MULTIFAMILY NATIONAL OUTLOOK

FALL 2021

PRESENTERS

JEFF ADLER

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AGENDA

- Opening Remarks

- Macroeconomic Outlook

- Demographic Trends Impacting Housing Demand

- Multifamily Fundamentals

- Investment Risk

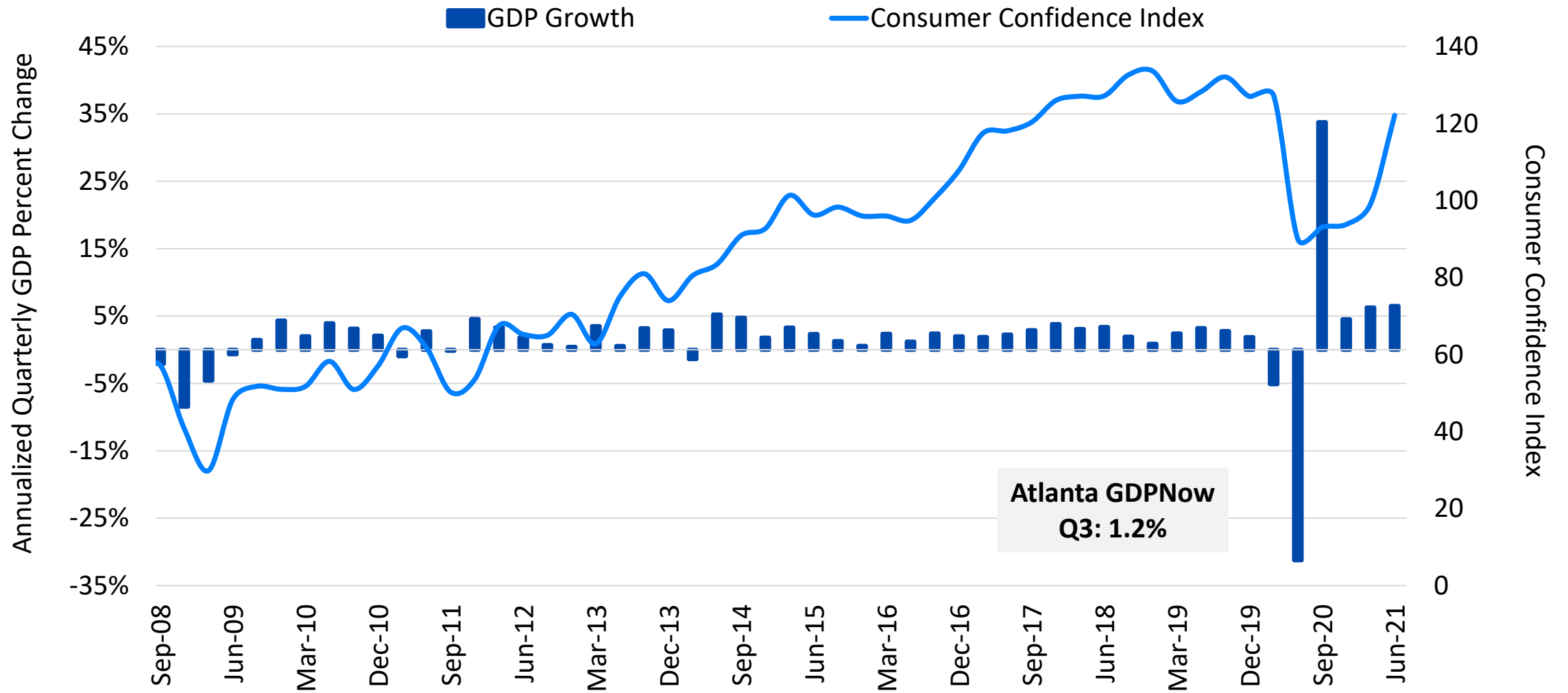- Single-Family Rentals in Build-to-Rent Communities

OPENING REMARKS

Yardi Matrix House View – October 2021

- INFLATION-The economy continues to expand, but headwinds are growing
  - Supply chain disruptions, a tighter-than-ever labor market and a handful of other factors are leading to growing inflation
  - We don't think inflation is transitory, but it won't become hyperinflation either

- MIGRATION- The pandemic has further fueled a general spreading of the population as remote work offered more flexibility
  - People are taking their incomes to lower-cost cities and suburbs to improve their welfare
  - This redeployment of people is fueling exceptional multifamily fundamentals nationwide
  - Rent growth is astounding in most markets, but it won't last – most markets are starting to see some deceleration
  - Tech hub markets have been performing the best, however most gateway markets are still seeing positive fundamentals

- REGULATION- The nature of work has created a spreading of the population, so we have begun to think more broadly about market selection
  - We have consolidated our previous work on political risk, infrastructure risk and environmental risk into a comprehensive investment risk analysis discussion

- Many market disruptions combined with demographic and lifestyle changes have led to the emergence of the single-family rental segment, which we now track in our multifamily database

Source: Yardi Matrix

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MACROECONOMIC OUTLOOK

GDP Growth Recovering After Plummeting in First Half of 2020

Legend: GDP Growth (bars) | Consumer Confidence Index (line)

Left axis: Annualized Quarterly GDP Percent Change (-35% to 45%)

Right axis: Consumer Confidence Index (0 to 140)

X-axis: Sep-08, Jun-09, Mar-10, Dec-10, Sep-11, Jun-12, Mar-13, Dec-13, Sep-14, Jun-15, Mar-16, Dec-16, Sep-17, Jun-18, Mar-19, Dec-19, Sep-20, Jun-21

Atlanta GDPNow
Q3: 1.2%

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U.S. GDP Forecast: a V-Shaped Recovery/Expansion

We share Evercore ISI's view, that the recovery in GDP looks like a V -shaped rebound

Looking ahead, these 5 factors are likely to continue to propel unit growth, inflation and asset prices:
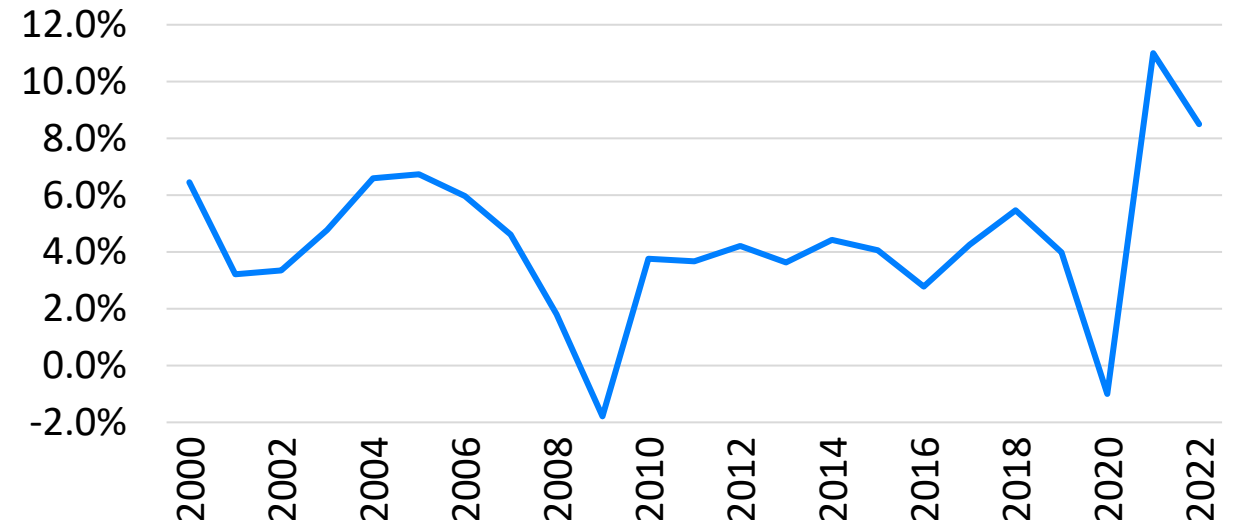
1. Massive monetary stimulus
2. Continued reopening
3. Record surge in consumer net worth
4. Excess saving
5. Inventory rebuilding

In September, Evercore lowered their GDP forecasts and raised their inflation forecasts for the second half of the year, trimming their Real GDP estimate to +6.0% for Q3 and +5.0% for Q4

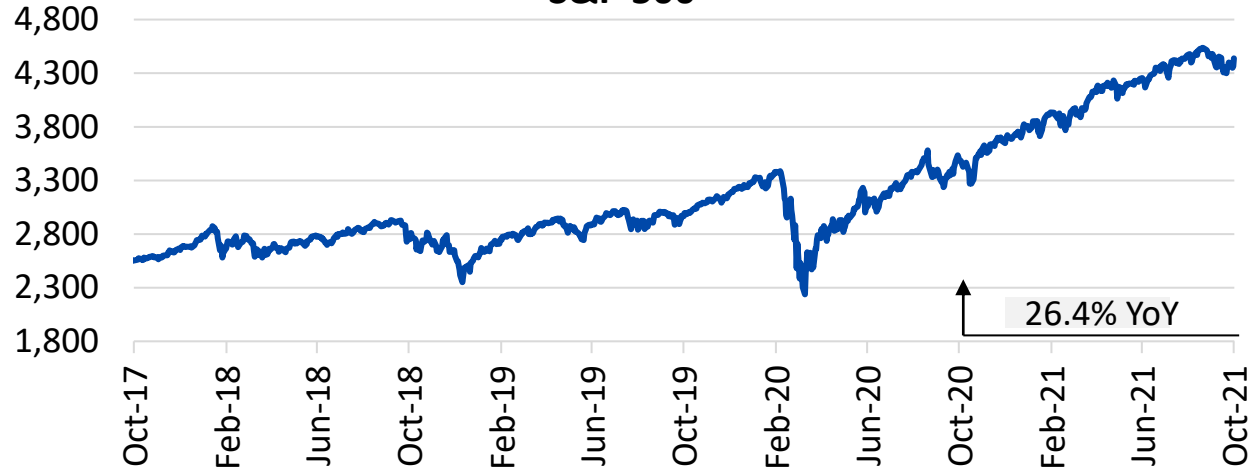If this forecast is accurate, the recovery will be V/U-shaped

	2020	2021 Forecast	2022 Forecast
Real GDP: YoY % Change	-2.3%	5.7%	4.5%
Nominal GDP: YoY % Change	-1.0%	11.0%	8.5%
Core PCE Deflator: YoY % Change	1.48%	4.50%	4.00%
Fed Funds: Year-end	0.25%	0.25%	0.25%
Bond Yields: Year-end	0.92%	1.75%	2.50%

Nominal Annual GDP: YoY % Change

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U.S. and International Financial Markets

S&P 500

26.4% YoY

10 Year Treasury Note

A breakout >3% is significant

82 bps

Yield Curve

Difference between
10 YR and Overnight = 148 bps

10/13/2021

10/13/2020

Overnight, 1 Month, 3 Month, 6 Month, 1 Year, 2 Year, 3 Year, 5 Year, 7 Year, 10 Year, 20 Year, 30 Year
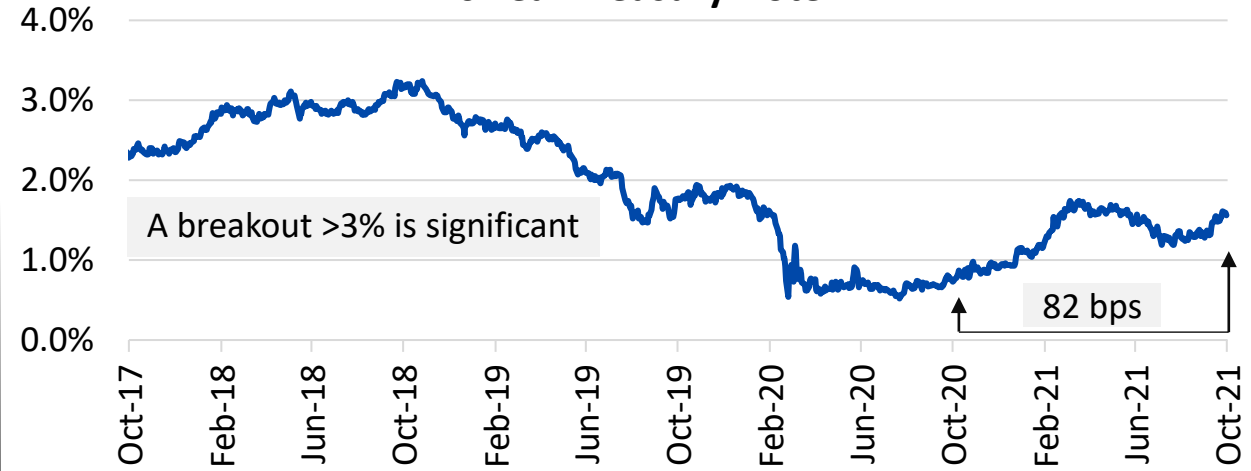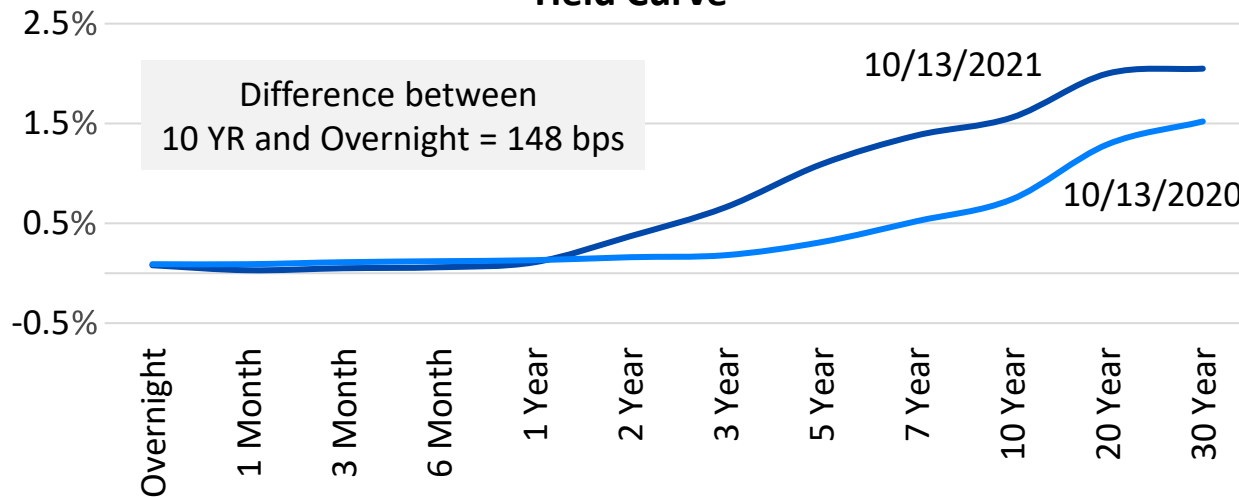
10 Year Treasury Bond Yields

US — Germany — UK — Italy — Japan — France

Source: Yardi Matrix; Moody's Analytics; Investing.com
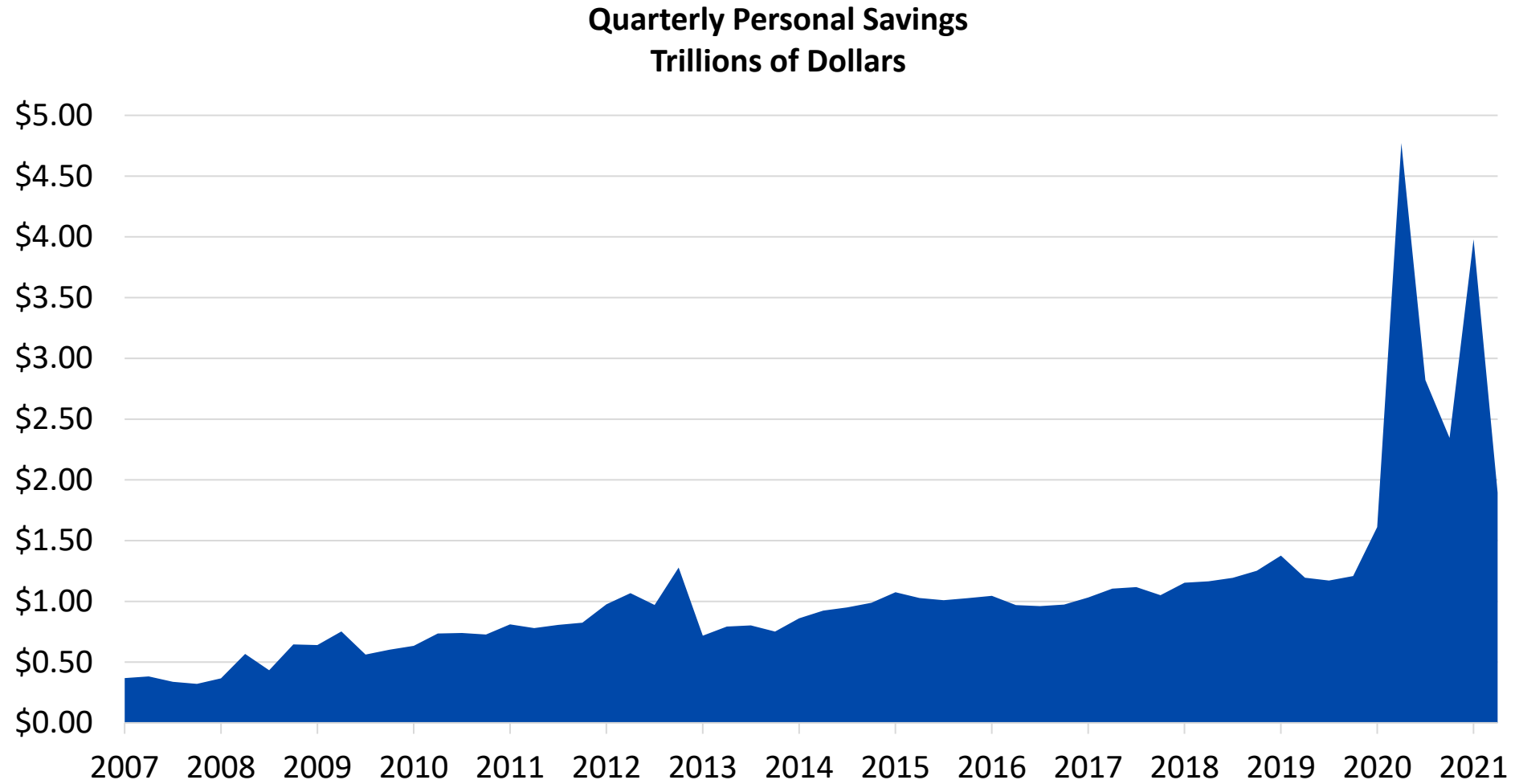
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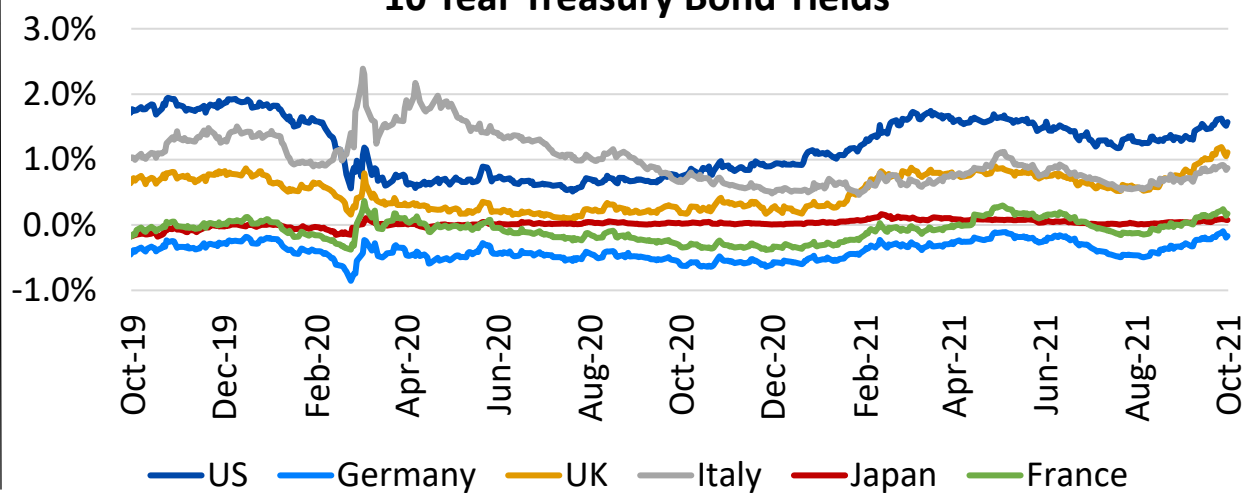
Inflation is Rippling Through the Economy and It's Not Over

- Prior to the pandemic, services inflation existed, but was offset by goods deflation

- That offset between goods and services is no longer keeping inflation in balance

- Inflation may be transitory, but its not looking that way to us
  - Commodity prices surging
  - Nationwide record-breaking rent growth
  - Labor shortage with rising wages
  - Strikes increasing
  - Excess consumer saving
  - Large movement of people from gateway to tech hub and urban to suburban

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Consumers Have a Lot of Dry Powder Due Pandemic Related Events

**Quarterly Personal Savings
Trillions of Dollars**

Source: Yardi Matrix; Federal Reserve Bank of St. Louis; U.S. Bureau of Economic Analysis (BEA)

Everything You Used to Know on Inflation Has Been Upended

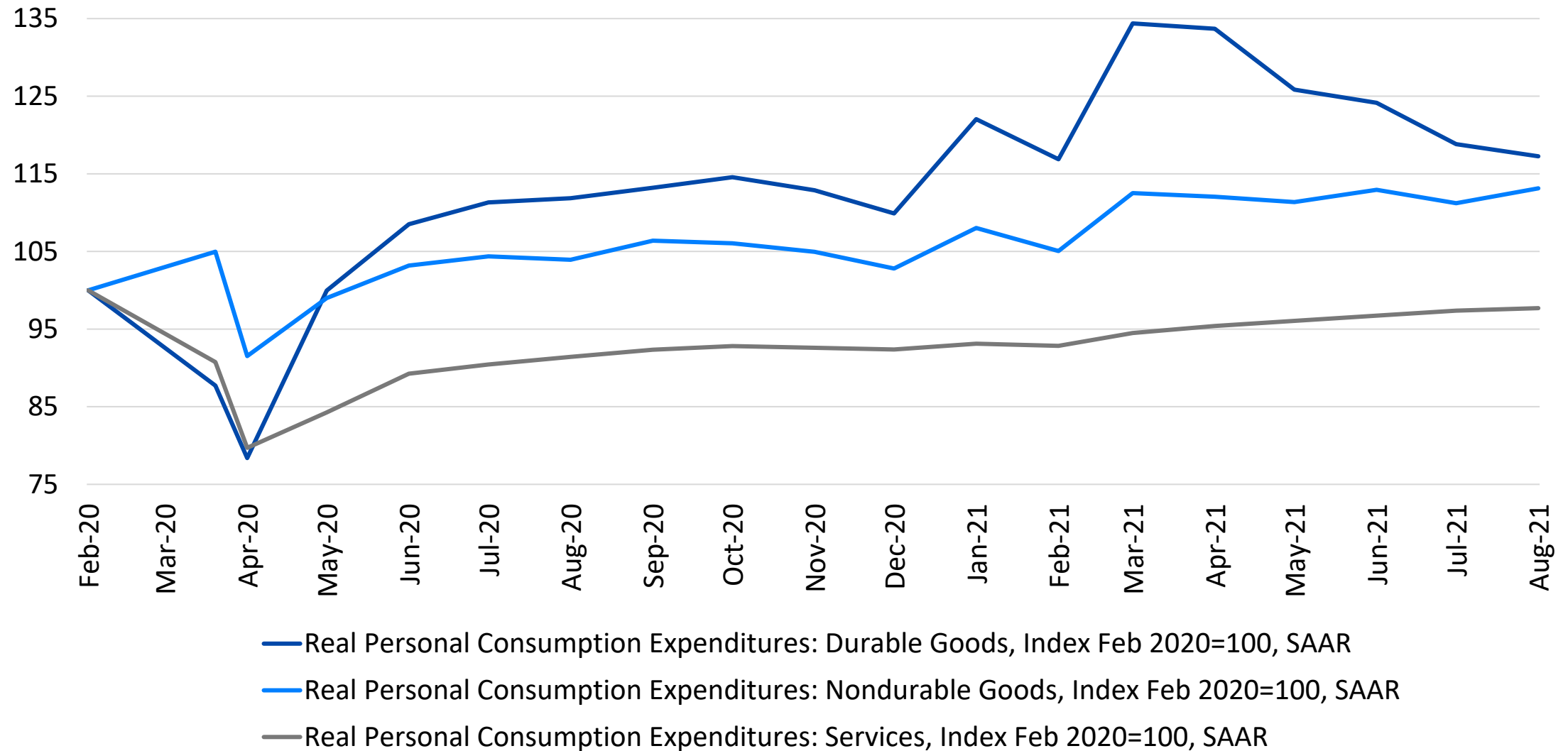Legend: Education — Health Care — Rent — CPI — CPI Less Education, Health Care and Rent
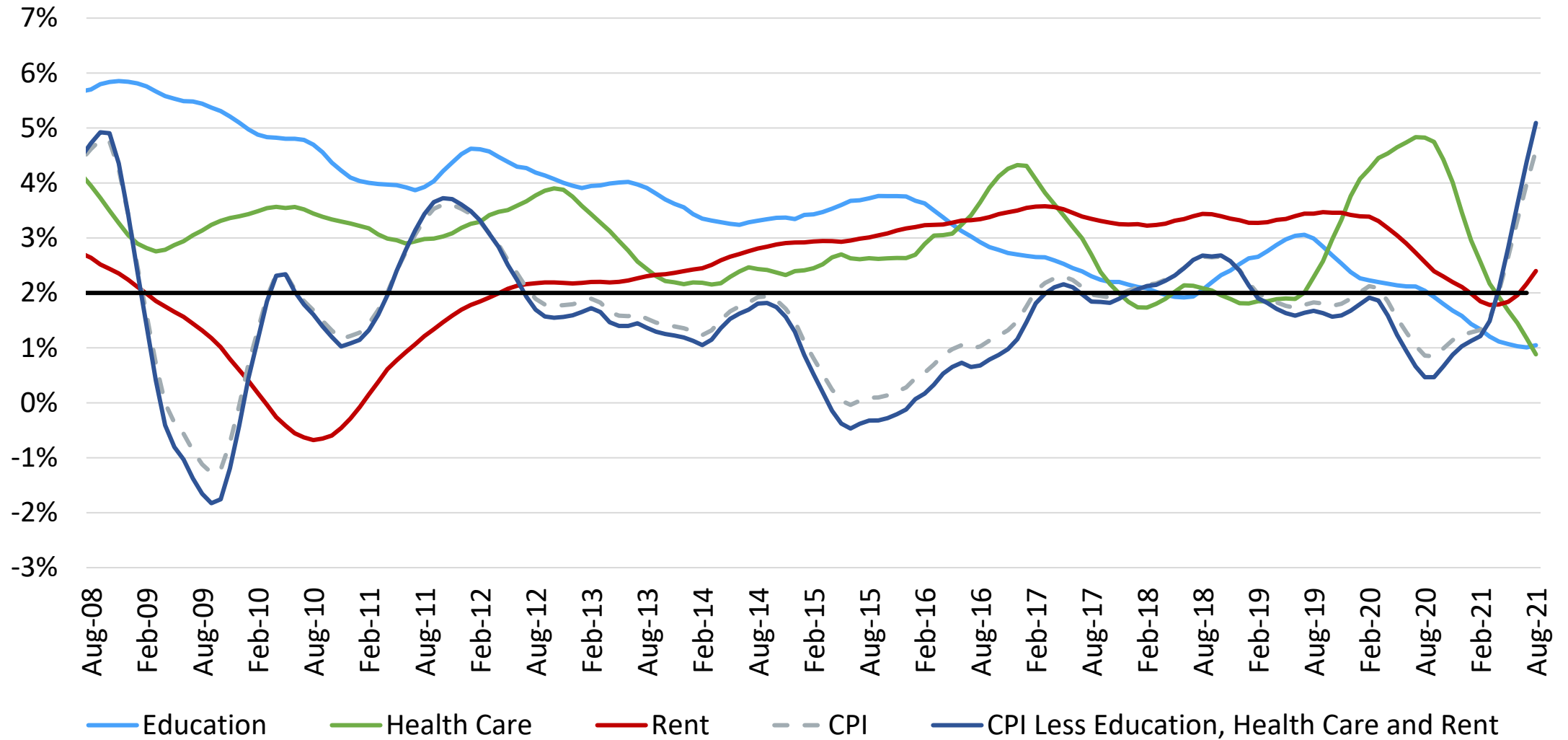
*YoY 6 month moving averages. CPI Less Health Care, Education and Rent is an estimate using BLS document "Math calculations to better utilize CPI data"

