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Research Report

DANIEL SCHWAM, JASON M. WARD, STEPHANIE BROOKS HOLLIDAY, SARAH B. HUNTER

Recent Trends in Housing Cost Burden Among U.S. Military Veterans

Although U.S. veterans are less likely than nonveterans to live in poverty, past estimates have found that millions of veteran households spend more than half their income on housing costs, suggesting they are at increased risk of experiencing housing instability and, in some cases, might be at risk of becoming homeless (Arnold, Bolton, and Crowley, 2013). Veterans make up about 7 percent of the population experiencing homelessness in the United States (de Sousa et al., 2022), although robust efforts to combat veteran homelessness have yielded large declines

KEY FINDINGS

- Fewer veteran households than nonveteran ones are financially burdened by housing costs (defined as spending more than 30 percent of gross household income on housing).
- This lower level of housing cost burden (HCB) reflects both higher incomes and lower costs of homeownership among veterans, although income growth among nonveterans has outpaced veteran income growth and reduced the differences over the past several years.
- Veterans are more likely to be homeowners than nonveterans are, and veteran homeowners have lower housing costs than nonveteran homeowners. However, for veterans that rent, housing costs are similar or, in some regions, larger than those for comparable nonveteran households.
- The gap in HCB experienced by veterans relative to nonveterans shrinks as income lowers; veterans and nonveterans with the lowest income levels have similarly high levels of HCB.
- In contrast to veterans overall, veterans who served after September 11, 2001 (post-9/11) experience greater HCB than nonveterans do. This is due, in part, to recent increases in housing and rent prices and the fact that more post-9/11 veterans are renters, but more research is needed on the factors driving this relationship.
- Although veterans are less likely to be women, the female veteran population is expected to grow over the next few decades. We found evidence consistent with past research showing that female veterans are more likely to face housing instability than male veterans, suggesting a need to focus on better meeting the housing needs of this population.

in the size of this population in recent years (U.S. Department of Housing and Urban Development, 2022). Much of this progress has focused on resolving homelessness once veterans have fallen into this state. To the best of our knowledge, there are no recent estimates of the number of veterans experiencing housing cost burden (HCB)—that is, spending more than a third of household gross income on housing costs (Eggers and Moumen, 2008).[1] The motivation for such an analysis is the potential link between HCB and housing instability (sometimes referred to as *housing insecurity*). Although there is not one agreed-on definition of housing instability, most of the literature on this subject includes the idea of spending an excessive amount of household income on housing (Curtis et al., 2013; Kang, 2021; U.S. Department of Health and Human Services, undated; Leopold et al., 2016; Chun et al., 2023).[2]

Housing instability is associated with poorer health and well-being (Downing, 2016; Tsai and Hooshyar, 2022). Understanding the extent of HCB and trends in this measure is important for policy related to the housing needs of veterans and nonveterans alike. This report contributes to that literature by providing updated estimates of veteran HCB and comparing trends among veterans and nonveterans over the last decade.[3] Moreover, this report takes a deeper look at these observed differences between veteran and nonveteran households by considering how they vary among various subgroups (e.g., sex, race/ethnicity, income, and geographic definitions), as well as considering mechanisms that might drive the patterns we report on. The veteran versus nonveteran comparison is an important consideration in this research because estimates of nonveteran HCB provide a benchmark against which to evaluate how the veteran population is faring.

Abbreviations

9/11	September 11, 2001
ACS	American Community Survey
AMI	area median income
COVID-19	coronavirus disease 2019
DOL	Department of Labor
GPD	grant and per diem
HCB	housing cost burden
HCHV	Healthcare for homeless veterans
HUD	U.S. Office of Housing and Urban Development
IPUMS	Integrated Public Use Microdata Series
MSA	metropolitan statistical areas
NLIHC	National Low Income Housing Coalition
PUMA	public use microdata areas
SSVF	Supportive Services for Veteran Families
USD	U.S. dollars
VA	Department of Veterans Affairs

Overview of the Veteran Population

There are an estimated 19 million veterans living in the United States (U.S. Department of Veterans Affairs [VA], undated); less than 10 percent of the U.S. population overall (Schaeffer, 2021). The number of veterans is trending downward and is expected to fall by 35 percent by 2046. A large proportion of U.S. veterans are men (89 percent), but the number of female veterans is growing over time; the proportion is projected to rise from 11 percent to 18 percent by 2040 (Vespa, 2020). Veterans are most likely to be White, non-Hispanic (74 percent); followed by Black, non-Hispanic (13 percent); and Hispanic (8 percent)—but these compositions are projected to change to reflect a more racially/ethnically diverse population over time as well (VA, undated). The median age of veterans is currently 65 years old (Vespa, 2020), and more than half report no longer being part of the labor force. The veteran population is expected to trend younger over time as mortality reduces the overall share of veterans who served in World War II and the Korean War.

According to the five-year 2021 American Community Survey (ACS), approximately 79 percent of veterans are homeowners in comparison with 62 percent of nonveterans.[4] Among those between the ages of 25 and 54 (the age range often referred to as *prime working age*) veterans participate in the labor force and are employed at a rate similar to nonveterans. Among those of prime working age, the median personal income of veterans is notably higher

than nonveterans ($63,600 per year versus $42,100 per year). This difference is, at least in part, because of the gender wage gap and differences in the share of female veterans versus nonveterans. However, at the household level, the median income of veteran households within the prime working age range is still notably higher than that of nonveteran households ($92,500 per year versus $80,000 per year).[5]

As might be expected from these income differences, fewer veteran households fall under 100 percent of the federal poverty level (7.1 percent versus 13.2 percent among the nonveteran population) and fewer veteran households receive public assistance, including cash welfare and food stamps (7.0 percent versus 13.0 percent among the nonveteran population). The share of Black veterans living in poverty (11.9 percent) is higher than that of veterans overall, but the poverty gap between Black veterans and Black nonveterans is considerably larger and goes in the other direction; Black veterans experience lower rates of poverty than Black nonveterans (23.0 percent). A similar pattern holds for Hispanic veteran households; 9.0 percent of these veteran households are below the poverty line versus 18.4 percent of Hispanic nonveteran households.

Homeownership, Housing Instability, and Homelessness Among Veterans

The rate of homeownership among veterans is higher than among nonveterans (roughly 76 percent of male veterans earning the median income were homeowners in 2021 versus around 60 percent of similar nonveterans, according to ACS data). These higher rates are, in significant part, driven by veteran access to highly favorable home financing mechanisms with, among other features, lower interest rates and lower down payment requirements (Consumer Financial Protection Bureau, undated; VA, 2022). These factors might help veterans fare better than nonveterans in terms of access to affordable homeownership and the housing stability that comes with it. On the other hand, veterans might face additional challenges to being stably housed, including a higher level of disability-related hardships (Heflin, Wilmoth, and London, 2012) and, among younger veterans, lower levels of educational attainment than nonveterans (Wenger and Ward, 2022) that might expose veteran households to greater risk of negative employment shocks.

Estimating the number of veterans who are unstably housed or homeless altogether is difficult. One key challenge is the lack of standard definition for housing insecurity or instability. One common way to estimate a higher risk of housing insecurity is to estimate the incidence of households experiencing HCB, defined as spending more than 30 percent of gross household income on housing costs (HUD USER, undated). In 2013, the National Low Income Housing Coalition (NLIHC) used data from the 2011 ACS to estimate the number of veteran households that were experiencing HCB. Between 2007 and 2011, the United States averaged a total of 19 million veteran households, out of which approximately 25 percent were considered to be experiencing at least moderate HCB and approximately 10 percent were considered to be experiencing severe HCB, defined as spending more than half of gross household income on housing. Although these numbers are significant, to put them in context, according to the NLIHC report, a larger estimated share of nonveterans' households between 2007 and 2011 experienced at least moderate HCB (38 percent), and 17.6 percent experienced severe HCB (Arnold, Bolton, and Crowley, 2013, pp. 6–9).

There are more sources of information concerning veterans experiencing homelessness, although many of these estimates are point-in-time counts that are the subject of several critiques.[6] According to estimates collected by the U.S. Office of Housing and Urban Development (HUD), 33,000 veterans were estimated to be experiencing homelessness in 2022 (de Sousa et al., 2022). This was a 50-percent reduction from the number reported in 2009 when the estimates were initiated (HUD, 2009), showing that concentrated efforts to end veteran homelessness, including more than doubling federal funding for homeless veteran programs and increased coordination and commitment by local regions, have greatly reduced the scope of the problem. (To learn more about federal programs and other initiatives providing support to veterans, please see the online annex to this report). However, veterans are more likely to

experience homelessness than nonveterans, and the lifetime prevalence of homelessness is higher among veterans (Fusaro, Levy, and Shaefer, 2018; de Sousa et al., 2022), indicating that it continues to be an important public health and housing issue to address.

