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Office Industry Overview

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Today's Agenda

- Macroeconomic Outlook
- National Office Fundamentals
- Investment Themes Coming Forward

The Yardi Matrix View- Office Investment Strategy

- **US macroeconomic conditions** are solid, with job growth of ~175-200K per month
  - February was a blow out @313,000- partially driven by Puerto Rican exodus
  - Wages are rising and labor market is tight- people are being pulled off the sidelines
  - Conditions sufficient to maintain good office using employment growth, occupancy and slow rental growth
  - Supply cresting in 2018 is a localized issue, but relevant in CBDs
  - Upward trends in inflation and interest rates- a yellow, but not red flag

- **Investment Strategy is bifurcated-** Capital preservation (Int'l Gateway CBDs) and Capital appreciation (suburban revitalization, primary and secondary cities). Drift down to the smaller "Amazon 20" also evident

Source: Yardi®Matrix

Office Investment Strategy - Continued

- **Three themes predominate**- given that wealth is created via intellectual capital in concentrated locations…real estate follows

  1) Employment growth location is driven by overflow out of US Int'l Gateway Cities (NYC, Boston, Wash DC, SF, LA, Chicago)…Seattle emerging as a Gateway

  2) Employment growth moving out of CBDs/urban core into "urbanized suburbs"- intellectual capital nodes across markets…Exceptions- tertiary market CBDs and "placemaking" capital intensive heavy lifts in the suburbs- lower costs and demographic driven movement out of space & school constrained cities

  3) Secular changes in density/worker, coworking, and on-demand space are dampening influences on space demand

Source: Yardi®Matrix

Macroeconomic Outlook

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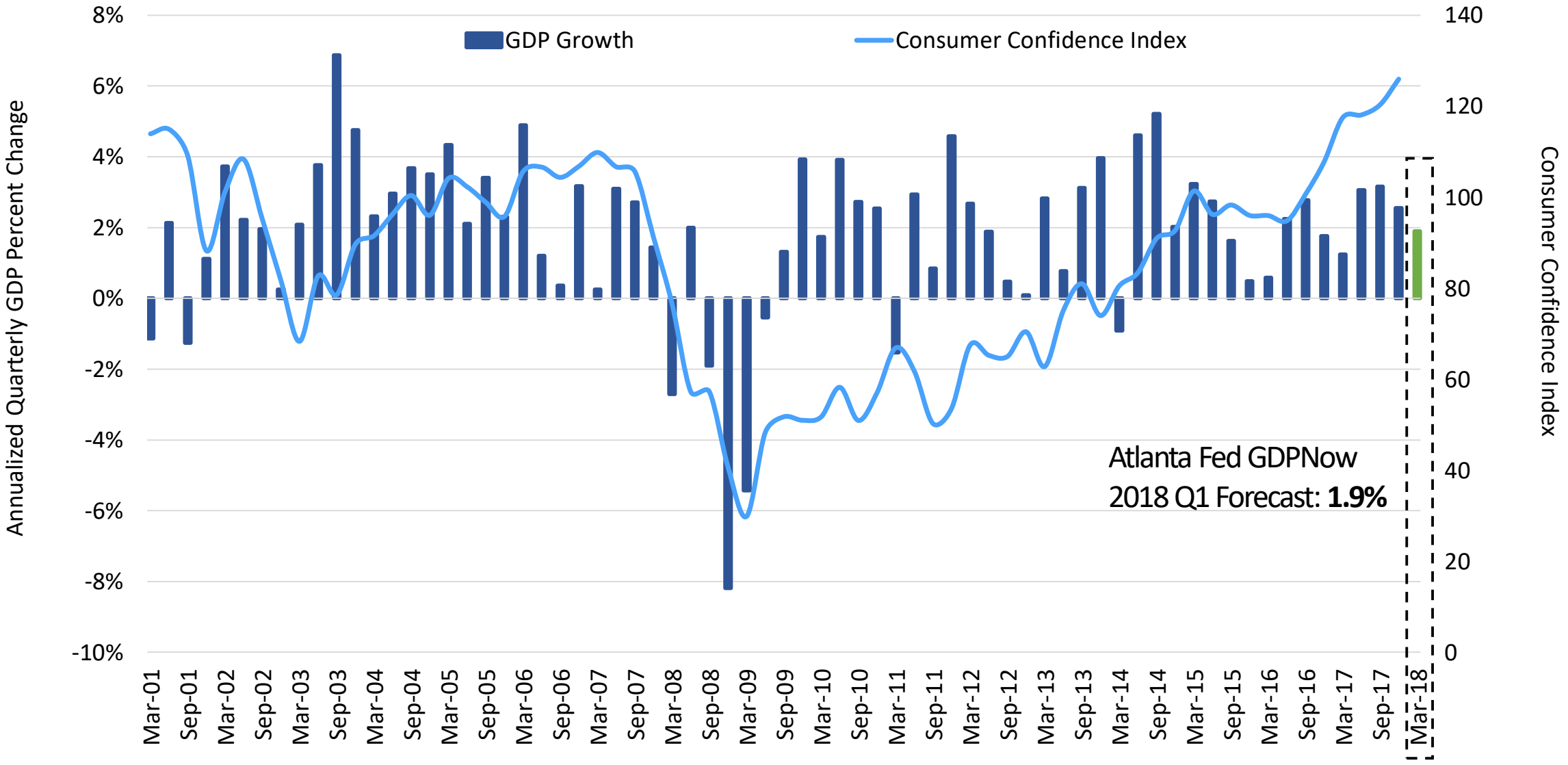
U.S. Economic Growth is Pretty Good



Source: Moody's Analytics; Bureau of Labor Statistics (BLS); S&P Dow Jones Indices LLC; CoreLogic, Inc; Federal Housing Agency (FHFA); Freddie Mac; Fannie Mae; U.S. Bureau of Economic Analysis (BEA); U.S. Board of Governors of the Federal Reserve System (FRB); Investing.com; Federal Reserve Bank of Atlanta

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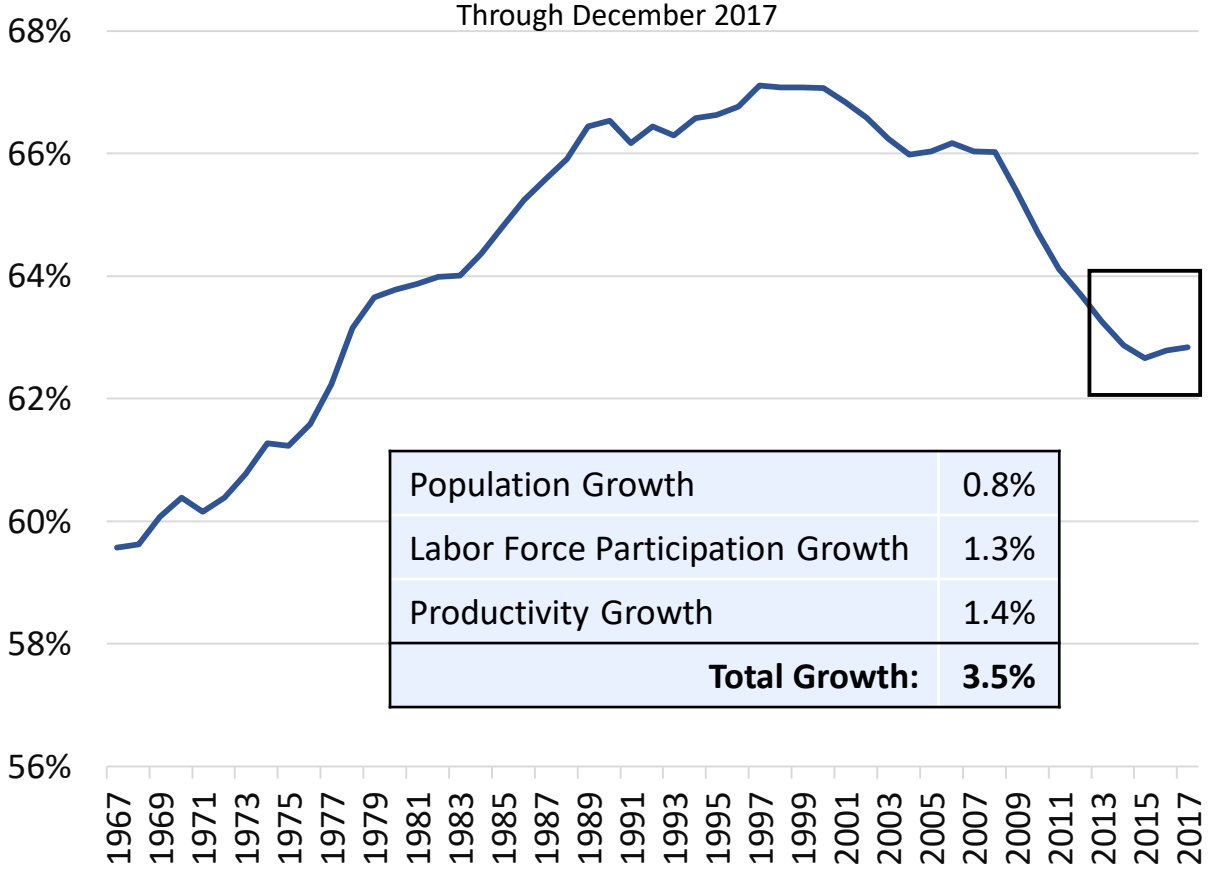
Factors Driving GDP Show Signs of Growth

Where will U.S. GDP growth come from?

Labor Force Participation Rate

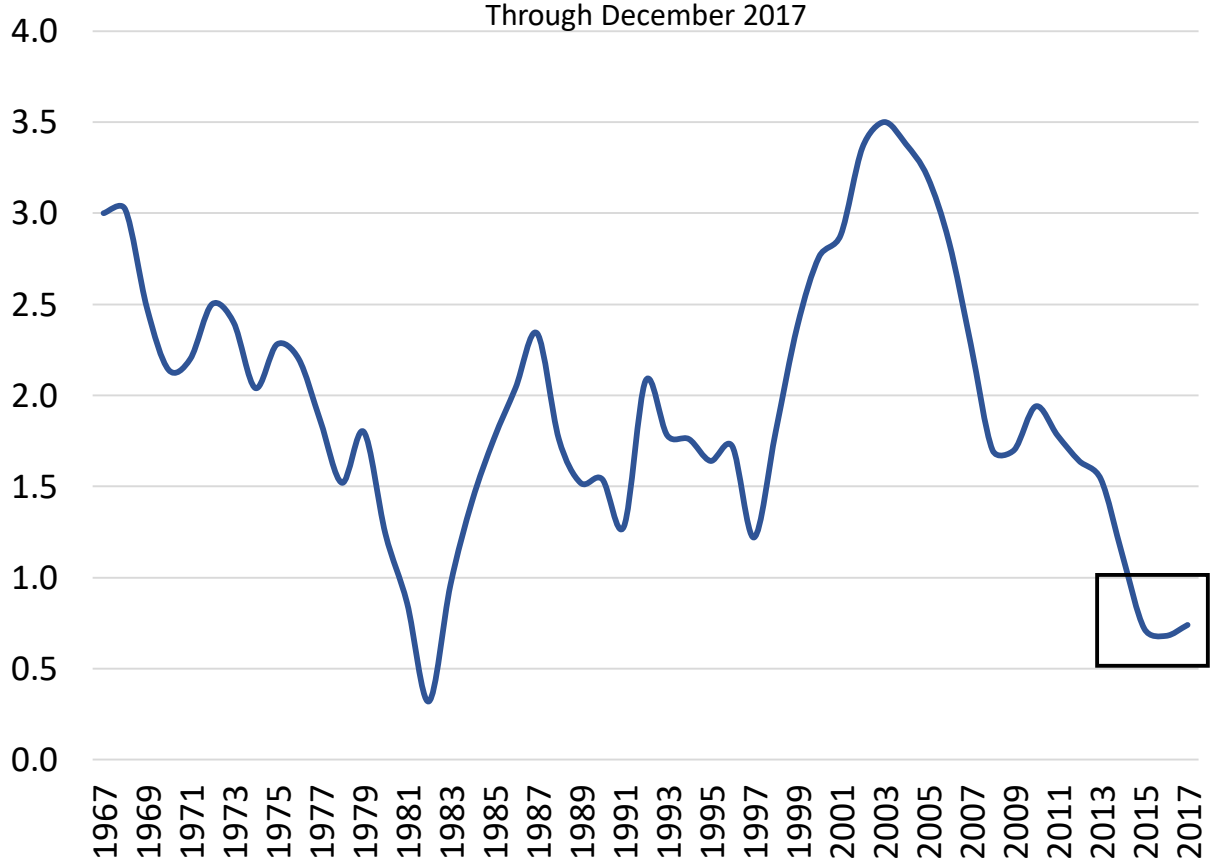
Through December 2017



Population Growth	0.8%
Labor Force Participation Growth	1.3%
Productivity Growth	1.4%
Total Growth:	**3.5%**

Labor Productivity Annual Change
Nonfarm Business Sector

Through December 2017



Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

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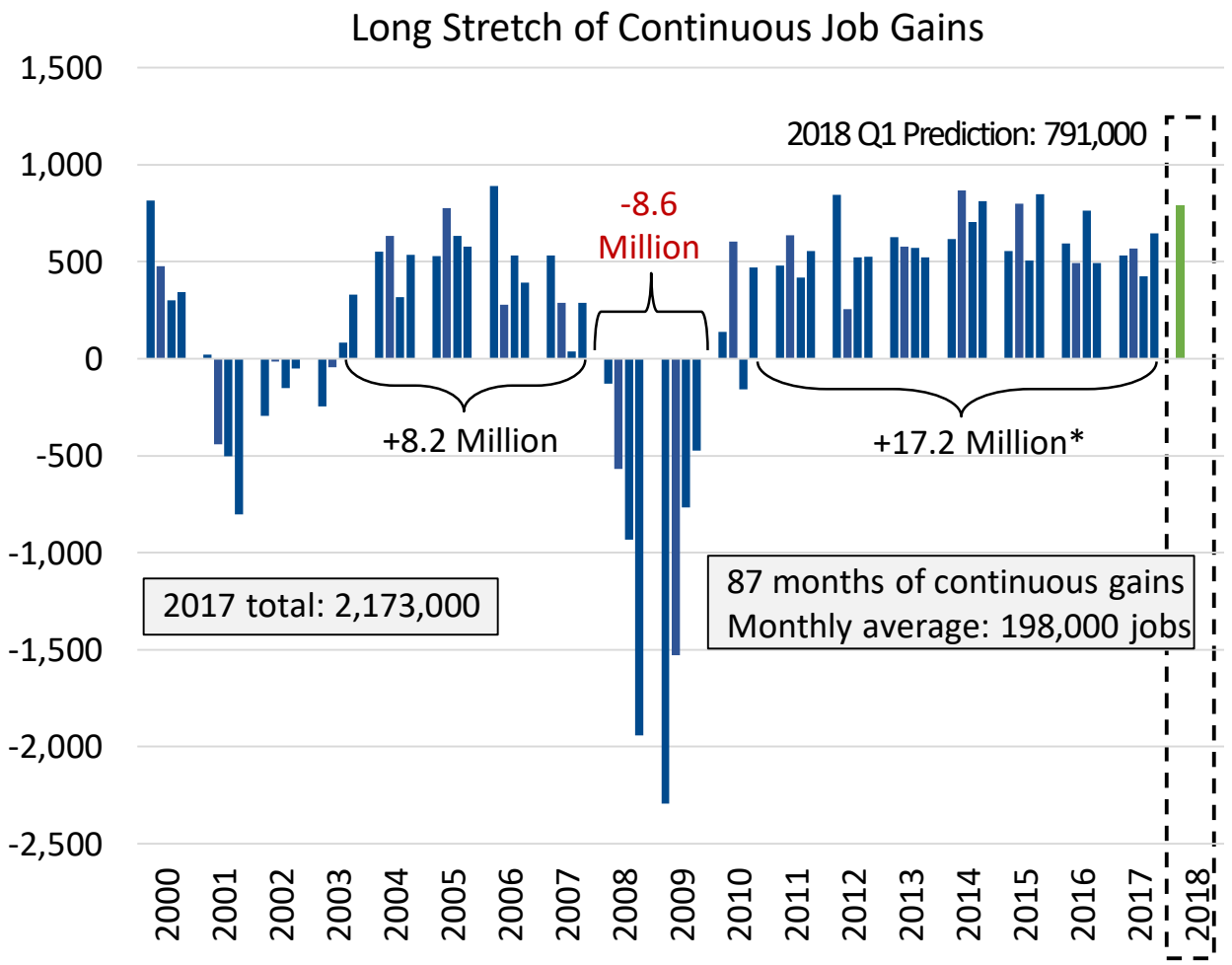
The Labor Market is Tight

The issue now is it's difficult to find labor at the right ***price***, with the right ***skills***, in the right ***city***



*Through December 2017

Source: Moody's Analytics; Bureau of Labor Statistics (BLS); The Conference Board

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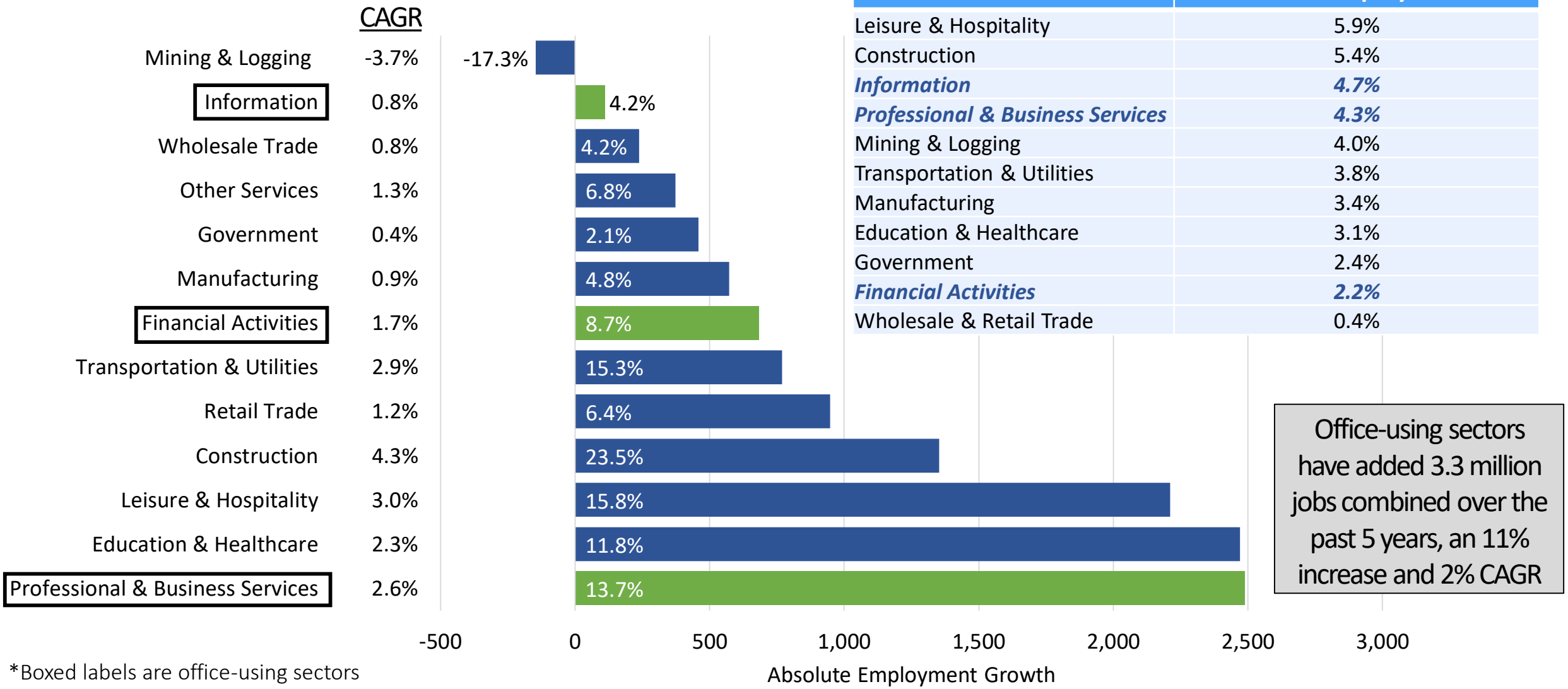
Employment Growth by Sector, 2013-2018



Sector	Jan 2018 Unemployment Rate
Leisure & Hospitality	5.9%
Construction	5.4%
Information	***4.7%***
Professional & Business Services	***4.3%***
Mining & Logging	4.0%
Transportation & Utilities	3.8%
Manufacturing	3.4%
Education & Healthcare	3.1%
Government	2.4%
Financial Activities	***2.2%***
Wholesale & Retail Trade	0.4%

Office-using sectors have added 3.3 million jobs combined over the past 5 years, an 11% increase and 2% CAGR

*Boxed labels are office-using sectors

Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

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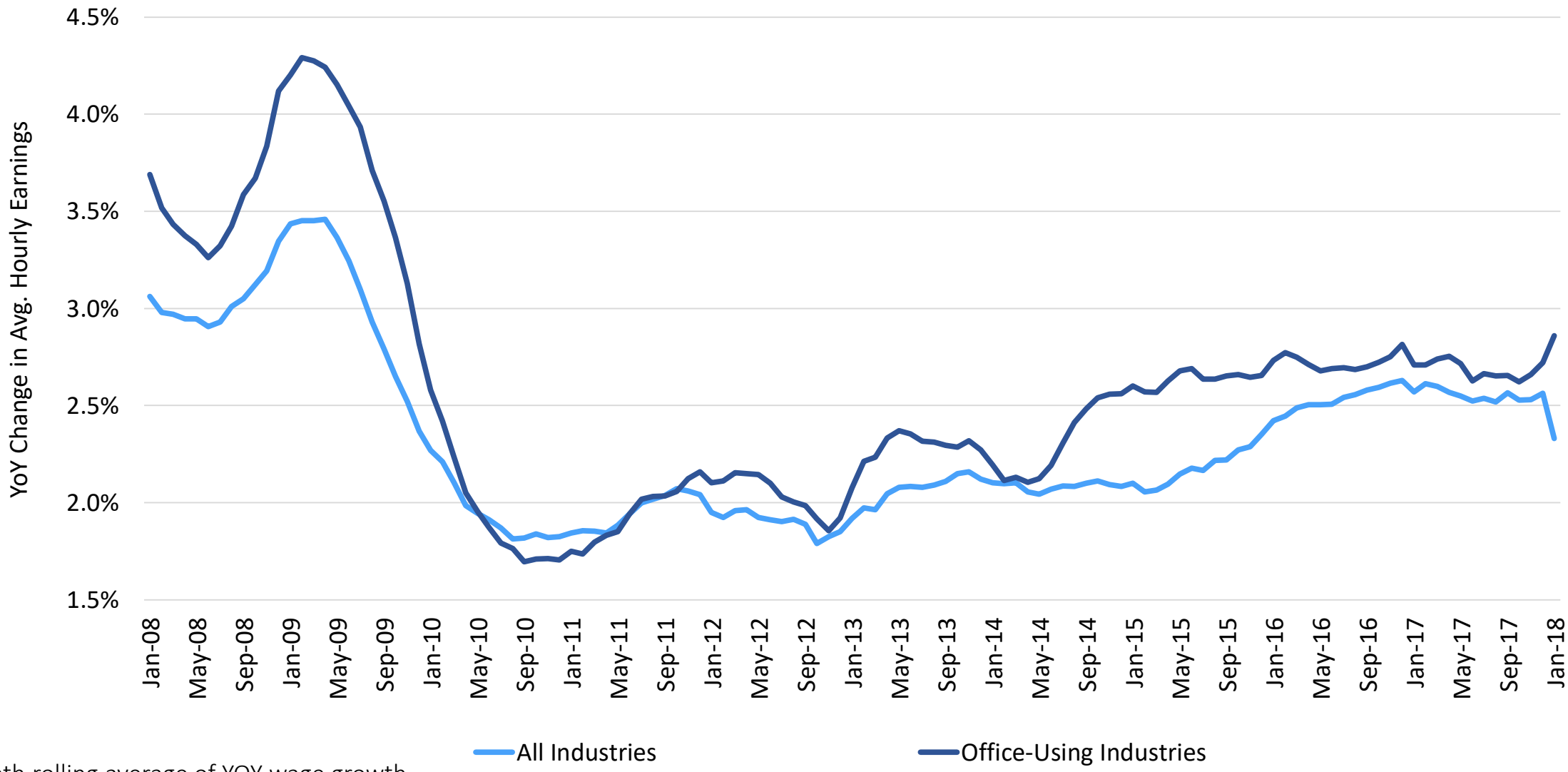
Slightly Higher Wage Growth for Office-Using Industries



*6-month rolling average of YOY wage growth

Source: Moody's Analytics; Bureau of Labor Statistics (BLS); Current Population Survey (CPS)

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U.S. Federal Policy Mix is Mildly Pro-Growth

Pro-Growth

- Tax Reform
- Regulatory Relief
- Executive Orders
  - Energy
  - Finance
  - Labor Costs

