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Locked Out? Are Rising Housing Costs Barring Young Adults from Buying their First Homes?

Twenty-somethings Dan and Susan dream of buying a house. Their rent keeps going up, and they want a place to call their own. But saving for a down payment is tough, especially with the price of houses in their area going up every year.

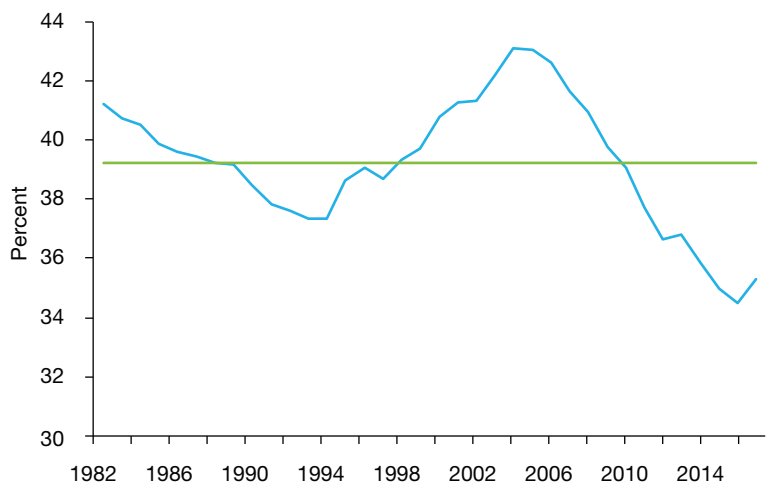
For Dan and Susan, and hundreds of thousands of young adults like them (ages 25-34), rising housing costs are deferring their American Dream. While rising home prices may be good for homeowners, they are pushing homeownership further into the future for many potential buyers. Higher home prices weaken affordability, and first-time home buyers are particularly impacted because prices have increased most for the lower-priced homes they would typically buy.

Young adults comprise a large share of first-time home buyers, and they have largely been excluded from the benefits of the rapidly rising home values of recent years. Unable to buy, many young adults have continued to rent, and rising rents have made it more difficult to save for a down payment. Conversely, some young households prefer the flexibility and convenience renting can offer and currently have no plans to buy a home.

Homeownership rates for young adult households have declined 8 percentage points from their 2004 peak (**Exhibit 1**). Although the rate has ticked up modestly in recent quarters, the overall level remains about 3 percentage points below the historical average.

Exhibit 1

Homeownership rate of young adults less than 35 years old (1982-2016)



Source: U.S. Census Bureau—Current Population Survey/Housing Vacancy Survey.
 Note: Horizontal line indicates the historical average.



Higher housing costs are the main factor explaining the drop in young adult homeownership rates. We find that they explain about half of the decline. Changes in sociological factors such as declining marriage and fertility rates explain much of the rest.

How much have increasing housing costs lowered the homeownership rate for young adults? This Insight describes analysis we did to answer that question. We also provide projections for future homeownership of young adults in 2016 under three alternative scenarios. We find that under all three scenarios, the homeownership rate for these young adults will rise as they age. However, that increase varies according to various conditions:

- Under a baseline scenario, homeownership rate of young adults in 2016 will rise to 58.1 percent by 2025.
- Under an optimistic scenario, the homeownership rate of young adults could rise as high as 60.0 percent by 2025—1.9 percentage points more than in the baseline.
- In a pessimistic scenario, the homeownership rate of young adults only increases to 55.9 percent by 2025—2.2 percentage points less than baseline.

A percentage point or two up or down may not seem like a lot, but when compared to the baseline scenario, it translates to 500,000 more home purchases by young adults under an optimistic scenario, and 600,000 less home purchases under a pessimistic scenario.

What accounts for the young adult homeownership gap?

Extensive literature studies the determinants of and obstacles to young adult homeownership, with many papers emphasizing the importance of socioeconomic and demographic characteristics (see Appendix A.1 for a summary of studies on homeownership by young adults). The consensus is that changes in life-cycle trajectory and economic conditions influence the choice to rent or buy. Our research refines prior studies by focusing on the role housing costs play in young adult homeownership.

Similar to our previous research on [Young Adult Household Formation](#), we built a statistical model to estimate the relationship of homeownership to a variety of economic and demographic factors

The overall level of homeownership for young adults, adults between the ages of 25 and 34, remains about 3 percentage points below the historical average.



using 2016 ACS data.¹ The main results are summarized below. Full details of the model can be found in Appendix A.5.

