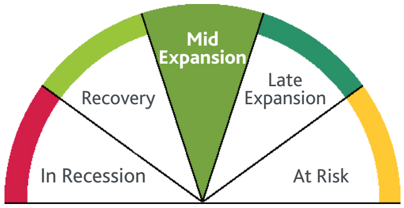
Moody's ANALYTICS

RALEIGH NC

Data Buffet® MSA code: IUSA_MRAL

ECONOMIC DRIVERS	EMPLOYMENT GROWTH RANK		RELATIVE COSTS		VITALITY	QUALITY
HIGH TECH, COLLEGE TOWN, MANUFACTURING	2018-2020	2018-2023	LIVING	BUSINESS	RELATIVE	OF LIFE
	67 1st quintile	44 1st quintile	101%	85%	154% Rank: 5	189
	Best=1, Worst=410		*U.S.=100%*		*Best=1, Worst=403*	*Best=1, Worst=378*

BUSINESS CYCLE STATUS



STRENGTHS & WEAKNESSES

STRENGTHS

- » Low living and business costs compared with other tech hubs.
- » High per capita income that supports consumption.
- » Strong and improving net migration.
- » Very high economic vitality.
- » Large concentration of prime-age workers.

WEAKNESSES

- » Strained infrastructure.
- » High employment volatility.

FORECAST RISKS

SHORT TERM ↑ | LONG TERM ↑

RISK EXPOSURE 2019-2024: **120** 2nd quintile *Highest=1 Lowest=403*

UPSIDE

- » More high-quality jobs in tech and life sciences boost incomes, spending.
- » Population growth is stronger, benefiting housing and consumer industries.
- » NCSU's expansion does more to stimulate growth in RAL's economy.

DOWNSIDE

- » Restrictions on the H-1B visa limit labor force growth, hurt key tech industries.

MOODY'S RATING

Aaa COUNTY AS OF AUG 07, 2014

ANALYSIS

Recent Performance. Raleigh's economy is the star of the Tar Heel State. Year-over-year payroll growth is once again running at more than double the national rate. A near-complete count of jobs from the Quarterly Census of Employment and Wages shows that the apparent slowdown through the first half of 2019 was an artifact of survey employment issues resulting from the impact of Hurricane Florence. Healthcare, professional/business services and leisure/hospitality accounted for two-thirds of net new jobs over the last year. The unemployment rate remains below the national average but has risen slightly from its late-2018 cycle low; however, this reflects RAL's rapidly expanding labor force and not weak job growth. The strong labor market is carrying over into housing, where prices are more than 20% above their prior peak.

White-collar wonder. Tech, life sciences, and other professional and technical services hold the most promise for growth. Professional/business services payrolls are growing at nearly three times the national rate and have accounted for one-third of net new jobs over the last year. Business costs are 15% below the U.S. average and much lower than those in other tech centers, giving RAL an edge that spurs investment. High tech accounts for more than 10% of RAL's jobs, seventh highest among the 65 U.S. metro areas and divisions with at least 1 million residents. Prospects remain bright, as RAL extended a string of positive news with Microsoft's recent announcement that it will create 500 additional software development jobs. Tech employers and RAL's universities will feed off each other as the deep talent pool draws firms to the area and expanding firms look to local universities to develop in-house talent.

NCSU. North Carolina State University will provide an increasingly valuable resource as talent becomes scarcer. Investment has been pouring into the Centennial Campus, a university-led innovation district. The campus provides critical collaboration between academics, entrepreneurs, and established corporate partners. NCSU is engaged in a three-year collaboration with Infosys to provide data science training to new hires. Beyond the advantages to the tech industry, NCSU will provide a stable source of quality jobs as one of the largest employers in RAL.

Housing. Strong demographics and robust job growth will increase pressure on an already-hot housing market. Households are forming at more than double the national rate thanks to strong population gains and the release of pent-up housing demand made possible by improving consumer finances. Despite the surge in demand, price appreciation has remained in check throughout the expansion thanks to a strong response from builders. Permitting issuance rebounded sharply and has surpassed levels from the early 2000s prior to the housing market bubble, despite ongoing sluggishness nationally. As a result, construction payrolls are up nearly 50% since the end of the recession, far better than the 33% rise nationally.

Young professionals are creating strong demand for multifamily housing and driving above-average rent growth despite a wealth of new supply coming on line. RAL is adding apartment units faster than most other parts of the country, but occupancy rates remain above 95%.

