

MARKET UPDATE

Denver

Tuesday, November 19, 2019

Kimpton Hotel Born



MULTIFAMILY & COMMERCIAL MARKET UPDATE

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AGENDA

1. Macroeconomic Outlook
2. Multifamily Fundamentals
3. Office Fundamentals
4. Denver Spotlight
5. New Technologies Emerging



KEY TAKEAWAYS



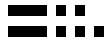
ECONOMY

The economy is in decent shape, with increasing cross-winds. GDP growth in Q3 was OK (~1.9%) and we expect Q4 to be a bit lower, with a lot more noise. Inflation is still relatively low around 2%. The labor market is extremely tight, and wages continue to rise – less so in manufacturing. The yield curve has been inverted for 5 months, but flattened and turned slightly positive following the September 18 and October 30 rate cuts. The European and Chinese economies are in poor shape. The manufacturing and farming sectors are struggling. There is a highly elevated risk of recession mid 2021.



DEMOGRAPHIC SHIFTS

As companies and people look for lower-cost alternate cities, they drive a shift of both jobs and population to tech hub cities previously not considered. When this happens, real estate will follow. We see this shift happening from urban cores to urbanized suburbs or intellectual capital nodes. The tax reform passed in 2017 will likely accelerate this trend and provide opportunities along the way.



KEY TAKEAWAYS – MULTIFAMILY



MULTIFAMILY MARKET

Demand continues to be strong with jobs and population shifting to lower-cost cities and tech hubs. New supply deliveries completed at just over 300,000 units in 2018, and with the constraints of financial and labor costs, 2019 and 2020 deliveries are expected to be flat.



RENT GROWTH

Rent growth has bounced back from a low point in late 2017, but is beginning to show a declining trend. Rent growth remains around 3% nationally with significant variations by city, while occupancy remains stable around 95%.



VALUATIONS & TRANSACTIONS

Valuations continue to rise at a steady pace with compressed cap rates; this has shifted the focus to tech hub and tertiary markets to look for potential value-add opportunities. Transaction volume in 2018 came in higher than 2017 with \$115 billion in sales. The markets where the transactions occurred reflect the shift, as most of the transactions occurred in tech hub markets and tertiary markets.



KEY TAKEAWAYS – OFFICE



COMMERCIAL MARKET

Demand is steady with job growth in office-using industries outpacing other industries. Completions peaked in 2018, but a lot of markets still have room for absorption. There are secular pressures that continue to alter the office market, such as decreasing square footage per employee, coworking and a changing talent pool for office-using employment.



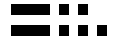
LISTING RATE GROWTH

Most Matrix markets showed moderate rate growth over the last year, but some have seen lease rates fall – Boston, Chicago, Seattle and Central Valley. Conditions are sufficient to maintain this pace of slow occupancy and lease rate growth in most markets.



TRANSACTIONS

Sales volume peaked in 2015 and has been dropping ever since. This is across all markets categories. However, sales prices per square foot have increased nationally since 2000, with tech hub markets having the most growth over the past ten years.



2019 OUTLOOK



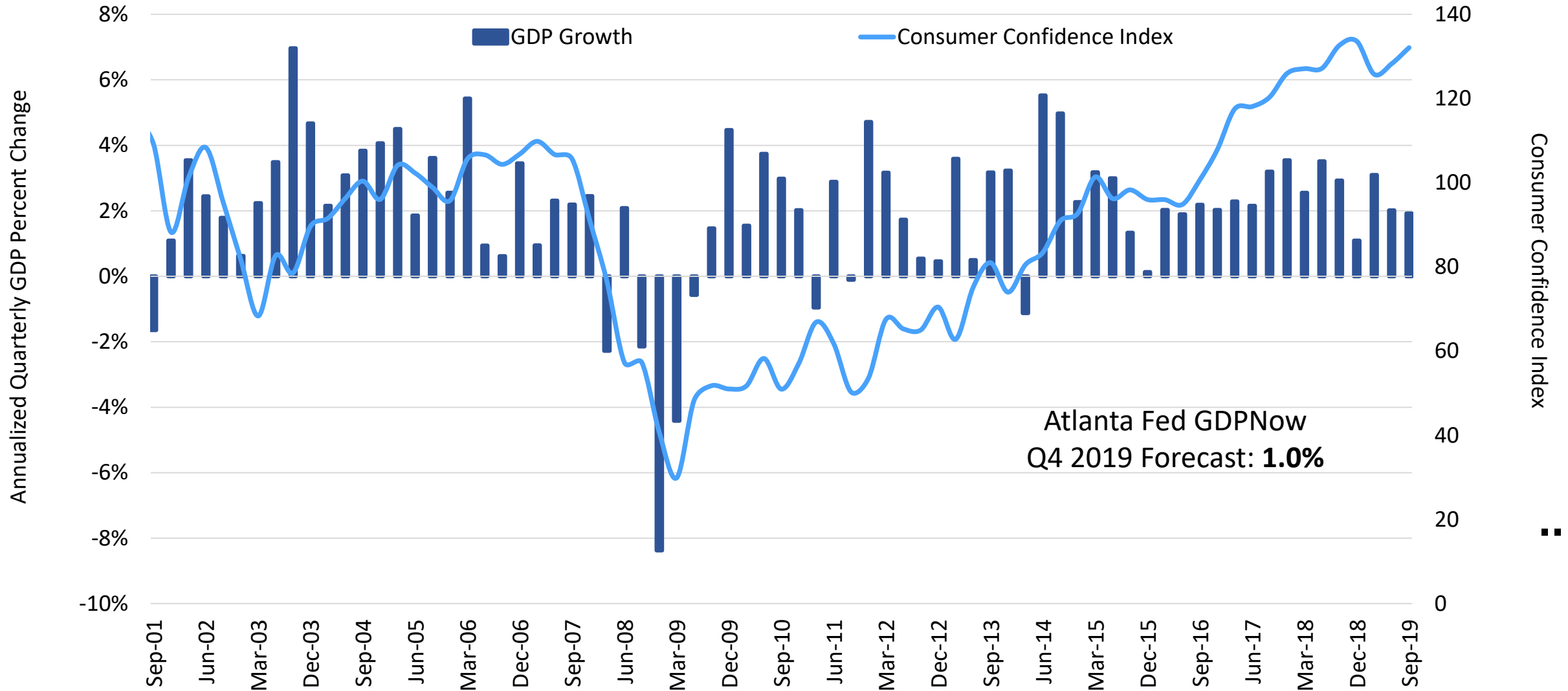
- GDP growth will be slow moving into Q4, with a lot more noise.
- Supply/demand conditions in multifamily will continue to favor mild rate growth, with higher rates in the tech hub and tertiary markets.
- A decent economy coupled with the demographic shift of jobs will continue to create office demand in tech hub cities, providing a solid base for office-using sectors.
- For new investments, it's a **sharpshooter's game** to find the right deal at the right price.
- On the operational side its about finding revenue and cost trimming opportunities to grow your NOI from your existing assets.
- The use of new technology is already impacting commercial space in help with costs, especially around **utility consumption**. This will accelerate as the technologies are more widely adopted.



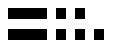
MACROECONOMIC OUTLOOK



U.S. Economic Growth Is Decent, but Slowing



Source: Yardi® Matrix; 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

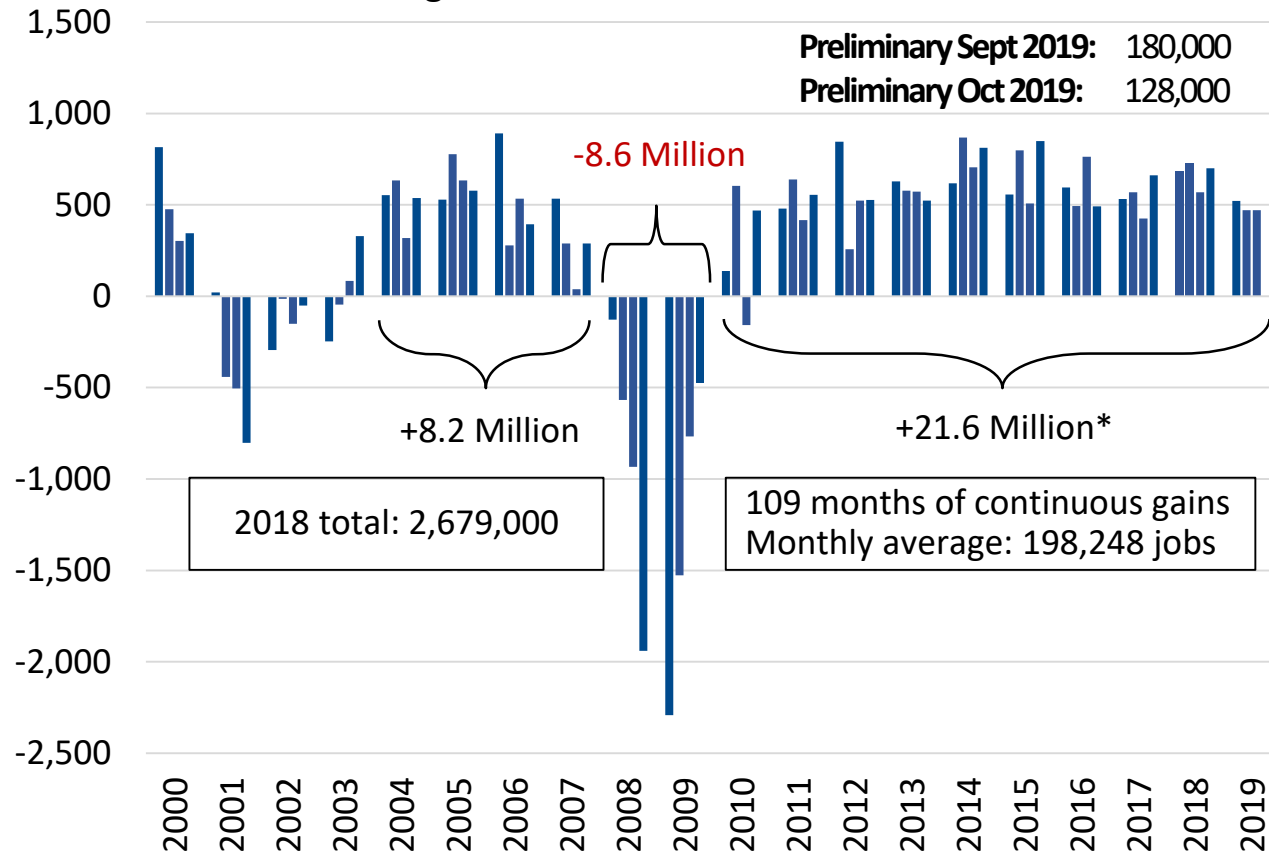


Tight Labor Market, Pulling People Off the Sidelines

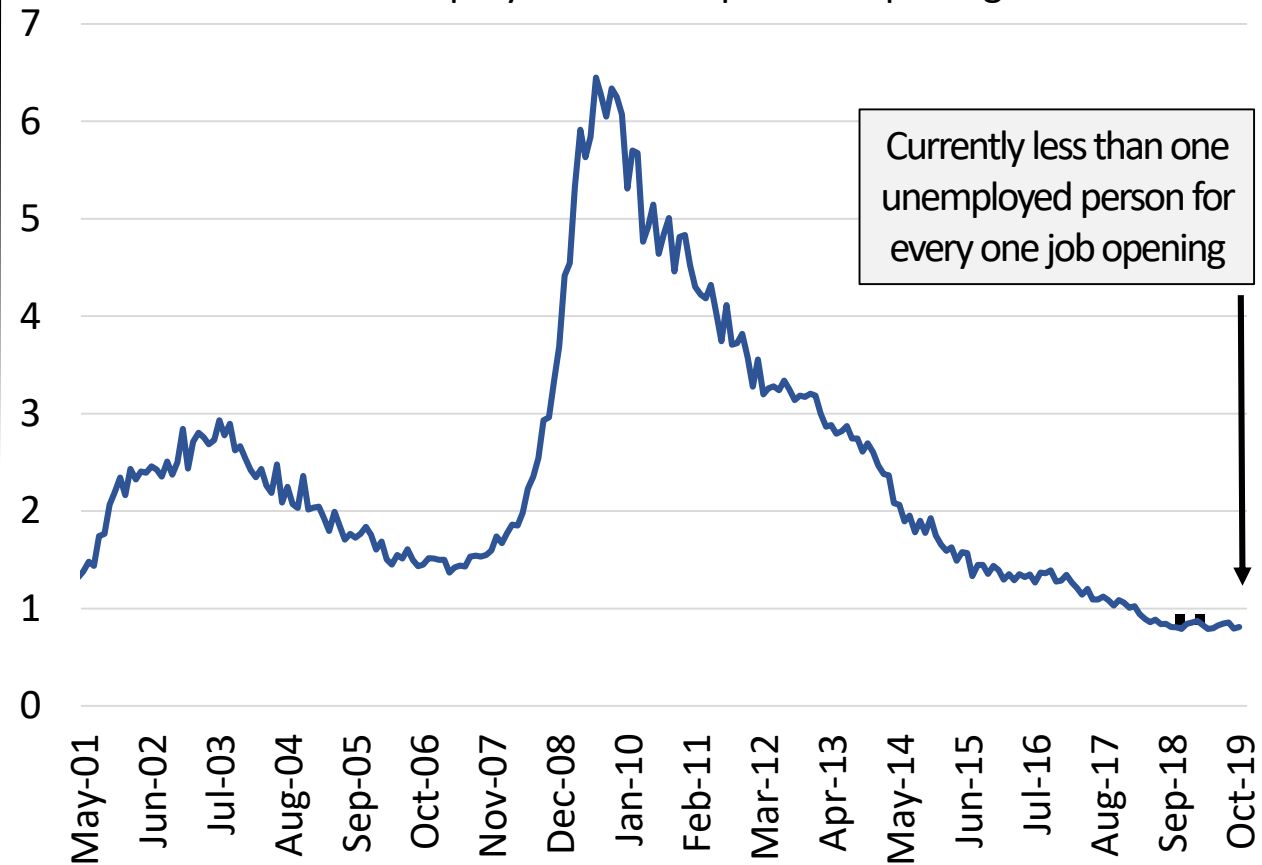


It is difficult to find labor at the right *price*, with the right *skills*, in the right *city*

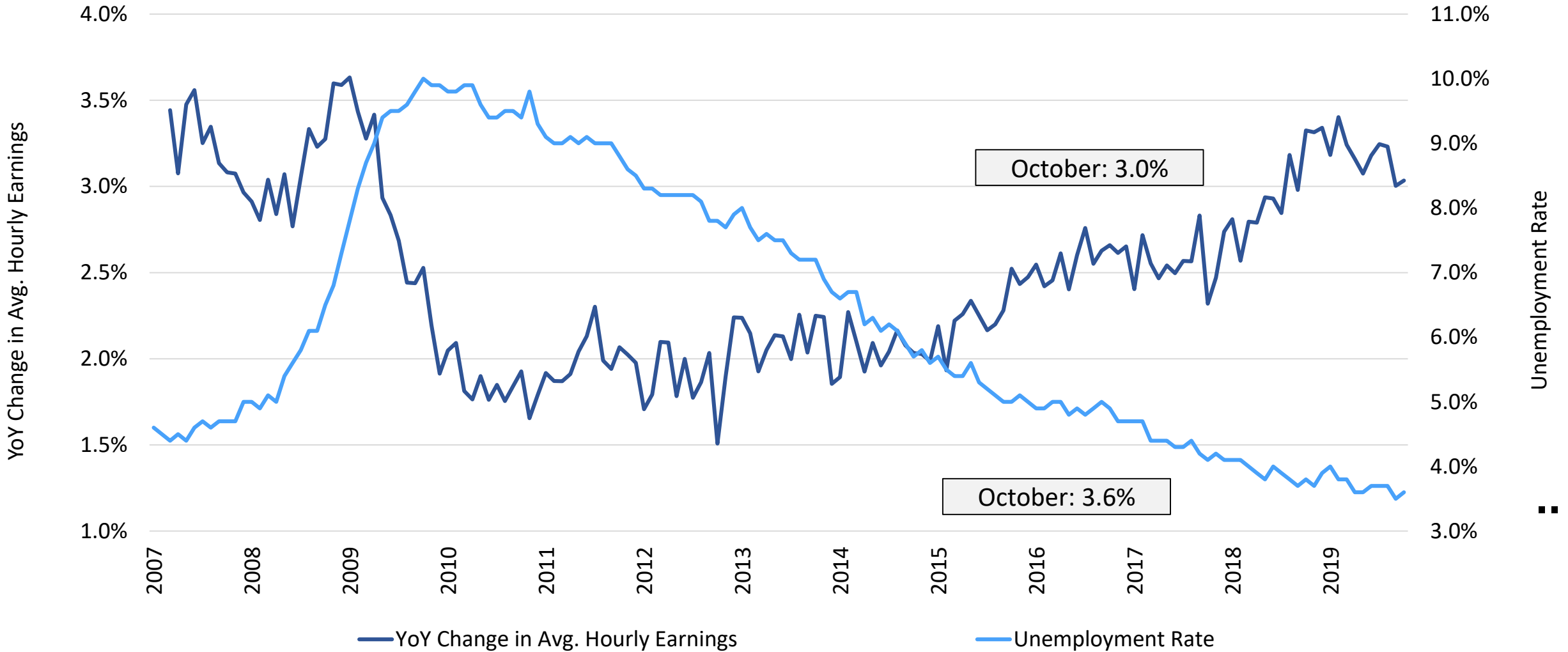
Long Stretch of Continuous Job Gains

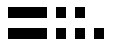


Unemployed Persons per Job Opening



Wage Growth Finally Emerging



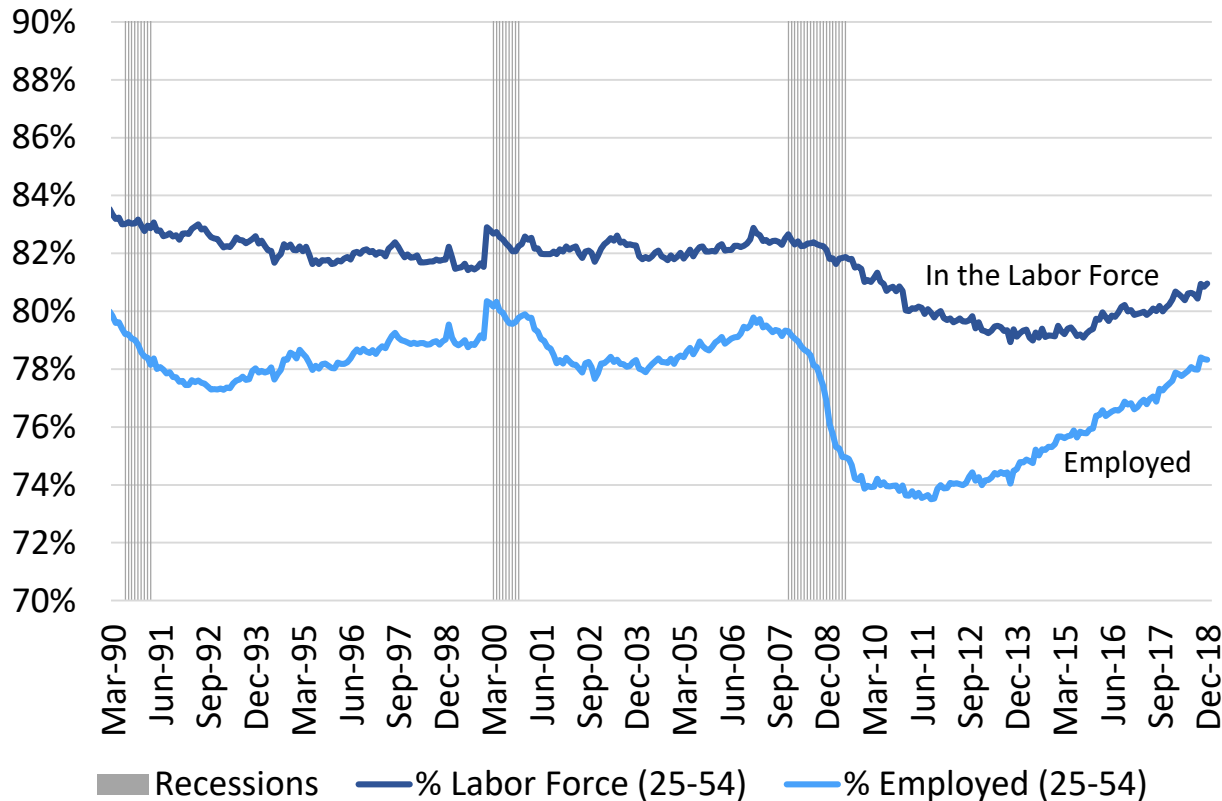


Reserve Supply of Labor

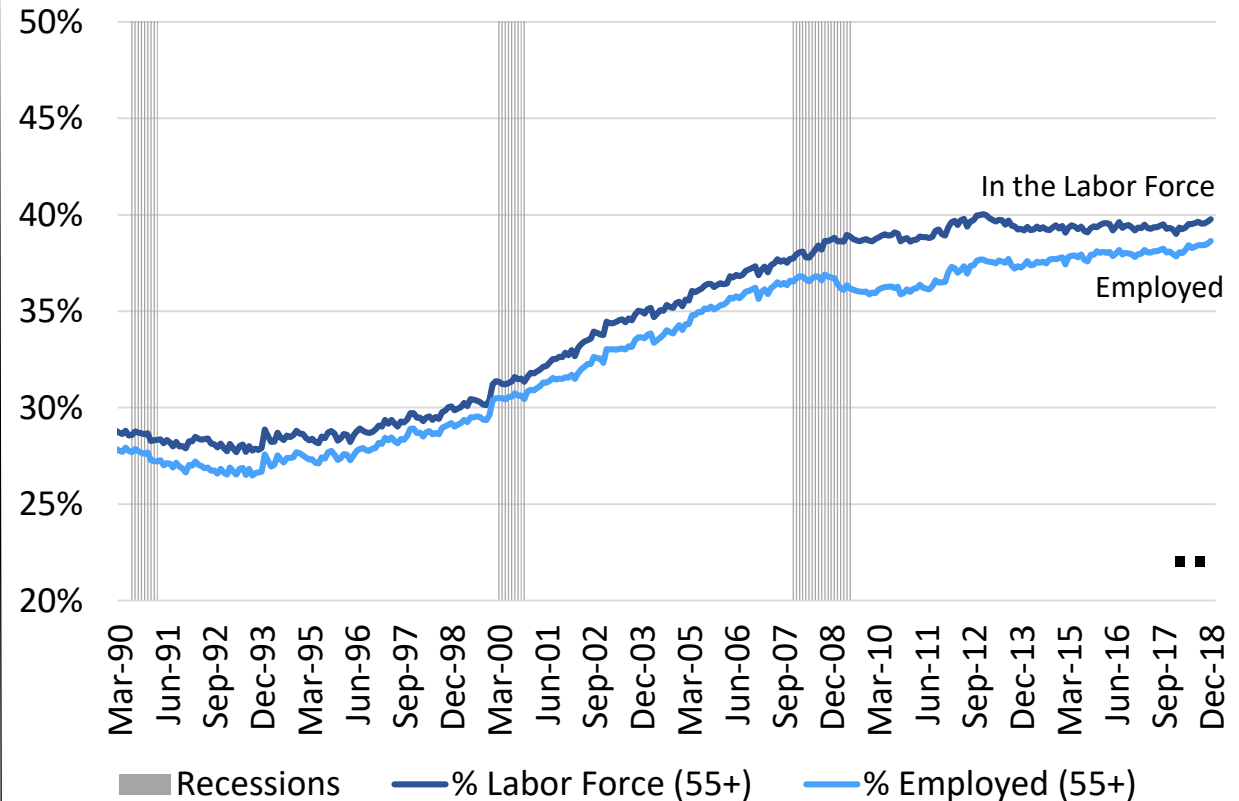


- Another 2.6% of the prime-age population could get engaged – approximately 3.4 million people
- Participation rates for people age 55+ are rising – buoying the expansion

Share of Prime-Age Population (25-54) That Is...



Share of Age 55+ Population That Is...

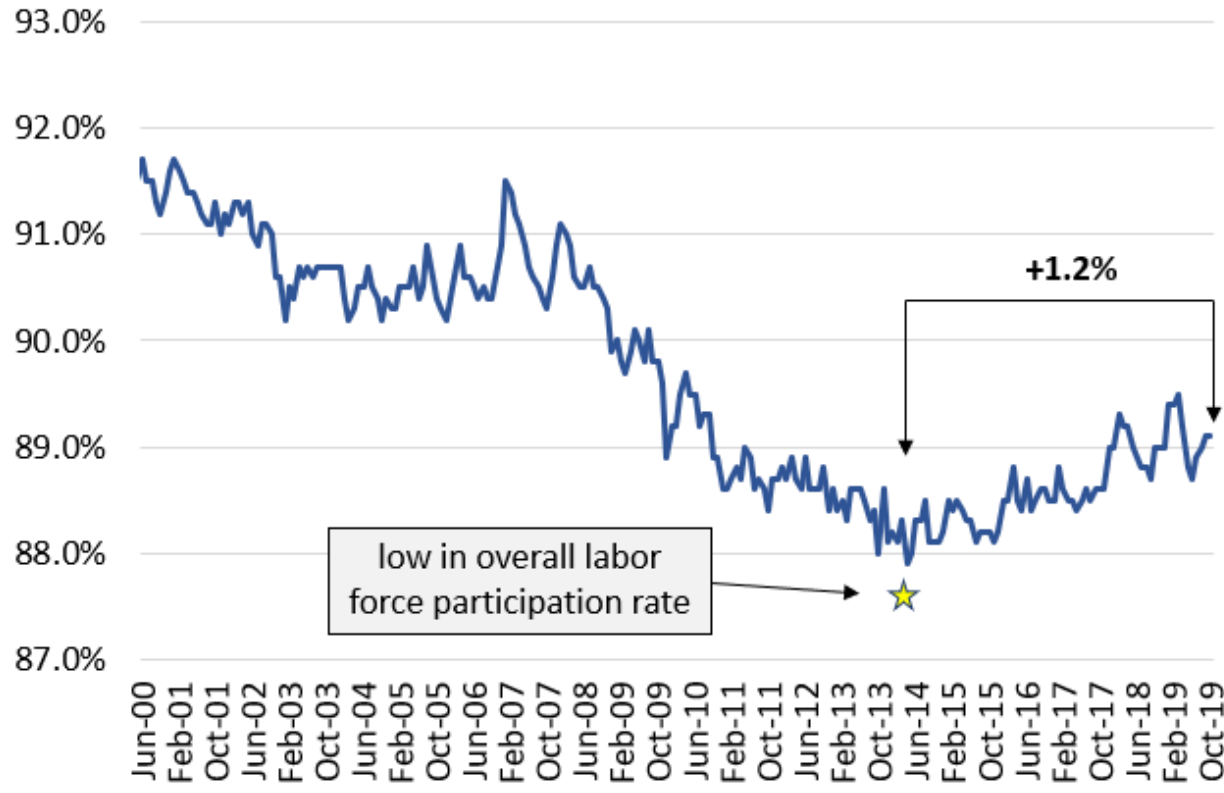




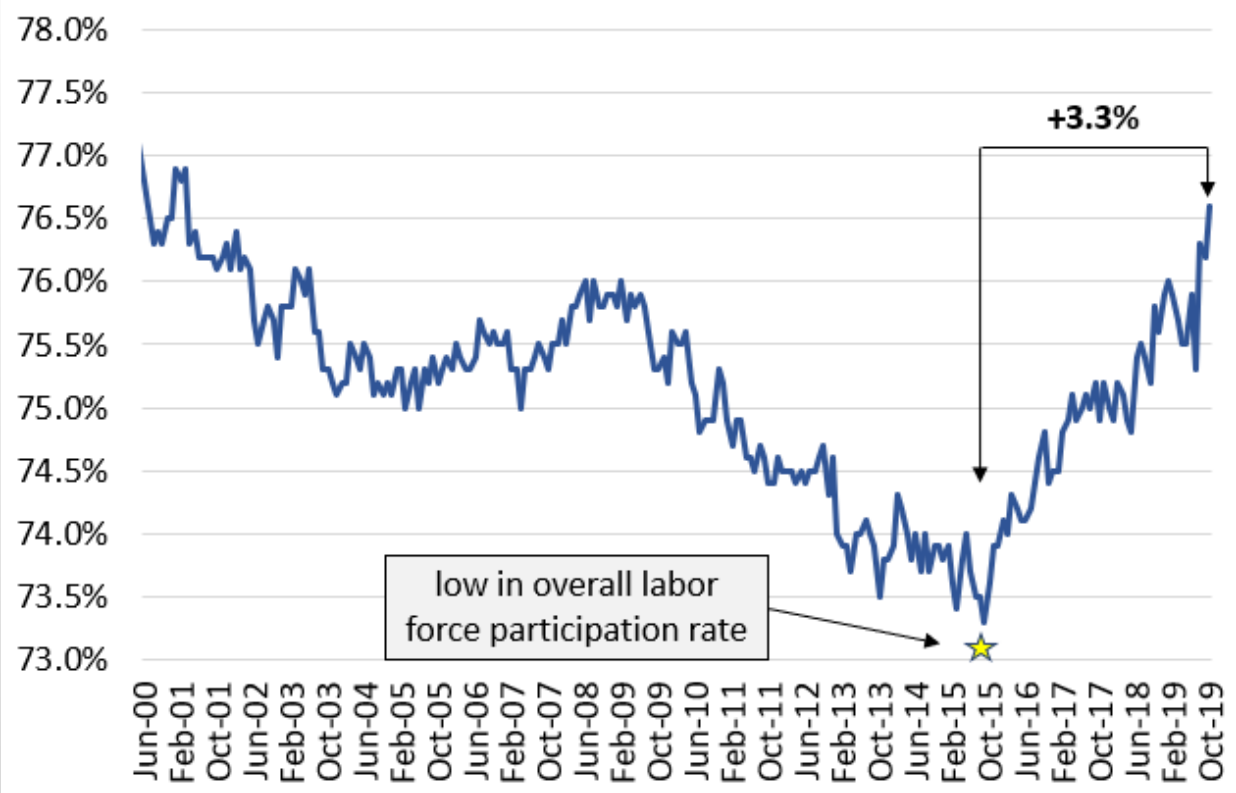
Increase in Labor Force Participation Rate Among 25-54 Year-Olds Driven by Women



