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TO ASK A QUESTION: TYPE YOUR QUESTION IN TO THE QUESTION BOX ON YOUR CONTROL PANEL. YARDI MATRIX STAFF WILL REVIEW AND PRESENT YOUR QUESTION TO THE SPEAKERS AS TIME ALLOWS.

TODAY'S WEBINAR IS BEING RECORDED AND WILL BE MADE AVAILABLE SHORTLY.

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COVID-19'S IMPACT ON MULTIFAMILY REAL ESTATE

JEFF ADLER
Vice President,
Yardi Matrix

JACK KERN
Director, Research &
Publications, Yardi

DHARMENDRA SAWH
Industry Principal,
Yardi

CHRIS NEBENZAHL
Institutional Research
Manager, Yardi Matrix

TODAY'S AGENDA

1. Opening Remarks
2. Epidemiology & Pharmacology
3. Financial Markets, Economic Indicators, Government Monetary & Fiscal Policy Actions
4. Multifamily Real Estate Fundamentals & Trends
5. Operational Response
6. Shape and Timing of Recovery

Opening Remarks

Yardi Matrix House View May 2020

The pain has just started

- The COVID-19 caused downturn has been swift and deep
  - 30 MM jobless in 6 weeks – depression levels
  - U.S. fiscal/monetary response has been swift too
    - Mitigating losses in the financial markets
    - Initially replacing incomes lost at the bottom of the economic scale
    - Carnage in the energy sector is just as bad as travel and hospitality
    - Impossible to replace a $22 trillion economy, despite best efforts
  - The pain has just started; Q1 GDP -5%, Q2 -20% to -40%; we are just beginning to see the ripple effects

The shape and speed of a recovery is dependent first on a medical solution, but second on political will

- Scenarios mostly driven by progress on anti-virals & vaccines; we should assume medical science will prevail, but with a lag
- Initial primary public policy goal was to avoid overwhelming the medical system
- Politically, now morphing into implicit partisan driven power objectives – for some, “a tragedy is a terrible thing to waste”
- Under the best of circumstances, and short of a medical solution, the recovery is likely to be partial and slow – think extended “U”, leaving =>10% of the workforce idled for an extended period of time
- Recovery likely to be slower in “Blue” states, faster in “Red” States…at least through the Nov. election, for each’s political goals
- The resulting explosion of “war-time” government debt will result in higher taxes and inflation – but not for another ~5 years

Source: Yardi Matrix

Yardi Matrix House View May 2020

<u>Multifamily has been holding up well...so far</u>

- Multifamily has, and is likely to, perform better than office, industrial, and retail; a bit less well than self-storage, manufactured housing and single-family rental
- Purpose-built, Class "A" student has done well so far, but there are a lot of cross-currents to navigate
- April multifamily collections have been pretty good, but cracks are emerging geographically and by asset class
- Leasing season has resumed, and the pace in the last week of April has picked up dramatically
  - Adoption of self-guided tours and automated leasing has helped; consumer preferences adjusting
- Rising concessions on lease-ups are the "Canary in the Coal Mine" of a potential rent roll down
- Short-term rental exposure is another smaller, but potentially concentrated risk factor
- Transfer payments to individuals should limit multifamily property financial distress at least until August
- Political risk is rising in those locations where it existed before
- Position of banks, GSEs, CMBS lenders to forbearances will determine extent of financial distress after that

<u>Society Will be re-shaped by an acceleration of pre-existing trends</u>

- Population movement South & West
- Movement to urbanized suburbs
- Aging of the population
- De-globalization (trade & immigration)
- E-commerce
- Technology/automation & remote business tools
- But, we will gather again – humans are social animals and travel, entertainment, and hospitality will re-emerge…slowly

Source: Yardi Matrix

Why are we Taking a Diversion from Real Estate to Talk About This?

- We are taking a 15 minute diversion from real estate to take a quick look at the current epidemiological and employment situation, since these set the stage for how real estate will be impacted

- After we breeze through these first couple sections, we will focus the majority of our time on multifamily real estate fundamentals

Source: Yardi Matrix

Epidemiology & Pharmacology

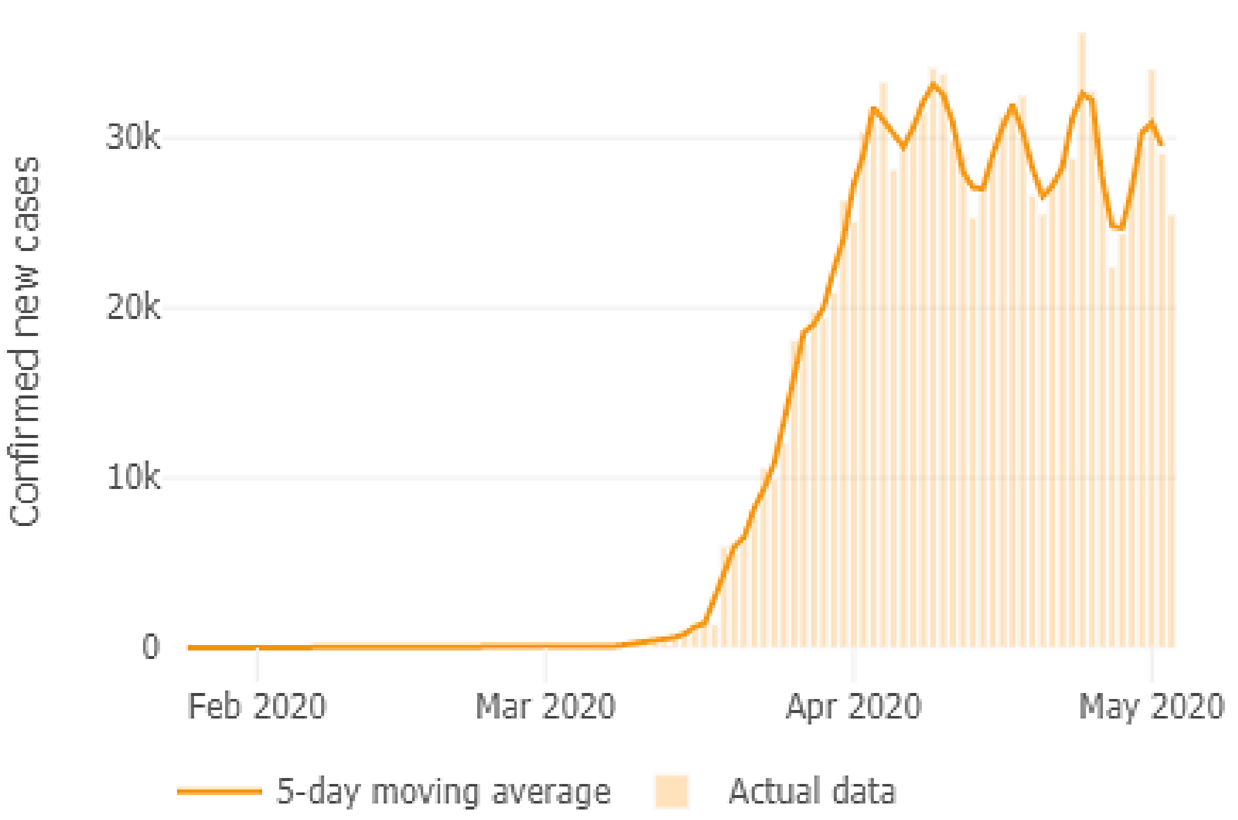
United States' Concern Is Now When & How to Gradually Reopen

- The United States is starting to see a decline in daily infection rates, signaling the country has successfully begun to flatten the curve of the coronavirus pandemic

- Officials have *expressed cautious optimism* that infections are hitting a plateau and economies can start slowly reopening

- ***To balance financial worries with fears that easing lockdowns could spur new COVID-19 outbreaks, government officials warn that the return to normalcy will need to be gradual***

U.S. Daily Confirmed New Cases
(5-day moving average)



*Confirmed cases as of May 3, 2020 @ 11:53PM EDT
Source: Yardi Matrix; CDC; John Hopkins University; Wall Street Journal, "States Move to Coordinate on Reopening Plans"

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COVID-19 Outbreak Will Not Be Solved Until a Vaccine or Effective Treatment Is Discovered

REMDESIVIR:

- April 29 press release announced **preliminary results from clinical trial of the antiviral drug shows promise**, as a result of this study, the **FDA authorized emergency use of the drug** on May 1
  - Run by the National Institute of Allergy and Infectious Diseases (NIAID), which Dr. Fauci leads
  - Placebo-controlled, randomized study of 1000 patients at numerous hospitals. Trial was expanded 400 to 440 to 572 to 1000
  - Clinical improvement, the study objective, was defined as an improvement from patient's baseline on a 7-point scale
  - **Prelim. results found patients given drug recovered in avg. of 11 days, 31% faster than the 15-day avg. of patients given placebo**
  - Trial "stopped" early and it appears drug is moving quickly to probable FDA approval— Trial will continue, but results promising enough to move to next stage of FDA approval. Results are being sent to a journal for peer review

VACCINE:

- There are **70 coronavirus vaccines in development** globally, with 3 candidates already in human trials
  - First human trial for a vaccine has begun in 45 adults in Seattle - skipping any animal research
  - First animal trial for a vaccine has begun in Australia. Hopes to be in human testing stage by end of April
- Dr. Fauci has said there's a chance that hundreds of millions of doses of a potential COVID-19 vaccine could be available by early next year, noting the ideal plan for a potential vaccine is to ensure it is safe and effective — and that it can be rapidly scaled up for distribution

Source: Yardi Matrix; BBC, "Coronavirus: Are we getting closer to a vaccine or drug?"; NPR, "Antiviral Drug Remdesivir Shows Promise For Treating Coronavirus In NIH Study"; NPR, "Fauci Says It's 'Doable' To Have Millions Of Doses Of COVID-19 Vaccine By January"; Wall Street Journal, "FDA Authorizes Emergency Use of Gilead Drug Remdesivir for Covid-19 Patients"; Time, "70 Coronavirus Vaccines Are Under Development, With 3 in Human Trials, WHO Says"

Can Antibody Testing Help Us Reopen?

USC and the Los Angeles County Department of Health conducted antibody testing of a representative sample of adults:

- Preliminary results: approx. 4.1% of the county's adult population has an antibody to the virus
- Adjusting for statistical error: 2.8% to 5.6% of the county's adult population has an antibody to the virus
- 28 to 55 times higher than confirmed cases in the county

New York has begun "the most aggressive" statewide antibody testing:

- The state randomly tested 3,000 people at groceries stores and shopping locations across 19 counties
- Preliminary data indicates that at least 2.7 million New Yorkers (out of 19.4 million residents) have been infected with COVID-19
- Largest concentration of positive antibody tests:

New York City: **21.2%**	Westchester: **11.7%**
Long Island: **16.7%**	Across the rest of the state: **3.6%**

On May 3, the FDA authorized the emergency use of an antibody test made by Roche Holding. The tests have proven 100% accurate at detecting COVID-19 antibodies in the blood & 99.8% accurate at ruling out the presence of those antibodies

Source: Yardi Matrix; news.usc.edu; npr.org; wsj.com

The U.S. Is Using a Phased Approach to Slowly Reopen

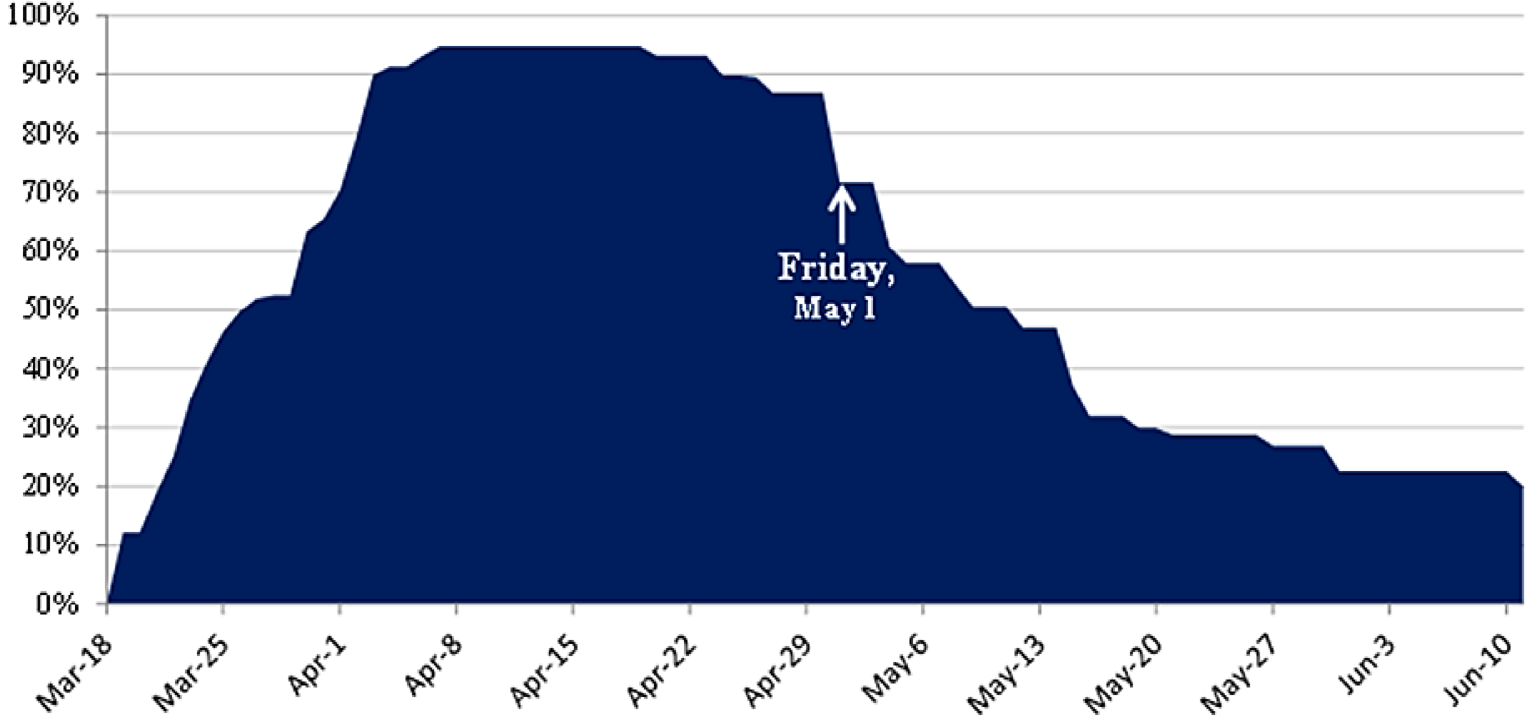
- President Trump released guidelines for a three-phased approach that allows areas to slowly start reopening in a cautious and deliberate way to avoid a resurgence of COVID-19 infections

- Governors and local officials have begun announcing timelines for relaxing the strict measures taken to mitigate COVID-19 **based on their individual, local situations**

- **To avoid a second wave of viral spread health experts say the U.S. needs to follow the strategy used by South Korea and Germany—have aggressive testing in place**

About 95% of the U.S. was under statewide stay-at-home restrictions for most of April, by May 1 that dropped to 72%, and by May 10 its projected to fall to roughly 50% of the U.S.

% of US Population Under Statewide Stay-at-Home Orders

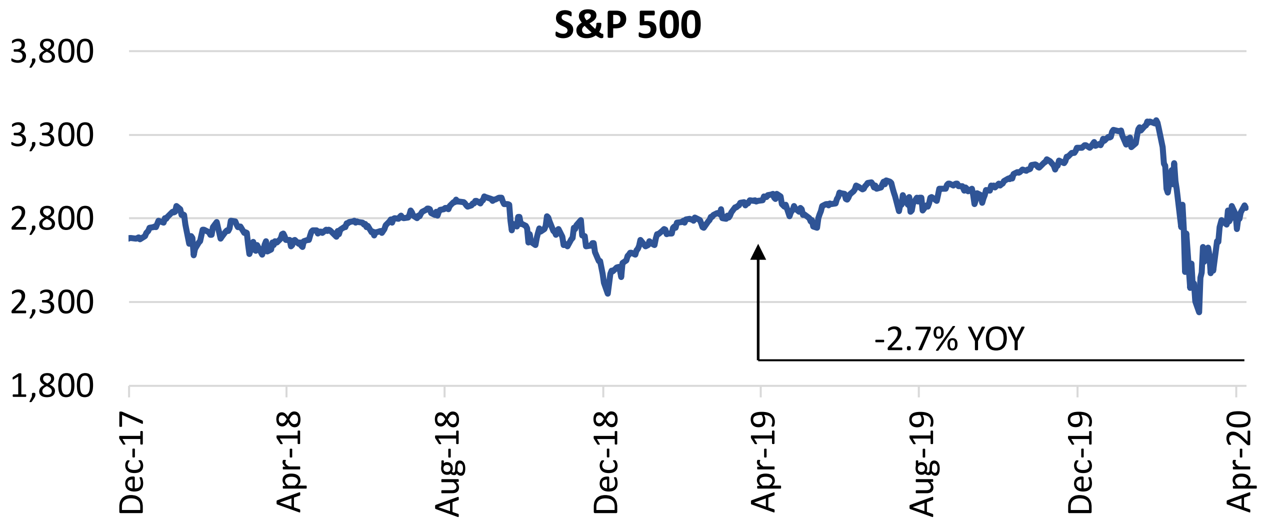


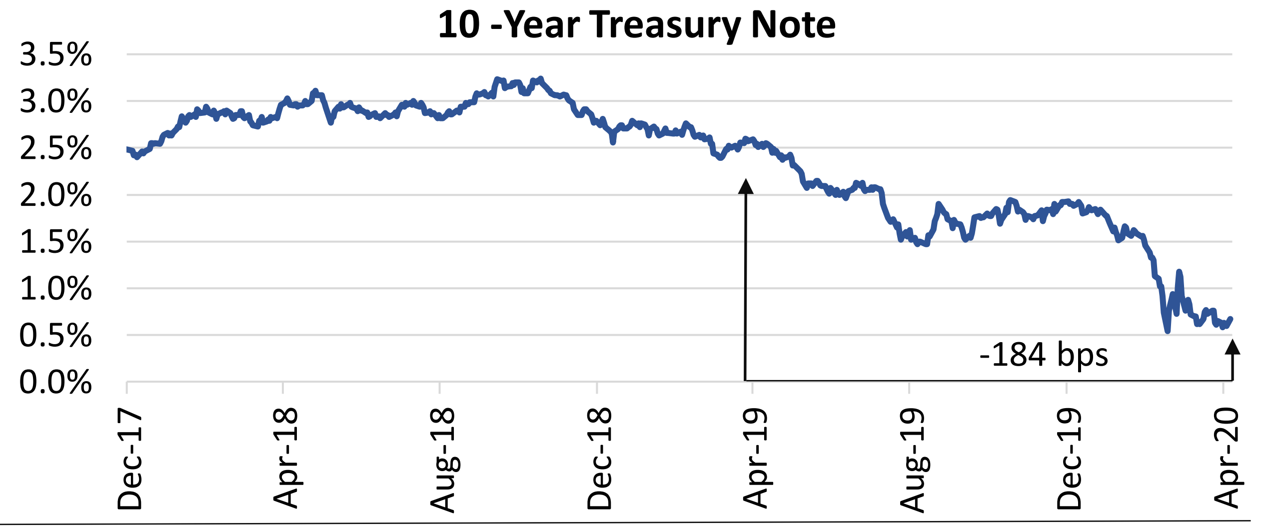
Source: State orders & news reports, Census. Expirations as of 5/1/2020 and subject to change; some states have no end date

