PolicyLink

PERE
USC Program for Environmental & Regional Equity

An Equity Profile of

Rhode Island

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Equity Profiles are products of a partnership between PolicyLink and PERE, the Program for Environmental and Regional Equity at the University of Southern California.

The views expressed in this document are those of PolicyLink and PERE, and do not necessarily represent those of A Sustainable Rhode Island Consortium.

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Summary

This analysis of equity in Rhode Island shows that communities of color are driving the state's population growth and are essential to the region's economic success now and into the future. While the state demonstrates many economic strengths, wide racial gaps in income, health, and opportunity – coupled with a shrinking middle class and uneven wage growth – place its economic future at risk.

To secure a prosperous future, the state's leaders must take steps to build a more equitable and sustainable economy. Critical strategies include growing good jobs, connecting unemployed and low-wage workers to job training and career opportunities, and increasing access to economic opportunity throughout the region. Implementing these strategies would put all the region's residents on the path to reaching their full potential, bringing shared economic prosperity statewide.

Introduction

Introduction
Overview

Across the country, state and regional planning organizations, local governments, community organizations and residents, funders, and policymakers are striving to put plans, policies, and programs in place that build healthier, more vibrant, more sustainable, and more equitable regions.

Equity – ensuring full inclusion of the entire region's residents in the economic, social, and political life of the region, regardless of race, ethnicity, age, gender, neighborhood of residence, or other characteristic – is an essential element of the plans.

Knowing how a state or region stands in terms of equity is a critical first step in planning for greater equity. To assist communities with that process, PolicyLink and the Program for Environmental and Regional Equity (PERE) developed an equity indicators framework that communities can use to understand and track the state of equity in their regions.

This document presents an equity analysis of the State of Rhode Island. It was developed to help A Sustainable Rhode Island Consortium effectively address equity issues throughout its process of planning for a more integrated and sustainable region. PolicyLink and PERE also hope this will be a useful tool for advocacy groups, elected officials, planners, and others.

The data in this profile are drawn from a regional equity database that includes data for the largest 150 regions in the United States. This database incorporates hundreds of data points from public and private data sources including the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the Behavioral Risk Factor Surveillance Survey, and Woods and Poole Economics. See the "Data and methods" section of this profile for a detailed list of data sources.

Introduction
Defining the region

For the purposes of the equity profile and data analysis, the Rhode Island region is synonymous with the State of Rhode Island. All data for Rhode Island presented in the profile use this regional boundary. Minor exceptions due to lack of data availability are noted in the "Data and methods" section beginning on page 82.

Introduction
Why equity matters now

The face of America is changing.

Our country's population is rapidly diversifying. Already, more than half of all babies born in the United States are people of color. By 2030, the majority of young workers will be people of color. And by 2043, the United States will be a majority people-of-color nation.

Yet racial and income inequality is high and persistent.

Over the past several decades, long standing inequities in income, wealth, health, and opportunity have reached unprecedented levels, and communities of color have felt the greatest pains as the economy has shifted and stagnated.

Strong communities of color are necessary for the nation's economic growth and prosperity.

Equity is an economic imperative as well as a moral one. Research shows that equity and diversity are win-win propositions for nations, regions, communities, and firms. For example:

- More equitable nations and regions experience stronger growth.[1]
- Companies with a diverse workforce achieve a better bottom-line.[2]
- A diverse population better connects to global markets.[3]

The way forward: an equity-driven growth model.

To secure America's prosperity, the United States must implement a new economic model based on equity, fairness, and opportunity.

Metropolitan regions are where this new growth model will be created.

Regions are the key competitive unit in the global economy, and the level where strategies are being incubated that bring about robust job growth that is linked to low-income communities and communities of color.

[1] Manuel Pastor, "Cohesion and Competitiveness: Business Leadership for Regional Growth and Social Equity," OECD Territorial Reviews, Competitive Cities in the Global Economy, Organisation For Economic Co-Operation And Development (OECD), 2006; Manuel Pastor and Chris Benner, "Been Down So Long: Weak-Market Cities and Regional Equity" in *Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas* (New York: American Assembly and Columbia University, 2008); Randall Eberts, George Erickcek, and Jack Kleinhenz, "Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future" (Federal Reserve Bank of Cleveland: April 2006), http://www.clevelandfed.org/Research/workpaper/2006/wp06-05.pdf.

[2] Cedric Herring. "Does Diversity Pay?: Race, Gender, and the Business Case for Diversity." *American Sociological Review*, 74, no. 2 (2009): 208-22; Slater, Weigand and Zwirlein. "The Business Case for Commitment to Diversity." *Business Horizons* 51 (2008): 201-209.

[3] U.S. Census Bureau. "Ownership Characteristics of Classifiable U.S. Exporting Firms: 2007" Survey of Business Owners Special Report, June 2012, http://www.census.gov/econ/sbo/export07/index.html.

Introduction
What is an equitable region?

Regions are equitable when all residents – regardless of their race/ethnicity/nativity, neighborhood of residence, or other characteristics – are fully able to participate in the region's economic vitality, contribute to the region's readiness for the future, and connect to the region's assets and resources.

Strong, equitable regions:

- Possess **economic vitality**, providing high-quality jobs to their residents and producing new ideas, products, businesses, and economic activity so the region remains sustainable and competitive.
- Are **ready for the future**, with a skilled, ready workforce, and a healthy population.
- Are **places of connection**, where residents can access the essential ingredients to live healthy and productive lives in their own neighborhoods, reach opportunities located throughout the region (and beyond) via transportation or technology, participate in political processes, and interact with other diverse residents.

Introduction
Equity indicators framework

The indicators in this profile are presented in four sections. The first section describes the region's demographics. The next three sections present indicators of the region's economic vitality, readiness, and connectedness. Below are the questions answered within each of the four sections.

Demographics:
Who lives in the region and how is this changing?

- Racial/ethnic diversity
- Demographic change
- Population growth
- Racial generation gap

Economic Vitality:
How is the region doing on measures of economic growth and well-being?

- Is the region producing good jobs?
- Can all residents access good jobs?
- Is growth widely shared?
- Do all residents have enough income to sustain their families?
- Is race/ethnicity/nativity a barrier to economic success?
- What are the strongest industries and occupations?

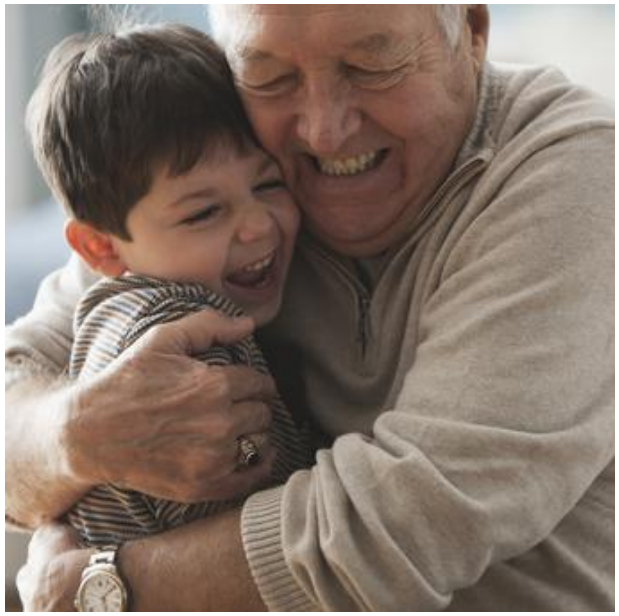
Readiness:
How prepared are the region's residents for the 21st century economy?

- Does the workforce have the skills for the jobs of the future?
- Are all youth ready to enter the workforce?
- Are residents healthy?
- Are racial gaps in education and health decreasing?

Connectedness:
Are the region's residents and neighborhoods connected to one another and to the region's assets and opportunities?

- Do residents have transportation choices?
- Can residents access jobs and opportunities located throughout the region?
- Can all residents access affordable, quality, convenient housing?
- Do neighborhoods reflect the region's diversity? Is segregation decreasing?
- Can all residents access healthy food?

Demographics



Demographics
Highlights
Who lives in the region and how is it changing?

- Rhode Island is moderately diverse and is experiencing rapid demographic change. Its share of people of color increased from 7 to 24 percent between 1980 and 2010.
- All of the state's recent population growth is attributable to people of color. Latinos, Asians, and African Americans are driving growth and change in the state, and will continue to do so for the foreseeable future.
- The people-of-color population is growing quickly in the state's nine largest cities and in the state as a whole. By 2040, 41 percent of Rhode Islanders will be people of color.
- There is a significant and growing racial generation gap between the region's predominantly white senior population and its increasingly diverse youth population.

People of color:

24%

State population growth attributable to people of color since 1990:

100%

Racial generation gap rank (out of largest 150 regions):

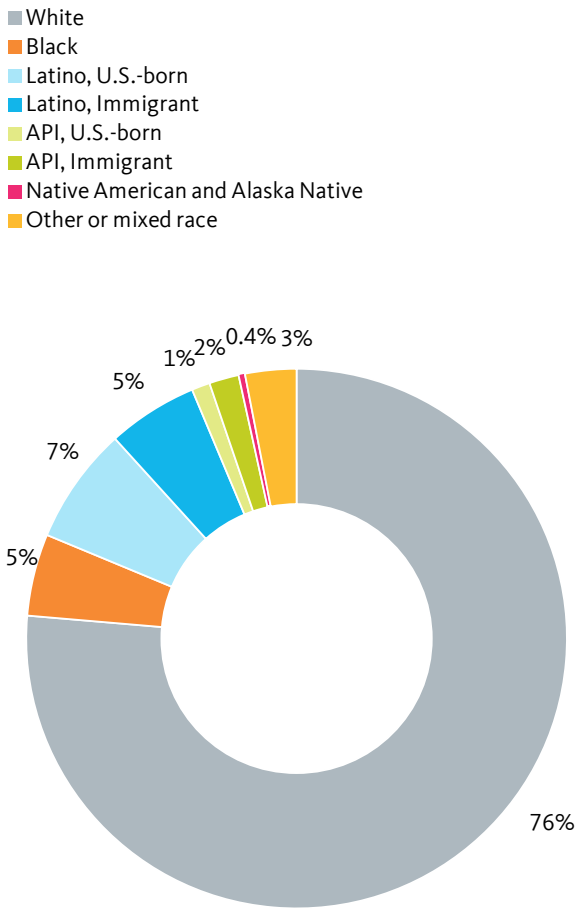
#52

Demographics
A moderately diverse region

Twenty-four percent of residents are people of color, including a diverse mix of racial and ethnic groups. The Asian population is small but diverse, including people of Chinese/Taiwanese, Cambodian, Asian Indian, Filipino, Laotian, and Korean ancestry. The Latino population is mainly of Dominican and Puerto Rican ancestry, with significant but smaller shares of people with Guatemalan, Mexican, and Columbian ancestry.

Rhode Island's population was 76 percent white in 2010

1. Race, Ethnicity, and Nativity, 2010



Sources: IPUMS; U.S. Census Bureau. 2006-2010 IPUMS data adjusted to match 2010 Census results.

Diverse Latino and Asian communities

2. Latino and Asian Populations by Ancestry, 2006-2010

Latino

Ancestry	Population
Dominican	36,307
Puerto Rican	31,328
Guatemalan	19,462
Mexican	9,770
Colombian	8,403
All other Latinos	18,779
Total	**124,049**

Asian/Pacific Islander

Ancestry	Population
Chinese or Taiwanese	7,141
Cambodian	4,793
Asian Indian	3,947
Filipino	3,271
Laotian	2,800
Korean	1,890
All other Asians	5,428
Total	**29,270**

Source: IPUMS.

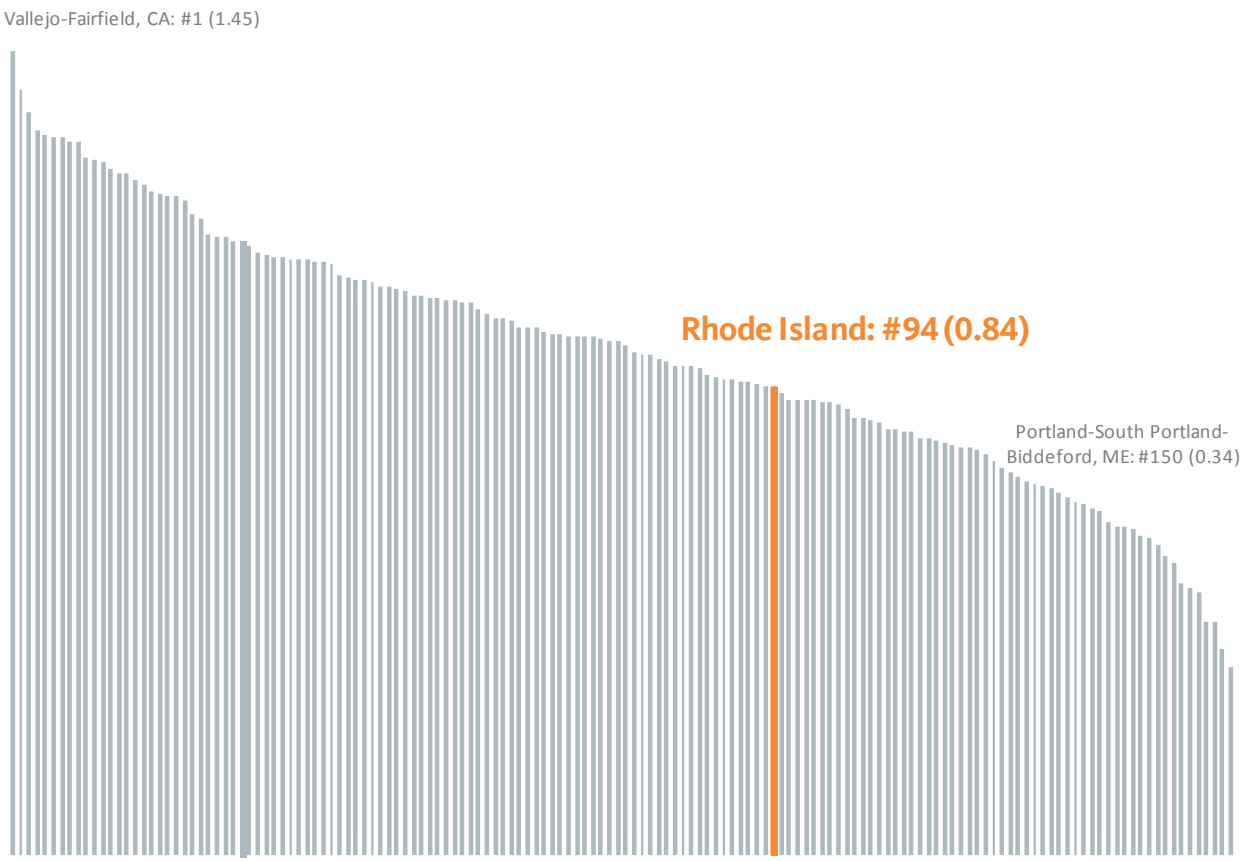
Demographics
A moderately diverse region
(continued)

Rhode Island ranks 94th on diversity among the largest 150 metropolitan regions in the country. Rhode Island has a diversity score of 0.84, making it more diverse than the similarly-sized Northeastern metro areas of Buffalo (0.75) and Albany (0.69), but less diverse than Bridgeport (1.04) and New Haven (1.01).

The diversity score is a measure of racial/ethnic diversity a given area. It measures the representation of the six major racial/ethnic groups (white, black, Latino, API, Native American, and other/mixed race) in the population. The maximum possible diversity score (1.79) would occur if each group were evenly represented in the region – that is, if each group accounted for one-sixth of the total population.

Note that the diversity score describes the region as a whole and does not measure racial segregation, or the extent to which different racial/ethnic groups live in different neighborhoods. Segregation measures can be found on pages 66 and 67.

Rhode Island has a relatively moderate level of diversity
3. Diversity Score in 2010: Largest 150 Metros Ranked



Source: U.S. Census Bureau.

Demographics

Slow growth but rapid demographic change over the past several decades

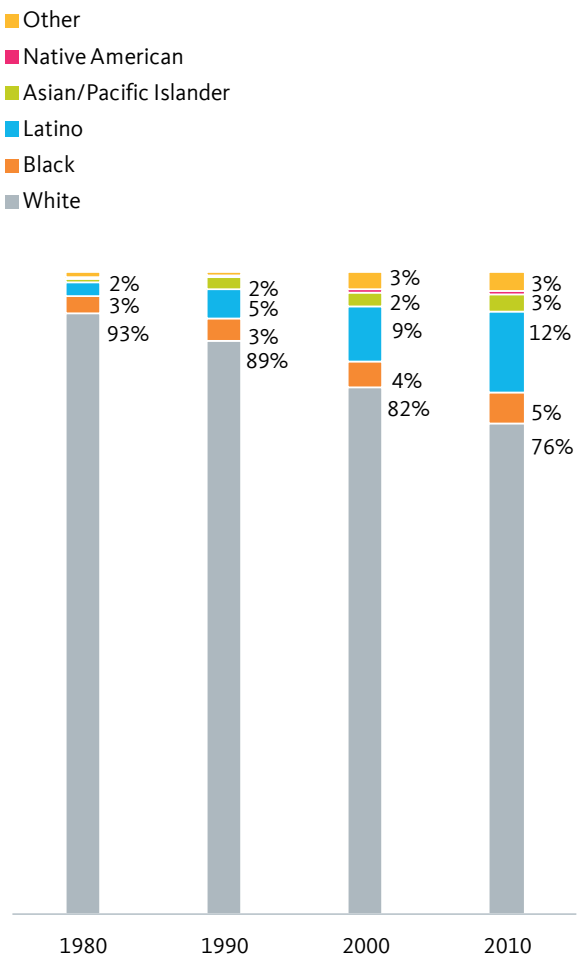
Rhode Island's population is growing, although growth has been slow over the past several decades. The state population increased by only 11 percent between 1980 and 2010 (from 947,000 to 1,053,000) while the nation as a whole grew by 36 percent.

Over the past two decades, slow net population growth overall in the state has been characterized by substantial declines in the white population alongside even more substantial increases in the number of people of color. As a result, all of the state's net population growth over the past two decades is attributable to people of color.

Rhode Island's population has rapidly become more diverse, with its people-of-color population increasing from 7 to 24 percent between 1980 and 2010.

The population has rapidly diversified

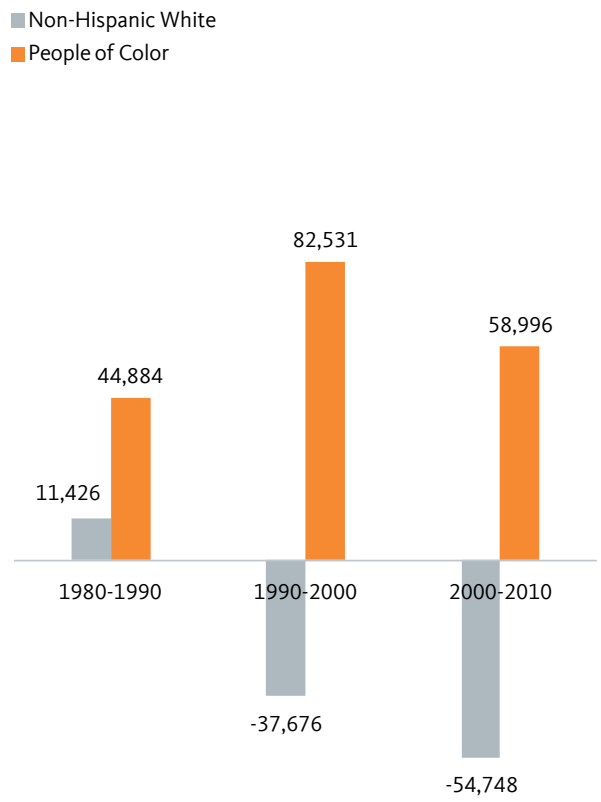
4. Racial/Ethnic Composition, 1980 to 2010



Source: U.S. Census Bureau.

The state's white population is decreasing, and growth is entirely coming from people of color

5. Net Population Growth by Decade, 1980 to 2010



Source: U.S. Census Bureau.

Demographics

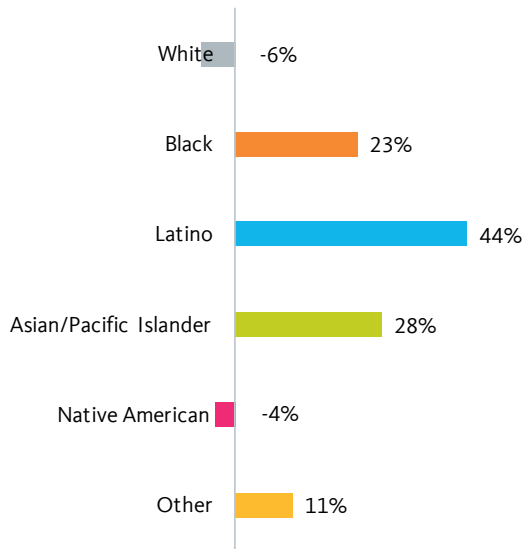
Latinos, Asians, and African Americans are leading the state's growth

Over the past decade, Rhode Island's Latino population grew 44 percent, adding almost 40,000 residents. The Asian and African American populations also grew by 28 and 23 percent, or 7,000 and 10,000 residents, respectively. The state's non-Hispanic white population shrank by six percent (55,000 residents).

A majority of the growth in the state's Latino and Asian populations over the past decade has not been due to immigration but to new births among U.S. residents.

Latino, Asian, and African American populations grew the most in the past decade, while the white and Native American populations experienced population decline

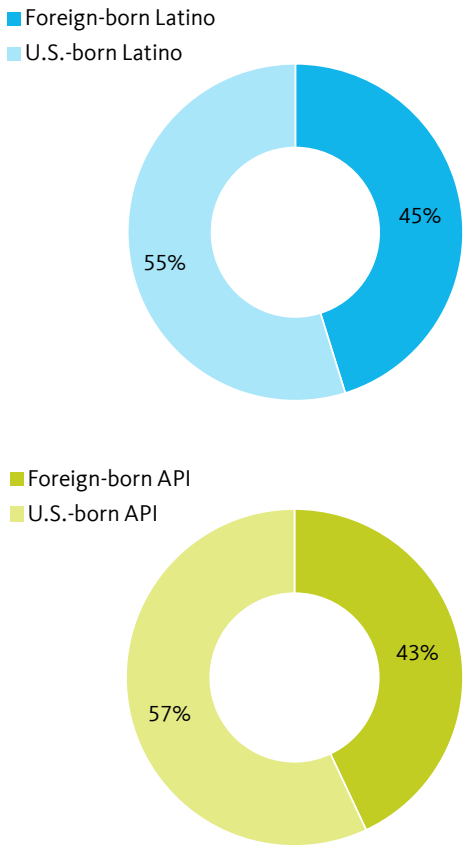
6. Growth Rates of Major Racial/Ethnic Groups, 2000 to 2010



Source: U.S. Census Bureau.

Latino and Asian population growth was driven more by increases in the U.S.-born than by immigration

7. Share of Net Growth in Latino and Asian Population by Nativity, 2000 to 2006-2010



Source: IPUMS.

Demographics

People of color are driving population change in all of Rhode Island's largest cities

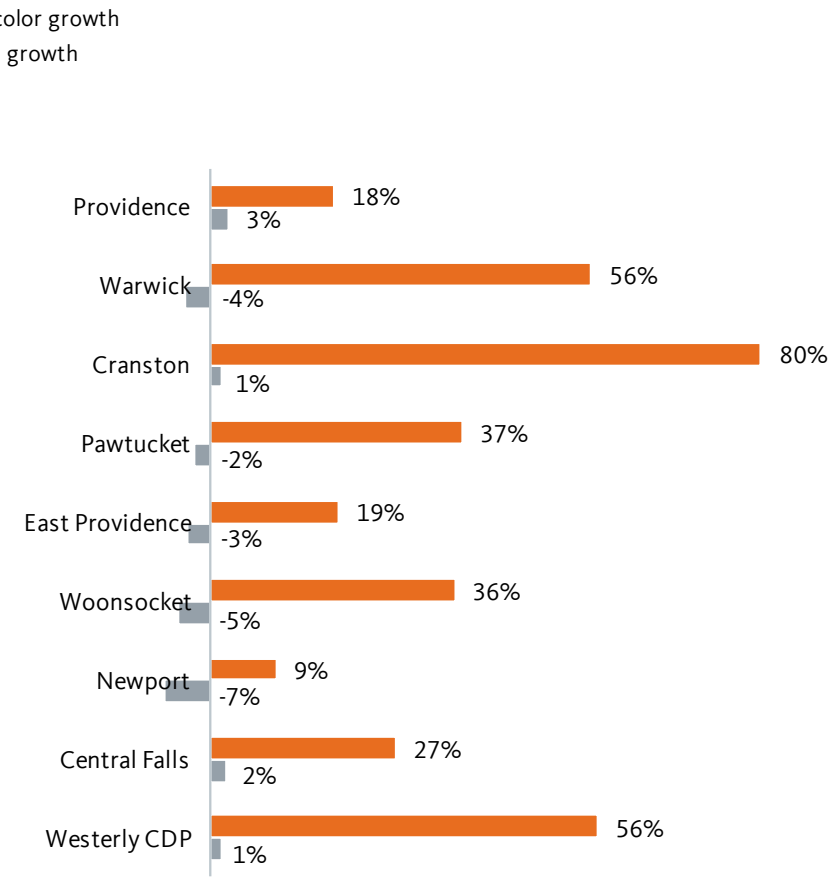
The rapid growth of people of color in Rhode Island is helping to stem population decline in many of the state's cities. Five of Rhode Island's nine largest cities (Warwick, Pawtucket, East Providence, Woonsocket, and Newport) experienced population losses of 2 to 7 percent over the past decade, and these losses would have been more severe were it not for the robust growth of their people-of-color populations.

Providence, Cranston, Central Falls, and Westerly all grew slightly (1 to 3 percent), and that growth was propelled by the growth of their people-of-color populations.

Providence, home to 17 percent of the state's residents, had the fastest overall growth rate at 3 percent but its people-of-color population grew six times as fast, at 18 percent.

Over the past decade, the people-of-color population increased in Rhode Island's nine largest cities

8. Percent Change in Population, 2000 to 2010 (in descending order by 2010 population)



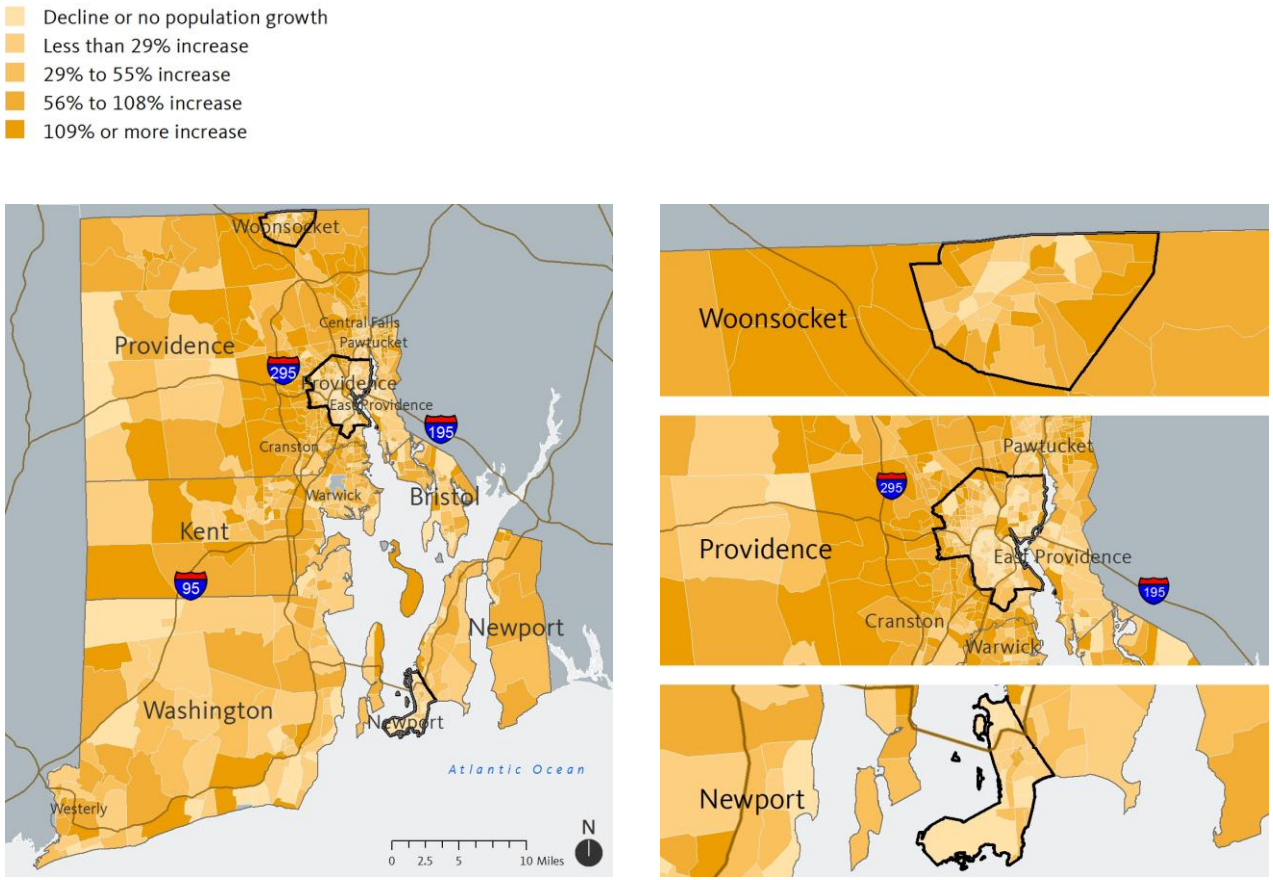
Source: U.S. Census Bureau.

Demographics
Rapid growth of communities of color statewide

Fast-growing communities of color can be found throughout Rhode Island. As these maps illustrate, communities of color doubled their numbers in many areas across the state (represented by the darkest orange-colored areas on the map). Communities of color are growing fast in the areas west of the City of Providence, as well as around Cranston, Woonsocket and Central Falls. Slower increases are generally seen inside the City of Providence (where the people-of-color population already comprises 62 percent of the total) and in the western and southern areas of the state.

Significant growth in communities of color across the state

9. Percent Change in People of Color by Census Block Group, 2000 to 2010



Sources: U.S. Census Bureau; Geolytics.
Note: To more accurately visualize change, block groups with a small populations (50 or fewer people in either 2000 or 2010) were excluded from the analysis. Excluded block groups are shaded in white.

