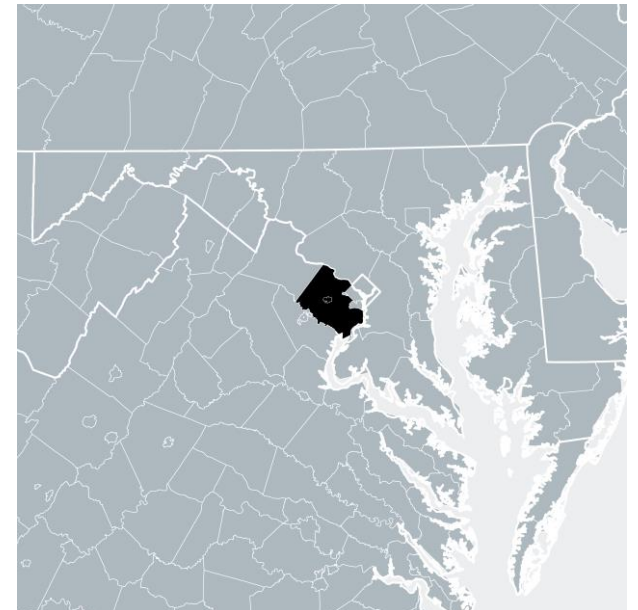


# Equitable Growth Profile of **Fairfax County**



# Summary

Communities of color are driving Fairfax County's population growth, and their ability to participate and thrive is central to the county's success. While the county demonstrates overall strength and resilience, wide gaps in income, employment, education, and opportunity by race and geography place its economic future at risk.

Equitable growth is the path to sustained economic prosperity in Fairfax County. By creating pathways to good jobs, connecting younger generations with older ones, integrating immigrants into the economy, building communities of opportunity throughout the county, and ensuring educational and career pathways for all youth, Fairfax County can put all residents on the path toward reaching their full potential, and secure a bright future for the whole county.

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Disconnected Youth: 16-to-24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 1980 to 2012

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# List of indicators

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Actual GDP and Estimated GDP without Racial Gaps in Income, 2012

# Introduction

## Foreword

Fairfax County, Virginia, is a diverse and thriving urban county and is the most populous jurisdiction in both the state of Virginia and the Washington, DC, metropolitan area with over one million residents. Fairfax County ranks second nationally in terms of household income with a median of \$110,292. While Fairfax County's socioeconomic data tends to be extremely positive overall, not all residents are prospering.

Earlier this year, representatives from public, private, nonprofit, faith, and community sectors came together to expand our understanding of equity as a key economic driver in Fairfax County. We also had the opportunity to bring forward a local perspective in the development of this study prepared by PolicyLink and by the University of Southern California's Program for Environmental and Regional Equity (PERE). These learnings are compelling. We recognize that our community's future will be much brighter if we ensure the full inclusion of all residents in our county's economic, social, and political life.

We believe that, by using this profile, we can engage our community in conversations to better understand the growth realities we face and spark actions that ensure our continued economic growth and competitiveness. We are committed to working together as public, private, and community leaders to guide our path toward a vision of "One Fairfax" – a community in which everyone can participate and prosper.



Karen Cleveland  
Interim President/CEO  
Leadership Fairfax, Inc.



Patricia Harrison  
Deputy County Executive  
Fairfax County Government



Patricia Mathews  
President & CEO  
Northern Virginia Health Foundation

# Introduction

## Overview

Across the country, 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, nativity, age, gender, neighborhood of residence, or other characteristics – is an essential element of the plans.

Knowing how a region stands in terms of equity is a critical first step in planning for equitable growth. To assist communities with that process, PolicyLink and the Program for Environmental and Regional Equity (PERE) developed a framework to understand and track how regions perform on a series of indicators of equitable growth.

This profile was developed to help frame and support a number of ongoing, strategic initiatives in Fairfax County, including the recently adopted Strategic Plan to Facilitate Economic Success and work of the Human Services system focused on economic self sufficiency. Both bodies of work recognize that social equity and inclusion are critical perspectives to ensure long-term economic success of the county, and of individual residents. To frame this equitable growth profile, the county formed an advisory committee with broad representation from the public, private, and nonprofit sectors to inform the development of this profile. We hope that it is broadly used by advocacy groups, elected officials, planners, business leaders, funders, and others working to build a stronger and more equitable region.

The data are drawn from a regional equity database that covers 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 System (BRFSS), and the Integrated Public Use Microdata Series (IPUMS). Note that while we disaggregate most indicators by major racial/ethnic groups, figures for the Asian/Pacific Islander population as a whole often mask wide variation on educational and economic indicators. Also, there is often too little data to break out indicators for the Native American population. See the “Data and methods” section for a more detailed list of data sources.

# Introduction

## Geography

This profile describes demographic and economic conditions in Fairfax County and Fairfax City combined, which are situated within the Washington, DC, metropolitan statistical area. In some cases, we present data separately for Fairfax City, as well as census tract level data.

Unless otherwise noted, all data follow this regional geography, which is simply referred to as “Fairfax County.”





# 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 2044, 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 while most have been affected by growing inequality, 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 regions experience stronger, more sustained growth.<sup>1</sup>
- Regions with less segregation (by race and income) and lower income inequality have more upward mobility.<sup>2</sup>
- Companies with a diverse workforce achieve a better bottom line.<sup>3</sup>
- A diverse population more easily connects to global markets.<sup>4</sup>

### The way forward is with an equity-driven growth model.

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

### Counties play a critical role in building this new growth model.

Local communities are where strategies are being incubated that foster equitable growth: growing good jobs and new businesses while ensuring that all – including low-income people and people of color – can fully participate and prosper.

<sup>1</sup> 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 21<sup>st</sup> 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>.

<sup>2</sup> Raj Chetty, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "Where is the Land of Economic Opportunity? The Geography of Intergenerational Mobility in the U.S." <http://obs.rc.fas.harvard.edu/chetty/website/v2/Geography%20Executive%20Summary%20and%20Memo%20January%202014.pdf>

<sup>3</sup> 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.

<sup>4</sup> 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 county?

Counties are equitable when all residents – regardless of race/ethnicity, and nativity, age, gender, neighborhood of residence or other characteristics – can fully participate in the region’s economic vitality, contribute to its readiness for the future, and connect to its 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.

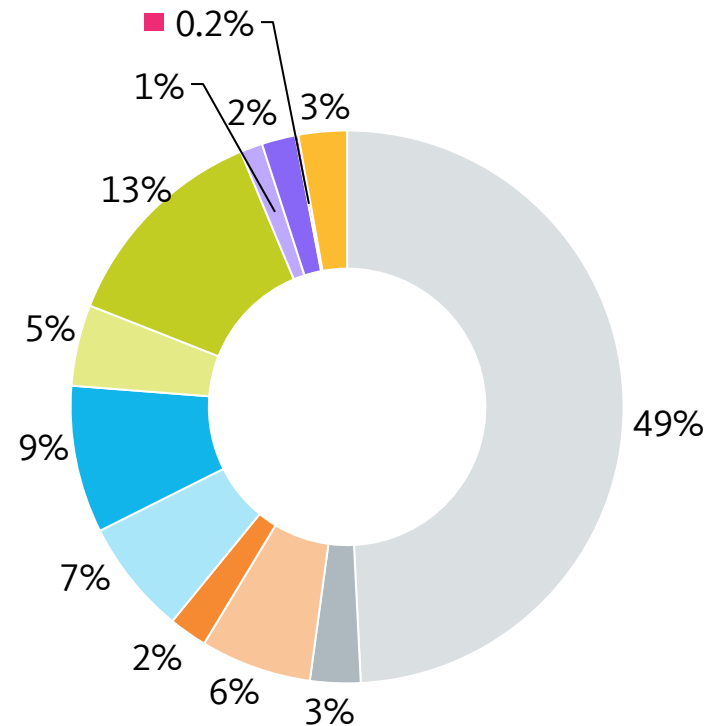
# Demographics

## Who lives in the county and how is this changing?

**Fairfax County has a diverse population.** The White population (including Middle Eastern Americans) constitutes only 55% of the population, compared to 64% nationwide. After Whites, the largest racial/ethnic group in the region is Asian Americans/Pacific Islanders (18 percent) followed by Latinos (16 percent).

### Race/Ethnicity and Nativity, 2012

- White, U.S.-born
- White, Immigrant
- Black, U.S.-born
- Black, Immigrant
- Latino, U.S.-born
- Latino, Immigrant
- Asian/Pacific Islander, U.S.-born
- Asian/Pacific Islander, Immigrant
- Middle Easterner, U.S.-born
- Middle Easterner, Immigrant
- Native American and Alaska Nati
- Other or mixed race



Source: IPUMS.  
 Note: Data represent a 2008 through 2012 average..

# Demographics

## Who lives in the county and how is this changing?

**Communities of color and Middle Easterners in the county are also diverse, many of them with large immigrant populations.** Asian Indians and Koreans make up a large share of the county's large Asian American population, while Salvadorans make up a large share of the Latino population.

### Black, Latino, Asian American/Pacific Islander, and Middle Eastern Populations by Ancestry, 2012

Black	Population	% Immigrant
African American	50,925	3%
Ethiopian	6,096	77%
Ghanian	3,783	70%
Caribbean	2,457	61%
Somalian	1,833	80%
Sudanese	1,472	63%
Other African	18,662	67%
All other Black	34,529	50%
<b>Total</b>	<b>119,757</b>	<b>30%</b>

Latino	Population	% Immigrant
Salvadoran	43,803	68%
Mexican	24,031	33%
Bolivian	19,886	73%
Peruvian	15,924	74%
Honduran	11,589	69%
Puerto Rican	11,174	1%
Guatemalan	8,712	75%
All other Latino	35,037	50%
<b>Total</b>	<b>170,156</b>	<b>57%</b>

Asian/Pacific Islander	Population	% Immigrant
Asian Indian	43,852	73%
Korean	41,515	78%
Vietnamese	28,779	73%
Chinese or Taiwanese	26,592	70%
Filipino	15,898	73%
Pakistani	13,092	68%
All other API	23,083	69%
<b>Total</b>	<b>192,811</b>	<b>73%</b>

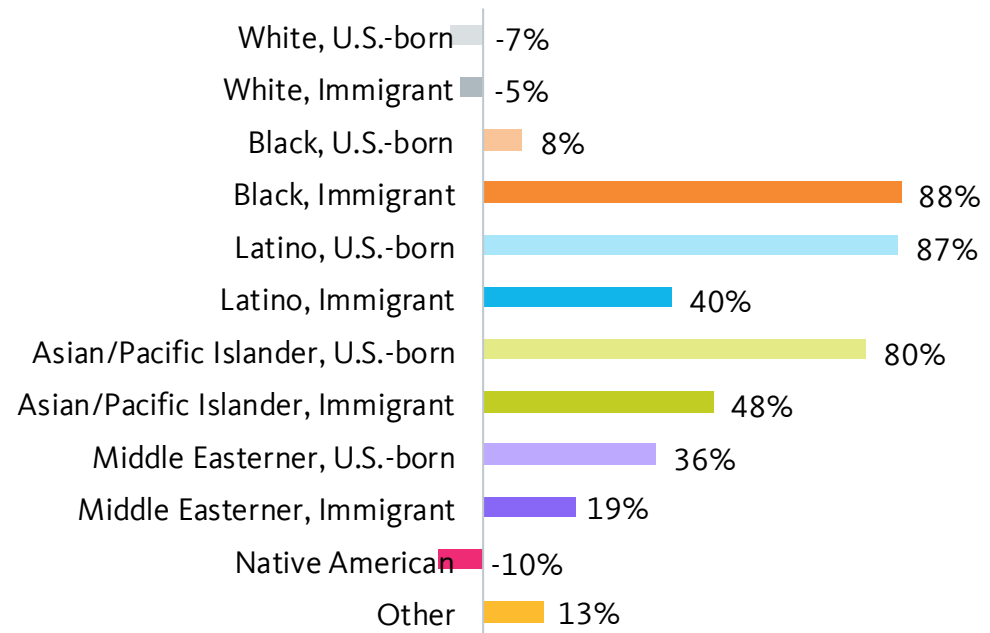
Middle Easterner	Population	% Immigrant
Iranian	9,667	71%
Lebanese	4,690	45%
Turkish	2,757	59%
Moroccan	2,691	65%
Egyptian	2,410	66%
Armenian	1,643	36%
All other Middle Easterner	12,462	59%
<b>Total</b>	<b>36,320</b>	<b>60%</b>

# Demographics

## Who lives in the county and how is this changing?

**Communities of color are leading the county’s growth.** The Latino population grew by 57 percent over the past decade, adding 62,000 residents. The Asian population also grew significantly (56 percent) adding 69,000 residents. The White population declined over the decade.

Growth Rates of Major Racial/Ethnic Groups, 2000 to 2012



Source: IPUMS.  
 Note: Data for 2012 represent a 2008 through 2012 average.

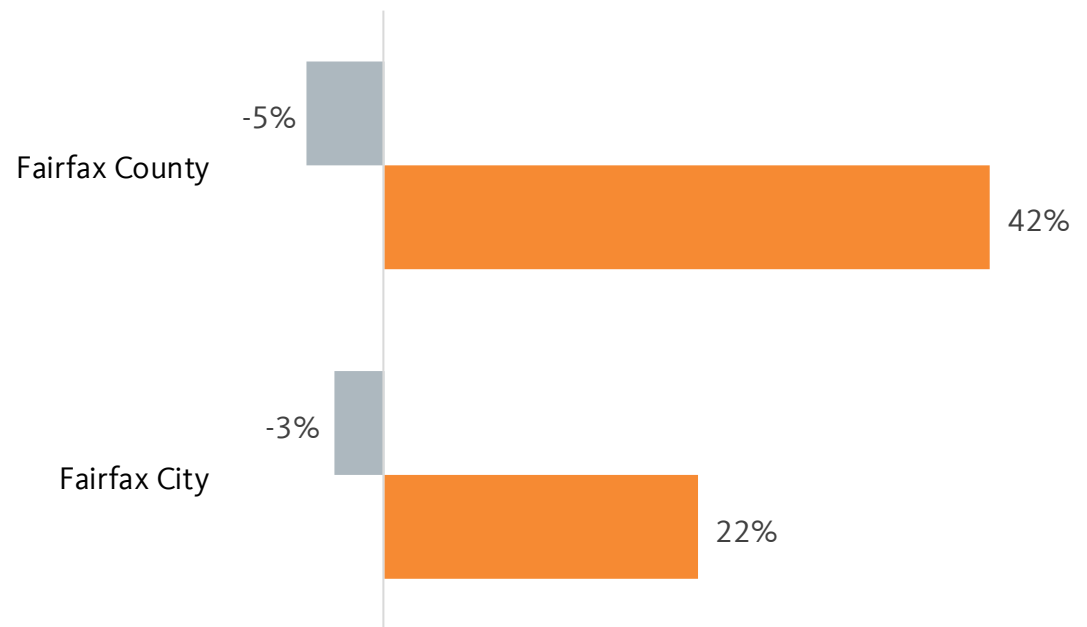
# Demographics

## Who lives in the county and how is this changing?

**In the past decade, communities of color contributed all of the county's net population growth.** The total population grew 11 percent, increasing by 113,000 between 2000 and 2010. In Fairfax County and Fairfax City the population of color grew while the White population declined.

### Net Change in Population by County, 2000 to 2010

- People of Color
- White



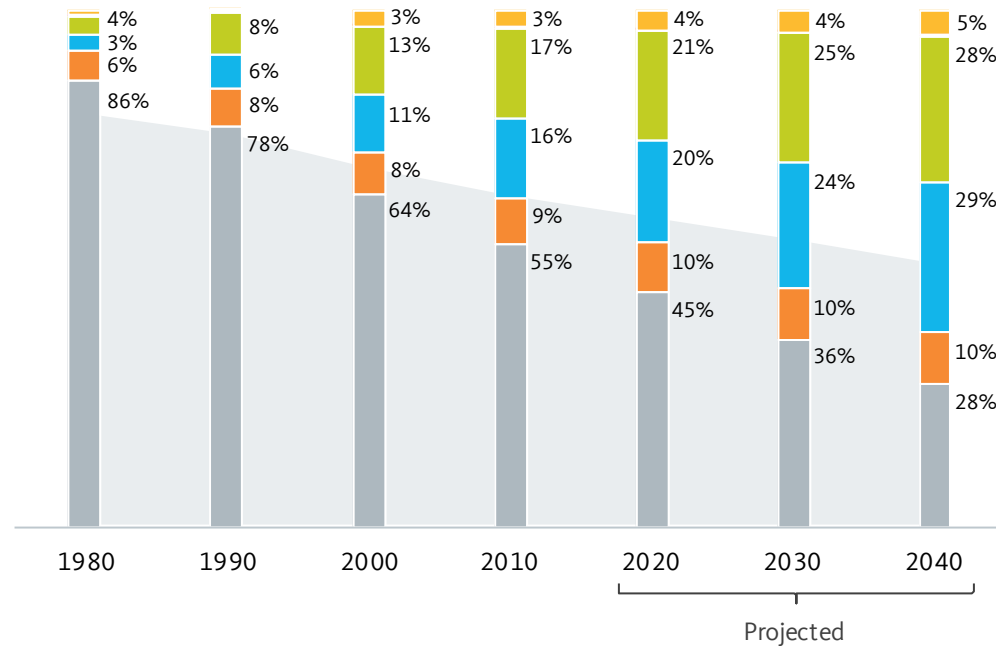
# Demographics

## Who lives in the county and how is this changing?

**The county is experiencing a rapid demographic shift.** Asians and Latinos will continue to drive growth: the Asian population will rise from 17 percent to 28 percent of the total population between 2010 and 2040, and the Latino population will grow from 16 percent to 29 percent. The county will be majority people of color by 2020.