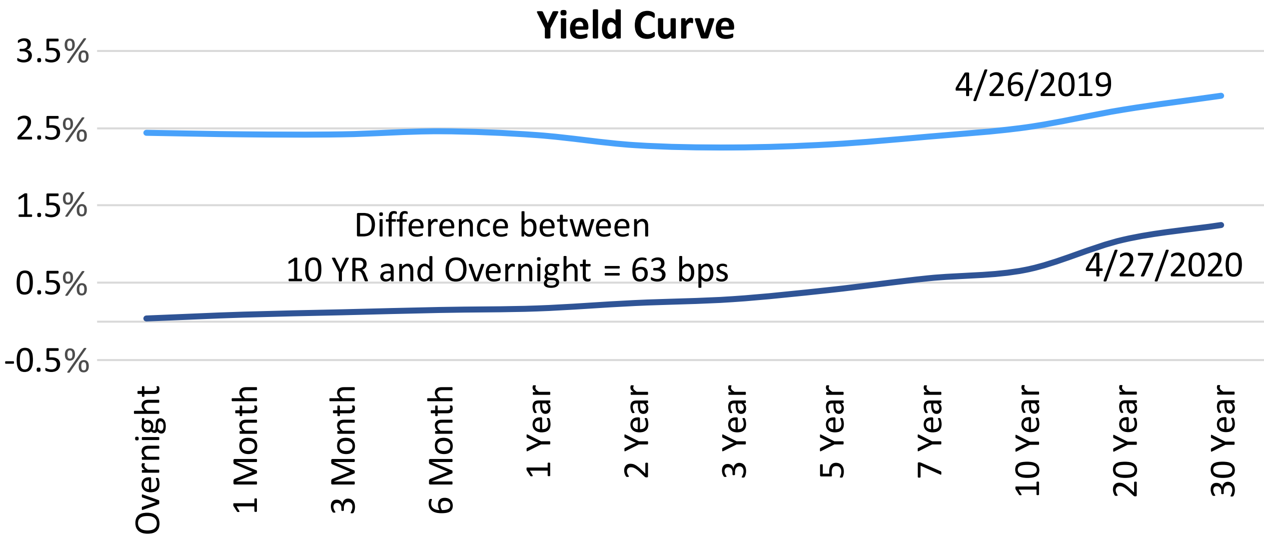
Source: Yardi Matrix; Evercore ISI based on state orders & news reports; CNBC, "The US economy can't reopen without widespread coronavirus testing. Getting there will take a lot of work and money"

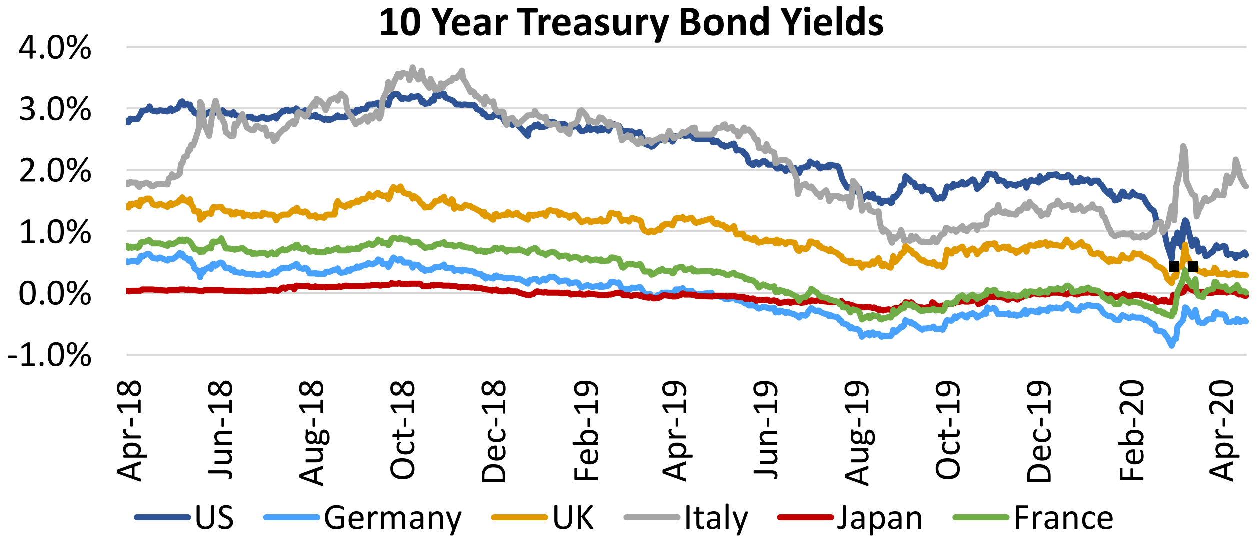
Financial Markets, Economic Indicators, Government Monetary & Fiscal Policy Actions

U.S. and International Financial Market





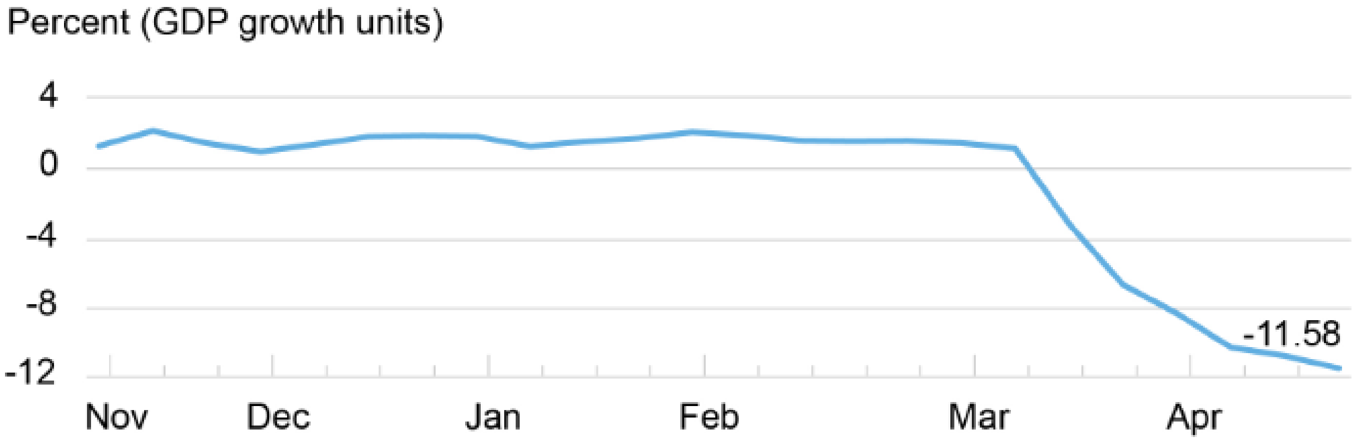




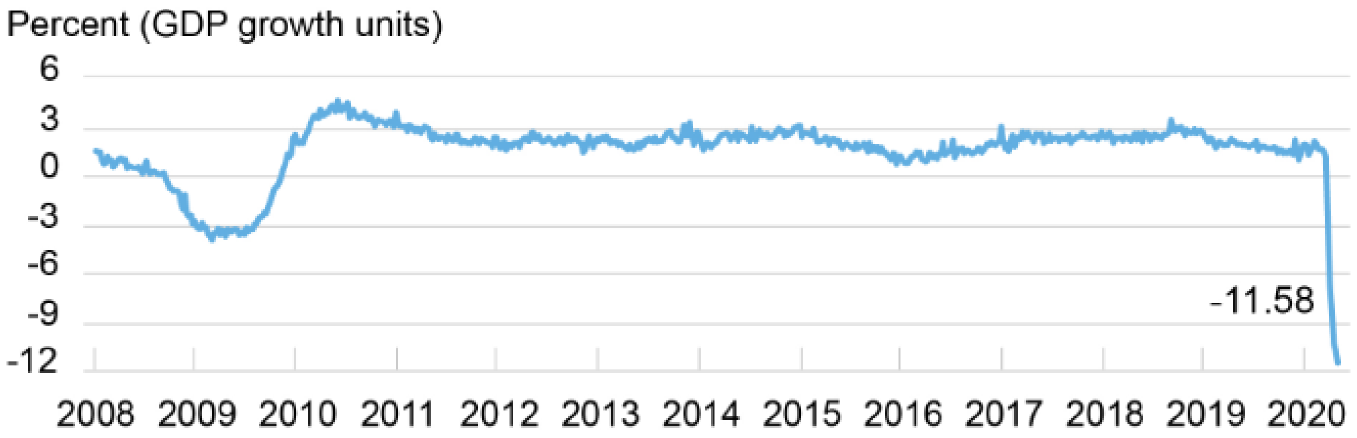
Source: Yardi Matrix; Moody’s Analytics; Investing.com

Weekly Economic Index (WEI)

WEI over Recent Months



WEI, 2008-Present



U.S. GDP contracted 4.8% in the first quarter of 2020

(at a seasonally & inflation adjusted annual rate)

The WEI is an index of 10 daily and weekly indicators of real economic activity, scaled to align with the four-quarter GDP growth rate

- For the week ending April 25, the WEI is -11.59%, scaled to four-quarter GDP growth; in comparison, the WEI stood at 1.58% for the week ending February 29
- The fall in the WEI for the week ending April 25 relative to the previous week ending April 18 (-11.08%) was **driven by continued modest declines in retail sales, steel production & consumer confidence**

*As of April 30, 2020
Source: Yardi Matrix; Wall Street Journal;
Federal Reserve Bank of New York: Weekly Economic Index, https://www.newyorkfed.org/research/policy/weekly-economic-index

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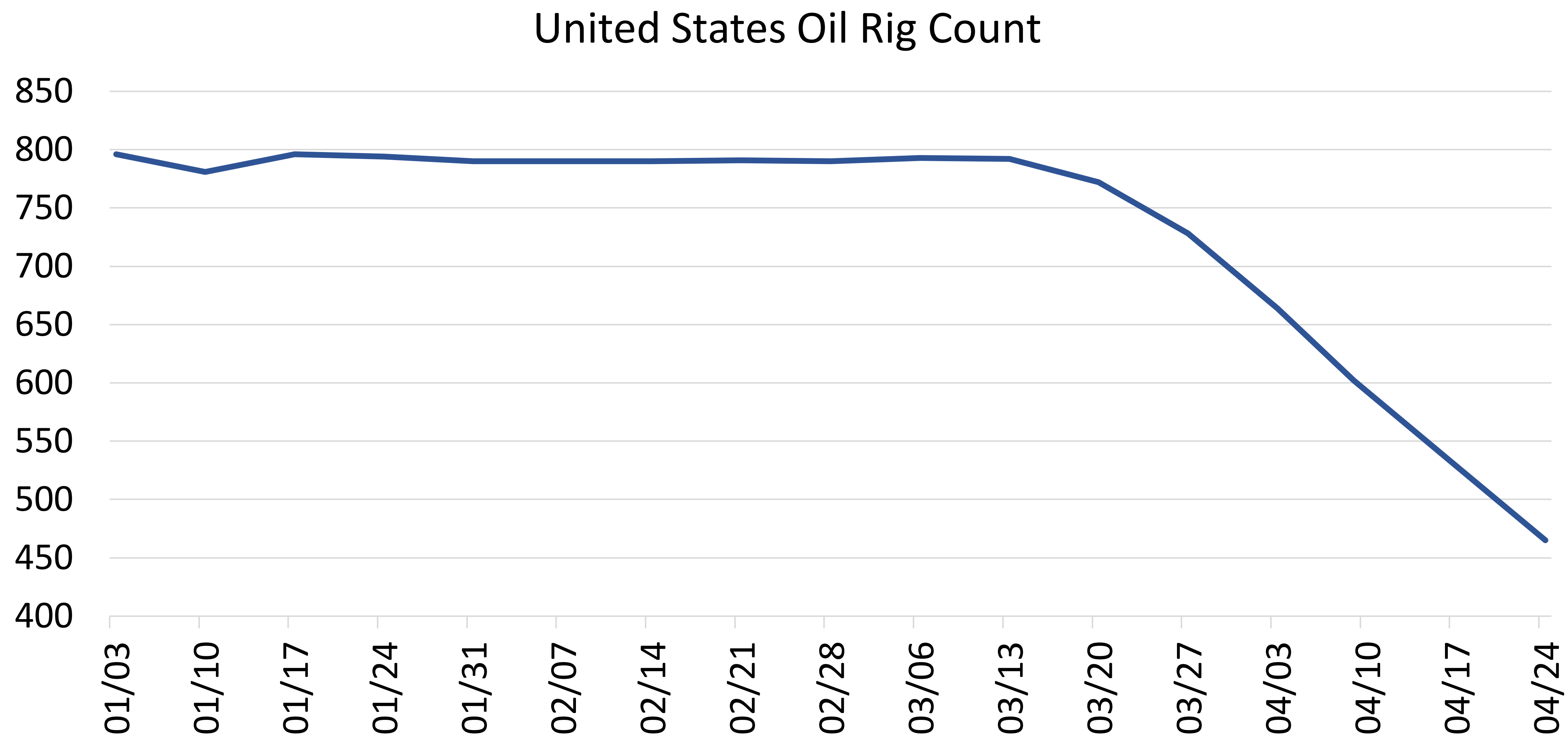
Oil Supply Far Exceeds Demand, Causing Stockpiles to Quickly Rise and Prices to Plummet

- U.S. inventory figures show stockpiles rising quickly with oil supply far exceeding demand, causing oil prices to collapse under the supply glut
  - On April 20, the price of West Texas Intermediate (WTI), dropped below zero for the first time in history
- Producers are scrambling to shutdown wells quickly and traders say that the world is running out of space to store oil
- **Nearly 90% of the global oil storage capacity is already full,** according to the consultancy Rystad Energy. Most of the excess oil ends up in floating-roof storage tanks, but millions of barrels are also idly sitting in supertankers, which are usually used to transport not store oil
- **On May 1, oil-producing nations will implement their agreement to remove 9.7 million barrels of crude, roughly 13% of global supply, from markets**— but, this will likely not be enough to mitigate the hit to demand
- Some analysts are hopeful that as some states begin easing coronavirus lockdown measures, it could help stabilize prices moving forward

Source: Yardi Matrix; Wall Street Journal, “Oil-Price Crash Deepens, Weighs on Global Markets”; Wall Street Journal, “Oil Prices Climb After Inventories Rise Less Than Expected”; Business Insider, “13 stunning photos of supertankers and storage tanks reveal the global oil glut in epic proportions”; Pixabay

The United States' Rig Count Has Been Steadily Declining



*Data as of April 24, 2020
Source: Yardi Matrix; Baker Hughes

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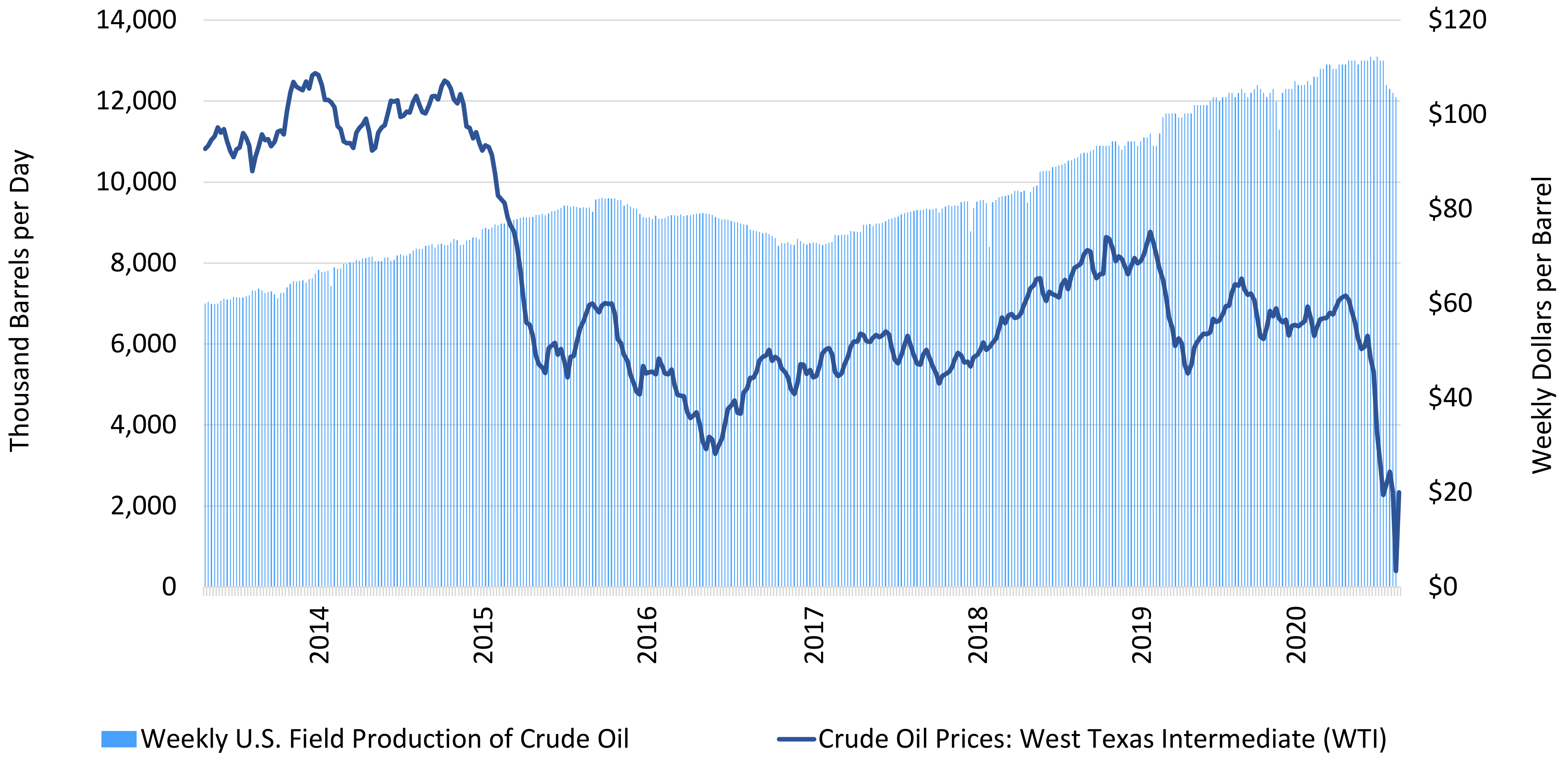
No Inflation Here



Source: Yardi Matrix; Energy Information Administration, Federal Reserve Bank of St. Louis, Economic Research Division

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COVID-19 Actions Specific to Real Estate

- **CARES Act included a 120-day moratorium on evictions, late fees and other penalties**
  - Moratorium **applies to all properties with a federally insured mortgage** (Fannie Mae, Freddie Mac, FHA, HUD, VA) and **properties participating in a covered housing program**, such as Section 8 voucher program, the Low-Income Housing Tax Credit, rural housing voucher program and properties covered by the Violence Against Women Act
  - Moratorium started March 27

- **Fannie Mae** & **Freddie Mac** are allowing multifamily landlords to defer their loan payments for 90 days by showing hardship as a consequence of COVID-19
  - In turn, they are requiring landlords not to evict any tenant based solely on non-payment of rent during the forbearance period