Main results of our model

Our statistical model reached similar conclusions as previous studies. As people get older, get married, and have children, the likelihood of homeownership increases. In addition, having a higher income increases the likelihood of owning a home. For example, our model indicates that a one percent increase in income increased the likelihood that young adults would own a home by 11 percent in 2016.

Conversely, higher housing costs decrease the likelihood of homeownership. For example, our model shows that a one percent increase in the average price of a home decreased the likelihood of homeownership for young adults by 11 percent in 2016. And where that home is located matters a lot. Young adults living in metro areas—where employment opportunities and amenities abound—are 5 percent less likely to become homeowners compared to young adults living outside metro areas.

As expected, we find that unemployed young adults are less likely to become homeowners. But, interestingly, our findings suggest that self-employed young adults are 5 percent more likely to become homeowners than young adults employed for wages.

We also find race and ethnicity to be a determinant of homeownership. Non-Hispanic white young adults are more likely to become homeowners, while African American young adults are less likely to own a home. Nativity is also an important predictor of homeownership. A foreign-born young adult is 11 percent less likely to become a homeowner compared to an otherwise similar young adult born in the United States, but the effect fades away as the number of years the foreign-born young adult has resided in the United States increases.

We also looked at the impact of homeownership among those young adults living in a multigenerational household. We find that young adults who have lived in a multigenerational household are 5 percent more likely to become a homeowner.²

High housing costs account for about half of the gap in the homeownership rate between young adults in 2000 and 2016, and this significant role is likely to continue.

1 We used household-level records from the U.S. Census Bureau's 1-in-100 national random sample of the population from the Decennial Census (for the year 2000) and the American Community Survey (for 2016), made available through the Integrated Public Use Microdata Series (IPUMS). We included a variety of demographic and economic controls to model historical trends in young adult homeownership and to simulate future scenarios.

2 Census Bureau defines multigenerational households as those containing three or more generations, and we used the same definition in our analysis.



What factors matter most?

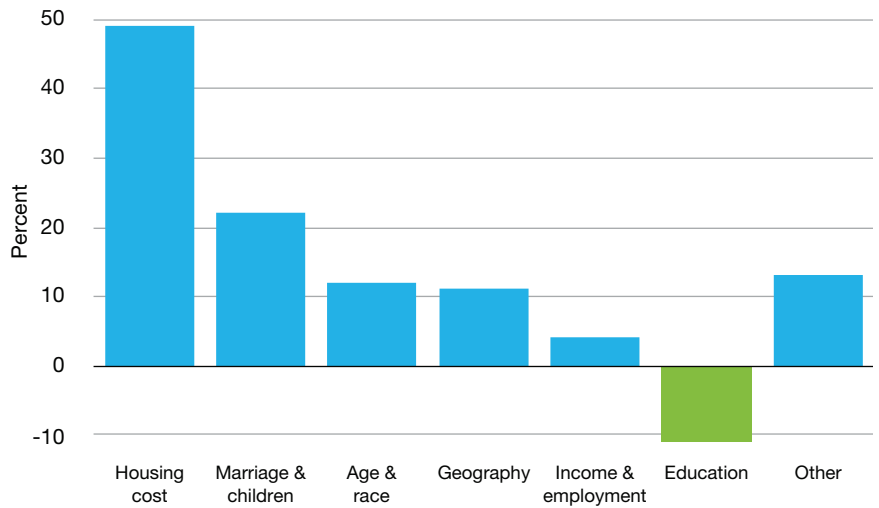
Exhibit 2 ranks the contribution of these factors to the homeownership gap between young adults in 2000 versus 2016. Our analysis suggests that nearly 87 percent of the gap in the homeownership rate between young adults in 2000 and 2016 is explained by the factors discussed above.

Almost 50 percent of the gap is caused by high housing costs, as measured by average home prices and rents. To put this in perspective, around 700,000 young adults did not buy a home between 2000 and 2016 because of increases in inflation-adjusted home prices and rents (**Exhibit 3**).

Exhibit 2

Factors contributing to decline in homeownership rate among young adults (2000-2016)

