in 2015. Thus, even though more education is usually correlated to higher likelihood of homeownership, the cost of education has risen so substantially that it affects millennials' ability to buy a home.

Researchers from the Federal Reserve Bank of New York found that the increase in education debt explains 11 to 35 percent of the 8 percentage-point decline in homeownership for 28-to-30-year-olds between 2007 and 2015 (Bleemer et al. 2017). A Fannie Mae survey in 2014 found that 26 percent of young renters with education debt think their debt is their biggest obstacle to getting a mortgage (Fannie Mae 2014, 10). Higher education costs not only decrease residual income, making saving for a down payment more difficult, but also raise debt-to-income ratios, which further decreases the probability of getting a mortgage application approved.

We use Federal Reserve Survey of Household Economics and Decisionmaking (SHED) data to examine millennials' education debt.¹¹ Table 5 shows that 45.6 percent of millennials borrowed money for education. This is 10 percentage points higher than Gen Xers and more than 25 percentage points higher than baby boomers. About 36 percent of millennials owe education debt, compared with 18.0 percent of Gen Xers and 4.1 percent of baby boomers. About 16.6 percent of millennials received assistance for debt payment. Their average monthly payment is \$420.20 higher than the two other generations.

TABLE 5

Education Debt by Generation

Age category	Borrowed money for education	Currently owe education debt	Receive financial assistance for education debt	Average monthly payment
Millennials (18–34)	45.6%	36.3%	16.6%	\$420.20
Gen Xers (35–50)	35.6%	18.0%	2.2%	\$374.00
Baby boomers (51–69)	19.8%	4.1%	0.4%	\$253.00
All	29.8%	16.6%		

Source: Survey of Household Economics and Decisionmaking.

BOX 2: A REGRESSION ANALYSIS APPROACH

Does Education Debt Decrease the Likelihood of Owning a Home?

To examine if student loan debt affects homeownership for millennials, we use the Survey of Consumer Finances because the dataset contains substantial information on additional factors that might affect homeownership. We took the millennial sample (ages 18 to 34) in 2016 and conducted an ordinary least squares regression. The dependent variable is tenure choice, and the key independent variable of interest is education debt. Control variables, such as education, income, marital status, children, and race or ethnicity, are added in the regression. The table below reveals that a larger amount of education debt decreases the probability of homeownership for millennials, a 1 percent increase in education debt decreases the likelihood of owning a home by 0.15 percentage points.

Logit Results: Education Debt on Likelihood of Owning a Home

Variable	Own
Log(student debt)	-0.15*** (2.91)
With college degree	0.15 (1.14)
Log(income)	1.32*** (7.34)
Married	0.16** (2.20)
Child exist	0.18*** (3.02)
Minority	-0.54*** (4.60)
Observations	1,805

Source: Survey of Consumer Finances.

Notes: All regressions are weighted by household weights. The coefficients are marginal effects, and the numbers in the parenthesis are t-statistics.

*** $p < 0.01$; ** $p < 0.05$.

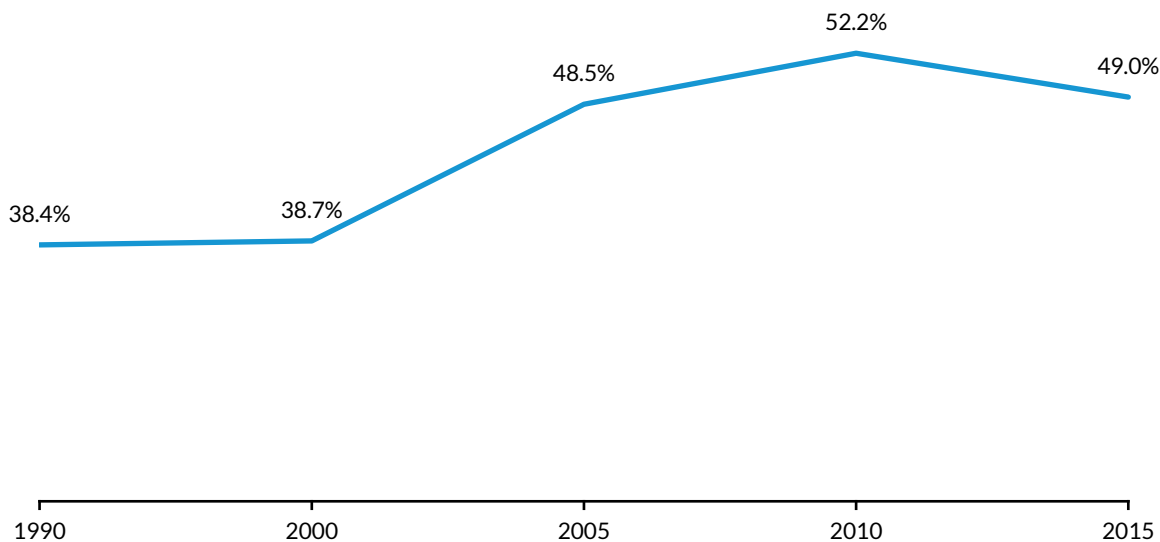
Rent Burden

After the financial crisis, the demand for rental housing increased because many homeowners who lost their homes entered the rental market, and renter households delayed transitioning to homeownership. According to the American Community Survey, 43 million US households rented their homes in 2015, up from 37 million in 2005. Meanwhile, the supply of rental properties did not increase with demand. According to the US Census Bureau, the national rental vacancy rate fell to 7.0 percent in the first quarter of 2016, which is 3.6 percent lower than the rate in the first quarter of 2010 and 3.1 percent lower than in the first quarter of 2005.

One effect was an increase in rent-burdened households. Households are rent burdened if they pay more than 30 percent of their income for rent. Figure 17 shows the share of rent-burdened households with heads ages 18 to 34. The proportion of rent-burdened households increased from 38.4 percent in 1990 to 49.0 percent in 2015.¹² During the housing boom, the share of rent-burdened households increased as house prices and rents went up faster than incomes. But the share continued to increase during the housing bust.

FIGURE 17

Share of Rent-Burdened Households with Heads Ages 18 to 34



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Sources: The Decennial Census and the American Community Survey.

As home prices fell, rents were stable and many household heads lost their jobs, increasing the rent burden. Rent burden has stabilized close to 2010 highs. Although unemployment has come down, rent

increases have outstripped wage increases because of a lack of new supply. Although this parallels the rent burden for renters of other age groups, the impact on millennials is profound because they are at the point in their lives when they are establishing households. And their rent burden is higher than that of previous generations at the same age.

Greater income spent on rent indicates that households have less remaining income to save for a down payment. Research by the Pew Charitable Trusts (2018) finds that rent burden slows the transition to homeownership. Using the Panel Study of Income Dynamics (PSID) datasets from 2011 to 2015, Pew’s research examines how rent burden affects renter households headed by 21-to-34-year-olds. Findings show that rent-burdened households are less likely to become homeowners, and our research shows similar results (box 3).

BOX 3: A REGRESSION ANALYSIS APPROACH

Does Rent Burden Decrease the Likelihood of Owning a Home?

Using the same dataset, we extend Pew’s finding by examining the rent burden and homeownership relationship after controlling for other variables that affect homeownership. We use two variables as proxies for rent burden. First is the rent-to-income ratio, which is higher for households with greater rent burden. The second is the residual income, which is annual household income minus annual rental cost. Residual income decreases as rent burden increases. Our regression tests whether renters with a higher rent burden are less likely to transition to homeownership in the next period. Because the Panel Study of Income Dynamics is updated biannually, the rent burden proxies indicate the level of rent burden two years ago.

Both regressions find that 18-to-34-year-old renters with a greater level of rent burden are less likely to own in the following period. Holding other demographic and socioeconomic factors (e.g., race or ethnicity, income, marital status, children, and education) constant, a 1 percent increase in the rent-to-income ratio decreases the likelihood of homeownership by 0.07 percentage points, and a 1 percent increase in residual income increases the likelihood of homeownership by 0.05 percentage points, after controlling for demographic and socioeconomic characteristics.^a

Logit Results: Rent Burden on the Transition to Homeownership

Variable	(1)	(2)
Log(rent/income): Previous period	-0.073 (1.83)*	
Log(residual income): Previous period		0.053 (5.06)***
Age	-0.001 (0.56)	0.003 (1.23)
Black	-0.031 (1.80)*	-0.04 (2.05)**

Variable	(1)	(2)
Hispanic	-0.03 (1.72)*	-0.071 (3.92)***
Asian	0.001 (0.03)	-0.032 (1.54)
Others	-0.017 (0.36)	-0.004 (0.06)
Female	-0.059 (1.47)	-0.092 (2.27)**
Married	0.098 (6.11)***	0.135 (7.86)***
Divorced or separated	0.174 (1.51)	0.342 (1.14)
Widowed	0.131 (4.82)***	0.125 (4.02)***
At least some college	0.07 (4.72)**	0.057 (3.55)**
Child exist	0.011 (0.80)	0.067 (4.55)**
Log(household income)	0.013 (1.11)	
Log(wealth)	0.083 (17.81)**	
N	4,480	4,346

Source: Panel Study of Income Dynamics.

Note: All regressions are weighted by household weights provided by the Panel Study of Income Dynamics. The coefficients are marginal effects and the numbers in the parenthesis are z-statistics.