- **Bank regulators** will permit banks to **defer mortgage payments for 90 days** and will not consider the loans non-performing (triggering bank capital write-downs)

- In addition, **eviction moratoriums** have been enacted on the **state and local government level**

Source: Yardi Matrix; Freddie Mac; Fannie Mae; NMHC; Motley Fool

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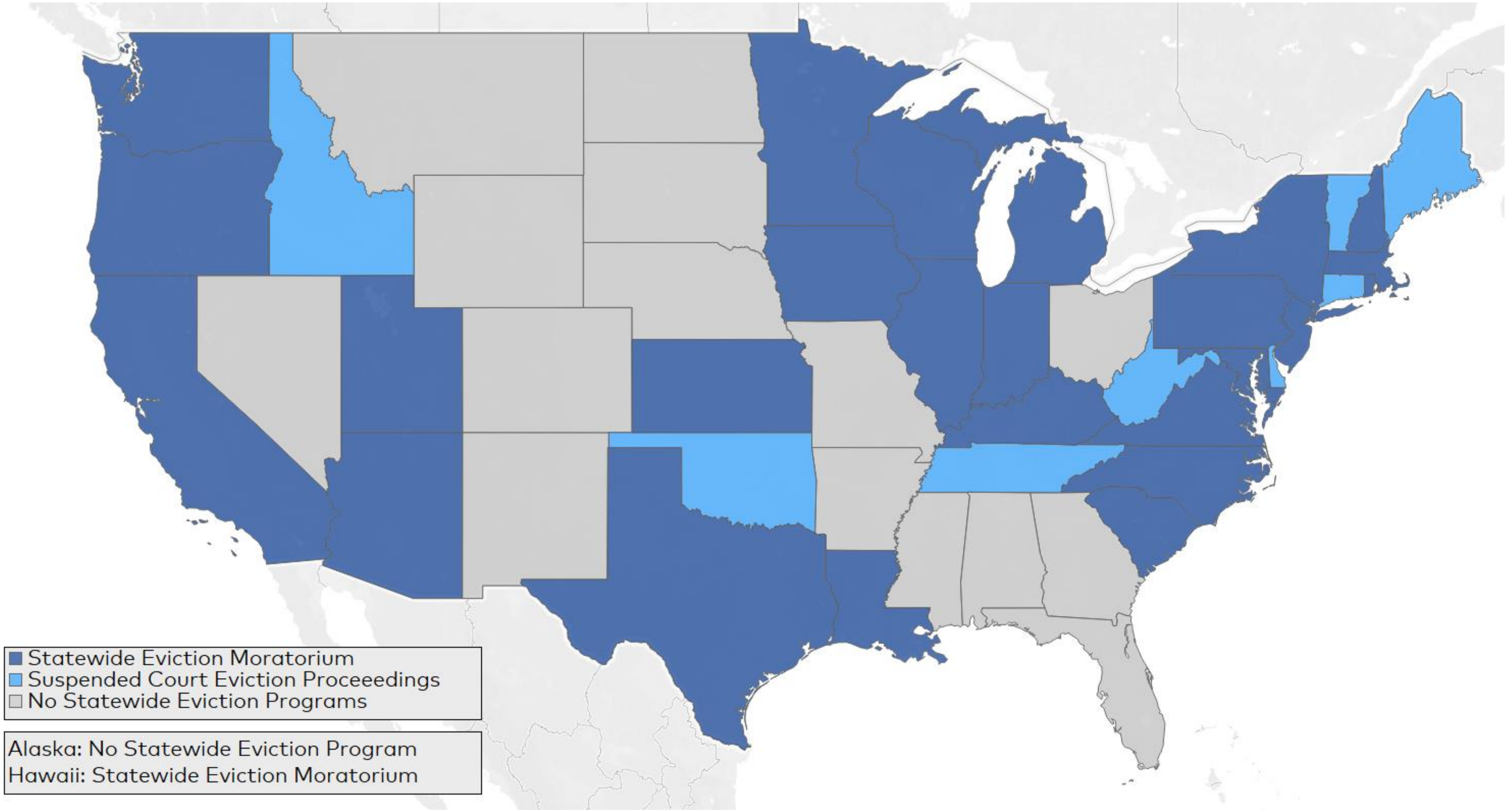
Eviction Moratoriums by State



*Data as of April 27, 2020
Source: Yardi Matrix; Tableau; Millionacres, A Motley Fool Company, “Cities and States That Have Paused Evictions Due to COVID-19”

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Federal Government Responses to COVID-19 as of April 20

Response	Allowed	Disbursed/Committed	Deficit Impact
Legislative Actions	**$2.9 trillion**	**> $840 billion**	**$2.0 trillion**
Coronavirus Preparedness & Response Supplemental Appropriations Act	$8 billion	Approx. $1 billion	$8 billion
Families First Coronavirus Response Act	$192 billion	Unknown	$192 billion
CARES Act	$2.7 trillion	> $840 billion	$1.8 trillion
Administrative Actions	**Approx. $380 billion**	**Unknown**	**Approx. $80 billion**
Declare national emergency	Approx. $50 billion	Unknown	Approx. $50 billion
Delay tax filing deadline to July 15	Approx. $300 million	N/A	$0
Other executive actions	Approx. $30 billion	Unknown	Approx. $30 billion
Federal Reserve Actions	**> $9.2 trillion**	**$1.7 trillion**	**N/A**
Interest rate changes	N/A	N/A	N/A
Asset purchases	$4.8 trillion**	$1.2 trillion	N/A
Liquidity measures	> $2.4 trillion	$444 billion	N/A
Emergency lending programs and facilities	> $2.0 trillion	$88 billion	N/A

$450 billion stimulus package approved April 22 not included in the above table

*Deficit impact is from 2020-2030.
**Assumes Treasury and mortgage-backed security purchases total $125 billion per day through May 31
Source: Yardi Matrix; Committee for a Responsible Federal Budget, "COVID Money Tracker: Policies Enacted Through April 20"

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Federal Programs Enacted to Help Small Businesses Weather the Coronavirus Pandemic

CARES ACT

- On March 27, CARES Act was signed into law, which contained $376 billion in relief for American workers and small businesses
- The Paycheck Protection Program initiative, exhausted by April 16, underwrote bank loans for small businesses
- **Within the 2 weeks, more than 1.4 million loans had been approved at a value of more than $315 billion, depleting the $349 billion it was allotted within 2 weeks**
- When the bill was being written, **economists warned** the money was nowhere close to the **$1 trillion or more companies actually need**

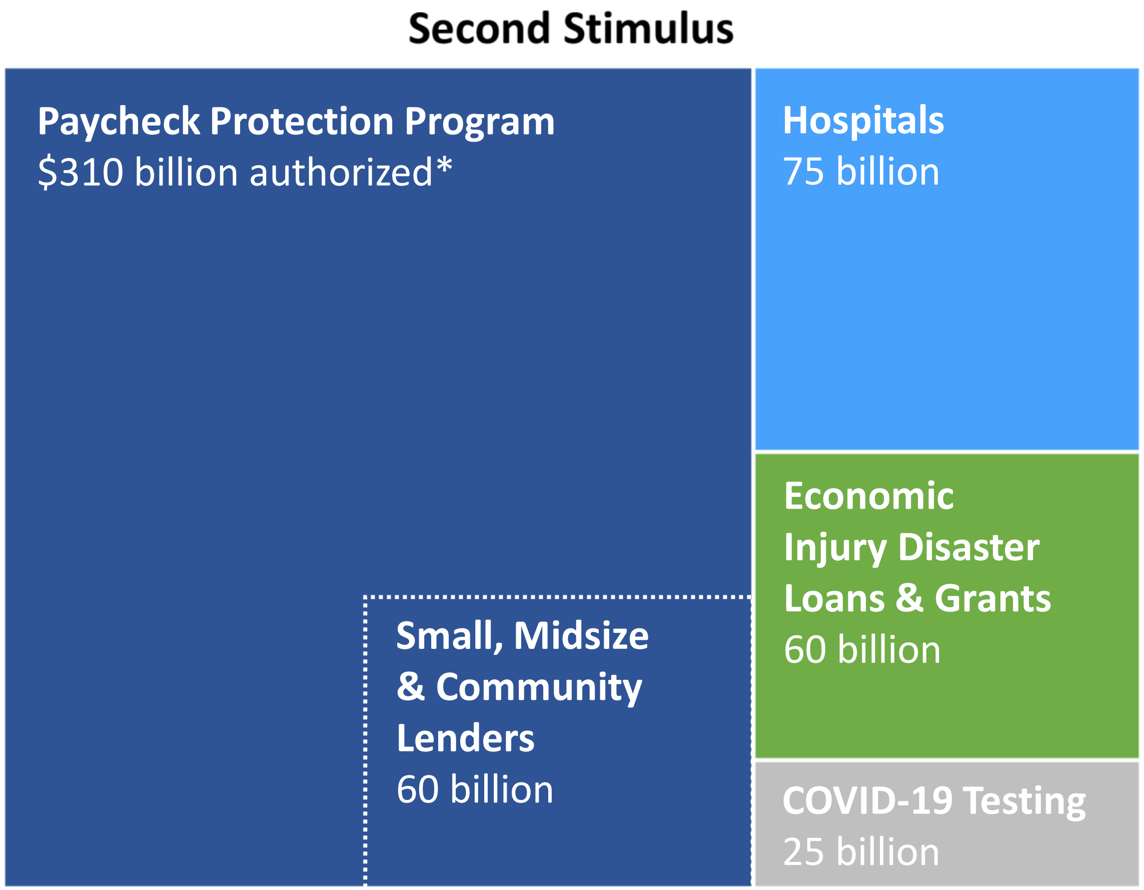
EMPLOYEE RETENTION CREDIT

- A program separate from the stimulus package, which was launched March 31
- A refundable tax credit implemented to help businesses keep their employees on payroll— **tax credit for 50% of up to $10,000 in wages for each employee if a business has been hurt by COVID-19**
- Can not be used in tandem with the Paycheck Protection Program (PPP)

Source: Yardi Matrix; New York Times, "Small-Business aid funds run dry as program, fails to reach hardest hit"; Wall Street Journal, "What Small Business Owners Need to Know About the New Stimulus Bill"

Second Stimulus Legislative Package Signed into Law

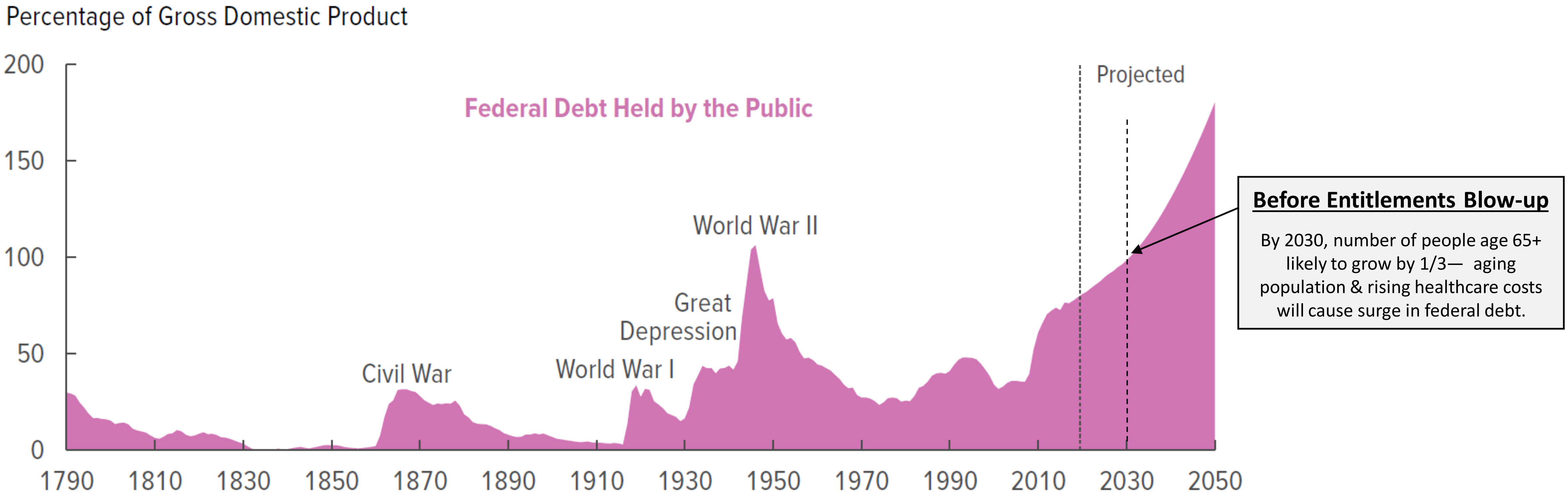
- **$484 billion legislation signed into law by President Trump on April 24,** after the interim emergency legislative package was swiftly passed by Congress
- Of the total, **approximately $310 billion will replenish funds for the Paycheck Protection Program (PPP)**, to provide small businesses with loans
- Loans are forgiven if several provisions are met, including:
  - Keeping/rehiring staff
  - Using 75% of funds for payroll
  - Funds used within 8 weeks
  - Additional criteria
- The bill will also **provide funding for hospitals, COVID-19 testing, and Economic Injury Disaster Loans and Grants**



**A total of $322 billion was appropriated, to include fees*

Source: Yardi Matrix; Wall Street Journal, "What's in the new coronavirus stimulus bill"; The Hill, "Trump signs $484 billion coronavirus relief package"

Federal Debt to GDP Ratio: Before the COVID-19 Pandemic



In January 2020, the Congressional Budget Office (CBO) released "The Budget and Economic Outlook: 2020 to 2030" report based on the laws and economy at that time. **In April, CBO updated their projections based reflect the COVID-19 pandemic**

Some of the findings and predictions from this report included:

- **Federal debt** held by the public was **79% of GDP** at the end of fiscal year **2019**
- CBO estimated federal debt was going to rise over the coming decade — from 81% of GDP in 2020 to 98% of GDP in 2030

*Chart taken from CBO's Budget and Economic Outlook: 2020 to 2030 report released January 28, 2020. Predictions are based on laws and economy as of January 2020.
Source: Yardi Matrix; Congressional Budget Office (CBO), "The Budget and Economic Outlook: 2020 to 2030"; Committee for a Responsible Federal Budget

Federal Debt to GDP Ratio: In the Wake of COVID-19

On April 24, CBO released new preliminary projections which factor in the effects of the COVID-10 pandemic on the U.S. economy.

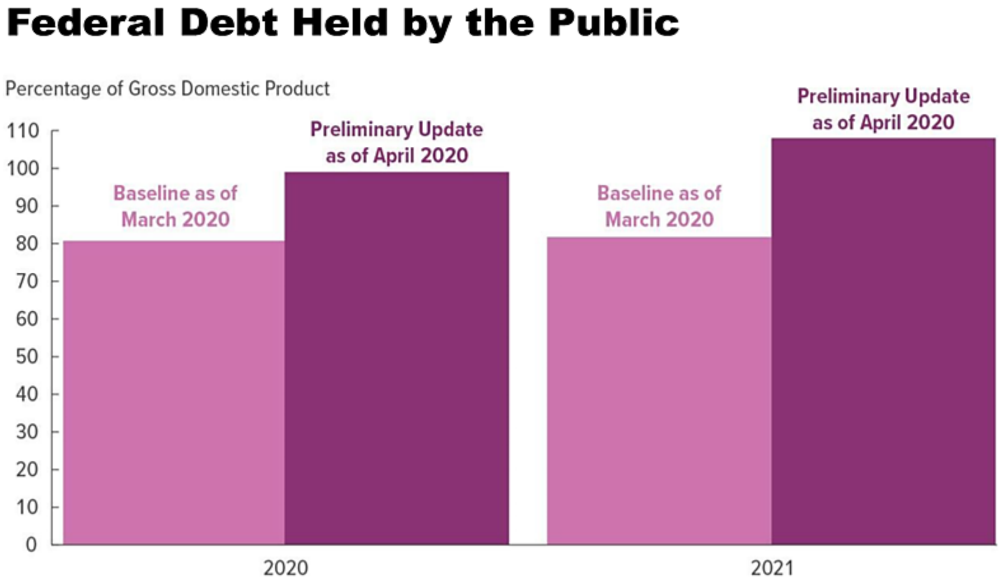
Federal debt will rise to 101% of GDP by end of FY 2020

→ 20% higher than the March baseline projections

Federal debt will grow to 108% of GDP by end of FY 2021

→ 26% higher than the March baseline projections

→ Surpassing the 107% threshold during World War II



POTENTIAL IMPLICATIONS OF THE RISING FEDERAL DEBT DUE TO COVID-19

- Surge in debt is equal to increases historically seen in times of war and resulted in inflation afterwards (WWI, WWII, Vietnam)
- There will likely be an inflationary after-effect in 3 to 5 years
  - An aging population may mitigate some inflation, esp. as more people claim pension benefits, further burdening federal debt
- Low interest rates have helped offset the rise in debt, but there is still some uncertainty of the long-term effects of COVID-19 to rates
- Not an immediate concern, but 7 to 10-year investment horizons must take into account

*Preliminary projections based on laws and economy as of April 24. Current projections are only through 2021, CBO plans to provide a comprehensive, long-term analysis of pandemic legislature & baseline projections later this year.

