

# Military Veterans and Neighborhood Racial Integration: VA Mortgage Lending Across Three Eras

Mary J. Fischer<sup>1</sup> · Jacob S. Rugh<sup>2</sup>

Received: 28 March 2017 / Accepted: 17 May 2018 / Published online: 23 May 2018  
© Springer Science+Business Media B.V., part of Springer Nature 2018

**Abstract** The military has long been seen as an avenue for increasing racial equality for minorities, especially black Americans. In this article, we examine to what extent military veterans also experience residential integration by looking at neighborhood residential outcomes for black and white men utilizing the popular Veterans Affairs (VA) loan program to purchase a home. We draw on data from the Home Mortgage Disclosure Act (HMDA) to examine residential integration among white and black veteran homebuyers compared to homebuyers utilizing conventional loans over three major lending eras: 1990s, 2000–2007, and 2008–2015. By 2015, a quarter of all home purchase mortgages loans to black men were VA loans even though veterans made up only a tenth of the adult black male population. In our multivariate analyses, we uncover a sizeable combined swing toward neighborhood minority-white integration, 14.4% points, among black and white veterans who use VA loans. Compared to those with conventional loans, black veterans live in neighborhoods with 10% points fewer minorities and, white veterans, 4.4% points fewer whites. Our results illustrate how racial integration in the US military has the potential to foster lasting housing integration among veterans.

**Keywords** Social mobility · Homeownership · Veterans · Racial residential segregation

---

✉ Mary J. Fischer  
mary.fischer@uconn.edu

Jacob S. Rugh  
jacob\_rugh@byu.edu

<sup>1</sup> Department of Sociology, University of Connecticut, Storrs, CT, USA

<sup>2</sup> Department of Sociology, Brigham Young University, Provo, UT, USA

## Introduction

The military has long played a role in sponsoring racial integration and racial equality in the United States, both during and after service. The egalitarian nature of this institution has made it particularly important to the socioeconomic advancement of many racial and ethnic minorities (Angrist 1993; Bryant et al. 1993; Moskos and Butler 1996; Routon 2014; Seeborg 1994; Segal et al. 1978), who are more likely to experience various forms of institutional discrimination. Minorities enlist in the military at higher rates relative to whites. From 1990 to 2009, the proportion of minorities in the military grew from 25.4% of enlistees to 36.2% (Pew Research Center 2011). In 2015, 17% of active duty and selective reserve members were black (National Center for Veterans Analysis and Statistics 2017). In line with these high levels of enlistment, minorities also represent a sizable and growing share of the veteran population. Over 1 in 4 living veterans in 2014 were minority and they are projected to comprise 35.7% of the veteran population by 2040 (National Center for Veterans Analysis and Statistics 2017). Recent evidence suggests that while employment prospects are positive for all veterans, the civilian wages of minority veterans is about 10% higher than their non-veteran counterparts (Routon 2014).

The home ownership rates and racial integration of veterans are not simply a residual of past micro-level processes, including the impact of integrated military service, but also a product of government intervention at the macro level in domains such as the national housing market (Bailey et al. 2017; Fetter 2013). The military may spur upward mobility and even possible racial integration of veterans through the Department of Veterans Affairs (VA) loan guaranty and the GI Bill. Each has provided millions access to homeownership and education that may have been otherwise unattainable (Altschuler and Blumin 2009; Fetter 2013; Bailey et al. 2017). As of 2014, 24.1% of minority veterans were current recipients of a VA home loan guaranty (National Center for Veterans Analysis and Statistics 2017). These benefits may especially be important to those facing more limited options in the civilian labor force and housing market after the disappearance of other low-down payment substitutes, such as subprime loans, after 2007 (Rugh and Fischer 2015). Moreover, the VA loan benefit is associated with lower foreclosure rates and greater stability in home ownership, even when controlling for observable attributes and compared to FHA government-insured loans (Goodman et al. 2014a). However, the extent to which homeownership for black veterans utilizing the VA loan guaranty facilitates racial integration remains less clear.

Blacks in general and black homeowners in particular continue to face high levels of residential segregation in many US cities (Friedman et al. 2013). Given that home equity is the main source of wealth for middle-class families (Oliver and Shapiro 2006) and that many black homebuyers are segregated (Fischer and Lowe 2015), this limits the wealth and upward mobility of the next generation. We would expect that the interracial contact experienced by whites in the military would make white veterans more amenable to living among other groups than their civilian counterparts (Fischer et al. 2016). Further, VA lending may afford black veterans

access to less racially isolated housing (Rugh and Fischer 2015). Thus, we expect that, like the military itself, the home location choices of VA borrowers would not reinforce existing patterns of racial residential segregation, but instead foster greater integration.

Our paper focuses on the extent to which veterans have leveraged improved socioeconomic mobility by way of the VA loan benefit to achieve greater residential mobility. Although the VA loan program is not a proxy for all veterans,<sup>1</sup> understanding the outcomes of those utilizing this popular program is important in its own right. In addition, the increased use of the VA lending program subsequent to 2008 implies greater representation of both black and white veterans. We draw on data from the Home Mortgage Disclosure Act (HMDA) to examine white and black veteran homebuyers over three major lending eras: (1) the 1990s housing boom; (2) the peak years 2000–2007; and (3) the crash and recovery period 2008–2015. The following questions guide our investigation. First, to what extent has VA lending contributed to homeownership expansion over the course of the 1990s and 2000s? What role has VA lending played for black and white homebuyers in the most recent era of restricted access to lending post-2007? Finally, in comparison to conventional lending, has VA lending contributed to the racial integration of black and white homebuyers over the three most recent lending periods?

## Homeownership, Neighborhood Attainment, and the Military

Although racial residential segregation has been generally declining in the US over the past several decades (Logan et al. 2011), segregation on the basis of race continues to be the main demographic characteristic defining urban neighborhoods. Two major theoretical perspectives on neighborhood attainment help us to understand the residential patterns we observe. The spatial assimilation model posits that residential location is an outcome of the status attainment process (Alba and Logan 1992; Massey and Denton 1993), suggesting that the higher levels of segregation experienced by blacks result from their lower average socioeconomic status relative to non-Hispanic whites. As blacks have made gains in education, occupation, and income over the past several decades, these diminished differences in socioeconomic status should result in greater residential integration. However, the place stratification perspective asserts that the residential choices for disadvantaged groups continue to be constrained by structural factors (Logan and Molotch 1987). While it is the case that higher SES blacks are less segregated from whites than their lower SES counterparts, they have the most difficulty compared to other groups in converting improved class status into less segregated neighborhood

---

<sup>1</sup> Not all veterans use VA loans and those who do are likely selective in certain ways. However, selectivity into VA loan utilization operates more heavily in the earlier period of this study than the later period. Post 2008, upwards of 90% of discharged veterans used the VA loan program regardless of race, according to an analysis of matched county recorder discharge and mortgage loan records by Rugh and Fischer (2015).

outcomes (Adelman 2004; Fischer 2003; Iceland and Wilkes 2006; Massey and Fischer 1999; Pais et al. 2012).