Racial/Ethnic Composition, 1980 to 2040

- U.S. % White
- Other
- Native American
- Asian/Pacific Islander
- Latino
- Black
- White



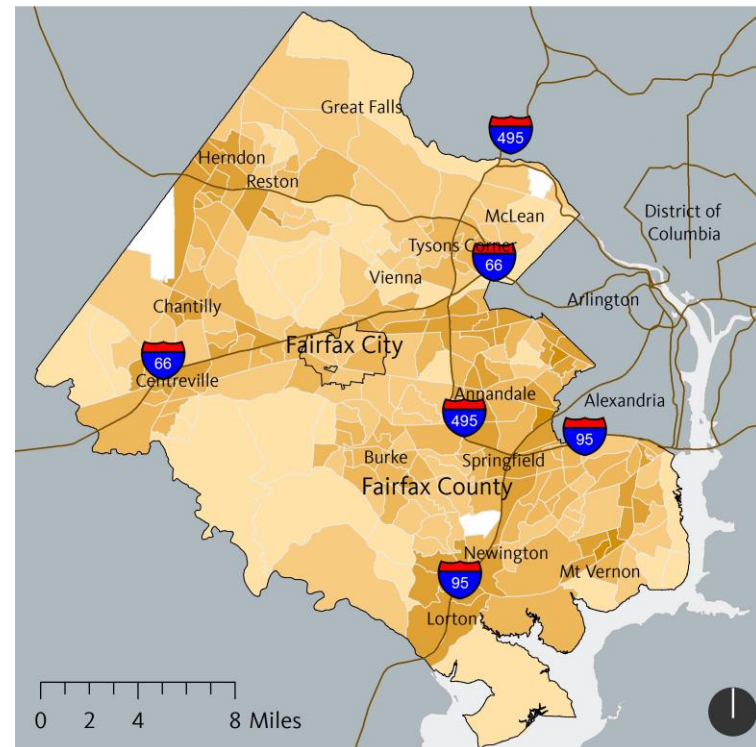
# Demographics

## Who lives in the county and how is this changing?

**Communities of color are spread throughout the county, but are more concentrated in its major towns and on the border with Arlington to the east.** Herndon and Reston have several tracts with a high percentage people of color as do Annandale, Springfield, Mt. Vernon, and Lorton.

### Percent People of Color, 2012

- Less than 24%
- 25% to 38%
- 39% to 56%
- 57% to 81%
- 82% or more



Source: U.S. Census Bureau.  
 Note: Data represent a 2008 through 2012 average. Areas in white are missing data.



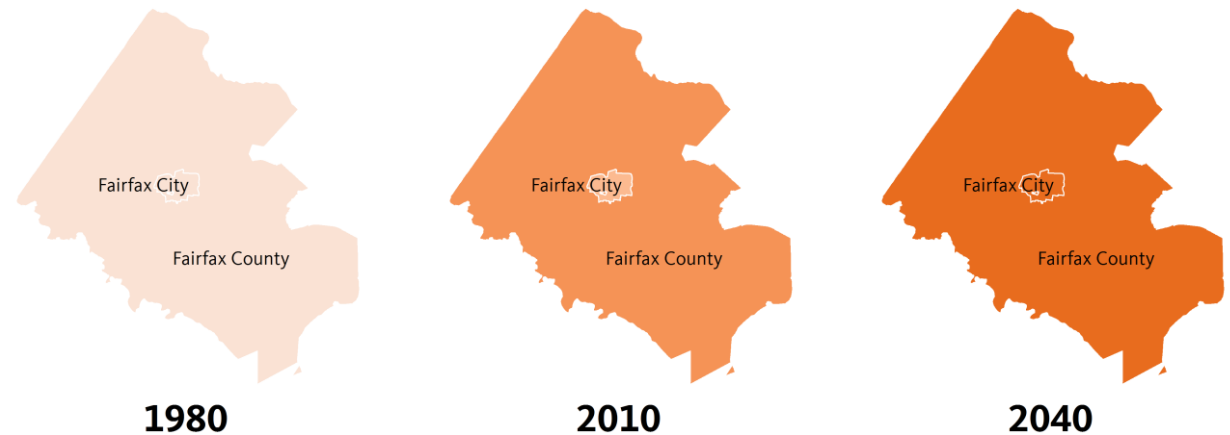
# Demographics

## Who lives in the county and how is this changing?

**By 2040, 72 percent of the region's residents will be people of color.** Two-thirds of Fairfax City's residents will be people of color, compared with 72 percent in Fairfax County. Between 2010 and 2040, people of color will continue to drive growth in the region.

### Percent People of Color by County, 1980 to 2040

- Less than 30%
- 30% to 39%
- 40% to 49%
- 50% or more



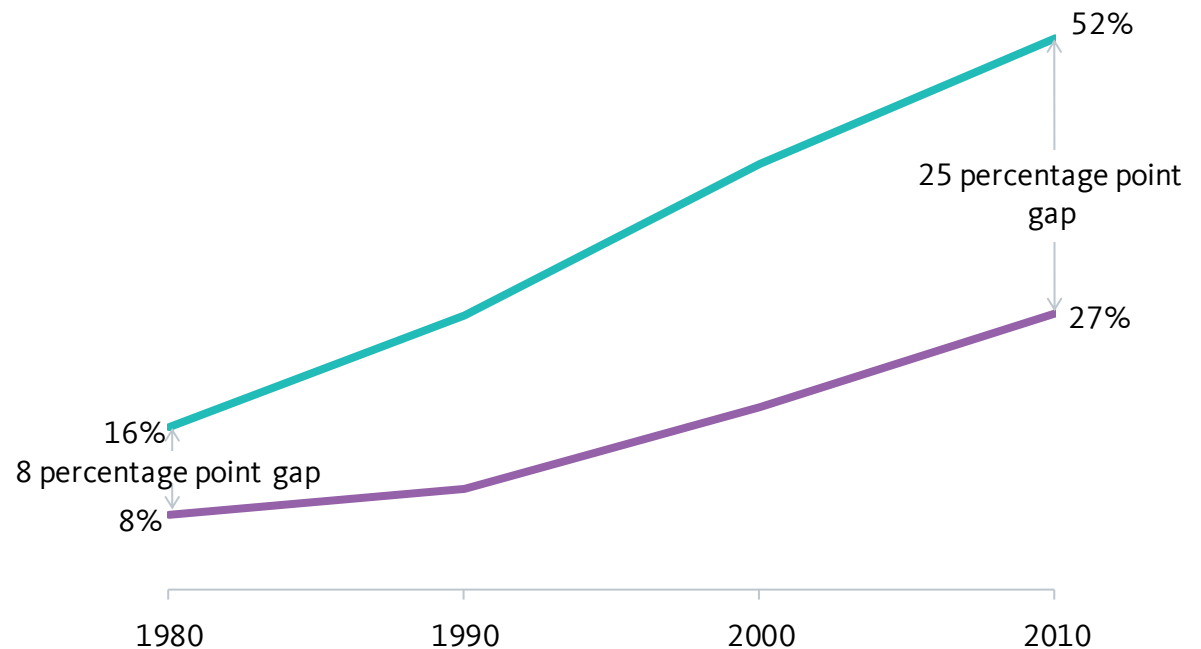
# Demographics

## Who lives in the county and how is this changing?

**There is a growing racial generation gap.** The racial generation gap, at 25 percentage points, is just below the national average but has more than tripled since 1980. This is important – a large racial generation gap often corresponds with lower investments in educational systems and infrastructure to support youth.

### Racial Generation Gap: Percent People of Color (POC) by Age Group, 1980 to 2010

- Percent of seniors who are POC
- Percent of youth who are POC

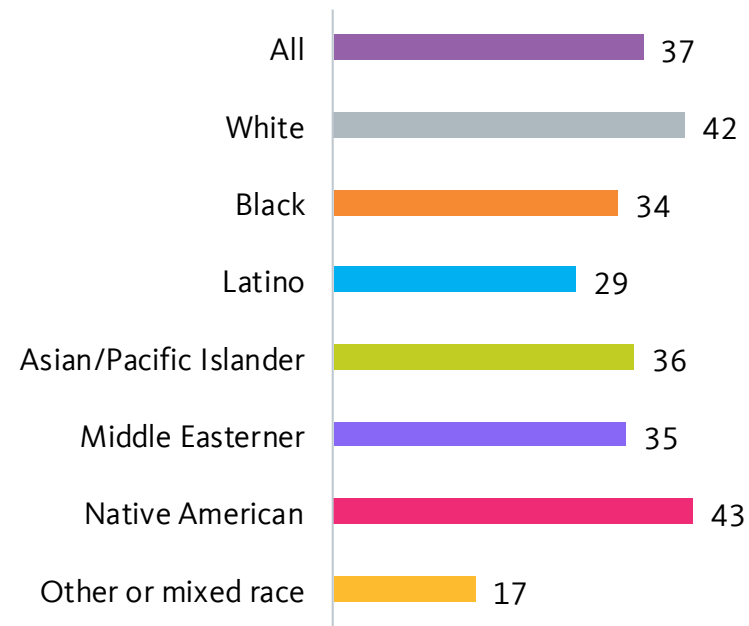


# Demographics

## Who lives in the county and how is this changing?

**The county's fastest-growing demographic groups are also comparatively younger than Whites.** People of Other or mixed race have the youngest median age of 17. Median ages for Asians (36), Middle Easterners (35), Blacks (34), and Latinos (29) and are lower than that for Whites (42).

### Median Age by Race/Ethnicity, 2012



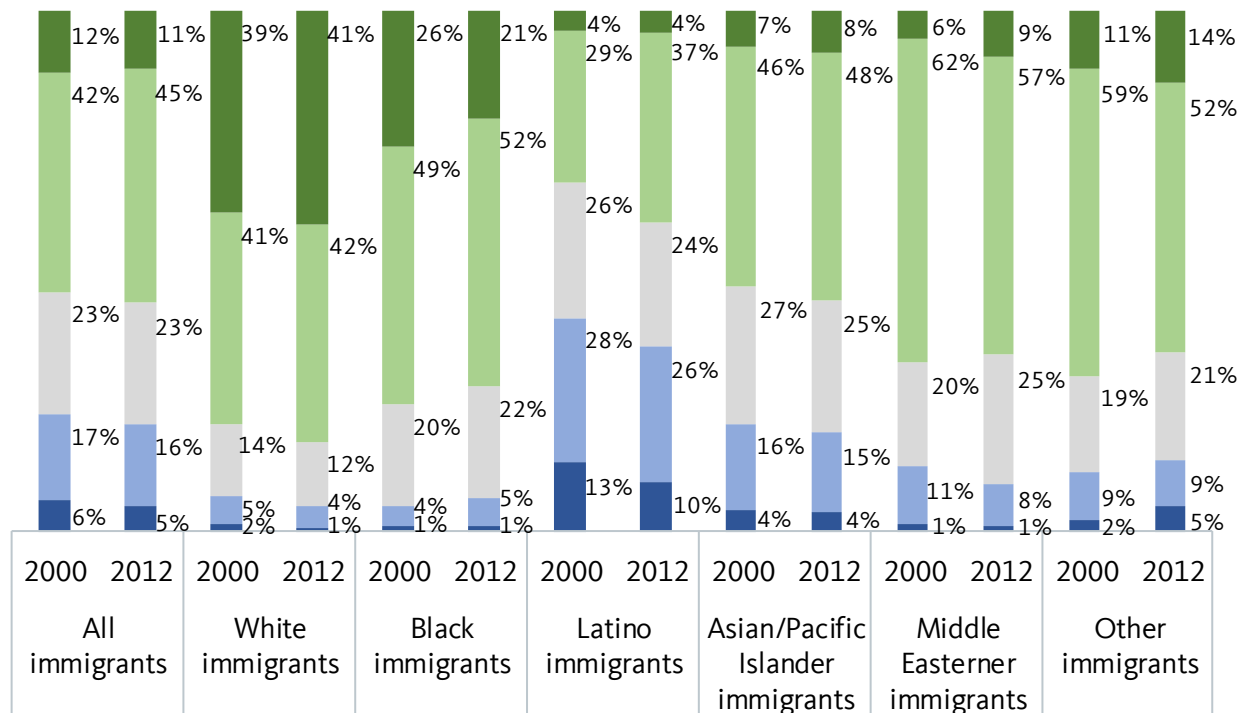
# Demographics

## Who lives in the county and how is this changing?

**Over half of all immigrants have limited English proficiency (LEP),** defined as speaking English less than “very well.” The LEP share of the immigrant population has increased slightly since 2000. Latino immigrants have the lowest levels of English-speaking ability, followed by Asian/Pacific Islander immigrants.

English-Speaking Ability Among Immigrants by Race/Ethnicity, 2000 and 2012

- Percent speaking English...
- Only
  - Very Well
  - Well
  - Not Well
  - None



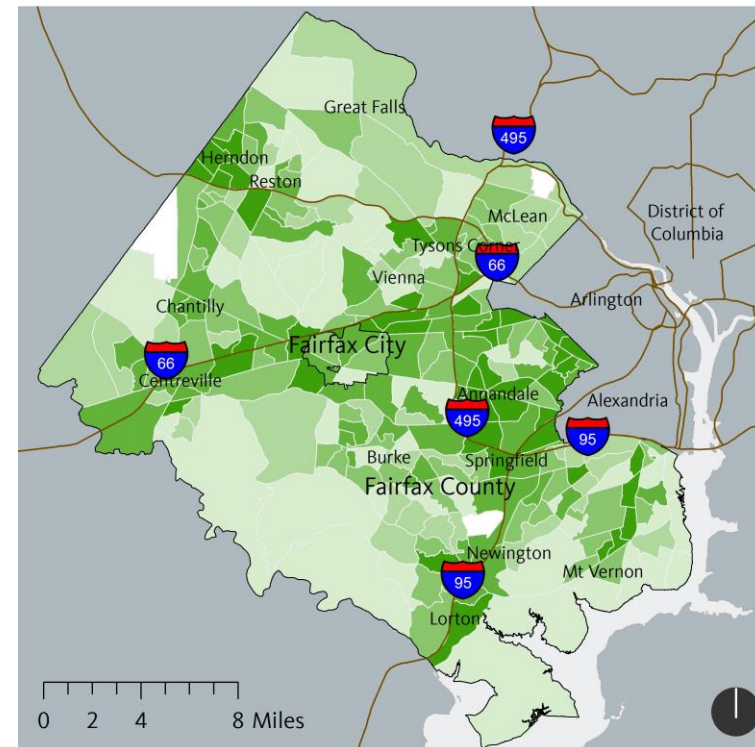
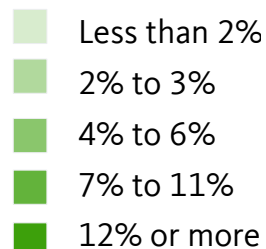
Source: IPUMS. Universe includes all persons ages 5 or older.  
 Note: Data for 2012 represent a 2008 through 2012 average.

# Demographics

## Who lives in the county and how is this changing?

**There are pockets of linguistic isolation throughout the county.** Defined as a household in which no member age 14 or older speaks only English or speaks English at least “very well,” linguistically isolated households are clustered around the communities of Annandale, Springfield, Herndon, and Centreville.

### Linguistic Isolation by Census Tract, 2012



Source: U.S. Census Bureau. Universe includes all households.

Note: Data represent a 2008 through 2012 average. Areas in white are missing data.

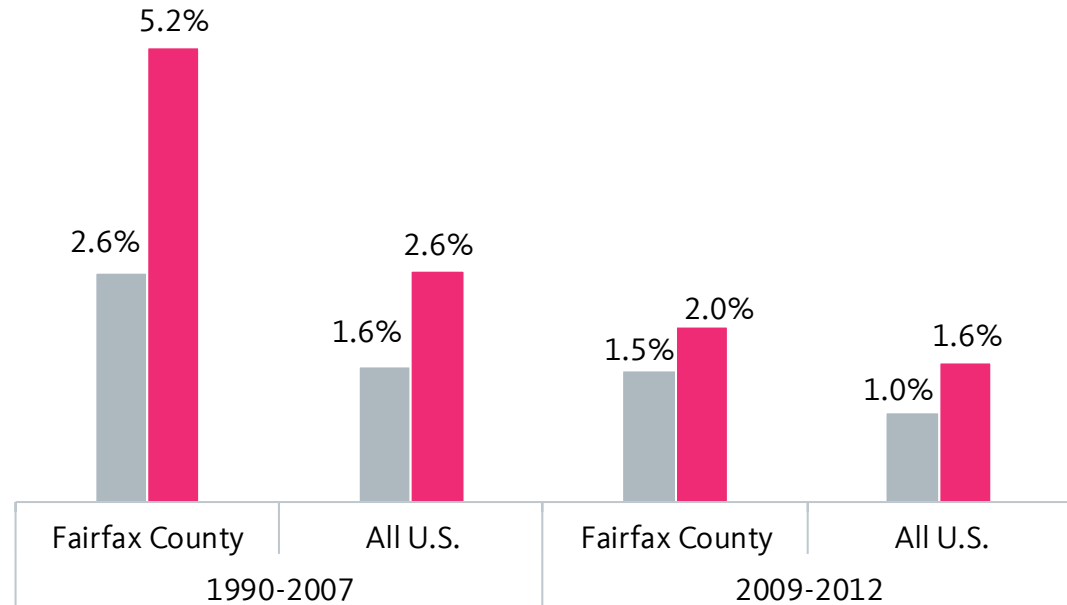
# Inclusive growth

## Is economic growth creating more jobs?

**The county is recovering from the Great Recession.** Pre-downturn, the county’s economy performed significantly better than the nation in terms of job and GDP growth. Since 2009, it has experienced higher growth in both jobs and GDP than the overall U.S. economy.

