

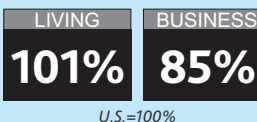
ECONOMIC DRIVERS



EMPLOYMENT GROWTH RANK



RELATIVE COSTS



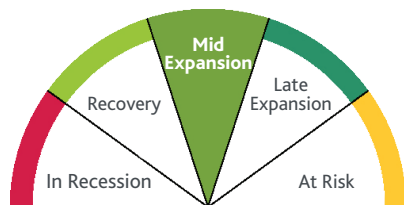
VITALITY



QUALITY



BUSINESS CYCLE STATUS



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
December 2019

1-866-275-3266
help@economy.com

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

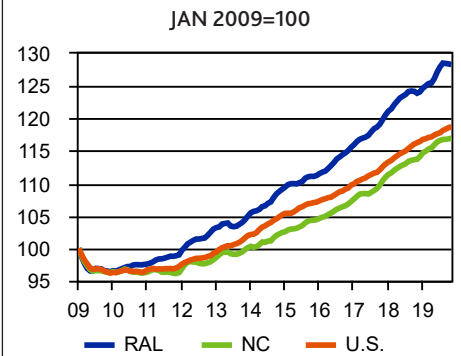
2013	2014	2015	2016	2017	2018	INDICATORS	2019	2020	2021	2022	2023	2024
59.1	62.0	65.6	67.7	70.2	73.1	Gross metro product (C12\$ bil)	74.1	76.2	78.6	81.9	84.7	87.5
1.9	4.9	5.9	3.1	3.8	4.1	% change	1.3	2.9	3.1	4.2	3.4	3.3
540.3	560.1	580.3	600.4	617.0	632.7	Total employment (ths)	645.6	657.7	661.7	671.4	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
<div> <div>Better than prior 3-mo MA</div> <div>Unchanged from prior 3-mo MA</div> <div>Worse than prior 3-mo MA</div> </div>						

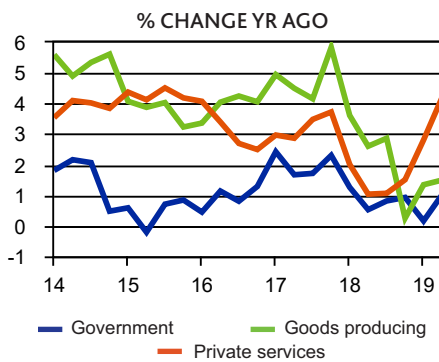
Sources: BLS, Census Bureau, Moody's Analytics

