

# Continued Success or Caught in the Housing Bubble? Black Immigrants and the Housing Market Crash

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**Abstract** The recent housing market crisis in the United States led to a drastic drop in homeownership and house values nationwide. While research documents the disproportionate impact of the housing market crisis on blacks, and the surprisingly small effect on immigrants, no research investigates how individuals who are both black and immigrants fared. I use 2005–2007 and 2009–2011 pooled American Community Survey data ( $N = 2,000,689$  and  $2,013,001$ , respectively) to determine whether black immigrants' housing market outcomes mirrored that of U.S.-born blacks or other immigrants during the housing crisis. Using the maximum likelihood estimator regression with a Heckman correction to measure race and nativity differences in homeownership and house value, I find that there is a great deal of diversity in black immigrant housing market outcomes. Caribbean immigrants experienced significantly larger drops in homeownership than U.S.-born whites and blacks and Asian immigrants, but there is no significant difference between whites and African immigrants. Consistent with previous research, living in major settlement areas mediated black immigrants' housing market disadvantage. Despite the benefits of living in a co-ethnic community, both African and Caribbean immigrants experienced significantly larger drops in house value than U.S.-born blacks and whites and Asian immigrants. These findings indicate that black immigrants' housing options are more rather than less constrained than U.S.-born blacks after the housing market crash. Given that the bulk of black wealth is held in home equity, reduced house values may also have long-term consequences on black immigrants' ability to make, maintain, and pass on wealth across generations.

**Keywords** Race · Nativity · Homeownership · Recession · Ethnic enclave

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## Introduction

Since the 1930s, homeownership has been a central element of social policy and a key aspect of economic attainment in the United States (Manturuk et al. 2012). The success of policies encouraging homeownership in general, and minority homeownership in particular, is evident when examining homeownership rates over time. Homeownership rose between 1995 and the mid-2000s, and did so more rapidly among black households than white households (Kochhar et al. 2009).

The increase in black homeownership in the twentieth century helped narrow the longstanding racial gap. It was assumed that once housing gaps between groups were closed or narrowed, they would not widen again (Cahill and Franklin 2013). The most recent foreclosure crisis, however, proved this assumption incorrect. Black households were nearly twice as likely as white households to be affected by the housing market crisis: their homeownership rates decreased more than any other group even after accounting for socioeconomic differences between groups (Bocian et al. 2011). As a result, most of black households' homeownership gains relative to white households were lost (Kuebler and Rugh 2013). Although immigrants made up a substantive portion of the total black population during the housing crisis—nearly 10% (Kent 2007)—no research has yet investigated how black immigrants fared during the housing market crash. Hence it is unclear how blackness and foreign-born status interact in the housing market during a recession and whether, like U.S.-born black households, black immigrants also lost their housing market gains.

Prior to the housing crisis, housing market disparities were not uniform across black groups: black immigrant households' housing market outcomes were consistently better than U.S.-born black households and, in some cases, no different from U.S.-born white (white) households. For example, Jamaican immigrant householders were just as likely as white householders to own their homes and African immigrant households owned homes of the same value as white households in 2007 (Tesfai 2016). In attaining these housing market gains relative to that of their U.S.-born counterparts and equivalent to white households, black immigrants largely mirrored the housing market trajectory of Asian immigrants (Myers and Lee 1998; Painter et al. 2001).

Black immigrants' homeownership and house value prior to the housing crisis indicate that they navigated the housing market differently from U.S.-born black individuals and were able to at least partially circumvent racial discrimination in the housing market (Dion 2001; Murdie 2008). Assuming this pattern continued during the crash, African and Caribbean immigrants' experiences may have been more similar to white and other immigrant households than to U.S.-born black households. Although immigrants were expected to be especially vulnerable to foreclosure due to the economic crisis, immigrant homeownership rates did not decline as sharply as they did for the U.S.-born (Kochhar et al. 2009; Painter and Yu 2014). If this was also true for black immigrants, they may have avoided the steep housing market declines experienced by U.S.-born black households.

Despite black immigrants' pre-crash success, it is also possible that black immigrants endured a housing market trajectory similar to U.S.-born black households. Racial disparities in the impact of the housing crisis have mainly been attributed to high levels of racial segregation. Mainstream banks and mortgage lenders avoided opening branches in minority neighborhoods and this void was largely filled by subprime lenders (Turner and Skidmore 1999; Williams et al. 2005). Minorities regardless of income were targeted for subprime loans, the widespread availability of which has been broadly blamed for the housing bubble (Coleman et al. 2008; Powell 2009). Like the U.S.-born, black immigrants live in racially segregated neighborhoods (Park and Iceland 2011). Thus black immigrant households may have experienced steep housing market (i.e., homeownership rate and house value) declines more similar to U.S.-born black households than other immigrant or white households because they lived in neighborhoods targeted by subprime lenders (Iceland and Scopilliti 2008).

While previous work on race and nativity differences in housing market outcomes during the foreclosure crisis provides important evidence of housing loss disparities, there are three major gaps in the literature. First, recent research focused on the extent to which the foreclosure crisis changed the landscape of homeownership across the country (Cahill and Franklin 2013). However, the literature examines the effects on race and nativity disparities separately. Because research has not included black immigrants—a key group representing the intersection of the race and immigration literatures—it is still unclear how the positive and negative characteristics associated with being an immigrant and being black interact during a recession.

Second, while detailed information about which populations were most affected by the housing crisis is crucial to the development of effective housing policy, few studies disaggregate large race/nativity groups into their sub-categories. My results show that Caribbean immigrant households experienced larger housing losses than even U.S.-born black households (the opposite pattern of that expected if black immigrants' housing outcomes were similar to that of other immigrants). When disaggregated into major sending countries, I find that the Caribbean homeownership disadvantage is largely due to the experience of Jamaican immigrants. However, Caribbean immigrants' results are not representative of all black immigrants; African immigrants' homeownership decline is much smaller and actually mirrors that of white households. Such wide variation indicates that housing market experiences differ even within a race or nativity group. Consequently, housing policy aiming to encourage minority homeownership or address housing losses due to a recession may not be effective because they do not adequately address the needs of black (or immigrant) individuals in the United States.

Finally, although the economic crisis resulted in an overall drop in average house value, few studies assess the relationship between the housing market crash and house value (Harding et al. 2009; Flanagan and Wilson 2013). This is a glaring omission given that minority wealth is largely centered in the value of their home (Gottschalck 2008). Furthermore, due to the intergenerational nature of wealth, house value declines during the housing crash have reverberations in future generations' economic outcomes (Burd-Sharps and Rasch 2015).

This paper addresses these gaps in the literature by analyzing changes in black immigrant homeownership and house value during the most recent housing market crisis. This is the first study to investigate how black immigrants fare during a recession and it does so by addressing three questions: First, do black immigrants' change in homeownership and house value relative to white households more closely mirror the experiences of U.S.-born black households or white and other immigrant households? Second, is there variation in the impact of the housing crash based on where black immigrants live? That is, are changes in black immigrants' homeownership and house value primarily due to their concentration in major black immigrant settlement areas or in metropolitan areas hit hard by the housing crisis? Finally, is there evidence of variation in housing market experiences among black immigrants? In answering these questions, I expand the current literature by providing data on the diversity within the black and immigrant housing market experiences during a recession. Highlighting these varied experiences provides a more complete understanding of the ways in which immigrant socioeconomic incorporation is disrupted by a recession. It also has significant implications for the development of mortgage default counseling and related programs which are likely to be more effective if designed for, and targeted to, populations most affected by the recession (Collins et al. 2011; Mayer et al. 2012).

## Background

Previous research provides two major explanations for race/ethnic differences in housing market declines due to the foreclosure crisis: group level differences in socioeconomic characteristics and structural barriers to homeownership and traditional mortgage lending.

