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More than Money: The Spatial Mismatch Between Where Homeowners of Color in Metro Boston Can Afford to Live and Where They Actually Reside Part I

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**More than Money:
The Spatial Mismatch Between Where Homeowners of Color in Metro Boston
Can Afford to Live and Where They Actually Reside**

by

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Prepared for the Metro Boston Equity Initiative of the Harvard Civil Rights Project,

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Executive Summary

One of the most common explanations for the patterns of residential segregation in Metro Boston is affordability. The argument emphasizes that, given the sad continuing gap in income and wealth between whites and communities of color, it is no surprise that more affluent communities, characterized by high housing costs, will continue to be the domain of whites. This argument has had particular currency because median home prices in the metro area now exceed \$400,000 (the third highest in the country,) and home price appreciation over the last decade also ranks in the top three.

This paper investigates whether the patterns of segregation between non-Latino whites and people of color is indeed simply due to affordability. Using data from the 2000 Decennial Census, we model the spatial distribution of homeowners by race across the metropolitan area as if the **value of their homes** were the only factor in determining where they live. We then compare this *predicted* distribution with the *actual* distribution to identify where certain racial groups are under- or over-represented and to what degree. We repeat the analysis using information on mortgage loan amounts from the 1999-2001 Home Mortgage Disclosure Act datasets to predict the spatial distribution of recent homebuyers by race as if the **mortgage amount borrowed** were the only factor in determining where buyers purchased homes. Lastly, acknowledging that buyers of color who borrow the same mortgage amounts as whites may still be purchasing less expensive homes because of their inability to afford the same downpayments, we perform two more sensitivity analyses, altering the loan-to-value ratios for different racial groups.

We conclude that, while African-American and Latino homebuyers do face greater affordability constraints on average, affordability alone does a poor job in explaining segregation. Analyses that control for affordability, both by home value and mortgage amount, show convincingly that mere financial affordability fails to explain the concentrated residence patterns that currently exist and that are largely being replicated in recent years. Most strikingly, African Americans and Latinos, who could afford to buy in a wide range of more outlying suburban communities, are concentrating in Boston, certain inner suburbs, and certain satellite cities, often the same places experiencing the largest declines in white homeowners. For Latinos, these locations include cities such as Lawrence, Chelsea, Lynn, Everett and Revere; for African-Americans: Randolph, Brockton, Milton, Boston, and Everett. At the same time, in eighty percent of the metro's cities and towns, African-American and Latino homebuyers are purchasing at less than half the rate that we would expect based on affordability alone. Clearly, the concentrated residence and homebuying patterns manifest in the Boston metro area are attributable to *more than money*.

We recommend several steps to address these continuing, troubling patterns:

First, we must openly recognize that our communities remain segregated and will likely remain so without concerted, coordinated and determined effort. That effort must focus on removing any remnants of discriminatory practices, but also on finding ways to attract and retain populations of color in communities they can afford but from which they are absent.

Public and private officials must recognize this reality *and* acknowledge that they have a role to play in changing it. On the state level, the Department of Community and Housing Development (DHCD) should develop a new analysis of impediments (AI) that incorporates 2000 census data as well as this and other recent studies showing the extent of the problem. The AI may, as did the previous one, choose to recognize affordability as an issue, but must acknowledge that the high price of homes itself is not necessarily the impediment. Assuming a more comprehensive look at the impediments to fair housing, DHCD must then use its resources to ensure that all available tools are employed to address the situation. This includes removing any impediments its policies place in the way of attaining fair housing.

We must utilize all the tools we have at our disposal, and this means a continued commitment to Chapter 40B, the state's anti-snob zoning statute, as well as the Low Income Housing Tax Credit program. But, we do not now know whether or how these programs are working to affect patterns of segregation. DHCD must begin to collect data by race on who is using and benefiting from these programs.

These actions alone will not overcome resistance or apathy that may exist in some suburban communities. Representatives of predominantly white communities often speak of preserving the "character" of their towns and seek to reserve any affordable units that are built for their current residents, the police, firefighters and teachers, as well as children of long-time residents. While these goals are important, the state must view any and all residency preference requests with critical eyes. Any such preferences that maintain exclusively white enclaves must be rejected in favor of more aggressive affirmative marketing plans to people of color from outside the community.

There is also a role for realtors and lenders, those who actually form the front lines of the home sales market. It is time banks expanded their outlook and their reach to assist people of color gain footholds in non-traditional communities, remembering that moderately priced homes are available throughout the region. They can do this through their marketing and their relationships with realtors. Realtors, of course, have the most direct influence on housing choices. Indeed, as much as bricks and mortar, realtors sell communities. Realtors must make sure that their sales and rental practices are free from discriminatory practices and that they provide their services and expertise to all clients.

Cities and towns themselves must play their parts in making themselves more welcoming and open. Rather than seeing newcomers as detracting from "character," suburban communities can and should embrace diversity as adding character. It means local leaders – both private and public – must speak out in favor of initiatives designed to increase diversity and openly challenge exclusionary proposals.

More than Money: The Spatial Mismatch Between Where Homeowners of Color in Metro Boston Can Afford to Live and Where They Actually Reside

Introduction

The Boston area is at once blessed and cursed by a rich history. It is celebrated as the cradle of American democracy and today prides itself as a center of education and culture. The celebration follows the path of the Freedom Trail from Beacon Hill and the Minute Man Trail through Concord and Lexington. But while it is remembered as a hotbed of abolitionism, it has also often been denounced as a northern stronghold of racism whose residents violently rejected the dismantling of segregated schools, public housing, and police and fire departments. Perhaps less known is the fact that the communities of Beacon Hill, Lexington and Concord, so closely associated with the region's positive past, remain predominantly white, affluent enclaves, while the growing population of African Americans and Latinos remains largely concentrated in a small number of neighborhoods and communities (with some Asians dispersing more broadly into communities like Lexington). The story of the Boston region's persistent racial separation may have much to say about the subtle but powerful forces at work to sustain segregation despite years of public and private efforts to eliminate the divide.

One of the most common explanations for the patterns of racial separation in the Boston region is affordability. The argument, credible and persuasive on its face, would emphasize that the areas mentioned above – Beacon Hill, Lexington, and Concord – are among the region's most affluent. Given the sad continuing gap in wealth between whites and communities of color, it is no surprise that more affluent communities will continue to be the domain of whites. People of color simply cannot afford to purchase homes in every community. It's simply a matter of money.

In Boston, as elsewhere, analysts and advocates have considered institutional forces that contribute to disparities in wealth and other economic indicators. Here, as elsewhere, for instance, homeownership rates for people of color tend to lag well behind those for whites. Again, the explanation for such gaps is most often phrased in terms of money. People of color do not have the money for down payments, sufficient income or adequate credit history to qualify for mortgages. This notion was seriously challenged by a detailed analysis of mortgage lending published by the Boston Federal Reserve Bank over a decade ago. The research found striking disparities between the outcomes of African American and white mortgage applications even after controlling for many of the financial characteristics thought to underlie these outcomes and created a groundswell of activity by banks and civil rights advocates to address apparently discriminatory practices by lenders.¹

¹ For the purposes of this paper, one of the most notable outcomes was the formation of the Massachusetts Community and Banking Council, an organization in which banks and community activists address CRA-related issues. One of MCBC's most important contributions has been an annual publication since 1995 of "Changing Patterns: Mortgage Lending to Traditionally Underserved Borrowers and Neighborhoods in Greater Boston." Changing Patterns has documented considerable improvement in the performance of banks, but has also documented continued gaps and recent increases in disparities for such lending. See, Changing Patterns X.