*** $p < 0.01$; ** $p < 0.05$.

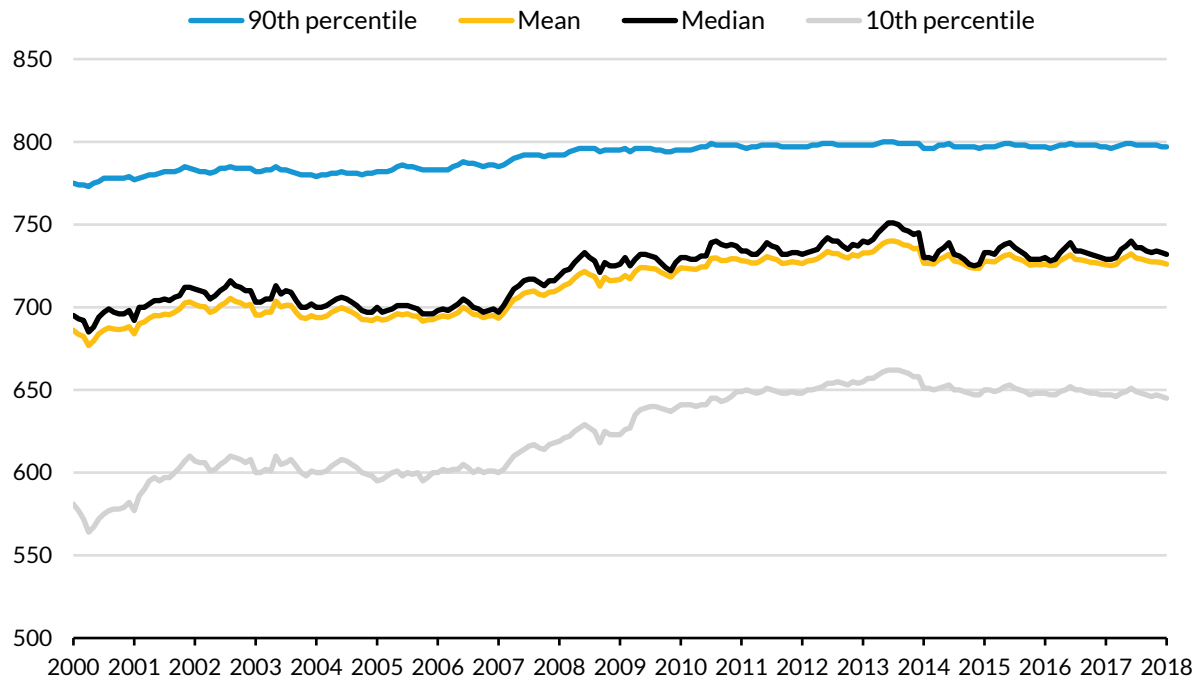
^a In column 2, we did not control for wealth because of the high correlation between wealth and residual income.

Tight Credit

At a young age, millennials experienced a housing market boom and bust that is likely to have affected their tenure choice through multiple channels. Many older millennials faced difficulty getting a stable job when they graduated from school, as the unemployment rate shot up to nearly 10 percent during the Great Recession. Following the crisis, getting a mortgage became more difficult because of tightened credit requirements. The median credit score stood at 733 in January 2015, increasing from 695 in January 2000 and 700 in January 2005 (figure 18). The credit score of the bottom 10th percentile increased from 581 in January 2000 and 595 in January 2005 to 650 in January 2015. In January 2018, the median credit score was 732 and that of the bottom 10th percentile was 645.

FIGURE 18

Borrower Credit Score at Origination



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Sources: CoreLogic and the Urban Institute.

Note: Purchase-only loans.

Because younger adults, on average, have lower credit scores, this increase in credit scores at the lower end of the distribution particularly affected millennials. Table 6 presents the credit score distribution of all consumers for each generation. The median credit score among millennials is 640, which is lower than among Gen Xers (662) and baby boomers (728). For all percentiles, millennials' credit scores are below the two prior generations' scores.

TABLE 6

Credit Score Distribution: Millennials, Gen Xers, and Baby Boomers, 2016

	P10	P25	P50 (median)	P75	P90
Millennials	501	541	640	721	764
Gen Xers	512	565	662	753	803
Baby boomers	542	627	728	803	821

Sources: Credit bureau data and the Urban Institute.

Note: P10 = 10th percentile.

Furthermore, millennials' median credit score (640) is significantly below the median credit score for new mortgage origination (733). Even the 75th percentile of millennial credit scores is lower than the median credit score for new mortgage origination, indicating borrowers with lower credit scores face additional challenges accessing homeownership.

Limited Housing Supply

As millennials reach homebuying age, there is a growing concern about the shortage of housing supply, especially for starter homes that are an important first step in wealth building. New home construction has not kept up with growing demand. We are facing the lowest rental vacancies in years, and low single-family construction is limiting the number of existing single-family homes for sale.¹³

This raises a significant concern that there is a lack of supply at the lower end of the market. Since the housing market crisis, the number of new housing starts has fallen significantly. Although the number is increasing, it is still below the levels of the 1960s (figure 19). According to Goodman (2018), the estimated differences between new housing supply and new household formation in 2017 is almost 350,000 units.

FIGURE 19
Thousands of Newly Built, Privately Owned Housing



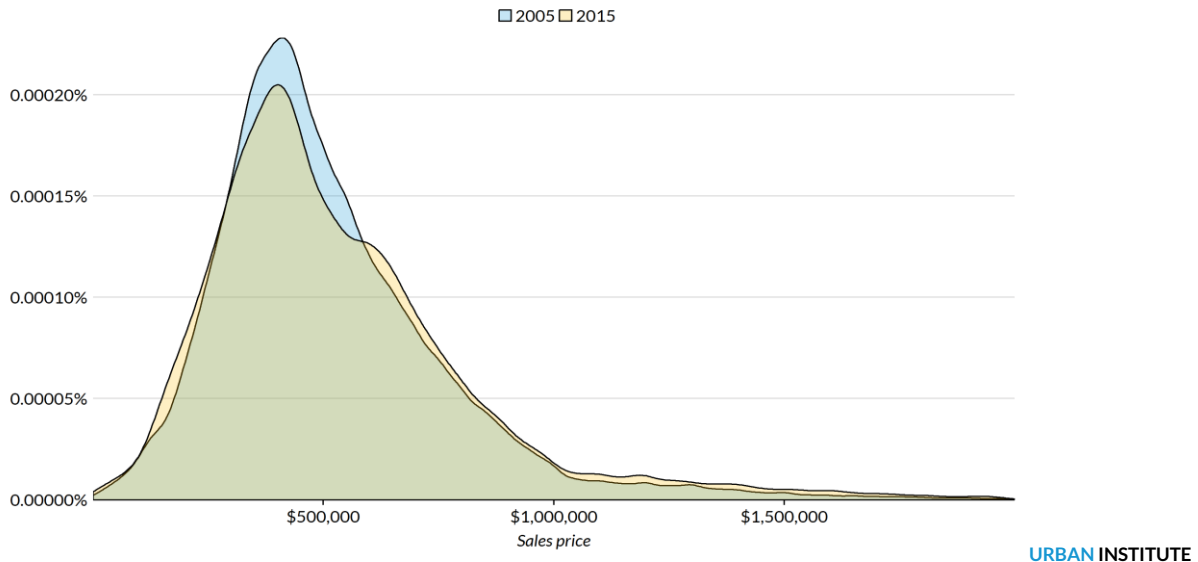
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Source: Federal Reserve economic data.

To examine this issue further, we looked at the distribution of home prices in Boston, San Francisco, Seattle, and Washington, DC, in 2005 and 2015. The urban centers saw a shift in the distribution toward higher prices, with a smaller share of sales occurring at the lower end of the price spectrum in later years. Below, we use Washington, DC, as an example (figure 20). Within the city limits and in Arlington County, the two counties that saw high increases in the share of millennials, we see the price distributions spreading out considerably toward the higher price range. Loudoun County, which has the lowest share of the population between 18 and 34, went in the other direction (figure 21). The figures for Boston, Seattle, and San Francisco are in appendix C.

FIGURE 20

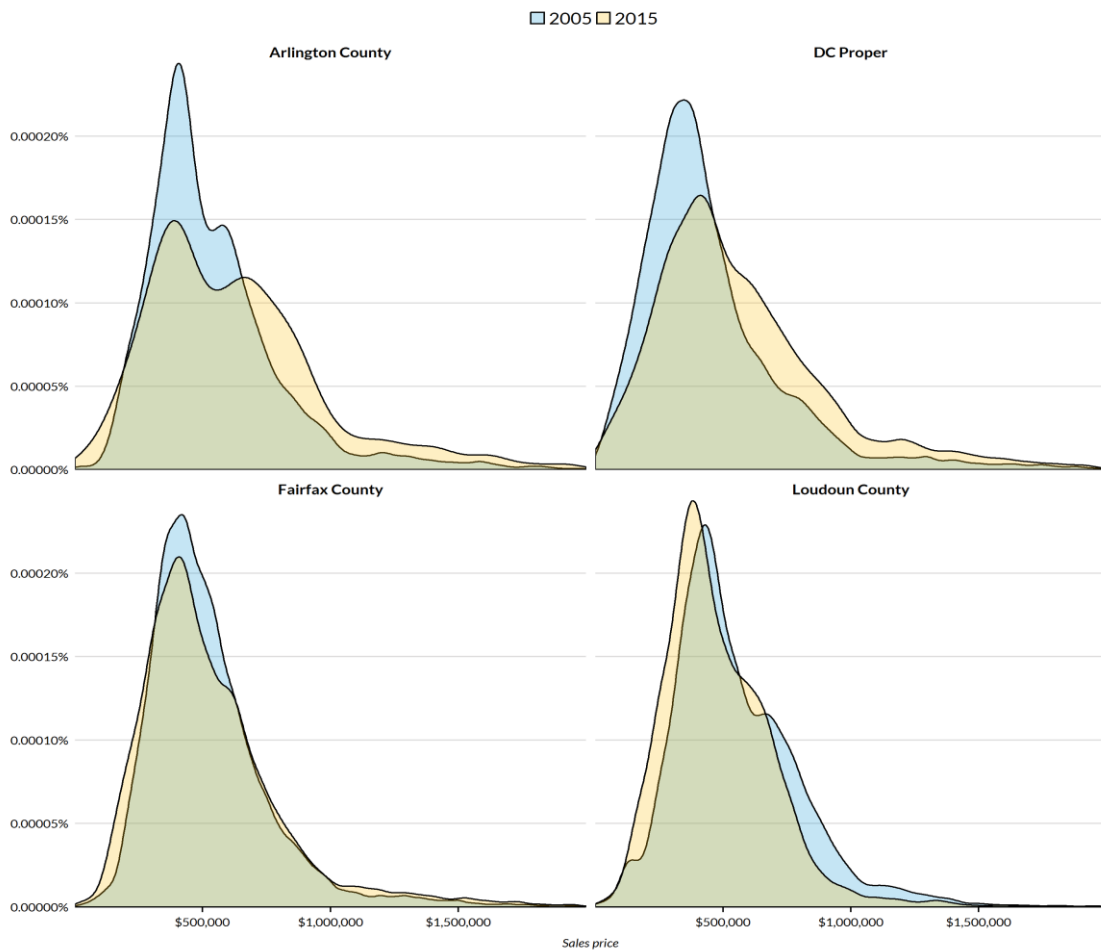
Housing Price Distribution: DC Metropolitan Area



Source: Black Knight Financial Services property records.