### Race/Ethnic Differences in Socioeconomic Characteristics

According to the microeconomic model of consumer choice, homeownership is based on the needs, preferences, and financial resources of households (Alba and Logan 1992a, b). Based on this theory, homeownership rates of minorities should match that of the majority group after controlling for socioeconomic characteristics. However, a large body of research shows that even before black households' losses during the housing crash, there were still housing market disparities between black and white households after controlling for socioeconomic characteristics (Rosenbaum 1996; Coulson 1999; Flippen 2001; Freeman 2005). Black individuals were less likely to be approved for a home loan (Kim and Squires 1995; Dawkins 2005). When approved for loans, black households averaged much less favorable terms (Fannie Mae Foundation 1998).

Although most housing market research controls for household socioeconomic resources, these are not the only characteristics determining homeownership. In addition to their own economic resources, families also rely on the resources of parents or other family members in order to purchase a home (Blau and Graham 1990). Extra-household income such as financial assistance from family may be

particularly useful for down payment-constrained households [households unable to generate the large up-front cost even though their income is sufficient to meet monthly mortgage obligations (Charles and Hurst 2002)].

Parents who still earn or have a high income may be willing and able to help their children overcome down payment constraints (Hilber and Liu 2008). Nonetheless, even after controlling for parental income and wealth, black individuals are less likely than white individuals to receive transfers from their parents (Cox and Rank 1992; McGarry and Schoeni 1997). Lower levels of parental transfers may be due to black individuals being more likely to have family in need of financial assistance themselves. As their income increases, they are more likely than white individuals to have provided assistance to a low-income family member (O'Brien 2012). These contributions to other family members mean that many are unable to save for a down payment, and their parents less able to assist them. Together, these extended family characteristics result in less money available for black households' down payment and, consequently, they tend to borrow larger amounts when purchasing a home (Kochhar et al. 2009). Due to the size of their loans, black households are subject to higher interest rates than white households (Chomsisengphet and Pennington-Cross 2006). Larger loans and higher interest rates left black households more vulnerable to the economic downturn and, consequently, they were more likely than white households to lose housing wealth (Rugh and Massey 2010; Bocian et al. 2011).

Like U.S.-born black individuals, immigrants are more likely than white individuals to support family members outside of the household, but do so through remittances. A large proportion of immigrants send remittances to support family or make investments in the home country (Owusu 1998; Singer 2010). While African and Caribbean immigrants are similar to U.S.-born black individuals in that they are more likely than white individuals to have family in need of financial support, they may be better able to offset this housing market disadvantage. Immigrants used strong networks to compensate for the negative effects of the housing crisis (Painter and Yu 2014). One of the ways immigrants utilize their network may be through rotating credit associations. Like other foreign-born groups, African and Caribbean immigrants form or join informal credit associations as a means to save for large purchases or as a type of insurance during uncertain economic times (Foner 1979; Besley et al. 1993; Mequanent 1996). Members of these groups contribute money on a regular basis, receiving large sums at specified intervals, and there is evidence that African and Caribbean immigrants use this money both to purchase homes and maintain homeownership (Foner 1979; Mequanent 1996; Stewart 2007).

Consistent access to large amounts of money during a recession would make immigrants more advantaged than the U.S.-born during the housing market crisis. The use of formal banking declines with enclave size and immigrants in large enclaves are more likely to use rotating credit associations (Zhan et al. 2012; Bohn and Pearlman 2013). Therefore, Caribbean immigrants—who have a larger population in the U.S. and are more highly concentrated than African immigrants<sup>1</sup>—would be more likely to use rotating credit associations and more likely to

<sup>1</sup> Author's calculations, 2007 and 2011 ACS 3-year estimates (Ruggles et al. 2010).

do so in their major settlement areas (New York, Miami, and Ft. Lauderdale). In addition to differences in population size and settlement patterns, there is also variation in African and Caribbean immigrants' entry visa patterns (i.e., immigrant selection), timing of entry into the United States, and other socioeconomic characteristics (Kent 2007). Combined, the differences between African and Caribbean immigrants may lead to national origin differences in homeownership and vulnerability to the housing crisis, indicating a need for comparisons by national origin among black households.

### **Structural Barriers to Traditional Lending and Homeownership**

When black households are able to purchase a home, they borrow larger amounts and pay higher interest rates than white households (Krivo and Kaufman 2004; Kochhar et al. 2009). As a result, black households take out a disproportionate share of high-cost loans nationally (Furman Center for Real Estate and Urban Policy 2008). Even among those receiving higher priced (subprime) loans, the average prices paid by black borrowers are higher than white borrowers (Avery et al. 2007).

Longstanding racial disparities in mortgage lending were exacerbated by residential segregation (Faber 2013). Historically, banks avoided opening branches in minority neighborhoods, limiting available mortgage market information and leaving residents at a distinct disadvantage in the housing market (Turner and Skidmore 1999; Renuart 2004). With less mortgage market knowledge, black individuals were more vulnerable to the predatory lending practices of the subprime mortgage industry that filled the lending void in minority and low-income neighborhoods (Gerardi and Willen 2009). The expansion of subprime lenders in minority neighborhoods occurred during the same period that subprime and near prime loans increased from 9% of new mortgages to 40% nationwide (DiMartino and Duca 2007).

Segregation allowed brokers to target black individuals with subprime loans because they were able to concentrate their services in black neighborhoods where residents had less knowledge of the mortgage market and few options (Stuart 2003). Even after accounting for differences in risk, black home buyers were disproportionately more likely to receive subprime loans (Bocian et al. 2006). Accordingly, if approved for a home loan, black households were more than twice as likely as white households to receive a subprime loan (Faber 2013).

The role of immigrant concentration on race/ethnic disparities in housing market outcomes is a major public policy concern because homeownership is one of the primary means of wealth accumulation (Joint Center for Housing Studies of Harvard University 2011; Anacker 2013). Research early in the housing market crash showed that home foreclosures were concentrated in minority neighborhoods where immigrants also lived (Joint Center for Housing Studies of Harvard University 2011). Yet housing market losses for immigrants were smaller than that of the native-born (Kochhar et al. 2009). In fact, the housing market outcomes of immigrants in new settlement areas actually improved because the recession was less severe in these places (Painter and Yu 2014).

Immigrants' geographic characteristics, on average, seem to shelter the foreign-born from foreclosure, but this may not be true for black immigrants. Caribbean immigrants in particular are very highly concentrated in Miami and Ft. Lauderdale (Kent 2007). Florida experienced one of the largest shares of homebuilding and some of the most significant house value inflation during the boom—metropolitan areas in Florida also had some of the largest housing market declines during the crash (Joint Center for Housing Studies of Harvard University 2011; Martin 2011). Although Caribbean immigrants' longstanding population in their largest settlement areas could aid households in times of unexpected financial need, the housing market characteristics in Miami and Ft. Lauderdale may have left them more susceptible to losing their homes and reduced house value. African immigrants have a smaller population and are concentrated in metropolitan areas with lower housing market declines during the housing crash than Caribbeans<sup>2</sup> (Joint Center for Housing Studies of Harvard University 2011). Therefore African immigrants' homeownership rates and house value may have decreased less than the Caribbean-born. Due to differences in population size and geographic concentration, foreign-born black households' housing market outcomes during the housing crisis may have been quite different from the patterns observed for both U.S.-born blacks and other immigrant groups.