As a key component of the American dream, homeownership can be thought of as playing a dual role in the status attainment process. First, the purchase of a home typically demarcates the achievement of some level of socioeconomic success. This home subsequently becomes a key asset and central component of wealth for most middle-class families to sponsor their upward mobility (Oliver and Shapiro 2006). However, minorities have historically been less likely to become homeowners for a variety of reasons. When they have gained market access, they have often been targeted for discriminatory lending practices and/or unfavorable terms such as predatory subprime loans (Immergluck 2015; Rugh et al. 2015). Minorities have also experienced severe reductions in access due to excessively tight conventional mortgage lending standards since 2009 that lock out millions of creditworthy borrowers (Goodman et al. 2014b).<sup>2</sup> Furthermore, the residential locations of newly purchased homes for blacks in the recent lending eras have tended to reinforce existing patterns of segregation (Fischer and Lowe 2015). For blacks, homeownership in more segregated neighborhoods means less home appreciation and the unfavorable lending terms many receive place them at greater risk of foreclosure.

## Segregation and Military Service

Segregation in neighborhoods is related to racial separation in other aspects of life, including schools, workplaces, and social networks. This is particularly the case for whites, who remain the most racially isolated group and often reside in overwhelmingly white communities despite substantial increases in racial/ethnic diversity (Rugh and Massey 2014). A potential implication of racial isolation is the role it can play in the perpetuation of negative group stereotypes and racial animosity that results from the lack of meaningful contact group members have with one another. According to the social contact hypothesis (Allport 1954; Sigelman and Welch 1993), intergroup contact under certain conditions can serve to correct such impressions. However, with lack of interaction and exposure, whites may be more inclined to make locational decisions that perpetuate racial segregation.

The military has long recognized these negative implications of racial segregation and has taken active steps to combat them. As part of a series of policies to address racial prejudice on and off base, housing on military bases has been explicitly racially integrated for the past several decades to help promote troop camaraderie and readiness (Hershfield 1985; Sutton 1971; United States Commission on Civil Rights 1963). These actions were deemed necessary as such divisions jeopardize the ability of the troops to act cohesively, increasing the risk of fatalities

<sup>2</sup> As a result, black and Hispanic buyers have increasingly relied on the Federal Housing Administration (FHA) loan program in order to access homeownership (Carr and Anacker 2015). However, FHA loans have added costs compared to VA loans, such as higher down payments and annual insurance premiums (Goodman et al. 2014a). The disproportionate reliance of minority borrowers on FHA loans combined with the lower home equity accumulation potential has led some to raise concerns that it continues the pattern of a persistent dual housing market segmented by race (Olsen et al. 2014).

and failed missions. As a result, the military is one of the most diverse and integrated institutions in US society (Moskos and Butler 1996; Emerson and Yancey 2011). The high levels of interracial contact experienced by those serving in the military makes it an ideal setting to test the premises of the social contact hypothesis, which posits that under specific conditions such contact would reduce or eliminate racial prejudice. Military research suggests that service members do indeed express lower levels of prejudice than their civilian counterparts (Burk and Espinoza 2012). There is some evidence that these attitudes may translate into behavior upon leaving the military. For instance, those who have served in the military have higher rates of intermarriage than their civilian counterparts (Farley 1999; Jacobson and Heaton 2003).

Metropolitan areas with a strong military presence have significantly lower levels of black/white residential segregation in the United States (DeFina and Hannon 2009; Farley and Frey 1994; Rugh and Massey 2014). As such, researchers examining trends in segregation routinely control for “military specialization” in models examining segregation and changes in segregation over time (see, for example, Friedman et al. 2013; Logan et al. 2004; Wilkes et al. 2004). However, we do not know the extent to which these patterns observed in overall levels of segregation between blacks and whites in communities with a strong military presence are driven by the behaviors of those currently enlisted but residing off base, the broader population, or to the residential choices of veterans themselves. Among veterans, we are particularly interested in those who are homebuyers as the purchase of a home also represents a tangible asset that can help sponsor their upward mobility and that of their family.

Understanding of the locational decision-making by veterans remains limited. Veterans in general tend to have higher than average residential mobility rates compared to non-veterans (Bailey 2013), and tend to move to larger metro areas upon separation from service (Bailey 2011; Plane et al. 2005). However, with the exception of recent research by Rugh and Fischer (2015) examining veteran homebuyers since 2008 and Fischer et al. (2016) examining white veterans, we lack information on the racial composition of their residential settlement patterns. This paper therefore contributes to this literature by examining the neighborhood attainment of black and white homebuyers utilizing VA loans over the course of two and a half decades.

## VA Lending Overview

In historical perspective, the advent of the VA loan guarantee benefit in the 1940s and 1950s was associated with an unmistakable increase in homeownership, but the size and impact of VA lending remains an empirical question. Early analyses relying on decomposition methods, found minimal effects of the direct effect of VA and FHA lending (e.g., Chevan 1989). In more recent research, VA lending shows approximately 25–40% of the rise in home ownership among those of eligible ages, primarily because it accelerated the age of first ownership by about 5 years (Fetter 2013). Using a regression discontinuity design, Fetter (2013) reports an added

increase in individual veteran ownership of 1.7 to 1.9 points in 1960 due to VA lending, in line with a 1.6-point increase in 1970 based on ecological analyses by Vigdor (2006). While Vigdor (2006) emphasizes how loosening access to credit via low/no-down payment VA loans may lead to increases in home prices, Fetter (2013) and Vigdor (2006) each demonstrate that veteran presence (VA eligibility) also raised *non-veteran* ownership rates, net of other factors.

The foregoing research is not simply a matter of measurement, but also has important implications for racial equality in housing among veterans (Bailey et al. 2017). As argued earlier, home ownership rates and housing choices of veterans are not simply a product of individual experiences, but also a matter of government intervention into the housing market, for better or for worse. If, as Vigdor (2006) argues, government subsidies such as the VA loan guarantee decreased access among those least likely to afford ownership, then its impact on inequality is significantly diminished. Alternatively, even if VA lending acts by speeding up ownership among those that may have entered later in life, it may reduce inequality by providing opportunities to accrue wealth earlier, especially it leads to positive spillover effects on ownership among non-veterans (Fetter 2013; Loveless-Morris 2014). Finally, while the economic considerations based on investigations of mainly white veterans in the era of conscripted service are instructive, there are sociological reasons to believe the impact of granting to black veterans on similar scales may not generate the same benefits today, apart from the self-selected nature of service. As Massey (2005) argues, if housing discrimination is a moving target based on group position and a racialized order, then widespread adoption of VA loans by blacks may lead to other means by which black–white inequality is maintained. In short, given how racial inequality is reproduced and persists, it is unclear if results based on nearly all-white veterans in the past generalize to a far more diverse population of future veterans (Bailey et al. 2017; Loveless-Morris 2014; Rugh and Fischer 2015).

The VA loan's promise of a soundly underwritten and equally accessible safe, fixed rate, no-down payment product for all veterans has led to record increases in VA loan volume, especially after the recent housing crisis (Rugh and Fischer 2015). As Moskos and Butler (1996) and Lundquist and colleagues (Lundquist 2004, 2006; Lundquist and Zhun 2014) have demonstrated, the record of the military in fostering both racial equality and social mobility is virtually unmatched in civilian society. Building on the recent work on the intersection of race and the potential lasting effects of military service on veterans, we seek to understand the changes in the overall veteran population and the veterans who take out VA-guaranteed mortgage loans to purchase a home. If black veterans have increased their usage of VA loans more than white veterans have, then we would expect it to attenuate gaps in homeownership and racial equality.