Source: Yardi Matrix; Congressional Budget Office (CBO); Committee for a Responsible Federal Budget; Wall Street Journal

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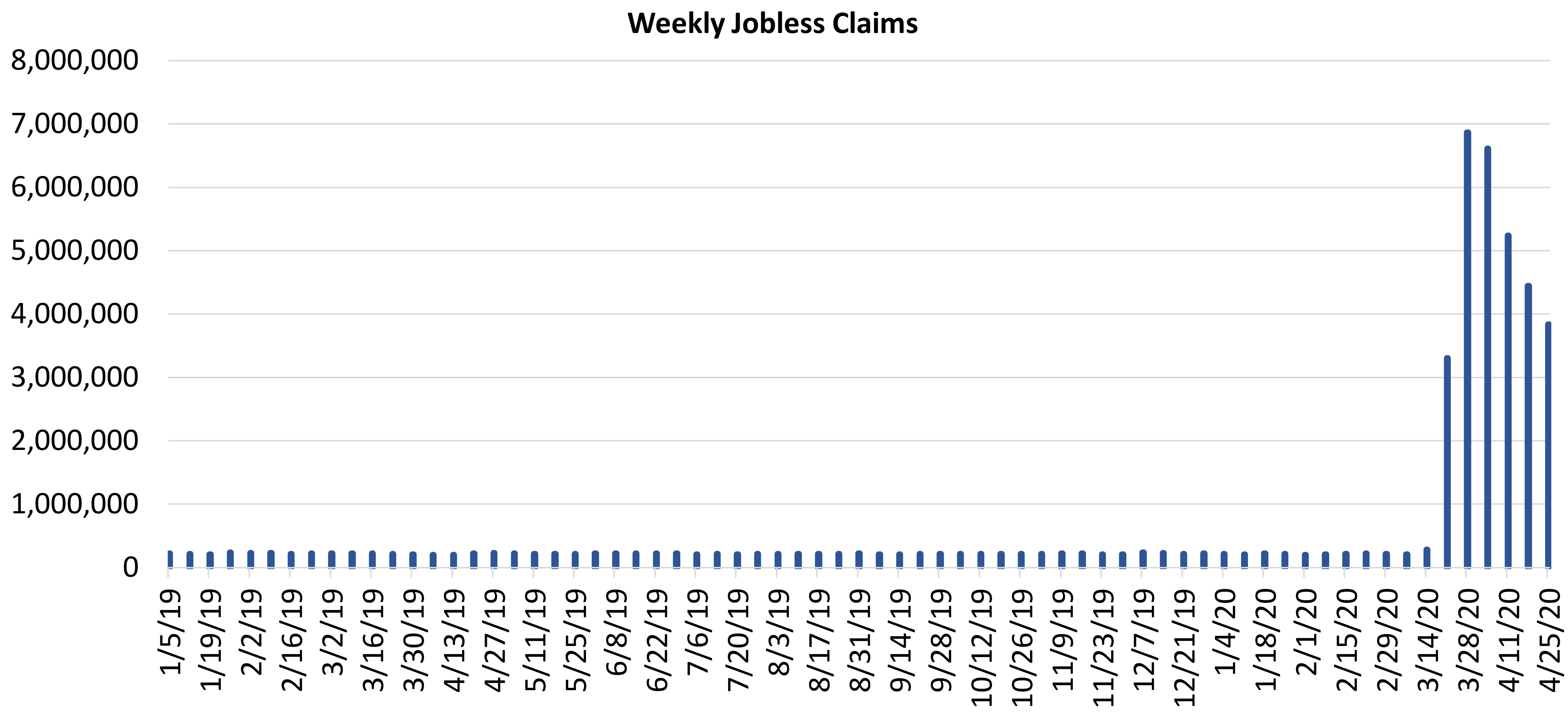
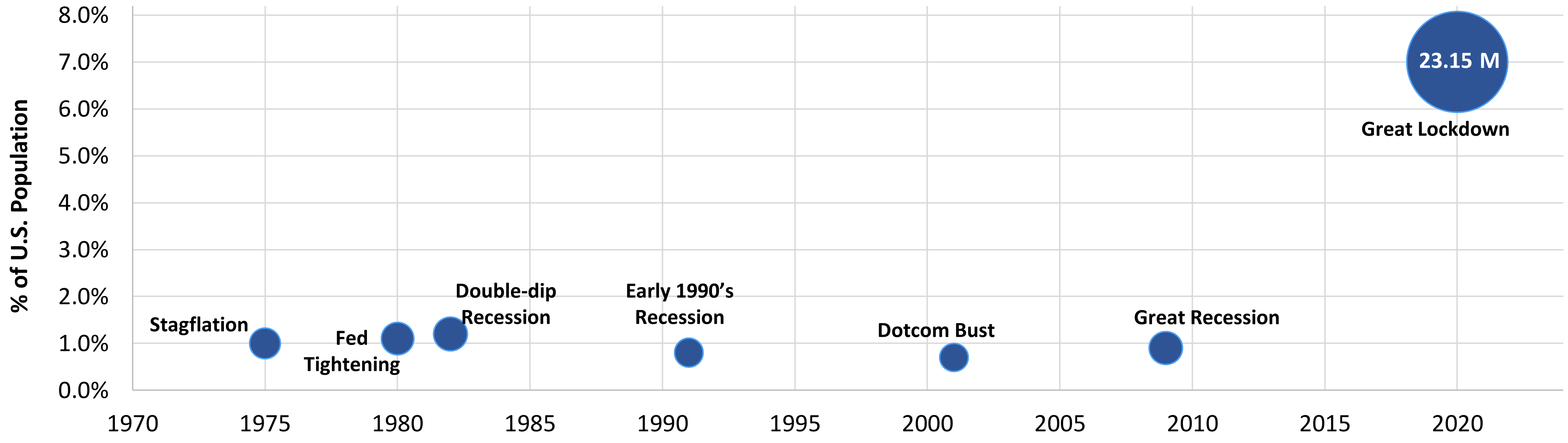
31 Million Have Filed for U.S. Jobless Benefits Since the Beginning of March



*Data as of May 1, 2020

Source: Yardi Matrix; Moody's Analytics; U.S. Employment & Training Administration (ETA)

Historic U.S. Job Losses in Perspective

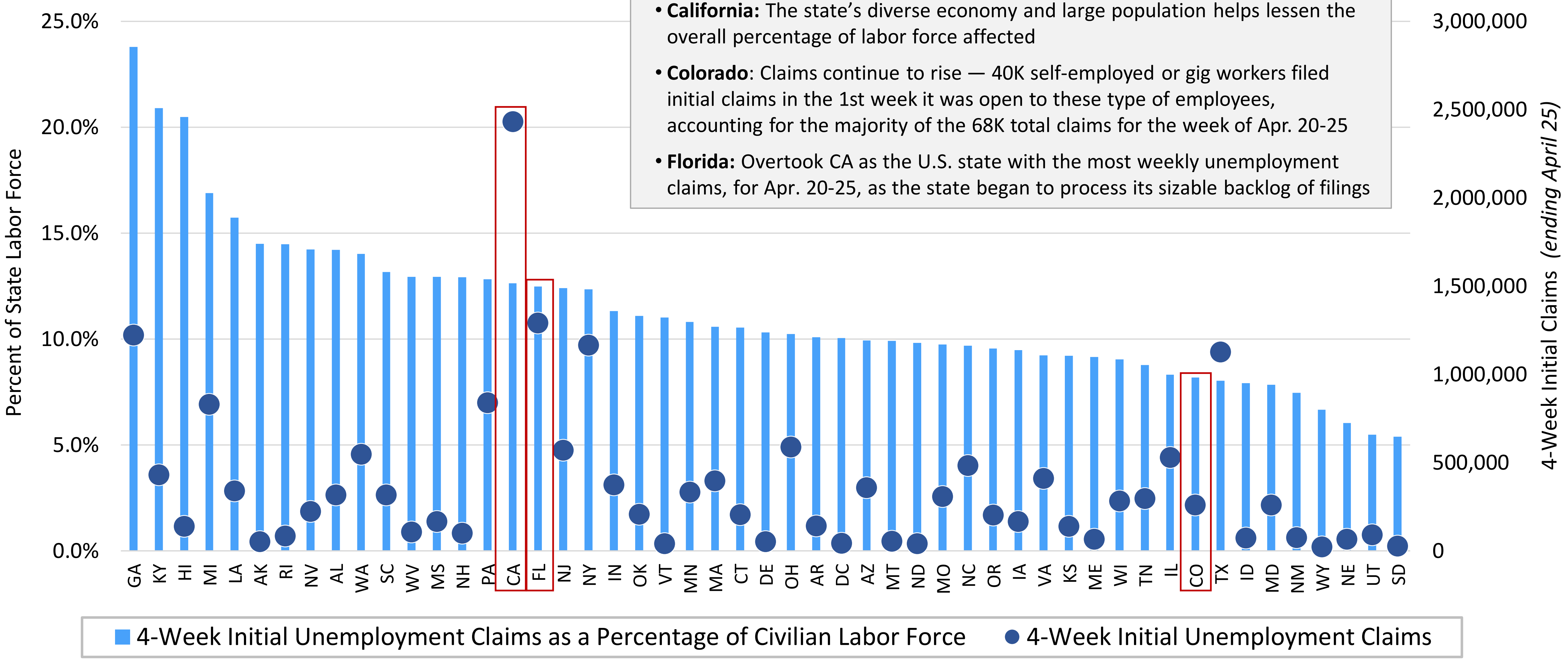


Year	Description	Peak Jobless Claims (4-week total)	% of U.S. Population
1975	Stagflation	2.24 Million	1.0%
1980	Fed Tightening (Volcker)	2.52 Million	1.1%
1982	Double-dip Recession	2.70 Million	1.2%
1991	Early 1990's Recession	2.00 Million	0.8%
2001	Dotcom Bust	1.96 Million	0.7%
2009	Great Recession	2.64 Million	0.9%
2020	Great Lockdown (COVID-19 Pandemic)	23.15 Million*	7.0%

*4-week total of jobless claims for the week end of March 28, 2020 to the week end of April 18, 2020

Source: Yardi Matrix; Moody's Analytics; U.S. Employment & Training Administration (ETA); Visual Capitalist; Financial Times

Percent of Labor Force Filing Jobless Claims Varies by State

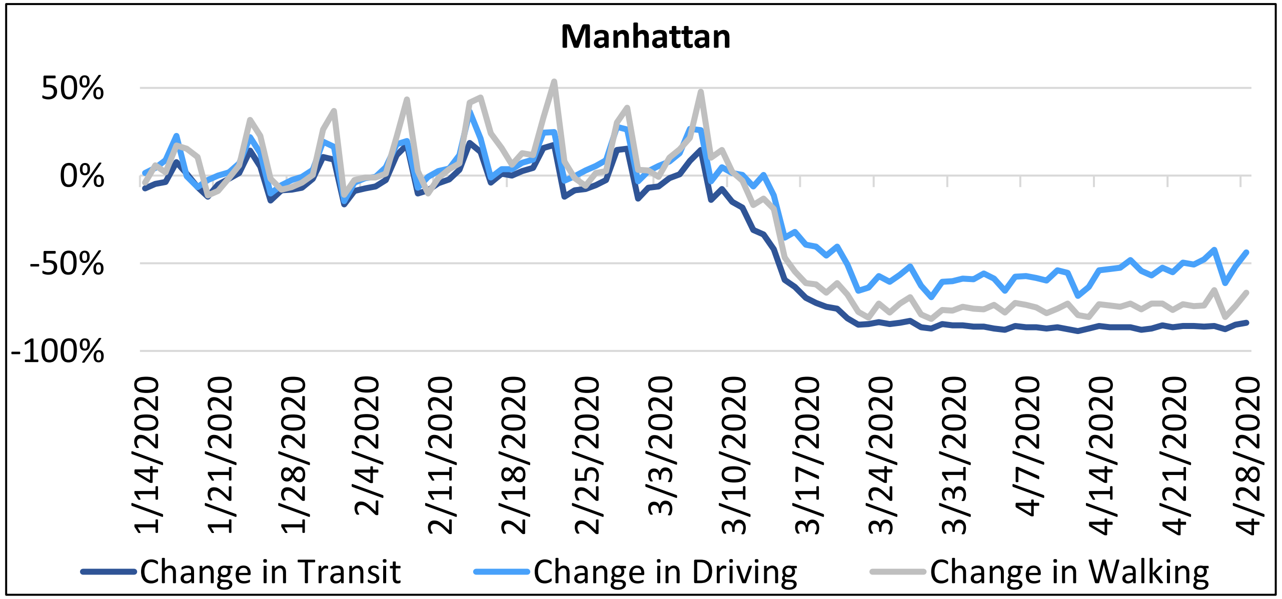


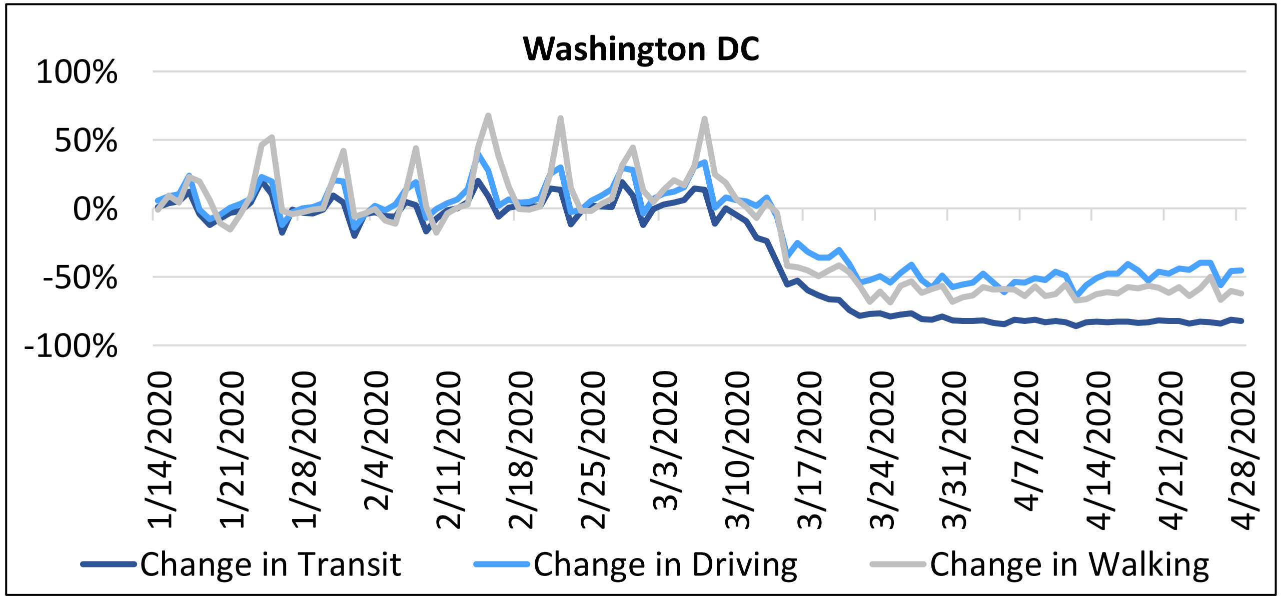
- **California:** The state's diverse economy and large population helps lessen the overall percentage of labor force affected
- **Colorado**: Claims continue to rise — 40K self-employed or gig workers filed initial claims in the 1st week it was open to these type of employees, accounting for the majority of the 68K total claims for the week of Apr. 20-25
- **Florida:** Overtook CA as the U.S. state with the most weekly unemployment claims, for Apr. 20-25, as the state began to process its sizable backlog of filings

*4-Weeks Initial Unemployment Claims as of week end April 25. Civilian Labor Force as of March 2020 (BLS preliminary data)

Source: Yardi Matrix; U.S. Bureau of Labor Statistics; U.S. Department of Labor (DOL); Tax Foundation; Business Insider; KVDR.com

Mobility Trends – Most Impacted Markets





Market	Change in Routing Requests - TRANSIT	Change in Routing Requests - DRIVING	Change in Routing Requests - WALKING
Manhattan	-84.0%	-43.7%	-66.9%
Washington DC	-82.0%	-45.4%	-62.1%
Seattle	-81.8%	-32.9%	-50.1%
Boston	-80.6%	-49.1%	-64.0%
San Francisco	-78.8%	-53.2%	-69.9%
Chicago	-76.5%	-35.3%	-47.1%
Portland	-76.1%	-37.0%	-37.1%
Pittsburgh	-72.9%	-37.0%	-49.5%
Los Angeles	-72.7%	-43.1%	-43.8%
Minneapolis	-71.4%	-41.5%	-30.4%
Tampa	-68.0%	-43.8%	-49.0%
Salt Lake City	-67.5%	-13.0%	-11.1%
Philadelphia	-67.3%	-31.6%	-37.8%
Miami	-66.6%	-45.8%	-49.4%
Orlando	-65.6%	-48.6%	-51.6%

*Change in routing request = January 13, 2020 – April 28, 2020
Source: Yardi Matrix; Apple – Mobility Trends Report

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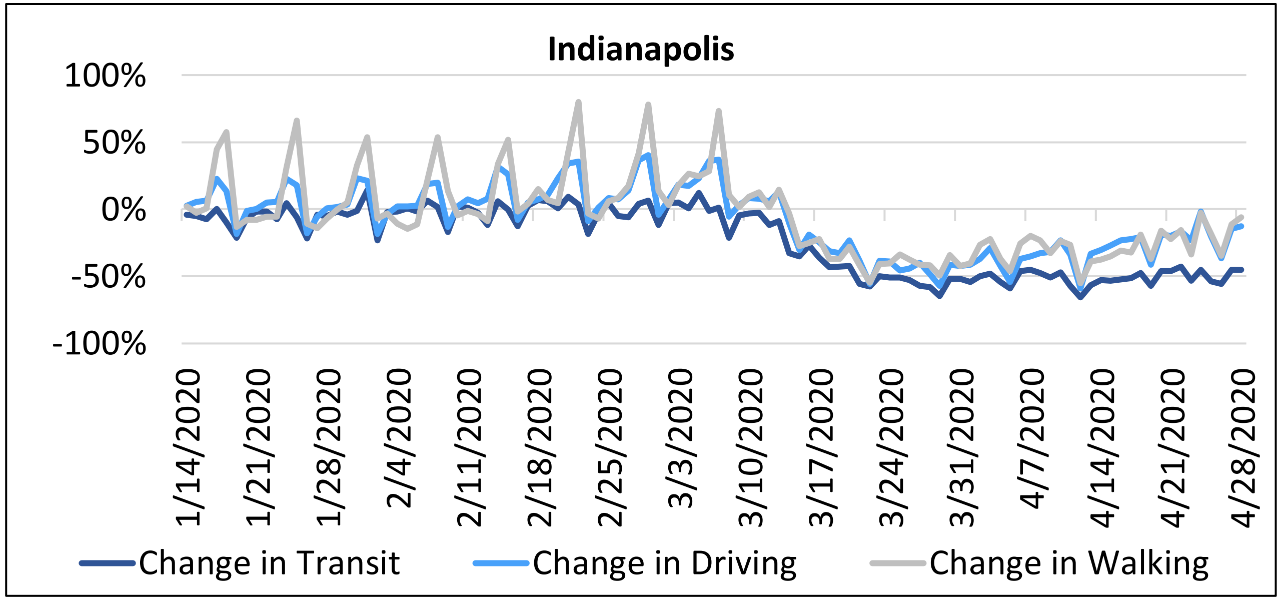
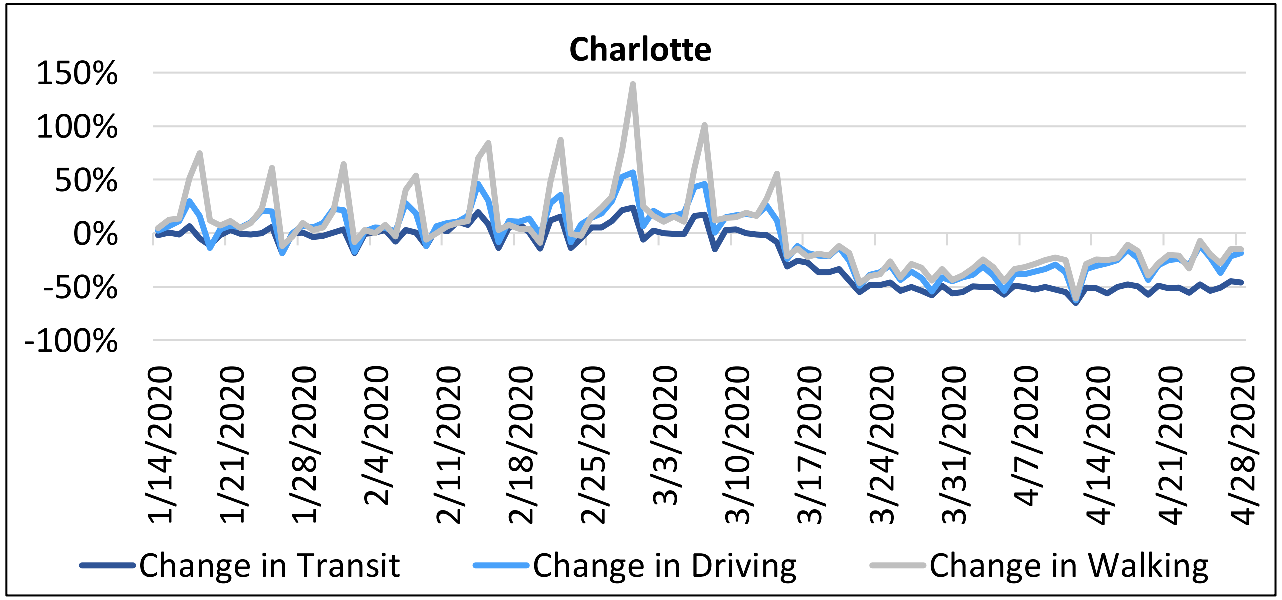
Mobility Trends – Least Impacted Markets