Raleigh will remain a top performer, easily outpacing the state and U.S. in the near term. Job growth will moderate but consumer-driven and knowledge-based industries will thrive thanks to in-migration and investment in high tech. Longer term, stellar demographics, a deep talent pool, and low business costs will spur investment and keep RAL a top-performing large economy in the South.

Dante DeAntonio *1-866-275-3266*
December 2019 *help@economy.com*

2013	2014	2015	2016	2017	2018	INDICATORS	2019	2020	2021	2022	2023	2024
59.1	62.0	65.6	67.7	70.2	73.1	Gross metro product (C12$ bil)	74.1	76.2	78.6	81.9	84.7	87.5
1.9	*4.9*	*5.9*	*3.1*	*3.8*	*4.1*	*% change*	*1.3*	*2.9*	*3.1*	*4.2*	*3.4*	*3.3*
540.3	560.1	580.3	600.4	617.0	632.7	Total employment (ths)	645.6	657.7	661.7	671.4	679.8	687.7
2.9	*3.7*	*3.6*	*3.5*	*2.8*	*2.6*	*% change*	*2.0*	*1.9*	*0.6*	*1.5*	*1.3*	*1.2*
6.2	5.1	4.8	4.4	3.9	3.4	Unemployment rate (%)	3.5	3.3	3.6	3.7	3.7	3.7
1.2	7.6	7.7	4.3	5.3	7.8	Personal income growth (%)	7.1	5.1	4.2	5.7	5.1	4.8
61.4	63.3	66.6	70.0	72.6	73.9	Median household income ($ ths)	75.4	77.5	79.0	81.2	83.4	85.5
1,213.3	1,241.2	1,271.2	1,303.8	1,334.3	1,362.5	Population (ths)	1,394.1	1,427.2	1,458.4	1,488.5	1,518.0	1,547.9
2.2	*2.3*	*2.4*	*2.6*	*2.3*	*2.1*	*% change*	*2.3*	*2.4*	*2.2*	*2.1*	*2.0*	*2.0*
17.0	18.7	21.4	24.0	22.5	20.5	Net migration (ths)	23.7	25.2	23.4	22.2	21.8	22.4
8,034	7,680	8,694	9,442	10,752	11,160	Single-family permits (#)	11,651	11,964	14,745	18,648	19,211	18,821
3,397	3,967	3,293	4,072	3,428	4,790	Multifamily permits (#)	3,381	5,518	6,611	6,972	6,970	6,929
156.0	163.2	171.2	182.1	196.2	209.4	FHFA house price (1995Q1=100)	221.6	225.9	228.5	230.9	234.7	239.9

ECONOMIC HEALTH CHECK

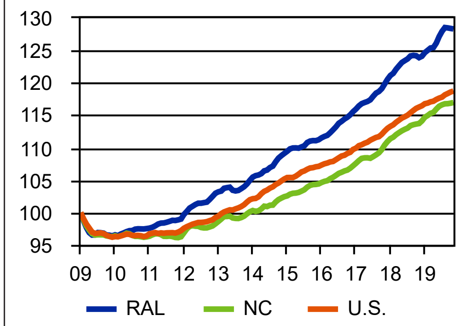
3-MO MA	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19
Employment, change, ths	2.1	2.0	1.7	1.4	1.8	1.9
Unemployment rate, %	3.6	3.7	3.7	3.6	3.6	3.5
Labor force participation rate, %	67.4	67.6	67.8	68.0	68.1	ND
Average weekly hours, #	33.8	33.8	33.9	33.9	34.0	33.8
Industrial production, 2012=100	113.0	113.2	113.6	114.1	114.2	114.3
Residential permits, single-family, #	12,246	12,800	12,020	12,138	11,482	11,540
Residential permits, multifamily, #	5,571	5,518	4,703	3,441	2,558	2,934
Dec/Dec	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Employment, change, ths	19.0	21.2	19.6	17.9	17.4	5.2

Better than prior 3-mo MA | Unchanged from prior 3-mo MA | Worse than prior 3-mo MA