BUSINESS CYCLE INDEX



Source: Moody's Analytics

CURRENT EMPLOYMENT TRENDS



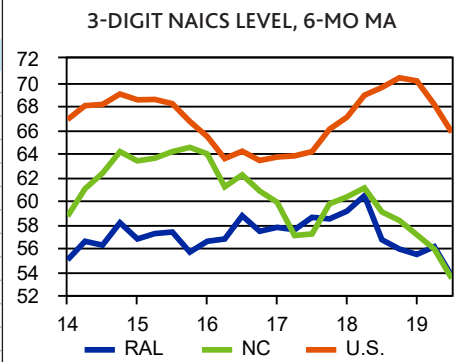
Sources: BLS, Moody's Analytics

% 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

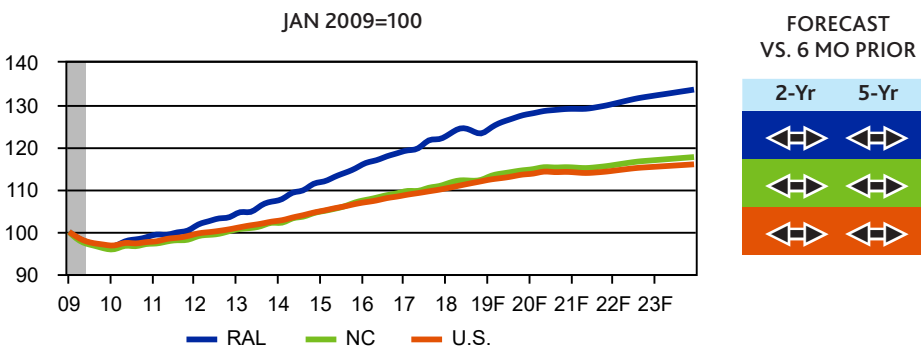
Sources: BLS, Moody's Analytics

DIFFUSION INDEX



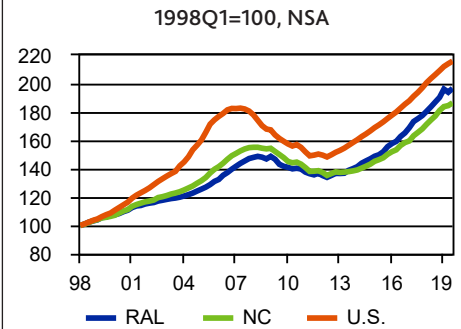
Sources: BLS, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE



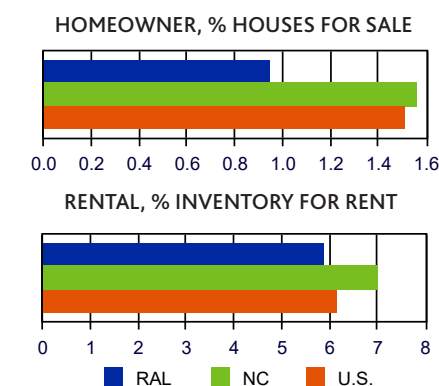
Sources: BLS, Moody's Analytics

HOUSE PRICE



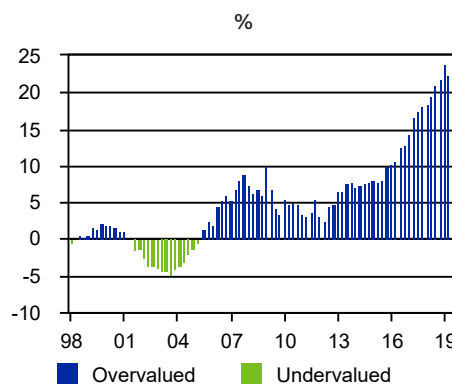
Sources: FHFA, Moody's Analytics

VACANCY RATES



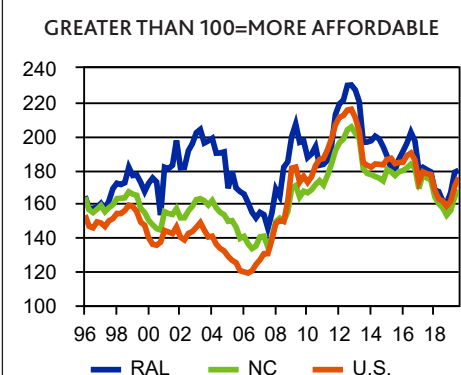
Sources: Census Bureau, ACS, Moody's Analytics, 2018

HOUSE PRICE TRENDS



Sources: FHFA, Moody's Analytics

HOUSING AFFORDABILITY



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

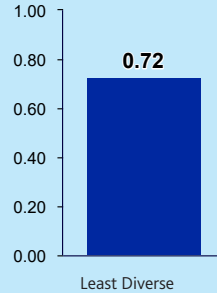
PUBLIC

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

2018

INDUSTRIAL DIVERSITY

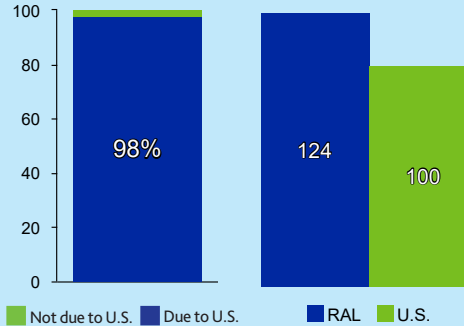
Most Diverse (U.S.)



Least Diverse

EMPLOYMENT VOLATILITY

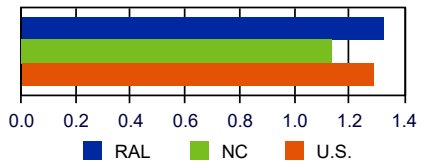
Due to U.S. fluctuations Relative to U.S.