In this report, we used more-recent data from the ACS to provide estimates of the share of U.S. veteran households that are experiencing HCB and how the size of this population has changed over time. As a point of reference, among the general population, recent reports have indicated that the number of households who are experiencing HCB has increased over time, and more than 40 million households experienced HCB in 2021 (nearly one-third of all U.S. households) (Whitney, 2023). Our aim here was to update what is known about veteran welfare regarding housing by examining the trends in HCB among veteran and nonveteran households over time using the most-recent available data.

Risk Factors for Housing Instability and Homelessness

Researchers have sought to understand what might increase the likelihood that a veteran will experience housing instability or homelessness. Although veteran homelessness has been declining substantially since 2009, veterans are still more likely than nonveterans to experience homelessness (de Sousa et al., 2022; Tsai and Rosenheck, 2015). Compared with nonveterans, veterans experiencing homelessness tend to be older, tend to have a higher level of education, are more likely to be married or have been married, and tend to have insurance (Tsai et al., 2015).

Associations between homelessness and behavioral health concerns—including posttraumatic stress disorder, depression, psychotic disorder, alcohol, and other substance disorders—are found among studies examining veterans (Metraux et al., 2013; Montgomery, Szymkowiak, and Tsai, 2020; Mulcahy, Szymkowiak, and Montgomery, 2021). Recent studies find that female veterans with a history of military sexual trauma or intimate partner violence are at an increased risk of housing instability and homelessness, as does being Black or having a substance use disorder, and Black female veterans also have higher

Veterans might face additional challenges in difficult labor markets, including a higher level of disability-related hardships.

rates of housing instability or homelessness than other female veterans (Dichter et al., 2017; Montgomery, Szymkowiak, and Tsai, 2020; Mulcahy, Szymkowiak, and Montgomery, 2021).

Also, there is some evidence that military misconduct or dishonorable discharge are associated with an increased likelihood of homelessness (Gamache, Rosenheck, and Tessler, 2000; Gundlapalli et al., 2015). However, it is unclear whether other military experiences increase homelessness risk. For example, one study found that veterans with a history of combat experience were less likely to have a recent period of housing instability (Montgomery, Szymkowiak, and Tsai, 2020). The evidence regarding chronic medical conditions or traumatic brain injury as a risk factor has also been mixed (Cusack and Montgomery, 2019; Jutkowitz et al., 2021; Metraux et al., 2013; Montgomery, Szymkowiak, and Tsai, 2020; Washington et al., 2010). A recent systematic review concludes that, although many individual-level risk factors for veteran homelessness have been identified, little is known about how these factors interact with structural characteristics at the community level, such as housing policies and market conditions, that could lead to housing instability or homelessness (Anderson et al., 2023).

Changing U.S. Housing and Employment Conditions

Past research of the general population has found that both decreases in employment levels (leading

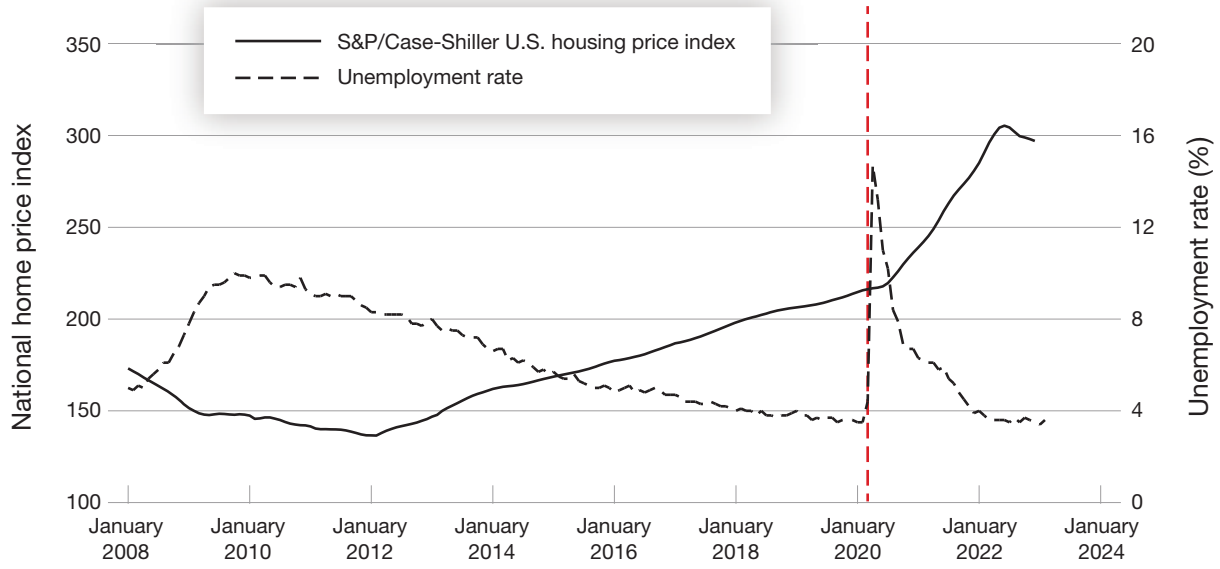
to reduced incomes) and increases in housing costs are important predictors of housing instability and homelessness (O'Flaherty, 2009; Zillow Research, 2018). Research further suggests that the combination of these experiences and other challenges—such as a substance use disorder, a physical or mental health condition, or other life shocks—leads to even greater susceptibility of experiencing housing instability or homelessness (Curtis et al., 2013; Johnson et al., 2019). These general patterns comport with veteran-specific research.

Figure 1 shows changes in the unemployment rate and housing costs from immediately prior to the Great Recession of 2008 to early 2023. Over most of this period, there is a strong inverse pattern between these measures of employment and housing cost. The dramatic, negative economic shock of the Great Recession led to a sharp increase in unemployment and a parallel, but more persistent, decline in house prices. Unemployment began to decline in late 2009 and around two years later home prices began to grow again. Over the subsequent eight years, the unemployment rate declined and housing costs grew, moving in opposite directions. Unemployment declined by around 50 percent (from 8 percent to 4 percent) while housing costs increased by nearly 60 percent.

This pattern was dramatically disrupted by the COVID-19 pandemic in 2020. This public health crisis led to an immediate spike in unemployment that had no precedent since the Great Depression (Long and Van Dam, 2020). This period of high unemployment was dramatically shorter than the one that occurred in the aftermath of the Great Recession, but the pandemic also had dramatic and persistent effects on the housing market. A combination of factors—including a significant spike in housing demand (which recent research has attributed to a combination of increased household formation and increased prevalence of remote work), a long-term decline in housing production (a legacy of the Great Recession's housing market collapse), and a short-term decline in houses on the market (due, at least in part, to the cessation of an array of in-person activi-

FIGURE 1

Unemployment and Housing Price Changes Over Time



SOURCES: Author calculations using data from Standard & Poor's Dow Jones Indices Limited Liability Company, 2023, and U.S. Bureau of Labor Statistics, 2023.

NOTES: Red dashed vertical line identifies the start of the coronavirus disease 2019 (COVID-19) pandemic in March 2020. S&P = Standard & Poor's.

ties related to COVID-19)—led to a rapid increase in home sale prices. Over an approximately 18-month period beginning in late 2020, house prices increased by more than 30 percent (Garcia and Paciorek, 2022; Ozimek and Carlson, 2023; Mondragon and Wieland, 2022).

Although existing homeowners with fixed-rate mortgages (including most veterans who have access to preferential mortgage terms) were not negatively affected by these price increases beyond property tax increases related to higher assessed values, many would-be homeowners were increasingly priced out of being able to enter the housing market or were more likely to enter the market with an increased HCB. Since the Federal Reserve began raising interest rates to combat inflation in spring 2022, new homeowners also face dramatically higher financing costs, which translate to higher monthly mortgage payments.

Rental prices also increased dramatically over 2021–2022, leading to broad increases in HCB among renter households who are not sheltered from rising rental prices in the same way that homeowners are protected by fixed mortgage rates. Figure 2 shows the effects of the COVID-19 pandemic and its inflationary aftermath on rental prices using national rental data from Zillow. The steady upward trend in rents was briefly interrupted during 2020, when rents remained flat over the first year of the pandemic. This was followed by a roughly 30 percent increase in rents across the United States over the following 18 months.