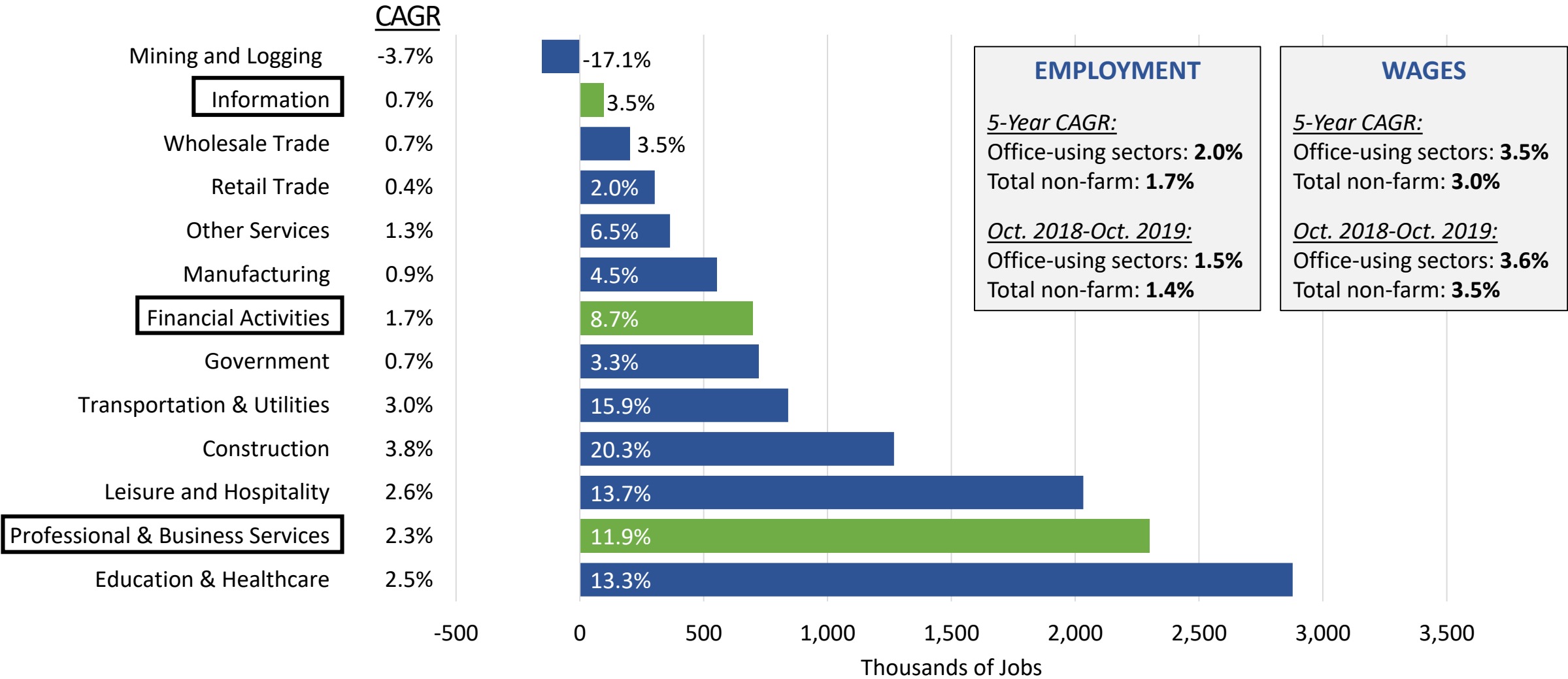
Labor Force Participation Rate Male, Ages 25-54



Labor Force Participation Rate Female, Ages 25-54



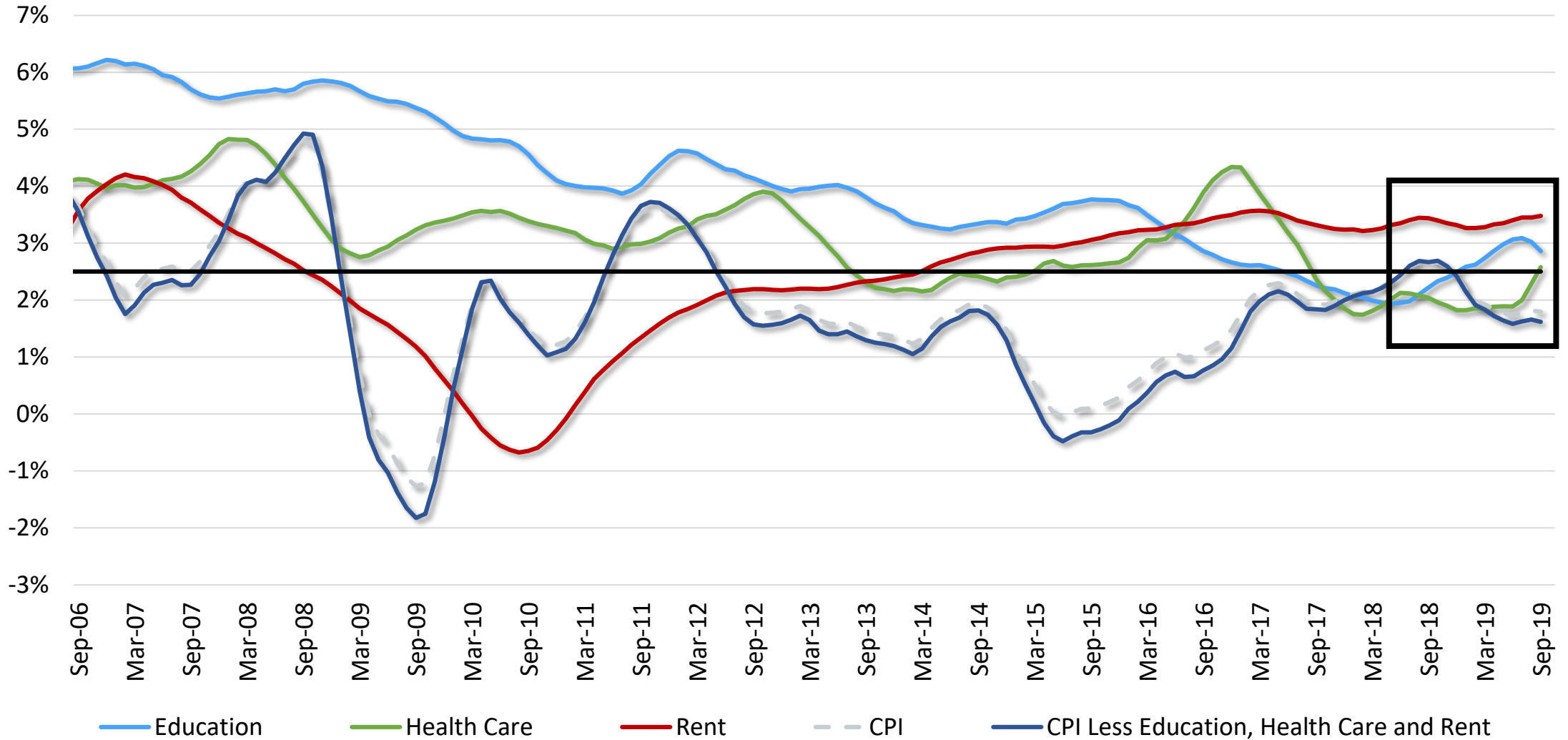
Office-Using Sectors Outpaced Overall Job Growth Over Last Five Years

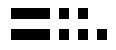


*October 2014-October 2019, Boxed labels are office-using sectors

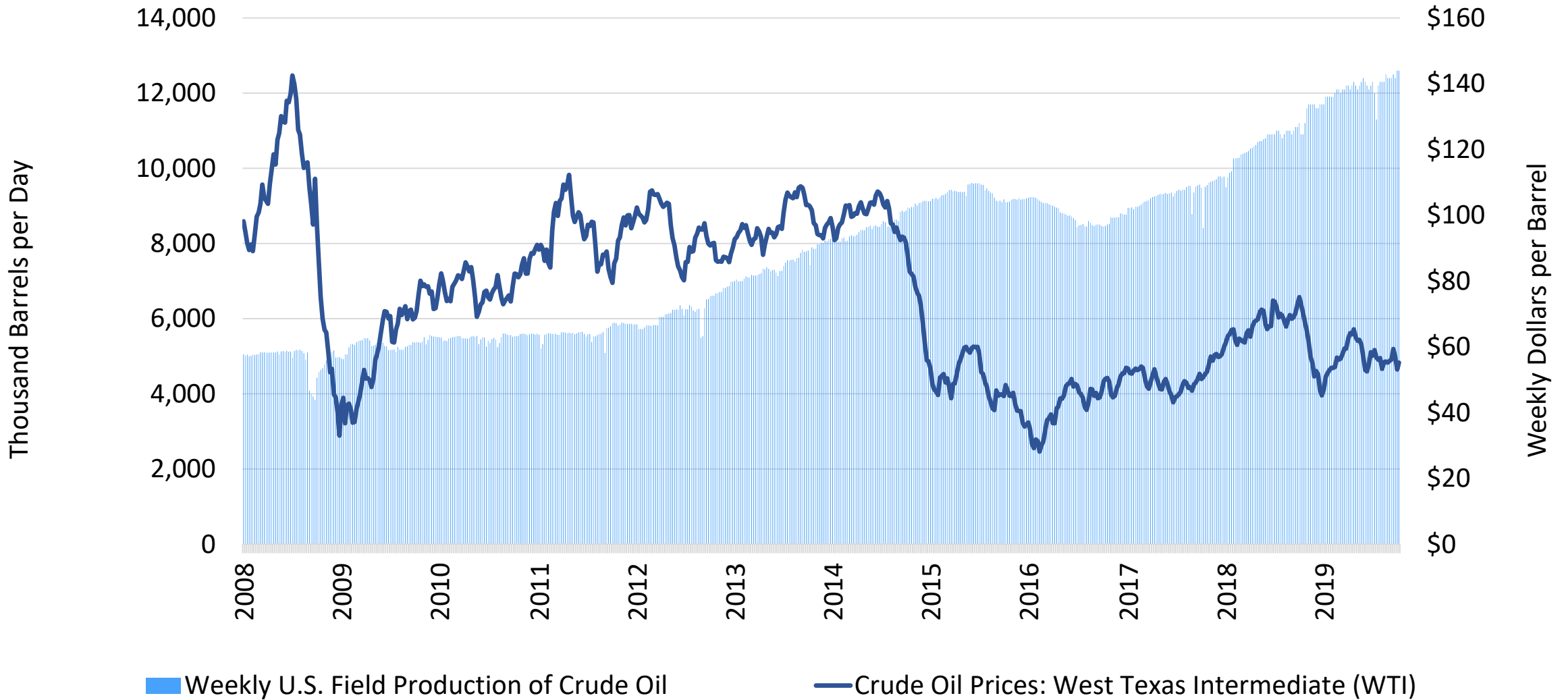
Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

Inflation Rising, But Unlikely to Break Out >2.5%



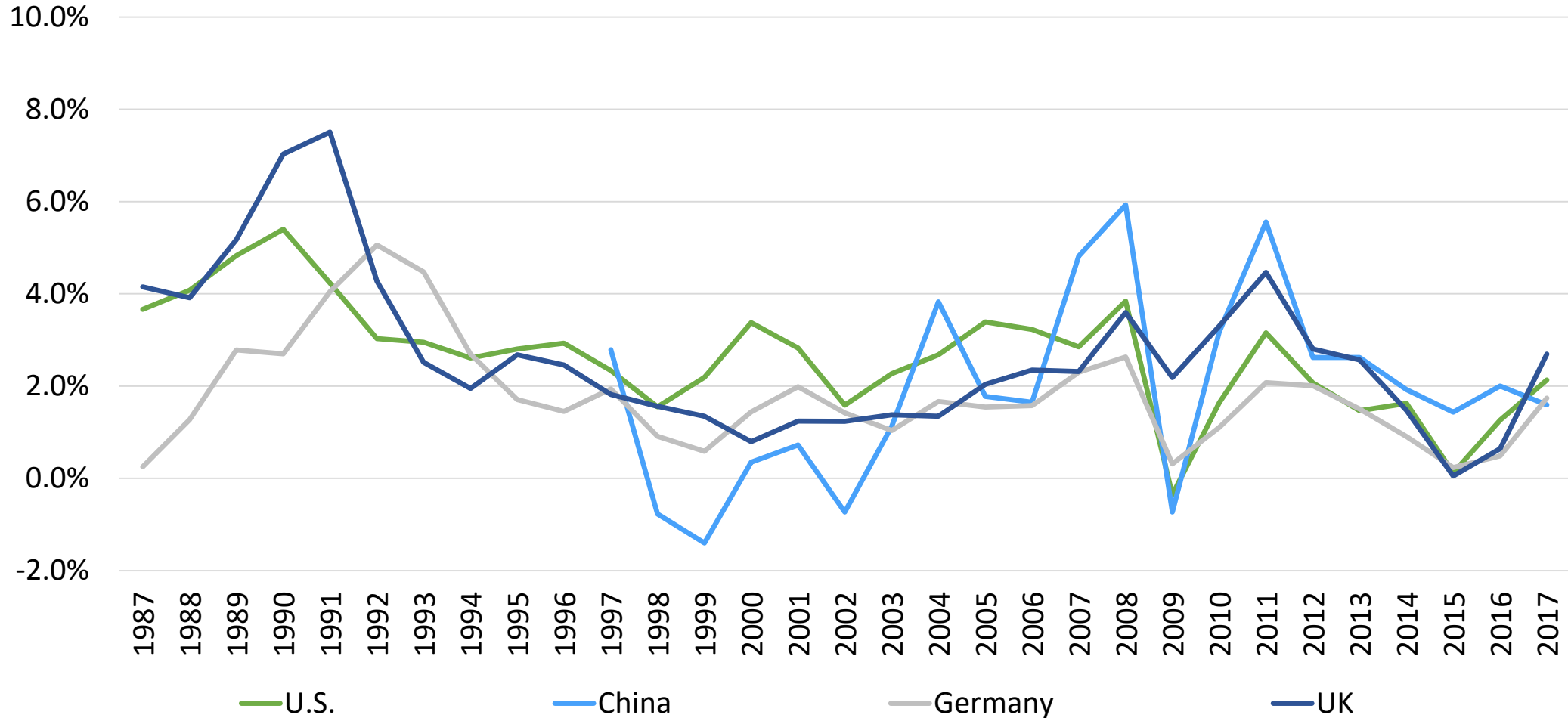


Why Is There No Inflation? U.S. Oil Is Flooding the Market

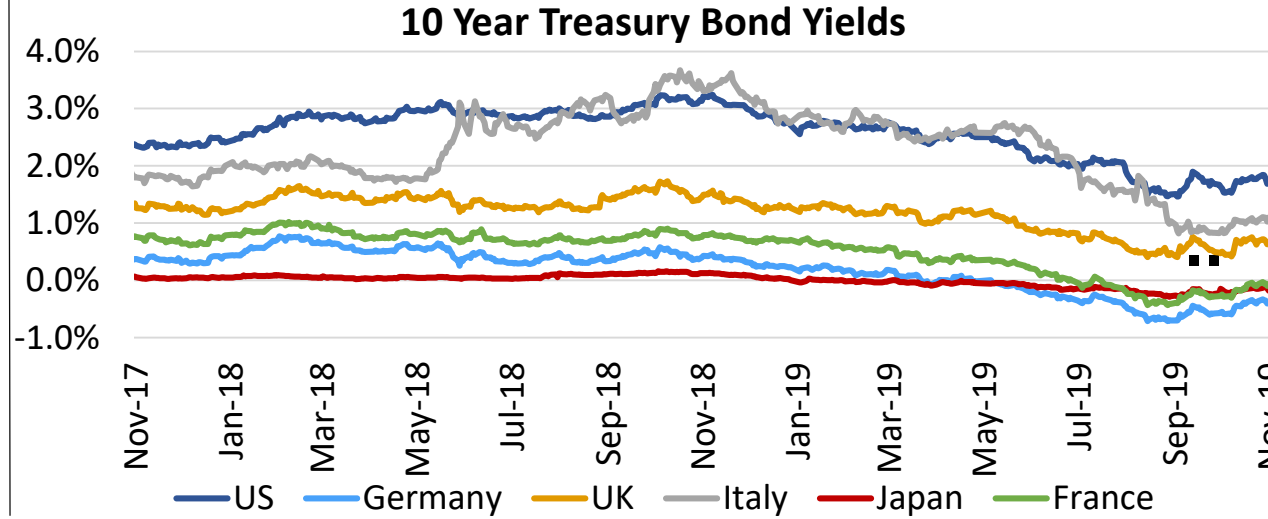
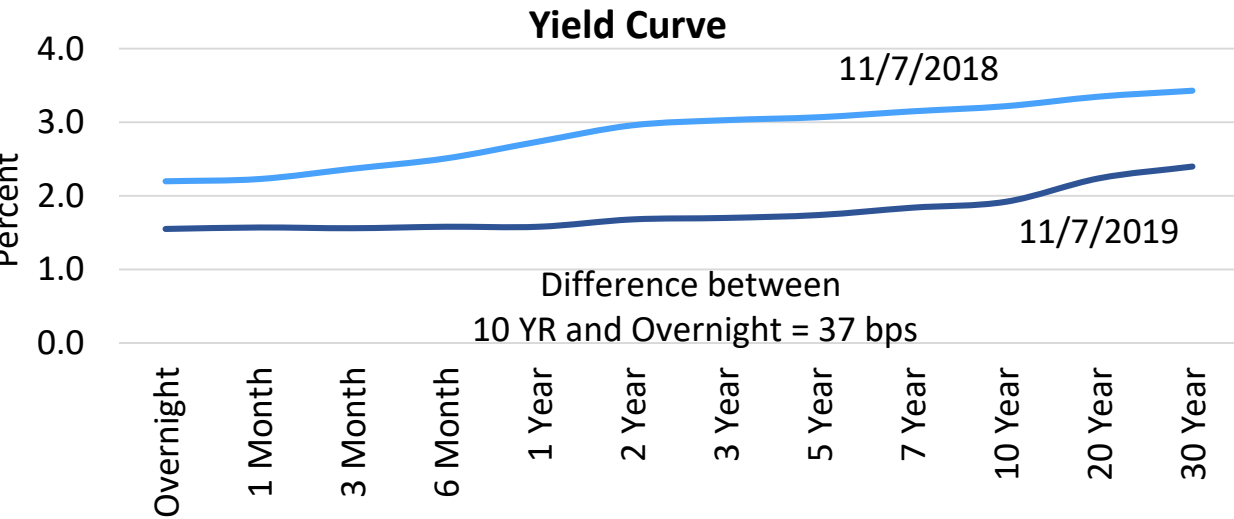
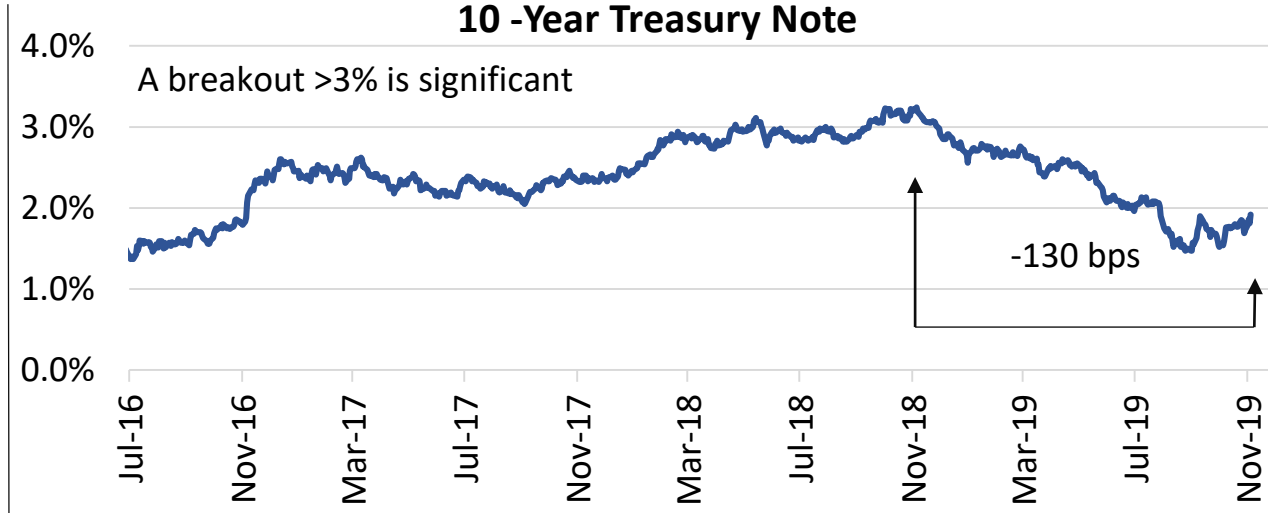
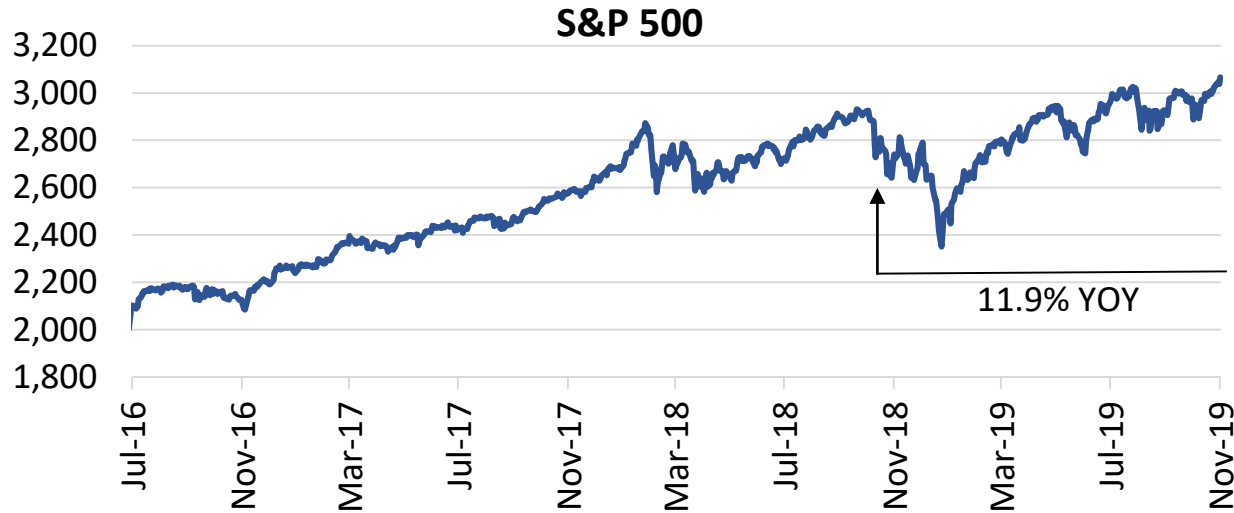


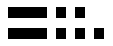
Inflation Going Down Is a Global Phenomenon

Inflation, Consumer Prices by Country



U.S. & International Financial Market





U.S. Federal Policy Mix is a Classic Glass Half Full/Glass Half Empty Situation

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

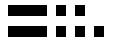
PROGRESS IN TONE,
BUT NOT YET
SUBSTANTIVE

ANTI-GROWTH

- Immigration Control
- Trade Renegotiation

RECENT TARIFF MOVE
A POTENTIAL DRAG
ON GROWTH





SUMMARY



1

The U.S. economy is in decent shape, but growth is choppy and is slowing

2

Unemployment remains very low & wage growth is good; September & October job gains were about average for this year

3

How much slack is left?

- Productivity
- Job growth

4

Inflation rising but not a lot, so the 10-yr rate is the binding constraint on the yield curve – which is currently slightly positive

5

Fiscal policy is mildly pro-growth

- Capital still needs to be deployed





MULTIFAMILY FUNDAMENTALS





Demographic & Lifestyle Changes



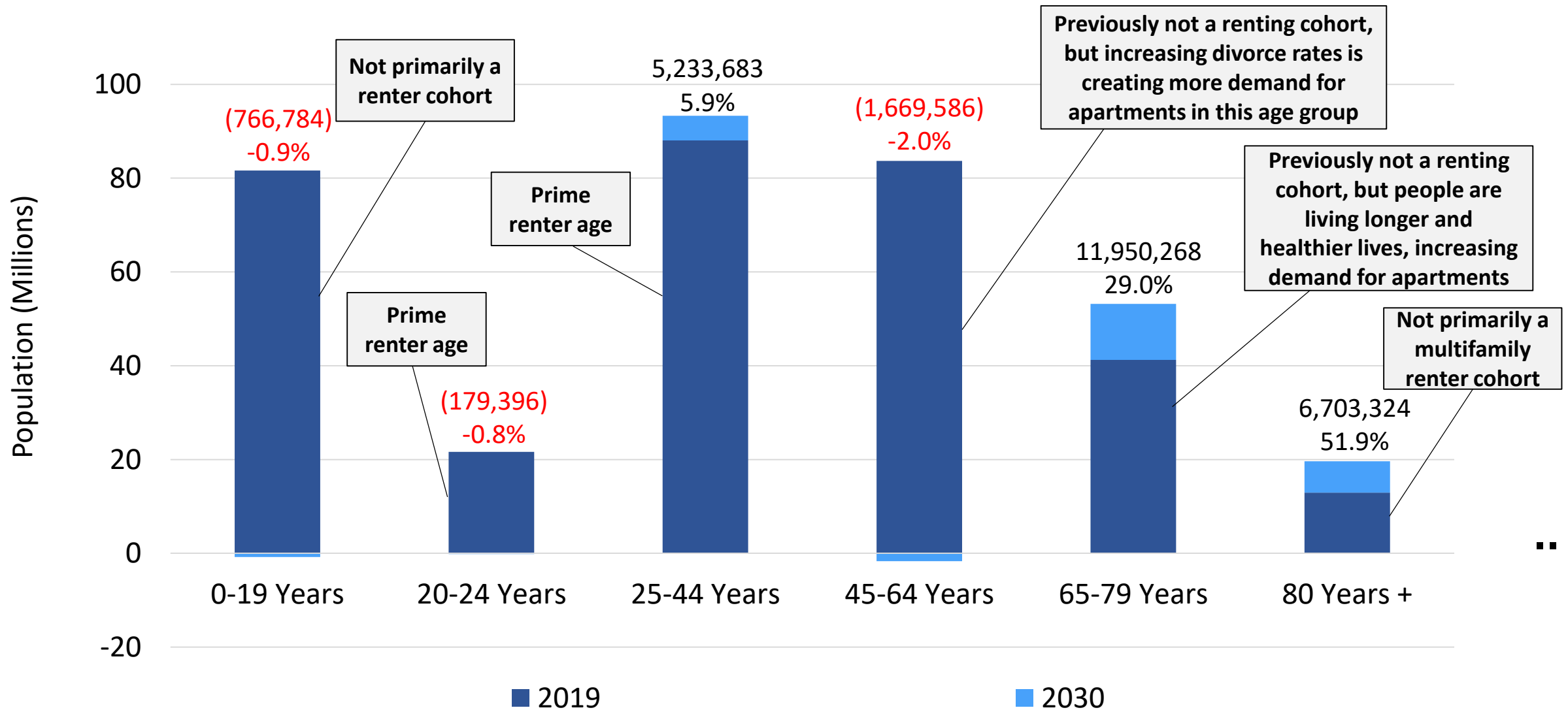
- Aging population
- Increasing divorce rates
- Young people living at home
 - Student debt burden
- Lifestyle changes
 - People getting married later in life
 - People having less kids and later in life

All of these in combination created a surge out of the recession,
but the effects seem to be durable