FIGURE 21

House Price Distribution: DC Metropolitan Area by County



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Source: Black Knight Financial Services property records.

Conclusion and Policy Recommendations

The millennial homeownership rate is 7.0 to 7.2 percentage points lower than the homeownership rate among baby boomers and Gen Xers when they were ages 18 to 34. Greater racial and ethnic diversity and delayed major life events are two important factors driving down millennial homeownership. But the homeownership rate has declined for all racial and ethnic groups and households with different marital statuses, indicating that there are additional factors affecting the millennial homeownership rate.

We also found that the disparities in homeownership increased across racial and ethnic and education groups. Black young adults have experienced the greatest decline, falling from 23.1 percent in 2000 to 13.4 percent in 2015. The homeownership rate among black millennials is 26.2 percent lower than that of white millennials. The homeownership rate increases with educational attainment. The homeownership rate gap between the two education groups we examined were less than 5 percentage points in 1990 and 2000, but the gap is now almost 10 percentage points for millennials. This section provides an additional look into this phenomenon by examining the intergenerational aspect of homeownership.

Other factors at work include changes in locational preferences, which have negatively affected the millennial homeownership rate, especially for highly educated millennials, as well as a small but noticeable change in attitudes toward homeownership.

Millennials face greater external barriers to homeownership than prior generations. Substantial education debt and the rise in rental costs have made it more difficult for millennials to save for a down payment. Tight credit constraints have increased the difficulty for obtaining mortgage credit. Additionally, the reduction of affordable housing supply has increased challenges. Considering these external conditions, we propose the following feasible policy recommendations to support millennial homeownership.

Enhancing Homeowner Education and Awareness

ENHANCING MILLENNIALS' FINANCIAL KNOWLEDGE

Even though millennials have a higher level of educational attainment than prior generations, they do not have higher a level of financial knowledge. The Survey of Consumer Finances asks three questions to measure financial knowledge on savings, borrowing, and investing. Out of 25 million millennials, 9 million, or 36 percent, answered all three questions correctly. Forty-three percent of Gen Xers and 47 percent of baby boomers answered all three correctly.¹⁴

It is unfair to directly compare millennials with other age groups because millennials are younger. But the numbers indicate that households with higher financial literacy have higher income and homeownership rates. Millennials with three correct answers have an average homeownership rate of 43.2 percent, compared with 27.4 percent among those with two or fewer correct answers. For the rating variable (from 0 to 10, with 10 being the highest), millennials rated 0 to 4 had an average

homeownership rate of 17 percent, those rated 5 to 7 had a homeownership rate of 31 percent, and those rated 8 to 10 had a homeownership rate of 40 percent.

Enhancing financial knowledge could promote millennial homeownership and bridge homeownership gaps between racial and ethnic and education groups. We need innovative approaches to encourage millennials to acquire adequate financial knowledge, which would be useful for the pursuit of homeownership and for other financial decisions, such as budgeting. Because millennials heavily rely on computers and mobile devices, providing fun and easy online games and training courses on financial literacy could be one approach.

Acknowledging the importance of obtaining financial knowledge at young age,¹⁵ Alabama, Missouri, Tennessee, Utah, and Virginia require high schools to include financial literacy courses.¹⁶ Proving a well-designed financial literacy course during high school could equip young adults with sufficient financial knowledge. Similarly, colleges could enhance students' financial knowledge. Many students will be challenged with education debt that could be reduced with better financial understanding.

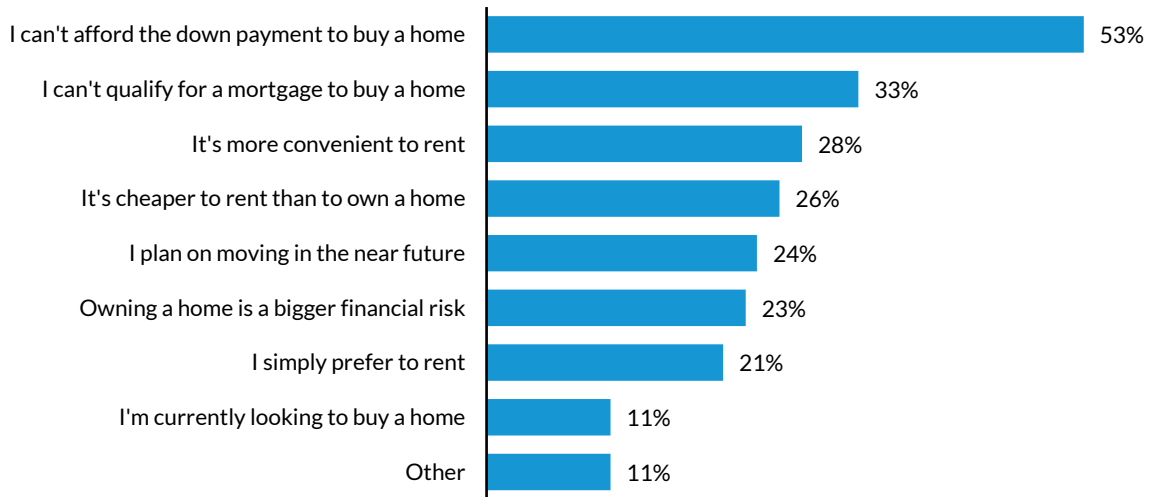
ENHANCING MILLENNIALS' HOMEBUYING AWARENESS

For most would-be first-time homebuyers, the inability to afford a down payment is a key reason they rent rather than own. In the Federal Reserve's Survey of Household Economics and Decisionmaking, 53 percent of renters chose the response "I can't afford a down payment to buy a home," and 33 percent chose "I can't qualify for a mortgage to buy a home" (figure 22).

For most millennials, lack of sufficient funds for a down payment is a major concern. The 2016 Survey of Consumer Finances shows that out of 17.1 million renters, 0.9 million earn more than \$60,000 a year and have less than \$10,000 in financial assets. If we target more narrowly, 3.0 million of 11.5 million 25-to-34-year-old renters earn more than \$60,000. Of them, 0.8 million have less than \$10,000 in financial assets. Even with enough income to pay back monthly mortgage debt, many millennials are still deterred from purchasing houses because of lack of funds for a down payment.

FIGURE 22

Barriers to Homeownership



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Sources: Survey of Household Economics and Decisionmaking, Board of Governors of the Federal Reserve, and the Urban Institute.

A potential homebuyer does not need a large amount for a down payment. The median down payment for agency mortgages is 12 percent, and for Federal Housing Administration (FHA) loans, borrowers usually put down 5 percent or less.¹⁷ Most renters do not know this and have inflated expectations about how much borrowers are required to put down to buy a home. According to the National Association of Realtors, of those who don't own a home, almost 40 percent think they need to put down more than 20 percent, while 26 percent think a 15 to 20 percent down payment is required. Only 12 percent know that a down payment can be lower than 5 percent.

Potential homebuyers were also not aware of down payment assistance. When renters do not have enough for a down payment, programs can assist them. Homebuyers can apply for assistance from nonprofit organizations and state housing finance agencies. Most first-time homebuyers qualify for down payment assistance. A recent Fannie Mae survey found that 42 percent of renters did not know about down payment assistance programs, and 34 percent were not very familiar with them (Fannie Mae 2015). Only 23 percent were very familiar or somewhat familiar.

Financial education as a part of a high school or college curriculum is a long-term solution, but there is an immediate need to give millennials information to increase their awareness about their ability to purchase a home. The government-sponsored enterprises offer housing counseling, much of it online, for some loans acquired through their affordable housing programs, but it covers only borrowers who

have applied for a mortgage loan. It does not cover borrowers who do not have the financial knowledge to know they should apply or those who are a small distance away from homeownership and do not realize it would be within reach if they took a few steps to build credit or save for a down payment. Both Fannie Mae (Home Counselor Online) and Freddie Mac (Loan Product Advisor) provide web-based online counseling to support consumers applying for home loans.

Streamlining the Mortgage Application

The mortgage application process is cumbersome. The average application contains more than 800 pages of material (Still 2016, 137). This process is ripe for the rise of technology-based (financial technology, or fintech) lenders, and many companies have recently entered this market. According to a Federal Reserve report, fintech lending increased its market share of US mortgage lending from 2 percent in 2010 to 8 percent in 2016 (Fuster et al. 2018).

Fuster and coauthors (2018) show that fintech lenders process mortgage applications 20 percent faster than traditional mortgage lenders. Such speed improvement does not come at a cost of higher defaults. Fintech innovation could improve mortgage lending efficiency, but fintech lenders, on average, tend to focus on high-quality applicants. These lenders are usually a bit more expensive, as they charge a convenience premium (Buchak et al. 2017).

Young, first-time buyers do not use fintech for mortgage applications as often as older age groups, partly because young homebuyers lack the financial literacy and necessary lending knowledge. As they gain financial knowledge and homebuying awareness, tech-savvy millennials will likely become the primary fintech users. In the near future, we expect lenders to offer more automated products, and we expect to see an expansion in the fintech credit box.

As more fintech firms enter the lending market, these firms might accomplish three goals:

1. **Increase efficiency for origination.** Fintech firms can be more innovative in collecting and processing information to lower underwriting costs, which is important for millennial homeowners given competing financial demands.
2. **Create a comprehensive assessment of risk.** Fintech firms can quickly adopt additional variables and aggregate more data sources to determine whether households can make timely mortgage payments. Rent and utility payment history are two possible variables that can better predict default probability.

3. **Reduce racial and ethnic disparities.** Fintech focuses on high-quality borrowers but could reduce racial and ethnic disparities in access to credit. Bartlett and coauthors (2018) found that racial discrimination in the mortgage rejection rate is less pronounced among fintech lenders, although both traditional and fintech lenders charge higher interest rates for minorities.

The government can also play a role. The Federal Housing Administration is a predominant source of financing for first-time homebuyers, as it offers low-down payment lending and does not do risk-based pricing. But its systems are archaic, making it difficult to streamline this part of the process. The agency's underwriting and servicing rules are drafted with paper loan files in mind and do not work well with loans for which information is submitted electronically. The latter often comes in formats that do not comply with FHA guidelines, precluding the FHA from supporting the way in which most millennials use financial services. Giving the FHA more funding for systems upgrades to improve and streamline its mortgage origination process would help. We would expect the FHA to consult with fintech and other mortgage originators to determine the top priorities for a systems overhaul.