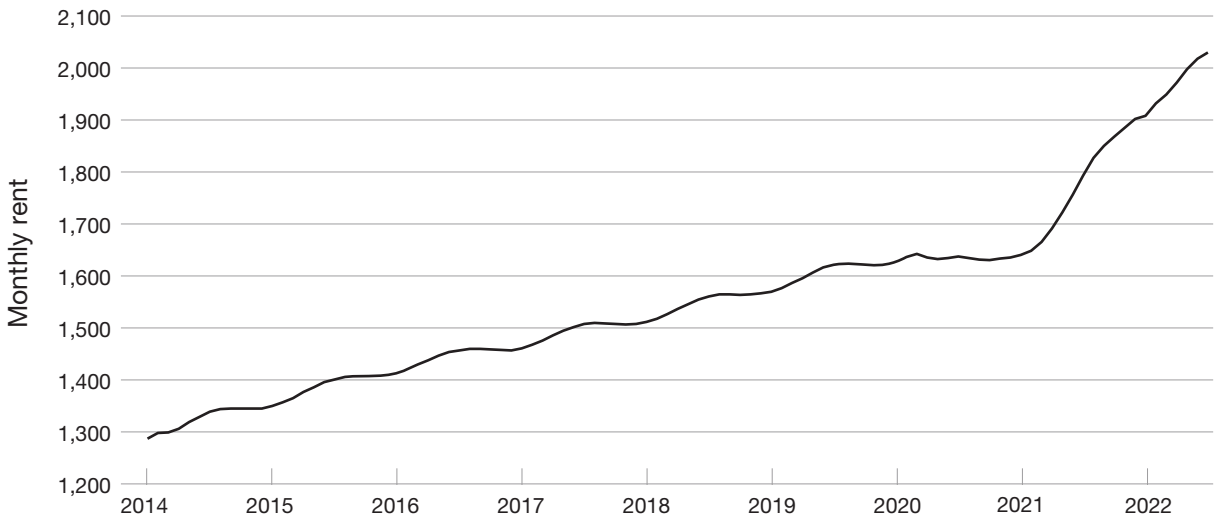
Because of their higher rates of homeownership and favorable mortgage terms, veterans might have fared better than nonveterans, on average, in terms of recent turmoil in the housing market. On the other hand, veterans might face additional challenges in difficult labor markets, including a higher level of disability-related hardships (Heflin, Wilmoth, and London, 2012) and, among younger veterans, lower levels of educational attainment than nonveterans (Wenger and Ward, 2022) that might expose veteran households to greater risk of HCB through changes in income related to employment changes. Together, these patterns suggest that veterans might have fared better than nonveterans, on average, in terms of recent turmoil in the housing market.

Approach

One of the key motivations for conducting this research was to update the NLIHC's 2013 estimates of the number of veterans experiencing HCB. We first

FIGURE 2

Rental Price Growth Over Time



SOURCE: Author calculations using Zillow, 2018.

NOTE: This dollar-denominated index uses a representative current dollar value for the most recent period and deflates this value back in time by the change in the underlying index value.

tried to replicate NLIHC's findings, but the report lacked the level of methodological detail required to be confident we could reproduce their approach. Although several of our findings, such as income categorizations of veterans and nonveterans, matched quite closely (see Appendix B in the online annex), many did not. Our results often deviated from NLIHC values, primarily in terms of the absolute levels, such as HCB; we generally found levels lower than those in the NLIHC report.

Our analysis first compared veteran and nonveteran households separately by income and housing characteristics, then attempted to further disaggregate these groups by their relative income categories. A *veteran household* was defined as one where the head of household or their spouse, if present, is a veteran.[7] Our data were primarily restricted to heads of households, and we used the provided household weights to conduct household-level analyses (exceptions to this approach are noted in the relevant tables or figures). Moreover, we required that households have nonnegative income to be included in our analysis.[8]

A list of definitions the reader will need to be familiar with are included in Table 1.

We framed our results as changes over time using three periods that are each five years apart. This choice was primarily related to the data source we relied on, which was ACS five-year public use microdata from the Integrated Public Use Microdata Series (IPUMS) (Ruggles et al., 2023).[9] The ACS is an annual survey of around 3.5 million households intended to provide up-to-date estimates of the needs of local communities (U.S. Census Bureau, 2022). These data sets include annual survey responses over a given five-year period and the Census Bureau releases them with a set of survey weights meant to make these data broadly representative at the national, state, and major metropolitan area levels. We focused on the years 2007 to 2011 (henceforth referred to as 2011), 2012 to 2016 (2016), and 2017 to 2021 (2021).

There are some shortcomings to the ACS and our decision to focus on the five-year estimates rather than the one-year estimates. First, although the ACS

TABLE 1
Important Definitions

Concept	Definition
Area median income (AMI)	AMI is the median income of the metropolitan/micropolitan statistical area (MSA) that a household lives in. Otherwise, AMI is the median household income for households not in metropolitan/micropolitan statistical areas.
Income categories	
Extremely low income	Household income ≤ 30 percent of AMI
Very low income	30 percent AMI < household income ≤ 50 percent AMI
Low income	50 percent AMI < household income ≤ 80 percent AMI
Not low income	household income > 80 percent AMI
Annual housing costs	
Renters	Gross rent (contract rent plus utilities) × 12
Owners	Ownership cost (includes homeowers' insurance, utilities, taxes) × 12
Housing cost burden	Annual housing cost/annual household income
Little to no HCB	0 percent ≤ HCB ≤ 30 percent
Moderate HCB	30 percent < HCB ≤ 50 percent
Severe HCB	HCB > 50 percent

SOURCES: AMI comes from the U.S. Census Bureau's five-year geographic estimates. All other definitions based on calculations by authors using ACS microdata.

is useful for studying HCB, this is only one measure of housing instability (Cox et al., 2017; Leopold et al., 2016). Other measures of housing instability include housing quality (e.g., plumbing, electricity, etc.) and neighborhood characteristics (e.g., crime, density) (Cox et al., 2017; Leopold et al., 2016). The measures, however, are captured in a different data source, the American Housing Survey, and a more complete look at housing instability would take these additional factors into consideration.

Secondly, as mentioned, our analysis used the five-year ACS data instead of the one-year data. Although the one-year data would allow us to look at changes in HCB from year to year, the five-year data use more information and thus provide more-precise estimates of HCB because they use more data. The choice to use five-year data, however, reduced our ability to assess changes to HCB related to shorter-term factors that might be important. For example, the data from the earliest period of our analysis, 2011, encompassed not only data from the recession of 2008 but also more than three years of data from the recovery from that recession, potentially attenuating our ability to measure the specific effects of that event on HCB.

For our most recent period, we were also limited by the 2021 data. These data extend only to the earliest part of the substantial recent increases in both housing prices and rents that occurred during the COVID-19 pandemic period (as discussed above). Thus, we were unlikely to appropriately measure the effect of these recent trends on HCB as these data would, at most, represent only around one-fifth of our sample over this five-year period (as major price increases began only in 2021). Such analysis will have to be left to future work.

Many of our analyses were at the national level, but, for some regression-based analyses, we controlled for varying levels of geography, including MSAs and public use microdata areas (PUMAs), which are the smallest geography included in the public use census files and are constructed to each contain between 100,000 and 200,000 people. Many major cities contain several PUMAs; in more sparsely populated areas, multiple counties might encompass a single PUMA. Additional information related to our analysis approach and sample, including specific sample sizes, are available in the online annex in Appendixes C and D.

Findings

Our primary analyses examined the extent to which veteran and nonveteran households are at risk of HCB. This measure is a ratio with annual household income as the denominator and annual housing costs as the numerator. Households are generally considered to be experiencing moderate HCB if this ratio is greater than 0.3 and less than or equal to 0.5—i.e., if they spend between 30 and 50 percent of their income on housing costs. Households are considered to be experiencing severe HCB if the ratio is greater than 0.5.

Overall, we found that HCB is on the decline; the share of at least moderately burdened nonveteran households across all income groups declined from approximately 40 percent to 30 percent between 2011 and 2021. Over the same period, the share of at least moderately burdened veteran households declined from 25 percent to 20 percent. The decline can, in large part, be explained by a greater drop in homeownership costs for both nonveteran and veteran households (15.3 percent in real dollars between 2011 and 2021 for nonveteran households and 7.6 percent for veteran households) compared with the increase in rental costs (10.2 and 8.8 percent in real terms for nonveteran households and veteran households, respec-

Overall, we found that HCB is on the decline. The decline can, in large part, be explained by a greater drop in homeownership costs for both nonveteran and veteran households.

tively) and the continued dominance of homeownership over renting. Homeownership has remained steady at approximately 60 percent for nonveteran households and 80 percent for veteran households. At the same time, real household incomes for both groups have been on the rise, with an increase of 9.6 percent for nonveteran households and 4.7 percent for veteran households between 2011 and 2021.

The HCB ratio can increase in one of two ways: if income falls or if housing costs increase. This naturally motivates an analysis of trends in income and in housing costs over time to better understand the potential nature of changes in HCB. We began by considering changes in income among veteran and nonveteran households over the last decade. We then considered changes in housing tenure (homeownership versus renting) and housing costs. Finally, we summarized HCB overall and broken down by income group and veteran cohort.