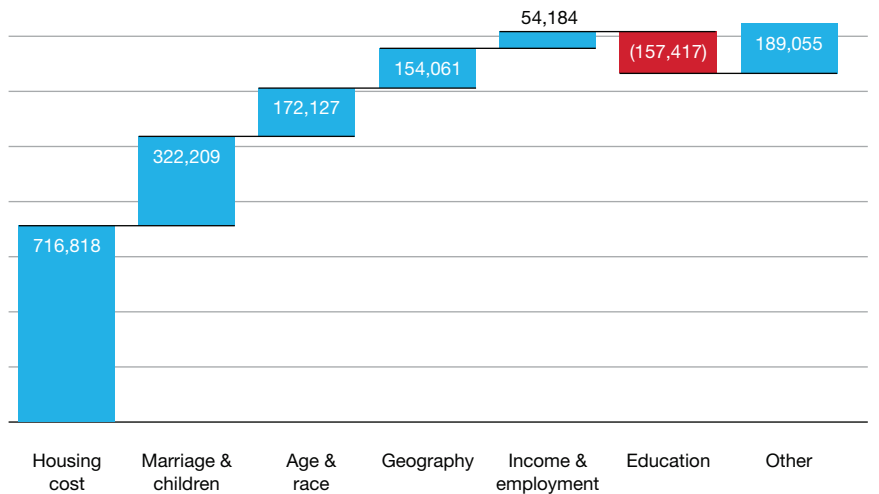
Housing cost is the biggest factor contributing to decline in young adult homeownership rate



Source: Author's calculations.

Exhibit 3

Number of young adult homeowners lost or added (2000-2016)



Source: Author's calculations.



Declining marriage and fertility rates among young adults are the second most important factor contributing to the gap in the young adult homeownership rate, keeping around 300,000 young adults from buying a home between 2000 and 2016. Young adults in 2016 are more racially diverse and are skewed younger than young adults in 2000, which added 12 percent, or 170,000 young adults, to the homeownership gap during this time period. The incomes of young adults have grown modestly since 2000, and fewer young adults are participating in the labor force; contributing to the decline in the homeownership rate. Increases in the number of young adults living in densely-populated metro areas, where housing is more expensive, also depressed the homeownership rate. Higher education levels of young adults in 2016 is the only factor that reduced the gap in the homeownership rate for young adults.

About 13 percent of the homeownership gap for young adults cannot be explained by differences in demographic variables, housing costs and other observable factors. This remaining portion of the gap may be due to unmeasured characteristics such as preferences, creditworthiness, borrowing constraints, disparity in financial wealth across groups and student debt.

Higher housing costs matter more for young adults than for older-aged cohorts. We extended our analysis to other age groups and found that while housing costs lower the homeownership rate for all age groups, the contribution of housing costs to the gap is lower for older age groups (**Exhibit 4**).

Exhibit 4

Contribution of housing cost to homeownership rate gap by age groups

Age groups	Homeownership rate gap between 2000 and 2016 (percentage points)	Contribution of housing cost to homeownership gap between 2000 and 2016 (percentage points)
25-34 (young adults)	8.2	4.1
35-44	9.8	3.8
45-54	6.7	2.7
55+	1.6	2.0

Notes: For the 55+ age group, the homeownership gap (1.6 percentage points) is lower than the contribution of housing cost to the gap (2.0 percentage points) because other factors boost the homeownership rate.

We used Oaxaca-Blinder decomposition to estimate the contribution to the gap between 2000 and 2016 headship rates.



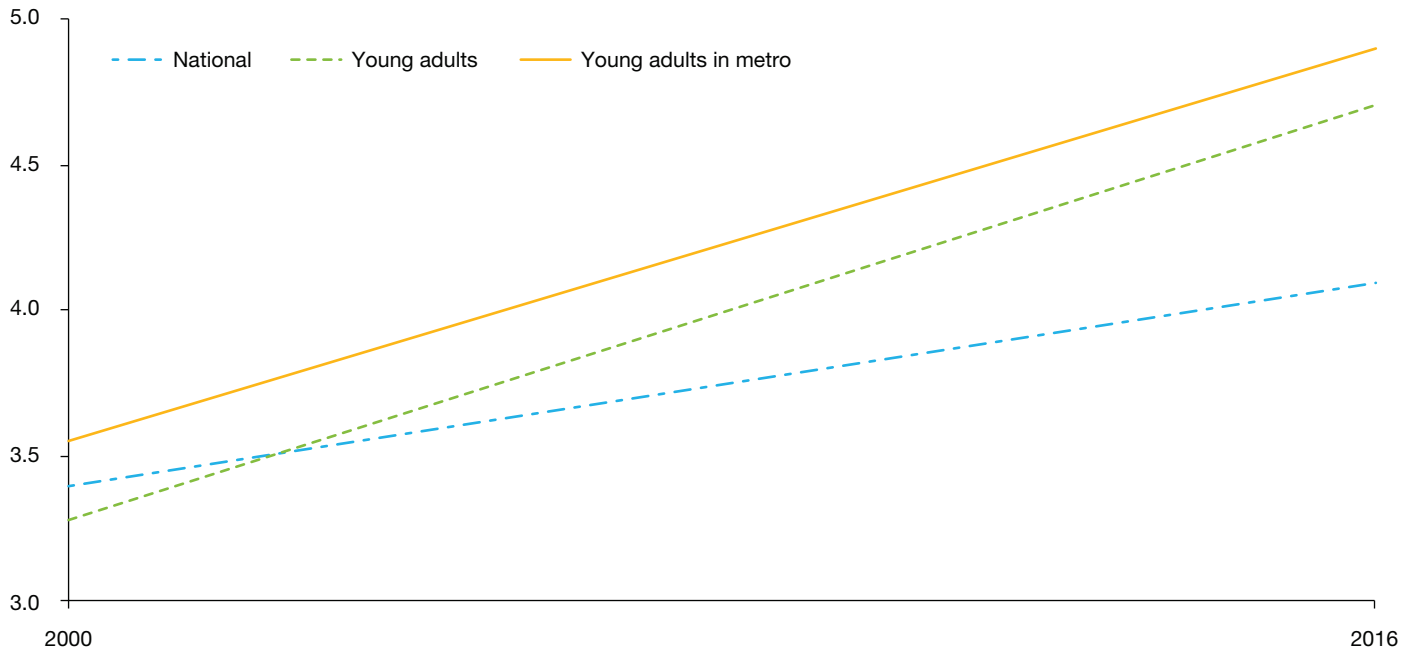
Up, up, and away? The rising cost of housing relative to income