Generally Positive Progress

Pro-Growth but Slow

- Infrastructure
- Education Reform
  - German Model
- Healthcare Reform

Progress in Tone, but Not Yet Substantive

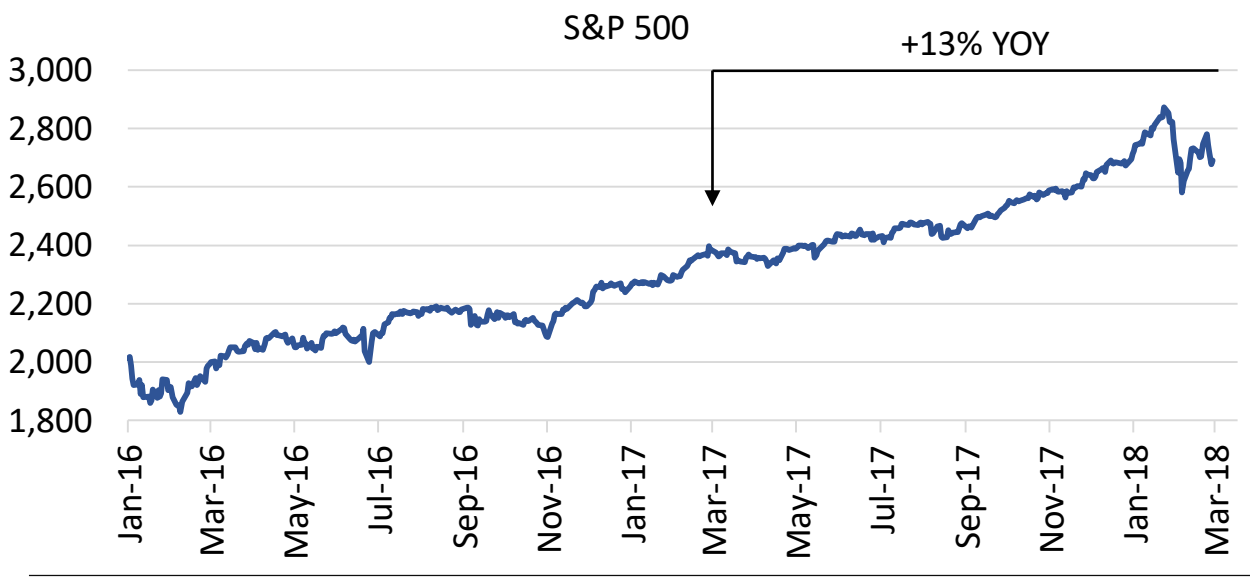
Anti-Growth

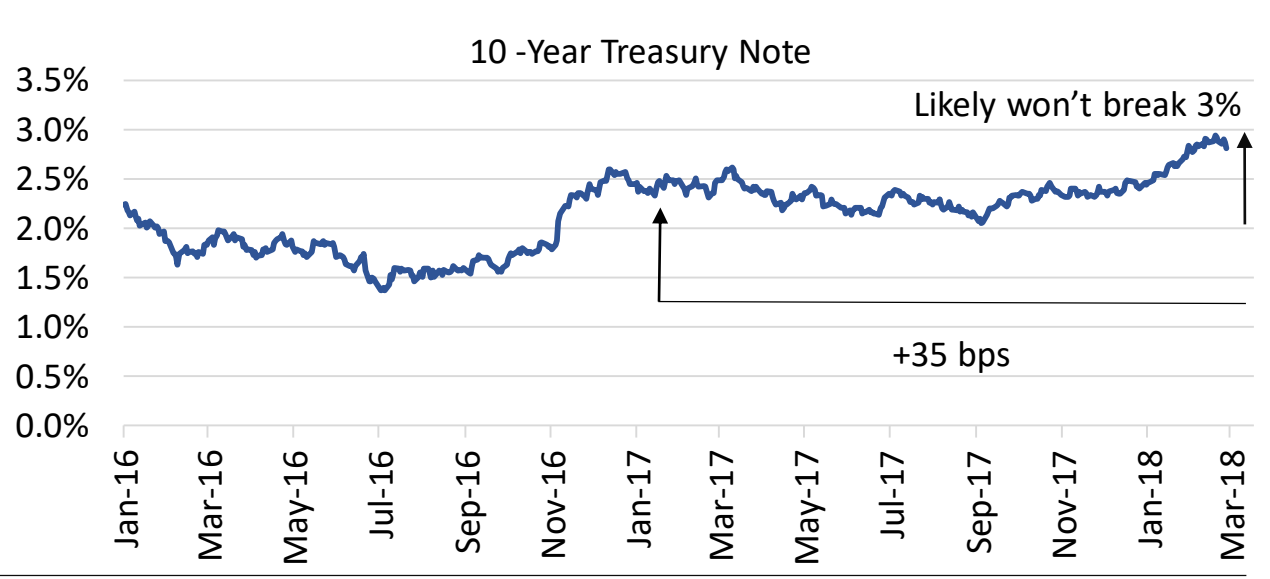
- Immigration Control
- Trade Renegotiation
  - President Trump announced U.S. will impose tariffs on steel and aluminum imports

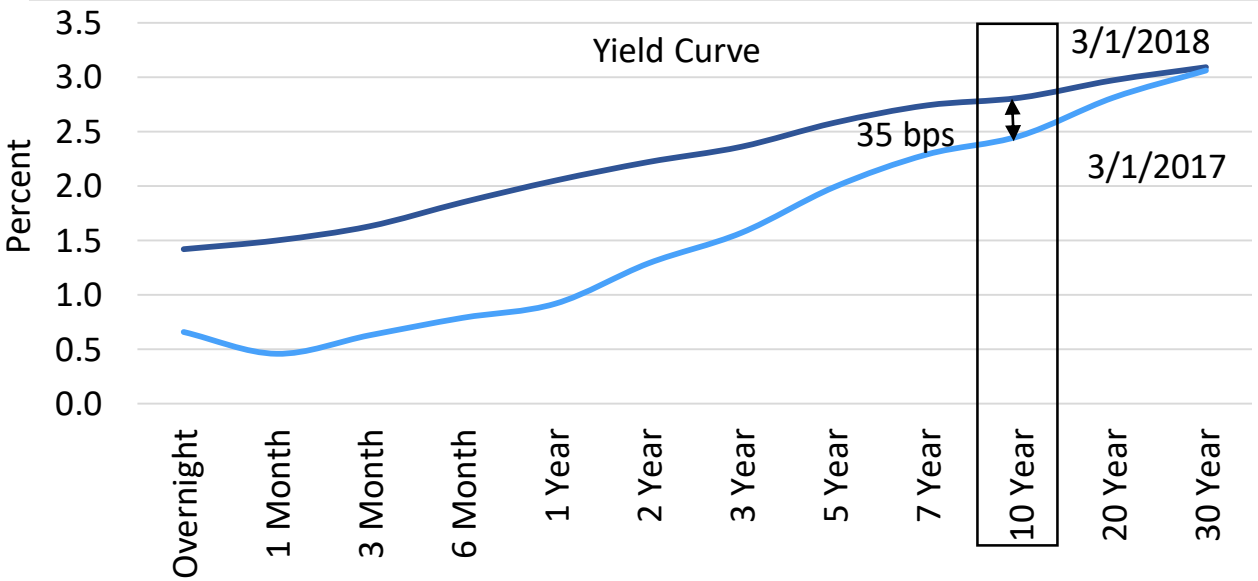
Recent Tariff Move a Potential Drag on Growth

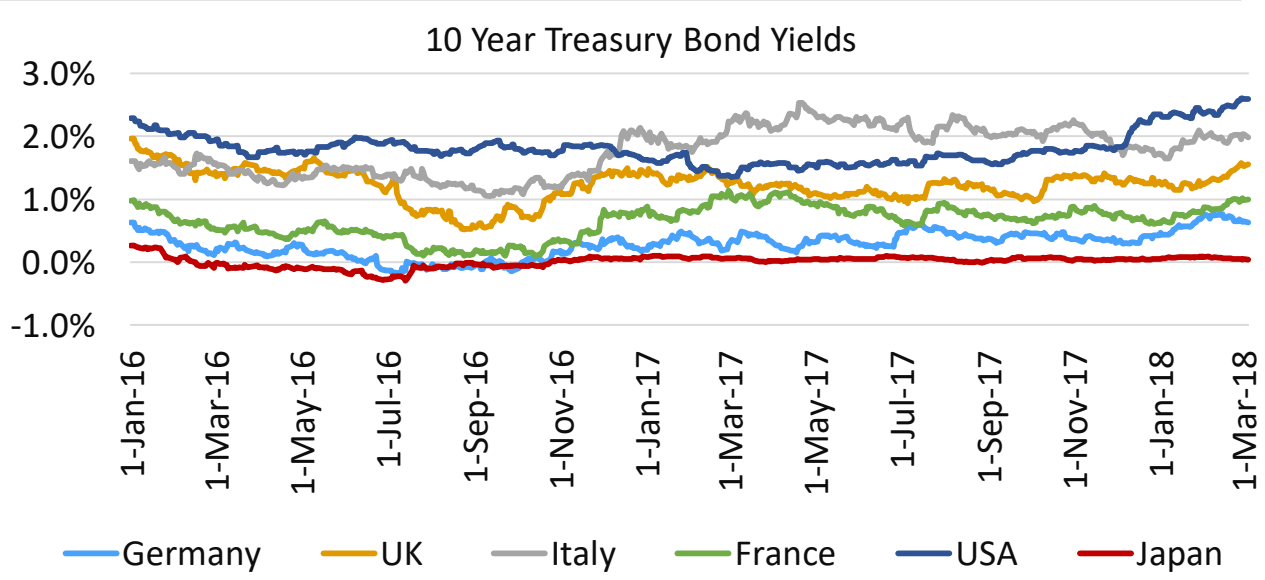
Source: Yardi®Matrix

U.S. and International Financial Market









Source: Moody's Analytics; Investing.com

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Watch for These 5 Signs that Presage a Recession

1. Average Hourly Earnings Growth goes from 2.5% to 4.0%
2. Cyclical Sector Share of GDP moves from 24% to 28% of GDP
3. GDP Deflator moves from <2.0% to 2.5%
4. Operating Capacity Utilization Rate moves from 76% to 80%
5. Yield Curve Inverts (10 Yr treasury rate less Fed Funds Rate) from +90bp to >-50bp ➡ NOT YET! Best guess 2020-2021

Source: Yardi®Matrix, Evercore ISI

National Office Fundamentals

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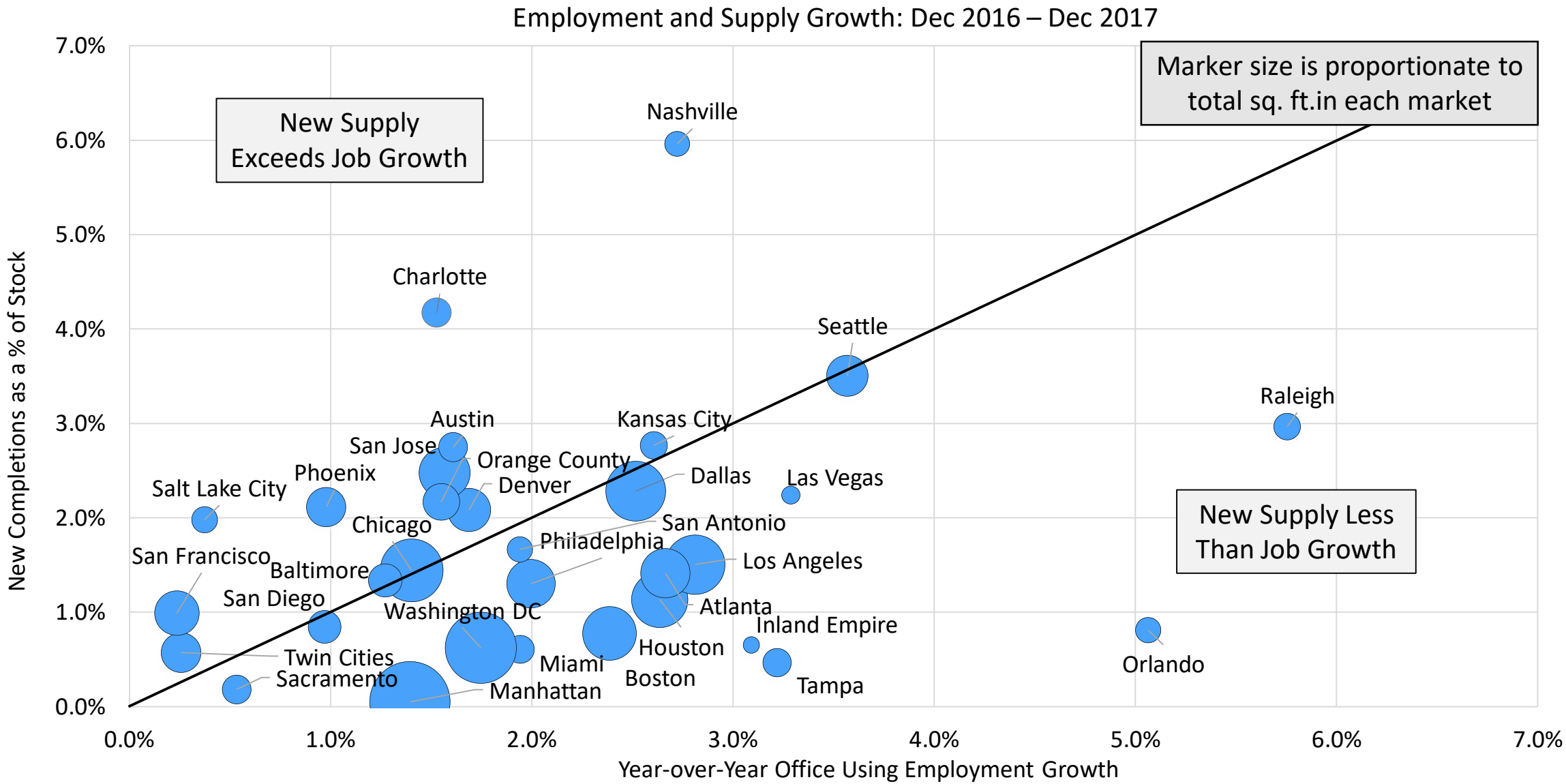
Supply Isn’t Keeping Up With Demand in Most Markets



Source: Yardi®Matrix

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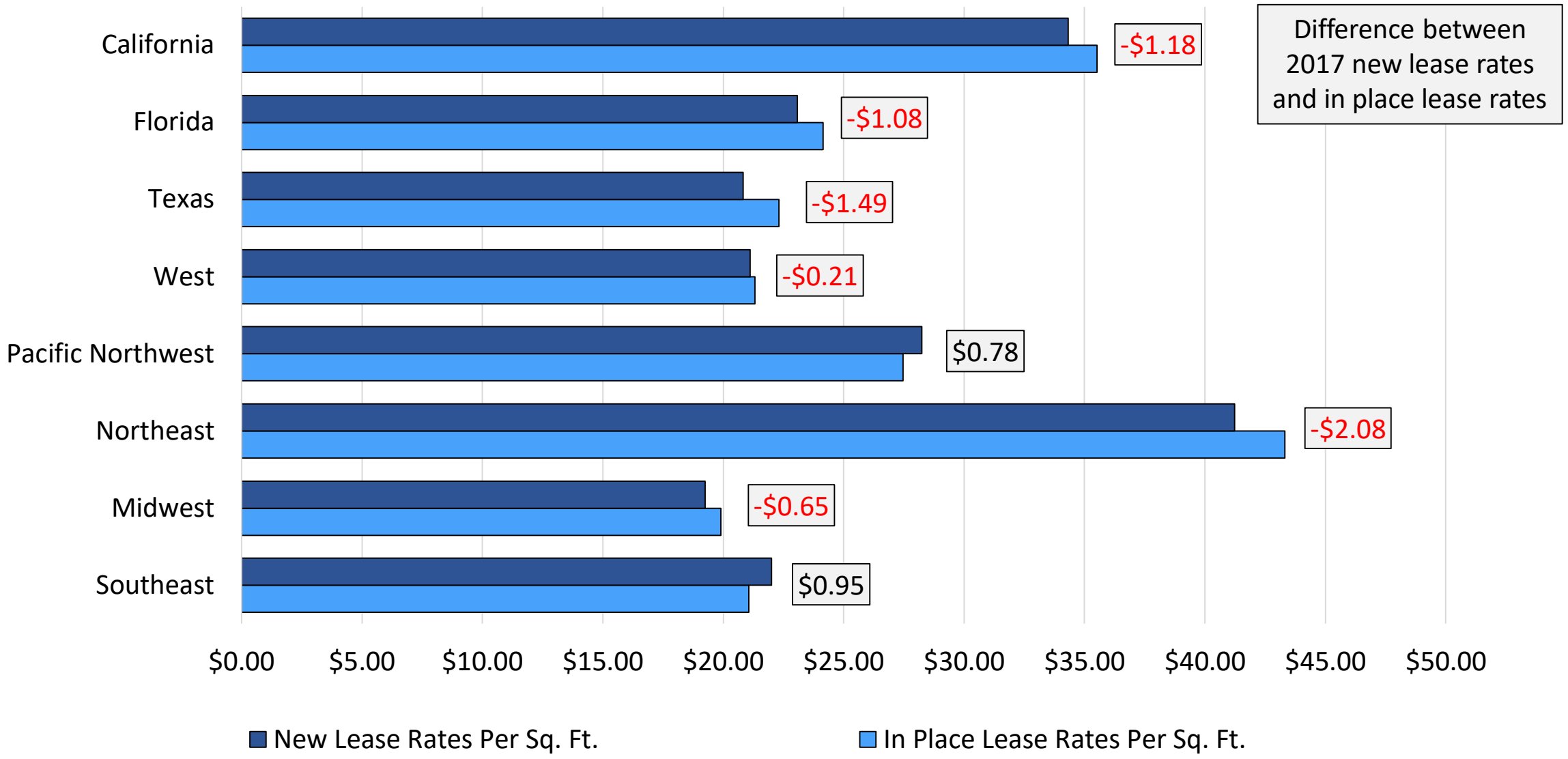
Most Regions Saw Negative Lease Rate Spreads in 2017



Source: Yardi®Matrix Expert

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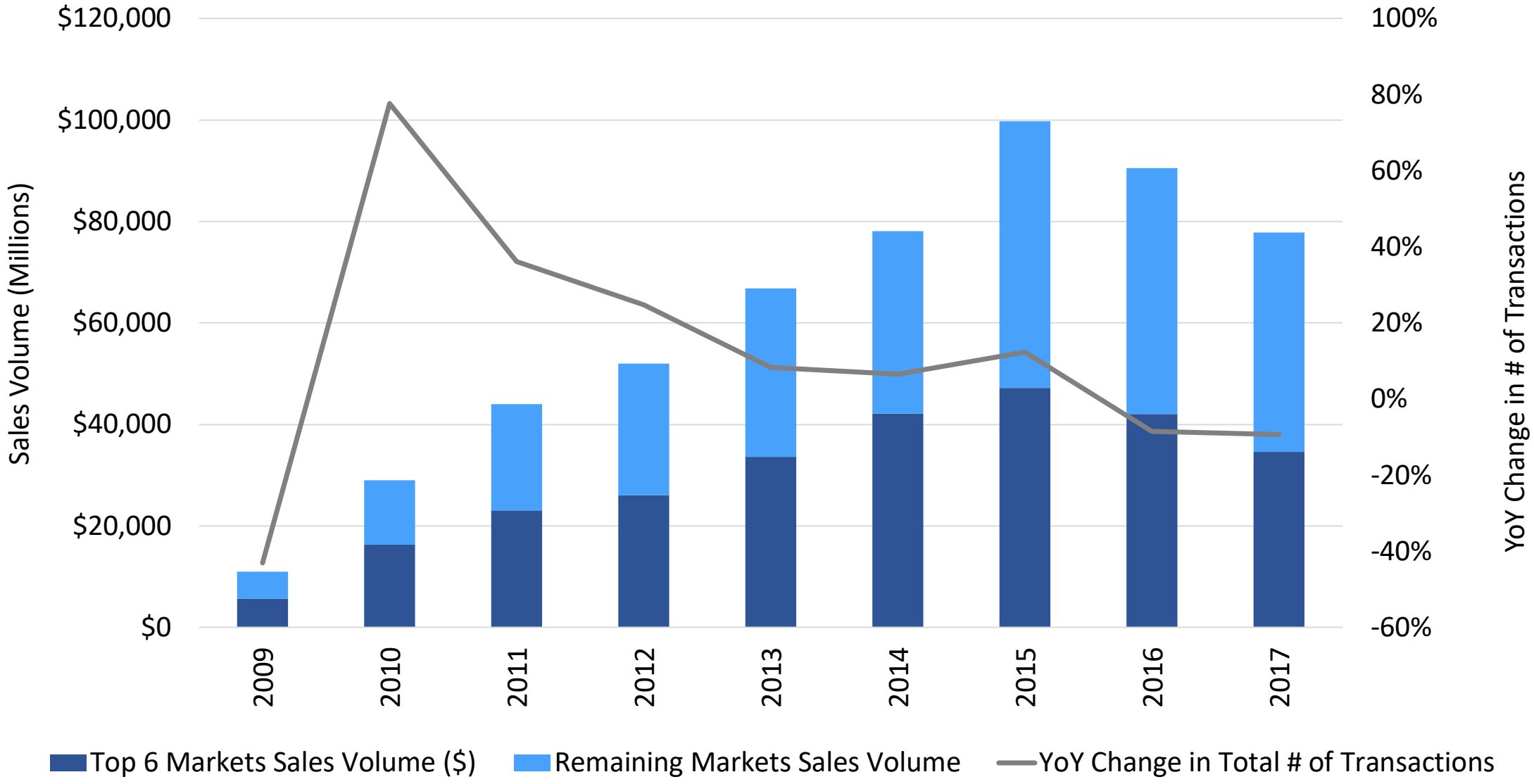
Sales Volume is Dropping



Source: Yardi® Matrix

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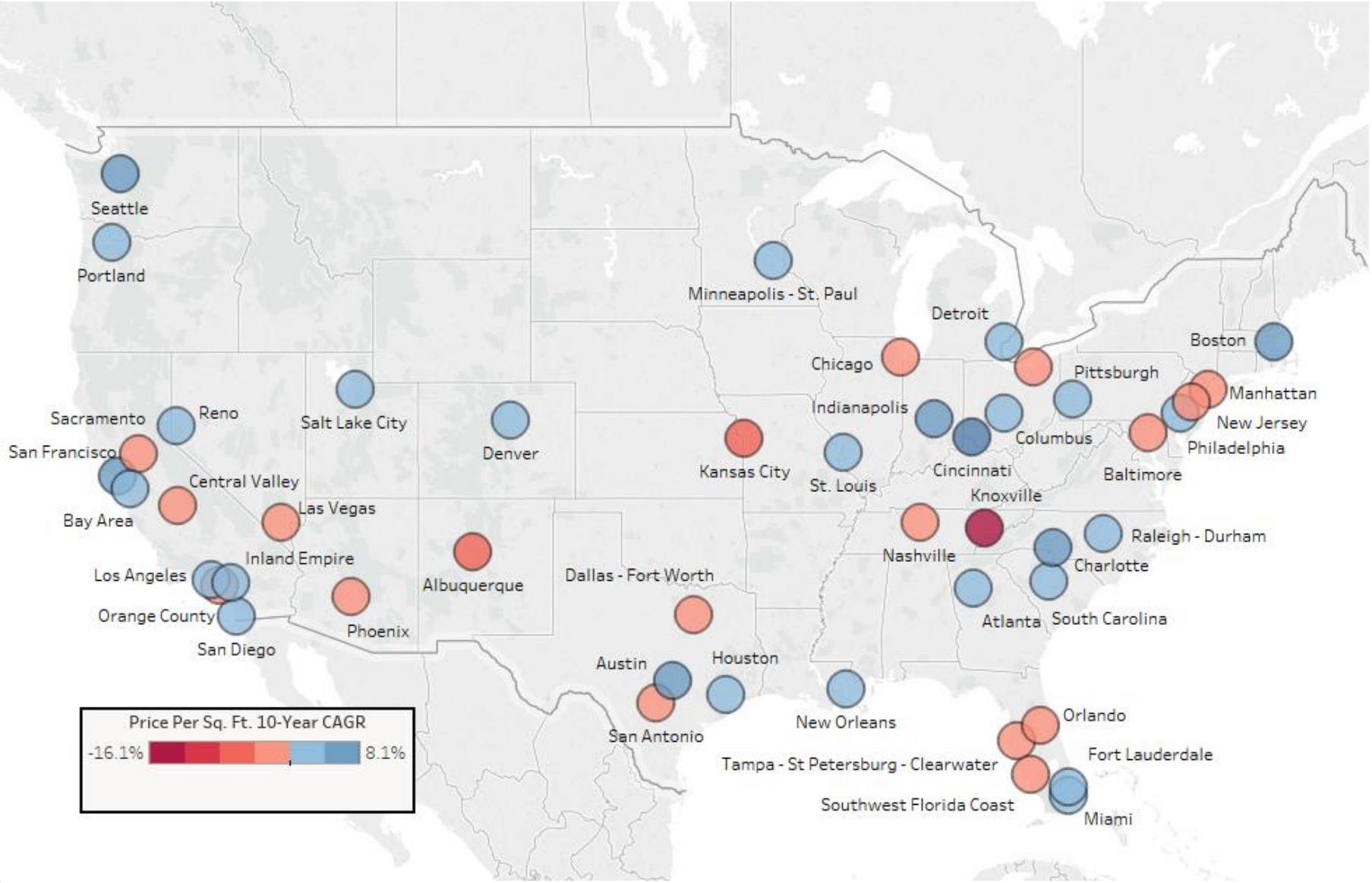
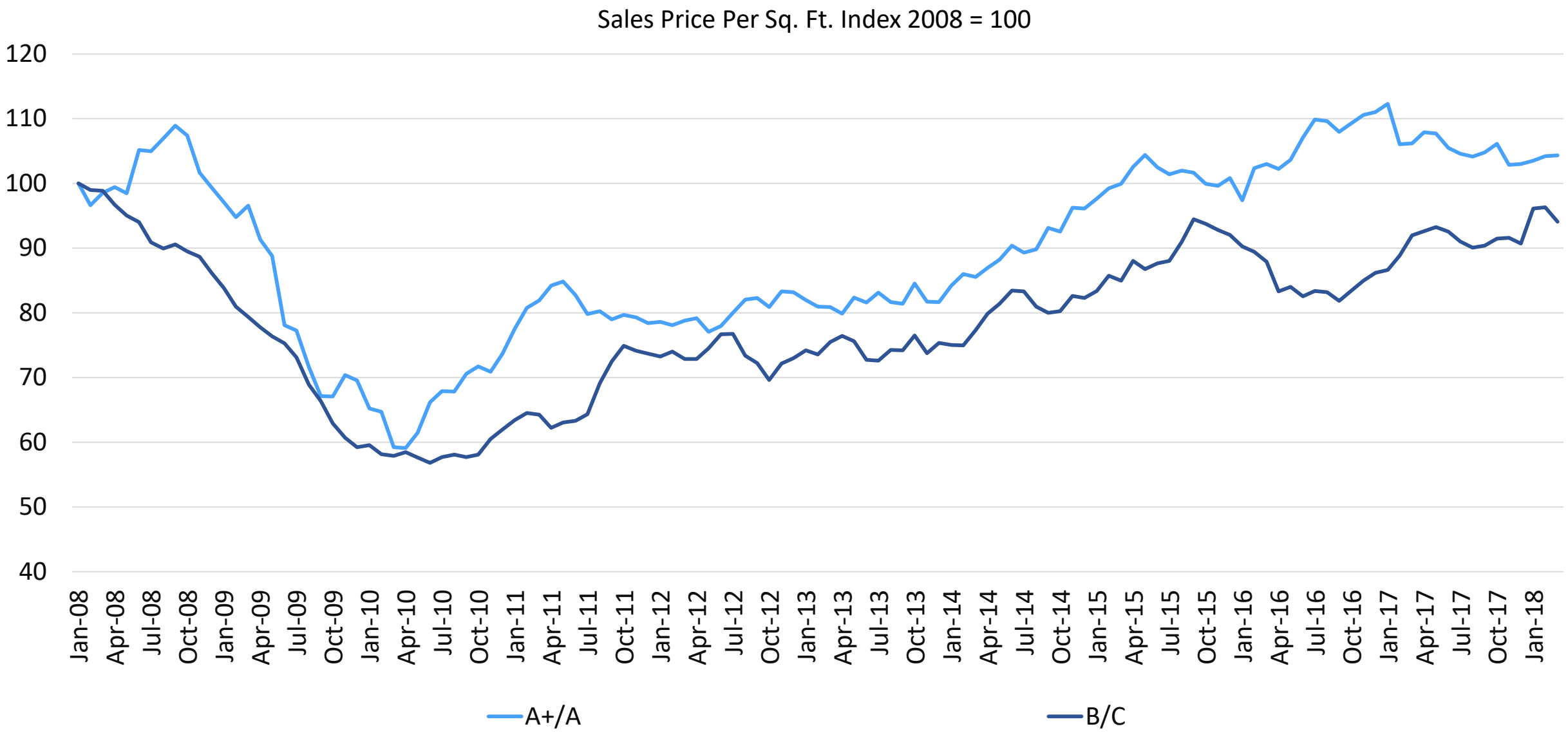
Sales Price Per Sq. Ft. 10-Year CAGR



Select Markets	Price Per Sq. Ft. 2008-2017 CAGR
Seattle	8.0%
Austin	5.4%
San Francisco	5.1%
Boston	4.5%
Los Angeles	3.6%
Minneapolis - St. Paul	3.4%
Denver	3.2%
South Bay Area	2.6%
Raleigh - Durham	1.8%
Miami	0.7%
San Diego	0.3%
Atlanta	0.2%
Chicago	-0.4%
Dallas - Fort Worth	-0.5%
Manhattan	-0.8%
Orange County	-1.2%
Las Vegas	-3.1%

Source: Yardi®Matrix

Indexed National Office Price Per Sq. Ft.