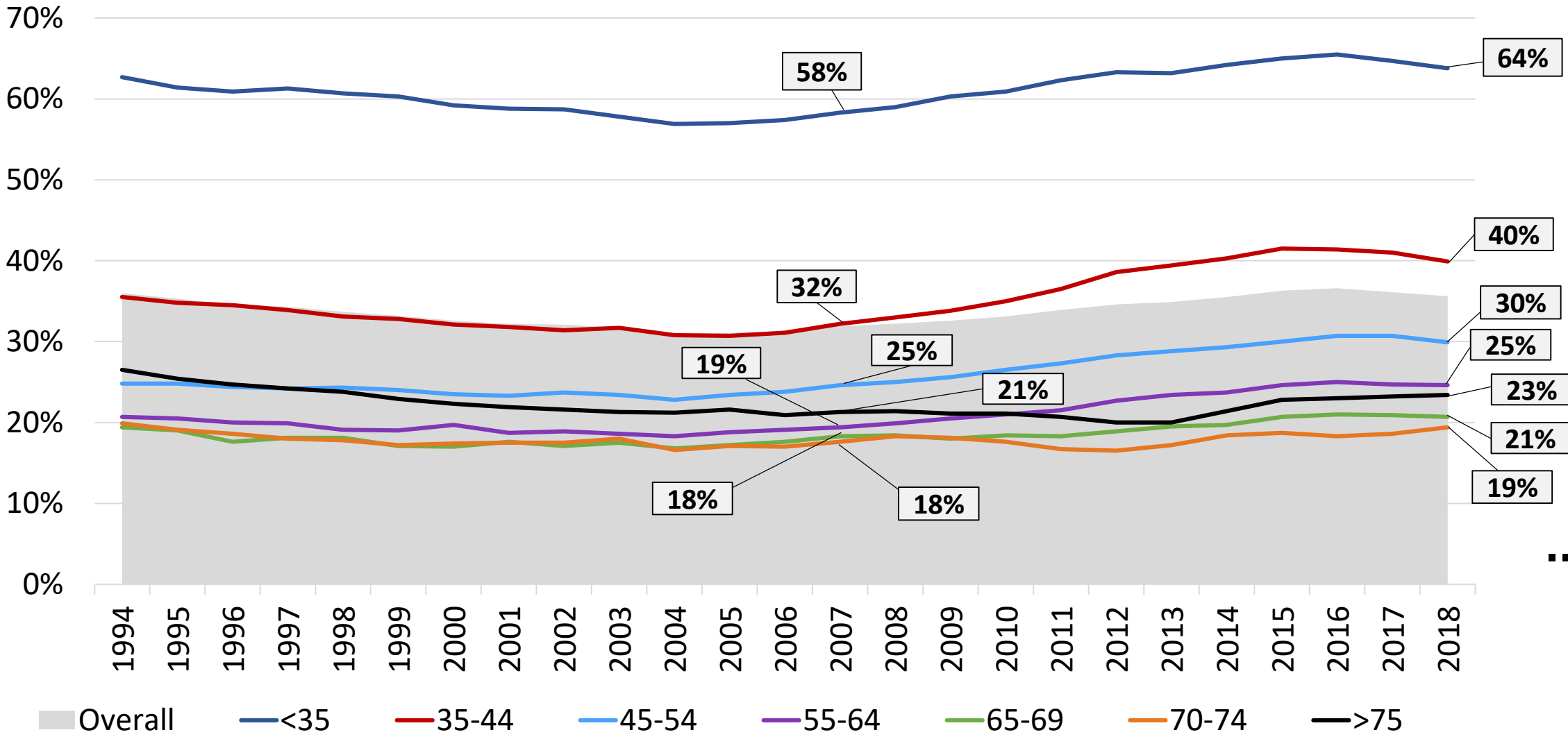


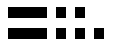


Within Each Age Group, There Are Drivers of Demand

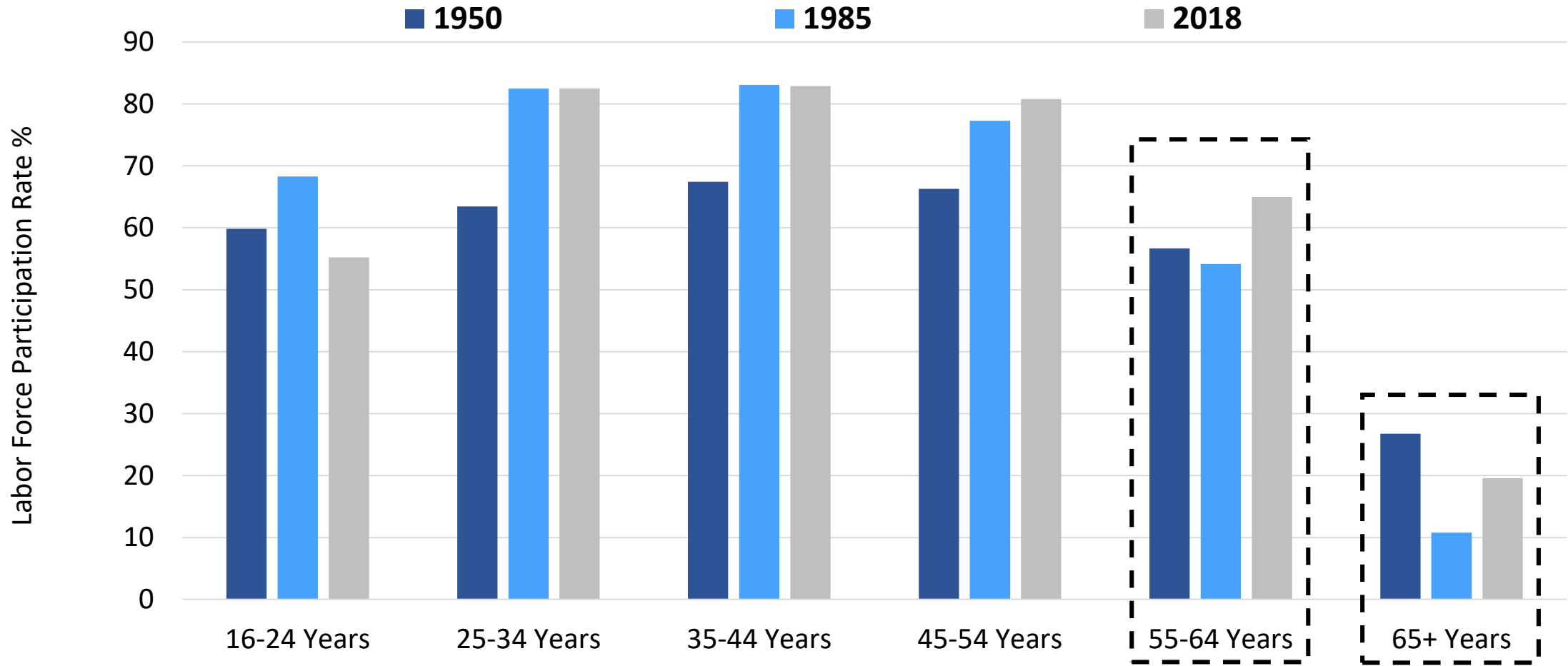


Historic Rentership by Age Cohort

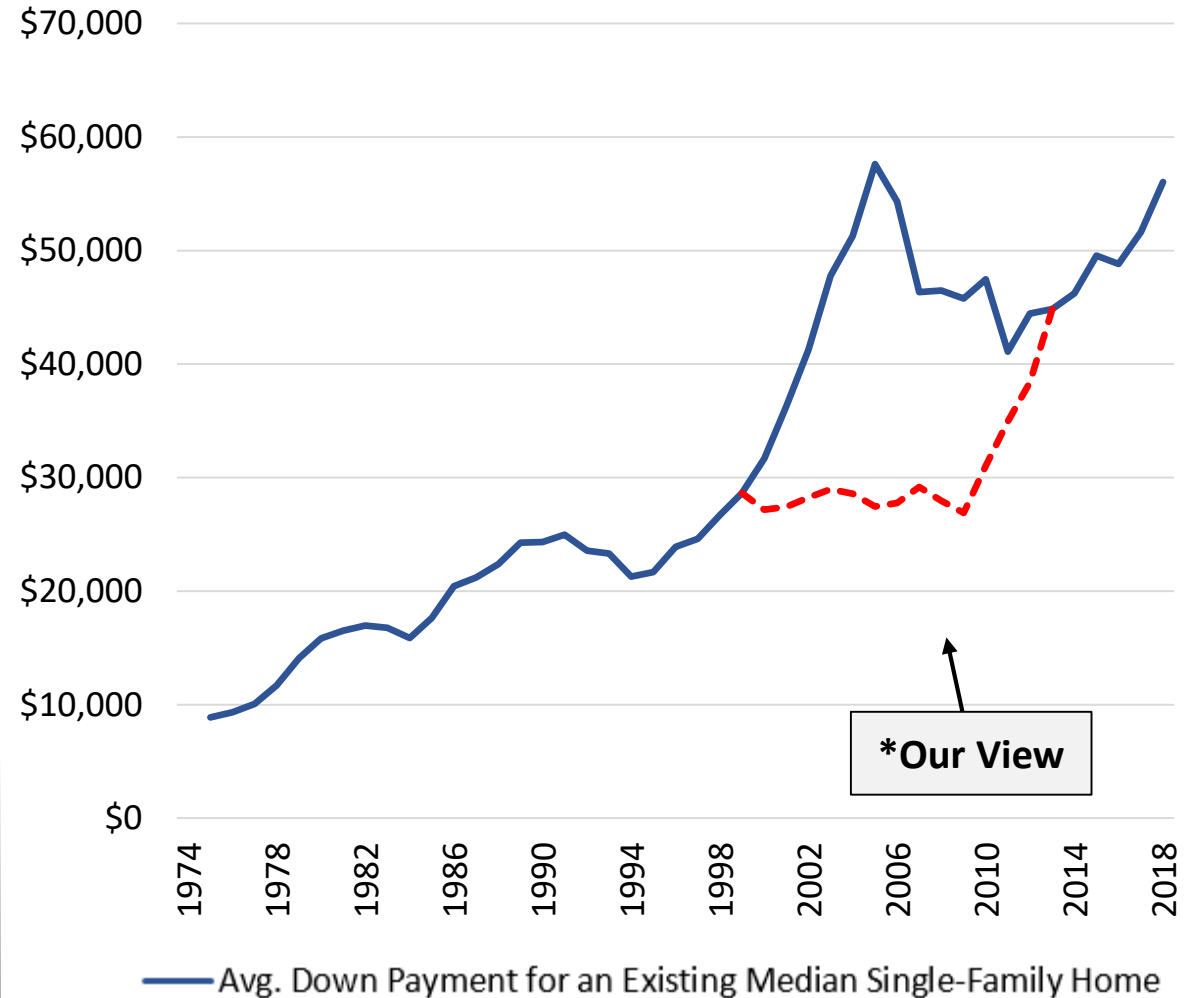
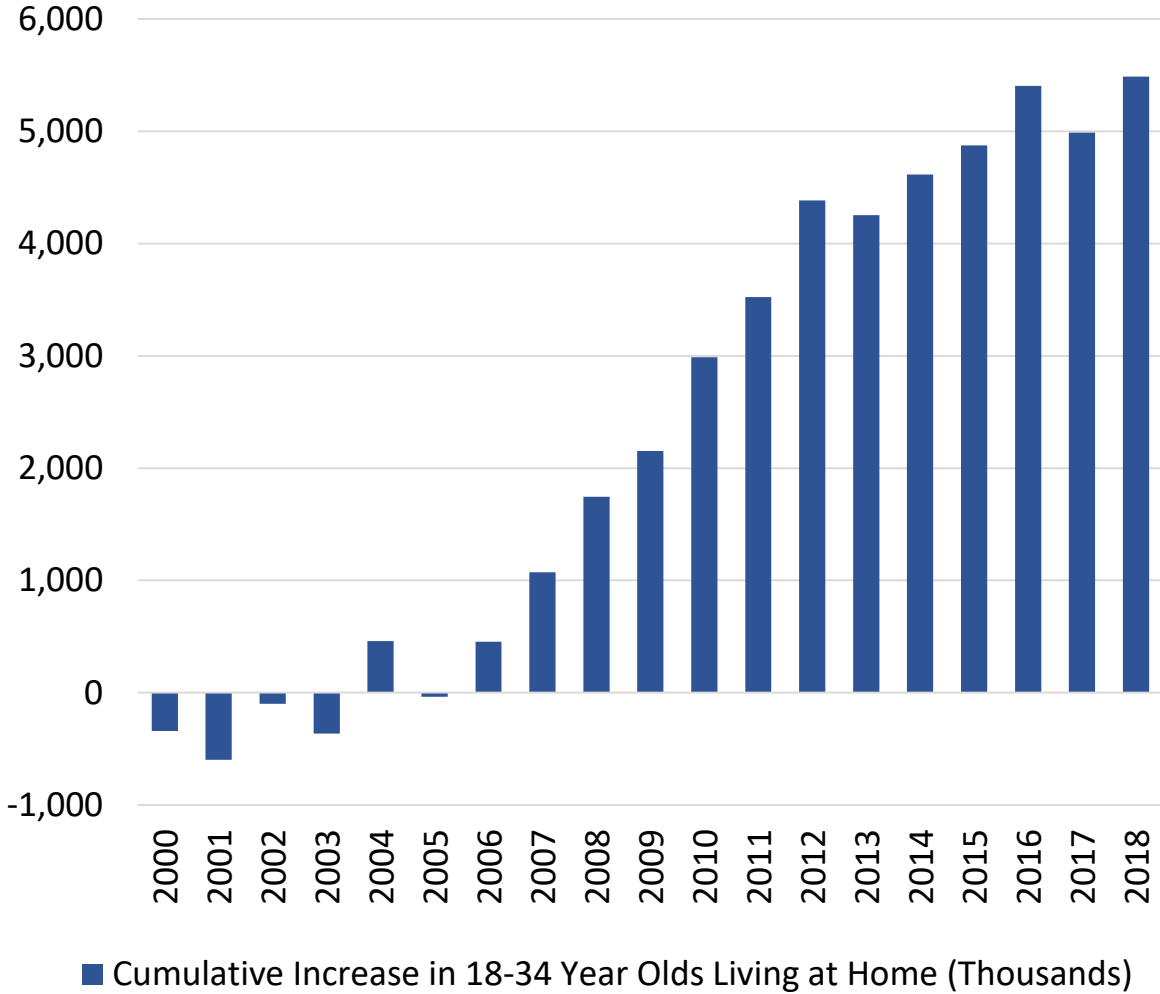




More People Working Longer Impacts the Multifamily *and* Office Industries

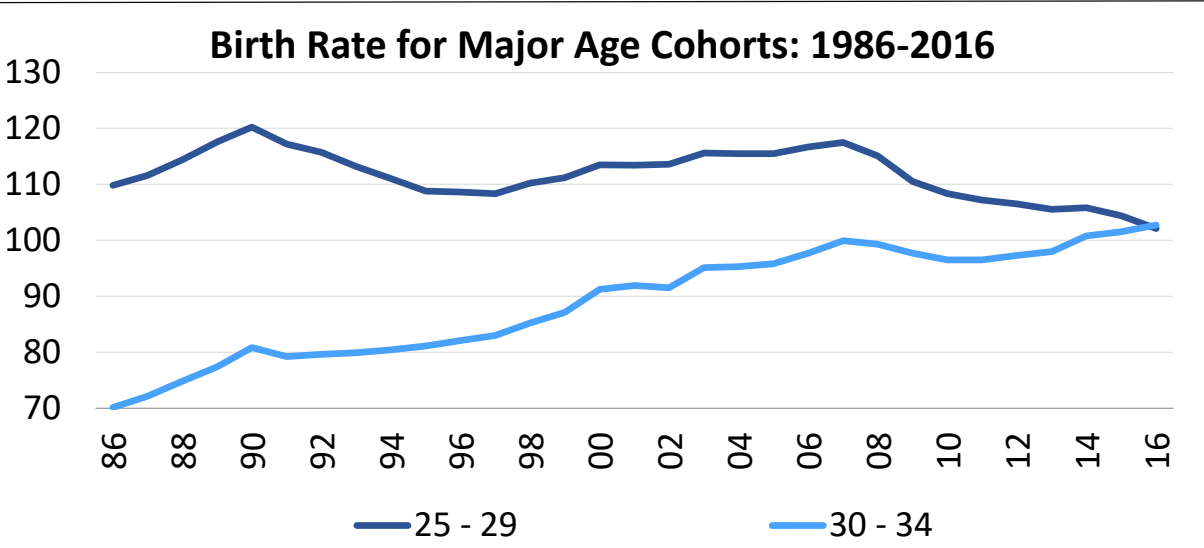
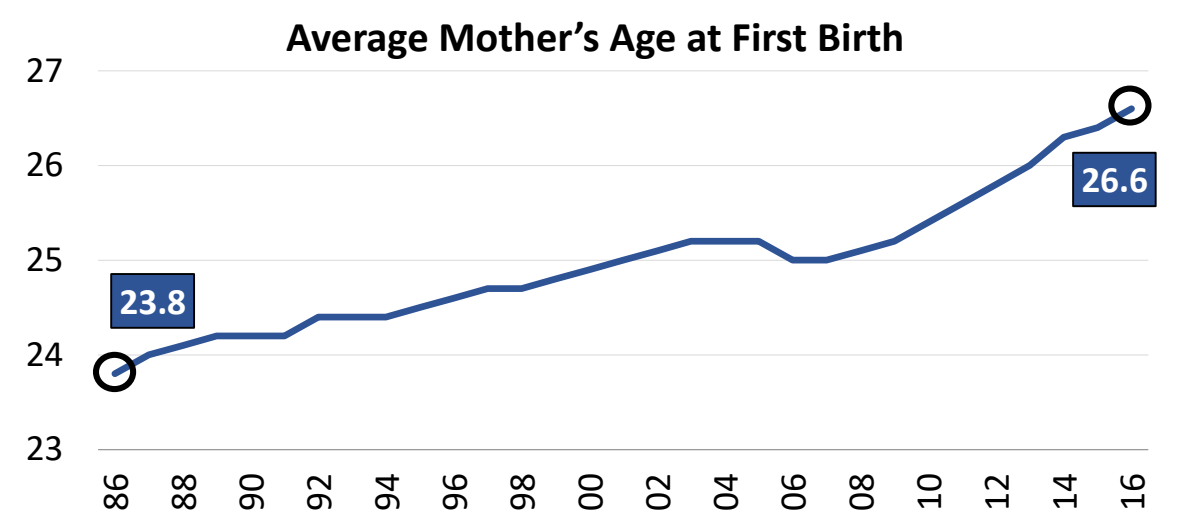
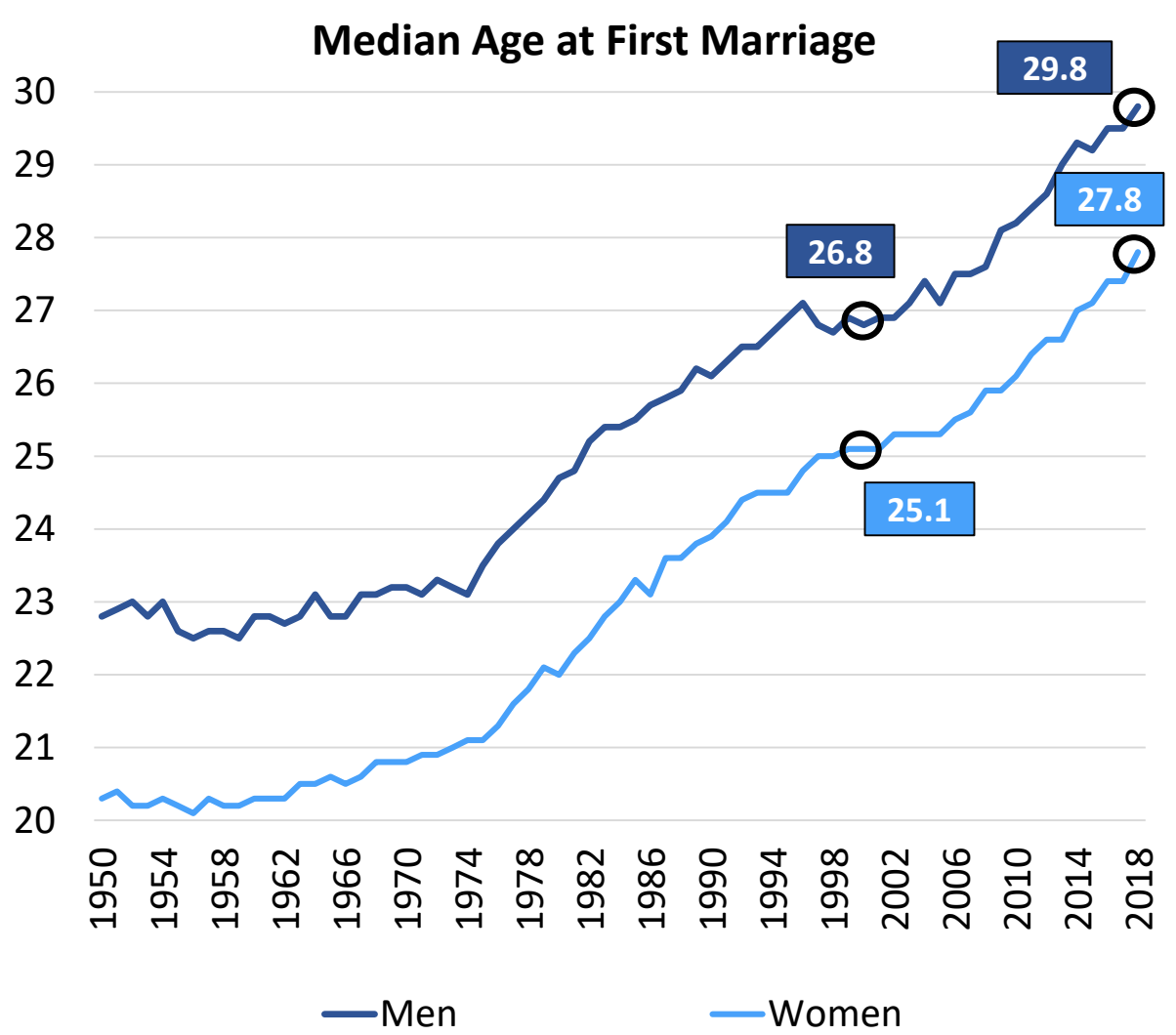


More Young People Living at Home as Average Down Payment for a Median Single Family Home Increases

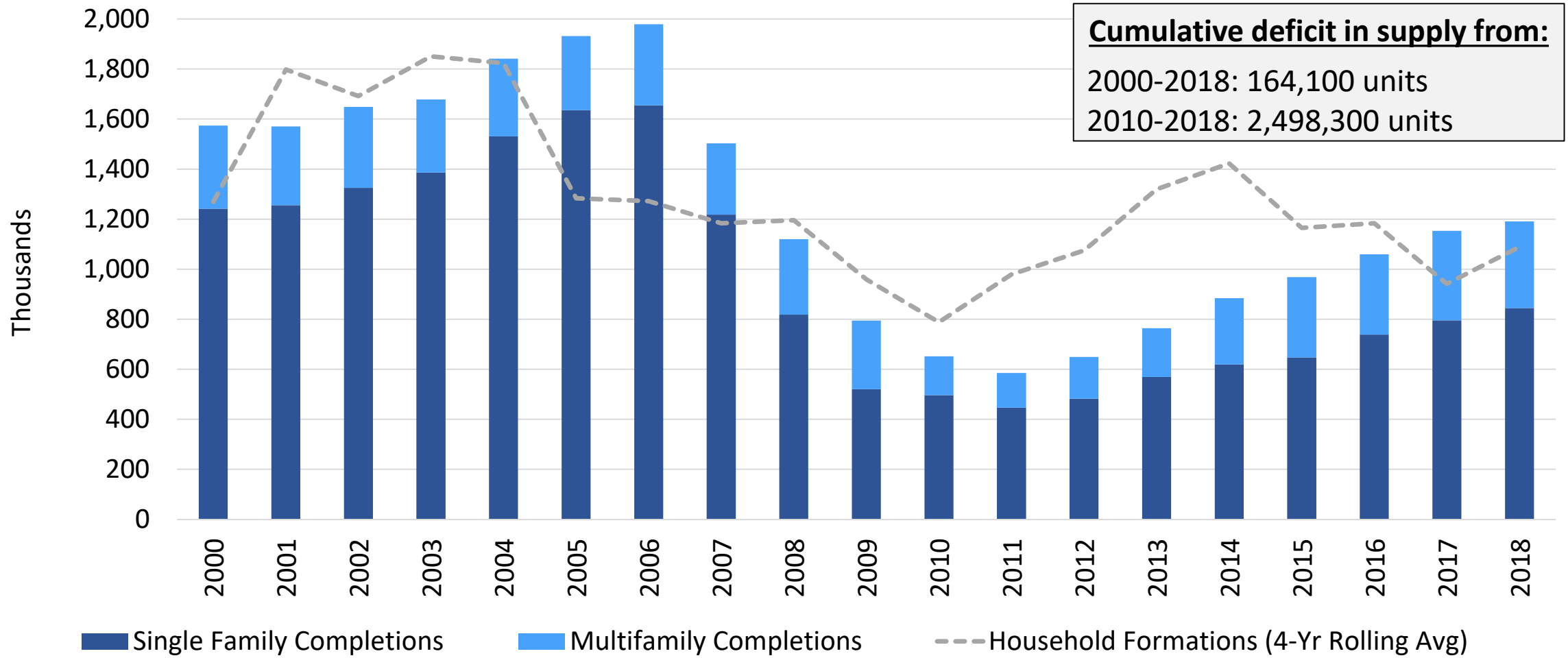




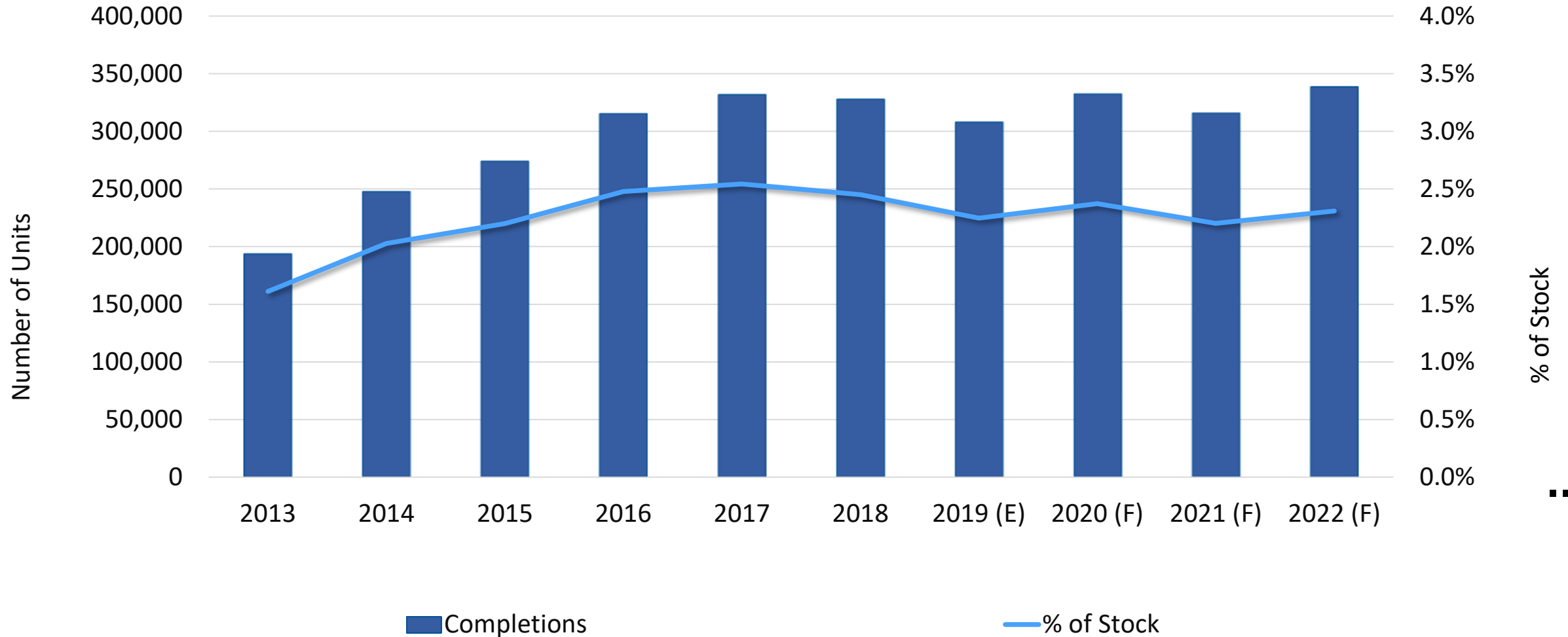
Lifestyle Changes Fueling Strong Demand for Multifamily



Multifamily Construction Catching Up to New Household Formation

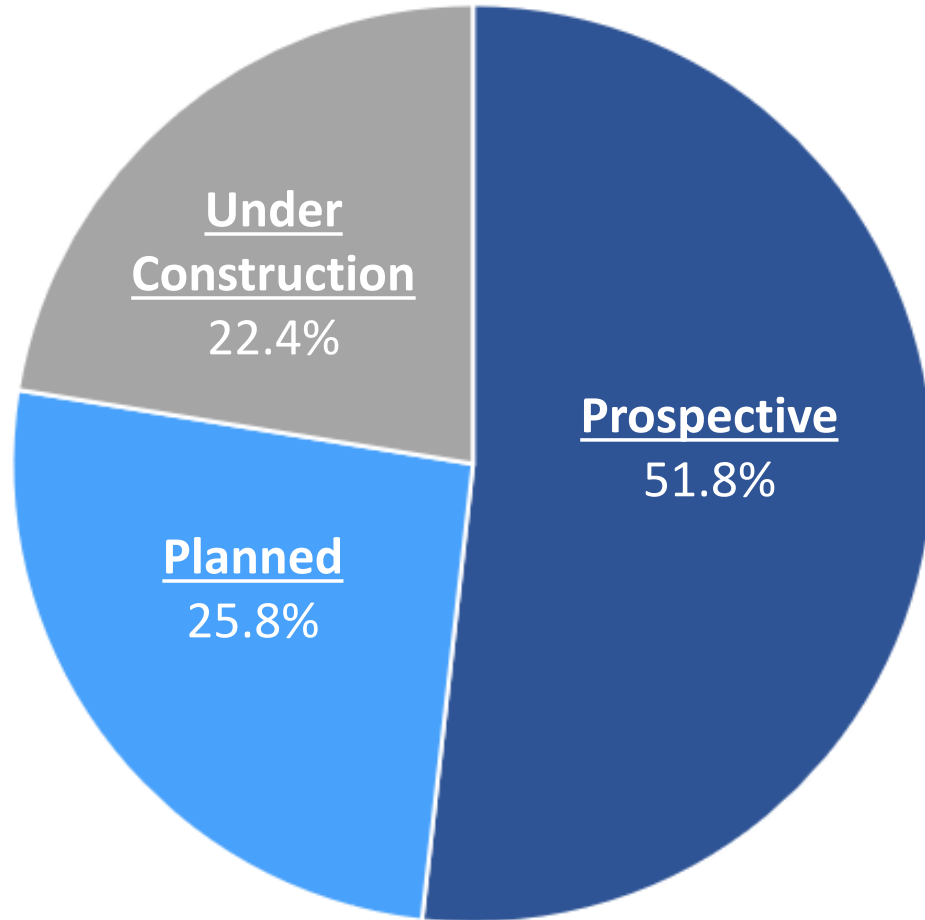


Multifamily Supply Has Levelled Out; But We See Another Ramp Up Coming





Based Upon What We See, New Multifamily Supply Is Unlikely to Break Out Above 330K a Year

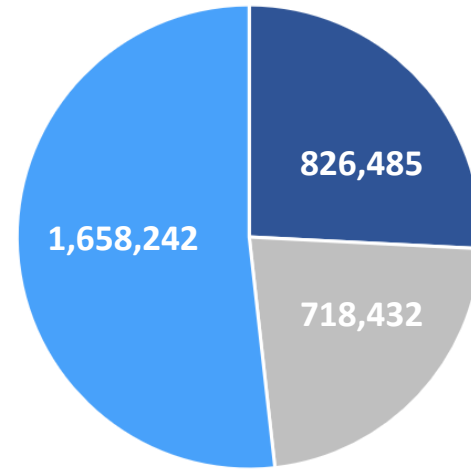


Property Status	Units	% of Total
Prospective	1,658,242	51.8%
Planned	826,485	25.8%
Under Construction	718,432	22.4%
TOTAL:	3,203,159	100.0%





Where Is Future Multifamily Supply Concentrated?