Improving Underwriting

CAPTURING CREDITWORTHINESS

Mortgage applications underestimate many millennials' creditworthiness because credit scores usually do not count rental histories and cell phone and cable bills and because income is often underestimated. Small changes in mortgage underwriting could allow for a more inclusive borrower base without raising the probability of default.

Millennials have lower credit scores than older borrowers, and many do not have FICO scores, the credit scores used for mortgage approvals. Some millennials have "thin files," with an amount of credit information too small to be scored by FICO, and other millennials are "credit invisible," with no credit information. But these scores do not account for millennials' two largest expenses: rent and telecommunications bills.

Credit scores generally do not include rental payment history, as most landlords do not report rental histories to credit bureaus. Payment history is included in a borrower's credit score only when the data are available to credit bureaus. But if a renter fails to make a payment and the debt is turned over to collection, it will be counted negatively.

Research suggests that mortgage borrowers who make their rental payments on time for 24 consecutive months have a low probability of going 90 or more days delinquent on mortgage payments

over the next three years. For all 2012 full-documentation government-sponsored enterprise borrowers, the probability of delinquency is 0.25 percent but rises to 28.2 percent for those who miss two or more payments.¹⁸ And for comparable numbers of rooms, total housing costs for renters and for homeowners with a mortgage are similar. This suggests that on-time rental payments are predictive of on-time mortgage payments. Moreover, two years of on-time performance could raise borrowers' credit scores.

There has been a direct test of this in the affordable housing space. The Credit Builders Alliance worked with eight affordable housing providers to report rent information to Experian. Seventy-nine percent of participants experienced an increase in credit score, with an average increase of 23 points. Fourteen percent experienced no change, and 7 percent experienced a decrease (Chenven and Schulte 2015).

But with so many of the nation's renters living in single-family properties—generally owned by mom-and-pop investors—or in small, multifamily properties with a similar ownership structure, universal reporting of rents is not possible. According to the 2015 American Housing Survey, 39.8 percent of renters live in one-unit structures, 17.3 percent in two-to-four-unit structures, and 10.9 percent in five-to-nine-unit structures. Thus, 68 percent of renters live in structures with fewer than 10 units, structures that are not apt to have institutional ownership or have the infrastructure to report to the credit bureaus. But while some rents are paid in cash or money orders, most others run through bank accounts, which could provide a way to collect information on rental payments without having to get landlord buy-in.

Telecom, utility, and television payment data are also not reported to credit bureaus. They are reported to the National Consumer Telecom and Utilities Exchange, which is comprehensive and contains more than 300 million accounts and 200 million customers (Kaul and Goodman 2018). FICO has been given limited use of these data to score and underwrite consumers with no credit score for credit cards. Although incorporating these data would be ideal, most could also be accessed from borrowers' bank statements. Because minorities are more likely to have no or low credit (Goodman, Bai, and Li 2018) and are more likely to be renters, incorporating rental payment history and telecom payments into credit evaluation could help bridge homeownership disparities across racial and ethnic groups.

CAPTURING INCOME AND DEBT MORE REALISTICALLY

Millennial income is often not fully captured. Income is considered only if it is consistent and the consumer has been in the same job or industry for two years. Millennials who are getting established are less likely to meet these requirements than older workers who are more established.

Moreover, many millennials have a primary job with a W-2 but earn additional income on the side. The Federal Reserve's Survey of Household Economic Decisionmaking indicates this is true for 38 percent of millennials, 36 percent of 25-to-34-year-olds, and 28 percent of the total population.¹⁹ Income that is part time or inconsistent is often not captured in mortgage calculations. For example, a teacher might tutor on the side or teach summer school every other summer. Additionally, self-employed income is often not fully captured; 8.2 percent of millennials with income are self-employed, and 5.3 percent have some self-employment income. It seems reasonable to count this supplemental income as long as it is reasonably regular. The use of bank statements can help capture this supplemental income.

On the debt side, education debt can be overcounted. Fannie Mae and Freddie Mac have revised their treatment of this debt such that if a student is taking advantage of an income-based repayment program, only that amount of debt is included in the debt-to-income calculation. Debt paid by others is not included. But government programs have not adopted this protocol. We suggest more flexibility in the debt-to-income calculation, especially for borrowers with high debt burdens because of education debt and high earnings potential (based on field and degree). These borrowers are more apt to "grow into" their mortgage as their income increases.

Changing Land-Use and Zoning Regulations

Decline in housing supply is mostly driven by increases in land and construction costs (Goodman 2018). Although cost increases can be attributed partly to geographic constraints, land-use and zoning regulations also play a role (Gyourko and Molloy 2015). Our previous analysis showed that the housing supply elasticity index, which includes land-use and zoning regulations, varies across cities, but these restrictions have also become more stringent. According to Ganong and Shoag (2017), land-use and zoning cases (highly correlated with the degree of land-use regulation) have increased substantially since 1980. There were 157 percent more land-use cases and 82 percent more zoning cases in 2010 than in 1980.

Most studies²⁰ have found that more regulations result in higher house prices and less construction. Builders face greater fees and additional time to obtain approval in places with greater regulations and

are more constrained in what and how they can build. Furthermore, as housing becomes more unaffordable in areas with restrictive zoning and land-use regulations, the decreasing amount of federal aid that flows toward housing subsidies supports fewer units and households (Calder 2017).

Because zoning and land-use regulations are devised and implemented at the local level, it is difficult to execute a national policy to alleviate excessive controls to promote greater housing supply and housing affordability. States could provide financial incentives to cities that limit or reduce regulation, such as reallocating housing subsidy dollars. Streamlining approval processes and allowing development by right could also be solutions to reform local land-use and zoning regulations. These laws' local nature makes it unattractive for a locality to reform its laws unless it can be sure neighboring localities will do the same. And if a locality can keep its zoning rules as is, while other localities in the same metropolitan statistical area relax their rules, the restrictive locality appears to be better off—although it may find itself without school teachers and first responders. Some states, most notably Massachusetts, have adopted state-based systems that override some local restrictions. This strategy needs further examination to see whether and how it can be extended without eliminating traditional local government roles.

Special Topic: The Impact of Parental Homeownership and Wealth

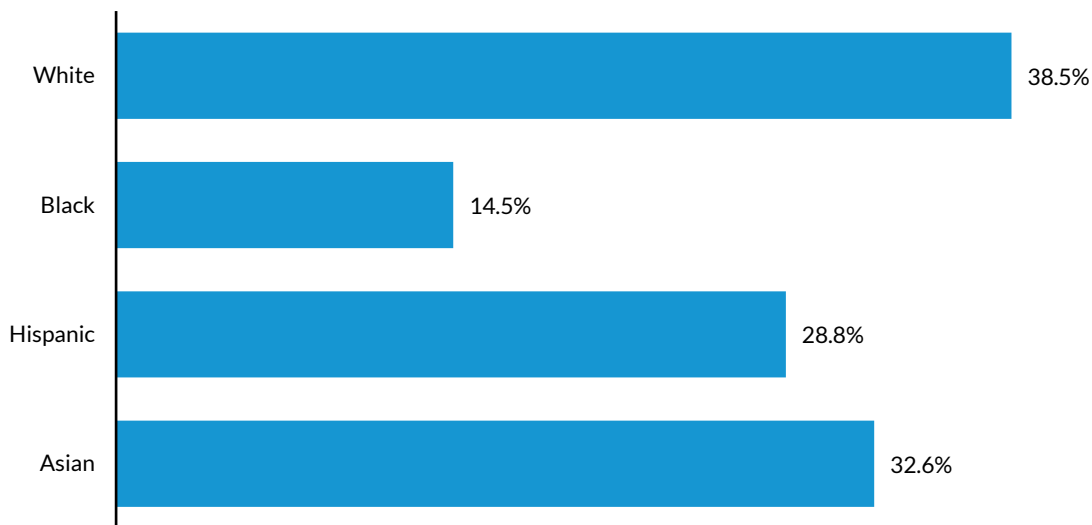
Our analysis shows that a significant homeownership gap exists across race and ethnicity, and the difference has not converged. We examine whether there is an intergenerational component that explains these differences by using a panel dataset. We examine whether parental ownership status and wealth affects a child's likelihood of owning a home. Prior studies (e.g., Boehm and Schlottmann 1999, Enström Öst 2011; Helderma and Mulder 2007) have found that both factors are strongly associated with a child's homeownership, suggesting that intergenerational wealth transfers might be reinforcing and extending the homeownership gap across generations.

To conduct this analysis, we use the Panel Study of Income Dynamics. The PSID has followed a sample of US individuals and households since 1968. Since 1997, the survey has been conducted biannually. Like census data, PSID data contain extensive information on individual- and household-level demographic and socioeconomic characteristics. Because the data follow the same people over time, we can track changes in homeownership status. The PSID allows us to link a parent's information to a child's information, enabling us to examine how parental wealth and homeownership status affects

a child's homeownership rate after controlling for other factors linked to tenure choices. We use data from 2005 to 2015 for all households with heads ages 18 to 34. In all our results, we use sample weights to obtain representativeness.

Consistent with our previous results (figure 3), our analysis of PSID data shows that homeownership among young adults differs across racial and ethnic groups. The homeownership rate among white young adults was 38.5 percent between 2005 and 2015, compared with just 28.8 percent for Hispanic households and 14.5 percent for black households (figure 23).