Average Annual Growth in Jobs and GDP, 1990 to 2007 and 2009 to 2012

- Jobs
- GDP



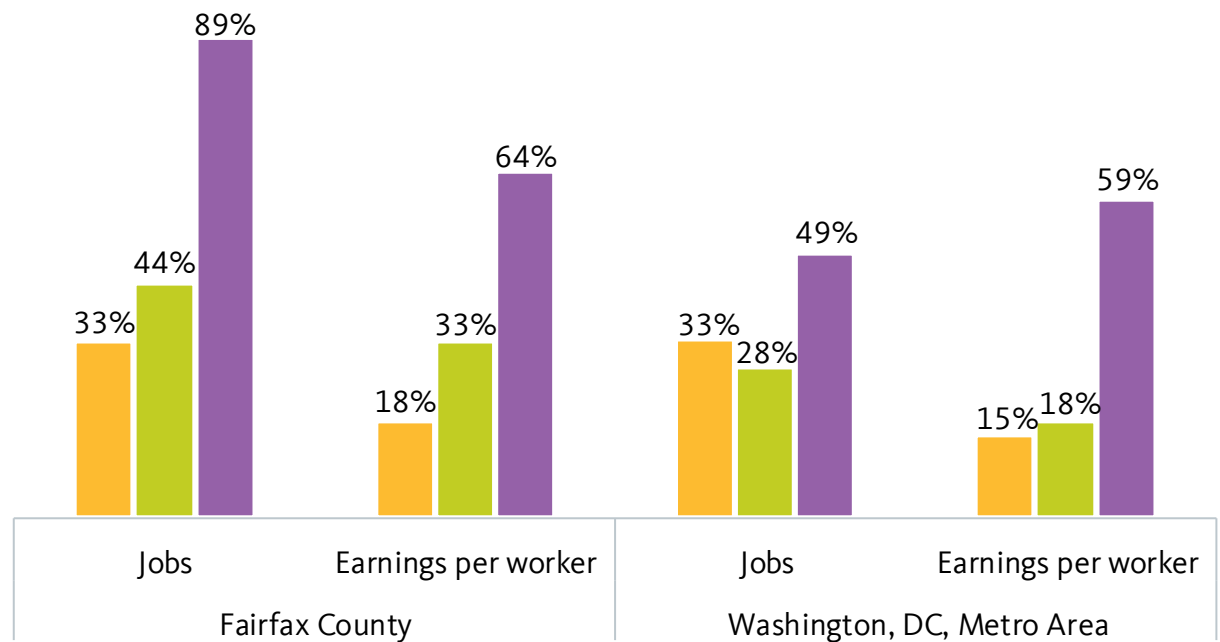
# Inclusive growth

## Is the county growing good jobs?

**There is strong growth in high- and middle-wage jobs.** High-wage jobs have grown much faster in the county than in the larger Washington, DC, metro since 1990, while middle-wage jobs have grown faster as well. Earnings growth has also been stronger in the county, particularly for middle-wage jobs.

Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2012

- Low-wage
- Middle-wage
- High-wage



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

# Inclusive growth

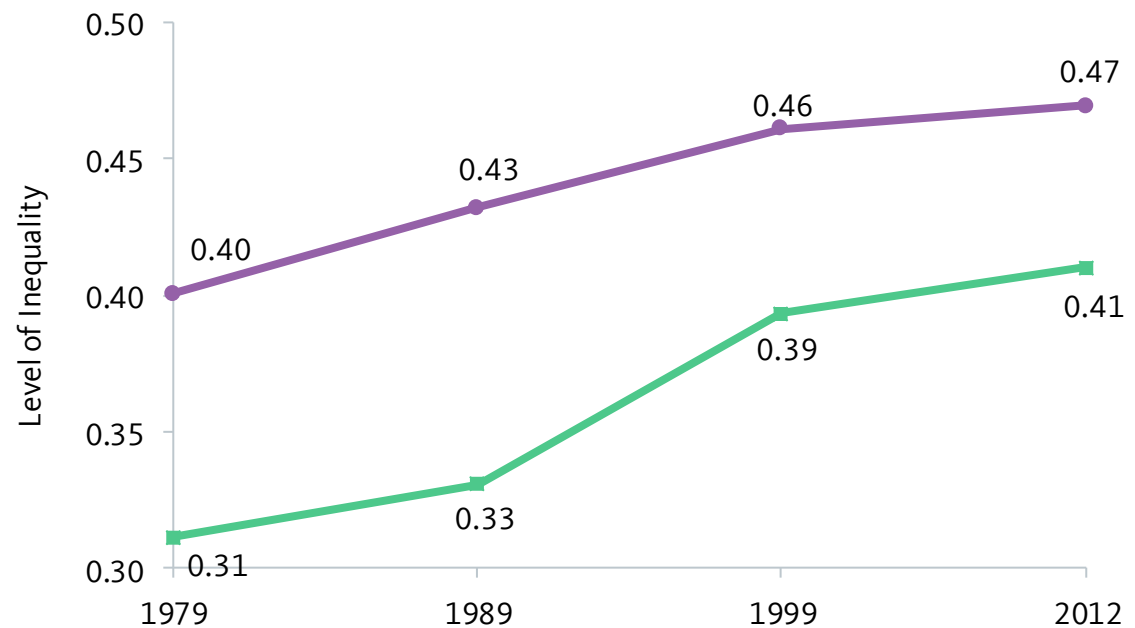
## Is inequality low and decreasing?

**Income inequality is relatively low but increasing.** Inequality is lower than the national average, but has seen substantial growth over the past three decades, with a significant jump in the 1990s.

### Income Inequality, 1979 to 2012

- Fairfax County
- United States

Inequality is measured here by the Gini coefficient, which ranges from 0 (perfect equality) to 1 (perfect inequality: one person has all of the income).





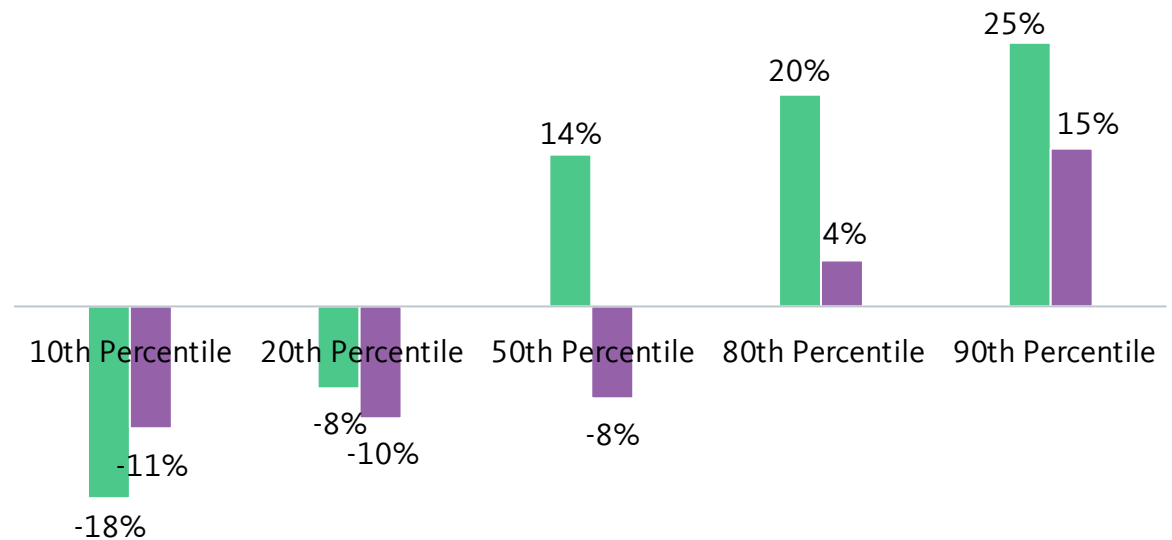
# Inclusive growth

## Are incomes increasing for all workers?

**Workers in the bottom 20 percent have seen their wages erode over the past three decades.** Workers in the 10<sup>th</sup> percentile have experienced wage declines greater than nationwide declines. Meanwhile, the county's higher-earners have seen above-average wage increases.

### Real Earned Income Growth for Full-Time Wage and Salary Workers, 1979 to 2012

■ Fairfax County  
■ United States

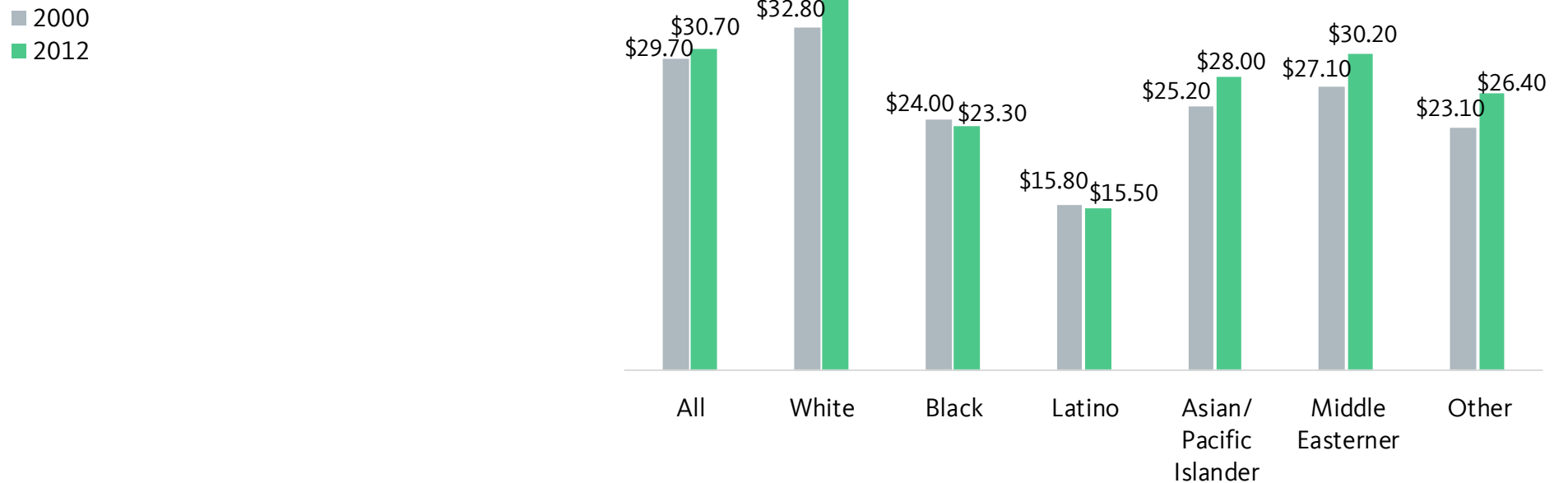


# Inclusive growth

## Are incomes increasing for all workers?

**Racial gaps in wages have grown over the past decade.** From 2000 to 2012, White workers saw their median hourly wage increase significantly, while Latinos and Blacks experienced slight wage declines.

Median Hourly Wage by Race/Ethnicity, 2000 and 2012



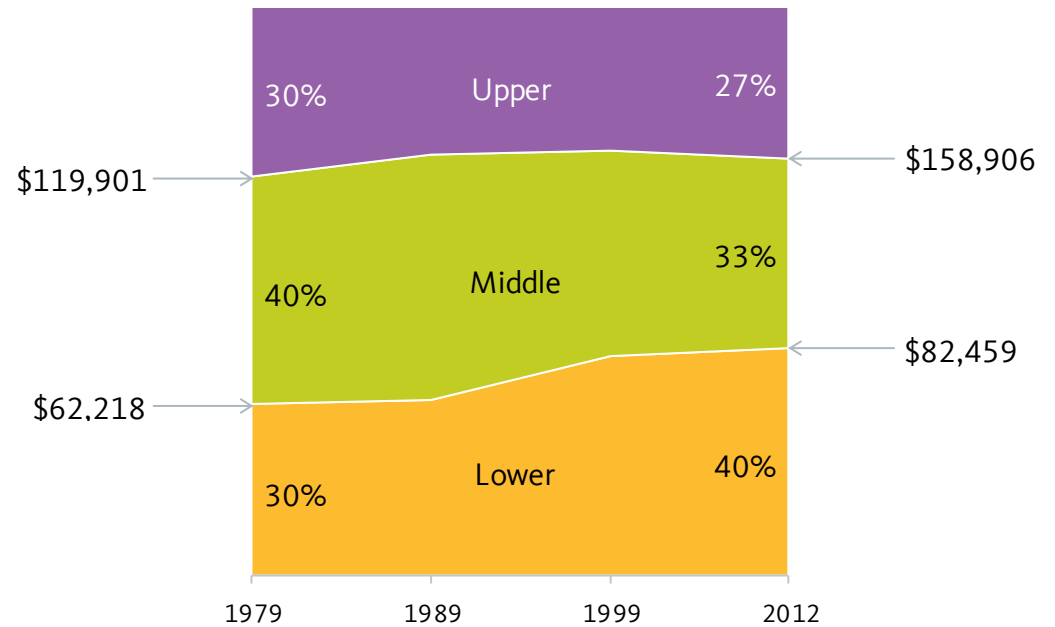
Source: IPUMS. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64. Note: Data for 2012 represent a 2008 through 2012 average. Values are in 2010 dollars.

# Inclusive growth

## Is the middle class expanding?

**The county's middle class is shrinking.** Since 1979, the share of middle-class households has declined from 40 percent to 33 percent of households. Meanwhile, the share of lower-income households has increased from 30 percent to 40 percent.

Households by Income Level, 1979 and 2012



Source: IPUMS. Universe includes all households (no group quarters).  
 Note: Data for 2012 represent a 2008 through 2012 average. Dollar values are in 2010 dollars.

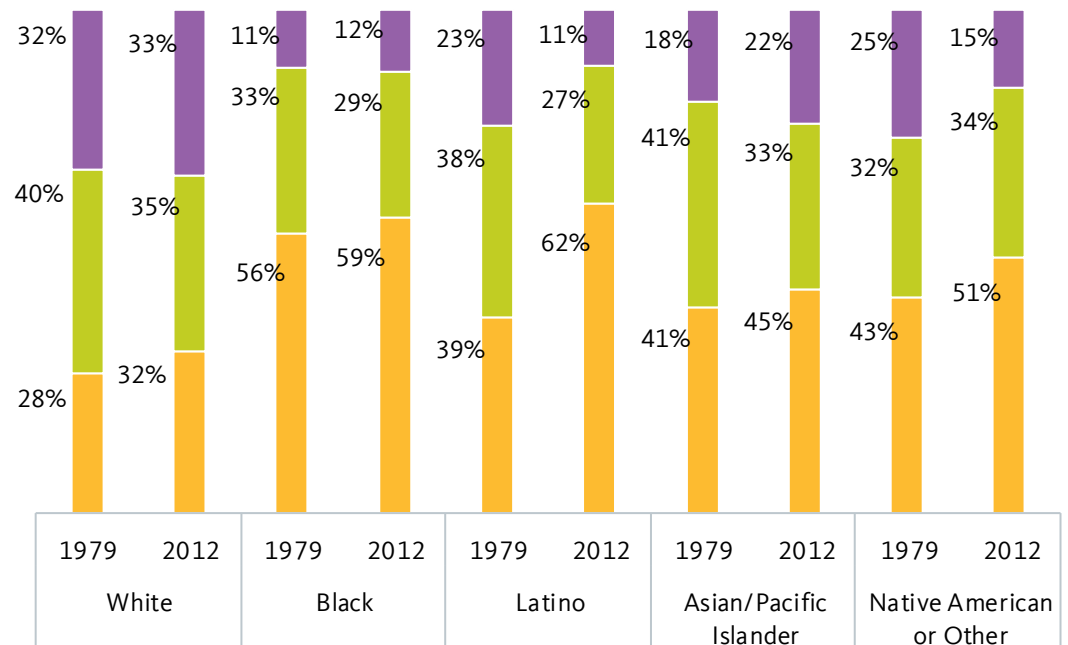
# Inclusive growth

## Is the middle class becoming more inclusive?

**The loss of middle-class standing is more prominent among communities of color.** The share of households of color who are middle-class shrank 6 percentage points since 1979, versus 5 percentage point for White households. Latinos experienced the biggest losses in upper-income status and the largest growth in lower-income status.