The access veterans have to home loans is important, particularly since broader patterns of racial inequality in the United States in education, neighborhood advantage, employment, earnings, and intergenerational mobility remain inextricably linked to inequalities in housing and homeownership (Flippen 2004; Massey and Denton 1993; Sharkey 2013; Chetty et al. 2014). Homeownership may narrow gaps in wealth and opportunity for the simple reason that, for most Americans, regardless

of race, home equity is the principal source of financial assets (Oliver and Shapiro 2006; Maroto 2016). Yet, the recent history of homeownership has shown how ownership alone is no guarantee of racial equality. The terms of homeownership—subprime versus prime mortgages, rising versus falling prices, and how these terms correspond to white versus non-white neighborhood composition—all combine to influence the risk of exiting ownership and the associated decline in wealth and neighborhood advantage (Kuebler and Rugh 2013; Fischer and Lowe 2015; Rugh and Massey 2010; Sharp and Hall 2014). For example, from 1995 to 2005 the black homeownership rate rose from 42 to 48%, only to fall back to 42% by 2015—a relative decline of over 12% from the peak; in contrast, white homeownership rose from 70% in 1995 to 76% in 2005 and then settled back to 72% by 2015—a decline of only 5%. These racial disparities in homeownership encapsulate how the housing market remains segmented by race, especially along the black–white divide.

Recent evidence suggests that an exception to the pattern of racial disparities in both access to and exit from homeownership does in fact exist: the US military's VA loan guaranty (Goodman et al. 2014a; Fischer et al. 2016; Rugh and Fischer 2015). The homeownership rate among veterans exceeds that of civilians. Veteran status corresponds to a large boost in homeownership among black men in particular. Specifically, 59% of black male veterans own their homes, which means they are 40% more likely to own compared to all blacks (42%). In contrast, while ownership is higher among white male veterans (79%), they are only 10% more likely to own their own home compared to all whites (72%).

This study examines the neighborhoods in which veterans utilizing the VA loan guaranty access relative to those who use conventional lending. Are white and black homebuyers utilizing VA loans more or less racially isolated? If veterans experience greater access to homeownership and disparities in access by race are much smaller, then we also expect more similar neighborhood composition for black and white veterans than among their counterparts utilizing conventional loans. We furthermore anticipate that lending era could impact the propensity of black and white veterans to seek VA loans as well as where these homes are purchased. We hypothesize that during the early boom period that VA lending would be more heavily utilized by blacks because of their lack of access to conventional lending. The relatively unconstrained lending of the early 2000s would likely result in less VA lending for all groups as conventional lending, including subprime, was accessible to a wide range of borrowers. We hypothesize that the tightening of the credit markets following the crash would make VA lending a more attractive option for both white and black borrowers. We examine whether the neighborhood composition of veteran homebuyers using the VA loan guaranty changed over the long-term period of boom, bust, and recovery, from 1992 to 2015. Our data, which we describe next, encompass a longer period than previous studies and allow us to examine our three main research questions. How has VA lending contributed to homeownership expansion over the course of the 1990s and 2000s? What role has VA lending played for black and white homebuyers in the most recent era of restricted access to lending post-2007? Finally, how does neighborhood attainment

for black and white homebuyers utilizing the VA loan program compared to their counterparts with conventional loans over the three most recent lending periods?

## Data and Methods

The loan and borrower data for this paper come from the Home Mortgage Disclosure Act (HMDA) Loan Application Register. These data contain information on loan type—conventional, Federal Housing Administration (FHA), and Department of Veterans Affairs (VA). Because the U.S. Census Bureau does not release population counts cross-tabulated by housing tenure, veteran status, and race/ethnicity at the census tract level, the HMDA data on VA versus other loans provide the most complete data on the neighborhoods in which veterans are purchasing homes. The HMDA data contain a number of pieces of information about the applicants, the loan itself, and the property, including a tract identifier that can be used to merge with data from the Census and ACS. Following prior research (Fischer 2013; Fischer and Lowe 2015), we examine approximately every third year of HMDA data, restricting to the years 1992, 1994, 1997, 2000, 2002, 2003, 2005, 2007, and 2010–2015.<sup>3</sup> This reduces the size of the dataset while still adequately capturing the different stages of the housing boom, bust, and recovery. To better capture neighborhood residential moves, we restrict our analysis to originated loans for the purchase of owner-occupied single-family properties, following prior research (Fischer 2013; Fischer and Lowe 2015). Although Hispanics have been an increasing presence in the military, they are still a smaller proportion of the veteran population and had much lower VA lending volumes compared to blacks (particularly in the 1990s). Thus the focus of our analysis is on black and white homebuyers. We extract a 10% sample of white applicants by year who fit these parameters in order to have a roughly equal number of white to black homebuyers in our analytic dataset of roughly 5.6 million loans, over 400,000 of which are VA issued.

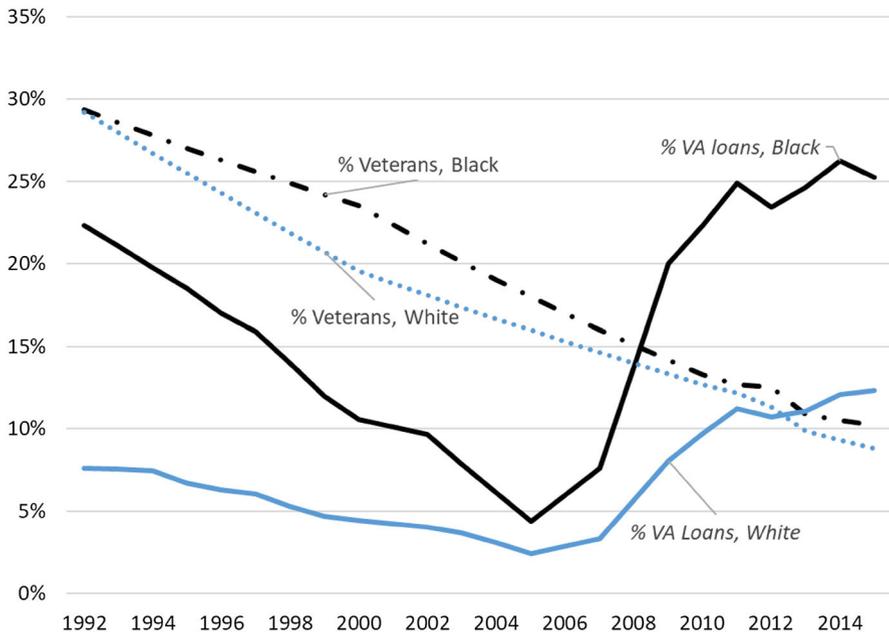
Table 1 lists the summary statistics for the variables used in the individual borrower loan level analysis by race. We subdivide the years of analysis into three main lending eras, which we anticipate would be significantly related to the utilization of VA lending by veterans as well as potentially shape neighborhood options for buyers: The 1990s period of homeownership expansion, the period of relatively unconstrained lending in the 2000s that extended to 2007, and the post-housing-boom period of 2010–2015. For both black and white homebuyers, income and loan amounts increased during each of these eras. However, the type of lending was quite different by race. For black homebuyers, only about half of lending in the 1990s was conventional. The other half was government-backed lending in the form of FHA loans (37%) and VA loan (13%). The expansion of lending the 2000s is also

<sup>3</sup> For the HMDA years 1992–2002, the data are merged by tract in 1990 boundaries with their corresponding linearly interpolated census data from 1990 and 2000. Individual level loan data from HMDA for 2003 to 2010 are merged at the tract level with linearly interpolated racial composition data from the 2000 Census and 2010 Census in 2000 boundaries created by Geolytics. The American Community Survey is merged with the 2010–2015 HMDA data.