■ Units Under Construction

■ Units Planned

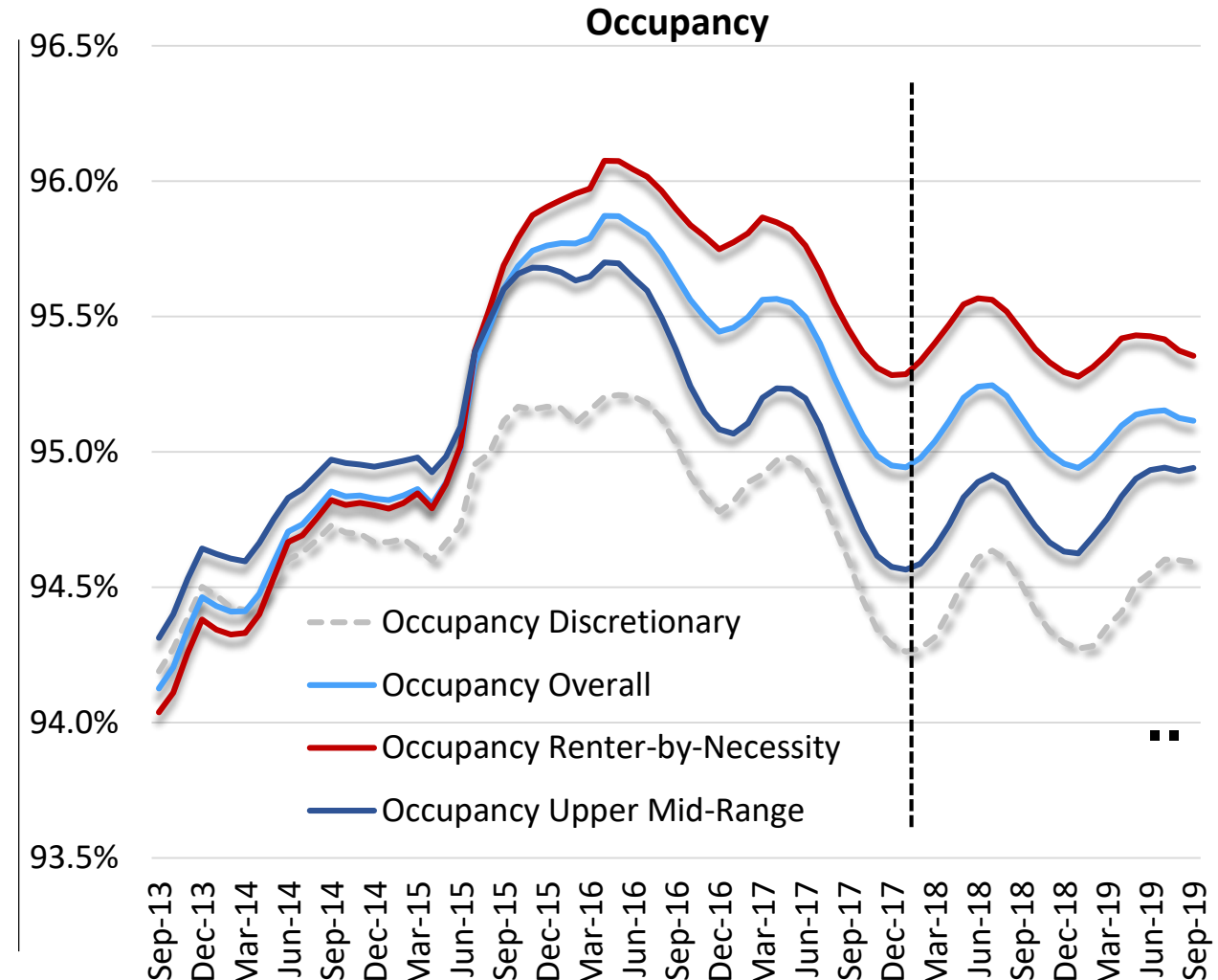
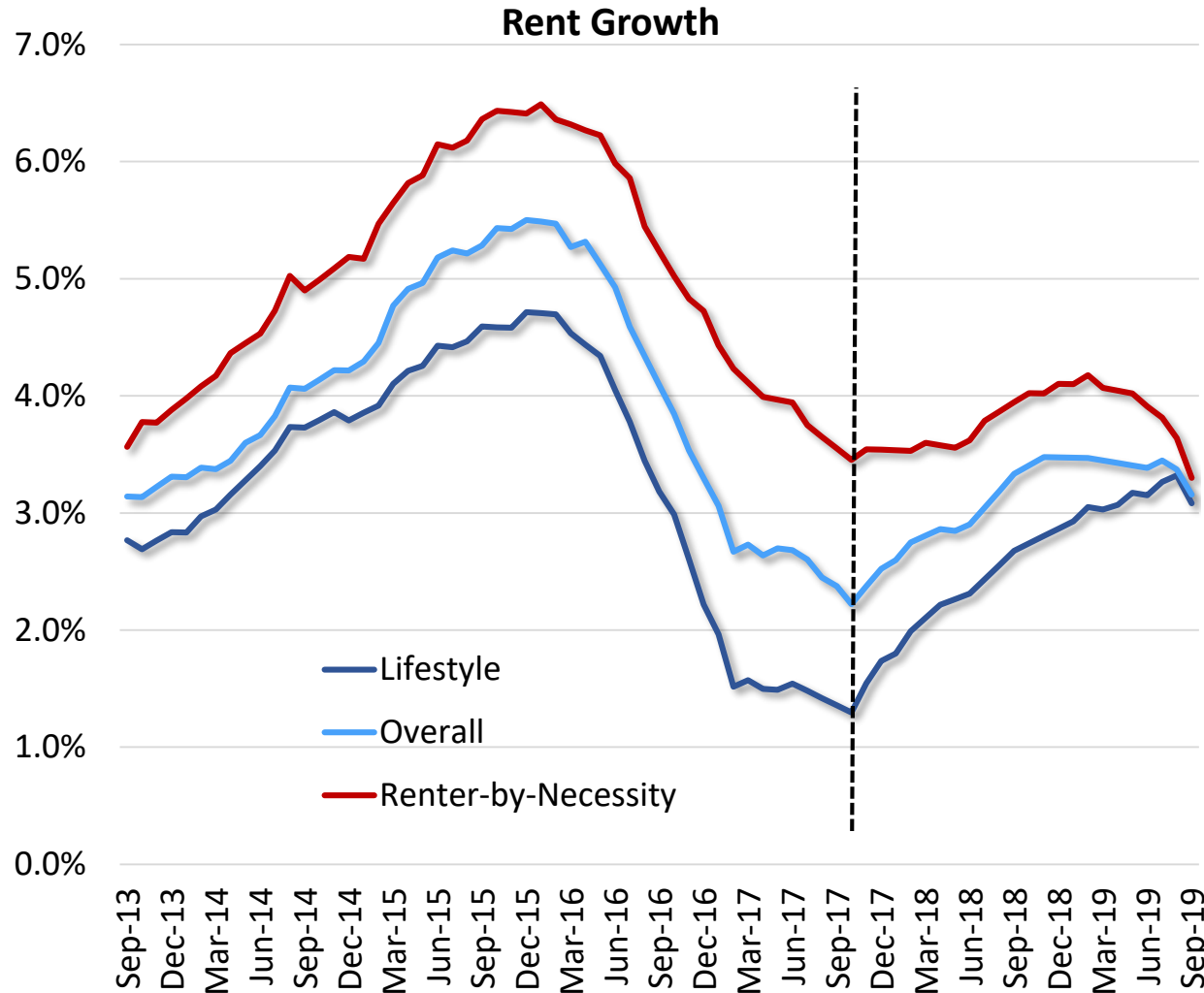
■ Prospective Units

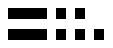
Top 10 Markets	Units	UC as a % of Existing Stock
Asheville	2,336	14.6%
Reno	4,837	12.7%
Miami	15,834	12.4%
Metro Los Angeles	20,066	11.2%
Salt Lake City	11,152	11.1%
Boston	24,481	11.0%
Wilmington	2,098	10.7%
Austin	25,217	10.7%
Queens	10,650	10.7%
Southwest Florida Coast	6,737	10.4%

Top 10 Markets	Units	Planned as a % of Existing Stock
Miami	26,742	20.9%
Southwest Florida Coast	13,361	20.6%
Urban Chicago	33,910	19.7%
Wilmington	3,594	18.4%
Asheville	2,875	18.0%
Northern New Jersey	38,695	17.7%
Orlando	29,701	13.8%
Huntsville	4,582	13.5%
West Palm Beach	8,982	13.5%
Fort Lauderdale	13,463	13.4%

Top 10 Markets	Units	Prospective as a % of Existing Stock
Miami	79,450	62.1%
San Francisco - Peninsula	49,285	41.0%
Bay Area - South Bay	43,825	34.9%
Southwest Florida Coast	21,468	33.1%
Bay Area - East Bay	44,620	33.1%
Metro Los Angeles	57,474	32.1%
Northern Virginia	61,872	28.2%
West Palm Beach	17,037	25.6%
Fort Lauderdale	24,775	24.6%
Washington DC	75,233	24.4%

Multifamily Rent Growth Has Fallen While Occupancy Levels Off

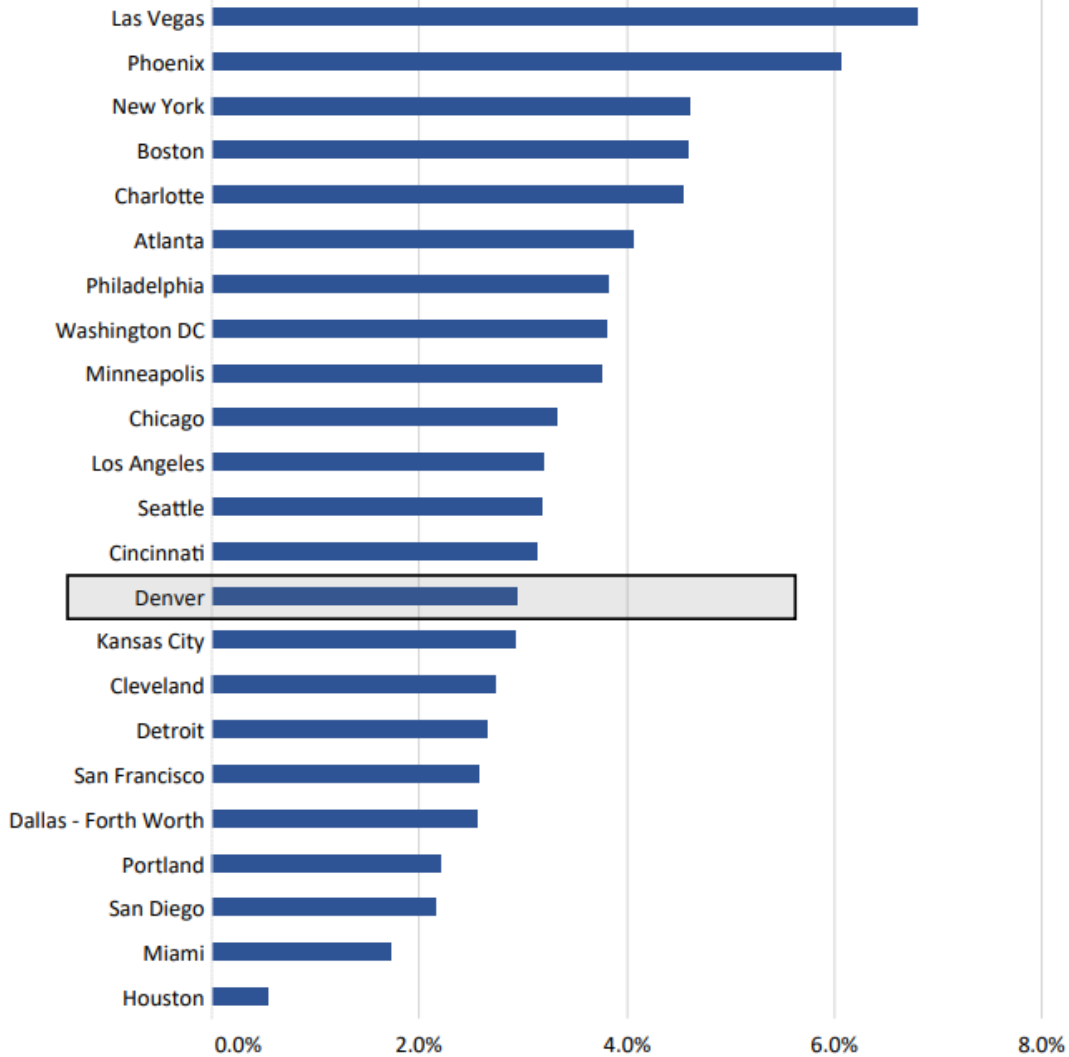




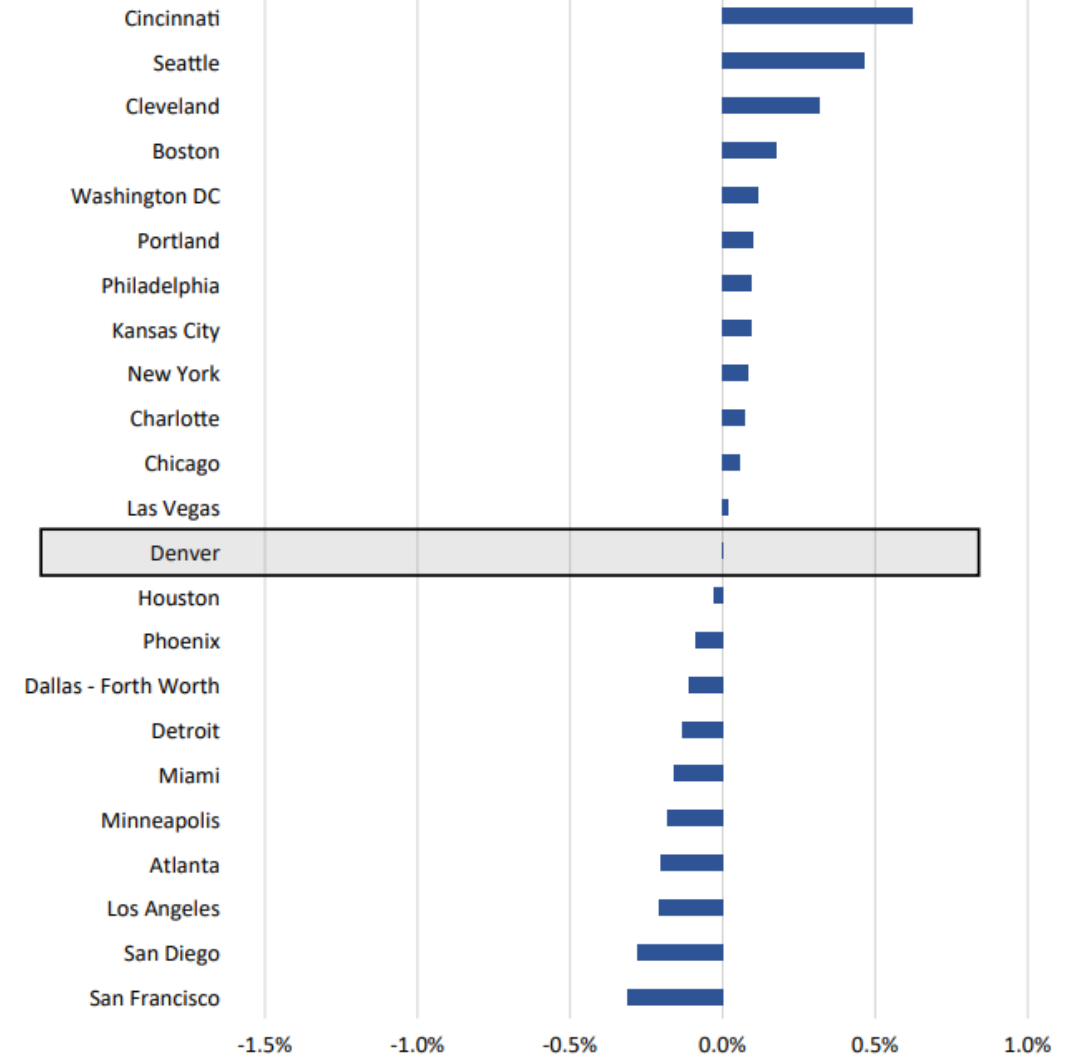
Major Market Multifamily Rent & Occupancy Growth

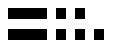


Rent Growth

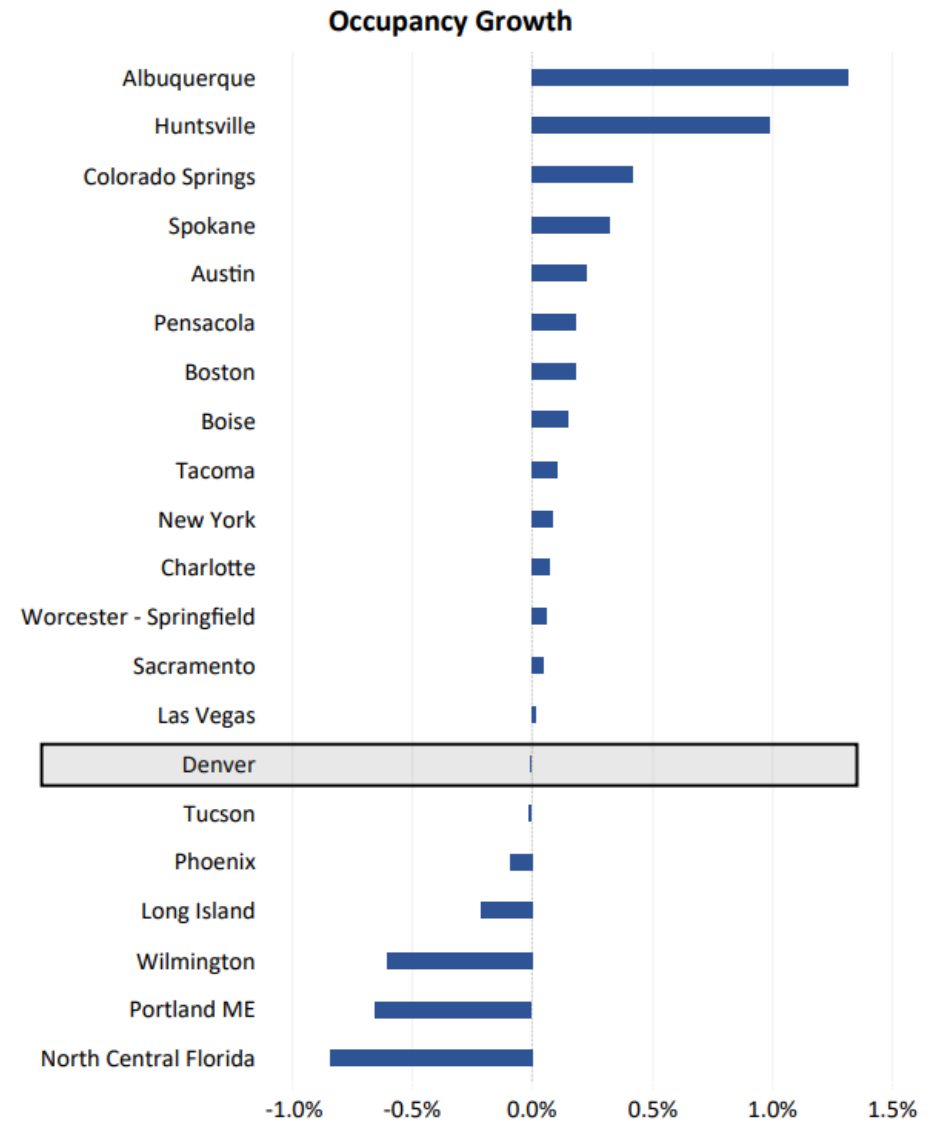
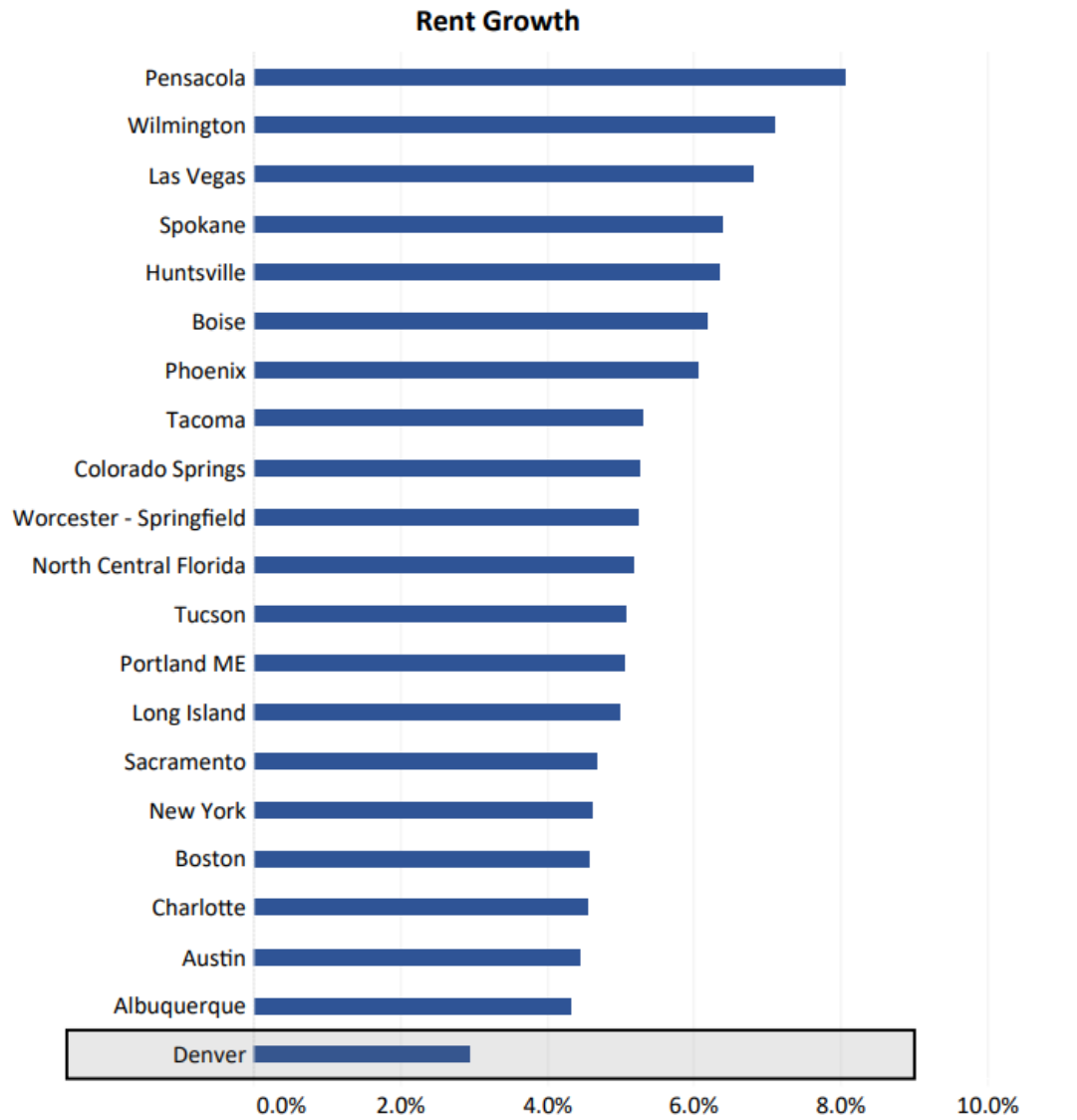