Not due to U.S. Due to U.S. RAL U.S.

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

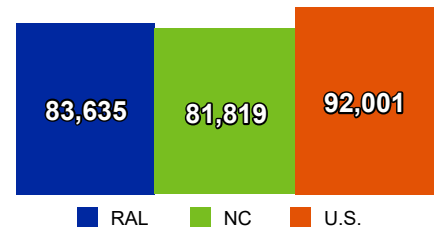
Destination	\$ mil
Africa	47.4
Asia	702.7
European Union	1,104.9
Canada & Mexico	973.0
South America	168.7
Rest of world	196.6
Total	3,193.2

% of GDP	3.9
Rank among all metro areas	214

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

PRODUCTIVITY

REAL OUTPUT PER WORKER, \$



Sources: BEA, Moody's Analytics, 2017

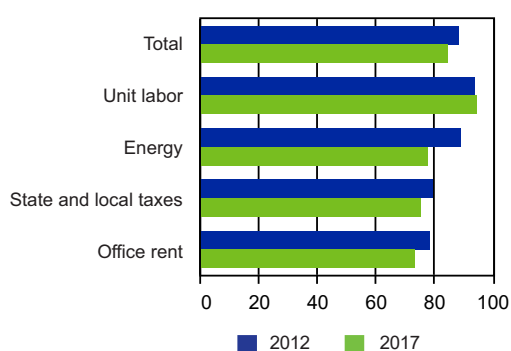
COMPARATIVE EMPLOYMENT AND INCOME

Sector	% OF TOTAL EMPLOYMENT			AVERAGE ANNUAL EARNINGS		
	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

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

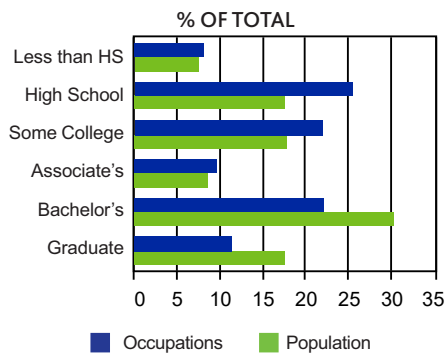
Source: Moody's Analytics, 2018

LEADING INDUSTRIES BY WAGE TIER

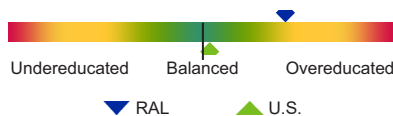
NAICS Industry	Location Quotient	Employees (ths)
5415 Computer systems design & related srvc.	2.0	15.8
5511 Management of companies & enterprises	1.2	10.5
5413 Architectural, engineering & rel. srvc.	1.7	9.7
6211 Offices of physicians	0.9	9.2
GVS State Government	2.2	44.8
GVL Local Government	0.8	44.5
5613 Employment services	1.6	23.2
6221 General medical and surgical hospitals	0.9	16.3
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