Sources: BLS, Census Bureau, Moody's Analytics

BUSINESS CYCLE INDEX

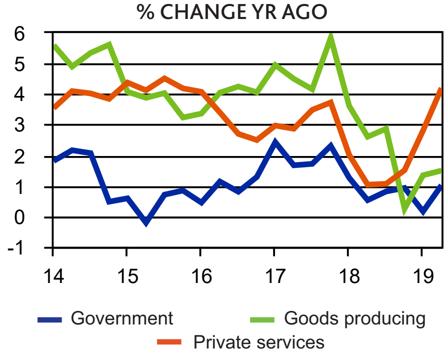
JAN 2009=100



Source: Moody's Analytics

CURRENT EMPLOYMENT TRENDS

% CHANGE YR AGO



Sources: BLS, Moody's Analytics

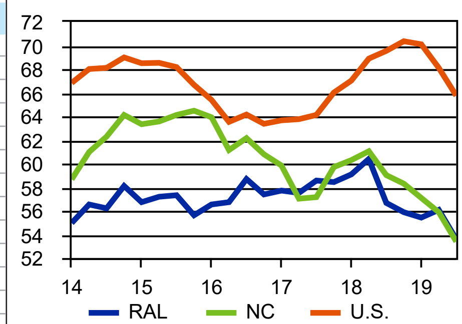
% CHANGE YR AGO, 3-MO MA

	Nov 18	May 19	Nov 19
Total	1.3	1.2	3.5
Mining	-2.0	-2.9	1.5
Construction	3.5	1.7	3.3
Manufacturing	2.0	0.3	0.9
Trade	-0.6	1.5	3.1
Trans/Utilities	5.1	2.7	2.1
Information	2.0	1.1	3.3
Financial Activities	3.2	1.6	1.8
Prof & Business Svcs.	2.1	1.2	5.6
Edu & Health Svcs.	1.6	1.1	5.2
Leisure & Hospitality	0.2	1.4	4.6
Other Services	1.6	1.0	2.1
Government	0.4	0.9	1.4

Sources: BLS, Moody's Analytics

DIFFUSION INDEX

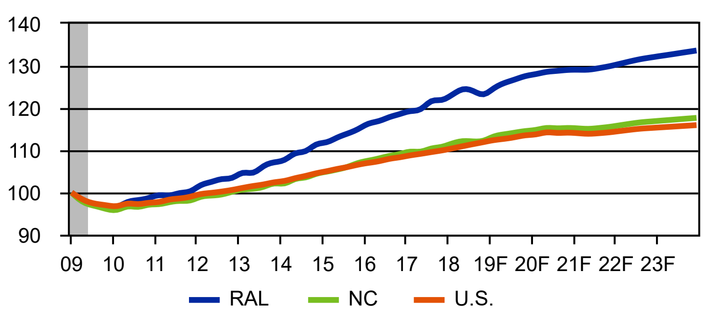
3-DIGIT NAICS LEVEL, 6-MO MA



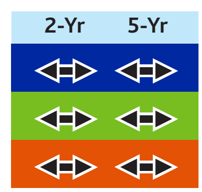
Sources: BLS, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE