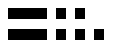
Occupancy Growth





Ranked Multifamily Rent & Occupancy Growth

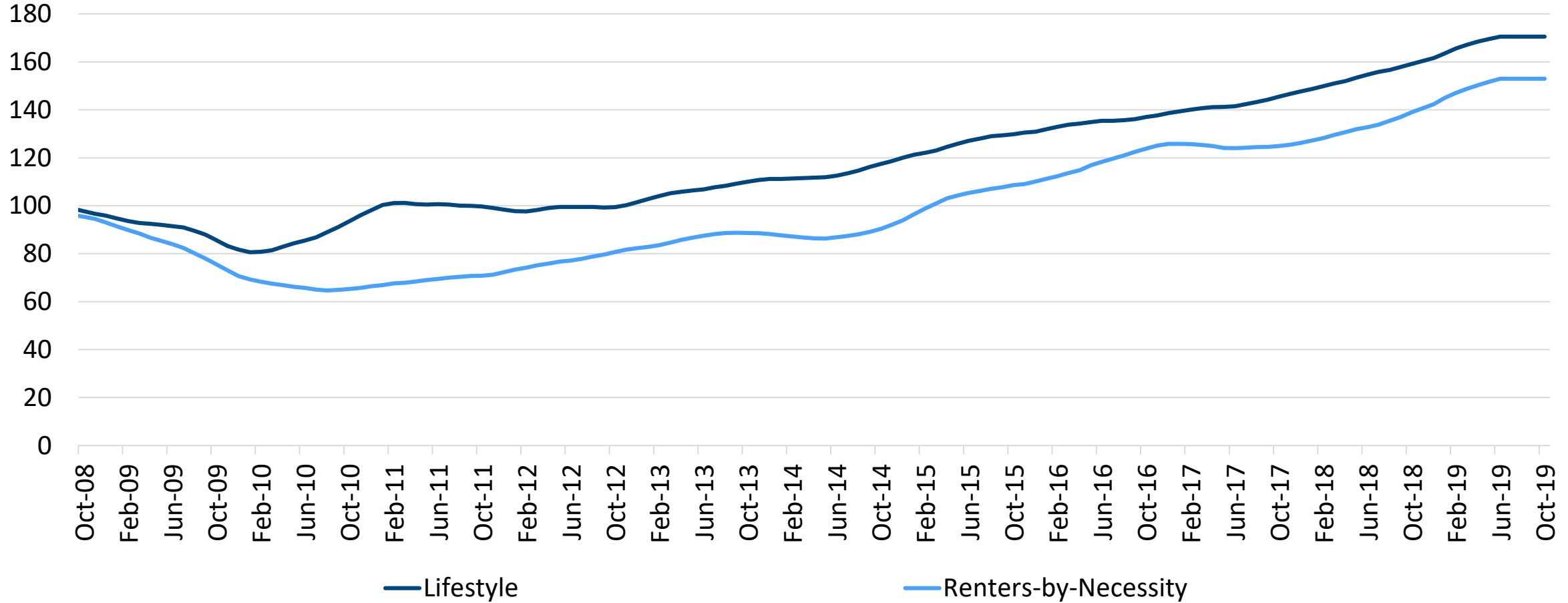




National Multifamily Values Keep Rising

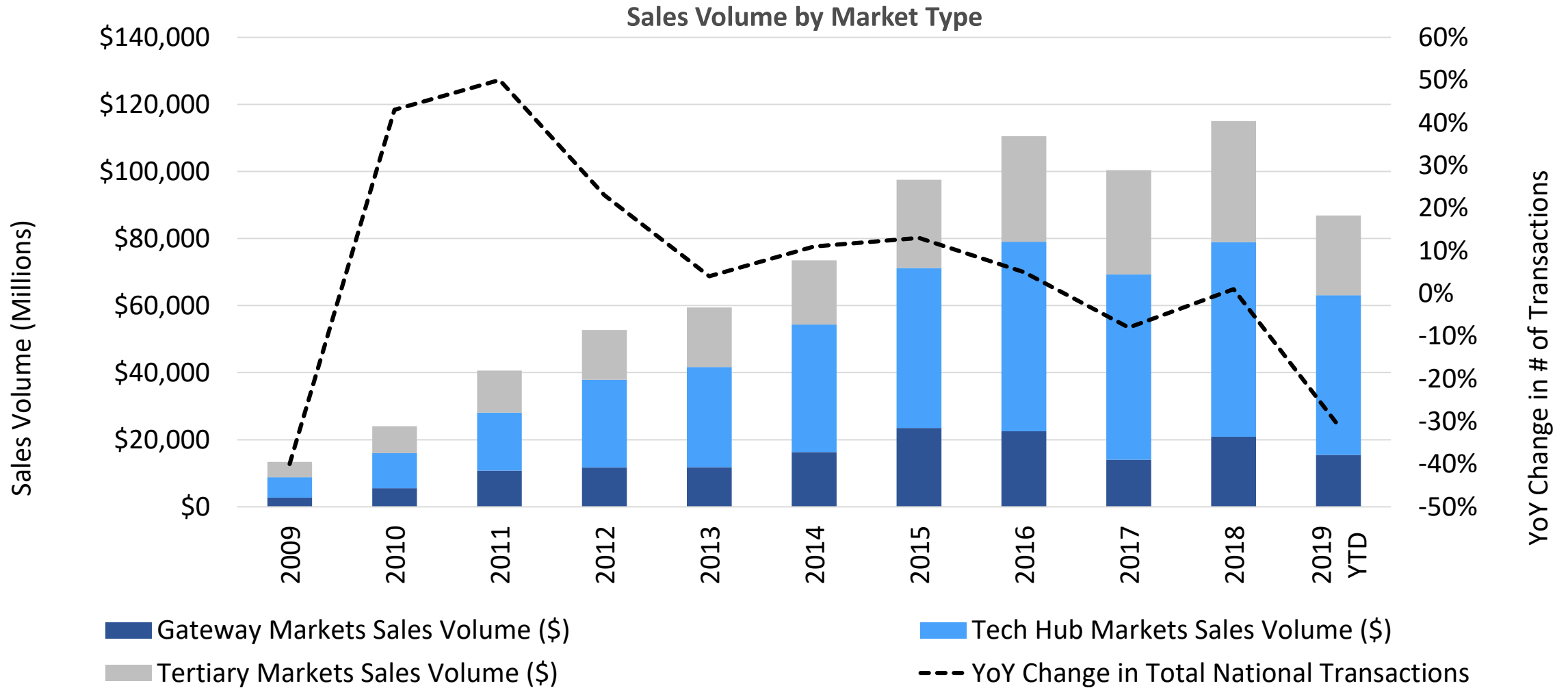


Sales Price Per Units Index 2008 = 100



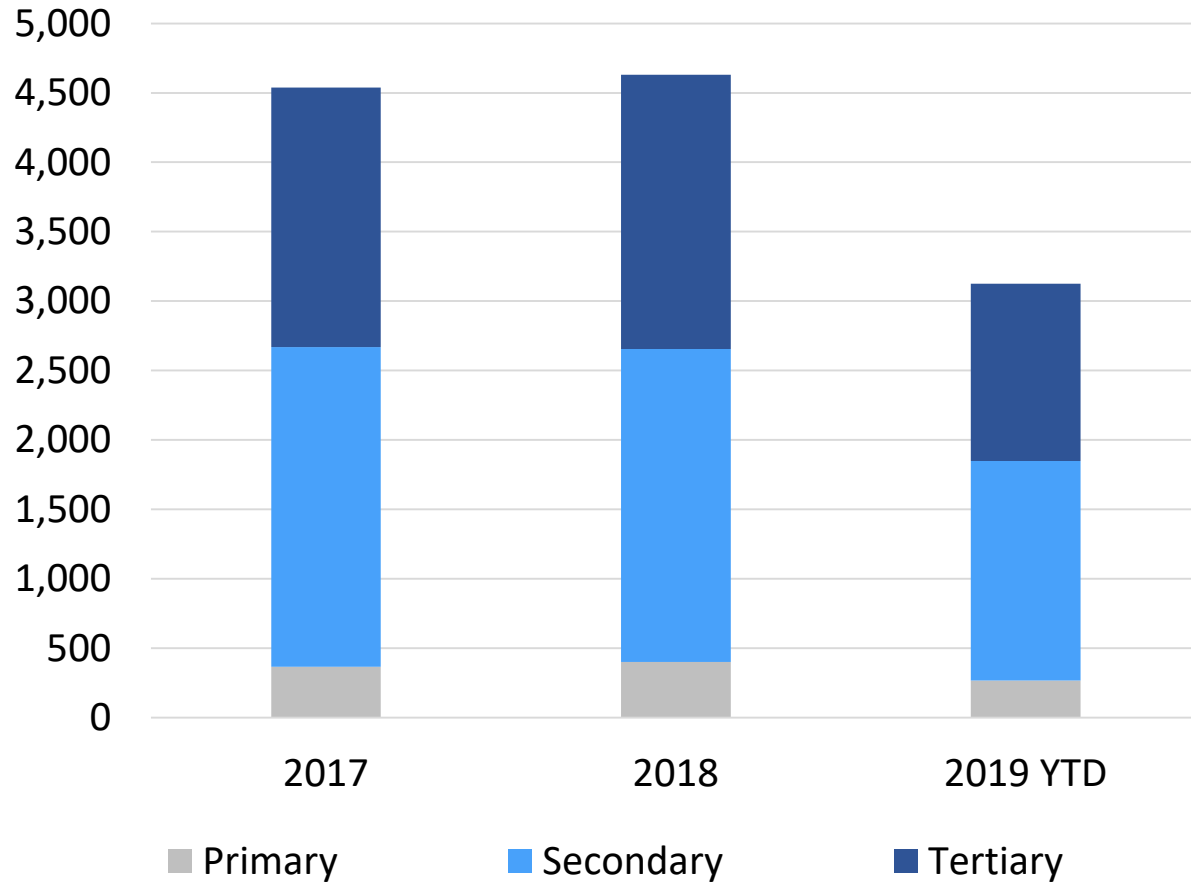


Multifamily Transactions Fairly Stable Over Past Five Years, but With Higher Dollar Amounts

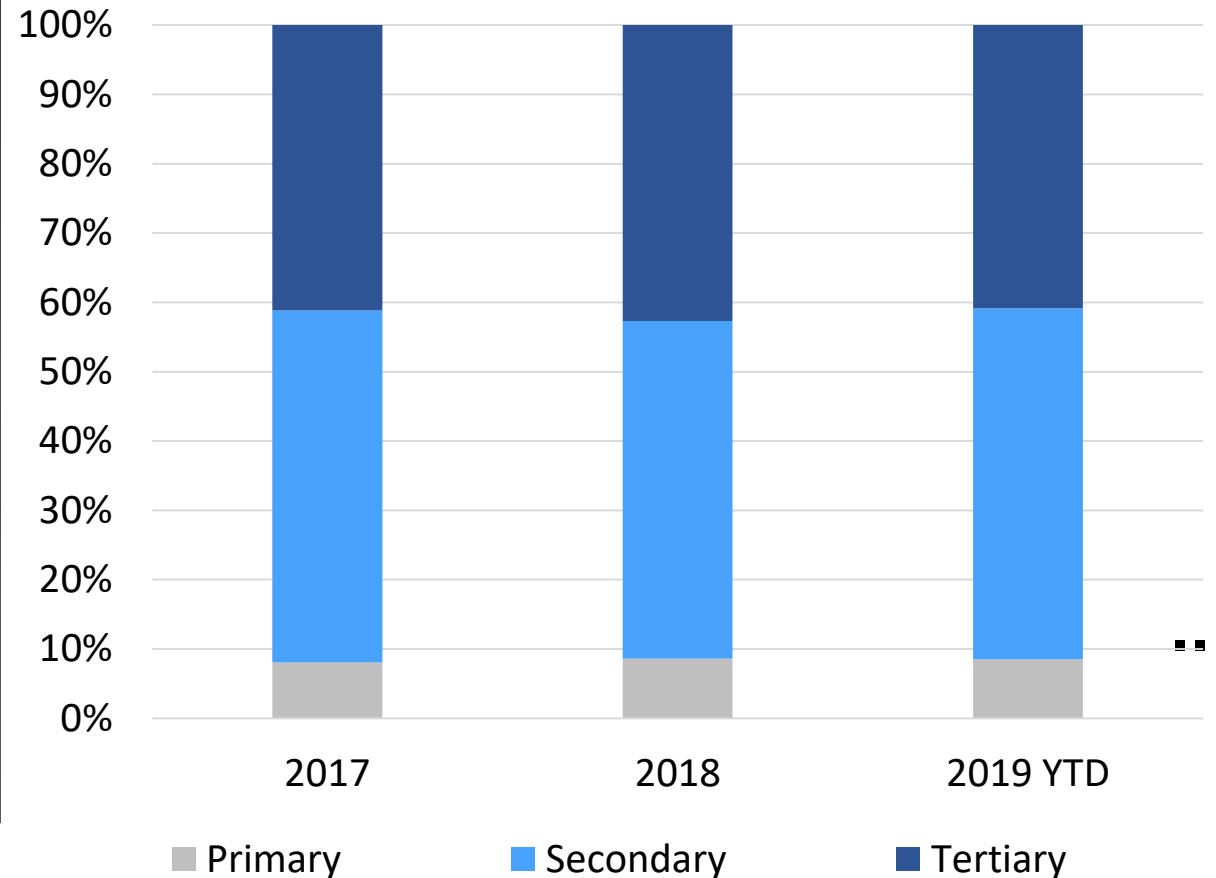


Multifamily Sales Are Concentrated in Tech Hub & Tertiary Markets

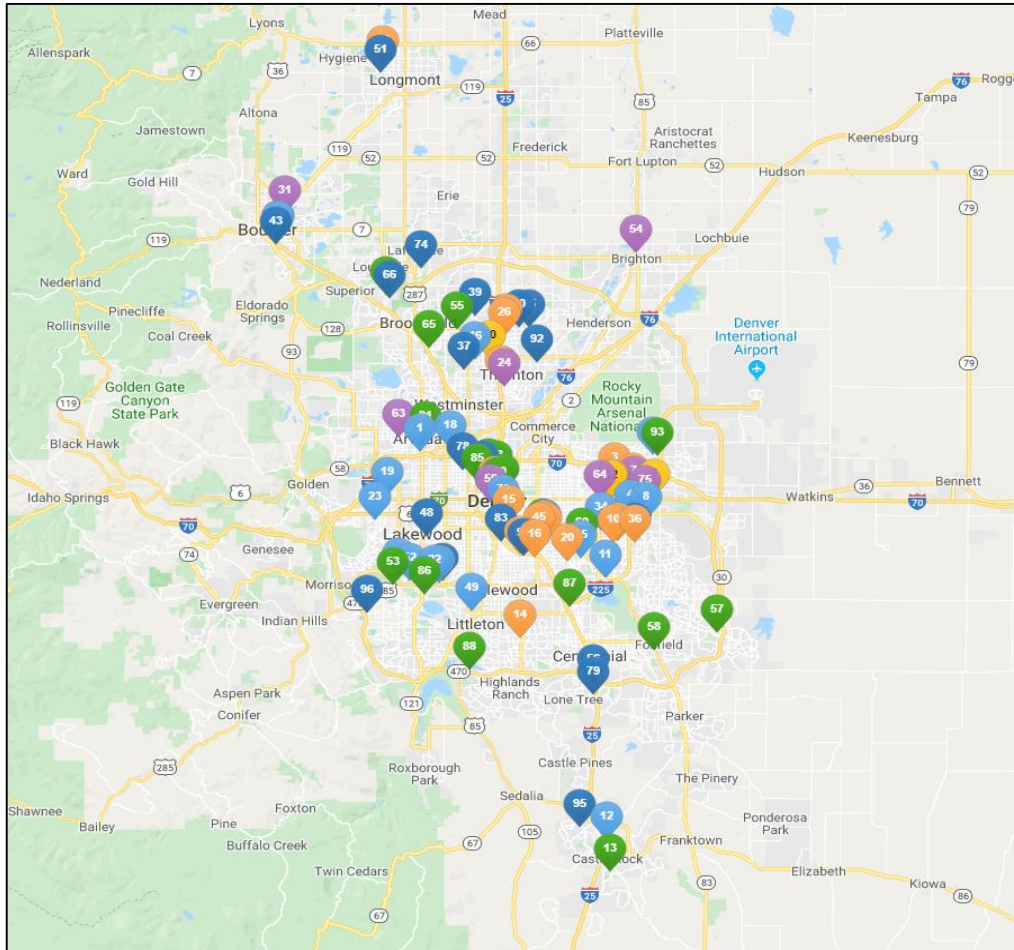
Properties Sold by Market Type



% of Properties Sold by Market Type



Denver Multifamily Transaction Composition in 2018



Property Asset Class:

Discretionary Upper Mid-Range Low Mid-Range Workforce - Upper Workforce - Lower Fully Affordable

2018 Transactions		
	#	% of Stock
Properties Sold	97	7.2%
Units Sold	21,634	8.2%
2018 Sales Prices		
Avg. Sales Price per Unit	\$240,326	
Avg. Sales Price per Unit for Low Mid-Range Assets	\$213,980	
1-Year Sales Price Growth for Low Mid-Range Assets	0.2%	
5-Year Sales Price Growth for Low Mid-Range Assets	114.6%	

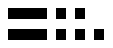


Population Growth Is in Non-Gateway Markets



Market	2016 Pop. Growth	2017 Pop. Growth	2018 Pop. Growth	Overall Trend
Austin	3.0%	2.6%	2.5%	Decelerating
Orlando	2.7%	2.4%	2.4%	Steady
Las Vegas	2.0%	2.0%	2.2%	Accelerating
Raleigh	2.6%	2.3%	2.1%	Decelerating
Phoenix	2.1%	1.8%	2.0%	Accelerating
Dallas	2.2%	2.1%	1.8%	Decelerating
Charlotte	2.1%	2.0%	1.8%	Decelerating
Tampa	2.2%	1.9%	1.7%	Decelerating
Nashville	2.1%	1.8%	1.6%	Decelerating
Salt Lake City	1.7%	1.7%	1.4%	Decelerating
Denver	1.6%	1.2%	1.4%	Accelerating
Seattle	2.0%	1.8%	1.4%	Decelerating
Houston	2.0%	1.4%	1.3%	Decelerating
Atlanta	1.8%	1.5%	1.3%	Decelerating
Columbus	1.2%	1.5%	1.2%	Decelerating
Indianapolis	1.0%	1.1%	1.1%	Steady

Market	2016 Pop. Growth	2017 Pop. Growth	2018 Pop. Growth	Overall Trend
Sacramento	1.3%	1.2%	1.1%	Decelerating
Minneapolis	1.0%	1.1%	1.0%	Decelerating
Portland	1.9%	1.2%	0.9%	Decelerating
Washington DC	0.9%	1.0%	0.8%	Decelerating
Kansas City	1.0%	0.9%	0.8%	Decelerating
Boston	0.8%	0.8%	0.6%	Decelerating
Miami	1.3%	0.8%	0.6%	Decelerating
San Diego	0.8%	0.5%	0.5%	Steady
San Francisco	0.7%	0.4%	0.3%	Decelerating
Philadelphia	0.2%	0.2%	0.3%	Accelerating
San Jose	0.7%	0.2%	0.3%	Accelerating
Detroit	0.1%	0.1%	0.1%	Steady
Cleveland	-0.1%	-0.1%	-0.1%	Steady/Negative
Los Angeles	0.2%	0.0%	-0.1%	Decelerating
New York	0.1%	-0.2%	-0.2%	Steady/Negative
Chicago	-0.2%	-0.2%	-0.2%	Steady/Negative

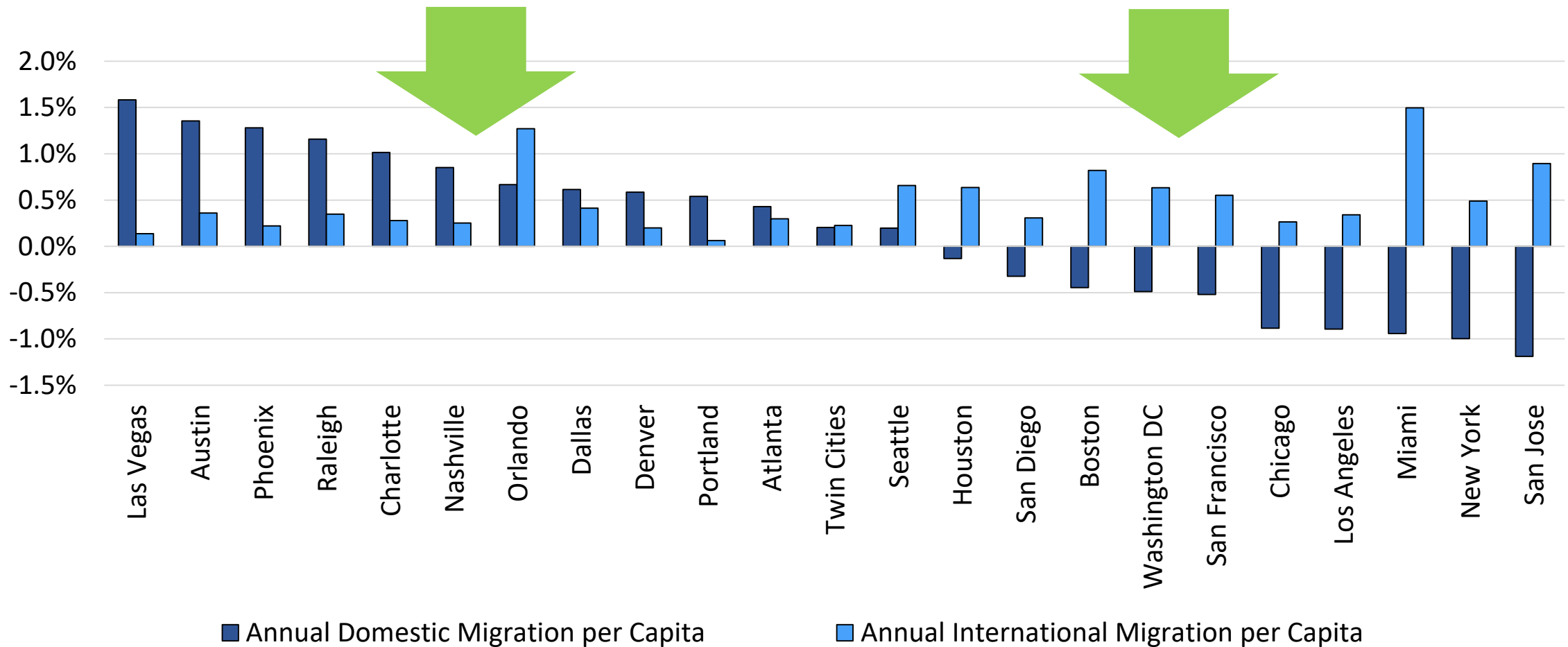


Immigration Is Key to Gateway Population Growth



Tech Hub Markets:
High Migration, Modest Immigration

Gateway Markets:
High Immigration, Low/Negative Migration



Tech Hub & Tertiary Markets Will Have Most Multifamily Rent Growth Over Next Couple Years

Market	2019 Forecast	2020 Forecast	2021 Forecast
Pensacola	9.8%	10.3%	9.3%
Reno	8.5%	7.1%	7.3%
Boise	6.1%	5.7%	5.2%
Spokane	5.8%	4.6%	4.2%
Tacoma	5.6%	4.8%	4.3%
Las Vegas	5.6%	6.7%	4.9%
North Central Florida	5.6%	5.2%	5.0%
Orlando	5.6%	6.0%	4.8%
Suburban Atlanta	5.5%	4.7%	4.3%
Eugene	5.2%	3.9%	3.2%

Market	2019 Forecast	2020 Forecast	2021 Forecast
Central Valley	5.2%	4.0%	3.1%
Huntsville	5.1%	4.8%	5.0%
Seattle	5.0%	4.8%	4.7%
Bay Area - East Bay	4.9%	3.9%	3.0%
Colorado Springs	4.9%	4.1%	4.6%
Tucson	4.9%	4.5%	4.1%
Bay Area - South Bay	4.9%	5.3%	5.7%
Suburban Twin Cities	4.9%	4.5%	4.4%
Austin	4.9%	4.5%	4.0%
Central Coast	4.9%	5.4%	5.6%

*Full market forecast on 133 markets and submarkets available for clients

*Data ranked by 2019 forecast values

Source: Yardi® Matrix



Tertiary Markets Will Have Least Multifamily Rent Growth Over Next Couple Years



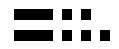
Market	2019 Forecast	2020 Forecast	2021 Forecast
Baton Rouge	-1.1%	-0.8%	0.4%
Jacksonville	0.6%	2.8%	3.0%
Lubbock	0.6%	0.9%	0.2%
Amarillo	0.9%	1.7%	1.2%
El Paso	1.0%	0.9%	1.8%
Savannah - Hilton Head	1.0%	1.6%	1.3%
Little Rock	1.2%	0.9%	0.7%
Central East Texas	1.5%	1.3%	0.8%
Toledo	1.5%	1.4%	1.2%
Corpus Christi	1.6%	0.2%	1.0%

Market	2019 Forecast	2020 Forecast	2021 Forecast
Tulsa	1.7%	1.0%	0.7%
Southwest Florida Coast	1.9%	1.5%	1.1%
Albany	1.9%	2.1%	2.2%
Bridgeport - New Haven	1.9%	2.2%	2.0%
Jackson	2.0%	2.5%	2.5%
Richmond - Tidewater	2.0%	2.6%	2.3%
Oklahoma City	2.0%	1.4%	1.1%
Wichita	2.5%	2.1%	1.7%
Baltimore	2.5%	1.9%	1.4%
Knoxville	2.6%	2.1%	2.0%

*Full market forecast on 133 markets and submarkets available for clients

*Data ranked by 2019 forecast values

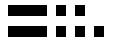
Source: Yardi® Matrix



Matrix Expert Multifamily Operating Data Per Unit



12-month period Ending September 2019	Denver	Atlanta	Austin	Boston	Chicago	Los Angeles	Manhattan	Phoenix
Total Income	\$17,918	\$15,684	\$15,125	\$25,276	\$22,736	\$28,061	\$37,354	\$12,896
Total Operating Expense	\$6,233	\$7,189	\$7,593	\$10,323	\$10,569	\$11,273	\$18,560	\$4,956
<i>Net Operating Income</i>	<i>\$11,685</i>	<i>\$8,494</i>	<i>\$7,532</i>	<i>\$14,953</i>	<i>\$12,167</i>	<i>\$16,788</i>	<i>\$18,755</i>	<i>\$7,941</i>
Operating Margin	65.2%	54.2%	49.8%	59.2%	53.5%	59.8%	50.2%	61.6%
Cap Rate (September 2019)	4.8%	7.2%	5.3%	4.9%	3.9%	4.0%	2.5%	5.1%



SUMMARY



1 Demand is strong, but there are constraints on supply due to construction delays & financing

2 Rent growth continues to hum along, with lower asset classes outperforming

3 Sales prices continue to rise, & most transactions occur in tech hub & tertiary markets, where population is also growing

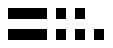
4 Rent growth will continue to grow the most in tech hub & tertiary markets with the support of strong population and employment fundamentals



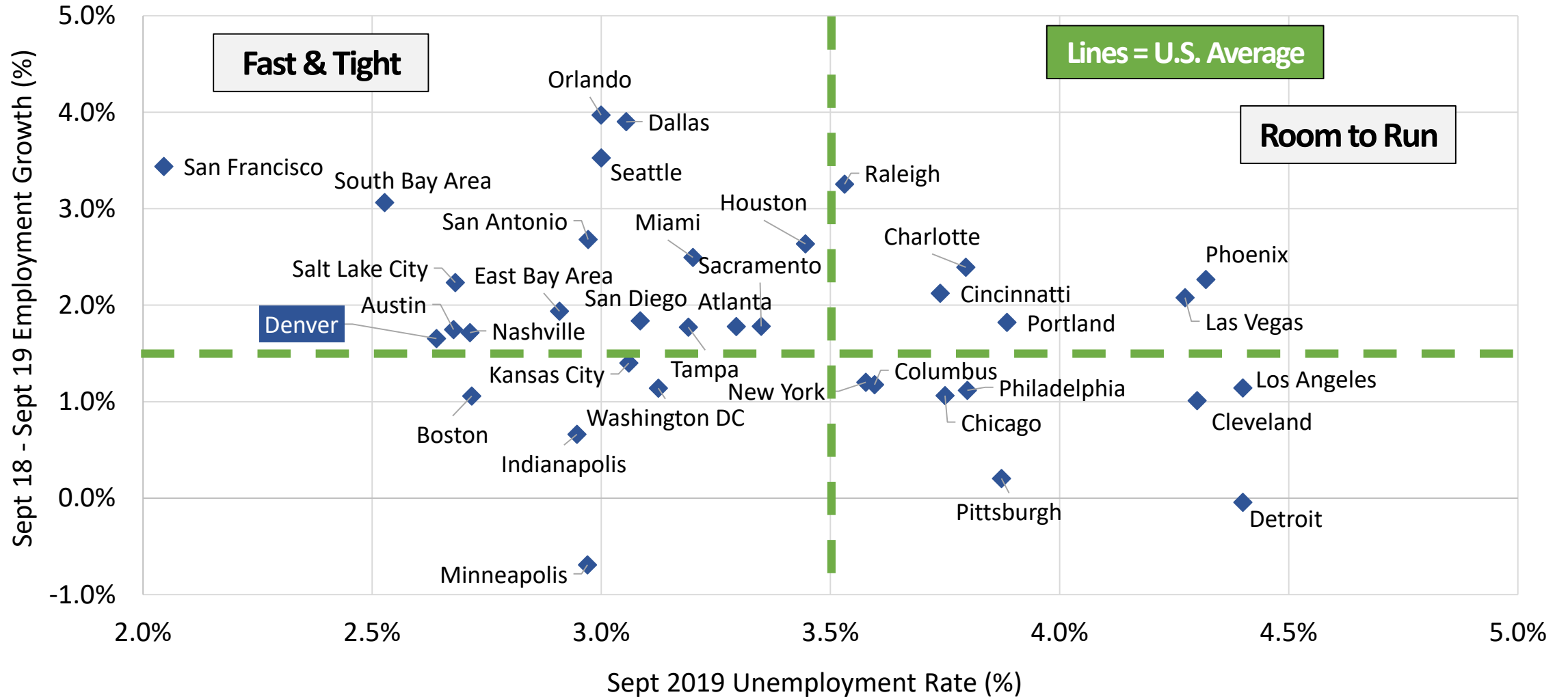


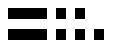
OFFICE FUNDAMENTALS





Tech Hub Markets Have Most Dynamic Job Growth

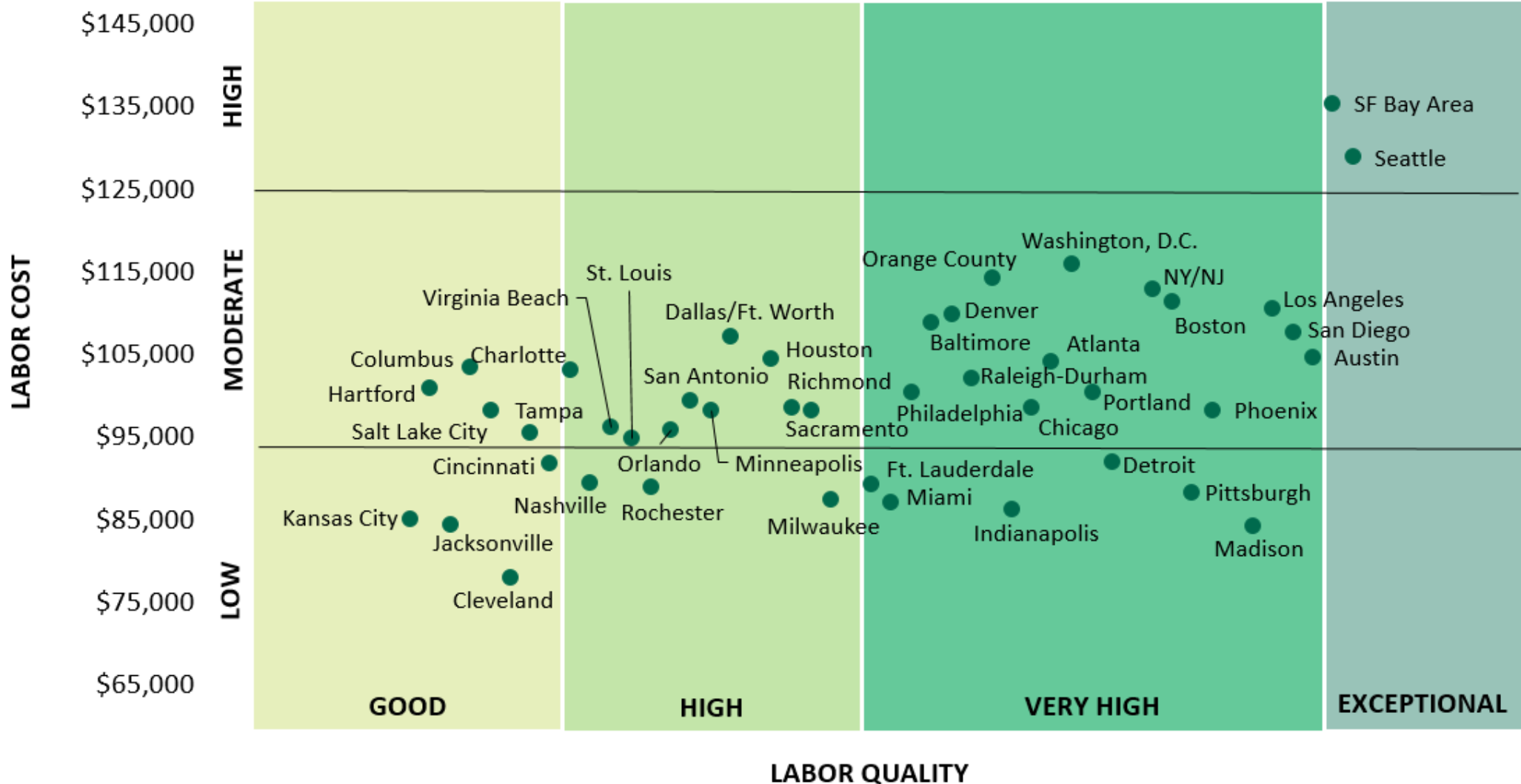


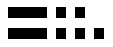


Tech Talent Quality vs. Cost Analysis



Average Annual Salary for Software Engineer (USD)