Households by Income Level, 1979 and 2012

- Lower
- Middle
- Upper



Source: IPUMS. Universe includes all households (no group quarters).  
 Note: Data for 2012 represent a 2008 through 2012 average.

# Full employment

## How close is the county to reaching full employment?

**Unemployment is low in the county.** As of February 2015, Fairfax County's unemployment rate was 3.9 percent, compared with 5.0 percent statewide, and 5.5 percent nationwide. Over 25,000 people in Fairfax City and County are unemployed.

### Unemployment Rate, February 2015



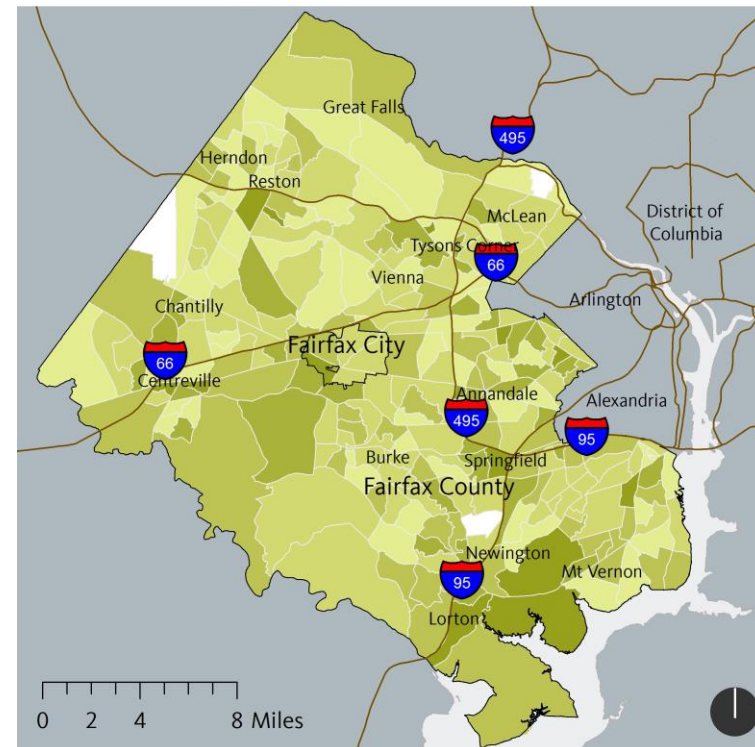
# Full employment

## How close is the county to reaching full employment?

**Unemployment is fairly low throughout the county, but varies geographically.** Unemployment rates are higher in the southeastern part of the county and in some clusters closer to Arlington and Fairfax City.

### Unemployment Rate by Census Tract, 2012

- Less than 3%
- 3% to 4%
- 5% to 6%
- 7% to 9%
- 10% or more

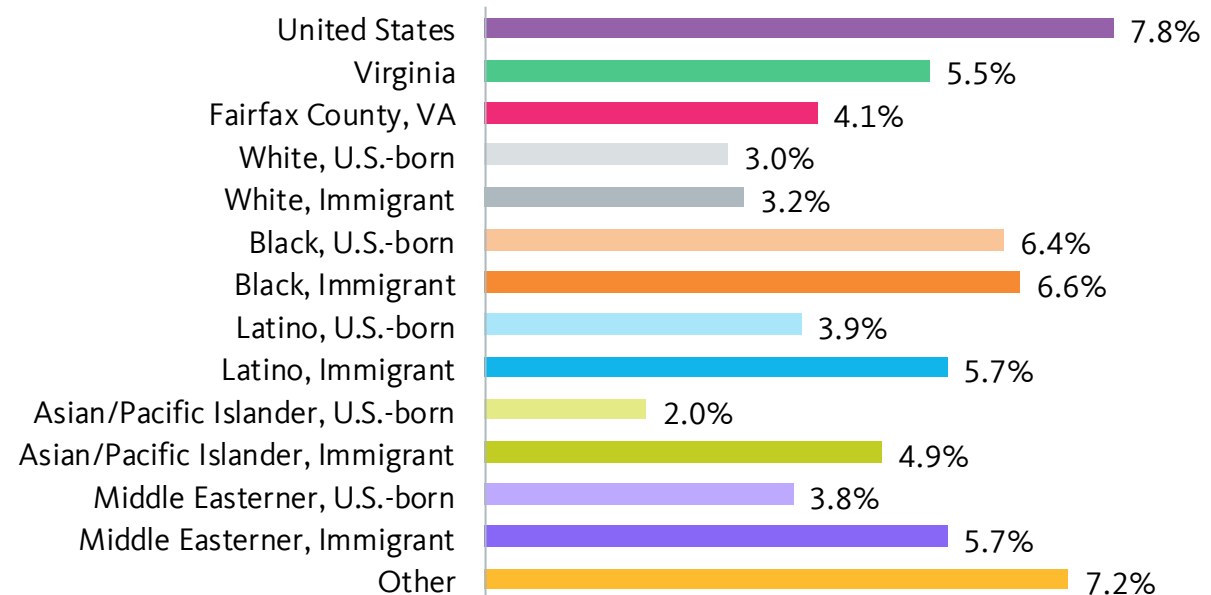


# Full employment

## How close is the county to reaching full employment?

**Unemployment is relatively low in the county but racial inequities persist.** Rates of unemployment in the county are highest for people of Other or mixed races (7.2 percent) and Black immigrants (6.4 percent). U.S.-born Whites have the lowest unemployment rate (3.0 percent).

### Unemployment Rate by Race/Ethnicity and Nativity, 2012



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

Note: The full impact of the Great Recession and budget sequestration are not reflected in the data shown, which are averaged over 2008 through 2012. These trends may change as new data become available.

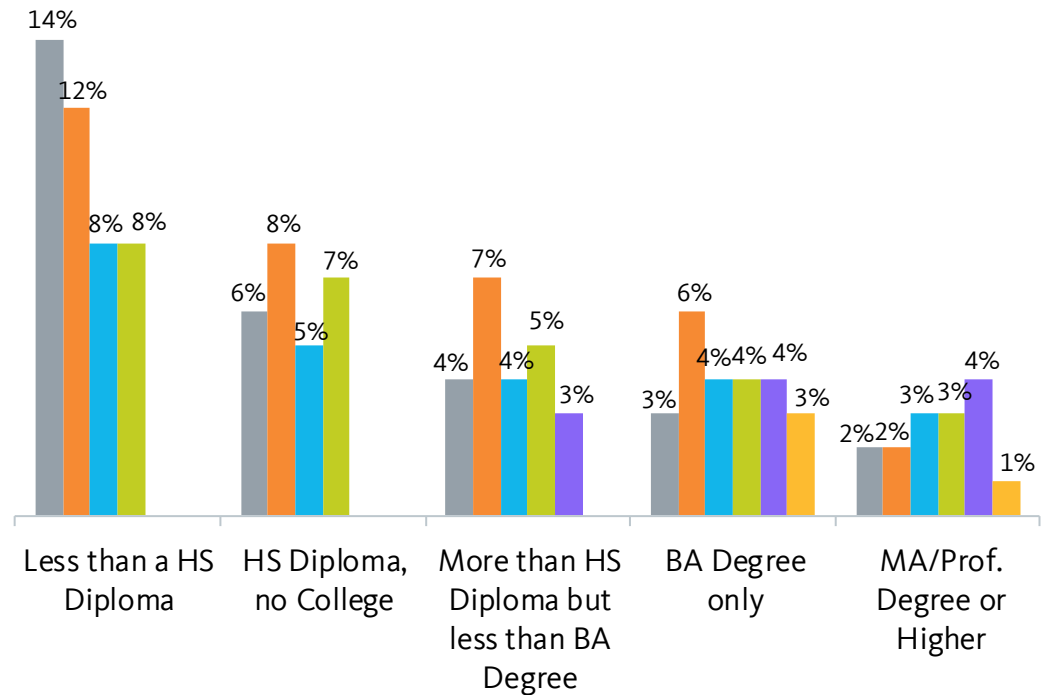
# Full employment

## How close is the county to reaching full employment?

**Unemployment declines with higher education, but racial gaps remain.** Whites without a high school diploma have the highest unemployment rates (although they comprise less than 1 percent of the labor force). Blacks face the highest rates of unemployment for most education levels.

Unemployment Rate by Educational Attainment and Race/Ethnicity, 2012

- White
- Black
- Latino
- Asian/Pacific Islander
- Middle Easterner
- Other



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

Note: Unemployment for the Middle Eastern population with less than some college, and for the Other population with less than a BA degree, are excluded due to small sample sizes. Data represent a 2008 through 2012 average.



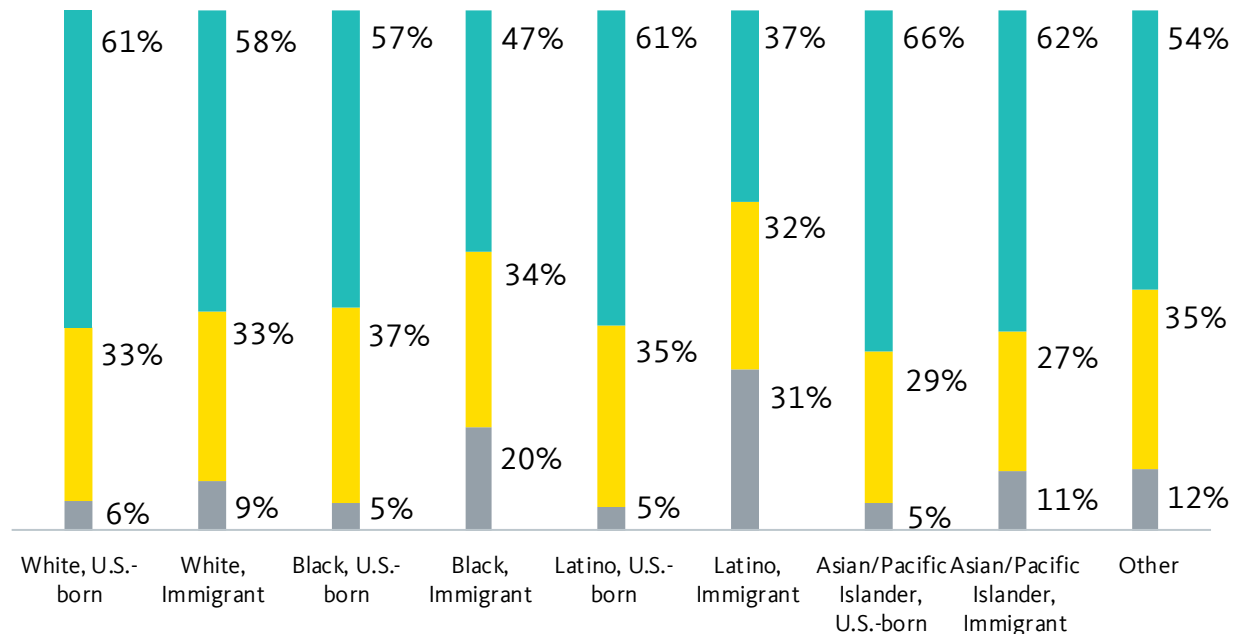
# Access to good jobs

## Can workers access high-opportunity jobs?

**Latino immigrants with college degrees have the least access to good jobs.** Thirty-seven percent of the county’s college-educated Latino immigrant workers are employed in high-opportunity jobs. Latino immigrant workers are also more likely to be in low-opportunity jobs (31 percent).

Jobs Held by Workers with a Bachelor’s Degree or Higher by Opportunity Level and Race/Ethnicity and Nativity, 2011

- High-opportunity
- Middle-opportunity
- Low-opportunity



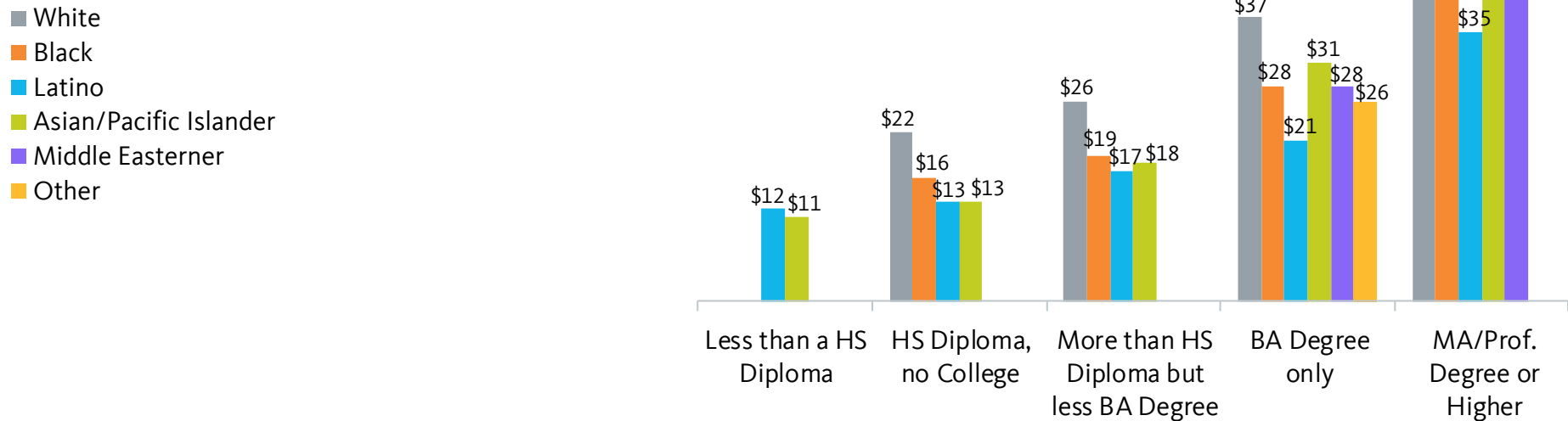
Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes the employed civilian noninstitutional population ages 25 through 64. While data on workers is from the Fairfax County, the opportunity ranking for each worker’s occupation is based on analysis of the Washington-Arlington-Alexandria Core Based Statistical Area as defined by the U.S. Office of Management and Budget.  
 Note: High-opportunity jobs are those that rank among the top third of jobs on an “occupation opportunity index,” based on five measures of job quality and growth. See the “Data and methods” section for a description of the index.

# Access to good jobs

## Can all workers earn a living wage?

**People of color earn lower wages than Whites at every education level.** Wages rise with education, but gaps by race remain. People of color with a BA degree have median hourly wages that are \$9 less than their Whites counterparts. Latinos face the largest gap of \$16 at that educational level.

Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2012



Source: IPUMS. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.  
 Note: Wages for some racial/ethnic groups are excluded due to small sample size. Data represent a 2008 through 2012 average. Dollar values are in 2010 dollars.

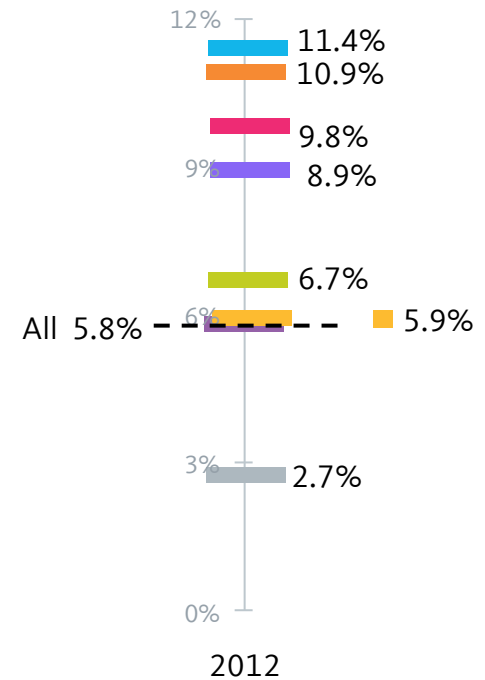
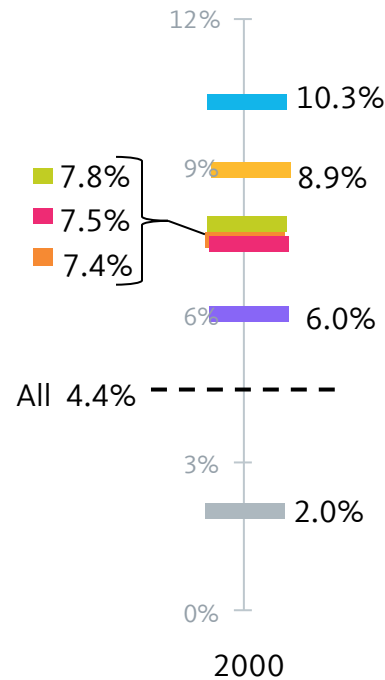
# Economic security

## Is poverty low and decreasing?

**Poverty is on the rise in the county, and the rate is higher for communities of color.** More than one in 10 Latinos and Blacks (and nearly one in 10 Native Americans) live in poverty compared to just under 3 percent of Whites. Poverty rates have risen the most for people of Middle Eastern descent and Blacks.