**Table 1** Individual, loan, and neighborhood characteristics for new homeowners, 1992–2015

	Black homebuyers			White homebuyers		
	1990–1997	2000–2007	2010–2015	1990–1997	2000–2007	2010–2015
<b>Individual</b>						
Income \$ (1000×)	55.33	66.03	71.57	74.78	84.84	98.50
Loan amount \$ (×1000)	102.77	132.87	183.37	128.69	162.17	221.63
<b>Loan characteristics</b>						
Conventional	49.62	74.25	28.40	77.59	86.76	61.89
FHA	37.19	20.58	51.64	16.25	10.18	25.59
VA	12.98	5.00	16.89	5.97	2.83	8.90
FSA	0.21	0.16	3.07	0.20	0.23	3.62
<b>Neighborhood</b>						
White (%)	50.69	45.56	49.90	84.73	78.42	72.90
Black (%)	36.94	37.45	29.04	5.24	6.73	8.49
Hispanic (%)	7.82	11.21	14.02	5.83	8.95	11.59
Asian (%)	2.99	3.82	4.35	2.87	4.00	4.35
<b>Metropolitan</b>						
<b>Demographic</b>						
Population size	4,015,273	4,338,544	3,966,939	3,130,203	3,357,041	3,129,170
White (%)	66.78	59.90	57.59	73.15	66.78	65.23
Black (%)	18.94	19.38	19.50	12.42	12.49	12.25
Asian (%)	2.79	4.26	4.53	2.62	4.03	4.27
Hispanic (%)	9.23	13.23	14.05	9.32	13.25	13.76
<b>Economic climate</b>						
Manufacturing (%)	14.08	11.03	9.62	15.30	12.02	10.68
Government (%)	5.59	5.32	5.52	4.83	4.79	4.79
Military (%)	0.81	0.51	0.79	0.57	0.41	0.52
Enrolled in college (%)	8.04	8.05	7.65	8.27	8.38	7.84
<b>Housing characteristics</b>						
New housing (%)	61.07	63.72	63.69	59.15	60.85	61.36
Suburban (%)	19.95	16.91	15.29	19.66	16.44	14.33
<i>N</i>	477,477	1,548,449	794,657	5,800,670	13,314,160	9,408,830

evident among blacks, with conventional lending increasing to 74% of loans issued and a subsequent drop in government-backed lending (5% VA and 21% FHA). Post-housing-boom there was a drop in loan volume as well as a decisive shift in loan type, with FHA lending now representing over half of originated loans for blacks, and VA lending comprising 17% of loans. Conventional lending, on the other hand, dropped to 28%.



**Fig. 1** Percent veterans, Pop. 18–64 versus percent VA loans, homebuyers: white men and black men

The composition of lending is markedly different for white borrowers, with conventional lending being the dominant loan vehicle in all eras. In the 1990s, 78% of loans to whites are conventional, rising to 87% during the housing boom years of the 2000s. VA lending has a similar pattern among whites compared to blacks, with VA loans becoming more prevalent in the post-housing-boom era. However, the percentage of loans to whites that are VA is far lower, peaking at just under 9% of loans in the 2010–2015 period. Because we know that a high percentage of veterans are white, these statistics suggests that white veterans are not as likely to utilize the VA lending program as black veterans.

We can use nationally representative data from IPUMS to get a broader sense of the relative growth of the veteran population and the utilization of VA lending by blacks and whites over this period. Figure 1 illustrates the general trends in the population of veterans aged 18–64, for white and black men, alongside the trends in white and black male usage of the VA loan guaranty when purchasing a home.<sup>4</sup> The dashed lines for both white and black men in both figures demonstrate a clear pattern of long-term decline in the veteran population in the United States. With each passing year, veterans of the last draft era military conflict, the Vietnam War, increasingly transition out of the 18–64 age group and are not replaced by younger veterans. As a result, for both black and white adults under the age of 65, the veteran share dropped from 3 in 10 in 1992 to 1 in 10 by 2015.

<sup>4</sup> We use male veterans aged 18–64 as the reference population since the vast majority of veterans are men and the vast majority of homebuyers are younger than age 65 (Rugh et al. 2015).

In contrast, the solid lines depicting the share of male homebuyers that use the VA loan guaranty illustrate two striking and interesting differences by race. First, in the early 1990s, when subprime lending was just beginning in communities of color (Williams et al. 2005), about 22% of home loans to black men were VA loans. However, among white men, only 7% were VA loans, despite the fact that veterans made up about 30% of both the white and black male adult population under 65 in the mid-1990s. The intercept or starting point of these trends clearly demonstrates that black males were more likely to use VA loans to access homeownership than white males going into the latest housing boom and bust. While we cannot join the two data sources on veterans and VA loan borrowers, we can safely assume that black veterans were more likely to use the VA guaranty to buy a home as well.

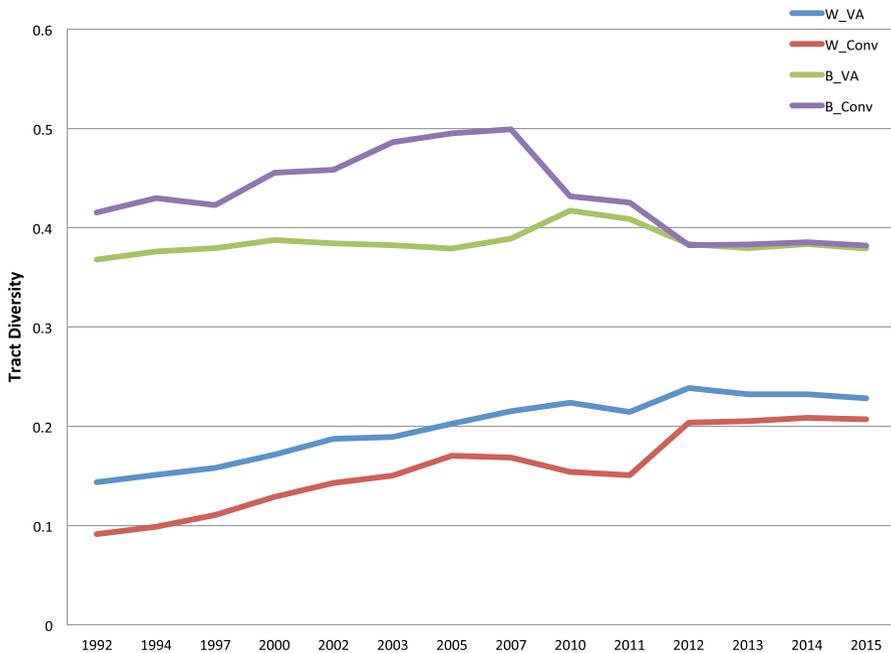
The second major difference between VA loan borrowing trends by black and white male homebuyers has been the response to the changes in the housing market and the total disappearance of subprime lending as an alternative no-down payment option in 2007. From 1992 to the peak of the housing boom in 2005, the VA loan share declined for both black and white men, albeit more steeply among black men, partly due to a substitution effect of subprime lending and for other reasons that remain less well understood (Rugh and Fischer 2015). From 2007 to 2015, the share of loans that are VA loans surged, rising from 3 to 12% among whites and from 8 to 25% among blacks. Thus, by 2015, the ratio the VA loan share to the veteran share of the population stood at 1.3 for white men (12% vs. 9%) and nearly twice as high for black men, at 2.5 (25% vs. 10%). Altogether, these trends suggest that VA loan usage overall has risen to new heights not seen in decades, and that the reliance on VA loans among black men is particularly pronounced. By 2015, 1 in 4 of all home purchase mortgage loans to black men were VA loans, far greater than the historical relationship with the veteran population share.