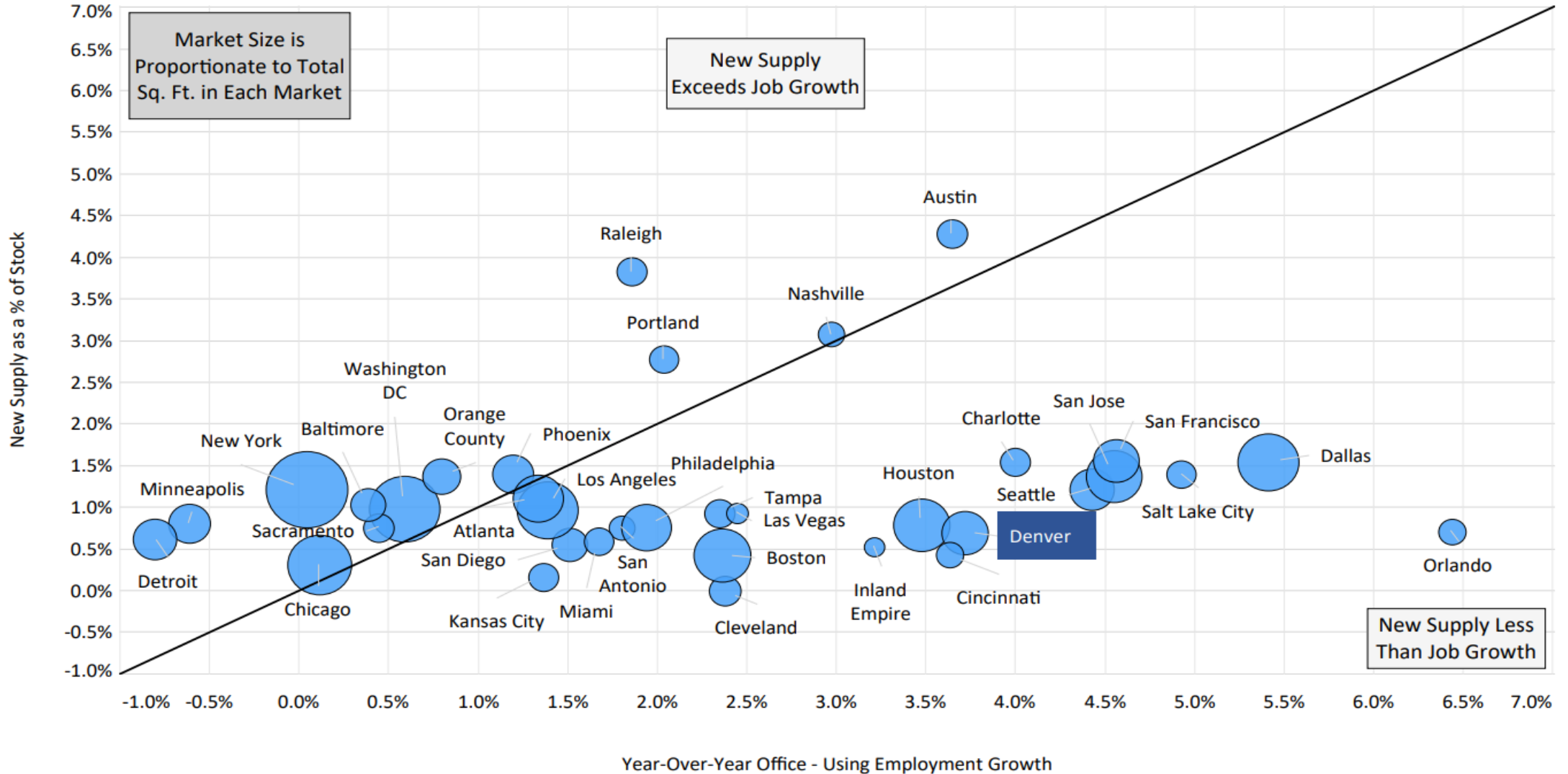




Most Markets Are Absorbing Office Space



Employment and Supply Growth: August 2018 - August 2019



Office Fundamentals Improving in Tech Hub Markets

Top 10 Markets					
Market	12-Month Change in Full-Service Equivalent Asking Rents	12-Month Change in Vacancy Rate	October Full-Service Equivalent Asking Rent	October Vacancy Rate	New Supply as a % of Stock Last 12 months
San Francisco	21.9%	-1.2%	\$71.1	7.8%	2.7%
Tampa - St. Petersburg	20.4%	0.4%	\$29.8	11.6%	0.9%
West Palm Beach	14.3%	0.9%	\$35.4	12.8%	0.7%
Brooklyn	13.6%	3.1%	\$59.6	12.1%	6.8%
Manhattan	11.9%	-2.0%	\$84.9	7.7%	1.5%
Bay Area	10.3%	-0.8%	\$47.8	14.1%	2.0%
Fort Lauderdale	7.2%	0.5%	\$31.1	12.8%	0.6%
Pittsburgh	4.7%	1.8%	\$24.7	14.3%	0.8%
Miami	4.6%	-0.9%	\$40.2	12.2%	0.7%
San Diego	3.8%	-0.9%	\$38.5	12.0%	0.7%

*As of October 2019

*Listings with high full-service equivalent rents that have been added over the last year in San Francisco, Tampa, Brooklyn, Bay Area and Manhattan are contributing to large YoY rent changes

Source: Yardi® Matrix



Office Fundamentals Improving in Tech Hub Markets



Bottom 10 Markets					
Market	12-Month Change in Full-Service Equivalent Asking Rents	12-Month Change in Vacancy Rate	October Full-Service Equivalent Asking Rent	October Vacancy Rate	New Supply as a % of Stock Last 12 months
Boston	-8.7%	0.7%	\$34.6	10.3%	0.7%
Chicago	-7.1%	1.1%	\$28.2	14.9%	0.3%
Seattle	-5.9%	-0.5%	\$36.8	8.4%	2.9%
Central Valley	-4.8%	3.0%	\$23.9	10.7%	0.6%
South Carolina	-2.4%	2.2%	\$21.8	13.6%	0.7%
Orlando	-1.9%	0.7%	\$21.2	12.3%	0.5%
Salt Lake City	-0.9%	3.0%	\$23.9	12.2%	1.7%
St. Louis	-0.8%	0.7%	\$21.1	11.7%	0.7%
Baltimore	-0.6%	0.5%	\$25.0	13.0%	0.4%
New Jersey	-0.5%	0.3%	\$31.7	20.9%	0.2%

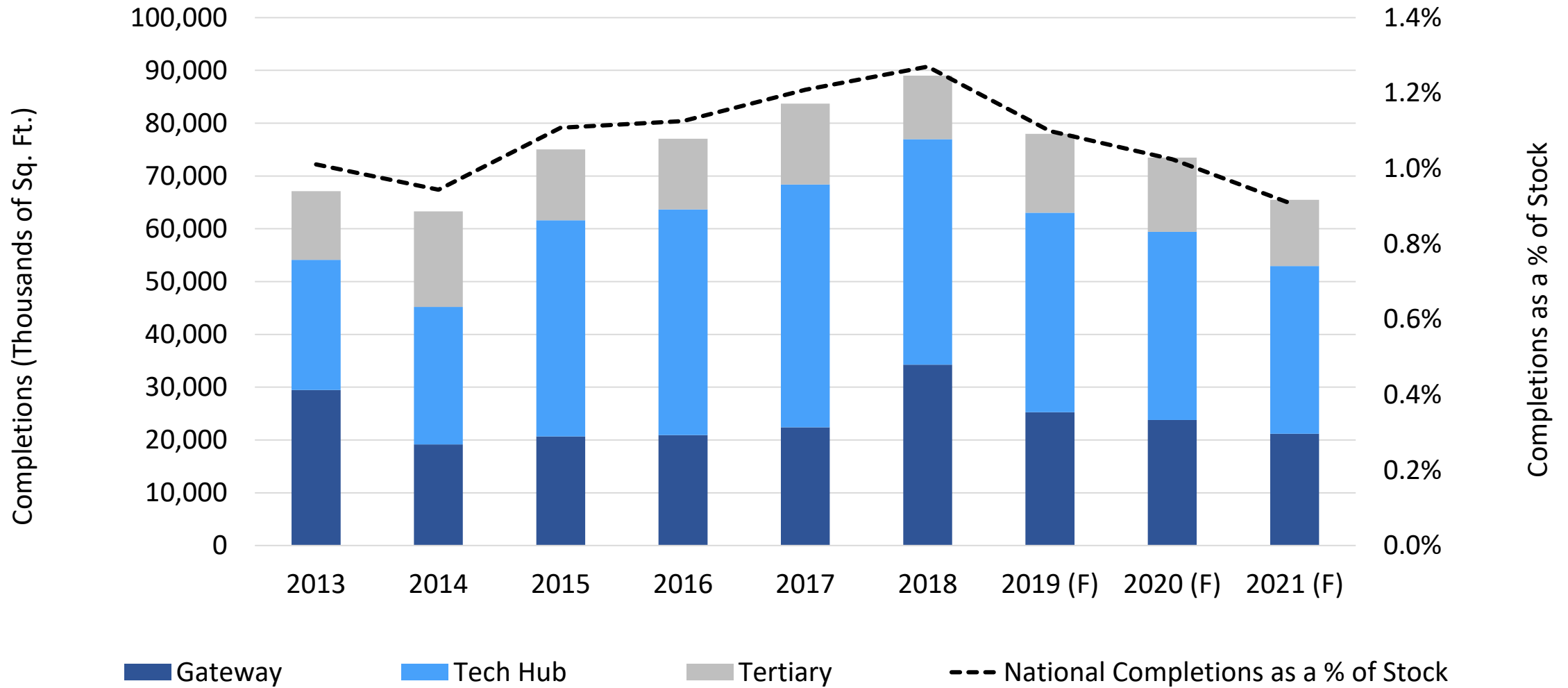
*As of October 2019

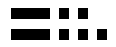
*Listings with high full-service equivalent rents that have been removed over the last year in Boston, Chicago, Seattle and Orlando are contributing to large YoY asking rent changes

Source: Yardi® Matrix

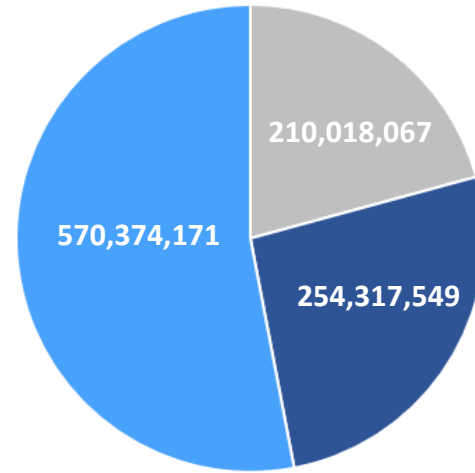


Office Supply Additions Peaked in 2018





Where Is Future Office Supply Concentrated?



■ Under Construction Sq. Ft.

■ Planned Sq. Ft.

■ Prospective Sq. Ft.

Top 10 Markets	Sq. Ft. UC (MM)	UC as a % of Existing Stock
Brooklyn	4.6	12.5%
Austin	8.5	10.6%
Queens	2.1	10.1%
Nashville	5.0	8.6%
South Bend	0.6	8.0%
San Francisco	10.5	6.0%
El Paso	0.4	5.7%
Seattle	9.2	5.5%
Buffalo	1.4	5.5%
North Central Florida	0.4	4.7%

Top 10 Markets	Sq. Ft. Planned (MM)	Planned as a % of Existing Stock
Austin	15.8	19.7%
Brooklyn	3.7	9.9%
Seattle	14.2	8.6%
Miami	6.1	8.5%
Mobile	0.5	8.1%
Wilmington	0.3	7.9%
Dallas - Fort Worth	23.2	7.5%
Bay Area	18.0	6.9%
Fort Wayne	0.6	6.7%
Charlotte	5.1	6.7%

Top 10 Markets	Sq. Ft. Prospective (MM)	Prospective as a % of Existing Stock
Nashville	15.4	26.2%
Austin	15.4	19.3%
Bay Area	46.9	18.1%
Jacksonville	7.1	17.2%
West Palm Beach	5.8	15.9%
Fort Lauderdale	7.1	15.2%
Brooklyn	5.6	15.1%
Atlanta	31.6	15.0%
Washington, D.C.	58.4	14.2%
San Francisco	23.8	13.5%



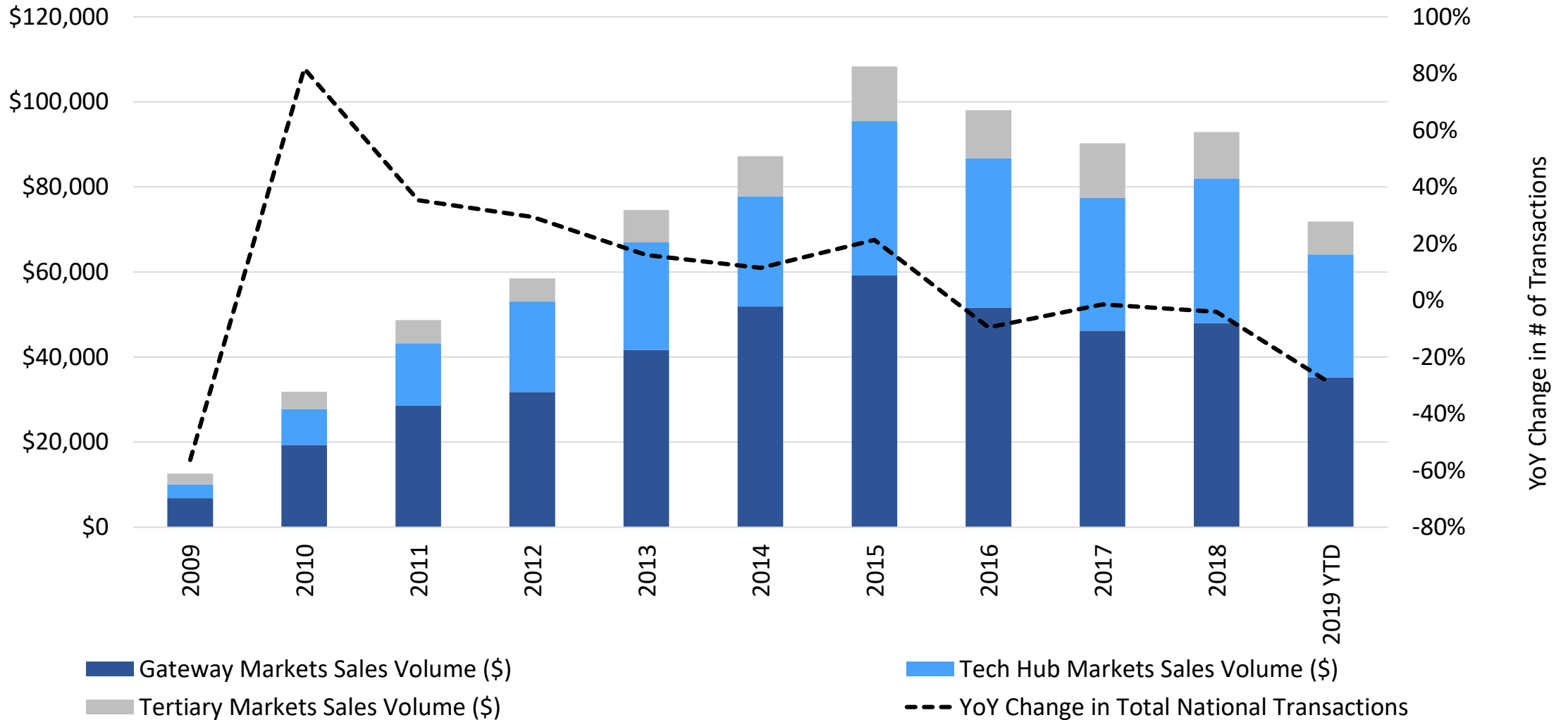
Top 20 Largest Office Projects Under Construction



Property Name	Market	Square Footage
50 Hudson Yards	Manhattan	2,900,000
The Spiral	Manhattan	2,800,000
The Post Office	Chicago	2,800,000
One Manhattan West	Manhattan	2,077,557
Two Manhattan West	Manhattan	1,840,000
One Vanderbilt	Manhattan	1,755,814
Winthrop Center	Boston	1,612,400
110 North Wacker	Chicago	1,565,909
3 Hudson Blvd	Manhattan	1,538,210
First Street Tower of Oceanwide Center	San Francisco	1,491,019
Seneca One Tower	Buffalo	1,348,964
Google Hudson Square - 550 Washington Street	Manhattan	1,300,000
California Market Center	Los Angeles	1,296,360
The Dayton's Project	Minneapolis - St. Paul	1,200,000
The Jacx	Queens	1,200,000
State Farm at Park Center - Phase II	Atlanta	1,160,000
Texas Tower	Houston	1,155,000
The David H. Koch Center for Cancer Care	Manhattan	1,153,000
Pioneer Natural Resources Headquarters	Dallas - Fort Worth	1,125,000
One Congress at Bulfinch Crossing	Boston	1,012,000

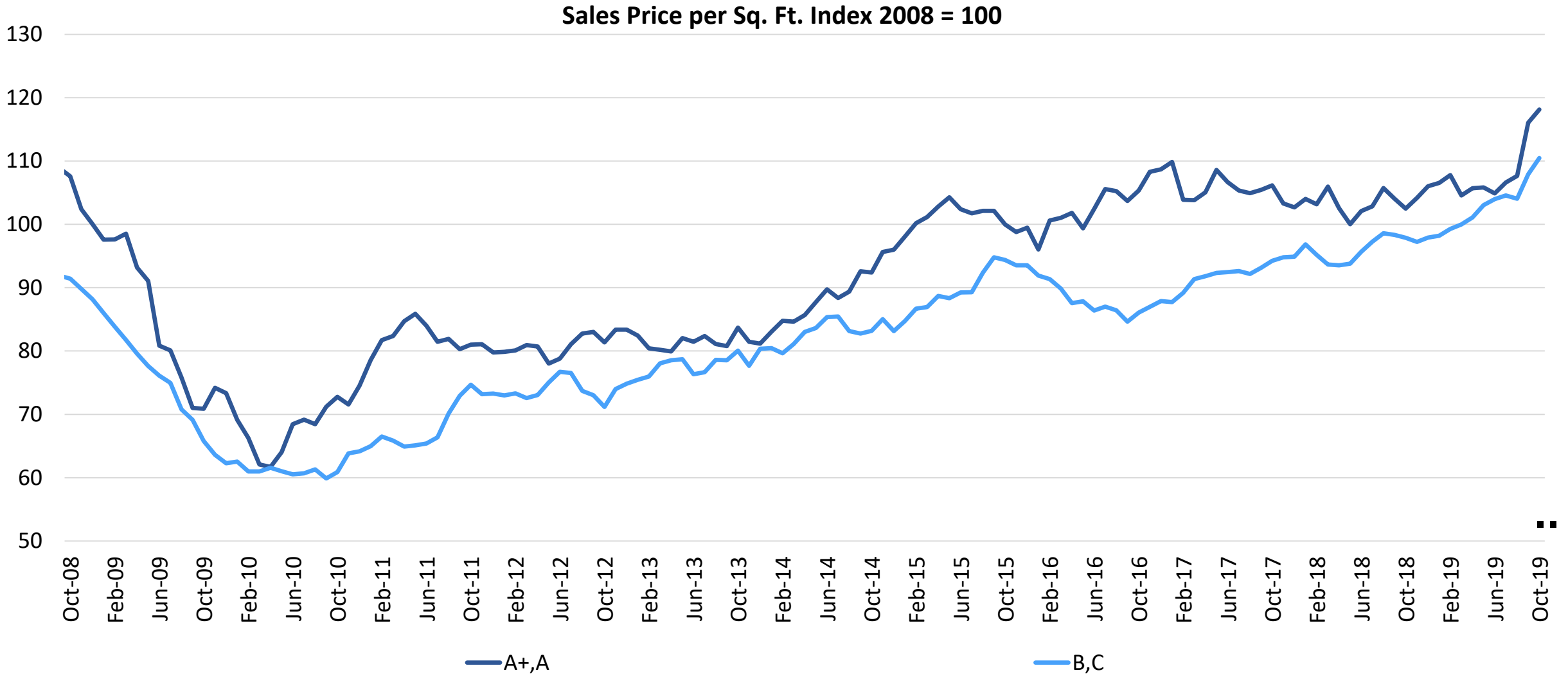


Expect 2019 Office Sale Volume to Be in Line With the Past Two Years

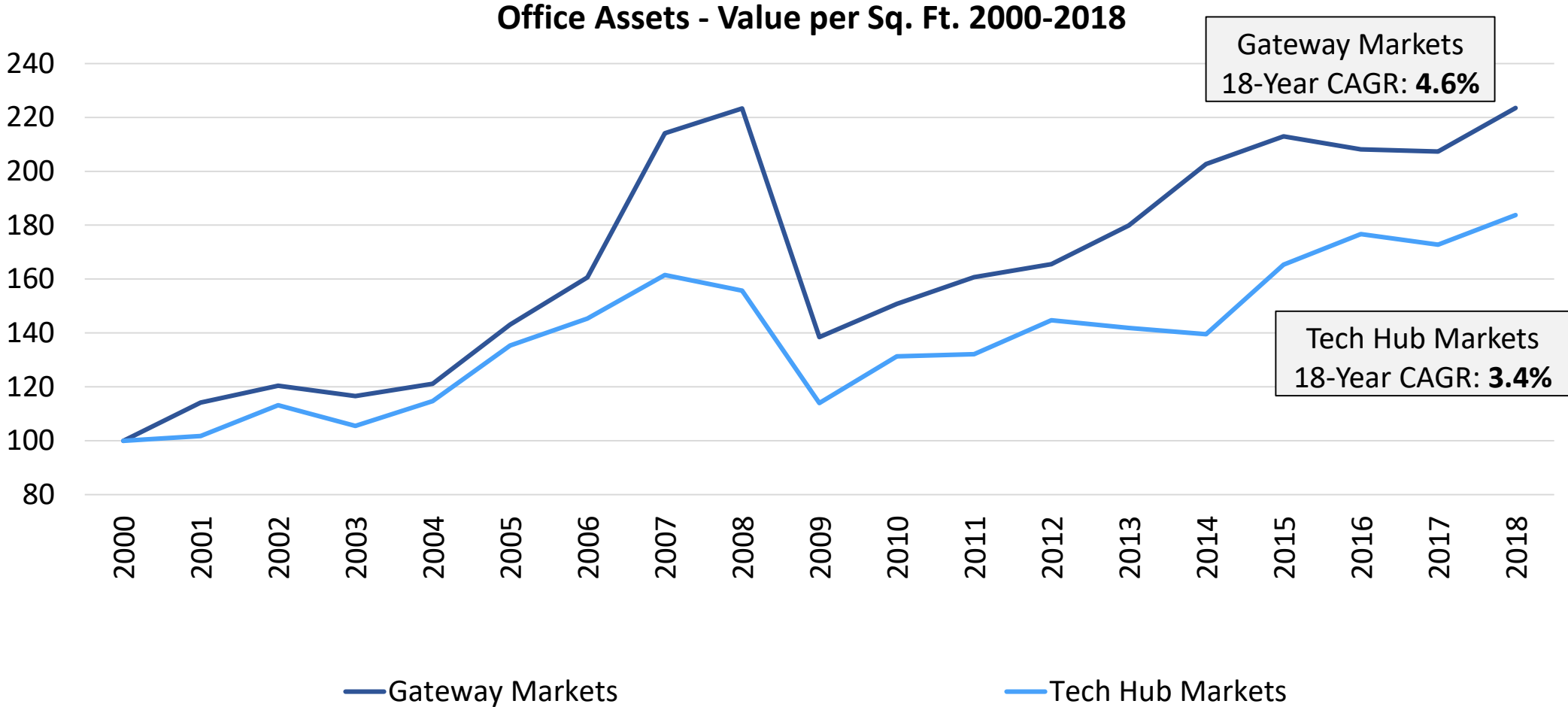




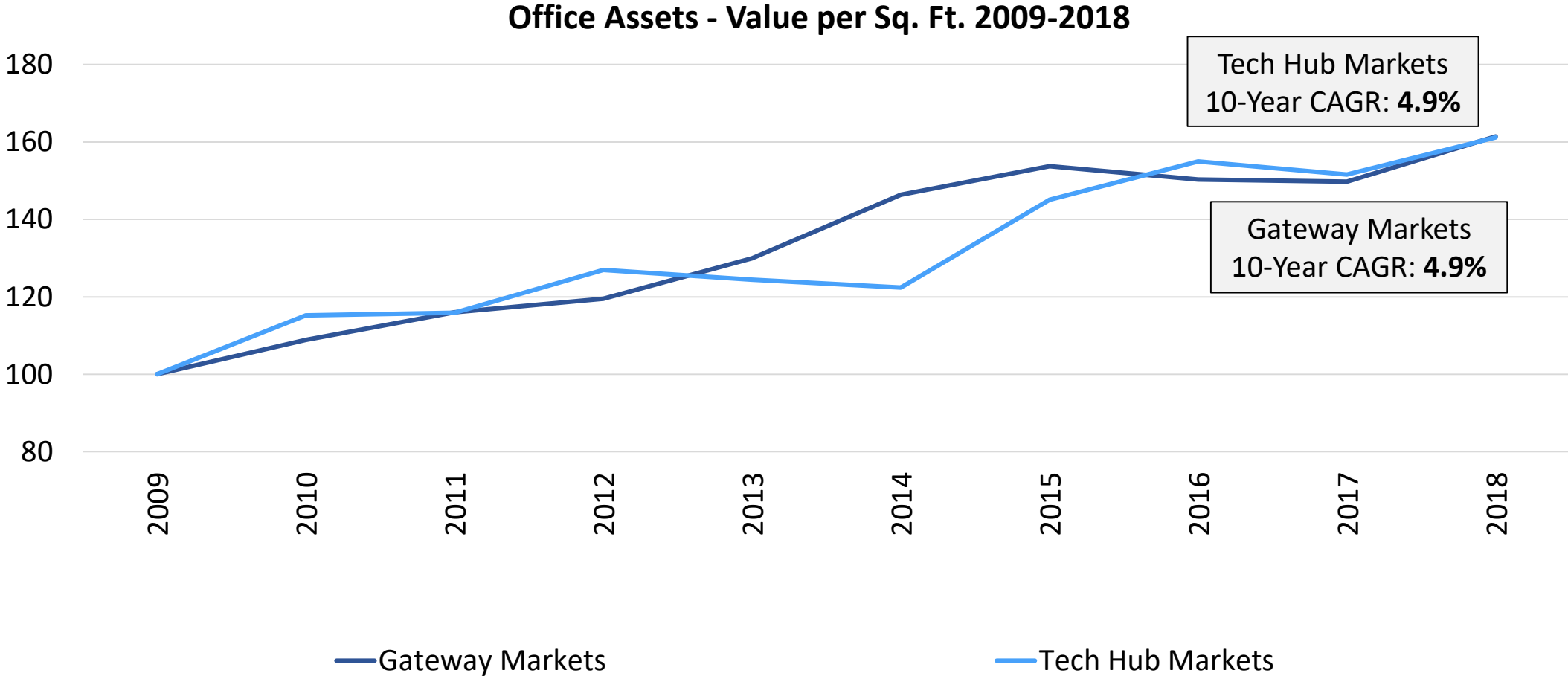
Since the Recession, Class A Has Outperformed B/C

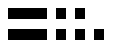


Office Assets in Gateway Markets Have Outperformed Since 2000, But...