Rising housing costs have made the affordability of homeownership a major concern in the United States. House price appreciation has shown no signs of slowing down. By contrast, incomes have grown only modestly and have not kept up with the rise in house prices. As discussed, the impact of house price appreciation and income on the likelihood of homeownership is of similar magnitude. This means that if the ratio of home prices to income remains stable, the homeownership rate won't be affected much. However, that's not the case. The ratio of house prices to income has increased substantially since 2000, depressing homeownership. The ratio has grown more for young adults than the overall population, and even more so for young adults living in metro areas (**Exhibit 5**).

Exhibit 5

House price-to-income ratio (2000-2016)

The ratio of house prices to income continues to rise, more so for young adults



Source: Author's calculations based on data from the U.S. Census Bureau American Community Survey.

The rise in the price-to-income ratio in 2016 compared to 2000 is mainly due to more young adults living in metro areas where housing costs are higher. The share of young adults living in metro areas grew from 63 percent in 2000 to 82 percent in 2016.



What does this mean for the future?

Armed with an understanding of the factors affecting homeownership, and in the light of rising housing costs, we simulate young adult homeownership rates in 2025. We consider two age groups: those aged 25-34 in 2016 who will be 35-44 years old by 2025; and those aged 15-24 in 2016 who will be 25-34 years old by 2025. The homeownership rate in 2016 was 37.5 percent for the group aged 25-34, compared to 13.1 percent for the group aged 15-24 in 2016 (**Exhibit 6**).

Similar to our [Young Adult Household Formation Insight](#), we consider three scenarios to see how homeownership rates might evolve:³

- **Baseline scenario:** We assume economic conditions in 2025 remain like current economic conditions. This scenario provides a view on how evolving demographics may drive homeownership rates in the absence of any significant shift in the economic environment.
- **Optimistic scenario:** We assume economic conditions improve by 2025. In this scenario, we keep housing costs fixed at 2016 levels and vary labor market outcome variables. Specifically, household incomes go up by 15 percent for each age cohort and race/ethnicity group, and we push the labor force participation, self-employment, and unemployment rates to 2000 levels.
- **Pessimistic scenario:** We assume housing market conditions deteriorate while keeping the labor market outcome variables and income fixed. Specifically, we assume that housing supply persists in falling short of demand, and real house prices and rents rise an additional 20 percent by 2025.

Using the projected households from our [March Insight](#), we estimate the homeownership rate for these young adults by 2025. Results are presented in **Exhibit 7**.

Exhibit 6

Homeownership rate among young adults (2016)

Age	Homeownership rate (percent)
25-34	37.5
15-24	13.1

Source: U.S. Census Bureau American Community Survey

Exhibit 7

Projections of homeownership rates (2025)

Scenario	Ages 25-34 (percent)	Ages 35-44 (percent)
Optimistic	38.3	60.0
Baseline	36.6	58.1
Pessimistic	34.2	55.9

Source: Authors calculations

³ Details on the methodology can be found in Appendix A.5. Details on our choice of the optimistic and pessimistic scenarios are also mentioned in the previous research on household formation.