Homeownership is, after all, one of the most potent symbols of the American Dream. More than that, it is also the largest single asset in the portfolios of American families, particularly for people of color². Where one decides to purchase a home has major implications, not only for the schools that children attend and the employment opportunities and amenities nearby, but also for the prospects of home price appreciation and wealth accumulation. As such, considerable research has focused on trends in homeownership. One of the most significant projects was a study of Home Mortgage Disclosure Act (HMDA) data for 126 cities and towns in the Greater Boston region between 1993 and 1998. The heartening part of the picture painted by this analysis was that a significant proportion of African-American and Latino homebuyers made purchases outside the city of Boston (40 and 60 percent, respectively; though 90 percent of whites did so.) The disheartening news was that nearly half of the purchases by African American and Latino buyers (48 percent) were concentrated in seven of the 126 communities studied. By a standard measure of residential segregation, “over 50% of African American and Hispanic homebuyers would have had to have bought a home in a different city or town” during the period in order to achieve integration. The study concluded that the “pattern of segregation” found in the city of Boston was “replicating itself across the cities and towns outside its boundaries.”³

In other words, for the most part, Latinos and African Americans in the Boston metropolitan area continue to live in and purchase homes in quite different areas than whites. The statistical studies documenting the patterns do not address causes, though research and experience suggest they may have several underlying determinants, ranging from the subtle to the severe; including differing attitudes about the attractiveness and receptiveness of particular areas and asymmetries in information available to different groups, to overt discrimination in the real estate market.

This paper investigates one of the most commonly cited potential reasons for segregation of homeowners—that people of color, particularly blacks and Latinos, just cannot afford to live in the same communities as whites. This argument has had particular currency in the Boston metro area where median home prices now exceed \$400,000 (third highest in the country⁴) and home price appreciation over the last decade also ranks in the top three⁵. Using data from the 2000 Decennial Census, we model the spatial distribution of homeowners by race across the metropolitan⁶ area as if the **value of their homes** were the only factor in determining where they live. We then compare this *predicted* distribution with the *actual* distribution to identify where certain racial groups are under- or over-represented and to what degree. We repeat the analysis using information on mortgage loan amounts from the 1999-2001 Home Mortgage Disclosure Act datasets to predict the spatial distribution of recent homebuyers by race as if the **mortgage amount borrowed** were the only factor in determining where buyers purchased homes. This analysis can be viewed as an extension of Dr. Guy Stuart’s previous analysis of HMDA data, covering the subsequent three-year period and controlling for size of mortgage. Lastly,

² Aizcorbe, et. al. 2003. Tables 5B and 8B, pp. 13 and 19.

³ Stuart, Guy. 2000.

⁴ National Association of Realtors, 2003. Refers to existing home prices.

⁵ Joint Center for Housing Studies. 2003. Appendix Table W-1 on website.

⁶ The Boston metro area in this analysis is defined as the Massachusetts portion of the New England County Metropolitan Area: Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, and Worcester counties.

acknowledging that minority groups who borrow the same mortgage amounts as whites may still be buying less expensive homes because of their inability to afford the same downpayments, we perform three sensitivity analyses, altering the loan-to-value ratios for different racial groups.

We conclude that, while African-American and Latino homebuyers do face greater affordability constraints on average, affordability alone does a poor job in explaining segregation. Clearly, the concentrated residence and homebuying patterns manifest in the Boston metro area are attributable to *more than money*.

Spatial Distribution of Homeowners by Race

As of 2000, families of color constituted less than 8 percent of all home-owning households in the Boston metropolitan area (African Americans 2.7%; Latinos 1.8%; Asians 2.5%). Because the population of color is small and a high proportion are immigrants who are not bound to long-established residence patterns, Boston could be a model of racial and ethnic integration. Instead, the outlying suburbs remain overwhelmingly white⁷, with African-American and Hispanic owners and new homebuyers clustered into a relatively small number of cities and towns⁸. Asian owners, with much higher income levels overall, have made significant inroads into certain suburbs, but some Asian subgroups remain quite segregated.

Exhibit 1 illustrates the divergent resident patterns of the major racial and ethnic groups. Two-thirds (65%) of white owners live in the outer suburbs⁹ (essentially those suburban areas beyond the Route 128 Belt), compared to 40% of Asians, 29% of Latinos, and 22% of African Americans. African-American owners are by far the most segregated from whites, such that 60% of African Americans would have to move to another municipality in order for their representation in each municipality to reflect that of the metro area as a whole. African-American owners are most heavily clustered in the City of Boston, while Latinos are concentrated in a group of urbanized satellite cities such as Lawrence, Brockton, Lynn, and Lowell¹⁰. Maps shown in **Exhibits 2a-d** provide much greater detail of racial residence patterns of homeowners at the local level.

Growth in Homeowners and Homeownership

The much-heralded homeownership boom of the 1990s--fueled by low interest rates, a strong economy, development of alternate mortgage products, and outreach to low-income and minority populations--brought unprecedented growth in the number of minority homeowners in the Boston metro area. However, unlike white owners, whose gains occurred almost exclusively in the outer suburbs, the number of minority owners increased most rapidly in a set of multi-ethnic

⁷ For the racial change of homeowners analysis in this section, racial classifications from the 2000 Census were defined as follows: “whites” are non-Hispanics who chose “white” alone as their race; “African Americans” are non-Hispanics who chose “African-American alone or in combination” as their race; Hispanics/Latinos are all Hispanics/Latinos regardless of race, and Asians are all Asians who chose “Asian alone or in combination” as their race. See the Technical Appendix for racial definitions used in remainder of paper.

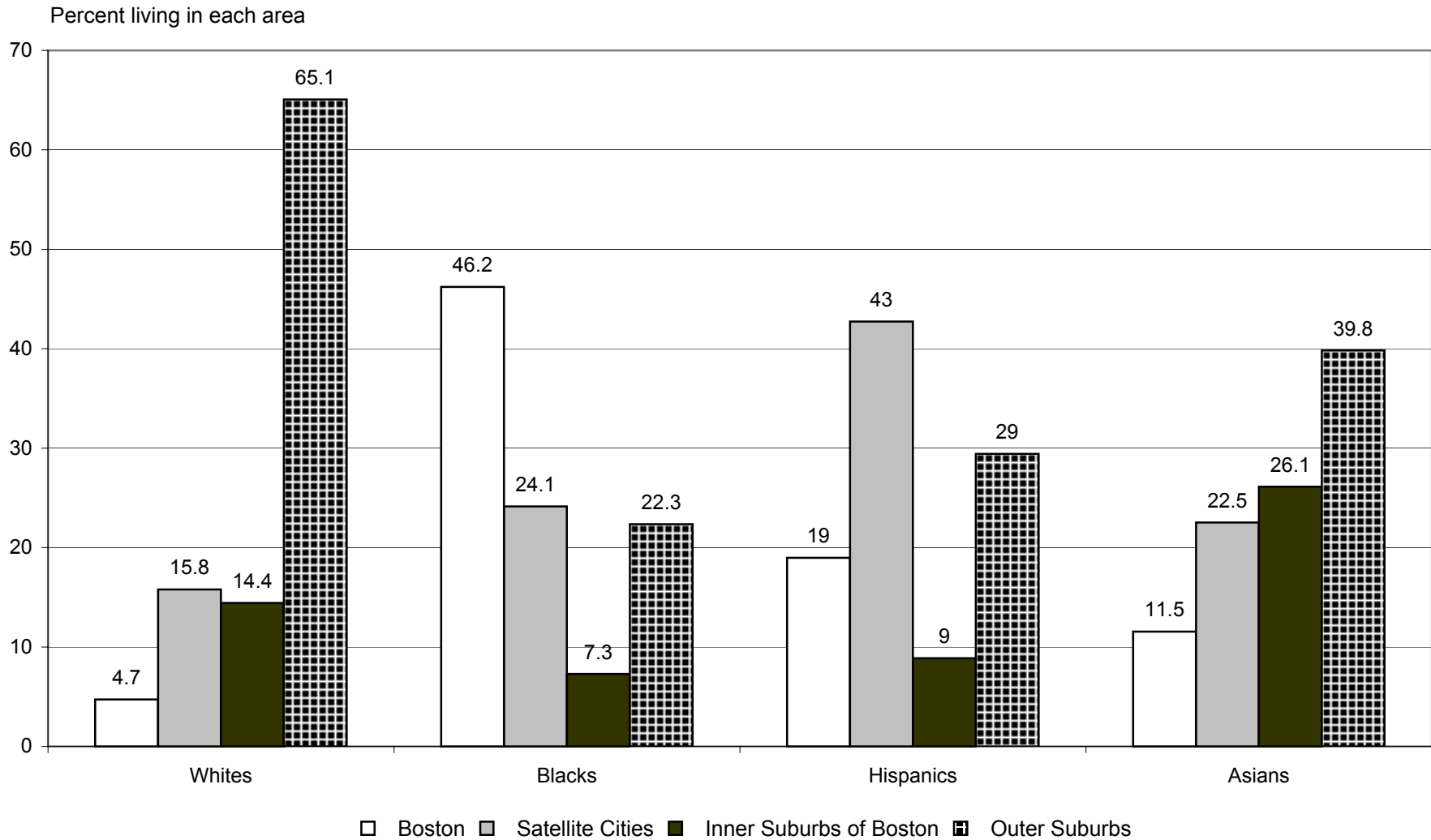
⁸ Stuart, Guy. 2000.