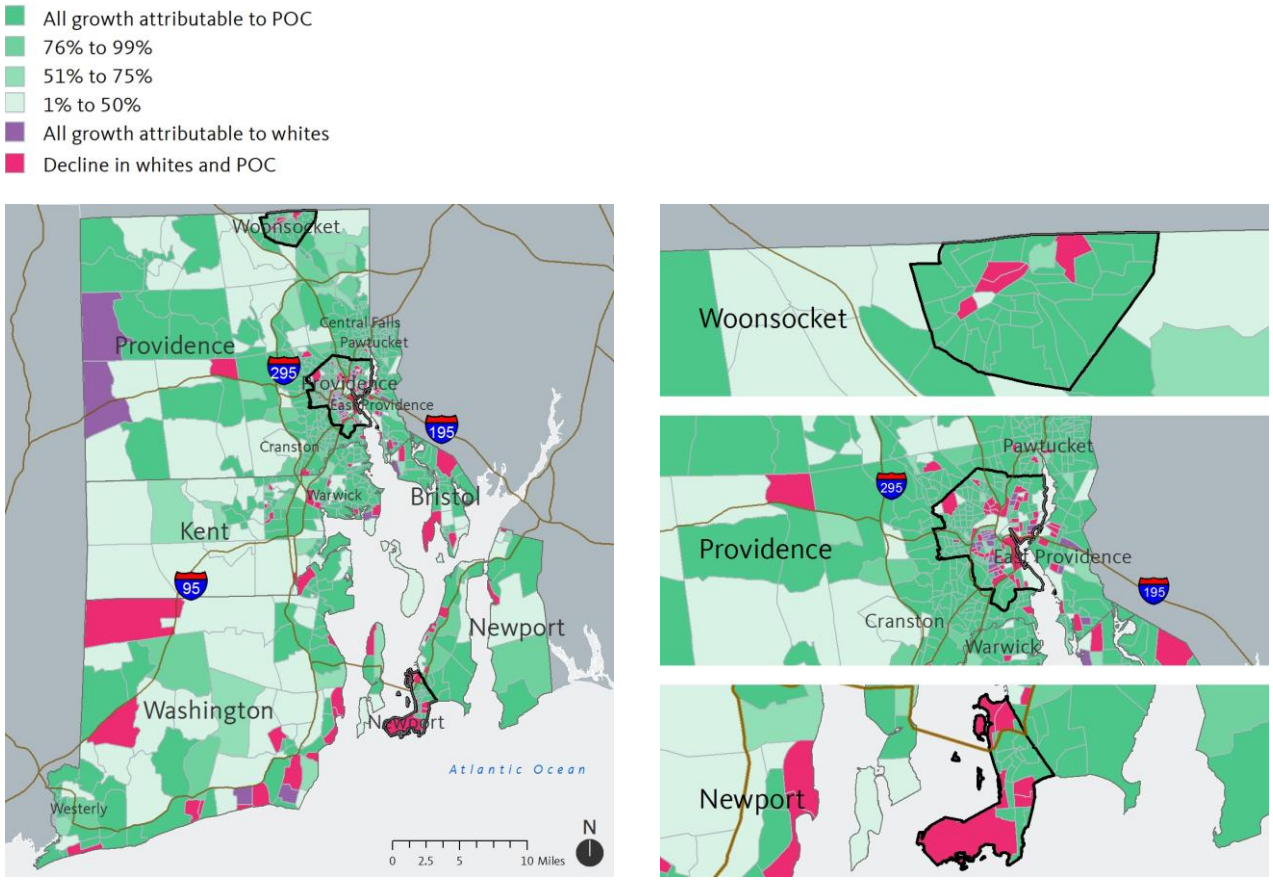
Demographics

People of color contributed all of the population growth in many communities across the state

Much of the population growth in Rhode Island over the last decade – particularly around Providence and other northern cities, and Westerly in the south – is entirely attributable to people of color. Although the state's white population decreased over the last decade, whites accounted for all of the population growth in a number of neighborhoods in the City of Providence, as well as in a few other parts of the state.

Much of Rhode Island's growth throughout the state is entirely attributable to people of color

10. Share of Net Population Growth Attributable to People of Color (POC) by Census Block Group, 2000 to 2010



Sources: U.S. Census Bureau; Geolytics.

Demographics

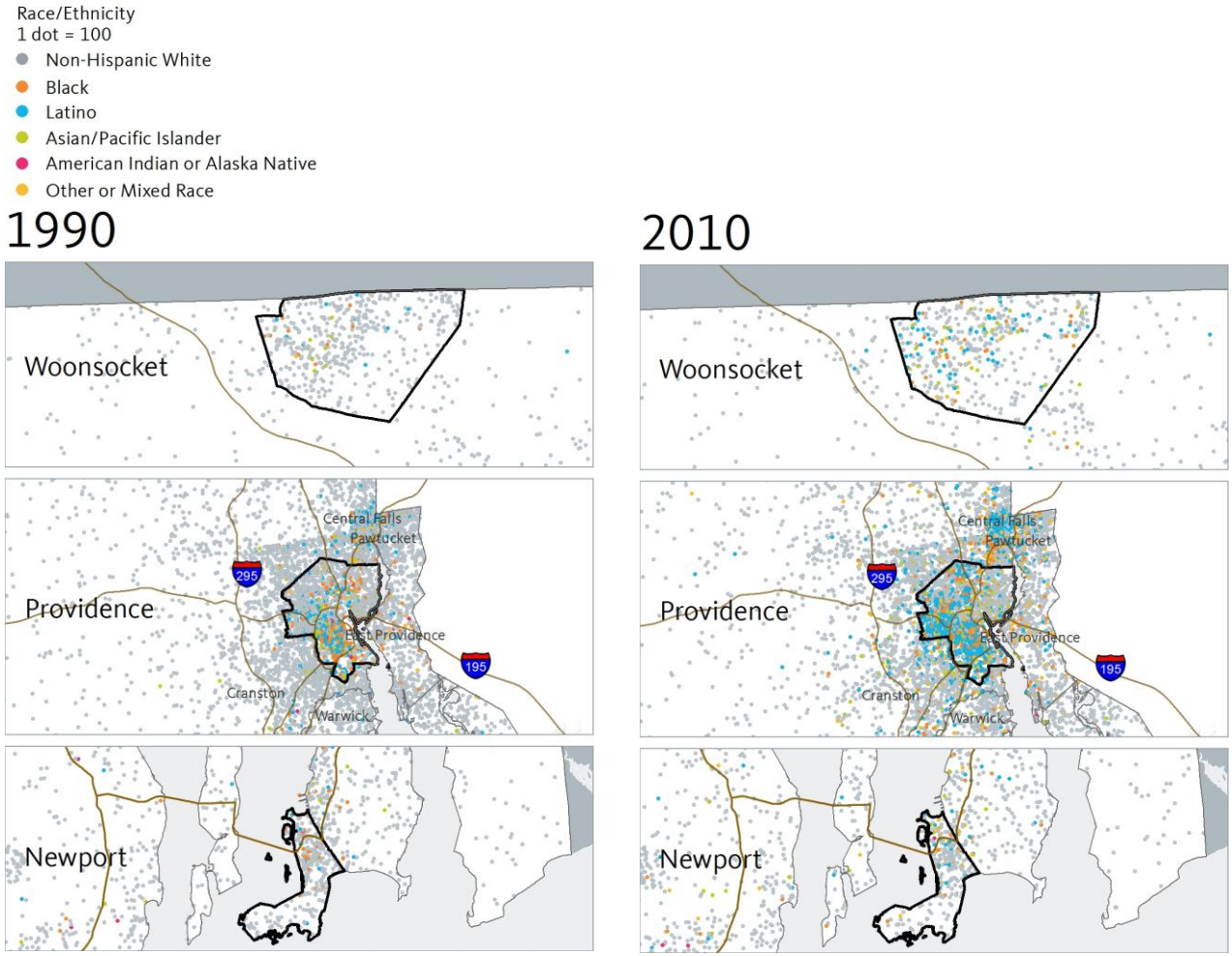
Suburban areas are becoming more diverse

Since 1990, the City of Providence and its neighboring cities of Cranston to the south and Central Falls and Pawtucket to the north have experienced large growth in their Latino populations. The African American population also grew and dispersed throughout Providence and its immediate suburban areas. The white population in Providence declined substantially over the past two decades.

Other cities, such as Woonsocket, experienced moderate growth and show a greater geographic dispersion of people of color within the city limits. On the other hand, Newport's low growth rate for people of color resulted in little change between 1990 and 2010, though some areas to the northeast of the city are now more diverse.

There is a growing Latino and African American presence in the suburbs of Providence and its neighboring cities of Central Falls, Pawtucket, and Cranston

11. Racial/Ethnic Composition by Census Block Group, 1990 and 2010



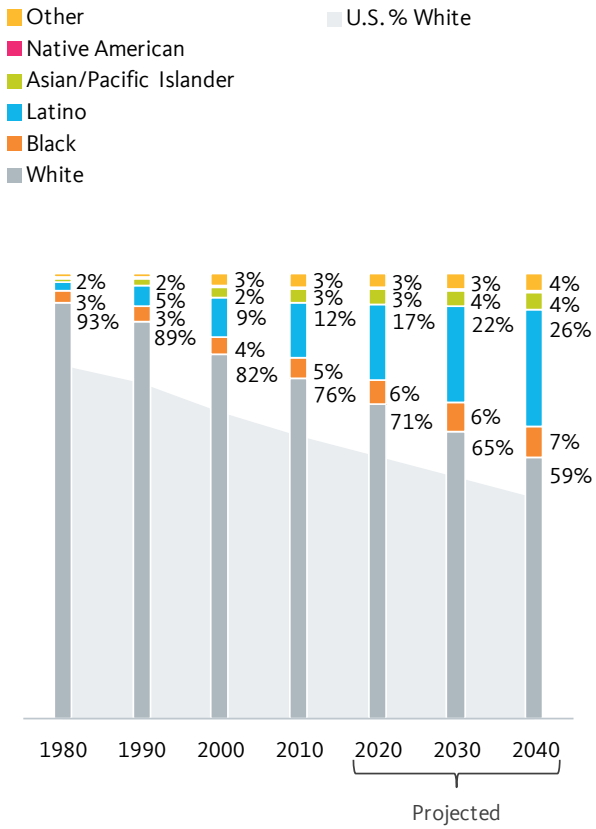
Sources: U.S. Census Bureau; Geolytics.

Demographics
Rhode Island will continue to diversify

Rhode Island will continue to grow more diverse in the future, at a rate that is similar to that of the past few decades and slightly higher than the nation as a whole. While the state currently ranks 103rd compared with the largest 150 regions in its share of people of color, projections indicate that by 2040 it will rank 92nd. When the nation as a whole becomes majority people of color around the year 2043, about 41 percent of Rhode Island's residents will be people of color, but Providence county will be majority people of color.

The state will grow more diverse, with Providence County expected to become majority people of color by 2040

12. Racial/Ethnic Composition, 1980 to 2040



Sources: U.S. Census Bureau; Woods & Poole Economics.

13. Percent People of Color by County, 1980 to 2040

Sources: U.S. Census Bureau; Woods & Poole Economics.

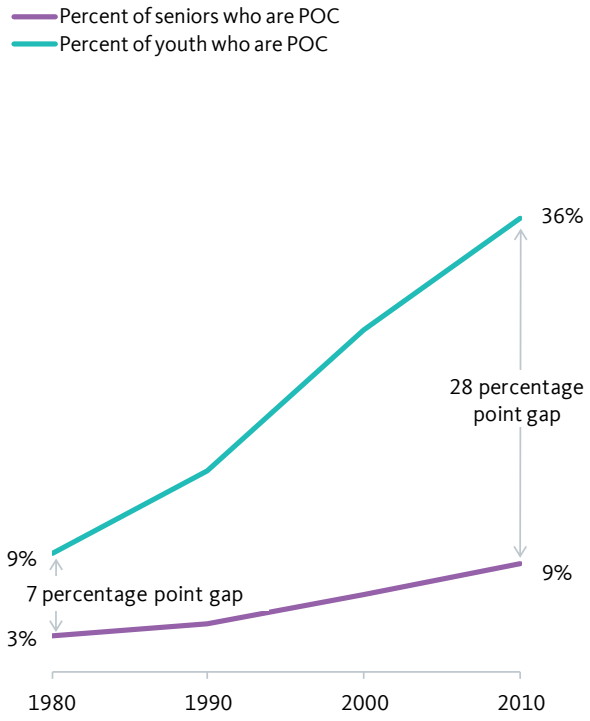
Demographics
A growing racial generation gap

Youth are leading the demographic shift occurring in the state. Today, 36 percent of Rhode Island's youth (under age 18) are people of color, compared with 9 percent of the state's seniors (over age 64). This 28 percentage point difference between the share of people of color among young and old can be measured as the racial generation gap. Rhode Island's racial generation gap quadrupled between 1980 and 2010.

All of the state's communities of color tend to be younger than its white population. The median age of its fast-growing Latino population, for example, is 26, or 16 years younger than the median age of 42 for the white population.

The youth population has diversified much more quickly than the senior population

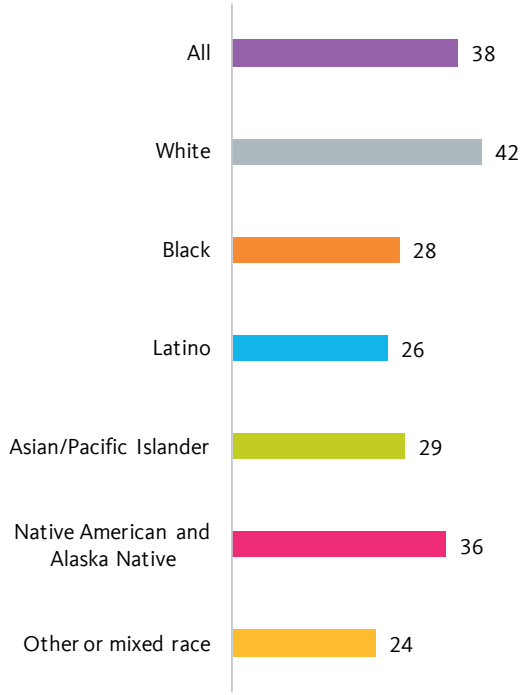
14. Percent People of Color (POC) by Age Group, 1980 to 2010



Source: U.S. Census Bureau.
Note: Gap value may not equal the difference in percentages shown due to rounding.

The state's diverse racial and ethnic groups are much younger than its white population

15. Median Age by Race/Ethnicity, 2006-2010



Source: IPUMS.

Demographics

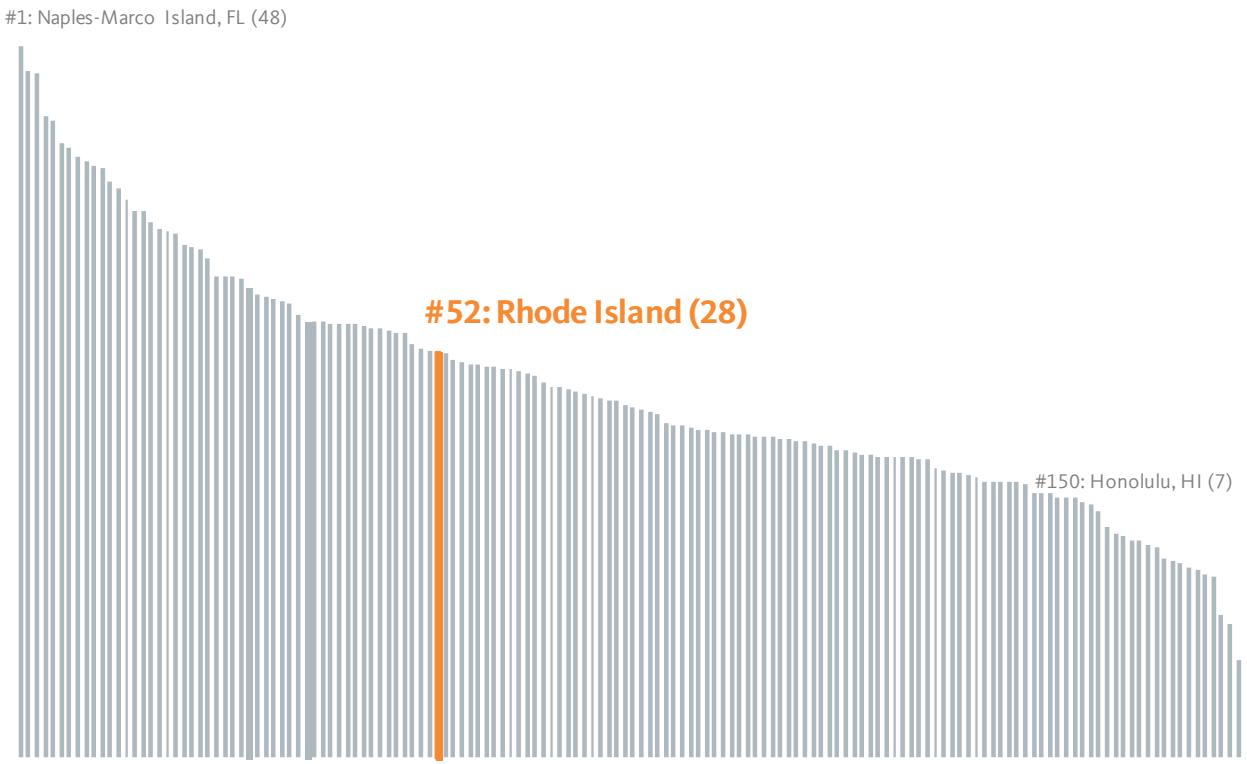
A growing racial generation gap

(continued)

The State of Rhode Island's 28 percentage point racial generation gap is slightly higher than the national average (26 percentage points), ranking it 52nd among the largest 150 regions on this measure.

Rhode Island has an above-average racial generation gap

16. The Racial Generation Gap in 2010: Largest 150 Metros Ranked



Source: U.S. Census Bureau.

Economic vitality

Economic vitality
Highlights
How is the region doing on measures of economic growth and well-being?

- Rhode Island has had sluggish job growth since 1990, and experienced high unemployment during the Great Recession.
- Income inequality sharply increased during the 1990s, but has slightly improved since 2000.
- Over the past few decades, wages have grown unevenly, with the highest earners seeing the greatest gains and the lowest earners seeing the smallest gains.
- Poverty and working poverty are increasing, and rates are highest for communities of color.
- Racial and gender gaps persist in the labor market. At nearly every level of educational attainment, people of color have worse outcomes than whites, and both white women and women of color earn less than their male counterparts.
- People of color are more likely to work in low-opportunity jobs compared with whites.

Rise in unemployment rate between 2007 and 2010:

+6.5 percentage points

Decline in middle-wage jobs since 1990:

-12%

College graduate wage difference between whites and people of color:

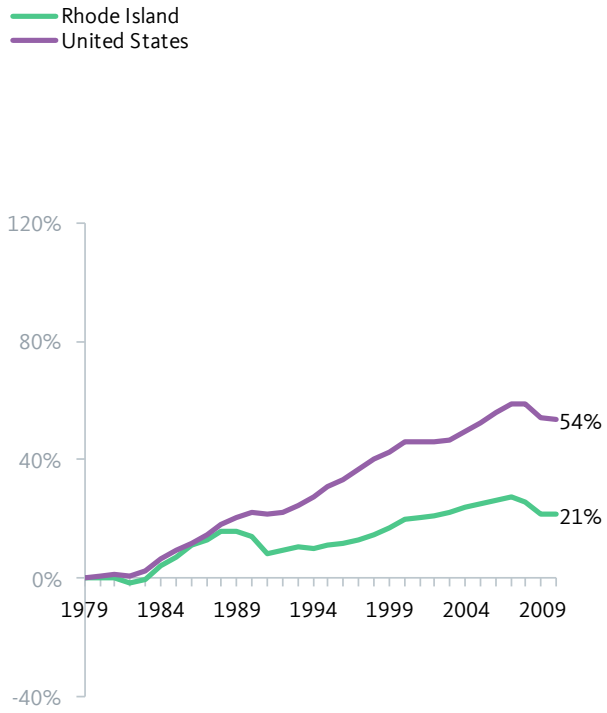
$6.50/hr

Economic vitality
Sluggish long-term job growth

Economic growth, as measured by increases in jobs and Gross Regional Product (GRP) – the value of all goods and services produced within the region – show mixed results for Rhode Island. While GRP growth has kept pace with the national average, job growth has lagged far behind since the late 1980s.

Job growth lagged behind the national average since 1988

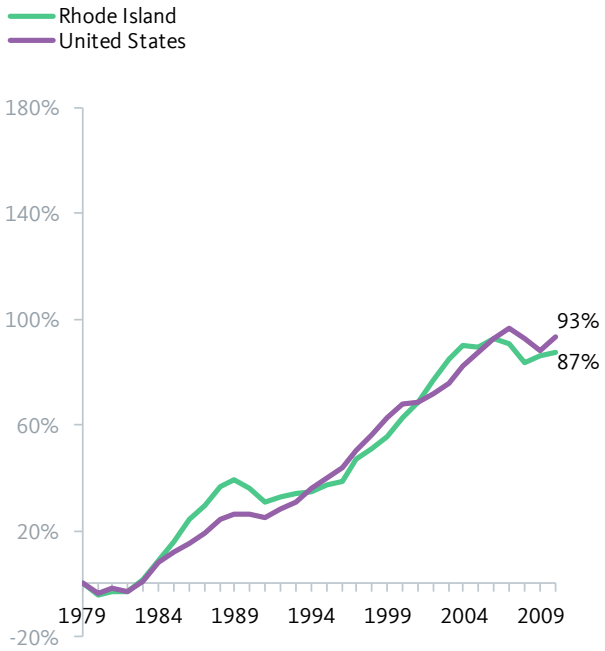
17. Cumulative Job Growth, 1979 to 2010



Source: U.S. Bureau of Economic Analysis.

Gross Regional Product (GRP) growth has kept pace with the nation

18. Cumulative Growth in Real GRP, 1979 to 2010



Source: U.S. Bureau of Economic Analysis.

Economic vitality

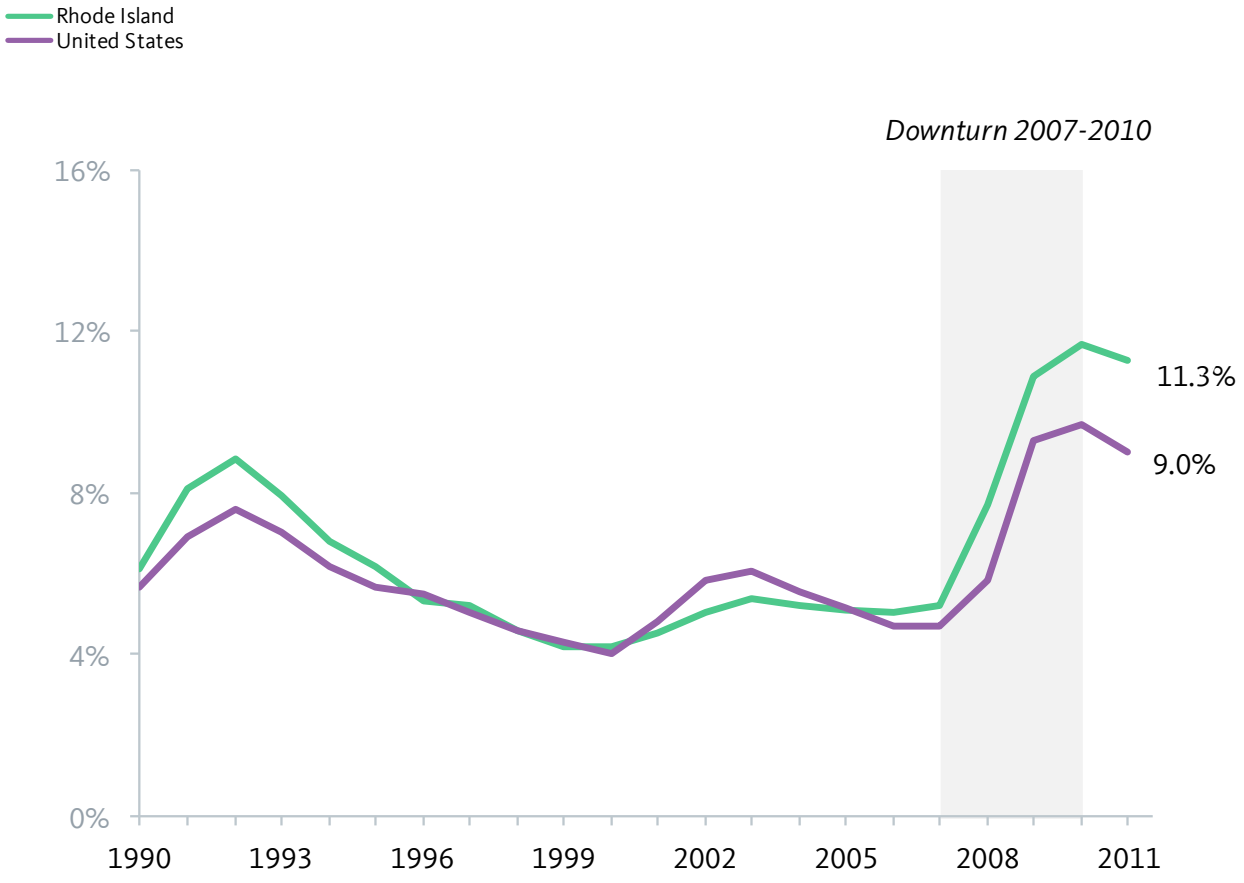
High unemployment during and after the downturn

Rhode Island's economy struggled during the economic downturn. Unemployment spiked between 2007 and 2010, rising well above the national average. In 2011, Rhode Island's unemployment rate was 11 percent, ranking it 21st among the largest 150 regions.

According to recent data from the Brookings Institution, the region's faltering economic performance has continued since the recession ended. As of March 2013, Rhode Island ranked 92nd among the 100 largest regions in its economic recovery, based on measures of employment, unemployment, GRP, and housing prices.

Unemployment remains far above the national average

19. Unemployment Rate, 1990 to 2011



Source: U.S. Bureau of Labor Statistics. Universe includes the civilian noninstitutional population ages 16 and older.

Economic vitality

Job growth is not quite keeping up with population growth

While overall job growth is essential, the real question is whether jobs are growing at a fast enough pace to keep up with population growth. Rhode Island has had slow job growth and slow population growth over the past two decades. Compared to the national average, its job growth per person has been slower since the early 1990s but has gained some ground over the past few years.

Lower than average job growth per person since 1990

20. Cumulative Growth in Jobs-to-Population Ratio, 1979 to 2010

Source: U.S. Bureau of Economic Analysis.

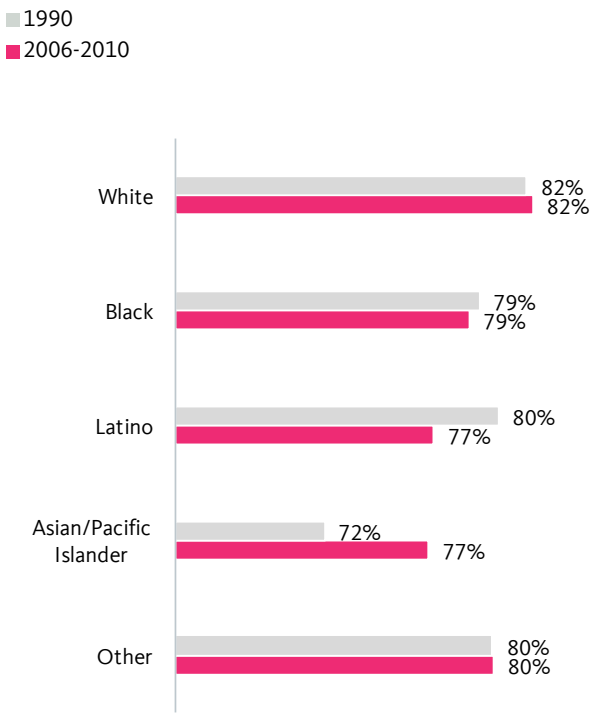
Economic vitality

Unemployment higher for people of color

Examining unemployment by race over the past two decades, although some progress has been made, racial employment gaps persist in Rhode Island. All of the region's racial and ethnic communities participate in the labor force (either working or actively seeking employment) at relatively similar rates, but African Americans and Latinos face much higher levels of unemployment compared with whites, Asians, and people of other/mixed racial background. Latino unemployment, for example, is twice the rate of white unemployment (12 percent compared with 5.7 percent).

The region's racial/ethnic groups participate in the labor market at similar rates

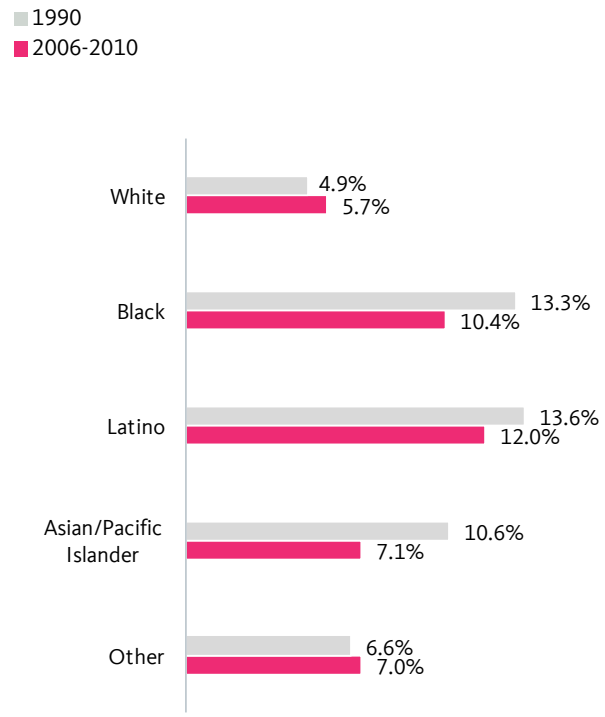
21. Labor Force Participation Rate by Race/Ethnicity, 1990 and 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64.
Note: The full impact of the Great Recession is not reflected in the latest data shown, which is averaged over 2006 through 2010. These trends may change as new data become available.

All communities of color have higher unemployment rates than whites

22. Unemployment Rate by Race/Ethnicity, 1990 and 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64.
Note: The full impact of the Great Recession is not reflected in the latest data shown, which is averaged over 2006 through 2010. These trends may change as new data become available.

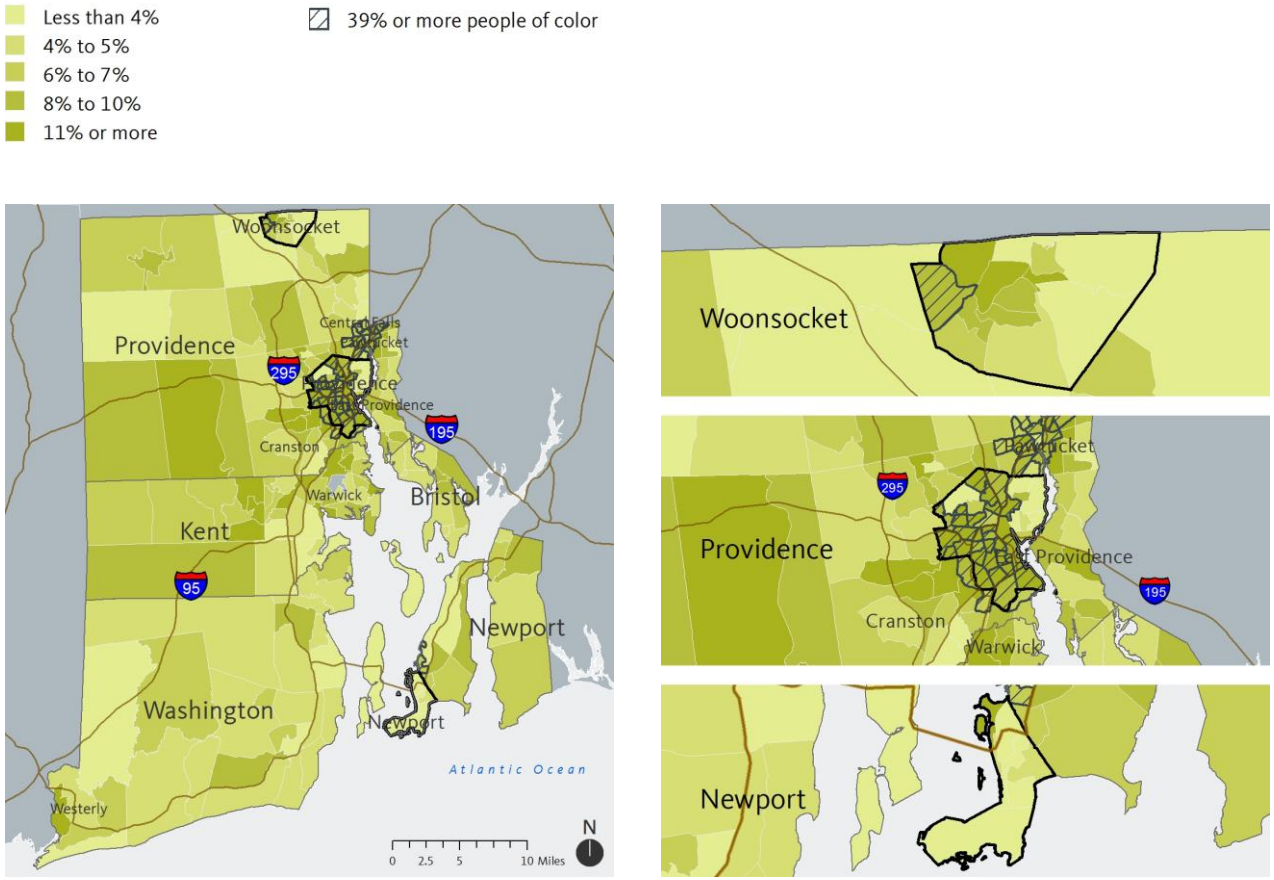
Economic vitality

High unemployment in urban communities of color, as well as suburban and rural areas

Knowing where high-unemployment communities are located in the region can help the region's leaders develop targeted solutions. As the maps to the right illustrate, concentrations of unemployment exist in communities of color in Providence, Pawtucket, Central Falls, and Woonsocket, as well as in some rural and suburban areas. Thirty percent of the region's unemployed residents live in the 20 percent of neighborhoods where at least 39 percent of residents are people of color.