Under the baseline scenario, the homeownership rate of young adults in 2016 increases from 37.5 percent in 2016 to 58.1 percent by 2025. The projected rate is a little higher than the homeownership rate for 35-44-year-olds in 2016, which is around 57 percent.⁴ This increase in the homeownership rate for households ages 35-44 in 2025 can be attributed to increased educational attainment, as well as decline in the foreign-born share of the population, particularly of Hispanics.⁵

In the optimistic scenario, where incomes increase by 15 percent and labor force participation and unemployment rates remain at year 2000 levels, the homeownership rate for young adults in 2016 increases further to 60 percent in 2025. For those aged 15-24 in 2016, the homeownership rate rises from 13.1 percent in 2016 to 38.3 percent in 2025.

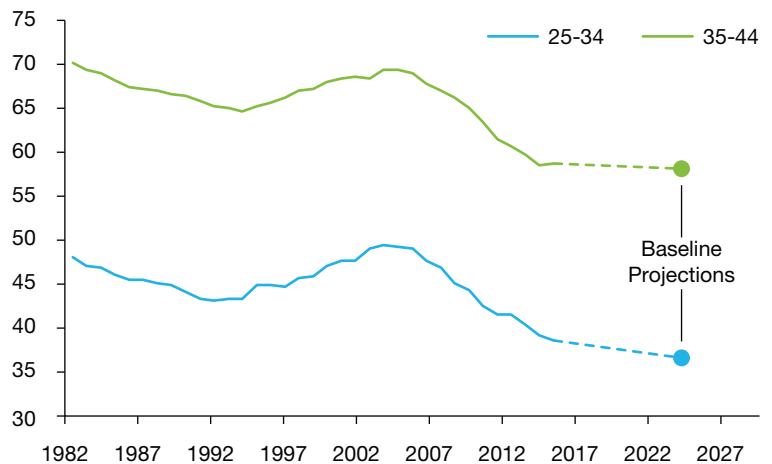
In the pessimistic scenario, with 20 percent increase in house prices and rents, homeownership rates decline to 55.9 and 34.2 percent respectively for young adults in 2016 and 2025, respectively.

To put these results in a historical perspective, consider the homeownership rate of 25–34-year-olds and 35-44-year-olds over time (**Exhibit 8**). The homeownership rate of these cohorts has been trending downward since the 1980s, and fell especially sharply after the Great Recession. There was an uptick during the housing boom of the early 2000s, but the decline after the crisis has left rates at levels not seen since the early 1980s. This decline has accumulated and will continue to accumulate over time: that is, there is a lagging cohort effect. This lag in homeownership rates for young adults carries through into the forecast for 2025, as can be seen in the declining forecasts for these two cohorts.

Our results are in the range of the estimates produced by other research on homeownership rates. The Urban Institute projects the baseline homeownership rate to be around 58 percent for the 35-44 age cohort by 2025, while Harvard University’s Joint

Exhibit 8

Homeownership rates for 25-34-year-old and 35-44-year-olds (Since 1982)



Source: U.S. Census Bureau—Current Population Survey/Housing Vacancy Survey, author’s calculations.

⁴ Based on 2016 ACS data.

⁵ For more on [Hispanic homeownership](#), see the June 2017 Insight.



Center for Housing Studies (JCHS) projects that the average homeownership rate for this age group will be around 58.5 percent by 2025.⁶

Conclusion

Our analysis identifies housing costs as the dominant factor contributing to the decline in young adult homeownership, followed by changes in sociological factors such as declining marriage and fertility rates.

Based on the factors affecting homeownership, as well as our household projections, we estimate the homeownership rate for young adults in 2016 to increase to 58 percent in 2025. Alternatively, if economic conditions improve and incomes rise faster, the homeownership rate could increase to around 60 percent by 2025. And if housing costs continue to rise, the rate could fall to 56 percent.

References

- Drew, R. B. 2015. "Effect of Changing Demographics on Young Adult Homeownership Rates." Working Paper WP15-2JCHS, Joint Center for Housing Studies (JCHS), Harvard University, Cambridge, MA.
- Fisher, J. D., and M. Gervais. 2011. "Why Has Homeownership Fallen Among the Young?" *International Economic Review* 52 (3): 883–912.
- Gabriel, S. A., and S. S. Rosenthal. 2015. "The Boom, the Bust, and the Future of Homeownership." *Real Estate Economics* 43 (2): 334–74.
- Goodman, L., R. Pendall, and J. Zhu. 2015. *Headship and Homeownership—What Does the Future Hold?* Washington, DC: Urban Institute.
- Gyourko, J., and P. Linneman. 1996. "Analysis of the Changing Influences on Traditional Households' Ownership Patterns." *Journal of Urban Economics* 39 (3): 318–41.
- Haurin, D. R., P. H. Hendershott, K. Dongwokk. 1994. "Housing Decisions of American Youth." *Journal of Urban Economics* 35(1):28-45
- Haurin, D. R., P. H. Hendershott, and S. Wachter. 1997. "Borrowing Constraints and the Tenure Choice of Young Households." *Journal of Housing Research* 8 (2): 137–54.
- Houle, J. N., and L. Berger. 2015. *The End of the American Dream? Student Loan Debt and Homeownership Among Young Adults*. Washington, DC: Third Way.