Poverty Rate by Race/Ethnicity, 2000 and 2012

- White
- Black
- Latino
- Asian/Pacific Islander
- Middle Easterner
- Native American
- Other



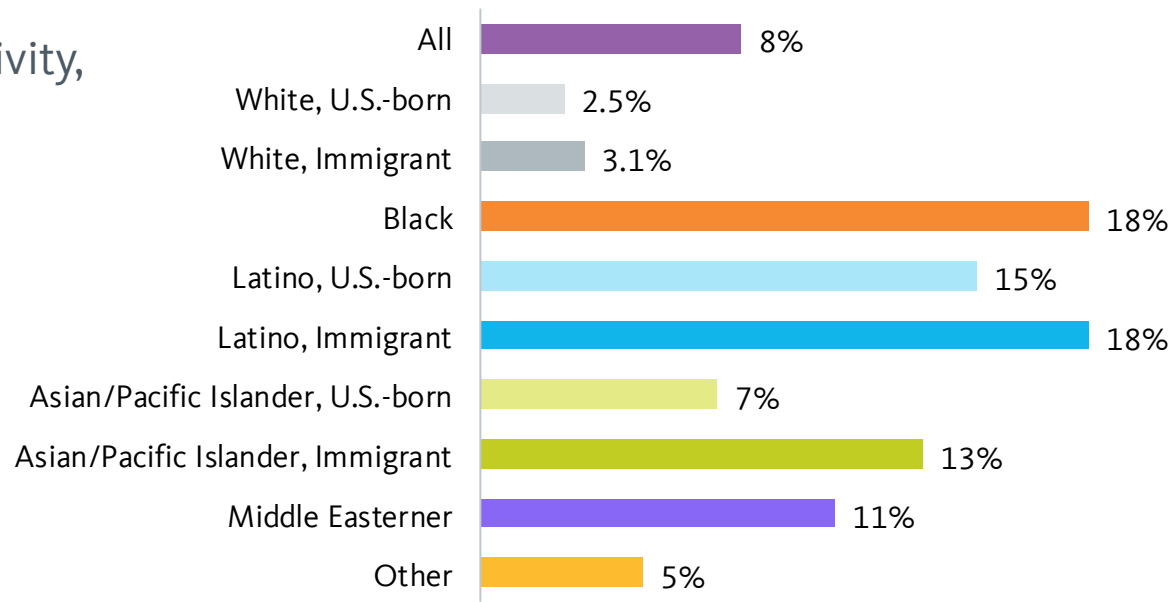
Source: IPUMS. Universe includes all persons not in group quarters.  
 Note: Data for 2012 represent a 2008 through 2012 average.

# Economic security

## Is poverty low and decreasing?

**Black and Latino children have the highest poverty rates.** In 2012, child poverty rates for Blacks and Latino immigrants were 18 percent, more than double the county average. By way of comparison, only about 3 percent of White children lived in poverty. The rate for children of color combined was 12 percent.

Child Poverty Rate by Race/Ethnicity and Nativity, 2012



Source: IPUMS. Universe includes the population under age 18 not in group quarters.

Note: Data for 2012 represent a 2008 through 2012 average. Data for the Black and Middle Eastern populations by nativity is not reported due to small sample sizes.

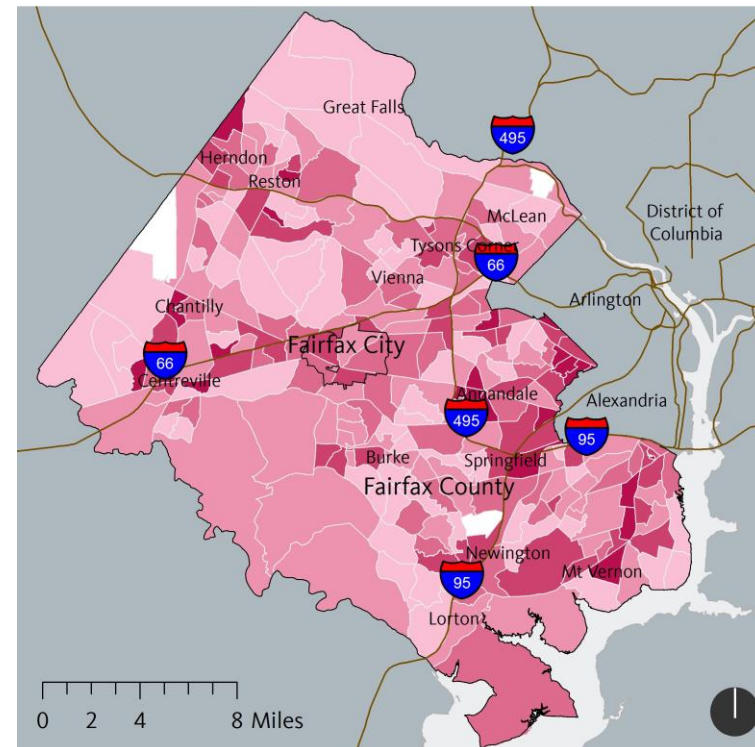
# Economic security

## Is poverty low and decreasing?

**Poverty rates are generally low in Fairfax County.** Pockets of higher poverty appear in tracts near the county's larger towns and places – particularly in Springfield, Annandale, Chantilly, Reston, and Mt. Vernon, as well as on the edges of Arlington and Alexandria.

### Percent Population Below the Poverty Level by Census Tract, 2012

- Less than 2%
- 2% to 3%
- 4% to 6%
- 7% to 12%
- 13% or more



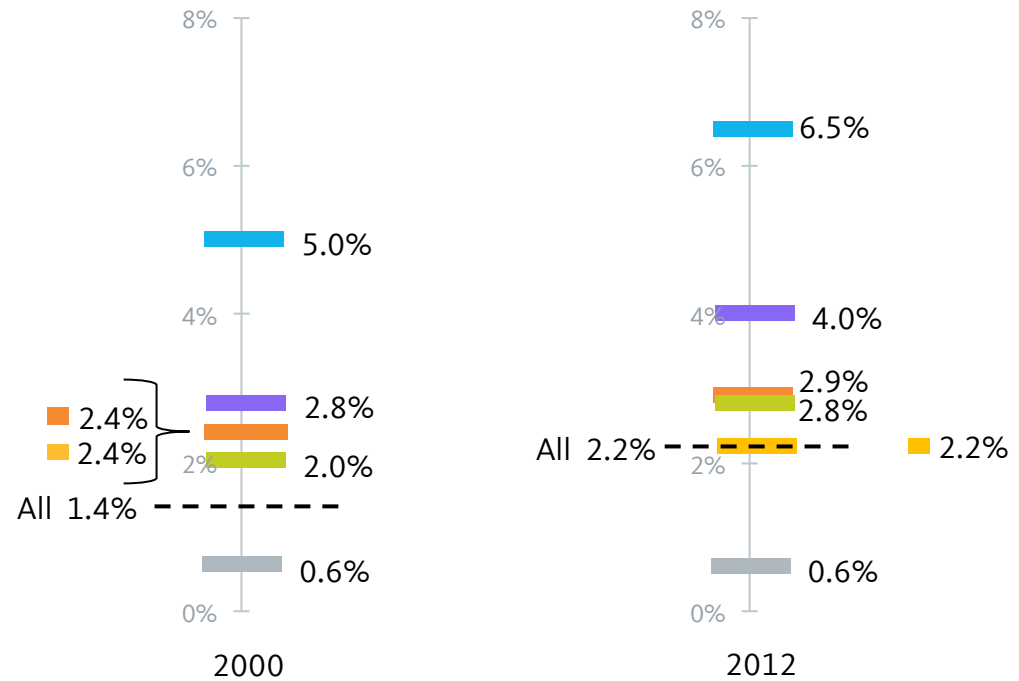
# Economic security

## Is the share of working poor low and decreasing?

**Rates of working poor are lower than the national average but they are on the rise.** The working poor rate – defined as working full time with incomes at or below 150 percent of poverty – is highest among Latinos (6.5 percent) and people of Middle Eastern descent (4.0 percent).

Working Poor Rate by Race/Ethnicity, 2000 and 2012

- White
- Black
- Latino
- Asian/Pacific Islander
- Middle Easterner
- Other



Source: IPUMS. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.  
 Note: Data for 2012 represent a 2008 through 2012 average.

# Strong industries and occupations

## What are the county's strongest industries?

**Professional services, management, and the financial sector are strong and growing industries in the county**, while health care is poised for growth as well. Construction and manufacturing, which provided many good middle-skill jobs in the past, have seen declines in employment.

### Strong Industries Analysis, 2012

Industry	Size	Concentration	Job Quality	Growth		
	Total Employment (2012)	Location Quotient (2012)	Average Annual Wage (2012)	Change in Employment (2002-12)	% Change in Employment (2002-12)	Real Wage Growth (2002-12)
Professional, Scientific, and Technical Services	165,411	4.5	\$113,798	50,764	44%	17%
All State and Local	58,300	0.7	\$52,596	7,267	14%	-3%
Retail Trade	55,910	0.8	\$33,158	-2,112	-4%	-9%
Health Care and Social Assistance	50,453	0.6	\$54,739	10,097	25%	4%
Accommodation and Food Services	41,715	0.8	\$21,354	5,482	15%	1%
Administrative and Support and Waste Management and Remediation Services	39,426	1.1	\$52,460	1,340	4%	27%
Construction	25,745	1.0	\$60,923	-5,797	-18%	2%
All Federal	24,861	1.9	\$93,314	8,090	48%	19%
Finance and Insurance	23,744	0.9	\$112,575	81	0%	6%
Management of Companies and Enterprises	22,298	2.4	\$152,616	6,886	45%	20%
Information	22,095	1.8	\$107,378	-15,044	-41%	5%
Other Services (except Public Administration)	21,731	1.0	\$46,160	252	1%	1%
Wholesale Trade	13,940	0.5	\$119,924	-2,064	-13%	15%
Education Services	10,773	0.9	\$50,049	4,542	73%	19%
Real Estate and Rental and Leasing	9,261	1.0	\$68,132	-224	-2%	8%
Manufacturing	8,551	0.2	\$82,476	-3,296	-28%	17%
Arts, Entertainment, and Recreation	7,938	0.9	\$23,729	767	11%	-1%
Transportation and Warehousing	6,585	0.3	\$52,595	422	7%	16%
Utilities	1,168	0.5	\$97,518	-537	-31%	21%
Mining	257	0.1	\$89,983	134	109%	68%
Agriculture, Forestry, Fishing and Hunting	60	0.0	\$26,275	-52	-46%	35%

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

Note: All industry data reflects private employment except for "All Federal" which includes all federal employment and "All State and Local" which includes all employment in state and local government.

# Strong industries and occupations

## What are the county's strongest occupations?

**Law, management, health care and advertising are strong and growing occupations in the metro Washington, DC, area.**

These job categories all pay good wages, employ many people, and have exhibited gains in recent years.

### Strong Occupations Analysis, 2011

Occupation	Employment	Job Quality	Growth			
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)	Median Age (2006-10 avg)
Top Executives	80,620	\$135,118	9%	27,210	51%	47
Lawyers, Judges, and Related Workers	42,350	\$147,155	3%	4,740	13%	42
Operations Specialties Managers	57,400	\$123,888	17%	12,600	28%	44
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	16,650	\$120,596	21%	3,040	22%	40
Other Management Occupations	77,660	\$109,907	6%	20,440	36%	45
Physical Scientists	13,610	\$113,110	7%	1,030	8%	42
Engineers	46,990	\$104,871	5%	3,650	8%	44
Other Healthcare Practitioners and Technical Occupations	3,100	\$75,880	40%	1,080	53%	44
Health Diagnosing and Treating Practitioners	84,110	\$98,253	5%	15,480	23%	44
Social Scientists and Related Workers	20,660	\$97,063	14%	-11,030	-35%	41
Computer Occupations	205,890	\$92,864	9%	19,170	10%	39
Mathematical Science Occupations	10,750	\$95,405	4%	2,450	30%	42
Air Transportation Workers	4,060	\$109,384	-19%	-120	-3%	45
Business Operations Specialists	205,900	\$80,121	0%	69,380	51%	42
Supervisors of Protective Service Workers	5,980	\$87,352	6%	660	12%	47
Life Scientists	10,050	\$92,083	1%	-650	-6%	41
Postsecondary Teachers	27,050	\$73,811	8%	9,190	51%	43
Architects, Surveyors, and Cartographers	6,280	\$77,103	10%	-1,200	-16%	42
Other Construction and Related Workers	5,180	\$61,192	24%	420	9%	44

Sources: U.S. Bureau of Labor Statistics; IPUMS. Universe includes all nonfarm wage and salary jobs.

Note: Data and analysis is for the Washington-Arlington-Alexandria Core Based Statistical Area as defined by the U.S. Office of Management and Budget. See page 71 for a description of our analysis of opportunity by occupation.



# Strong industries and occupations

## Which industries are projected to grow?

**Professional services, health care, accommodation and food services, and construction are projected to add the most jobs by 2022.** Many jobs in these industries pay relatively well and may be accessible to workers with lower levels of educational attainment if they obtain the right industry certifications.

### Industry Employment Projections, 2012-2022

Industry	2012 Estimated Employment	2022 Projected Employment	Total 2012-2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Professional, Scientific, and Technical Services	249,802	336,283	86,481	3%	35%
Health Care and Social Assistance	91,272	125,563	34,291	3%	38%
Accommodation and Food Services	91,975	110,951	18,976	2%	21%
Construction	57,252	74,279	17,027	3%	30%
Educational Services	96,268	112,987	16,719	2%	17%
Administrative and Support and Waste Management and Remediation Services	71,151	86,304	15,153	2%	21%
Retail Trade	114,511	126,071	11,560	1%	10%
Other Services (except Public Administration)	53,318	63,232	9,914	2%	19%
Finance and Insurance	35,089	39,792	4,703	1%	13%
Wholesale Trade	23,493	26,911	3,418	1%	15%
Arts, Entertainment, and Recreation	15,453	18,316	2,863	2%	19%
Real Estate and Rental and Leasing	18,761	21,075	2,314	1%	12%
Transportation and Warehousing	28,338	29,163	825	0%	3%
Agriculture, Forestry, Fishing and Hunting	153	169	16	1%	10%
Mining, Quarrying, and Oil and Gas Extraction	499	509	10	0%	2%
Public Administration	4,222	4,224	2	N/A	0%
Utilities	2,491	2,189	-302	-1%	-12%
Management of Companies and Enterprises	27,902	27,165	-737	0%	-3%
Information	36,907	35,792	-1,115	0%	-3%
Manufacturing	20,102	18,621	-1,481	-1%	-7%
<b>Total, All Industries</b>	<b>1,263,482</b>	<b>1,496,788</b>	<b>233,306</b>	<b>2%</b>	<b>18%</b>

Source: Virginia Employment Commission.

Note: Data is for Combined Projections Area (LWIA XI and LWIA XII), which includes Fairfax County, Fairfax City, Falls Church, Arlington County, and Alexandria City.

# Strong industries and occupations

## Which occupations are projected to grow?

**Computer and mathematical, business and financial, food preparation and serving, and office support occupations are projected to add the most jobs by 2022.** Opportunities exist for job-specific training and placement in quality employment.

### Occupational Employment Projections, 2012-2022

Occupation	2012 Estimated Employment	2022 Projected Employment	Total 2012-2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Computer and Mathematical	131,928	172,486	40,558	3%	31%
Business and Financial Operations	130,563	158,041	27,478	2%	21%
Food Preparation and Serving Related	87,426	106,846	19,420	2%	22%
Office and Administrative Support	154,478	171,306	16,828	1%	11%
Management	107,591	121,777	14,186	1%	13%
Construction and Extraction	51,721	64,525	12,804	2%	25%
Healthcare Practitioners and Technical	42,980	55,317	12,337	3%	29%
Education, Training, and Library	69,234	81,503	12,269	2%	18%
Sales and Related	114,556	126,674	12,118	1%	11%
Personal Care and Service	46,360	57,205	10,845	2%	23%
Protective Service	35,367	43,789	8,422	2%	24%
Healthcare Support	19,565	27,674	8,109	4%	41%
Building and Grounds Cleaning and Maintenance	49,584	57,243	7,659	1%	15%
Arts, Design, Entertainment, Sports, and Media	29,623	36,103	6,480	2%	22%
Transportation and Material Moving	49,688	55,243	5,555	1%	11%
Installation, Maintenance, and Repair	38,312	43,608	5,296	1%	14%
Architecture and Engineering	32,611	37,533	4,922	1%	15%
Community and Social Services	12,370	14,943	2,573	2%	21%
Life, Physical, and Social Science	13,020	15,004	1,984	1%	15%
Production	22,364	24,175	1,811	1%	8%
Legal	23,788	25,445	1,657	1%	7%
Farming, Fishing, and Forestry	353	348	-5	0%	-1%
<b>Total, All Occupations</b>	<b>1,263,482</b>	<b>1,496,788</b>	<b>233,306</b>	<b>2%</b>	<b>18%</b>

Source: Virginia Employment Commission.