Income

Veteran and nonveteran households have had somewhat different income trajectories over the past ten years. Table 2 shows median household incomes for veteran and nonveteran households by race of the head of household and median person-level incomes for veterans by sex.[10] Since 2011, veteran households have had consistently higher levels of median household income than have nonveteran households. This trend also holds when looking at households by age of the head of household. More specifically, household income for veteran households where the head is prime working age were $84,225 in 2011 and $92,467

TABLE 2

Median Income Levels and Percentage Change over Time by Demographic Characteristics for Veteran- and Nonveteran-Led Households (in 2021 Dollars)

Demographic	Veteran	2011	2016	2021	2011 to 2016 (%)	2016 to 2021 (%)
Household income						
Overall	Nonveteran households	$62,098	$61,712	$68,035	–0.62	10.25
	Veteran households	$72,328	$70,638	$75,743	–2.34	7.23
White, non-Hispanic	Nonveteran households	$68,358	$68,699	$74,839	0.50	8.94
	Veteran households	$72,894	$70,897	$76,000	–2.74	7.20
Black, non-Hispanic	Nonveteran households	$40,427	$40,055	$44,510	–0.92	11.12
	Veteran households	$66,492	$65,035	$67,753	–2.19	4.18
Hispanic	Nonveteran households	$49,287	$48,919	$57,474	–0.75	17.49
	Veteran households	$74,539	$72,261	$80,072	–3.06	10.81
All other, non-Hispanic	Nonveteran households	$73,498	$74,424	$83,296	1.26	11.92
	Veteran households	$77,263	$77,081	$84,332	–0.23	9.41
Person-level income						
Male	Nonveterans	$38,556	$37,259	$41,540	–3.36	11.49
	Veterans	$48,195	$46,575	$49,737	–3.36	6.79
Female	Nonveterans	$25,267	$25,146	$28,000	–0.48	11.35
	Veterans	$39,761	$40,075	$42,390	0.79	5.78

SOURCE: Authors' calculations using five-year ACS data.

NOTES: Dollar values presented are 2021 real U.S. dollars (USD) using the Consumer Price Index for all urban wage earners. *Income* encompasses income for all sources and only includes households with positive household income. Estimates are weighted using household-level weights when considering household-level income and person-level weights when considering person-level income but are not adjusted by age.

in 2021, whereas the corresponding numbers for nonveteran prime working age households were $73,205 and $80,000. For households where the head was age 55 or older, household incomes for veteran households in 2011 and 2021 were $64,837 and $64,306, respectively, and incomes for nonveteran households were $50,460 and $59,132.[11]

This relationship is consistent across households of different race/ethnicity, although to widely varying degrees. White veteran-led household income is only slightly higher than that of White nonveteran households, whereas Black veteran-led households have much higher incomes, at the median, than their nonveteran counterparts. More specifically, the median household income for veteran-led, White, non-Hispanic households is only 1.6 percent higher than nonveteran-led, White, non-Hispanic households in 2021. The difference between Black, non-Hispanic, veteran and nonveteran households was 52.2 percent in 2021.

Veteran versus nonveteran incomes when broken down by sex display a similar pattern; veterans outearn their nonveteran counterparts for both men and women (again, to varying degrees).

However, veterans' income advantage eroded over 2011–2021 because nonveterans' incomes grew at faster rates. Expressing income in inflation-adjusted 2021 dollars, from 2011 to 2016 (where 2011 reflects incomes from five years of data collection between 2007 and 2011 and, so, includes some substantial income declines associated with the Great Recession of 2007 and its aftermath), income changes among groups reflected a mix of negative and small positive changes; veterans fared slightly worse than demographically similar nonveterans.

From 2016 to 2021, economy-wide income growth was large (over 10 percent) and, in all cases in Table 2, veteran incomes (at both the household and person levels) grew more slowly than nonveteran incomes. In some cases, such as among female and Black individuals, the rate of income growth for veterans was less than half the rate of growth for their nonveteran counterparts. These disparate changes narrowed the overall income gap between veterans and nonveterans substantially. For example, overall, the veteran-nonveteran household income gap over this period declined from around $10,000 in 2016 to $7,700 in 2021, or by around 23 percent.

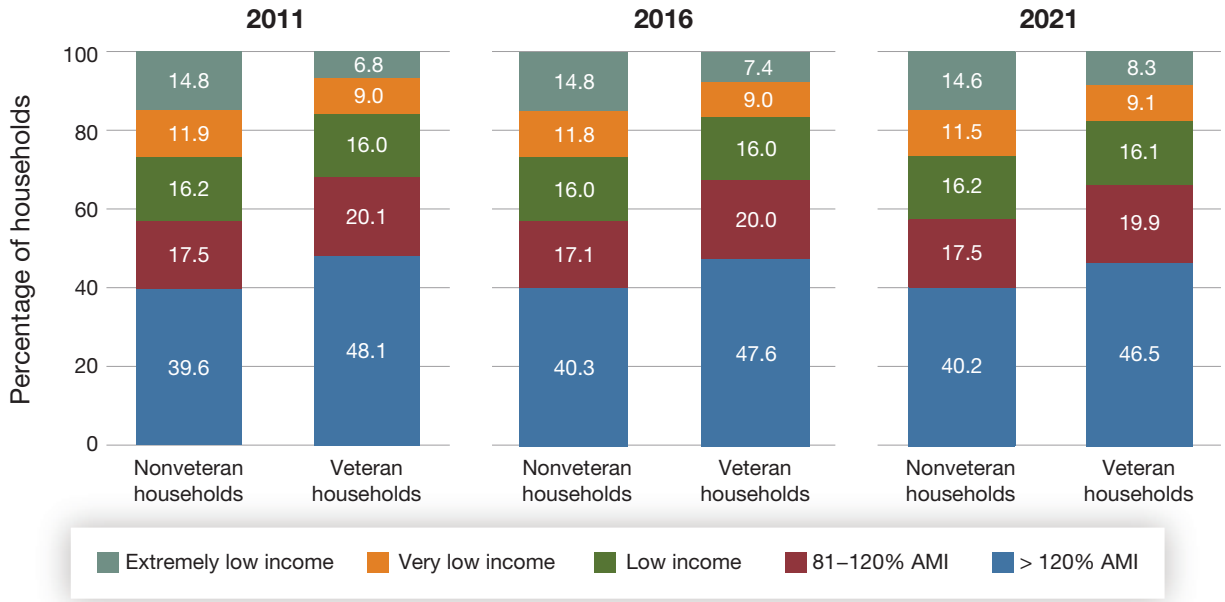
Veterans' income advantage eroded over 2011–2021 because nonveterans' incomes grew at faster rates.

The slower growth rate in incomes experienced by veteran households is further illustrated in Figure 3, which compares veteran with nonveteran households according to their incomes relative to the AMI. We found that, although the share of nonveteran households with greater than 80 percent of AMI (the sum of the 80 to 120 percent and greater than 120 percent categories) remained relatively consistent at between 57 percent and 58 percent of all households, this same share declined from 68 percent to 66 percent among veteran households. Most of this decline manifested as an increase in the share of veteran households classified as extremely low income, which grew from 6.8 percent in 2011 to 8.3 percent in 2021 (an increase of 22 percent).

But rather than indicating that some significant share of veterans experienced a decline in earnings, the evidence from Table 2 suggests that this change was driven primarily by the higher rate of income growth among nonveteran households. Since the entire population's earnings set the median income values that these categories were derived from, faster earnings growth among nonveterans than among veterans will move veterans down into lower income groupings since veterans are a much smaller subset of the overall population. In the more recent period of data we focus on (2017–2021), income growth among nonveterans was around 40 percent higher than income growth among veterans (10.25 percent versus 7.23 percent). This is consistent with research showing that inflation-adjusted income growth since the start of the COVID-19 pandemic has been high-

FIGURE 3

Veteran and Nonveteran Households, by Income Category, Five-Year Trends (2011–2012)



SOURCE: Authors' calculations using five-year ACS data.

NOTES: Extremely low income = 0–30 percent AMI; very low income = 31–50 percent AMI; low income = 51–80 percent AMI. Estimates are weighted using household weights.

est among lower-wage workers (Zhang and Saving, 2022). The generally older population of veterans should comprise fewer lower-wage workers since these workers tend to be disproportionately younger, which can help to explain the relatively larger growth in the share of extremely low-income veterans.

The lack of upward income growth among veterans relative to nonveterans was likely driven, in part, by differences in the age distributions of veterans and nonveterans. On average, research has documented that income exhibits an inverted U-shaped pattern, typically peaking between the ages of 50 and 60 (see, for example, Tamborini, Kim, and Sakamoto, 2015). From 2011 to 2021, the average age of male veterans went from 62.2 to 63.9, moving closer to retirement, while the average age of male nonveterans went from 32.5 to 35.6, indicating that, on average, the younger population of nonveterans was moving up the positive slope of this curve while the older population of veterans were moving down the negative slope of this curve. Thus, this age difference is likely a key factor contributing to the observed combination of higher income levels among veterans but a smaller rate of income growth.