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

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From Services to Goods: Consumers Spending More on Durable Goods

Consumption of Durable Goods and Services During COVID-19 Recession

— Real Personal Consumption Expenditures: Durable Goods, Index Feb 2020=100, SAAR

— Real Personal Consumption Expenditures: Nondurable Goods, Index Feb 2020=100, SAAR

— Real Personal Consumption Expenditures: Services, Index Feb 2020=100, SAAR

Source: Yardi Matrix; Federal Reserve Bank of St. Louis (FRED); U.S. Bureau of Economic Analysis

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Spending Has Increased Substantially on Non-Store and Sporting Goods

Change in Monthly Retail Sales

Category	
Non-Store	
Sporting Goods, etc.	
Furniture & Home Furnishings	
Building Materials	
Gasoline	
General Merchandise	
Grocery Stores	
Motor Vehicle & Parts Dealers	
Clothing	
Department Stores	
Electronics & Appliances	
Health & Personal Care	
Food Service & Drinking	

Percent Change in Sales: Feb 2020 - Aug 2021

0%   5%   10%   15%   20%   25%   30%   35%   40%
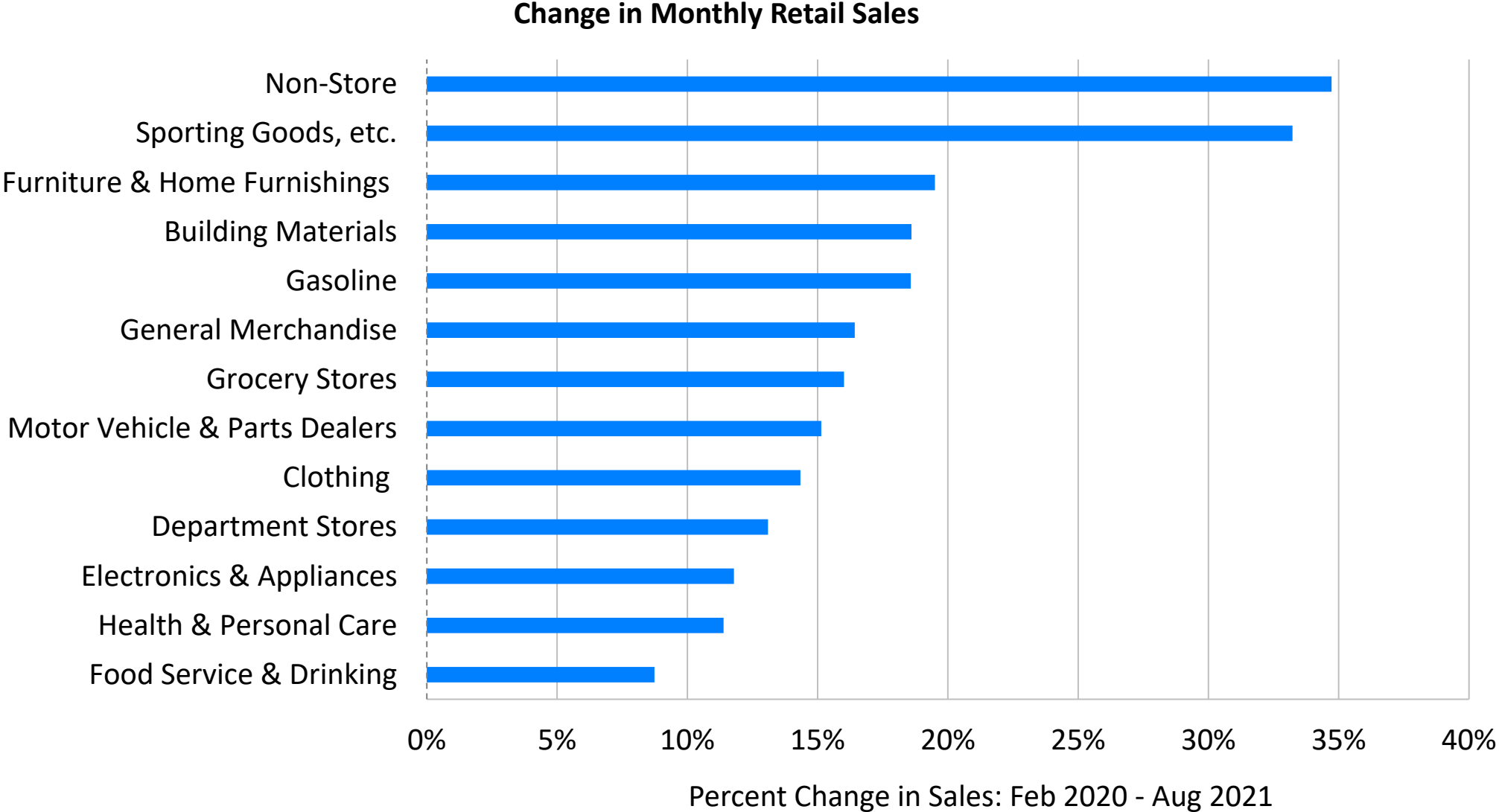
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Spending on Services is Beginning to Pick Up

Consumer Spending on Services Contribution to GDP Growth (%)

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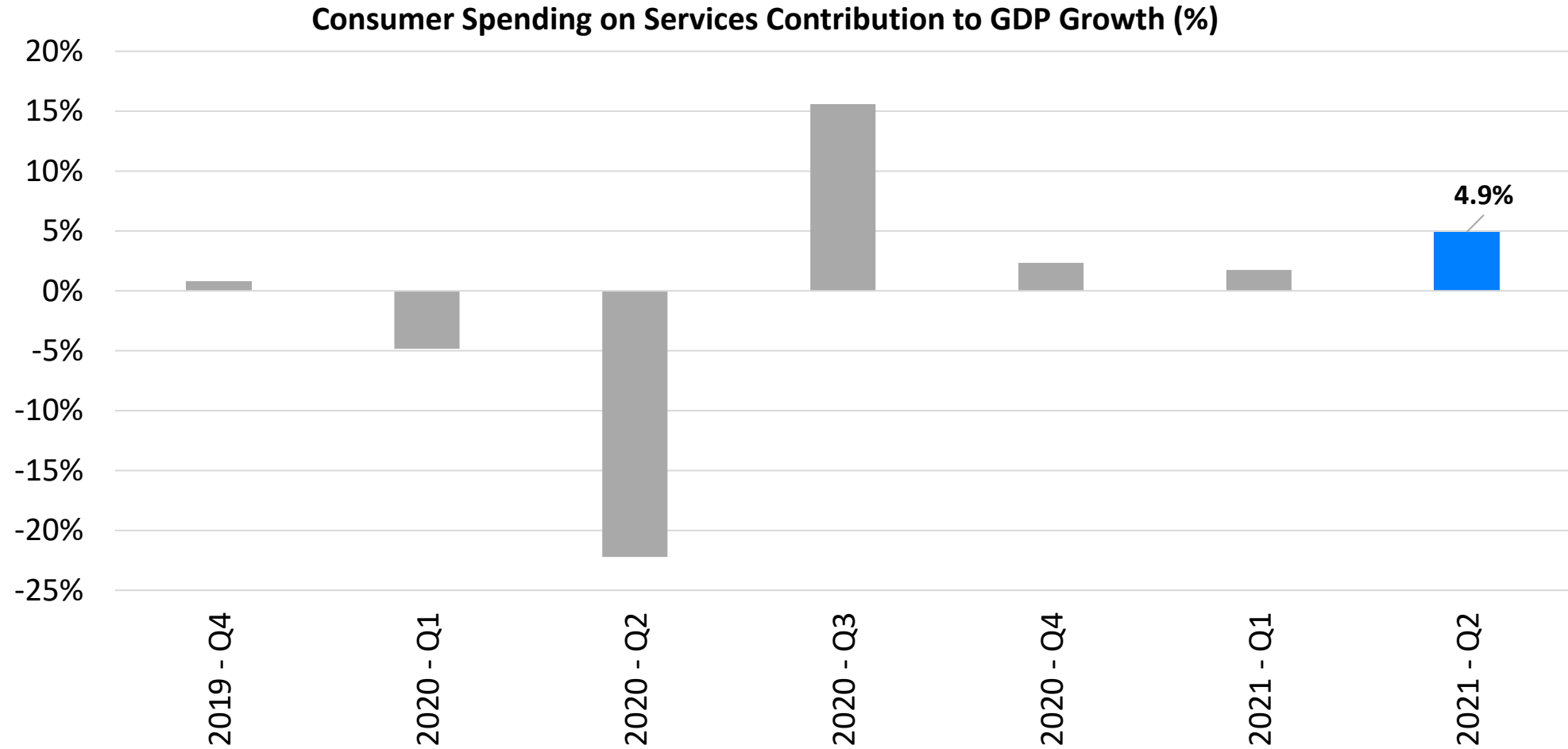
COVID-19 Sensitive Items Are Currently Contributing to the Rise in Inflation

U.S. Core CPI: Contributions From COVID Sensitive Items & Base Effect

Legend:
- Excluding Base Effect & COVID Sensitive Items*
- Base Effect (Ex-COVID Sensitive Items)
- Sensitive Items*
- Core CPI
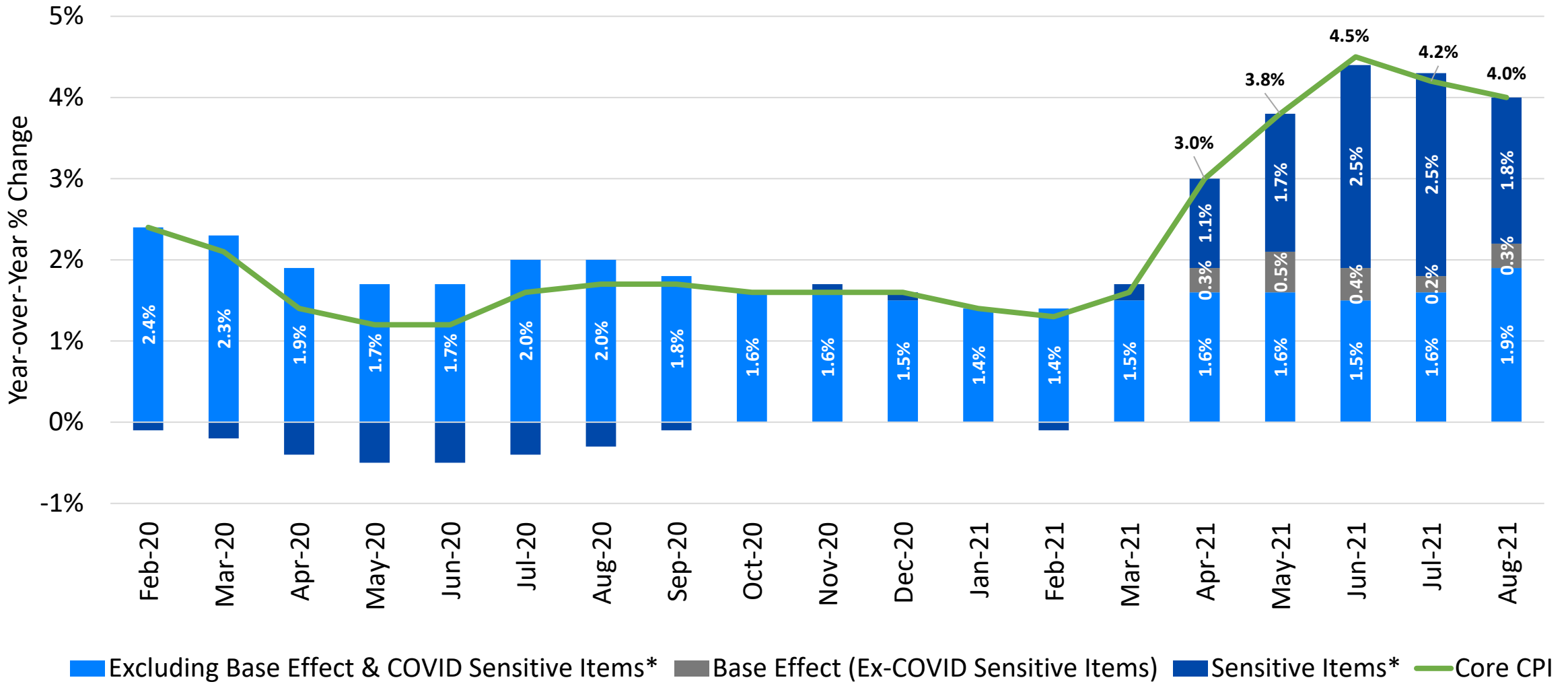
*Sensitive items: lodging away from home, used cars, car rentals, airline fares, televisions, toys, personal computers

Source: Yardi Matrix; Bureau of Labor Statistics (BLS); Bureau of Economic Analysis (BEA)

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Oil Prices Are Hovering Around $70-$80/Barrel

Legend: ▮ Weekly U.S. Field Production of Crude Oil   — Crude Oil Prices: West Texas Intermediate (WTI)

Source: Yardi Matrix
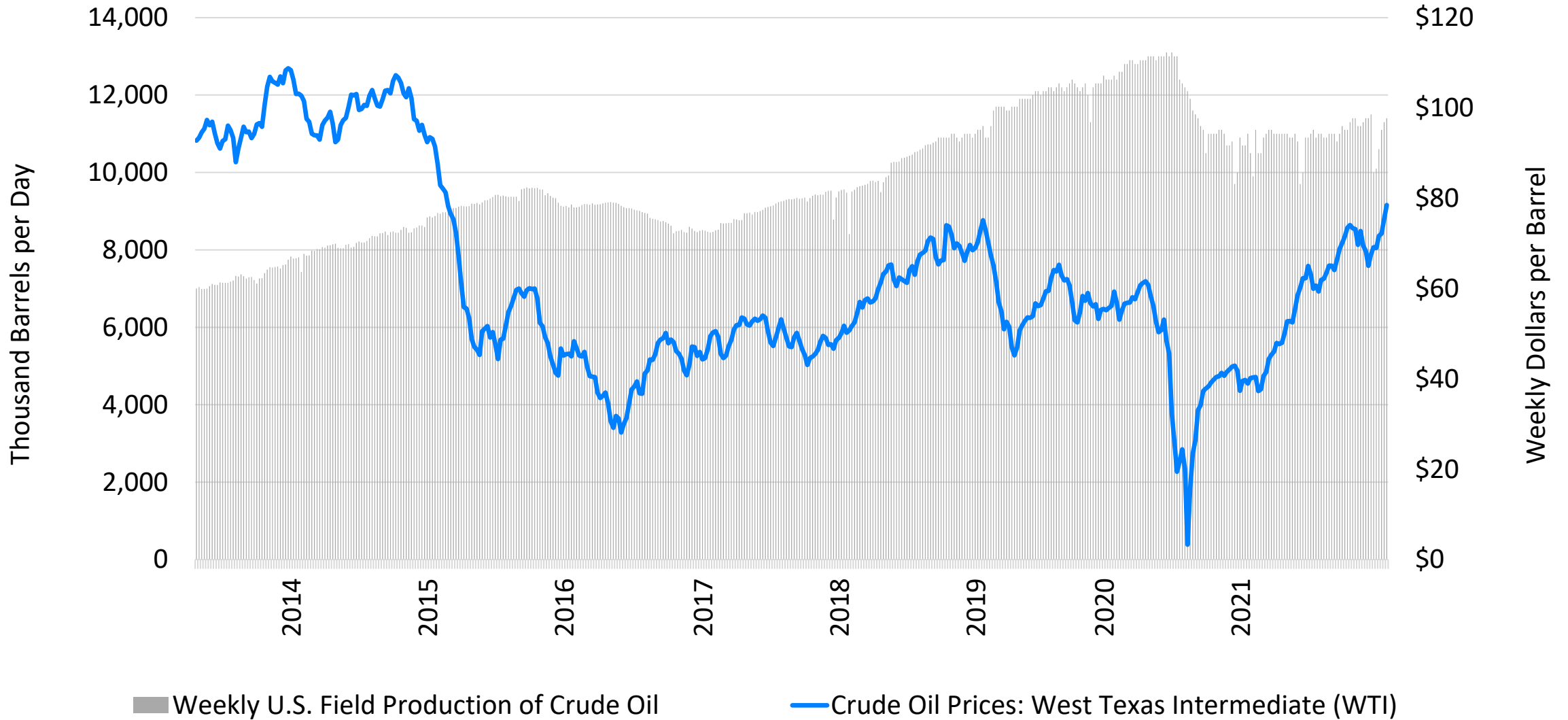
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Average Asking Rent Rising Faster than Inflation
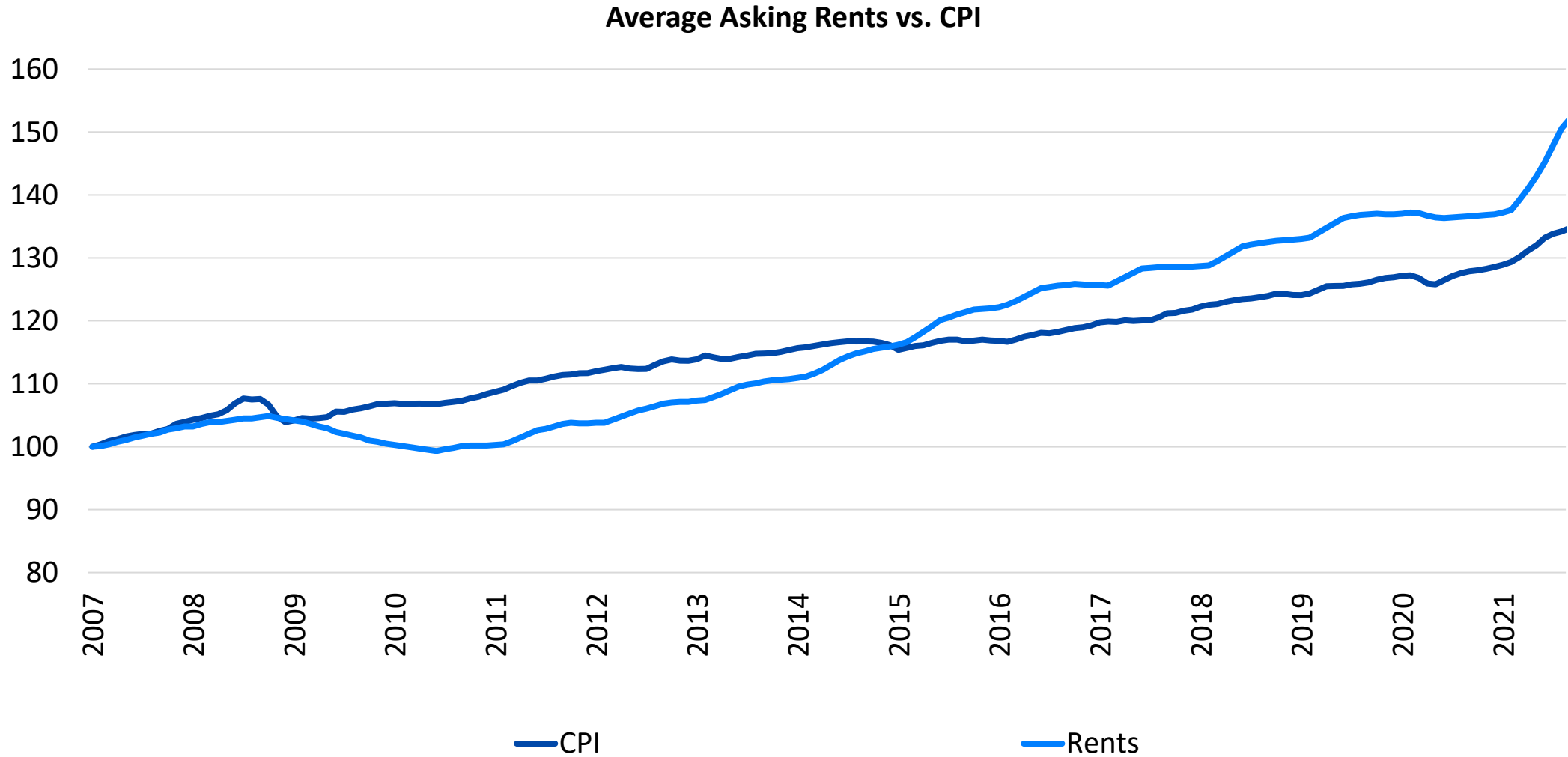
Average Asking Rents vs. CPI

CPI   Rents

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Unemployment and Underemployment Falling, but Still Slightly Elevated

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021

—— U.S. Unemployment Rate   —— U-6: Unemployed + Marginally Attached + Part-Time for Economic Reasons
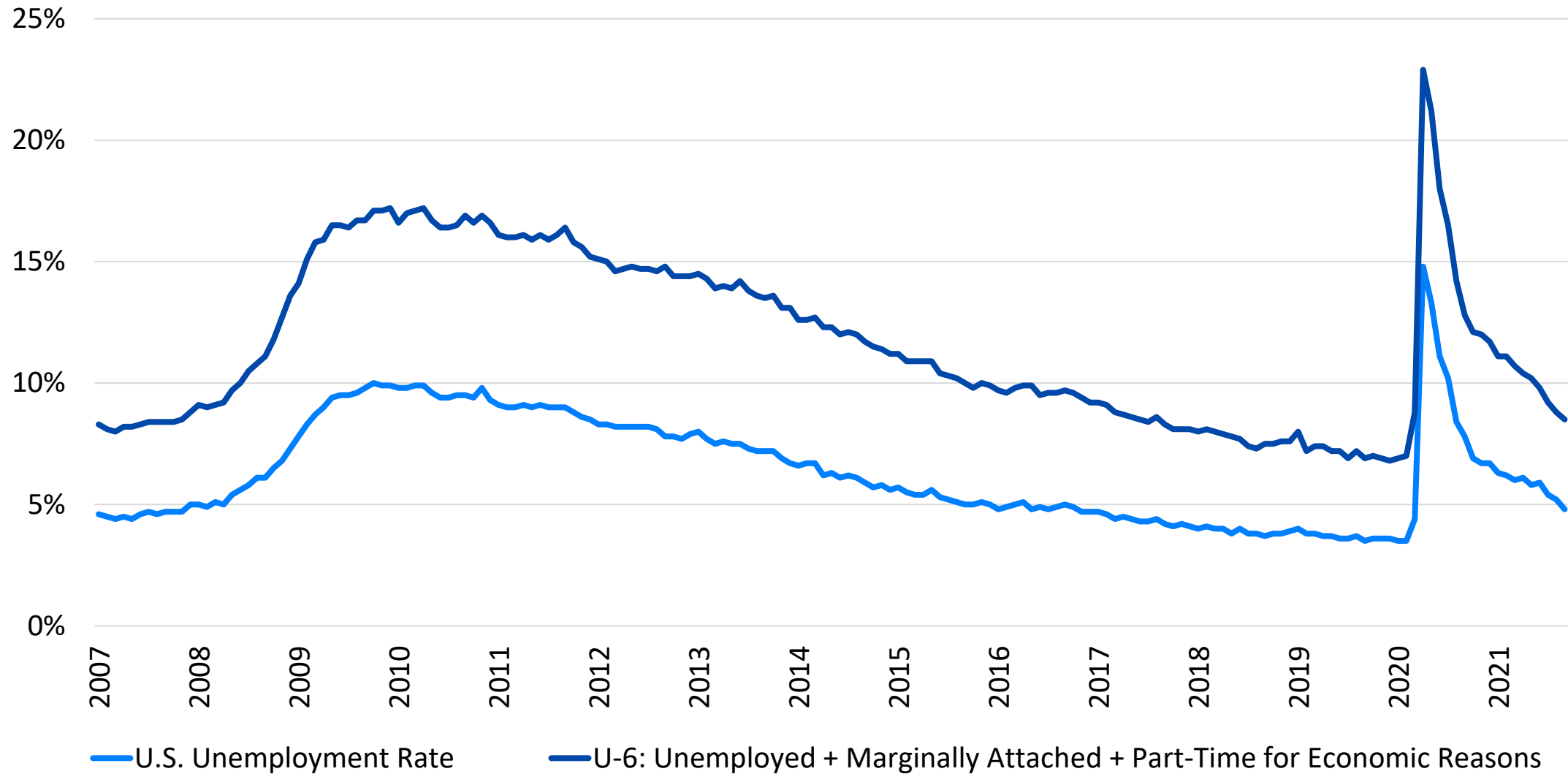
*Data through September 2021
Source: Yardi Matrix; Bureau of Labor Statistics (BLS)