Immigrants comprise an increasingly important segment of the U.S. housing market, and foreign-born blacks are a larger proportion of the immigrant population than ever before (Myers and Liu 2005; Anderson et al. 2015). Yet no research thus far examines how black immigrants fare during a recession. Consequently, black immigrants' experiences during a recession are unknown, and it is unclear if a housing crash has long-term implications for their socioeconomic incorporation in the United States. Using household-level American Community Survey (ACS) data, I explore whether foreign-born black households' housing outcomes mirror that of white households (as it did for some black immigrants before the crash) or if they experienced housing market losses commensurate to that of U.S.-born black households. By including analyses focusing on major black immigrant settlement areas, I indirectly address whether an ethnic enclave is beneficial for black immigrants during a recession. I also determine whether housing market outcomes for black immigrants were negatively impacted by their concentration in metropolitan areas hard hit by the housing market crisis through analyses of metropolitan areas distinguished by their high foreclosure rates. Together, these analyses provide a solid understanding of both the average and local level impacts of the housing crisis on immigrants and minorities—necessary information for programs designed to interrupt the effects of foreclosure concentration (Immergluck 2012).

## Data

I use pooled 2005–2007 (2007) and 2009–2011 (2011) ACS data made available through the Integrated Public Use Microdata Series (IPUMS) to determine the impact of the housing market crisis on black immigrants' homeownership and house

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<sup>2</sup> Author's calculations, 2007 and 2011 ACS 3-year estimates *ibid*.



value (Ruggles et al. 2010). The financial crisis occurred in 2008 with the collapse of Lehman Brothers, which had a huge impact on mortgage lending (The Economist 2013). By excluding 2008, I focused the analyses on the time before and after the housing crash (Modestino and Dennett 2013).

Analyses are limited to households in identifiable metropolitan areas and the data only include householders who are aged 25 or over and are not in school. Because the unit of analysis is the household, all socioeconomic characteristics including race/nativity are defined based on that of the householder. This may slightly under- or over-estimate the impact of the housing crash on housing market disparities because it assumes that households are homogenous by race and nativity status. In this analysis, most mixed-nativity households are considered native-born—approximately 60% of these couples have a native-born householder (Larsen and Walters 2013). However, this is unlikely to have a large effect on the results presented since the number of mixed-nativity households is quite small [7% of married couple households are mixed nativity (Larsen and Walters 2013)].

### **Dependent Variables**

In analyses of the housing market crisis, most studies focus on the drop in homeownership (Kochhar et al. 2009; Cahill and Franklin 2013; Clark 2013; Grinstein-Weiss et al. 2015). However, another aspect of the housing market crisis is the decrease in house values after the housing bubble burst. To provide a more nuanced view of the effect of the housing market crash on black immigrants, I analyze two residential outcomes: homeownership and house value. Both homeownership and house value are self-reported in the census. House value is a categorical variable with a top-code for the highest house value category and I use the midpoint of each category as the value of the home. House values are converted to constant dollars using the IPUMS CPI-U multiplier before regression analyses so that changes over time do not reflect inflation. Although homeowners slightly overvalue their homes when providing self reports, Goodman and Ittner (1992) found that this is not related to either housing or household characteristics and is unlikely to affect analyses of house value disparities.

### **Independent Variables**

The independent variable of interest in this analysis is race/ethnicity. U.S.-born non-Hispanic white householders (whites) are used as the reference group for this categorical variable for two reasons. First, earlier analyses show that, at the national level, Caribbean immigrants' house values are higher than that of white householders, but this was due to their geographic concentration in metropolitan areas with high average house values (Tesfai 2016). Using whites as a reference group in this paper will allow me to determine whether this pattern continues during the housing market crash. Second, U.S.-born black households experienced larger housing losses than any other race/ethnic group during the crash (Bocian et al. 2011). Consequently, using U.S.-born black households as a reference may not



provide enough context to evaluate the extent of the black immigrant advantage if one does indeed exist.

In addition to whites, Asian and non-white Hispanic immigrants are included as a comparison to other research on immigrant housing market outcomes.<sup>3</sup> Due to the complexity of Hispanics' racial self-identification in the United States, non-white Hispanic immigrants are included rather than focusing only on black Hispanic immigrants. Hispanics are more likely than other groups to reject the conventional notion of race in the U.S. (Itzigsohn and Dore-Cabral 2000). Hispanics' definition of race leads to a lower likelihood of identifying as black regardless of skin tone (Landale and Oropesa 2002). This is borne out in this dataset: over 90% of all non-white Hispanics chose other as their race.

Given my focus of disaggregating blacks, individuals who identify as black or African American in the race question are separated by nativity and origin: U.S.-born non-Hispanic black respondents, foreign-born non-Hispanic African black respondents, and foreign-born non-Hispanic Caribbean black respondents. These non-Hispanic black immigrants are then disaggregated by major sending country (Nigeria, Ethiopia, Jamaica, Haiti, and Trinidad and Tobago). Large immigrant groups are more likely to have access to same ethnicity social networks, which were an important part of immigrants' ability to avoid housing market disadvantage during the housing crash (Painter and Yu 2014). By conducting analyses focusing on major immigrant sending countries, I indirectly address this and other immigrant characteristics discussed in the "Background" section.

Independent variables also include geographic, household, socioeconomic, and immigration characteristics. The geographic characteristics control for variations in homeownership and house value that are related to location; these variables are region (northeast, midwest, south, and west), suburb, metropolitan area, and city population. Suburb is defined as living within a metropolitan area, but outside of the central city. City population is included because population size is an important determinant of housing prices (Rappaport 2008).

To address aspects of geographic location not captured by independent variables, I also run analyses on specific metropolitan areas. First, I examine homeownership and house value in the top three settlement areas of African (Atlanta, New York, and Washington D.C.) and Caribbean (Ft. Lauderdale, Miami, and New York) immigrants. The immigrant housing literature points to the importance of geographic concentration and living in new immigrant settlement areas in immigrants' positive housing market outcomes after the bubble burst. Analyses limited to the largest black immigrant settlement areas are an additional proxy measure of the benefits of living with a large co-ethnic population discussed in the "Background" section. Moreover, these analyses also address whether living in new immigrant settlement areas (Atlanta and Washington D.C.) served as a protective factor for black immigrants during the housing market crisis. Second, I conduct analyses focusing on metropolitan areas with high foreclosure rates to determine

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<sup>3</sup> Analyses also include U.S. and foreign-born white Hispanics, U.S.-born Asians, and U.S.-born non-white Hispanics, but they are not included in the tables. Tables including results for these groups are available upon request.

whether the relationships observed in analyses including all metro areas and in major settlement areas are a result of black immigrant concentration in places that experienced high foreclosure rates. The metropolitan areas included in these analyses are the 10 metro areas with the highest foreclosure rates: Atlanta, Cleveland, Detroit, Houston, Indianapolis, Jacksonville, Kansas City, Las Vegas, Memphis, Miami, Orlando, Phoenix, Riverside, St. Louis, and Tampa (Joint Center for Housing Studies of Harvard University 2011).

In addition to geographic characteristics, socioeconomic factors also have a significant effect on homeownership and house value. Individuals receive home loans based on a number of factors including household income and educational attainment (both are independent variables in this analysis along with age, marital status and a bivariate variable indicating whether the household received public assistance income). For the foreign-born, country of education may affect the actual or perceived quality of education, both of which can impact wages. Employers may be uncertain about the value of foreign degrees, and foreign education may be of lower quality or a poor match to the U.S. economy. Given its importance in determining wages, I estimate whether education was completed in the United States by calculating age at immigration and comparing that to the estimated age at which the householder completed their education. If the estimated age of education completion is lower than immigration age, I assume that education was completed outside of the United States.

Immigration characteristics, such as foreign education, have been found to have an effect on immigrants' housing market outcomes. Assimilation theory predicts that with time in the United States, immigrants become more like the U.S.-born. Consistent with this theory, results of previous research show that English ability and time in the United States are both associated with increased likelihood of homeownership (Colburn 1998; Flippen 2001). To control for these characteristics, I include a bivariate variable for English ability (speaks English at least very well or not) and a categorical immigration cohort variable. Immigration cohorts are defined as U.S.-born/immigration by 1980 (pre-1980), 1981–1990, 1991–2000, 2001–2011.