⁹ See the Technical Appendix for description of geographic areas.

¹⁰ See the Technical Appendix for a complete list and description of the satellite cities.

Exhibit 1

Residence Patterns of Homeowners Vary Greatly by Race in Boston Metro Area
(Share of Each Race Living in Each Location, 2000)

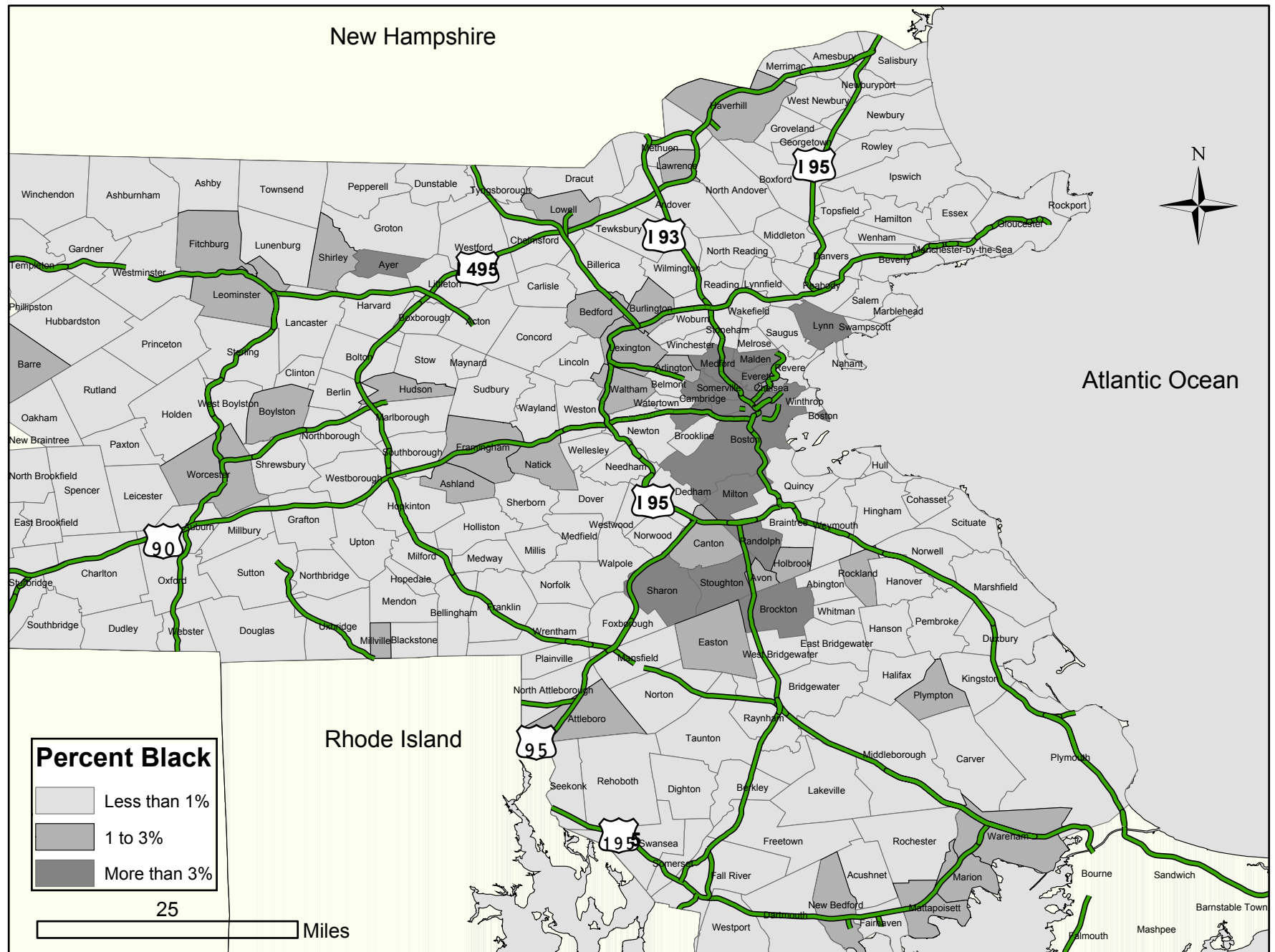


Note: For definitions of racial groups and geographic areas, see Technical Appendix.

Source: 2000 Decennial Census, Summary Files 1 and 2.