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Labor Force Participation Lowest Since the 70's Despite Record Job Openings
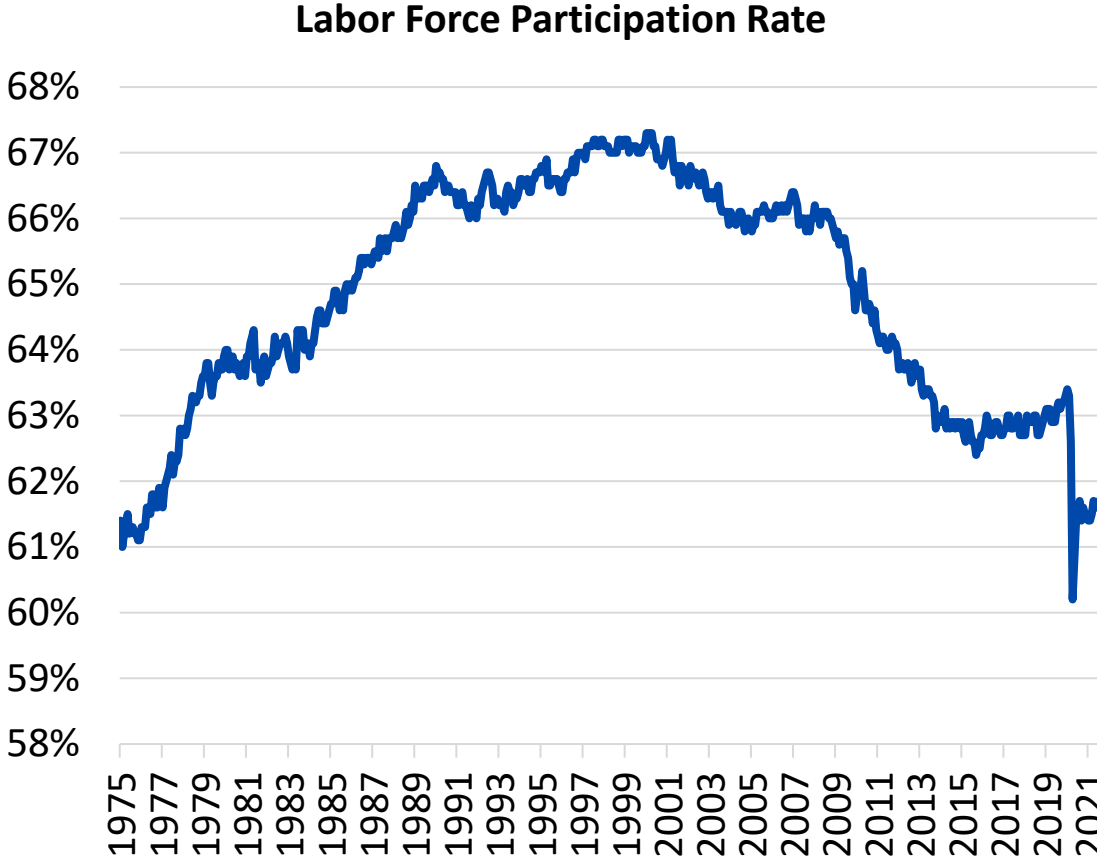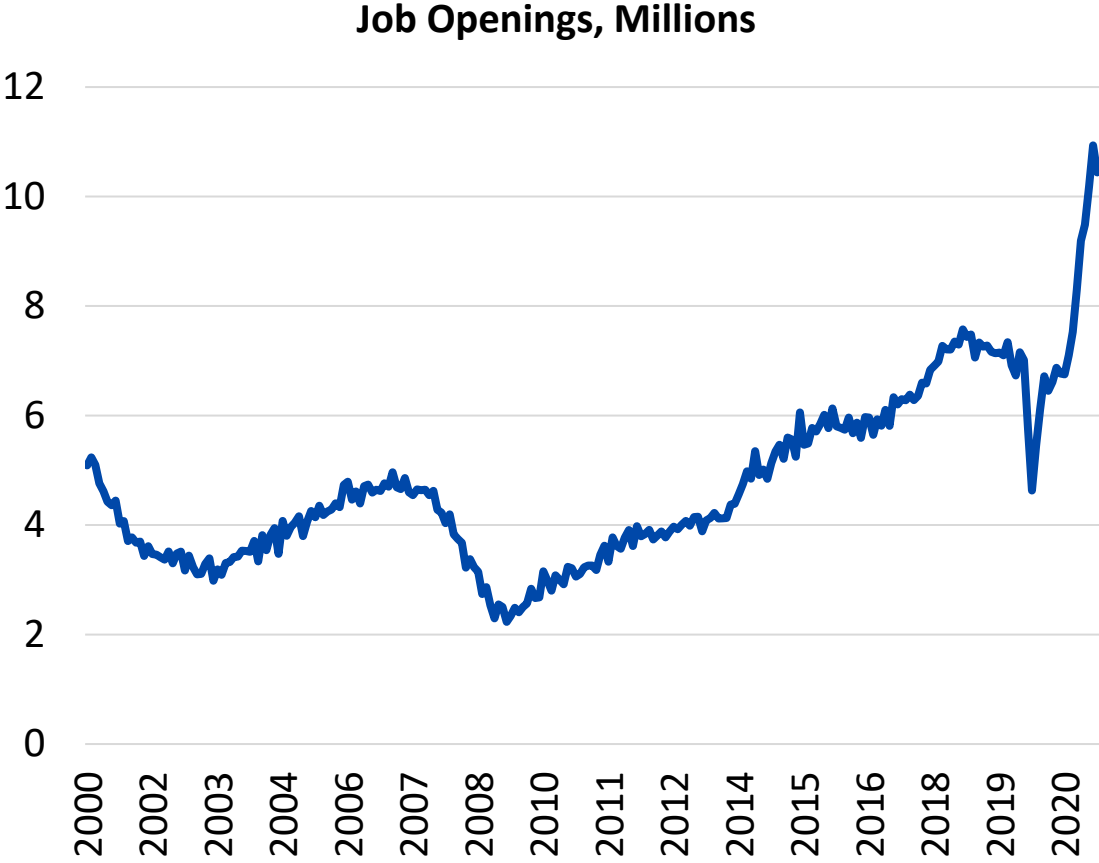
Job Openings, Millions

Labor Force Participation Rate

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Labor Force Participation Among Women and People
Age 55+ is Down Compared to Pre-pandemic Levels

Labor Force Participation Rate – Gender
Indexed Jan 2020 = 100

Women — Men
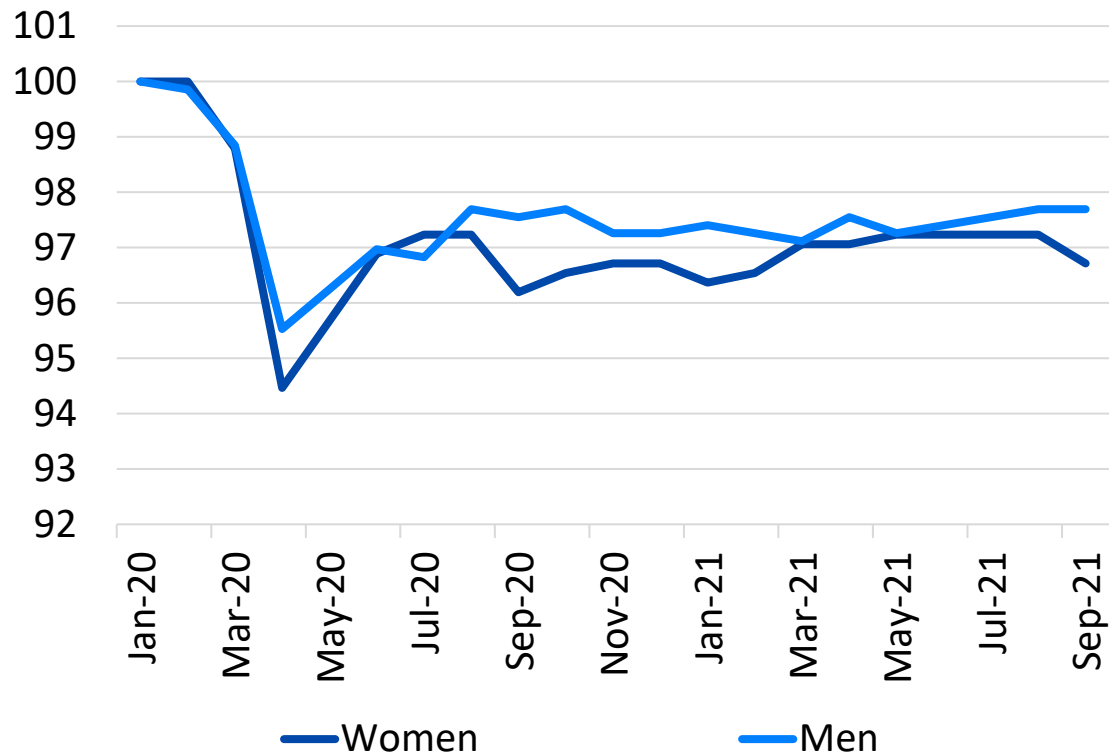
Labor Force Participation Rate – Age
Indexed Jan 2020 = 100

25-54 Yrs — 55 Yrs +

Source: Yardi Matrix; Federal Reserve Bank of St. Louis; U.S. Bureau of Labor Statistics
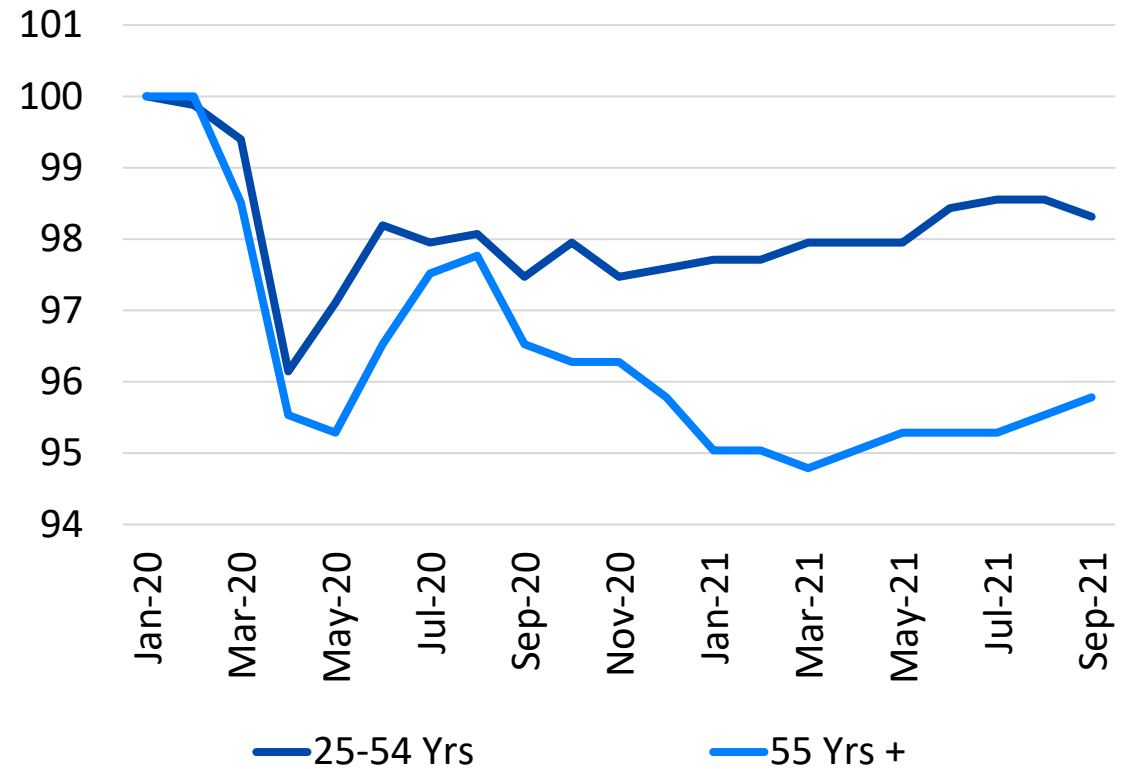
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Labor Force Participation is Also Down Among Those With No College Degree, Which is Translating to Certain Industries Struggling to Find Workers
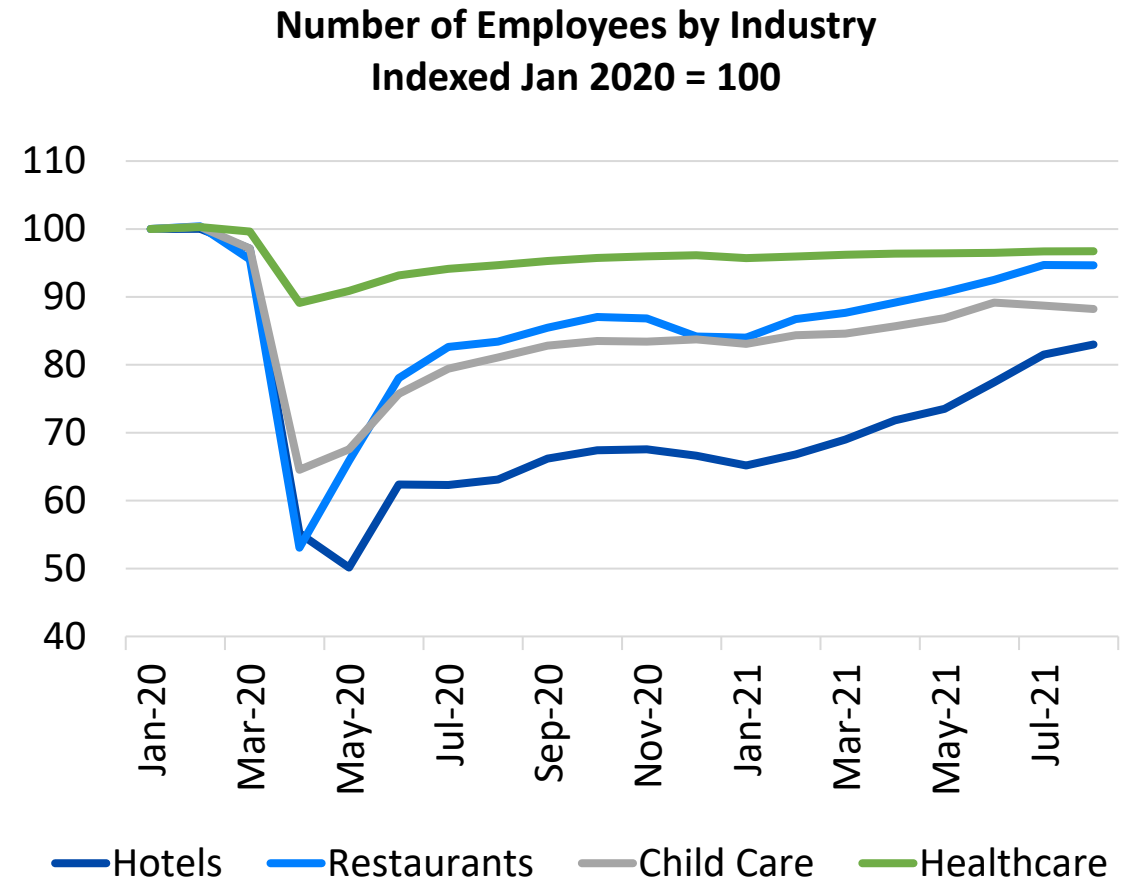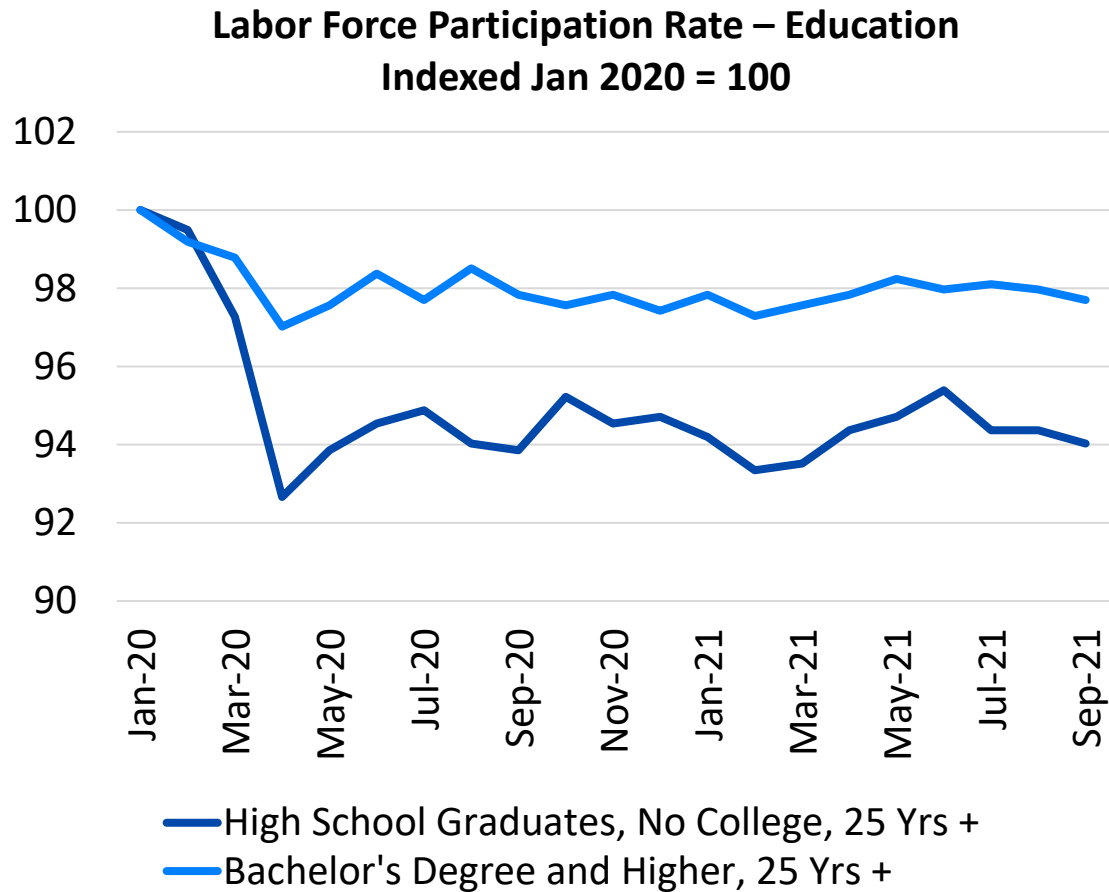
Labor Force Participation Rate – Education
Indexed Jan 2020 = 100

Legend:
— High School Graduates, No College, 25 Yrs +
— Bachelor's Degree and Higher, 25 Yrs +

Number of Employees by Industry
Indexed Jan 2020 = 100

Legend:
— Hotels — Restaurants — Child Care — Healthcare

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Wage Growth Has Been Strongest at the Lower End

6-Month Change in Average Hourly Earnings (Apr - Sept 2021)
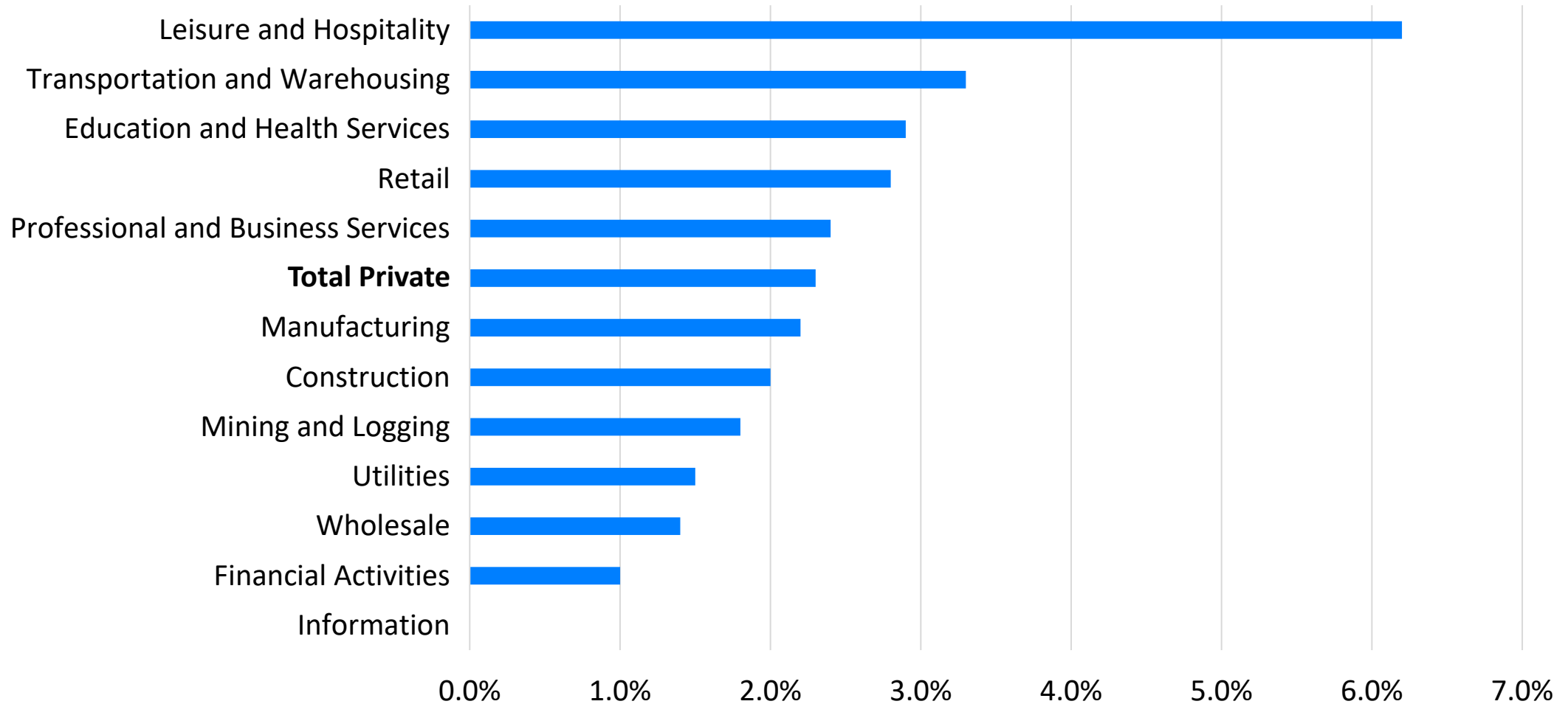
*Average hourly earnings of all employees, seasonally adjusted
Source: Yardi Matrix; U.S. Bureau of Labor Statistics (BLS); Federal Reserve Bank of St. Louis (FRED); The Daily Shot

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DEMOGRAPHIC TRENDS IMPACTING HOUSING DEMAND

Demographic Changes Will Impact Multifamily Demand Over the Next Decade

Population Change by Age Cohort

Not primarily a renter cohort

(1,090,000)
-1.3%

(140,000)
-0.6%

3,690,000
4.2%

(2,450,000)
-3.0%

Previously not a renting cohort, but the increasing divorce rate is creating more demand for apartments in this age group

10,410,000
24.5%

Previously not a renting cohort, but people are living longer and healthier lives, increasing demand for apartments

6,270,000
47.6%

Not primarily a multifamily renter cohort

Population, Millions

0-19 Years   20-24 Years   25-44 Years   45-64 Years   65-79 Years   80 Years +

Prime renter age

■ 2020   ■ 2030

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Lifestyle Changes Fueling Strong Demand for Multifamily

Median Age at First Marriage

30.5

28.1

26.8

25.1

Men   Women
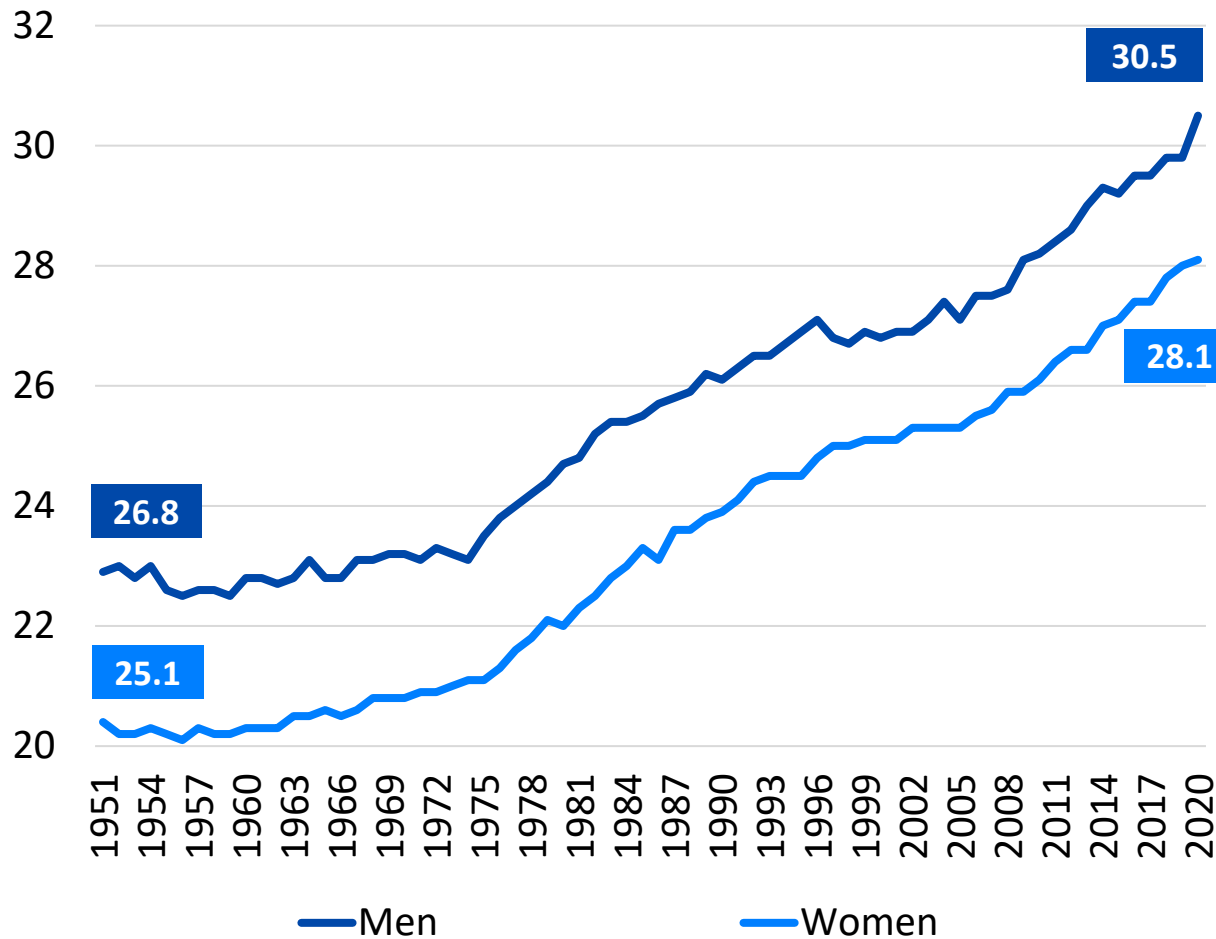
Average Mother's Age at First Birth

27.0

24.2
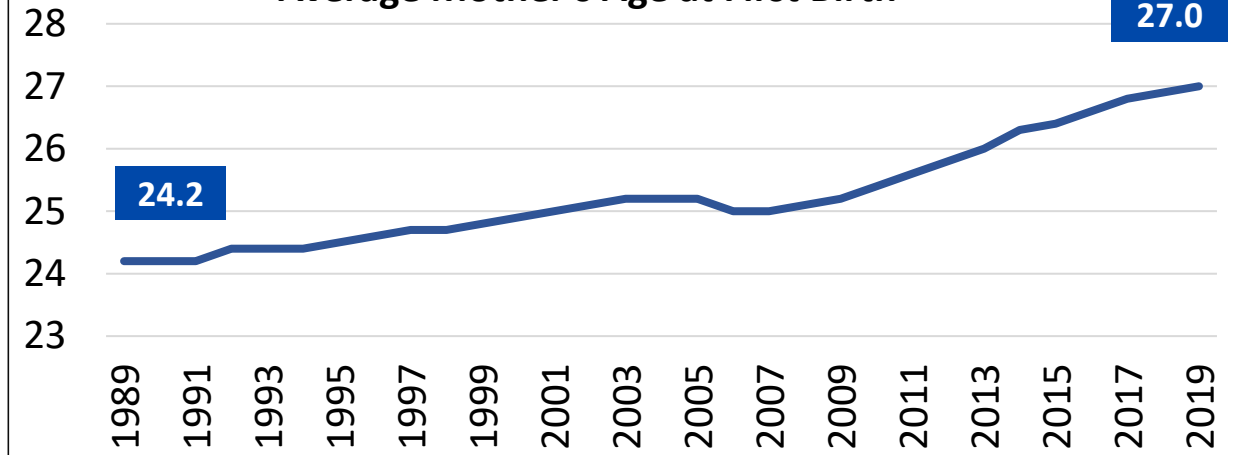
Birth Rate for Major Age Cohorts: 1989-2019

25 - 29   30 - 34

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Fertility in the U.S. Has Been Declining For a Number of Years

**Total Fertility Rate
United States**

WHY?