Unemployment is concentrated in the state's communities of color, but also in its rural and suburban areas

23. Unemployment Rate by Census Tract and High People-of-Color Tracts, 2006-2010



Source: U.S. Census Bureau. Areas in white are missing data.
Note: While the size (land area) of the census tracts in the region varies widely, each has a roughly similar number of people. A large tract on the region's periphery likely contains a similar number of people as a seemingly tiny tract in the urban core. Care should be taken not to pay an unwarranted amount of attention to large tracts just because they are large.

Economic vitality

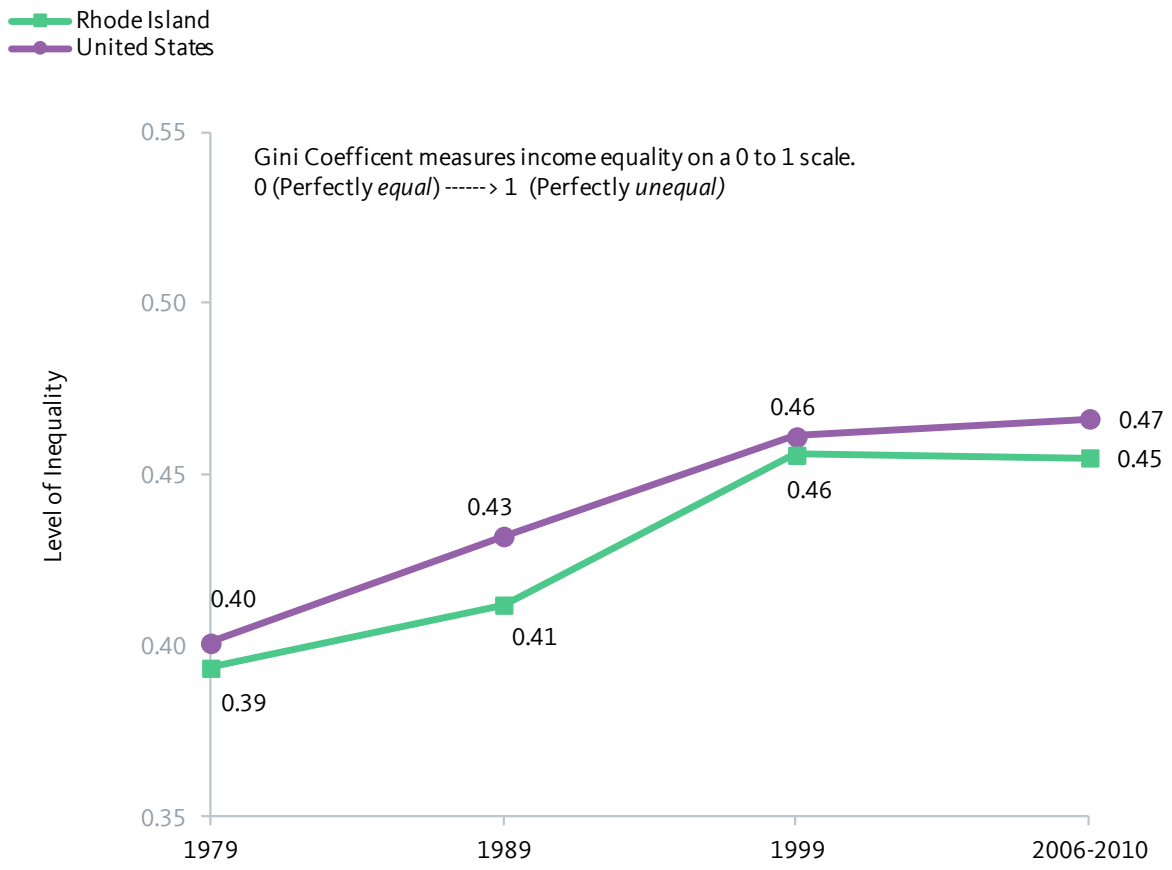
Income inequality increased over the past three decades

Income inequality in Rhode Island has increased over the past 30 years, but has remained slightly below the national average. Inequality decreased slightly in the state over the past decade.

Inequality here is measured by the Gini coefficient, which is the most commonly used measure of inequality. The Gini coefficient measures the extent to which the income distribution deviates from perfect equality, meaning that every household has the same income. The value of the Gini coefficient ranges from zero (perfect equality) to one (complete inequality, one household has all of the income).

Household income inequality increased sharply until 1999, then decreased slightly over last decade

24. Gini Coefficient, 1979 to 2006-2010



Source: IPUMS. Universe includes all households (no group quarters).

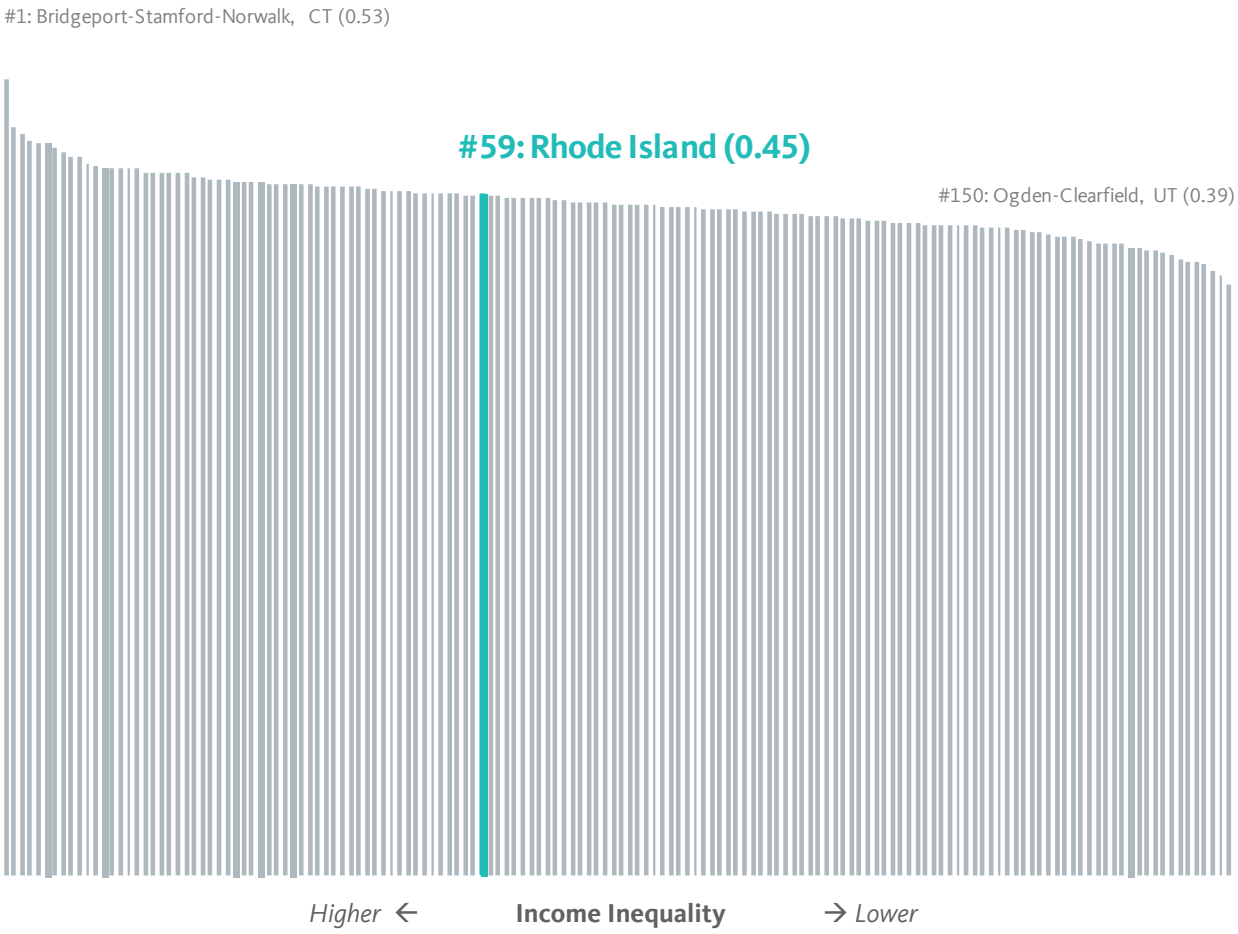
Economic vitality

Income inequality is moderately high

In 1979, Rhode Island ranked 61st out of the largest 150 regions in terms of income inequality. Today, it ranks 59th, leaving it between Nashville, TN (58th) and Kalamazoo, MI (60th). Compared with other similarly-sized metros in the Northeast, the level of inequality in Rhode Island is higher than Albany (0.43), but lower than New Haven (0.46) and Buffalo (0.46).

Rhode Island has the 59th highest income inequality

25. The Gini Coefficient in 2006-2010: Largest 150 Metros Ranked



Source: IPUMS. Universe includes all households (no group quarters).

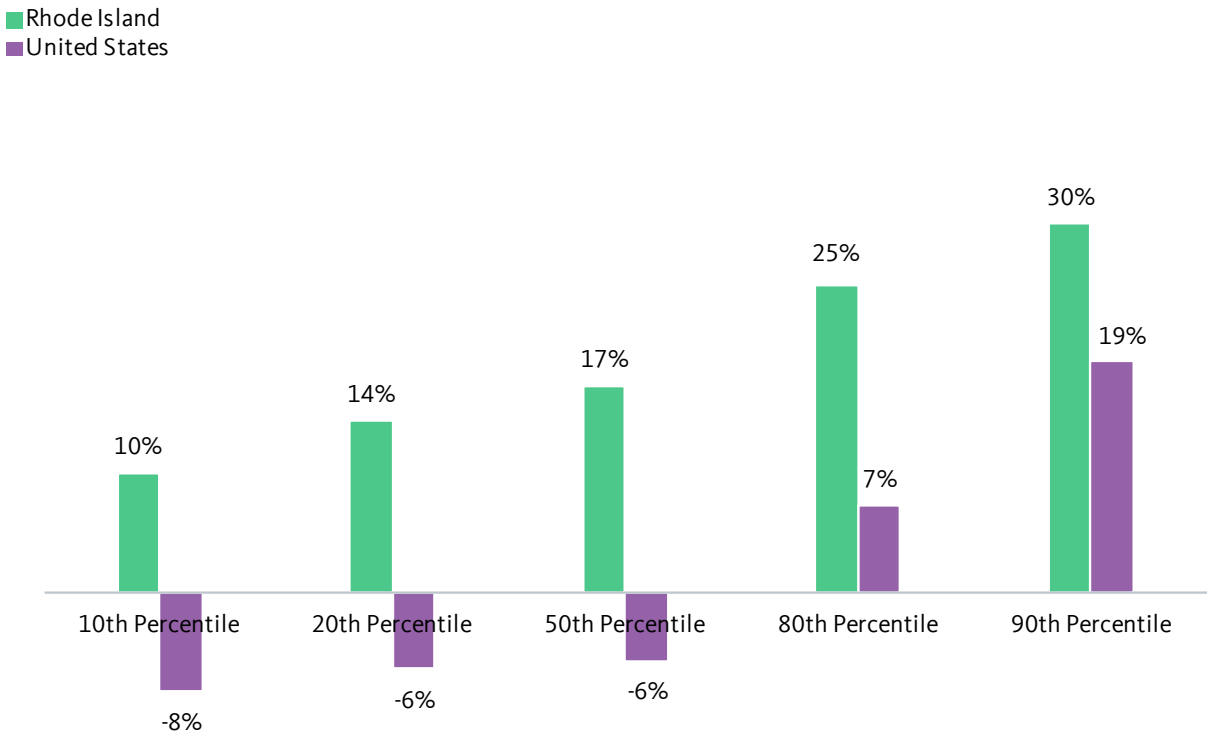
Economic vitality

Wages are increasing, but the gains are unequal

Bucking the national trend of declining or stagnant wages for the majority of workers, inflation-adjusted wages have grown for Rhode Island's workers of all income levels over the past three decades. The gains have been unequal, however, with the highest 20 percent of earners gaining the most – and far above national rates. The wages of the top 10 percent of workers grew by 30 percent, for example, while the wages for the bottom 10 percent of workers increased just 10 percent.

Income gains across the board, but highest for top earners

26. Real Earned Income Growth for Full-Time Wage and Salary Workers Ages 25-64, 1979 to 2006-2010



Source: IPUMS. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.

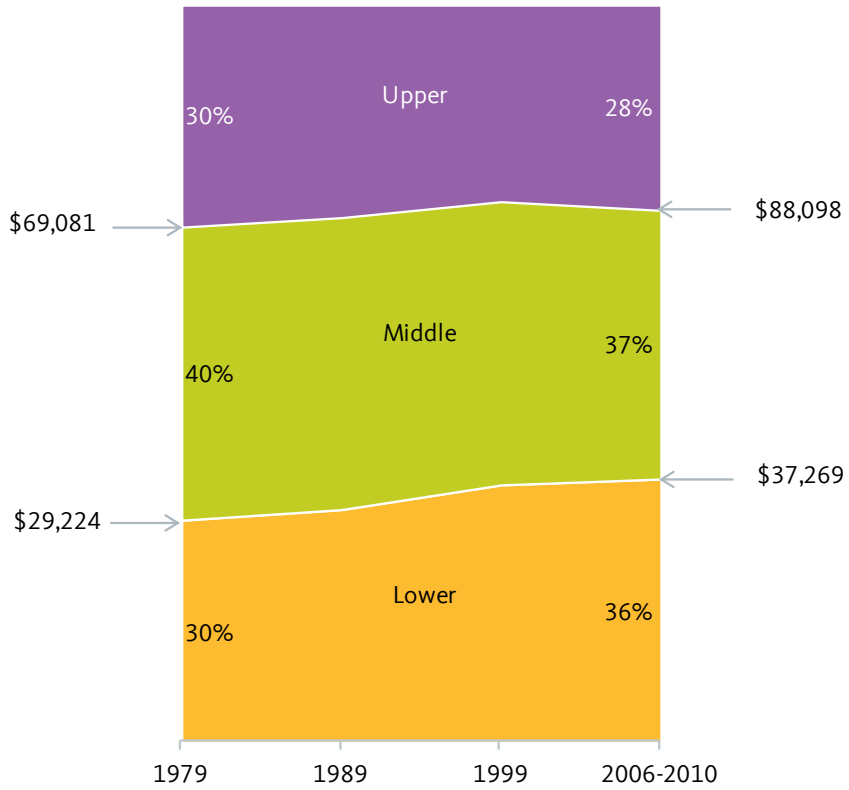
Economic vitality
A shrinking middle class

Rhode Island's middle class is shrinking: since 1979, the share of households with middle-class incomes decreased from 40 to 37 percent. The share of upper-income households also declined, from 30 to 28 percent, while the share of lower-income households grew from 30 to 36 percent.

In this analysis, middle-income households are defined as the middle 40 percent of household income distribution. In 1979, those household incomes ranged from $29,224 to $69,081. Change in the middle class and the other income ranges was assessed by calculating what the income range would be today if incomes had increased at the same rate as average household income growth overall. Today's middle class incomes would be $37,269 to $88,098, and 37 percent of households fall in that income range.

The share of middle-class households declined since 1979

27. Households by Income Level, 1979 and 2006-2010 (all figures in 2010 dollars)



Source: IPUMS. Universe includes all households (no group quarters).

Economic vitality

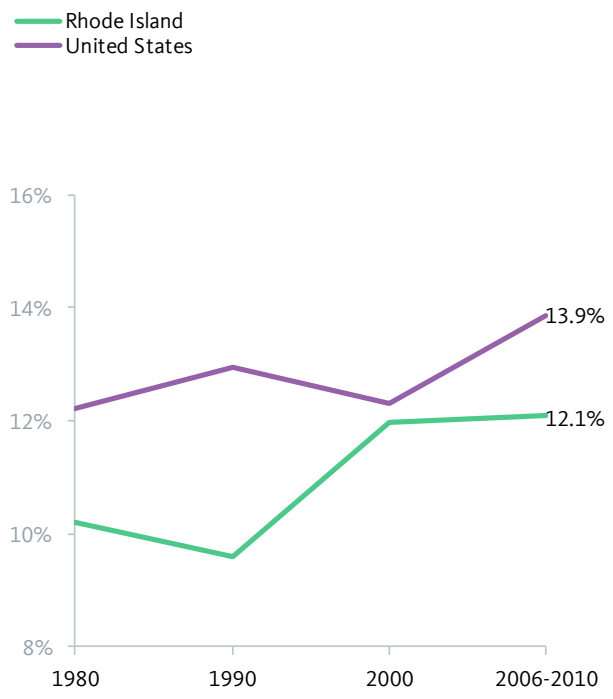
Poverty and working poverty are below average, but on the rise

Poverty and working poverty have been on the rise in Rhode Island over the past two decades. Contrary to national trends, poverty increased steeply in the 1990s, and has risen slightly since. Today, about one out of every eight Rhode Islanders (12.1 percent) lives below the poverty line, which is about $22,000 a year for a family of four.

Working poverty, defined as working full-time with an income below 150 percent of the poverty level, has also been increasing since 1990 but remains well below the national average. About one out of every 36 adults are working poor (2.7 percent).

Poverty is below the national average, but on the rise

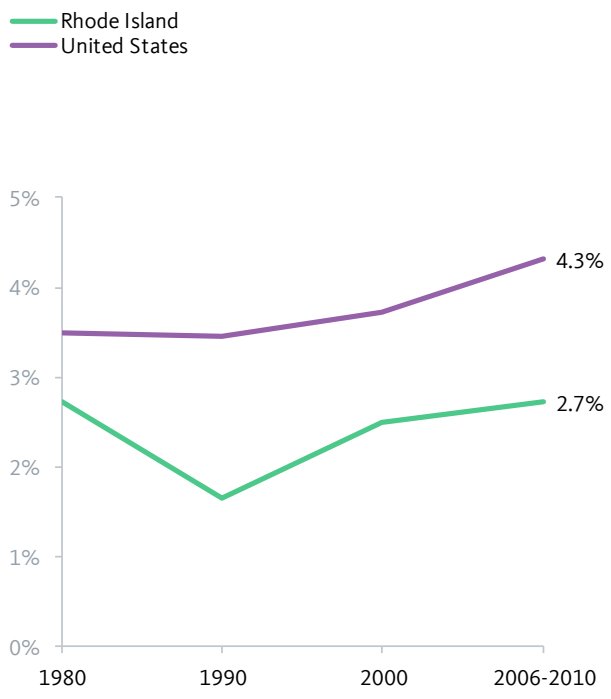
28. Poverty Rate, 1980 to 2006-2010



Source: IPUMS. Universe includes all persons not in group quarters.

Working poverty also below average but increasing

29. Working Poverty Rate, 1980 to 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.

Economic vitality

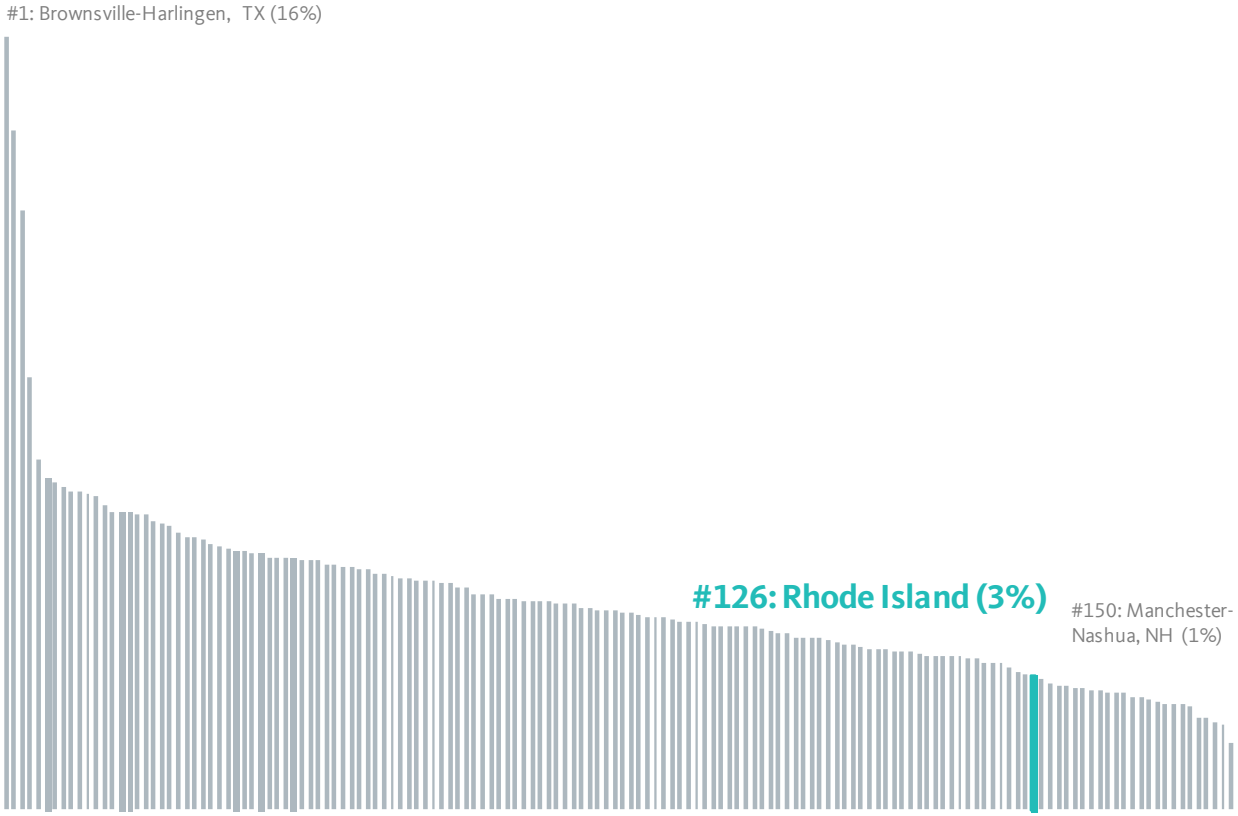
Poverty and working poverty are below average, but on the rise

(continued)

Rhode Island ranks 126th for its working poverty rate among the largest 150 metros. Its poverty rate places it at 101st out of 150. Compared with other Northeastern metro areas of similar size, the working poverty rate in Rhode Island is higher than Albany's (2.4 percent) and New Haven's (2.1 percent), but slightly lower than Buffalo's (3.2 percent).

Rhode Island's working poverty rate is relatively low compared with other regions

30. Working Poverty Rate in 2006-2010: Largest 150 Metros Ranked



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.

Economic vitality

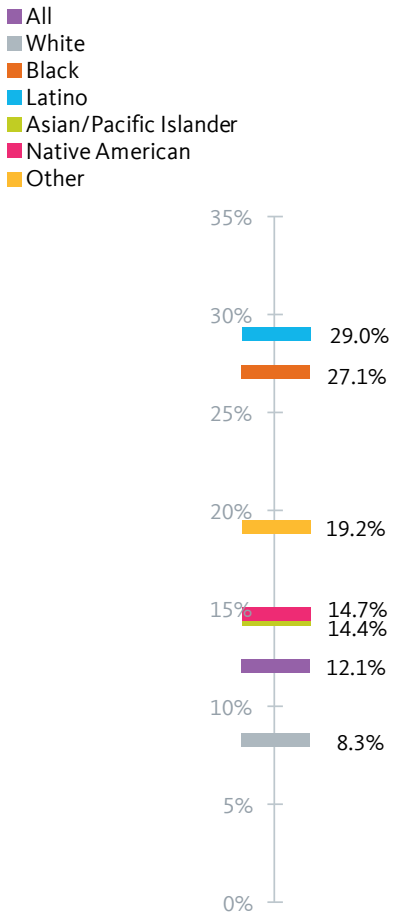
Higher poverty and working poverty for people of color

More than one out of every four of the state's Latinos and African Americans live below the poverty level – compared with about one out of every 12 whites. Poverty is also higher for all other racial/ethnic groups relative to whites.

Latinos are much more likely to be working poor compared with all other groups, with a 10.7 percent working poverty rate compared with the 2.7 percent average overall. African Americans and APIs also have an above-average working poverty rate. Whites have the lowest rate of working poverty, at 1.4 percent.

Poverty is highest for Latinos and African Americans

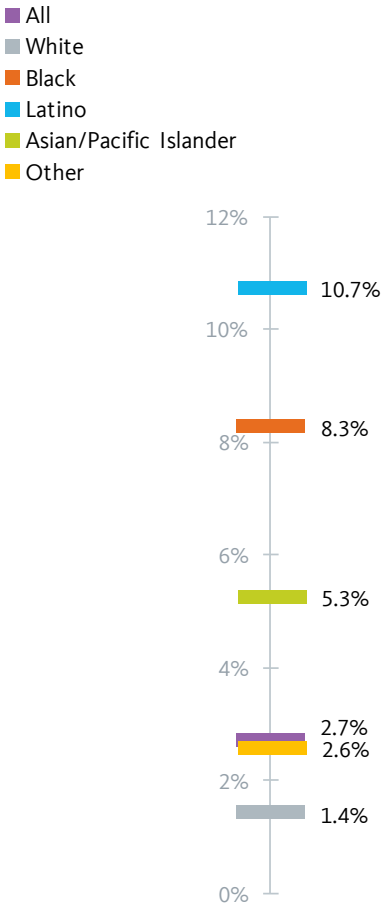
31. Poverty Rate by Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes all persons not in group quarters.

Working poverty is also highest for Latinos and African Americans

32. Working Poverty Rate by Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.

Economic vitality

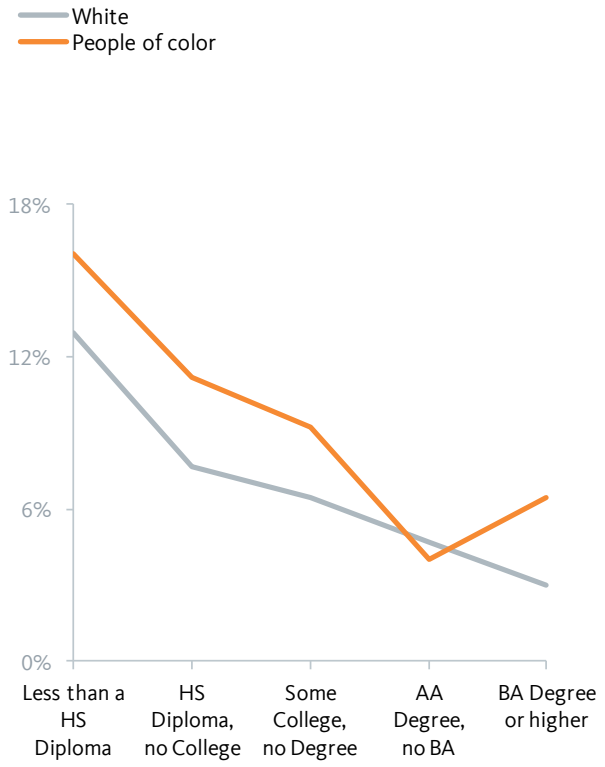
Education is a leveler but racial economic gaps persist

In general, unemployment decreases and wages increase with higher educational attainment. But at nearly every education level, Rhode Island's communities of color have worse economic outcomes than whites.

Throughout the education spectrum, people of color have higher unemployment rates (with the notable exception of people of color with an associate's degree, but no BA) and consistently lower wages relative to whites. Even among college graduates (with a BA or higher), unemployment rates for people of color are 3.5 percentage points higher and wages are about $6.50/hour lower for Rhode Island's people of color compared with whites.

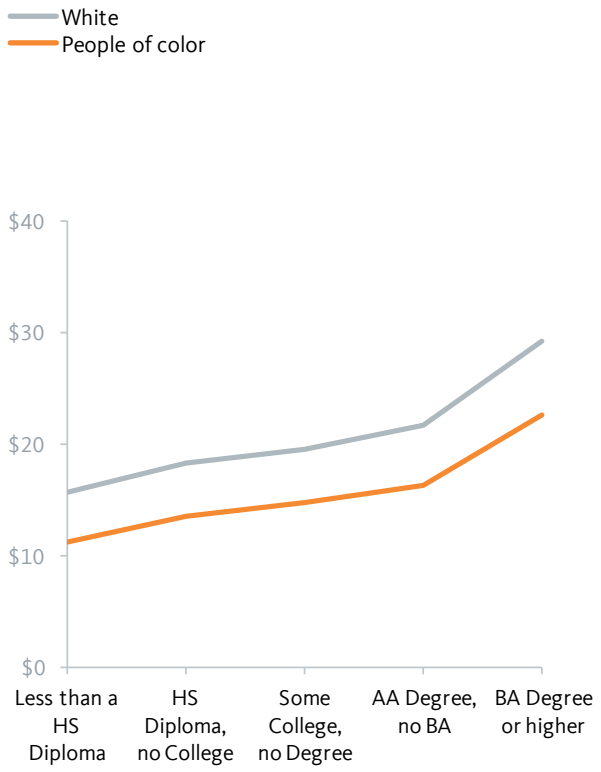
At nearly every education level, people of color have higher unemployment and lower wages than whites

33. Unemployment Rate by Educational Attainment and Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64.

34. Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.

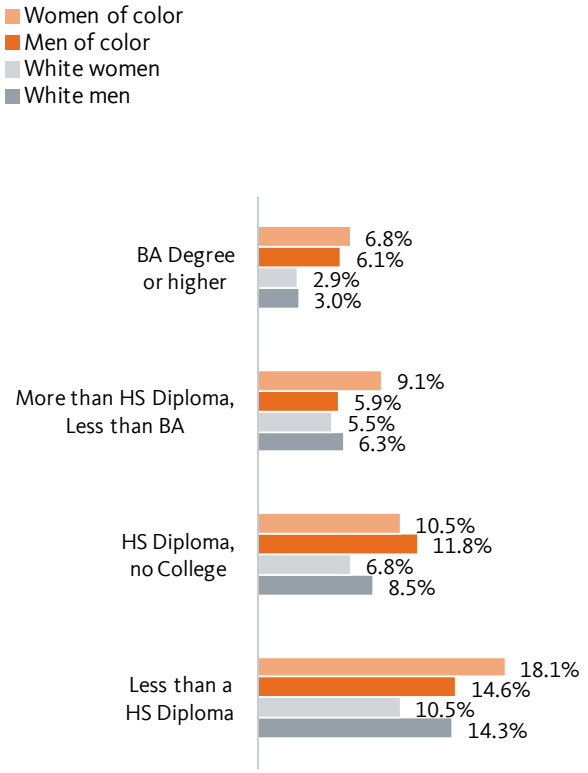
Economic vitality

There is also a gender gap in work and pay

At nearly every education level, Rhode Island's women of color face the highest unemployment and earn the least compared with white women and men of all races/ethnicities. Both white women and women of color earn lower wages than their male counterparts with the same levels of education. Most women of color also have higher unemployment rates than their male counterparts, with the exception of those with high school degrees but no further education. The reverse is true for white women: at every education level, they have lower rates of unemployment than their male counterparts.