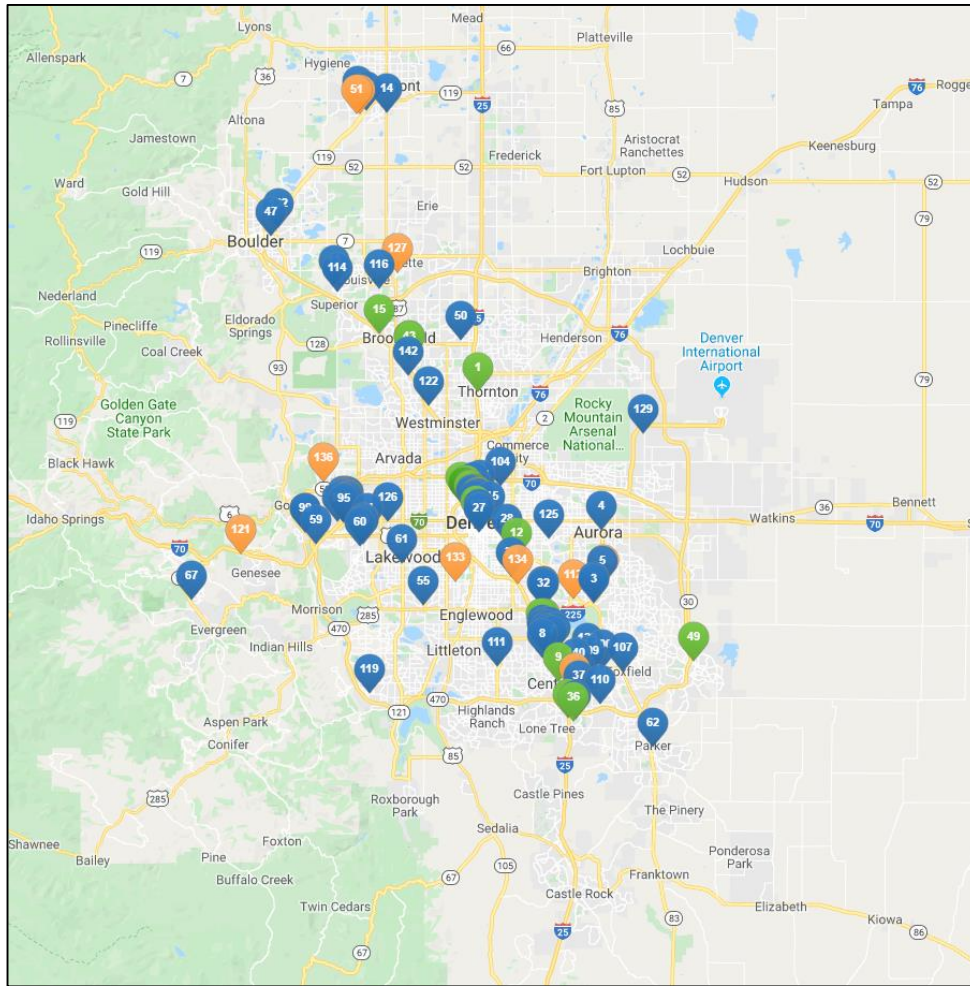


Office Assets in Tech Hub Markets Have Performed in Line With Gateway Markets Since 2009





Denver Office Transaction Composition in 2018



Building Class: A+ A B C

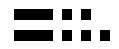


2018 Transactions

	#	% of Stock
Properties Sold	145	8.8%
Sq. Ft. Sold	18,305,077	10.4%

2018 Sales Prices

Avg. Sales Price per Sq. Ft.	\$241.79
Avg. Sales Price per Sq. Ft. for Class A+/A Assets	\$379.03
1-Year Sales Price per Sq. Ft. Growth for Class A+/A Assets	25.0%
5-Year Sales Price per Sq. Ft. Growth for Class A+/A Assets	47.1%

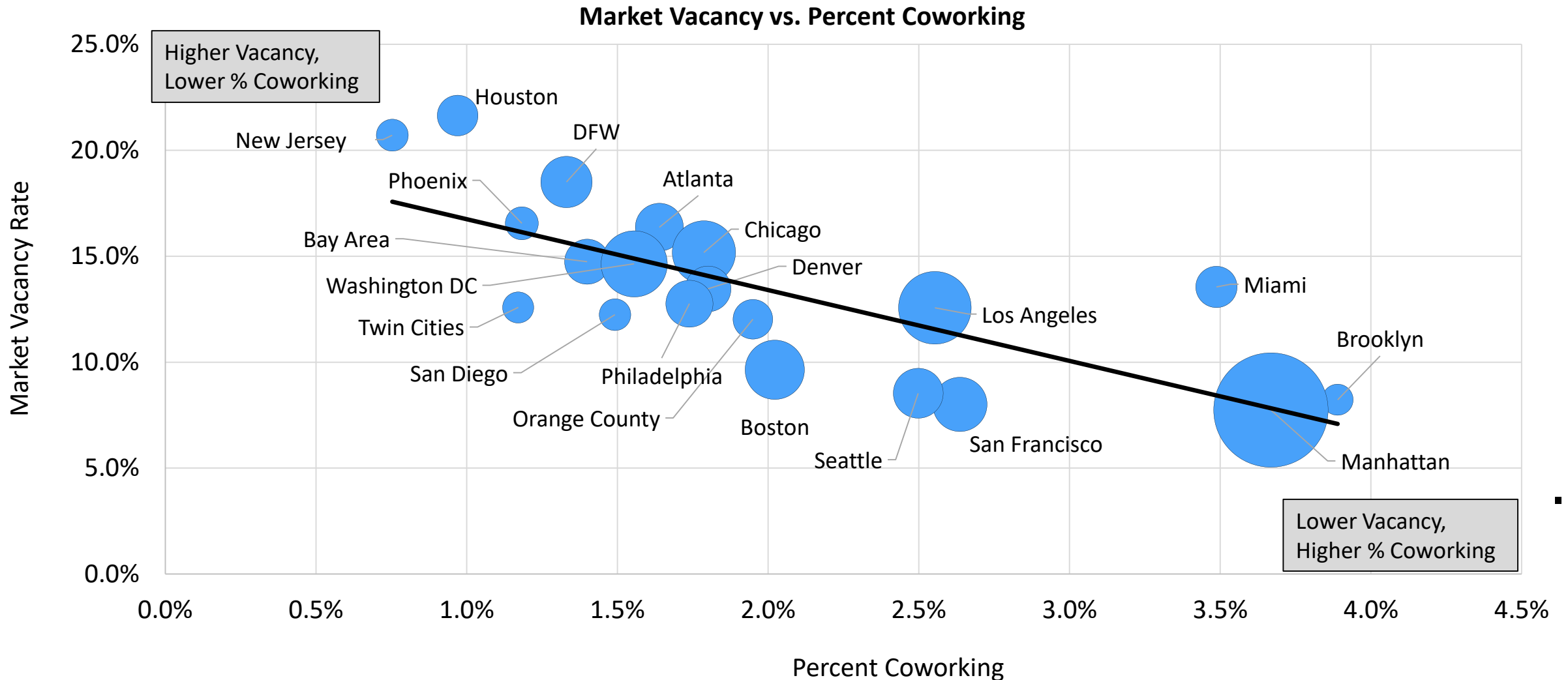


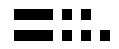
Secular Pressures Continue to Alter the Office Market



- Coworking
 - Pulls roughly 1-3% of market demand from traditional office leases
 - More highly concentrated in dense, high-cost gateway markets
 - More players have entered the market: CBRE, JLL, Tishman, Savills
- Decreasing square foot per employee
 - Specifically in CBD and high-cost metros
- Talent pool for office using employment – office is becoming more about the *experience*
 - Diversifying and moving to lower cost markets
- Capital expenditures are rising in office assets as the labor market tightens and office occupiers view space as a part of HR strategy, and most markets still have a lot of space to absorb ..
- Technological advancements are coming that will change the way we invest in and manage office properties

Markets With Lower Vacancy Rates Have Higher Proportion of Coworking Space



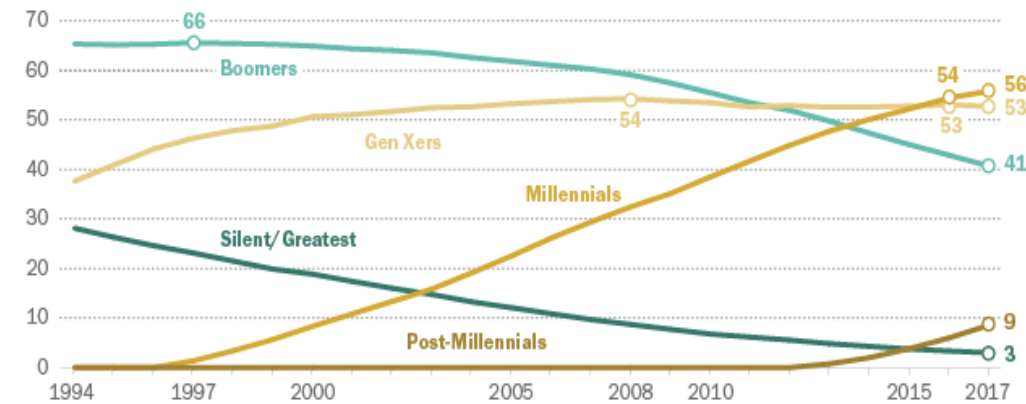


The Office Has Become an Experience Much Like Retail



Millennials became the largest generation in the labor force in 2016

U.S. labor force, in millions

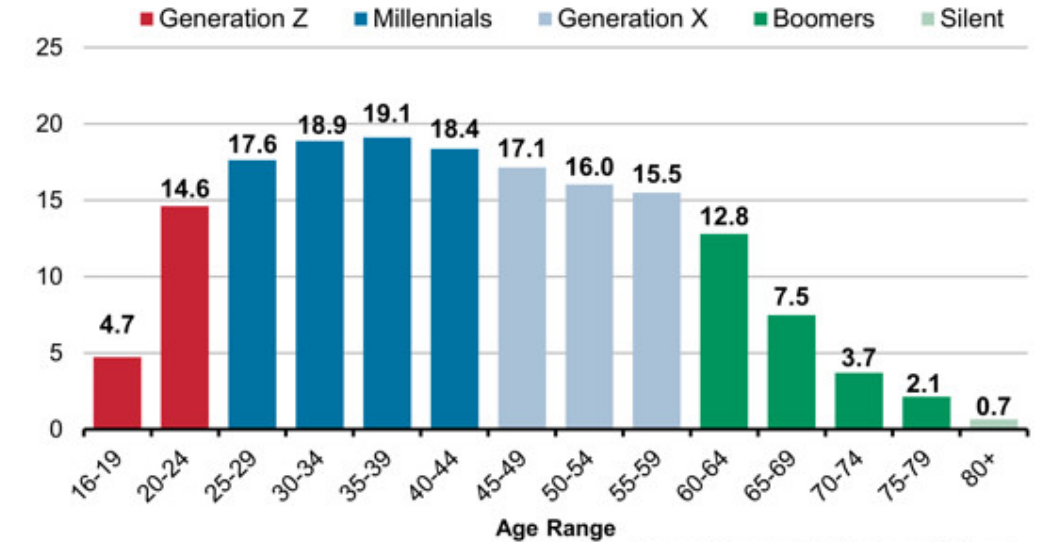


Note: Labor force includes those ages 16 and older who are working or looking for work. Annual averages shown. Source: Pew Research Center analysis of monthly 1994-2017 Current Population Survey (IPUMS).

PEW RESEARCH CENTER

The Workforce in 2025

Projected size of U.S. labor force (in millions) by age, for the year 2025



Source: Department of Labor | WSJ.com

From **Commercial Property Executive**: “Gen-Z’s Impact on Workplace Design”

- Gen-Z will comprise 30% of the workforce by 2030
- In the reception area, 100% of participants preferred a personal connection over a strictly digital one
- 86% of Gen-Z indicated that office setting would influence the acceptance of a job offer

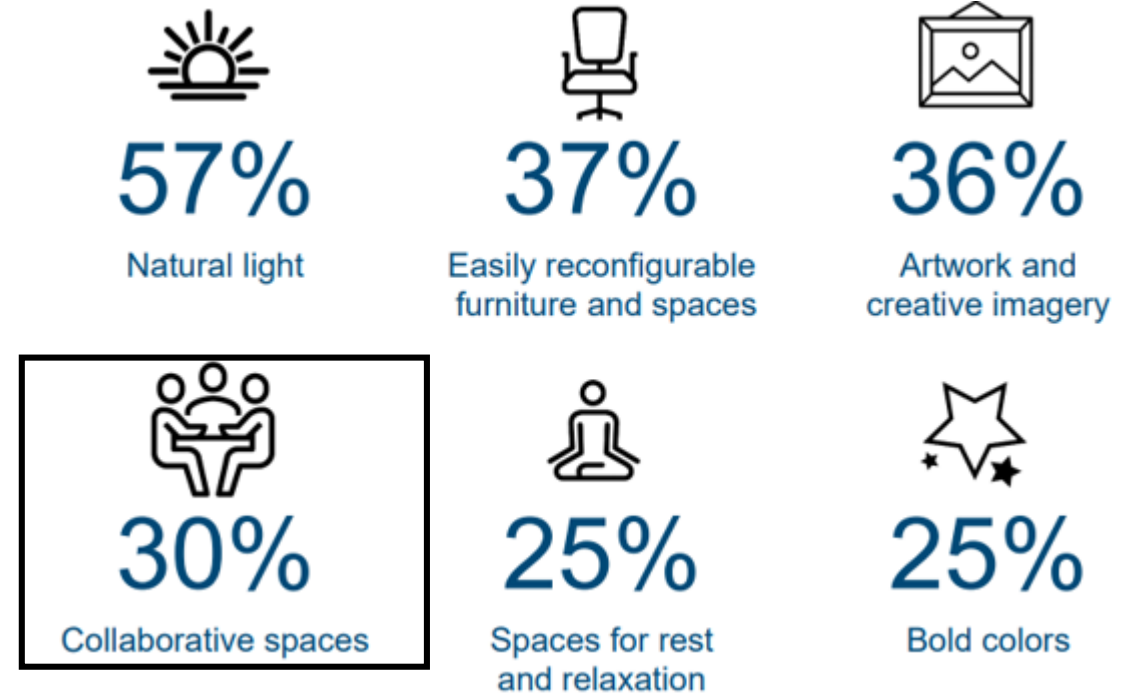
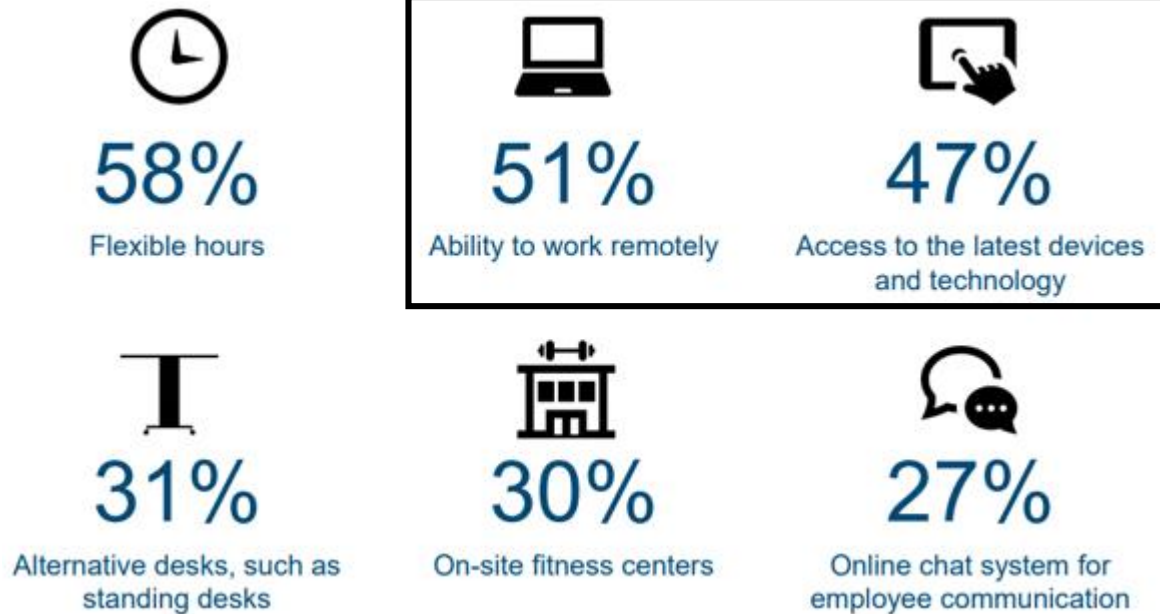


Capital One 2018 Work Environment Survey



Attracting Talent: Meeting Expectations

Office Design: Elements That Matter



Capital Expenditures Rising as Office Space Becomes Draw for Top Talent

MULTIFAMILY	Denver	Atlanta	Austin	Boston	Dallas	Manhattan	Miami	San Francisco	Washington D.C.
Net Operating Income	\$11,685	\$8,494	\$7,532	\$14,953	\$7,200	\$18,755	\$11,550	\$20,872	\$11,252
CapEx	\$2,121	\$2,134	\$1,501	\$1,935	\$1,692	\$2,243	\$1,291	\$1,525	\$1,508
CapEx as a % of NOI	18.2%	25.1%	19.9%	12.9%	23.5%	12.0%	11.2%	7.3%	13.4%

OFFICE	Denver	Atlanta	Austin	Boston	Dallas	Manhattan	Miami	San Francisco	Washington D.C.
Net Operating Income	\$12.86	\$13.15	\$18.37	\$21.92	\$10.72	\$32.60	\$18.16	\$36.47	\$20.42
CapEx	\$4.06	\$4.20	\$4.50	\$5.02	\$4.15	\$5.58	\$4.46	\$6.24	\$5.04
CapEx as a % of NOI	31.6%	31.9%	24.5%	22.9%	38.7%	17.1%	24.6%	17.1%	24.7%



Matrix Expert Office Operating Data Per Sq. Ft.



12-month period Ending September 2019	Denver	Atlanta	Austin	Boston	Chicago	Los Angeles	Manhattan	Seattle
Total Income	\$24.10	\$22.64	\$31.99	\$38.00	\$26.48	\$33.49	\$61.72	\$35.82
Total Operating Expense	\$11.23	\$9.49	\$13.62	\$16.08	\$14.08	\$13.62	\$29.11	\$11.47
<i>Net Operating Income</i>	<i>\$12.86</i>	<i>\$13.15</i>	<i>\$18.37</i>	<i>\$21.92</i>	<i>\$12.41</i>	<i>\$19.87</i>	<i>\$32.60</i>	<i>\$24.35</i>
Operating Margin	53.4%	58.1%	57.4%	57.7%	46.9%	59.3%	52.8%	68.0%
Cap Rate (September 2019)	5.8%	6.9%	6.9%	6.3%	6.8%	5.1%	3.8%	5.6%



SUMMARY



1

New supply peaked in 2018, & various factors are reducing demand for office space

- Coworking, telecommuting, outsourcing

2

Both gateway & tech hub markets saw rising asking rents over the past year, with the highest growth in San Francisco, Tampa, West Palm Beach, Brooklyn & Manhattan

3

Transactions are falling nationally, but sales prices have been increasing

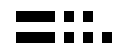
- Sales prices per sq. ft. increased the most in gateway markets since 2000, however, tech hub markets have performed in line with gateways since 2008, further indicating that the timing of investment is key





CITY SPOTLIGHT





What Helps a City Reach Its Critical Point to Succeed?



ALL EXISTING TECH MARKETS HAVE THESE CHARACTERISTICS TO SOME DEGREE

PUBLIC & PRIVATE
PARTNERSHIPS

FRIENDLY BUSINESS
ENVIRONMENT

COMMUNITY & AMENITIES THAT
RETAIN & DRAW IN TALENT

EDUCATED WORKFORCE



What's Going on in Denver?

PUBLIC & PRIVATE PARTNERSHIPS

- Mayor Hancock has asked the City Council for \$2.5 million to create a P3 office to oversee projects
- Many public & private investors partnering for the \$1 billion plan for the renovation & growth of the National Western Center used for entertainment, research & education
- Public-private partnership between Great Hall Partners & the Denver International Airport has been terminated
 - Lengthy completions dates & rising costs are to blame

COMMUNITY & AMENITIES THAT RETAIN & DRAW IN TALENT

- The River Mile, a new live-work-play neighborhood in Downtown Denver on the South Platte River combines the aesthetic of waterfront scenery with a modern urban setting
 - Amenities include affordable housing, parks, recreations centers, bike & pedestrian paths & flood control improvements
 - Developed by Revesco Properties

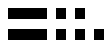
FRIENDLY BUSINESS ENVIRONMENT

- State Rank #8
- The Colorado Economic Development Commission approved the Job Growth Incentive Tax Credit (JGITC) to lure new companies to the state
- British Petroleum moved its headquarters from Houston along with 200 of its employees to Downtown Denver
 - The City of Denver offered employment incentive grants & tax credits for the move

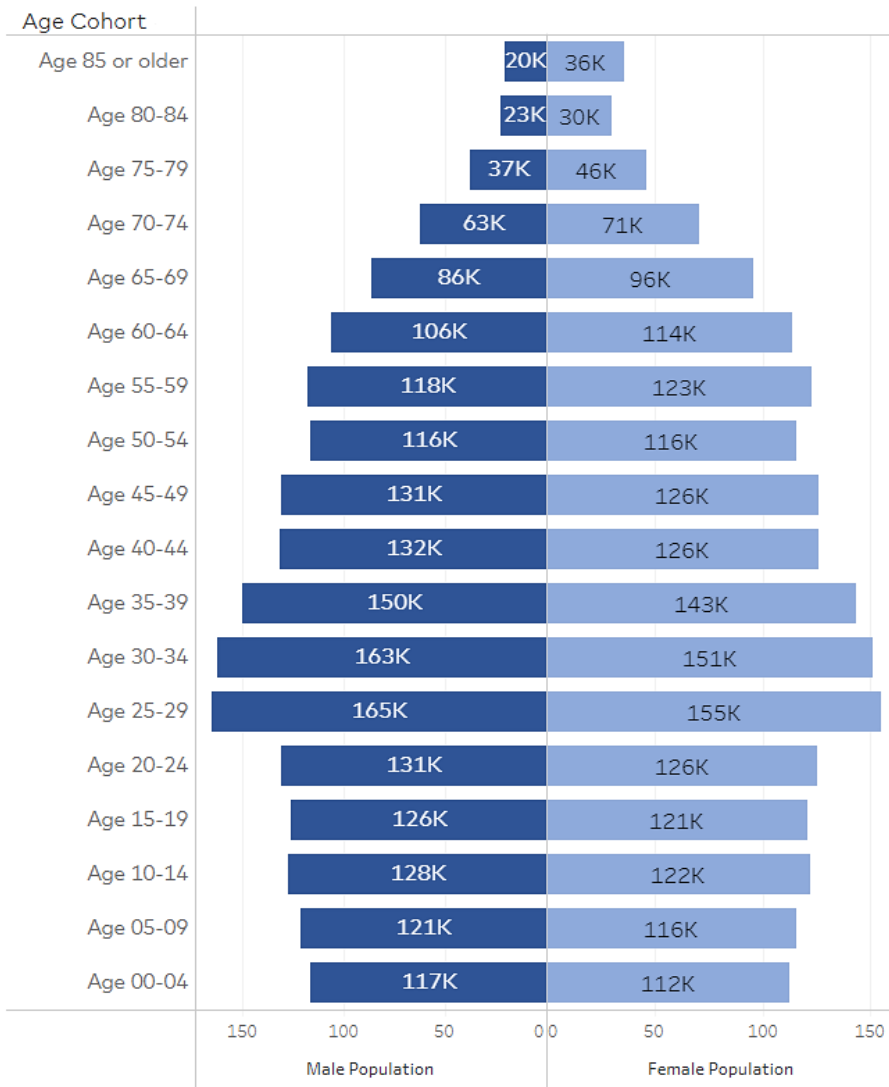
EDUCATED WORKFORCE

- 46% of adults in the City of Denver have a bachelor's degree or higher

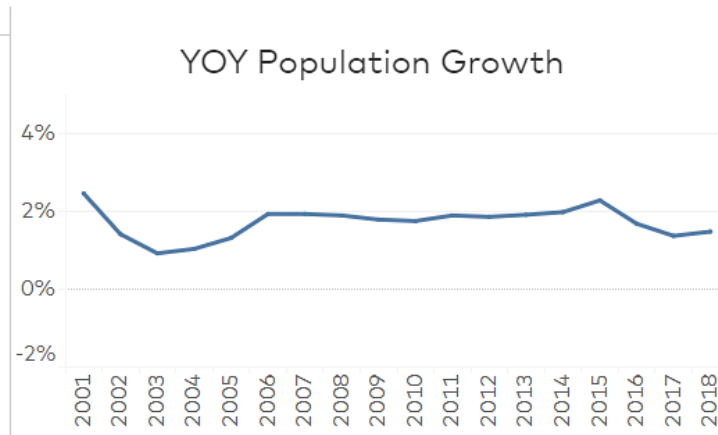
University	Approx. Enrollment 2018
University of Colorado-Boulder	34,870
Metropolitan State College of Denver	19,258
University of Colorado-Denver	15,232
University of Denver	11,434
Regis University	10,518



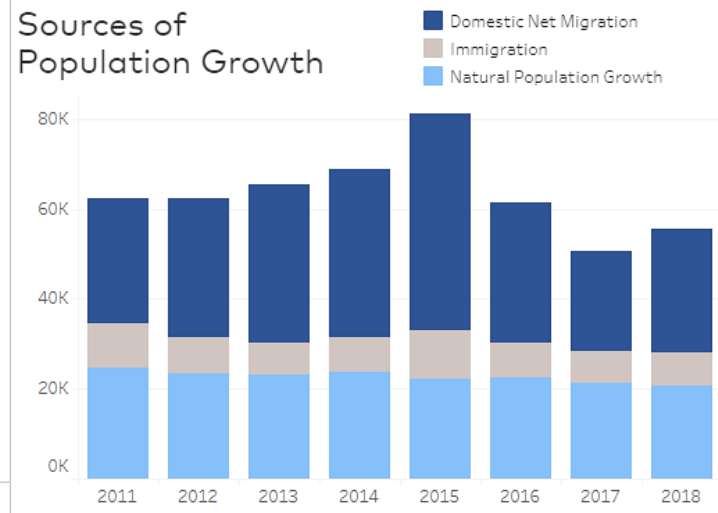
Denver Demographics Overview



Source: U.S. Census Bureau (BOC); Moody's Analytics



Source: U.S. Census Bureau (BOC); Moody's Analytics



Source: U.S. Census Bureau (BOC); Moody's Analytics

IRS Migration Data (2016)

Domestic Migrants Into Denver

Coming From	Count
Colorado	13,707
California	11,733
Texas	8,611
Arizona	4,252
Illinois	4,143
Florida	3,744
New York	2,119
Wyoming	1,837
Nevada	1,822
New Mexico	1,692

Total Inbound Residents

77,744

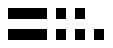
Domestic Migrants Leaving Denver

Heading to	Count
Colorado	16,957
California	7,313
Texas	7,024
Arizona	5,324
Florida	2,634
Washington	2,305
Nevada	1,749
Utah	1,150
Oregon	1,102
Wyoming	1,056