Exhibit 2a

Black Share of Homeowners: 2000

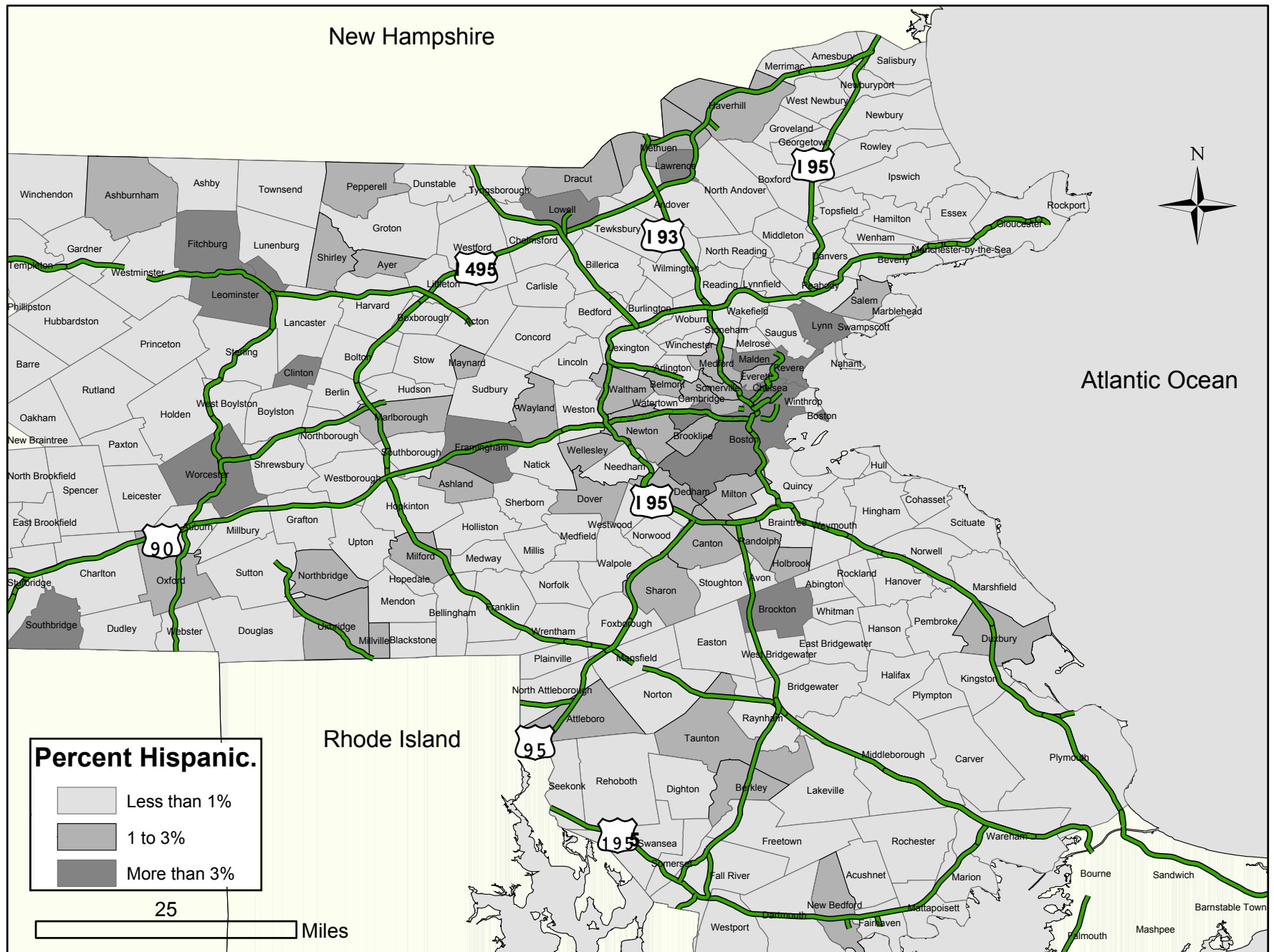


Source: 2000 Decennial Census, Summary File 2.

Note: Blacks are non-Hispanic blacks.

Exhibit 2b

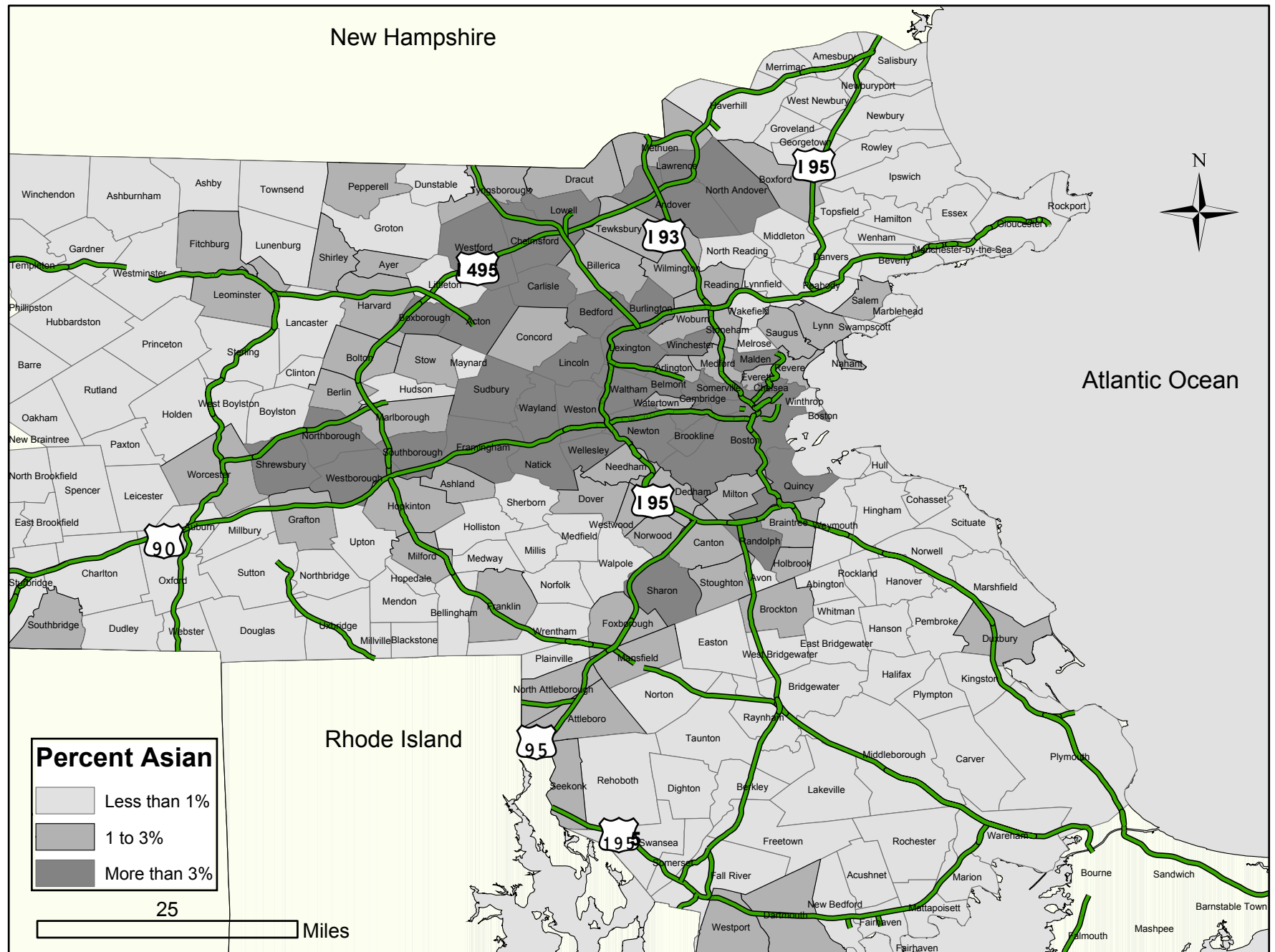
Hispanic Share of Homeowners: 2000



Source: 2000 Decennial Census, Summary File 2.

Exhibit 2c

Asian Share of Homeowners: 2000



Source: 2000 Decennial Census, Summary File 2.

Note: Asians include Pacific Islanders.



satellite cities. At the same time, these very same cities--Lawrence, Brockton, New Bedford, and others--experienced the largest declines in white homeowners.

Growth in homeowners and homeownership can be measured in a variety of ways, each helpful in answering different questions. *Numeric growth* reflects the absolute change over time and is measured in number of homeowners. *Percent growth* reflects numeric growth as a share of the original number of homeowners and is expressed as a percent. It shows rate of change or how fast change is occurring. The *homeownership rate* reflects the share of all occupied housing units that are owner-occupied. The higher the homeownership rate, the larger the share that homeowners constitute of all households and the greater their ratio to renter households. While some may assume that rising homeownership rates mean absolute growth in the number of owners, this is not necessarily true. Homeownership rates can rise even as the number of owners declines, as long as renters decline more quickly. In addition to these homeownership metrics, this section also explores the shifting spatial variation in owner households across the metro area by revealing the shares of all metro owners that reside in various geographic subdivisions: the City of Boston, the satellite cities, the inner suburbs, and the outer suburbs. This analysis shows the “*market share*” of owners claimed by each of these geographic units over time.

Virtually all of the numerical growth in white owners occurred in suburban areas beyond the Route 128/195 belt, pushing white homeownership rates there up to 77% (**See Appendix 1**). Cities and towns gaining the largest number of white owners--Franklin, Plymouth, Taunton, Shrewsbury, and Haverhill--are almost uniformly located near the outer edge of the metro area (**Exhibit 3**).

All minority groups dramatically outpaced whites in terms of percent growth, despite adding fewer **numbers** of owners than did whites. In other words, while still significantly outnumbered, minorities are narrowing the gap over time.