Market	Change in Routing Requests - TRANSIT	Change in Routing Requests - DRIVING	Change in Routing Requests - WALKING
Denver	-64.9%	-37.3%	-36.1%
Detroit	-64.9%	-33.7%	-3.7%
Austin	-64.6%	-38.8%	-39.5%
Sacramento	-63.5%	-28.0%	-26.2%
Las Vegas	-58.8%	-29.3%	-53.4%
Phoenix	-57.4%	-33.3%	-39.2%
Houston	-57.3%	-35.6%	-34.0%
Baltimore	-57.2%	-28.7%	-28.1%
Atlanta	-55.3%	-25.8%	-28.5%
San Antonio	-55.1%	-28.1%	-31.7%
Nashville	-54.0%	-35.7%	-57.4%
Raleigh	-53.4%	-24.6%	-22.7%
Dallas	-51.7%	-31.1%	-25.9%
Charlotte	-45.9%	-18.7%	-14.7%
Indianapolis	-45.1%	-12.6%	-5.8%

*Change in routing request = January 13, 2020 – April 28, 2020
Source: Yardi Matrix; Apple – Mobility Trends Report

Avg. Unemployment Insurance Replacement Rates by State

State	Weekly Benefit	Weekly Wage*	Replacement Rate	Replacement Rate + $600	Difference
	Weighted Average 2019 Q4				
MS	$212.53	$682.14	31%	119%	88%
AL	$232.06	$709.14	33%	117%	85%
AR	$268.97	$715.78	38%	121%	84%
NM	$341.65	$729.85	47%	129%	82%
ME	$351.40	$735.96	48%	129%	82%
ID	$340.40	$736.20	46%	128%	81%
LA	$215.99	$748.80	29%	109%	80%
TN	$240.13	$754.36	32%	111%	80%
MO	$268.75	$765.39	35%	114%	78%
AZ	$233.78	$770.18	30%	108%	78%
KY	$347.25	$780.19	45%	121%	78%
SD	$352.97	$789.33	45%	121%	77%
DE	$272.55	$805.30	34%	108%	76%
VT	$369.92	$808.95	46%	120%	75%
FL	$251.62	$809.71	31%	105%	74%
NE	$347.22	$811.98	43%	117%	74%
SC	$273.74	$815.68	34%	107%	74%
IA	$394.62	$815.98	48%	122%	74%
MT	$380.36	$820.87	46%	119%	73%
WY	$402.76	$837.52	48%	120%	72%
WI	$323.90	$855.00	38%	108%	70%
OK	$387.14	$855.10	45%	115%	70%
MI	$328.19	$858.57	38%	108%	70%
NC	$275.91	$863.71	32%	101%	69%
NV	$374.10	$881.75	42%	110%	68%

*Weekly wage based on hourly wage of claimant and normalized to 40 hours by DOL. Extra $600 a week in unemployment benefits through July 2020.
Source: Yardi Matrix; Evercore ISI; U.S. Department of Labor (DOL)

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Avg. Unemployment Insurance Replacement Rates by State

Weighted Average 2019 Q4

State	Weekly Benefit	Weekly Wage*	Replacement Rate	Replacement Rate + $600	Difference
KS	$390.08	$886.45	44%	112%	68%
PA	$408.43	$890.77	46%	113%	67%
MD	$357.51	$896.54	40%	107%	67%
IN	$300.17	$904.39	33%	100%	66%
GA	$304.52	$910.00	33%	99%	66%
RI	$362.06	$910.01	40%	106%	66%
VA	$320.23	$924.53	35%	100%	65%
AK	$254.72	$931.53	27%	92%	64%
OH	$362.69	$943.72	38%	102%	64%
CT	$320.23	$945.01	42%	105%	63%
OR	$423.09	$947.36	45%	108%	63%
WV	$325.17	$958.57	34%	97%	63%
UT	$439.76	$964.94	46%	108%	62%
ND	$465.33	$970.92	48%	110%	62%
TX	$418.84	$985.58	42%	103%	61%
CA	$345.43	$997.22	35%	95%	60%
MN	$467.63	$1,005.38	47%	106%	60%
NJ	$458.84	$1,069.80	43%	99%	56%
IL	$351.39	$1,076.96	33%	88%	56%
CO	$453.89	$1,077.55	42%	98%	56%
NH	$338.62	$1,093.33	31%	86%	55%
NY	$359.46	$1,105.25	33%	87%	54%
DC	$358.73	$1,114.70	32%	86%	54%
WA	$513.34	$1,141.94	45%	97%	53%
HI	$536.03	$1,161.49	46%	98%	52%
MA	$524.97	$1,206.99	43%	93%	50%

*Weekly wage based on hourly wage of claimant and normalized to 40 hours by DOL. Extra $600 a week in unemployment benefits through July 2020.
Source: Yardi Matrix; Evercore ISI; U.S. Department of Labor (DOL)

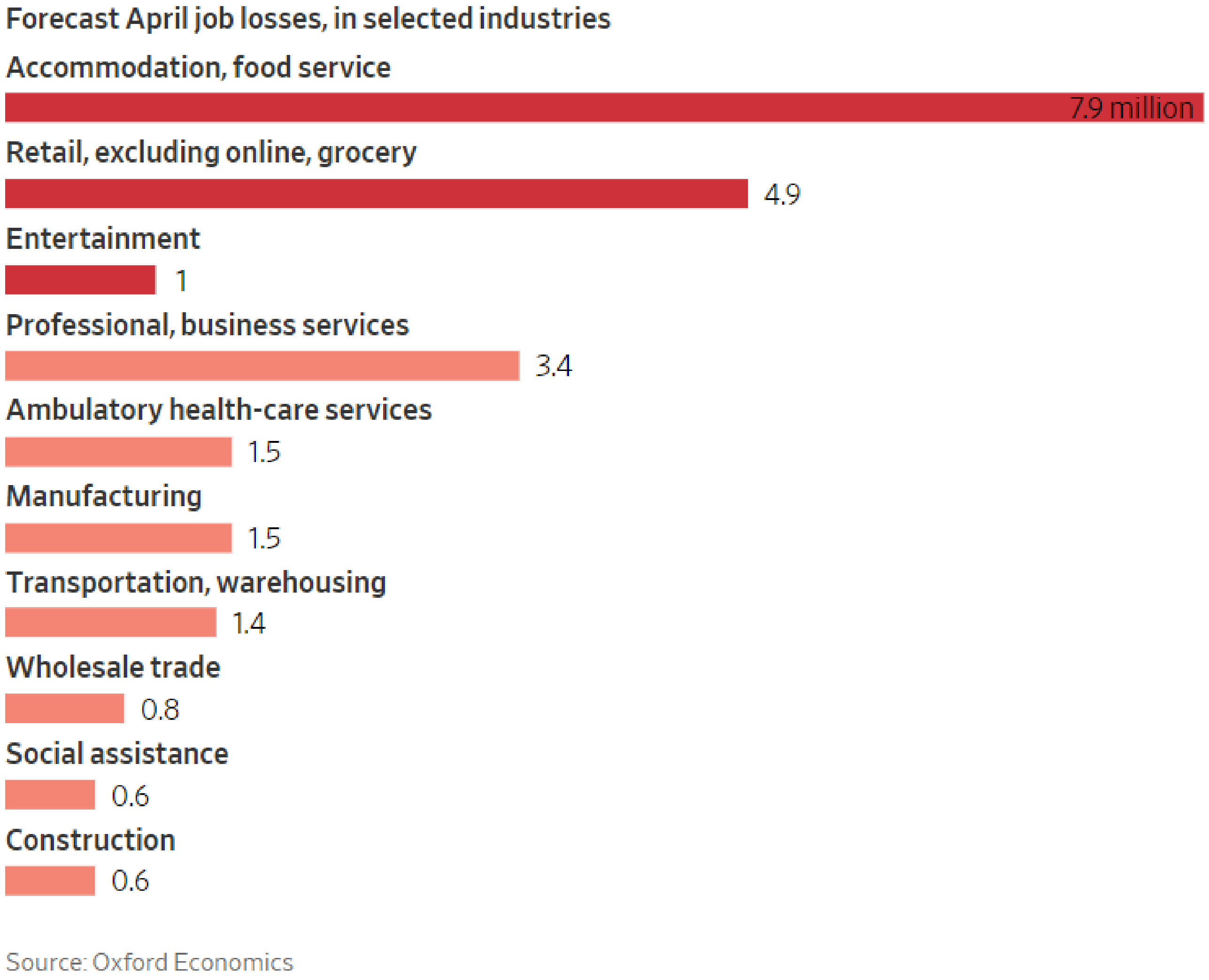
Employment – Secondary Industry Layoffs Begin

First industries to lose their jobs included restaurants, malls, hotels and other places that closed to contain the pandemic

Now, a **second wave of job loss** is hitting higher - skilled workers, including corporate lawyers, healthcare workers not involved in fighting the pandemic & government workers being furloughed

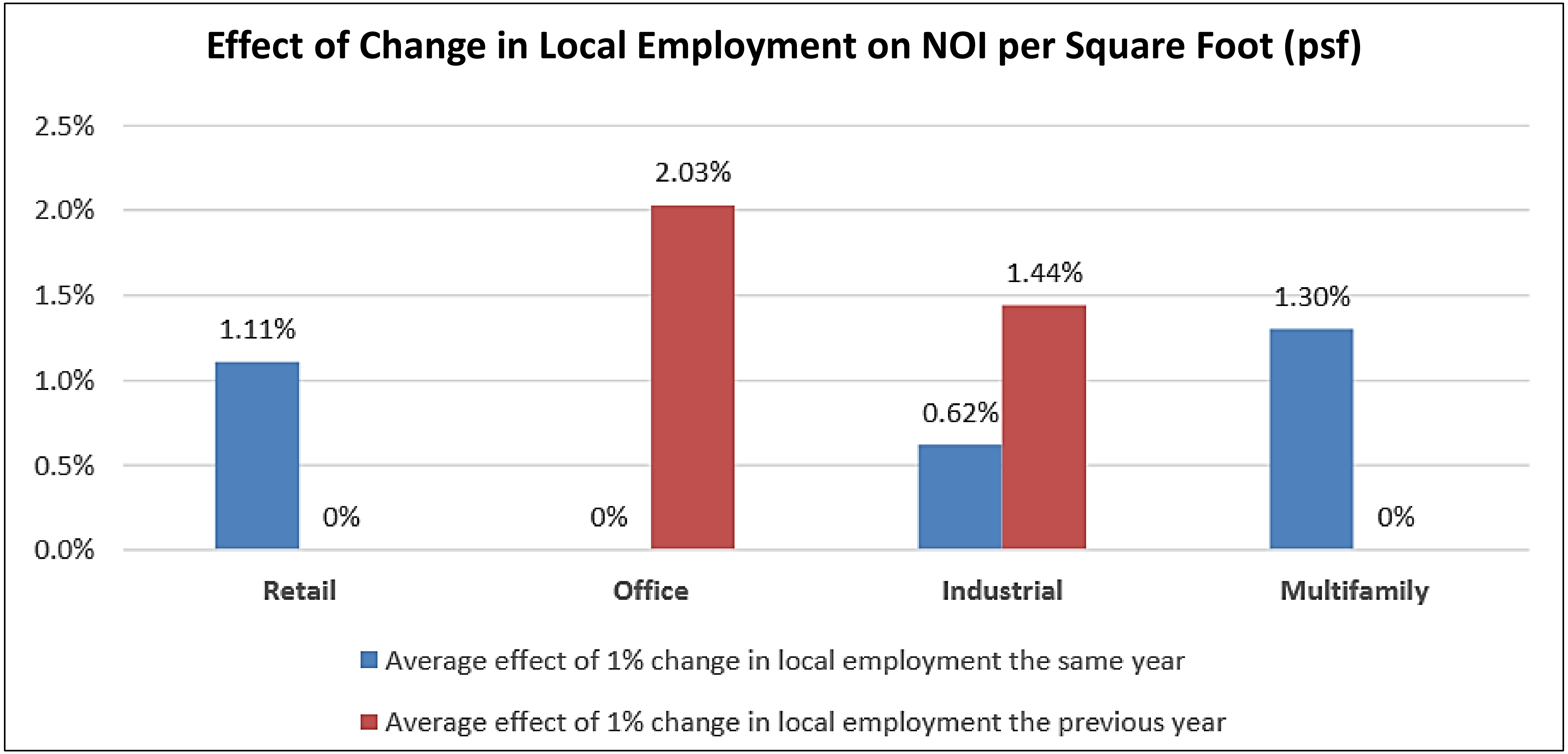
Consensus of 57 economists surveyed by The Wall Street Journal says **14.4 million jobs will be lost in the coming months** and **unemployment rate will rise to a record 13% in June**

Given all the industries impacted, we can expect to see a 10-20% GDP loss in the second quarter



Source: Yardi Matrix; Wall Street Journal, "A Second Round of Coronavirus Layoffs Has Begun. Few Are Safe."

Sensitivity of Property NOI psf to Local Job Loss Varies by Property Type



All numbers displayed are statistically significant at a 5% level. Numbers not significantly different from zero at a 5% level are displayed as 0 in the table

*Analysis is based on a study of the historical sensitivity of property net operating income (NOI) to historical changes in employment levels
Source: Yardi Matrix; PREA Research analysis based on data from MSCI and U.S. Bureauu of Labor Statistics

Universities & Colleges Feel the Impact

- Most university and college campuses have been closed due to the COVID-19 outbreak, and courses are being held online, as a result some administrators are struggling to make the finances work
  - On top of refunds for room and board, and parts of tuition, schools have had to spend money to take courses online. Additionally, schools aren't bringing in money from expected tuition and revenue from events such as athletics, conferences on campus and summer camps
  - The University of Michigan estimates it may lose up to $1 billion by the end of the year, while the University of Kentucky estimates it may lose up to $70 million

- **There has been a question whether or not campuses will reopen for fall semesters, especially as schools will experience further adverse financial impacts if they remain closed**
  - Purdue University, The University of Mary Washington in Virginia, and William Jewell College in Missouri plan to reopen their campuses for in-person classes come fall 2020
  - University of Missouri and Clemson University in South Carolina are also developing reopening plans for fall

Source: Yardi Matrix; The Hill, "Purdue University plans to reopen campus for fall 2020, saying coronavirus poses 'zero lethal threat' to students"; NPR, "Can Colleges Survive Coronavirus? 'The Math Is Not Pretty'"

Phased Approach for Opening Up America Again

President Trump issued guidelines for a three-phased approach, based on the advice of public health experts, to help state local officials reopen their economies

States or Regions must meet specific "gating criteria" ***before beginning*** this phased comeback

PHASE ONE

States regions that satisfy gating criteria

- Vulnerable individuals should shelter in place
- Everyone should practice social distancing in public & avoid groups of 10+ people
- Minimize non-essential travel
- Employers should encourage telework & have employees return to work in phases
- Schools/daycares remain closed
- Senior living facilities prohibit visitors
- Elective surgeries allowed
- Gyms open with strict social distancing
- Large venues (e.g. sit-down dining, theaters, places of worship) can operate with strict physical distancing

PHASE TWO

States regions with no evidence of a rebound & satisfy gating criteria a second time

- Vulnerable individuals should continue to shelter in place
- Everyone should practice social distance in public & avoid groups of 50+ people
- Non-essential travel can resume
- Employers should still encourage telework
- Schools/daycares can reopen
- Senior living facilities prohibit visitors
- Large venues (e.g. sit-down dining, theaters, places of worship) can operate with moderate physical distancing
- Bars can open with decreased occupancy

PHASE THREE

States regions with no evidence of a rebound & satisfy gating criteria a third time

- Vulnerable individuals can resume public interactions, but with precautions
- Unrestricted staffing of all worksites
- Visits to senior living facilities allowed
- Large venues (e.g. sit-down dining, theaters, places of worship) can operate under limited physical distancing policies
- Gyms open, social distancing no longer required
- Bars open with increased occupancy

Source: Yardi Matrix; whitehouse.gov

Many U.S. States Are Beginning to Re-open Slowly, Following the Phased Approach Guidelines

Each governor has tailored Trump's phased approach guidelines to create their own timeline that meets the diverse circumstances of their state

States that started reopening and/or relaxing restrictions by May 4th

Alabama, Alaska, Arkansas, Colorado, Florida, Georgia, Hawaii*, Idaho, Indiana, Iowa, Kansas, Maine*, Minnesota*, Mississippi*, Missouri, Montana, Nebraska, Nevada*, New Hampshire*, New Jersey*, New Mexico*, North Dakota, Ohio*, Oklahoma, Pennsylvania*, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, Wisconsin* Wyoming

States that plan to start reopening and/or relaxing restrictions after May 4th

Arizona, Connecticut, Delaware, District of Columbia, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Michigan, New York, North Carolina, Rhode Island, Vermont, Virginia, Washington

States that do not have a date set to start reopening and/or relaxing restrictions

California, Maryland, Oregon

*Statewide say-at-home order still intact as of May 4, but state has begun partial reopening of specific non-essential businesses, healthcare, or outdoor recreation areas
**As of May 4, 2020
Source: Yardi Matrix; NBC News, "Reopening America"

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Multifamily Real Estate Fundamentals & Trends

NMHC Rent Payment Tracker Finds 91.5% of Apartment Households Made a Payment by April 26

- The NMHC Rent Payment Tracker powered by industry property management software players finds that most residents who can pay their rent are doing so
- 91.5% of apartment households made a full or partial rent payment by April 26 in its second survey of 11.5 million units, up 2.8 percentage points from April 19
- "Unfortunately, unemployment levels are continuing to rise and delays have been reported in getting assistance to residents, which could affect May's rent levels." - Doug Bibby
- We will continue to track and report on the findings of the Rent Payment Tracker