Housing Tenure and Housing Costs

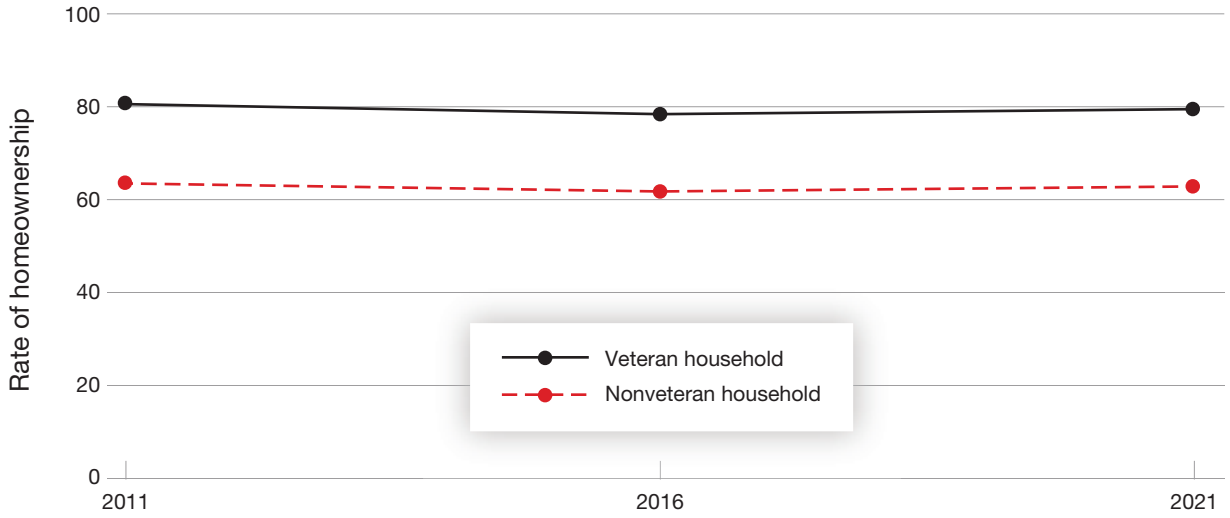
To understand the extent of veteran HCB, it is important to also understand key characteristics of the distribution of housing among veterans in terms of housing tenure (ownership versus rentership) and expenditures on housing.

Housing Tenure Among Veterans and Nonveterans

Veterans have substantially higher rates of homeownership than nonveterans (approximately 80 percent versus approximately 60 percent, respectively) and this relationship has been relatively stable over the last decade or longer. Figure 4 shows that the rate of

FIGURE 4

Homeownership Rates Among Veteran and Nonveteran Households



SOURCE: Authors' calculations using definitions based on five-year ACS data (Ruggles et al., 2023).
NOTE: Estimates use household weights.

homeownership for veteran households is about 20 percentage points (or roughly 27 percent) higher than the rate for nonveterans and has remained consistent over the past decade.

Why are rates of veteran homeownership so much higher? One likely reason is that veterans have access to relatively generous home financing programs through the VA that involve both lower down payments and lower interest rates than the commercial market (Bundrick and Marquand, 2023). These programs lower both the initial barrier (down payment requirements) and the ongoing cost of ownership (the interest component of a monthly mortgage payment that can often make up more than half of the monthly total).

To provide empirical evidence on this question of differing homeownership rates, we estimated a basic regression model that considered the relationship between homeownership and income. We hypothesize that a weaker relationship between homeownership and income among veterans would suggest that the availability of VA benefits contributes to higher homeownership among veterans. Since the sex composition of veterans differs considerably from that of nonveterans, we included a control for the sex of the head of household, as well as the interaction of sex and income in the model. To address potential differences in where veterans and nonveterans might choose to live, we also controlled for geography at the PUMA level; this allowed us to compare veterans with nonveterans within relatively small areas that might have important differences in terms of the cost of housing and other factors. We estimated this model separately for veteran and nonveterans using data from 2011, 2016, and 2021.

The results of this simple modeling exercise are presented in Table 3, and they reveal some common patterns between veterans and nonveterans, as well as some important differences. First, veterans have a higher overall rate of homeownership (i.e., an average of around 80–82 percent for male veterans earning the median income versus around 67–69 percent for nonveterans) and these rates have been quite stable over the time period we considered.

The association between income and homeownership is positive among both veterans and nonveterans, but it is weaker for veterans (consistent with the aid programs that make homeownership less costly for veterans). Female veterans are much less likely to be homeowners than male veterans (between 12 and 17 percentage points), although this gap has declined in magnitude over time. At the median income level,

TABLE 3

Associations Between Income and Homeownership Among Veterans and Nonveterans

Dependent Variable is Homeownership	2011	2016	2021
Panel A: Veterans			
Income ($1000s)	0.00091***	0.00096***	0.00086***
	(0.00002)	(0.00002)	(0.00002)
Female	–0.17280***	–0.15747***	–0.11594***
	(0.00347)	(0.00318)	(0.00361)
Income ($1000s) × Female	0.00098***	0.00065***	0.00046***
	(0.00005)	(0.00004)	(0.00005)
Male veteran homeownership rate (at median income)	0.78335***	0.75439***	0.75838***
	(0.00042)	(0.00042)	(0.00050)
N	890,787	736,892	618,500
Panel B: Nonveterans			
Income ($1000s)	0.00132***	0.00126***	0.00108***
	(0.00003)	(0.00002)	(0.00002)
Female	–0.03294***	–0.01950***	–0.01804***
	(0.00134)	(0.00119)	(0.00117)
Income ($1000s) × Female	0.00044***	0.00034***	0.00030***
	(0.00001)	(0.00001)	(0.00001)
Male nonveteran homeownership rate (at median income)	0.62457***	0.59663***	0.60359***
	(0.00101)	(0.00088)	(0.00087)
N	5,069,446	5,359,217	5,448,004

SOURCE: Authors' analysis using definitions based on five-year ACS data (Ruggles et al., 2023).

NOTES: Sample is heads of household. Estimates are weighted using household weights. Household income is demeaned by the weighted median household income level, so the constant term is the average homeownership rate for males earning the median income. All models use PUMA. Standard errors (clustered at PUMA level) are presented in parentheses. *** denotes $p < 0.001$; ** denotes $p < 0.05$; * denotes $p < 0.01$.

female veterans are approximately as likely as nonveterans to be homeowners (the difference in homeownership rates between male and female nonveterans presented in Panel B of Table 3, although statistically significant, was economically fairly small—between 3 and 5 percent).

The positive relationship between income and homeownership has weakened modestly from 2011 to 2021 for both veterans and nonveterans. In 2011, an extra $10,000 in income relative to the median was associated with a 0.091 percent increase in the probability of homeownership among veterans and a 0.130 percent increase among nonveterans. By 2021, these probabilities declined to a 0.086 percent increase for veterans and a 0.110 percent increase for nonveterans.

Housing Costs Among Veterans and Nonveterans by Housing Tenure

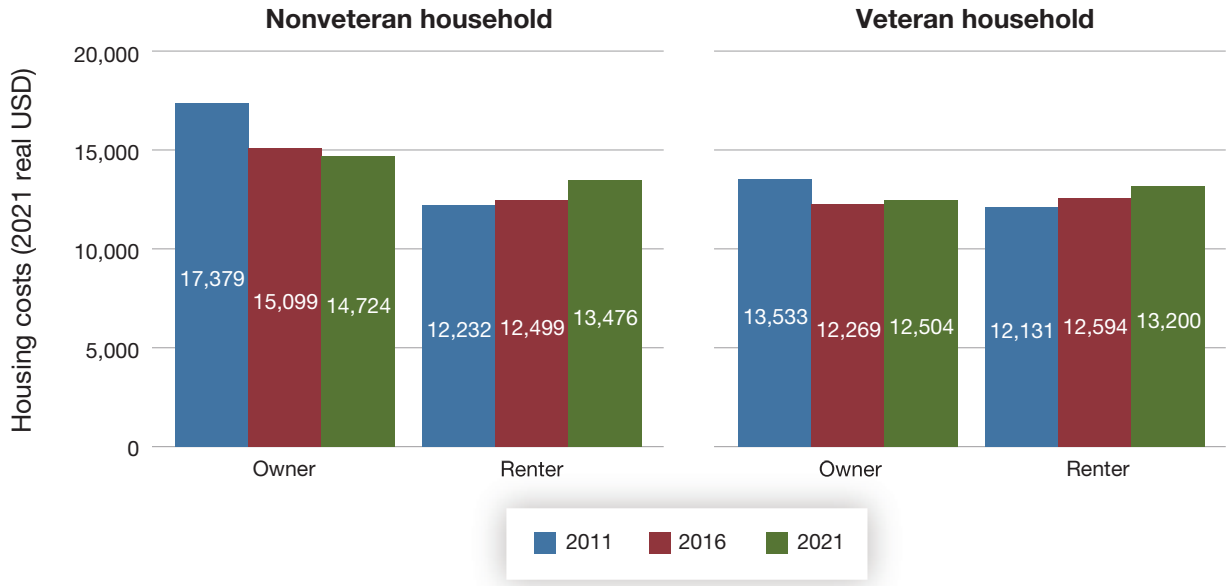
Figure 5 provides further information on factors related to the differential patterns of homeownership among veterans and nonveterans. Median homeownership costs for veterans are noticeably lower than homeownership for nonveterans, while housing costs for renters are virtually the same. Over time, inflation adjusted rental costs have been rising steadily between 2011 and 2021 while ownership costs declined.