- Record student debt; childcare is too expensive

- Teen birth rate has declined to around a third of what it was in 1990

- Changing marital patterns, delaying marriage

- Changed social and cultural expectations of parents and parenting

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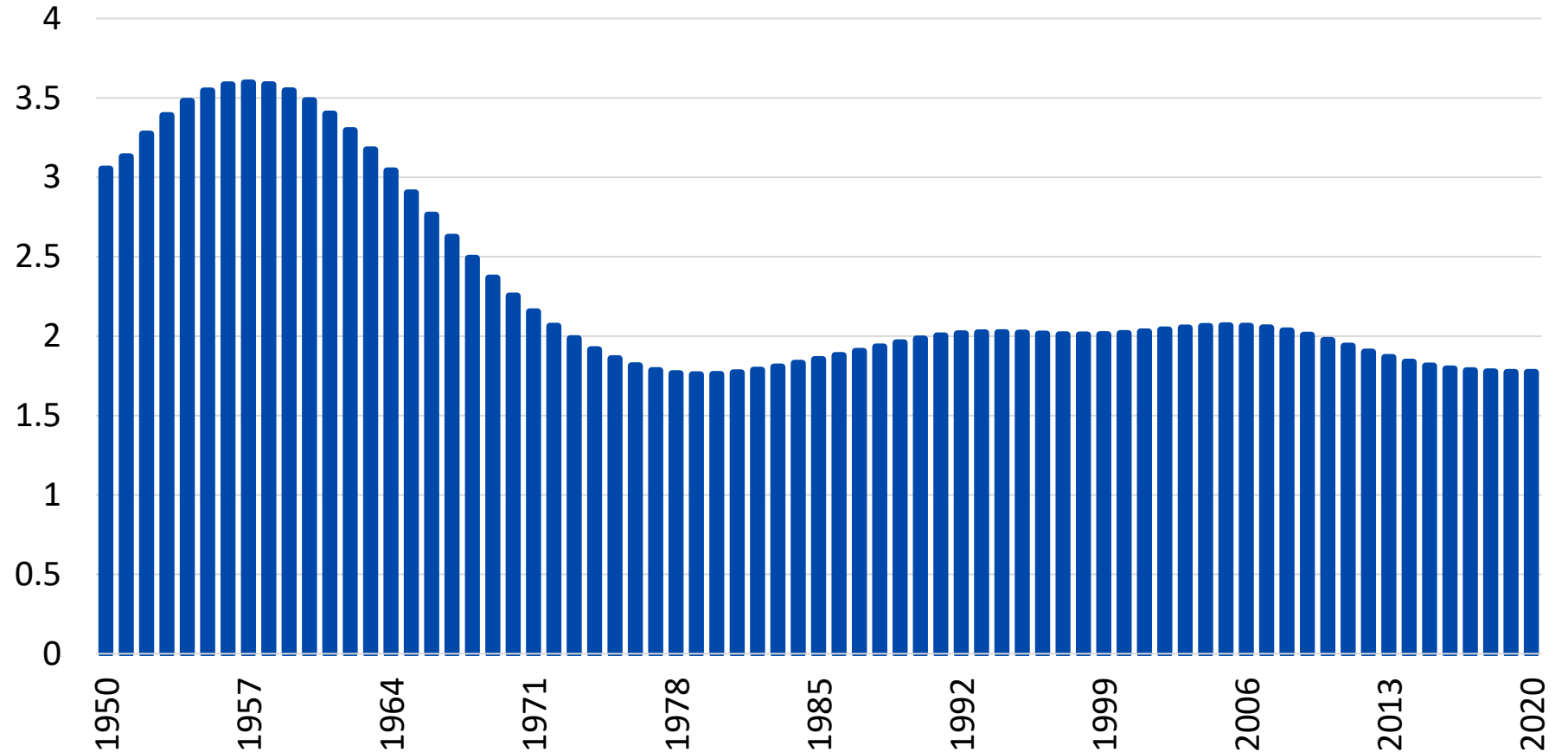
Millennials Are Reaching Home-Buying Age, But Many Are Still Renting
People Getting Married Later, Having Less Children and Rising Down Payments are Pushing Demand Toward Multifamily

Population Estimates by Age

Median age for moving out: 26

Median age for first home purchase: 34

Source: Yardi Matrix, U.S. Census Bureau, Population Division July 2020

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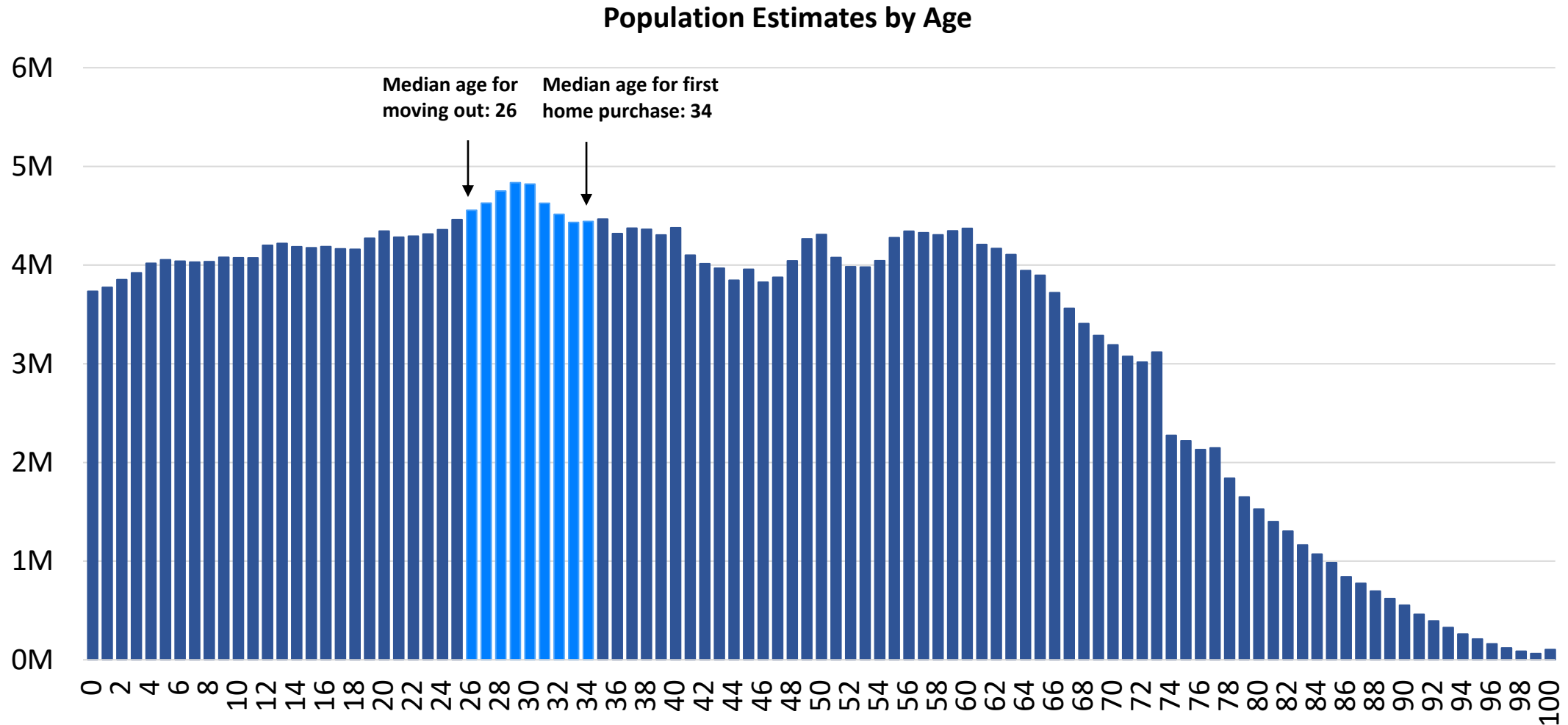
There is Still a Cumulative Deficit in Single-Family and Multifamily Housing Coming Out of the Great Recession

Completions, Millions

- Single-Family Completions
- Multifamily Completions
- Household Formations (4-Yr Rolling Avg)

Source: Yardi Matrix; Moody's Analytics; National Association of Realtors (NAR); U.S. Census Bureau (BOC)
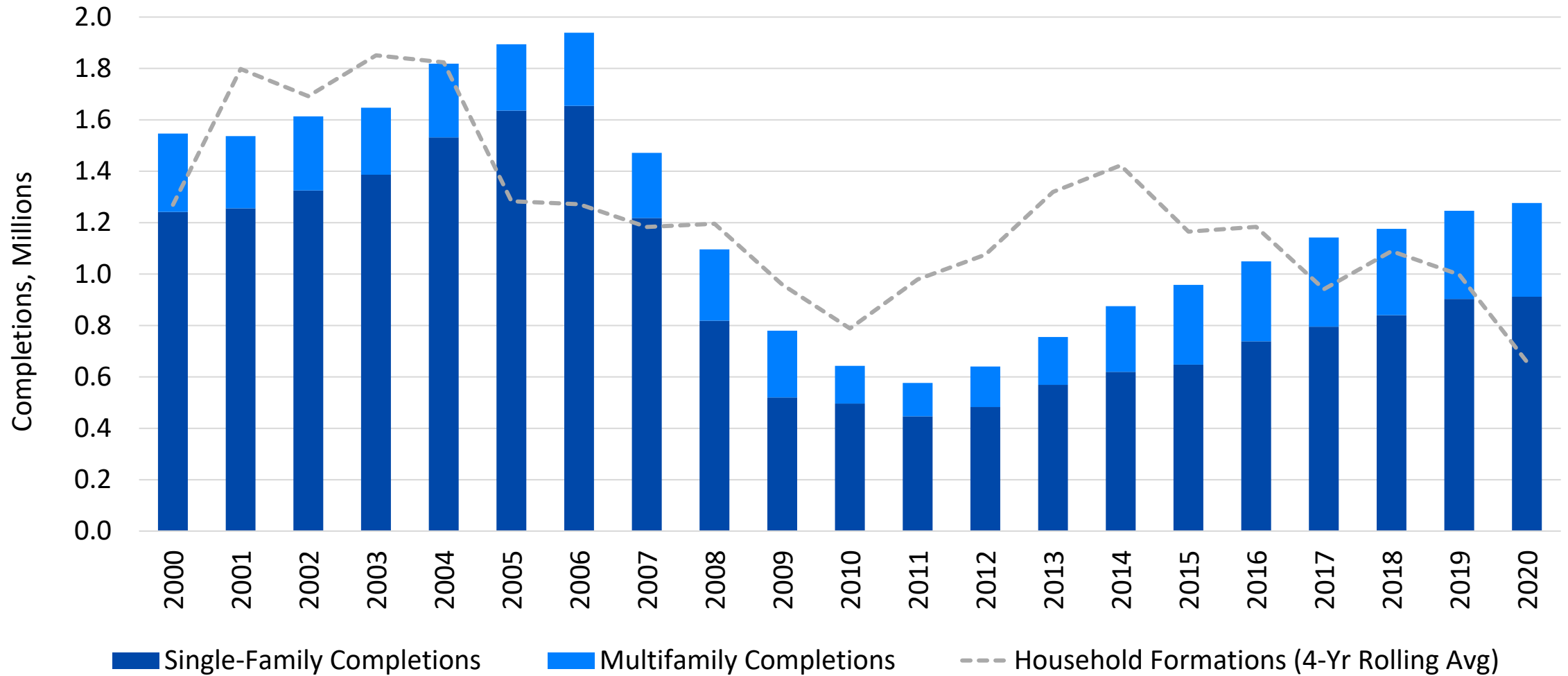
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Housing Supply and Demand Imbalances Causing Increased Pricing in Single-Family, Multifamily and Single-Family Rentals

Year-over-Year Growth:
Home Prices vs. Multifamily Rents
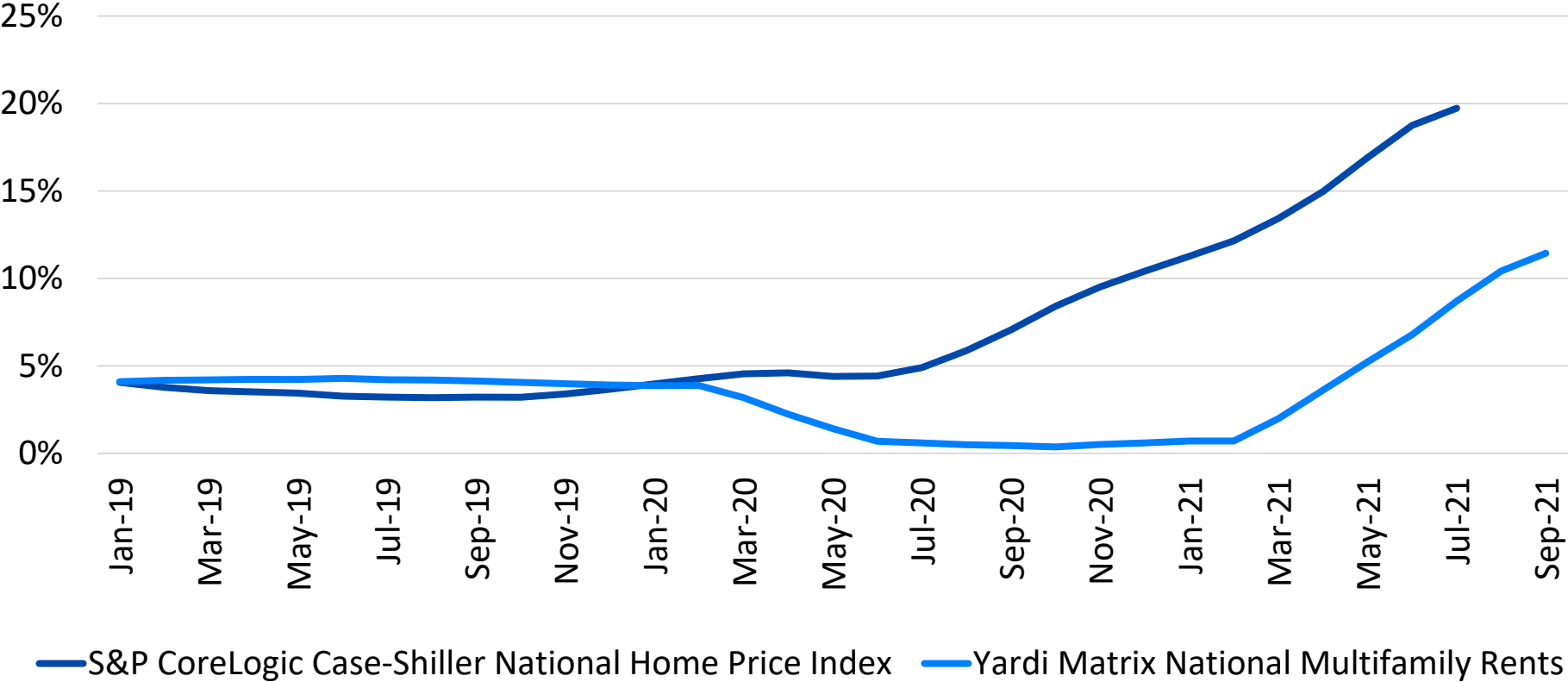
— S&P CoreLogic Case-Shiller National Home Price Index   — Yardi Matrix National Multifamily Rents

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Our Market Universe for Investment Strategy Analysis

Legend:
- Global Gateways (green)
- Established Tech Hubs (red)
- Emerging Tech Hubs (blue)

Cities shown: Seattle, Portland, Boise, Minneapolis, Madison, Grand Rapids, Boston, Chicago, Pittsburgh, New York, Salt Lake City, Denver, Omaha, Indianapolis, Columbus, Philadelphia, San Francisco, Colorado Springs, Kansas City, Washington DC, Las Vegas, Tulsa, Nashville, Raleigh - Durham, Los Angeles, Albuquerque, Oklahoma City, Charlotte, Huntsville, Phoenix, San Diego, Atlanta, Savannah, Dallas, Austin, Houston, Orlando, Tampa, Miami

© 2021 Mapbox © OpenStreetMap

Source: Yardi Matrix

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Tech Hub Markets Continue to Gain Steam

- Affordability concerns were very apparent pre-COVID, which led to movement out of expensive gateway markets into lower-cost tech hub markets

- The pandemic and flexibility of working from home fueled more movement to smaller metros

- As a result, most tech hub markets are absorbing new supply and are seeing rent growth surge

- Even though rents are rising nationwide, consumer welfare is rising, too – consumers are now able to take their income to cheaper markets which is now an option due to the flexibility of work

- Example – Austin, TX
  - Austin was the city that built too much – even though migration has been steady, rent growth had been suppressed due to the glut of new supply
  - Now, fundamentals are turning a corner as a lot of new supply is getting absorbed, and Austin is seeing double-digit rent growth this year

Source: Yardi Matrix

Austin's Fundamentals are Strong in 2021

Legend: Unit Completions — YoY Rent Change — YoY Occupancy Change

Source: Yardi Matrix
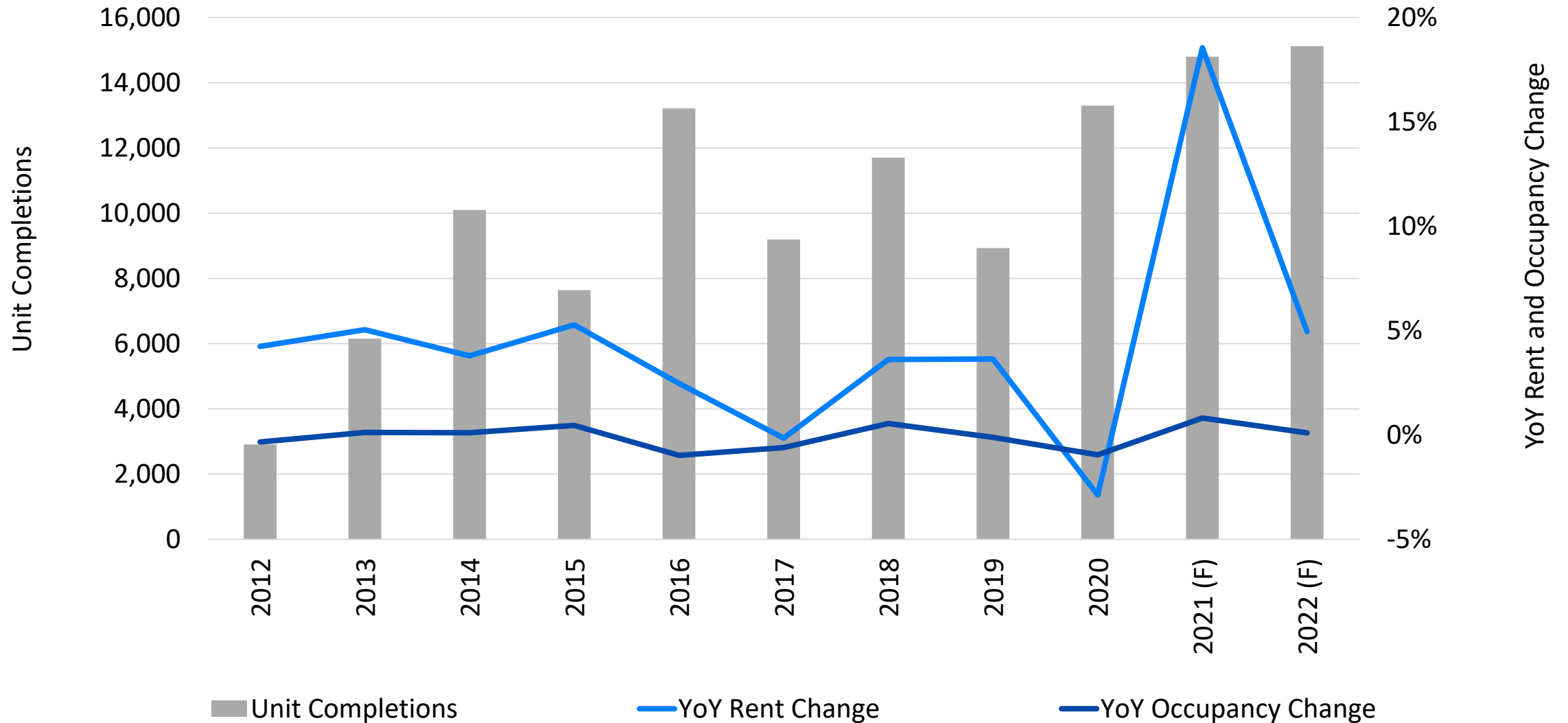
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Prior to the Pandemic, Tech Hub Markets Were Already Seeing a Surge in Net Migration
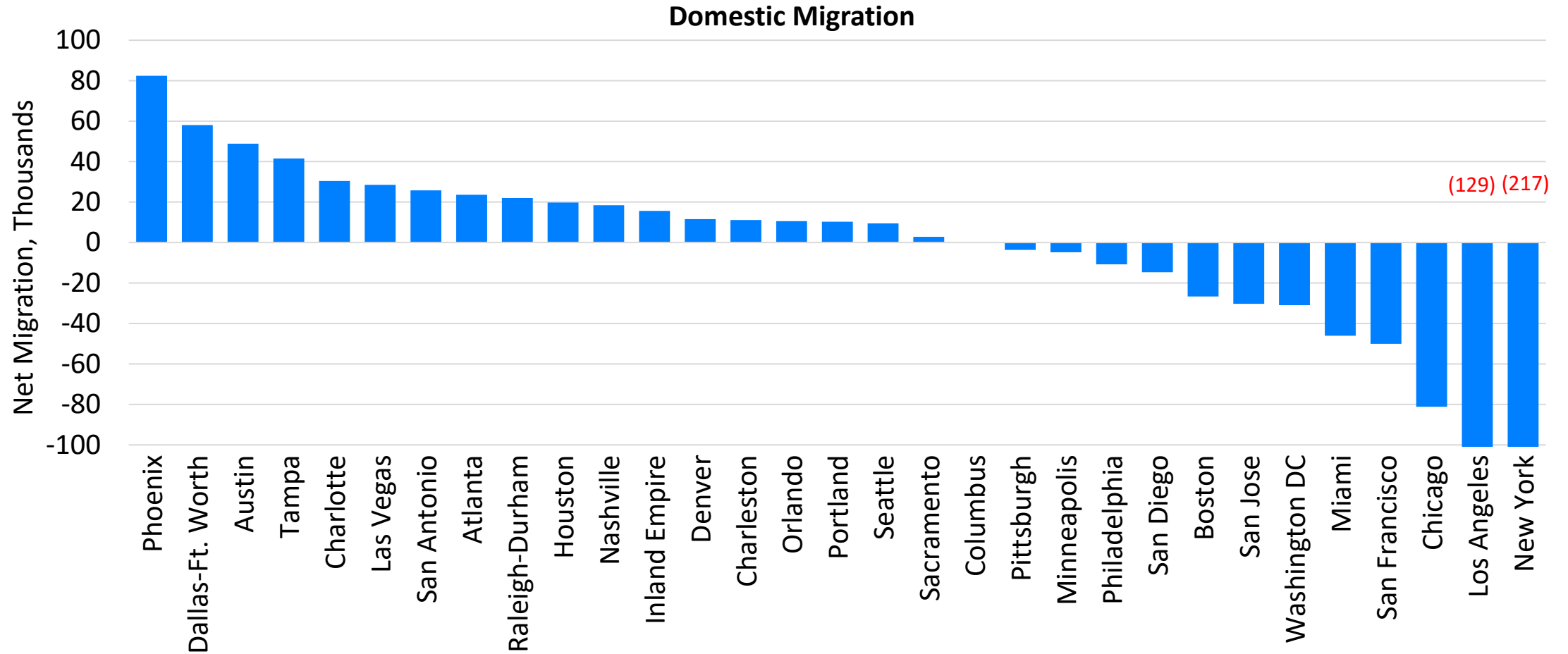
Domestic Migration

Net Migration, Thousands

(129) (217)

Phoenix, Dallas-Ft. Worth, Austin, Tampa, Charlotte, Las Vegas, San Antonio, Atlanta, Raleigh-Durham, Houston, Nashville, Inland Empire, Denver, Charleston, Orlando, Portland, Seattle, Sacramento, Columbus, Pittsburgh, Minneapolis, Philadelphia, San Diego, Boston, San Jose, Washington DC, Miami, San Francisco, Chicago, Los Angeles, New York

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The Pandemic Has Only Accelerated That Trend and the Movement Is Not Over Yet

Change in Net Moves Per 1,000 Population, 2020 vs. 2019: COVID-19 Impact

Net Moves per 1,000
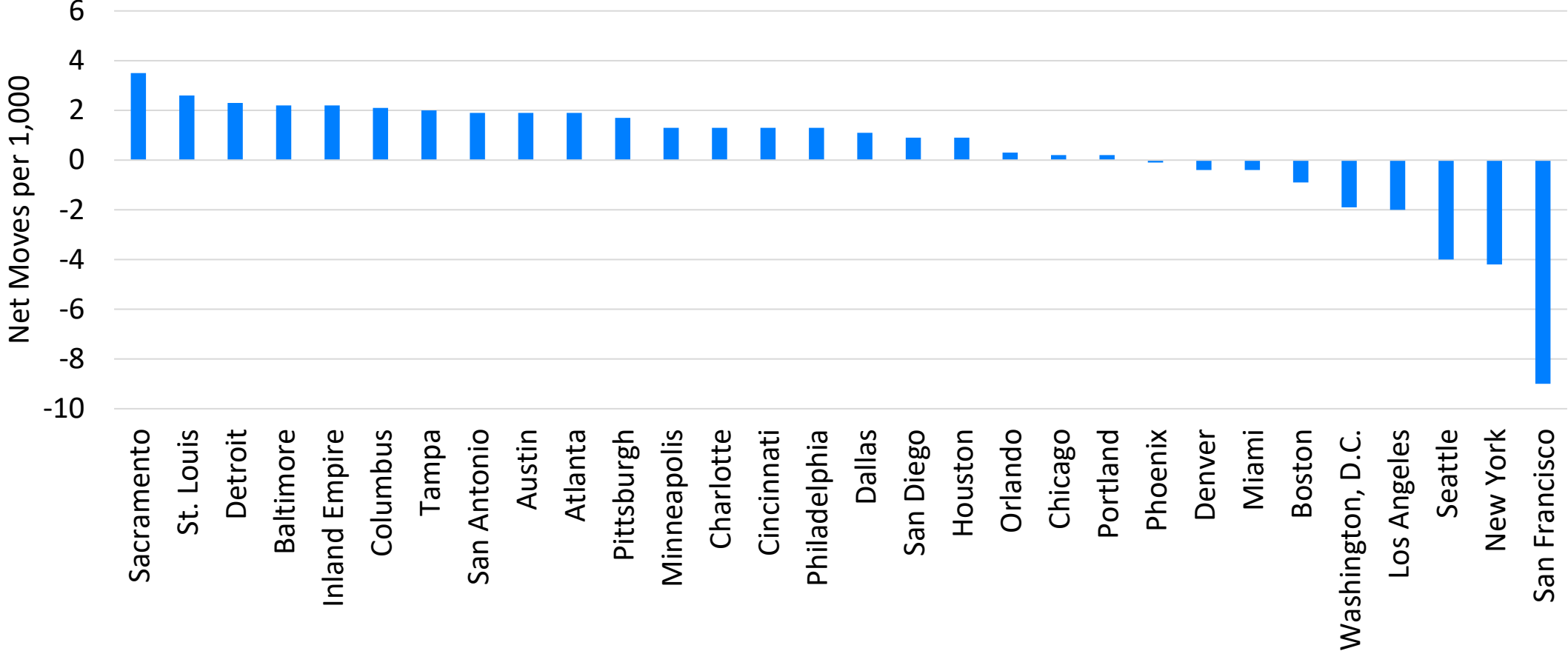
*COVID-19 Impact = (2020 Net Move-Ins – 2019 Net Move-Ins)/Population
Source: Yardi Matrix; USPS; CBRE Research

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Work From Anywhere Fueling Migration

- Accelerated by the pandemic, the work from home revolution has fundamentally changed where home base is for employees - **work is not somewhere you go, but something you do**

- Companies have realized that working from home does not necessarily mean less productivity and are rethinking the concept of requiring employees to work in the office five days a week

- Employees are taking this opportunity to **move out of dense, costly metros to lower cost alternatives**

- Prior to the pandemic, about **10%** of the U.S. labor force worked remotely full-time. As much as **25%** of the labor force is projected to work remotely full-time in the long term (could be significantly higher for office-using employment) and many more are likely to continue working remotely part-time

- Industries like technology are better equipped to handle remote work in the future, compared to industries like financial activities and government which handle sensitive information and often need to be monitored for compliance purposes

- The shift to remote work has given smaller cities and communities the opportunity to compete with coastal hubs for residents

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Financial Services and Government Employment Sectors Handle Sensitive Information, Which Makes Fully Remote Work Difficult

Financial Services
Likely method of work post-pandemic: **Office-based**

- Challenges around compliance and safety, especially for those who work with high-risk portfolios or deal with highly confidential data make working from home difficult for financial institutions

- Cybersecurity attacks are on the rise, and financial institutions are at particular risk given the nature of transactional and confidential information

- Increased regulations will likely require workers who need to be monitored for compliance purposes to return to the office

Government
Likely method of work post-pandemic: **Hybrid/In-Person**

- Federal government employees are more likely to use a hybrid or fully remote model post-pandemic, whereas local government workers are more likely to return to a fully in-person model

- For a large percentage of the federal government workforce to continue working remotely, the implementation of a telework foundation in terms of policies and infrastructure is necessary

- Like financial services, there are sensitive workloads, required face-to-face interviews and mail that needs to be opened which makes remote works difficult

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The Tech Sector Will Likely Drive the Remote Work Trend

Technology
Likely method of work post-pandemic: **Hybrid/Fully Remote**

- Tech workers are in extremely high demand which pushes employers to accommodate tech talent and their needs