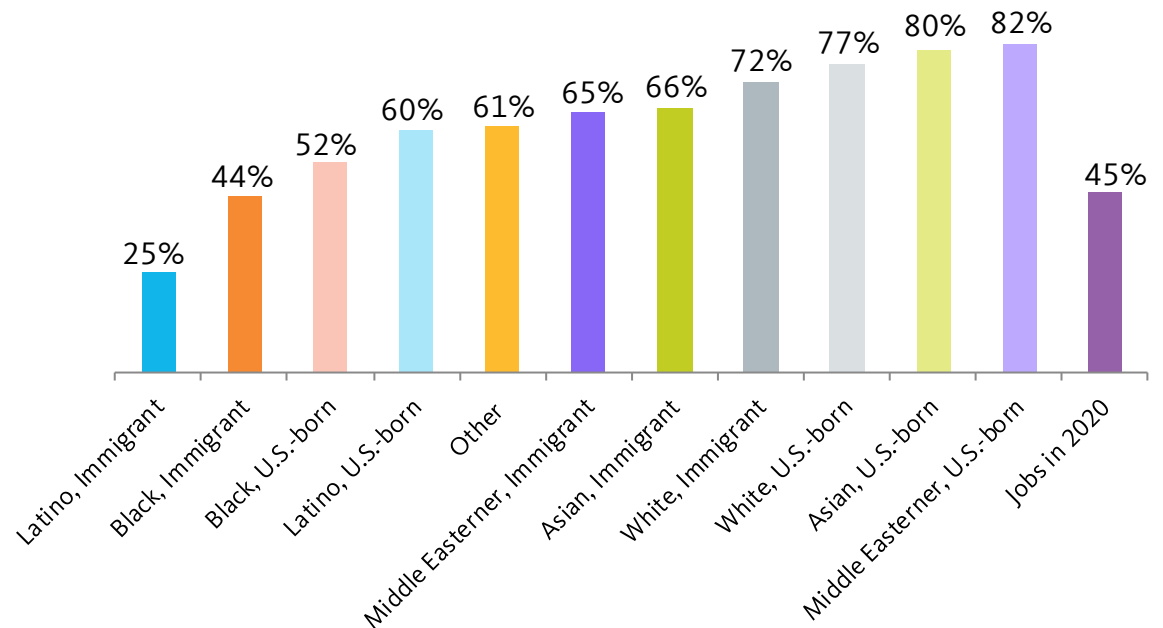
Note: Data is for Combined Projections Area (LWIA XI and LWIA XII), which includes Fairfax County, Fairfax City, Falls Church, Arlington County, and Alexandria City.

# Skilled workforce

**Do workers have the education and skills needed for the jobs of the future?**

**The education levels of the county’s Latino immigrant population aren’t keeping up with employers’ educational demands.** By 2020, an estimated 45 percent of jobs in Virginia will require at least an associate’s degree. Only 25 percent of Latino immigrants have that level of education now.

Share of Working-Age Population with an Associate’s Degree or Higher by Race/Ethnicity and Nativity, 2012, and Projected Share of Jobs that Require an Associate’s Degree or Higher, 2020



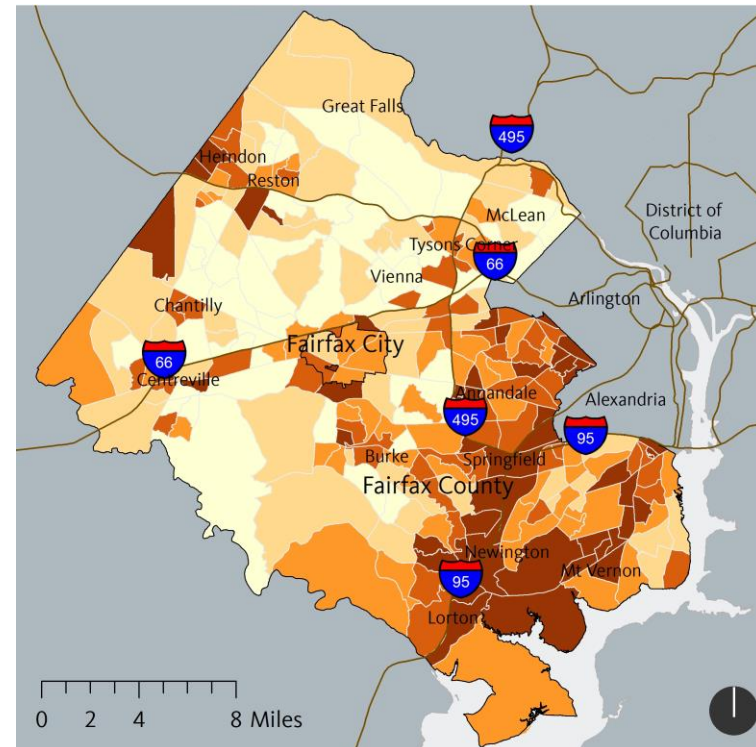
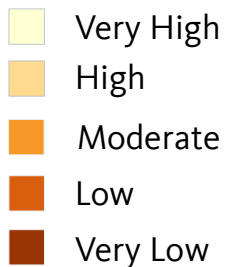
Sources: Georgetown Center for Education and the Workforce; IPUMS. Universe for education levels of workers includes all persons ages 25 through 64.  
 Note: Data for 2012 by race/ethnicity and nativity represent a 2008 through 2012 average at the county level; data on jobs in 2020 represents a state-level projection for Virginia.

# Youth preparedness

## Are all youth receiving access to opportunity?

**Child opportunity is high in Fairfax County overall relative to the Washington, DC, metro, but there are differences across communities within the county.** The southeastern portion of the county has the lowest child opportunity, including the communities of Lorton, Newington, Mt. Vernon and Springfield.

### Composite Child Opportunity Index by Census Tract



Sources: The diversitydatakids.org project and the Kirwin Institute for the Study of Race and Ethnicity.

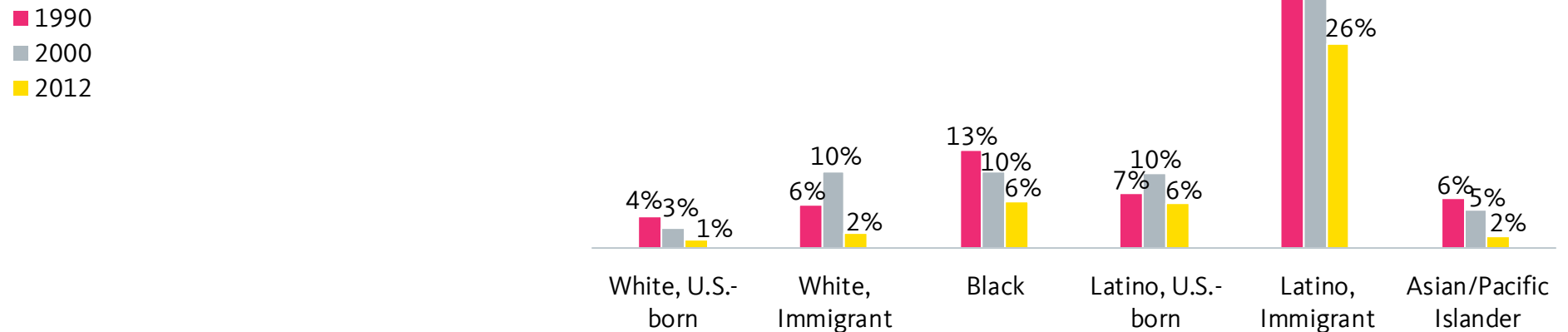
Note: The Child Opportunity Index is a composite of indicators across three domains: educational opportunity, health and environmental opportunity, and social and economic opportunity. The vintage of the underlying indicator data varies, ranging from years 2007 through 2013. The map was created by applying Jenks natural breaks to census tract level Overall Child Opportunity Index Score values for the region.

# Youth preparedness

## Are youth ready to enter the workforce?

**More of the county's youth are getting high school degrees, but racial gaps remain.** Nearly 5,600 youth were without a high school degree and not in pursuit of one in 2012. Black and Latino youth, particularly Latino immigrants, are less likely to finish high school than their White counterparts.

Share of 16-to-24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Nativity, 1990 to 2012



Source: IPUMS.  
 Note: Data for 2012 represent a 2008 through 2012 average.

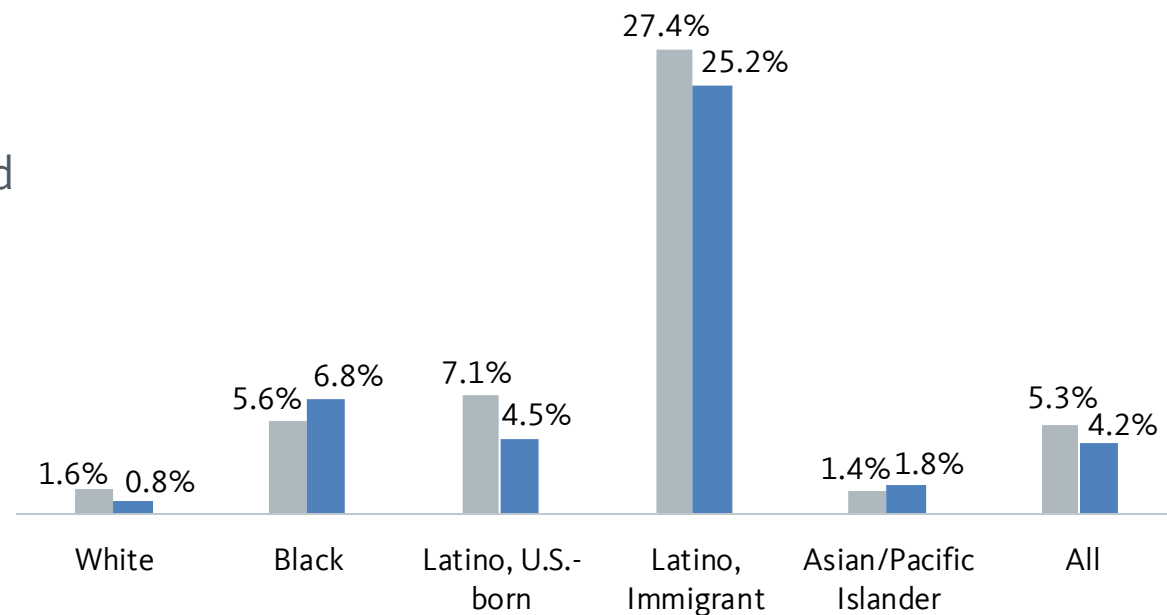
# Youth preparedness

## Are youth ready to enter the workforce?

**While young females are less likely than males to drop out of high school overall, this does not hold for all racial/ethnic groups.** Among young Blacks and Asians, females are more likely to be lacking a high school diploma and not in pursuit of one.

Share of 16-to-24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Gender, 2012

■ Male  
■ Female



Source: IPUMS.

Note: Data for 2012 represent a 2008 through 2012 average.

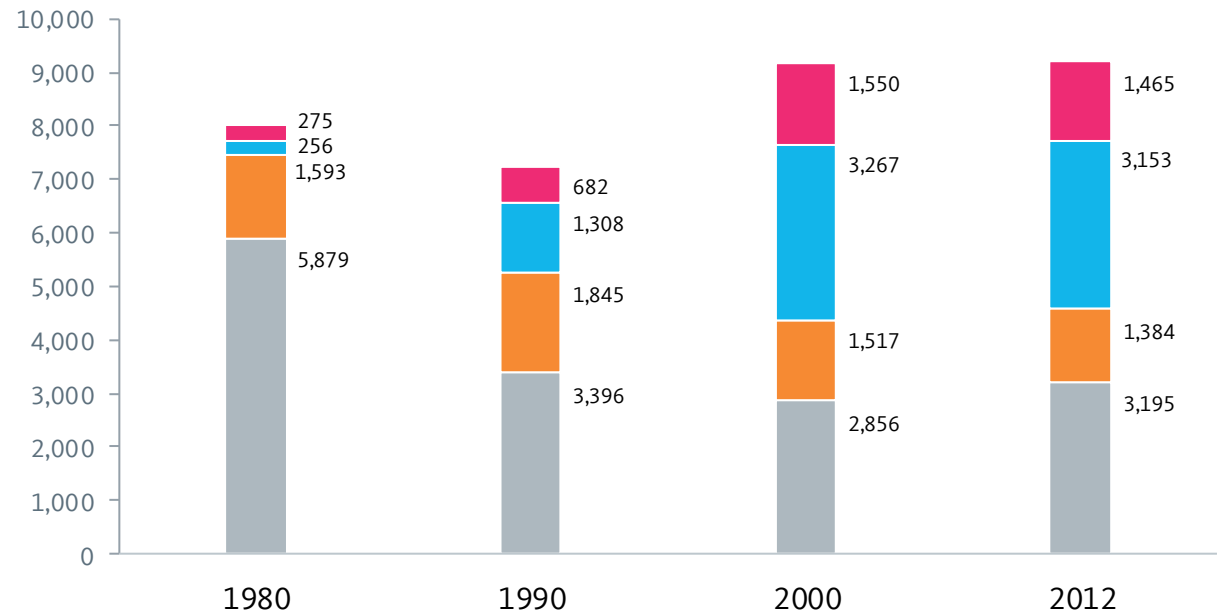
# Youth preparedness

## Are youth ready to enter the workforce?

**While the share of youth who are disconnected has decreased, youth of color remain disproportionately disconnected.** Of the nearly 9,200 disconnected youth in 2012, 15 percent were Black and 34 percent were Latino. These two groups make up 10 and 21 percent of all youth, respectively.

Disconnected Youth: 16-to-24-Year-Olds Not in School or Work by Race/Ethnicity, 1980 to 2012

- Native American or Other
- Asian/Pacific Islander
- Latino
- Black
- White



Source: IPUMS.  
 Note: Data for 2012 represent a 2008 through 2012 average.

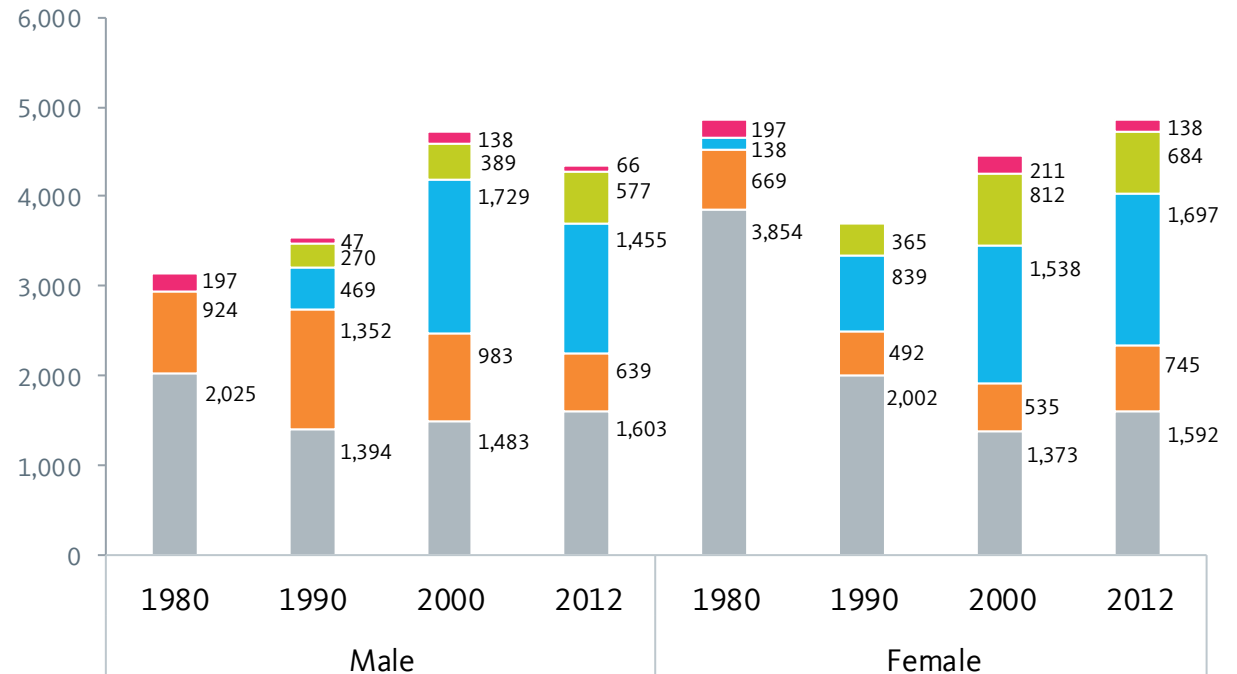
# Youth preparedness

## Are youth ready to enter the workforce?

**More young women of color are disconnected than their male counterparts.** Of the nearly 9,200 disconnected youth in 2012, 35 percent were young women of color. Comparatively, 30 percent were young men of color while young White men and women comprised 17 percent each.

Disconnected Youth: 16-to-24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 1980 to 2012

- Native American or Other
- Asian/Pacific Islander
- Latino
- Black
- White



Source: IPUMS.  
 Note: Data for 2012 represent a 2008 through 2012 average.