Returning to Table 1, the neighborhoods in which new black homebuyers were purchasing homes were on average 50% white, 37% black, and 8% Hispanic in the 1990s. The percent white dipped during the housing boom of the 2000s to 45%, and then rose back to an average of 50% in the 2010–2015 period. The average neighborhood composition became slightly more minority concentrated during the 2000s housing boom (46% white, 37% black, and 11% Hispanic). In the 2010–2015 period, the average percent black in the neighborhood of new black homebuyers dropped to 29%, while there was an increase in the percent Hispanic (14%), Asian (4%), and other (3%). The neighborhood composition trends were more linear for whites, with steady declines in the percent white from an average of 85% in the 1990s, to 78% in the 2000s, and finally 73% in the 2010–2015 period. There were corresponding increases in the percent black and Hispanic in the neighborhoods of white homebuyers, from an average of about 10% minority in the 1990s to about 20% minority in 2010–2015.

These differences in neighborhood composition can be summarized by examining changes in the average neighborhood diversity experienced by those with VA loans compared to those with conventional loans.<sup>5</sup> Figure 2 shows the average

---

<sup>5</sup> We measure neighborhood diversity using the entropy index, which is a summary measure of segregation among whites, blacks, Hispanics, Asians, and other/multiracial residents across all census



**Fig. 2** Neighborhood diversity by race and loan type, 1992–2015

neighborhood diversity, a summary measure of racial composition, by race, veteran status, and year. Consistent with contact hypothesis, white veterans live in neighborhoods greater diversity than their civilian counterparts. On the other hand, black veterans experience less neighborhood diversity than black homebuyers utilizing conventional lending, suggesting greater integration with whites. This difference is most pronounced for black veterans in the peak of the housing boom from 2000 to 2007. In the multivariate models below, we will investigate whether the veteran effect remains once other factors are taken into consideration.

We control for additional factors that can impact the choice of neighborhood for homebuyers, such as income and loan amount, which is a proxy for the home value. We also include metropolitan characteristics that have been shown to be related to neighborhood attainment, such as the overall demographics of the metropolitan area, the region of the metropolitan area, housing characteristics of the metropolitan area such as the percentage of housing built in the past 10 years and the percent suburban. Finally, we include several measures of the employment mix of the metropolitan area, including the percent of the population that are active duty military, the percent employed in government, and the percent employed in manufacturing.

Our analytic strategy is as follows. We examine patterns of segregation utilizing ordinary least squares regression with standard errors adjusted for potential

Footnote 5 continued

tracts in a metropolitan area. The entropy index varies from zero, indicating complete segregation, to (5) indicating perfect integration. The table shows entropy in its raw form.

unobserved heterogeneity at the metropolitan area using the ‘cluster’ command in STATA to estimate the census tract percent minority for black and white homebuyers. The tract percent minority for blacks can be construed as a measure of within-group contact or racial isolation depending on the group in question. We examine whether black VA borrowers are less racially isolated than those utilizing conventional loans, which would support the spatial assimilation model because it implies that the social mobility gained from military service is being translated into better neighborhood outcomes. However, this could also be seen as evidence that the state intervention via the VA loan program is helping to combat the structural forces highlighted by the place stratification perspective that serve to perpetuate black segregation. Drawing on the contact hypothesis, we predict that white veteran borrowers would experience greater minority contact in their neighborhoods than their counterparts with conventional loans. We then examine whether the neighborhood racial composition for white and black homebuyers varies by lending era by estimating the full model separately for the 1990s, 2000–2007 housing boom, and the housing bust period of 2010–2015.

## Results

Table 2 reports the regression estimates of census tract percent minority (black and Hispanic). Model 1 shows the baseline relationship between loan type and neighborhood racial composition. Prior to the introduction of controls, VA lending is associated with a lower percentage of minorities in the tract of the purchased home, while those utilizing FHA loans have a higher percentage minority compared to those with conventional loans. The homes of new black homebuyers are in neighborhoods with a minority percentage that is estimated to be nearly 30 points higher than the neighborhoods of new white homebuyers. The next model adds an interaction between VA loan and black applicant, showing that black veterans experience an estimated 12% point reduction in neighborhood minority presence relative to white conventional homebuyers.<sup>6</sup> This lends support to the spatial assimilation model, suggesting that VA lending for blacks helps to secure access to more integrated neighborhood settings. The sign for the main effect of VA lending shifts to positive, suggesting that whites utilizing VA lending have on average an estimated 4.9% points higher minority concentration in their neighborhood. Income and loan amount both operate in the expected directions; increases in both are associated with declines in the average percent minority in the neighborhood of the newly purchased home.

We add temporal and geographic factors to the analysis in Model 4. Homes purchased in the housing boom period of the 2000s had higher minority percentages than did those purchased in the eras before and after. This is not surprising given that the more lax lending standards of the 2000s meant that there was a more heterogeneous group of homeowners in the market, in addition to high housing costs driving some borrowers into relatively lower cost, more diverse neighborhoods.

<sup>6</sup> An *f* test of 105.25,  $p = 0.000$  indicates the addition of the interaction improved model fit.

**Table 2** OLS regression predicting percent minority in tract

	Model 1	Model 2	Model 3	Model 4
<b>Individual and loan factors</b>				
VA loan	- 3.074***	4.513***	4.283***	4.366***
FHA loan	3.473***	3.262***	2.414***	2.369***
FSA loan (ref. conventional loan)	- 8.265***	- 8.262***	- 9.456***	- 8.559***
Black	29.508***	30.405***	29.406***	23.182***
Black × VA mortgage		- 12.212***	- 11.394***	- 10.007***
Income (ln)			- 3.308***	- 5.399***
Amount (ln)			- 1.189+	- 2.821***
<b>Geographic context and year</b>				
South				- 4.700***
West (ref. northeast/midwest)				- 2.056***
1990s				- 1.790***
2010–2015 (ref. 2000s)				- 2.292***
CBSA minority (%)				0.769***
CBSA manufacturing (%)				- 0.202***
CBSA government (%)				0.320***
CBSA active military (%)				- 0.260***
CBSA college (%)				0.071***
CBSA suburban (%)				0.036***
CBSA new housing (%)				- 0.171***
Constant	16.226***	15.846***	35.719***	37.012***
<i>N</i>	5,672,894	5,672,894	5,572,358	5,542,891
<i>R</i> <sup>2</sup>	0.288	0.291	0.309	0.413

\*\*\**p* < 0.01

As expected, the percent minority in the metropolitan area is associated with a higher percentage minority in the neighborhood of new homebuyers. Similarly, homebuyers in metropolitan areas with higher percentages of the population employed in government or enrolled in college have slightly higher percentages of minorities in their neighborhood, lending support to the idea that the presence of these more egalitarian institutions may have spillover effects on residential patterns. However, the opposite effect is found for the percent employed in active military, which is negatively associated with the percent minority. These metro level effects are rather small though compared to individual, loan, and temporal effects.