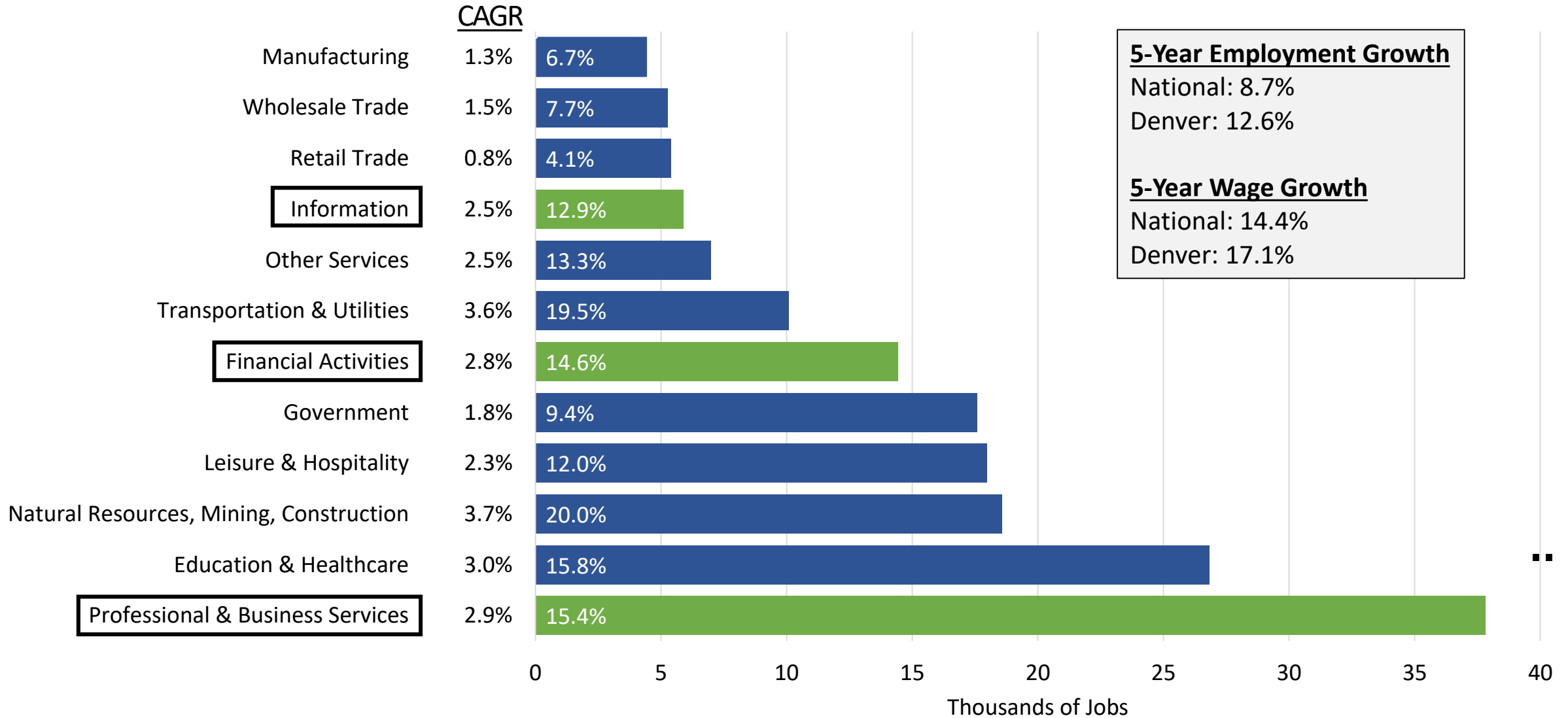
Total Outbound Residents

55,481

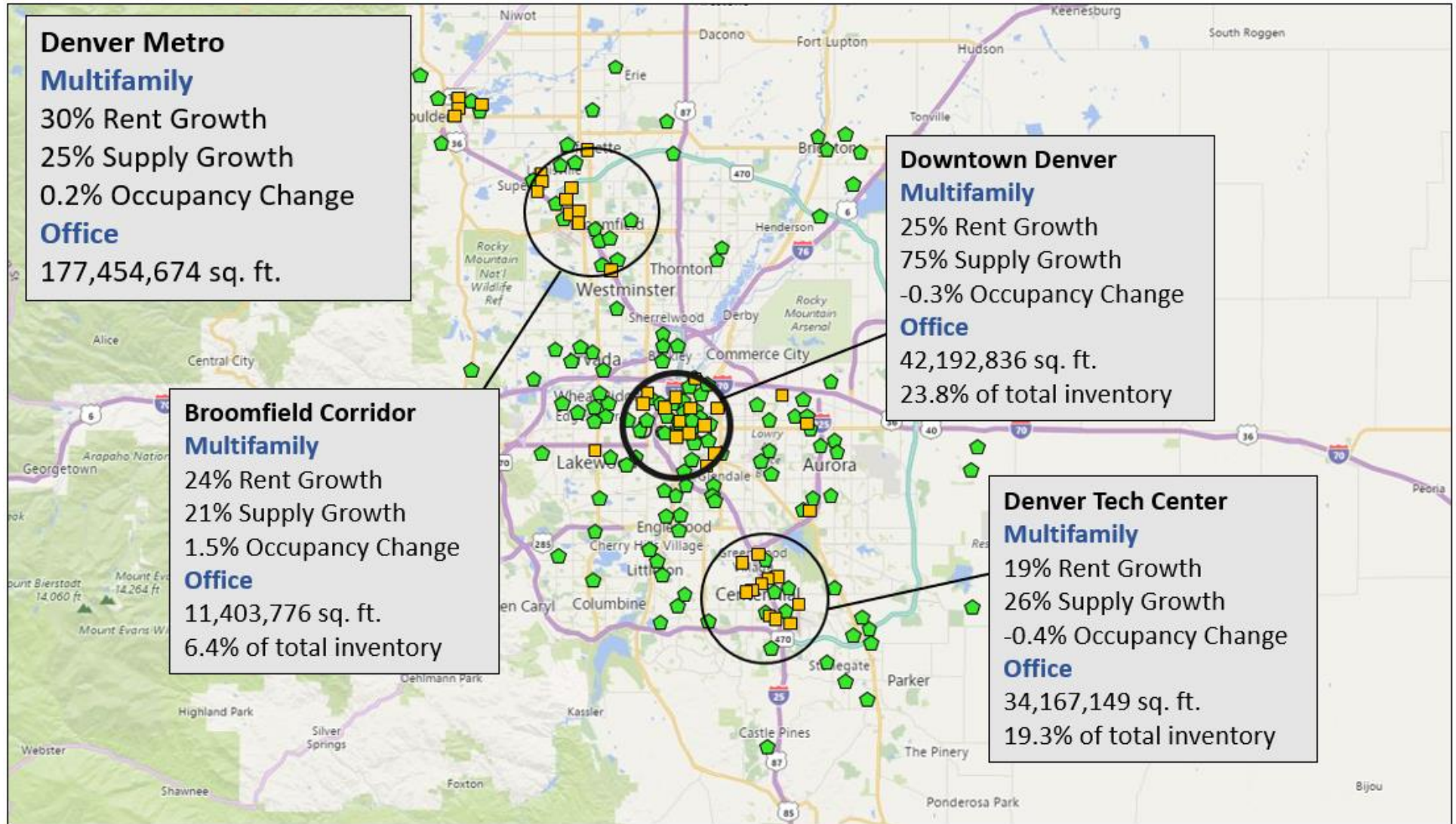
Source: IRS Statistics of Income (SOI); Moody's Analytics



Denver Employment Growth Sept 2014 – Sept 2019



Denver Intellectual Capital Nodes



■ Office Development

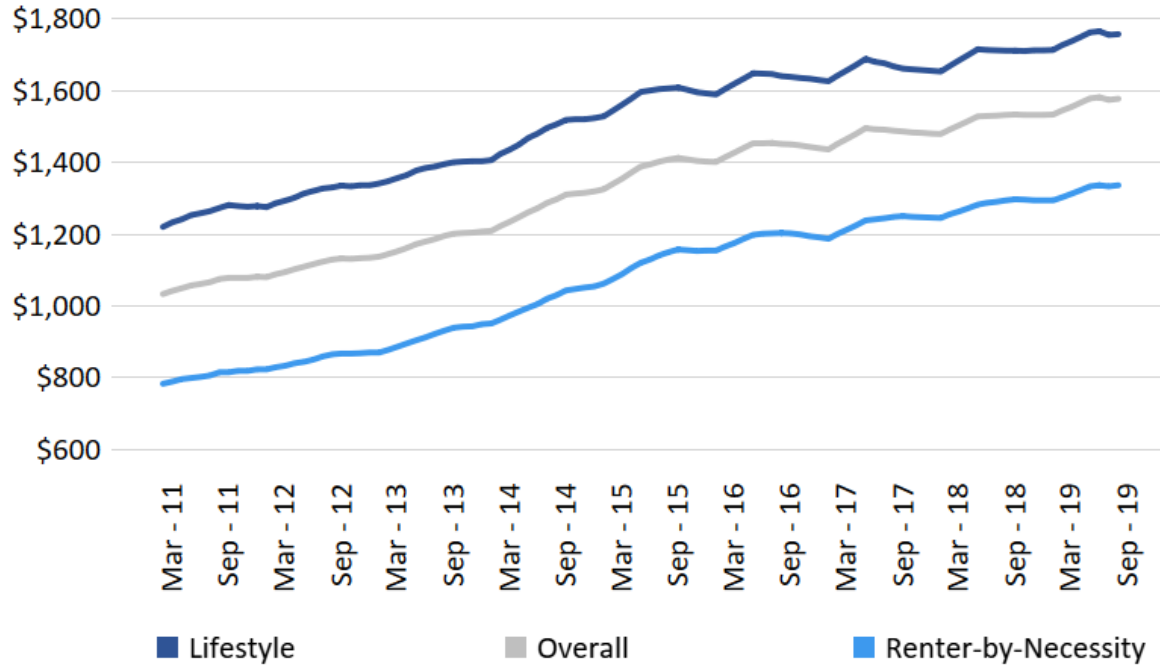
■ Multifamily Development

*Multifamily rent growth, supply growth and change in occupancy based on Sept. 2014 through Sept. 2019.
 Office inventory as of Nov. 2019.

Source: Yardi® Matrix

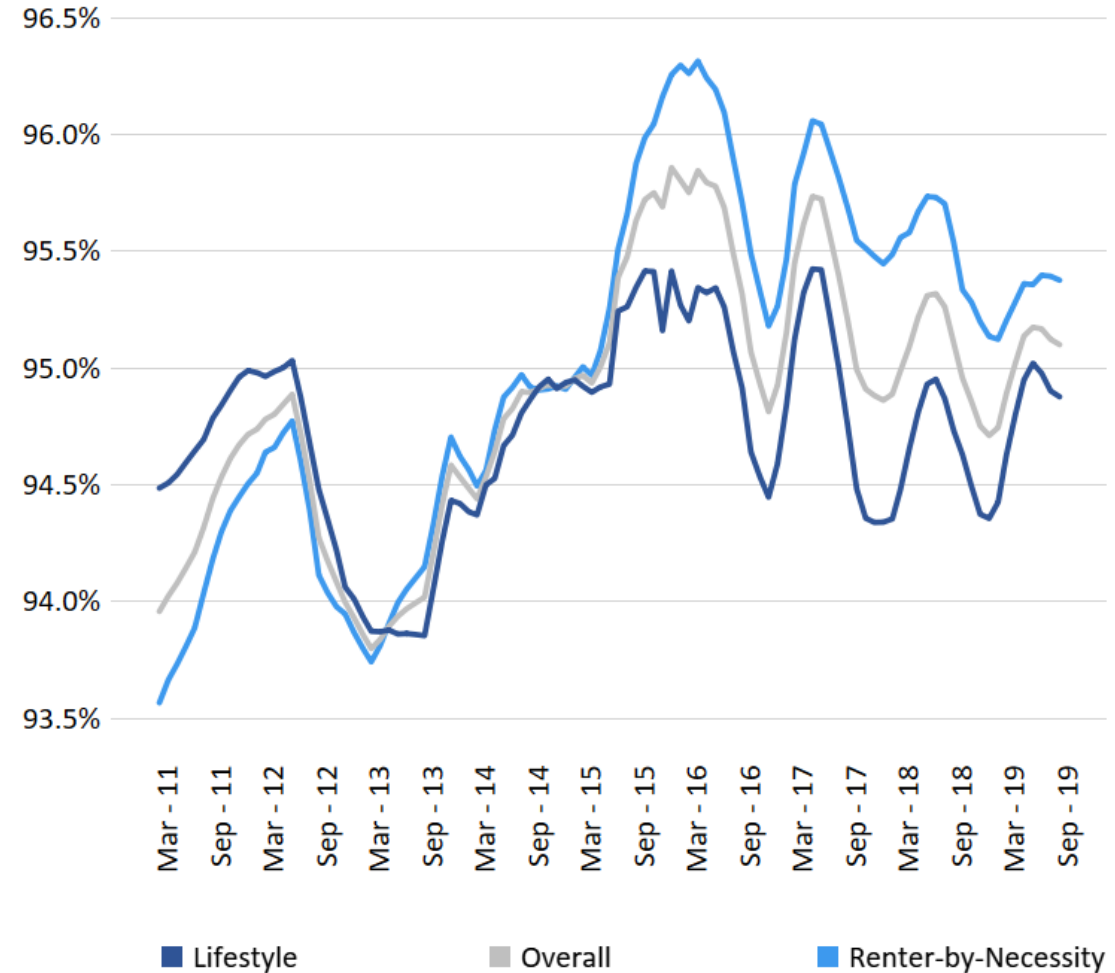
Multifamily Rents & Occupancy: Denver

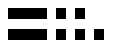
Average Rents



Asset Class	Rent CAGR 2011-2019	Rent Growth 2018-2019
Lifestyle	4.7%	2.7%
Renter-by-Necessity	6.9%	3.2%
Overall	5.4%	2.9%

Average Occupancy



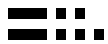


Denver Top 5 Submarkets Multifamily Rent & Occupancy Forecasts

	2018			2019 Forecast			2020 Forecast		
Submarket	Rent Growth	Avg Rent	Occupancy	Rent Growth	Rent	Occupancy	Rent Growth	Rent	Occupancy
Applewood/West Pleasant View	3.4%	\$1,680	96.8%	7.0%	\$1,798	97.4%	1.5%	\$1,825	97.5%
Wheat Ridge	3.7%	\$1,236	95.5%	6.6%	\$1,317	93.8%	1.8%	\$1,341	94.1%
Arapahoe-East	1.0%	\$1,639	93.8%	6.2%	\$1,740	95.1%	1.6%	\$1,768	95.1%
Fort Collins-South	1.6%	\$1,349	96.1%	5.7%	\$1,425	95.6%	1.4%	\$1,445	95.8%
College View/Ruby Hill	5.0%	\$1,421	96.3%	5.3%	\$1,496	95.5%	1.6%	\$1,519	95.7%
Denver	3.4%	\$1,532	94.8%	3.7%	\$1,587	95.1%	1.7%	\$1,614	95.3%

Denver Office Fundamentals

Asset Class	Count	Sq. Ft. (Thous.)	Direct Sq. Ft. Available (Thous.)	Sublease Sq. Ft. Available (Thous.)	Total Sq. Ft. Available (Thous.)	Direct Asking Rate	Market Asking Rate	Direct Vacancy	Sublease Vacancy	Overall Vacancy
A & A+	406	77,256	5,906	790	6,696	\$31.66	\$33.04	8.8%	1.1%	10.0%
B	1,025	82,772	7,907	348	8,255	\$24.04	\$24.02	14.4%	0.5%	14.9%
C	229	12,351	1,080	3	1,083	\$16.94	\$16.93	21.0%	0.1%	21.0%
TOTAL	1,660	172,379	14,893	1,141	16,034	\$26.92	\$27.99	11.7%	0.8%	12.5%

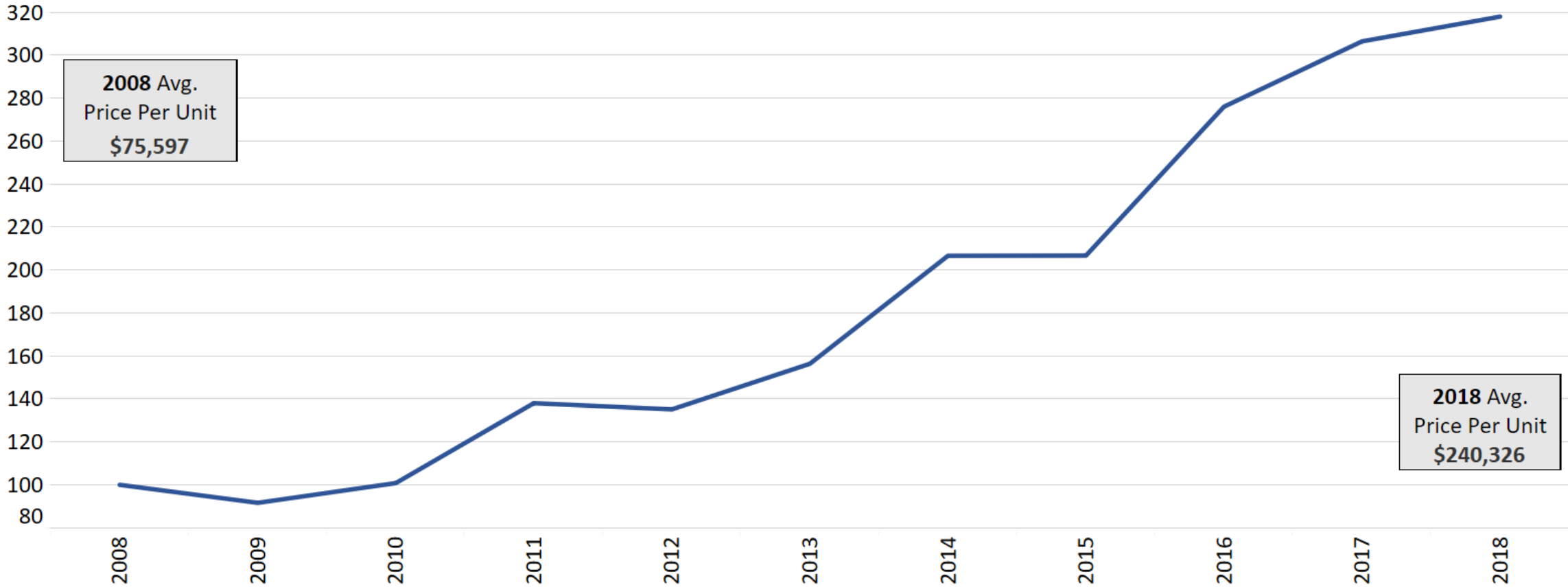


Multifamily Sales Prices: Denver



Price Per Unit Index 2008 = 100

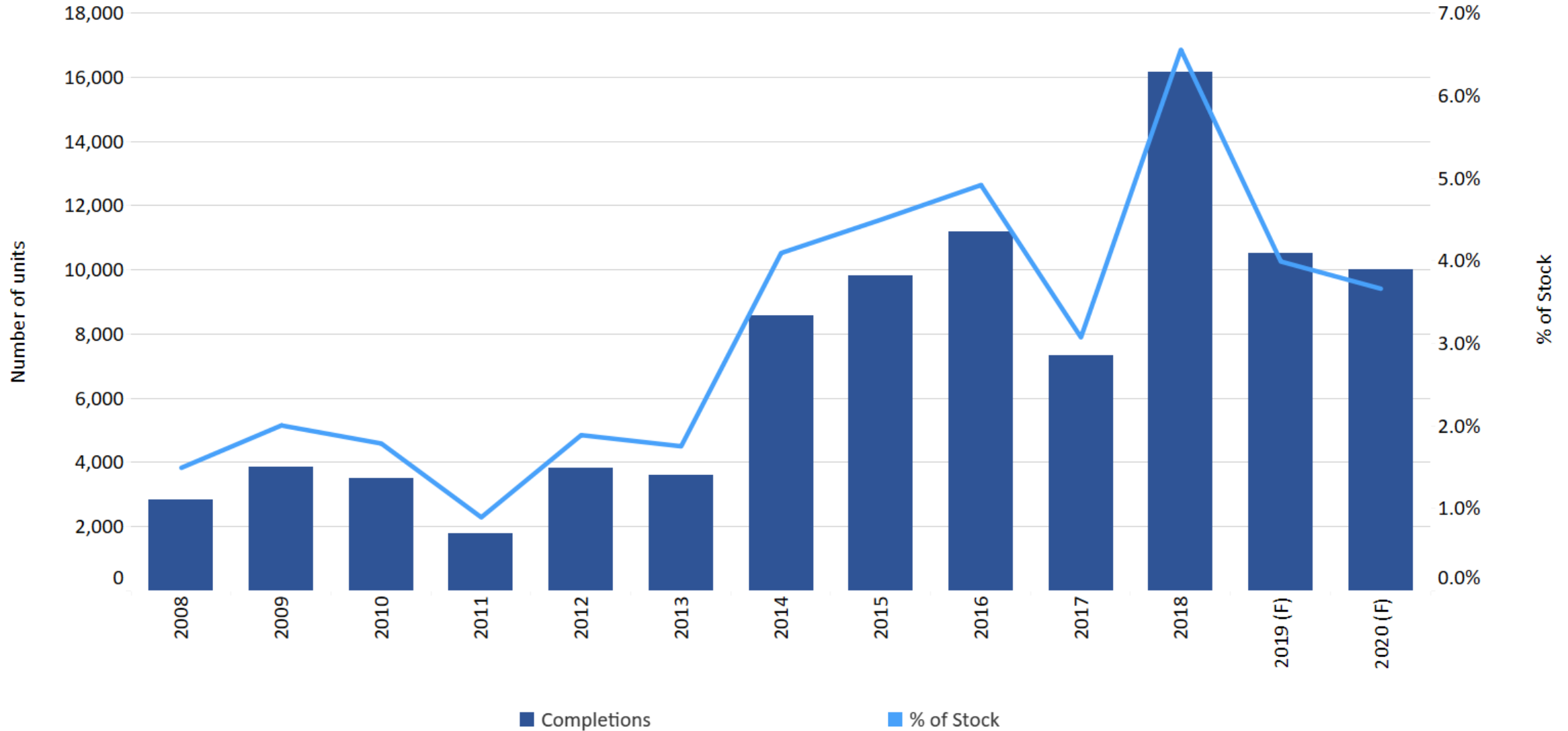
10-Year Growth: 218.1%
10-Year CAGR: 12.3%

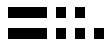


**2008 Avg.
Price Per Unit
\$75,597**

**2018 Avg.
Price Per Unit
\$240,326**

Multifamily Supply Pipeline: Denver

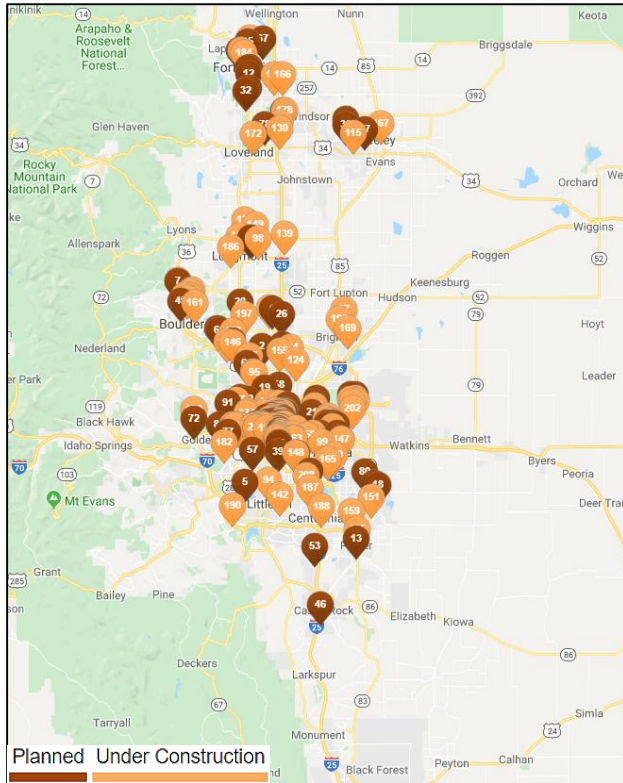




Denver Development Pipeline

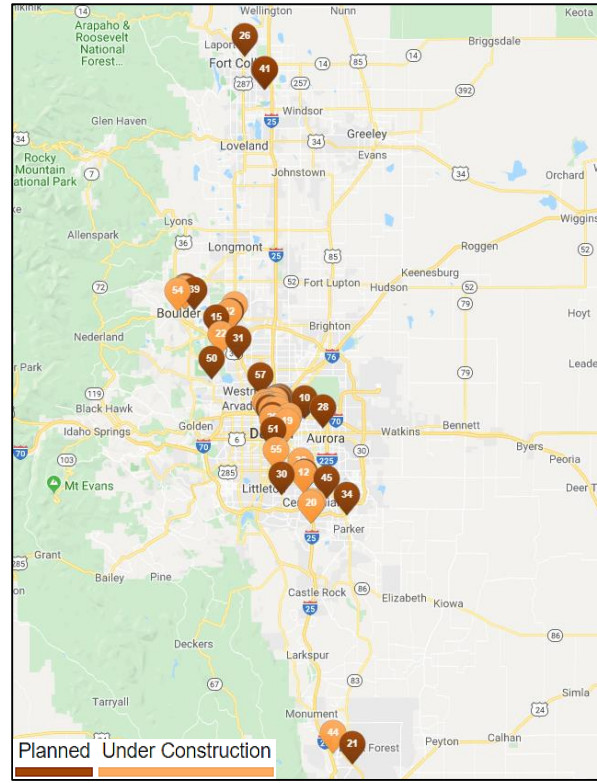


Multifamily



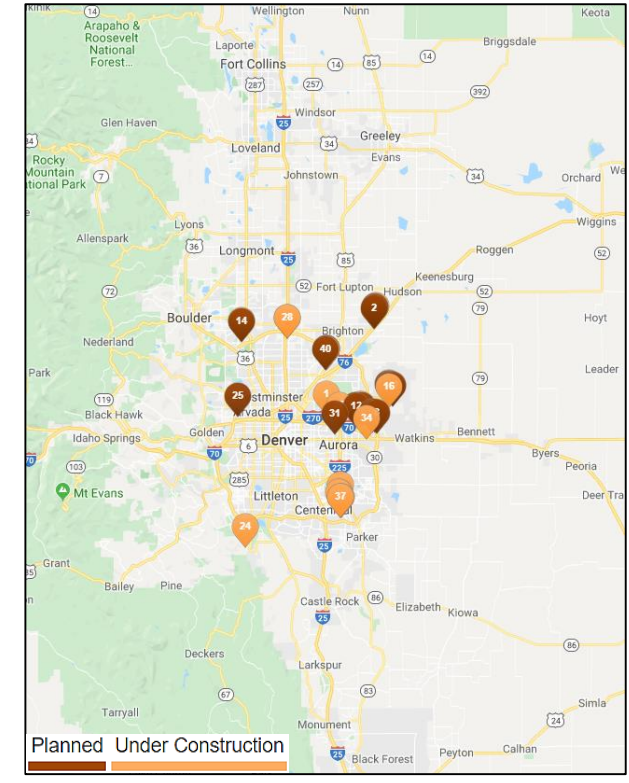
Property Status	# of Units	% of Existing Stock
Under Construction	24,622	9.1%
Planned	18,945	7.0%

Office



Property Status	Sq. Ft.	% of Existing Stock
Under Construction	5,391,836	3.0%
Planned	3,843,140	2.2%

Industrial



Property Status	Sq. Ft.	% of Existing Stock
Under Construction	4,377,793	3.5%
Planned	6,379,498	5.1%

*As of November 2019
Source: Yardi® Matrix



Top 5 Denver Submarkets With Construction Activity



Multifamily

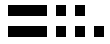
Submarket	Units Under Construction	% of Existing Stock
Denver International Airport	324	148.6%
Estes Park/Laporte	176	59.7%
Champion	1,245	35.1%
Aurora – Northwest	768	30.3%
CBD/Five Points/North Capitol Hill	6,902	23.4%
Denver	24,622	9.1%

Office

Submarket	Sq. Ft. Construction	% of Existing Stock
Five Points	764,149	40.4%
North Denver	345,275	25.0%
Highland	210,859	16.0%
LoDo	976,590	15.3%
Denver South	293,000	15.0%
Denver	5,391,836	3.0%

Industrial

Submarket	Sq. Ft. Construction	% of Existing Stock
Centennial	863,646	25.2%
I-76 Corridor	976,800	15.1%
Lafayette – Louisville Central	113,288	10.6%
Aurora	1,729,781	6.4%
I-25 Corridor	219,200	1.7%
Denver	4,377,793	3.5%



SUMMARY



1 Domestic migration into Denver has been declining since 2015. Employment & wage growth in Denver is above the national average, over a five-year period.

2 Multifamily rents are rising, primarily in the lifestyle asset class. Occupancy for Renter-by-Necessity assets is currently outpacing Lifestyle asset class occupancy by about 0.5%. Overall occupancy has hovered around 95% for the last four years. Multifamily completions peaked in 2018 & there are still a number of projects in the pipeline.

3 Office fundamentals remain positive, with class A & A+ asking rates significantly higher than B & C assets. Denver has about 3.0% of office sq. ft. under construction as a percentage of existing stock & most of that new supply will be added in the Five Points & North Denver submarkets.





NEW TECHNOLOGIES EMERGING





Technology's Impact on Commercial Real Estate



ALREADY IN PROGRESS

UTILITY OPTIMIZATION

Independent monitoring of HVAC and all associated system and independent correction, optimization and fault notification

SMART HOME/BUILDING

Automate locks, rekeying, maintenance, guest entry

VIRTUAL & AUGMENTED REALITY

Sell, inspect, repair pre-completion and post completion

AI: MACHINE LEARNING

Prescriptive recommendations based on learned patterns and predicted outcomes

COMING SOON

DIGITAL ASSISTANTS

Alexa, Google Home, Smart AI that will enable digital actions: pay bills, appointments, etc.

MACHINE LEARNING: EVERYTHING

Everything that is developed and deployed will have some form of machine learning behind it: investments, asset management, operations, maintenance, construction

CHAT BOTS

Artificial intelligence natural language interactions: calls, emails, chat, helpers

RESEARCH & DEVELOPMENT

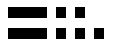
AUTONOMOUS TRANSPORTATION

Deliveries, parking, ride-sharing

ENERGY

Batteries and solar energy



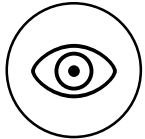


Technology Risks to Keep in Mind



Security

Regulatory burden is so high, people will look to third party providers to manage security of their IoT and AI networks

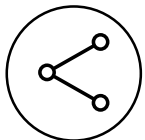


Privacy

What is considered “private” and what isn’t?

- It’s a fluid definition

Need to default to a conservative view of privacy



Operational Management

Who’s going to manage all the connected devices?

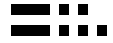
Who fields support calls?

What happens when something gets disconnected?

**ALTHOUGH TECHNOLOGY ENABLES A
PLUG AND PLAY ABILITY:**

Selecting, implementing and managing an enterprise wide “smart” technology platform needs a planned, thoughtful and process-oriented approach to be successful.





2019 OUTLOOK



- GDP growth will be slow moving into Q4, with a lot more noise.
- Supply/demand conditions in multifamily will continue to favor mild rate growth, with higher rates in the tech hub and tertiary markets.
- A decent economy coupled with the demographic shift of jobs will continue to create office demand in tech hub cities, providing a solid base for office-using sectors.
- For new investments, it's a **sharpshooter's game** to find the right deal at the right price.
- On the operational side its about finding revenue and cost trimming opportunities to grow your NOI from your existing assets.
- The use of new technology is already impacting commercial space in help with costs, especially around **utility consumption**. This will accelerate as the technologies are more widely adopted.



THANK YOU

FOR ANY QUESTIONS PLEASE FEEL FREE TO CONTACT ME


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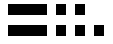
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