Source: Yardi®Matrix

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Sq. Ft. Per Person Seems to Respond to Cost Pressures

Office-using employment has grown faster than total employment and population over the past ten years

	10-Year CAGR (Jan 2008- Jan 2018)
Office-Using Employment	***1.3%***
Total Employment	0.9%
Population	0.7%

And yet, sq. ft. per person has fallen over the same time period in typically expensive markets

Market	Sq. Ft. per Person 10-Year CAGR (Jan 2008 – Jan 2018)
South Bay Area	-2.5%
San Francisco	-2.4%
Raleigh - Durham	-0.8%
Dallas - Fort Worth	-0.6%
Austin	-0.5%
Atlanta	-0.4%
Portland	-0.2%
Manhattan	-0.1%
Charlotte	0.0%
Houston	0.0%
San Antonio	0.1%
West Palm Beach	0.2%
Tampa	0.2%

Market	Sq. Ft. per Person 10-Year CAGR (Jan 2008 – Jan 2018)
Fort Lauderdale	0.2%
Orlando	0.3%
Denver	0.4%
Philadelphia	0.5%
Los Angeles	0.8%
Miami	1.2%
Boston	1.2%
Sacramento	1.3%
Seattle	1.3%
Orange County	1.3%
Phoenix	1.8%
San Diego	2.2%
Inland Empire	3.1%

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); U.S. Census Bureau (BOC); Yardi®Matrix

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Maximizing Rental Income Drives NOI

Revenues vary by market, but expenses are more stable across all markets, with the exception of real estate and other taxes

Office Market	Atlanta	Austin	Boston	Chicago	Denver	Los Angeles	Manhattan	Miami	San Diego	San Francisco	Seattle	Washington D.C.
Total Operating Income	$20.41	$33.20	$40.75	$24.46	$23.27	$31.26	$60.20	$31.10	$30.06	$48.18	$34.81	$35.02
Payroll	-$0.96	-$0.95	-$1.04	-$1.31	-$0.95	-$1.32	-$3.10	-$1.39	-$0.86	-$1.55	-$1.16	-$1.48
Marketing & Advertising	-$0.06	-$0.05	-$0.08	-$0.05	-$0.05	-$0.05	-$0.10	-$0.08	-$0.06	-$0.07	-$0.02	-$0.08
Repairs & Maintenance	-$1.90	-$2.42	-$2.93	-$2.87	-$2.16	-$2.95	-$4.13	-$3.25	-$2.45	-$3.73	-$3.00	-$2.93
Administrative	-$1.06	-$0.89	-$1.25	-$1.16	-$0.71	-$1.42	-$1.96	-$1.20	-$0.84	-$1.79	-$1.10	-$1.09
Management Fees	-$0.65	-$0.83	-$0.96	-$0.74	-$0.77	-$0.84	-$1.24	-$0.89	-$0.85	-$1.18	-$0.84	-$0.98
Utilities	-$1.73	-$1.88	-$2.78	-$1.25	-$1.68	-$2.33	-$2.78	-$1.99	-$1.69	-$2.50	-$1.69	-$1.93
Real Estate & Other Taxes	-$2.24	-$6.76	-$6.86	-$5.11	-$4.12	-$2.75	-$12.18	-$3.59	-$2.38	-$4.67	-$2.77	-$5.60
Insurance	-$0.16	-$0.18	-$0.24	-$0.22	-$0.17	-$0.50	-$0.50	-$0.82	-$0.38	-$0.83	-$0.40	-$0.18
Other Operating Expenses	-$0.07	-$0.17	-$0.55	-$0.20	-$0.10	-$0.47	-$1.00	-$0.07	-$0.14	-$0.14	-$0.24	-$0.34
Total Operating Expense	-$8.83	-$14.13	-$16.69	-$12.91	-$10.71	-$12.63	-$26.99	-$13.28	-$9.65	-$16.46	-$11.22	-$14.61
Net Operating Income	***$11.58***	***$19.07***	***$24.06***	***$11.55***	***$12.56***	***$18.63***	***$33.21***	***$17.82***	***$20.41***	***$31.72***	***$23.59***	***$20.41***

Source: Yardi®Matrix Expert

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Investment Themes Coming Forward

#1: Overflow out of gateway cities into secondary cities

#2: Movement out of urban cores into intellectual capital nodes which are “urbanized suburbs”

#3: Certain office disruptors are impacting investors everywhere, regardless of location

Buying core assets as capital preservation, or buying and repurposing fringe assets as value appreciation

- Urban core downtown = capital preservation
- Urban secondary and suburban primary = capital appreciation

Source: Yardi®Matrix

Theme #1:

Overflow out of gateway cities into secondary cities

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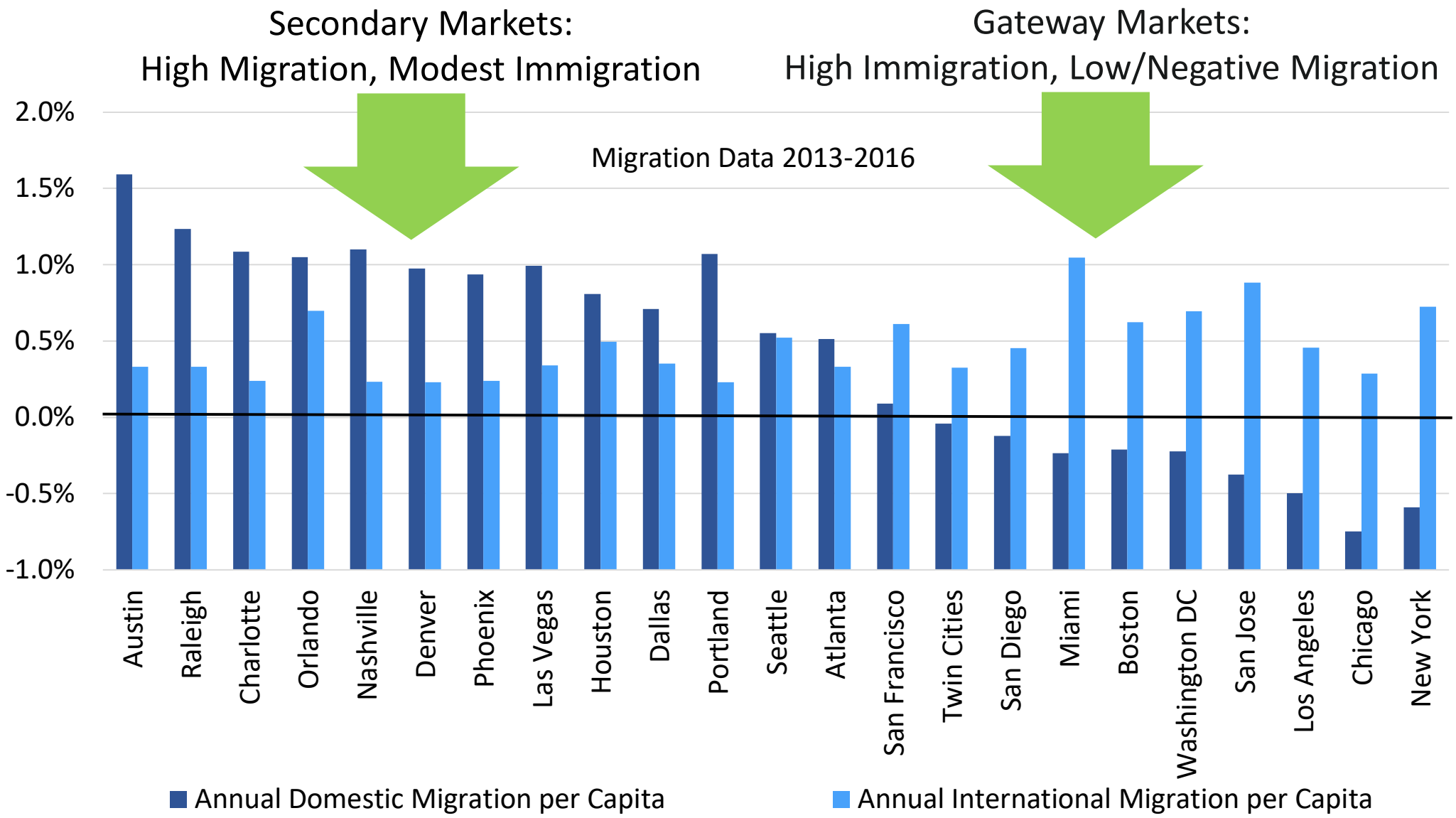
Immigrant vs Domestic Migrant Patterns



Source: U.S. Census Bureau (BOC); Yardi® Matrix

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Job Growth is Happening in Secondary Cities

At this stage in the economic expansion, companies are relocating and expanding in markets where their money will get them further

Charles Schwab

- Relocated jobs from San Francisco to lower-cost states like Texas and Colorado
- Consolidated Denver-area employees and newly relocated employees into a $230 million campus in Lone Tree, CO
- Light rail currently being extended in part to accommodate employees and other residents drawn to the area

KPMG

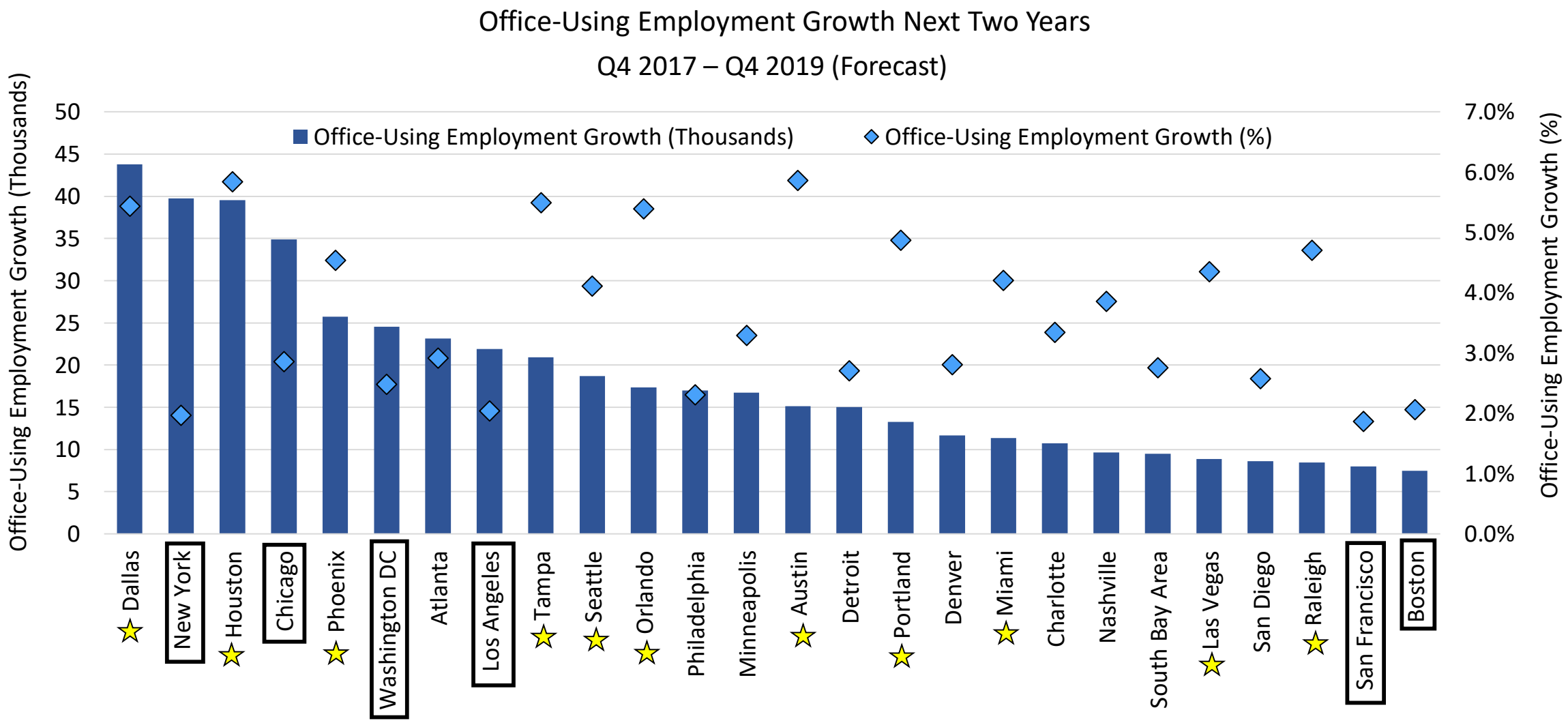
- Developing $400 million, 55-acre learning, development and innovation campus in Lake Nona outside of Orlando
- Create 330 new jobs and 800,000 sq. ft. for meeting, classroom, residential and dining facilities

Overall Employment Growth Dec. 2016-Dec.2017

Market	YoY Emp. Growth	Market	YoY Emp. Growth
Reno	5.0%	**San Francisco**	**1.9%**
Boise	4.0%	Oakland	1.9%
Inland Empire	3.9%	Houston	1.8%
Seattle	3.2%	Atlanta	1.7%
Austin	3.2%	San Diego	1.6%
Charlotte	3.2%	**New York**	**1.6%**
Orlando	3.1%	Kansas City	1.6%
Jacksonville	3.0%	Fort Lauderdale	1.5%
Phoenix	2.7%	Minneapolis	1.4%
South Bay Area	2.7%	**Los Angeles**	**1.4%**
Las Vegas	2.6%	North Central Florida	1.4%
Sacramento	2.5%	Indianapolis	1.3%
Portland	2.4%	**Washington DC**	**1.3%**
Denver	2.3%	Miami	1.3%
Dallas	2.3%	Philadelphia	1.2%
Salt Lake City	2.3%	Detroit	1.2%
Nashville	2.2%	Columbus	1.0%
Tampa	2.0%	West Palm Beach	0.8%
Orange County	2.0%	Milwaukee	0.7%
Boston	**2.0%**	**Chicago**	**0.6%**
Raleigh	1.9%	St. Louis	0.6%

Source: Moody's Analytics; Bureau of Labor Statistics; kpmg.com; denverpost.com

Secondary Cities Will Benefit the Most Moving Forward



* ★ indicates markets with office-using employment expected to surge upwards of 4.0% by 2019

Source: Moody's Analytics; Bureau of Labor Statistics (BLS); Yardi®Matrix

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Gateway Cities Exposed

International cities' net migration deficit is only made up by immigration.

Within that, certain industries and cities are impacted by specific programs:

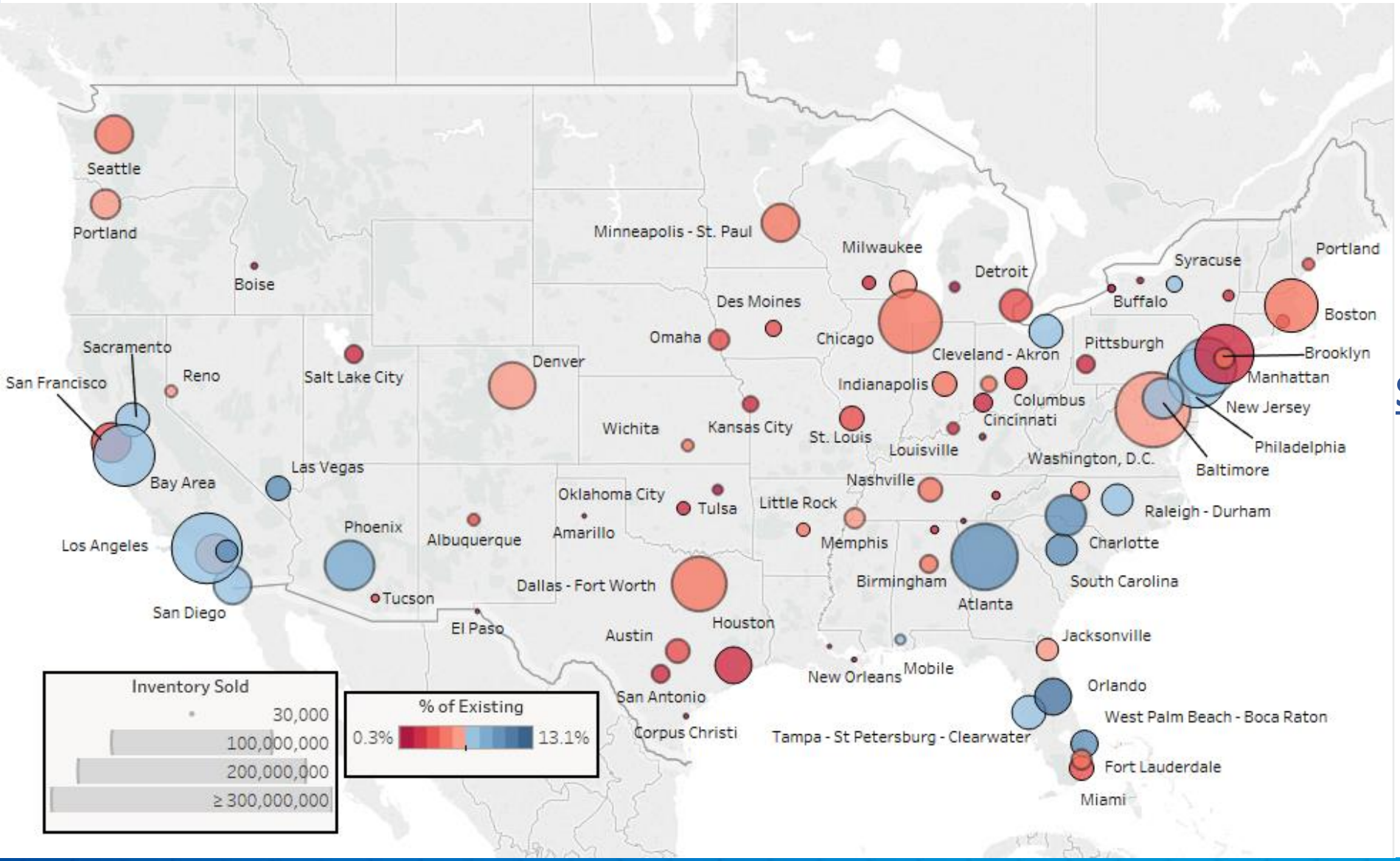
H1-B /EB-5	Industries Affected
• San Francisco	Tech, Finance
• Boston	Tech, Healthcare
• New York	Finance, Tech
• Washington, D.C.	Healthcare, Defense

Certain cities, while not international gateways, are exposed to a lesser degree:

H1-B /EB-5	Industries Affected
• Seattle	Tech
Restrictive Borders	
• Los Angeles	Construction

Source: Yardi®Matrix

Office Sales in 2017: A Measure of Liquidity



Big Dark Red Bubbles:

Most Liquid Markets

Small Dark Blue Bubbles:

Least Liquid Markets

Source: Yardi®Matrix

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Market Level Supply and Demand – Last Five Years

National supply growth doesn't look crazy, but what have we seen at the market level over the last five years?

Market	2013 Supply	5-Year Supply Growth	5-Year Demand Growth	Net %	Current Vacancy
Austin	54	21.2%	27.4%	-6.1%	10.2%
South Bay Area	177	13.9%	25.5%	-11.6%	17.3%
Raleigh-Durham	46	13.3%	24.4%	-11.1%	11.9%
Seattle	113	13.1%	18.4%	-5.3%	9.4%
San Francisco	139	11.4%	27.3%	-16.0%	9.5%
Houston	209	11.1%	10.2%	0.9%	22.0%
Dallas	242	10.4%	23.4%	-13.0%	19.6%
Phoenix	104	10.4%	18.5%	-8.2%	18.9%
Charlotte	57	9.8%	23.3%	-13.5%	14.0%
Denver	131	7.5%	14.0%	-6.5%	13.7%
Boston	200	7.2%	14.5%	-7.3%	11.0%
Miami	56	7.0%	17.1%	-10.1%	13.6%
Portland	52	7.0%	15.9%	-9.0%	11.5%

Market	2013 Supply	5-Year Supply Growth	5-Year Demand Growth	Net %	Current Vacancy
San Antonio	40	6.7%	18.3%	-11.6%	14.6%
San Diego	75	5.9%	7.7%	-1.8%	12.0%
Philadelphia	167	5.7%	9.1%	-3.4%	11.6%
Atlanta	171	5.6%	20.0%	-14.3%	16.2%
Inland Empire	19	5.6%	18.2%	-12.6%	13.1%
Orange County	94	5.5%	11.6%	-6.1%	10.7%
Los Angeles	249	4.5%	9.1%	-4.6%	14.6%
Ft Lauderdale	32	3.7%	15.6%	-11.9%	14.5%
Manhattan	461	3.4%	11.3%	-7.8%	8.3%
Orlando	47	2.8%	22.3%	-19.5%	11.9%
Tampa	58	2.7%	20.6%	-17.9%	11.6%
Sacramento	60	1.0%	12.1%	-11.1%	13.2%
West Palm Beach	26	0.2%	17.0%	-16.7%	14.2%

Weighted Average Vacancy for 25 Markets: 13.7%

*Supply data in millions of square feet

*Demand is office-using employment growth

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); Yardi®Matrix

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Market Level Supply and Demand – Next Two Years

How does supply fit demand over the next two years?

Market	2018 Supply	2-Year Supply Growth	2-Year Demand Growth	Net %	Current Vacancy
Seattle	128	5.6%	4.2%	1.4%	9.4%
Portland	55	5.3%	5.0%	0.3%	11.5%
Orlando	48	4.6%	5.8%	-1.2%	11.9%
Charlotte	63	4.3%	3.5%	0.7%	14.0%
Dallas	268	3.6%	5.5%	-1.9%	19.6%
South Bay Area	201	2.9%	2.8%	0.0%	17.3%
Raleigh-Durham	53	2.3%	4.7%	-2.4%	11.9%
San Antonio	43	2.1%	4.8%	-2.7%	14.6%
Manhattan	477	2.0%	2.0%	0.0%	8.3%
San Francisco	154	1.9%	1.9%	0.0%	9.5%
Atlanta	181	1.8%	3.1%	-1.3%	16.2%
Tampa	60	1.7%	5.6%	-3.9%	11.6%
Los Angeles	260	1.6%	2.1%	-0.5%	14.6%

Market	2018 Supply	2-Year Supply Growth	2-Year Demand Growth	Net %	Current Vacancy
Phoenix	115	1.2%	4.5%	-3.3%	18.9%
Austin	65	1.0%	5.9%	-5.0%	10.2%
Boston	214	0.8%	2.0%	-1.2%	11.0%
Denver	141	0.7%	2.8%	-2.1%	13.7%
Houston	232	0.7%	6.0%	-5.3%	22.0%
Inland Empire	20	0.6%	1.9%	-1.3%	13.1%
San Diego	79	0.5%	2.6%	-2.1%	12.0%
Philadelphia	176	0.3%	2.4%	-2.1%	11.6%
Sacramento	61	0.2%	2.7%	-2.4%	13.2%
Orange County	99	0.2%	3.0%	-2.8%	10.7%
Ft Lauderdale	33	0.0%	4.2%	-4.2%	14.5%
Miami	59	0.0%	4.1%	-4.1%	13.6%
West Palm Beach	27	0.0%	4.9%	-4.9%	14.2%

Weighted Average Vacancy for 25 Markets: 13.7%

*Supply data in millions of square feet
*Demand is office-using employment growth

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); Yardi®Matrix

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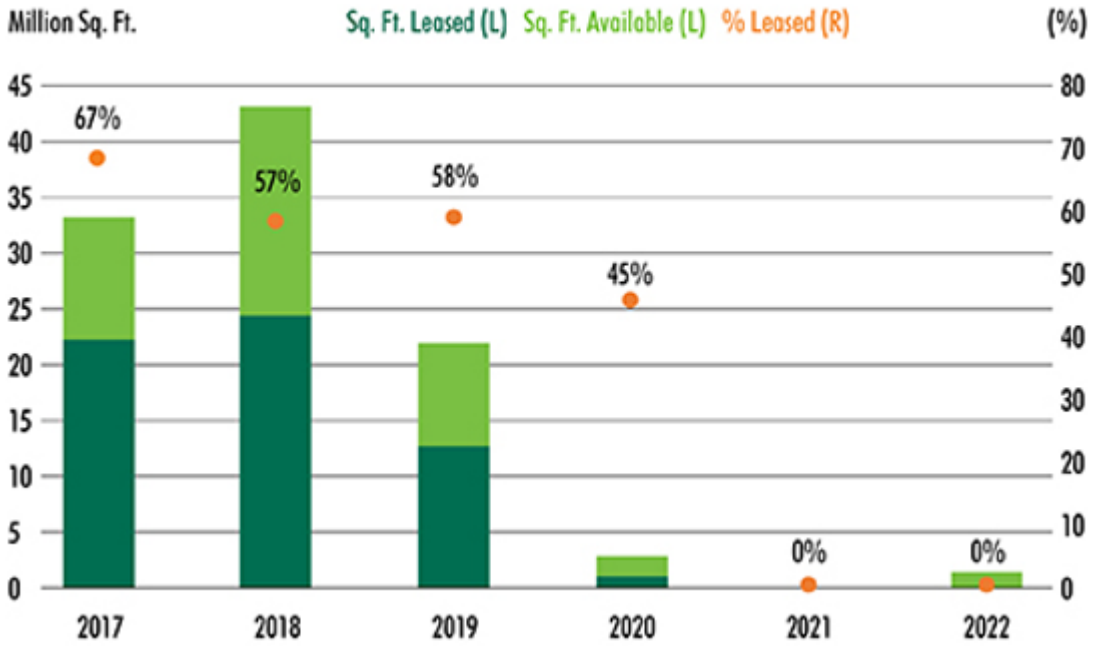
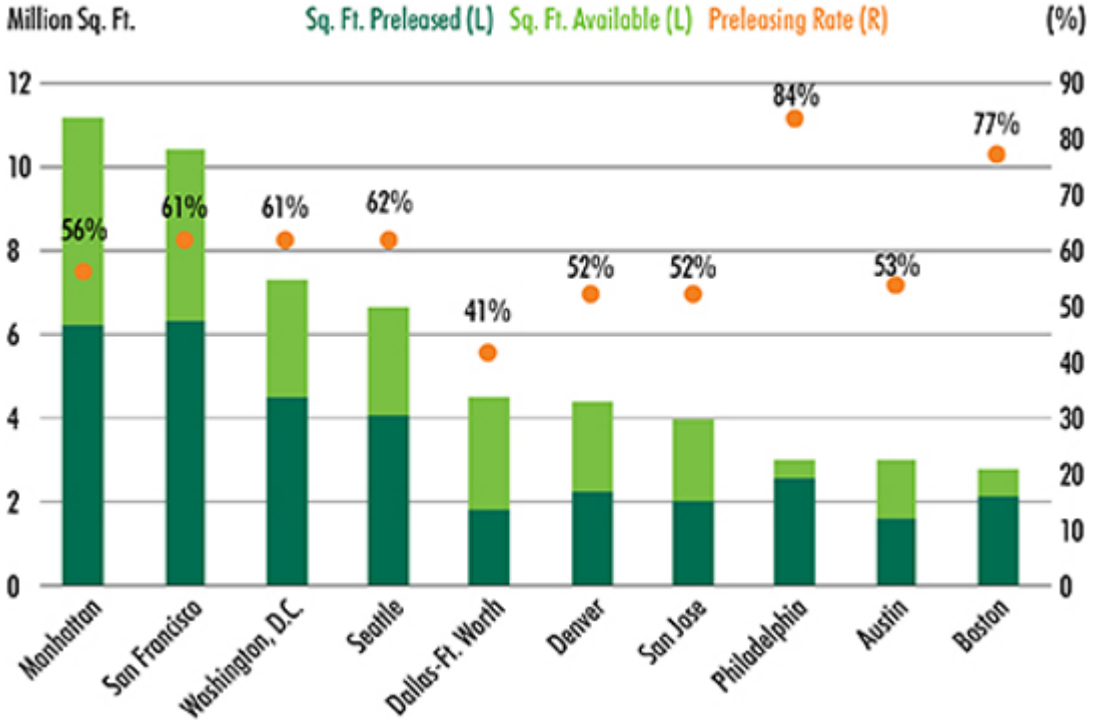
Strong Demand is Evidenced by High Preleasing Levels