- Enables tech companies to recruit throughout the country rather than be tied to their physical offices

- Tech companies have among the best capabilities and overall infrastructure to transition seamlessly to remote work

Education
Likely method of work post-pandemic: **Hybrid/In-Person**

- Most K-12 students learn best in person, surrounded by classmates and led by a teacher

- But school systems are looking at remote learning as a way to meet diverse needs – teenagers who have jobs, children with certain medical conditions, or kids who prefer learning virtually

- Many universities are planning for an in-person return in fall 2021. But more remote and hybrid options will be available for students

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Work From Anywhere Fueling Migration,
Which Has Implications on the Multifamily Industry

Assumptions:

20-25% of office workers will work **remotely full-time**

40-50% of office workers will work on a **hybrid schedule**

30-35% of office workers will work in the **office full-time**

> **Biggest risk to multifamily is the people who work remotely full-time deciding to move out of the metro entirely**

To determine the most at-risk metros:

- Number of office-using employees per metro

- Estimate number of full-time remote employees (20-25% of office-using employees per metro)

- Determine number of renters per metro (metro rentership rate x full-time remote employees)

- Determine % of housing stock (# of full-time remote employees that are renters/housing stock)

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Gateway Markets Have the Greatest Potential to be Impacted by Remote Work

Market	Office-Using Emp. (Feb. 20)	Est. Full-Time Remote Employees	Est. # of Renters	% of Multifamily Stock	Market	Office-Using Emp. (Feb. 20)	Est. Full-Time Remote Employees	Est. # of Renters	% of Multifamily Stock
Los Angeles	**1,102,070**	**250,000**	**128,750**	**44.5%**	Salt Lake City	215,210	50,000	16,000	14.9%
San Francisco	**484,690**	**110,000**	**51,700**	**41.4%**	Minneapolis	528,620	120,000	32,400	14.5%
New York	**2,095,050**	**470,000**	**230,770**	**35.8%**	Atlanta	842,030	190,000	63,840	14.0%
Chicago	**1,237,120**	**280,000**	**95,200**	**26.4%**	Phoenix	620,750	140,000	44,940	14.0%
Boston	**623,490**	**140,000**	**54,320**	**22.9%**	Denver	453,160	100,000	37,100	12.7%
Washington DC	**846,480**	**190,000**	**60,990**	**19.2%**	Orlando	344,170	80,000	28,640	12.5%
Miami	**288,170**	**65,000**	**25,610**	**18.6%**	Dallas	867,270	195,000	68,835	11.9%
San Diego	362,350	80,000	33,760	17.6%	Charlotte	350,040	80,000	21,360	11.5%
Philadelphia	747,070	170,000	52,360	17.3%	Tampa	403,530	90,000	25,020	11.2%
Seattle	492,580	110,000	44,660	17.1%	Indianapolis	261,700	60,000	18,000	10.2%
Portland	294,990	65,000	24,375	15.0%	Houston	718,950	160,000	55,520	8.3%

*Gateway markets are bolded
Source: Yardi Matrix; U.S. Bureau of Labor Statistics (BLS); U.S. Census Bureau (BOC)

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MULTIFAMILY FUNDAMENTALS

National Multifamily Rents Surged This Year, But Growth is Starting to Slow

National Average Rents

Source: Yardi Matrix

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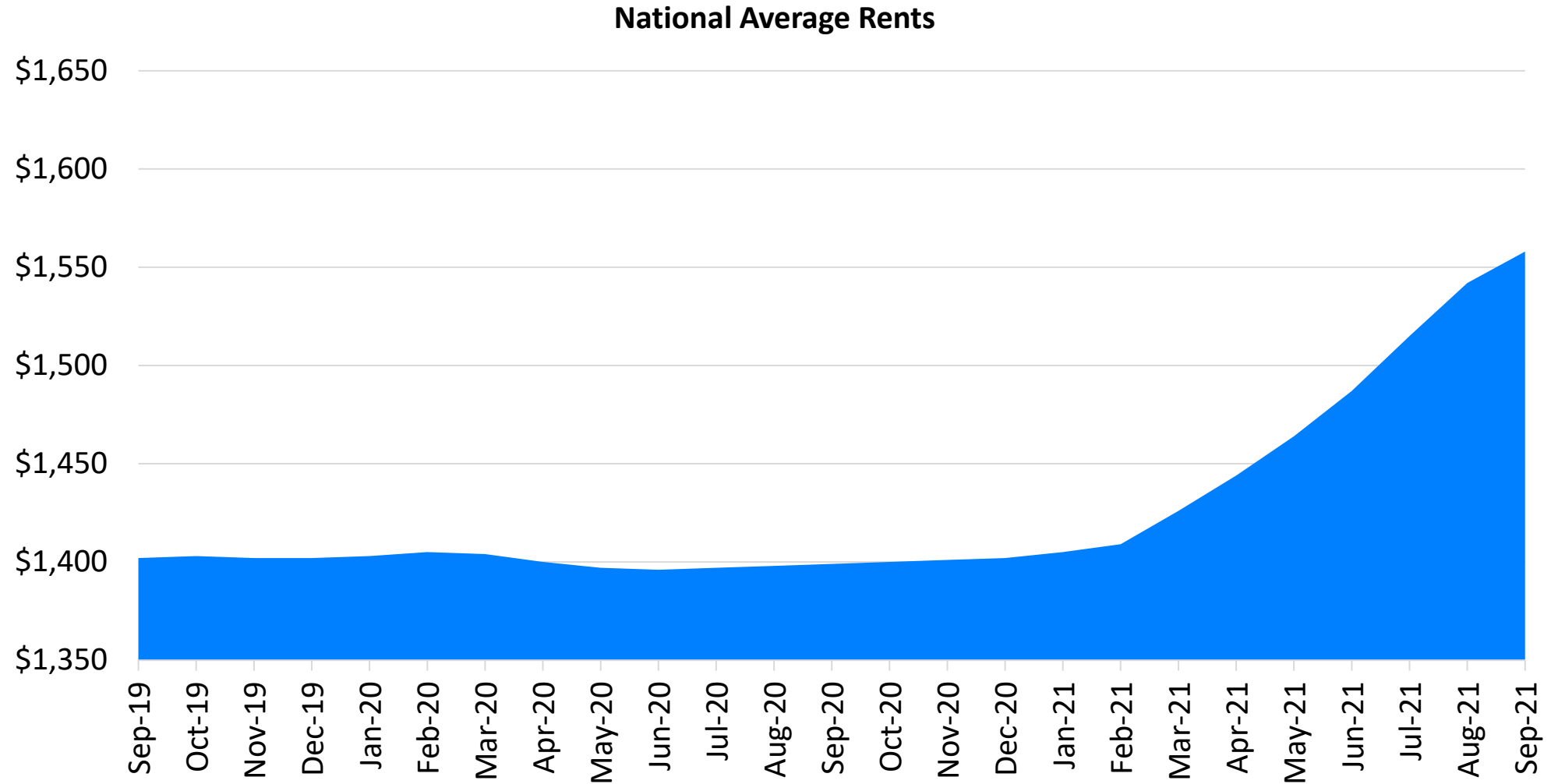
Absorption and Rent Growth Have Been Strongest In Tech Hub Markets

Rent Growth vs Net Absorption % Stock

Source: Yardi Matrix
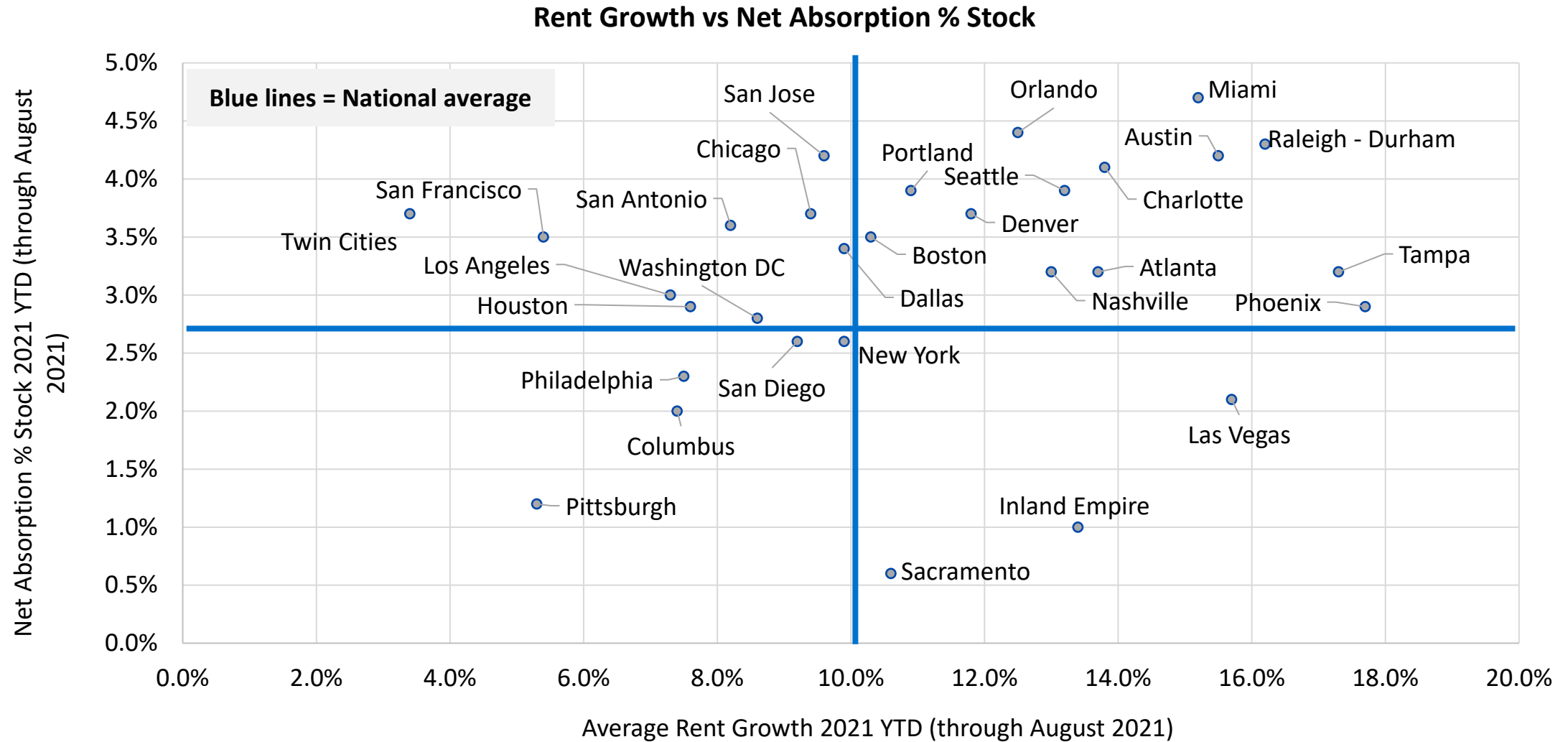
YARDI

Rent & Occupancy Growth Highest in Emerging Tech Hub Markets

Rent Growth vs Change in Occupancy

Blue lines = National average

Y-axis: YoY Rent Growth: August 2021 (0% to 25%)
X-axis: Occupancy Change: July 2020-2021 (-1.0% to 3.5%)

Data points (approximate): Phoenix, Tampa, Boise, Las Vegas, Miami, Albuquerque, Atlanta, Raleigh, Austin, Colorado Springs, Savannah, Charlotte, Nashville, Grand Rapids, Orlando, Huntsville, Denver, Portland, Salt Lake City, Tulsa, Seattle, Indianapolis, Philadelphia, San Diego, Oklahoma City, Boston, Chicago, Washington DC, Houston, Los Angeles, Madison, Omaha, Columbus, Twin Cities, Pittsburgh, New York, Kansas City, San Francisco

Source: Yardi Matrix

YARDI

Multifamily Sales Volume Has Returned to 2019 Levels with Higher Prices per Unit

Sales Volume (Billions)

Legend: ■ Gateway Markets ■ Tech Hub Markets

Categories: Q1 2019, Q2 2019, Q3 2019, Q4 2019, Q1 2020, Q2 2020, Q3 2020, Q4 2020, Q1 2021, Q2 2021, Q3 2021
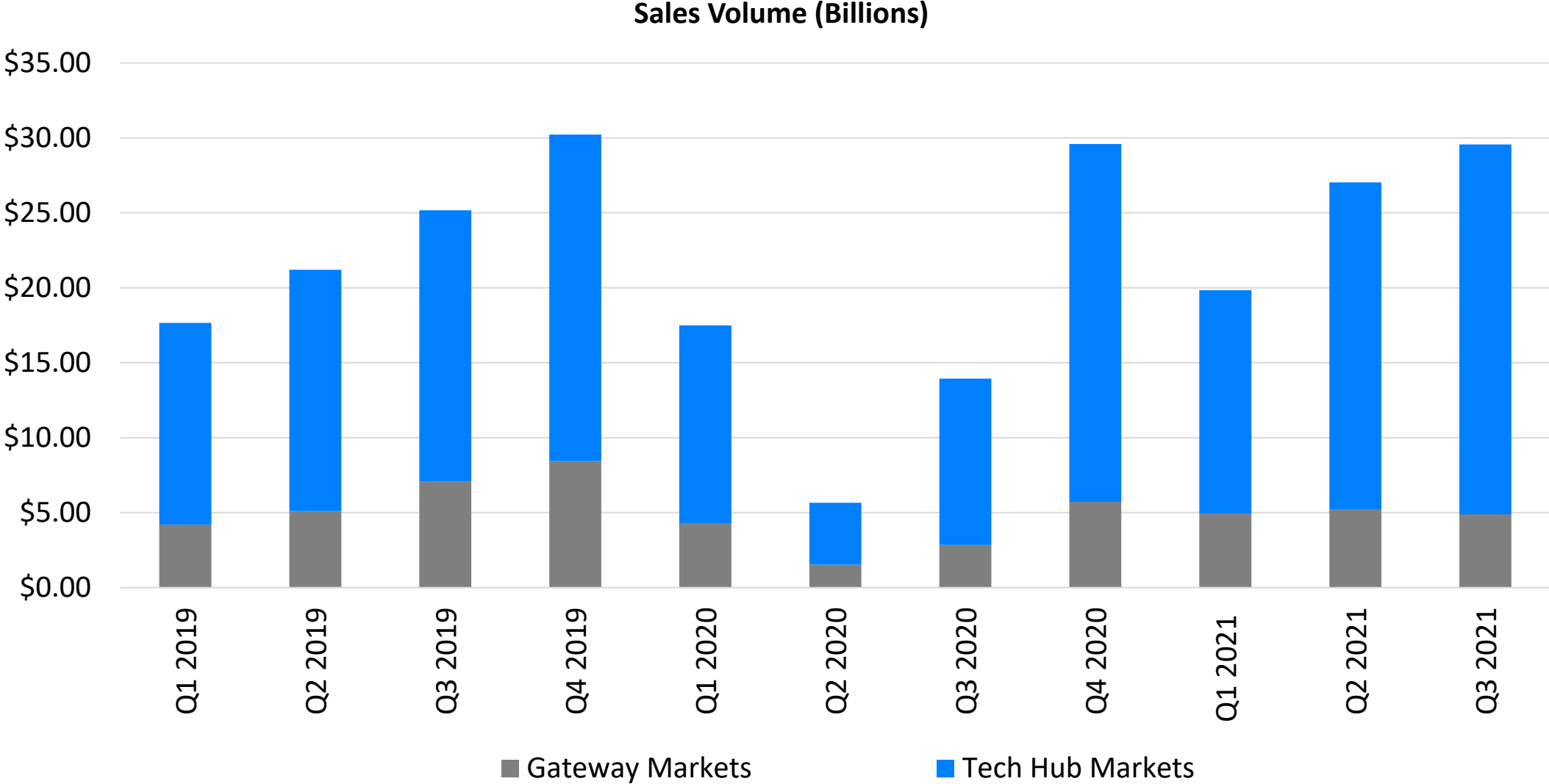
Source: Yardi Matrix

YARDI

Average Multifamily Sales Price Per Sq. Ft. Has Fluctuated in Gateway Markets Over the Past Few Months, While Tech Hub Sales Prices Continue to Grow

Avg. Sales Price Per Sq. Ft.
Indexed Jan 2020 = 100

Source: Yardi Matrix

✔YARDI
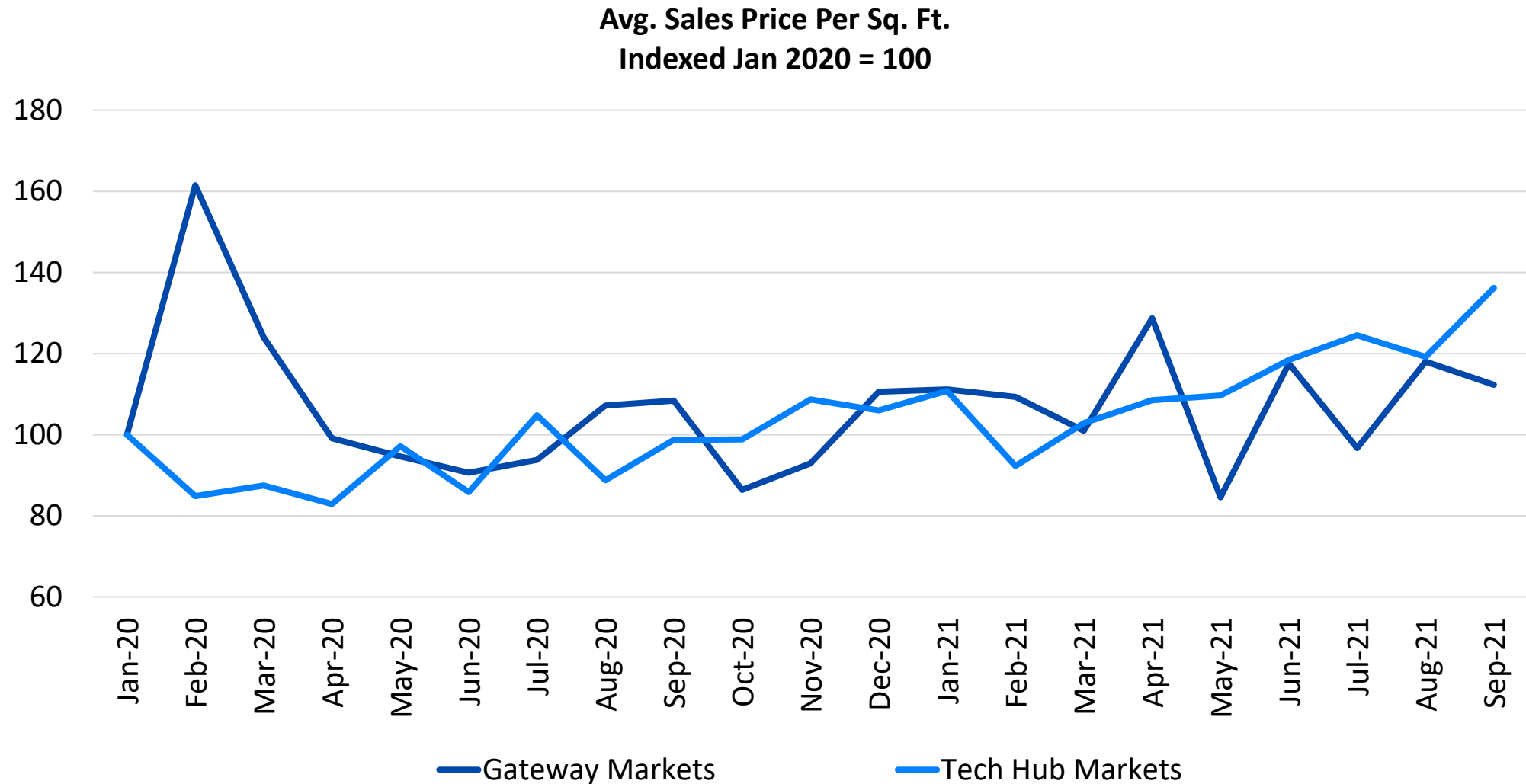
New Supply Pipeline: Where is New Supply Concentrated?

Under Construction — 899,030

Planned — 1,095,249

Prospective — 2,441,285
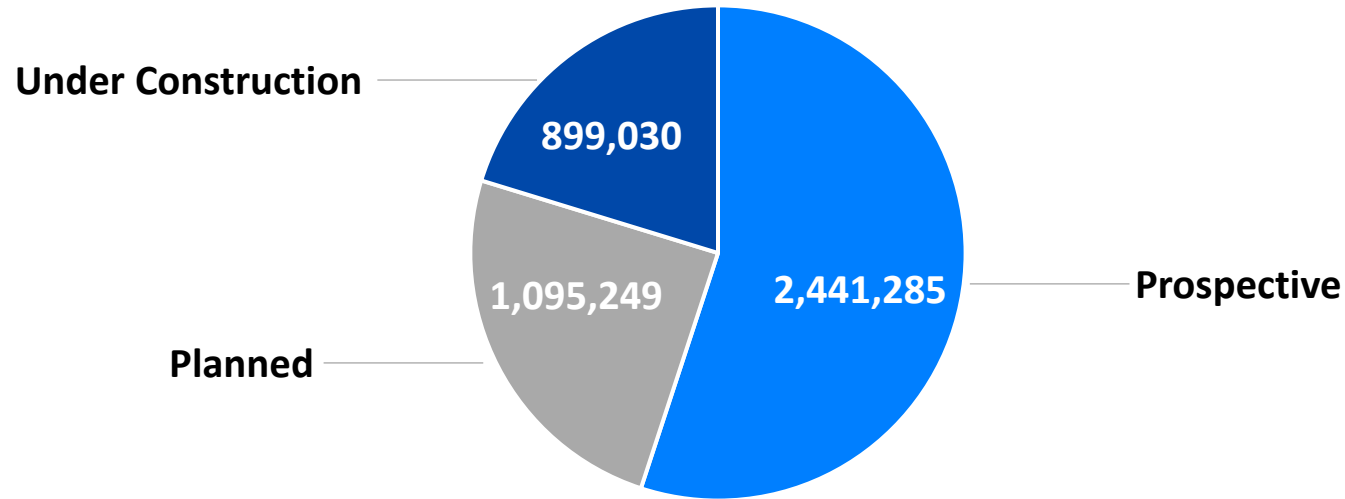
Top 10 Markets	Units	UC as a % of Existing Stock
Huntsville	5,671	15.6%
Miami	21,446	15.2%
Austin	38,334	14.6%
Athens	2,911	12.8%
Madison	5,926	12.0%
N New Jersey	27,503	11.8%
Pensacola	4,158	11.6%
Wilmington	2,496	11.4%
NW Arkansas	4,164	11.2%
Nashville	16,003	11.1%

Top 10 Markets	Units	Planned as a % of Existing Stock
Asheville	4,989	26.2%
Portland, ME	3,299	25.0%
Miami	32,531	23.0%
N New Jersey	51,298	22.0%
El Paso	10,812	20.2%
Chicago - Urban	37,075	20.0%
Fort Lauderdale	21,556	19.9%
White Plains	12,269	17.0%
Los Angeles - Metro	31,211	16.2%
Wilmington	3,534	16.1%

Top 10 Markets	Units	Prospective as a % of Existing Stock
Miami	99,811	70.7%
SW Florida Coast	44,912	58.4%
Boise	12,512	54.5%
Wilmington	10,930	49.8%
San Fran Peninsula	54,781	43.2%
Raleigh - Durham	61,581	36.8%
Orlando	83,595	35.6%
Pensacola	12,595	35.1%
Queens	35,646	34.2%
Bay Area - South Bay	42,630	32.2%

Source: Yardi Matrix

YARDI

Tech Hubs Are Forecasted to Have the Highest Number of Deliveries on a Percent of Stock Basis

Forecasted New Unit Deliveries 2021-2026 (Thousands) - Percentages Denote Avg Annual Growth as a % of Stock

Market	Growth		Market	Growth
Dallas-Ft Worth	3.0%		Chicago	1.6%
Houston	2.5%		Salt Lake City	4.9%
Austin	6.2%		Columbus	2.0%
Washington DC	2.6%		San Diego	1.9%
Phoenix	4.1%		Kansas City	2.2%
Los Angeles	2.9%		Las Vegas	1.9%
Atlanta	2.6%		Portland	2.0%
Orlando	4.9%		Colorado Springs	5.7%
Charlotte	5.4%		Omaha	2.7%
Seattle	3.7%		Manhattan	0.7%
Denver	3.2%		Huntsville	5.8%
San Francisco	3.3%		Madison	4.2%
Miami	6.1%		Indianapolis	1.0%
Twin Cities	3.3%		Boise	6.9%
Tampa	3.2%		Savannah	3.2%
Raleigh	4.2%		Pittsburgh	1.3%
Philadelphia	2.2%		Albuquerque	2.0%
Nashville	4.8%		Oklahoma City	1.0%
Boston	2.5%		Grand Rapids	1.1%
			Tulsa	0.7%

Legend: ■ Gateway Markets ■ Tech Hub Markets

Source: Yardi Matrix

YARDI

Most Tech Hub Markets Are Likely to Remain Balanced Despite Large Pipelines

Market	Historical 3-Yr Avg. Net Absorption as a % of Stock	Projected 3-Yr Avg. Completions as a % of Stock	Difference	Market	Historical 3-Yr Avg. Net Absorption as a % of Stock	Projected 3-Yr Avg. Completions as a % of Stock	Difference
Denver	4.5%	3.0%	1.5%	Pittsburgh	1.1%	1.3%	-0.2%
Portland	3.1%	1.6%	1.5%	Philadelphia	1.9%	2.3%	-0.4%
Grand Rapids	2.1%	1.0%	1.1%	Tampa	2.9%	3.4%	-0.5%
Tulsa	1.6%	0.6%	1.0%	Salt Lake City	4.5%	5.0%	-0.5%
Indianapolis	1.6%	1.1%	0.5%	Minneapolis	2.6%	3.3%	-0.7%
Savannah - Hilton Head	3.6%	3.1%	0.5%	**Miami**	**3.9%**	**4.6%**	**-0.7%**
Las Vegas	2.2%	1.8%	0.4%	**Washington DC**	**1.8%**	**2.6%**	**-0.7%**
Atlanta	2.7%	2.3%	0.4%	Houston	1.4%	2.3%	-0.9%
San Diego	2.1%	1.7%	0.4%	Colorado Springs	3.2%	4.3%	-1.1%
Kansas City	2.3%	1.9%	0.4%	Phoenix	3.1%	4.2%	-1.1%
Oklahoma City	1.4%	1.1%	0.3%	Omaha	1.6%	2.9%	-1.3%
Chicago	**1.7%**	**1.6%**	**0.1%**	**Los Angeles**	**1.5%**	**2.8%**	**-1.3%**
Dallas	3.0%	2.9%	0.1%	**New York**	**0.6%**	**2.0%**	**-1.4%**
Columbus	2.3%	2.2%	0.1%	Charlotte	4.2%	5.6%	-1.4%
Nashville	4.0%	3.9%	0.1%	Madison	3.3%	4.8%	-1.5%
Raleigh-Durham	3.6%	3.6%	0.0%	Austin	4.2%	6.2%	-2.0%
Boston	**2.7%**	**2.7%**	**0.0%**	Orlando	2.9%	5.1%	-2.2%
Seattle	3.6%	3.6%	0.0%	**San Francisco**	**1.2%**	**3.6%**	**-2.4%**
Boise	5.7%	5.8%	-0.1%	Huntsville	2.0%	6.0%	-4.0%
Albuquerque	1.7%	1.8%	-0.2%				

Gateway markets are bolded
Source: Yardi Matrix

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Tech Hub Markets Are Forecasted to Have the Most Rent Growth This Year...