While white owners posted a 15 % growth rate, African-American owners increased by 60%--with a doubling of their numbers in the satellite cities. The City of Boston is still home to the largest number of African-American owners and added almost 4,000 more over the 1990s; but the City actually lost share to other parts of the metro as African-American owners in the suburbs and satellite cities increased rapidly. In 2000, 46% of African-American owners in the metro resided in the City of Boston, down from 54% in 1990. Brockton and Randolph posted particularly strong numeric gains. African Americans outpaced all groups when it came to increasing **homeownership rates**. The share of African-American households that owned homes went from 26.1% in 1990 to 31.5% to 2000. Still, African Americans own homes at less than half the rate of whites. Even in the outer suburbs, where owned housing is most prevalent, only about half of African Americans are homeowners, compared with three quarters of whites.

The number of Latino owners grew by 70%, even faster than African-American owners. The satellite cities led the way again, with the number of Latino owners more than doubling there. Unlike African Americans, however, Latinos exhibited particularly fast growth in the City of Boston and slowest growth in suburban areas. These divergent growth patterns led to a shift in the spatial distribution of Latinos. The share of Latino owners residing in the satellite cities went from 34% to 43% over the decade, but the share living in the outer suburbs fell from 37% to

Exhibit 3

Largest Numeric Gains and Losses in Number of Homeowners: 1990-2000 Boston Metro Area

<u>Largest Numeric Decrease</u>				<u>Largest Numeric Increase</u>			
Non-Hispanic Whites							
	<u>1990</u>	<u>2000</u>	<u>change</u>		<u>1990</u>	<u>2000</u>	<u>change</u>
Lawrence	6,622	5,003	-1,619	Franklin	5,500	7,996	2,496
Brockton	15,552	13,968	-1,584	Plymouth	11,449	13,908	2,459
Boston	54,661	53,323	-1,338	Taunton	10,472	12,829	2,357
Randolph	6,821	5,750	-1,071	Shrewsbury	6,329	8,433	2,104
New Bedford	15,681	14,655	-1,026	Haverhill	11,179	13,075	1,896
Lynn	13,799	13,068	-731	Mansfield	3,852	5,494	1,642
Malden	8,843	8,119	-724	Bridgewater	3,953	5,425	1,472
Lowell	14,568	13,851	-717	North Andover	5,259	6,704	1,445
Worcester	26,592	26,022	-570	Marlborough	6,843	8,261	1,418
Somerville	8,863	8,303	-560	Westford	4,550	5,902	1,352
Latinos							
	<u>1990</u>	<u>2000</u>	<u>change</u>		<u>1990</u>	<u>2000</u>	<u>change</u>
Wareham	144	45	-99	Boston	2,386	4,073	1,687
Taunton	223	139	-84	Lawrence	997	2,462	1,465
Fall River	151	71	-80	Worcester	356	1,148	792
Stoughton	92	55	-37	Chelsea	258	814	556
Somerset	48	11	-37	Lynn	276	788	512
Dartmouth	61	26	-35	Lowell	361	669	308
Hudson	69	43	-26	Revere	94	362	268
Lancaster	30	17	-13	Methuen	134	361	227
Marion town	19	7	-12	Frammingham	232	456	224
Norton town	32	21	-11	Haverhill	133	345	212
Non-Hispanic Blacks							
	<u>1990</u>	<u>2000</u>	<u>change</u>		<u>1990</u>	<u>2000</u>	<u>change</u>
Shirley	52	39	-13	Boston	11,142	15,116	3,974
Sudbury	46	35	-11	Brockton	1,125	2,543	1,418
Tewksbury	58	49	-9	Randolph	441	1,449	1,008
Bellingham	45	40	-5	Worcester	368	826	458
Duxbury	29	24	-5	Lynn	347	759	412
Saugus	27	24	-3	Milton	228	616	388
Carver	58	57	-1	Malden	166	500	334
Seekonk	32	31	-1	Somerville	172	400	228
Acton	23	24	1	New Bedford	337	564	227
Pembroke	22	23	1	Stoughton	211	404	193
Asians/Pacific Islanders							
	<u>1990</u>	<u>2000</u>	<u>change</u>		<u>1990</u>	<u>2000</u>	<u>change</u>
North Brookfield	8	1	-7	Boston	1,882	3,328	1,446
Northbridge	12	7	-5	Quincy	907	2,178	1,271
Paxton	11	6	-5	Lowell	461	1,258	797
Lancaster	14	10	-4	Newton	648	1,323	675
Carver	9	6	-3	Malden	349	956	607
Hanson	11	8	-3	Brookline	696	1122	426
Holden	35	32	-3	Worcester	303	715	412
Essex	2	0	-2	Lexington	422	765	343
Manchester	4	2	-2	Lynn	141	483	342
Millbury	27	25	-2	Cambridge	402	720	318

Note: Black ranking excludes area which had less than 20 black owners in 1990.

1990 racial groups are non-Hispanic whites, non-Hispanic blacks, Hispanics, and Asians/Pacific Islanders.

2000 Racial groups are non-Hispanic whites (alone), non-Hispanic blacks (alone or in combination with other groups,) Hispanics, and Asians/Pacific Islanders (alone or in combination.)

Source: 1990 Decennial Census, Summary File 1 and 2000 Decennial Census Summary Files 1 and 2.

29%. Outside the City of Boston, Lawrence by far gained the largest number of Latino owners. Lawrence also has the dubious distinction of losing the largest number of white owners over the period. The homeownership rate of Latinos is the lowest of all groups. At only 22%, it is one third that of whites. Even in the outer suburbs, they have less than one half the white ownership rate. Nevertheless, Latino ownership rates did rise moderately over the 1990s.

It is important not to place too much emphasis on changes in the homeownership **rates** of populations whose current ranks are fueled by immigration. Most commonly, immigrants of all backgrounds who have resided in the U.S. for an extended period of time make steady progress in achieving homeownership. But the overall homeownership rate for a racial or ethnic group is usually pushed down if there is a steady influx of new immigrants, who generally start off as renters. This factor is likely to be strongest for Latinos and Asians. Only 2% of whites and 11% of African Americans in the Boston metro are recent immigrants (entered during the 1990s,) compared to 19% of Latinos and 33% of Asians.

Given large immigrant shares, it is especially impressive that Asian growth rates outpaced all other groups, with the number of Asian owners more than doubling to 31,000. All geographic subareas saw rapid Asian growth rates, with the satellite cities leading the way. In terms of absolute growth in number of Asian owners, the City of Boston gained the most, closely followed by Quincy and then Lowell, Newton, and Malden. Asians made gains in areas with widely disparate socio-economic characteristics: from Lowell, Worcester and Lynn to Newton, Brookline and Lexington. This diversity reflects the underlying variety of the Asian populations in the metro. For instance, the Chinese population had a 2000 homeownership rate of 51%, compared to 36% for Vietnamese and 28% for Koreans. As a whole, Asian homeownership rates rose only slightly over the 1990s, probably reflecting the impact of new immigrant arrivals. Ownership rates actually fell in the suburbs, but this mostly reflects the fact that renter growth there outpaced even the spectacular increases in number of Asian homeowners.

The significant differences in homeownership rates between white households and those headed by people of color, while not the focus of this study, are still important to highlight. Release of “microdata” files from the 2000 Census allows us to more carefully examine these differences in the Boston metro area. Minority households differ from whites across important dimensions, such as age, household composition, and income--all of which are significant predictors of homeownership. However, none of these factors come close to explaining the homeownership gap. White households with the same age, income, and household characteristics as African Americans have an ownership rate of 54%, versus 32% for African Americans. Whites with the same attributes as Hispanics have an ownership rate of 46%, versus 22% for Hispanics. Whites with the same attributes as Asians have an ownership rate of 60%, versus 40% for Asians.