## Methods

I use a maximum likelihood estimator (MLE) with a Heckman correction to measure race and nativity differences in homeownership and house value in the United States. Variation in house value can be derived from Ordinary Least Squares (OLS) regression, but by necessity these analyses focus solely on the homeowner and are not representative of the entire population. Within a race or ethnic group, those who own their home may have substantially different characteristics from those who do not, making it impossible to generalize results to the entire race/ethnic group. Thus, OLS results of home value provide biased, inconsistent parameter estimates (Long 1997). To address this bias, I use the MLE with Heckman correction to control for selection into homeownership before estimating house value differences. This method determines the predicted probability of

homeownership in the first stage of a two-step analysis using the following probit equation (Ermisch and Wright 1994):

$$P(Y = 1) = F(Xb + e)$$

The dependent variable in this equation is a dummy variable indicating whether the householder owns their home.  $\beta$  represents both the socioeconomic variables and the selection variables—affordability of homes in the metropolitan area, number of children in the household, and proportion single-family homes in the metropolitan area. The selection variables are included in this first-stage homeownership equation, but not the second-stage equation determining house value differences. Affordability of homes in the metropolitan area (represented by the ratio between median house value in the metro area and median household income in the metro area) and number of children are both included as selection variables due to their positive relationship with homeownership. Markets with a greater share of single-family housing are also more conducive to homeownership (Lee and Myers 2003). Therefore, the proportion of single-family homes in the metropolitan area is also a selection variable.

The probit model controls for selection into homeownership before the MLE with Heckman correction determines house value using the following second-stage equation:

$$\ln(v_h) = X_h\beta + \sigma_{eu}\lambda_h,$$

$v_h$  represents house value, while  $\beta$  is a vector of parameters to be estimated and  $\sigma_{eu}$  represents the covariance between error terms in the house value equation and the homeownership equation.  $\lambda_h$  (the inverse Mills ratio) is a control variable accounting for selection into homeownership. If the Mills' lambda is significant, selection into homeownership has a significant effect on house value that is not captured by the independent variables in the house value equation. In all analyses presented in this paper, the Mills' lambda is highly significant, indicating that house value is significantly impacted by selection into homeownership.

## Results

### Descriptive Statistics

Table 1 presents socio-demographic characteristics of both U.S. and foreign-born householders. Overall, Caribbean immigrants' characteristics are similar to that of U.S.-born black householders; the average age and proportion with a college degree or higher are almost identical to U.S.-born black householders in both time periods. By contrast, Africans are the youngest race/ethnic group and are more highly educated than every group except Asian immigrants. Focusing on major African sending countries, I find that Nigerian immigrants (the largest African group) are more educated than even Asian immigrants. The educational characteristics of

**Table 1** Householder characteristics (adults age 25+, not in school, all identifiable metropolitan areas)

	U.S.-born			Foreign-born								
	Non-Hispanic White	Black	African	African			Caribbean		Haitian	Trinidadian and Tobagonian	Non-White Hispanic	Asian
				All Africans	Nigerian	Ethiopian	All Caribbeans	Jamaican				
2007												
Mean age	54	52	44	46	43	51	52	49	51	45	48	
% College degree+	36.5	19.2	46.2	74.0	35.8	21.7	21.8	20.0	22.4	9.1	56.9	
Mean household income (in thousands)	82.4	48.3	62.1	79.1	58.2	59.8	61.3	57.1	60.7	48.6	91.6	
% Homeowner	80.6	54.7	45.1	62.2	44.9	59.5	65.6	54.3	55.0	49.8	67.5	
Mean house value (in thousands)	296.1	190.4	308.3	309.7	348.4	325.6	313.0	331.5	343.6	291.6	439.1	
Migration Cohort (%)												
Pre-1980	-	-	16.7	25.4	12.2	44.4	43.9	38.1	45.9	37.8	34.3	
1981-1990	-	-	24.2	27.1	28.6	31.2	32.3	33.8	28.5	30.5	29.3	
1991-2000	-	-	40.5	32.9	40.4	19.8	19.1	22.7	21.6	24.9	26.8	
2001-2011	-	-	18.6	14.6	18.8	4.7	4.7	5.4	4.0	6.9	9.6	
% U.S. citizen	-	-	49.5	37.4	41.6	31.2	28.0	35.9	35.6	52.3	32.1	
% Speaks english at least very well	-	-	72.3	90.0	59.4	84.0	98.9	45.4	99.1	30.3	55.2	
N	1,601,436	218,253	6570	1558	877	14,502	6037	3919	1830	62,027	83,680	

Table 1 continued

	U.S.-born		Foreign-born							Non-White Hispanic	Asian		
	Non- Hispanic White	Black	African		Caribbean			Trinidadian and Tobagonian					
			All Africans	Nigerian	Ethiopian	All Caribbeans	Jamaican		Haitian				
<i>2011</i>													
Mean age	56	53	46	48	45	53	53	51	53	46	50	46	50
% College degree+	38	20	43.8	70.8	34.8	22.5	22.5	18.0	22.8	8.8	56.3	8.8	56.3
Mean household income (in thousands)	86.1	50.3	65.0	86.1	61.2	62.0	62.0	56.6	63.4	48.9	97.8	48.9	97.8
% Homeowner	78.7	51.6	42.1	61.0	42.5	57.0	57.0	52.8	53.6	42.7	71.2	42.7	71.2
Mean house value (in thousands)	289.6	178.6	265.7	291.2	270.8	275.7	266.7	260.4	304.3	215.6	430.7	215.6	430.7
Migration cohort (%)													
Pre-1980	-	-	13.1	20.2	9.8	39.9	39.9	32.7	42.7	32.1	29.9	32.1	29.9
1981-1990	-	-	20.5	24.7	22.7	30.2	30.2	31.6	27.4	28.6	27.1	28.6	27.1
1991-2000	-	-	35.6	30.0	33.4	21.0	21.0	25.4	22.3	26.7	26.2	26.7	26.2
2001-2011	-	-	30.9	25.2	34.0	9.0	9.2	10.4	7.7	12.6	16.8	12.6	16.8
% Arriving post 2007	-	-	4.2	4.7	4.3	1.2	1.1	1.6	1.0	1.4	3.4	1.4	3.4
% U.S. citizen	-	-	43.7	31.7	35.9	27.3	24.2	32.1	29.3	51.9	28.9	51.9	28.9
% Speaks english at least very well	-	-	71.7	89.6	58.1	82.7	98.9	42.7	99.5	30.4	54.4	30.4	54.4
<i>N</i>	1,579,952	240,455	8623	1841	1174	16,770	6990	4773	2088	52,734	97,601	52,734	97,601

immigrants from Ethiopia, another major sending country, are more representative of African immigrants as a whole.

Despite their similarities to U.S.-born black householders, Caribbean immigrants have higher household incomes in both years (as do the African-born). This is consistent with research finding that black immigrants are more advantaged in the labor market than their U.S.-born counterparts (Corra and Kimuna 2009). Of all black householders, Nigerians are the only group whose household income approaches that of white householders. In fact, their household income is only two dollars lower than that of whites in 2011 due to an increase in Nigerians' household income between 2007 and 2011.

Given their high level of education and comparable income to white householders, Nigerians could reasonably be expected to own homes at the same rate, yet they are approximately 20% less likely than white householders to own their homes in both years. This pattern is similar to that of Asian immigrants who have higher household incomes than whites in both years. The observed homeownership differences may be due to immigration characteristics, specifically, how long immigrants lived in the United States. As predicted by assimilation theory, homeownership increases with time in the United States for all immigrant groups. Homeownership rates are quite low for the newest immigrants (Ethiopians in this migration cohort have the lowest homeownership rates of any group), but increases until approximately 2/3 of the longest settled African and Caribbean immigrants own their homes (not shown).