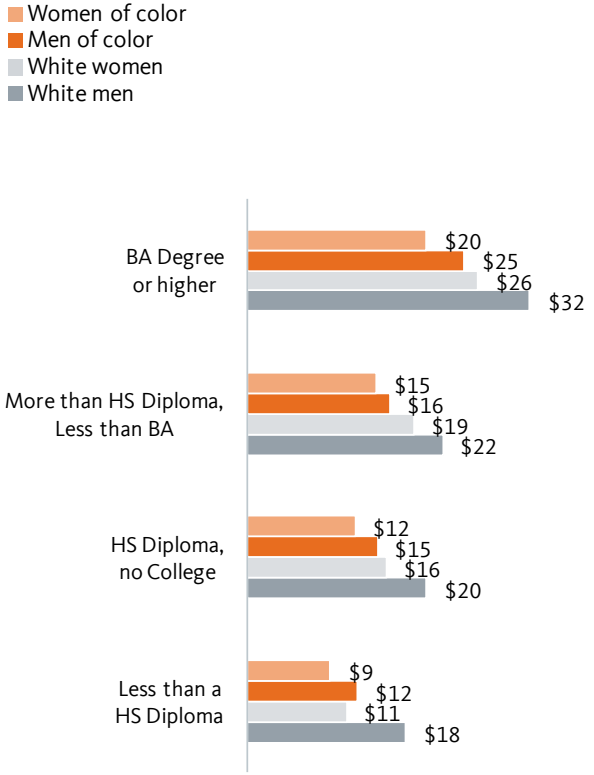
At almost every level of education, women of color have the highest rates of joblessness and the least pay

35. Unemployment Rate by Educational Attainment, Race/Ethnicity, and Gender, 2006-2010



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64.

36. Median Hourly Wage by Educational Attainment, Race/Ethnicity, and Gender, 2006-2010



Source: IPUMS. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.

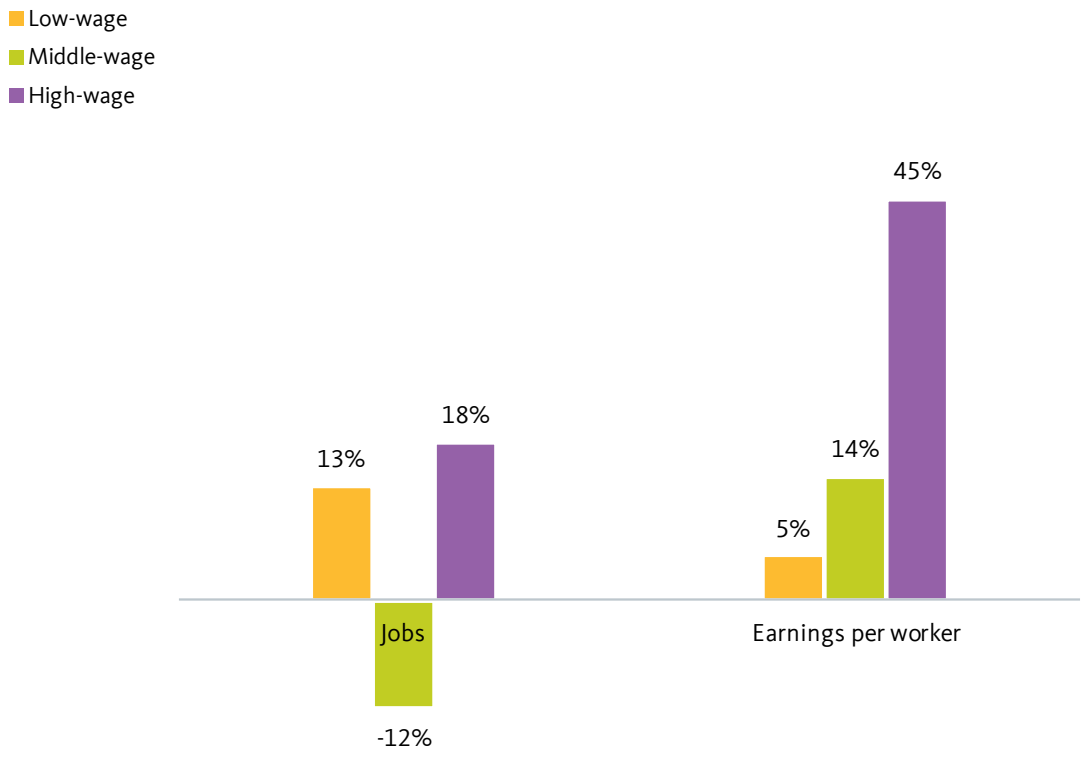
Economic vitality

The state is losing middle-wage jobs

Following the national trend, over the past two decades, Rhode Island added low- and high-wage jobs while losing middle-wage ones. The loss of middle-wage jobs is a weak point, because these jobs are often accessible to workers without four-year college degrees. Wage growth has been faster for high-wage workers, with slower wage growth for low- and middle-wage workers.

The fastest job growth is in low- and high-wage jobs, with substantial losses in middle-wage jobs

37. Growth in Jobs and Earnings by Wage Level, 1990 to 2010



Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics. Universe includes all jobs covered by the federal Unemployment Insurance (UI) program.

Economic vitality

Wage growth is fast at the top, slow at the bottom

The region's high-wage workers have generally experienced strong wage growth over the past two decades. Managers' wages have doubled, for example. Some middle-wage workers, such as those in information and education services, have had moderate wage growth during the same time period. But the wages of most low-wage workers – including retail, restaurant, hotel, and other service workers – have barely budged, if at all. The region's nearly 47,000 retail workers, for instance, only make 4 percent more today than they did in 1990 (about $27,000 per year currently compared with about $26,000 in 1990).

A widening wage gap between high- and low-wage workers

38. Industries by Wage-Level Category in 1990

Wage Category	Industry	Average Annual Earnings 1990 ($2010)	Average Annual Earnings 2010 ($2010)	Percent Change in Earnings 1990 to 2010	Number of Jobs 2010
High	Utilities	$58,779	$83,249	42%	1,131
	Professional, Scientific, and Technical Services	$50,406	$63,865	27%	20,878
	Management of Companies and Enterprises	$49,791	$101,299	103%	9,325
	Mining	$49,624	$51,086	3%	181
	Finance and Insurance	$48,861	$73,450	50%	23,406
	Wholesale Trade	$48,837	$63,222	29%	15,809
Middle	Construction	$48,122	$51,597	7%	15,928
	Information	$46,698	$61,212	31%	10,010
	Manufacturing	$40,686	$49,219	21%	40,328
	Health Care and Social Assistance	$36,165	$41,117	14%	78,216
	Transportation and Warehousing	$35,348	$36,394	3%	8,711
	Education Services	$33,383	$45,530	36%	19,199
	Real Estate and Rental and Leasing	$31,819	$37,574	18%	5,644
Low	Agriculture, Forestry, Fishing and Hunting	$28,457	$25,024	-12%	729
	Other Services (except Public Administration)	$26,461	$26,614	1%	17,946
	Retail Trade	$25,929	$27,058	4%	46,881
	Administrative and Support and Waste Management and Remediation Services	$24,709	$30,045	22%	23,171
	Arts, Entertainment, and Recreation	$20,881	$23,738	14%	7,547
	Accommodation and Food Services	$15,050	$16,243	8%	41,964

Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics. Universe includes all jobs covered by the federal Unemployment Insurance (UI) program.

Economic vitality
Identifying the region's strong industries

Understanding which industries are strong and competitive in the region is critical for developing effective strategies to attract and grow businesses. To identify strong industries in the region, 19 industry sectors were categorized according to an **"industry strength index"** that measures four characteristics: size, concentration, job quality, and growth. Each characteristic was given an equal weight (25 percent each) in determining the index value. "Growth" was an average of three indicators of growth (change in the number of jobs, percent change in the number of jobs, and wage growth). These characteristics were examined over the last decade to provide a current picture of how the region's economy is changing.

Industry strength index =

Size (2010)	+ Concentration (2010)	+ Job quality (2010)	+ Growth (2000 to 2010)
Total Employment The total number of jobs in a particular industry.	**Location Quotient** A measure of employment concentration calculated by dividing the share of employment for a particular industry in the region by its share nationwide. A score >1 indicates higher-than-average concentration.	**Average Annual Wage** The estimated total annual wages of an industry divided by its estimated total employment.	**Change in the number of jobs** **Percent change in the number of jobs** **Real wage growth**

Note: This industry strength index is only meant to provide general guidance on the strength of various industries in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the table on the next page. Each indicator was normalized as a cross-industry z-score before taking a weighted average to derive the index.

Economic vitality

Health care, management, education services, and finance and insurance dominate

According to the industry strength index, the region's strongest industries are **health care**, **management**, **education**, **and finance and insurance**. The health care and social assistance field has a large and growing employment base, growing wages, and a strong concentration in the state. Management of companies and enterprises shows fast job growth and high wages, but a relatively small base of employment. Education services' strength comes from its high concentration in the state, as well as job and wage growth.

Health care, management, education services, and finance and insurance are strong and expanding in Rhode Island

39. Industry Strength Index

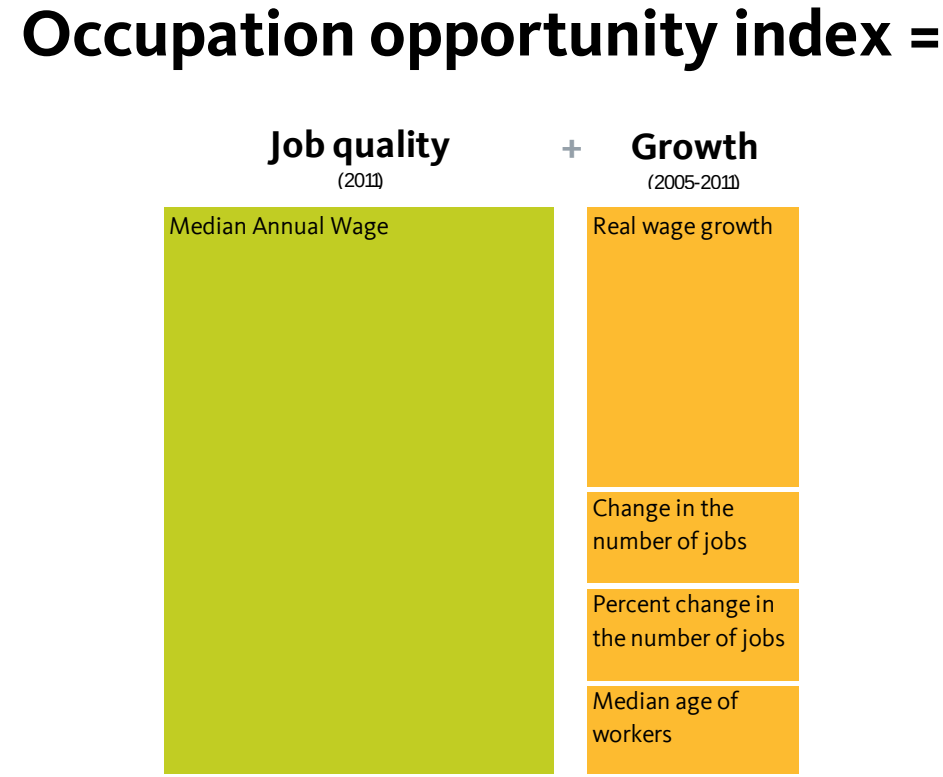
	Size	Concentration	Job Quality	Growth			Industry Strength Index
	Total employment	Location Quotient	Average annual wage	Change in employment	% Change in employment	Real wage growth	
Industry	(2010)	(2010)	(2010)	(2000 to 2010)	(2000 to 2010)	(2000 to 2010)	
Health Care and Social Assistance	78,216	1.4	$41,117	13,273	20%	9%	113.3
Management of Companies and Enterprises	9,325	1.4	$101,299	3,312	55%	12%	104.6
Education Services	19,199	2.2	$45,530	4,321	29%	10%	85.9
Finance and Insurance	23,406	1.2	$73,450	189	1%	26%	66.0
Professional, Scientific, and Technical Services	20,878	0.8	$63,865	2,284	12%	5%	14.9
Wholesale Trade	15,809	0.8	$63,222	-685	-4%	9%	2.9
Accommodation and Food Services	41,964	1.1	$16,243	2,555	6%	0%	-4.0
Information	10,010	1.1	$61,212	-874	-8%	-1%	-5.3
Retail Trade	46,881	0.9	$27,058	-5,171	-10%	1%	-9.0
Other Services (except Public Administration)	17,946	1.2	$26,614	1,146	7%	1%	-17.6
Administrative and Support and Waste Management and Remediation Services	23,171	0.9	$30,045	-2,857	-11%	18%	-18.4
Construction	15,928	0.8	$51,597	-2,094	-12%	4%	-19.6
Manufacturing	40,328	1.0	$49,219	-30,731	-43%	8%	-22.4
Utilities	1,131	0.6	$83,249	-241	-18%	-6%	-27.0
Arts, Entertainment, and Recreation	7,547	1.1	$23,738	900	14%	1%	-33.9
Real Estate and Rental and Leasing	5,644	0.8	$37,574	-341	-6%	0%	-47.6
Transportation and Warehousing	8,711	0.6	$36,394	-435	-5%	-2%	-58.8
Mining	181	0.1	$51,086	-43	-19%	14%	-74.0
Agriculture, Forestry, Fishing and Hunting	729	0.2	$25,024	-101	-12%	-5%	-112.4

Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics. Universe includes all jobs covered by the federal Unemployment Insurance (UI) program.

Economic vitality
Identifying high-opportunity occupations

Understanding which occupations are strong and competitive in the region can help leaders develop strategies to connect and prepare workers for good jobs. To identify "high-opportunity" occupations in the region, we developed an **"occupation opportunity index"** based on measures of job quality and growth, including median annual wage, wage growth, job growth (in number and share), and median age of workers. A high median age of workers indicates that there will be replacement job openings as older workers retire.

Job quality, measured by the median annual wage, accounted for two-thirds of the occupation opportunity index, and growth accounted for the other one-third. Within the growth category, half was determined by wage growth and the other half was divided equally between the change in number of jobs, percent change in the number jobs, and median age of workers.



Note: Each indicator was normalized as a cross-occupation z-score before taking a weighted average to derive the index.

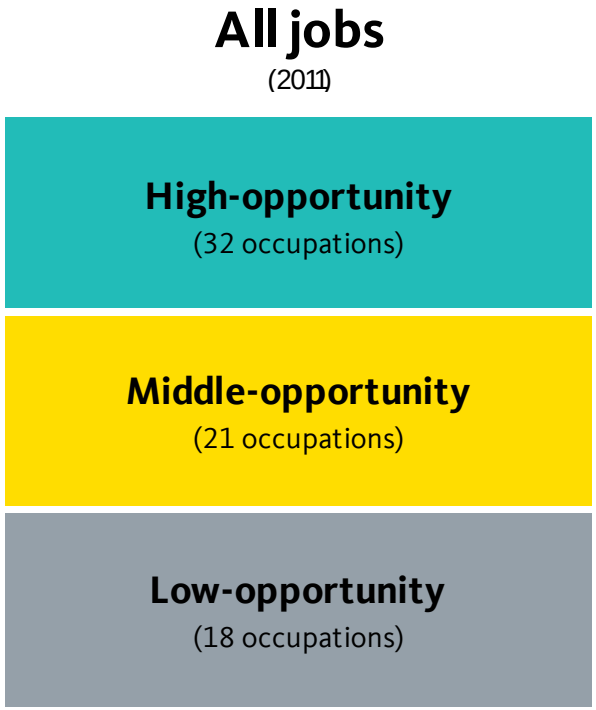
Economic vitality

Identifying high-opportunity occupations

(continued)

Once the occupation opportunity index score was calculated for each occupation, occupations were sorted into three categories (high-, middle-, and low-opportunity). The average index score is zero, so an occupation with a positive value has an above-average score while a negative value represents a below-average score.

Because education level plays such a large role in determining access to jobs, we present the occupational analysis for each of three educational attainment levels: workers with a high school degree or less; workers with more than a high-school degree but less than a BA; and workers with a BA or higher.



Note: The occupation opportunity index and the three broad categories drawn from it are only meant to provide general guidance on the level of opportunity associated with various occupations in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the tables on the following pages.

Economic vitality

High-opportunity occupations for workers with a high school degree or less

Installation, maintenance, and repair occupations, as well as supervisors of construction, manufacturing, and transportation workers are high-opportunity jobs for workers without postsecondary education

40. Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a High School Degree or Less

		Employment	Job Quality	Growth				Occupation Opportunity Index
			Median Annual Wage	Real Wage Growth	Change in Employment	% Change in Employment	Median Age	
	Occupation	(2011)	(2011)	(2011)	(2005 to 2011)	(2005 to 2011)	(2005 to 2011)	
High-Opportunity	Supervisors of Construction and Extraction Workers	1,210	$66,720	1.4%	-800	-39.8%	47	0.52
	Supervisors of Production Workers	2,240	$58,740	4.0%	-620	-21.7%	44	0.33
	Supervisors of Transportation and Material Moving Workers	930	$54,035	3.6%	-180	-16.2%	43	0.20
	Other Installation, Maintenance, and Repair Occupations	7,990	$43,899	12.8%	600	8.1%	44	0.10
Middle-Opportunity	Woodworkers	610	$33,653	12.4%	410	205.0%	42	-0.01
	Supervisors of Building and Grounds Cleaning and Maintenance Workers	720	$45,058	6.4%	-300	-29.4%	43	-0.05
	Printing Workers	750	$37,596	4.3%	-140	-15.7%	47	-0.23
	Other Construction and Related Workers	1,290	$38,302	-11.6%	460	55.4%	49	-0.31
	Construction Trades Workers	9,980	$45,357	-3.3%	-5,230	-34.4%	41	-0.42
	Metal Workers and Plastic Workers	7,200	$35,183	0.1%	-2,280	-24.1%	44	-0.50
	Supervisors of Food Preparation and Serving Workers	3,030	$35,617	-6.2%	10	0.3%	38	-0.50
	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	4,520	$37,270	-11.7%	70	1.6%	39	-0.51
	Nursing, Psychiatric, and Home Health Aides	14,420	$27,149	-3.2%	2,540	21.4%	39	-0.56
Low-Opportunity	Material Recording, Scheduling, Dispatching, and Distributing Workers	13,060	$31,605	-6.8%	-780	-5.6%	43	-0.62
	Building Cleaning and Pest Control Workers	10,410	$24,086	-9.2%	2,600	33.3%	47	-0.64
	Motor Vehicle Operators	10,300	$30,797	-5.6%	-1,630	-13.7%	44	-0.67
	Textile, Apparel, and Furnishings Workers	2,540	$23,606	0.4%	-850	-25.1%	46	-0.75
	Assemblers and Fabricators	5,290	$25,447	-2.3%	-710	-11.8%	41	-0.76
	Personal Appearance Workers	1,560	$24,365	0.2%	-290	-15.7%	39	-0.76
	Other Protective Service Workers	3,950	$25,566	-1.0%	-580	-12.8%	38	-0.76
	Other Personal Care and Service Workers	8,300	$23,801	-4.6%	620	8.1%	37	-0.80
	Cooks and Food Preparation Workers	9,480	$24,976	8.1%	-1,840	-16.3%	28	-0.81
	Other Production Occupations	6,840	$26,777	-6.4%	-2,220	-24.5%	45	-0.82
	Material Moving Workers	9,900	$26,412	2.2%	-2,920	-22.8%	35	-0.84
	Grounds Maintenance Workers	3,430	$24,990	-9.1%	130	3.9%	35	-0.87
	Food Processing Workers	1,500	$24,898	-14.7%	-350	-18.9%	37	-0.98
	Other Transportation Workers	790	$21,666	-7.3%	-210	-21.0%	34	-0.99
	Retail Sales Workers	28,420	$21,678	-2.8%	-1,500	-5.0%	28	-1.03
	Food and Beverage Serving Workers	24,710	$18,552	-3.5%	-720	-2.8%	23	-1.14
	Other Food Preparation and Serving Related Workers	4,310	$18,477	-2.9%	-690	-13.8%	20	-1.17

Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have less than a high school degree. Analysis reflects the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Economic vitality

High-opportunity occupations for workers with more than a high school degree but less than a BA

Supervisory positions in some service and retail sectors, drafting, and law enforcement are among the highest-opportunity occupations for workers with more than a high school degree but less than a BA

41. Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Degree but Less Than a BA

		Employment	Job Quality	Growth				Occupation Opportunity Index
			Median Annual Wage	Real Wage Growth	Change in Employment	% Change in Employment	Median Age	
	Occupation	(2011)	(2011)	(2011)	(2005 to 2011)	(2005 to 2011)	(2005 to 2011)	
High-Opportunity	Supervisors of Protective Service Workers	1,340	$65,814	1.2%	760	131.0%	47	0.76
	Supervisors of Installation, Maintenance, and Repair Workers	1,230	$66,540	6.2%	50	4.2%	41	0.62
	Drafters, Engineering Technicians, and Mapping Technicians	2,000	$55,385	11.4%	820	69.5%	47	0.53
	Supervisors of Office and Administrative Support Workers	5,680	$55,610	9.4%	850	17.6%	45	0.43
	Plant and System Operators	720	$52,523	10.5%	-60	-7.7%	46	0.29
	Law Enforcement Workers	2,160	$56,105	6.8%	-920	-29.9%	41	0.24
	Supervisors of Sales Workers	4,580	$50,395	6.6%	-40	-0.9%	43	0.16
	Fire Fighting and Prevention Workers	1,790	$51,239	3.9%	-100	-5.3%	40	0.11
Middle-Opportunity	Health Technologists and Technicians	9,300	$49,373	3.8%	-670	-6.7%	42	0.04
	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	1,050	$46,451	-7.7%	-170	-13.9%	39	-0.22
	Other Education, Training, and Library Occupations	6,510	$34,858	11.4%	-350	-5.1%	45	-0.23
	Other Healthcare Support Occupations	5,130	$34,447	5.4%	1,260	32.6%	37	-0.29
	Secretaries and Administrative Assistants	13,270	$39,069	1.9%	-1,580	-10.6%	45	-0.30
	Media and Communication Equipment Workers	540	$38,961	-2.6%	90	20.0%	39	-0.31
	Supervisors of Personal Care and Service Workers	630	$38,350	-4.0%	100	18.9%	40	-0.34
	Life, Physical, and Social Science Technicians	570	$43,215	-1.7%	-150	-20.8%	27	-0.35
	Financial Clerks	12,600	$35,305	0.3%	-250	-1.9%	46	-0.36
	Other Office and Administrative Support Workers	13,440	$30,955	7.0%	330	2.5%	43	-0.39
	Communications Equipment Operators	640	$28,218	2.5%	80	14.3%	41	-0.55
	Information and Record Clerks	18,280	$32,129	-0.9%	-1,330	-6.8%	39	-0.59
Low-Opportunity	Entertainment Attendants and Related Workers	830	$19,122	-10.5%	370	80.4%	24	-1.07

Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have at least a high school degree but less than a BA. Analysis reflects the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Economic vitality

High-opportunity occupations for workers with a BA degree or higher

Top executive, operations manager, advertising, and health diagnosing are the highest-opportunity occupations for workers with a BA degree or higher

42. Occupation Opportunity Index: All Levels of Opportunity for Workers with a BA Degree or Higher

		Employment	Job Quality	Growth				Occupation Opportunity Index
			Median Annual Wage	Real Wage Growth	Change in Employment	% Change in Employment	Median Age	
	Occupation	(2011)	(2011)	(2011)	(2005 to 2011)	(2005 to 2011)	(2005 to 2011)	
High-Opportunity	Top Executives	5,540	$129,737	21.5%	-2,520	-31.3%	48	2.59
	Operations Specialties Managers	5,800	$107,910	13.4%	660	12.8%	44	2.00
	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	1,800	$106,348	21.3%	-700	-28.0%	41	1.93
	Health Diagnosing and Treating Practitioners	20,120	$89,637	14.9%	3,690	22.5%	46	1.65
	Engineers	4,760	$93,824	10.7%	870	22.4%	42	1.55
	Other Management Occupations	6,640	$92,313	15.5%	30	0.5%	46	1.54
	Lawyers, Judges, and Related Workers	1,820	$87,930	-7.5%	-10	-0.5%	47	1.10
	Physical Scientists	760	$79,196	4.3%	50	7.0%	40	0.95
	Postsecondary Teachers	5,620	$77,487	-6.6%	1,790	46.7%	46	0.93
	Computer Occupations	10,930	$75,435	3.3%	1,460	15.4%	41	0.91
	Social Scientists and Related Workers	890	$74,672	7.5%	-320	-26.4%	45	0.86
	Sales Representatives, Services	3,510	$56,175	21.4%	1,460	71.2%	42	0.67
	Business Operations Specialists	11,030	$62,670	2.7%	3,110	39.3%	44	0.66
	Sales Representatives, Wholesale and Manufacturing	5,580	$65,504	10.3%	-100	-1.8%	43	0.65
	Other Sales and Related Workers	1,850	$46,680	47.2%	-490	-20.9%	43	0.57
	Preschool, Primary, Secondary, and Special Education School Teachers	14,370	$66,597	4.0%	-650	-4.3%	43	0.56
	Other Teachers and Instructors	3,990	$53,147	24.4%	-60	-1.5%	40	0.46
	Other Healthcare Practitioners and Technical Occupations	760	$50,749	25.2%	110	16.9%	41	0.44
	Financial Specialists	7,640	$63,259	2.4%	-1,960	-20.4%	44	0.38
	Life Scientists	680	$58,860	-21.5%	480	240.0%	36	0.24
Middle-Opportunity	Librarians, Curators, and Archivists	1,200	$51,173	5.4%	-330	-21.6%	40	0.10
	Media and Communication Workers	1,970	$50,725	-11.7%	140	7.7%	43	-0.07
	Entertainers and Performers, Sports and Related Workers	1,450	$42,633	-3.0%	780	116.4%	39	-0.07
	Specialists	9,160	$43,974	2.9%	150	1.7%	41	-0.09
	Legal Support Workers	1,020	$45,848	-0.3%	-40	-3.8%	40	-0.10
	Art and Design Workers	1,460	$45,731	-1.2%	-970	-39.9%	41	-0.19

Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a BA degree or higher. Analysis reflects the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Economic vitality

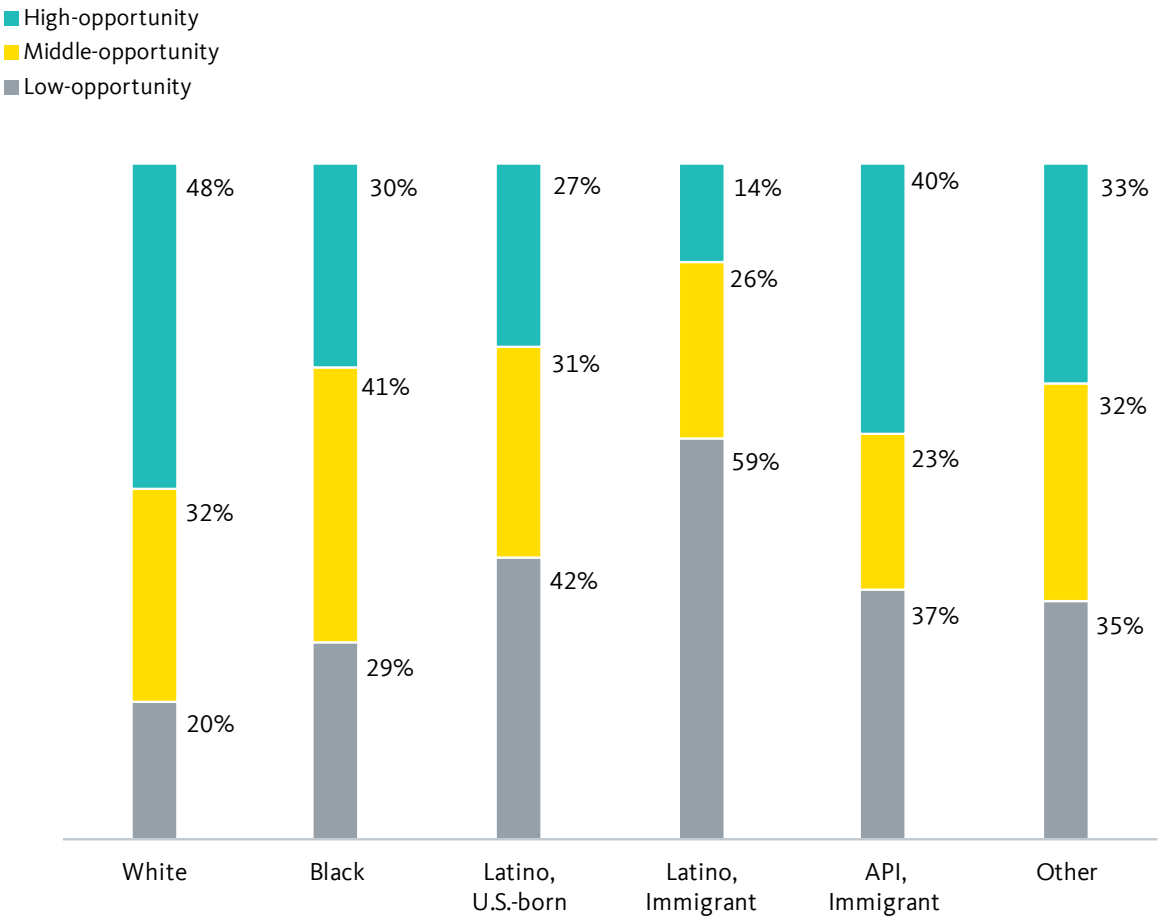
High-opportunity jobs by race/ethnicity/nativity

Examining who is in high-opportunity jobs by race/ethnicity and nativity, we find that whites and immigrant Asian/Pacific Islanders (APIs) are most likely to hold high-opportunity jobs. Latino immigrants are by far the least likely to be in high-opportunity jobs, with the majority in low-opportunity ones. People of other or mixed racial backgrounds, African Americans, and U.S.-born Latinos are also less likely to be in high-opportunity jobs.

Differences in educational attainment play a large role in determining access to high-opportunity jobs, but racial discrimination, work experience, social networks, and, for immigrants, legal status and English-language ability are also contributing factors. The next several pages examine whether racial gaps in access to high-opportunity jobs remain when we look at workers with similar levels of education.