JAN 2009=100



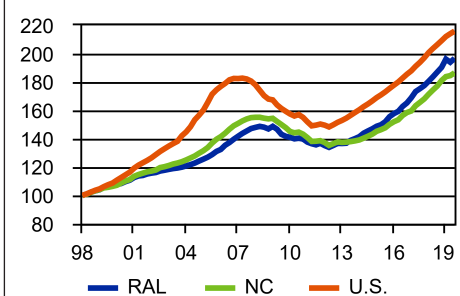
FORECAST VS. 6 MO PRIOR



Sources: BLS, Moody's Analytics

HOUSE PRICE

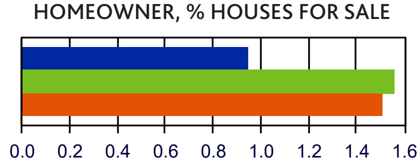
1998Q1=100, NSA



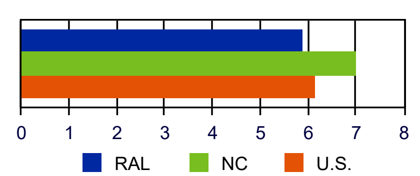
Sources: FHFA, Moody's Analytics

VACANCY RATES

HOMEOWNER, % HOUSES FOR SALE



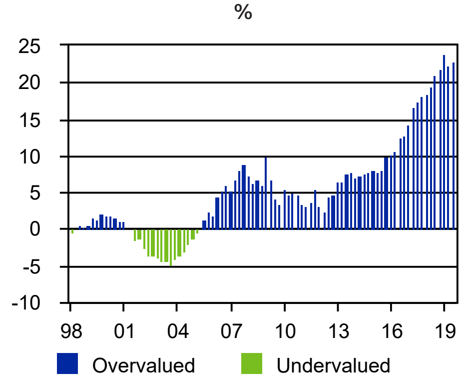
RENTAL, % INVENTORY FOR RENT



Sources: Census Bureau, ACS, Moody's Analytics, 2018

HOUSE PRICE TRENDS

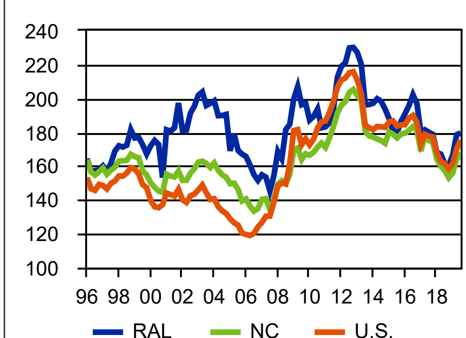
%



Sources: FHFA, Moody's Analytics

HOUSING AFFORDABILITY

GREATER THAN 100=MORE AFFORDABLE



Sources: NAR, Moody's Analytics

EMPLOYMENT AND INDUSTRY

TOP EMPLOYERS

IBM Corp.	10,000
WakeMed Health & Hospitals	9,105
North Carolina State University	9,069
Rex Healthcare	7,400
SAS Institute Inc.	5,632
Cisco Systems	5,000
Fidelity Investments	3,700
GSK Group	3,000
Duke Energy	2,800
Wells Fargo	2,658
IQVIA	2,600
Lowe's Cos. Inc.	2,600
Spectraforce Technologies Inc.	2,600
Wake Technical Community College	2,547
Lenovo	2,500
Progress Energy	2,500
First Citizens Bank	2,383
Grifols	2,250
Wal-Mart Stores Inc.	2,250
Target	2,247

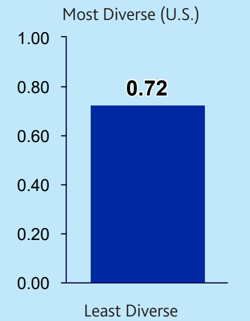
Sources: Triangle Business Journal, Book of Lists, 2017-2018, Triangle Business Journal, Book of Lists, 2018, Wake County Economic Development, 2017

PUBLIC

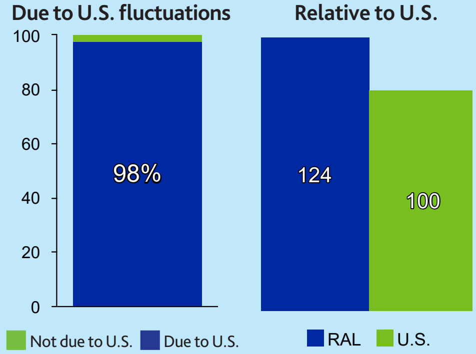
Federal	5,807
State	45,846
Local	46,440

2018

INDUSTRIAL DIVERSITY

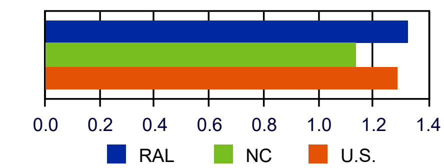


EMPLOYMENT VOLATILITY



ENTREPRENEURSHIP

EMPLOYMENT IN NEW COMPANIES, % OF TOTAL



Sources: Census Bureau, Moody's Analytics, avg 2012-2016

EXPORTS

Product	$ mil
Food and kindred products	ND
Chemicals	1,500.7
Primary metal manufacturing	ND
Fabricated metal products	ND
Machinery, except electrical	262.6
Computer and electronic products	582.9
Transportation equipment	ND
Miscellaneous manufacturing	122.7
Other products	562.6
Total	3,193.2

Destination	$ mil
Africa	47.4
Asia	702.7
European Union	1,104.9
Canada & Mexico	973.0
South America	168.7
Rest of world	196.6
Total	3,193.2
% of GDP	*3.9*
Rank among all metro areas	*214*