⁶ The JCHS projects homeownership rates by five-year age cohorts. The rate for the 35-39-year-old age cohort is 55 percent by 2025, while the rate for the 40-44-year-old age cohort is 62.1 percent.



Miller, J. J., and S. Nikaj. 2018. "Student Loan Debt, Educational Attainment, and Tenure Choice." *Journal of Education Economics* 26 (4): 393–410.

Morrow-Jones, H. A. 1988. "The Housing Life Cycle and the Transition from Renting to Owning a Home in the United States: A Multistate Analysis." *Environment and Planning A* 20: 1165–84.

Ruggles S. , K. Genadek, R.Goeken, J. Grover, and M. Sobek. 2017. *Integrated Public Use Microdata Series: Version 7.0* [dataset]. Minneapolis: University of Minnesota.
<https://doi.org/10.18128/D010.V7.0>.

Spader, J., and C. Herbert. 2017. "Waiting for Homeownership: Assessing the Future of Homeownership." *Boston College Journal of Law & Social Justice* 37 (2, Article 4): 267–94.

Appendix

A.1 Literature on young adult homeownership

Both *demographic and social factors are strong predictors* of owning a home, a study by Morrow-Jones (1988) that looked at transitions from owning to renting among young adults in the United States revealed.

Homeownership choices of individuals aged 20 to 33 is determined by their *income*, along with *relative costs of owning and renting, availability of down payment, borrowing constraints, and demographic characteristics*, a 1994 study by Haurin, Hendershott, and Dongwook and their subsequent study (Haurin, Hendershott and Wachter, 1997) found.

Differences in educational attainment and race account for the gap in homeownership between 1960 and 1990, Gyourko and Linneman (1996) found when looking at young adults with similar financial circumstances.

The *decline in the share of married couples* was a primary factor for declining trends in homeownership observed between 1980 and 2000 among head of the households aged 25 to 44, Fisher and Gervais (2011) concluded.

Lower income, higher prices, and more volatility decreases the likelihood of homeownership for younger households (those whose heads of household are in their mid-thirties or younger), Gabriel and Rosentel (2015) found, though more so in 2000 and 2009 than during the height of the housing boom in 2005.

The slowdown in young people buying houses is *due to the great recession* and the collapse in housing market and *changes in "transition to adulthood,"* a term used by demographers to explain the stage of life when young adults leave their parents, marry, have children and gain full-time employment, Houle and Berger (2015) found. They also indicated that *student loan debt is not*



dragging down the housing market or leading young adults to eschew buying a home.

Increases in the share of minority and unmarried householders are decreasing homeownership rates for householders aged 25 to 34, while higher levels of income and education attainment are providing a boost, Drew (2015) concluded.

Those who incurred student loans but did not complete their degrees are nearly 7.8 percentage points less likely to own a home than holders of bachelor degrees who are otherwise similar, Miller and Nijak (2018) found, using the Educational Longitudinal Study of 2002, which tracks high school sophomores to young adulthood.

A.2 Descriptive statistics of key variables

Variables (young adults)	2000 mean	2016 mean
Homeownership rate	45.7%	37.5%
Household income (2016\$)	\$69,779	\$71,495
Home prices (2016\$)	\$228,732	\$336,805
Monthly rent (2016\$)	\$742	\$954
Share of young adults in metro areas	62.8%	81.6%



A.3 Regression results (Linear probability model)