Latinos and African Americans are least likely to be in high-opportunity jobs

43. Opportunity Ranking of Occupations by Race/Ethnicity/Nativity, All Workers



Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes the employed civilian noninstitutional population ages 25 through 64. While data on workers iare from the State of Rhode Island, the opportunity ranking for each worker's occupation is based on analysis of the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

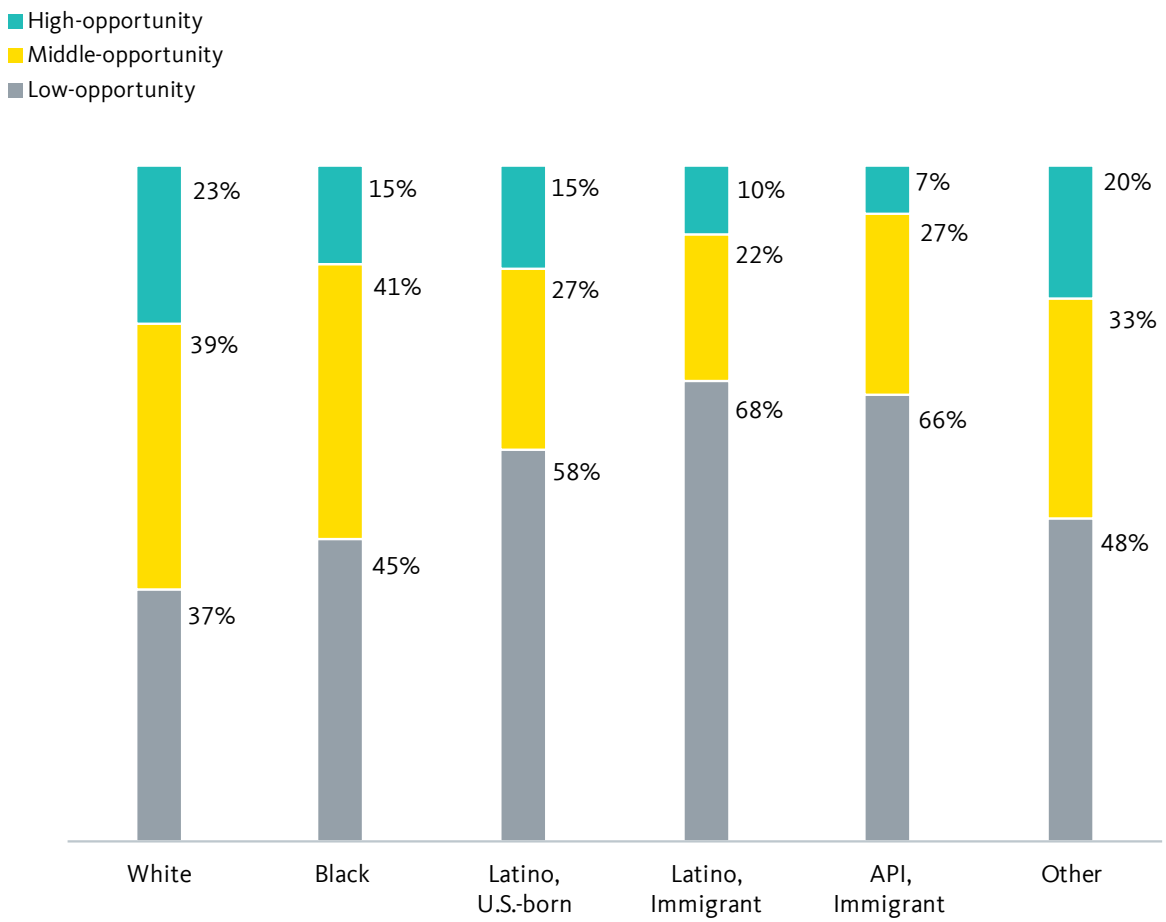
Economic vitality

Access to high-opportunity jobs for workers with a high school degree or less

Among workers with low education levels, people of color are least likely to be in the highest-opportunity occupations and most likely to be in the lowest-opportunity ones. Occupational opportunity is lowest for Asian and Latino immigrants, followed by African Americans and U.S.-born Latinos. Less-educated African Americans are more likely to hold middle-opportunity jobs than other people of color.

Among workers with low education levels, whites are most likely to be in high-opportunity occupations

44. Opportunity Ranking of Occupations by Race/Ethnicity/Nativity, Workers with Low Educational Attainment



Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes the employed civilian noninstitutional population ages 25 through 64 with less than a high school degree. While data on workers are from the State of Rhode Island, the opportunity ranking for each worker's occupation is based on analysis of the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

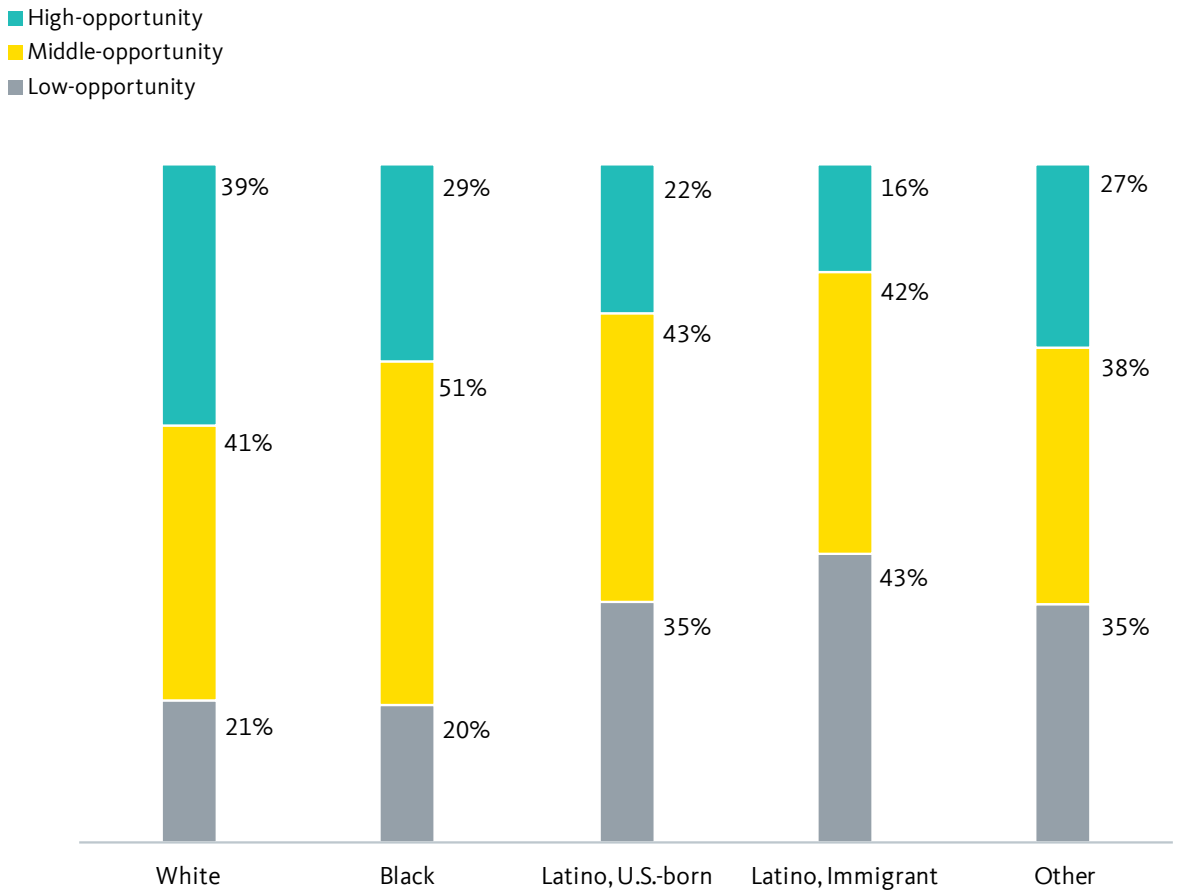
Economic vitality

Access to high-opportunity jobs for workers with more than a high school degree but less than a BA

Among workers with middle education levels (more than a high school degree but less than a bachelors degree), people of color are less likely to have high-opportunity jobs compared with their white counterparts. Among people of color, Latino immigrants are least likely to have high-opportunity jobs, followed by U.S.-born Latinos, people of other or mixed racial backgrounds, and African Americans. African American workers with middle levels of education are more likely to hold middle-opportunity jobs than workers of all other races/ethnicities.

Among workers with middle education levels, Latinos (both immigrants and U.S.-born) are least likely to have high-opportunity jobs and most likely to have low-opportunity jobs

45. Opportunity Ranking of Occupations by Race/Ethnicity/Nativity, Workers with Middle Educational Attainment



Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes the employed civilian noninstitutional population ages 25 through 64 with at least a high school degree but less than a BA. While data on workers are from the State of Rhode Island, the opportunity ranking for each worker's occupation is based on analysis of the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

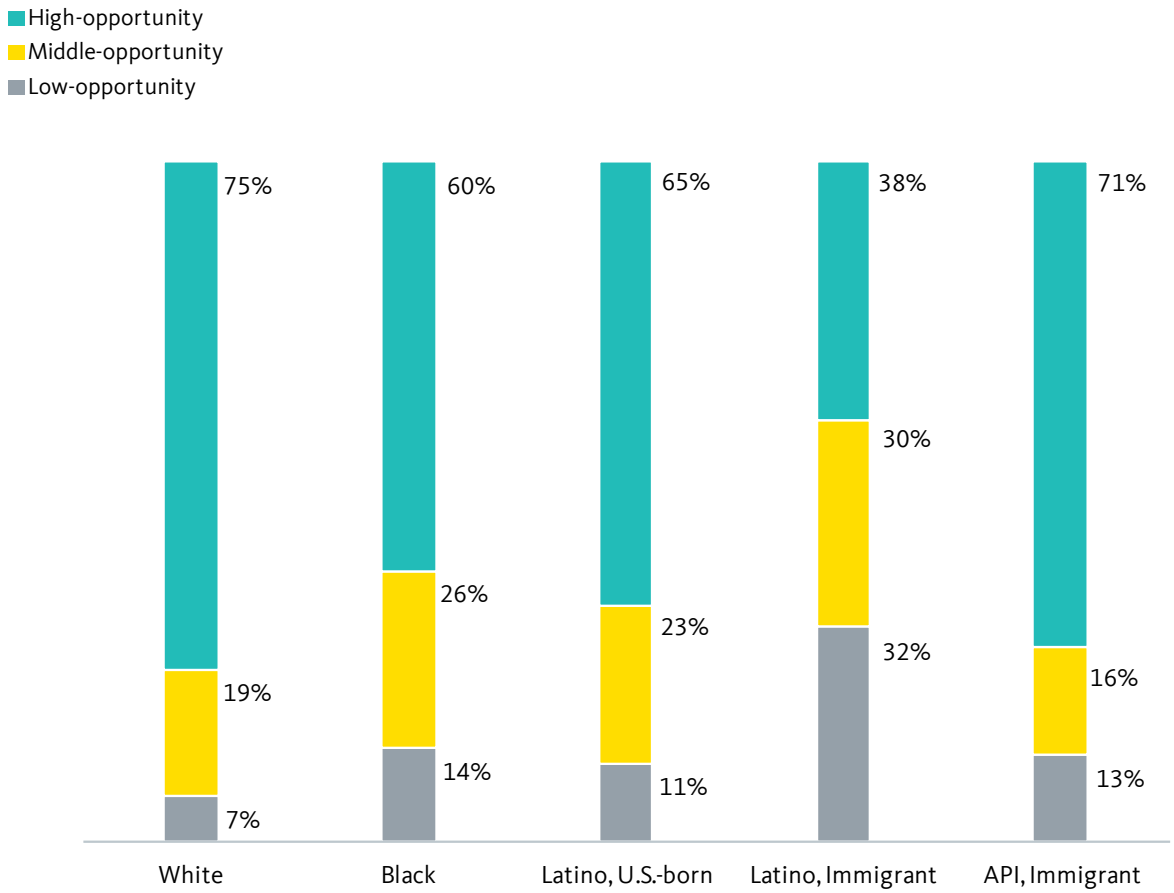
Economic vitality

Access to high-opportunity jobs for workers with a BA or higher

Among workers with college degrees, whites are most likely to be in high-opportunity jobs, followed by Asian immigrants. U.S.-born Latinos and African Americans with college degrees have moderate access to high-opportunity occupations. Latino immigrants are by far the least likely to have high-opportunity jobs and the most likely to have low-opportunity ones.

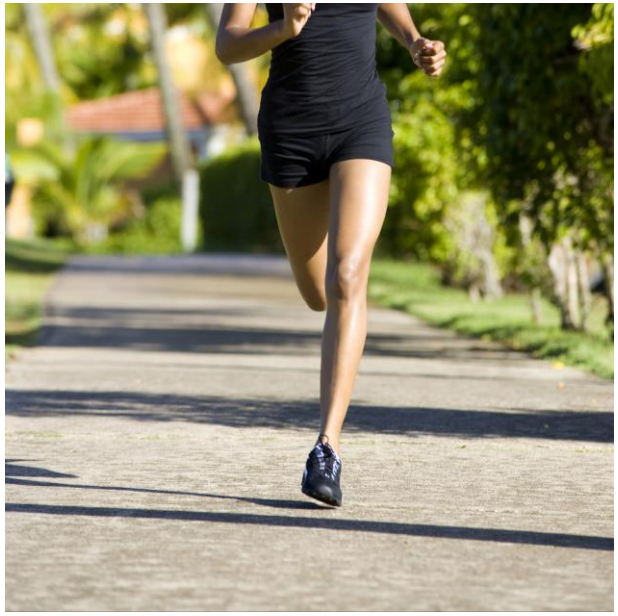
Among college-educated workers, Latino immigrants are the least likely to have high-opportunity jobs and the most likely to have low-opportunity jobs

46. Opportunity Ranking of Occupations by Race/Ethnicity/Nativity, Workers with High Educational Attainment



Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes the employed civilian noninstitutional population ages 25 through 64 with a BA degree or higher. While data on workers are from the State of Rhode Island, the opportunity ranking for each worker's occupation is based on analysis of the Providence Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Readiness



Readiness
Highlights
How prepared are the state's residents for the 21st century economy?

- There is a looming education and skills gap for the state's fastest-growing groups. By 2018, 42 percent of jobs will require an associate's degree or higher, but only 21 percent of U.S.-born Latinos, 15 percent of Latino immigrants, and 30 percent of African Americans had that level of education as of 2010.

- Over the past decade, educational attainment for youth of color increased substantially, but continues to lag behind that for white youth.

- The number of disconnected youth (not in school or working) is on the rise. Most of these disconnected youth are white, but Latino and African American youth are more likely to be disconnected than other groups.

- African Americans, Latinos, and Native Americans have above average rates of obesity and diabetes, and Native Americans also have above average rates of asthma.

Percent of the population with an associate's degree or higher:

41%

Latino youth who are disconnected:

1 in 5

Percent of adults who are overweight or obese:

61%

Readiness

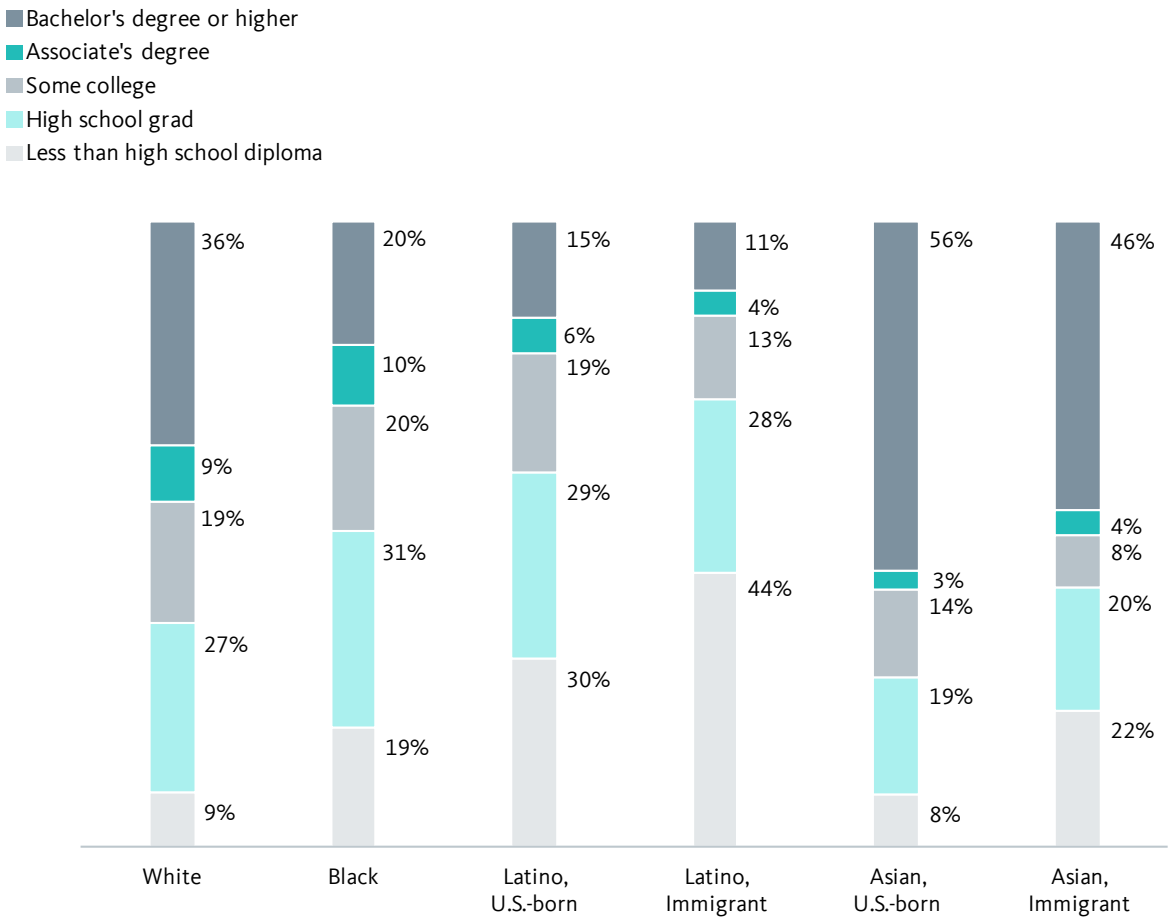
An education and skills gap for people of color

According to the Georgetown Center for Education and the Workforce, 42 percent of Rhode Island's jobs will require an associate's degree or above by 2018. Today, 41 percent of the region's workers have that level of education, yet there are large differences in educational attainment by race/ethnicity and nativity. Only 30 percent of the region's African Americans, 21 percent of U.S.-born Latinos, and 15 percent of Latino immigrants have at least that level of education.

While not shown in the graph, the current levels of educational attainment represent an improvement over 1990 levels for all groups depicted. Despite the improvement, Latinos and African Americans, who together will account for an increasing share of the new workforce, are still much less prepared for the future economy than their white counterparts.

There are wide gaps in educational attainment by race, ethnicity, and nativity

47. Educational Attainment by Race/Ethnicity/Nativity, 2006-2010



Source: IPUMS. Universe includes all persons ages 25 through 64.

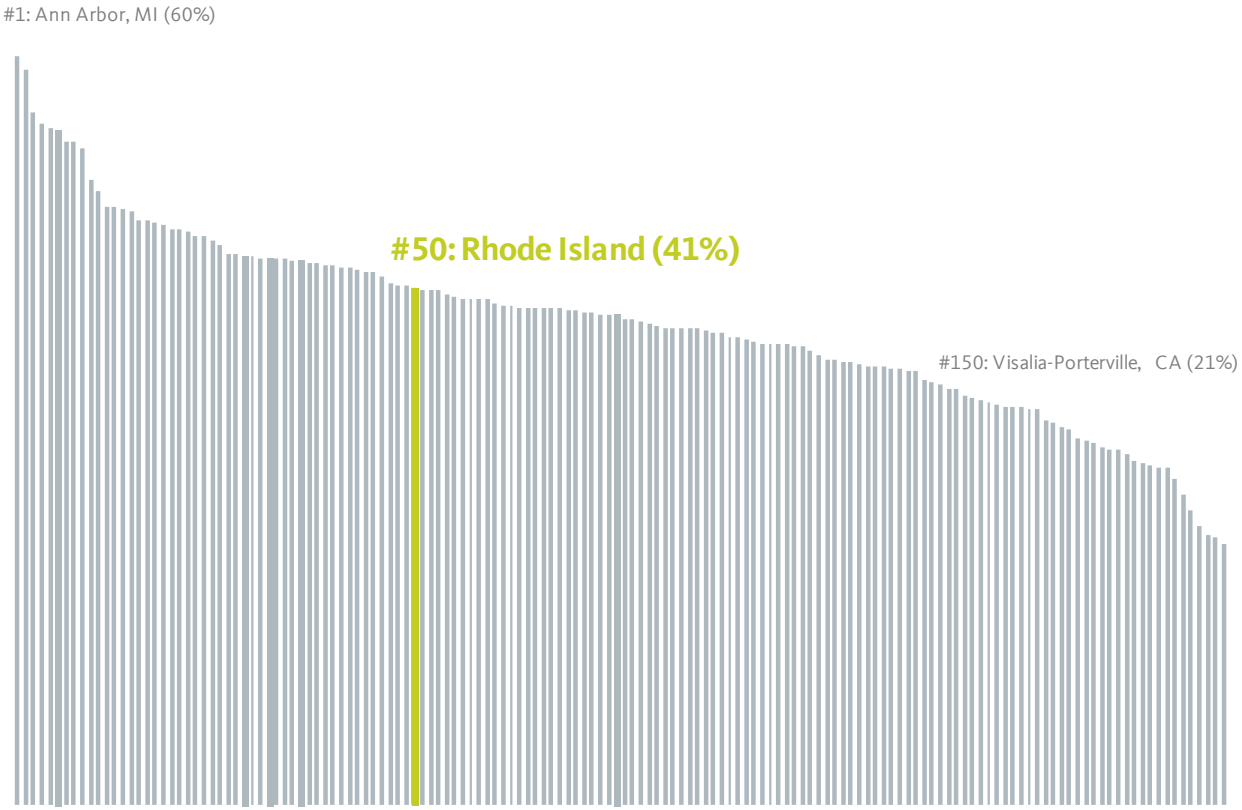
Readiness
Relatively high education levels

Rhode Island ranks in the top third of the 150 largest regions on the share of residents with an associate's degree or higher (41 percent).

On the other hand, Rhode Island also ranks 46th highest in the share of residents with less than a high school education (13 percent), far higher than the similarly-sized Northeastern metro areas of Buffalo (8 percent) and New Haven (9 percent), which rank 128th and 110th, respectively.

The state has a relatively high share of residents with an associate's degree or higher

48. Percent of the Population with an Associate's Degree or Higher in 2006-2010: Largest 150 Metros Ranked



Source: IPUMS. Universe includes all persons ages 25 through 64.

Readiness

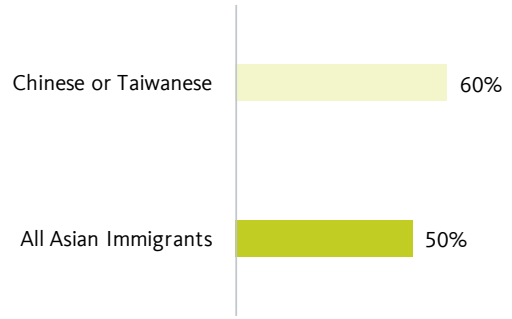
High variation in education levels among immigrants

Overall, education levels are higher among Asian immigrants, and the levels for Chinese or Taiwanese immigrants (the only sub-group we have reliable information on) are higher than for all Asian immigrants combined.

Immigrants from Central America and Mexico tend to have very low education levels while those from the Caribbean and South America tend to have low to moderate education levels (e.g. 15 percent of Dominican immigrants and 23 percent Columbian immigrants have at least an associate's degree).

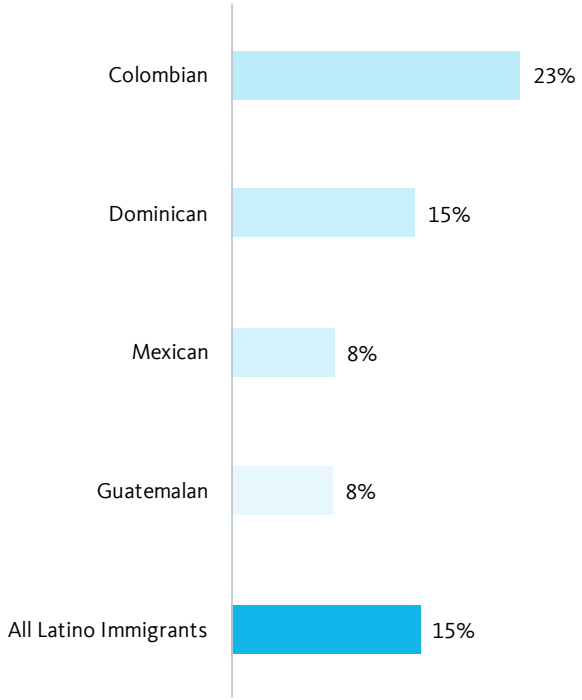
Asian immigrants tend to have higher education levels compared with Latino immigrants, but there are major differences in educational attainment among immigrants by country of origin

49. Asian Immigrants, Percent with an Associate's Degree or Higher by Origin, 2006-2010



Source: IPUMS. Universe includes all persons ages 25 through 64.

50. Latino Immigrants, Percent with an Associate's Degree or Higher by Origin, 2006-2010



Source: IPUMS. Universe includes all persons ages 25 through 64.

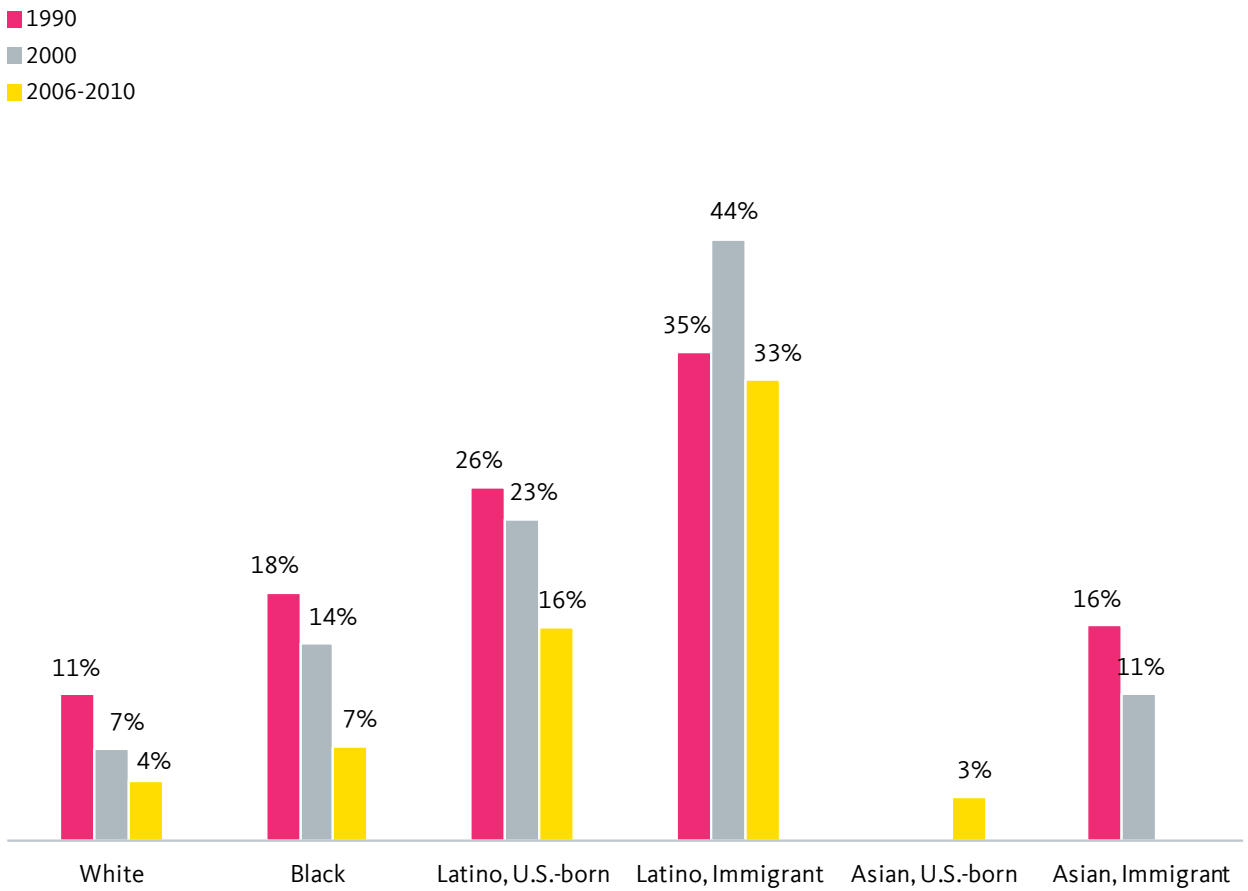
Readiness

More youth are getting high school degrees, but Latino immigrants are more likely to be behind

The share of youth who do not have a high school education and are not pursuing one has declined considerably since 1990 for most racial/ethnic groups. Despite the overall improvement, youth of color (with the exception of U.S.-born Asians) are still less likely to finish high school than their white counterparts. Immigrant Latinos had the smallest improvement since 1990 and continue to have particularly high rates of dropout or non-enrollment, with one in every three lacking and not pursuing a high school degree.

Educational attainment and enrollment among youth has improved since 1980

51. Percent of 16-24-Year-Olds Not Enrolled in School and Without a High School Diploma, 1990 to 2006-2010



Source: IPUMS.

Readiness

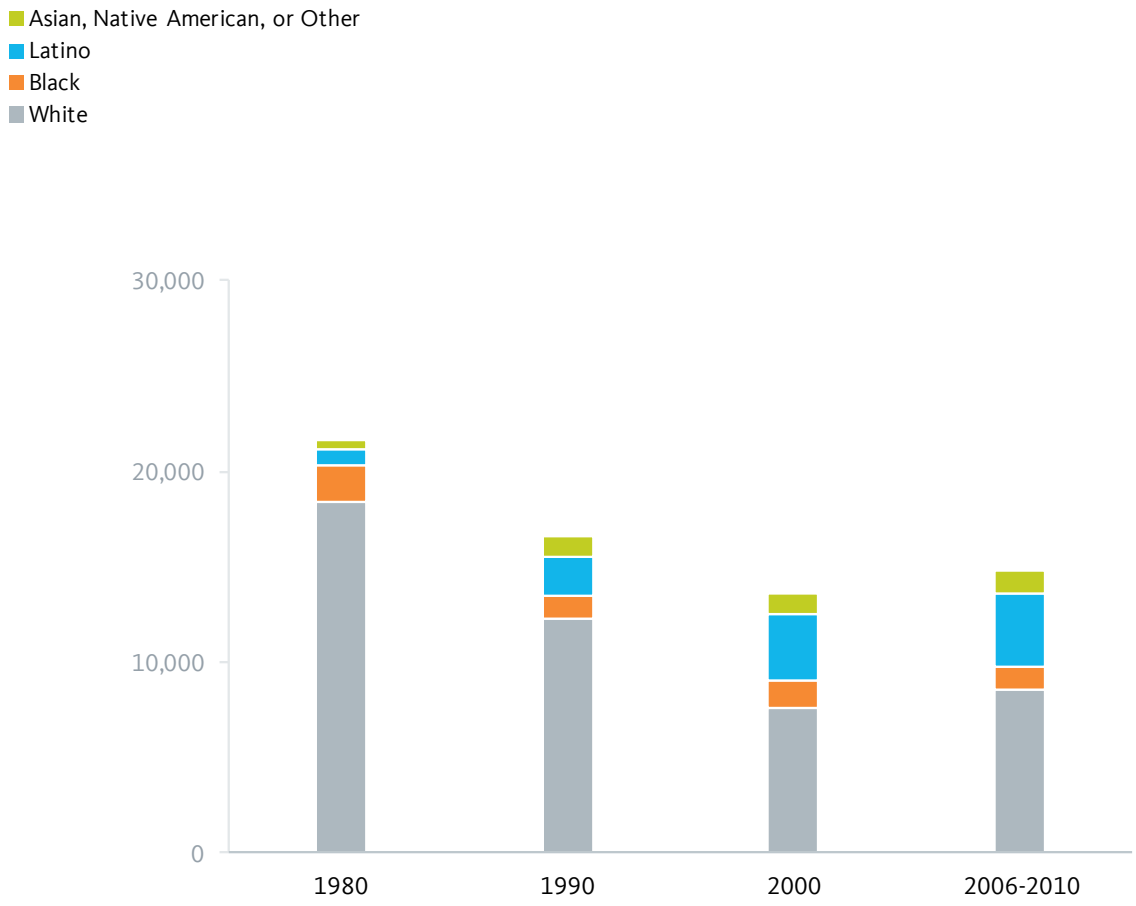
Many youth remain disconnected from work or school

While trends in the pursuit of education have been positive for youth of color, the number of "disconnected youth" who are neither in school nor working is on the rise. Between 1980 and 2000, Rhode Island saw consistent declines in the number of disconnected youth, but over the last decade there was a significant increase.