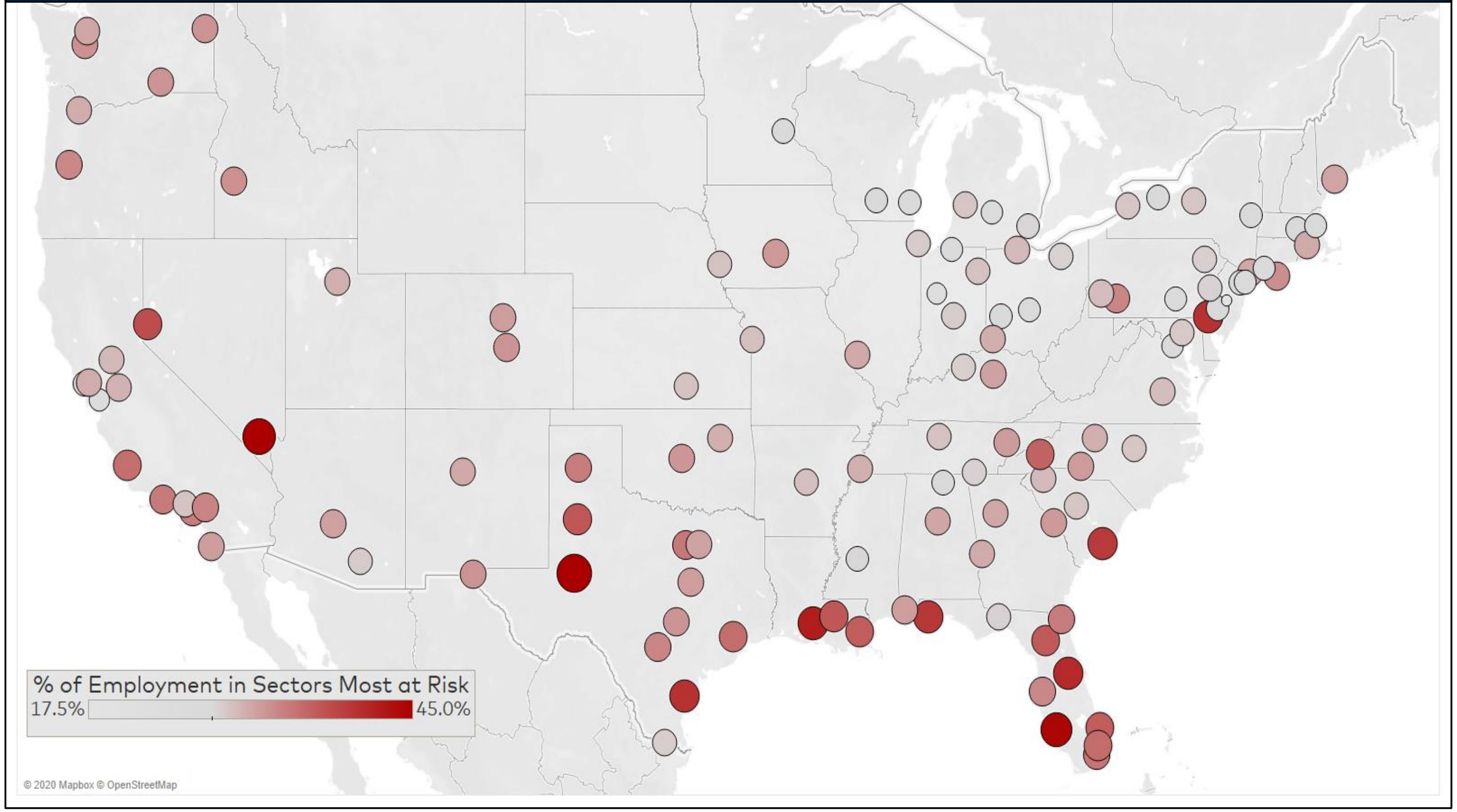
Source: Yardi Matrix

Industry Observations of Collections by Asset Class

- Overall collections of ~92%: Class B+/A in mid to high 90% range, Class C ~5% below average
- Small floor plans in Class A major cities struggling as younger people who don't have a tie to the city are extinguishing leases and moving home
- Corporate rentals struggling as corporations walk away from corporate leases
- Deferrals and payment plans increasing – but cash should be there eventually, even if it's late
- The emerging short-term rental segment is going to struggle

Industry Observations on Collections by Geography

% of Employment in Sectors Most at Risk



- Collections in Portland, Seattle, San Diego, Sacramento, Salt Lake City and Phoenix are generally ok – common thread is Government, Tech & Healthcare
- The Northeast (excluding NYC) is ok
- Orlando, Las Vegas, New Orleans, Ft Lauderdale, Houston, Miami, NYC proper, LA County proper are harder hit
- Suburban is doing better than urban

*At-risk employment sectors include: Leisure and hospitality, Mining, Logging and Construction, Retail and Wholesale Trade
Source: Yardi Matrix; Bureau of Labor Statistics (BLS)

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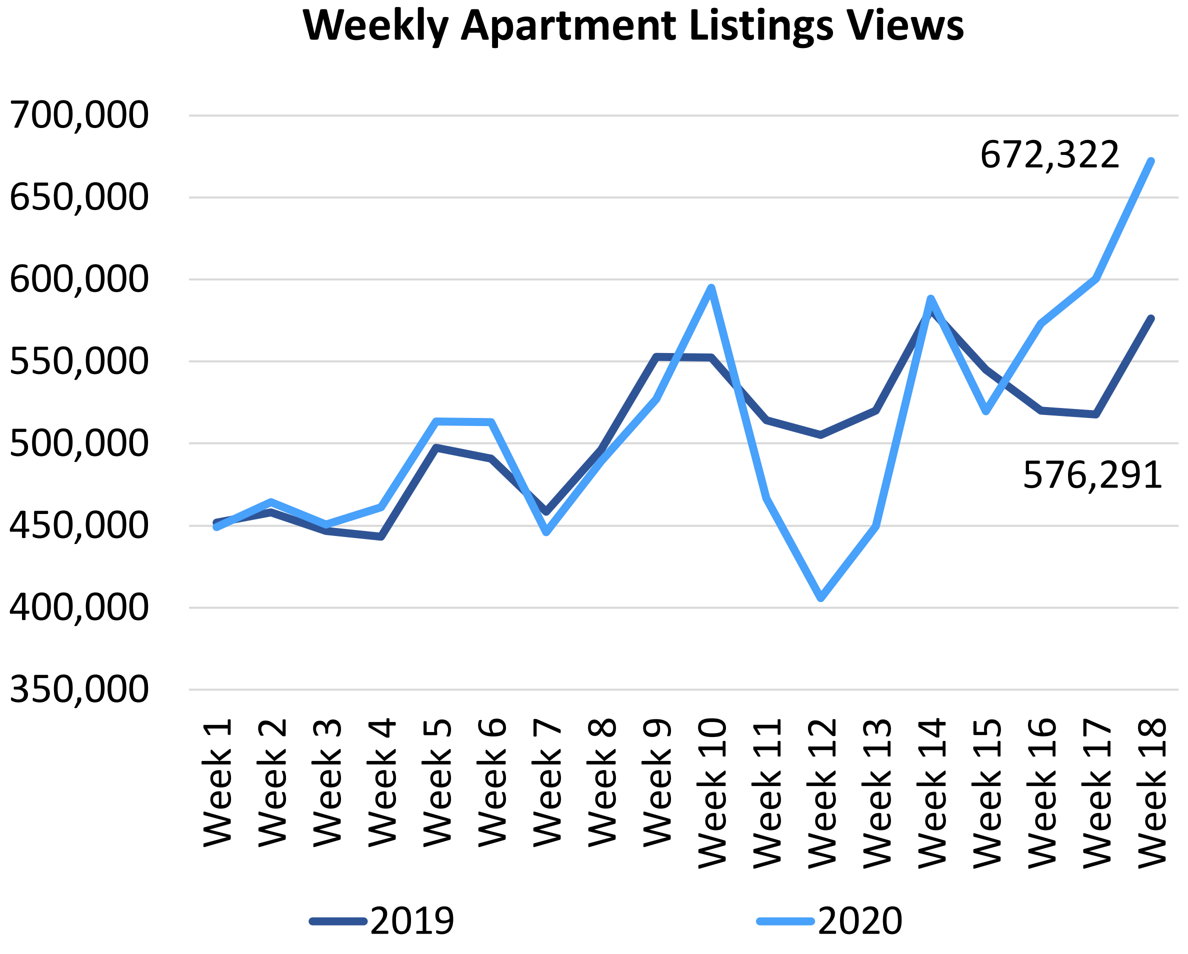
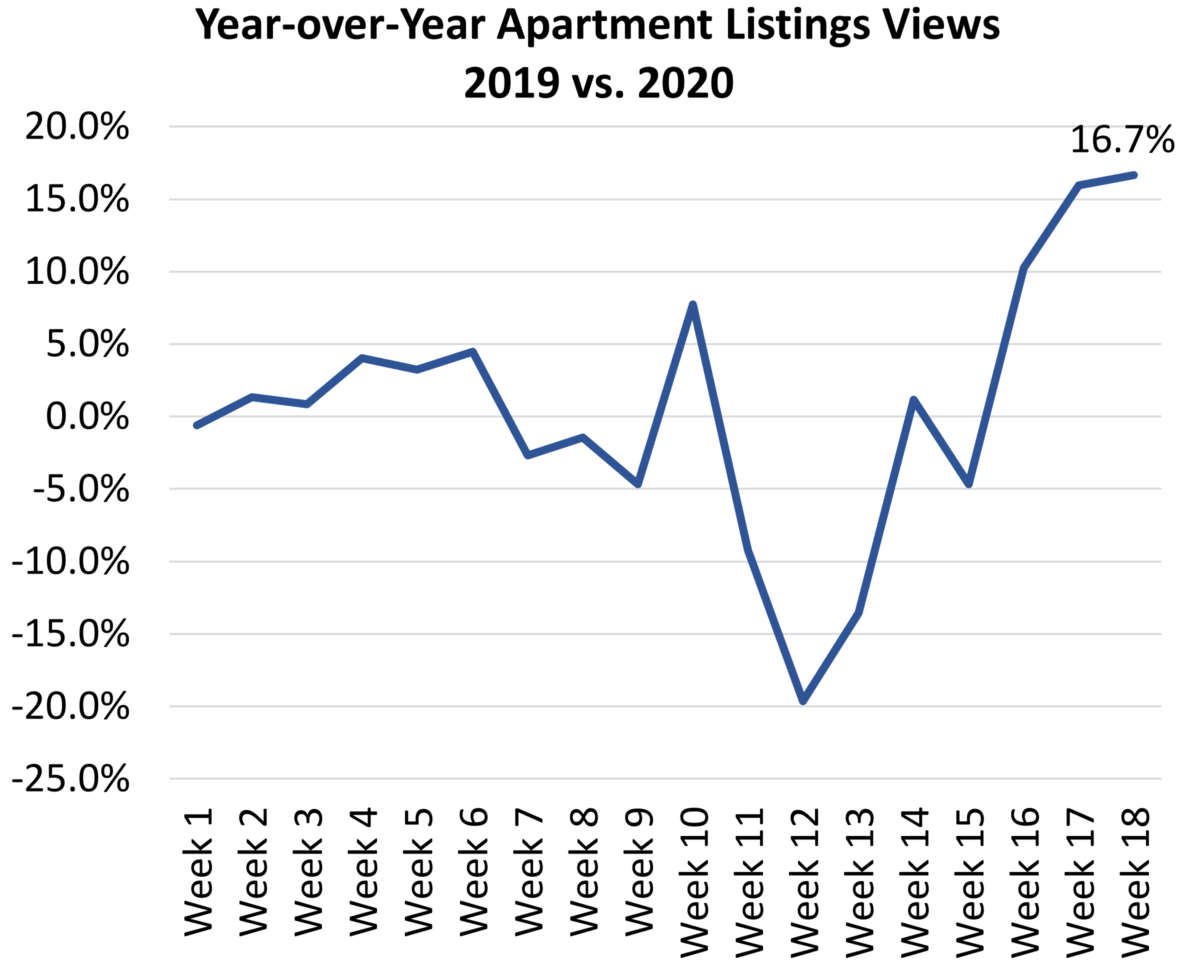
Weekly Apartment Listings Views from RENT*Café* Are Picking Back Up

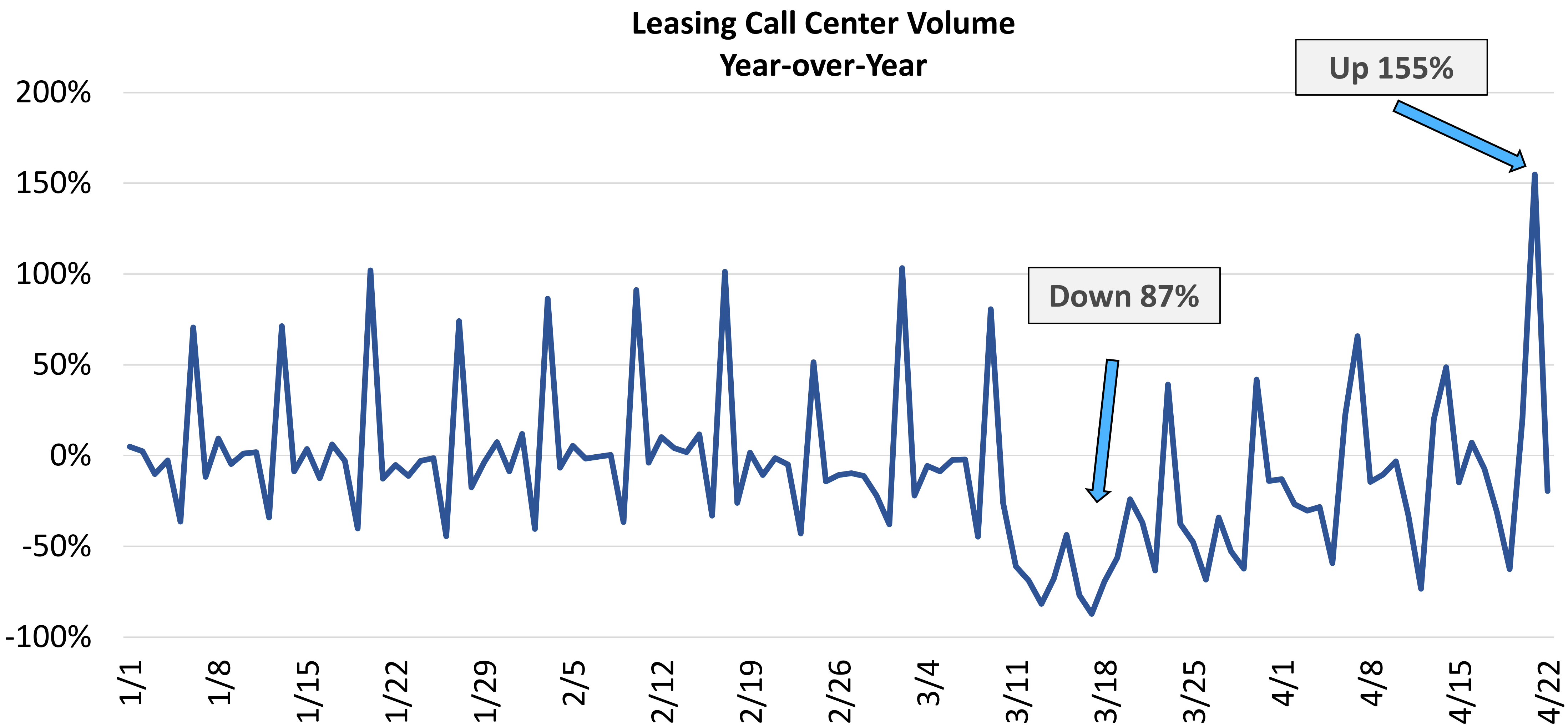




*Week 1 is the first week in each year, 2019 and 2020

Source: Yardi Matrix; RENT*Café*

Leasing Call Center Volume Picking Back Up as Well



Source: Yardi Matrix; Yardi Systems

National Takeaways from Operating Data

1. Prospects – Not quite back to pre-COVID, but pretty close across MF property classes (Discretionary, Mid-Range, Workforce)

2. Approved Apps – Not quite back to pre-COVID levels, but pretty close across property classes

3. Notices – Back “on track” for discretionary, below for mid-range and workforce. Efforts to increase renewals appear only marginally effective

4. Availability – Up across the board, most in discretionary, some in mid-range, a bit up in workforce

5. Work Orders – Down across the board around 20% - same as last report

Conclusions: The leasing season is back, enabled by self-guided tours, virtual tours and on-line leasing. Expect a reshaped, but relatively active leasing season and, therefore, a need to leverage revenue management system capabilities. The issue to watch is if Class A increased concessions start a cascading rent down roll.