FIGURE 23
2005–15 Homeownership Rate among Household Heads Ages 18 to 34



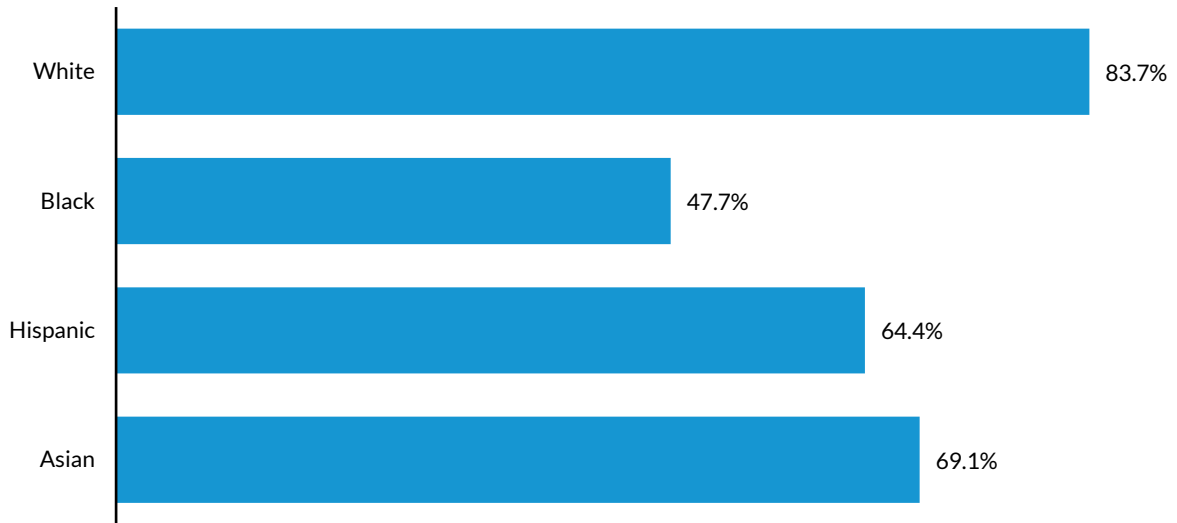
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Source: Panel Study of Income Dynamics.

Homeownership rates among parents of these young adults follow a pattern similar. White parents have an 83.7 percent homeownership rate, Hispanic parents have a 64.4 percent rate, and black parents have a 47.7 percent rate, suggesting an intergenerational association (figure 24). Figure 25 shows that a young adult's homeownership is highly correlated with parental homeownership. The homeownership rate for young adults whose parents were renters is 14.4 percent, whereas the homeownership rate for young adults whose parents were homeowners is 31.7 percent.

FIGURE 24

Parental Homeownership Rate, 2005–15

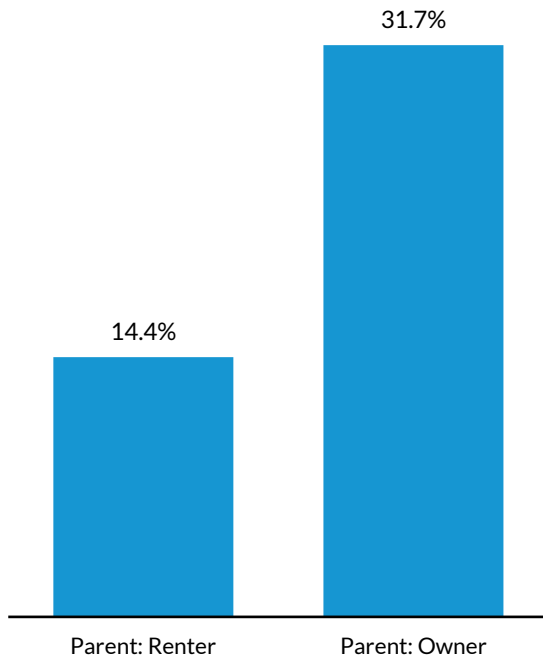


URBAN INSTITUTE

Source: Panel Study of Income Dynamics.

FIGURE 25

Child's Homeownership Rate by Parents' Tenure

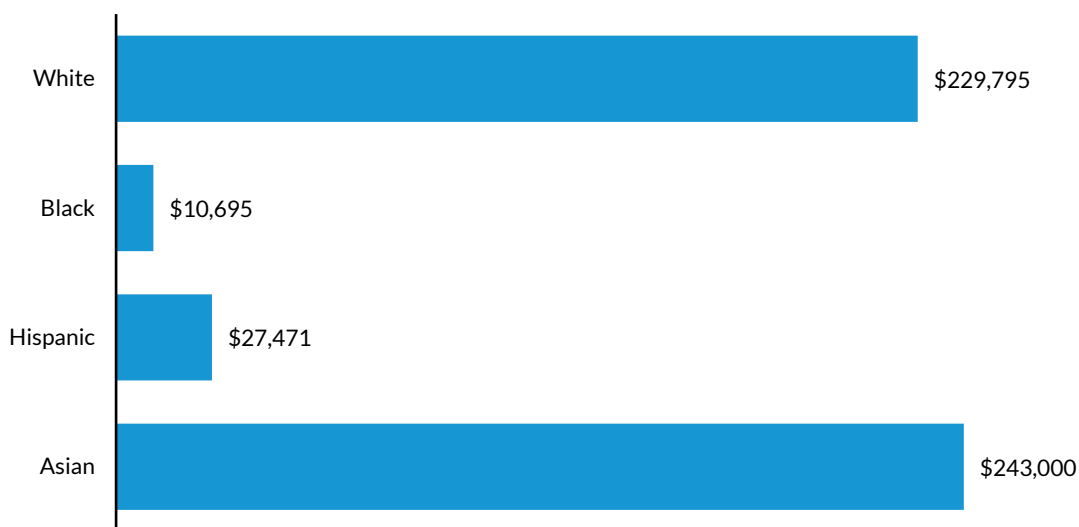


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Source: Panel Study of Income Dynamics.

Parental wealth can affect a child's ability to afford a home, especially with respect to having a down payment. In our dataset, median wealth for white parents is approximately \$230,000, compared with \$27,000 for Hispanic parents and \$11,000 for black parents (figure 26).²¹ Figure 27 shows that the homeownership rate for young adults increases linearly with increases in parental wealth. These results suggest both parent's wealth and ownership status matter for child's decision to own a home.

FIGURE 26
Inflation-Adjusted Median Parental Wealth, 2005–15
2015 dollars



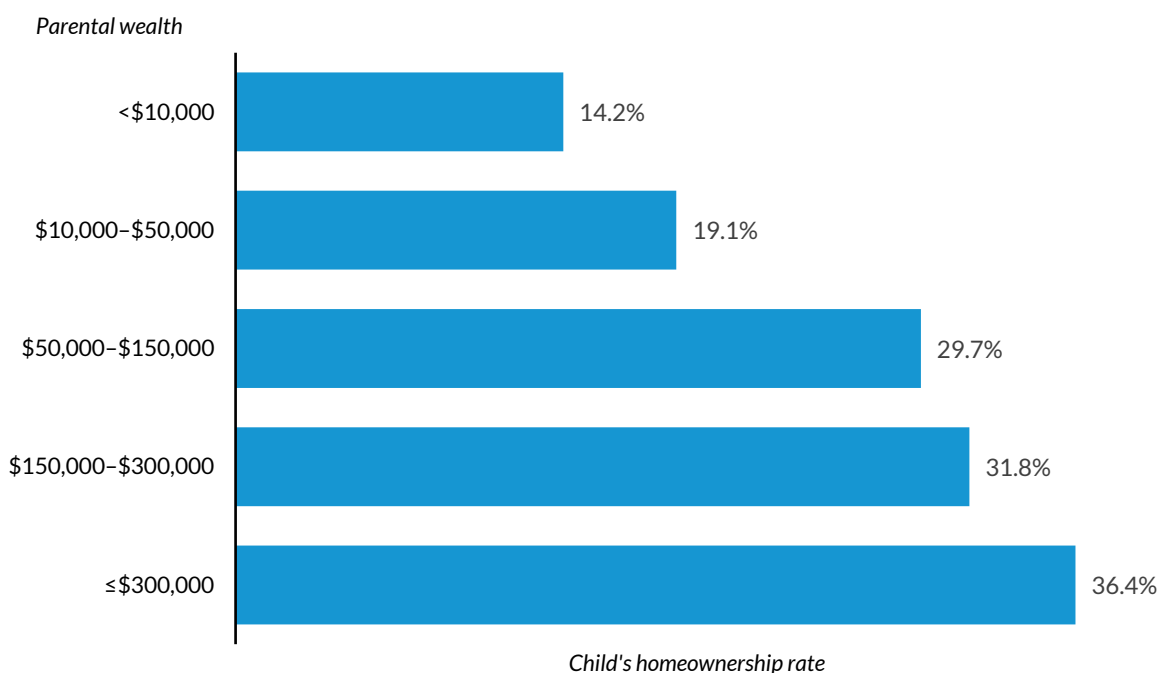
URBAN INSTITUTE

Source: Panel Study of Income Dynamics.

Parental wealth and homeownership shows a strong relationship with a child's homeownership. Helping millennials become homeowners helps them build long-term wealth and can benefit generations to come.

FIGURE 27

Child's Homeownership Rate by Parental Wealth



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Source: Panel Study of Income Dynamics.

BOX 4: A REGRESSION ANALYSIS APPROACH

Does Parental Homeownership and Wealth Affect a Child's Homeownership?

Our regression results confirm the significant impacts of parental ownership and wealth on a child's homeownership, even after including control variables. Because parental wealth and ownership status are highly correlated, we put them in separate regressions. Column 1 shows that a child's likelihood of being a homeowner increases by 10.9 percentage points if the parents are owners. Similarly, a 1 percent increase in parental wealth increases a child's likelihood of being a homeowner by 0.016 percentage points (column 2).