Of the region's nearly 15,000 disconnected youth, 58 percent are white, 26 percent are Latino, and 8 percent are African American. As a share of the youth population, Latinos have the highest rate of disconnection (20 percent), followed by African Americans (13 percent), Asians (9 percent) and whites (8 percent).

There are still almost 15,000 disconnected youth in the state

52. Disconnected Youth: 16-24-Year-Olds Not in Work or School, 1980 to 2006-2010



Source: IPUMS.

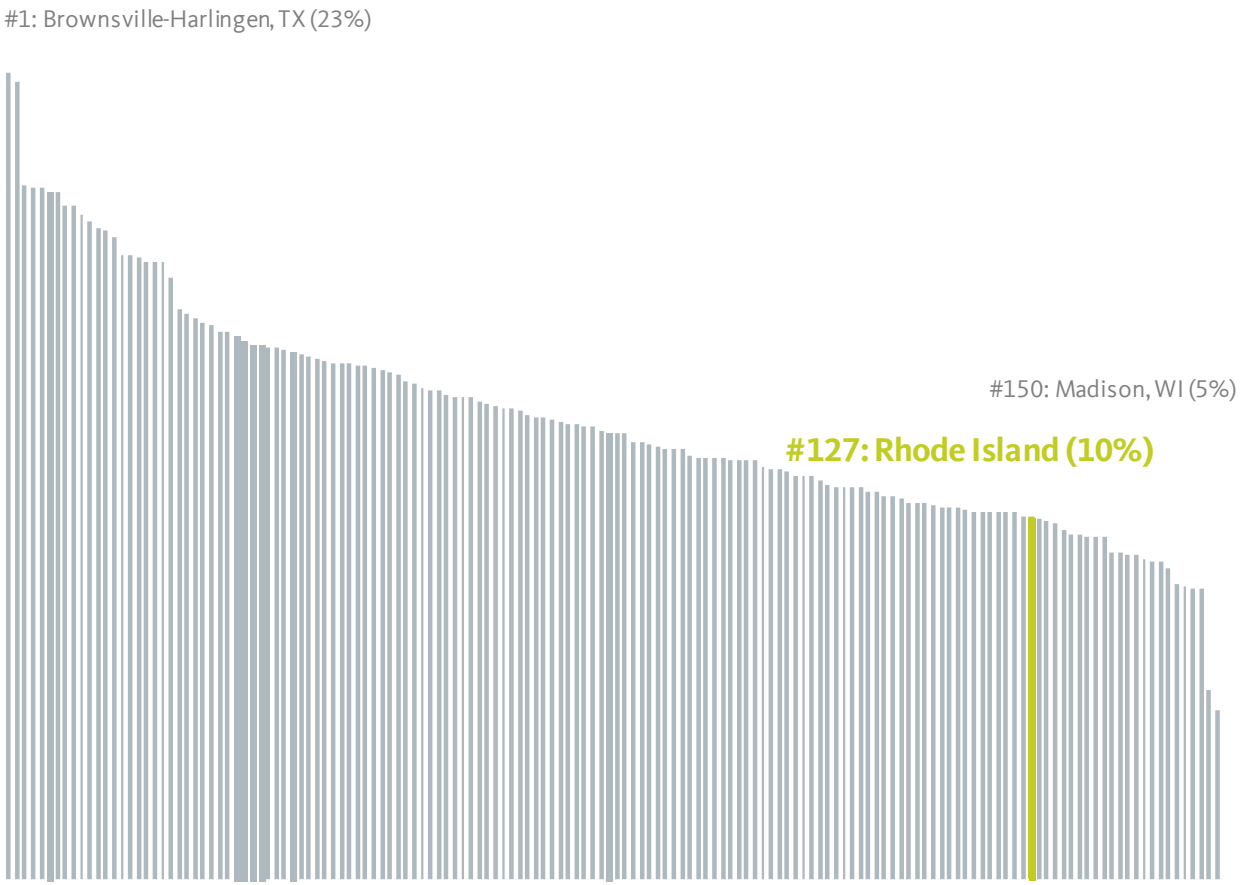
Readiness

A comparatively low share of disconnected youth

Despite the increase in disconnected youth over the last decade, the state ranks relatively low on this indicator compared with other regions. Ten percent of youth are disconnected in Rhode Island. This places the region at 127th out of the largest 150 metro areas – a ranking that is better than the similarly-sized Northeastern metro areas of New Haven and Buffalo, but slightly worse than Albany.

Rhode Island ranks among the bottom third of regions in its share of disconnected youth

53. Percent of 16-24-Year-Olds Not in Work or School, 2006-2010: Largest 150 Metros Ranked



Source: IPUMS.

Readiness

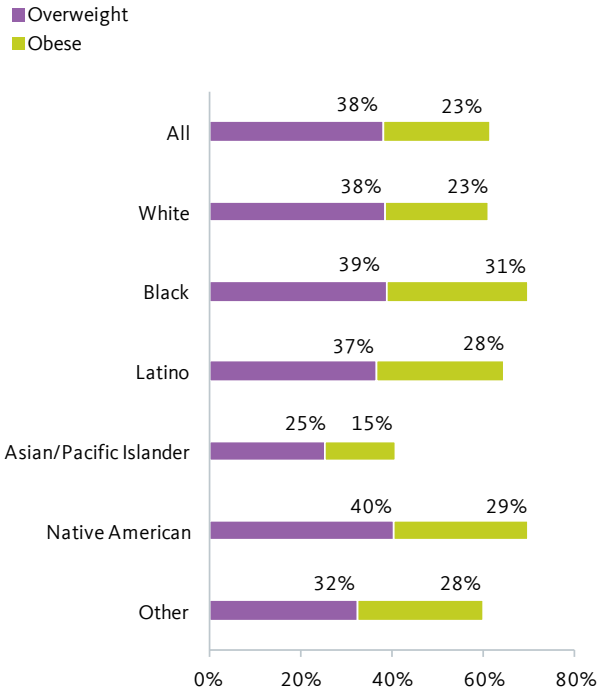
Health challenges for communities of color

Adult obesity and diabetes rates are lower in Rhode Island than national averages, but asthma rates are slightly higher than national averages. African Americans and Latinos have above average rates for overweight/obesity and diabetes, while Native Americans have above average rates on all three health indicators.

Asians have better than average health across all three indicators, with only three percent of Asians having diabetes and only 40 percent overweight or obese (compared with 61 percent statewide).

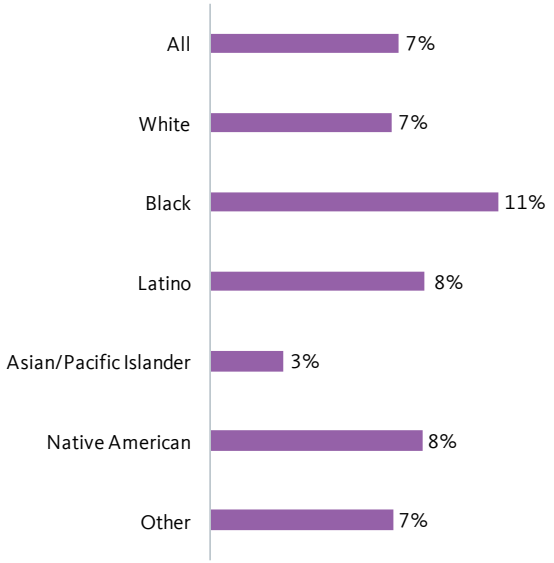
African Americans and Latinos face above average rates of obesity and diabetes, while Native Americans have above average asthma rates as well

54. Adult Overweight and Obesity Rates by Race/Ethnicity, 2006-2010



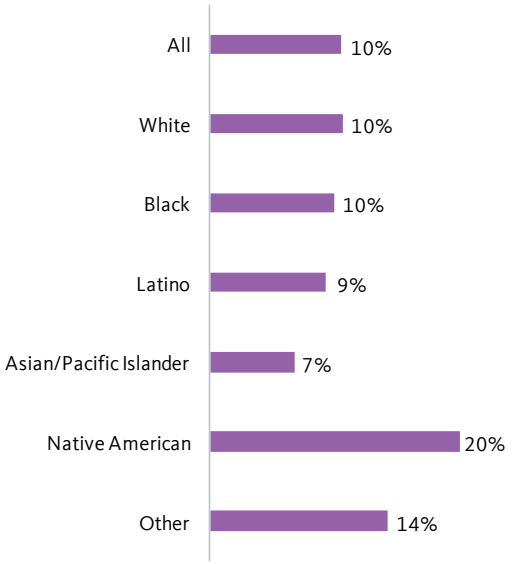
Source: Centers for Disease Control and Prevention. Universe includes adults ages 18 and older.

55. Adult Diabetes Rates by Race/Ethnicity, 2006-2010



Source: Centers for Disease Control and Prevention. Universe includes adults ages 18 and older.

56. Adult Asthma Rates by Race/Ethnicity, 2006-2010



Source: Centers for Disease Control and Prevention. Universe includes adults ages 18 and older.

Connectedness

Connectedness
Highlights

Are the region's residents and neighborhoods connected to one another and to the region's assets and opportunities?

- Residential segregation is declining overall, but segregation between Latinos and whites has increased, and Latinos are more likely to live in neighborhoods with other Latinos.
- People of color are more likely to live in neighborhoods of concentrated poverty. Nearly 9 percent of people of color live in high-poverty tracts compared with only 2 percent of whites.
- Like much of the nation, Rhode Island is auto dependent, with 81 percent of residents driving alone to work. People of color are much more likely to rely on transit than whites.
- Communities of color have higher housing burdens for both renters and homeowners, and homeowner housing burden is relatively high in the region.
- Food deserts are primarily found in Providence and Woonsocket, and are more likely to affect communities of color.

Percent of people of color living in high-poverty tracts:

9%

Percent of renters who are burdened by housing costs:

48%

Home-owner housing cost burden rank (out of largest 150 regions):

#25

Connectedness

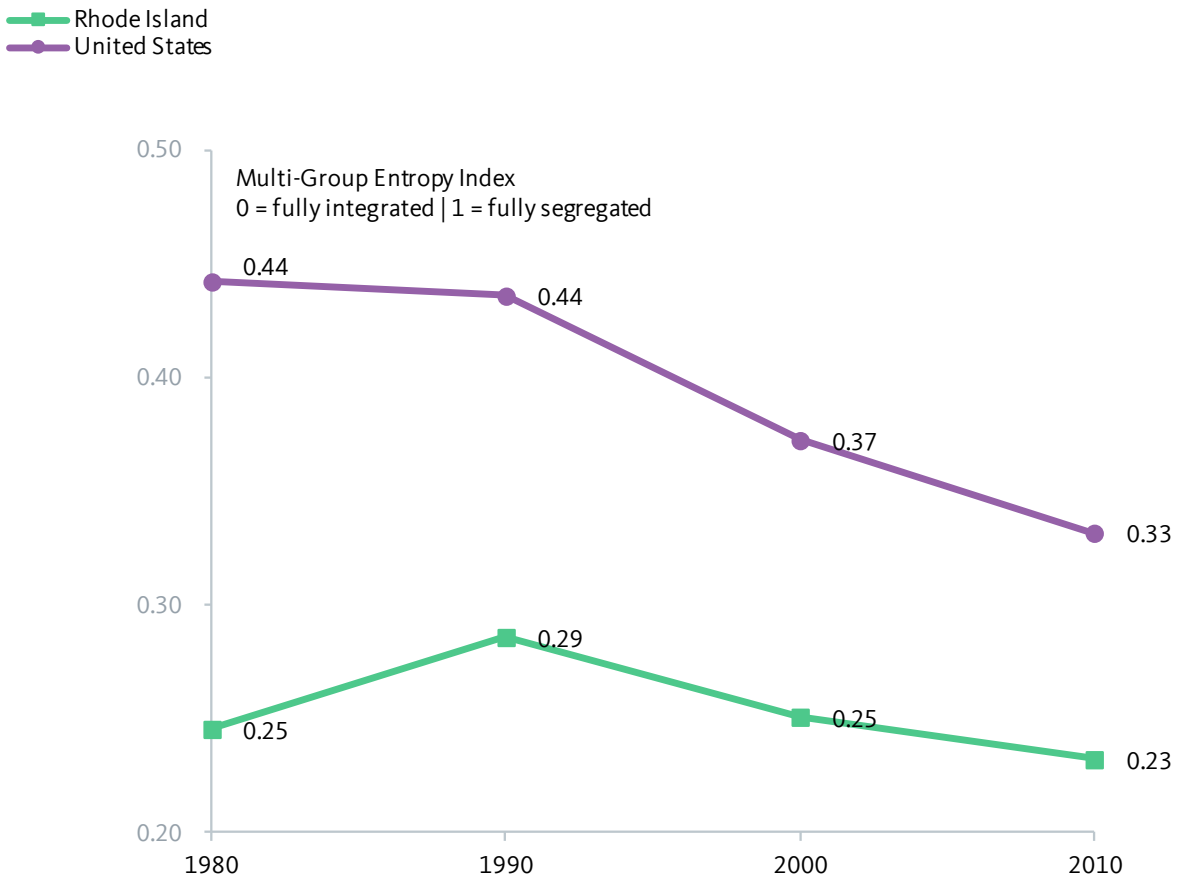
Segregation is relatively low and decreasing

Rhode Island is much less residentially segregated by race/ethnicity than the United States as a whole. Although segregation increased during the 1980s, it has since declined as the state's population has become more diverse.

Segregation is measured by the entropy index, which ranges from a value of 0, meaning that all census tracts have the same racial/ethnic composition as the entire metropolitan area (maximum integration), to a high of 1, if all census tracts contained one group only (maximum segregation).

Residential segregation is decreasing over time

57. Residential Segregation, 1980 to 2010



Sources: U.S. Census Bureau; Geolytics. See the "Data and methods" section for details of the residential segregation index calculations.

Connectedness

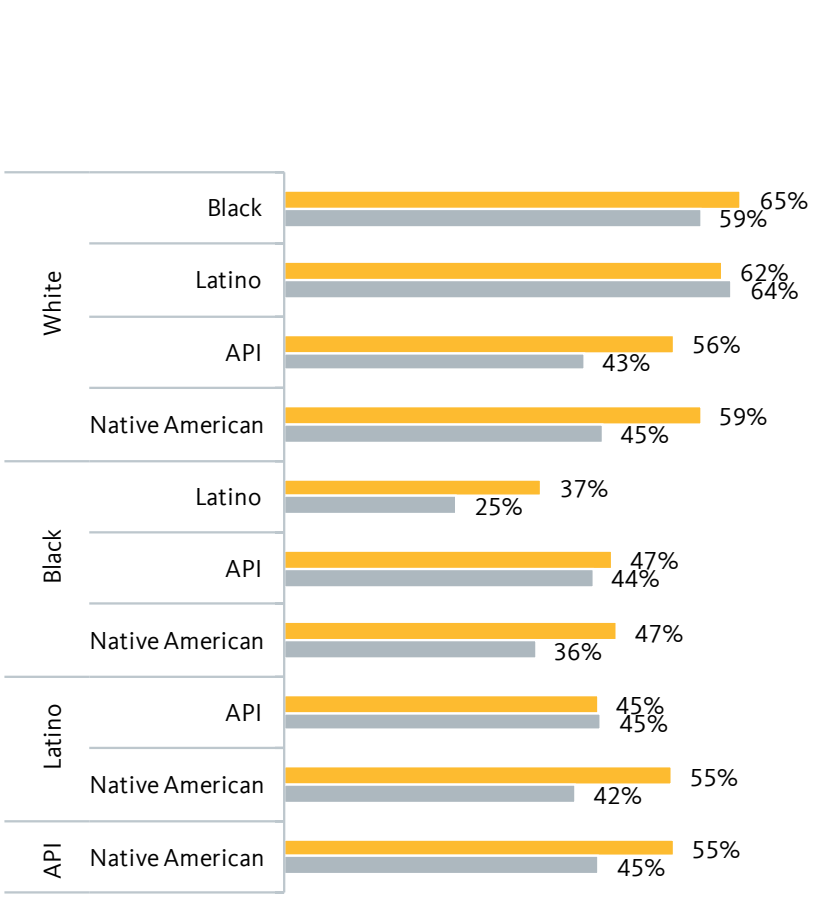
Increased integration among most groups

While overall residential segregation has decreased, examining segregation between specific groups reveals how some groups are living closer together and some are still living apart – and points to which particular groups are driving the overall decline in segregation statewide.

The dissimilarity index estimates the share of a given racial/ethnic group that would need to move to a new neighborhood to achieve complete integration. According to this measure, segregation between most groups has declined since 1990, with large declines between whites and Asians, as well as between African Americans and Latinos. Segregation increased, however, between whites, the state's largest racial/ethnic group, and Latinos, its fastest growing group. Segregation between all groups and Native Americans also declined substantially.

Segregation between most groups has decreased, but white-Latino segregation increased

58. Residential Segregation, 1990 and 2010, Measured by the Dissimilarity Index



Sources: U.S. Census Bureau; Geolytics. Data reported is the dissimilarity index for each combination of racial/ethnic groups. See the "Data and methods" section for details of the residential segregation index calculations.

Connectedness

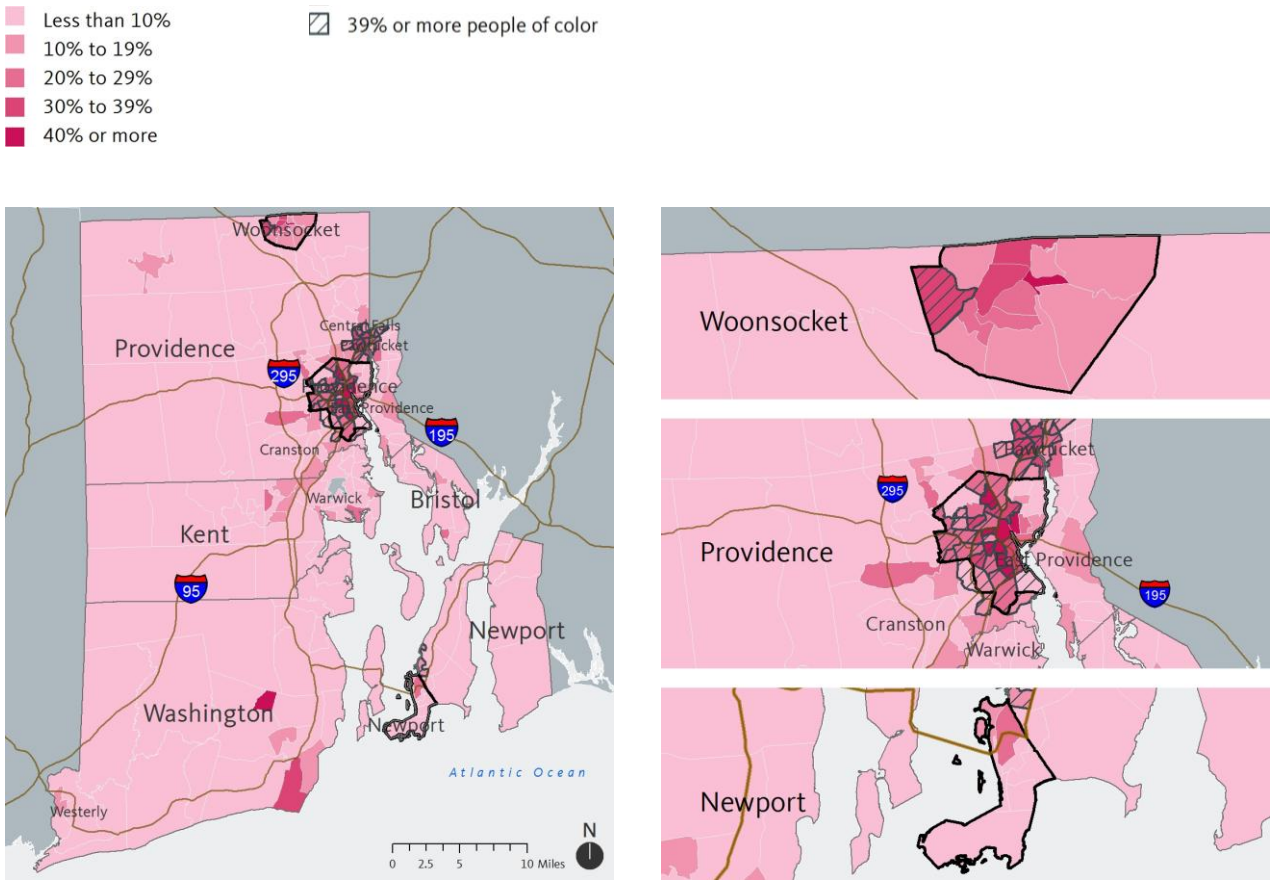
Concentrated poverty still a challenge for communities of color

In Rhode Island, the share of people living in high-poverty neighborhoods (those with poverty rates 40 percent or higher) quadrupled since 1980, rising from 0.8 to 3.5 percent. People of color are much more likely to live in these neighborhoods than whites: nearly 9 percent of people of color live in high-poverty tracts compared with only 2 percent of whites. In the 20 percent of neighborhoods with the highest shares of people of color (39 percent or more), the average poverty rate is about 27 percent, compared with 9 percent for all other neighborhoods combined.

As these maps show, high-poverty neighborhoods are most prevalent in Providence, but areas of relatively high poverty are also found in Pawtucket, Central Falls, and Woonsocket, as well as in the southern part of the state.

High-poverty neighborhoods are primarily located in Providence

59. Percent Population Below the Poverty Level by Census Tract and High People-of-Color Tracts, 2006-2010



Source: U.S. Census Bureau. Areas in white are missing data.

Connectedness

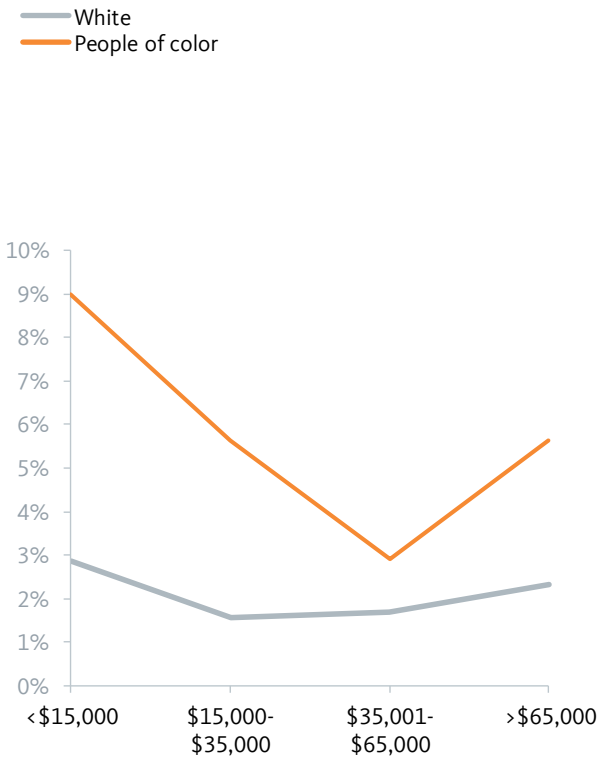
People of color are more likely to rely on the region's transit system to get to work

Income and race both play a role in determining who uses Rhode Island's transit system to get to work. Very low-income people of color are most likely to get to work using public transit. Although transit use declines rapidly for middle-income people of color, the rate rises for upper-income earners. Very low-income and upper-income whites use public transit at about the same rate.

Households of color are much less likely to own cars than whites. Across the region, 92 percent of white households have at least one car, but among households headed by a person of color, only 83 percent do. People of other or mixed racial background, African American, and Latino households are the most likely to be carless.

Transit use varies by income and race

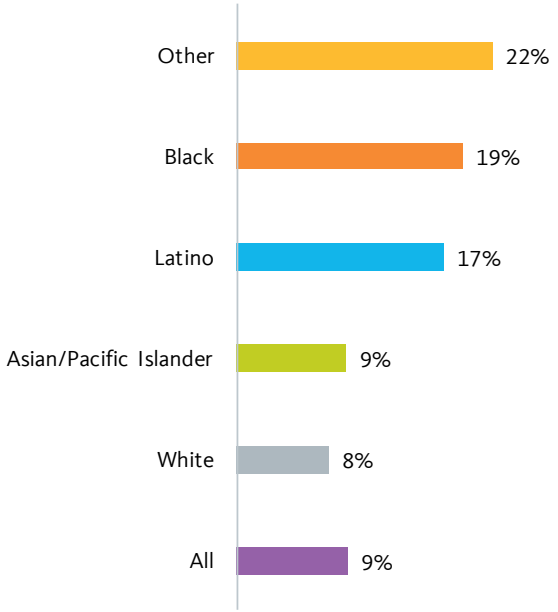
60. Percent Using Public Transit by Annual Earnings and Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes workers ages 16 and older with earnings.

Households of color are less likely to own cars

61. Percent of Households without a Vehicle by Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes all households (no group quarters).

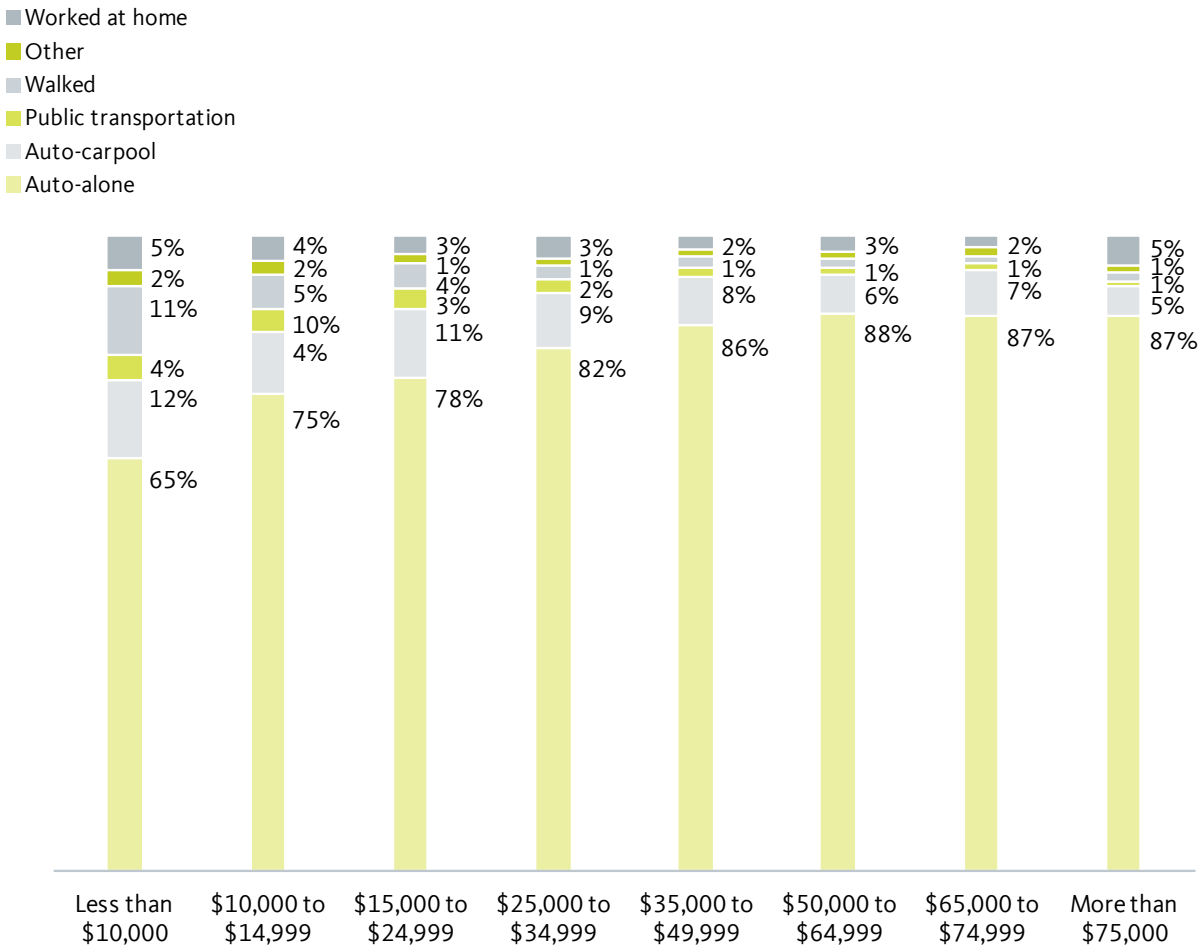
Connectedness

Lone commuting increases as income rises

Most residents in the state (81 percent) drive alone to work, placing it in the middle third of the largest 150 metros in its share of lone commuters. Single-driver commuting varies by income, however. Only 68 percent of very low-income workers (earning under $15,000 per year) drive alone to work, compared with 87 percent of workers who make over $65,000 a year.

Lower-income residents are less likely to drive alone to work

62. Means of Transportation to Work by Annual Earnings, 2006-2010



Source: U.S. Census Bureau. Universe includes workers ages 16 and older with earnings.