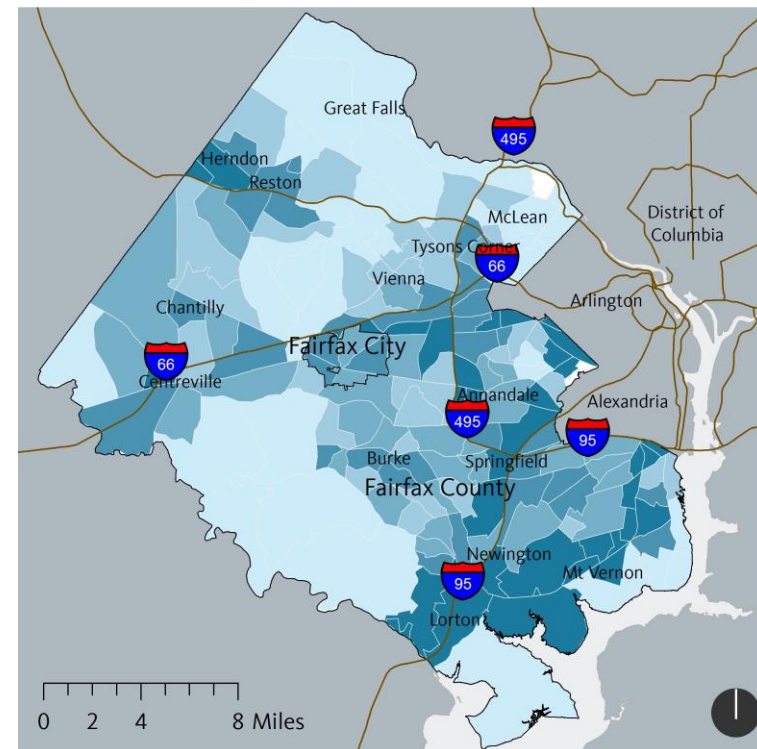
# Health Access

## Do residents have equal access to positive health outcomes?

**Opportunity for positive health outcomes is far lower in some communities than others.** While the social determinants of health are favorable in Fairfax County overall, communities in the southeastern portion of the county and in Herndon and Reston are least likely to have positive health outcomes.

### Virginia Health Opportunity Index by Census Tract (2013 Version)

- Very High
- High
- Moderate
- Low
- Very Low



Source: Northern Virginia Health Foundation.

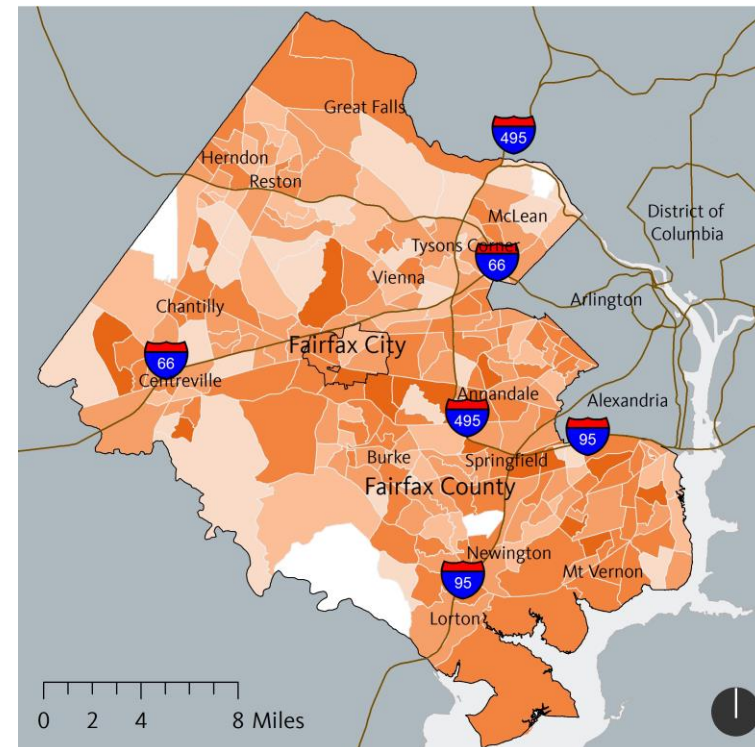
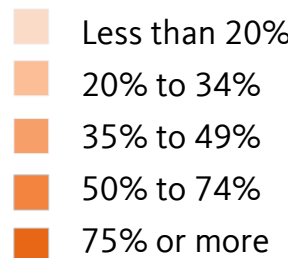
Note: The Health Opportunity Index (HOI) is a composite of ten indicators developed by the Virginia Department of Health for 328 census tracts in northern Virginia that illustrate a range of social determinants of health, including a variety of personal, social, economic, and environmental factors that contribute to individual and population health. The map was created by applying Jenks natural breaks to census tract level HOI values for the region. Areas in white are missing data.

# Connectedness

## Can all residents access affordable housing?

**High rent burden occurs throughout the county.** In several communities the majority of renter households are rent burdened (paying more than 30 percent of income on rent) – communities on the outskirts of Fairfax City and in and around the other major towns have high rates of rent burden.

### Percent Rent-Burdened Households by Census Tract, 2012



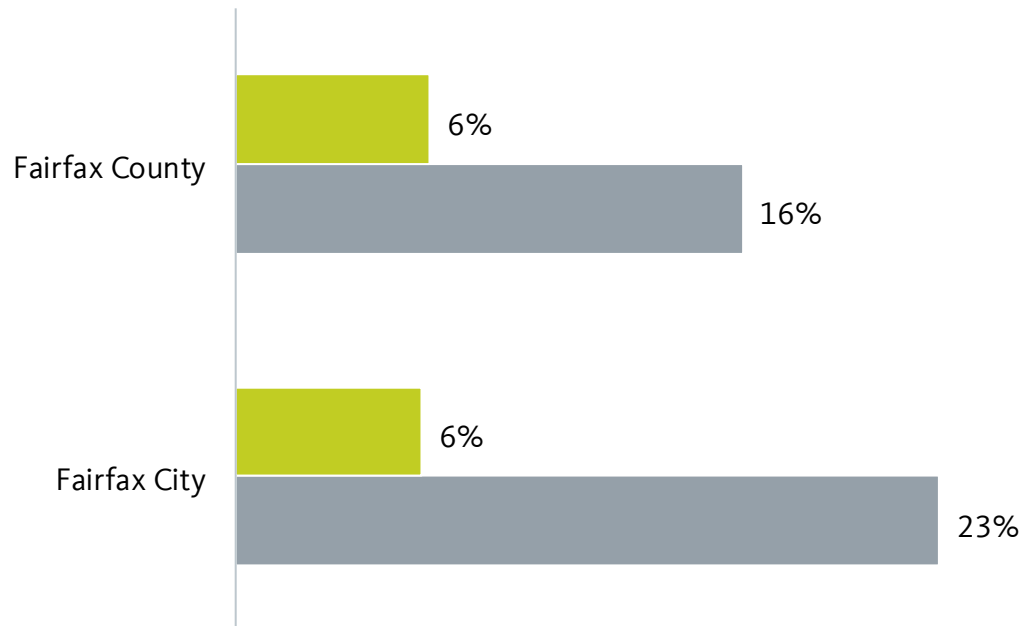
# Connectedness

## Can all residents access affordable housing?

**Low-wage workers in the county are not likely to find affordable rental housing:** 16 percent of jobs are low-wage (paying \$1,250 per month or less) and only 6 percent of rental units are affordable (having rent of \$749 per month or less, which would be 30 percent or less of two low-wage workers' incomes).

### Low-Wage Jobs and Affordable Rental Housing by County

- Share of rental housing units that are affordable
- Share of jobs that are low-wage



Source: U.S. Census Bureau.  
 Note: Data on affordable rental housing represents a 2008 through 2012 average; data on low-wage jobs is from 2010.

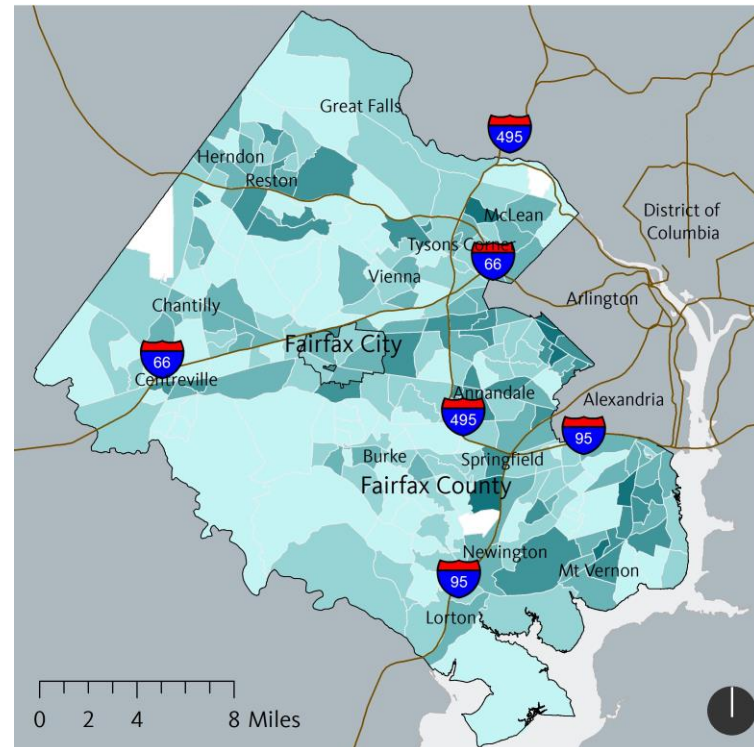
# Connectedness

## Can all residents access transportation?

**Car access varies by neighborhood but is lower in areas closer to Washington, DC.** Households in areas on the western and southern edges of the county are most likely to have access to a car.

Percent Households without a Vehicle by Census Tract, 2012

- Less than 1%
- 1% to 2%
- 3% to 6%
- 7% to 15%
- 16% or more



Source: U.S. Census Bureau. Universe includes all households (excludes group quarters).  
 Note: Data represent a 2008 through 2012 average. Areas in white are missing data.

# Connectedness

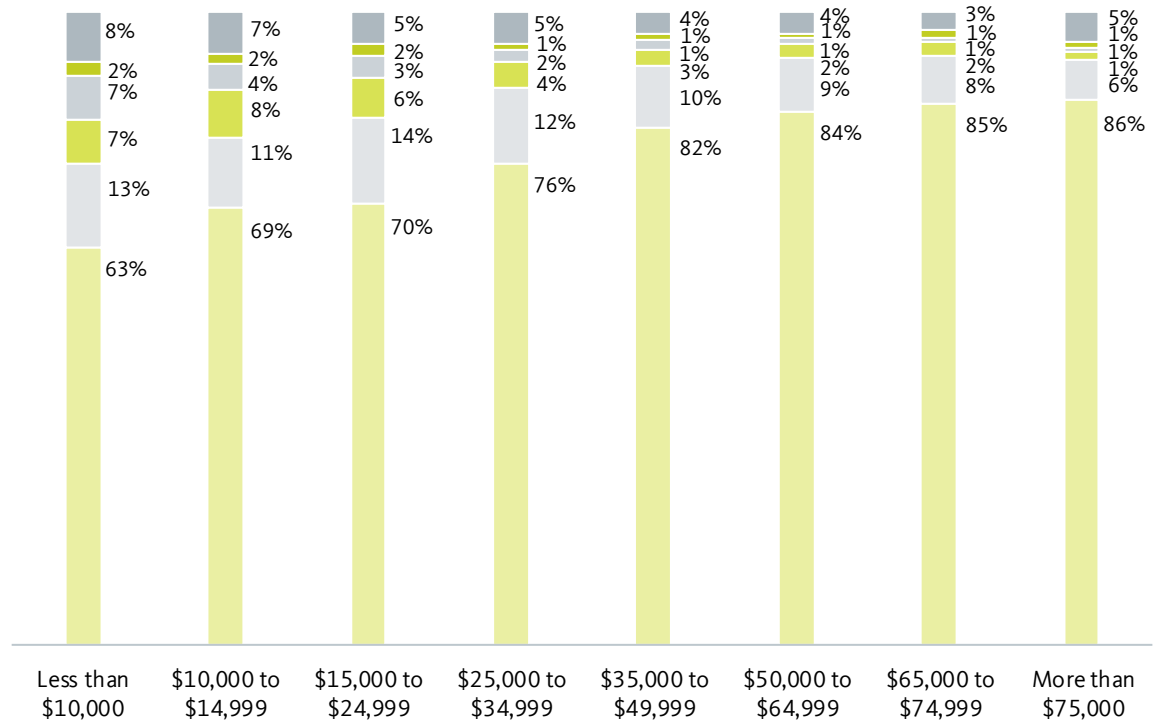
## Can all residents access transportation?

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

While 80 percent of all residents drive alone to work, single-driver commuting varies by income with 65 percent of workers earning under \$15,000 a year commuting alone compared to 86 percent of workers earning more than \$65,000 a year.

Means of Transportation to Work by Annual Earnings, 2012

- Worked at home
- Other
- Walked
- Public transportation
- Auto-carpool
- Auto-alone



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

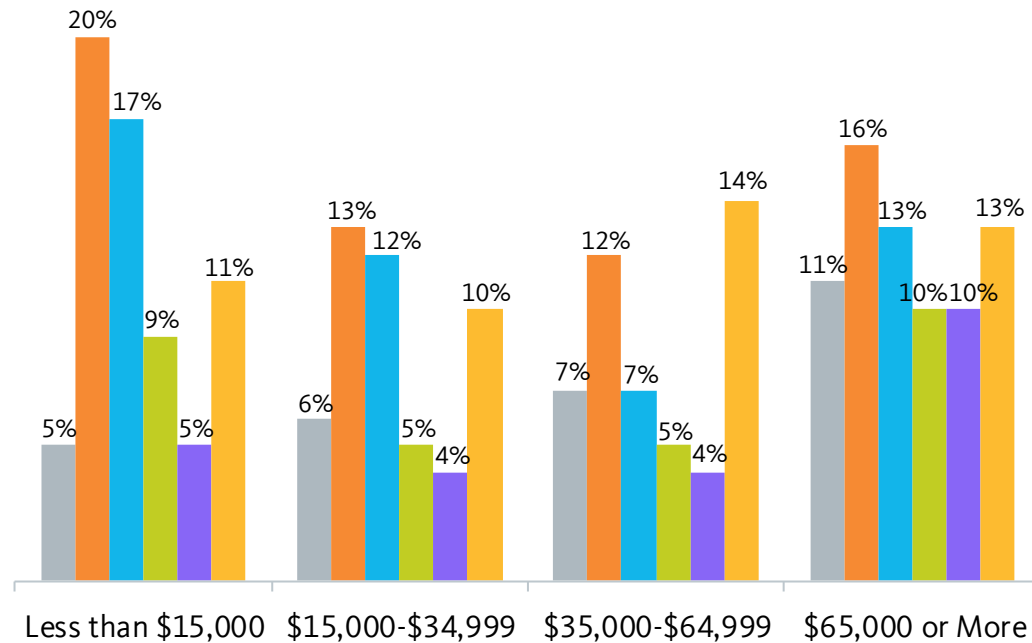
# Connectedness

## Can all residents access transportation?

**People of color are more likely than Whites to rely on the regional transit system to get to work.** Very low-income African Americans and Latinos are the most likely to use transit, although transit use markedly increases for higher-income workers.

Percent Using Public Transit by Annual Earnings and Race/Ethnicity, 2012

- White
- Black
- Latino
- Asian/Pacific Islander
- Middle Easterner
- Other



Source: IPUMS. Universe includes workers ages 16 and older with earnings.  
 Note: Data for 2012 represent a 2008 through 2012 average.

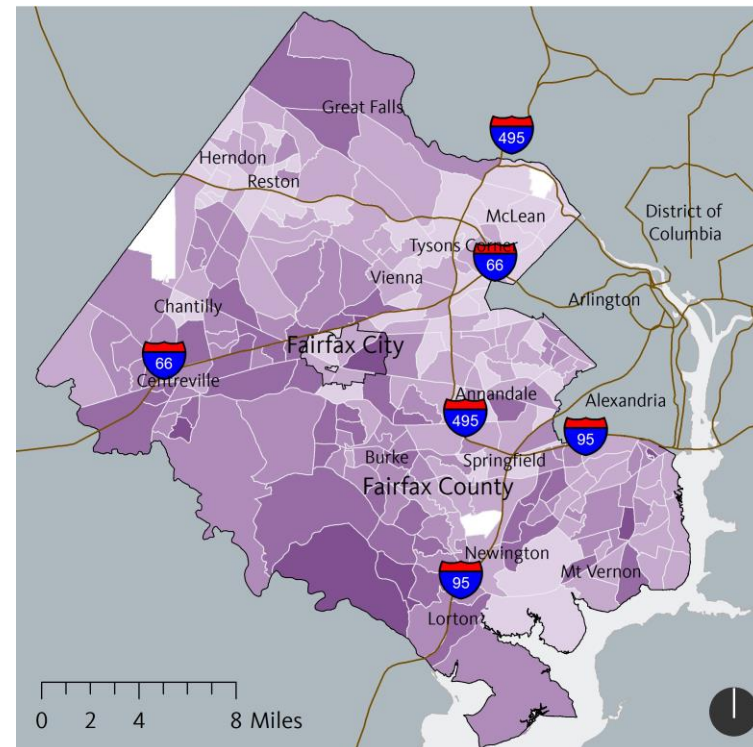
# Connectedness

## Do residents have reasonable travel times to work?

**Commuter times are highest in the outer edges of Fairfax County.** Commute times are lowest in areas closer to Washington, DC, and Arlington and highest in the southern and western portions of the county, as well as the eastern portion of Fairfax City.