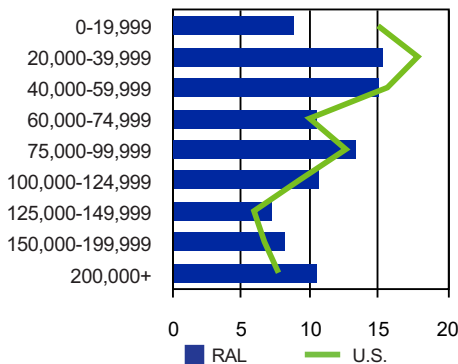


ECONOMIC DISENFRANCHISEMENT

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

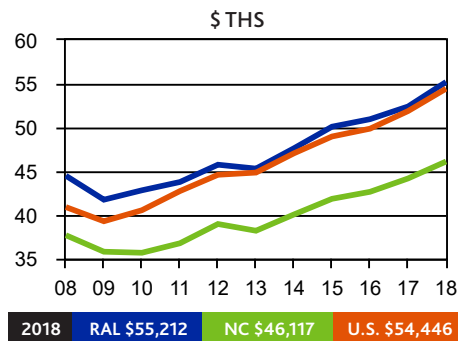
*Most unequal=1; Most equal=403

HOUSEHOLDS BY INCOME, %



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

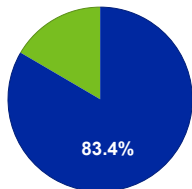
PER CAPITA INCOME



Sources: BEA, Moody's Analytics

COMMUTER FLOWS

RESIDENTS WHO WORK IN RAL

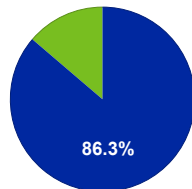


Top Five Outside Sources of Jobs

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

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

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

MIGRATION FLOWS

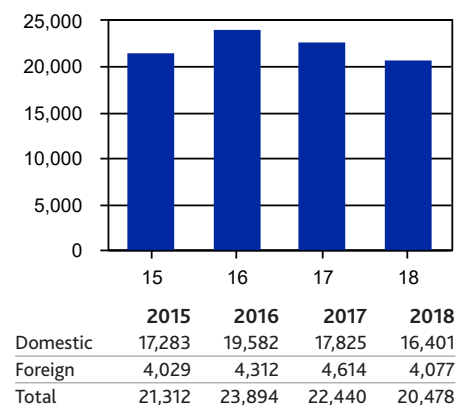
INTO RALEIGH NC

	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

	Number of Migrants
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

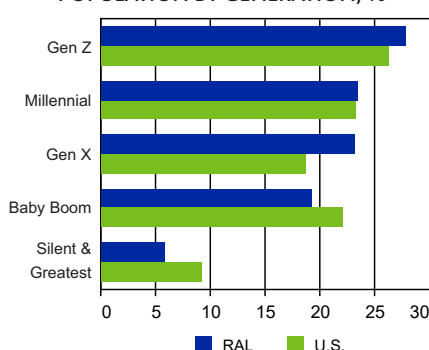
NET MIGRATION,



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

GENERATIONAL BREAKDOWN

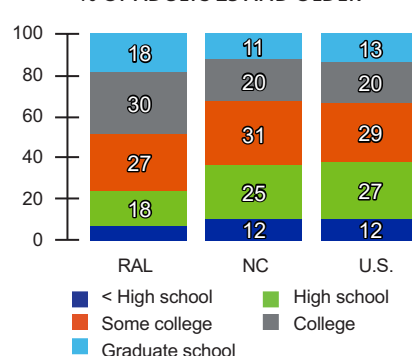
POPULATION BY GENERATION, %



Sources: Census Bureau, Moody's Analytics, 2018