Even with this variation by migration cohort, when all cohorts are pooled, the average house value for all black immigrants is higher than every group except Asian immigrants in 2007. After the housing bubble burst, there is a decrease in house value for all groups, and only immigrants from Nigeria, Trinidad and Tobago, and Asia maintained their house value advantage relative to whites. Despite having a higher average house value than white householders, Nigerians—the black immigrant group with the smallest decrease in house value—still saw a house value decline nearly three times that of white, and 1.6 times that of U.S.-born black, households. This may reflect the disproportionate effect of the housing crash on black immigrants' housing market outcomes, but it may also be a consequence of variation in settlement patterns. In the next section, I not only assess homeownership and house value change between 2007 and 2011 in metropolitan areas nationwide, I also include analyses focusing specifically on major black immigrant settlement areas and metropolitan areas with the highest foreclosure rates.

### **MLE with Heckman Correction Predicting Homeownership and House Value**

The results from both steps of the MLE with Heckman correction predicting change in homeownership and house value between 2007 and 2011 are presented in Tables two through four. Table 2 displays analyses in all metropolitan areas in the United States with non-Hispanic black immigrants divided into two major regional groups (Africa and the Caribbean) and highlights results for major sending countries that were conducted in separate analyses. Table 3 presents the results of analyses

**Table 2** Multivariate models predicting homeownership and house value—all metropolitan areas

	Homeownership (coefficients)	Natural log of house value
Race/ethnicity (ref. U.S.-born white)		
U.S.-born NH black	-0.42***	-0.18***
African-born black	-0.59***	0.04**
Caribbean-born black	-0.17***	0.06***
Foreign-born non-white Hispanic	-0.27***	0.09***
Foreign-born Asian	-0.26***	0.01*
Race/ethnicity interaction (ref. U.S.-born white* 2011)		
U.S.-born NH black* 2011	-0.03***	0.004
African-born black* 2011	0.02	-0.07***
Caribbean-born black* 2011	-0.04*	-0.13***
Foreign-born non-white Hispanic	-0.09***	-0.20***
Foreign-born Asian	0.03***	0.05***
Major immigrant sending countries (ref. U.S.-born white)		
Nigerian-born black	-0.08*	-0.09***
Ethiopian-born black	-0.24***	0.13***
All other African-born black	-0.33***	0.05**
Jamaican-born black	0.32***	0.02
Haitian-born black	-0.04	0.13***
Trinidad and Tobago-born black	0.09**	-0.02
All other Caribbean-born black	0.13***	-0.01
Major immigrant sending countries* year (ref. U.S.-born white* 2011)		
Nigerian-born black* 2011	0.07	-0.05
Ethiopian-born black* 2011	0.07	-0.16**
All Other African-born black* 2011	0.004	-0.07**
Jamaican-born black* 2011	-0.08**	-0.13***
Haitian-born black* 2011	0.01	-0.22***
Trinidad and Tobago-born black* 2011	0.04	-0.05
All other Caribbean-born black* 2011	-0.04	-0.04
Year (2011)	-0.08***	-0.16***
Female	-0.01***	-0.01***
Age	0.08***	-0.01***
Age <sup>2</sup>	-0.001***	2.63 × 10 <sup>-5</sup> ***
Marital status (ref. married, spouse present)		
Married, spouse absent	-0.54***	0.02***
Never married/single	-0.61***	-0.14***
Divorced	-0.58***	-0.13***
Widowed	-0.26***	-0.07***
Separated	-0.81***	-0.05***
Does not speak English at least very well	-0.05***	-0.02***
Foreign education	-0.16***	0.04***
Migration cohort (ref. U.S.-born/pre-1980)		



**Table 2** continued

	Homeownership (coefficients)	Natural log of house value
1981–1990	−0.03***	−0.04***
1991–2000	−0.21***	−0.06***
2001–2011	−0.76***	0.02**
Naturalized citizen	−0.33***	0.03***
Educational attainment (ref. 4+ years college)		
1–3 years college	−0.14***	−0.17***
High school diploma/GED	−0.23***	−0.31***
<High school	−0.43***	−0.49***
Number of working adults in household	0.13***	−0.03***
Household income (in thousands)	0.01***	0.003***
Public assistance	−0.67***	−0.10***
Selection variables		
Affordability (in thousands)	0.16	
Number of children	0.05***	
Proportion single-family homes in metro area	0.29*	
Wald $\chi^2$	$2.28 \times 10^6$	
Prob $> \chi^2$	0	
$\rho$	−0.56	
Mills Lambda	−0.40***	
Uncensored $N$	3,229,461	

Models also control for region, city population, suburb, and metropolitan area

The coefficients of the independent and selection variables as well as the value of the Mills Lambda for analyses focusing on major immigrant sending countries are not presented separately because they are identical to that of the aggregate analyses

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

focusing on major black immigrant settlement areas and Table 4 focuses on the 10 metropolitan areas with the highest foreclosure rates.

Table 2 shows that Caribbean-born black households experience the second largest homeownership decline relative to white households. Decreased homeownership after controlling for socioeconomic characteristics is surprising given Caribbeans' lower socioeconomic characteristics and very similar homeownership drop relative to whites in the descriptive statistics (Table 1). One would expect that, after controlling for socioeconomic characteristics, the homeownership gap between white and Caribbean black households would be smaller than that observed in the descriptive statistics. In models only controlling for race/ethnicity, year, the interaction between the two, and metro area (not shown), the Caribbean homeownership disadvantage is smaller and the difference between Caribbean immigrant and white households is not significant. The disadvantage grows after controlling for age, and does not change with additional variables. Although the average age difference between white and Caribbean immigrant householders is

only three years, the age distribution for these two groups is quite different: nearly 40% of whites are 60 and over, while this is only true of approximately 30% of Caribbean immigrants. At older ages, whites are much more likely to own their homes than Caribbean immigrants (84% those aged 60 and over owned their home compared to approximately 65% of Caribbean immigrants in the same age range in 2007 and 2011).

Previous research shows that black households were more negatively impacted by the housing market crisis than white households (Rugh and Massey 2010; Bocian et al. 2011). Yet my results indicate that this is not true of all black households. There is no significant difference in homeownership over time between African immigrant and white households. Even after disaggregating Africans into major sending countries, there is very little difference between groups, and no African group's homeownership change is significantly different from that of white households.

Among Caribbean immigrants, only Jamaicans' homeownership decline between 2007 and 2011 was significantly larger than that of U.S.-born white and black households (significant differences between minority and immigrant groups in all analyses were determined using post-regression Wald tests for significance). While Jamaicans' significantly larger loss in homeownership could be attributable to changes in the effect of the independent variables on homeownership, when analyses are conducted separately by year (not shown), there is very little difference in the 2007 and 2011 coefficients of independent variables. Additionally, all independent variables in Table 2 have the expected relationship with homeownership except naturalized citizenship. Instead of the expected positive association between naturalized citizenship and homeownership, there is a significant negative association with homeownership. This relationship seems to indicate that, at least for foreign-born black households, immigration characteristics are not necessarily a disadvantage in the housing market. When immigration characteristics are added to models that only include geographic characteristics (not shown), Africans' homeownership disadvantage decreased while that of Caribbean immigrants *increased*. The relationship between immigrant characteristics and Caribbean homeownership is consistent with previous research showing that immigrants who are not citizens are more likely to make use of community organizations—resources that have a stronger positive effect on their housing market outcomes than naturalized citizens (Haurin and Rosenthal 2009).