### Average Travel Time to Work in Minutes by Census Tract, 2012

- Less than 30 minutes
- 30 to 31 minutes
- 32 to 34 minutes
- 35 to 37 minutes
- 38 minutes or more



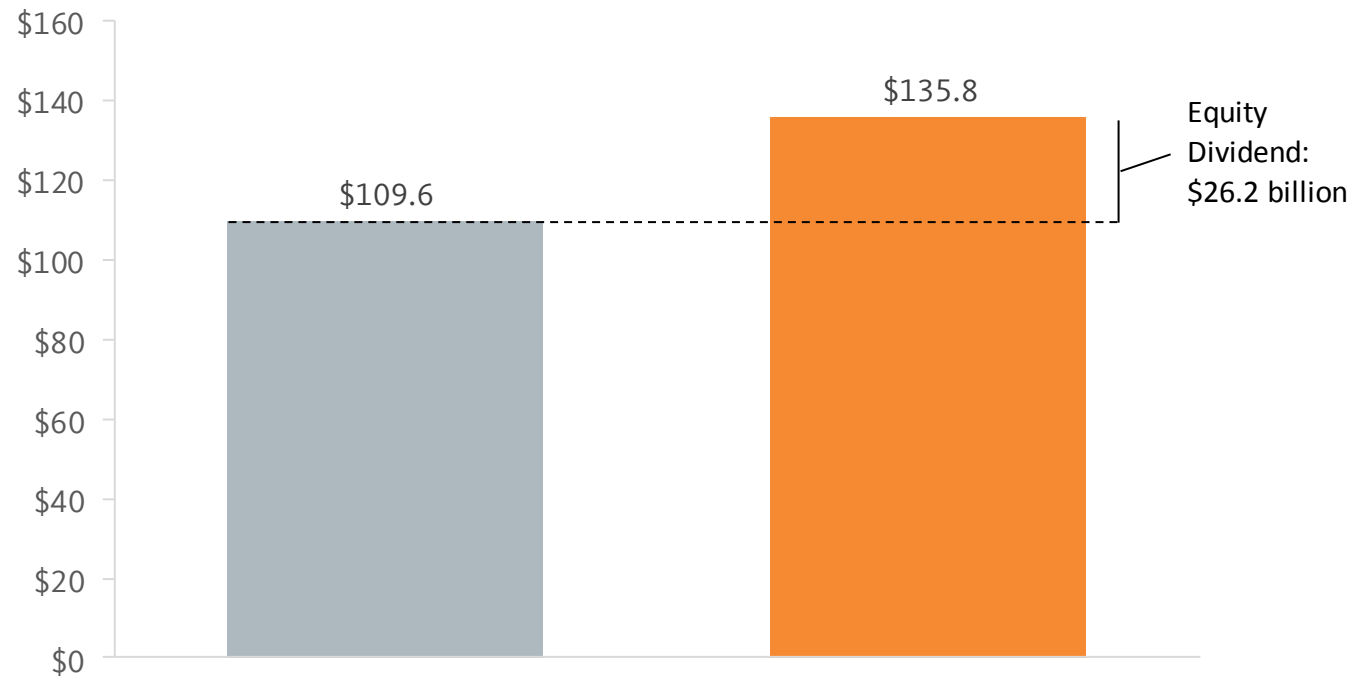
# Economic benefits of equity

How much higher would GDP be without racial economic inequalities?

**Fairfax County's GDP would have been \$26.2 billion higher in 2012 if its racial gaps in income were closed.**

Actual GDP and Estimated GDP without Racial Gaps in Income, 2012

- GDP in 2012 (billions)
- GDP if racial gaps in income were eliminated (billions)





# Data and methods

## **Data source summary and regional geography**

Broad racial/ethnic origin

Nativity

Detailed racial/ethnic ancestry

Other selected terms

General notes on analyses

## **Summary measures from IPUMS microdata**

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

## **Adjustments made to demographic projections**

National projections

County and regional projections

## **Estimates and adjustments made to BEA data on GDP**

Adjustments at the state and national levels

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## **Middle-class analysis**

## **Assembling a complete dataset on employment and wages by industry**

## **Growth in jobs and earnings by industry wage level, 1990 to 2012**

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## **Middle class analysis**

## **Assembling a complete dataset on employment and wages by industry**

## **Growth in jobs and earnings by industry wage level, 1990 to 2012**

## **Analysis of occupations by opportunity level**

# Data and methods

## Data source summary and 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. While much of the data and analysis presented in this equitable growth 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 county 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. That said, we do draw upon more local data sources for some indicators.

Source	Dataset
Integrated Public Use Microdata Series (IPUMS)	1980 5% State Sample
	1990 5% Sample
	2000 5% Sample
	2010 American Community Survey, 5-year microdata sample
	2012 American Community Survey, 5-year microdata sample
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)
	2010 Summary File 1 (SF1)
	2012 5-Year American Community Survey Summary File
	2012 National Population Projections, Middle Series
2010 TIGER/Line Shapefiles, 2010 Counties	
2010 Local Employment Dynamics, LODES 6	
Woods & Poole Economics, Inc.	2014 Complete Economic and Demographic Data Source
U.S. Bureau of Economic Analysis	Gross Domestic Product by State
	Gross Domestic Product by Metropolitan Area
	Local Area Personal Income Accounts, CA30: regional economic profile
U.S. Bureau of Labor Statistics	Quarterly Census of Employment and Wages
	Local Area Unemployment Statistics
	Occupational Employment Statistics
Georgetown University Center on Education and the Workforce	Recovery: Job Growth And Education Requirements Through 2020; State Report
The diversitydatakids.org project and the Kirwin Institute for the Study of Race and Ethnicity	Child Opportunity Index Maps
Northern Virginia Health Foundation	How Healthy is Northern Virginia? A Look at the Latest Community Health Indicators (May 2013)

# Data and methods

## Selected terms and general notes

### Broad racial/ethnic origin

In the analyses presented, two different racial/ethnic categorizations are used depending on whether or not the Middle Eastern population is broken out. All categorization of people by race/ethnicity and nativity is based on individual responses to various census surveys.

For all analyses that *do not* break out the Middle Eastern population, all people were first assigned to one of six mutually exclusive racial/ethnic categories, depending on their responses 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.

For all analyses that *do* break out the Middle Eastern population, we began with the categorization described above and re-categorized all people into a new “Middle Eastern” category who identified as being of Middle Eastern descent, as determined their response(s) to the census question on ancestry (virtually all of those we ultimately

categorized as Middle Easterners identify racially as non-Hispanic White and were thus removed from the White category). The census reports up to two responses to the question, and if any response indicated a Middle Eastern country or region. More specifically, individuals in the IPUMS data with values for the variables “ANCESTR1” and “ANCESTR2” ranging from 400 to 496 were all defined as Middle Easterner.

### 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 United States, of non-American parents.

### Detailed racial/ethnic ancestry

Given the diversity of ethnic origin and substantial presence of immigrants among the Latino, Asian, Black, and Middle Eastern populations, we present population totals and the percentage immigrant for more detailed

# Data and methods

## Selected terms and general notes

(continued)

racial/ethnic categories within these groups. In order to maintain consistency with the broader racial/ethnic categories and to calculate the immigrant shares, these more detailed categories 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 and not the U.S.-born population. For the Black and Middle Eastern populations, however, responses to the question on race do not provide sufficient detail to identify subgroups so we utilize the responses to the question on ancestry.

### 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 previously.

- The term “communities of color” generally refers to distinct groups defined by race/ethnicity among people of color.
- 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 American Community Survey (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](http://www.census.gov/acs/www/Downloads/methodology/content_test/P6b_Weeks_Worked_Final_Report.pdf).

### General notes on analyses

Below we provide some general notes about the analyses conducted.

- In the summary document that accompanies this profile, we may discuss rankings comparing the profiled region to the largest 150 metros. In all such instances, we are referring to the largest 150 metropolitan statistical areas in terms of 2010 population.
- In regard to monetary measures (income, earnings, wages, etc.), the term “real” indicates the data have been adjusted for

# Data and methods

## Selected terms and general notes

(continued)

inflation, and, unless otherwise noted, all dollar values are in 2010 dollars. 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 <http://www.bls.gov/cpi/tables.htm>.

- Note that income information in the decennial censuses for 1980, 1990, and 2000 is reported for the year prior to the survey.

# Data and methods

## Summary measures from 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 2008 through 2012 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 2008 through 2012 files are from the 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 2008 through 2012 period.

Compared with the more commonly used census “summary files,” which include 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 provides a more nuanced view of groups defined by age, race/ethnicity, and nativity in each region of the United States.

The IPUMS microdata allows for the tabulation of detailed population characteristics, but 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.

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.” PUMAs are 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.

Because PUMAs do not neatly align with the boundaries of metropolitan areas, we created a geographic crosswalk between PUMAs and the region for the 1980, 1990, 2000, and 2008-2012 microdata. This involved estimating the share of each PUMA’s population that falls inside the region using population information from Geolytics for 2000 census block groups (2010 population information was used for the 2008-2012 geographic crosswalk). If the share was at least 50 percent, the PUMAs were assigned to the region and included in generating regional summary measures. For the remaining PUMAs, the share was somewhere between 50 and 100 percent, and this share was used as the “PUMA adjustment factor” to adjust downward the survey weights for individuals included in such PUMAs in the microdata when estimating regional summary measures.

## Data and methods

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

For the racial generation gap indicator, we generated consistent estimates of populations by race/ethnicity and age group (under 18, 18-64, and over 64 years of age) 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/Alaska 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 of 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 was taken from the 1990 Modified Age Race Sex (MARS) file – 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 the number of the “Other race” and multiracial by age group.

# Data and methods

## Adjustments made to demographic projections

### National projections

National projections of the non-Hispanic White share of the population are based on the U.S. Census Bureau's 2012 National Population Projections, Middle Series. However, because these projections follow the OMB 1997 guidelines on racial classification and essentially distribute the Other single-race alone group across the other defined racial/ethnic categories, adjustments were made to be consistent with the six broad racial/ethnic groups used in our analysis.

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 in SF1 of 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 2012 National Population Projections to get the projected number of people by race/ethnicity.

### County and regional projections

Similar adjustments were made in generating county and regional projections of the population by race/ethnicity. Initial county-level projections were taken from Woods & Poole Economics, Inc. Like the 1990 MARS file described above, the Woods & Poole projections follow the OMB Directive 15-race categorization, assigning all persons identifying as Other or multiracial to one of 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 or multiracial group from each of these five categories. This was done by comparing the Woods & Poole projections for 2010 to the actual results from SF1 of the 2010 Census, figuring out the share of each racial/ethnic group in the Woods & Poole data that was composed of Other or multiracial persons

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 five groups (White, Black, Latino, Asian/Pacific Islander, and Native American), exclusive of Others or multiracials.

To estimate the county-level share of population for those classified as Other or multiracial 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 or 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 at the county level for the six broad racial/ethnic groups included in the Atlas, which were then applied to projections of the total population by county from Woods & Poole to get



## Data and methods

# Adjustments made to demographic projections

(continued)

projections of the number of people for each of the six racial/ethnic groups.

Finally, an Iterative Proportional Fitting (IPF) procedure was applied to bring the county-level results into alignment with our adjusted national projections by race/ethnicity described above. The final adjusted county results were then aggregated to produce a final set of projections at the metro-area and state levels.

# Data and methods

## Estimates and adjustments made to BEA data on GDP

The data on national gross domestic product (GDP) and its analogous regional measure, gross regional product (GRP) – both referred to as GDP in the text – are 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, and a lack of metropolitan area estimates prior to 2001, 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 2012.

### **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 a NAICS basis occurred in 1997, BEA also provides estimates under an 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.

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

# Data and methods

## Estimates and adjustments made to BEA data on GDP

(continued)

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.

We should note that BEA does not provide data for all counties in the United States, but rather groups some counties that have had boundary changes since 1969 into county

groups to maintain consistency with historical data. Any such county groups were treated the same as other counties in the estimate techniques described above.

Fairfax County is included in one of the BEA county groups (composed of Fairfax County, Fairfax City, and Falls Church City). Thus, to estimate GDP for the region comprising of just Fairfax County and Fairfax City, which is the regional definition used for most of the data presented in this profile, we applied a similar approach to that described above but using a different data source – the Quarterly Census of Employment and Wages (QCEW) – which provides data for each individual county/city. Using the QCEW, we calculated Falls Church’s share of total earnings for workers in its BEA county group, and adjusted our GDP estimate for the county group downward by that share to get our final GDP estimate for the region comprising just Fairfax County and Fairfax City.

# Data and methods

## Middle-class analysis

To analyze middle-class decline over the past four decades, 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

Analysis of jobs and wages by industry, reported on pages 23 and 39, is based on an 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, Inc., which contains complete jobs and wages data for broad, two-digit NAICS industries at multiple geographic levels. (Proprietary issues barred us from using Woods & Poole data 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 Woods & Poole 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 Woods & Poole data.

To make for a more accurate application of the Woods & Poole data, we made some adjustments to it to better align it with the QCEW. One of the challenges of using Woods & Poole data as a "filler dataset" is that it includes all workers, while QCEW includes only wage and salary workers. To normalize the Woods & Poole 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 are available on an annual basis, the Woods & Poole data are available on a decadal basis until 1995, at which point they become available on an annual basis. For the 1990-1995 period, we estimated the Woods & Poole annual jobs and wages figures using a

straight-line approach. Finally, we standardized the Woods & Poole 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 are 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

# Growth in jobs and earnings by industry wage level, 1990 to 2012

The analysis on page 23 uses our filled-in QCEW dataset (see the previous page) and seeks to track shifts in regional job composition and wage growth 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, middle, 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-, middle-, 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/~media/research/files/reports/2012/4/26%20baltimore%20economy%20vey/0426\\_baltimore\\_economy\\_vey.pdf](http://www.brookings.edu/~media/research/files/reports/2012/4/26%20baltimore%20economy%20vey/0426_baltimore_economy_vey.pdf).

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

The analysis of strong occupations on page 40 and jobs by opportunity level on page 33 are related and based on an analysis that seeks to classify occupations in the region by opportunity level. Industries and occupations with high concentrations in the region, strong growth potential, and decent and growing wages are considered strong.

To identify “high-opportunity” occupations, 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 (which represents potential job openings due to retirements).

Once the “occupation opportunity index” score was calculated for each occupation, they were sorted into three categories (high, middle, and low opportunity). Occupations were evenly distributed into the categories based on employment. The strong occupations shown on page 40 are those found in the top, or high category.

There are some 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 2010 5-year IPUMS ACS microdata file (for the employed civilian noninstitutional population ages 16 and older). It is calculated at the metropolitan statistical area level (to be consistent with the geography of the OES data), except in cases for which there were fewer than 30 individual survey respondents 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 considerably more detailed data is available in the OES, it was necessary to aggregate to the three-digit SOC level in order to align closely with the occupation codes reported for workers in the ACS microdata, making the analysis reported on page 40 possible.

# Data and methods

## Estimates of GDP without racial gaps in income

Estimates of the gains in GDP under a hypothetical scenario in which there is no income inequality by race/ethnicity are based on the IPUMS 2012 5-Year American Community Survey (ACS) microdata. We applied a methodology similar to that used by Robert Lynch and Patrick Oakford in Chapter Two of *All-in Nation: An America that Works for All* with some modification to include income gains from increased employment (rather than only those from increased wages). As in the Lynch and Oakford analysis, once the percentage increase in overall average annual income was estimated, 2012 GDP was assumed to rise by the same percentage.

We first organized individuals aged 16 or older in the IPUMS ACS into six mutually exclusive racial/ethnic groups: non-Hispanic White, non-Hispanic Black, Latino, non-Hispanic Asian/Pacific Islander, non-Hispanic Native American, and non-Hispanic Other or multiracial. Following the approach of Lynch and Oakford in *All-In Nation*, we excluded from the non-Hispanic Asian/Pacific Islander category subgroups whose average incomes

were higher than the average for non-Hispanic Whites. Also, to avoid excluding subgroups based on unreliable average income estimates due to small sample sizes, we added the restriction that a subgroup had to have at least 100 individual survey respondents in order to be included.

We then assumed that all racial/ethnic groups had the same average annual income and hours of work, by income percentile and age group, as non-Hispanic Whites, and took those values as the new “projected” income and hours of work for each individual. For example, a 54-year-old non-Hispanic Black person falling between the 85th and 86th percentiles of the non-Hispanic Black income distribution was assigned the average annual income and hours of work values found for non-Hispanic White persons in the corresponding age bracket (51 to 55 years old) and “slice” of the non-Hispanic White income distribution (between the 85th and 86th percentiles), regardless of whether that individual was working or not. The projected individual annual incomes and work hours

were then averaged for each racial/ethnic group (other than non-Hispanic Whites) to get projected average incomes and work hours for each group as a whole, and for all groups combined.

One difference between our approach and that of Lynch and Oakford is that we include all individuals ages 16 years and older, rather than just those with positive income. Those with income values of zero are largely non-working, and were included so that income gains attributable to increased average annual hours of work would reflect both expanded work hours for those currently working and an increased share of workers—an important factor to consider given sizeable differences in employment rates by race/ethnicity. One result of this choice is that the average annual income values we estimate are analogous to measures of per capita income for the age 16 and older population and are notably lower than those reported in Lynch and Oakford; another is that our estimated income gains are relatively larger as they presume increased employment rates.





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