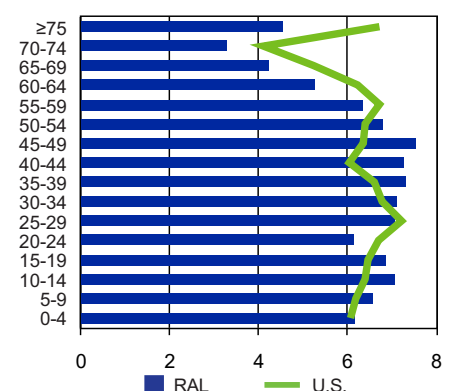
EDUCATIONAL ATTAINMENT

% OF ADULTS 25 AND OLDER



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

POPULATION BY AGE, %



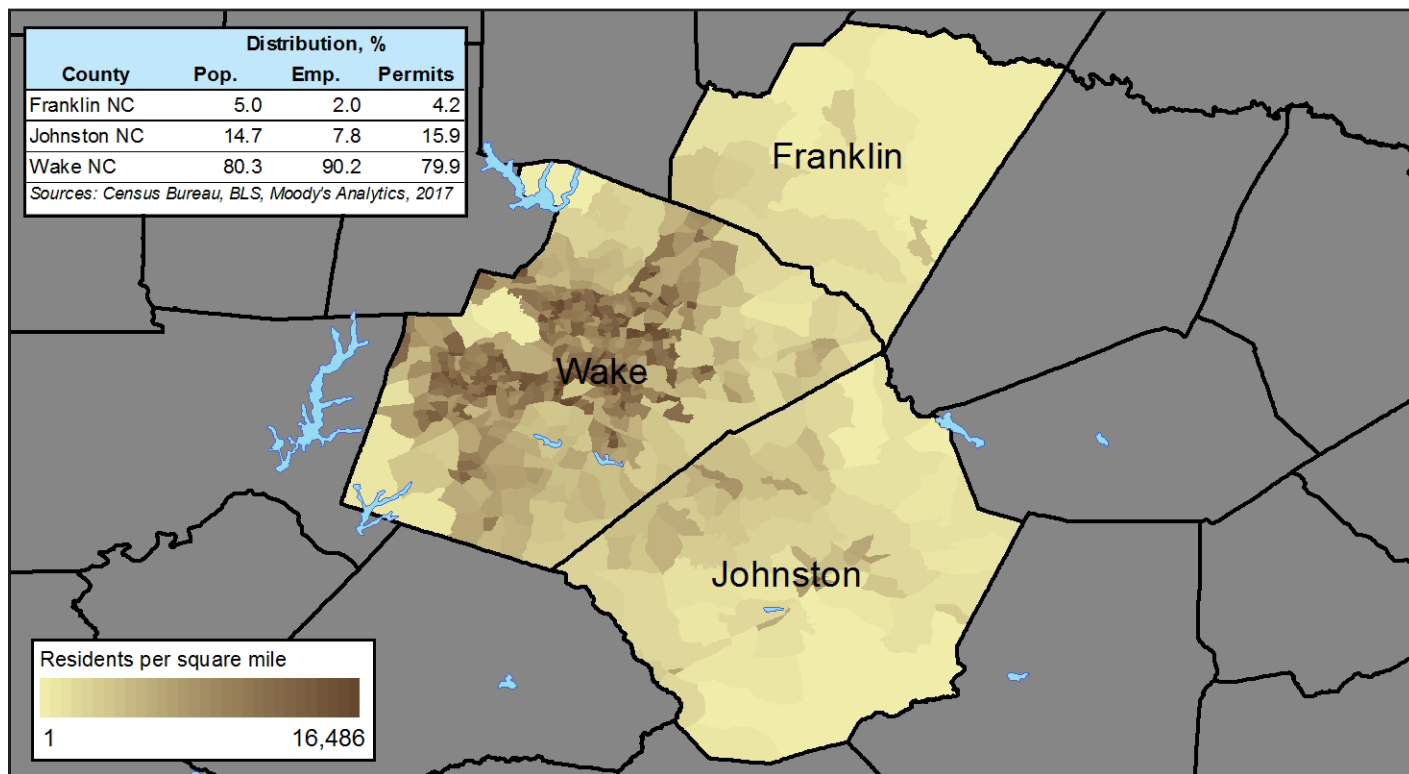
Sources: Census Bureau, Moody's Analytics, 2018

GEOGRAPHIC PROFILE

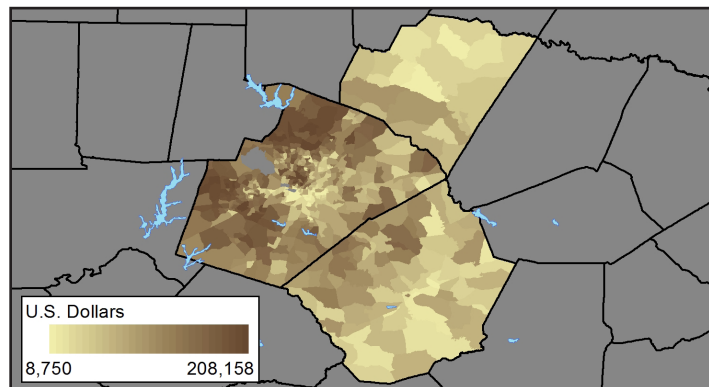
POPULATION DENSITY	
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000
11	1100
12	1200
13	1300
14	1400
15	1500
16	1600
17	1700
18	1800
19	1900
20	2000
21	2100
22	2200
23	2300
24	2400
25	2500
26	2600
27	2700
28	2800
29	2900
30	3000
31	3100
32	3200
33	3300
34	3400
35	3500
36	3600
37	3700
38	3800
39	3900
40	4000
41	4100
42	4200
43	4300
44	4400
45	4500
46	4600
47	4700
48	4800
49	4900
50	5000
51	5100
52	5200
53	5300
54	5400
55	5500
56	5600
57	5700
58	5800
59	5900
60	6000
61	6100
62	6200
63	6300
64	6400
65	6500
66	6600
67	6700
68	6800
69	6900
70	7000
71	7100
72	7200
73	7300
74	7400
75	7500
76	7600
77	7700
78	7800
79	7900
80	8000
81	8100
82	8200
83	8300
84	8400
85	8500
86	8600
87	8700
88	8800
89	8900
90	9000
91	9100
92	9200
93	9300
94	9400
95	9500
96	9600
97	9700
98	9800
99	9900
100	10000