Parental wealth and homeownership become less significant when race and ethnicity variables are added (columns 3 and 4). A child's likelihood of being a homeowner increases 8.4 percentage points if the parents are owners, and a 1 percent increase in parental wealth increases a child's propensity of owning by 0.009 percentage points. This is consistent with what the Panel Study of Income Dynamics and other data have told us: parental wealth and homeownership are strongly correlated with race and ethnicity. Our results provide strong evidence of an intergenerational factor in homeownership that could reinforce racial and ethnic disparities. The homeownership rate among black households

headed by 45-to-64-year-olds significantly dropped over the past 15 years, and this could have an ongoing negative influence on their millennial children’s likelihood of becoming homeowners.^a

Parental Ownership and Wealth on Child’s Homeownership

Variable	(1)	(2)	(3)	(4)
Parent: Own	0.109 (8.18) ^{***}		0.084 (6.20) ^{***}	
Log(parent wealth)		0.016 (5.03) ^{***}		0.009 (3.01) ^{***}
Age	0.015 (10.45) ^{***}	0.016 (9.86) ^{***}	0.016 (10.82) ^{***}	0.016 (10.24) ^{***}
Black			-0.122 (9.64) ^{***}	-0.122 (8.51) ^{***}
Hispanic			-0.05 (3.07) ^{***}	-0.031 (1.67)
Asian			-0.044 (1.02)	-0.058 (1.37)
Others			-0.037 (0.78)	-0.037 (0.72)
Female	-0.070 (5.87) ^{***}	-0.076 (5.74) ^{***}	-0.064 (5.44) ^{***}	-0.07 (5.38) ^{***}
Married	0.13 (10.16) ^{***}	0.132 (9.50) ^{***}	0.115 (8.94) ^{***}	0.116 (8.34) ^{***}
Divorced or separated	0.109 (0.98)	0.266 (2.07) ^{**}	0.088 (0.83)	0.299 (2.65) ^{***}
Widowed	0.092 (4.81) ^{***}	0.097 (4.63) ^{***}	0.074 (3.96) ^{***}	0.079 (3.81) ^{***}
At least some college	-0.001 (0.12)	-0.015 (1.14)	-0.006 (0.48)	-0.015 (1.12)
Child exist	0.086 (7.34) ^{***}	0.095 (7.31) ^{***}	0.106 (8.81) ^{***}	0.108 (8.12) ^{***}
Log(income)	0.138 (16.77) ^{***}	0.14 (15.22) ^{***}	0.131 (15.84) ^{***}	0.137 (14.85) ^{***}
Observations	9,626	8,064	9,626	8,064

Source: Panel Study of Income Dynamics.

Notes: All regressions are weighted by household weights provided by the Panel Study of Income Dynamics. The coefficients are marginal effects, and the numbers in the parenthesis are t-statistics.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

^aLaurie Goodman, Alanna McCargo, and Jun Zhu, “A Closer Look at the Fifteen-Year Drop in Black Homeownership,” *Urban Wire* (blog), Urban Institute, February 13, 2018, <https://www.urban.org/urban-wire/closer-look-fifteen-year-drop-black-homeownership>.

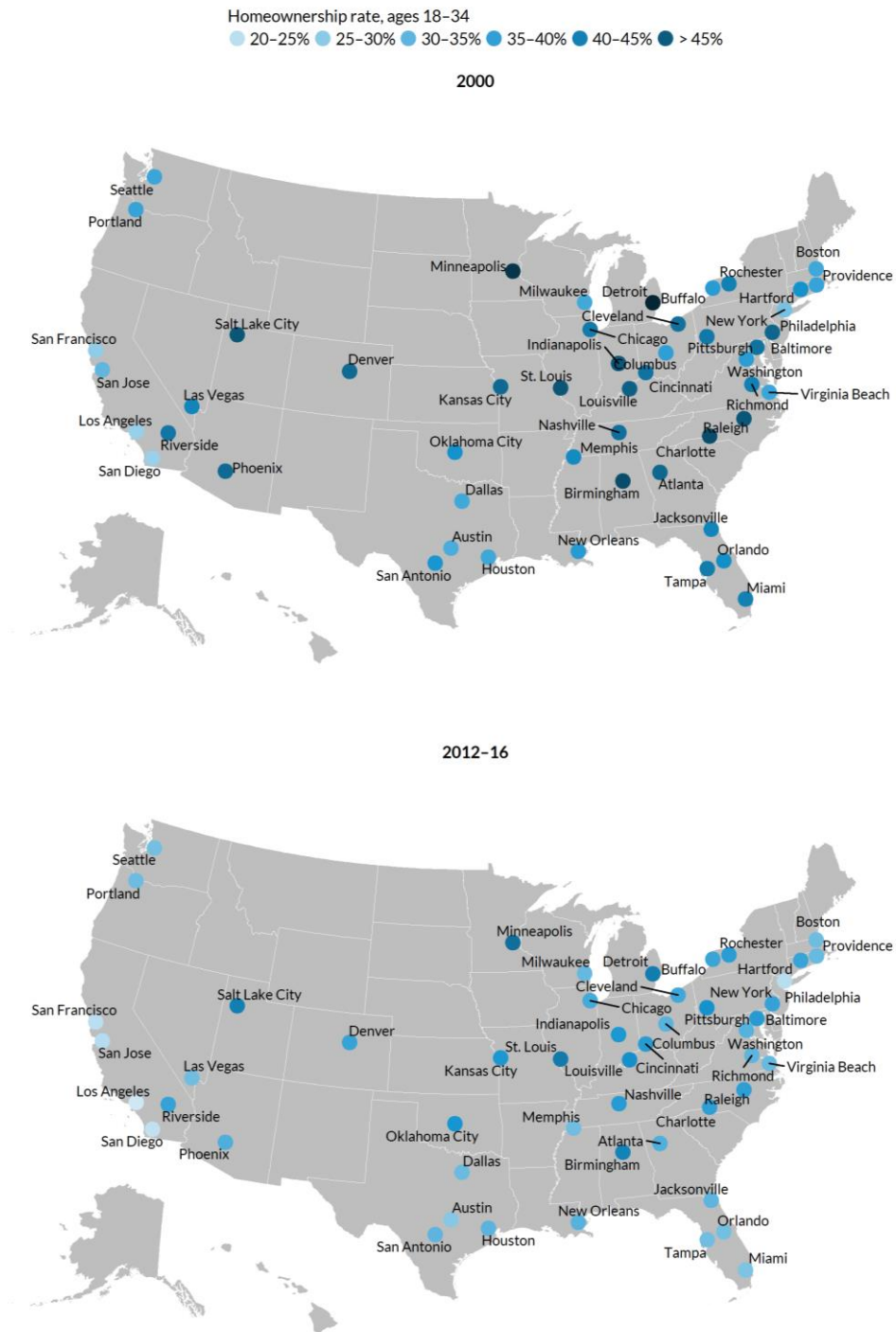
Appendix A. Intercity Migration and Homeownership

Figure A.1 presents the share of the population ages 18 to 34 in 2000 and 2012–16 for the 50 largest US cities.²² The share of young adults varies from 19.8 to 29.8 percent. Austin, Los Angeles, San Diego, San Francisco, San Jose, and Washington, DC, had high shares of young adults, whereas Cleveland, Detroit, and Pittsburgh had low shares. The change in the share of the young adult population from 2000 to 2012–16 ranges from –4.6 to 1.7 percent.

The homeownership rate among young adults also varies significantly (figure A.2). According to the 2012–16 American Community Survey, the homeownership rate among 18-to-34-year-olds, who are mostly millennials, ranged between 18.0 percent in Los Angeles to 46.2 percent in Minneapolis.

FIGURE A.2

Homeownership among 18-to-34-Year-Olds in the 50 Largest US Cities



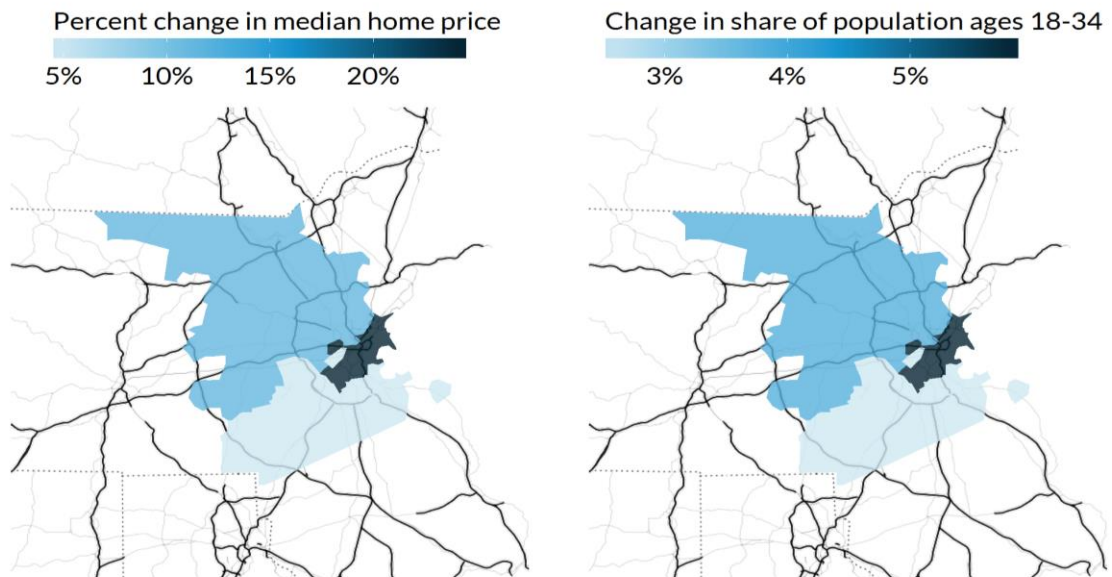
Source: The Decennial Census and the American Community Survey.

Appendix B. Intracity Migration and Changes in House Prices in Boston, Seattle, and San Francisco

In every city, counties closer to the urban core had a growing share of millennials and higher home price appreciation than suburban counties farther from the city center. The maps below show the relationship between home price appreciation and the millennial population.

FIGURE B.1

Millennial Location Preferences and Median Home Prices in Boston

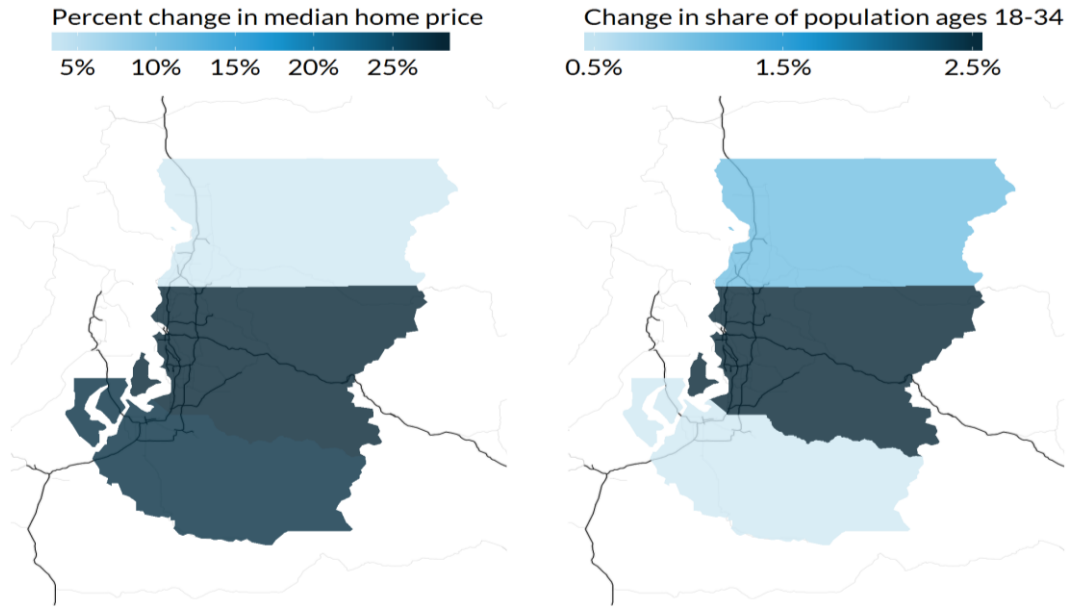


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Sources: Black Knight Financial Services property records and the American Community Survey.