Just as Caribbean immigrants, on average, have nearly the largest decline in homeownership, they also experienced a significantly larger decline in house value than every group except non-white Hispanic immigrants. Among black households, the U.S.-born experienced a significantly smaller decrease in house value over time than Africans and Caribbeans. These findings may reflect that, as shown in Table 1, U.S.-born black households own less expensive homes than black immigrant households. As in the first stage of the analysis, independent variables largely have the expected relationship with house value.

When regional groups are disaggregated, I find a great deal of variation in the housing market outcomes of foreign-born black households. Although Ethiopians did not lose ground relative to whites in terms of homeownership, their relative

house values dropped by 16%. This house value decline was commensurate to that of all other black immigrant groups with the exception of immigrants from Nigeria and Trinidad and Tobago. Immigrants from these countries experienced a small decline in house value, but the difference from white households was not significant.

### **Housing Market Outcomes in Major Black Immigrant Settlement Areas**

The significantly larger drop in homeownership for Jamaicans and the overall house value decline for black immigrants over time suggests that the housing market crisis hit foreign-born black households harder than white, Asian immigrant, and U.S.-born black households. However, much of the immigrant housing literature points to the importance of geographic concentration and living in new immigrant settlement areas in moderating the effect of the recession on immigrant housing market outcomes. Therefore, Table 3 presents data focusing on the top three immigrant settlement areas for Africans and Caribbeans. Separate analyses are conducted for New York (a major settlement area for both Africans and Caribbeans), Miami and Ft. Lauderdale (Caribbean settlement areas), and Atlanta and Washington D.C. (African settlement areas). Atlanta and Washington D.C. are also new immigrant settlement areas.

Comparing homeownership in the three sets of metropolitan areas, I find that living in new immigrant settlement areas seems to benefit non-Hispanic black immigrants in a similar way research has shown it does for Asians and Latinos (Painter and Yu 2014). The decrease in homeownership between 2007 and 2011 was not significantly different from white households for U.S., Caribbean, and African-born black households, and there was no significant difference among black households in Miami and Ft. Lauderdale, and Atlanta and Washington D.C. (Table 3). There is also no significant difference among African immigrants. However, among Caribbean immigrants, there is a great deal of variation in the size of the coefficients. In New York, the coefficients for all other Caribbean immigrants were significantly lower than that of immigrants from Jamaica, Haiti, and Trinidad and Tobago. Those that were not from Jamaica, Haiti, or Trinidad and Tobago substantially brought down the homeownership of Caribbean immigrants in New York and had a larger homeownership decline in the other major settlement areas.

Although there was very little change in homeownership over time for non-Hispanic black immigrants in their major settlement areas, there were large significant declines in house value for these groups. In Miami and Ft. Lauderdale, Caribbean immigrant house values declined 16% (the largest decline of any group) and there was a similar decrease in Washington D.C. and Atlanta. Africans also lost 11% of their house value in Atlanta and Washington D.C. (their major settlement areas). After disaggregating non-Hispanic black immigrants, I find that the African decline is largely due to the 24% decrease in Ethiopian house values.

The Caribbean house value drop is also due to the outcomes of one group: Jamaicans. Jamaicans' housing outcomes drive the Caribbean results because of their population size and settlement patterns. Jamaicans are the largest Caribbean immigrant group—42% of the black Caribbean population—and have a very different settlement patterns from the next largest group (Haitians). Jamaicans live

**Table 3** Multivariate models predicting homeownership and house value—major immigrant settlement areas

	Homeownership (coefficients)				Natural log of house value			
	New York		Miami and Ft. Lauderdale		New York		Miami and Ft. Lauderdale	
	Atlanta and Washington D.C.	Atlanta and Washington D.C.	Atlanta and Washington D.C.	Atlanta and Washington D.C.	New York	Miami and Ft. Lauderdale	Atlanta and Washington D.C.	
<b>Race/ethnicity (ref. U.S.-born white)</b>								
U.S.-born black	-0.47***	-0.31***	-0.35***	-0.22***	-0.23***	-0.11***		
African-born black	-0.76***	-0.56***	-0.58***	-0.04	0.07	0.10***		
Caribbean-born black	-0.19***	-0.21***	-0.26***	-0.05	0.05	0.10***		
Foreign-born non-white Hispanic	-0.81***	-0.28***	-0.29***	0.15***	0.06	0.14***		
Foreign-born Asian	-0.05	-0.09	-0.28***	-0.15***	0.08*	0.09***		
<b>Race/ethnicity* year (ref. U.S.-born white* 2011)</b>								
U.S.-born black* 2011	0.04	-0.02	0.01	0.01	0.01	-0.05***		
African-born black* 2011	0.04	0.17	-0.04	0.00	-0.23	-0.11***		
Caribbean-born black* 2011	-0.07*	-0.03	0.01	0.01	-0.16***	-0.13***		
Foreign-born non-white Hispanic* 2011	-0.11**	-0.13*	-0.11*	0.01	-0.14***	-0.15***		
Foreign-born Asian* 2011	0.05*	0.05	-0.02	0.14***	-0.03	0.04**		
<b>Major immigrant sending countries (ref. U.S.-born white)</b>								
Nigerian	-0.39**	-0.42	-0.23*	-0.08	0.12	-0.13**		
Ethiopian	-0.48	0.68	-0.55***	-0.62*	-0.30	0.21***		
All other African	-0.94***	-0.73**	-0.70***	0.00	0.01	0.18***		
Jamaican	-0.07	-0.05	-0.10	-0.08*	0.02	0.08*		
Haitian	-0.32***	-0.35***	-0.36**	-0.03	0.11**	0.22**		
Trinidad and Tobago	-0.28***	-0.22	-0.37**	0.00	-0.02	0.02		
All Other Caribbean	-0.21***	-0.24**	-0.44***	-0.05	-0.04	0.13*		
<b>Major immigrant sending countries* year (ref. U.S.-born white* 2011)</b>								
Nigerian* 2011	0.22	-0.60	-0.15	-0.09	-0.34	0.00		
Ethiopian* 2011	0.05	-	-0.03	0.52	-	-0.24**		

Table 3 continued

	Homeownership (coefficients)			Natural log of house value		
	New York	Miami and Ft. Lauderdale	Atlanta and Washington D.C.	New York	Miami and Ft. Lauderdale	Atlanta and Washington D.C.
All other African* 2011	-0.02	0.17	-0.00	0.02	-0.17	-0.13**
Jamaican* 2011	-0.07	-0.08	-0.03	-0.02	-0.14***	-0.13**
Haitian* 2011	-0.04	0.02	-0.02	0.01	-0.20***	-0.09
Trinidad and Tobago* 2011	-0.01	0.10	-0.06	-0.02	-0.13	-0.15
All other Caribbean* 2011	-0.13*	-0.08	-0.15	0.06	-0.07	-0.15*
Year	-	4.65*	-0.10***	-0.00***	-0.39***	-0.20***
Female	0.02**	0.07***	0.05***	-0.01	-0.02**	-0.01**
Age	0.08***	0.08***	0.09***	-0.01***	-0.01***	-0.01***
Age <sup>2</sup>	-0.00***	-0.00***	-0.00***	0.00***	5.79 × 10 <sup>-6</sup>	0.00***
Marital status (ref. married, spouse present)						
Married, spouse absent	-0.35***	-0.37***	-0.61***	0.07**	0.02	0.04**
Never married/single	-0.50***	-0.44***	-0.56***	-0.05**	-0.14***	-0.07***
Divorced	-0.37***	-0.37***	-0.52***	-0.03*	-0.12***	-0.07***
Widowed	-0.15***	-0.12***	-0.26***	0.01	-0.08***	-0.03***
Separated	-0.57***	-0.64***	-0.74***	0.07**	-0.01	0.03*
Does not speak English at least very well	-0.21***	-0.18***	0.00	0.05**	-0.03*	-0.01
Foreign education	-0.21***	-0.13***	-0.17***	0.07***	0.02	0.03**
Migration cohort (ref. U.S.-born/pre-1980)						
1981-1990	-0.04*	-0.03	0.06*	-0.01	-0.11***	-0.01
1991-2000	-0.21***	-0.11***	-0.07*	0.01	-0.16***	-0.07***
2001-2011	-0.69***	-0.53***	-0.74***	0.18***	-0.03	0.03
Naturalized citizen	-0.37***	-0.40***	-0.37***	0.18***	0.08***	0.07***