Market	YOY Rent Growth Year-End 2021	Occupancy Year-End 2021	YOY Rent Growth Year-End 2022	Occupancy Year-End 2022	Market	YOY Rent Growth Year-End 2021	Occupancy Year-End 2021	YOY Rent Growth Year-End 2022	Occupancy Year-End 2022
Las Vegas	22.8%	96.4%	7.8%	96.0%	**Miami**	**16.2%**	**96.1%**	**7.5%**	**96.2%**
Tampa	22.6%	96.1%	5.0%	96.3%	Savannah	16.1%	95.8%	3.5%	95.9%
Phoenix	21.4%	96.4%	6.8%	96.2%	Orlando	16.1%	95.6%	6.7%	95.3%
Raleigh	20.1%	95.2%	5.9%	95.1%	Denver	15.6%	95.3%	5.7%	95.4%
Charlotte	20.0%	95.6%	5.1%	96.0%	Colorado Springs	15.2%	96.7%	3.7%	96.4%
Austin	18.6%	94.6%	4.9%	94.7%	Grand Rapids	14.9%	97.0%	3.7%	96.8%
Boise	18.4%	98.0%	4.6%	97.2%	Seattle	14.8%	95.1%	4.2%	96.2%
Nashville	17.6%	95.3%	5.2%	95.1%	Oklahoma City	14.8%	93.9%	5.5%	94.1%
Albuquerque	17.1%	96.8%	4.2%	96.4%	Portland	14.5%	96.2%	5.4%	96.1%
Atlanta	16.8%	96.1%	5.0%	95.9%	Dallas - Ft Worth	14.4%	94.9%	3.6%	95.9%

Sorted by YOY Rent Growth Year-End 2021. Gateway markets are bolded
Source: Yardi Matrix

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While Gateway Markets Are Forecasted to Have the Least, But Still Significant Rent Growth
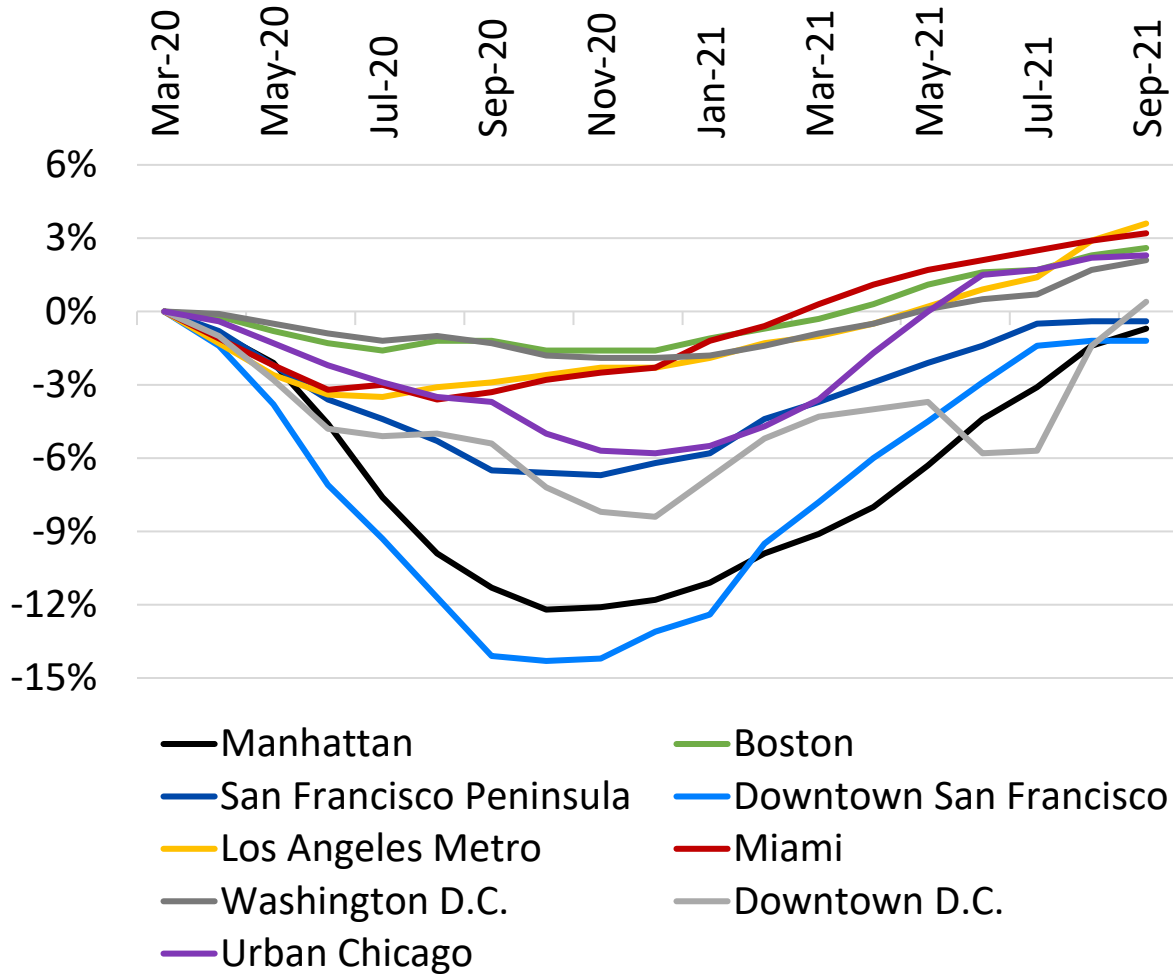
Market	YoY Rent Growth Year-End 2021	Occupancy Year-End 2021	YoY Rent Growth Year-End 2022	Occupancy Year-End 2022	Market	YoY Rent Growth Year-End 2021	Occupancy Year-End 2021	YoY Rent Growth Year-End 2022	Occupancy Year-End 2022
Salt Lake City	14.3%	97.0%	7.9%	96.6%	Indianapolis	9.1%	95.1%	4.2%	95.0%
Manhattan	**13.6%**	**94.8%**	**4.5%**	**95.9%**	Columbus	8.5%	95.6%	4.2%	95.1%
San Diego	12.8%	97.2%	7.5%	97.2%	**Los Angeles**	**8.4%**	**97.1%**	**5.6%**	**97.1%**
Tulsa	12.7%	95.2%	3.4%	95.0%	Kansas City	7.9%	95.1%	3.8%	95.2%
Huntsville	12.3%	96.8%	6.0%	95.9%	**San Francisco**	**7.0%**	**95.0%**	**6.9%**	**97.0%**
Washington DC	**10.4%**	**94.9%**	**3.1%**	**95.6%**	Madison	6.3%	97.2%	4.6%	96.9%
Boston	10.3%	95.6%	2.8%	95.7%	Pittsburgh	5.9%	95.9%	2.8%	95.2%
Houston	9.8%	93.1%	4.2%	92.8%	Omaha	5.3%	95.8%	4.1%	96.0%
Chicago	**9.7%**	**95.7%**	**4.3%**	**95.1%**	Twin Cities	4.2%	96.9%	3.0%	96.7%
Philadelphia	9.5%	97.1%	3.3%	96.9%					

Gateway Markets Have Begun to Recover, But at a Slower Pace in Downtowns

Change in Occupancy Since March 2020

Change in New Rents Since March 2020

Legend (both charts):
— Manhattan — Boston
— San Francisco Peninsula — Downtown San Francisco
— Los Angeles Metro — Miami
— Washington D.C. — Downtown D.C.
— Urban Chicago

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Rents Continue to Soar in Tech Hub Markets

Change in Occupancy Since March 2020
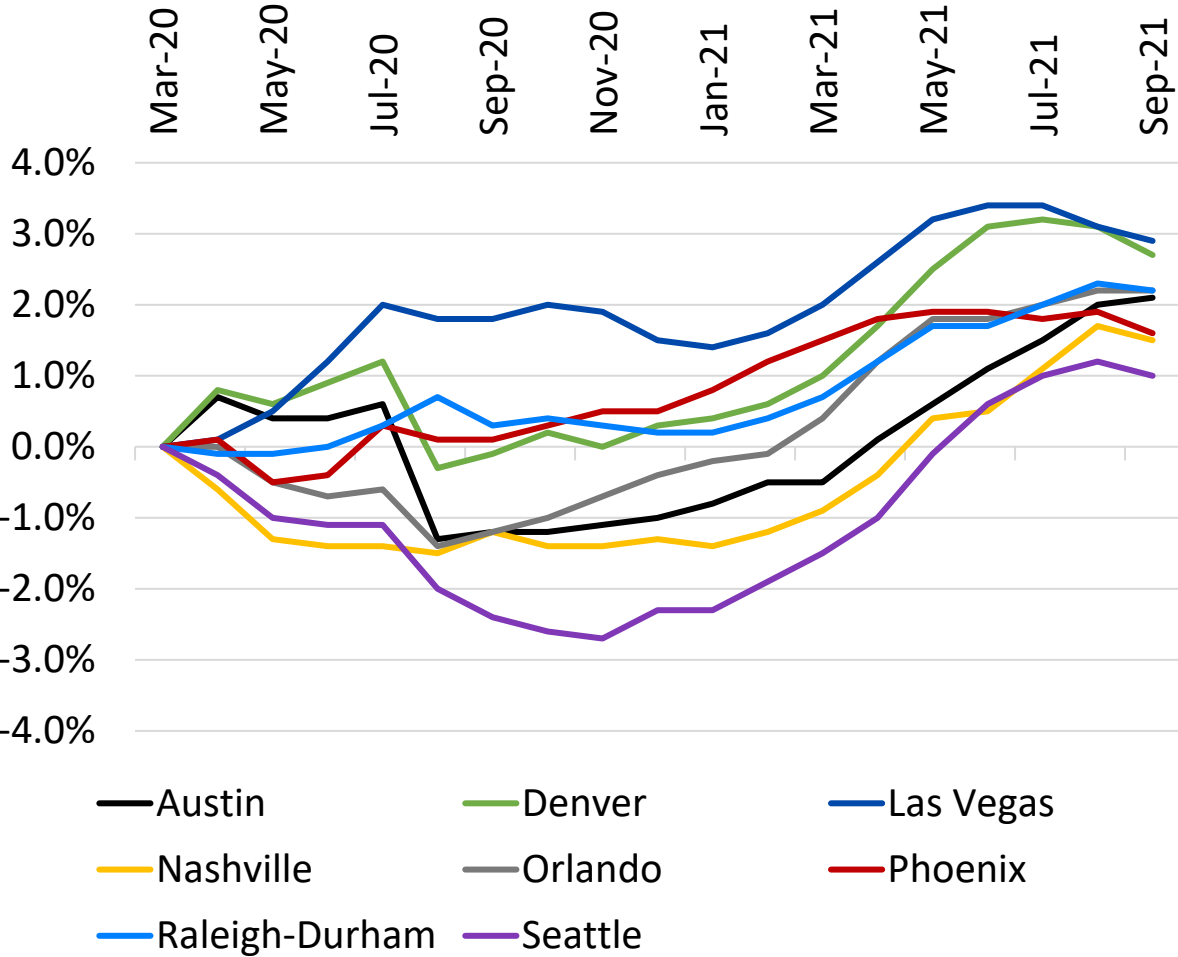
Change in Rents Since March 2020

Legend: Austin, Denver, Las Vegas, Nashville, Orlando, Phoenix, Raleigh-Durham, Seattle
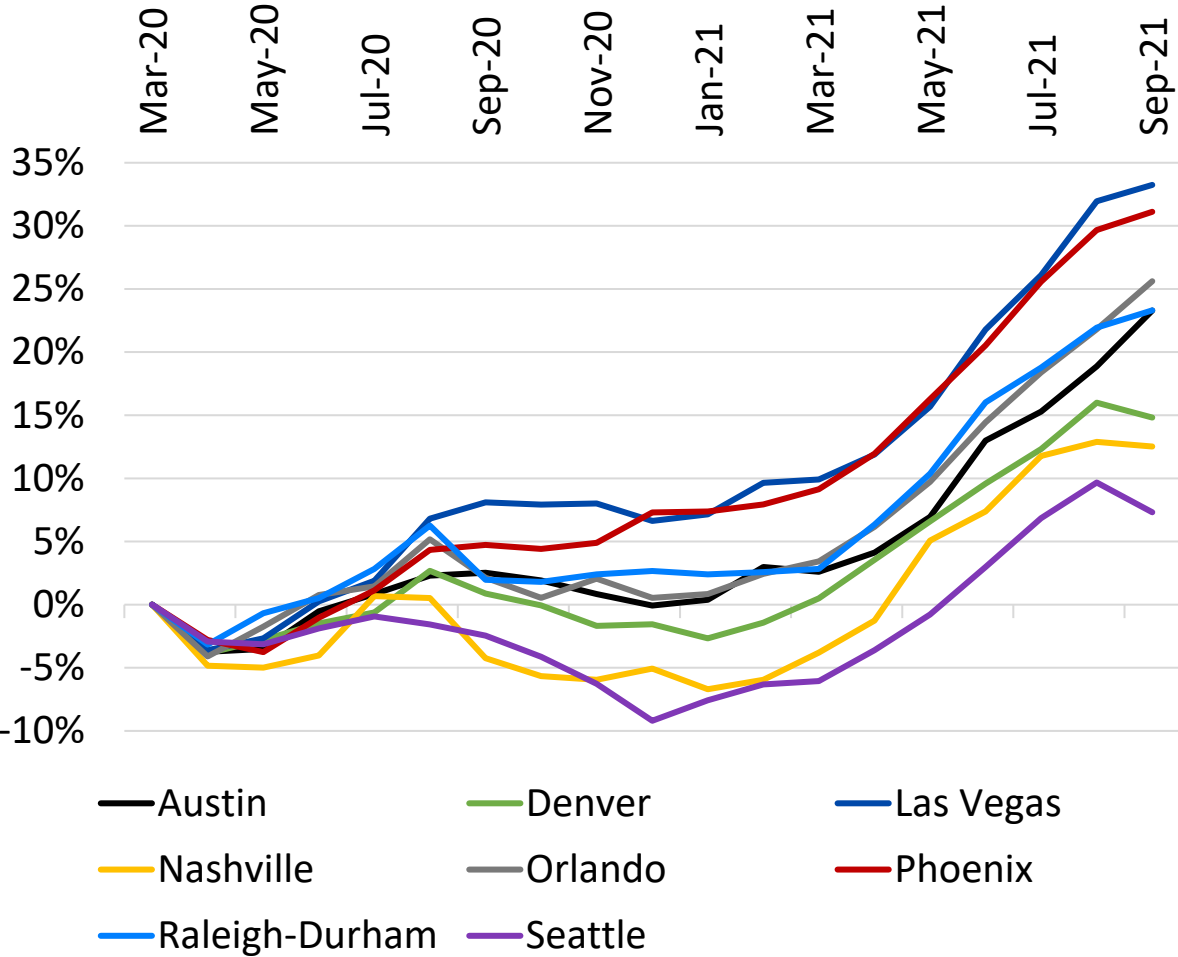
*Improvement Ranking Class A & B
Source: Yardi Matrix Expert
Matrix Expert data is based upon aggregated and anonymized Yardi transaction activity

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Urban Cores Continue to Recover

Year-Over-Year Rent Growth

Legend: Suburban — Urban

Year-Over-Year Occupancy Change

Legend: Suburban — Urban

Source: Yardi Matrix
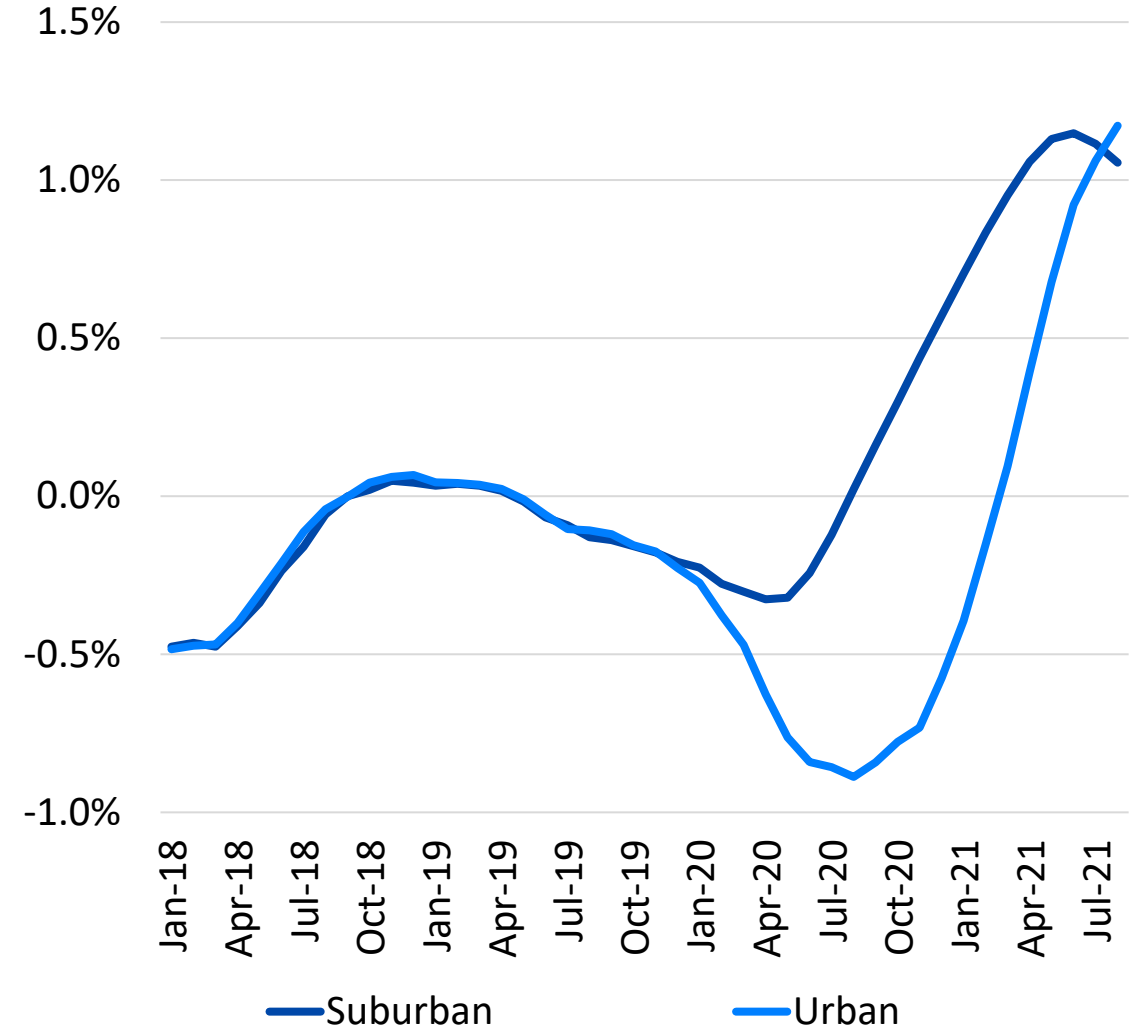
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Suburbs Have Outperformed Their Urban Counterparts in the Majority of Markets

Difference Between Suburban and Urban Rent Growth Sept 2020-Sept 2021

Legend:
- Gateway Markets
- Tech Hub Markets
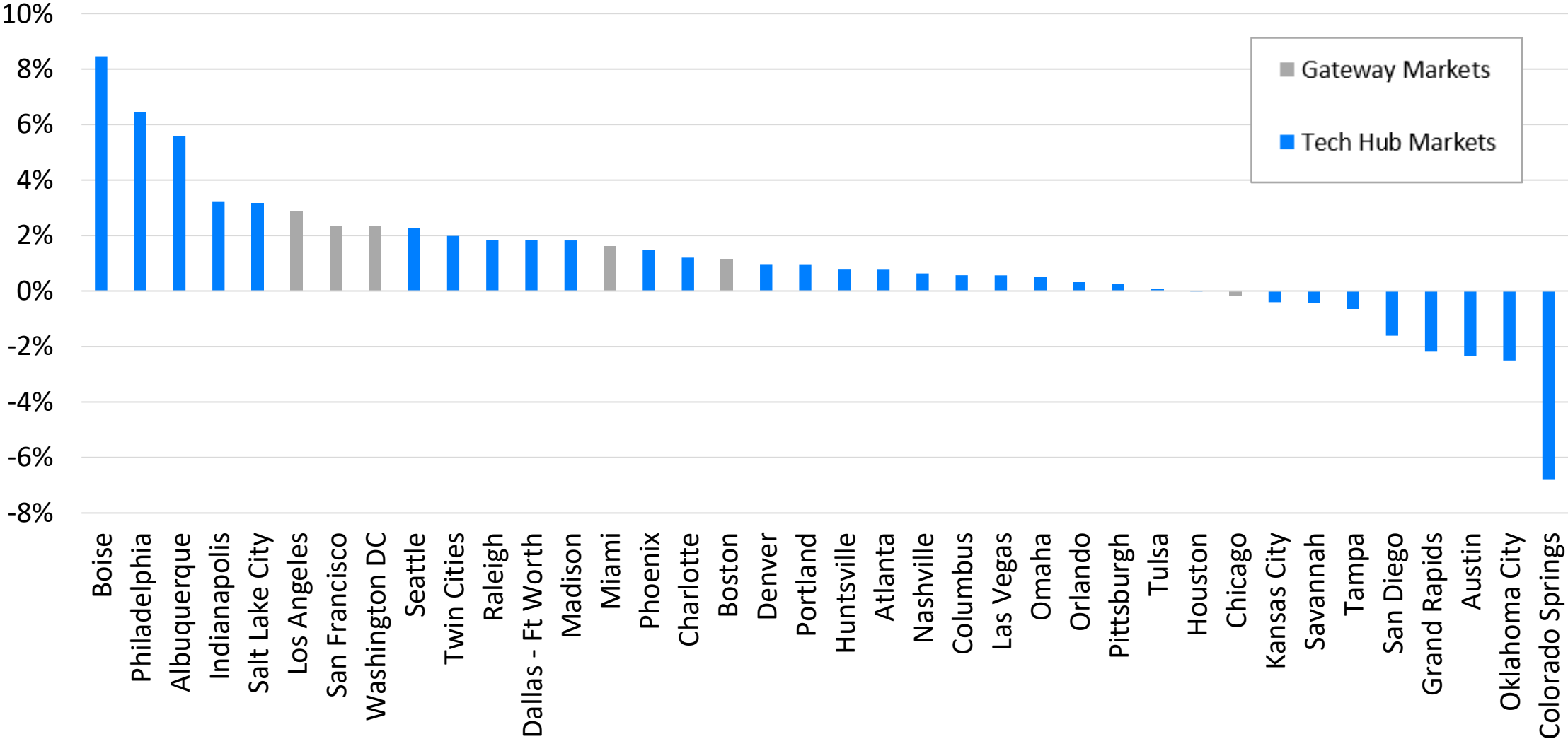
New York excluded as it does not have a suburban component
Source: Yardi Matrix

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New Supply to Remain Concentrated in Urban Areas

Geographic Distribution of New Supply (Units)
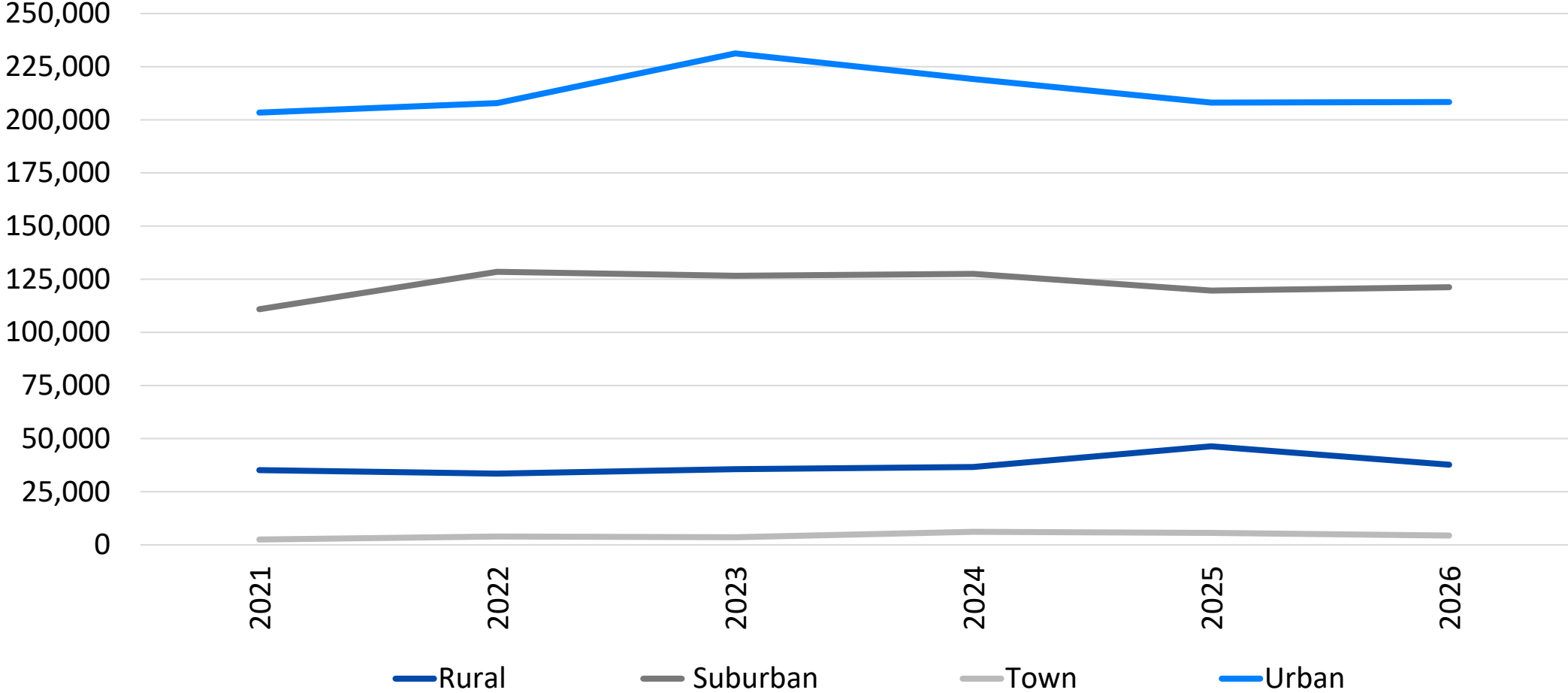
YARDI

Introduction to our Investment Risk Analysis

Holistic view on how to analyze markets and factors to consider when making investment decisions

The Investment Risk Analysis combines our previously released national analyses of **political risk**, **infrastructure** and **environmental risk**