Source: Yardi Matrix

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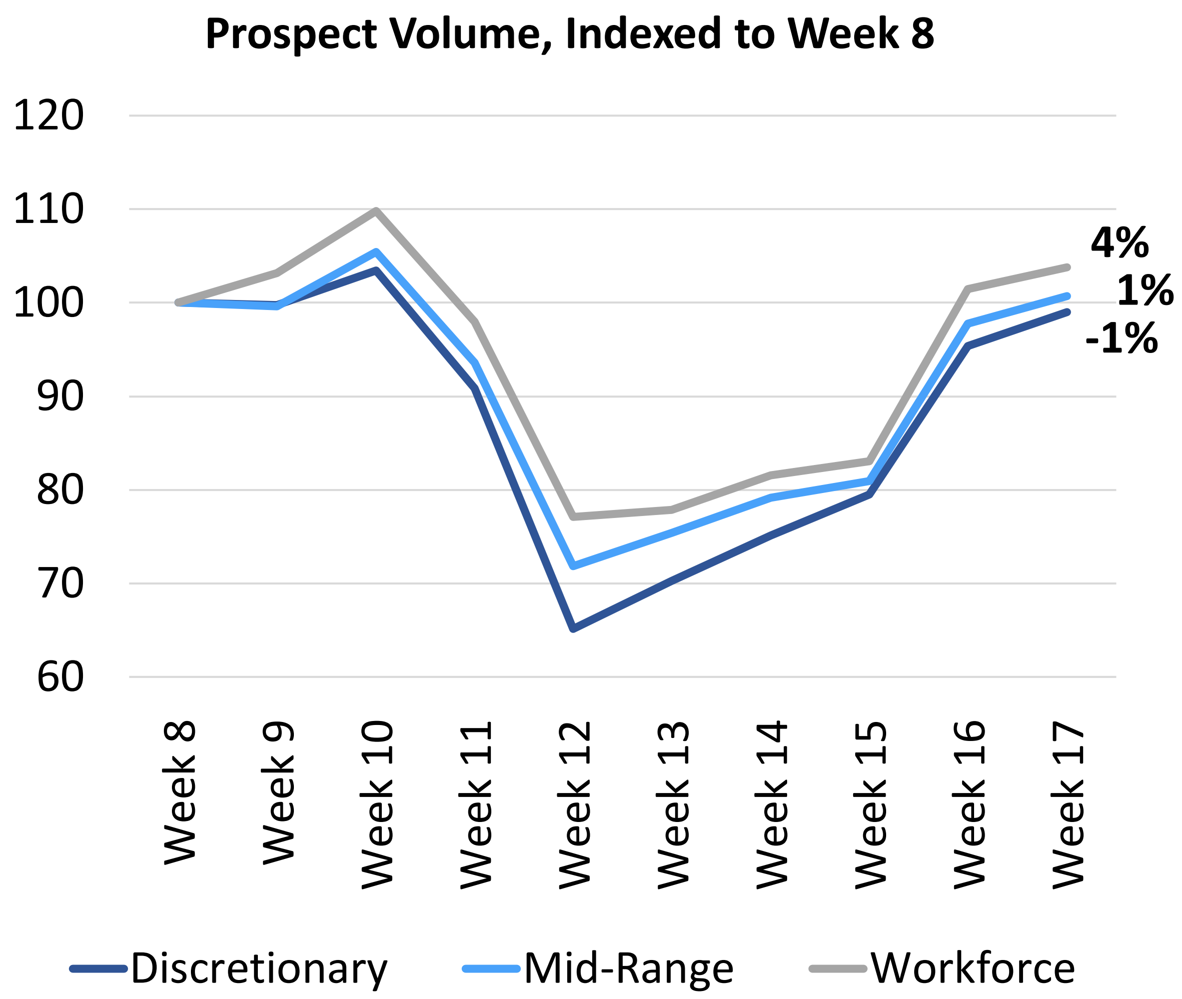
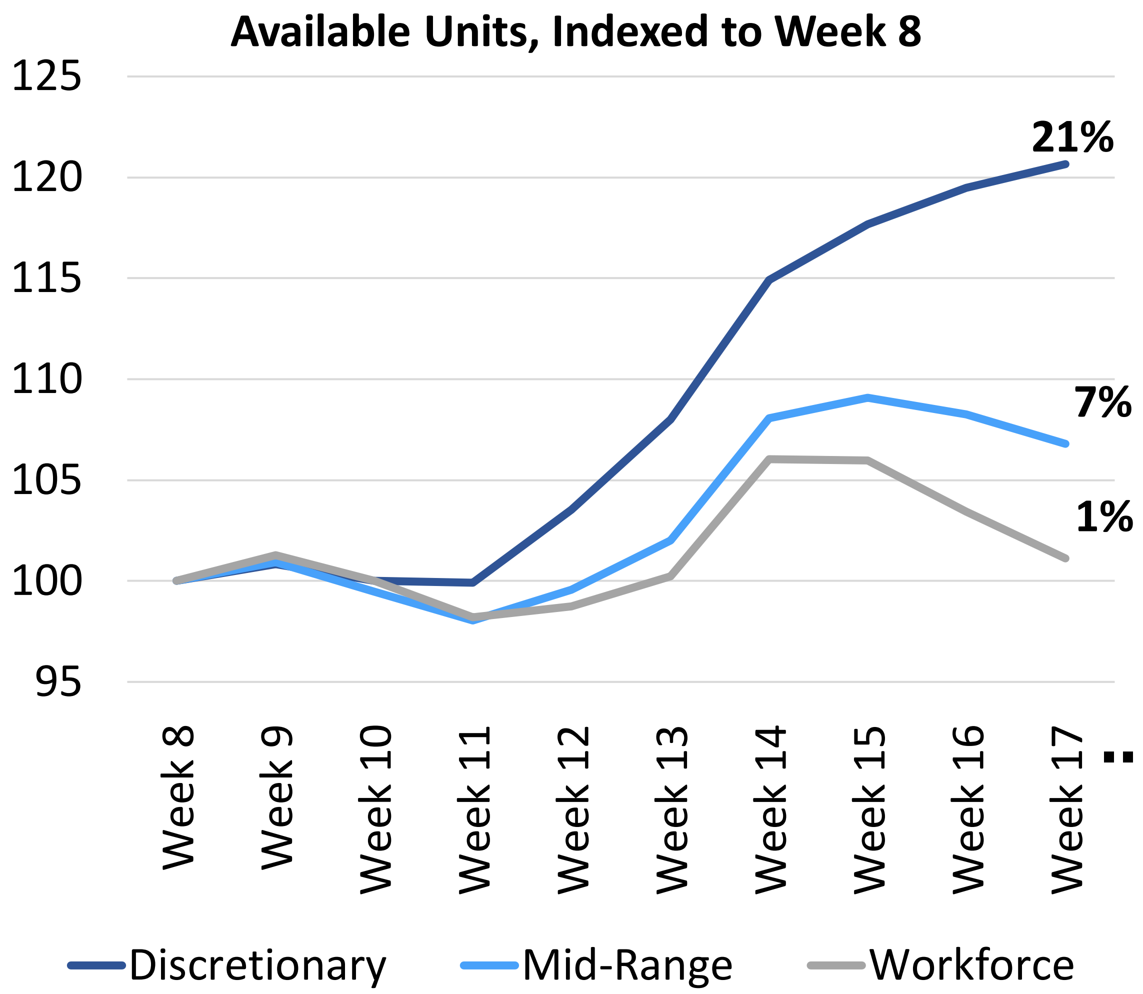
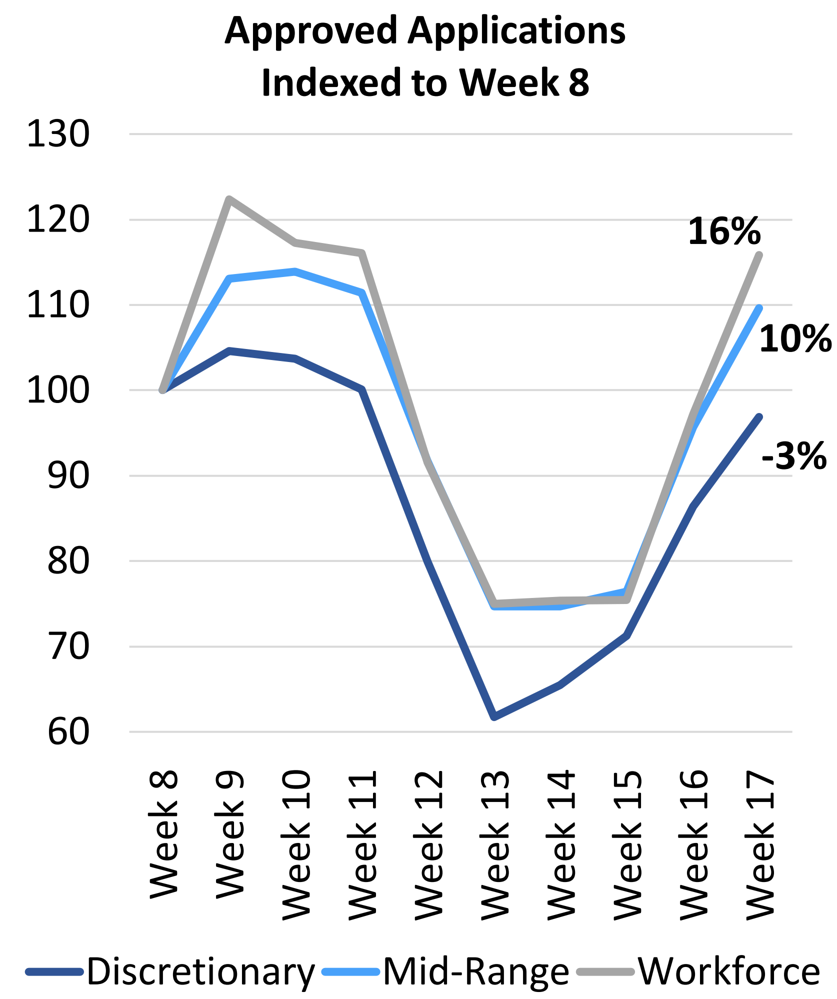
Apartment Prospect Volume is Picking Up, While Availability, Particularly for Discretionary Units, Has Jumped 21%

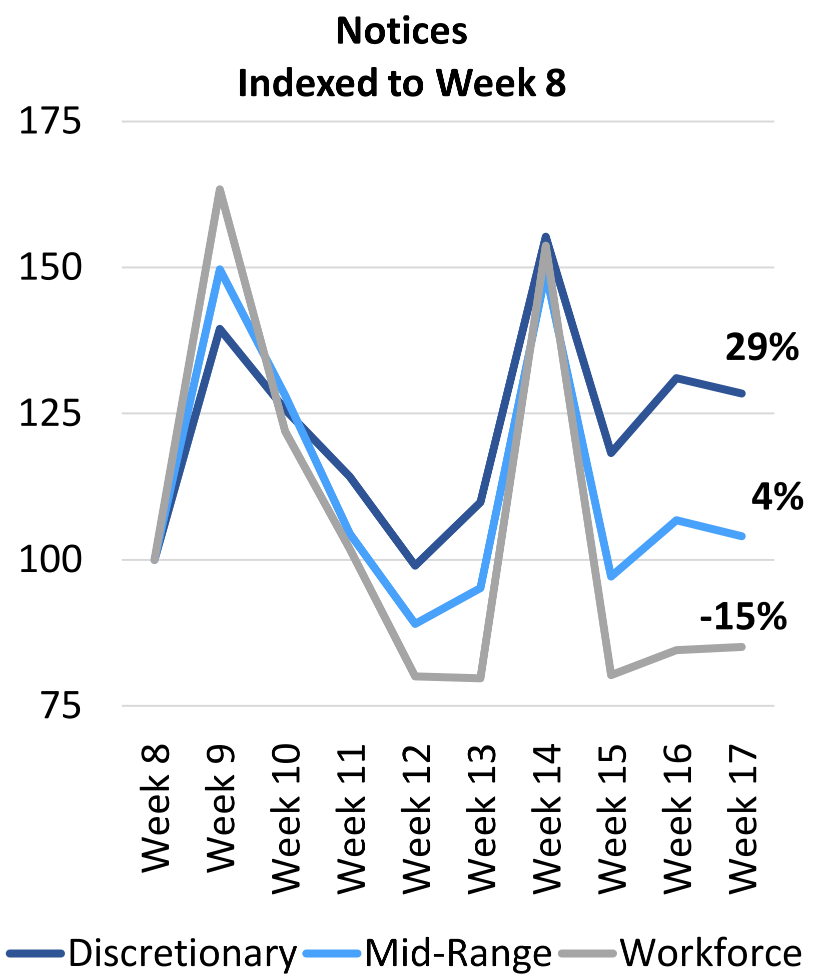


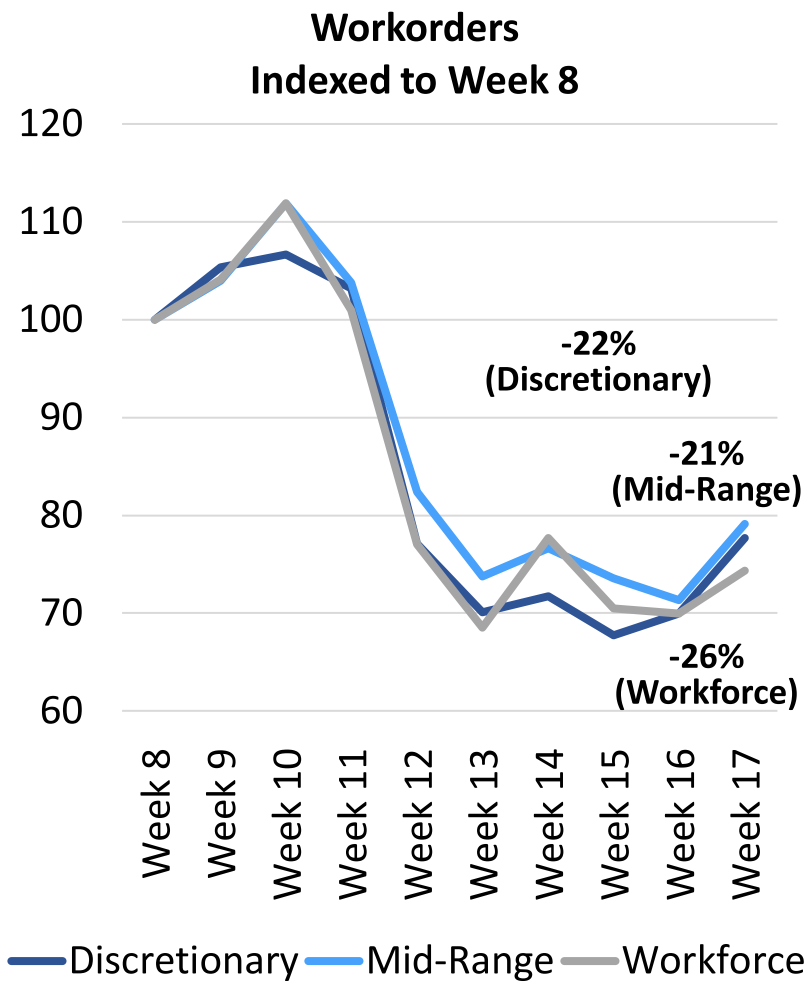


*Week 8 starts at 2/17/20, week 17 ends 4/26/20
Source: Yardi Matrix; Yardi Systems

As Turnover Picks Back Up, So Do Approved Applications and Notices, While Workorders Are Limited to Emergencies Only







*Week 8 starts at 2/17/20, week 17 ends 4/26/20
Source: Yardi Matrix; Yardi Systems

Top 10 and Bottom 10 Based on **Overall Rating**

Market	Prospect Volume	Availability	Approvals	Notices	*Overall*
Top 10 Markets Ranked Based on Yardi Operating Data					
Baltimore	Least Impacted				*1 (Tied)*
Louisville					*1 (Tied)*
Inland Empire					*3*
Albuquerque					*4*
Indianapolis					*5*
Salt Lake City					*6*
Charlotte					*7*
San Antonio					*8*
St. Louis					*9*
Philadelphia					*10*
Bottom 10 Markets Ranked Based on Yardi Operating Data					
New York	Most Impacted				*40*
San Jose					*39*
Orange County					*38*
Austin					*37*
Los Angeles					*36*
Boston					*35*
Nashville					*34*
San Francisco					*33*
Sacramento					*32*
SW Florida Coast					*31*

Source: Yardi Matrix; Yardi Systems

Top 10 and Bottom 10 Based on Asset Class: **Discretionary**

Market	Prospect Volume	Availability	Approvals	Notices	*Overall*
Top 10 Markets Ranked Based on Yardi Operating Data					
Inland Empire	Least Impacted				*1*
San Antonio					*2*
Tampa					*3*
Jacksonville					*4*
Baltimore					*5*
Philadelphia					*6*
Chicago					*7*
Long Island					*8*
Las Vegas					*9*
Phoenix					*10*
Bottom 10 Markets Ranked Based on Yardi Operating Data					
Nashville	Most Impacted				*31*
Los Angeles					*30*
Orange County					*29*
San Jose					*27 (Tied)*
New York					*27 (Tied)*
San Francisco					*26*
Boston					*25*
Twin Cities					*24*
Dallas					*23*
Atlanta					*22*

Source: Yardi Matrix; Yardi Systems

Top 10 and Bottom 10 Based on Asset Class: **Mid-Range**

Market	Prospect Volume	Availability	Approvals	Notices	*Overall*
***Top* 10 Markets Ranked Based on Yardi Operating Data**					
Raleigh	Least Impacted				*1*
Sacramento					*2*
Baltimore					*3*
Indianapolis					*4*
Orlando					*5*
Louisville					*6*
St. Louis					*7 (Tied)*
Inland Empire					*7 (Tied)*
Las Vegas					*9*
Kansas City					*10*
***Bottom* 10 Markets Ranked Based on Yardi Operating Data**					
New York	Most Impacted				*40*
San Francisco					*39*
Orange County					*38*
Boston					*37*
Los Angeles					*36*
Washington DC					*35*
San Jose					*34*
SW Florida Coast					*32*
Miami					*32*
Austin					*31*

Source: Yardi Matrix; Yardi Systems

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Top 10 and Bottom 10 Based on Asset Class: **Workforce**

Market	Prospect Volume	Availability	Approvals	Notices	*Overall*
Top 10 Markets Ranked Based on Yardi Operating Data					
Louisville	Least Impacted				***1***
Charlotte					***2***
Albuquerque					***3***
Baltimore					***4***
Kansas City					***5***
Phoenix					***6***
Seattle					***7***
Indianapolis					***8***
Orlando					***9***
Inland Empire					***10***
Bottom 10 Markets Ranked Based on Yardi Operating Data					
Austin	Most Impacted				***38***
San Jose					***37***
Sacramento					***36***
Chicago					***34 (Tied)***
New York					***34 (Tied)***
Orange County					***33***
Nashville					***31 (Tied)***
SW Florida Coast					***31 (Tied)***
Los Angeles					***30***
San Antonio					***29***

Source: Yardi Matrix; Yardi Systems

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Matrix April Rent Survey Observations: Pretty Consistent Trends Across Markets, Though Magnitude Might Vary

Matrix Top 40 Markets Rent Declines

- Renter-by-Necessity (RBN) continues to outperform Lifestyle
- On a month-over-month overall rent basis the most significant declines were in primary markets (NY, LA, SF Boston) and secondary markets that locked down early (Denver, Tacoma)
- Month-over-month RBN rents show the same pattern. DC and Seattle join the top 10 major markets with rent declines, as well as Raleigh and Nashville
- Lifestyle month-over-month rent declines were also heavy on the coasts, but also included some traditional late stage growth markets of Tampa, Miami and Phoenix

All Matrix Markets Rent Declines

- Midland Odessa and Scranton lead in rent drops across the board
- For overall rents, tourism markets are getting hit hard (Reno, Savannah, West Palm Beach, Pensacola), Oil patch also suffering losses
- RBN is a mixed bag, some small markets are falling (Des Moines, Youngstown, Midland, Ashville) but so too are gateway markets (SF, Chicago, Philadelphia)
- Lifestyle drops were most severe in outlying areas of major cities (Queens, San Fernando Valley) and smaller markets (Scranton, Midland, Augusta GA, Reno, South Bend)

Source: Yardi Matrix

April Asking Rent Survey Observations: Pretty Consistent Trends Across Markets, Though Magnitude Might Vary

Analysis of Top 40 Markets Month-over-Month Trends

Top 10 MOM Overall Rent Drops		Top 10 MOM RBN Rent Drops		Top 10 MOM Lifestyle Rent Drops	
Queens	-1.2%	Denver	-0.8%	Queens	-2.3%
Denver	-1.0%	San Francisco	-0.8%	Los Angeles	-1.6%
Kansas City	-0.9%	Washington DC	-0.8%	Tampa - St Petersburg	-1.5%
San Diego	-0.9%	Tacoma	-0.8%	San Diego	-1.3%
Los Angeles	-0.9%	Seattle	-0.8%	Richmond - Tidewater	-1.2%
Tacoma	-0.8%	Boston	-0.7%	Phoenix	-1.1%
Boston	-0.8%	Bay Area - South Bay	-0.7%	Kansas City	-1.1%
Brooklyn	-0.8%	Kansas City	-0.7%	Brooklyn	-1.0%
San Francisco	-0.8%	Raleigh - Durham	-0.7%	Denver	-1.0%
San Antonio	-0.8%	Nashville	-0.6%	Miami Metro	-1.0%

National Month-over-Month Rent Change

Overall	Renter-by-Necessity	Lifestyle
-0.4%	-0.3%	-0.7%

Source: Yardi Matrix

Our Multifamily Rent Forecasts Have Been Updated in April Based on Our Continued Learning From COVID-19

Market	Year-over-Year Rent Growth YE 2020	Year-over-Year Rent Growth YE 2021
Las Vegas	-5.4%	3.1%
San Francisco	-3.5%	1.2%
Atlanta	-3.0%	1.8%
Miami	-2.9%	2.9%
Raleigh - Durham	-2.6%	0.6%
Nashville	-2.3%	0.8%
Austin	-1.6%	1.6%
Portland	-1.6%	1.6%
Denver	-1.0%	2.8%
Orlando	-0.9%	2.2%
Boston	-0.8%	1.3%
San Antonio	-0.7%	1.8%
Charlotte	-0.6%	2.4%
Chicago	0.1%	2.5%
Sacramento	0.2%	1.9%

Market	Year-over-Year Rent Growth YE 2020	Year-over-Year Rent Growth YE 2021
North Dallas	0.3%	2.4%
Washington DC	0.5%	2.2%
Phoenix	0.6%	5.2%
Orange County	0.7%	3.8%
Seattle	0.9%	3.4%
Baltimore	1.0%	2.2%
Inland Empire	1.1%	3.2%
Houston	1.1%	1.6%
Los Angeles	1.4%	3.7%
San Jose	1.5%	4.1%
Kansas City	1.7%	3.2%
Twin Cities	1.7%	2.1%
Philadelphia	1.9%	2.3%
Tampa - St Petersburg	2.8%	4.1%
Indianapolis	3.2%	2.4%