Sources: BEA, International Trade Administration, Moody's Analytics, 2018

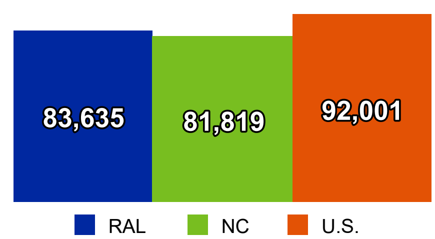
COMPARATIVE EMPLOYMENT AND INCOME

	% OF TOTAL EMPLOYMENT			AVERAGE ANNUAL EARNINGS		
Sector	RAL	NC	U.S.	RAL	NC	U.S.
Mining	0.1	0.1	0.5	$31,856	$38,236	$103,785
Construction	6.2	4.9	4.9	$64,983	$57,428	$68,455
Manufacturing	5.7	10.6	8.5	$107,190	$72,288	$83,365
Durable	*70.3*	*54.4*	*62.6*	*nd*	*$75,685*	*$86,331*
Nondurable	*29.7*	*45.6*	*37.4*	*nd*	*$68,227*	*$78,483*
Transportation/Utilities	2.2	3.4	4.0	nd	$53,477	$60,890
Wholesale Trade	4.1	4.1	3.9	$108,789	$83,862	$88,316
Retail Trade	11.2	11.2	10.6	$32,934	$31,064	$35,245
Information	3.5	1.8	1.9	$101,964	$85,160	$119,417
Financial Activities	5.2	5.3	5.7	$47,007	$52,873	$59,540
Prof. and Bus. Services	18.8	14.1	14.1	nd	$60,929	$71,767
Educ. and Health Services	12.4	13.6	15.9	$56,774	$52,772	$56,400
Leisure and Hosp. Services	11.2	11.2	11.0	$22,277	$25,487	$29,108
Other Services	3.9	3.4	3.9	$40,144	$34,170	$38,639
Government	15.5	16.3	15.1	$66,835	$67,912	$78,273

Sources: Percent of total employment — BLS, Moody's Analytics, 2018, Average annual earnings — BEA, Moody's Analytics, 2017

PRODUCTIVITY

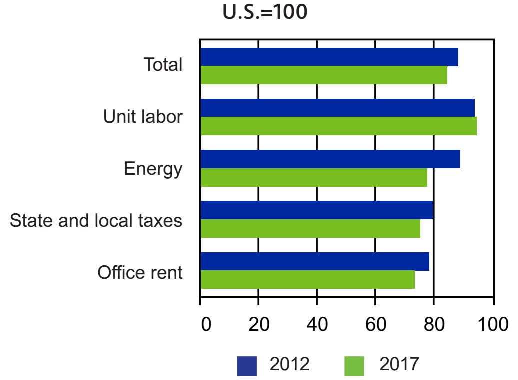
REAL OUTPUT PER WORKER, $



Sources: BEA, Moody's Analytics, 2017

BUSINESS COSTS

U.S.=100



Source: Moody's Analytics

HIGH-TECH EMPLOYMENT

	Ths	% of total
RAL	64.2	10.1
U.S.	7,261.0	4.9

HOUSING-RELATED EMPLOYMENT

	Ths	% of total
RAL	80.4	12.7
U.S.	14,296.2	9.6

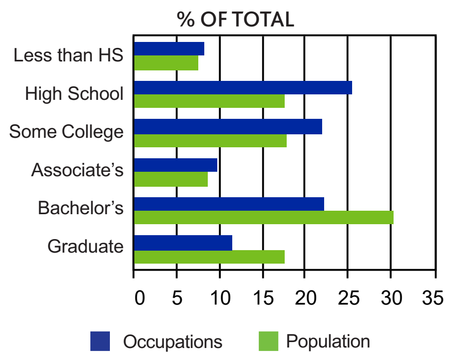
Source: Moody's Analytics, 2018

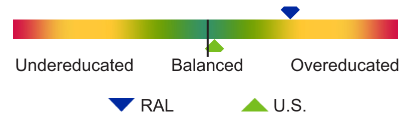
LEADING INDUSTRIES BY WAGE TIER

	NAICS	Industry	Location Quotient	Employees (ths)
HIGH	5415	Computer systems design & related srvcs.	2.0	15.8
	5511	Management of companies & enterprises	1.2	10.5
	5413	Architectural, engineering & rel. srvcs.	1.7	9.7
	6211	Offices of physicians	0.9	9.2
MID	GVS	State Government	2.2	44.8
	GVL	Local Government	0.8	44.5
	5613	Employment services	1.6	23.2
	6221	General medical and surgical hospitals	0.9	16.3
LOW	7225	Restaurants and other eating places	1.2	47.7
	5617	Services to buildings and dwellings	1.6	13.0
	4451	Grocery stores	1.1	12.0
	7139	Other amusement and recreation industries	1.6	8.4