Nearly 60% of projected 2018-2019 completions preleased



Note: 2017 represents amount of space delivered in 2017 that was leased as of Feb-18. Data includes 20 largest office markets by existing inventory. *Source: CBRE Research*

>50% of projected 2018-2022 completions preleased in most markets



Note: Data includes top 10 markets for sq. ft. under construction. Data includes expected deliveries from 2018-22. *Source: CBRE Research*

Source: CBRE Research

YARDI

Theme #2:

Movement out of urban cores into intellectual capital nodes which are “urbanized suburbs”

Urban Asking Rents Significantly Greater Than Suburban

Market	Urban Asking Rent	Suburban Asking Rent	Difference Between Urban-Suburban	Urban Vacancy Rate	Suburban Vacancy Rate
Boston	$57.64	$28.20	$29.44	**7.8%**	13.6%
Austin	$54.92	$33.90	$21.02	**7.3%**	10.7%
Seattle	$42.63	$28.40	$14.23	**8.0%**	11.9%
San Francisco	$64.19	$51.10	$13.09	**7.1%**	13.3%
West Palm Beach	$44.62	$31.67	$12.95	14.9%	**14.3%**
Houston	$35.35	$24.65	$10.70	**19.1%**	24.6%
Sacramento	$32.06	$21.81	$10.26	**7.0%**	15.5%
Denver	$33.25	$24.04	$9.21	**12.6%**	13.9%
Los Angeles	$39.61	$31.54	$8.08	14.5%	**14.4%**
Charlotte	$32.12	$24.45	$7.67	14.9%	**13.0%**

*Bold indicates lower vacancy than its corresponding urban/suburban area

Source: Yardi®Matrix

YARDI

Urban Asking Rents Slightly Greater Than Suburban

Market	Urban Asking Rent	Suburban Asking Rent	Difference Between Urban-Suburban	Urban Vacancy Rate	Suburban Vacancy Rate
Portland	$31.58	$24.48	$7.09	**10.4%**	12.2%
Atlanta	$29.85	$23.57	$6.28	**14.4%**	16.4%
South Bay Area	$46.38	$40.46	$5.92	**12.0%**	18.6%
Raleigh - Durham	$29.27	$23.43	$5.84	**6.7%**	12.7%
Miami	$39.93	$35.32	$4.61	16.2%	**13.8%**
Orlando	$24.64	$20.43	$4.21	**11.3%**	12.0%
Tampa - St Petersburg - Clearwater	$26.13	$23.23	$2.90	**10.5%**	11.4%
Dallas - Fort Worth	$28.52	$25.68	$2.84	21.9%	**18.1%**
Philadelphia	$28.05	$25.31	$2.75	**11.3%**	12.5%
Fort Lauderdale	$31.36	$28.72	$2.65	15.9%	**14.9%**
Inland Empire	$24.29	$21.98	$2.31	**10.3%**	14.1%

*Bold indicates lower vacancy than its corresponding urban/suburban area

Source: Yardi®Matrix

YARDI

Urban Asking Rents Less Than Suburban

Market	Urban Asking Rent	Suburban Asking Rent	Difference Between Urban-Suburban	Urban Vacancy Rate	Suburban Vacancy Rate
Phoenix	$25.14	$25.19	-$0.05	22.7%	**16.4%**
San Antonio	$23.82	$25.36	-$1.54	16.4%	**13.2%**
San Diego	$33.25	$37.42	-$4.18	**11.1%**	12.1%

Manhattan is only urban, while Orange County is only suburban

Market	Urban Asking Rent	Suburban Asking Rent	Urban Vacancy Rate	Suburban Vacancy Rate
Manhattan	$74.87	-	8.2%	-
Orange County	-	$32.09	-	10.7%

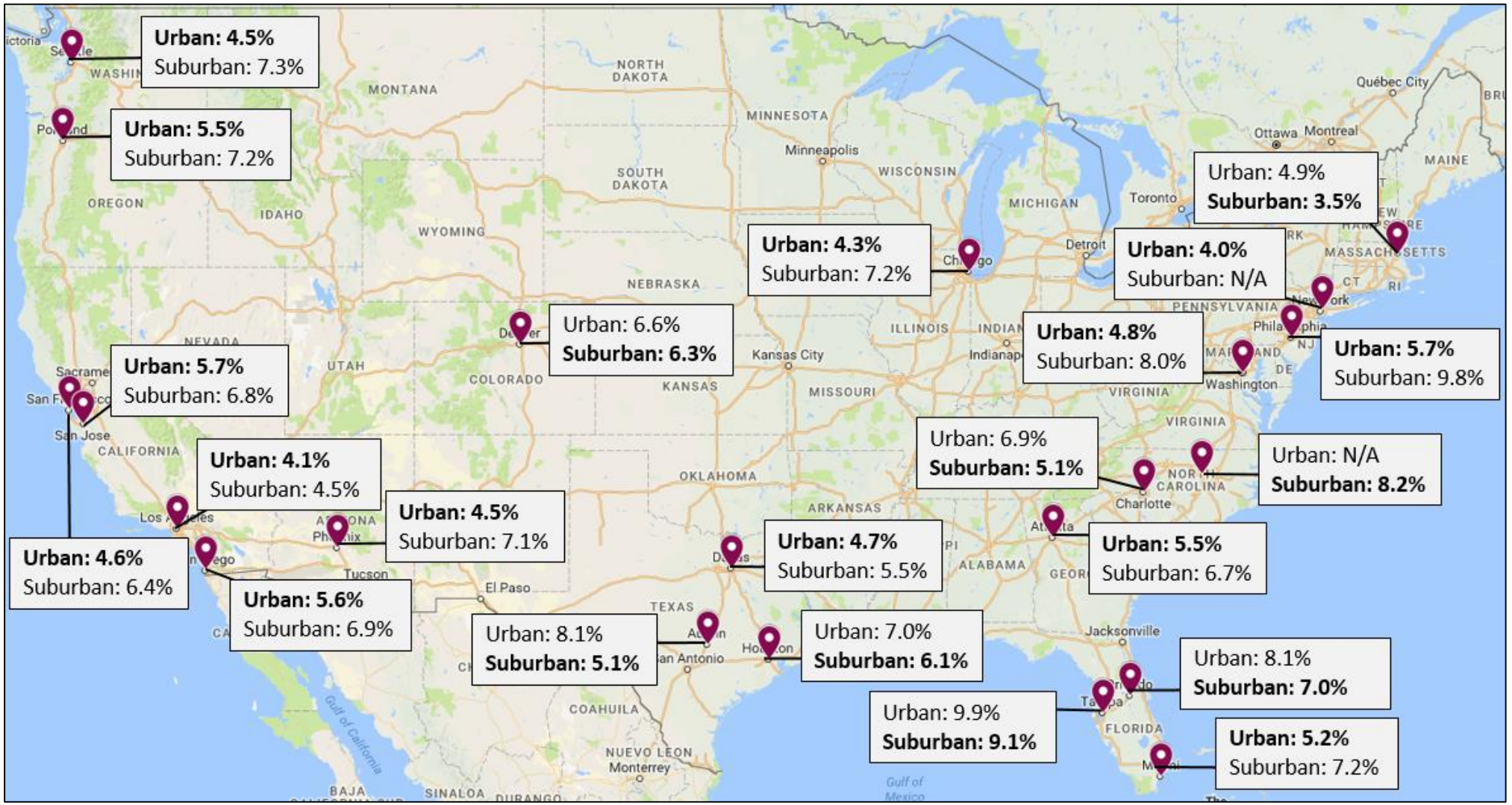
*Bold indicates lower vacancy than its corresponding urban/suburban area

Source: Yardi®Matrix

Cap Rates by Market

<u>Suburban Office Markets Valued More Highly Than Their Urban Core:</u>

- Austin
- Boston
- Charlotte
- Denver
- Houston
- Orlando
- Tampa



Source: Yardi®Matrix Expert

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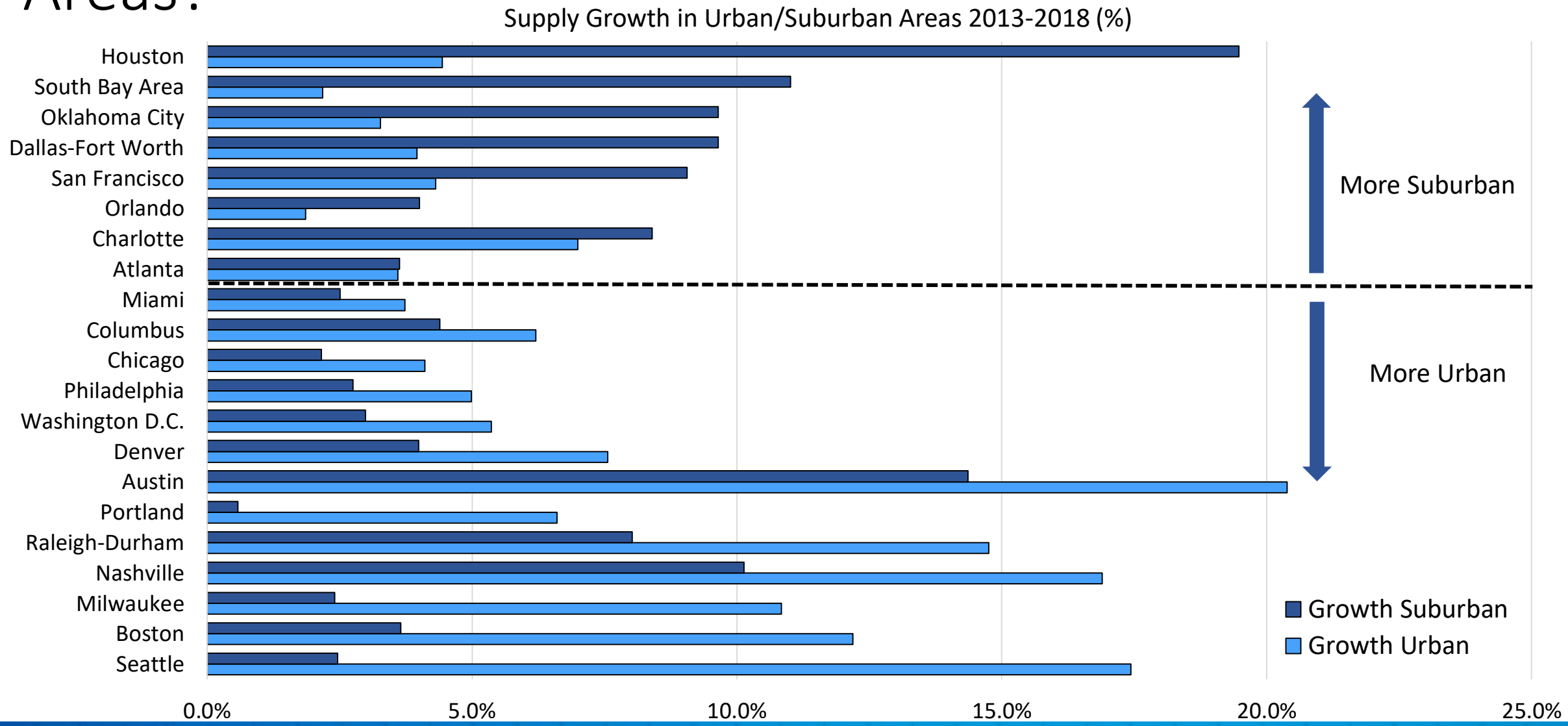
Has Past Development Been in Urban or Suburban Areas?



Source: Yardi®Matrix

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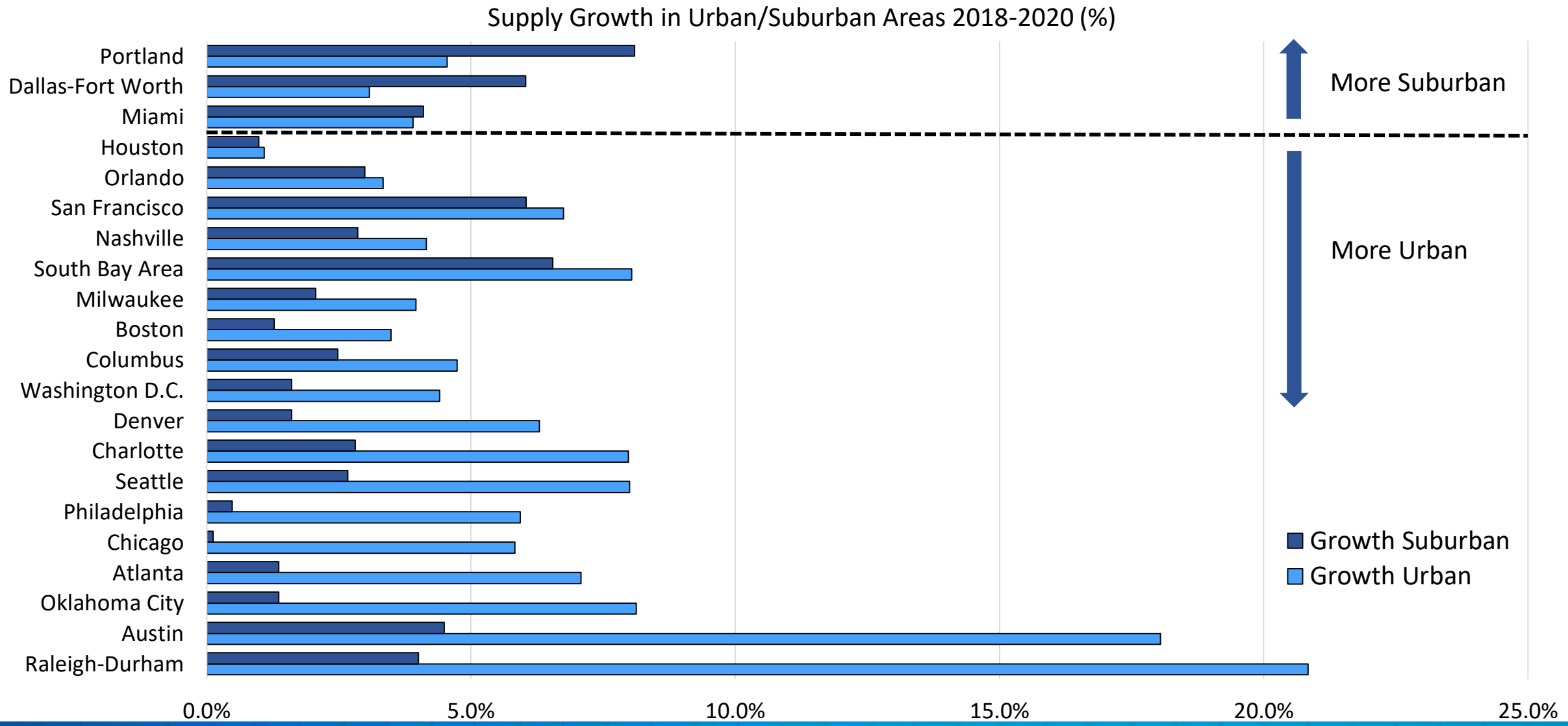
Will New Supply be in Urban or Suburban Areas?



Source: Yardi®Matrix

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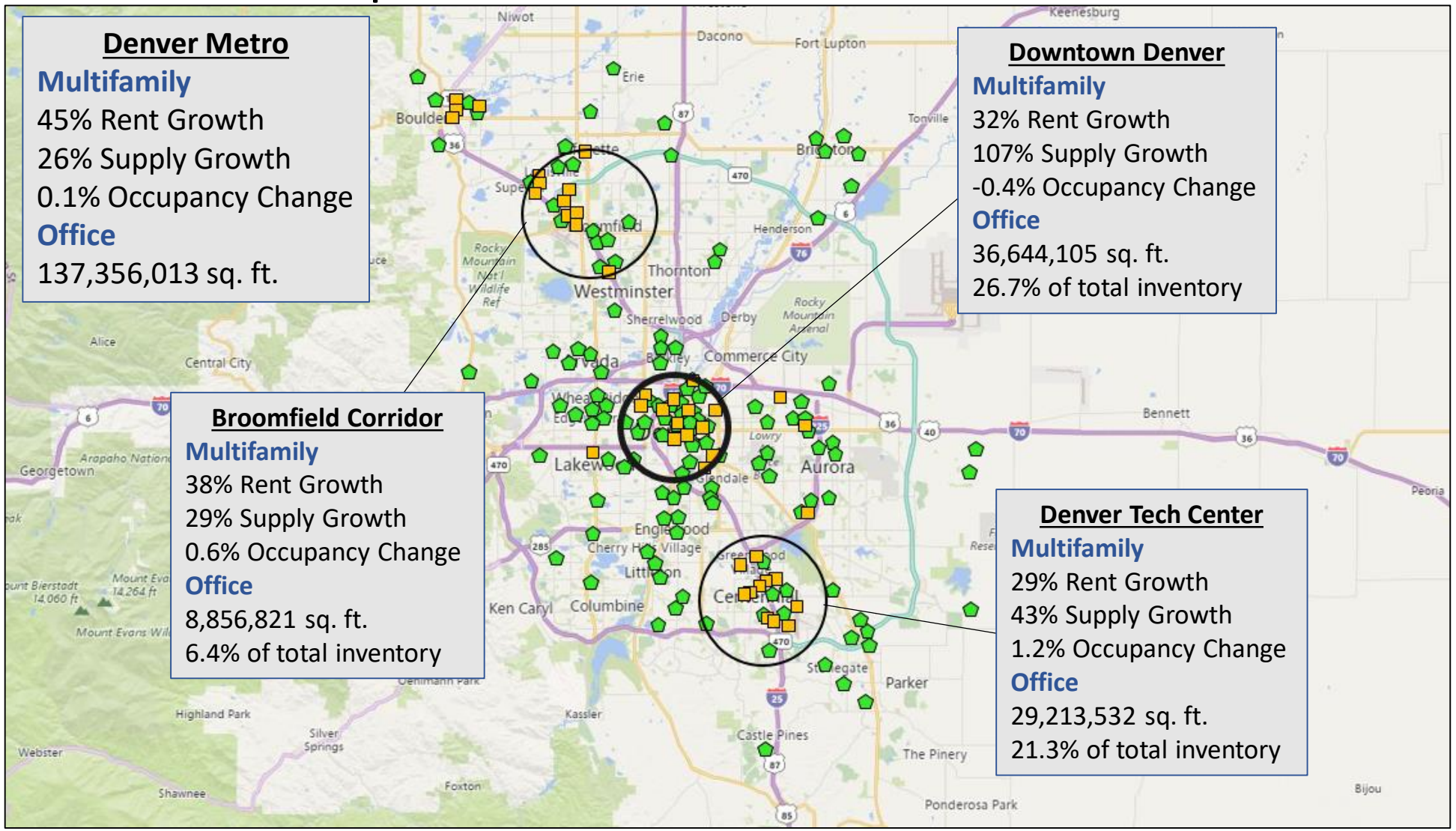
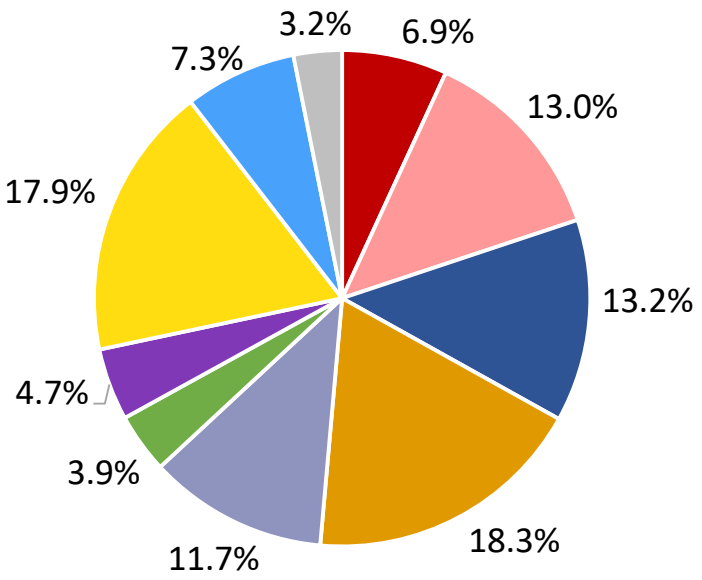
Intellectual Capital Nodes – Denver

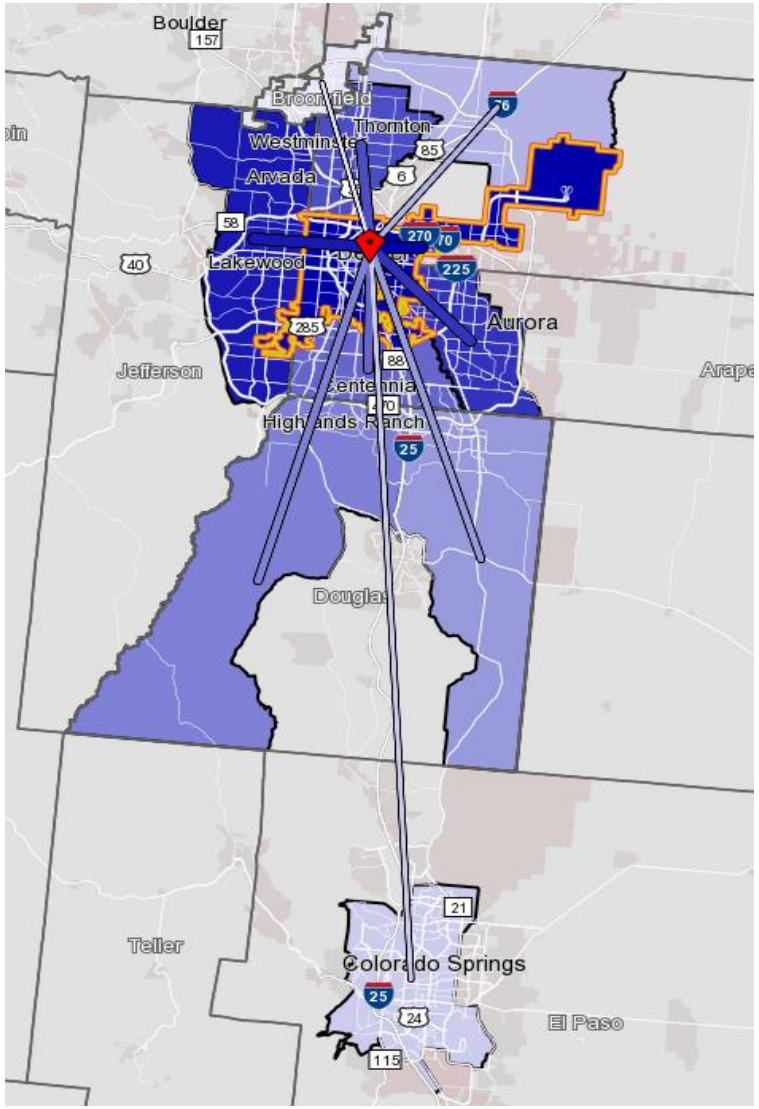


* Multifamily rent growth based on Jan 2013 through Jan 2018
* Change in multifamily occupancy based on Dec 2016 through Dec 2017
Source: Yardi® Matrix

Denver Employment and Transportation

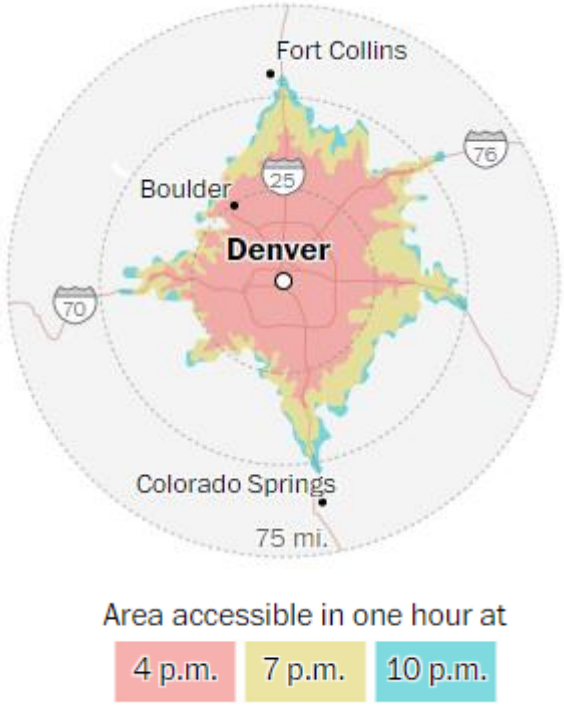


*Map based on 2015 data; Employment based on December 2017 data



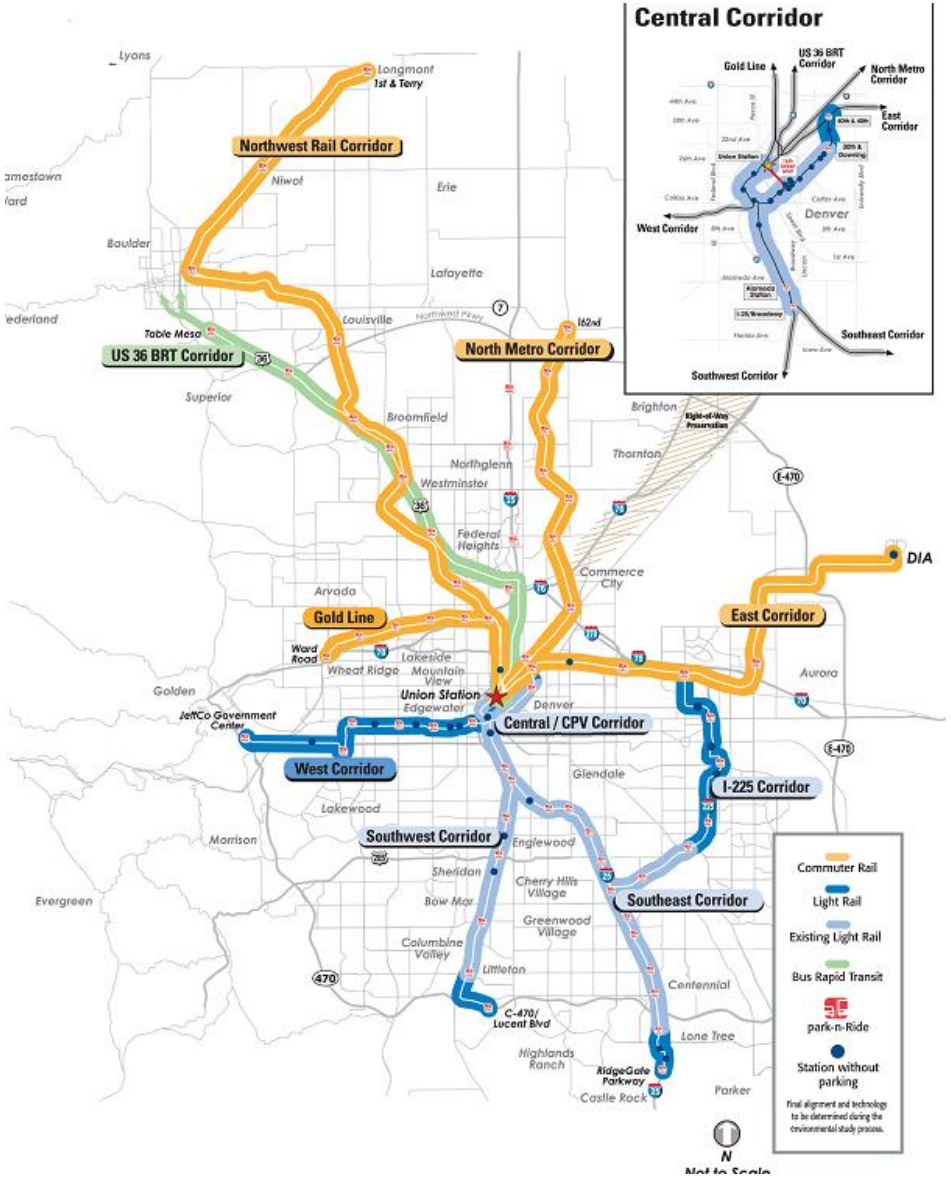
Blue areas are the top 10 county subdivisions where Denver workers live

Approximately 5,908 jobs in Denver are occupied by residents who live in Colorado Springs, which has a commute time of over an hour, regardless of what time



Source: Moody's Analytics; U.S. Census Bureau (BOC), Center for Economic Studies; The Washington Post; HERE

Denver Transportation Maps



Source: Colorado Department of Transportation

YARDI

Legacy West – Plano, TX

- Business district in Plano, TX
- Opened mid-2017
- $3.2 billion development
- 255-acre plot of land
- Office, retail shopping, restaurants, apartments, hotels

These corporate giants brought more than 20,000 jobs to Legacy West:

- FedEx International Headquarters
- Toyota North American Headquarters
- JP Morgan Chase Regional Headquarters
- Liberty Mutual Regional Headquarters

Source: nbcdfw.com; legacywest.com; Yardi®Matrix

Legacy West – Plano, TX

JP Morgan Chase Regional Campus

$300 million

1 million sq. ft.