Data on household wealth, also critical to achieving homeownership, are difficult to obtain for racial groups in Boston. Nationally, the net worth of white households is seven times that of minority households.¹¹ While much of this gap is attributable to higher white ownership rates; even for renters, whites have four times the net wealth of African Americans and three times that of Latinos¹². Whites have greater wealth to overcome the down payment hurdle to

¹¹ Federal Reserve Board. 2003. Table 3.

¹² Joint Center for Housing Studies. 2003. Table A-4 on website.

homeownership and, having become owners, are better able to pass their wealth on to succeeding generations.

Other factors, such as credit quality, employment history, debt levels, and knowledge of mortgage markets most likely contribute to homeownership gaps as well, though most studies find that no combination of social and economic variables completely explains the differences in ownership between white and minority households. As we concentrate in this paper on the spatial variation of those who have already achieved ownership, it is important to remember that extensive gaps in homeownership rates by race remain.

Overlap of Racial Income Distributions

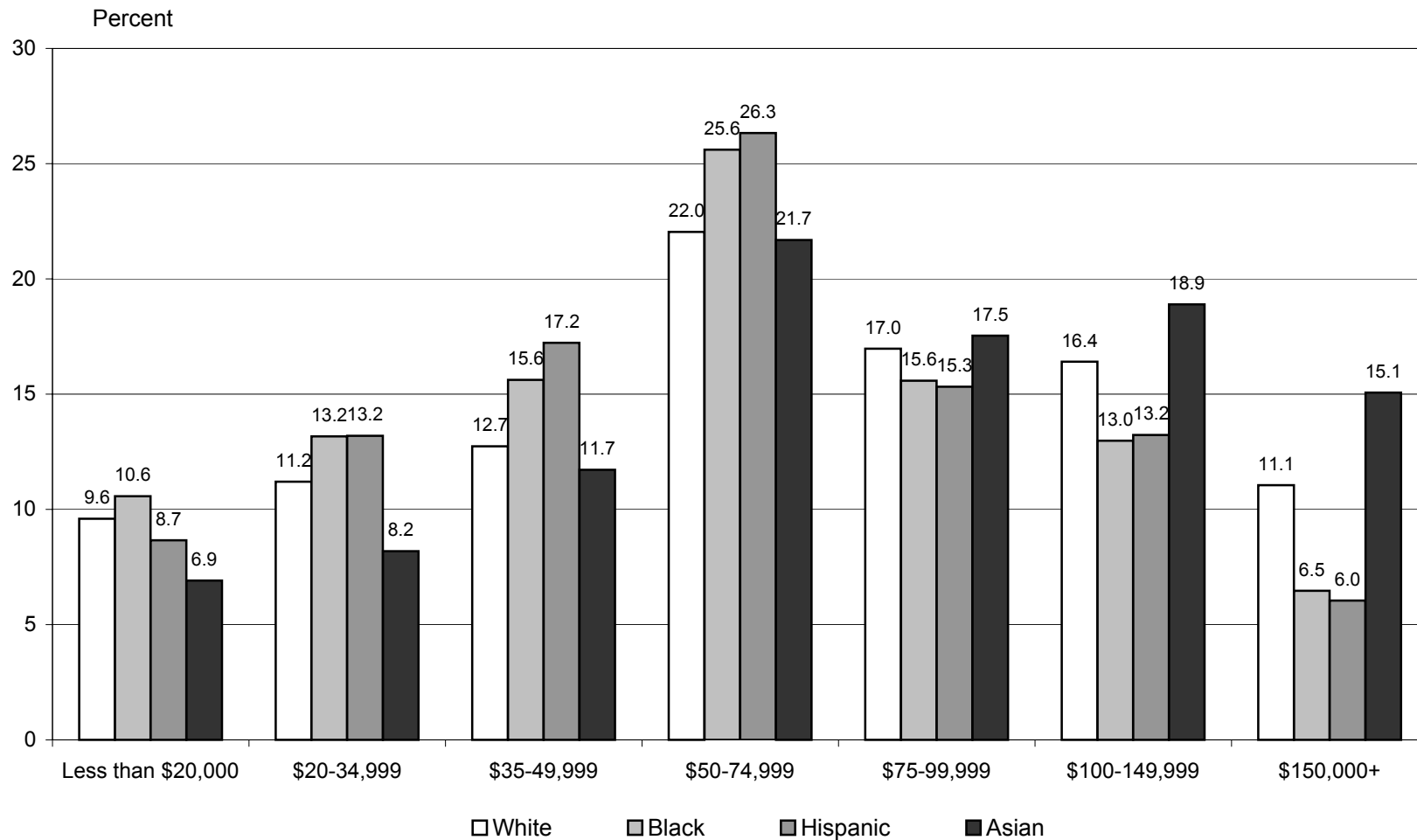
Lower minority incomes, which impede the ability to afford homes in certain market areas, may explain the differences in racial residence patterns. If home prices are fairly uniform **within** municipalities but differ substantially **between** municipalities, and if fairly little overlap exists among the income distributions of different races, then segregation may be due merely to affordability issues. In fact, median household incomes for homeowners do differ markedly, but there is also very substantial overlap between racial income distributions. The 1999 median household income for Asian owners was \$76,788, with about a third of households above \$100,000 annually. For whites the median income was \$68,260, with about a quarter of households above \$100,000. For African Americans and Latinos, median owner income was about \$59,000, with a fifth of households over \$100,000. Nevertheless, the income distributions, shown graphically in **Exhibit 4**, illustrate a great deal of overlap and belie the notion that the different races have almost completely distinct income profiles, especially when limited to home-owning households.

Residential segregation of owners would result if municipalities have distinct differences in home values, and if higher income racial groups (generally whites and Asians) tend to cluster in high-value areas while lower-income groups (generally African Americans and Latinos) cluster in lower-income areas. This pattern does occur to some extent. **Exhibit 5** maps the median value of owner-occupied homes in 2000¹³. Many of the higher-value suburbs to the west of the City do exhibit elevated shares of Asian households, the highest income group; and certain high-priced North and South shore suburbs are overwhelmingly white. Many of the satellite cities with high African-American and Latino shares, such as Brockton, Lynn, Lowell, Lawrence, Worcester, Fall River, and New Bedford have much lower home values. On the other hand, while African-American and Latino owners do reside in substantial numbers in certain municipalities characterized by moderate home values such as Malden, Revere, Somerville, Everett, Framingham, and Randolph; very few reside in more outlying suburbs that have similar home values.

¹³ 2000 Decennial Census. Summary File 3.