Source: Moody's Analytics, 2018

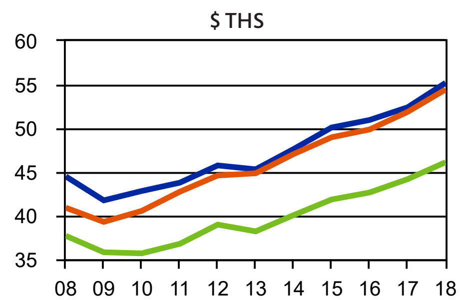
SKILLS MISMATCH





Sources: Census Bureau, ACS, Moody's Analytics, 2018

PER CAPITA INCOME



2018	RAL $55,212	NC $46,117	U.S. $54,446

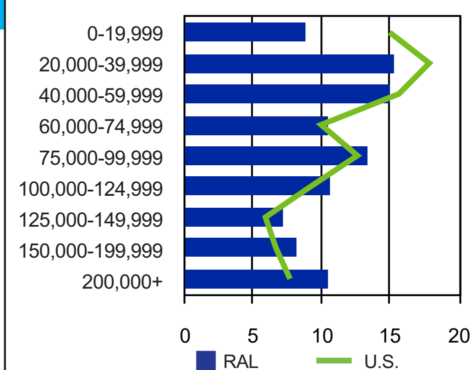
Sources: BEA, Moody's Analytics

ECONOMIC DISENFRANCHISEMENT

Index	2018	Rank*
Gini coefficient	0.45	280
Palma ratio	2.9	270
Poverty rate	8.9%	360

**Most unequal=1; Most equal=403*

HOUSEHOLDS BY INCOME, %



Sources: Census Bureau, ACS, Moody's Analytics, 2018

MIGRATION FLOWS

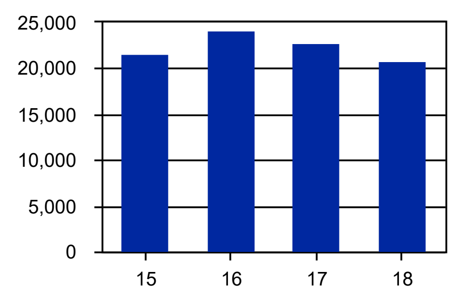
INTO RALEIGH NC

	Number of Migrants
Durham NC	7,360
New York NY	2,750
Charlotte NC	2,218
Washington DC	1,613
Greensboro NC	1,405
Fayetteville NC	1,267
Rocky Mount NC	1,245
Greenville NC	1,005
Wilmington NC	993
Nassau County NY	972
Total in-migration	*69,313*

FROM RALEIGH NC

Durham NC	7,723
Charlotte NC	2,209
Greensboro NC	1,401
Rocky Mount NC	1,060
Wilmington NC	1,006
Washington DC	968
Atlanta GA	960
New York NY	838
Fayetteville NC	824
Goldsboro NC	763
Total out-migration	*53,799*
Net migration	**15,514**

NET MIGRATION,

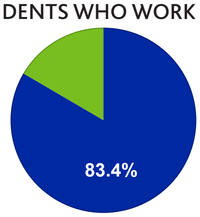


	2015	2016	2017	2018
Domestic	17,283	19,582	17,825	16,401
Foreign	4,029	4,312	4,614	4,077
Total	21,312	23,894	22,440	20,478

Sources: IRS (top), 2018, Census Bureau, Moody's Analytics

COMMUTER FLOWS

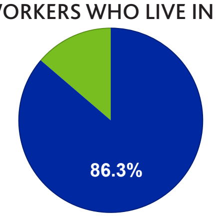
RESIDENTS WHO WORK IN RAL



Top Five Outside Sources of Jobs

Raleigh NC	Share
Durham NC	11.1
Rocky Mount NC	0.4
Goldsboro NC	0.4
Fayetteville NC	0.3
Greensboro NC	0.2

WORKERS WHO LIVE IN RAL



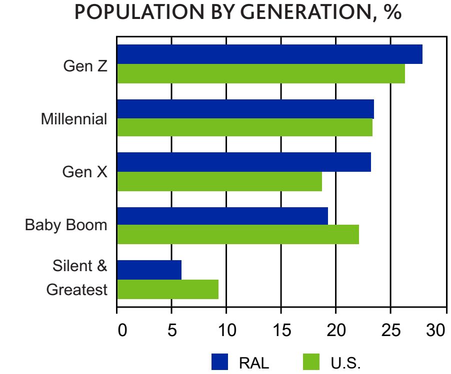
Top Five Outside Sources of Workers

Raleigh NC	Share
Durham NC	5.4
Rocky Mount NC	0.8
Goldsboro NC	0.6
Burlington NC	0.4
Charlotte NC	0.3