Variables	(2000) LPM	(2016) LPM	Variables	(2000) LPM	(2016) LPM
ln_hhinc	0.126*** (0.002)	0.110*** (0.002)	hispanic	-0.005 (0.006)	-0.003 (0.006)
ln_valueh	-0.134*** (0.006)	-0.114*** (0.005)	white_nh	0.066*** (0.005)	0.057*** (0.005)
ln_rent	0.026*** (0.009)	-0.007 (0.009)	black_nh	-0.072*** (0.006)	-0.123*** (0.006)
lessthanhigh	-0.015 (0.015)	-0.080*** (0.019)	foreignborn	-0.152*** (0.009)	-0.115*** (0.01)
highschl	0.026* (0.014)	-0.044** (0.018)	notacitizen	-0.083*** (0.007)	-0.119*** (0.008)
coll_nodegree	0.041*** (0.014)	-0.016 (0.018)	fn_yrsinUS	0.008*** 0.000	0.007*** 0.000
bachelors	0.043*** (0.014)	0.025 (0.018)	multigen_hh	0.070*** (0.009)	0.051*** (0.011)
unemployed	-0.036*** (0.006)	-0.023*** (0.007)	in_metro	-0.028*** (0.003)	-0.048*** (0.004)
NILF	0.004 (0.004)	0.012** (0.005)	MiddleAtlantic	0.002 (0.006)	0.000 (0.007)
self_employ	0.081*** (0.005)	0.051*** (0.006)	EastNorthCentral	0.066*** (0.006)	0.060*** (0.007)
age	0.072*** (0.009)	0.057*** (0.011)	WestNorthCentral	0.054*** (0.007)	0.073*** (0.008)
agesq	-0.001*** 0.000	-0.001*** 0.000	SouthAtlantic	0.064*** (0.006)	0.032*** (0.007)
male	0.043*** (0.003)	0.025*** (0.003)	EastSouthCentral	0.078*** (0.007)	0.057*** (0.009)
separated	-0.004 (0.007)	-0.011 (0.01)	WestSouthCentral	-0.007 (0.007)	0.020*** (0.007)
divorced	0.023*** (0.005)	-0.004 (0.006)	Mountain	0.065*** (0.007)	0.036*** (0.008)
widowed	0.224*** (0.02)	0.137*** (0.033)	Pacific	-0.014** (0.006)	-0.017** (0.007)
married	0.194*** (0.003)	0.176*** (0.003)	Constant	-1.090*** (0.145)	-0.561*** (0.166)
child_present	0.074*** (0.003)	0.063*** (0.003)			
			Observations	169,850	153,305
			R-squared	0.244	0.234

Note: Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1



A.4 Decomposition results (Oaxaca-Blinder decomposition)

Variables	(1) Differential	(2) Endowments
Income&Employment		0.003
		(0.002)
Housing_Cost		0.041***
		(0.007)
Education		-0.009***
		(0.001)
Age&Race		0.010***
		(0.002)
Marriage&children		0.018***
		(0.001)
Immigration_Status		-0.001
		(-0.001)
multigen_hh		-0.0004*
		(0.000)
Geography		0.009***
		(0.002)
Total		0.071***
		(0.008)
Prediction_2000	0.457***	
	(0.026)	
Prediction_2016	0.375***	
	(0.022)	
Difference	0.083***	
	(0.011)	
Constant		
Observations	323,155	323,155



A.5 Methodology for projecting homeownership

We focus on the following factors explored in the literature: demographic variables (age, sex, marital status, presence of children); labor market outcome variables (income and employment); educational attainment; housing costs (average rents and average housing prices by Public Use Microdata Areas (PUMA)); nativity (share of foreign born, share of non-citizen young adults, and years resided in the United States); type of household (share of young adults living in multigenerational households); and geography (share of young adults living in metro areas).

We first run a regression of those factors on the homeownership rate to determine the impact each would have on homeownership. We do this by race and age. For race, we group the population into four racial/ethnic groups: Non-Hispanic Whites, Non-Hispanic Blacks, Non-Hispanic Others, and Hispanics. We run the regression for two 10-year cohorts to see how these factors drive homeownership:

- Those aged 25–34 in 2016 who will be 35-44 in 2025
- Those aged 15–24 in 2016 who will be 25-34 in 2025.

Our regression equation is:

$$Y = \alpha + \sum_{i=1}^n \beta_i X_i + \varepsilon$$

Where:

Y is the dependent variable—homeowner head of the household (Yes/No)

X_i are the factors (age, sex, marital status, presence of children, race, not in labor force, self-employed, unemployed, household income, high school, some college, no degree, associate degree, bachelor’s degree, average rents, average housing prices, not a citizen, foreign-born, foreign-born and not a citizen, number of years resided in the United States, share of young adults living in multigenerational households, living in metro)

b_i are the regression coefficients and α is a constant

ε is the error term

Next, we estimate the means of each of these factors for 2016 by race and age. We then obtain the sum-product of the coefficients obtained through regression and the means of these factors. Finally, we multiply these sum-products with the number of households we estimated in our March Insight ([Why is Adulting Getting Harder? Young Adults and Household Formation](#)) to estimate the homeownership rate under the various scenarios.