To assess how observed housing cost differences might relate to differences in where veterans and nonveterans locate, we generated estimates of these same expenditure differences controlling for various levels of geography. Table 4 presents differences among veterans and nonveterans by housing tenure according to three distinct levels of geography so that these comparisons used only variation in housing costs within a state, within an MSA, or within a PUMA. We found that veteran households experience statistically and substantially lower homeownership costs compared with nonveteran households, and this relationship is robust when controlling for geographic variation. Rental costs, on the other hand, are more sensitive to geographic variation. Overall, we found that, in 2021, veteran households experienced lower rental costs than nonveteran households. However, when controlling for PUMA or MSAs, we found that veteran households that rent pay more than nonveteran households.

The presence of highly statistically significant differences within nearly every level of geographic analysis implied that geographic differences explain relatively little of the difference in observed housing costs between veterans and nonveterans over time. Indeed, among renters, focusing on within-geography comparisons makes these differences much larger. Moreover, the results imply that there are significant benefits to ownership for veteran households compared with nonveteran ones, and, within small geographic ranges, veteran households face higher rental costs than nonveteran households. But there is also a consistent pattern of these differences becoming smaller over time among homeowners, echoing the pattern in Figure 3.

FIGURE 5

Annual Costs of Homeownership and Rentership



SOURCE: Authors' calculations using five-year ACS data.
NOTE: Bars are medians for each group.

TABLE 4

Difference in Housing Expenditures by Veteran Status and Ownership Status over Time Controlling for Various Geographies

Outcome Is Difference in Annual Housing Expenditures Between Veterans and Nonveteran Households	2011	2016	2021
Homeowners			
No adjustment	–3.955.45*** (21.49)	–3,072.06*** (19.78)	–2,737.83*** (23.69)
State adjustment	–3,537.66*** (474.33)	–2,613.58*** (377.51)	–2,195.23*** (366.14)
MSA adjustment	–2,931.64*** (561.39)	–2,087.46*** (391.18)	–1,626.35*** (349.59)
PUMA adjustment	–2,883.38*** (132.22)	–1,998.76*** (108.82)	–1,503.92*** (106.41)
N	4,266,209	4,266,339	4,286,388
Renters			
No adjustment	19.31 (26.61)	90.21*** (28.25)	–238.69*** (38.05)
State adjustment	380.77** (164.38)	495.55*** (181.61)	234.97 (192.62)
MSA adjustment	662.75*** (106.76)	816.08*** (109.09)	653.37*** (107.71)
PUMA adjustment	606.74*** (50.81)	791.52*** (58.03)	673.81*** (60.66)
N	1,633,601	1,791,679	1,706,504

SOURCE: Authors' analysis of five-year ACS data from IPUMS (Ruggles et al., 2023).

NOTES: Regression models are estimated using 2021 real USD at the household level and weighted using household weights. Standard errors (in parentheses) are clustered at the relevant geography indicated in each row. *** denotes $p < 0.001$; ** denotes $p < 0.05$; * denotes $p < 0.01$. Appendix Table C.1 provides numbers of clusters/geographies included in each regression.

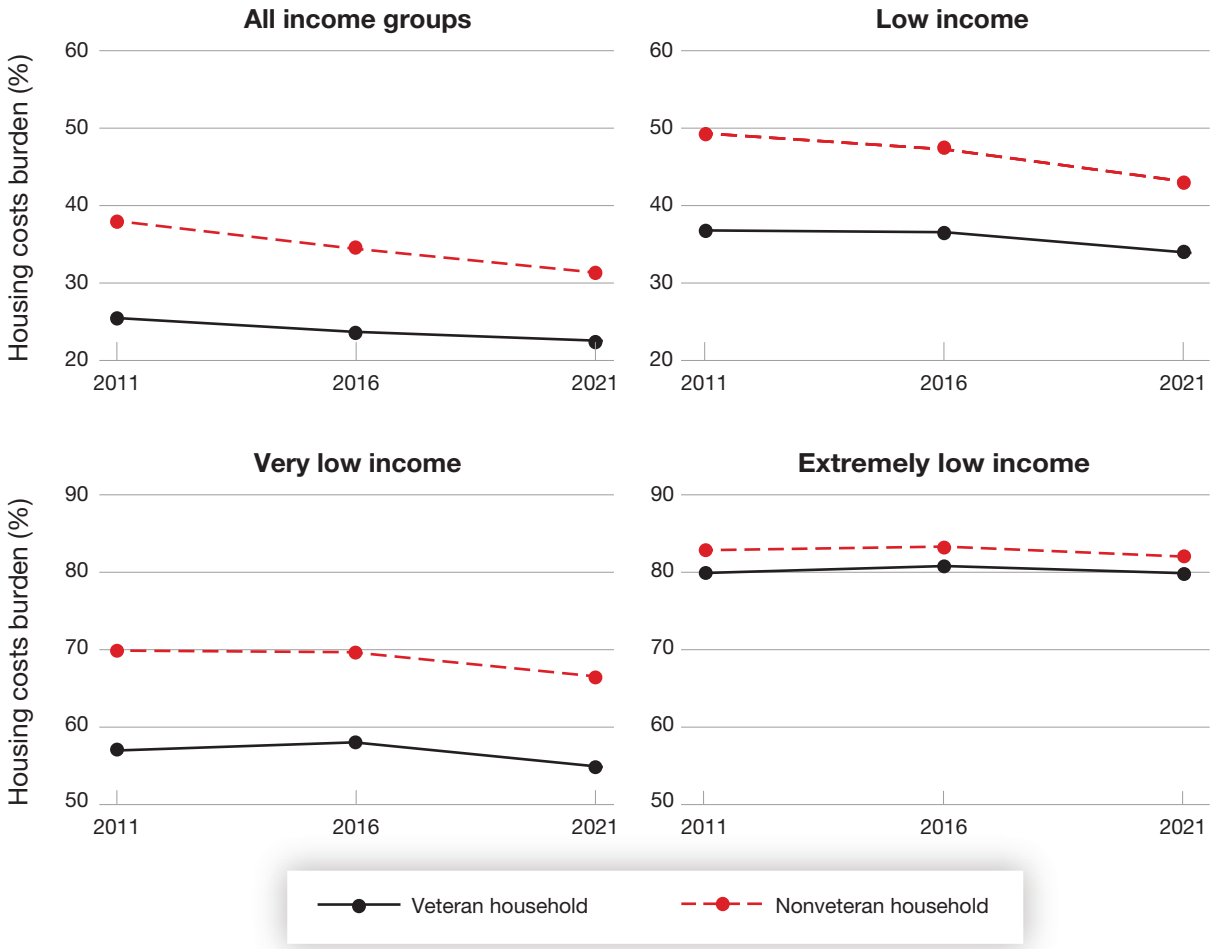
Housing Cost Burden Among Lower Income Veteran and Nonveteran Households

We previously examined the trends separately for household income and housing costs. We now look at the two in conjunction with one another. As we noted earlier, incomes and housing costs are both on the rise. To assess the relative movements of housing costs and household income, we constructed a measure of HCB, which, as defined in Table 1, categorizes households based on their annual housing costs relative to their annual household income. Figure 6 displays the share of households by veteran status and income level that have an HCB ratio of more than 30 percent (at least moderate HCB). As suspected, the lower a household's income relative to AMI, the larger the share with at least a moderate HCB. Across all income categories, a larger share of nonveteran households experience HCB than do veteran households, though the gap between these groups shrinks as income falls.

However, this pattern of differences in HCB is not true for all veterans. Figure 7 displays veteran households by two service eras: those who served before September 11, 2001, (pre-9/11) and those who served after (post-9/11).[12] We found that the share of post-9/11 veteran households experiencing at least a moderate HCB exceeds that of nonveteran households, while the share of pre-9/11 households is below that of nonveterans. This difference in HCB between service eras is likely explained, in part, by the change

FIGURE 6

Percentage of Households with Housing Cost Burden, by Income Category



SOURCE: Authors' calculations using five-year ACS data downloaded via IPUMS (Ruggles et al., 2023).

NOTES: This figure includes both owner-occupying and renter-occupying households, accounting for different sources of housing costs (e.g., mortgage and insurance for owners and rent and utilities for renters). "All Income Groups" includes the "not low income" group. Estimates are weighted using household weights and represent the share of the population with at least moderate HCB.