Exhibit 4

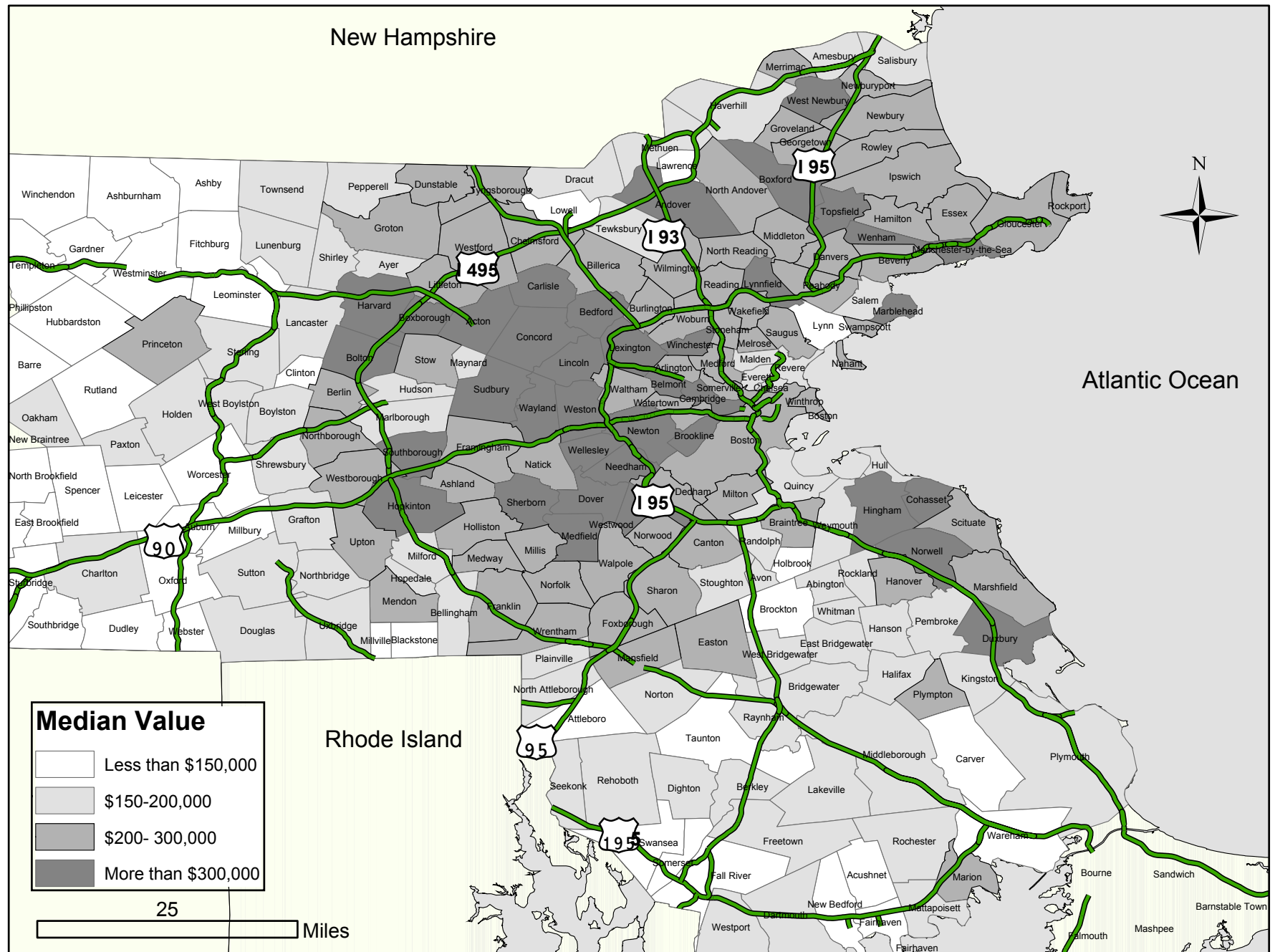
Household Income Distribution for Homeowners: 1999 Boston Metro Area (Share in Each Income Range)



Source: 2000 Decennial Census, Summary File 4.

Exhibit 5

Median Home Value, 2000



Source: 2000 Decennial Census, Summary File 3.

Methodology of Color-Blind Simulations by Home Value and Mortgage Amount

To understand the extent to which housing affordability affects the spatial distribution of homeowners across municipalities, we performed four simulations. The first predicted the racial distribution of owners across municipalities as if they were distributed purely according to the value of the homes that they own. In other words, owners were distributed spatially in a “color-blind” fashion. (See Technical Appendix for complete discussion of methodology.)

Decennial Census data has the benefit of a large sample size—one in six households in 2000 were surveyed about the value of their homes (or rent levels, in the case of renters,) however, it also has limitations. One key limitation is that the Census Bureau only reports home values by race for “specified units.” These units exclude mobile homes, houses with a business or medical office, houses on 10 or more acres, and housing units in multi-unit buildings. The housing stock in several metro area municipalities, including some heavily minority areas, is predominantly multi-family, even among owner-occupied units. The exclusion of these units could potentially skew the results. This distortion is especially possible because minorities are more likely than whites to live in multi-unit structures and are therefore more likely to be excluded. Metro-wide, 46% of Latino owners and 39% of African-American owners live in multi-unit structures, compared to just 17% of whites. More than 60% of all owner-occupied units in Somerville, Chelsea, Cambridge, Brookline, and Boston, and over half in Everett and Watertown are excluded from this analysis because they are not Census-designated “specified units.”

A second limitation of Census data is that it reports the home values of all households who currently own homes, regardless of when they purchased. White homeowners, on average, may have purchased their homes years ago, when prices were more affordable than they have been in recent years when minorities entered more strongly into the homebuyer market. These white owners have seen their home values grow over time, but these values may no longer reflect the amounts that these older white owners can “afford.” Indeed, many may not be able to “afford” the units they currently own if they were forced to buy them at today’s prices.

To address these Census data limitations, we repeated the analysis using data on mortgage loan amounts from the Home Mortgage Disclosure Act database. Loan amounts for home-purchase mortgages originated between 1999 and 2001 in 1-to-4 family, owner-occupied units were used to form categories over which borrowers of different races were allocated, once again in a “color-blind” fashion. We predicted the distribution of mortgage borrowers (a proxy for recent homebuyers) by race across municipalities as if mortgage amount alone determined where a borrower would reside.

Replicating the “color-blind” simulation with HMDA mortgage loan amounts rather than home values has certain advantages and disadvantages, but the overall conclusions are similar. Among the advantages—loan data reflects units in 1-to-4 unit structures, which include a large share of the multi-family stock that the Census “specified” home value information excludes. Secondly, loan amounts, derived from actual sales data, may better represent the true variation in property values across municipalities than Census-based home values that are households’ own estimates of the units’ worth. Thirdly, analysis based on loan data gives us a better “forward look” at trends that are likely to affect future spatial distribution. Home values of all units largely reflect

what has happened in the past, while loan information is more dynamic and illustrates the direction of change.

Disadvantages include smaller sample sizes than the Census because only a relatively small share of homes in a community is sold each year. Therefore, we included loans for a three-year period, 1991-2001, to boost the number of cases.

Secondly, mortgage amounts may not be a perfect indicator of what a buyer can afford, since they reflect home value (price) net of down payment. Hence, if white and black buyers both obtain mortgages for the same amount, but white buyers make a larger downpayment and hence purchase a more expensive house, then the loan value will represent a smaller share of the actual total home value for whites than it will for blacks. Analysis of the 1999 American Housing Survey¹⁴ revealed that the typical white and Asian recent homebuyer had a loan-to-value ratio of 90% versus 95% for blacks and Hispanics. The most recent American Housing Survey for Metro Boston¹⁵, performed in 1998, revealed an 80% loan-to-value ratio for whites, but did not have a large enough sample size to produce reliable estimates for minority homebuyers. Therefore, we performed 3 simulations with the HMDA data. First, the reported loan amount was used to allocate buyers spatially in a “color-blind” manner, which was then compared to the spatial distribution of actual owners to reflect areas that were “under”-and “over-represented” even after affordability was taken into account. In the second instance, an “adjusted value” was created which reflected the reported loan amount plus a downpayment based on a 90% loan-to-value ratio for blacks and Hispanics and an 80% ratio for all others. This adjusted value was then used to spatially allocate buyers. Lastly, an alternate “adjusted value” was created which reflected the reported loan amount plus a downpayment based on a 95% loan-to-value ratio for blacks and Hispanics and an 80% ratio for all others. No adjustment was made for Asian buyers. This scenario created the most conservative estimates, reflecting that blacks and Latinos obtaining the same mortgage amounts as whites may actually be purchasing lower-value homes, because they can afford to put less money down.

“Color-Blind” Simulation by Home Value

The values of homes owned by various racial groups vary more notably than do incomes, though these differences most clearly reflect the large share of Asians who own expensive homes. The 2000 median value for Asian owners was almost \$225,600, with about 60% of homes valued at \$200,000 or more¹⁶. For whites, the median value was \$190,800, with 46% valued at \$200,000 or more. For both Latinos and African Americans, median value was about \$161,000, with 33% and 28%, (respectively) of homes valued at \$200,000 or more. While **Exhibit 6** shows considerable overlap between home value distributions by race, especially in the middle ranges, the differences suggest that housing affordability could play a role in determining segregated residence patterns. The following simulation tests this assertion.