6,000 employees

FedEx International Headquarters

265,000 sq. ft.

1,200 employees

Toyota North American Headquarters

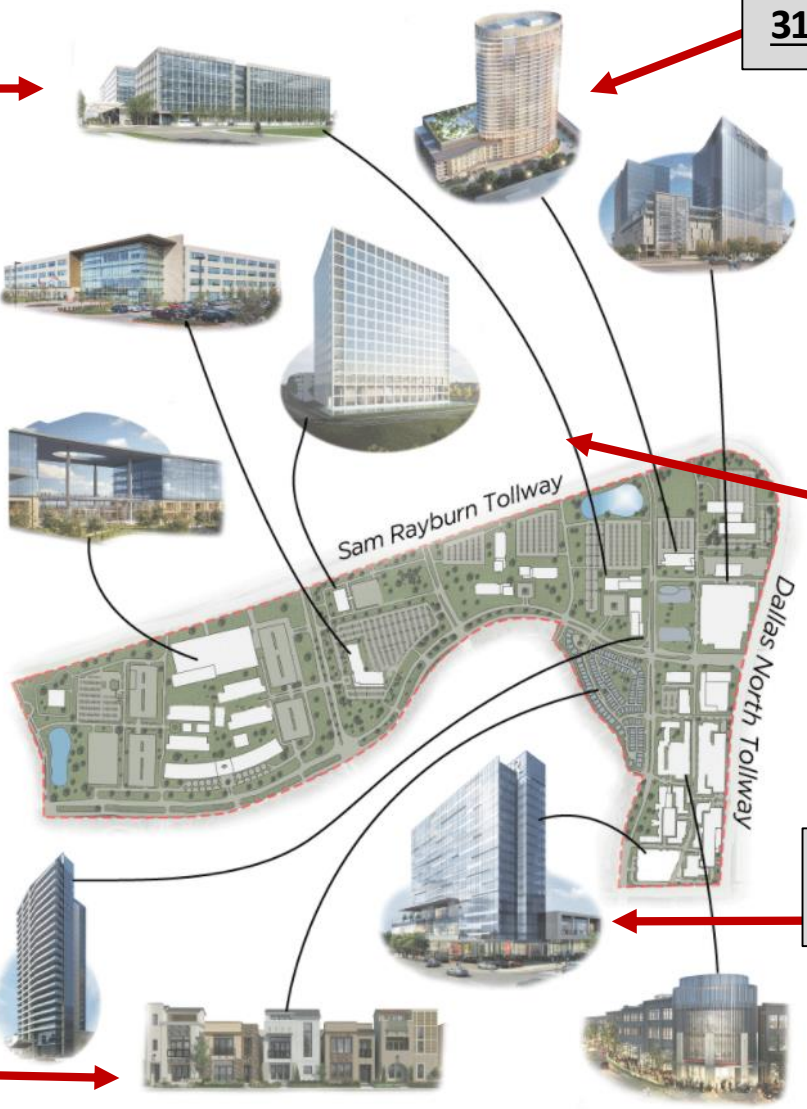
$350 million

2 million sq. ft.

4,000 employees

95-unit luxury condo building

127 single family homes



312-unit apartment building

Liberty Mutual Insurance Regional Office

$325 million

900,000 sq. ft.

5,000 employees

Gaedeke Group Office Tower

327,856 sq. ft.

Multi-tenant

NTT Data anchor business

304-room luxury hotel

Legacy West Urban Village

$400 million

415,000 sq. ft. retail and restaurant

325,000 sq. ft. office

1,200 apartments

Source: Dallasnews.com; Yardi®Matrix

YARDI

Lake Nona – Orlando, FL

- 17 square mile master-planned community – one of the country's fastest growing
- More than 12,000 residents and more than 10 million sq. ft. of residential and commercial facilities
- Health and life sciences cluster
- Lake Nona Town Center
  - 3.8 million sq. ft. campus
  - 80,000 sq. ft. of retail, restaurant, and entertainment

Johnson & Johnson

- $18 million expansion of its existing 17,000 sq. ft. development and training center
- New regional headquarters
- Create 25 position by Dec 31 2020 that pay an average annual wage of $100,000

Source: multihousingnews.com; bizjournals.com

Theme #3:

Certain office disruptors are impacting investors everywhere, regardless of location

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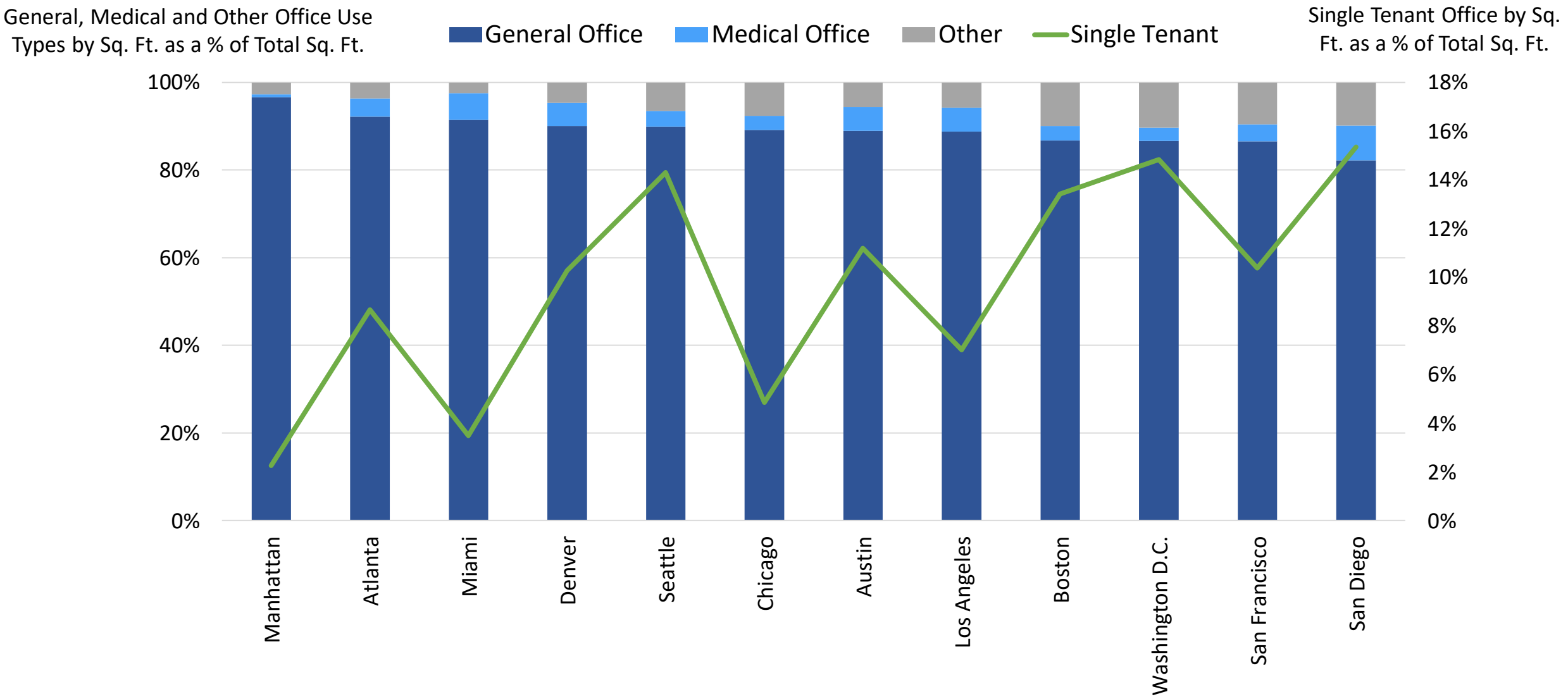
There is a lot going on inside little niches



Source: Yardi®Matrix

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Factors Mitigating Growth and Reducing Office Space Demand

Coworking, Telecommuting and Outsourcing

Telecommuting

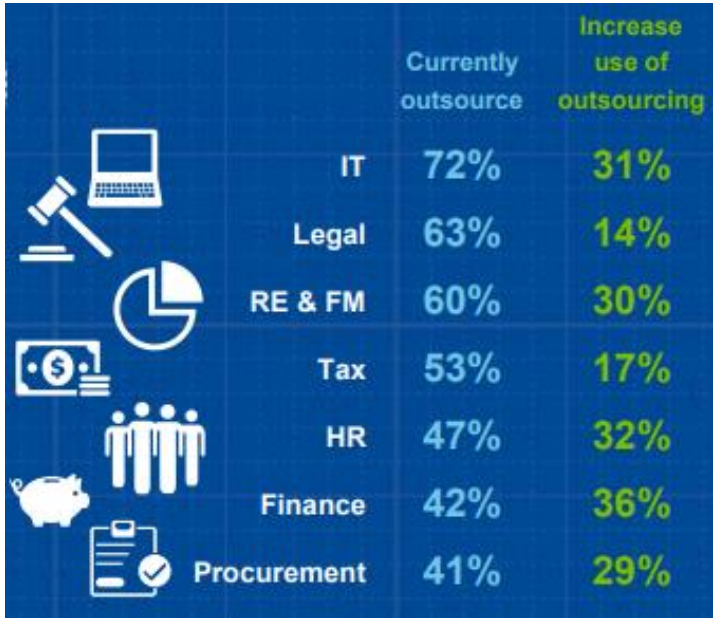
- Work-at-home population has grown by 115% since 2005
  - Nearly 10x faster than the rest of the workforce
- 3.7 million employees (2.8% of workforce) now work from home at least half the time

Small but growing
Impacts demand at the margins

Outsourcing

- Companies outsource to cut costs, focus on core business, and solve capacity issues

What are your current and future outsourcing strategies for the various business functions?



2016 Global Outsourcing Survey by Deloitte

*Telecommuting data as of June 2017
*Outsourcing data as of Jan 2016

Source: GlobalWorkplaceAnalytics.com; Deloitte.com; Yardi®Matrix

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Coworking: Another Small, Yet Growing Segment in Office

What is Contributing to Growth?

Growth in the Gig Economy
- # of self-employed workers has risen

Entrepreneurial Workers
- Founders and employees of startup companies

Remote Employees
- Technology enables people to work remote

Less Commuting
- Workers are avoiding long commutes for quality of life and environmental reasons

Relaxed, Social Environment
- Attractive particularly to Millennials

Cutting Costs
- Companies are trying to reduce their footprint as rents increase

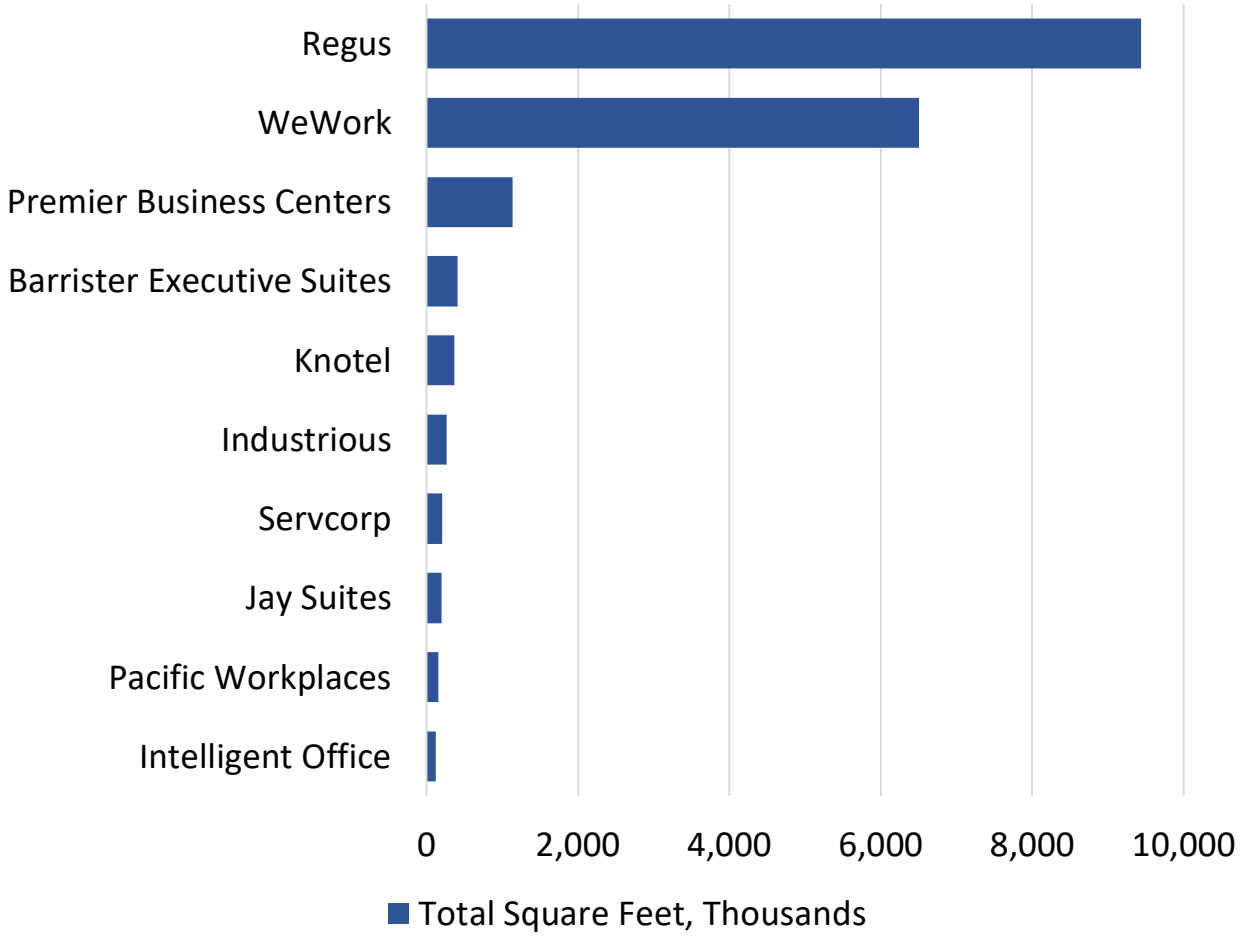
Large Corporations
- Growing segment of coworking demand

Tax Laws
- Starting in 2019, corporations must treat lease obligations as debt on their balance sheets

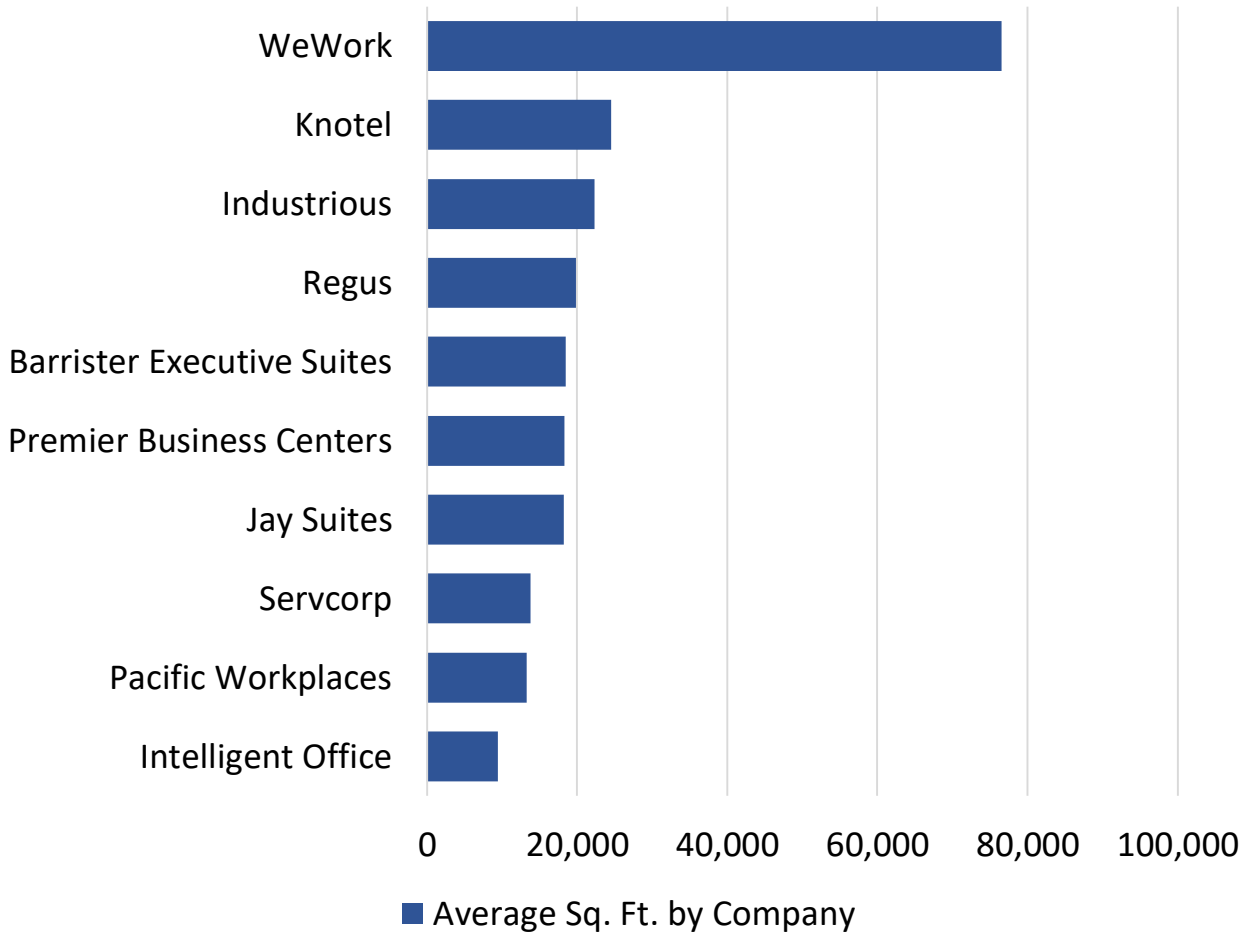
Source: Yardi®Matrix

Two Industry Giants Dominate Coworking

Regus has the Most Space



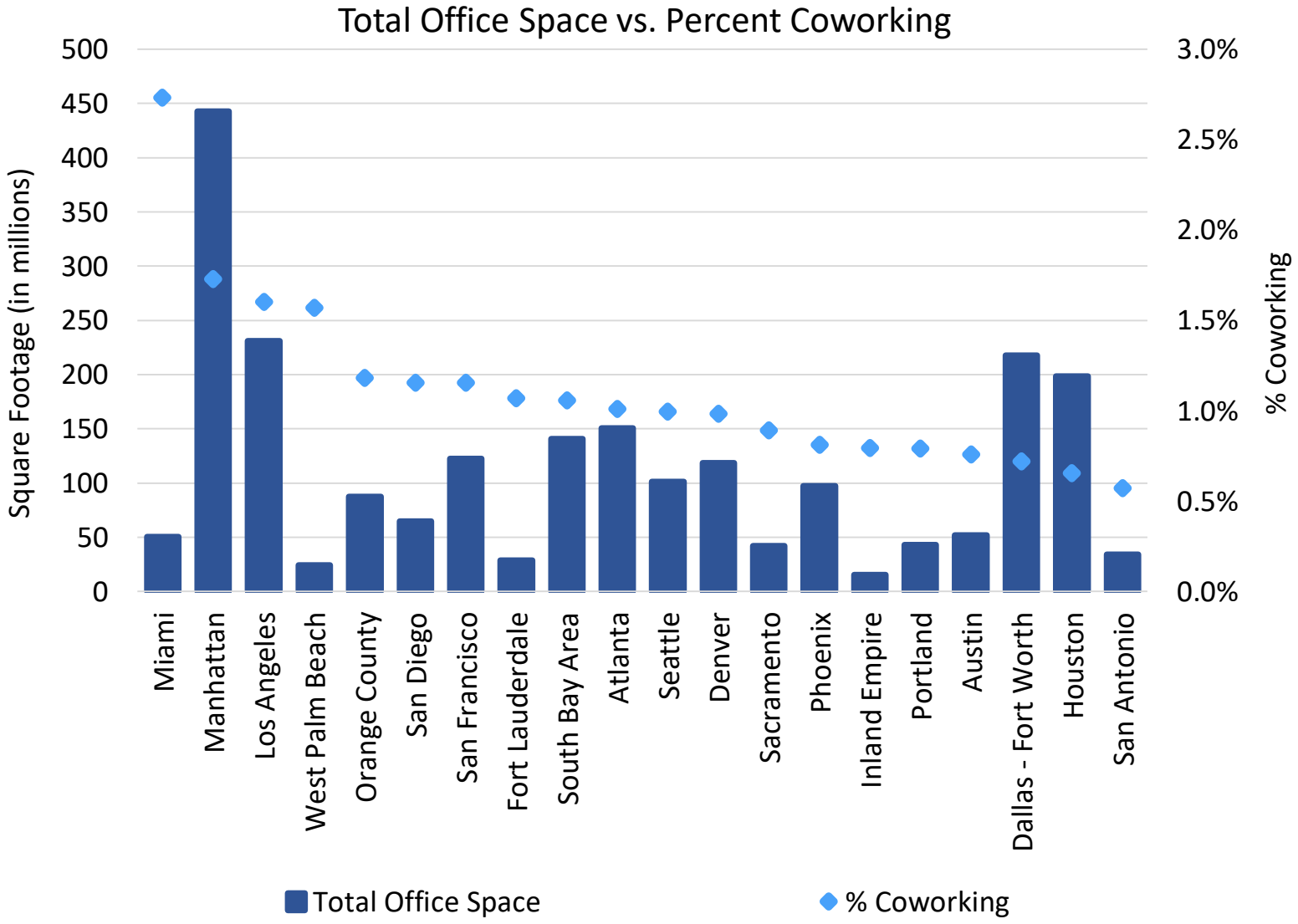
While WeWork has the Biggest Spaces



Source: Yardi®Matrix

YARDI

Coworking Space by Market



Market	Total # of Tenants	Square Feet
Manhattan	245	7,650,722
Los Angeles	158	3,702,972
Dallas-Fort Worth	88	1,565,144
Atlanta	76	1,519,969
Bay Area	48	1,485,882
San Francisco	50	1,416,292
Miami	59	1,379,098
Houston	71	1,295,804
Denver	67	1,164,063
Orange County	55	1,032,568
Seattle	40	1,004,705
Phoenix	42	789,644
San Diego	41	749,735
Austin	20	395,500
West Palm Beach	25	376,975
Sacramento	12	375,587
Portland	19	340,000
Fort Lauderdale	22	305,927
San Antonio	18	194,375
Inland Empire	10	123,458

Source: Yardi®Matrix

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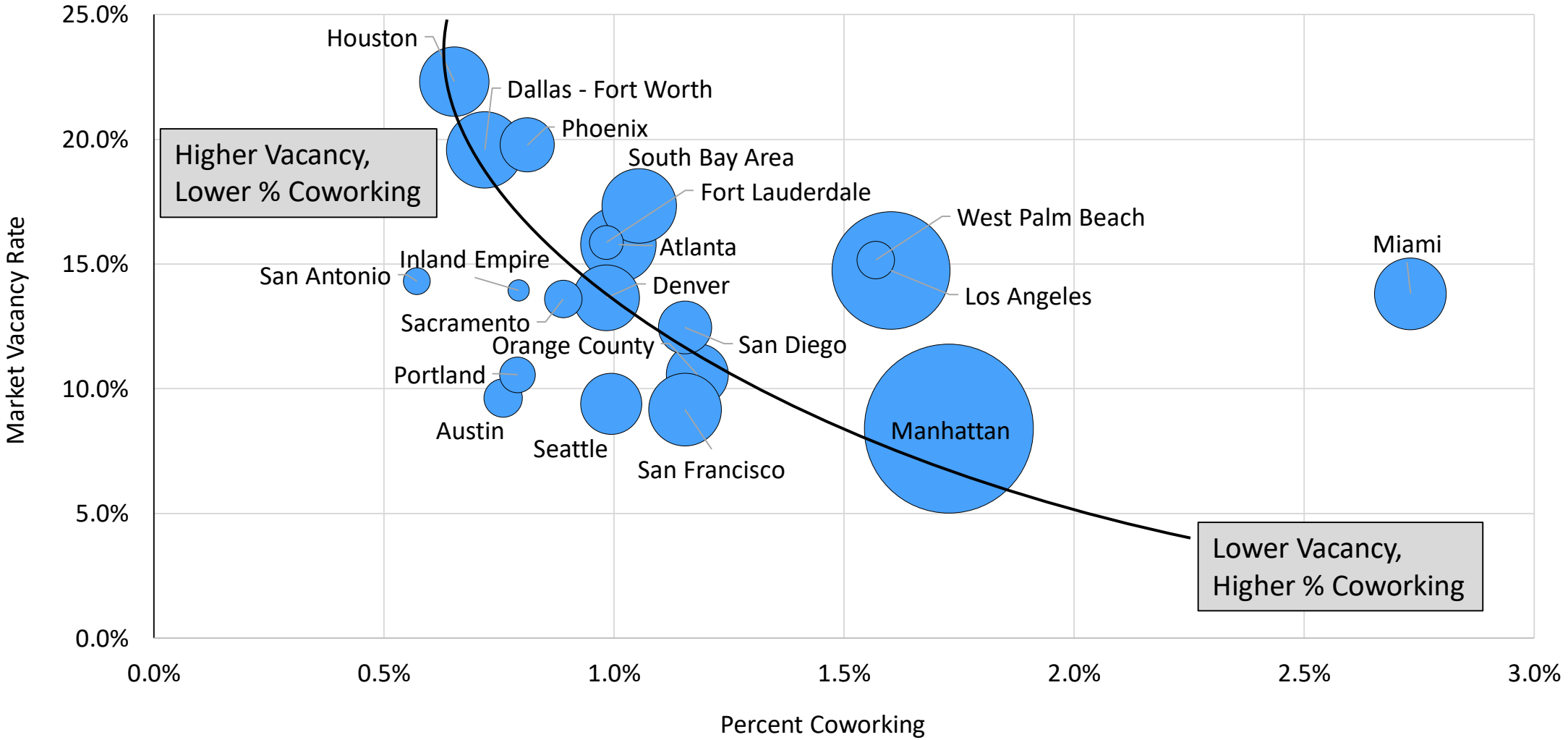
Markets with Lower Vacancy Rates Have Higher Proportion of Coworking Space



Source: Yardi®Matrix

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Adaptive Reuse

Companies are repurposing existing buildings into office properties to reduce waste and maintain character

Former Wonder Bread Factory near Washington DC was rehabbed and is now occupied by WeWork

Google transformed the former Nabisco factory turned food mart, called Chelsea Market, into their office building

HP transformed former mall in Mountain View, CA into offices

Google bought and renovated the space in 2013, transforming it into its Google Glass headquarters

Source: Yardi®Matrix; businessinsider.com; douglasdevelopment.com; nytimes.com; google.com

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Green Office and Employee Wellness

Sustainable buildings experience higher rent, occupancy, renewals and tenant satisfaction

– 2015 study of 10 years of financial performance data across Bentall Kennedy office portfolio of 58 million sq. ft.