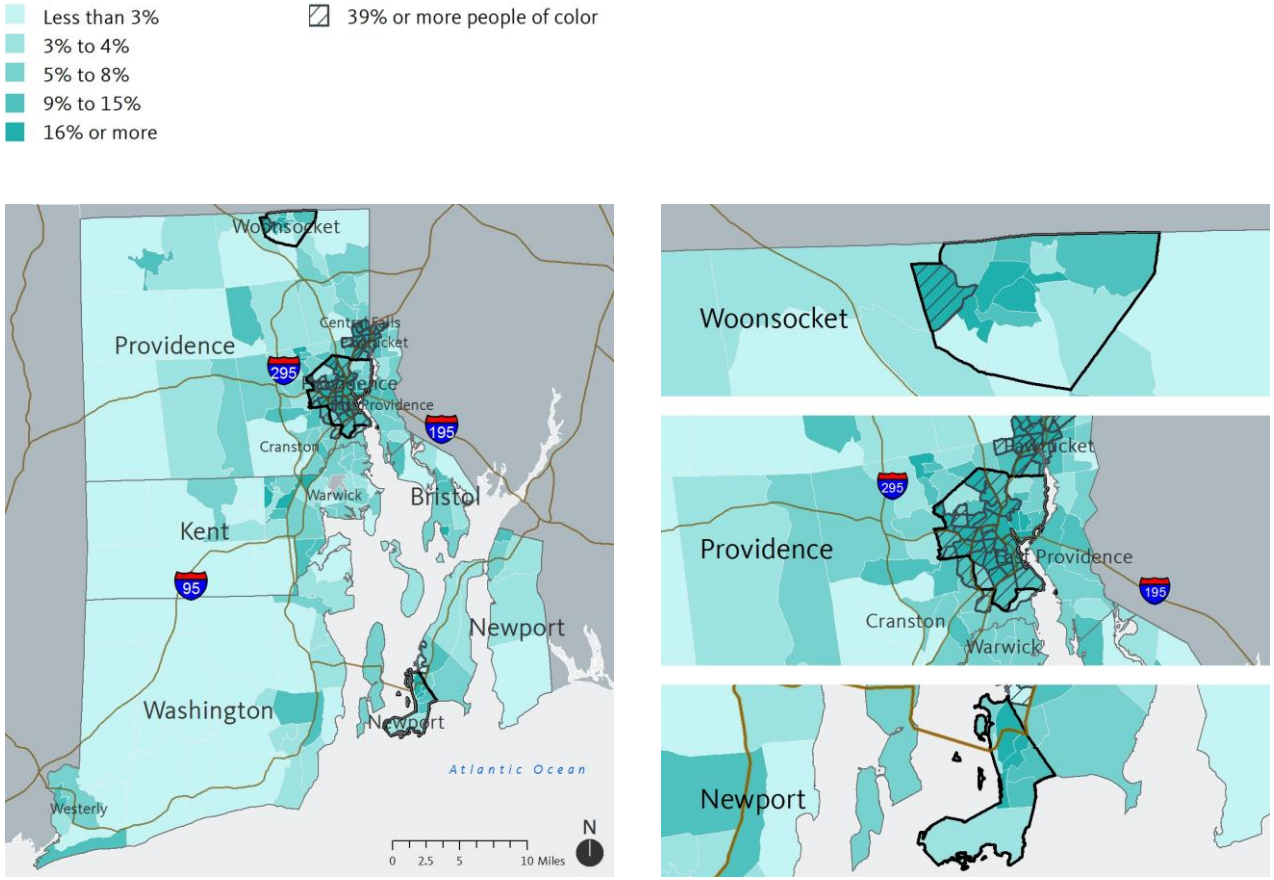
Connectedness

Communities of color are more likely to be carless

Although the vast majority of households have access to at least one vehicle, vehicle access varies across the state. Neighborhoods with high rates of zero-vehicle households are found primarily in and around Providence, Pawtucket, and Central Falls, and some of Woonsocket. Carlessness is particularly high in areas with high concentrations of people of color, which are mostly located in the same cities.

Concentrations of households without a vehicle are focused primarily in communities of color

63. Percent of Households Without a Vehicle by Census Tract and High People-of-Color Tracts, 2006-2010



Source: U.S. Census Bureau. Areas in white are missing data.

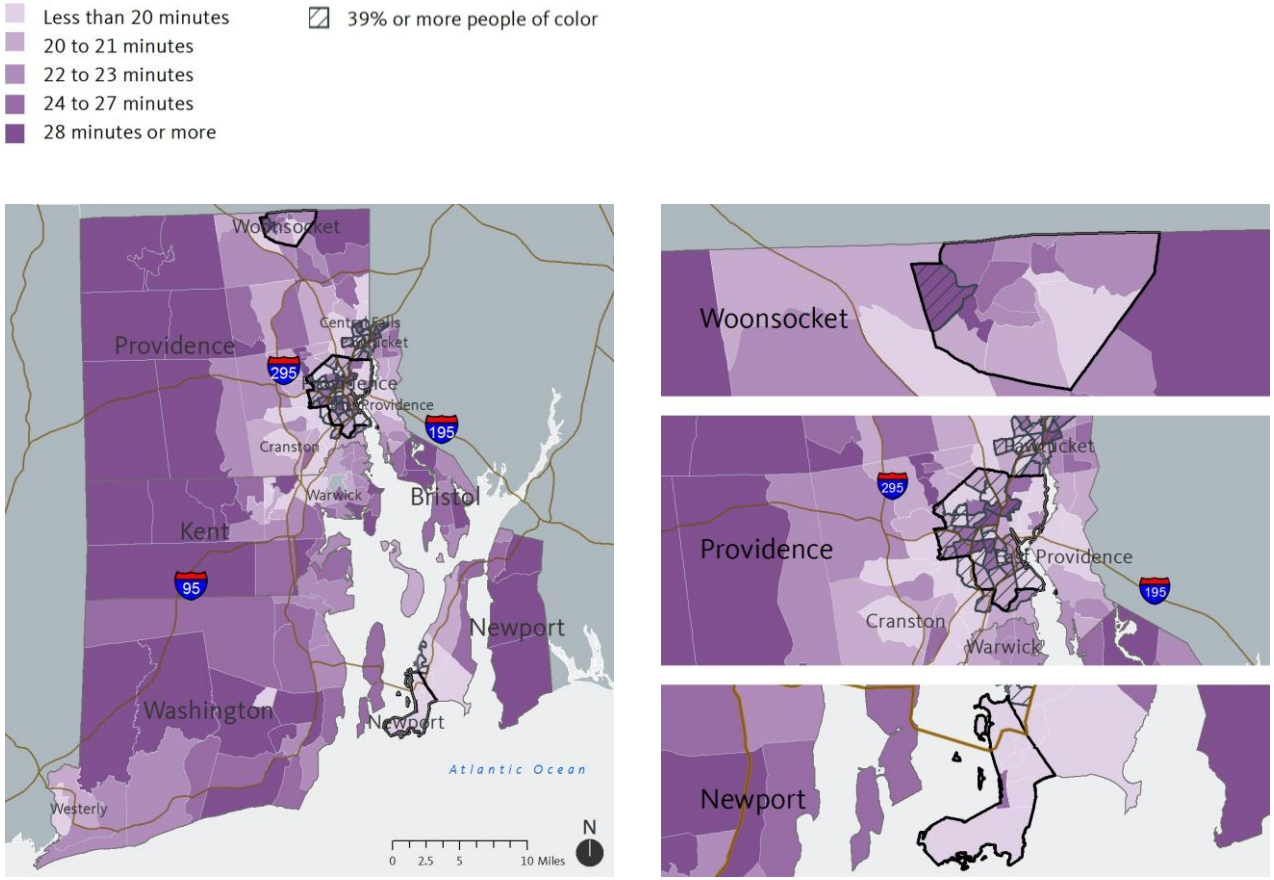
Connectedness

Longer commutes for inner-city communities of color and more rural areas

Workers in the more suburban areas of Providence and Woonsocket, and most residents of Newport, tend to have the shortest commutes. Many, though not all, of the neighborhoods with the highest shares of people of color have medium to long commutes. Much of the western and southern portions of the state also have long commutes for workers.

Workers in many areas of the state have long commute times, including communities of color in the city centers

64. Average Travel Time to Work by Census Tract and High People-of-Color Tracts, 2006-2010



Source: U.S. Census Bureau. Areas in white are missing data.

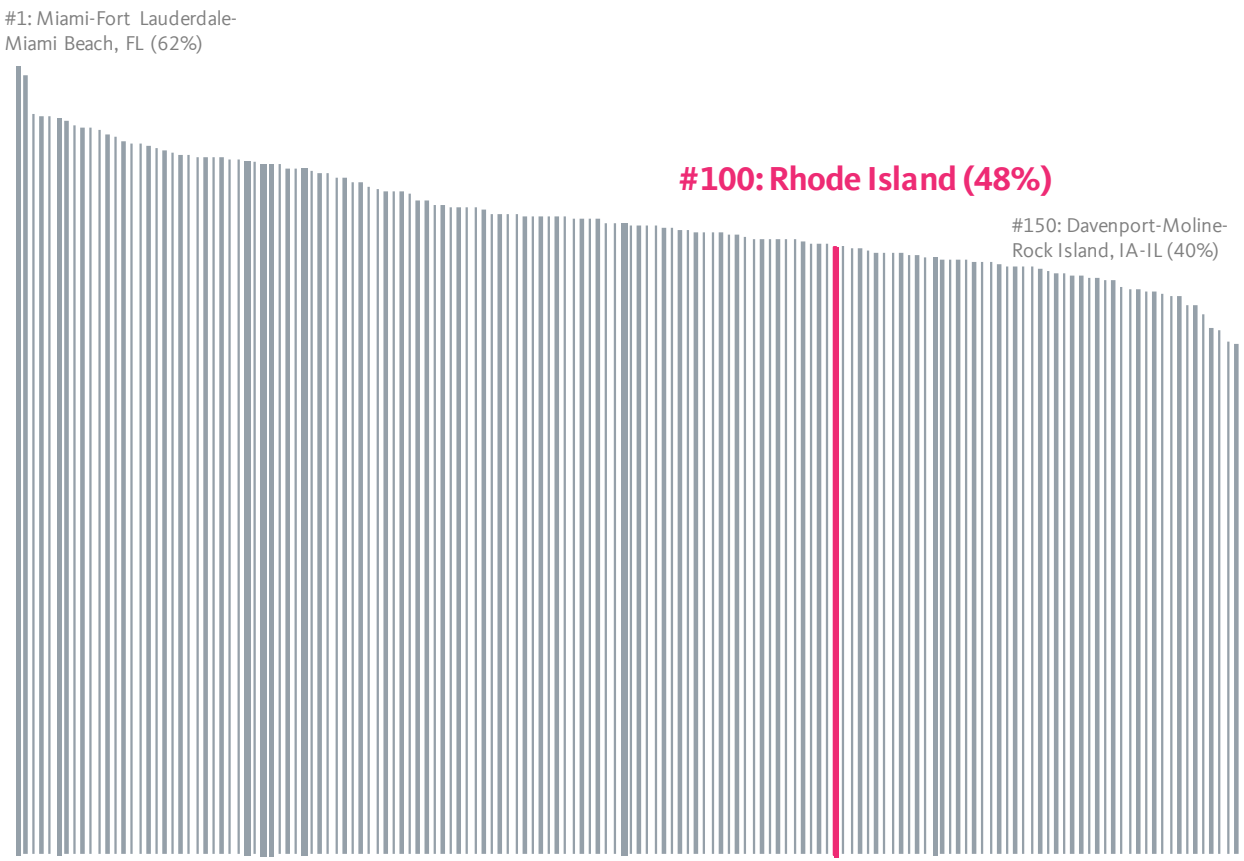
Connectedness

A relatively low-cost rental housing market

Rhode Island has relatively low housing costs for renters, ranking 100th in renter housing burden among the largest 150 metros. Still, nearly half (48 percent) of renters are housing burdened, defined as spending more than 30 percent of their income on housing. Compared with other similarly-sized northeastern metros, this is much better than New Haven (54 percent), slightly better than Buffalo (49 percent), but worse than Albany (45 percent). For homeowners, however, Rhode Island ranks 25th highest for housing cost burden, far worse than Albany or Buffalo, but slightly better than New Haven.

Rhode Island has a relatively low ranking for rent-burdened households compared with other regions

65. Share of Households that are Rent Burdened, 2006-2010: Largest 150 Metros Ranked



Source: IPUMS. Universe includes renter-occupied households with cash rent (excludes group quarters).

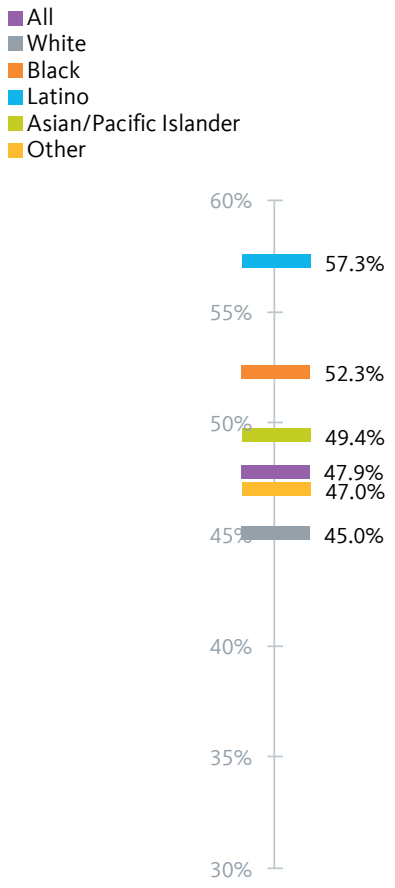
Connectedness

People of color face higher housing burdens

The region's people of color are much more likely than whites to spend too large a share of their income on housing, whether they rent or own. Latino renters and owners are by far the most likely to be burdened by housing costs, followed by African Americans. Housing burden is defined as paying more than 30 percent of household income toward housing.

Latinos and African Americans have the highest renter housing burden

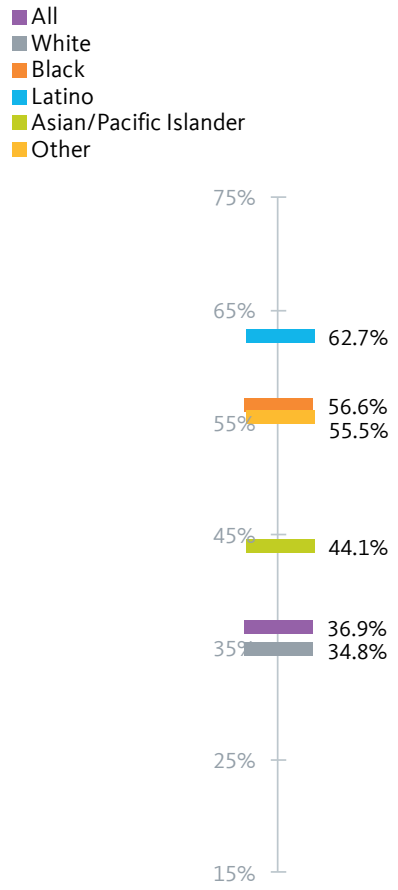
66. Renter Housing Burden by Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes renter-occupied households with cash rent (excludes group quarters).

Latinos, African Americans, and people of other/mixed racial background have the highest homeowner housing burden

67. Homeowner Housing Burden by Race/Ethnicity, 2006-2010



Source: IPUMS. Universe includes owner-occupied households (excludes group quarters).

Connectedness

Jobs-housing mismatch for low-wage workers in some parts of the region

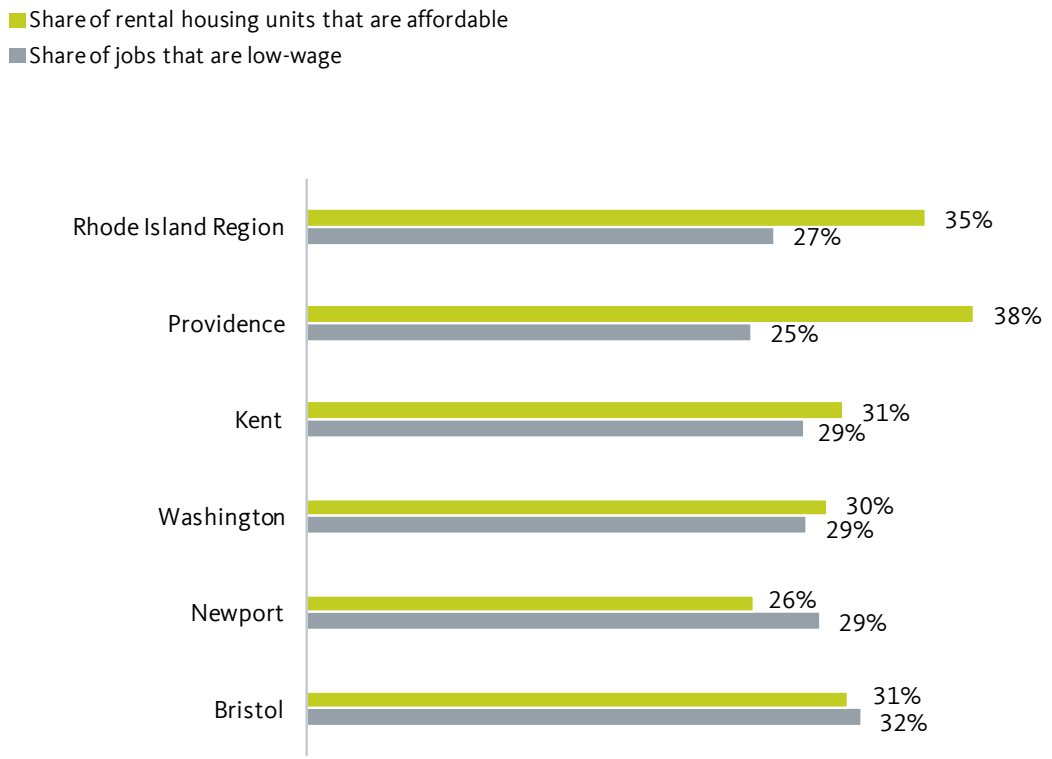
Low-wage workers in the region may find affordable rental housing – but will it be close to work? Across the region, 27 percent of jobs are low-wage (paying $1,250 per month or less) and 35 percent of rental units are affordable (defined as having rent of $749 per month or less, which would be 30 percent or less of two low-wage workers' incomes).

County-level data show that Providence has the highest share (38 percent) of affordable rental units in the state. This suggests that many low-wage workers can find affordable housing within the county; however, this does not reflect availability within specific cities.

In most other counties, the share of affordable rental housing units is about the same as the share of low-wage jobs, at around 30 percent. Newport and Bristol have the most room to grow – they are the only counties for which the share of low-wage jobs is higher than the share of affordable rental housing.

Some counties have a low-wage jobs - affordable housing gap

68. Low-Wage Jobs and Affordable Rental Housing by County



Source: U.S. Census Bureau.

Connectedness

Jobs-housing mismatch for low-wage workers in some parts of the region

(continued)

A low-wage jobs to affordable rental housing ratio in a county with a higher than regional average ratio indicates a lower availability of affordable rental housing for low-wage workers in that county relative to the region overall.

Providence is the only county in Rhode Island with a low-wage jobs to affordable rental housing ratio that is lower than the statewide average. All other counties in the state have a much higher ratio, indicating a potential shortage of affordable units. Washington County's ratio is the highest, at nearly double the statewide average.

Range of jobs-housing ratios throughout the state, with Washington having the highest affordability mismatch

69. Low-Wage Jobs, Affordable Rental Housing, and Jobs-Housing Ratios by County

	Jobs (2010)		**Housing** (2006-2010)			**Jobs-Housing Ratios**	
	All	Low-wage	All	Rental*	Affordable Rental*	All Jobs: All Housing	Low-wage Jobs: Affordable Rentals
Providence	273,546	69,641	238,059	102,790	39,254	1.1	1.8
Kent	70,782	20,180	69,109	17,589	5,397	1.0	3.7
Washington	46,073	13,183	49,130	10,856	3,232	0.9	4.1
Newport	31,138	9,143	34,771	12,104	3,091	0.9	3.0
Bristol	13,813	4,378	19,236	5,078	1,573	0.7	2.8
Rhode Island Region	**435,352**	**116,525**	**410,305**	**148,417**	**52,547**	**1.1**	**2.2**

*Includes only those units paid for in cash rent.

Source: U.S. Census Bureau.

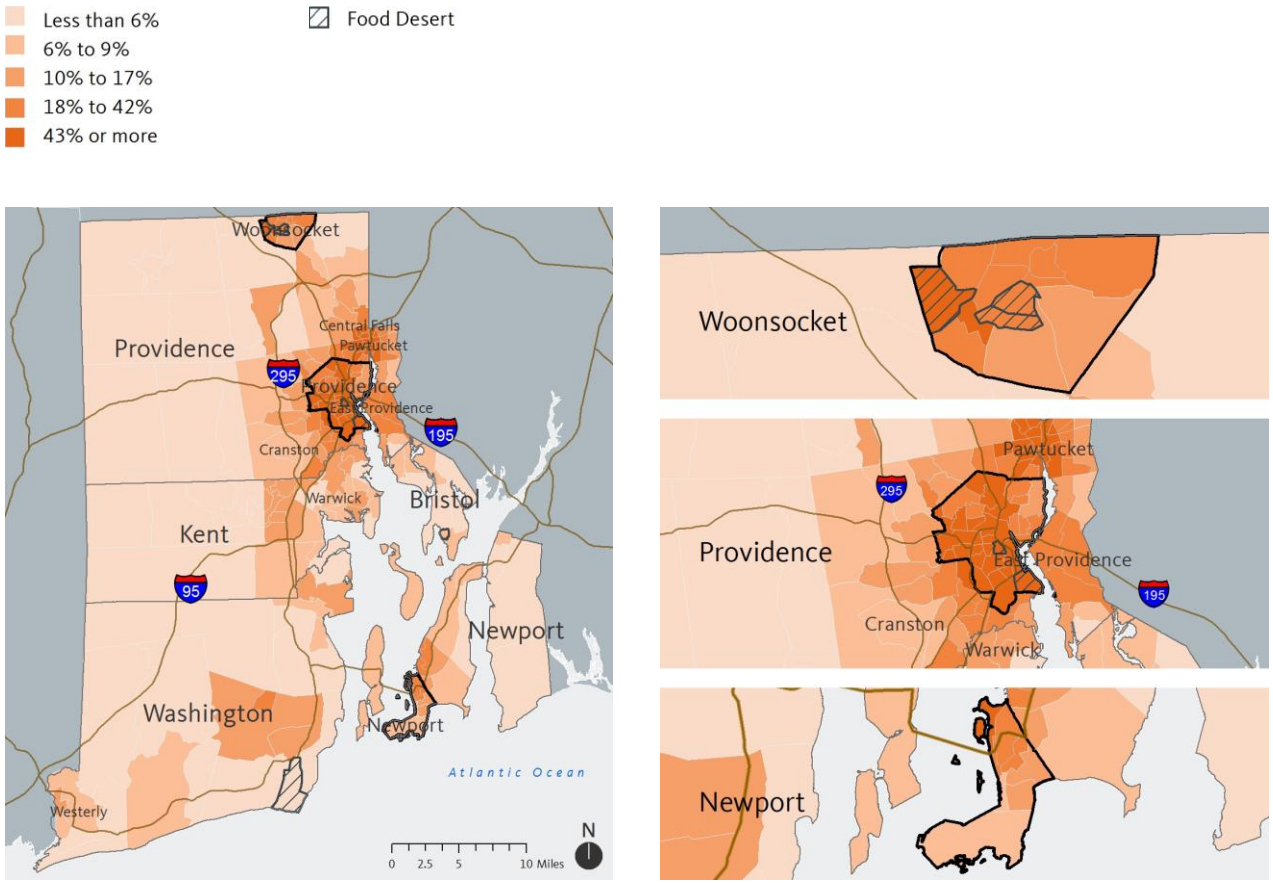
Connectedness

Food deserts primarily in urban communities of color and rural areas

The state's food deserts, defined as low-income census tracts where a substantial number or share of residents have low access to a supermarket or large grocery store, are primarily found in communities of color. Most are located in Providence and Woonsocket. A food desert is also found in a predominantly white tract located on the southern coast of the state, which also has very high poverty (see page 68).

Food deserts concentrated primarily in communities of color in Providence and Woonsocket

70. Percent People of Color by Census Tract, 2010, and Food Desert Tracts



Sources: Geolytics; U.S. Department of Agriculture. See the "Data and methods" section for details.

Connectedness

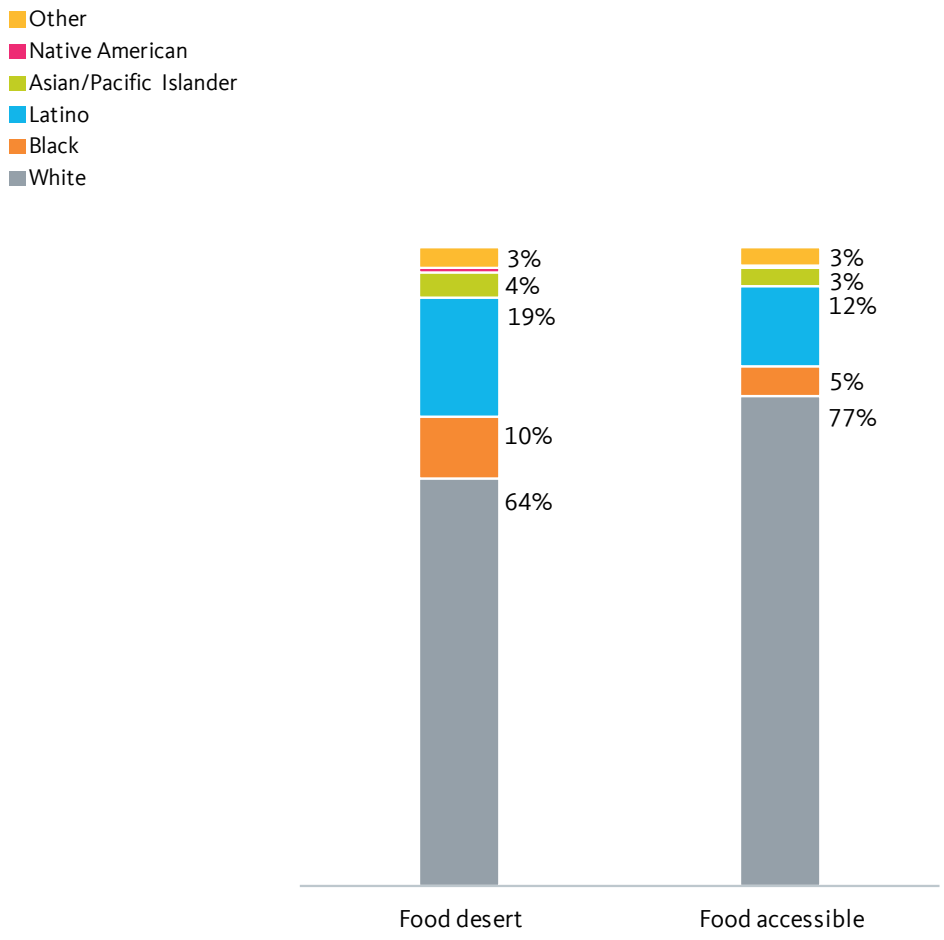
Food deserts primarily in urban communities of color and rural areas

(continued)

The state's food deserts are home to higher shares of people of color compared with neighborhoods that are not food deserts. African Americans and Latinos make up a much higher share of the population in food deserts (29 percent) than in areas with better food access (17 percent).

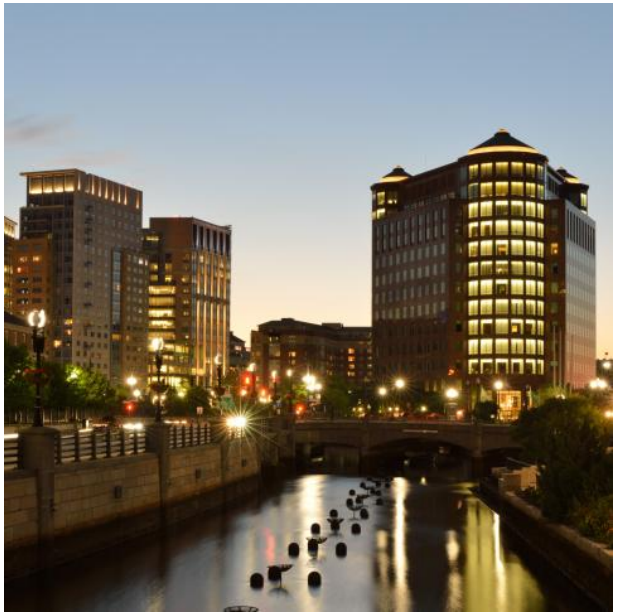
People of color are disproportionately represented in food deserts

71. Racial/Ethnic Composition of Food Environments, 2010



Sources: U.S. Census Bureau; U.S. Department of Agriculture. See the "Data and methods" section for details.

Implications



Implications
Building a more equitable state

As Rhode Island undergoes a rapid demographic transformation, ensuring that all of its residents can participate in and contribute to the state's economy is an economic imperative. To take advantage of its growing, diverse population and build a more equitable and sustainable economy, Rhode Island must take steps to better connect its communities of color to jobs, housing, and quality education from pre-K to college.

Governor Chafee's Executive Order on Diversity, signed in May 2013, is a tremendous step forward. PolicyLink and PERE suggest the following areas of focus as the state continues to build a more equitable economy:

Bridge the racial generation gap

Bridging the racial generation gap between youth of color and a predominantly white senior population will be critical to the region's economy, because support for strong public schools for all children and workforce training are needed to prepare the region's emerging workforce for the jobs of tomorrow. One way to build these bridges is to plan for multigenerational communities, which "make cities and neighborhoods accessible, safe, and inclusive for children, youth, families, adults, and the elderly."[1] This will allow the elderly to age in place and at the same time provide safe and healthy environments for families to raise children. By supporting infrastructure investments in community facilities and public spaces, Rhode Island can create built environments that facilitate social interaction between residents of all ages. In addition, promoting active and accessible public engagement in local and regional planning processes will help the state build the diverse leadership it needs to succeed in the future.

Grow good jobs

Even with slow job growth over the last few decades, Rhode Island has an opportunity to grow better jobs by focusing its economic and workforce development efforts on industry sectors and occupations that show signs of strength and pay living wages. The state should also support strategies that ensure strong and rising wages, especially for low-wage workers.

Connect unemployed and low-wage workers to careers in high-growth industries

It is vital for Rhode Island to connect its strong industries with middle-skills jobs that pay good wages and could provide economic mobility for workers without college degrees. Our analysis of strong industries in the state indicates that healthcare and education are sectors in which public and private investment could pay off by expanding middle-wage jobs. Our analysis of occupations suggests that there are particular opportunities to attach lower- and middle-skilled workers to better-quality jobs in these sectors in occupations ranging from secretaries and administrative assistants to nurses, home health aides, and other healthcare support occupations.

Rhode Island must mobilize its economic and workforce development resources to create workforce partnerships between community colleges and employers, ensuring that all

Implications
Building a more equitable region
(continued)

workers – including those who face high barriers to employment or who have previously not had success in school – can get the advanced training or education they need to succeed. These partnerships will be essential for building a workforce that is prepared for jobs in the state's strong and growing industries. Additionally, public infrastructure investments throughout the region present an opportunity to build bridges out of poverty. Construction jobs offer workers without a college degree a viable path to a well-paying career.

Identify educational pathways
Educational attainment for African Americans and Latinos remains a critical issue, even as progress has been made over the last few decades to close racial gaps. The increasing number of youth not in school or work highlights the importance of increasing high school and associate degree graduation rates throughout the region.

Create healthier communities
Investments in healthy communities will reduce health gaps for people of color, create more vibrant places, strengthen economic productivity, and result in overall health-care costs savings. By making neighborhoods healthier – with safe streets for all users, access to healthy food, and good community design – the region can create a supportive built environment for reducing these persistent health gaps.

Expand transportation choices and mobility
It is critical that Rhode Island focus its transportation investments to connect transit-dependent residents to employment centers and housing that is affordable for all incomes. Regional planning must incentivize and prioritize the development and preservation of housing that is affordable for the majority of the region's population and that is co-located with multimodal transportation investments. To fulfill the region's economic development and growth goals, Rhode Island must coordinate transportation, housing, and economic development investments to address concentrated poverty, segregation, and housing and transportation burdens, all of which have disproportionately negative effects on communities of color.

[1] American Planning Association, "Multigenerational Planning: Using smart growth and universal design to link the needs of children and the aging population." 2011, http://www.planning.org/research/family/briefingpapers/multigenerational.htm.

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Data and methods

Data source summary and regional geography

Unless otherwise noted, all of the data and analyses presented in this equity profile are the product of PolicyLink and the USC Program for Environmental and Regional Equity (PERE).

The specific data sources are listed in the table on the right. Unless otherwise noted, the data used to represent the region was assembled to match the State of Rhode Island.