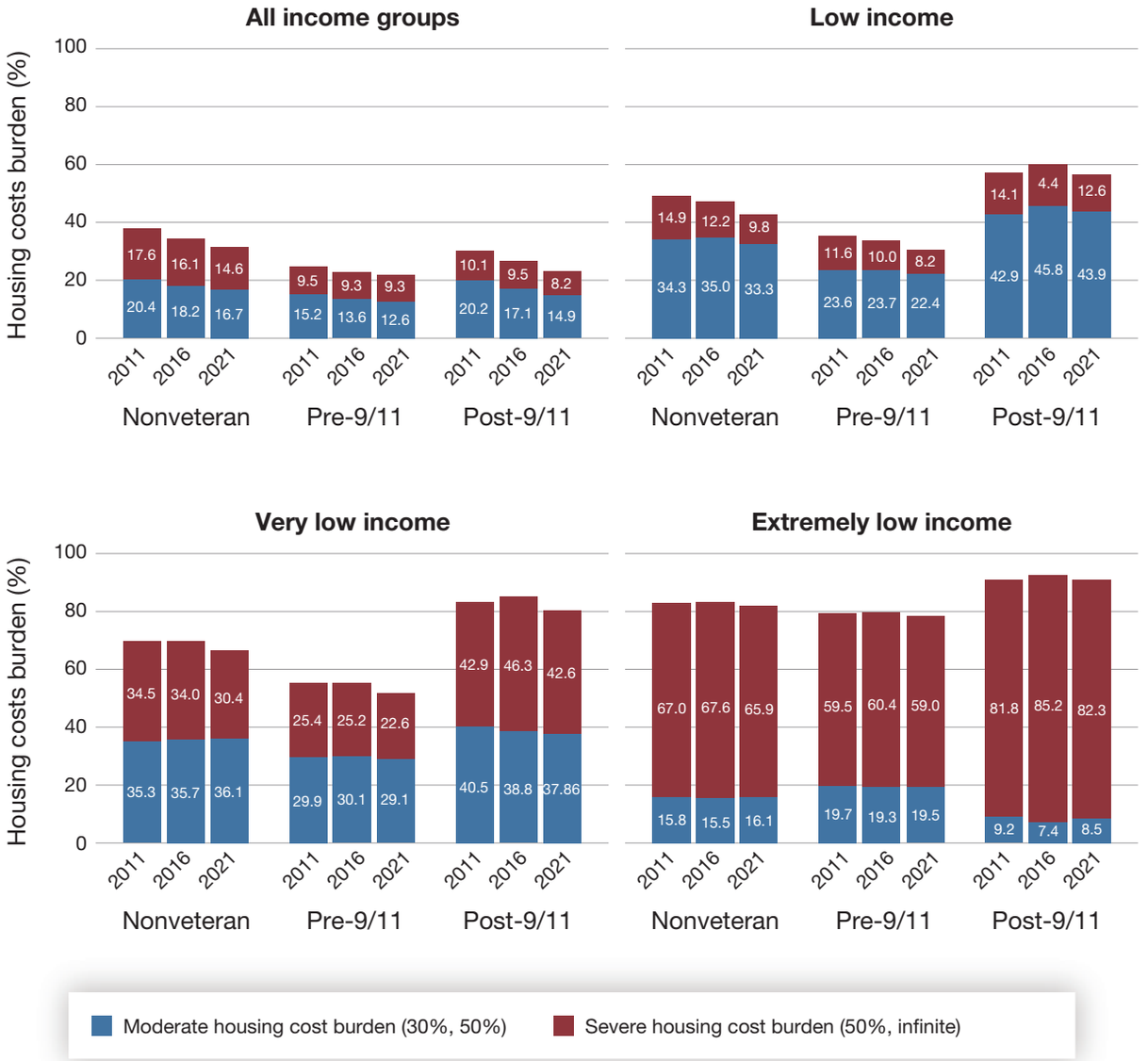
in earnings across age that we referred to earlier and by lower housing costs related to both lower prices and the potential that significantly older pre-9/11 veterans no longer have a mortgage payment. However, post-9/11 veterans are also more likely to have had combat experience and associated risks of disability, including posttraumatic stress disorder, than other veterans serving in the primarily peacetime decades preceding them (Parker et al., 2019), which might affect income through limiting opportunities in the labor market.[13]

Importantly, HCB for both veteran and nonveteran households and for lower income populations appears to have remained relatively consistent between 2011 and 2021. Nonveteran and pre-9/11 households in the low-income category (households earning between 50 percent and 80 percent of AMI) appear to demonstrate a decline in the number of households experiencing moderate levels of HCB. This is consistent with the evidence cited earlier regarding relatively larger gains in real income in the lower tail of the distribution of income.

Figure 8 displays the share of very low-income households with at least moderate HCB in two ways. First, we determined the 25th and 75th percentiles of the age distribution for pre-9/11 and post-9/11

FIGURE 7

Housing Cost Burden, by Income Category and Service Era



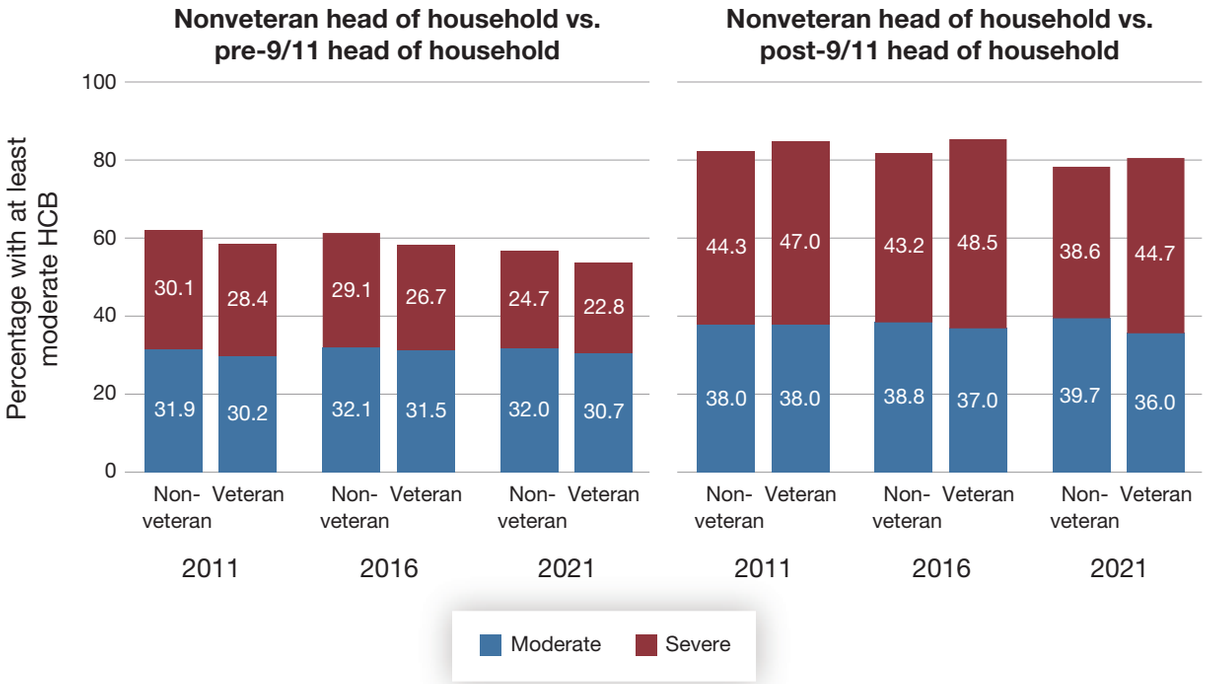
NOTES: All income groups include the "not low income" group. Estimates are weighted using household weights.

veteran household heads in each data set (2011, 2016, and 2021). We then compared HCB among these two veteran service-era groups with the HCB among nonveterans restricted to be within the age range of each group of veterans.

The purpose of this analysis was to determine whether the age distribution of pre- and post-9/11 veterans can explain the finding presented in Figure 7: A smaller share of pre-9/11 veteran households experience HCB than nonveteran households, although a larger share of post-9/11 veteran households experience HCB than nonveteran households. We found that, for very low-income households, controlling for age leads to more-comparable estimates of HCB for both pre- and post-9/11 veteran households compared with nonveteran households, although pre-9/11 HCB estimates are still slightly below that of nonveteran households in a similar age range, and post-9/11 estimates are slightly above nonveteran households in a similar age range.

FIGURE 8

Age-Dependent Comparison of Nonveteran and Veteran Housing Cost Burden Ratios Among Households with Very Low Income



SOURCE: Authors' calculations using five-year ACS data.

NOTES: We subset to heads of households that fall between the 25th and 75th percentiles of age for pre-9/11 and post-9/11 veterans. The nonveteran population was then subset to heads of households within these percentiles for a more direct comparison. Estimates are weighted using household weights. The 25th and 75th age percentiles are presented in Appendix Table C.3. Appendix Table C.4 compares estimates from Figure 6 with estimates from Figure 8.