<u>With such a tight labor market, employers are using creative office environments to attract and retain talent</u>

- Clean/Fresh Air
- Natural Light
- Water Quality
- Noise Levels
- Fitness Center
- Standing Desks

While Reducing Costs Via Increased Density
i.e. CBRE HQ Los Angeles

Transwestern's Regional Headquarters in Chicago awarded LEED Platinum Certification and Silver level WELL Certification

Source: Yardi®Matrix; BentallKennedy.com; Globest.com

Technology's Impact on the Future of Real Estate

- Position where wealth is created and where the value of "place" will increase
- With a focus on live/work/play then "fulfill"/store

Technologies

*Energy
- Batteries
- Solar

*Electric & Autonomous Vehicles
- Lithium-Ion Batteries
- LIDAR Sensors

IoT/Sensors
- Smart Office & Smart Home
  - Amazon Echo
  - Nest Thermostat

Artificial Intelligence/Robotics
- Drones
- Virtual Realty

"Taken-for-Granted" Tablestakes

Connectivity
- 1G Connectivity, 40x High Speed
- Mobility
- Security

Collaboration
- Mobile apps
- Connectivity and free-up trapped resources

*Focus today on these two

Source: Yardi®Matrix

Technology Disruption Model

Technology

- **Lithium Ion Battery** is a new technology, but it won't lead to disruption on its own
- Converge with other technologies + business model innovation for disruption

Technology Convergence

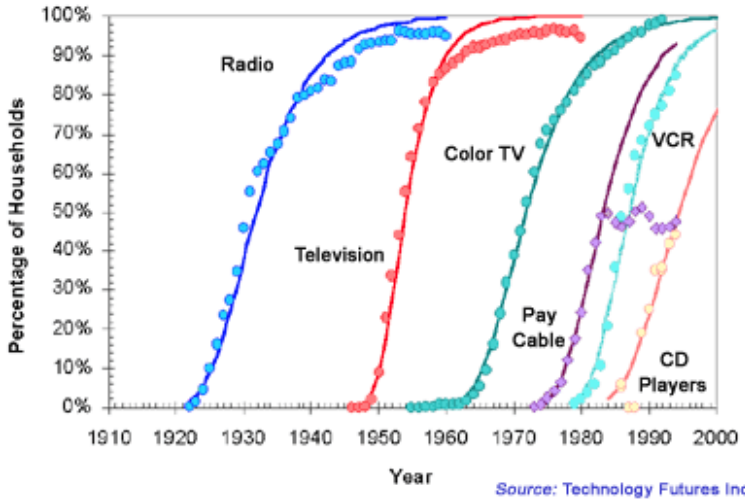
- New functionalities possible when several technologies converge
- **Lithium Ion Battery** + Data Storage + Computing + Digital Imaging + Network Capacity ….
  = **Smartphone**

Business Model Innovation

- Smartphone + Cloud convergence enabled **Uber** (business model innovation)
- Loan financing or cost sharing will drive down current cost of usage

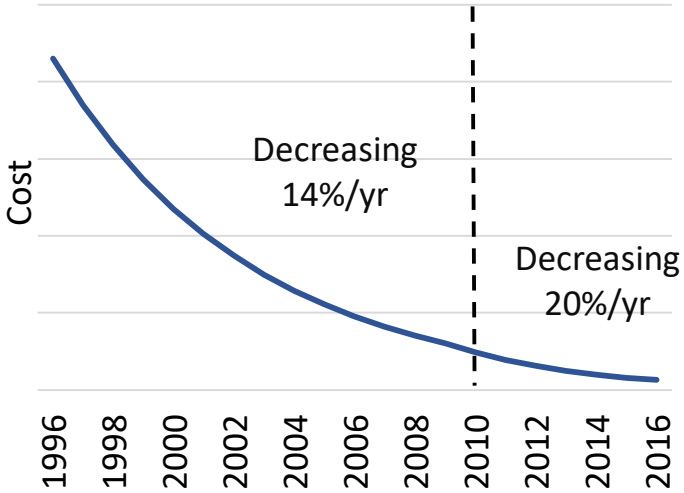
Technological Disruption

- Several technologies + business model innovation converge to enable certain functionality at a certain cost
- Cost reduction will lead to disruption, adapted as an S-Curve



Horse → Car
Telephone → Cellphone
Taxi → **Uber**

Lithium-Ion Cost Curve



Example:

Lithium Ion Battery **(Technology)**

Touchscreen + Computing + Digital Imaging + Lithium Ion Battery = Smart Phone **(Convergence)**

Smart Phone + Cloud = Uber **(Business Model Innovation)**

Uber is a disruption of the taxi business!

Source: Tony Seba, Clean Disruption of Energy and Transportation; Technology Futures Inc.

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Energy Disruption Model

Battery Cost

- Investment in vehicle and grid markets driving down cost of batteries
- Energy storage can lead to disconnection from the grid, avoidance of peak load pricing **(SOLAR)**
- Declining battery costs result in lower-cost electric cars, and vice versa
- Electric vehicles are 10x cheaper to charge/fuel than vehicles with internal combustion engines
- Li-ion battery cost dropping rapidly, 16-20% per year
  - Result of major industries heavily investing, more research and development, more scale

Solar Panels Cost

- Solar PV cells cost ~ $0.35/per watt, but will likely increase with new tariffs imposed
- Solar accounts for 39% of new electricity generation in 2016, more than any other source
- Grid parity – when solar is as cheap or cheaper than what we pay the utility
- Currently lowest cost for stand alone generation, but next will be new central generation, then individual business generation, then consumer generation
- Eventually, the cost of solar on your rooftop will cost less than transmission, thanks to **STORAGE**

Financing

- Solar-plus-battery systems are long-term assets
  - Upfront capital cost
  - Likely to be financed at some interest rate
  - Paid off in monthly installments
- Landlord can finance cap ex as part of building revenues

Rapid adoption

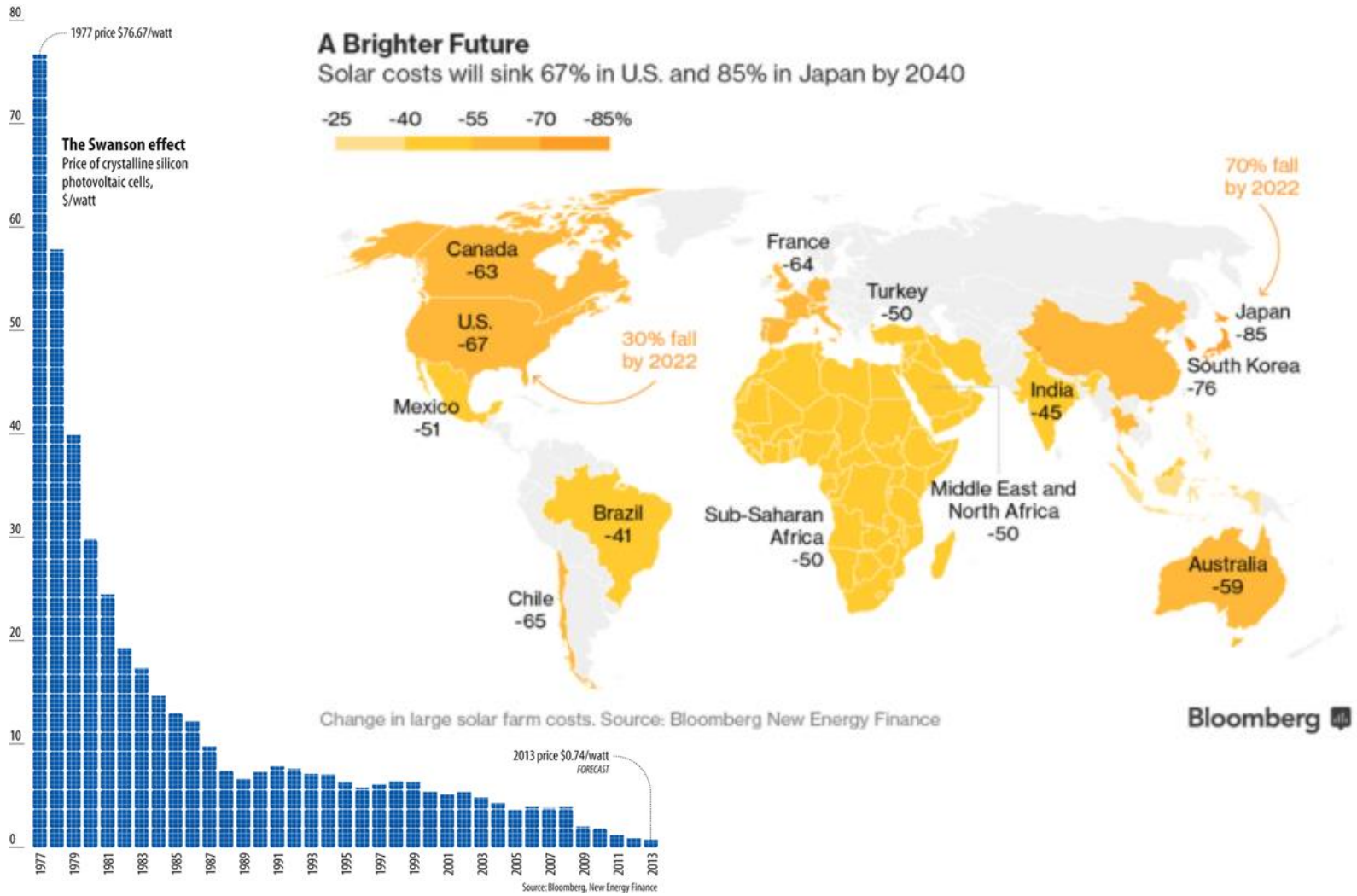
Source: Tony Seba, Clean Disruption of Energy and Transportation; Rocky Mountain Institute, The Economics of Grid Defection; Barron's

Solar Energy was Becoming More Affordable…

Prices will go up, though

- Trump Administration approved a 30% tariff on solar cells/panels from overseas
- >95% of U.S. solar panels are imported, mainly from China, Malaysia, South Korea
- Solar cells currently cost about $0.35-$0.40/watt
- Cost could be passed on to customers, making solar energy more expensive and less attractive, cooling down growth
- However, technology and installation costs have dropped in recent years, possibly offsetting higher cost of cells and panels
- Storage projects, when paired with renewable energy, currently qualify for a 30% federal investment tax credit, which was left intact in the recent tax overhaul

Cost of Solar PV Cells



Source: Bloomberg New Energy Finance; Tony Seba, Clean Disruption of Energy and Transportation; cleantechnica.com; wsj.com; money.cnn.com; nytimes,com; theguardian.com

YARDI

Solar Will Be Adopted When It's Economical

Disintermediation Starts at Highest Cost

- Islands
- Peak Load Pricing
- NYC StuyTown announces Rooftop Solar

Copenhagen International School in Denmark

- Building is completely covered by solar tiles
- Provides 300 MWh of electricity per year, accounting for 50% of the school's energy needs

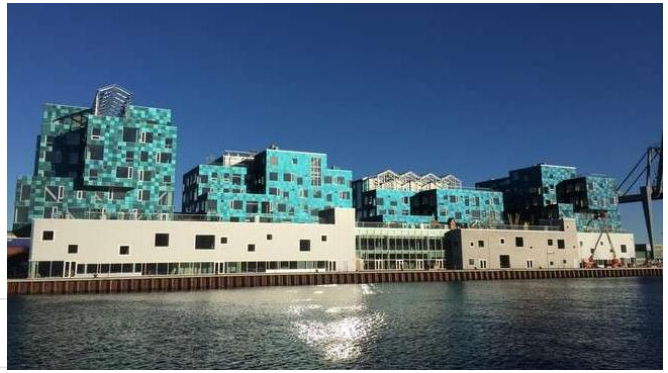
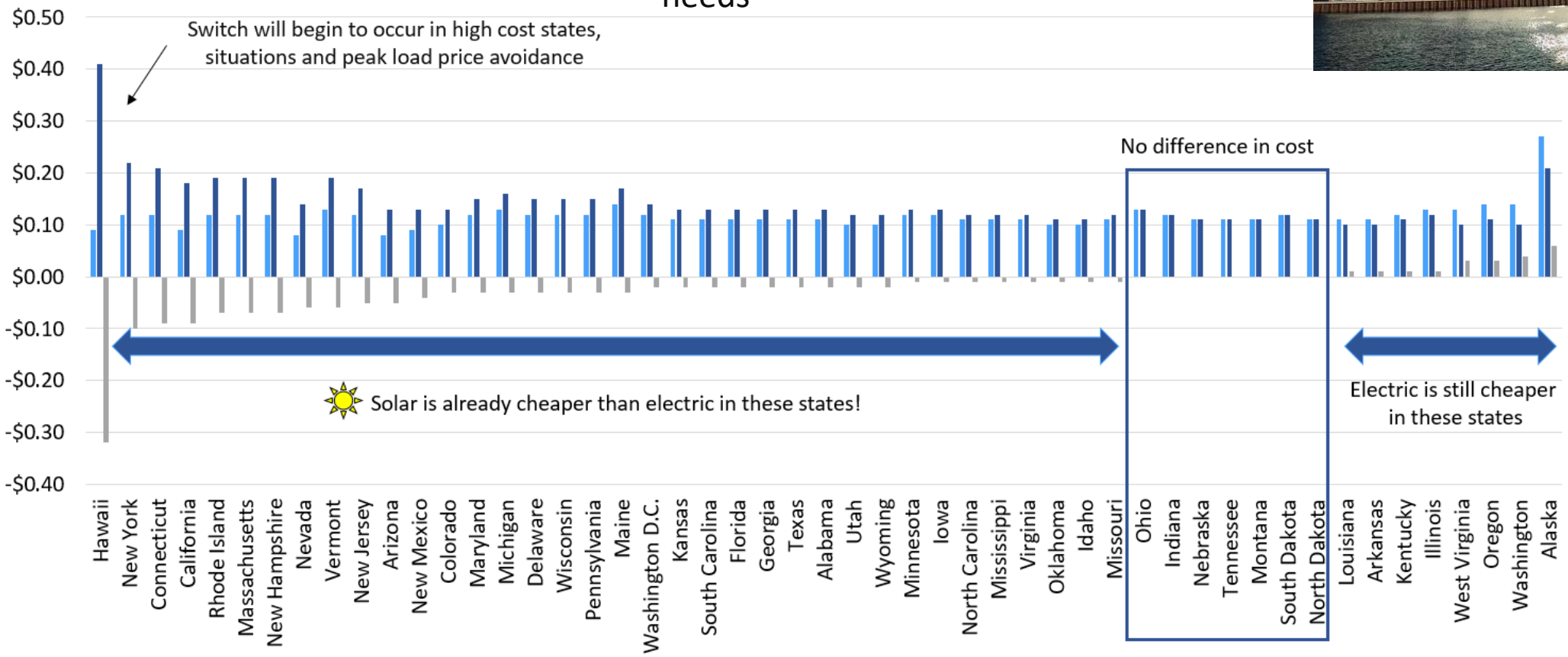


Photo: EPFL



Source: dailyplanet.climate-kic.org; Tony Seba, Clean Disruption of Energy and Transportation; Deutsche Bank

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States with Lower-Cost Solar Energy are Taking Action

Arizona

- Tucson Electric Power is building a 100-megawatt solar facility and 30-megawattt battery array
- Could power 21,000 homes
- Store inexpensive solar generation in the morning, when power demand is low, and deploy it in the heat of the afternoon
- Batteries can provide power *"for a lower cost than the operating cost of traditional inefficient generation resources"*
  – Jim Robo, Next Era Energy Chief Executive
- Corporation commissioner Andy Tobin proposed a three-gigawatt mandate by 2030
  - He argues that investing in battery storage makes business sense for the sun-rich state

California

- Developing a battery array 3x the size of the Tucson project in Long Beach, CA
- Fluence Energy is building a battery that could power 60,000 southern California homes for up to 4 hours
- It will be the largest lithium-ion battery in the world
- 3x bigger than battery built last year by Tesla in Australia
- California has a mandate to add 1.2 gigawatts of storage by 2020

New York and Massachusetts

- Developing similar programs to California's 1.2 gigawatt of storage by 2020 mandate

Source: wsj.com; tep.com; Yardi®Matrix

Solar + Storage: Grid-Scale and Commercial Scale

You may be forced to take a more active role in the energy utility business

Grid System

- 396 stacks of Tesla batteries installed in Southern California Edison's Mira Loma substation, with 20 MW of energy storage capacity
- System sucks up electricity from the grid during the day and feeds it back into the system at night
- Can power roughly 15,000 homes over 4 hours
- Estimated cost of roughly $29 million and took just under 3 months to complete
- PG&E's Colusa Generating Station, a 660 MW natural-gas fired power plant, cost roughly $450 million and took 2 years to complete!

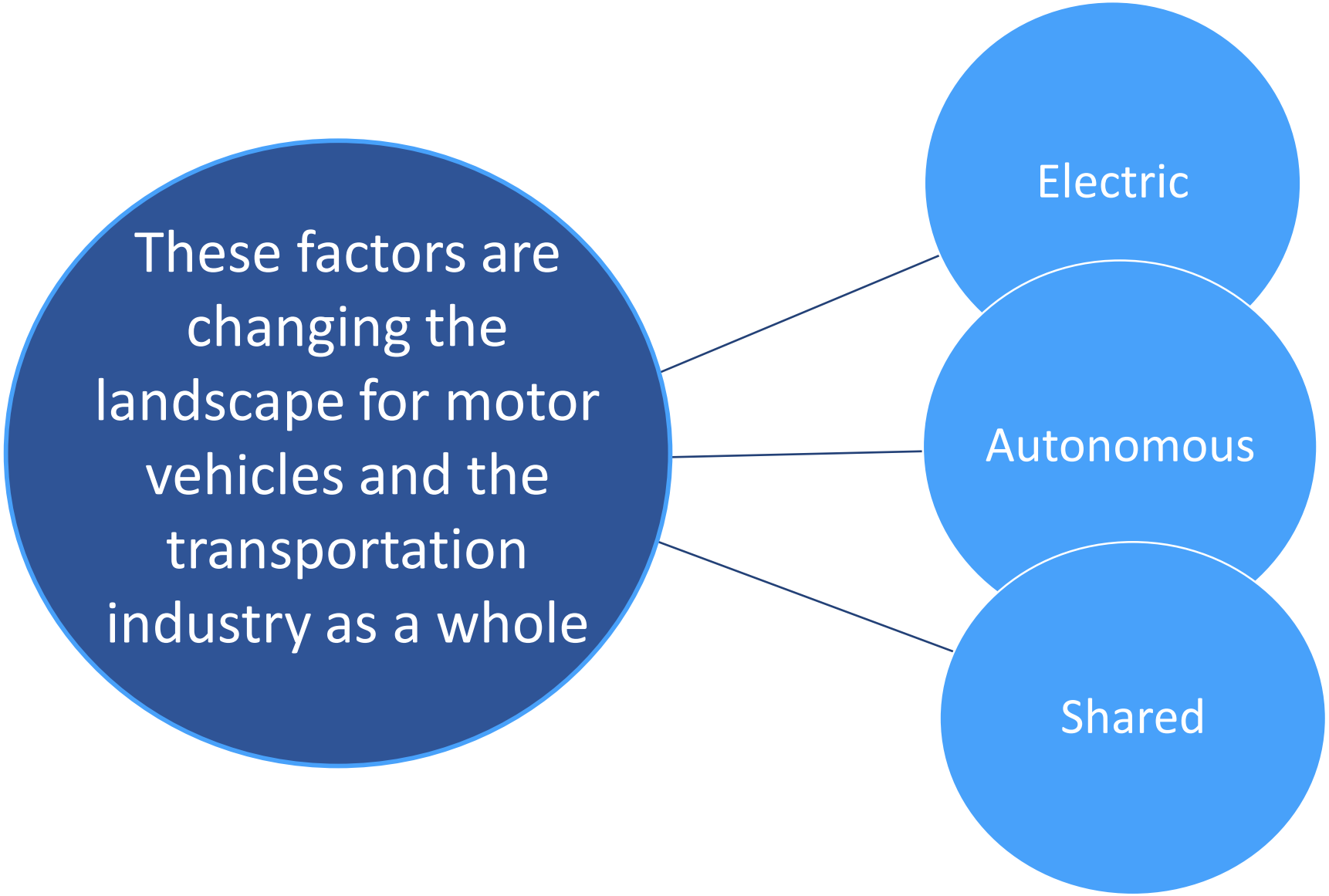
Commercial System

- Tesla's Powerpack can be pared back from the grid scale and serve even a small commercial business
- Microsoft turning to renewable energy for international data centers
  - Wind energy projects in Ireland and the Netherlands
  - Recently signed deals with India and Singapore for solar energy
- Office in Ontario planned for completion in March 2019 will be the first net positive energy office in Canada, generating more energy than needed for annual operation
- Japan's first office building fully powered by off-the-grid solar energy generated by 320 solar panels on the roof and stored in lithium-ion batteries opened in February

Source: nytimes.com; Tony Seba, Clean Disruption of Energy and Transportation; energy.ca.gov; tesla.com; businessinsider.com; japantimes.co.jp; eletimes.com; proudgreenbuilding.com

YARDI

The Ground Transportation Industry is Changing

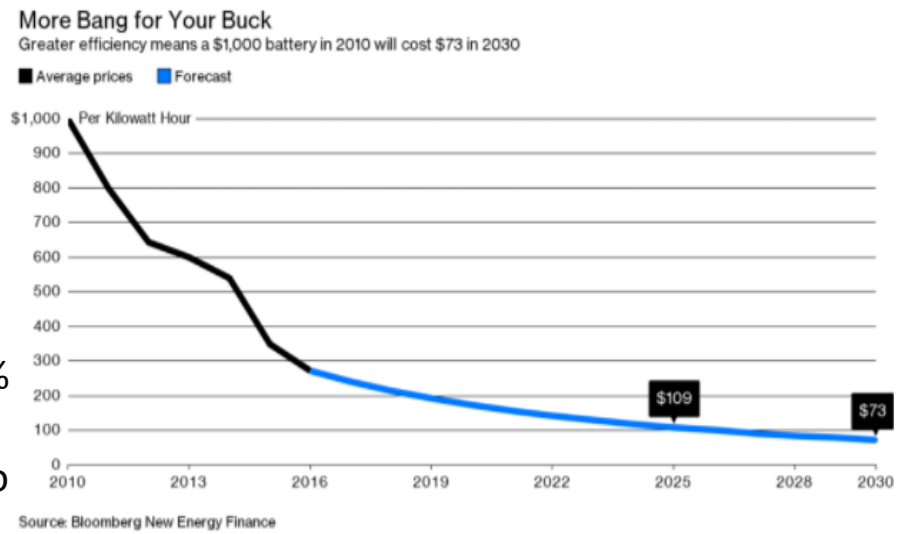


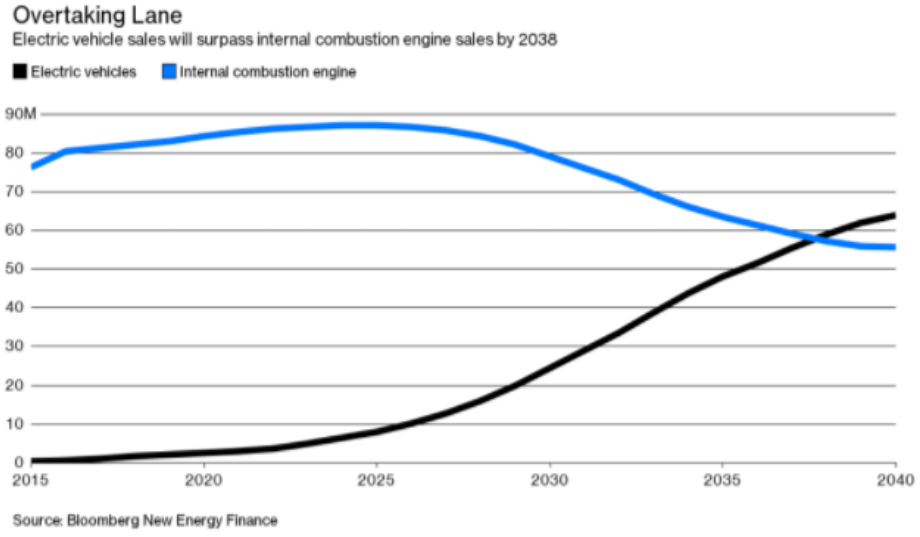
Source: Yardi®Matrix

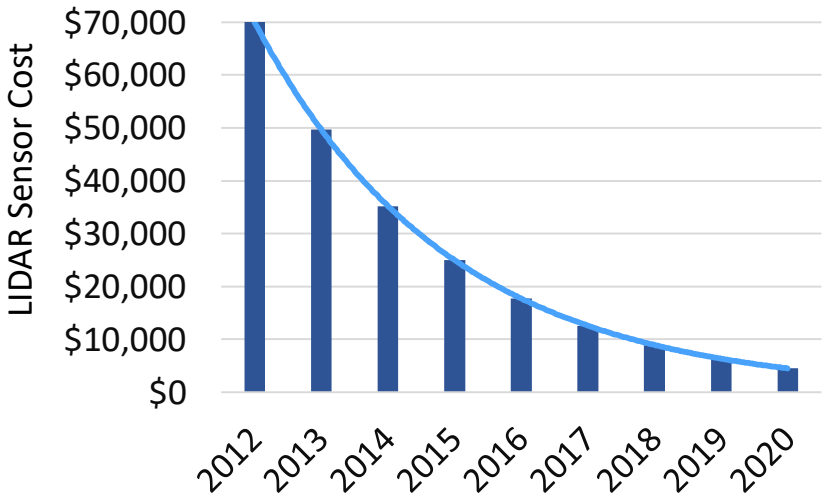
Electric and Autonomous Vehicles

Electric Vehicles

- Regulators seeking to reduce automotive CO2 emissions
- Cost of Li-ion batteries are falling
- Cost for gasoline cars ⬆ , while cost for electric vehicles ⬇
  - 18 moving parts (EV) **vs.** 2,000 (gasoline)
  - 90-95% efficient (EV) **vs.** 17-21% efficient (gasoline)
  - EV is cheaper to fuel, cheaper to maintain, and lasts longer…