To further investigate the impact of lending era on neighborhood access for veteran homebuyers, we estimate Model 4 separately by year. The results are shown in Table 3. During each time period, those utilizing VA loans and FHA loans on average moved into neighborhoods with a higher percentage of minority residents compared to those with conventional loans. Black homebuyers are further segregated, particularly in the first two eras. During the period of more restricted lending from 2010 onward, the average percentage minority in the neighborhood of black homebuyers declines to 14.8%. In line with the spatial assimilation model,

**Table 3** OLS regression predicting percent minority in tract by lending era

	1990s	2000–2007	2010–2015
<b>Individual and loan factors</b>			
VA Loan	4.656***	4.120***	2.481***
FHA loan	4.335***	2.669***	3.159***
FSA loan (ref. conventional loan)	– 6.719***	– 8.813***	– 7.289***
Black	27.722***	26.004***	14.871***
Black × VA mortgage	– 8.987***	– 11.021***	– 5.058***
Income (ln)	– 4.063***	– 6.864***	– 3.134***
Amount (ln)	– 5.157***	– 2.920***	– 2.421***
<b>Geographic context and year</b>			
South	– 2.474***	– 6.094***	– 0.371***
West (ref. northeast/midwest)	2.891***	– 2.253***	– 1.504***
CBSA minority (%)	0.686***	0.770***	0.818***
CBSA manufacturing (%)	– 0.030***	– 0.242***	– 0.326***
CBSA government (%)	0.249***	0.323***	0.368***
CBSA active military (%)	– 0.310***	– 0.243***	– 0.239***
CBSA college (%)	0.074***	0.058***	0.166***
CBSA suburban (%)	0.051***	0.058***	0.019***
CBSA new housing (%)	– 0.182***	– 0.237***	– 0.050***
Constant	35.292***	42.868***	24.257***
<i>N</i>	1,035,056	2,774,382	1,733,453
<i>R</i> <sup>2</sup>	0.449	0.398	0.451

\*\*\**p* < 0.01

black veterans experience reductions in the percentage minority in their neighborhood during all time periods. The absolute value of this decline is somewhat larger (*B* = – 11.0) in the period of lending expansion in which blacks have the lowest relative utilization of VA loans. However, since there was a large overall increase in lending volume to blacks during this period (double the volume of the 1990s), those obtaining conventional loans were likely more mixed in terms of qualifications. Furthermore, this is also the period in which subprime lending was peaking and blacks were more likely to be targets of this type of lending (though we lack the data to examine this directly).

The main effect for VA loan shows the estimated percent minority in the neighborhood for whites utilizing VA loans. We can see that for all eras, white veterans have a higher estimated percent minority in their neighborhoods than whites with conventional loans. The estimated percentage minority was highest in the 1990s, at 4.3%, and lowest in the most recent era at 2.9%. While veteran status appears to have a greater impact on neighborhood composition for blacks, the combined impact of the residential choices for both black and white veterans promotes residential integration. In markets with larger volumes of VA lending, these residential patterns could potentially influence overall levels of residential segregation.

Finally, there were some interesting temporal differences in the effect of metropolitan factors on percent minority in the neighborhood of new homebuyers. Regional effects appear to be diminished in the most recent lending period, while the greatest regional variation occurs during the housing boom. This may be related to the greater divergence in home pricing found during this time period. For instance, during the lending boom of the 2000s, homes purchased in the South had an estimated 6.1% fewer minorities than those purchased in the Northeast or Midwest. This is controlling for new housing in the metropolitan area, which also displays a similar pattern with respect to neighborhood composition with stronger effects in the early 2000s and 1990s compared to the more recent era.

## Discussion

Our paper has sought to examine how the VA lending has contributed to black and white homeownership and the neighborhood outcomes for these new homeowners over the past two and a half decades of lending since 1992. Homeownership is central to the socioeconomic status attainment process. The ability to purchase a home for many represents the achievement of an essential component of the American dream. The home itself then becomes a primary asset for most middle-class families, representing the bulk of their wealth that may be used to secure and sponsor the family's upward mobility, especially the next generation. We show that VA lending represents a key pathway for blacks to access homeownership, with VA loans comprising more than 1 in 4 home loans to black men today. Moreover, we find that VA lending fosters racial integration for blacks and whites. We examined the types of neighborhoods in which veteran homebuyers have chosen to reside in since the early 1990s relative to their counterparts utilizing different lending instruments. Specifically, in our multivariate analysis, we uncover a sizeable combined swing toward neighborhood minority-white integration, 14.4% points, among black and white veterans who use VA loans. Compared to those with conventional loans, black veterans live in neighborhoods with 10% points fewer minorities and white veterans, 4.4% points fewer whites.

As McKibben (2011) has argued, the institutionalized racial equality of the military may foster lasting racial integration in housing and the local community. Such integration may persist beyond service members' enlistment periods and local military base closure. The VA loan program continues to provide access to homeownership and appears to be particularly important for black veterans. We find evidence that blacks utilize VA lending at higher rates than do whites, despite the fact that similar percentages of whites and blacks are veterans. Blacks have a particularly high rate of VA loan utilization since 2010 in the period of restrictive lending following the housing crash. Whites also experienced a growth in VA loan utilization during the post-housing crash period, although VA lending still comprised a relatively smaller proportion of all home loans for them.

Furthermore, the neighborhoods in which black veterans are buying homes are less racially isolated than those in which their counterparts utilizing conventional loans are residing (see also Fischer et al. 2016; Rugh and Fischer 2015). The pattern

of results we find in our analysis suggests that VA lending is playing an important role in the upward mobility of blacks in two ways. First, by providing access to home loans, enabling the purchase of a home as black veterans have much higher rates of homeownership than black civilians, with around 60% of veterans owning homes compared to around 40% of civilians. Second, by enabling access to homeownership in neighborhoods that are less segregated, home price appreciation and home equity for black veteran homeowners may exceed that for blacks with conventional loans in neighborhoods with higher minority concentrations. Thus, our findings with respect to the impact of VA lending to black veterans are in line with the spatial assimilation model, while the neighborhood outcomes for black homebuyers overall are not (Fischer and Lowe 2015).

We also find evidence to support the intergroup contact hypothesis regarding the residential choices of white veterans. Whites utilizing the VA home loan guaranty live in neighborhoods that are an estimated 4.3% higher percent minority than their counterparts with conventional loans. The effect of veteran status on neighborhood racial composition is strongest for whites during the 1990s, in which the average percent minority was 4.7% in the neighborhoods of new veteran homebuyers compared to those with conventional loans. This evidence is consistent with prior research finding that white veterans live in more integrated neighborhoods net of other factors (Fischer et al. 2016; Rugh and Fischer 2015), but extends this research by looking specifically at homeowners over the span of two and a half decades.