While much of the data and analyses presented in this equity profile are fairly intuitive, in the following pages we describe some of the estimation techniques and adjustments made in creating the underlying database, and provide more detail on terms and methodology used. Finally, the reader should bear in mind that while only a single region is profiled here, many of the analytical choices in generating the underlying data and analyses were made with an eye toward replicating the analyses in other regions and the ability to update them over time. Thus, while there may be regionally-specific data

Source	Dataset
Integrated Public Use Microdata Series (IPUMS)	1980 5% State Sample
	1990 5% Sample
	2000 5% Sample
	2006 through 2010 American Community Survey (ACS), pooled single-year, 1%, samples
	2010 American Community Survey
U.S. Census Bureau	1980 Summary Tape File 1 (STF1)
	1980 Summary Tape File 2 (STF2)
	1980 Summary Tape File 3 (STF3)
	1990 Summary Tape File 2A (STF2A)
	1990 Modified Age/Race, Sex and Hispanic Origin File (MARS)
	1990 Summary Tape File 4 (STF4)
	2000 Summary File 1 (SF1)
	2000 Summary File 3 (SF3)
	2010 ACS 5-year Summary File (2010 5-year ACS)
	2010 Summary File 1 (SF1)
	2010 Local Employment Dynamics, LODES 6
	2008 National Population Projections
	Cartographic Boundary Files, 2000 Census Block Groups
	2010 TIGER/Line Shapefiles, 2010 Census Tracts
	2010 TIGER/Line Shapefiles, 2010 Counties
Geolytics	1980 Long Form in 2000 Boundaries
	1990 Long Form in 2000 Boundaries
	2010 Summary File 1 in 2000 Boundaries
U.S. Department of Agriculture	Food Desert Locator
Woods & Poole Economics	2011 Complete Economic and Demographic Data Source
U.S. Bureau of Economic Analysis	Gross Domestic Product by State, 1979 through 2010
	Gross Domestic Product by Metropolitan Area, 1979 through 2010
	Local Area Personal Income Accounts, CA30: regional economic profile, 1979 through 2010
U.S. Bureau of Labor Statistics	Quarterly Census of Employment and Wages
	Local Area Unemployment Statistics
	Occupational Employment Statistics
Centers for Disease Control and Prevention	Behavioral Risk Factor Surveillance System

Data and methods

Data source summary and regional geography

(continued)

available that is more recent and/or illuminating than what is presented here, a necessary and often painful choice was made (given our love of all data!) to disregard such sources to serve the higher purpose of comparability and replicability over time.

Data and methods
Selected terms and general notes

Broad racial/ethnic origin
In all of the analysis presented, all categorization of people by race/ethnicity and nativity is based on individual responses to various census surveys. All people included in our analysis were first assigned to one of six mutually exclusive racial/ethnic categories, depending on their response to two separate questions on race and Hispanic origin as follows:

- "White" and "non-Hispanic white" are used to refer to all people who identify as white alone and do not identify as being of Hispanic origin.
- "Black" and "African American" are used to refer to all people who identify as black or African American alone and do not identify as being of Hispanic origin.
- "Latino" refers to all people who identify as being of Hispanic origin, regardless of racial identification.
- "Asian," "Asian/Pacific Islander," and "API" are used to refer to all people who identify as Asian or Pacific Islander alone and do not identify as being of Hispanic origin.
- "Native American" and "Native American and Alaska Native" are used to refer to all people who identify as Native American or Alaskan Native alone and do not identify as being of Hispanic origin.
- "Other" and "other or mixed race" are used to refer to all people who identify with a single racial category not included above, or identify with multiple racial categories, and do not identify as being of Hispanic origin.
- "People of color" or "POC" is used to refer to all people who do not identify as non-Hispanic white.

Nativity
The term "U.S.-born" refers to all people who identify as being born in the United States (including U.S. territories and outlying areas), or born abroad of American parents. The term "immigrant" refers to all people who identify as being born abroad, outside of the U.S., of non-American parents.

Detailed racial/ethnic ancestry
Given the diversity of ethnic origin and substantial presence of immigrants among the Latino and Asian populations, we sometimes present data for more detailed racial/ethnic categories within these groups. In order to maintain consistency with the broad racial/ethnic categories, and to enable the examination of second-and-higher generation immigrants, these more detailed categories (referred to as "origin" or "ancestry") are drawn from the same two questions on race and Hispanic origin. For example, while country-of-origin information could have been used to identify Filipinos among the Asian population or Salvadorans among the Latino population, it could only do so for immigrants, leaving only the broad "Asian" and "Latino" racial/ethnic categories for the U.S.-born population. While this methodological choice makes little difference in the numbers of immigrants by detailed origin we report – i.e., the vast majority of immigrants from El Salvador mark "Salvadoran" under Hispanic origin – it is an important point of clarification.

Data and methods

Selected terms and general notes

(continued)

Other selected terms

Below we provide some definitions and clarification around some of the terms used in the equity profile:

- The terms "region," "metropolitan area," "metro area," and "metro," are used interchangeably to refer to the geographic areas defined as Metropolitan Statistical Areas by the U.S. Office of Management and Budget, as well as to the region that is the subject of this profile as defined above.
- The term "neighborhood" is used at various points throughout the equity profile. While in the introductory portion of the profile this term is meant to be interpreted in the colloquial sense, in relation to any data analysis it refers to census tracts.
- The term "communities of color" generally refers to distinct groups defined by race/ethnicity among people of color.
- The term "high-poverty neighborhood" refers to census tracts with a poverty rate of greater than or equal to 40 percent.
- The term "high POC tracts" (or "high people-of-color tracts") refers to census tracts in which people of color account for 39 percent of the population or more.
- The term "full-time" workers refers to all persons in the IPUMS microdata who reported working at least 45 or 50 weeks (depending on the year of the data) and usually worked at least 35 hours per week during the year prior to the survey. A change in the "weeks worked" question in the 2008 ACS, as compared with prior years of the ACS and the long form of the decennial census, caused a dramatic rise in the share of respondents indicating that they worked at least 50 weeks during the year prior to the survey. To make our data on full-time workers more comparable over time, we applied a slightly different definition in 2008 and later than in earlier years: in 2008 and later, the "weeks worked" cutoff is at least 50 weeks while in 2007 and earlier it is 45 weeks. The 45-week cutoff was found to produce a national trend in the incidence of full-time work over the 2005-2010 period that was most consistent with that found using data from the March Supplement of the Current Population Survey, which did not experience a change to the relevant survey questions. For more information, see http://www.census.gov/acs/www/Downloads/methodology/content_test/P6b_Weeks_Worked_Final_Report.pdf.

Data and methods

Selected terms and general notes

(continued)

General notes on analyses

Below we provide some general notes about the analyses conducted:

- At several points in the profile we present rankings comparing the profiled region to the "largest 150 metros" or "largest 150 regions," and refer in the text to how the profiled region compares with these metros. In all such instances, we are referring to the largest 150 metropolitan statistical areas in terms of 2010 population. If the geography of the profiled region does not conform to the "official" metro area definitions used by the U.S. Office of Management and Budget, then we substitute the "custom" profiled region in place of the best corresponding official metro area. For example, for the profile created for Rhode Island, which defines the region as the entire state, we substitute the state in for the official 6-county Providence-Warwick metro area.
- In regard to monetary measures (income, earnings, wages, etc.) the term "real" indicates the data has been adjusted for inflation. All inflation adjustments are based on the Consumer Price Index for all Urban Consumers (CPI-U) from the U.S. Bureau of Labor Statistics, available at: ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt.
- Some may wonder why the graph on page 36 indicates the years 1979, 1989, and 1999 rather than the actual survey years from which the information is drawn (1980, 1990, and 2000, respectively). This is because income information in the decennial census for those years is reported for the year prior to the survey. While seemingly inconsistent, the actual survey years are indicated in the graphs on page 37 depicting rates of poverty and working poverty, as these measures are partly based on family composition and work efforts at the time of the survey, in addition to income from the year prior to the survey.

Data and methods

Summary measures from IPUMS microdata

About IPUMS microdata

Although a variety of data sources were used, much of our analysis is based on a unique dataset created using microdata samples (i.e. "individual-level" data) from the Integrated Public Use Microdata Series (IPUMS), for four points in time: 1980, 1990, 2000, and 2006 through 2010 "pooled" together. While the 1980 through 2000 files are based on the decennial census and cover about 5 percent of the U.S. population each, the 2006 through 2010 files are from the American Community Survey (ACS) and cover only about 1 percent of the U.S. population each. Five years of ACS data were pooled together to improve the statistical reliability and to achieve a sample size that is comparable to that available in previous years. Survey weights were adjusted as necessary to produce estimates that represent an average over the 2006 through 2010 period.

Compared with the more commonly used census "summary files," which includes a limited set of summary tabulations of population and housing characteristics, use of the microdata samples allows for the flexibility to create more illuminating metrics of equity and inclusion, and provide a more nuanced view of groups defined by age, race/ethnicity, and nativity in each region of the United States.

A note on sample size

While the IPUMS microdata allows for the tabulation of detailed population characteristics, it is important to keep in mind that because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups. In an effort to avoid reporting highly unreliable estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents (i.e., unweighted $N < 100$).

Geography of IPUMS microdata

A key limitation of the IPUMS microdata is geographic detail: each year of the data has a particular "lowest-level" of geography associated with the individuals included, known as the Public Use Microdata Area (PUMA) or "County Groups" in 1980. PUMAs are generally drawn to contain a population of about 100,000, and vary greatly in size from being fairly small in densely populated urban areas, to very large in rural areas, often with one or more counties contained in a single PUMA.

While the geography of the IPUMS microdata generally poses a challenge for the creation of regional summary measures, this was not the case for the profile created for Rhode Island, given that the regional geography is defined as the entire state.

Data and methods

Adjustments made to census summary data on race/ethnicity by age

Demographic change and what is referred to as the "racial generation gap" (pages 24-25) are important elements of the equity profile. Due to their centrality, care was taken to generate consistent estimates of people by race/ethnicity and age group (under 18, 18-64, and over 64) for the years 1980, 1990, 2000, and 2010, at the county level, which was then aggregated to the regional level and higher. The racial/ethnic groups include non-Hispanic white, non-Hispanic black, Hispanic/Latino, non-Hispanic Asian and Pacific Islander, non-Hispanic Native American/Alaskan Native, and non-Hispanic other (including other single race alone and those identifying as multiracial). While for 2000 and 2010, this information is readily available in SF1 of each year, for 1980 and 1990, estimates had to be made to ensure consistency over time, drawing on two different summary files for each year.

For 1980, while information on total population by race/ethnicity for all ages combined was available at the county level for all the requisite groups in STF1, for race/ethnicity by age group we had to look to STF2, where it was only available for non-Hispanic white, non-Hispanic black, Hispanic, and the remainder of the population. To estimate the number non-Hispanic Asian and Pacific Islanders, non-Hispanic Native Americans/Alaskan Natives, and non-Hispanic others among the remainder for each age group, we applied the distribution of these three groups from the overall county population (of all ages) from STF1.

For 1990, population by race/ethnicity at the county level was taken from STF2A, while population by race/ethnicity taken from the 1990 Modified Age Race Sex (MARS) file – a special tabulation of people by age, race, sex, and Hispanic origin. However, to be consistent with the way race is categorized by the Office of Management and Budget's (OMB) Directive 15, the MARS file allocates all persons identifying as "other race" or multiracial to a specific race. After confirming that population totals by county were consistent between the MARS file and STF2A, we calculated the number of "other race" or multiracial that had been added to each racial/ethnic group in each county (for all ages combined) by subtracting the number that is reported in STF2A for the corresponding group. We then derived the share of each racial/ethnic group in the MARS file that was made up of "other race" or multiracial people and applied this share to estimate the number of people by race/ethnicity and age group exclusive of the "other race" and multiracial, and finally number of the "other race" and multiracial by age group.

Data and methods

Adjustments made to demographic projections

National projections

On page 23, national projections of the non-Hispanic white share of the population are shown. These are based on the latest national projections from the U.S. Census Bureau of the population by race/ethnicity at the time of the analysis (the 2008 National Population Projections). However, because those projections are based on the 2000 Census and the 2010 Census has since been released, we made some minor adjustments to incorporate the recently released 2010 Census results and to ensure consistency in the racial/ethnic categories included in our historical analysis of demographic change.

As noted above, while our categorization of race/ethnicity includes a non-Hispanic other category (including other single race alone and those identifying as multiracial), the 2008 National Population Projections follow OMB 1997 guidelines and essentially distribute the non-Hispanic other single race alone group across the other defined racial ethnic categories. Specifically, we compared the percentage of the total population composed of each racial/ethnic group in the projected data for 2010 to the actual percentage reported by the 2010 Census. We subtracted the projected percentage from the actual percentage for each group to derive an adjustment factor, and carried this adjustment factor forward by adding it to the projected percentage for each group in each projection year.

Finally, we applied the adjusted population distribution by race/ethnicity to the total projected population from the 2008 National Population Projections to get the projected number of people by race/ethnicity.

Data and methods

Adjustments made to demographic projections

(continued)

County and regional projections

On page 23, projections of the racial/ethnic composition by county and region are also presented. These are based on initial county-level projections from Woods & Poole Economics, Inc. However, given that they were made prior to the release of the 2010 Census, and they use a different categorization of race than we use, a careful set of adjustments were made to incorporate the recently released 2010 Census results and to ensure consistency with the racial/ethnic categories included in our historical analysis of demographic change. Once all adjustments were made at the county level, the results were aggregated to produce a final set of projections at the regional and state levels.

Similar to the 1990 MARS file described above, the Woods & Poole projection follows the OMB Directive 15 race categorization, assigning all persons identifying as "other race" or multiracial to one of the five mutually exclusive race categories: white, black, Latino, Asian/Pacific Islander, or Native American. Thus, we first generated an adjusted version of the county-level Woods & Poole projections that removed the other and multiracial group from each of these five categories. This was done by comparing the Woods & Poole projections for 2010 to the actual 2010 Census results, figuring out the share of each racial ethnic group in the Woods & Poole data that was composed of others and multiracials in 2010, and applying it forward to later projection years. From these projections we calculated the county-level distribution by race/ethnicity in each projection year for the five groups (white, black, Latino, Asian/Pacific Islander, and Native American), exclusive of others and multiracials.

To estimate the county-level other and multiracial share of the population in each projection year, we then generated a simple straight-line projection of this share using information from SF1 of the 2000 and 2010 Census. Keeping the projected other and multiracial share fixed, we allocated the remaining population share to each of the other five racial/ethnic groups by applying the racial/ethnic distribution implied by our adjusted Woods & Poole projections for each county and projection year.

The result was a set of adjusted projections for the six-group racial/ethnic distribution in each county, which was then applied to projections of the total population by county from Woods & Poole to get projections of the number of people for each of the six racial/ethnic groups. Finally, these county-level projections were adjusted to match our adjusted national projections by race/ethnicity using a simple Iterative Proportional Fitting (IPF) procedure.

Data and methods

Estimates and adjustments made to BEA data on GDP, GRP, and GSP

The data presented on page 28 on national Gross Domestic Product (GDP) and its analogous regional measure, Gross Regional Product (GRP) – both referred to as GRP in the text – is based on data from the U.S. Bureau of Economic Analysis (BEA). However, due to changes in the estimation procedure used for the national (and state- level) data in 1997, a lack of metropolitan area estimates prior to 2001, and no available county-level estimates for any year, a variety of adjustments and estimates were made to produce a consistent series at the national, state, metropolitan area, and county levels from 1969 to 2010. Because the regional definition used for this particular equity profile does not match the official metropolitan area definition used by BEA, the GRP data reported is an aggregation of our final county-level estimate of gross product across the counties contained in the region.

Adjustments at the state and national levels

While data on Gross State Product (GSP) are not reported directly in the equity profile, they were used in making estimates of gross product at the county level for all years and at the regional level prior to 2001, so we applied the same adjustments to the data that were applied to the national GDP data. Given a change in BEA's estimation of gross product at the state and national levels from a Standard Industrial Classification (SIC) basis to a North American Industry Classification System (NAICS) basis in 1997, data prior to 1997 were adjusted to avoid any erratic shifts in gross product in that year. While the change to NAICS basis occurred in 1997, BEA also provides estimates under a SIC basis in that year. Our adjustment involved figuring the 1997 ratio of NAICS-based gross product to SIC-based gross product for each state and the nation, and multiplying it by the SIC-based gross product in all years prior to 1997 to get our final estimate of gross product at the state and national levels.

County and metropolitan area estimates

To generate county-level estimates for all years, and metropolitan-area estimates prior to 2001, a more complicated estimation procedure was followed. First, an initial set of county estimates for each year was generated by taking our final state-level estimates and allocating gross product to the counties in each state in proportion to total earnings of employees working in each county – a BEA variable that is available for all counties and years. Next, the initial county estimates were aggregated to metropolitan area level, and were compared with BEA's official metropolitan area estimates for 2001 and later. They were found to be very close, with a correlation coefficient very close to one (0.9997). Despite the near-perfect correlation, we still used the official BEA estimates in our final data series for 2001 and later. However, to avoid any erratic shifts in gross product during the years up until 2001, we made the same sort of adjustment to our estimates of gross product at the metropolitan area level that was made to the state and national data – we figured the 2001 ratio of the official BEA estimate to our initial estimate, and multiplied it by our initial estimates for 2000 and earlier to get our final estimate of gross product at the metropolitan area level.

Data and methods

Estimates and adjustments made to BEA data on GDP, GRP, and GSP

(continued)

We then generated a second iteration of county-level estimates – just for counties included in metropolitan areas – by taking the final metropolitan-area-level estimates and allocating gross product to the counties in each metropolitan area in proportion to total earnings of employees working in each county. Next, we calculated the difference between our final estimate of gross product for each state and the sum of our second-iteration county-level gross product estimates for metropolitan counties contained in the state (that is, counties contained in metropolitan areas). This difference, total nonmetropolitan gross product by state, was then allocated to the nonmetropolitan counties in each state, once again using total earnings of employees working in each county as the basis for allocation. Finally, one last set of adjustments was made to the county-level estimates to ensure that the sum of gross product across the counties contained in each metropolitan area agreed with our final estimate of gross product by metropolitan area, and that the sum of gross product across the counties contained in state agreed with our final estimate of gross product by state. This was done using a simple IPF procedure.

Data and methods
Middle class analysis

Page 36 of the equity profile shows a decline in the share of households falling in the middle class in the region over the past four decades. To analyze middle-class decline, we began with the regional household income distribution in 1979 – the year for which income is reported in the 1980 Census (and the 1980 IPUMS microdata). The middle 40 percent of households were defined as "middle class," and the upper and lower bounds in terms of household income (adjusted for inflation to be in 2010 dollars) that contained the middle 40 percent of households were identified. We then adjusted these bounds over time to increase (or decrease) at the same rate as real average household income growth, identifying the share of households falling above, below, and in between the adjusted bounds as the upper, lower, and middle class, respectively, for each year shown. Thus, the analysis of the size of the middle class examined the share of households enjoying the same relative standard of living in each year as the middle 40 percent of households did in 1979.

Data and methods

Assembling a complete dataset on employment and wages by industry

We report analyses of jobs and wages by industry and "industry strength" on pages 42-45. These analyses were based on a industry-level dataset constructed using two-digit NAICS industries from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW). Due to some missing (or nondisclosed) data at the county and regional levels, we supplemented our dataset using information from Woods & Poole Economics' Complete Economic and Demographic Data Source (CEDDS), which contains complete jobs and wages data for broad, two-digit NAICS industries at multiple geographic levels. (Proprietary issues barred us from using CEDDS directly, so we instead used it to complete the QCEW dataset.) While we refer to counties in describing the process for "filling in" missing QCEW data below, the same process was used for the regional and state levels of geography.

Given differences in the methodology underlying the two data sources (in addition to the proprietary issue), it would not be appropriate to simply "plug in" corresponding CEDDS data directly to fill in the QCEW data for nondisclosed industries. Therefore, our approach was to first calculate the number of jobs and total wages from nondisclosed industries in each county, and then distribute those amounts across the nondisclosed industries in proportion to their reported numbers in the CEDDS data.

To make for a more accurate application of the CEDDS, we made some adjustments to it to better align it with the QCEW. One of the challenges of using CEDDS as a "filler dataset" is that it includes all workers, while QCEW includes only wage and salary workers. To normalize the CEDDS data universe, we applied both a national and regional wage and salary adjustment factor; given the strong regional variation in the share of workers who are wage and salary, both adjustments were necessary. Second, while the QCEW data is available on an annual basis, the CEDDS is available on a decadal basis until 1995, at which point it becomes available on an annual basis. For the 1990-1995 period, we estimated the CEDDS annual jobs and wages figures using a straight-line approach. Finally, we standardized the CEDDS industry codes to match the NAICS codes used in the QCEW.

It is important to note that not all counties and regions were missing data at the two-digit NAICS level in the QCEW, and the majority of larger counties and regions with missing data were only missing data for a small number of industries and only in certain years. Moreover, when data is missing it is often for smaller industries. Thus, the estimation procedure described is not likely to greatly affect our analysis of industries, particularly for larger counties and regions.

Data and methods

Change in jobs and wages by industry/wage level, 1990 to 2010

The analysis presented on pages 42-43 uses our filled-in QCEW dataset (for more on the creation of this dataset, see the previous page, "Assembling a complete dataset on employment and wages by industry"), and seeks to track shifts in regional industrial job composition and wage growth over time by industry wage level.

Using 1990 as the base year, we classified broad industries (at the two-digit NAICS level) into three wage categories: low-, medium-, and high-wage. An industry's wage category was based on its average annual wage, and each of the three categories contained approximately one-third of all private industries in the region.

We applied the 1990 industry wage category classification across all the years in the dataset, so that the industries within each category remained the same over time. This way, we could track the broad trajectory of jobs and wages in low-, medium-, and high-wage industries.

This approach was adapted from a method used in a Brookings Institution report, *Building From Strength: Creating Opportunity in Greater Baltimore's Next Economy*. For more information, see: http://www.brookings.edu/research/reports/2012/04 /26-baltimore-economy-vey.

While we initially sought to conduct the analysis at a more detailed NAICS level, the large amount of missing data at the three to six-digit NAICS levels (which could not be resolved with the method that was applied to generate our filled-in two-digit QCEW dataset) prevented us from doing so.

Data and methods

Analysis of occupations by opportunity level

Pages 46-54 of the equity profile present an analysis of "occupational opportunity." The analysis seeks to identify occupations in the region that are of "high opportunity" for workers, but also to associate each occupation with a "typical" level of education that is held by workers in that occupation, so that specific occupations can be examined by their associated opportunity level for workers with different levels of educational attainment. In addition, once each occupation in the region is defined as being of either high, medium, or low opportunity, based on the "Occupation Opportunity Index," this general level of opportunity associated with jobs held by workers with different education levels and backgrounds by race/ethnicity/nativity is examined, in an effort to better understand differences in access to high-opportunity occupations in the region while holding broad levels of educational attainment constant.

There are several aspects of this analysis that warrant further clarification. First, the "Occupation Opportunity Index" that is constructed is based on a measure of job quality and set of growth measures, with the job quality measure weighted twice as much as all of the growth measures combined. This weighting scheme was applied both because we believe pay is a more direct measure of "opportunity" than the other available measures, and because it is more stable than most of the other growth measures, which are calculated over a relatively short period (2005-2011). For example, an increase from $6 per hour to $12 per hour is fantastic wage growth (100 percent), but most would not consider a $12-per-hour job as a "high-opportunity" occupation.

Second, all measures used to calculate the "Occupation Opportunity Index" are based on data for Metropolitan Statistical Areas from the Occupational Employment Statistics (OES) program of the U.S. Bureau of Labor Statistics (BLS), with one exception: median age by occupation. This measure, included among the growth metrics because it indicates the potential for job openings due to replacements as older workers retire, is estimated for each occupation from the same pooled 2006-2010 IPUMS American Community Survey (ACS) microdata file that is used for many other analyses (for the employed civilian noninstitutional population ages 16 and older). The median age measure is also based on data for Metropolitan Statistical Areas (to be consistent with the geography of the OES data), except in cases for which there were fewer than 30 individual survey respondents (i.e., unweighted $N < 30$) in an occupation; in these cases, the median age estimate is based on national data.

Third, the level of occupational detail at which the analysis was conducted, and at which the lists of occupations are reported, is the three-digit Standard Occupational Classification (SOC) level. While data of considerably more detail is available in the OES, it was necessary to aggregate the OES data to the three-digit SOC level in order to associate education levels with the occupations. This information is not available in the OES data, and was estimated using 2010 IPUMS ACS microdata. Given differences in between the two

Data and methods

Analysis of occupations by opportunity level

(continued)

datasets in the way occupations are coded, the three-digit SOC level was the most detailed level at which a consistent crosswalk could be established.

Fourth, while most of the data used in the analysis are regionally specific, information on the education level of "typical workers" in each occupation, which is used to divide occupations in the region into the three groups by education level (as presented on pages 48-50), was estimated using national 2010 IPUMS ACS microdata (for the employed civilian noninstitutional population ages 16 and older). Although regionally specific data would seem to be the better choice, given the level of occupational detail at which the analysis is conducted, the sample sizes for many occupations would be too small for statistical reliability. And, while using pooled 2006-2010 data would increase the sample size, it would still not be sufficient for many regions, so national 2010 data were chosen given the balance of currency and sample size for each occupation.

The implicit assumption in using national data is that the occupations examined are of sufficient detail that there is not great variation in the typical educational level of workers in any given occupation from region to region. While this may not hold true in reality, we would note that a similar approach was used by Jonathan Rothwell and Alan Berube of the Brookings Institution in *Education, Demand, and Unemployment in Metropolitan America* (Washington D.C.: Brookings Institution, September 2011).

We should also note that the BLS does publish national information on typical education needed for entry by occupation. However, in comparing this data with the typical education levels of actual workers by occupation that were estimated using ACS data, there were important differences, with the BLS levels notably lower (as expected). The levels estimated from the ACS were determined to be the appropriate choice for our analysis as they provide a more realistic measure of the level of educational attainment necessary to be a viable job candidate – even if the typical requirement for entry is lower.

Fifth, it is worthwhile to clarify an important distinction between the lists of occupations by typical education of workers and opportunity level, presented on pages 48-50, and the charts depicting the opportunity level associated with jobs held by workers with different education levels and backgrounds by race/ethnicity/nativity, presented on pages 52-54. While the former are based on the national estimates of typical education levels by occupation, with each occupation assigned to one of the three broad education levels described, the latter are based on actual education levels of workers in the region (as estimated using 2006-2010 IPUMS ACS microdata), who may be employed in any occupation, regardless of its associated "typical" education level.

Lastly, it should be noted that for all of the occupational analysis, it was an intentional decision to keep the categorizations by education and opportunity level fairly broad,

Data and methods

Analysis of occupations by opportunity level

(continued)

with three categories applied to each. For the categorization of occupations, this was done so that each occupation could be more justifiably assigned to a single typical education level; even with the three broad categories some occupations had a fairly even distribution of workers across them nationally, but, for the most part, a large majority fell in one of the three categories. In regard to the three broad categories of opportunity level, and education levels of workers shown on pages 52-54, this was kept broad to ensure reasonably large sample sizes in the 2006-2010 IPUMS ACS microdata that were used for the analysis.

Data and methods

Health data and analysis

Health data in this study were taken from the Behavioral Risk Factor Surveillance System (BRFSS) database, housed in the Centers for Disease Control and Prevention. The BRFSS database is created from randomized telephone surveys conducted by states, which then incorporate their results into the database on a monthly basis.

The results of this survey are self-reported and the population includes all related adults, unrelated adults, roomers, and domestic workers who live at the residence. The survey does not include adult family members who are currently living elsewhere, such as at college, a military base, a nursing home, or a correctional facility.

The most detailed level of geography associated with individuals in the BRFSS data is the county. Using the county-level data as building blocks, we created additional estimates for the region, state, and United States.

While the data allow for the tabulation of personal health characteristics, it is important to keep in mind that because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups.

To increase statistical reliability, we combined five years of survey data, for the years 2006 through 2010. As an additional effort to avoid reporting potentially misleading estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents (i.e., unweighted $N < 100$). This is similar to, but more stringent than, a rule indicated in the documentation for the 2010 BRFSS data of not reporting (or interpreting) percentages based on a denominator of fewer than 50 respondents. Even with this sample size restriction, regional estimates for smaller demographic subgroups should be regarded with particular care.

For more information and access to the BRFSS database, please visit http://www.cdc.gov/brfss/index.htm.

Data and methods

Measures of diversity and segregation

In the equity profile we refer to a measure of racial/ethnic diversity (the "Diversity Score" on page 16) and several measures of residential segregation by race/ethnicity (the "multi-group entropy index" on page 66 and the "dissimilarity index" on page 67). While the common interpretation of these measures is included in the text of the profile, the data used to calculate them, and the sources of the specific formulas that were applied, are described below.

All of these measures are based on census-tract-level data for 1980, 1990, 2000, and 2010 from Geolytics. While the data originate from the decennial censuses of each year, an advantage of the Geolytics data we use is that (with the exception of 2000) they have been "re-shaped" to be expressed in 2000 census tracts boundaries, and so the underlying geography for our calculations is consistent over time; the census tract boundaries of the original decennial census data change with each release, which could potentially cause a change in the value of residential segregation indices even if no actual change in residential segregation occurred. In addition, while most all the racial/ethnic categories for which indices are calculated are consistent with all other analyses presented in this profile, there is one exception. Given limitations of the tract-level data released in the 1980 Census, Native Americans are combined with Asians and Pacific Islanders in that year. For this reason, we set 1990 as the base year (rather than 1980) in the chart on page 67, but keep the 1980 data in other analyses of residential segregation as this minor inconsistency in the data is not likely to affect the analyses.

The formulas for the diversity score and the multi-group entropy index were drawn from a 2004 report by John Iceland of the University of Maryland, *The Multigroup Entropy Index (Also Known as Theil's H or the Information Theory Index)* available at: http://www.census.gov/housing/patterns/about/multigroup_entropy.pdf. In that report, the formula used to calculate the Diversity Score (referred to as the "entropy score" in the report), appears on page 7, while the formulas used to calculate the multigroup entropy index (referred to as the "entropy index" in the report), appear on page 8.

The formula for the other measure of residential segregation, the dissimilarity index, is well established, and is made available by the U.S. Census Bureau at: http://www.census.gov/hhes/www/housing/housing_patterns/app_b.html.

Data and methods
Food desert analysis

There are many ways to define a food desert or to measure access to food. The U.S. Department of Agriculture's (USDA's) Healthy Foods Financing Initiative working group defines a food desert as a low-income census tract where a substantial number or share of residents have low access to a supermarket or large grocery store.

To qualify as a "low-income community," a census tract must have either 1) a poverty rate of 20 percent or higher, OR 2) a median family income at or below 80 percent of the statewide or metropolitan area median family income (in the case of urban tracts, the "area median" income applied is the greater of the metro area median and the state median; for rural tracts, the "area median" applied is always the state median).

To qualify as a "low-access community," at least 500 people and/or at least 33 percent of a census tracts' population must reside more than one mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles).

The USDA's data on population and income are derived from block-level data from the 2000 Census of Population and Housing, which is allocated to a 1-km square grid where it can be matched with data on food access from the Socioeconomic Data and Applications Center.

An inventory of supermarkets and large grocery stores (defined as having at least $2 million in annual sales and similar food departments as those found in a supermarket) was created by the USDA from a directory. The directory consisted of stores authorized to receive Supplemental Nutrition Assistance Program (SNAP) benefits, and was supplemented with data from Trade Dimensions TDLinx (a Nielsen company), a proprietary supermarket store listing – both for the year 2006.

The USDA has released a food desert locator (http://www.ers.usda.gov/data-products/food-desert-locator.aspx) that shows census tracts considered food deserts by the USDA.

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PolicyLink is a national research and action institute advancing economic and social equity by Lifting Up What Works®.

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