The results from Figure 8 suggest that most of the difference in veteran HCB across these broad eras of service might have more to do with when veterans entered the housing market than with any important differences in, for example, labor market outcomes (employment or income). The roughly 20-percent higher level of HCB among households led by post-9/11 veterans relative to all nonveterans declines to an approximately 3-percent difference when we compare these veterans with households headed by similarly aged nonveterans. As shown in Figure 1, the difference between becoming a homeowner in, for example, 2010, and becoming a homeowner in 2021 could amount to a doubling of the price of a home. Even with favorable financing, this is a substantial increase in housing costs (the numerator of the HCB ratio). Additionally, the large increases in home prices might preclude many lower-income households for veterans and nonveterans alike from even being able to participate in homeownership, instead keeping these households in the rental market, which was subject to dramatic, sharp price increases in recent years, as shown in Figure 2. This obvservation is consistent with the data. Appendix Table C.5 presents homeownership versus rentership rates separately for veterans of these two service eras, indicating that the rate of rentership among post-9/11 veterans is roughly twice what it is among older pre-9/11 veterans (36 to 40 percent for post-9/11 veterans versus around 18 percent for pre-9/11 veterans).

However, differences remain in the relative level of HCB between veterans and nonveterans who served in the post-9/11 period after matching on age, suggesting that other factors might be contributing to higher HCB. Given that this disparity exists even with significantly favorable homeownership pro-

grams for veterans, more research should be done to understand why these programs appear to be losing efficacy in the current environment.

Discussion and Directions for Future Research

A considerable and still growing body of research has assessed the nature and scope of veteran homelessness and solutions to this problem (Hunter et al., 2021; Metraux et al., 2013; Perl, 2022; de Sousa et al., 2022). By most recent estimates, about 33,000 veterans are homeless on any given night across the United States, and veterans are more likely to experience homelessness than nonveterans. Research has primarily focused on individual factors related to homelessness, and less attention has been paid to how these factors interact with structural characteristics, such as housing policies and market conditions, that could lead to housing instability or homelessness.

Less work has explored differences in housing costs and HCB between veterans and nonveterans and how these differences have evolved over time. The 2013 NLIHC report Housing Instability Among Our Veterans explored cross-sectional differences in HCB between these groups and found evidence suggesting the presence of substantial HCB among veterans. This report builds on that evidence by conducting similar analyses over a 15-year period divided into five-year increments (2007–2011 to 2017–2021) to explore how these relationships—both veteran outcomes and comparisons with nonveterans—are changing over time.

We found evidence that veterans were, in virtually all cases, faring better than nonveterans with respect to measures of HCB and other metrics, such as homeownership. More specifically, we estimate that approximately 3.2 million veteran households were experiencing at least moderate HCB in 2021 (that is 22.1 percent of the estimated 14.5 million veteran households in the United States). Across time, we found modest improvements across most measures of HCB among lower-income veterans and slightly larger improvements among nonveterans. We documented that veterans appear to have more tools to facilitate homeownership and lower costs of owning a home than nonveterans, although the advantage accruing specifically to veterans in this area appears to have declined over time. Additionally, the role of age differences between veterans and nonveterans might play an important role as it relates to, for example, changes in the cost of purchasing a home over time.

We found no housing advantage for veterans who rent, however. In fact, veteran households who own their homes had significantly lower housing costs than nonveterans. Ownership and renter costs, as of 2021, were approximately equal for veterans. Additionally, veterans who rent had higher housing costs than nonveterans on average. This might be one reason why veterans who served after 9/11 had a level of HCB approximately equal to that of nonveterans with similar incomes and ages—younger veterans might be more likely to rent than own their home.

Our study has some key limitations. First, we focused on HCB, a financial measure of housing instability. However, housing instability can also encompass other elements (such as overcrowding, moving frequently, and housing quality) that we did not capture in our analyses. Also, we did not incorporate individual perspectives that help to explain the patterns we observed. For example, speaking to veterans who choose to rent versus own could help to tailor potential interventions to improve HCB among this population.

Conclusion

We found that the following groups of veterans are the ones most in need of housing support to lower their housing costs. Policymakers could focus homeownership support (e.g., finances and counseling) on the following veteran groups:

- **Younger veterans.** Approximately 71 percent (or 163,400) of post-9/11 veteran households are experiencing HCB, compared with 61 percent (or 850,420) of pre-9/11 veterans with at least very low income relative to AMI. These younger veterans have rates of renter-ship that are roughly twice those of pre-9/11 veterans, although this gap declined in magnitude in the most recent period we considered,

2017–2021. Recent runups in home prices and higher interest rates aimed at fighting inflation might reverse this trend, however, and further research on this issue is warranted.

- **Female veterans.** Female veterans generally have lower incomes than male veterans and are less likely to be homeowners, resulting in higher housing costs on average. Moreover, female veterans appear to move substantially more frequently than male veterans, a pattern that is absent among nonveterans (see Table C.6 in the online annex).
- **Veterans in high-cost housing markets.** The advantages that veterans experience in home accrual might decline over time as overheated housing markets increasingly put homeownership out of reach of veterans and nonveterans alike.[14] Although we would suggest that this is a critical policy problem broader than its effect on veterans alone, its specific bearing on eroding veteran pathways to homeownership is important. Future research might be warranted to focus on how often significant variation in local housing markets moderates the relative effectiveness of these programs aimed at fostering homeownership among veterans.[15]
- **Veterans who rent.** We observed advantages for veterans who own as opposed to rent. Therefore, increased investment in homeownership counseling might be useful. Efficacious homeownership counseling programs exist (Myhre and Watson, 2017; Smith, Hochberg, and Greene, 2017; Santiago and Leroux, 2022). This effort might be especially impactful for veterans of color, who have a distinct income advantage over their nonveteran peers.

Notes

[1] Households are considered *moderately housing cost burdened* if they are spending more than 30 percent of their household annual income on housing costs. The 30 percent cutoff is an historical assumption used to determine the share of income families in federally assisted (i.e., public housing) must pay in rent (Eggers and Moumen, 2008).

[2] Although the empirical literature on this is not well established, there is evidence linking significant changes in financial well-being to housing instability and homelessness, and the mechanism for such a connection is an inability to meet housing costs (Curtis et al., 2013; Kang, 2021; U.S. Department of Health and Human Services, undated; Leopold et al., 2016; Chun et al., 2023).

[3] An online annex provides more-detailed data on the estimates described in this report. To view the annex, please visit www.rand.org/t/rra1363-3.

[4] Henceforth, all estimates are the authors' calculations unless cited from another source.

[5] Based on head of household's age.

[6] The U.S. Office of Housing and Urban Development (HUD) requires local areas receiving HUD funding to conduct an annual point-in-time count at least every two years to allow HUD to develop estimates of the number of people experiencing homelessness in the United States. As part of this process, veteran status is ascertained to develop specific estimates of the number of veterans experiencing homelessness. HUD defines *homelessness* as living in a place not fit for human habitation (e.g., park, vehicle, tent, sidewalk, or underpass) or in an emergency or transitional housing setting. The HUD estimates are based on an unduplicated count, conducted by regional entities, of the number of sheltered and unsheltered people experiencing homelessness on a single night in January. HUD does not employ any sort of independent verification of the count data; many of the counts are conducted by a cadre of volunteers and the methodology has changed over time. Moreover, there is considerable variability in the enumeration and extrapolation methods used across regions (Tsai and Alarcón, 2022).

[7] We identify these positions in a household by restricting the sample to positions 1 or 2 in the "relate" variable in the Integrated Public Use Microdata Series (IPUMS) ACS data.

[8] This restriction removes around 1 percent of the sample. Negative incomes can reflect self-employment losses over a year, but we also worried that households showing large, negative income amounts might have more-complex income pictures, and including these values would not fully reflect their true household fiscal health.

[9] The ACS is released as one-year and five-year estimates. The five-year estimates use the same data as the one-year estimates but are reweighted and capture five-year averages. The benefit of the five-year data is increased precision of estimates because of a larger sample size (five years of data versus one year).

[10] We used person-level incomes for sex to avoid potential differences in household composition respecting labor market attachment. Specifically, there might be differences in the rate of labor market attachment among spouses in households led by male veterans versus nonveteran households. Additionally, female veteran heads of household might have average differences in household structure compared with female nonveteran heads of household.

[11] Household incomes here are in 2021 real United States Dollars (USD).

[12] If a household contains both a pre-9/11 and a post-9/11 veteran, the household was assigned to the pre-9/11 group so that we could create two mutually exclusive service eras for households. This applied to 0.3 percent (or 9,939 households) of 2,856,314 households across the three five-year samples.

[13] See Table C.2 in the online annex for sample statistics by service era and average age of veterans compared with nonveterans using person-level weights.

[14] Recall that our data are five-year averages meant to capture longer-term trends and that our analysis is through 2021. New data would be required to analyze these trends in the context of the current housing crisis, which began in 2022 and is particularly affecting lower-income households that rent (Housing Matters, 2023).

[15] For example, the median home price in Los Angeles County, California, was nearly $830,000 in late 2022 while the median home price in Harris County, Texas, home to Houston, was only around $271,000 (National Association of Realtors, 2022).

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About This Report

This report provides estimates of the number of U.S. military veterans who experience financial burden from housing costs. We provide context for how these estimates changed over the past 15 years by comparing trends among veterans to nonveterans. These findings should be of interest to policymakers focused on veteran welfare and housing policy and to the general public.

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