Table 3 continued

	Homeownership (coefficients)			Natural log of house value		
	New York	Miami and Ft. Lauderdale	Atlanta and Washington D.C.	New York	Miami and Ft. Lauderdale	Atlanta and Washington D.C.
Educational attainment (ref. 4+ years college)						
1–3 years college	–0.05***	–0.14***	–0.15***	–0.11***	–0.10***	–0.15***
High school diploma/GED	–0.18***	–0.21***	–0.24***	–0.10***	–0.22***	–0.29***
<High School	–0.50***	–0.46***	–0.47***	0.01	–0.23***	–0.45***
Number of working adults in household	0.21***	0.15***	0.09***	–0.01	–0.02**	–0.03***
Household income (in thousands)	0.003***	0.01***	0.01***	0.002***	0.003***	0.003***
Public assistance	–0.85***	–0.63***	–0.68***	0.17***	0.03*	$3.93 \times 10^{-2}$ *
Suburb	0.59***	0.33***	0.31***	–0.22***	–0.06***	–0.17***
Ft. Lauderdale/Washington D.C.		3.21*	–0.23***		–0.21***	0.63***
Selection variables						
Affordability	0.01**	2.64*	–0.0001			
Number of children	0.07***	0.02**	0.04***			
Wald $\chi^2$	$5.85 \times 10^4$	$1.45 \times 10^4$	$8.15 \times 10^4$			
Prob > $\chi^2$	0.00	0.00	0.00			
$\rho$	–0.61	–0.71	–0.74			
Mills Lambda	–0.49***	–0.56***	–0.48***			
Uncensored $N$	63,028	53,217	142,693			

Models also control for region, city population, suburb, and metropolitan area

The coefficients of the independent and selection variables as well as the value of the Mills Lambda for analyses focusing on major immigrant sending countries are not presented separately because they are identical to that of the aggregate analyses

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

in higher SES neighborhoods than Haitians (White and Sessler 2000). These higher SES neighborhoods translate to higher house values on average prior to the housing market crash, and a larger drop after the crash.

### Housing Market Outcomes in Metropolitan Areas with High Foreclosure Rates

Although ethnic concentration may moderate the effect of the crash on black immigrants, it is still possible that black immigrants were more concentrated than other groups in metropolitan areas hard hit by the recession. Two of the metropolitan areas with the highest foreclosure rates in the nation—Atlanta and Miami—are also major African and Caribbean settlement areas. To determine whether this kind of concentration impacted the results presented in Tables two and three, I also conducted analyses focusing on ten metropolitan areas with the highest foreclosure rates in the United State (Table 4).

**Table 4** Multivariate models predicting homeownership and house value—metropolitan areas with high foreclosure rates

	Homeownership (coefficients)	Natural log of house value
Race/ethnicity (ref. U.S.-born white)		
U.S.-born NH black	-0.41***	-0.12***
African-born black	-0.46***	0.03
Caribbean-born black	-0.24***	0.09***
Foreign-born non-white Hispanic	-0.17***	0.08***
Foreign-born Asian	-0.24***	0.12***
Race/ethnicity Interaction (ref. U.S.-born white*2011)		
U.S.-born NH black*2011	-0.04**	-0.01
African-born black*2011	-0.004	-0.02
Caribbean-born black*2011	0.01	-0.13***
Foreign-born non-white Hispanic*2011	-0.05*	-0.23***
Foreign-born Asian*2011	-0.03	0.05***
Major immigrant sending countries (ref. U.S.-born white)		
Nigerian-born black	-0.38***	-0.13**
Ethiopian-born black	-0.34**	0.16*
All Other African-born black	-0.55***	0.12**
Jamaican-born black	-0.05	0.05
Haitian-born black	-0.40***	0.16***
Trinidad and Tobago-born black	-0.24*	0.04
All other Caribbean-born black	-0.30***	0.06
Major immigrant sending countries*year (ref. U.S.-born white*2011)		
Nigerian-born black*2011	0.07	0.04
Ethiopian-born black*2011	-0.11	-0.18
All other African-born black*2011	-0.01	-0.02
Jamaican-born black*2011	-0.08	-0.11**



**Table 4** continued

	Homeownership (coefficients)	Natural log of house value
Haitian-born black*2011	0.02	-0.16***
Trinidad and Tobago-born black*2011	0.03	-0.09
All other Caribbean-born black*2011	0.14	-0.16*
Year (2011)	-0.08***	-0.28***
Female	0.002	-0.08*****
Age	0.08***	-0.10***
Age <sup>2</sup>	$-5.48 \times 10^{-4}$ ***	$5.0 \times 10^{-5}$ ***
Marital status (ref. married, spouse present)		
Married, spouse absent	-0.52***	0.06***
Never married/single	-0.57***	-0.07***
Divorced	-0.54***	-0.10***
Widowed	-0.26***	-0.06***
Separated	-0.77***	$4.89 \times 10^{-4}$ ***
Does not speak English at least very well	-0.01	-0.04***
Foreign education	-0.13***	0.03***
Migration cohort (ref. U.S.-born/Pre-1980)		
1981-1990	0.03**	-0.05***
1991-2000	-0.18***	-0.07***
2001-2011	-0.73***	0.04**
Naturalized citizen	-0.36***	0.03***
Educational attainment (ref. 4+ years college)		
1-3 Years College	-0.15***	-0.17***
High School Diploma/GED	-0.24***	-0.30***
<High school	-0.40***	-0.45***
Number of working adults in household	0.10***	-0.05***
Household income (in thousands)	0.01***	0.004***
Public assistance	-0.59***	-0.05***
Selection variables		
Affordability	0.01*	
Number of children	0.03***	
Proportion single-family homes in metro area	0.77	
Wald $\chi^2$	127,400.33	
Prob > $\chi^2$	0	
$\rho$	-0.73	
Mills Lambda	-0.58***	
Uncensored $N$	429,519	

Models also control for region, city population, suburb, and metropolitan area

The coefficients of the independent and selection variables as well as the value of the Mills Lambda for analyses focusing on major immigrant sending countries are not presented separately because they are identical to that of the aggregate analyses

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

I find that, like the results in major settlement areas, Caribbean immigrants experienced changes in homeownership that were equivalent to whites, as did African immigrants. These coefficients are very similar to those of foreign-born Asians. Unlike the results of Table 2, Wald tests for significant differences between groups indicate that Caribbean immigrants in places with high foreclosure rates were better able than U.S.-born black households to hold onto their homes. Because four of the ten metropolitan areas with the highest foreclosure rate are also major black immigrant settlement areas, this may be further indication that, like Asian immigrants, black immigrants' co-ethnic social networks help them weather economic uncertainty (Painter and Yu 2014).

The black immigrant advantage did not consistently extend to house value. While African immigrants' house value change was no different from whites in these places, Caribbean immigrants' losses were 13% larger than whites, the second largest loss of any group. Disaggregating black immigrants into their largest groups show that, similar to the results in all metropolitan areas combined (Table 2), Caribbean immigrants' house value losses were largely due to Jamaican and Haitian immigrants' experiences.