Interactive workbook available for Yardi Matrix clients

Source: Yardi Matrix

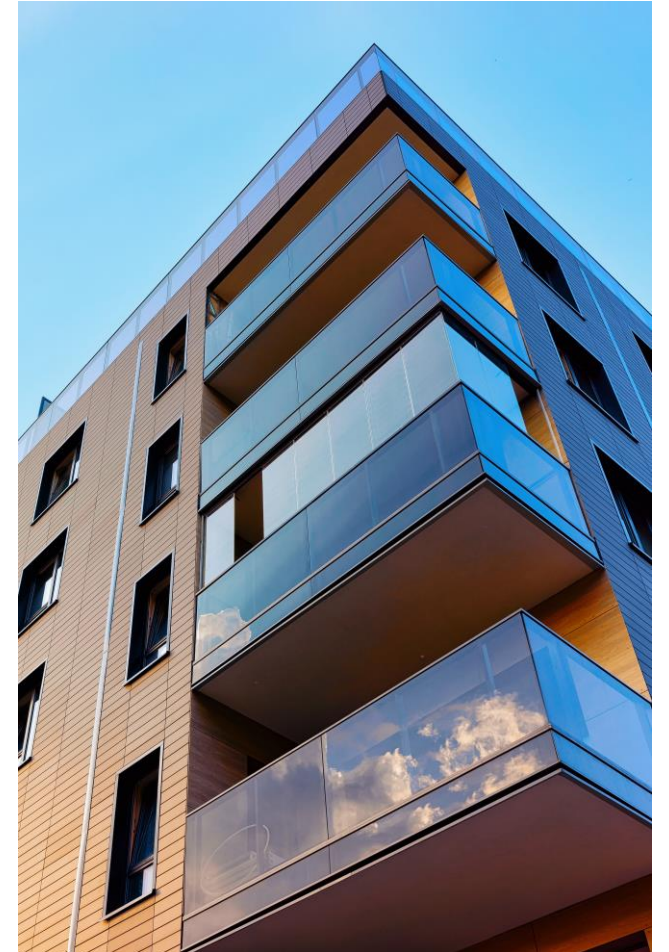| Weighting	25%			25%				25%			25%			100%
	FUNDAMENTALS			INFRASTRUCTURE				POLITICAL RISK			ENVIRONMENTAL RISK			
MARKET	Historical Supply/Demand	Quality of Tech Labor Market	Affordability	Water	Energy	Transportation	Schools	Philosophy Toward Affordability	Urban Policing/Security	Tax Burden/Pension Liability	Natural Disasters	Pollution (Air & Water)	State & Local Government	OVERALL RATING
Los Angeles	1	2	1	1	1	3	1	0.5	2	2	1	2	2	1.50
San Francisco	1	3	1	1	1	1	2	0.5	1	1	1	3	3	1.52
Houston	1	1	2	1	1	3	2	3	1	3	1	1	1	1.60
Tulsa	1	1	3	2	2	1	1	3	1	2	2	1	1	1.63
Chicago	1	1	2	3	3	1	1	2	1	1	3	2	2	1.75
Dallas	1	2	2	2	1	2	3	2	2	2	2	1	1	1.75
Miami	1	1	2	1	1	3	3	3	1	2	1	3	2	1.75
Washington D.C.	1	3	1	3	2	2	1	0.5	3	2	1	1	3	1.79
San Diego	2	2	1	2	1	2	1	1	3	1	1	3	3	1.79
Las Vegas	1	1	2	2	3	2	2	2	1	2	3	1	2	1.81
New York	1	3	1	3	1	1	1	1	2	2	1	3	3	1.85
Nashville	1	2	2	3	3	2	2	2	2	2	2	1	1	1.88
Albuquerque	2	1	3	1	3	1	1	3	1	2	3	1	2	1.88
Atlanta	3	2	2	2	3	3	1	2	1	2	2	1	2	1.90
Savannah	1	2	3	2	2	2	2	2	2	2	1	2	2	1.92
Seattle	1	3	1	3	2	2	2	1	1	3	2	2	3	1.92
Portland	1	3	1	2	2	3	2	0.5	1	2	3	2	2	1.94
Orlando	2	2	2	1	1	3	1	2	2	3	2	3	1	1.96
Colorado Springs	3	2	3	1	2	1	2	2	1	1	2	2	2	2.02
Huntsville	2	3	3	3	2	1	1	3	1	1	2	2	2	2.02
Boston	1	3	1	3	3	2	2	1	3	2	1	2	3	2.04
Philadelphia	3	3	2	1	1	1	2	2	2	1	2	2	3	2.06
Kansas City	2	1	3	2	2	3	3	3	1	2	3	1	2	2.06
Denver	1	3	1	2	2	2	2	2	3	2	2	2	2	2.08
Omaha	3	1	3	2	3	1	2	3	2	1	3	1	1	2.08
Pittsburgh	2	2	3	1	2	2	2	3	3	1	2	2	3	2.10
Columbus	2	1	2	3	2	1	1	3	2	2	2	1	3	2.10
Phoenix	2	2	2	1	3	3	3	2	2	2	2	2	2	2.13
Austin	1	3	2	2	2	3	3	3	2	2	1	3	1	2.13
Tampa	3	2	2	3	1	2	2	2	3	3	1	3	1	2.17
Charlotte	1	2	3	3	3	3	3	3	1	3	2	1	1	2.17
Oklahoma City	3	1	3	3	1	3	3	3	1	3	2	2	2	2.23
Minneapolis	1	2	2	3	3	3	3	2	1	2	3	2	3	2.25
Grand Rapids	1	3	3	2	1	1	3	3	2	2	3	2	2	2.27
Raleigh-Durham	1	3	2	3	3	2	2	3	3	3	2	2	2	2.38
Indianapolis	3	1	3	3	3	2	3	3	2	3	2	2	2	2.44
Salt Lake City	2	3	2	2	2	3	3	3	3	3	3	1	2	2.46
Boise	3	3	2	3	3	3	3	3	3	3	3	2	2	2.75
Madison	3	2	3	3	3	1	3	3	3	3	3	3	3	2.79

Investment Risk
Base Case Scenario:
Ranked by Score

LEGEND
Red = High Investment Risk
Yellow = Mild Investment Risk
Green = Low Investment Risk

Source: Yardi Matrix

YARDI

| Weighting | 25% | | | 25% | | | | 25% | | | 25% | | | 100% |
| MARKET | FUNDAMENTALS | | | INFRASTRUCTURE | | | | POLITICAL RISK | | | ENVIRONMENTAL RISK | | | |
	Historical Supply/Demand	Quality of Tech Labor Market	Affordability	Water	Energy	Transportation	Schools	Philosophy Toward Affordability	Urban Policing/ Security	Tax Burden/ Pension Liability	Natural Disasters	Pollution (Air & Water)	State & Local Government	OVERALL RATING
New York	1	3	1	3	1	2	1	1	2	2	1	3	3	1.85
Los Angeles	1	2	1	1	1	3	1	0.5	2	2	1	2	2	1.50
Chicago	1	1	2	3	3	1	1	2	1	1	3	2	2	1.75
Dallas	1	2	2	2	1	2	3	2	2	2	2	1	1	1.75
Houston	1	1	2	1	3	3	2	3	1	3	1	1	1	1.60
Philadelphia	3	3	2	1	1	1	2	2	3	1	2	2	3	2.06
Washington D.C.	1	3	2	3	2	2	1	0.5	3	3	1	1	3	1.79
Atlanta	3	2	2	2	3	3	1	2	1	2	2	1	2	1.90
San Francisco	1	3	1	1	1	1	2	0.5	1	3	3	3	3	1.52
Boston	1	3	1	3	3	2	2	1	3	2	1	2	3	2.04
Phoenix	2	2	2	1	3	3	3	2	2	1	3	2	2	2.13
Miami	1	1	1	1	1	3	3	3	2	2	1	3	2	1.75
Denver	1	3	1	2	2	2	3	2	3	2	2	2	3	2.08
Tampa	3	2	2	3	1	2	2	2	3	3	1	3	1	2.17
Minneapolis	1	2	2	3	3	3	3	2	2	1	3	2	3	2.25
San Diego	2	2	1	2	1	2	1	1	3	1	3	3	3	1.79
Orlando	2	2	2	1	1	3	1	2	2	3	2	3	1	1.96
Seattle	1	3	1	3	2	2	1	1	1	3	2	2	3	1.92
Salt Lake City	2	3	2	2	3	3	3	3	3	3	1	1	3	2.46
Charlotte	1	2	3	3	3	3	3	3	1	3	2	1	1	2.17
Portland	1	3	1	2	2	3	2	0.5	1	3	3	2	2	1.94
Indianapolis	3	1	3	3	3	3	3	3	2	2	2	2	2	2.44
Las Vegas	1	1	2	2	3	2	2	2	2	2	3	1	2	1.81
Pittsburgh	2	2	3	1	2	2	3	3	3	1	3	3	1	2.10
Kansas City	2	1	3	2	1	3	3	3	3	2	3	1	2	2.06
Austin	1	3	2	2	2	3	3	3	2	2	1	3	1	2.13
Columbus	2	1	3	3	2	1	1	2	2	2	3	1	3	2.10
Raleigh-Durham	1	3	2	3	3	3	3	3	3	3	2	2	2	2.38
Nashville	1	2	2	3	3	2	2	3	2	2	2	1	1	1.88
Grand Rapids	1	3	3	2	1	1	3	3	2	2	3	3	2	2.27
Oklahoma City	3	1	3	3	1	2	1	1	3	3	2	2	2	2.23
Omaha	3	1	3	2	3	1	3	3	2	2	3	1	2	2.08
Albuquerque	2	3	3	1	1	1	3	3	1	2	3	2	2	1.88
Tulsa	1	2	2	3	2	2	2	3	2	2	2	2	2	1.63
Boise	3	3	2	3	3	3	3	3	3	3	3	2	2	2.75
Colorado Springs	3	3	2	1	3	1	1	2	1	1	2	3	2	2.02
Savannah	1	2	3	2	1	2	2	3	2	2	1	2	2	1.92
Madison	3	3	3	3	3	3	3	3	3	3	3	3	3	2.79
Huntsville	2	3	3	3	2	1	1	3	1	1	2	2	2	2.02

Investment Risk Base Case Scenario: Ranked by Population Size

LEGEND
Red = High Investment Risk
Yellow = Mild Investment Risk
Green = Low Investment Risk

Source: Yardi Matrix

YARDI

Investment Risk Base Case Scenario: Ranked by Score

Weighting	40% FUNDAMENTALS			40% INFRASTRUCTURE				10% POLITICAL RISK			10% ENVIRONMENTAL RISK			100%
MARKET	Historical Supply/Demand	Quality of Tech Labor Market	Affordability	Water	Energy	Transportation	Schools	Philosophy Toward Affordability	Urban Policing/Security	Tax Burden/Pension Liability	Natural Disasters	Pollution (Air & Water)	State & Local Government	OVERALL RATING
Los Angeles	1	2	1	1	1	3	1	0.5	2	2	1	2	2	1.45
San Francisco	1	3	1	1	1	1	2	0.5	1	1	1	3	3	1.48
Houston	1	1	2	1	1	3	2	3	1	3	1	1	1	1.57
Tulsa	1	1	3	2	2	1	1	3	1	2	2	1	1	1.60
Miami	1	1	1	1	1	3	3	3	1	2	1	3	2	1.60
San Diego	2	2	1	2	1	2	1	1	3	1	1	3	3	1.67
Chicago	1	1	2	3	3	1	1	2	1	1	3	2	2	1.70
New York	1	3	1	3	1	2	1	1	2	2	1	3	3	1.77
Dallas	1	2	2	2	1	2	3	2	2	2	2	1	1	1.80
Las Vegas	1	1	2	2	3	2	2	2	1	2	3	1	2	1.80
Albuquerque	2	1	3	1	3	1	1	3	1	2	3	1	2	1.80
Washington D.C.	1	3	1	3	2	2	1	0.5	3	2	1	1	3	1.82
Orlando	2	2	2	1	1	3	1	2	2	3	2	3	1	1.83
Seattle	1	3	1	3	2	2	1	1	1	3	2	2	3	1.87
Denver	1	3	1	2	2	1	3	2	3	2	2	2	3	1.93
Portland	1	3	1	2	2	3	2	0.5	1	3	3	2	2	1.95
Savannah	1	2	3	2	2	2	2	3	2	2	1	2	1	1.97
Columbus	2	1	3	3	2	1	1	3	2	2	3	1	3	1.97
Nashville	1	2	2	3	3	2	2	2	2	2	2	1	1	2.00
Philadelphia	3	3	2	1	1	1	2	2	3	1	2	2	3	2.00
Boston	1	3	1	3	3	2	2	1	3	2	1	2	3	2.07
Pittsburgh	2	2	3	1	2	2	2	3	3	1	2	2	2	2.07
Kansas City	2	1	3	2	1	3	3	3	1	2	3	1	2	2.10
Atlanta	3	2	2	2	3	3	1	2	1	1	2	1	2	2.13
Colorado Springs	3	3	2	1	3	1	2	2	1	1	2	3	2	2.13
Huntsville	2	3	3	3	2	1	1	3	1	1	2	2	2	2.13
Omaha	3	1	3	2	3	1	2	3	2	2	3	1	1	2.13
Grand Rapids	1	3	3	2	1	1	3	3	2	2	3	3	3	2.13
Tampa	3	2	2	3	1	2	2	2	3	3	1	3	1	2.17
Austin	1	3	2	2	2	3	3	3	2	2	1	3	1	2.20
Phoenix	2	2	2	1	3	3	3	2	2	1	3	2	2	2.20
Oklahoma City	3	1	3	3	1	2	3	3	1	3	2	2	2	2.27
Minneapolis	1	2	2	3	3	3	3	2	1	2	3	2	3	2.30
Raleigh-Durham	1	3	2	3	3	2	2	3	3	3	2	2	2	2.30
Charlotte	1	2	3	3	3	3	3	3	1	3	2	1	1	2.37
Salt Lake City	2	3	2	2	2	3	3	3	3	3	3	1	2	2.43
Indianapolis	3	1	3	3	3	2	3	3	2	3	2	2	2	2.50
Madison	3	2	3	3	3	1	3	3	3	3	3	3	3	2.67
Boise	3	3	2	3	3	3	3	3	3	3	3	2	2	2.80

LEGEND

Red = High Investment Risk
Yellow = Mild Investment Risk
Green = Low Investment Risk

Source: Yardi Matrix

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Weighting	40%			40%				10%			10%			100%
	FUNDAMENTALS			INFRASTRUCTURE				POLITICAL RISK			ENVIRONMENTAL RISK			
MARKET	Historical Supply/Demand	Quality of Tech Labor Market	Affordability	Water	Energy	Transportation	Schools	Philosophy Toward Affordability	Urban Policing/Security	Tax Burden/Pension Liability	Natural Disasters	Pollution (Air & Water)	State & Local Government	OVERALL RATING
New York	1	3	1	3	1	2	1	1	2	2	1	3	3	1.77
Los Angeles	1	2	1	1	1	3	1	0.5	2	2	1	2	2	1.45
Chicago	1	1	2	3	3	1	1	2	1	1	3	2	2	1.70
Dallas	1	2	2	2	1	2	3	2	2	2	2	1	1	1.80
Houston	1	1	2	1	1	3	2	3	1	3	1	1	1	1.57
Philadelphia	3	3	2	1	1	1	2	2	3	1	2	2	3	2.00
Washington D.C.	1	3	1	3	2	2	1	0.5	3	2	1	1	3	1.82
Atlanta	3	2	2	2	3	3	1	2	1	1	2	1	2	2.13
San Francisco	1	3	1	1	1	1	2	0.5	1	1	1	3	3	1.48
Boston	1	3	1	3	3	2	2	1	3	2	1	2	3	2.07
Phoenix	2	2	2	1	3	3	3	2	2	1	3	2	2	2.20
Miami	1	1	1	1	1	3	3	3	1	2	1	3	2	1.60
Denver	1	3	1	2	2	1	3	2	2	2	2	2	3	1.93
Tampa	3	2	2	3	1	2	2	2	3	3	1	3	1	2.17
Minneapolis	1	2	2	3	3	3	3	2	1	2	3	2	3	2.30
San Diego	2	2	1	2	1	2	1	1	3	1	1	3	3	1.67
Orlando	2	2	2	1	1	3	1	2	2	3	2	3	1	1.83
Seattle	1	3	1	3	2	2	1	1	1	3	2	2	3	1.87
Salt Lake City	2	3	2	2	3	3	3	3	3	3	3	1	2	2.43
Charlotte	1	2	3	3	3	3	3	3	1	3	2	1	1	2.37
Portland	1	3	1	2	2	3	2	0.5	1	3	3	2	2	1.95
Indianapolis	3	1	3	3	3	2	3	3	2	3	2	2	2	2.50
Las Vegas	1	1	2	2	3	2	2	2	1	2	1	1	2	1.80
Pittsburgh	2	2	3	1	2	2	2	3	3	1	2	2	2	2.07
Kansas City	2	1	3	2	1	3	3	3	1	2	3	1	2	2.10
Austin	1	3	2	2	2	3	3	3	2	2	1	3	1	2.20
Columbus	2	1	3	3	2	1	1	3	2	2	3	1	3	1.97
Raleigh-Durham	1	3	2	3	3	2	2	3	3	3	2	2	2	2.30
Nashville	1	2	2	3	3	2	2	2	2	2	2	1	1	2.00
Grand Rapids	1	3	3	2	1	1	3	3	2	2	3	3	2	2.13
Oklahoma City	3	1	3	3	1	2	3	3	1	3	2	2	2	2.27
Omaha	3	1	3	2	3	1	2	3	2	2	3	1	1	2.13
Albuquerque	2	1	3	1	3	1	1	3	2	2	3	1	2	1.80
Tulsa	1	1	3	2	1	2	1	3	1	2	2	1	1	1.60
Boise	3	3	2	3	3	3	3	3	3	3	3	2	2	2.80
Colorado Springs	3	3	2	1	3	1	2	2	1	1	2	3	2	2.13
Savannah	1	2	3	2	2	2	2	3	2	2	1	2	1	1.97
Madison	3	2	3	3	3	1	3	3	3	3	3	3	3	2.67
Huntsville	2	3	3	3	2	1	1	3	1	1	2	2	2	2.13

Investment Risk
Base Case Scenario:
Ranked by Population Size

LEGEND
Red = High Investment Risk
Yellow = Mild Investment Risk
Green = Low Investment Risk

Source: Yardi Matrix

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Investment Risk Factors

FUNDAMENTALS

- **Historical Supply/Demand**
- **Quality of Tech Labor Market**
- **Affordability**

INFRASTRUCTURE

- **Water**
  - Average cost of water utility bill by state
  - State water pressure based on use and availability
  - Water supply condition, quantity and quality
  - Condition of existing water infrastructure
  - Efforts and/or funding to improve current conditions for future growth
- **Energy**
  - State average residential price of electricity
  - State average residential price of natural
  - State average price of regular gasoline
  - Total number of power outages statewide 2008–2017
  - Average duration of power outages statewide 2008–2017
  - Total number of people affected by power outages statewide 2008–2017
  - Conditions of existing energy infrastructure and projects/funding for growth
- **Transportation**
  - Percent of major roads in urban area in poor condition
  - State rank based on average commute time
  - AllTransit Performance Score
  - Percent of bridges in state that are deficient
  - Airport rank based on number of scheduled flight departures
  - Efficiency of airport based on percent of on-time departure/arrival flights
  - International flights and airline hubs at major metro airport
  - Efforts to improve and expand road infrastructure
  - Efforts to improve and expand transit infrastructure
  - Ability of airport to grow its footprint and projects to increase operations

- **Schools**
  - Score for state public school systems
  - State school spending rank vs. state school system quality ranking
  - State high school graduation rate
  - Charter school enrollment share in city
  - Overall student-teacher ratio metro school district
  - School district's capacity, enrollment trends and projects/funding for future needs

POLITICAL RISK

- **Philosophy Towards Affordability**
- **Urban Policing/Security**
- **Tax Burden/Pension Liability**

ENVIRONMENTAL RISK

- **Natural Disasters**
  - Hurricanes, tornadoes, tropical storms
  - Wildfires
  - Rising sea levels
- **Pollution**
  - Air quality
  - Toxic chemicals
  - Water pollution
  - Pesticides
- **State & Local Government**
  - State hazard mitigation plans
  - Cost of billion-dollar weather and climate disasters to state
  - City's climate adaptation readiness
  - City tax incentives for renewable energy

SINGLE-FAMILY RENTALS
IN BUILD-TO-RENT COMMUNITIES

# The Single-Family Rental Industry Benefitting From Strong Fundamentals

- Current demand for single-family homes is stronger than ever, largely fueled by:
  - Record-low mortgage interest rates
  - People wanting more space and privacy coming out of the pandemic, particularly for those working from home

- But, there are constraints to purchasing:
  - Continued price appreciation outpacing wage growth
  - Long-standing limited supply at the entry-level
  - Millennials reaching home-buying age, but cannot afford the down payment due to student debt burdens

- More demand for homes, with constraints to purchasing, is fueling greater demand for single-family rentals:
  - Single-family rental stock (new and existing) grew 18% from 2008-2018 to approx. 15.5 million units, accounting for about one-third of all rental units nationwide – *Harvard Joint Center for Housing Studies' Rental Housing 2020* report
  - Build-to-rent homes currently make up 5-10% of new home stock – U.S. Census Bureau
  - John Burns Real Estate Consulting identified 43 announcements since the start of 2020 totaling more than $30 billion in capital that are targeting single-family rentals and build-to-rent in the U.S.

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Single-Family Rentals in Build-to-Rent Communities
Now a Part of the Yardi Matrix Data Service!

Yardi Matrix Single-Family Rental Coverage Map
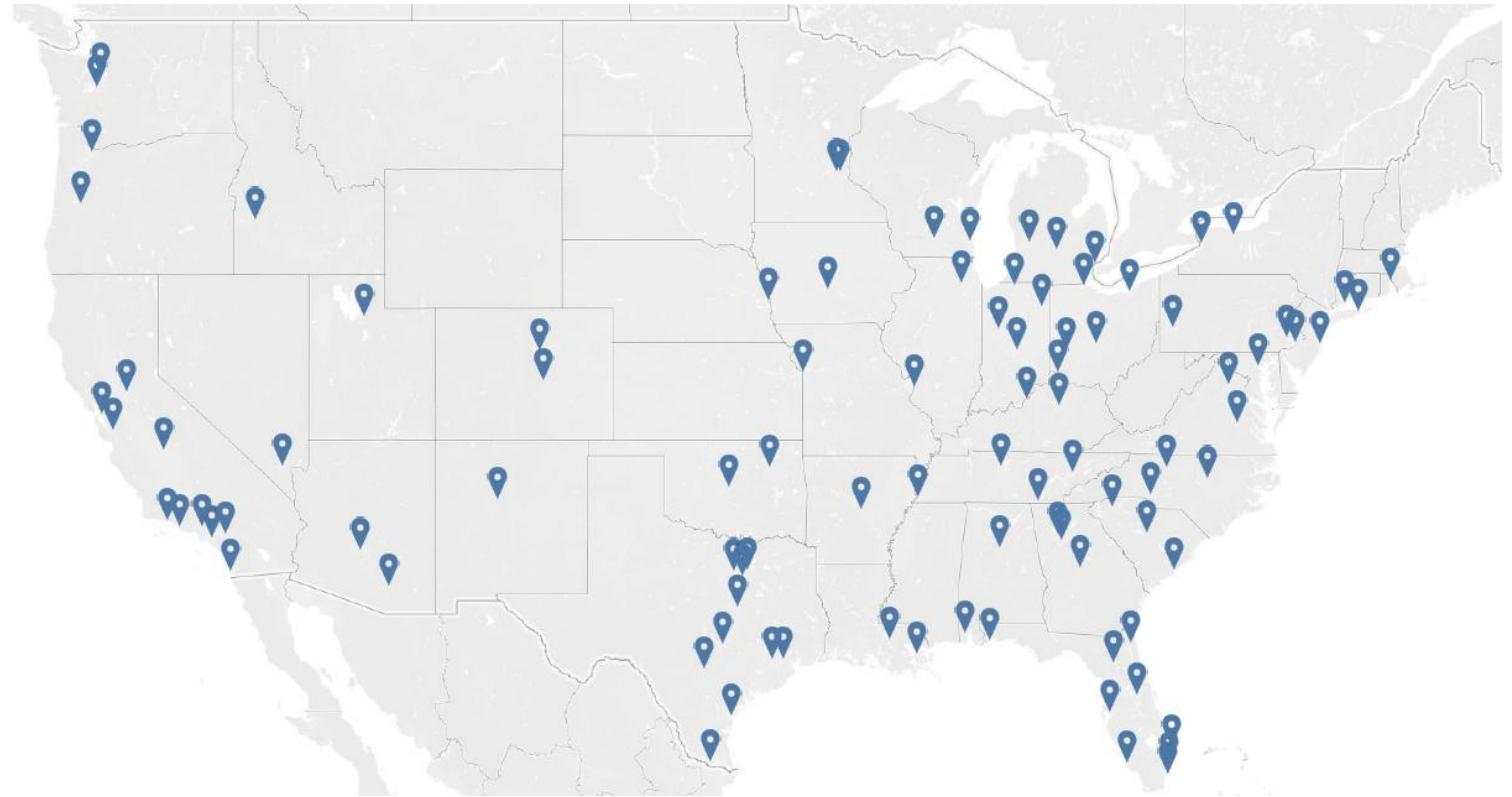
Status	Properties	Units
Completed	615	78,780
Under Construction	113	14,001
Planned	46	8,041
Prospective	48	12,557
TOTALS	**822**	**113,379**

*Yardi Matrix coverage include single-family rentals and built-to-rent over 50 units. Complete explanation of our definition is available upon request

Source: Yardi Matrix

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Single-Family Rental Fundamentals Are Strong

Year-over-Year Rent Growth

Year-over-Year Occupancy Change

Source: Yardi Matrix

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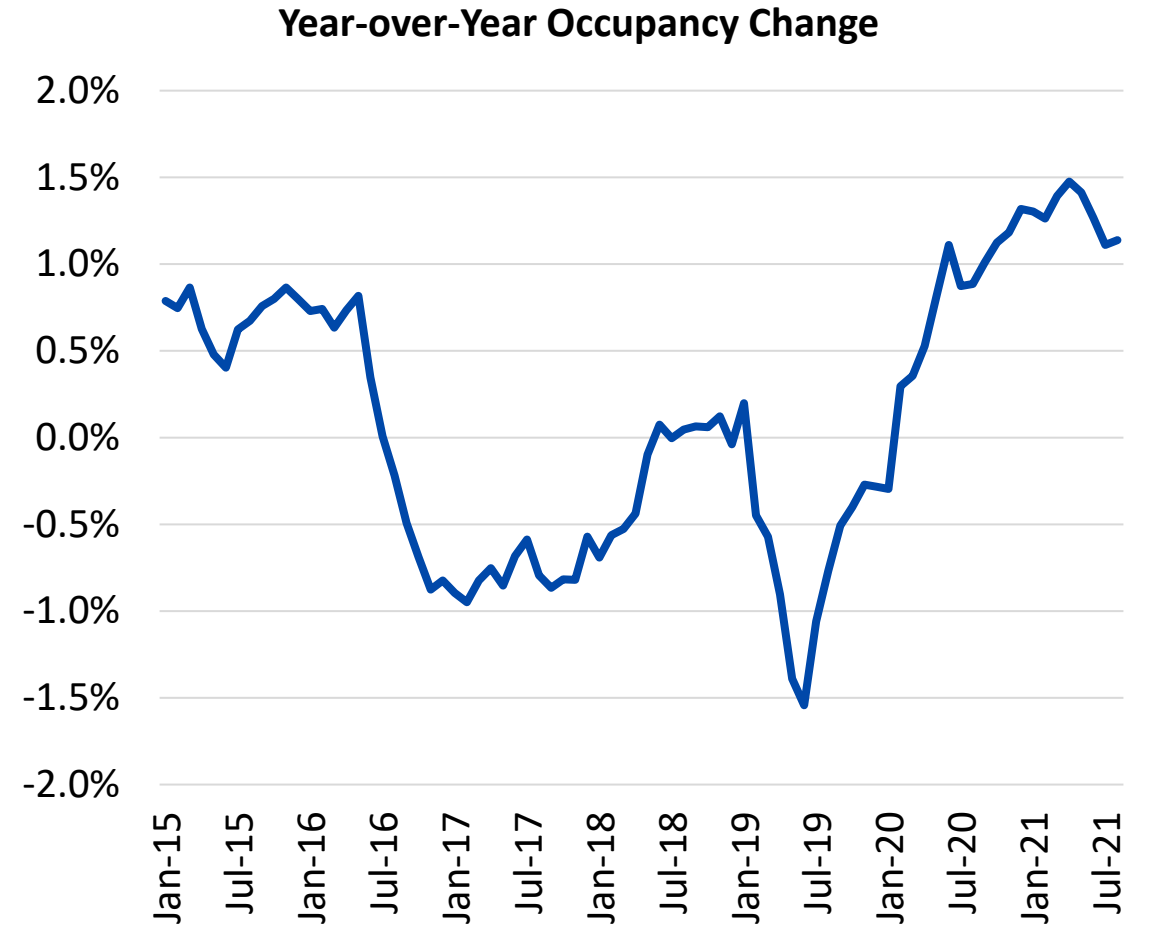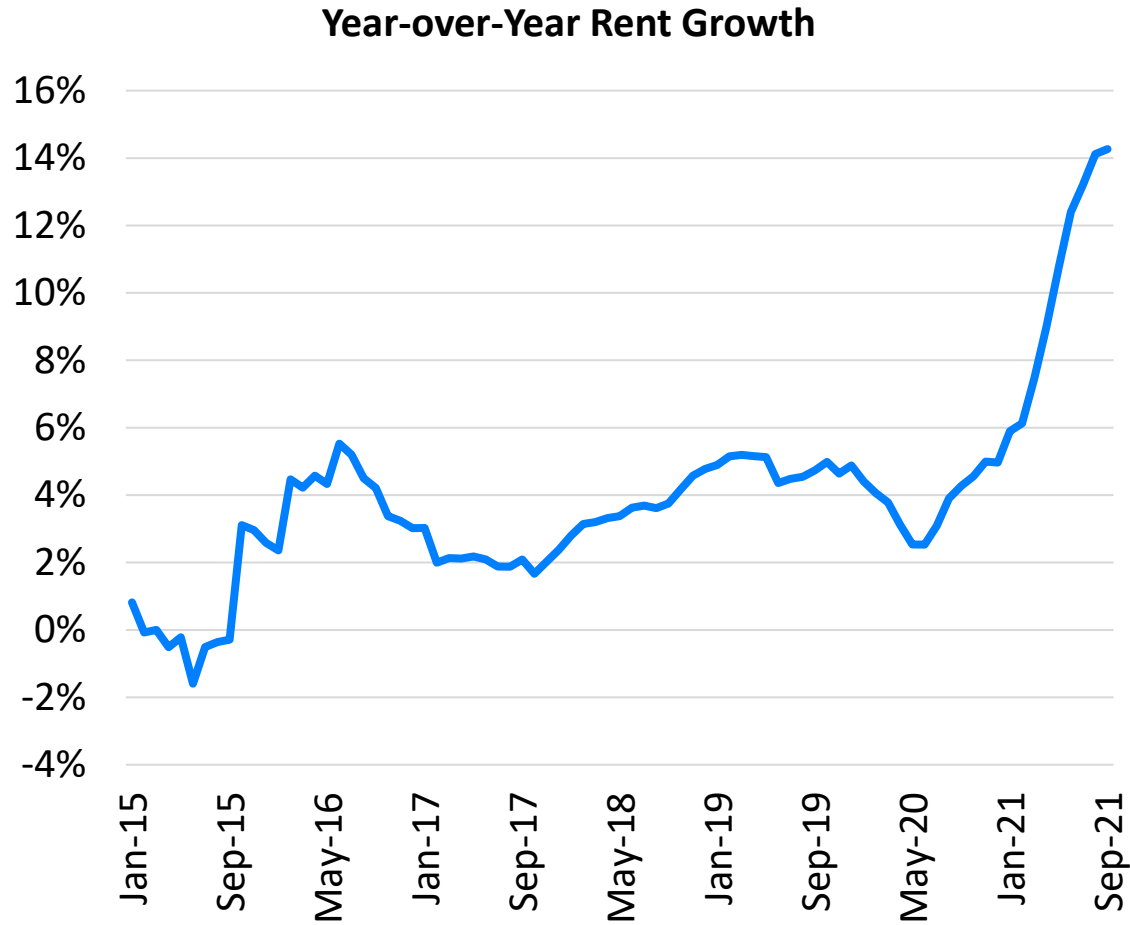
Single-Family Rent Growth is Solid in All 30 Markets