It is important to note that VA lending is a proxy for veteran status and therefore does not identify all veteran homebuyers. Thus, while all borrowers using VA loans are veterans, veterans are not restricted to these loans. However, the favorable terms of VA loans would likely make them more attractive to those who have more limited options in the commercial market. This expectation is consistent with the data we present from IPUMS showing that black veterans are more likely to utilize VA lending than white veterans, especially after the housing boom ended in 2007. We unfortunately have no way of comparing neighborhood outcomes for white veterans who are not utilizing VA loans. However, this would be an interesting topic for future research, particularly as we have limited data to parse whether the more integrated neighborhoods that white veterans are living in is a function of their preferences for greater integration versus being a result of lower socioeconomic status. Stated income on the loan application and the amount of the loan only partially address this concern. Finally, we are aware that the reference group of borrowers with conventional loans has not remained static, but changed in important ways. In particular, the onerous restrictions on lending since 2009 mean that today's homebuyers on average have much higher credit scores and are concentrated more in white areas (Goodman et al. 2014b). However, these issues are counter-balanced by the trend of veterans increasingly turning exclusively to the VA loan guaranty in the absence of other very low-down payment (subprime) alternatives post-2007, which makes VA loan receipt a reliable proxy of veteran status for the near future.

Notwithstanding these limitations, we have shown the ways that VA lending improves access to homeownership and to less racially isolated neighborhoods. Future research should examine whether and to what extent integration confers greater neighborhood resources and a more secure financial starting point for the

next generation. As Loveless-Morris (2014) finds, military service alone does not close wealth gaps; equality is greatest among those who served in the Army (consistent with Moskos and Butler 1996) and among college graduates. Research should exploit variation in the branch of military service by time, veteran subgroups, and geography (e.g., “Navy towns” vs. “Army towns”) to better understand any possible differential impacts on racial integration. Further research should also consider the residential stratification of the growing population of Asian, Latino, and Native American veterans (Bailey et al. 2017). We suspect Latino American veterans may also live in more racially integrated neighborhoods than their Latino civilian counterparts (Rugh and Fischer 2015). Ultimately, these results illustrate how racial integration in the US military has the potential to foster lasting housing integration among veterans.

## Appendix 1

See Table 4.

**Table 4** OLS regression predicting percent black in tract

	Model 1	Model 2	Model 3	Model 4
Individual and loan factors				
VA loan	− 4.042***	2.762***	2.604***	2.822***
FHA loan	2.704***	2.516***	1.445***	1.924***
FSA loan (ref. conventional loan)	− 5.806***	− 5.802***	− 7.276***	− 5.824***
Black	27.712***	28.517***	27.113***	22.926***
Black * VA Mortgage		− 10.947***	− 9.781***	− 9.209***
Income (ln)			− 4.215***	− 4.747***
Amount (ln)			− 2.251***	− 2.367***
Geographic context and year				
South				− 0.68
West (ref. northeast/midwest)				− 9.441***
1990s				− 0.364
2010–2015 (ref. 2000s)				− 3.847**
CBSA minority (%)				0.344***
CBSA manufacturing (%)				0.091
CBSA government (%)				0.854**
CBSA active military (%)				0.055
CBSA college (%)				0.099
CBSA suburban (%)				0.115+
CBSA new housing (%)				− 0.218*
Constant	6.863***	6.521***	35.431***	23.207***
<i>N</i>	5,664,547	5,664,547	5,564,260	5,534,851
<i>R</i> <sup>2</sup>	0.287	0.29	0.312	0.364

\*\*\**p* < 0.01

## References

- Adelman, R. M. (2004). Neighborhood opportunities, race, and class: The black middle class and residential segregation. *City & Community*, 3, 43–63.
- Alba, R. D., & Logan, J. R. (1992). Analyzing locational attainments: Constructing individual-level regression models using aggregate data. *Sociological Methods and Research*, 20(3), 367–397.
- Allport, G. W. (1954). *The nature of prejudice*. New York: Doubleday Anchor Books.
- Altschuler, G., & Blumin, S. (2009). *The GI bill: The new deal for veterans*. Oxford: Oxford University Press.
- Angrist, J. D. (1993). The effect of veterans benefits on education and earnings. *ILR Review*, 46(4), 637–652.
- Bailey, A. K. (2011). Race, place, and veteran status: Migration among black and white men, 1940–2000. *Population Research and Policy Review*, 30(5), 701–728.
- Bailey, A. K. (2013). Military employment and spatial mobility across the life course. In J. R. Wilmoth & A. S. London (Eds.), *Life-course perspectives on military service* (pp. 1–18). New York: Taylor and Francis.
- Bailey, A. K., Poulos, C. D., & Joosten, K. M. (2017). Housing veterans: Homelessness and mortgages. In L. Hicks, et al. (Eds.), *The civilian lives of U.S. veterans: Issues and identities* (pp. 693–718). Santa Barbara, CA: Praeger.
- Bryant, R. R., Samaranayake, V. A., & Wilhite, A. (1993). The effect of military service on the subsequent civilian wage of the Post-Vietnam veteran. *The Quarterly Review of Economics and Finance*, 33, 15–31.
- Burk, J., & Espinoza, E. (2012). Race relations within the US military. *Annual Review of Sociology*, 38, 401–422.
- Carr, J. H., & Anacker, K. B. (2015). The complex history of the federal housing administration: Building wealth, promoting segregation, and rescuing the U.S. housing market and the economy. *Banking & Financial Services Policy Report*, 34(8), 10–18.
- Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, 129(4), 1553–1623.
- Chevan, A. (1989). The growth of home ownership: 1940–1960. *Demography*, 26(2), 249–266.
- DeFina, R., & Hannon, L. (2009). Diversity, racial threat and metropolitan housing segregation. *Social Forces*, 88(1), 373–394.
- Emerson, M. O., & Yancey, G. A. (2011). *Transcending racial barriers: Towards a mutual obligations approach*. Oxford: Oxford University Press.
- Farley, R. (1999). Racial issues: Recent trends in residential patterns and intermarriage. In N. J. Smelser & J. C. Alexander (Eds.), *Diversity and its discontents: Cultural conflict and common ground in contemporary American society* (pp. 86–128). Princeton: Princeton University Press.
- Farley, R., & Frey, W. (1994). Changes in the segregation of whites from during the 1980s: Small steps toward a more integrated society. *American Sociological Review*, 59(1), 23–45.
- Fetter, D. K. (2013). How do mortgage subsidies affect home ownership? Evidence from the mid-century GI bills. *American Economic Journal: Economic Policy*, 5(2), 111–147.
- Fischer, M. J. (2003). The relative importance of income and race in determining residential outcomes in U.S. urban areas, 1970–2000. *Urban Affairs Review*, 38, 669–696.
- Fischer, M. J. (2013). Black and white homebuyer, homeowner, and household segregation in the United States, 1990–2010. *Social Science Research*, 42(6), 1726–1736.
- Fischer, M. J., & Lowe, T. (2015). Homebuyer neighborhood attainment in black and white: Housing outcomes during the boom and bust. *Social Forces*, 93(4), 1481–1512.
- Fischer, M. J., Lundquist, J. H., & Vachon, T. (2016). Residential segregation: The mitigating effect of prior military experience. *Social Science Research*, 60(1), 61–73.
- Flippen, C. A. (2004). Unequal Returns to housing investments? A study of real housing appreciation among black, white, and hispanic households. *Social Forces*, 82, 1527–1555.
- Friedman, S., Tsao, H., & Chen, C. (2013). Housing tenure and residential segregation in Metropolitan America. *Demography*, 50(4), 1477–1498.
- Goodman, L., Seidman, E., & Zhu, J. (2014a). *VA loans outperform FHA Loans. Why? and what can we learn?*. Washington, DC: Urban Institute.