## Conclusions

For immigrants, homeownership is a key indicator of assimilation because it represents a significant commitment to the United States and hinges on substantive knowledge of American housing markets. Accordingly, homeownership is positively associated with an advanced level of incorporation (Alba and Logan 1992a, b; Gonzalez-Fuentes and Iglesias-Fernandez 2013). By decreasing homeownership and housing wealth, the housing crisis disrupted a critical pathway to immigrants' (and minorities') economic and cultural incorporation. Information about the populations most affected by the housing market crisis is crucial to both understanding the underlying forces leading to housing market disparities and developing effective policy responses (Hall et al. 2015).

Research reflects immigrants' unexpected ability to hold onto their homes at higher rates than even the U.S.-born, and also clearly shows the disproportionately large impact of the housing market crisis on black households (Kochhar et al. 2009; Faber 2013). The opposite housing market patterns of black and immigrant households beg the question: How did those who are both black *and* immigrants navigate the housing crisis? Results of the analyses presented here show that not only did some foreign-born black households experience larger housing market declines than white households, but also larger than that of U.S.-born black households.

Disaggregating black immigrants into their component sub-groups shows that there is a great deal of diversity in black immigrant housing market outcomes. Caribbean immigrants experienced significantly larger drops in homeownership than whites, but there is no significant difference between white and African immigrant households. These results suggest at least one of the following: (1) the African immigrant population in 2011 is substantially different from that of 2007

due to increased immigration over time; (2) African immigrants who were not homeowners before the crisis purchased homes at low prices during the housing market crash at higher rates than white individuals or members of other black groups; or (3) African households were just as able as white households to hold on to their homes through the housing market crisis.

Approximately 4% of Africans in the 2011 sample came to the United States after 2007 and only 5% of this group owned their home (0.2% of the 2011 African sample). Given the small size of this group, it is extremely unlikely that Africans' homeownership after the housing market crash was due to new immigrants. Instead, Africans' larger proportions of new homeowners in 2011—measured as the percent of homeowners who moved into their home after 2007—may explain why they did not experience the same kind of homeownership decline as other black households. Thirty-eight percent of Africans who owned their home in 2011 moved into that residence after 2007 compared to approximately 20% of white and U.S. and Caribbean-born black households. The large proportion of new homeowners suggests that Africans' smaller homeownership decline is not due to Africans holding onto their homes through the housing crisis, but instead is attributable to Africans' new home purchases during this time. New homeowners during this period offset the decline in longstanding homeowners.

An additional explanation for African immigrants' homeownership outcomes may be differences in household formation. Previous research shows that low rates of household formation can artificially inflate homeownership rates for some groups (Yu and Myers 2010). African immigrant households, on average, contain more families and, accordingly, more adults than white households (1.17 families compared to 1.10 and 0.04 more adults per household than whites in 2011) providing some evidence in favor of slower household formation. However, as shown above, a larger proportion of African immigrants are new homeowners compared to all other groups. It may be that—while household formation fell substantially for the U.S. and foreign-born alike during the most recent housing market crash (Lee and Painter 2013)—African immigrant household formation did not drop as precipitously as it did for other groups. Because ACS data are cross-sectional, I cannot determine differences in household formation patterns during the housing crisis. Future research should use panel data to address the impact of race/ethnic differences in household formation during a recession on black immigrants' homeownership and house value change.

African immigrant households' change in homeownership relative to white households was not significant at the national level and was no different in major black immigrant settlement areas and places with high foreclosure rates. Living in major settlement areas—particularly the new settlement areas of Miami and Ft. Lauderdale and Atlanta and Washington D.C.—mediated the housing market disadvantage of Caribbean immigrants. This may mean that homeownership differences at the national level are largely due to concentration in parts of the country with larger housing market declines than the average. It may also indicate that there is a benefit to black immigrants' living in a major settlement area that is mostly limited to homeownership. The negative house value coefficients are smaller in major settlement areas, but Caribbean immigrants in Miami and Ft. Lauderdale

and places with high foreclosure rates still experienced significantly larger house value declines than white and U.S.-born black households. The same is true of African and Caribbeans in the new settlement areas of Atlanta and Washington D.C.

The unique homeownership outcomes of African immigrants influence the interpretation of their house value results. The African house value decline may simply be a consequence of new homeowners purchasing houses at low cost *during* the recession rather than long-time homeowners losing value. To investigate this further, I conducted an OLS analysis of established homeowners' house value change between 2007 and 2011 (not shown)—I use OLS because, by necessity, this analysis must focus solely on those who owned their home prior to the housing crash. I find that African immigrants' house value change coefficient is half the size of that found in Table 2. This provides further evidence that the observed African immigrant house value decline is due to the low value of homes purchased during the housing crash. Because Caribbeans have similar proportions of new homeowners as U.S.-born whites and blacks and foreign-born Asians (and their house value decline in the OLS is very similar to that presented in Table 2), it is much less likely that their house value decline can be attributed to new homeowners purchasing property at low prices.

Although African and Caribbean house value declines may be attributable to different causes, the consequence of low home value is the same for both groups: a widening of the racial/ethnic house value gap over time. Because housing makes up such a large proportion of black wealth in the United States, reduced house values may have long-term effects on black immigrants' ability to build, maintain, and pass on wealth across generations. Black immigrants most likely experienced greater losses in total wealth on a percentage basis due to the housing crisis and subsequent recession as research has shown it did for black households in the aggregate. As a result of wealth lost during the recession, white home equity is projected to be 1.6 times that of black households (Burd-Sharps and Rasch 2015). These projections also show that the effects of the disparity in wealth lost due to the housing crash will persist across the next several generations. Blacks have the largest proportion of households that lost at least 50% of their net worth, reinforcing evidence that the housing crisis hit black households the hardest (Grinstein-Weiss et al. 2015).

House value clearly plays a large role in wealth as well as parents' ability to make gifts and bequests to children to help them purchase homes, start businesses, and weather financial crises. Consequently, the black immigrant house value decline due to the housing crash may lead to differences in inheritance and other intergenerational transfers. Black individuals' lower wealth than white households is, in part, a product of differences in the legacy of lower homeownership rates among previous generations (Blau and Graham 1990; Joint Center for Housing Studies of Harvard University 2011). Since black individuals are already less likely than white individuals to receive transfers from their parents, this decrease in wealth could leave them at an even larger disadvantage in the future.

The housing market outcomes of black immigrants, and their presumed loss in wealth, have implications for both the narrative surrounding black immigrants' socioeconomic outcomes and local housing markets and planning. Black immigrants are described as able to avoid at least some of the racial discrimination in the

housing market (Dion 2001; Murdie 2008). Black immigrants also use their co-ethnic network to find and purchase homes in ways that U.S.-born black individuals cannot (Foner 1979; Mequanent 1996; Ratner 1997). These are characteristics immigrants would continue to, or increasingly, draw on during an economic crisis, presumably allowing them to weather uncertain economic times. However, Caribbean immigrants still experienced huge declines in homeownership and, given the house value of African homes in 2011, Africans seem to be limited to less expensive homes. These findings indicate that black immigrants' housing options are *more* rather than less constrained than U.S.-born black individuals: Africans in the neighborhoods in which they own homes and Caribbean immigrants in the rental housing market.

If rental housing is more spatially concentrated within the broader urban housing market, other things being equal, racial and economic segregation will worsen (Immergluck 2009). This would have significant long-term implications for black immigrant economic outcomes. Access to racially integrated neighborhoods plays a large role in cultural and socioeconomic assimilation; making place of residence an important determinant of quality of life (Freeman 2002). Black individuals living in segregated neighborhoods experience higher poverty and more inequality (Rosenbaum and Friedman 2001; Ananat 2011). Black individuals' neighborhoods also have fewer amenities (Bayer and McMillan 2005; Zenk et al. 2005). In addition to investigating causes of the housing market crash, future research should investigate the ways in which the housing market crisis affects future segregation patterns of both U.S. and foreign-born black households.

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