FIGURE B.2

Millennial Location Preferences and Median Home Prices in Seattle

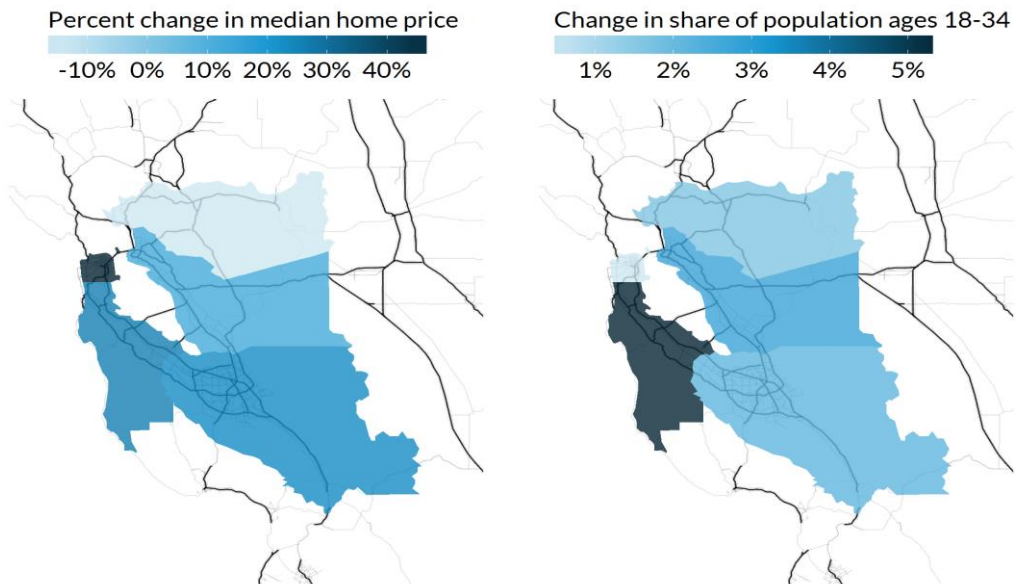


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Sources: Black Knight Financial Services property records and the American Community Survey.

FIGURE B.3

Millennial Location Preferences and Median Home Prices in San Francisco



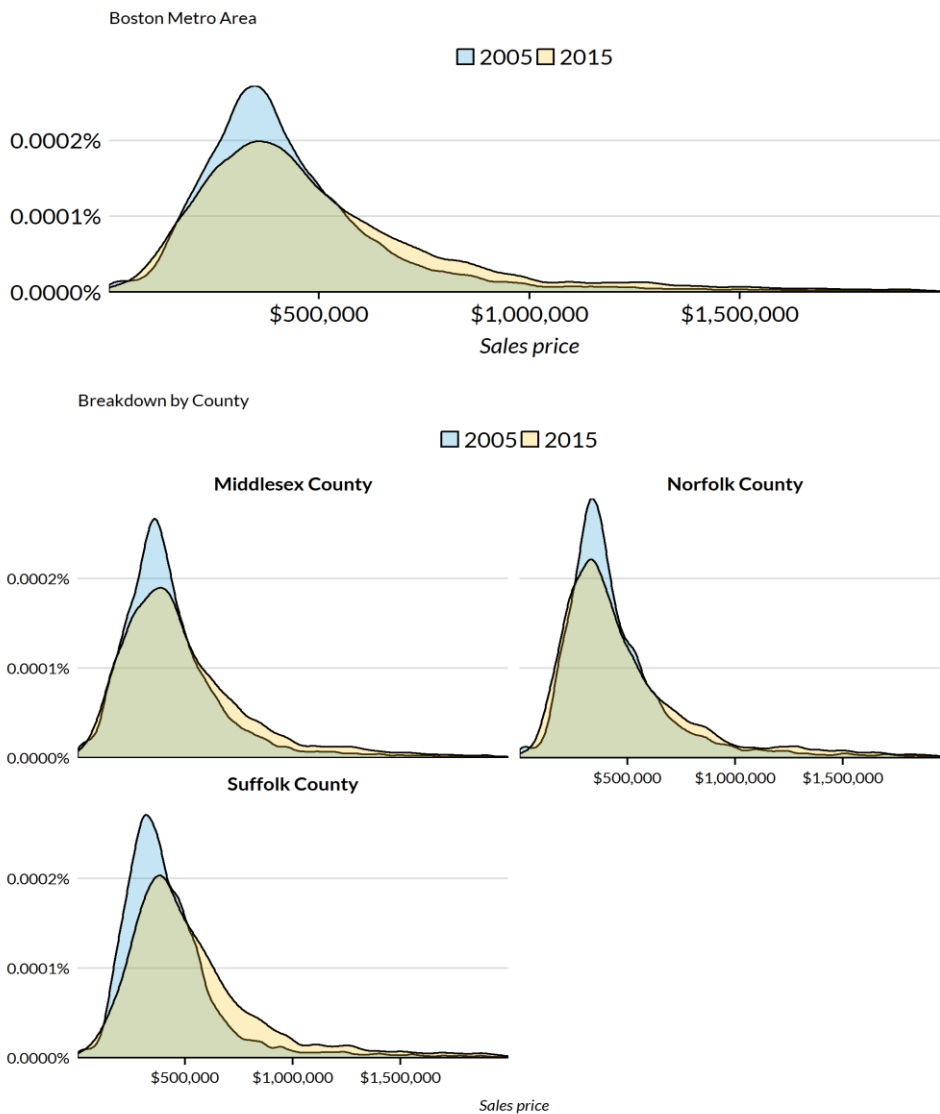
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Sources: Black Knight Financial Services property records and the American Community Survey.

Appendix C. House Price Distribution in Boston, Seattle, and San Francisco

FIGURE C.1

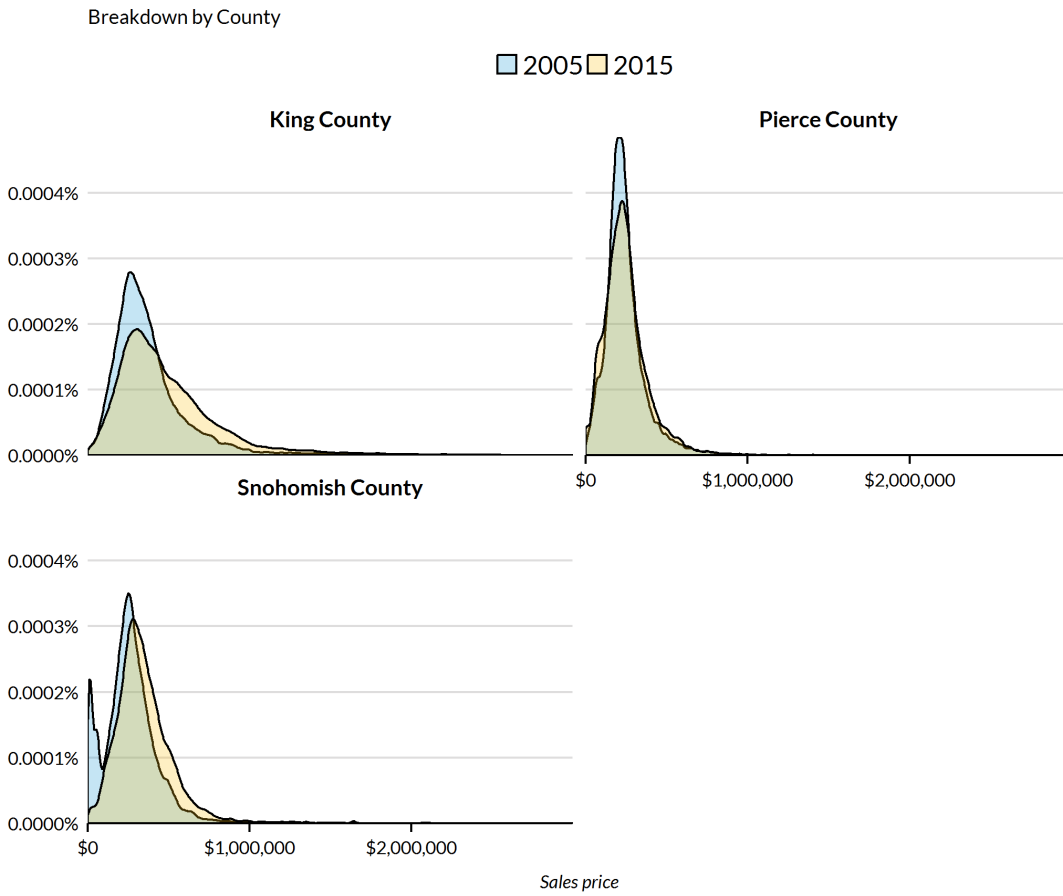
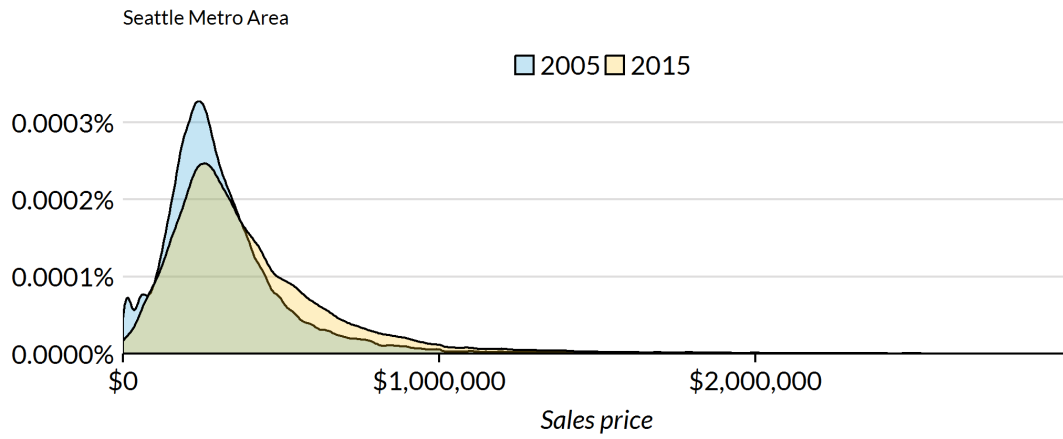
Boston



Source: Black Knight Financial Services property records.