September Year-over-Year Rent Growth

Market	Growth
Tampa	38.8%
Miami	32.7%
Phoenix	26.0%
Atlanta	20.9%
Austin	20.5%
Las Vegas	18.6%
Denver	18.5%
Baltimore	16.2%
Cleveland	14.9%
Inland Empire	14.8%
Dallas	14.3%
Detroit	14.3%
San Diego	12.4%
Columbus	11.9%
Chicago	11.5%

September Year-over-Year Rent Growth

Market	Growth
Lansing	11.4%
Orange County	11.0%
Toledo	10.9%
Seattle	10.7%
Los Angeles	10.2%
Indianapolis	10.0%
Houston	9.2%
Twin Cities	9.2%
San Antonio	9.0%
Philadelphia	8.7%
Portland	8.6%
Orlando	7.5%
Sacramento	6.5%
Pittsburgh	6.1%
Kansas City	3.0%

Source: Yardi Matrix

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However, There is More Disparity in Occupancy

August Year-over-Year Change in Occupancy

City	Change
Houston	9.9%
San Antonio	6.2%
Indianapolis	3.4%
Austin	3.2%
Tampa	3.1%
Miami	2.7%
Twin Cities	2.4%
Orange County	2.2%
Baltimore	2.1%
Kansas City	2.1%
Portland	1.8%
Phoenix	1.7%
Dallas	1.7%
Denver	1.4%
Columbus	1.2%

August Year-over-Year Change in Occupancy

City	Change
Toledo	1.2%
Detroit	0.9%
Chicago	0.6%
San Diego	0.5%
Las Vegas	0.3%
Inland Empire	0.1%
Lansing	0.1%
Seattle	0.1%
Los Angeles	0.0%
Philadelphia	0.0%
Sacramento	-0.6%
Pittsburgh	-0.7%
Cleveland	-0.8%
Orlando	-1.1%
Atlanta	-3.2%

Source: Yardi Matrix

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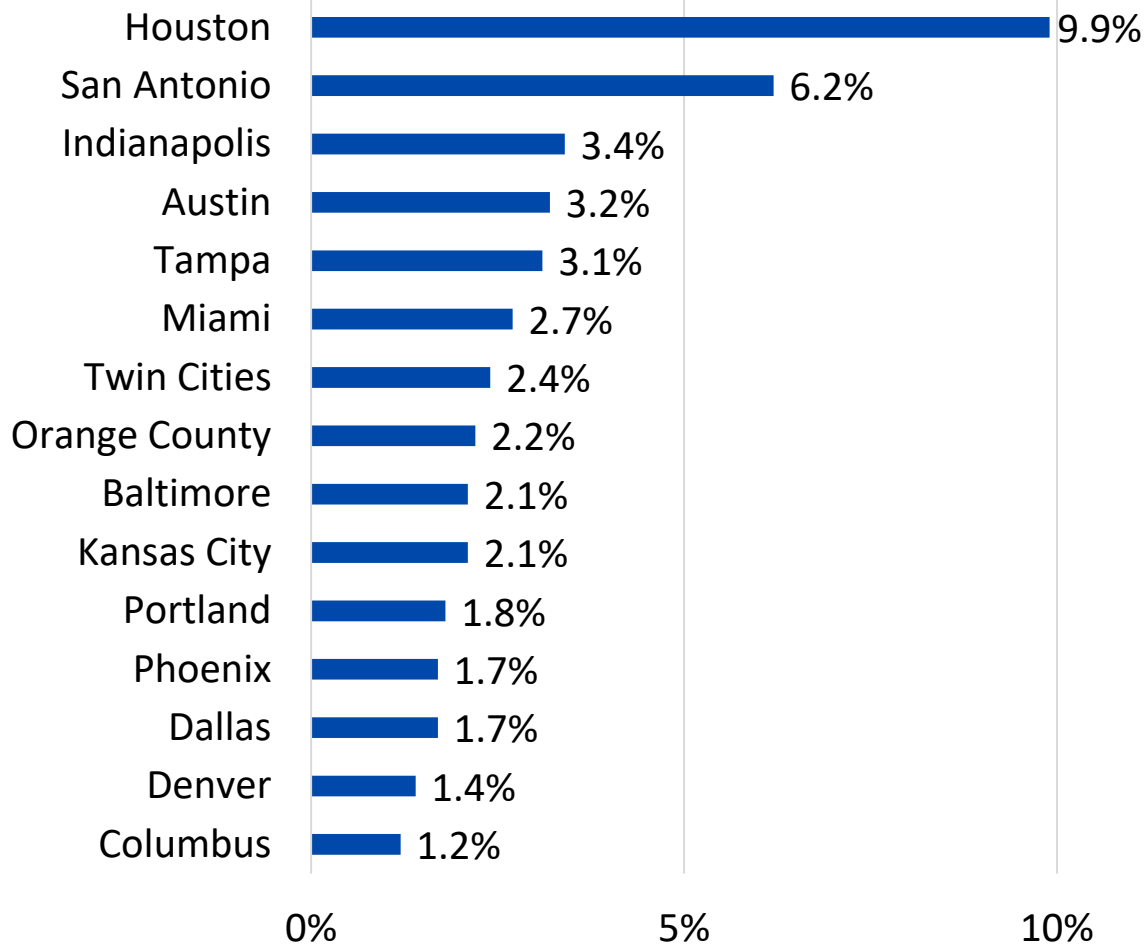
In Many Markets, Rents per Sq. Ft. Are Higher for Suburban Multifamily Rentals than Single-Family Rentals

September 2021 Rent per Sq. Ft.
Suburban Multifamily vs. Single-Family Rentals
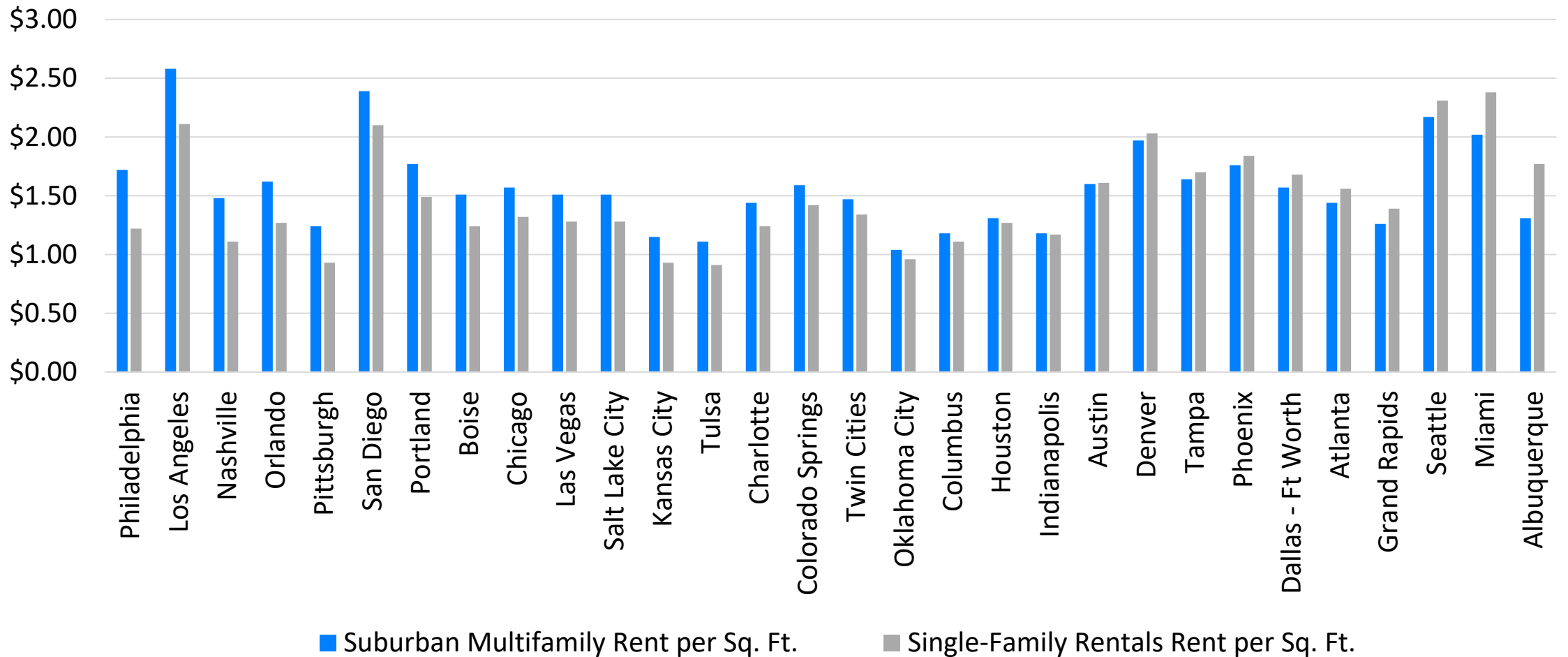
■ Suburban Multifamily Rent per Sq. Ft.   ■ Single-Family Rentals Rent per Sq. Ft.

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Yardi Matrix Insights From Other Sectors

SELF STORAGE

STUDENT HOUSING

OFFICE

INDUSTRIAL

Yardi Matrix House View – October 2021

- INFLATION- The economy continues to expand, but headwinds are growing
  - Supply chain disruptions, a tighter-than-ever labor market and a handful of other factors are leading to growing inflation
  - We don't think inflation is transitory, but it won't become hyperinflation either

- MIGRATION- The pandemic has further fueled a general spreading of the population as remote work offered more flexibility
  - People are taking their incomes to lower-cost cities and suburbs to improve their welfare
  - This redeployment of people is fueling exceptional multifamily fundamentals nationwide
  - Rent growth is astounding in most markets, but it won't last – most markets are starting to see some deceleration
  - Tech hub markets have been performing the best, however most gateway markets are still seeing positive fundamentals

- REGULATION- The nature of work has created a spreading of the population, so we have begun to think more broadly about market selection
  - We have consolidated our previous work on political risk, infrastructure risk and environmental risk into a comprehensive investment risk analysis discussion

- Many market disruptions combined with demographic and lifestyle changes have led to the emergence of the single-family rental segment, which we now track in our multifamily database

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THANK YOU

Feel free to contact me with any questions

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APPENDIX:
INVESTMENT RISK METHODOLOGY

Fundamentals Methodology

Historical Supply/Demand Balance

<u>Calculation of oversupply/undersupply (9-year period):</u>
Annual Absorption – Annual Deliveries

Calculated the total oversupply/undersupply for an 8-year period & a 1-year period as a percentage of existing stock. For the markets experiencing an undersupply – the absolute value of the deficit was used.

Color Ranking:

- Green (3) = net surplus/deficit of units as a % of existing stock is 0 – 100 bps

- Yellow (2) = net surplus of units as a % of existing stock is 101 – 200 bps –OR– net deficit of units as a % of existing stock is 101 – 200 bps

- Red (1) = net surplus of units as a % of existing stock is 201+ bps –OR– deficit of units as a % of existing stock is 201+ bps

8-year supply/demand imbalance = 40% of overall score
1-year supply/demand imbalance = 60% of overall score

Ex: A market was rated yellow for the eight-year category & green for the one-year: (2 0.4) + (3 * 0.6) = 2.6 – final rating would be yellow*

Quality of Tech Labor Market

Based on six different categories (five for the emerging markets). Each market in each category was given a green (3), yellow (2) or red (1) score and the scores were weighted as follows:

1. Employment Growth vs. Unemployment Rate (tech hubs – 16%, emerging – 19%)

2. 2021 CBRE Tech Talent Analysis – *only included in ranking of tech hub markets (tech hubs – 16%)*

3. Percentage of Workforce in Tech (tech hubs – 16%, emerging – 19%)

4. Percentage of Workforce in Office-Using Sectors (tech hubs – 16%, emerging – 19%)

5. Educational Attainment (tech hubs – 16%, emerging – 19%)

6. Projected Job Growth (tech hubs – 20%, emerging – 24%)

Affordability

Based on a survey conducted by the Joint Center for Housing Studies (JCHS) of Harvard University.

We based our ratings on the following statistics:

- % of cost-burdened (paying from 30% - 50% of their income) middle income households (earning $45,000 - $75,000 per year)

- % of severely cost-burdened (more than 50% of their income) middle income households (earnings $45,000 - $75,000 per year)

Markets were then color categorized corresponding to the percentage of middle-income renters that were cost burdened or severely cost burdened.

<u>Rating Scale – Moderately Burdened</u>
- Green (3) = 0.0% - 19.9%
- Yellow (2) = 20.0% - 30.0%
- Red (1) = 30.0%

<u>Rating Scale – Severely Burdened</u>
- Green (3) = 0.0% - 2.9%
- Yellow (2) = 3.0% - 5.0%
- Red (1) = 5.0% +

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Infrastructure Methodology

To rank a market's quality of infrastructure we analyzed four different categories based on numerous different factors for each:

TRANSPORTATION

SCHOOLS

ENERGY

WATER

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Infrastructure Methodology: Water

The markets were rated in terms of their school infrastructure based on <u>five different categories</u>, which included several different statistics and qualitative research.

<u>*Water statistics used:*</u>

- Average cost of water utility bill by state
- State water pressure based on use and availability

<u>*Qualitative research used:*</u>

- Water supply condition, quantity and quality:
    if nothing is done, can the water supply handle growth?
- Condition of existing water infrastructure:
    if nothing is done, can it handle growth?
- Efforts and/or funding to improve current conditions for future growth

---

Each market in each category was given a green (3), yellow (2) or red (1) score and the scores were weighted as follows:

Average score of all the following categories weighted at 40%:

- Average cost of water utility bill by state
- State water pressure based on use and availability

The following category was weighted at 60%:

- Water supply condition, quantity and quality:
    if nothing is done, can the water supply handle growth?
- Condition of existing water infrastructure:
    if nothing is done, can it handle growth?
- Efforts and/or funding to improve current conditions for future growth

The resulting total weighted average ("overall score") for each market were assigned a final color based on the all scores divided into 33rd and 66th percentiles as follows:
   Green = overall water scores in the top 66th percentile
   Yellow = overall water scores between the 33rd and 66th percentiles
   Red = overall water scores in the bottom 33rd percentile

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Infrastructure Methodology: Energy

The markets were rated in terms of their school infrastructure based on <u>seven different categories</u>, which included several different statistics and qualitative research.

<u>*Energy statistics used:*</u>

- State average residential price of electricity (cents per kilowatt-hour)
- State average residential price of natural gas (dollars per thousand cubic feet)
- State average price of regular gasoline (dollars per gallon)
  Total number of power outages statewide 2008 through 2017
- Average duration of power outages statewide 2008 through 2017
- Total number of people affected by power outages statewide 2008 through 2017

<u>*Qualitative research used:*</u>

- Conditions of existing energy infrastructure and projects and/or funding for energy infrastructure growth

Each market in each category was given a green (3), yellow (2) or red (1) score and the scores were weighted as follows:

Average score of all the following categories weighted at 40%:

- State average residential price of electricity in cents per kilowatthour
- State average residential price of natural gas in dollars per thousand cubic feet
- State average price of regular gasoline in dollars per gallon
- Total number of power outages statewide 2008 through 2017
- Average duration of power outages statewide 2008 through 2017
- Total number of people affected by power outages statewide 2008 through 2017

The following category was weighted at 60%:

- Conditions of existing energy infrastructure and projects and/or funding for energy infrastructure growth

The resulting total weighted average ("overall score") for each market was assigned a final color based on the all scores divided into 33rd and 66th percentiles as follows:
Green = overall water scores in the top 66th percentile
Yellow = overall water scores between the 33rd and 66th percentiles
Red = overall water scores in the bottom 33rd percentile

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Infrastructure Methodology: Transportation

The markets were rated in terms of their transportation infrastructure based on <u>eleven different categories</u>, which included several different statistics and qualitative research.

<u>*Transportation statistics used:*</u>

- <u>Road Conditions</u>: percent of major roads in urban area in poor condition
- <u>Commute</u>: state rank based on average commute time
- <u>Transit</u>: AllTransit™ Performance Score
- <u>Bridges</u>: 2018 state rank based on percent of deficient bridges
- <u>Aviation</u>: airport rank based on number of scheduled flight departures
- <u>Aviation</u>: efficiency of airport based on percent of on-time departure flights
- <u>Aviation</u>: efficiency of airport based on percent of on-time arrival flights

<u>*Qualitative research used:*</u>

- <u>Aviation</u>: international flights and airline hubs at major metro airport
- <u>Road Conditions</u>: efforts to improve and expand infrastructure
- <u>Transit</u>: efforts to improve and expand infrastructure
- <u>Aviation</u>: availability of land surrounding airport for growth, and projects underway to expand airport flight operations

Each market in each category was given a green (3), yellow (2) or red (1) score and the scores were weighted as follows:

Average score of all the following categories weighted at 40%:

- <u>Road Conditions</u>: percent of major roads in urban area in poor condition
- <u>Commute</u>: state rank based on commute time
- <u>Transit</u>: AllTransit Performance Score
- <u>Bridges</u>: 2018 state rank based on percent of deficient bridges
- <u>Aviation</u>: airport rank based on number of scheduled flight departures
- <u>Aviation</u>: efficiency of airport based on percent of on-time departure flights
- <u>Aviation</u>: efficiency of airport based on percent of on-time arrival flights
- <u>Aviation</u>: international flights and airline hubs at major metro airport

Average score of all the following categories weighted at 60%:

- <u>Road Conditions</u>: efforts to improve and expand infrastructure
- <u>Transit</u>: efforts to improve and expand infrastructure
- <u>Aviation</u>: availability of land surrounding airport for growth, and projects underway to expand airport flight operations

The resulting total weighted average ("overall score") for each market was assigned a final color based on the all scores divided into 33rd and 66th percentiles as follows:

Green = overall water scores in the top 66th percentile
Yellow = overall water scores between the 33rd and 66th percentiles
Red = overall water scores in the bottom 33rd percentile

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Infrastructure Methodology: Schools

The markets were rated in terms of their school infrastructure based on <u>six different categories</u>, which included several different statistics and qualitative research.

The largest school district in each market was focused on for the school district specific statistics and qualitative research.

<u>School statistics used:</u>

- Score for public school systems in state based on 15 quality factors and 14 safety factors
- State school spending rank vs. state school system quality ranking
- State high school graduation rate
- Charter school enrollment share in city
- Overall student-teach ratio in largest school district in city

<u>Qualitative research used:</u>

- Current capacity and utilization rate within school district and projects and/or funding to meet future needs and growth

Each market in each category was given a green (3), yellow (2) or red (1) score and the scores were weighted as follows:

Average score of all the following categories weighted at 40%:

- Score for public school systems in state based on 15 quality and 14 safety factors
- State school spending rank vs. state school system quality ranking
- County-level high school graduation rate
- Charter school options within school district and district support for local charter schools
- Overall student-teach ratio in largest school district

The following category was weighted at 60%:

- Current capacity and utilization rate within school district and projects and/or funding for future growth

The resulting total weighted average ("overall score") for each market was assigned a final color based on the all scores divided into 33rd and 66th percentiles as follows:
Green = overall water scores in the top 66th percentile
Yellow = overall water scores between the 33rd and 66th percentiles
Red = overall water scores in the bottom 33rd percentile

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Political Risk Methodology

Tax Burden/Pension Liability

Tax Burden -
Based on the state rank score of each market from the Tax Foundation's 2020 State Business Tax Climate Index.

Major tax components and their weighting:
- Individual Income Tax: 30.2%
- Sales Tax: 24.0%
- Corporate Tax: 19.7%
- Property Tax: 16.6%
- Unemployment Insurance Tax: 9.5%

Pension Liability -
Unfunded pension liability data on the city level was collected through various resources including the official government city websites, comprehensive annual financial reports, and other local sources.

When city data was available it was used in place of state data

Philosophy Toward Affordability

Factors we based our ratings on:

- Rent control initiatives and laws

- Extended eviction moratoriums enacted due to the COVID-19 pandemic

- Inclusionary/exclusionary zoning policies

- Permitting and entitlement requirements

- Supply restrictions

Using the information found through this qualitative research, the market's stance on each focused topic was viewed as positively or negatively affecting the area's affordability.

*Each market was assigned a color and score. A **red color score** was assigned a value of 0.5 or 1 — differentiating the markets with stances negatively affecting affordability (E.g., rent control) that have also enacted long-term eviction moratoriums due to the pandemic by assigning it a 0.5 red score*

Urban Policing/Security Risk

The markets were rated in terms of their urban policing and security risk based on qualitative research.

Factors we based our ratings on:

- Police enforcement of public nuisances and low-level crimes

- The attitude of the local police force toward protests and maintaining general orderliness

- Public policy response to police funding

- Reform of policing policies

- Initiatives to improve police training and disciplinary process

- The public view of the police force

- Issues or events that have resulted in police officers not wanting to go to work

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Environmental Risk Methodology

Natural Disasters

The markets were rated based on the prevalence of three different natural disasters: Hurricanes| Tropical Storms| Tornadoes, Wildfires and Rising Sea Levels.

Hurricanes| Tropical Storms| Tornadoes –
The hurricane and tropical storm metric uses data from the National Oceanic and Atmospheric Administration (NOAA). We looked at the historical hurricane and tropical storms that occurred in each metro studied based on the track of each storm.

Wildfires –
The wildfire data came from Urban Land Institute's (ULI) report titled 'Firebreak Wildfire Resilience Strategies for Real Estate,' which used data adapted from Verisk. The states were ranked by the number of properties at high or extremely high risk from wildfires.

Rising Sea Levels–
The threat of rising sea levels amongst the markets was evaluated utilizing data came from ArcGIS. This data measured the cumulative changes in relative sea level from 1960 to 2018.

Pollution

The markets were rated in terms of pollution based on four different factors: Air Quality, Toxic Chemicals, Pesticides and Water Contaminants.

Air Quality –
Data was obtained from the EPA's Air Quality System Database to evaluate air quality. Specifically, we looked at the number of days per year the Air Quality Index was "unhealthy for sensitives groups" or worse, as well as the number of annual ozone days in each market.

Toxic Chemicals –
The toxic chemical metric utilizes data from the Toxics Release Inventory (TRI), an EPA program. Each market was graded based on the total pounds of toxic chemicals released into the metro's environment (inc. air, water, land and off-site releases).

Pesticides –
Using data on pesticides pollution from the National Environmental Public Health Tracking Network, created and maintained the CDC, we looked at the average rate of reported pesticide exposures per 100,000 residents in each state.

Water Pollution –
To compare water pollution across the markets, we used data from EWG's Tap Water Database on the number of contaminants in the local water that exceed recommended standards.

State & Local Government

The markets were rated for environmental risk in terms of four different type of state and local government policies and affairs:

Hazard Mitigation Plan –
Using the "State Hazard Mitigation Plans & Climate Change: Rating the States 2019 Update" report written by the Sabin Center for Climate Change Law, we factored in a state's planned efforts to prepare for natural and man-made disasters based on their State Hazard Mitigation Plans.

Cost of Weather & Climate Disasters –
To understand financial risks related to the environment, we used state-level data on the total cost of billion-dollar weather and climate disasters events per million residents available through NOAA.

Climate Adaptation Readiness –
Using the University of Notre Dame's Urban Adaptation Assessment tool, we compared the readiness of each city to adapt to climate change based on its capacity to mobilize and target adaptation investments.

Renewable Energy Tax Incentives –
We looked at the number of tax incentives each market provides for renewable energy initiatives, using information from the Database of State Incentives for Renewables and Efficiency.

Source: Yardi Matrix
*Our full methodology document is available for Matrix clients

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Investment Risk Analysis Methodology: Overall Rating

- The total score of each of the four risk categories — fundamentals, infrastructure, political and environmental risk — was first calculated based on an average of its factor's scores. With each factor being assigned a numerical score based on its previously determined color rating, whereas Green = 3; Yellow = 2; Red* = 1.

Factors included within each of the four risk categories:			
FUNDAMENTALS	**INFRASTRUCTURE**	**POLITICAL RISK**	**ENVIRONMENTAL RISK**
- Historical Supply/Demand - Quality of Tech Labor Market - Affordability	- Water - Energy - Transportation - Schools	- Philosophy Towards Affordability - Urban Policing/Security - Tax Burden/ Pension Liability	- Natural Disasters - Pollution - State & Local Government

*As previously mentioned, the Philosophy Towards Affordability red color ratings may be assigned a value of 1 or 0.5

- An overall investment risk rating for each market was then calculated based on the weighted average** of the score of each of its four risk categories— fundamentals, infrastructure, political and environmental risk.

  NOTE: The weight of each of the four categories is subjective and can be altered based on one's own opinion on the importance of each of the individual categories. For the purpose of this presentation, we used a "base" scenario, with each of the four categories equally weighted at 25% of the overall score. We also used an "alternative" scenario whereas the overall score used the following weights for each of the categories: fundamentals = 40%, infrastructure = 40%, political = 10% and environmental = 10%.

- The resulting total weighted average ("overall investment risk rating") for each market was given a final color based on the all of market's scores divided into 33rd and 66th percentiles, whereas: Green = overall water scores in the top 66th percentile; Yellow = overall water scores between the 33rd and 66th percentiles; Red = overall water scores in the bottom 33rd percentile.

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