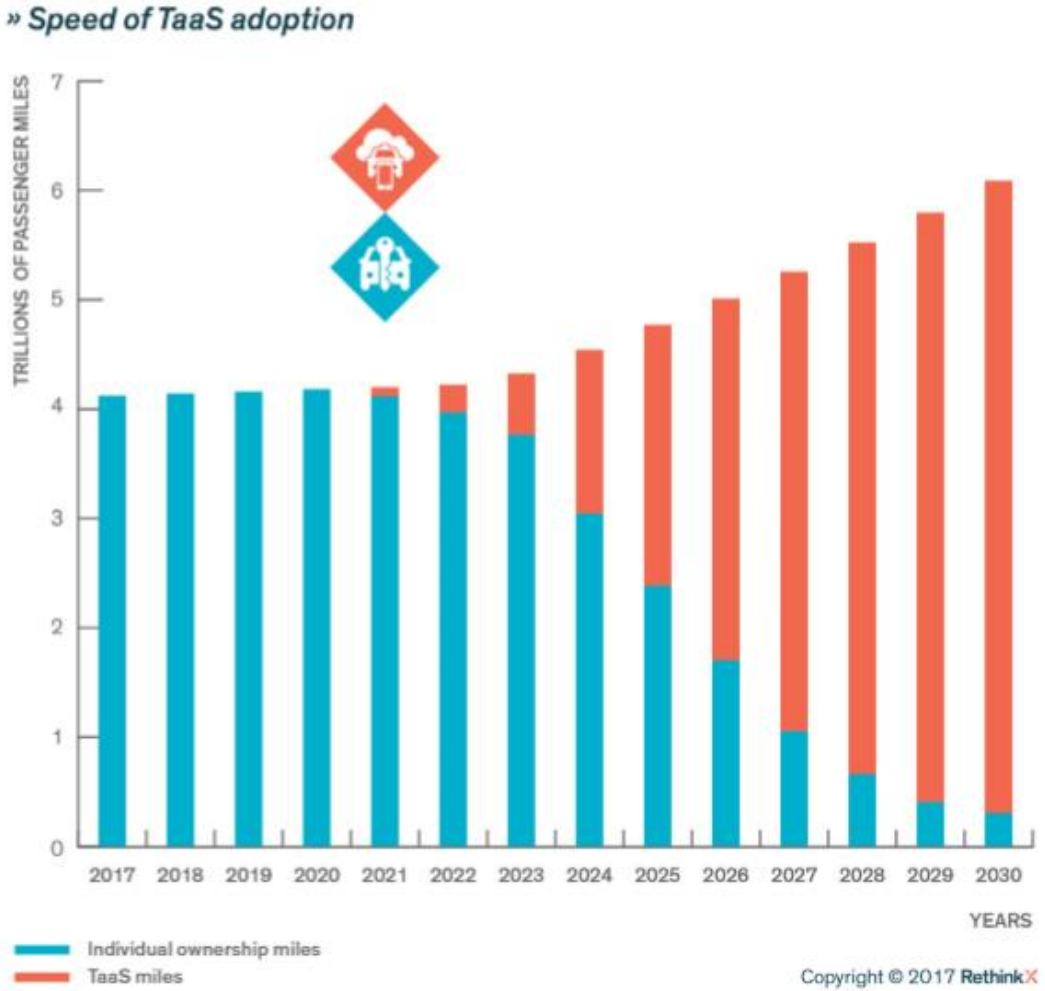
Autonomous Vehicles

- Google's 'Waymo' has more than 5 million miles self-driven
- Nissan, BMW, Mercedes: pledged to have autonomous vehicles ready by 2020
- Tony Seba: autonomous vehicles will save lives, time, space, energy, and money
- LIDAR (laser + radar) allows car to "see" in 360 degrees
- Most expensive component of autonomous vehicles, but the cost is rapidly decreasing

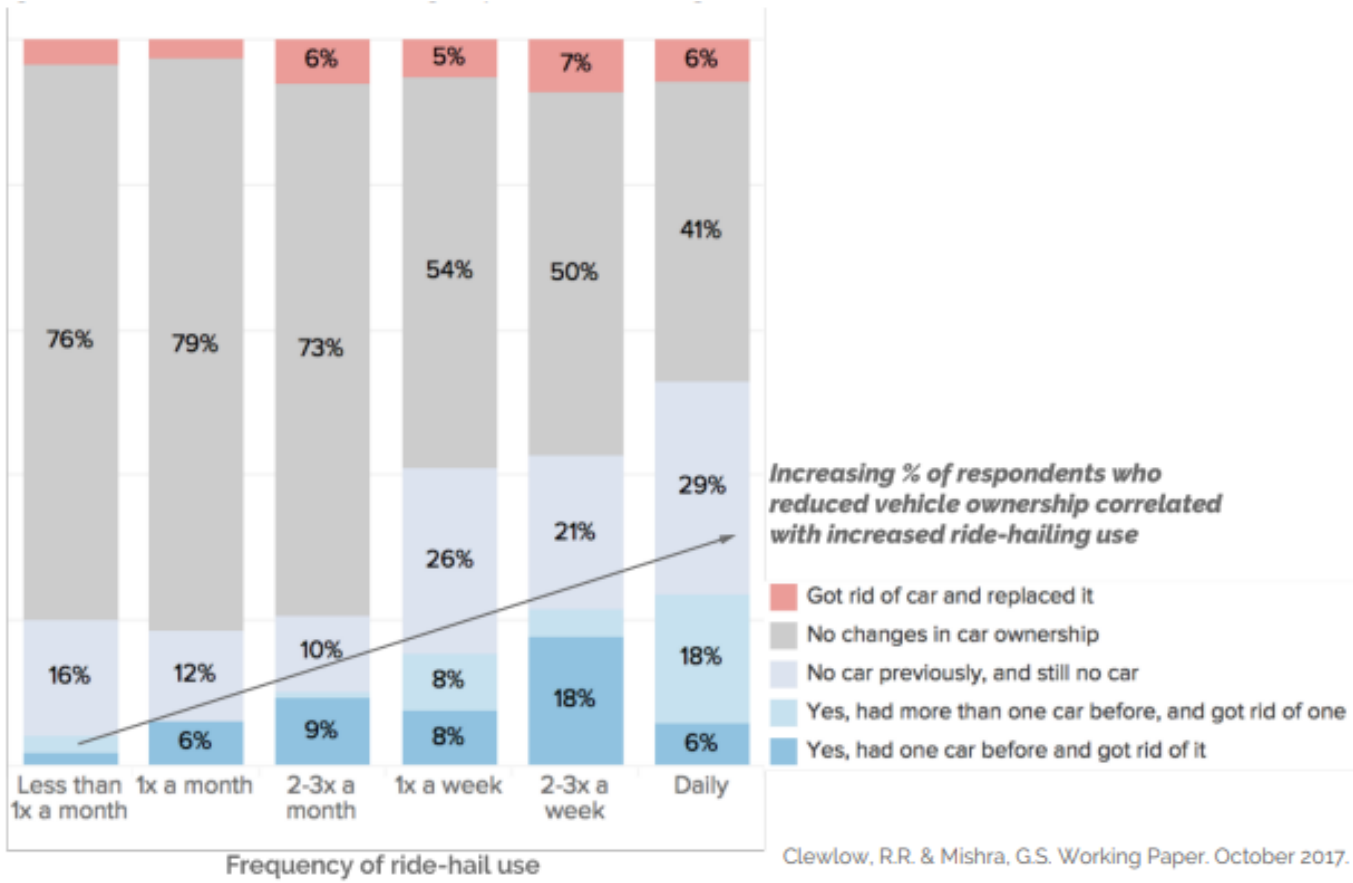
Source: Bloomberg New Energy Finance; Tony Seba, Clean Disruption of Energy and Transportation; Barron's ; waymo.com

The Growth of Ridesharing Services

As Ride Sharing Grows…



…Vehicle Ownership Falls



Source: Clewlow, R.R. & Mishra, G.S. Working Paper. October 2017;RethinkX

Adoption Will Come First in Commercial Transportation

These changes will be adopted by commercial transportation much quicker than consumer transportation because it makes ***economic sense***!

Commercial Adoption:

- Long haul trucking
- Short haul trucking
- Delivery
- Services
  - Garbage
  - Snow Removal
  - Buses

Consumer Adoption:

Once there is wide-scale adoption on a consumer level, what will you do with your extra land that was formerly tied up for parking?

May not affect you in the next two years, but certainly will over the typical ten year investment period…***and you may have more land than you think!***

Source: Yardi®Matrix

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Contact Information

Thank you! We are happy to answer any questions. Please contact:

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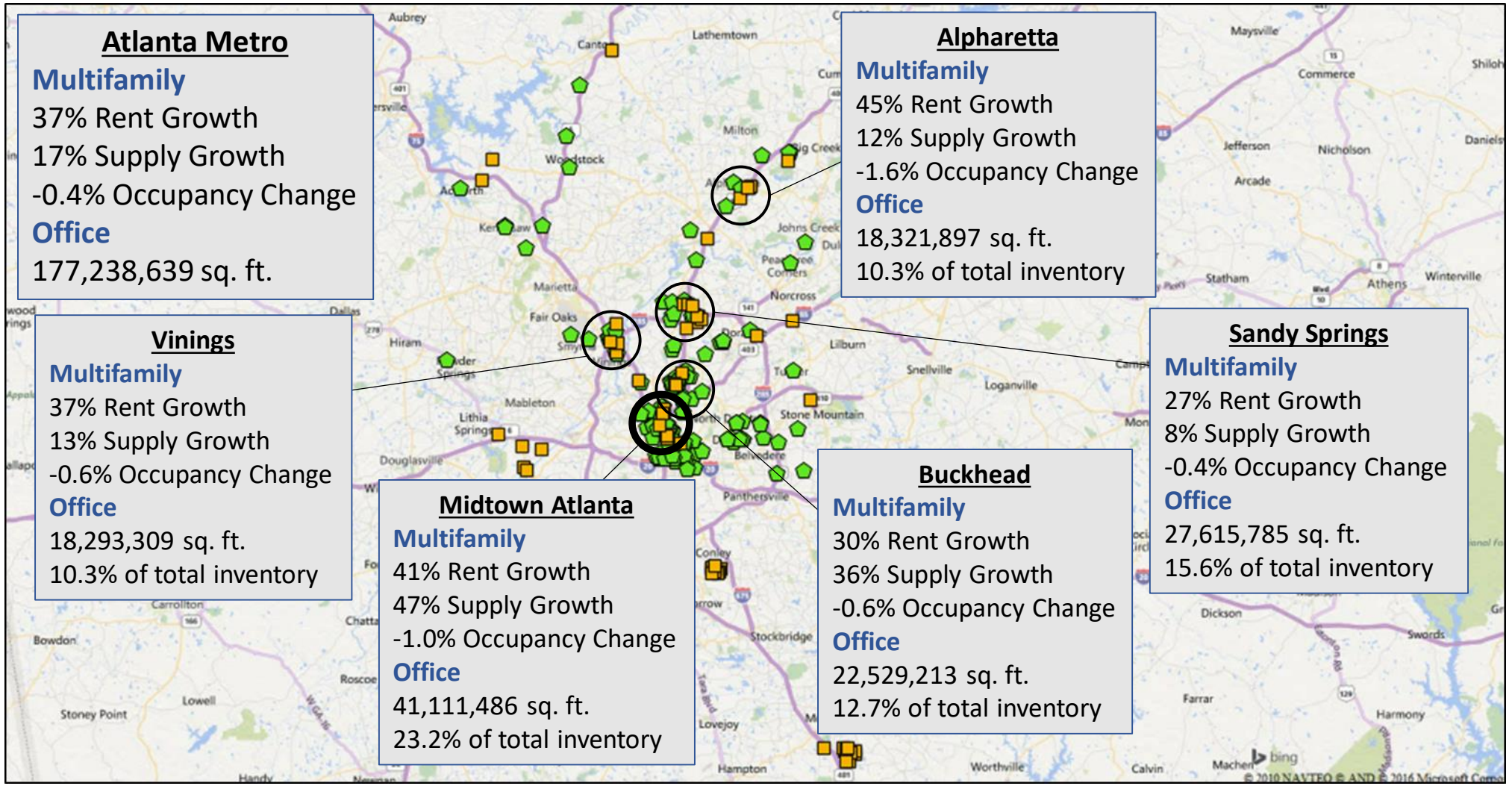
Appendix

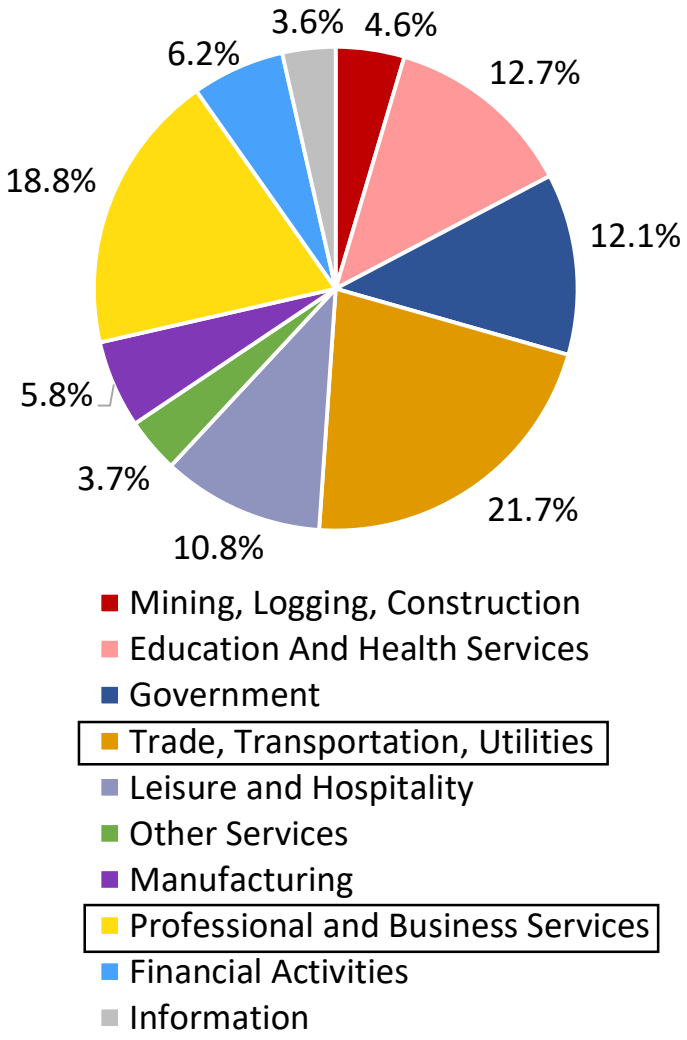
Intellectual Capital Nodes – Atlanta

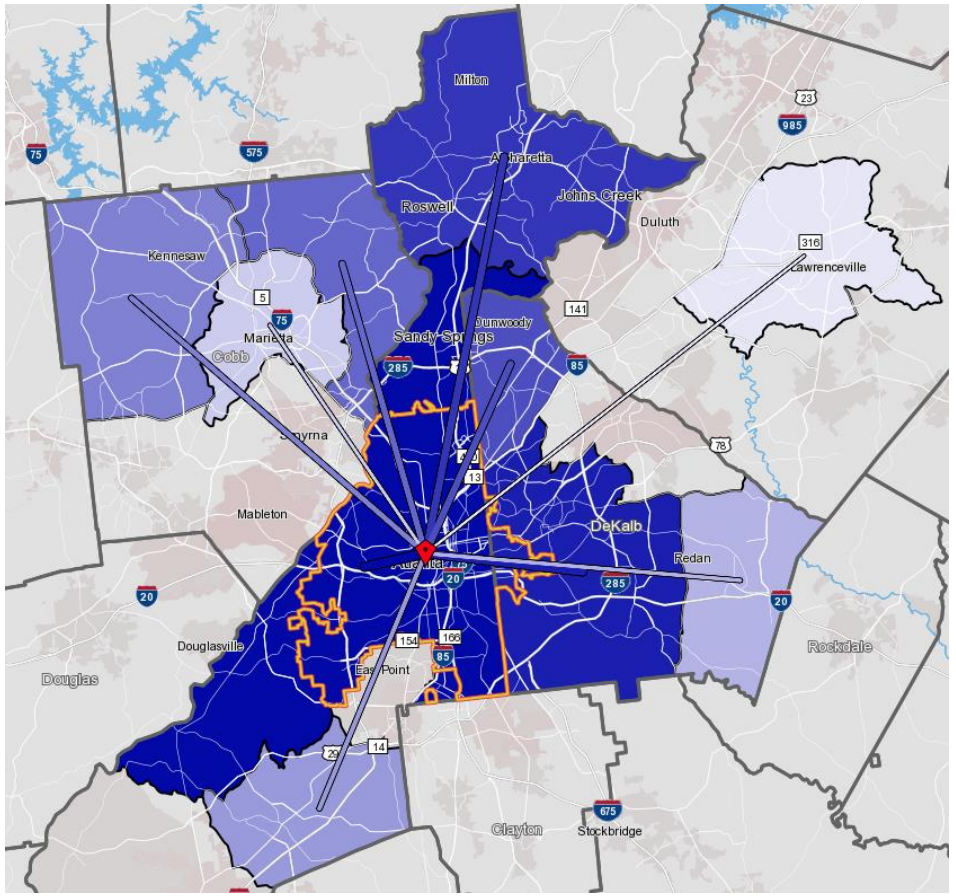


Office Development Multifamily Development

* Multifamily rent growth based on Jan 2013 through Jan 2018
* Change in multifamily occupancy based on Dec 2016 through Dec 2017
Source: Yardi® Matrix

Atlanta Employment and Transportation





87,733 Jobs
45,187 Jobs
15,744 Jobs
15,269 Jobs
12,767 Jobs
10,024 Jobs
8,455 Jobs
8,436 Jobs
8,089 Jobs
8,006 Jobs

Blue areas are the top 10 county subdivisions where Atlanta workers live

It takes a lot longer to commute home from work for those who live in northern counties, yet a good portion of workers choose to live there anyways

*Map based on 2015 data; Employment based on December 2017 data

Source: Moody's Analytics; U.S. Census Bureau (BOC), Center for Economic Studies; The Washington Post; HERE

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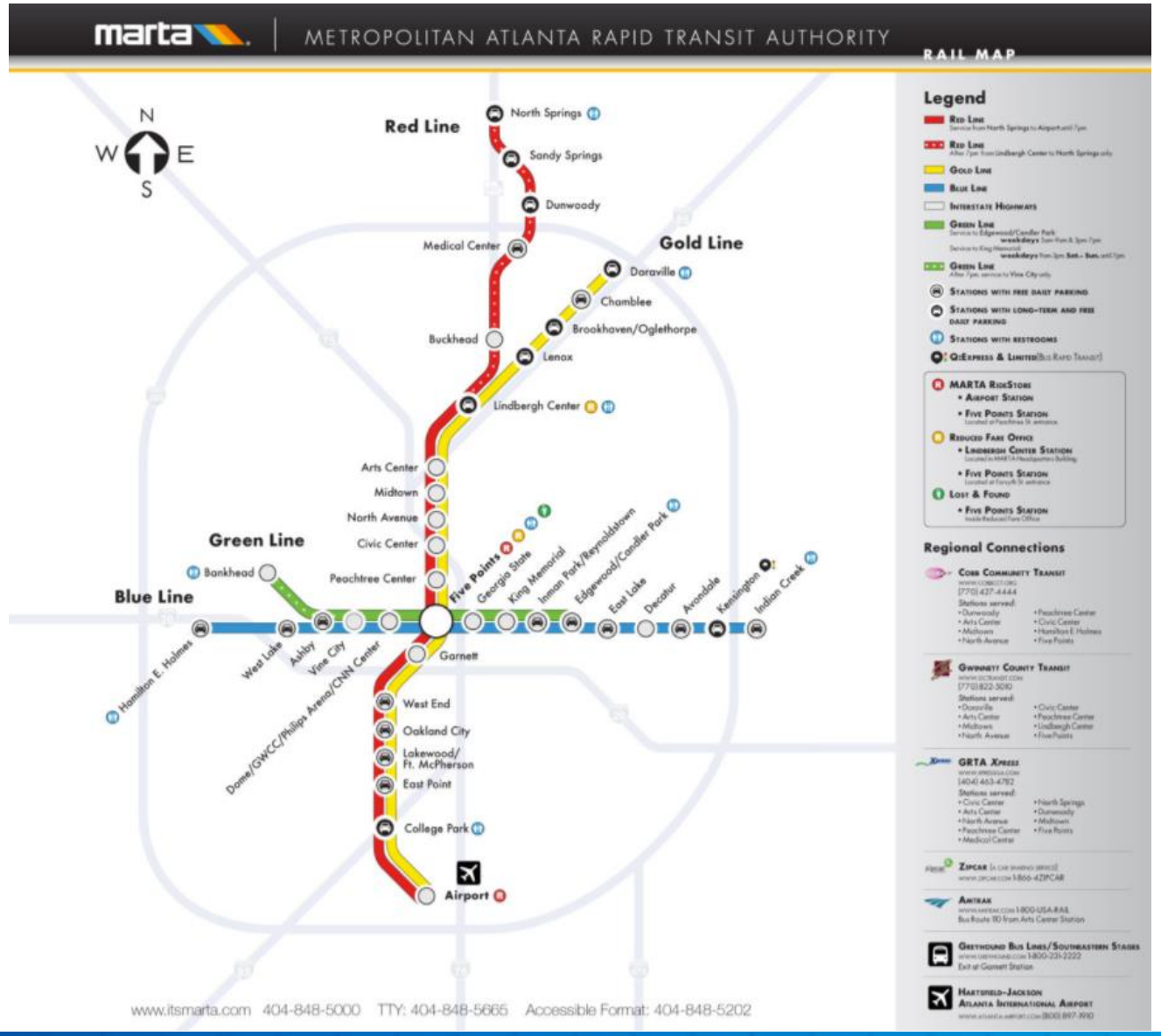
Atlanta Transportation Maps



Source: transitmap.net

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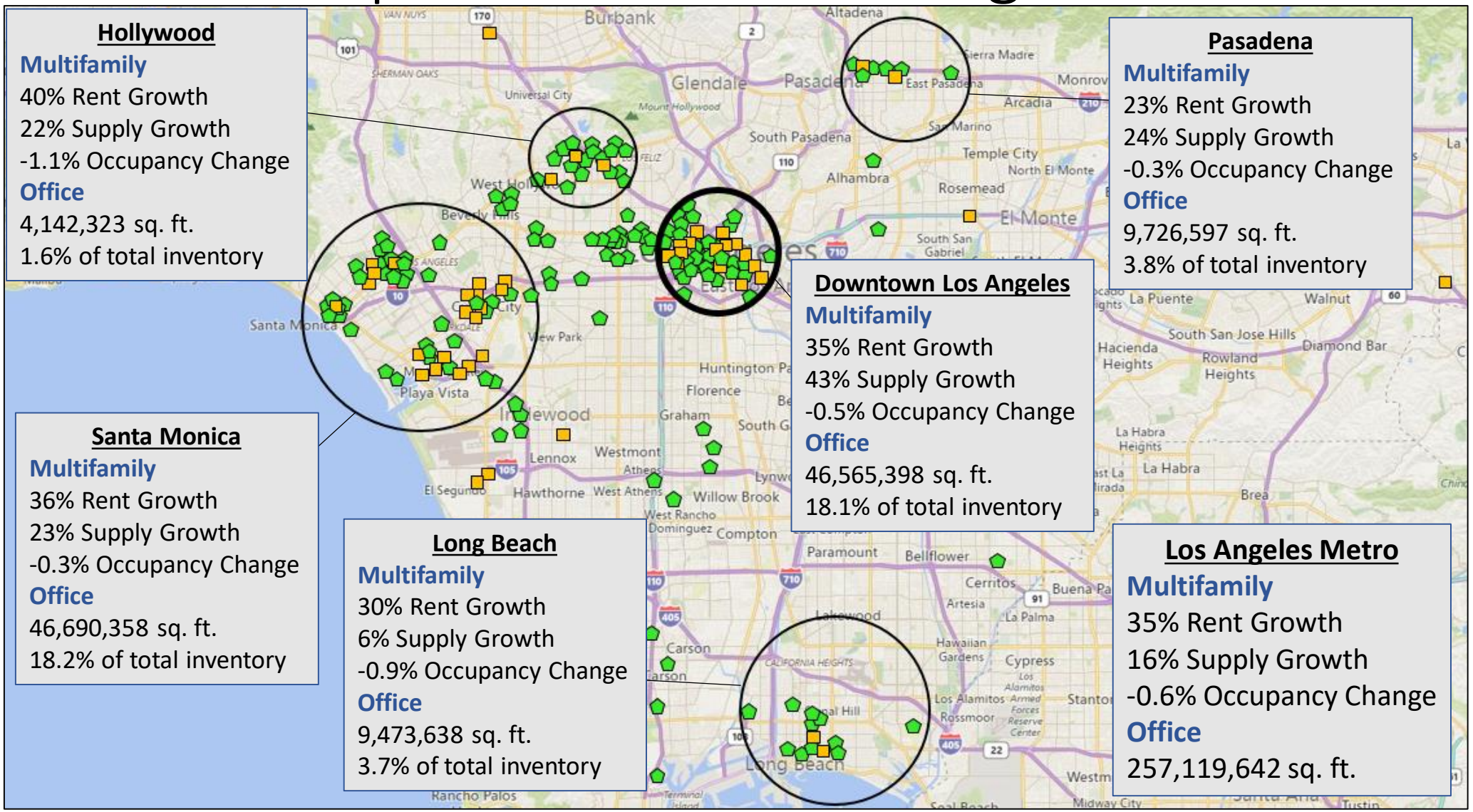
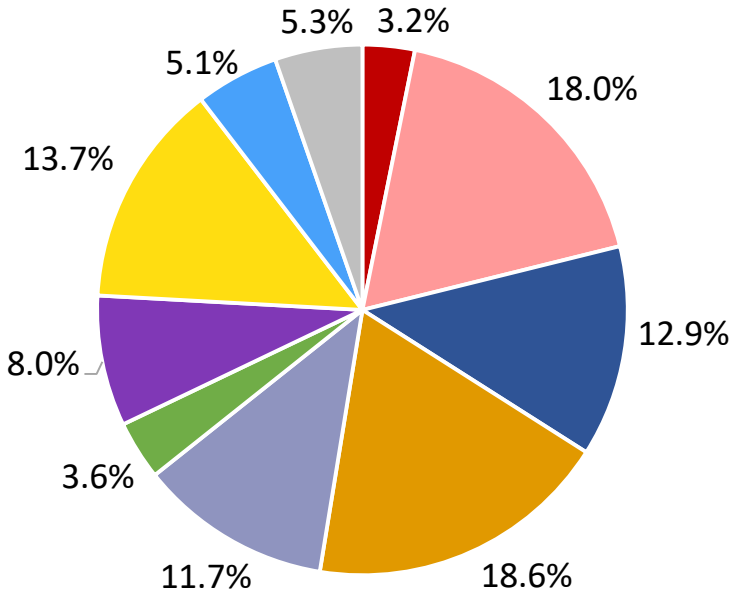
Intellectual Capital Nodes – Los Angeles