A.5a Overview of homeownership projection scenarios

Scenario	Group	Housing costs	Incomes	All other factors
Optimistic	Ages 25-34 in 2025	Looks like today's 25-34 yr olds	15% higher income than today's 25-34 yr olds, year 2000 labor force participation rate	Looks like today's 25-34 yr olds
	Ages 35-44 in 2025	Looks like today's 35-44 yr olds	15% higher income than today's 35-44 yr olds, year 2000 labor force participation rate	Looks like today's 35-44 yr olds
Baseline	Ages 25-34 in 2025	Looks like today's 25-34 yr olds	Looks like today's 25-34 yr olds	Looks like today's 25-34 yr olds
	Ages 35-44 in 2025	Looks like today's 35-44 yr olds	Looks like today's 35-44 yr olds	Looks like today's 35-44 yr olds
Pessimistic	Ages 25-34 in 2025	20% higher than faced by today's 25-34 yr olds	Looks like today's 25-34 yr olds	Looks like today's 25-34 yr olds
	Ages 35-44 in 2025	20% higher than faced by today's 25-34 yr olds	Looks like today's 35-44 yr olds	Looks like today's 35-44 yr olds



A.5b Scenario equations

Age	Race			
	Hispanic	Non-hispanic white	Non-hispanic black	Non-hispanic other
25-34	$Y_{11} = \sum b_{ij} X_{ij}$	$Y_{12} = \sum b_{ij} X_{ij}$	$Y_{13} = \sum b_{ij} X_{ij}$	$Y_{14} = \sum b_{ij} X_{ij}$
35-44	$Y_{21} = \sum b_{ij} X_{ij}$	$Y_{22} = \sum b_{ij} X_{ij}$	$Y_{23} = \sum b_{ij} X_{ij}$	$Y_{24} = \sum b_{ij} X_{ij}$

Age	Household estimates			
	Hispanic	Non-hispanic white	Non-hispanic black	Non-hispanic other
25-34	HH_{11}	HH_{12}	HH_{13}	HH_{14}
35-44	HH_{21}	HH_{22}	HH_{23}	HH_{24}

For the scenarios, we fix some of the factors (such as education levels and immigration status) at their 2016 levels and carry them through the years until 2025. We let some factors, such as sociological factors like marriage and fertility rates, evolve with time: that is, we assume that in 2025, today's 25-34-year-olds will look like the current 35-44-year-olds. In other words, we impose the condition that future cohorts match past cohorts at a particular age. So, for example, in 2025, 35-44-year-old Hispanic marriage rates match the 2016 marriage rates for 35-44-year-olds.

X = factors from Oaxaca Blinder; demographic, labor market outcome variables, educational attainment, housing costs, nativity, type of household, and geography

$$\text{Homeownership rate} = \sum Y_{ij} * HH_{ij}$$

Homeownership rate in 2025 for young adults in 2016 =

$$Y_{11} * HH_{11} + Y_{12} * HH_{12} + Y_{13} * HH_{13} + Y_{14} * HH_{14}$$

Homeownership rate in 2025 for young adults in 2025 =

$$y_{21} * HH_{21} + y_{22} * HH_{22} + y_{23} * HH_{23} + y_{24} * HH_{24}$$

Exhibits A.5c and A.5d (following page) present the homeownership rate projection for young adults in 2016 and young adults in 2025 by race.



A.5c Homeownership rate projection results for young adults 25-34 years old (2025)

Race	Race	Homeownership rate for 35-44-year-olds in 2025 (percent)		
	Homeownership rate for 25-34 year-olds in 2016	Baseline scenario	Optimistic scenario	Pessimistic scenario
Non-hispanic white	46.1	68.3	70.2	66.1
Non-hispanic black	15.3	34.9	36.7	32.8
Non-hispanic other	30.6	58.3	60.3	56.1
Hispanic	28.0	45.9	47.6	43.7
Hispanic	37.5	58.1	60.0	55.9

A.5d Homeownership rate projection results for young adults 15-24 years old (2025)

Race	Race	Homeownership rate for 25-34-year-olds in 2025 (percent)		
	Homeownership rate for 15-24 year-olds in 2016	Baseline scenario	Optimistic scenario	Pessimistic scenario
Non-hispanic white	15.2	46.6	48.4	44.2
Non-hispanic black	5.8	15.8	17.5	13.4
Non-hispanic other	11.1	31.1	32.8	28.7
Hispanic	12.7	28.5	30.3	26.1
Hispanic	13.1	36.6	38.3	34.2



Prepared by the Economic & Housing Research group

Sam Khater, Chief Economist
Len Kiefer, Deputy Chief Economist
Ajita Atreya, Quantitative Analytics Senior
Venkataramana Yanamandra, Quantitative Analytics Senior

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