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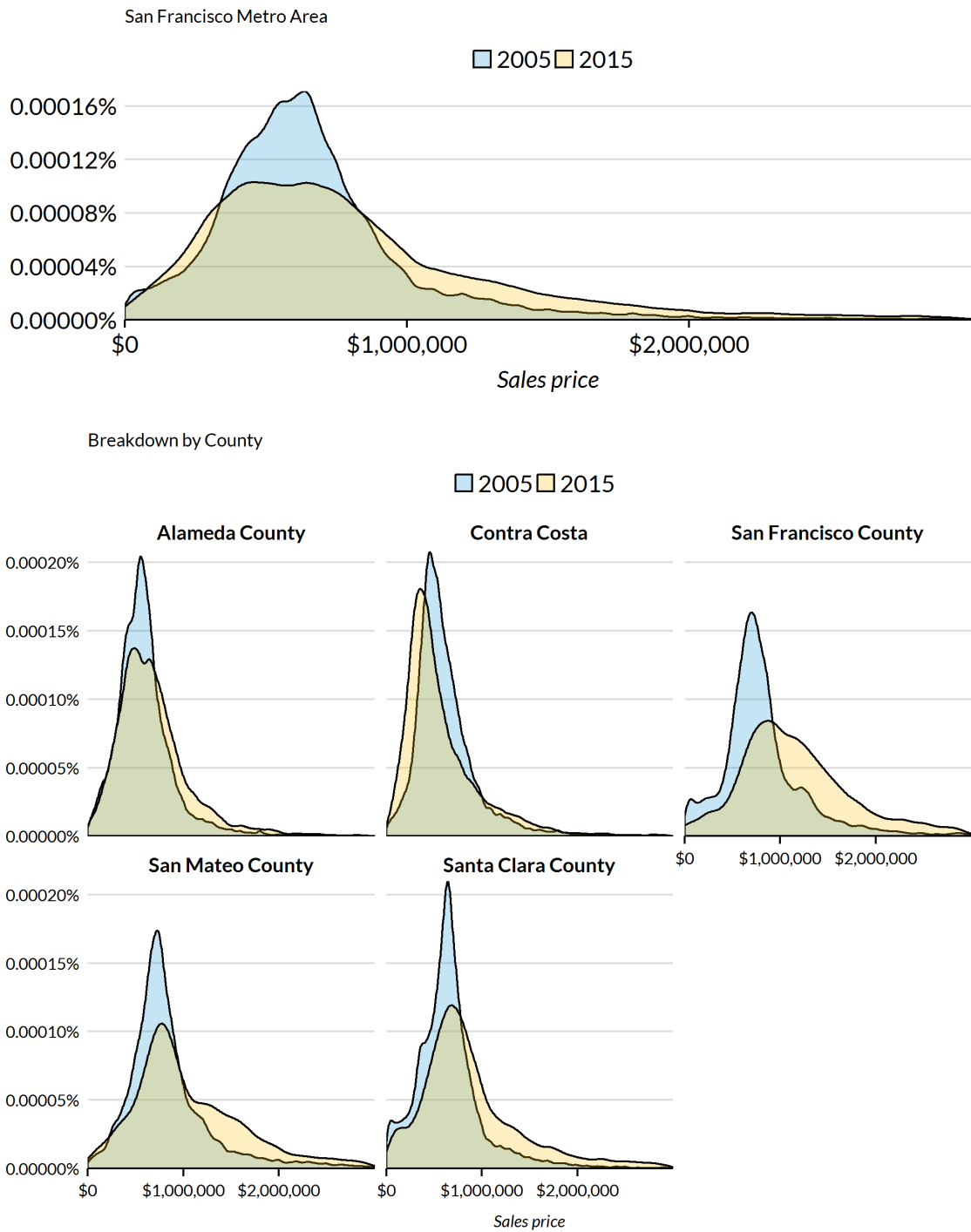
FIGURE C.2
Seattle



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Source: Black Knight Financial Services property records.

FIGURE C.3
San Francisco



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Source: Black Knight Financial Services property records.

Notes

- ¹ We use 1990, 2000, 2005, 2010, and 2015. We chose 2015 instead of 2016 (the most recent available data) because 2015 is the year millennials were ages 18 to 34, an age range most commonly used to categorize young adults. It is also easier to provide a cross-generation comparison using this age group. In 2016, when millennials were ages 19 to 35, the millennial homeownership rate was 33.8 percent. For those ages 18 to 34, the homeownership rate was 32.3 percent in 2016, nearly identical to the 32.2 percent rate in 2015.
- ² Because the US Census was conducted only every 10 years until 2005, it is not feasible to provide a clear year-generation classification of 18-to-34-year-olds. In 1990, late baby boomers were ages 26 to 34 and early Gen Xers were ages 18 to 25. In 2000, 18-to-34-year-olds were mostly Gen Xers, and some millennials were 18 or 19 years old.
- ³ Joe Cortright, “Here’s What’s Wrong with That ‘Peak Millennials’ Story,” *CityLab*, January 24, 2017, <https://www.citylab.com/equity/2017/01/flood-tide-not-ebb-tide-for-young-adults-in-cities/514283/>.
- ⁴ Morley Winograd and Michael D. Hais, “Opinion: Great Recession Turning Millennials into Their Great-Grandparents,” *Atlantic*, February 28, 2013, <https://www.theatlantic.com/politics/archive/2013/02/opinion-great-recession-turning-Millennials-into-their-great-grandparents/430137/>.
- ⁵ Issi Roem, “Characteristics of Domestic Cross-Metropolitan Migrants,” BuildZoom, April 3, 2018, <https://www.buildzoom.com/blog/characteristics-of-domestic-cross-metropolitan-migrants>.
- ⁶ Because the one-year American Community Survey covers only 1 percent of the US population, we use the five-year 2012–16 American Community Survey to expand our sample size. This dataset enhances statistical accuracy for estimating city-level data. The share of population is estimated using millennial population, not millennial households.
- ⁷ During this period, the proportion of those who received a college education increased, with a corresponding decline in the share of young adults with a high school diploma or less.
- ⁸ Jordan Weissmann, “Young Adults Are Getting More Suburban. So Why Does Your City Seem Full of Twentysomethings?” *Moneybox* (blog), *Slate*, April 8, 2015, http://www.slate.com/blogs/moneybox/2015/04/08/young_adults_and_cities_college_graduates_are_becoming_more_urban_high_school.html.
- ⁹ Even at this high income level, other racial and ethnic groups experienced a greater decrease of 4.2 percent, and their homeownership rate showed greater volatility. As in the regression result in box 1, this suggests that a combination of factors or factors we have not measured might be keeping minorities from accessing homeownership, even for those with high incomes.
- ¹⁰ Anna Bahney, “How the Financial Crisis Affected Millennials, 10 Years Later,” *CNN Money*, December 4, 2017, <http://money.cnn.com/2017/12/04/pf/impact-recession-millennials/index.html>.
- ¹¹ Education debt includes any debt used for educational expenses. For those with education debt in the Survey of Household Economics and Decisionmaking dataset, 94.8 percent hold student loans, 17.6 percent hold credit card loans, and 3.2 percent hold home equity loans. The shares do not add up to 100 percent because a person can have more than one type of debt.
- ¹² For the total US population, the share of rent-burdened households was 50.6 percent in 2015.
- ¹³ Jordan Rappaport, “The Large Unmet Demand for Housing,” *Main Street Views* (blog), Federal Reserve Bank of Kansas City, April 12, 2017, <https://www.kansascityfed.org/publications/research/mb/articles/2017/large-unmet-demand-housing>.

- ¹⁴ There is another variable associated with financial literacy. Households rate their levels of knowledge about personal finance on a scale of 0 to 10, where 0 indicates “not knowledge at all” and 10 indicates “very knowledgeable.” Roughly 41 percent of millennials rated themselves 8 to 10, lower than Gen Xers (48 percent) and baby boomers (53 percent).
- ¹⁵ “The Case for High School Financial Literacy,” Champlain College, accessed June 20, 2018, <https://www.champlain.edu/centers-of-excellence/center-for-financial-literacy/report-national-high-school-financial-literacy/the-case-for-high-school-financial-literacy>.
- ¹⁶ Ann Carns, “Most States Don’t Require Specific Financial Literacy Classes,” *New York Times*, January 19, 2018, <https://www.nytimes.com/2018/01/19/your-money/states-financial-literacy-classes.html>.
- ¹⁷ The national median loan-to-value ratio is 93 percent. The Federal Housing Administration and US Department of Veterans Affairs typically offer lower down payment options (0 to 3.5 percent) than the government-sponsored enterprises. See Goodman and coauthors (2017).
- ¹⁸ Laurie Goodman and Jun Zhu, “Rental Pay History Should Be Used to Assess the Creditworthiness of Mortgage Borrowers,” *Urban Wire* (blog), Urban Institute, April 17, 2018, <https://www.urban.org/urban-wire/rental-pay-history-should-be-used-assess-creditworthiness-mortgage-borrowers>.
- ¹⁹ The question asks, “In addition to your formal employment, have you earned money from informal income-generating activities in the month before the survey?”
- ²⁰ Quigley and Rosenthal (2005) provide a survey of studies examining the effect of regulation on housing prices and quantity.
- ²¹ The PSID oversamples white and black households. Asian households make up less than 2 percent of the sample. Thus, the statistical errors of median wealth and the homeownership rate among Asians are likely to be large.
- ²² Because the one-year American Community Survey covers only 1 percent of the US population, we use the five-year 2012–16 American Community Survey to expand our sample size. This dataset enhances statistical accuracy for estimating city-level data. The share of the population is estimated using millennial population, not millennial households.

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