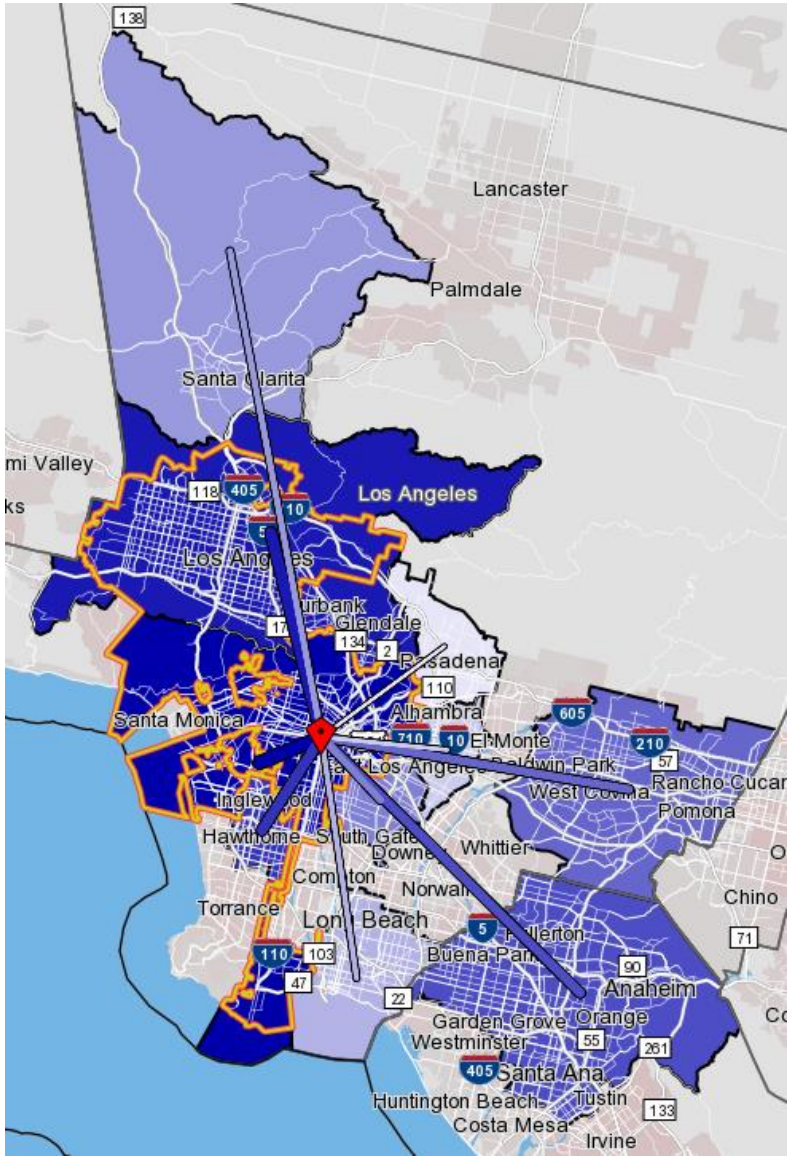


* Multifamily rent growth based on Jan 2013 through Jan 2018
* Change in multifamily occupancy based on Dec 2016 through Dec 2017
Source: Yardi® Matrix

Los Angeles Employment and Transportation

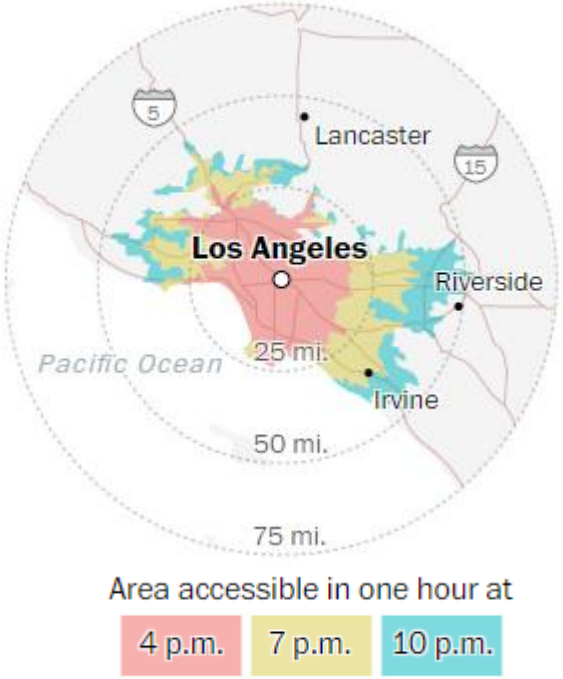


*Map based on 2015 data; Employment based on December 2017 data



Blue areas are the top 10 county subdivisions where Los Angeles workers live

Most people who work in Los Angeles live within the surrounding northern county subdivisions, which appears to have the easiest commute



Source: Moody's Analytics; U.S. Census Bureau (BOC), Center for Economic Studies; The Washington Post; HERE

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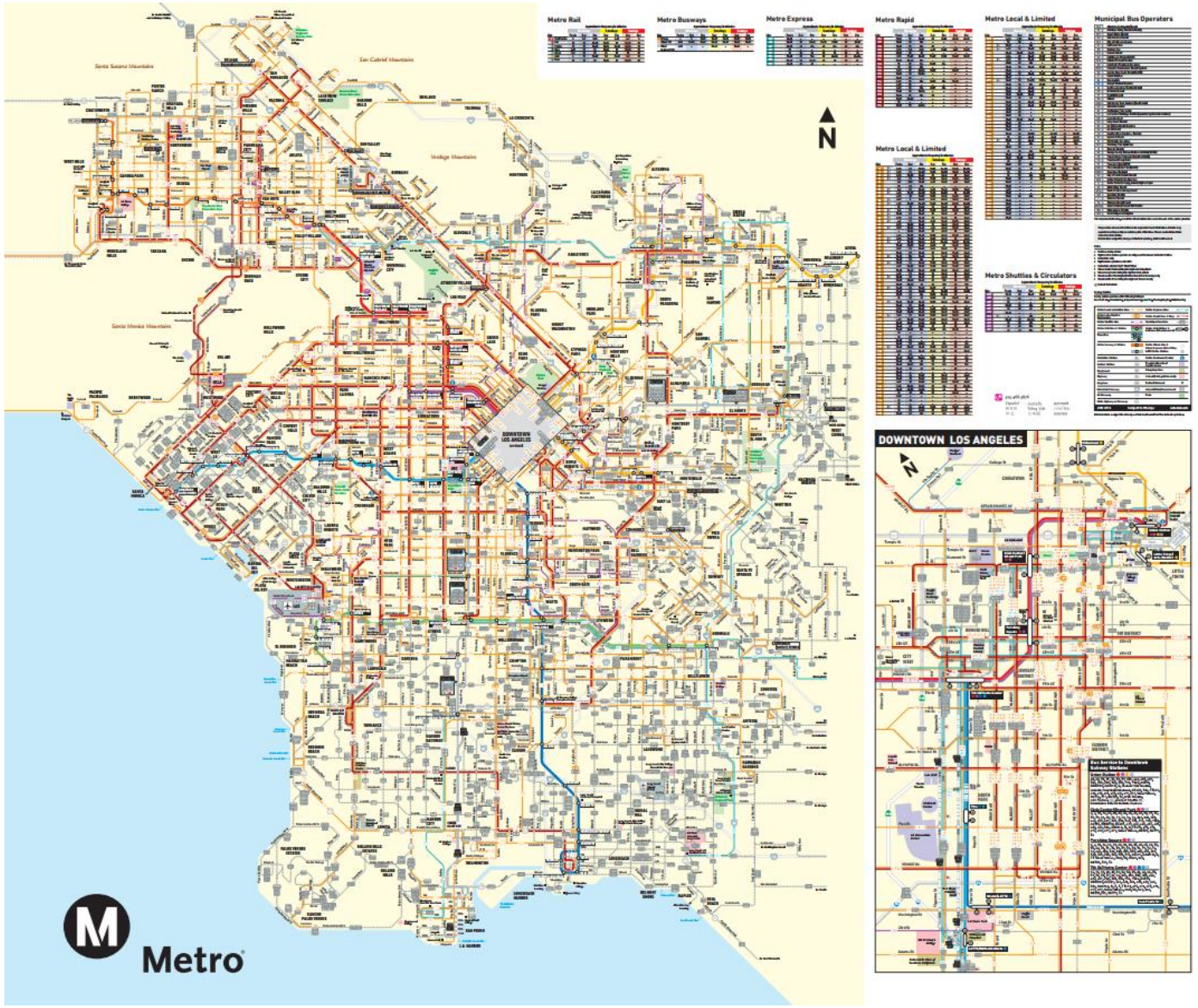
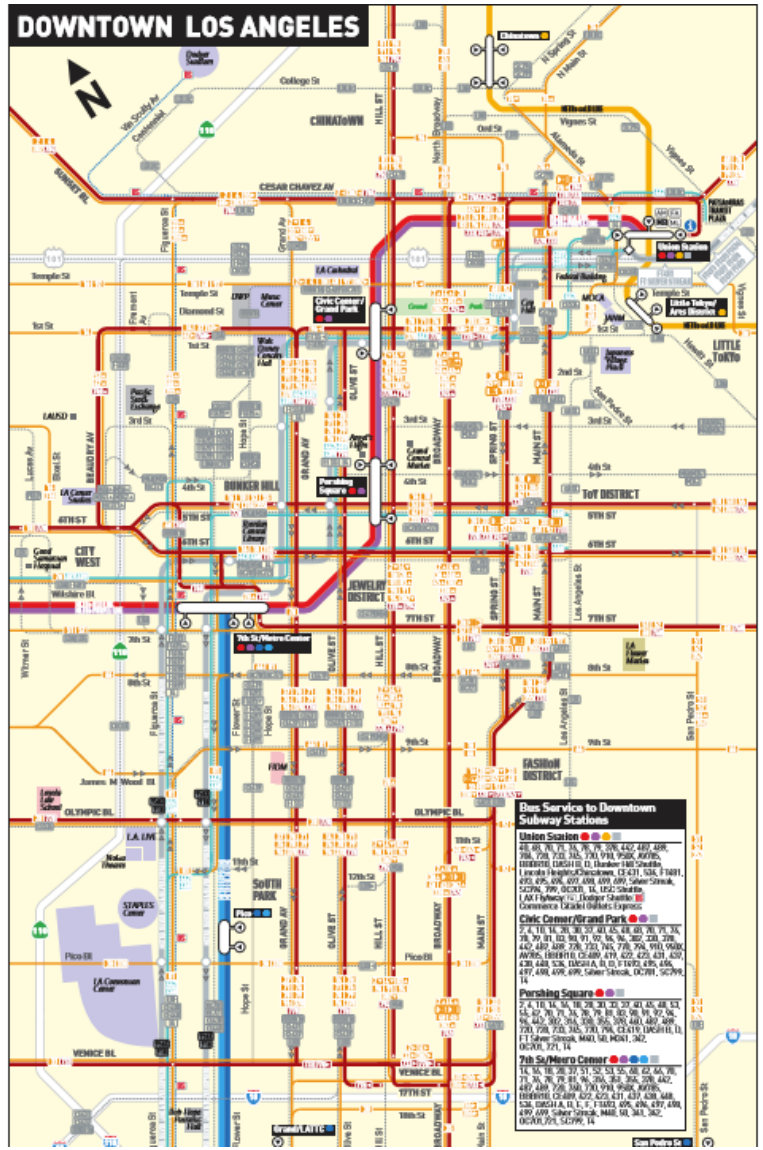
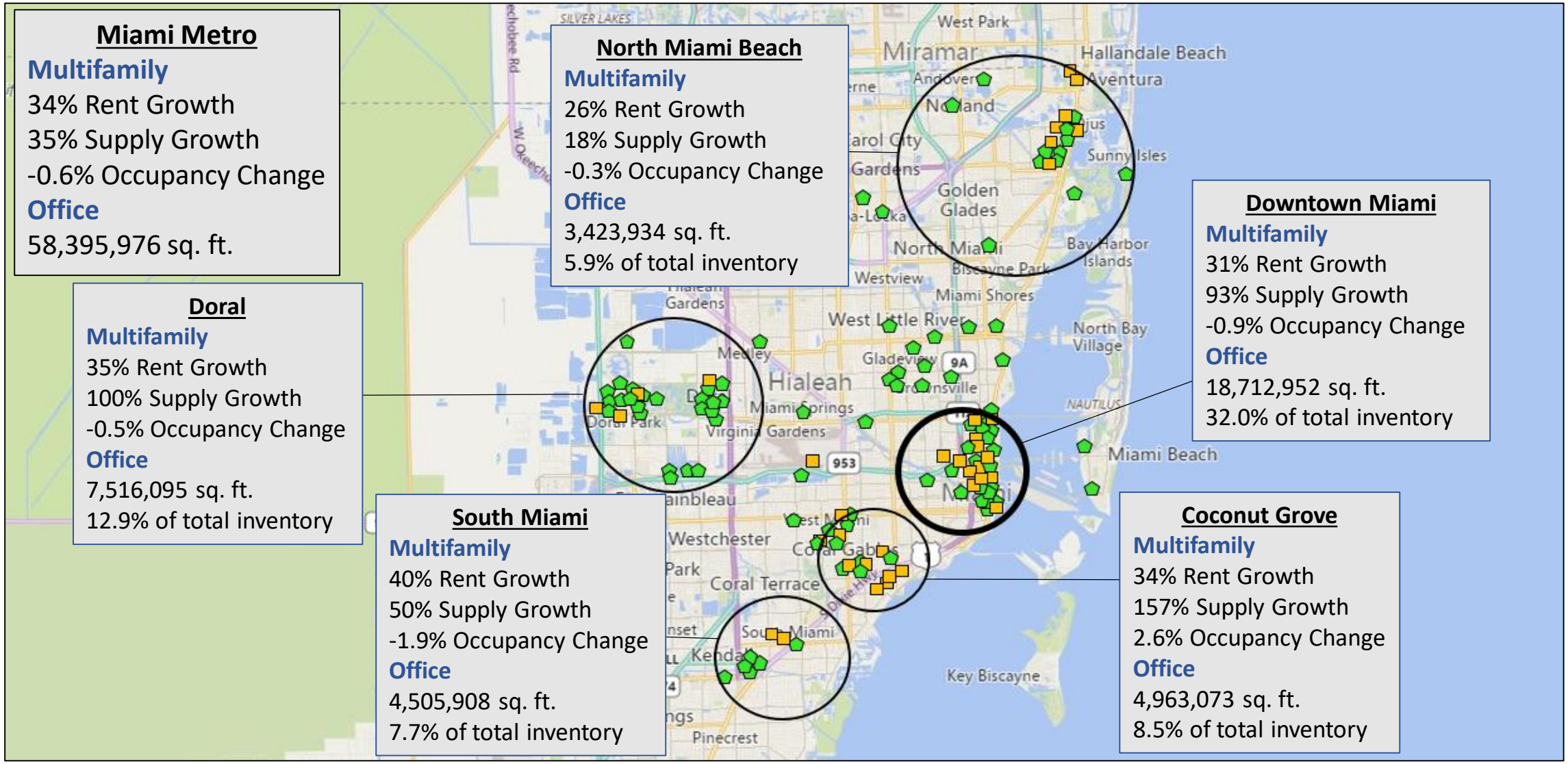
Los Angeles Transportation Maps





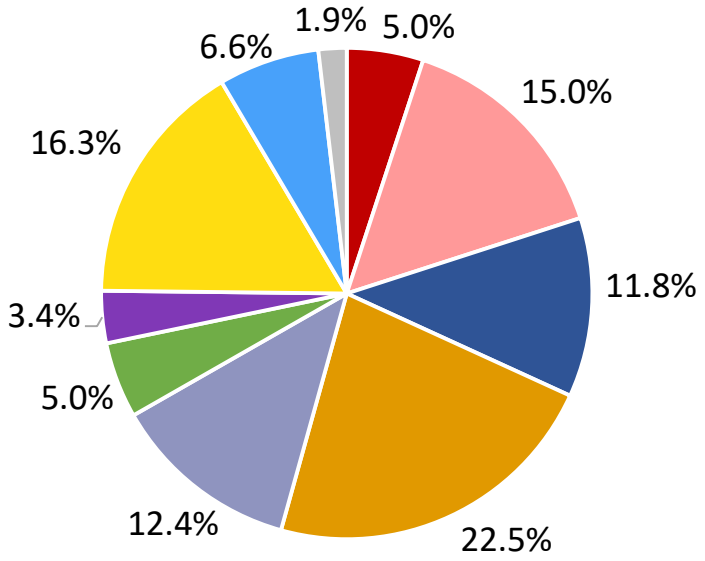
Source: Los Angeles County Metropolitan Transportation Authority

Intellectual Capital Nodes – Miami

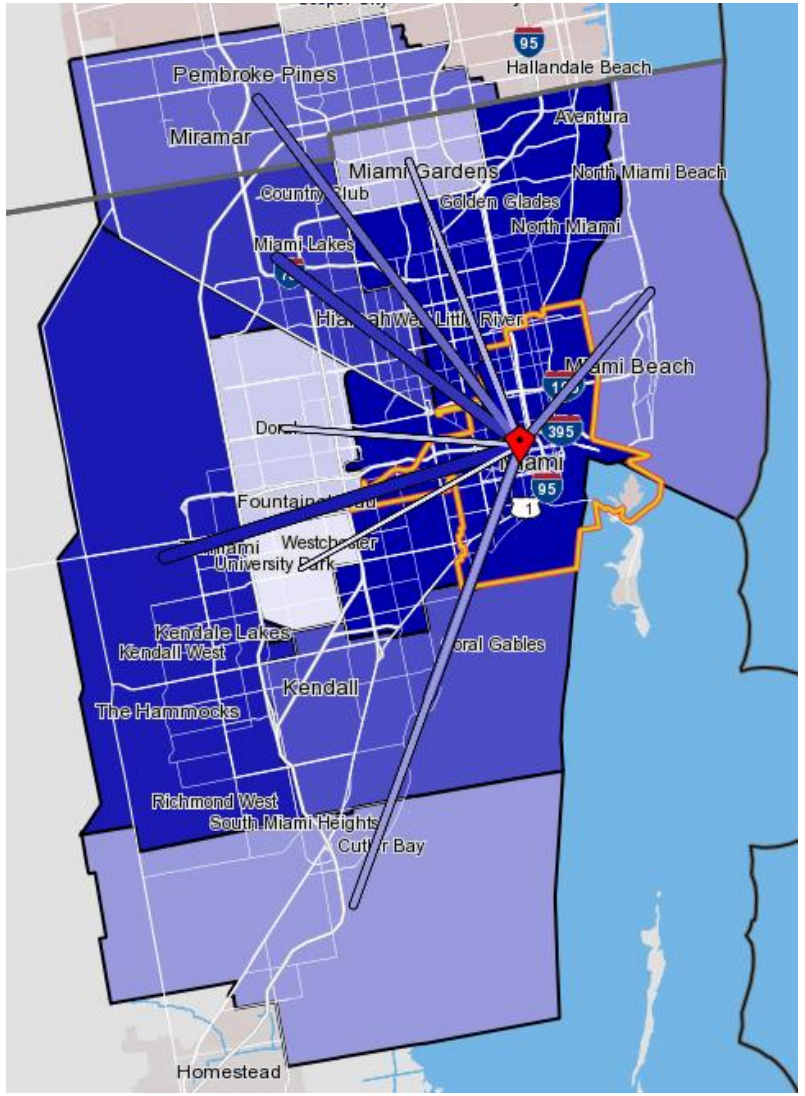


* Multifamily rent growth based on Jan 2013 through Jan 2018
* Change in multifamily occupancy based on Dec 2016 through Dec 2017
Source: Yardi® Matrix

Miami Employment and Transportation



*Map based on 2014 data; Employment based on December 2017 data



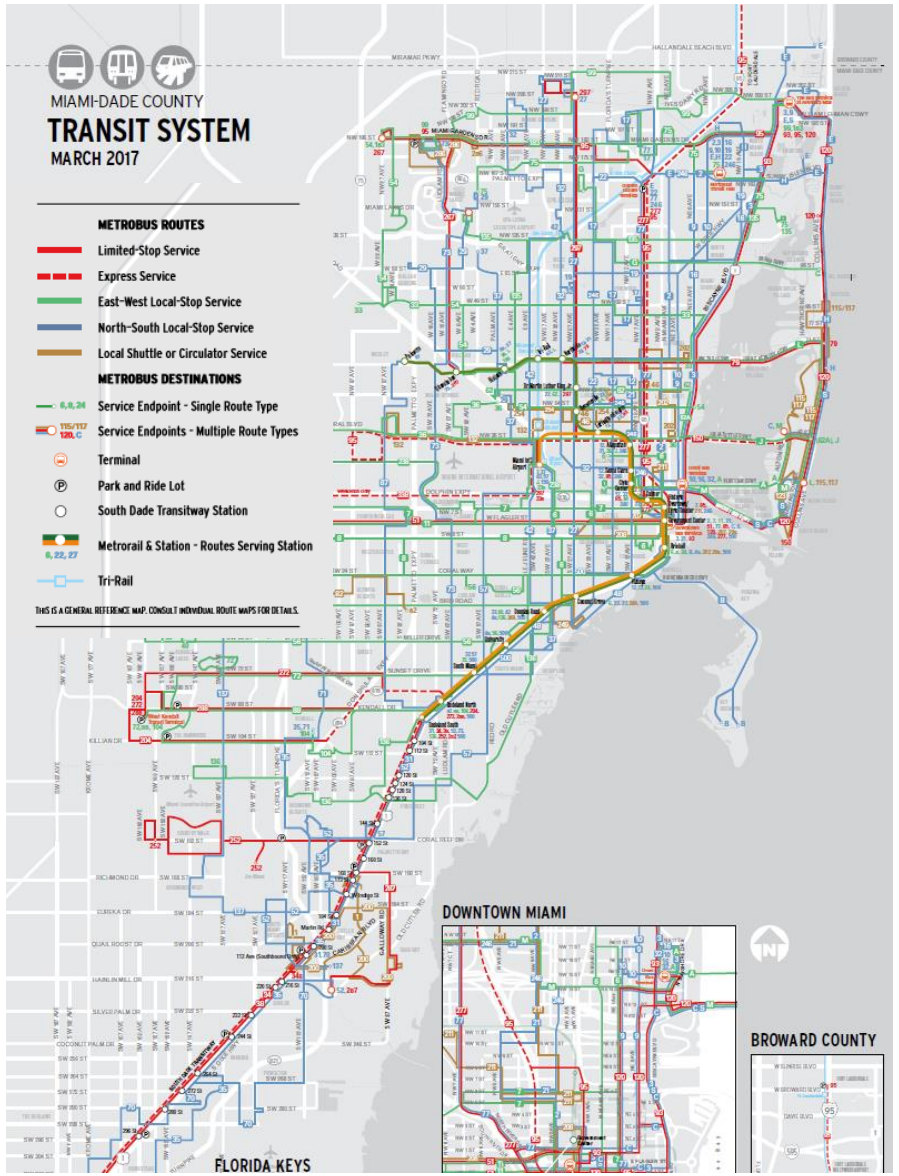
Blue areas are the top 10 county subdivisions where Miami workers live

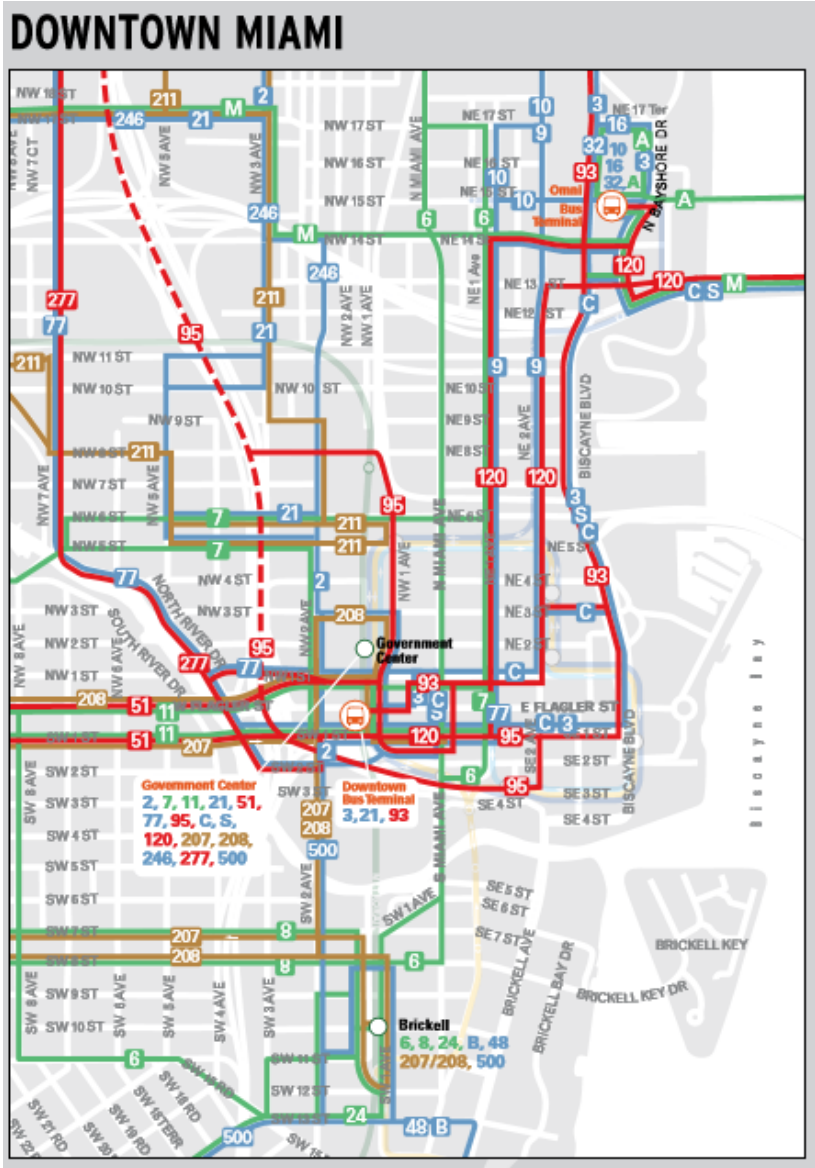
The majority of Miami workers live in surrounding county subdivisions, which appear to have the shortest commute time

Source: Moody's Analytics; U.S. Census Bureau (BOC), Center for Economic Studies; The Washington Post; HERE

YARDI

Miami Transportation Maps





Source: miamidade.gov/transit