Sources: Census Bureau, Moody's Analytics, avg 2009-2013

GENERATIONAL BREAKDOWN

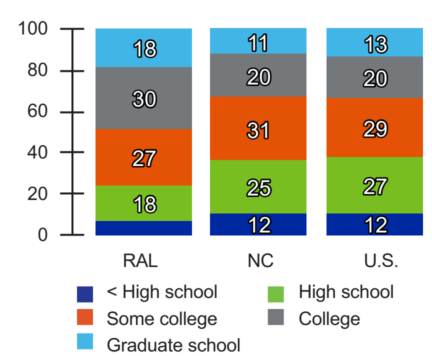
POPULATION BY GENERATION, %



Sources: Census Bureau, Moody's Analytics, 2018

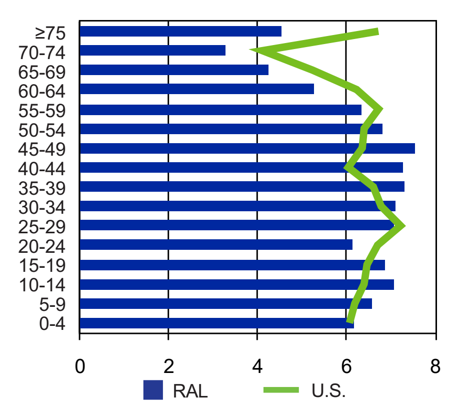
EDUCATIONAL ATTAINMENT

% OF ADULTS 25 AND OLDER



Sources: Census Bureau, ACS, Moody's Analytics, 2018

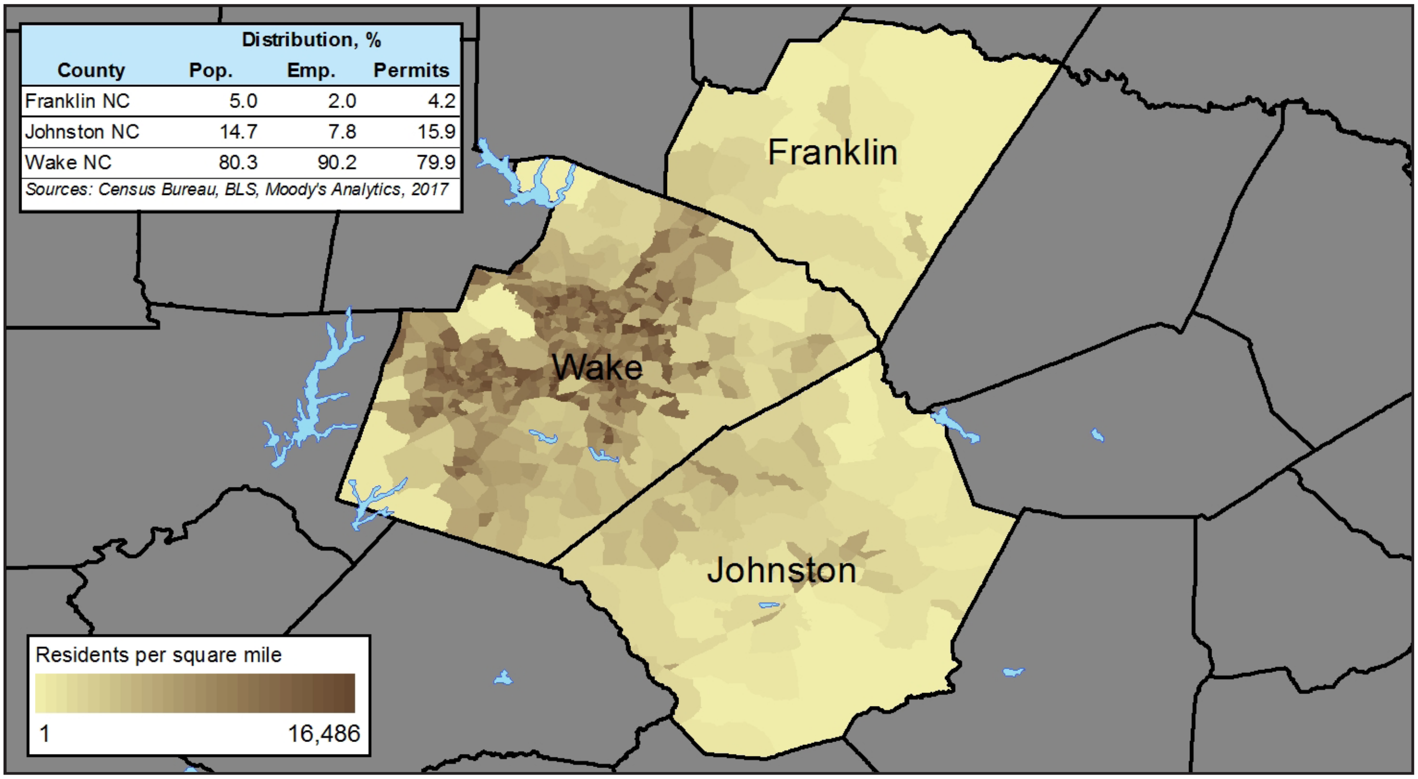
POPULATION BY AGE, %



Sources: Census Bureau, Moody's Analytics, 2018

GEOGRAPHIC PROFILE

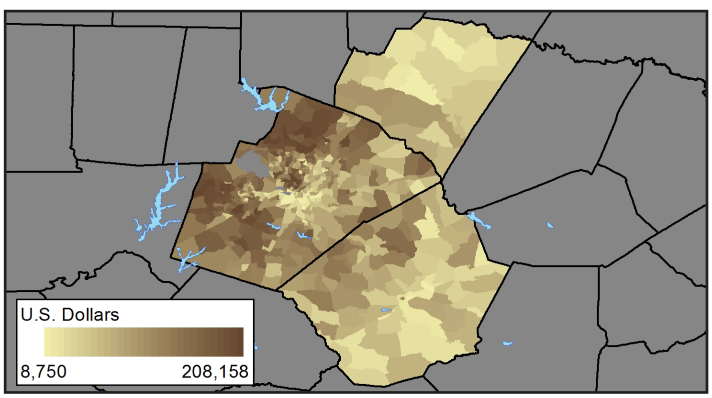
POPULATION DENSITY



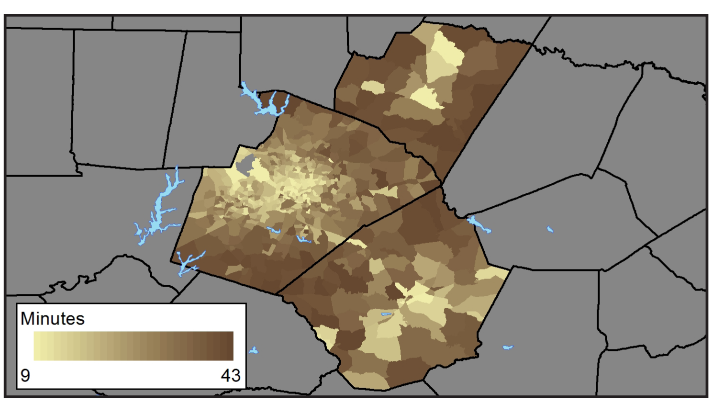
County	Distribution, % Pop.	Emp.	Permits
Franklin NC	5.0	2.0	4.2
Johnston NC	14.7	7.8	15.9
Wake NC	80.3	90.2	79.9

Sources: Census Bureau, BLS, Moody's Analytics, 2017

MEDIAN HOUSEHOLD INCOME



MEDIAN COMMUTE TIME



POPULATION & HOUSING CHARACTERISTICS

	Units	Value	Rank*
Total area	sq mi	2,147.3	161
Total water area	sq mi	29.2	248
Total land area	sq mi	2,118.2	143
Land area - developable	sq mi	2,102.6	50
Land area - undevelopable	sq mi	15.5	336
Population density	pop. to developable land	605.9	98
Total population	ths	1,362.5	52
U.S. citizen at birth	% of population	86.7	301
Naturalized U.S. citizen	% of population	5.2	105
Not a U.S. citizen	% of population	6.5	94
Median age		36.9	273
Total housing units	ths	548.2	55
Owner occupied	% of total	59.9	139
Renter occupied	% of total	32.2	138
Vacant	% of total	7.9	306
1-unit; detached	% of total	61.4	293
1-unit; attached	% of total	9.6	40
Multifamily	% of total	22.8	166
Median year built		1996	

** Areas & pop. density, out of 410 metro areas/divisions, including metros in Puerto Rico; all others, out of 403 metros.*

Sources: Census Bureau, Moody's Analytics, 2018 except land area 2010

Sources: ACS, Moody's Analytics

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