- Goodman, L., Zhu, J., & George, T. (2014b). Where have all the loans gone? The impact of credit availability on mortgage volume. *The Journal of Structured Finance*, 20(2), 45–53.
- Hershfield, D. (1985). Attacking housing discrimination: Economic power of the military in desegregating off-base rental housing. *American Journal of Economics and Sociology*, 44, 23–28.
- Iceland, J., & Wilkes, R. (2006). Does socioeconomic status matter? Race, class, and residential segregation. *Social Problems*, 53(2), 248–273.
- Immergluck, D. (2015). *Preventing the next mortgage crisis: The meltdown, the federal response, and the future of housing in America*. Lanham, MD: Rowman & Littlefield.
- Jacobson, C. K., & Heaton, T. B. (2003). Intergroup marriage and United States military service. *Journal of Political and Military Service*, 31, 1–22.
- Kuebler, M., & Rugh, J. S. (2013). New evidence on racial and ethnic disparities in homeownership. *Social Science Research*, 42(5), 1357–1374.
- Logan, J. R., & Molotch, H. L. (1987). *Urban fortunes: The political economy of place*. Berkeley, CA: University of California Press.
- Logan, J. R., & Stults, B. J. (2011). The persistence of segregation in the metropolis: New findings from the 2010 census. *Census Brief prepared for Project US2010*. <http://www.s4.brown.edu/us2010>.
- Logan, J. R., Stults, B. J., & Farley, R. (2004). Segregation of minorities in the metropolis: Two decades of change. *Demography*, 41(1), 1–22.
- Loveless-Morris, J. A. (2014). Black–white wealth accumulation: Does veteran status matter? *Ph.D. dissertation*. Seattle, WA: University of Washington. <http://hdl.handle.net/1773/24987>.
- Lundquist, J. H. (2004). When race makes no difference: Marriage and the military. *Social Forces*, 83(2), 1–28.
- Lundquist, J. H. (2006). The black–white gap in marital dissolution among young adults: What can a counterfactual scenario tell us? *Social Problems*, 53(3), 421–441.
- Lundquist, J. H., & Zhun, X. (2014). Reinstitutionalizing the family: Lifecourse policy and marriage in the military. *Journal of Marriage and the Family*, 76, 1063–1081.
- Maroto, M. (2016). Growing farther apart: Racial and ethnic inequality in household wealth across the distribution. *Sociological Science*. <https://doi.org/10.15195/v3.a34>.
- Massey, D. S. (2005). Racial discrimination in housing: A moving target. *Social Problems*, 52(2), 148–151.
- Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.
- Massey, D. S., & Fischer, M. J. (1999). Does rising income bring integration? New results for Blacks, Hispanics, and Asians in 1990. *Social Science Research*, 28, 316–326.
- McKibben, C. L. (2011). *Racial beachhead: Diversity and democracy in a military town*. Stanford, CA: Stanford University Press.
- Moskos, C., & Butler, J. (1996). *All that we can be: Black leadership and racial integration the army way*. New York: Basic Books.
- National Center for Veterans Analysis and Statistics. (2017). *Minority veterans report: Military service history and VA benefit utilization statistics*. Washington, DC: Data Governance and Analytics, Department of Veterans Affairs.
- Oliver, M. L., & Shapiro, M. Thomas. (2006). *Black wealth/white wealth: A new perspective on racial inequality*. New York: Routledge.
- Olsen, S., Curnutte, K., Gudell, S., Lightfeldt, A., Hopkins, C., Humpries, S., et al. (2014). *A house divided: How race colors the path to homeownership*. Washington, DC: Zillow, Inc. and The National Urban League.
- Pais, J., South, S. J., & Crowder, K. (2012). Metropolitan heterogeneity and minority neighborhood attainment: Spatial assimilation or place stratification? *Social Problems*, 59, 258–281.
- Pew Research Center. 2011. Chapter 6: A profile of the modern military In *the military–civilian gap war and sacrifice in the post-9/11 Era*. Washington, DC. Retrieved 3 Dec 2017 from <http://www.pewsocialtrends.org/2011/10/05/chapter-6-a-profile-of-the-modern-military/>.
- Plane, D. A., Henrie, C. J., & Perry, M. J. (2005). Migration up and down the urban hierarchy and across the life course. *Proceedings of the National academy of Sciences of the United States of America*, 102(43), 15313–15318.
- Routon, W. (2014). The effect of 21st century military service on civilian labor and educational outcomes. *Journal of Labor Research*, 35(1), 15–38.

- Rugh, J. S., Albright, L., & Massey, D. S. (2015). Race, space, and cumulative disadvantage: A case study of the subprime mortgage collapse. *Social Problems*, 62(2), 186–218. <https://doi.org/10.1093/socpro/spv002>.
- Rugh, J. S., & Fischer, M. J. (2015). Are military veterans more racially integrated? An analysis of homeowners in 98 U.S. metro areas. *Paper Presented at the American Sociological Associations Annual Meetings in Chicago* (2015).
- Rugh, J. S., & Massey, D. S. (2010). Racial segregation and the American foreclosure crisis. *American Sociological Review*, 75(5), 629–651.
- Rugh, J. S., & Massey, D. S. (2014). Segregation in post-civil rights America: Stalled integration or end of the segregated century? *Du Bois Review: Social Science Research on Race*, 11(4), 205–232. <https://doi.org/10.1017/S1742058X13000180>.
- Seeborg, M. C. (1994). Race, poverty and enlistment: Some evidence from the national longitudinal survey of youth. *Journal of Economics*, 20, 15–24.
- Segal, D. R., Bachman, J. G., & Dowdell, F. (1978). Military service for female and black youth—Perceived mobility opportunity. *Youth & Society*, 10, 127–134.
- Sharkey, P. (2013). *Stuck in place: Urban neighborhoods and the end of progress toward racial equality*. Chicago: University of Chicago Press.
- Sharp, G., & Hall, M. (2014). Emerging forms of racial inequality in homeownership exit, 1968–2009. *Social Problems*, 61(3), 427–447.
- Sigelman, L., & Welch, S. (1993). The contact hypothesis revisited: Black–white interaction and positive racial attitudes. *Social Forces*, 71(3), 781–795.
- Sutton, D. (1971). The military mission against off-base discrimination. In C. Moskos (Ed.), *Public opinion and the military establishment*. Beverly Hills, CA: Sage Publications.
- United States Commission on Civil Rights. 1963. “The Negro in the Armed Forces” in 1963 Report of the US Commission on Civil Rights. Washington, DC.
- Vigdor, J. L. (2006). Liquidity constraints and housing prices: Theory and evidence from the VA mortgage program. *Journal of Public Economics*, 90(8–9), 1579–1600.
- Wilkes, R., & Iceland, J. (2004). Hypersegregation in the twenty-first century. *Demography*, 41(1), 23–36.
- Williams, R., Nesiba, R., & McConnell, E. D. (2005). The changing face of inequality in home mortgage lending. *Social Problems*, 52(2), 181–208.