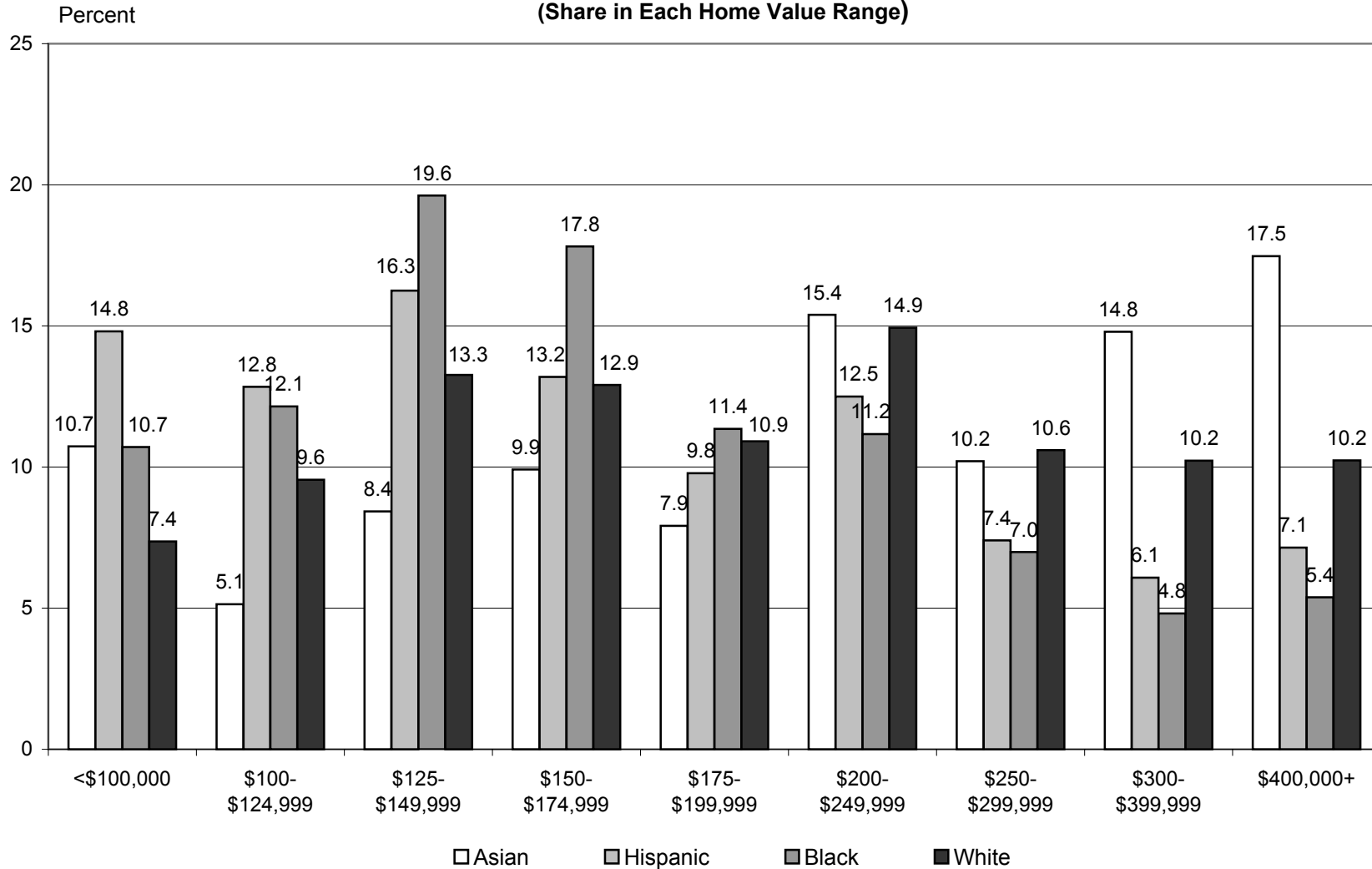
¹⁴ A biennial survey of approximately 60,000 households by the Census Bureau on behalf of the Department of Housing and Community Development.

¹⁵ A survey of about 4,500 households performed every 5-6 years.

¹⁶ The median home values and distributions cited in this paragraph reflect a small number of owners residing in the New Hampshire portion of the NECMA. These owners are excluded in the analysis in the balance of this paper.

Exhibit 6

Home Value Distribution: 2000 Boston Metro Area (Share in Each Home Value Range)



Note: Includes a small share of owner households in the New Hampshire portion of the metro area.

Source: 2000 Decennial Census, Summary File 4.

Exhibits 7a-d show the extent to which the actual distributions of homeowners by race across communities differ from the distributions which one would expect if location was determined solely according to the value of the homes that racial groups already own and the values of homes existing in each community. Take for example **Exhibit 7a**: municipalities in red (or the lightest shade in black-and-white map versions) are those in which African-American owners are greatly under-represented relative to what they could afford, if affordability is defined as owning a home of similar value to the homes in the specified community. In the vast majority of municipalities, particularly beyond Boston and its inner and southern suburbs, the actual African-American share of owners is less than half what we would expect based on what they could afford. In certain other areas, however, African-American owners are dramatically over-represented. In Boston, the African-American share of owners is 11 times what one would expect based on affordability; in Randolph, 7.2 times; in Milton 5.6 times; in Cambridge, 4.1 times; and in Brockton, 4.1 times. The heavy African-American concentration in Boston and its southern suburbs greatly exceeds what home values can explain.

Exhibit 7b illustrates that Latino owners are particularly under-represented in the far southern and western suburbs and over-represented in Boston, certain inner suburbs, and a far-flung set of satellite cities. At its most extreme, the Latino share of owners in Lawrence is 9.5 times what one would expect based on affordability; in Chelsea, 7.9 times; in Boston, 3.9 times; in Cambridge, 3.4 times; and in Somerville, 3.1 times.

Exhibit 7c indicates that Asian owners are particularly under-represented in the outlying suburbs, but over-represented in western inner suburbs and certain satellite cities. The Asian share of owners in Quincy is 4.8 times what one would expect based on affordability; in Acton, 3.8 times; in Malden, 3.4 times; in Randolph, 3.4 times; in Lowell, 3.3 times; and in Lexington, 3.3 times.

In contrast, **Exhibit 7d** shows the large over-representation of whites in the outer suburbs and under-representation in Boston, certain inner and southern suburbs and satellite cities. Because the white share of all owners is so large in the metro area, we used different definitions of “under- and over-representation” in this analysis¹⁷. Whites are deemed to be “under-represented” if their actual share of owners in a municipality is less than 97% of the share one would expect based on home values. Whites are deemed to be “over-represented” if their actual share of owners in a municipality is 3 percent or more above what one would expect based on home values. White owners are most under-represented in Boston where they constitute only 74% of the predicted share of homeowners; Randolph, 75% of predicted; Lawrence; 81% of predicted; Chelsea, 83% of predicted; and Brookline, 85% of predicted share. Whites are most over-represented in Templeton, 9% above predicted share; East Brookfield, 8% above; Athol, 8% above; Brookfield, 7% above, and Gardner, 7% above.

¹⁷ The need to use different “over- and under-representation” cutoffs for whites can be seen in this example: Take a community with a predicted white share of owners equal to the metro average share (about 92%.) Even if its actual white share of owners is 100% (the maximum,) the “actual share/predicted share” ratio will only be 1.09, or 9% above the predicted share. Using a cutoff such as “50% above predicted share,” as with the other racial groups, is clearly not sensible.