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

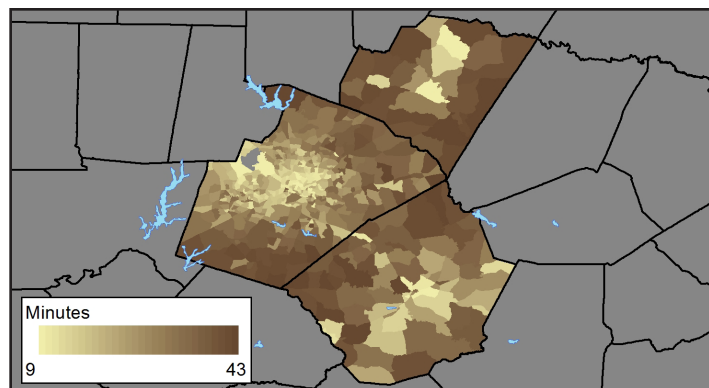
Sources: Census Bureau, BLS, Moody's Analytics, 2017



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

About Moody's Analytics

Moody's Analytics provides financial intelligence and analytical tools supporting our clients' growth, efficiency and risk management objectives. The combination of our unparalleled expertise in risk, expansive information resources, and innovative application of technology helps today's business leaders confidently navigate an evolving marketplace. We are recognized for our industry-leading solutions, comprising research, data, software and professional services, assembled to deliver a seamless customer experience. Thousands of organizations worldwide have made us their trusted partner because of our uncompromising commitment to quality, client service, and integrity.

Concise and timely economic research by Moody's Analytics supports firms and policymakers in strategic planning, product and sales forecasting, credit risk and sensitivity management, and investment research. Our economic research publications provide in-depth analysis of the global economy, including the U.S. and all of its state and metropolitan areas, all European countries and their subnational areas, Asia, and the Americas. We track and forecast economic growth and cover specialized topics such as labor markets, housing, consumer spending and credit, output and income, mortgage activity, demographics, central bank behavior, and prices. We also provide real-time monitoring of macroeconomic indicators and analysis on timely topics such as monetary policy and sovereign risk. Our clients include multinational corporations, governments at all levels, central banks, financial regulators, retailers, mutual funds, financial institutions, utilities, residential and commercial real estate firms, insurance companies, and professional investors.

Moody's Analytics added the economic forecasting firm Economy.com to its portfolio in 2005. This unit is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at www.economy.com.

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). Further information is available at www.moodyanalytics.com.

DISCLAIMER: Moody's Analytics, a unit of Moody's Corporation, provides economic analysis, credit risk data and insight, as well as risk management solutions. Research authored by Moody's Analytics does not reflect the opinions of Moody's Investors Service, the credit rating agency. To avoid confusion, please use the full company name "Moody's Analytics", when citing views from Moody's Analytics.

About Moody's Corporation

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). MCO reported revenue of \$4.4 billion in 2018, employs approximately 13,100 people worldwide and maintains a presence in 42 countries. Further information about Moody's Analytics is available at www.moodyanalytics.com.

© 2019 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.