Source: Yardi Matrix

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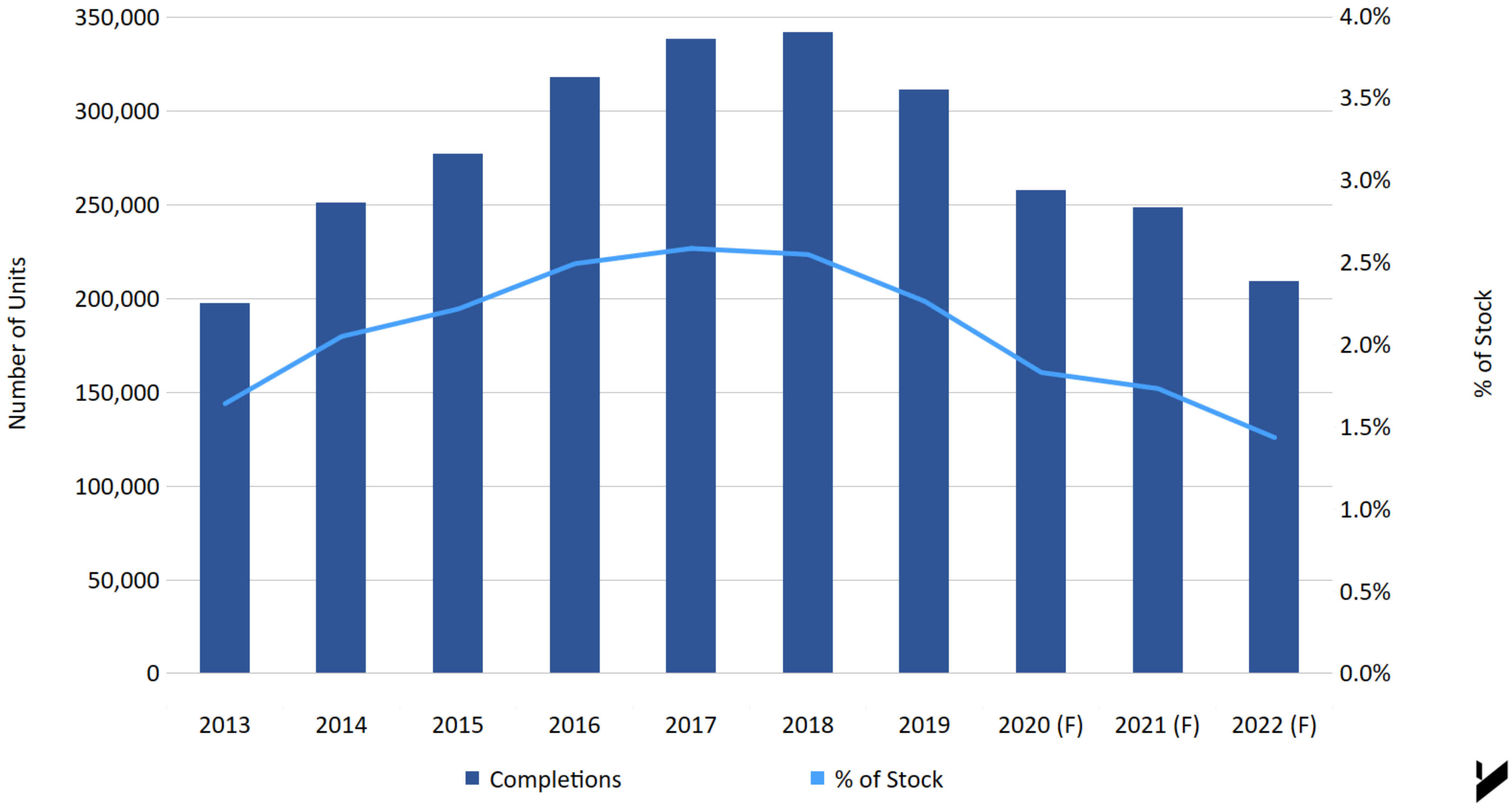
We Updated Our Supply Forecast in April and We Expect New Supply to Drop Off Significantly



Source: Yardi Matrix

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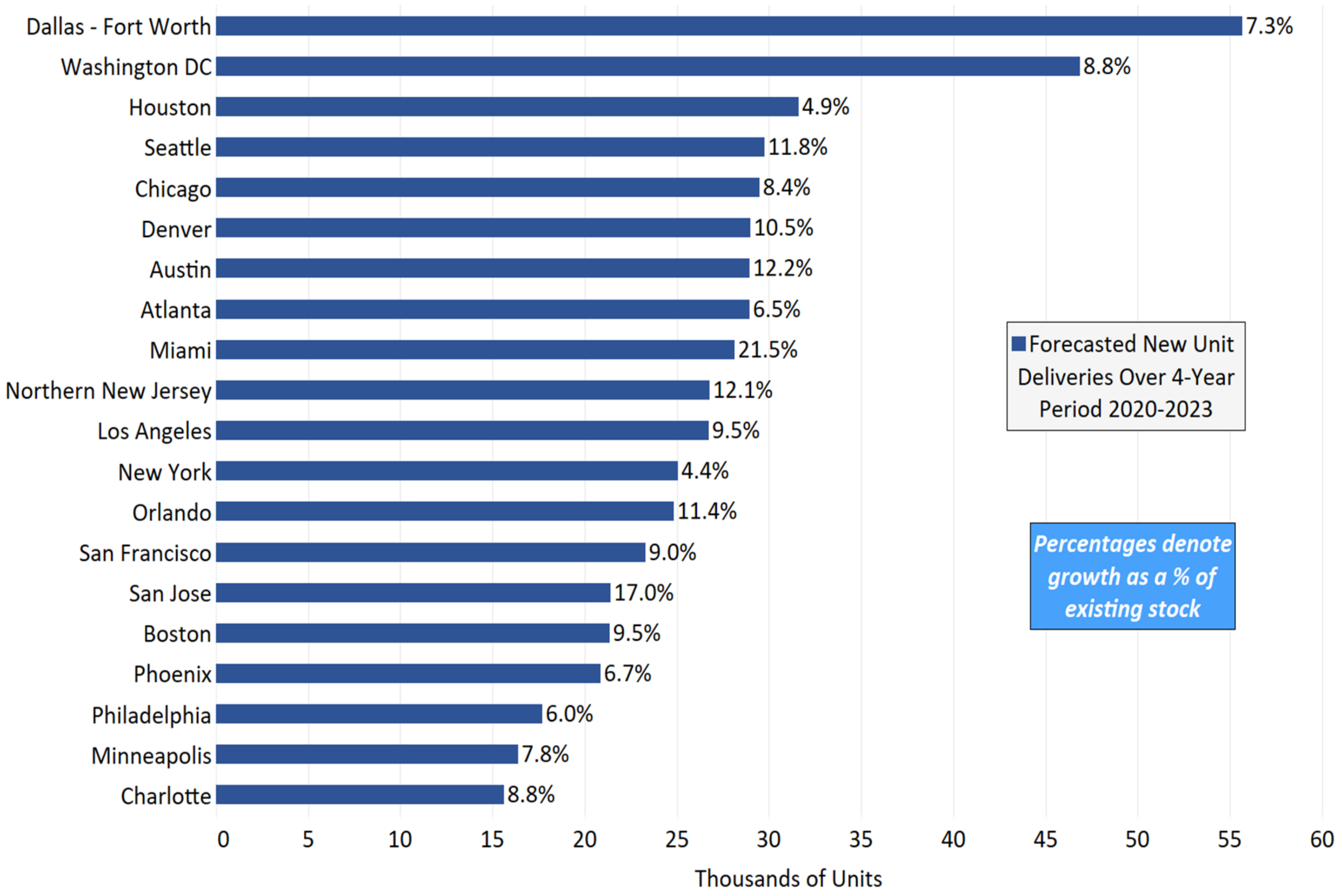
Our New Completion Forecast 2020-2023 Still Shows Significant New Supply Coming



NEW FORECAST ASSUMPTIONS

Attrition

- Planned: rate of attrition increased 125%*
- Prospective: rate of attrition increased 150%*

Rate of Progress

- 2020-2021
  - Under construction to lease up slowed 41%*
  - Planned to under construction slowed 55%*
  - Prospective to planned slowed 50%*
- 2022
  - Under construction to lease up slowed 20.5%*
  - Planned to under construction slowed 47.5%*
  - Prospective to planned slowed 50%*
- 2023
  - Under construction to lease up slowed 20.5%*
  - Planned to under construction slowed 40%*
  - Prospective to planned slowed 50%*

*Percent of prior 12-month average

Source: Yardi Matrix

Political Risk Analysis

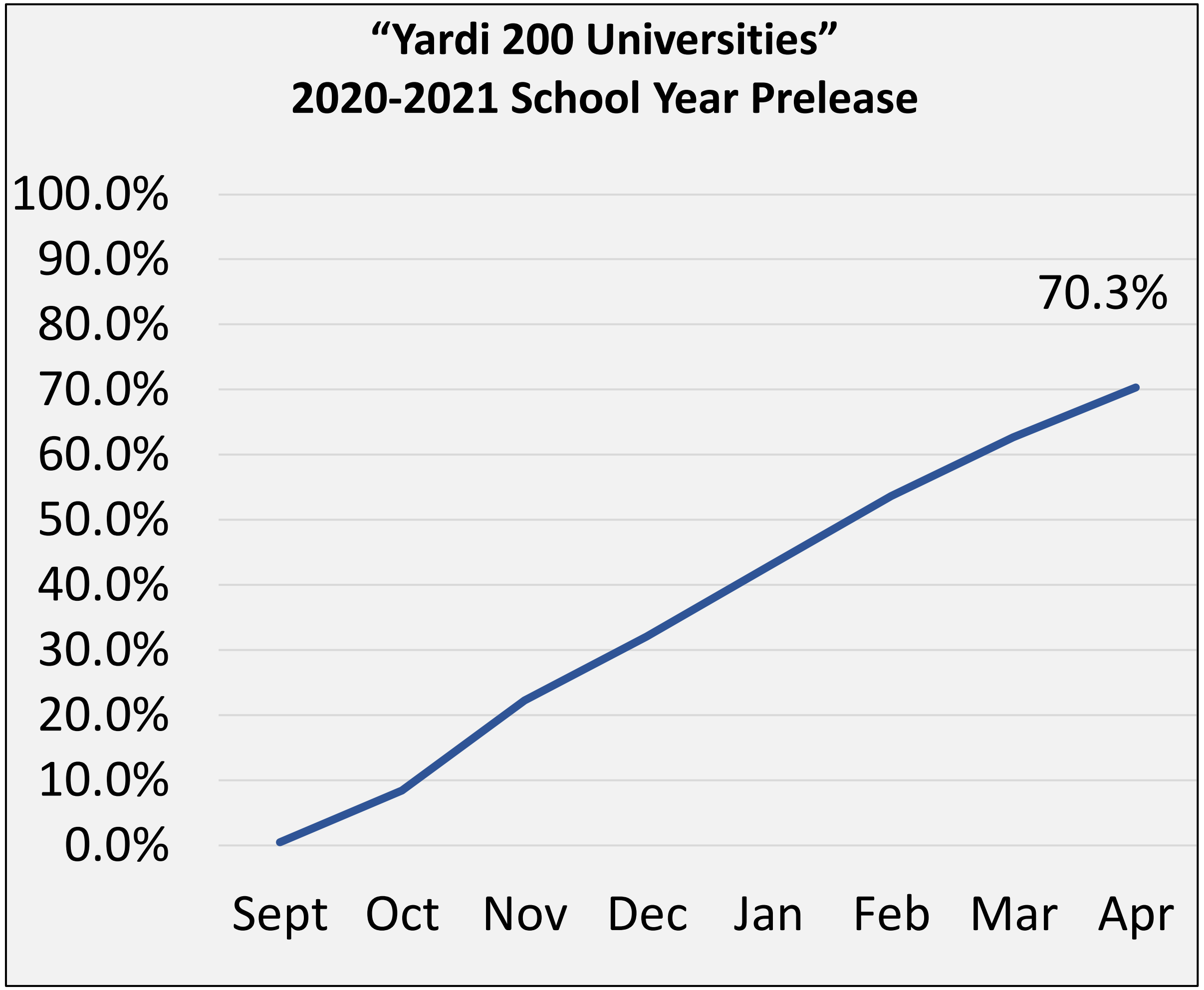
Market	Affordability	Philosophy Toward Affordability	Urban Policing/ Security	Social Mobility	Tax Burden (Business/Individual)	Unfunded Pension Liability	Overall Rating
Los Angeles	1	1	1	2	1	2	1.23
San Francisco	1	1	1	3	1	2	1.35
Seattle	1	1	1	3	2	2	1.47
New York	1	1	3	2	1	2	1.67
Portland	2	1	1	2	3	2	1.68
Washington D.C.	1	1	2	3	1	3	1.68
Chicago	2	2	2	2	1	1	1.77
Boston	1	2	3	2	1	1	1.77
Dallas	2	2	1	2	3	1	1.78
Atlanta	2	2	2	1	2	2	1.88
Denver	2	2	2	3	2	1	2.00
Minneapolis	2	3	2	3	1	1	2.10
Orlando	2	2	2	2	3	2	2.12
Houston	3	3	1	3	3	1	2.33
Austin	2	3	2	2	3	2	2.33
Tampa	2	2	3	1	3	3	2.33
Nashville	2	3	2	2	2	3	2.33
Charlotte	3	3	2	1	3	3	2.55
Salt Lake City	2	3	2	3	3	3	2.57
Indianapolis	3	3	2	2	3	3	2.67
Raleigh-Durham	3	3	3	1	3	3	2.77

Source: Yardi Matrix

In Mid-April, 4 Student Housing CEOs Gave Insight on the State of the Industry During a Webinar Run by Student Housing Business

<u>Landmark Properties, The Scion Group, Blue Vista Companies and Harrison Street CEOs:</u>

- As of April 16, all four CEOs reported mid to high 90%'s of rent payments collected
- All four also reported their portfolios to be between 60% and 79% pre-leased for the Fall, with leasing velocity slowing but not stopping
- The overall tone was **"cautiously optimistic"**



Source: Yardi Matrix

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Potential Distress Areas – Student Housing

Public Colleges Losing Funding as States Cut Budgets Amid Coronavirus Pandemic

- Montclair State University (NJ) – state funding cut of $12.3 million, about 25% of annual appropriation
- Missouri State University (MO) – state funding cut of $7.6 million, about 8.3% of annual appropriation
- The Nevada System of Higher Education – proposed 4% cut to university budgets in 2020, and offered options of 6%, 10% and 14% cuts for next fiscal year
- More to come??

Important Issues We Are Tracking:

- When will universities open again?
- How badly will preleasing be impacted?
- Impact of foreign students vs no semester abroad?
- Will construction projects get finished on time?
- Shakeout of school based on financial resiliency?

Source: Yardi Matrix; Multi-Housing News; NPR; Pixabay

Debt Market Conditions

- 5.8% of multifamily CMBS loans were 30+ days late (up from 2.7% in March) according to Trepp
- Debt market conditions have improved since Fed included Agency CMBS in TALF
- Freddie/Fannie:
  - 3.25%-3.50% for 10yrs, 70%-75% LTV loans if “mission” driven – 37.5% of units considered workforce
- Funded Reserve:
  - Principal, interest - 9-12 months; equal to 3-8% of loan value
- Deals are still getting done – virtual inspections, Title Gap Insurance
- Some at-risk metro areas under special review
- Student Housing – Lower LTVs, tighter conditions

Source: Yardi Matrix; Commercial Property Executive “CMBS Late Payments Starting to Mushroom”, Paul Fiorilla; CRE Finance Council; Trepp; Pixabay

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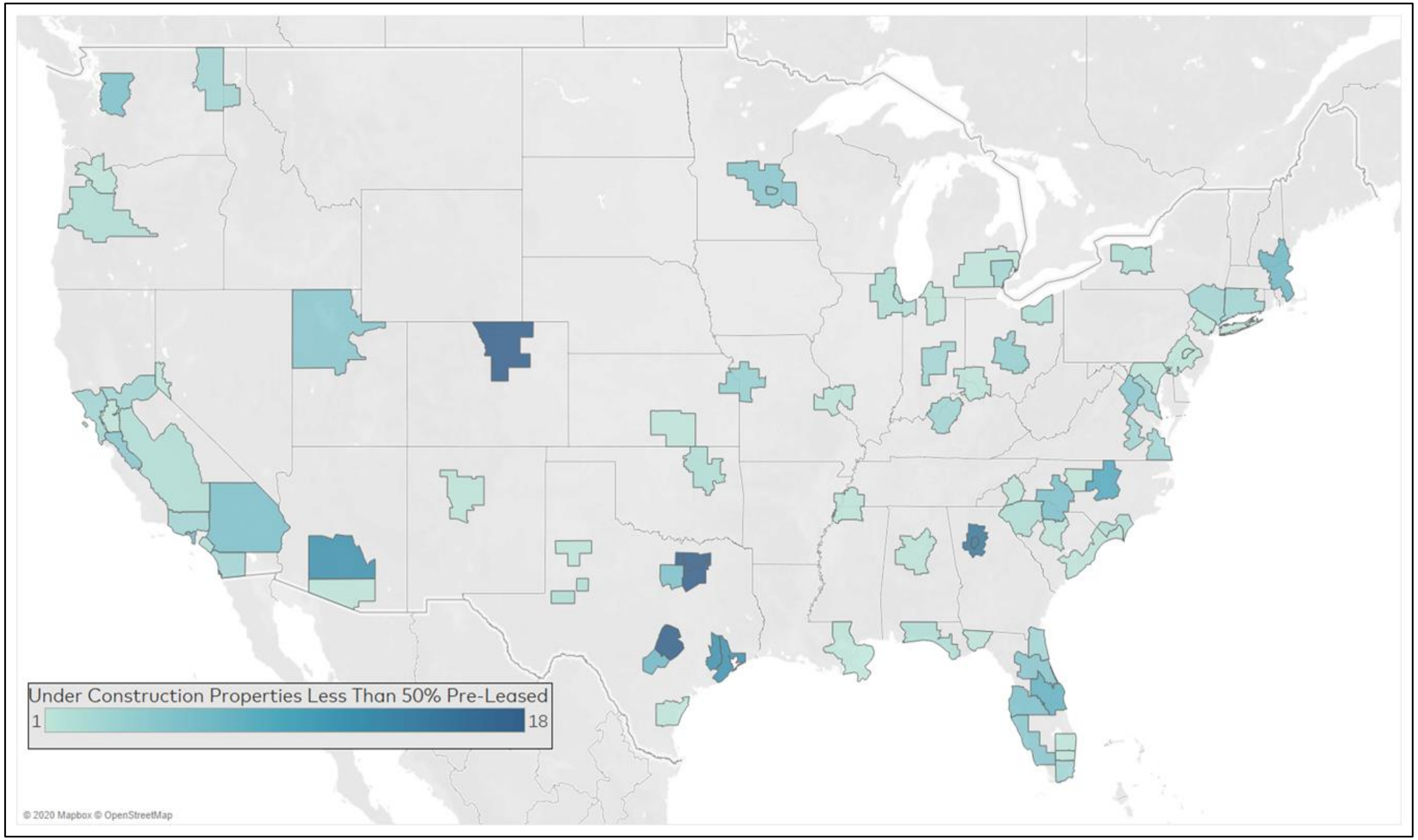
Resulting Probable Areas of Distress in Late 3Q/4Q

- Select lease-ups in hard hit metros – based on Sponsor
- Select Class A with a lot of corporate housing
- Select Class C in hard hit metros
- Select student housing – based on Sponsor

Source: Yardi Matrix

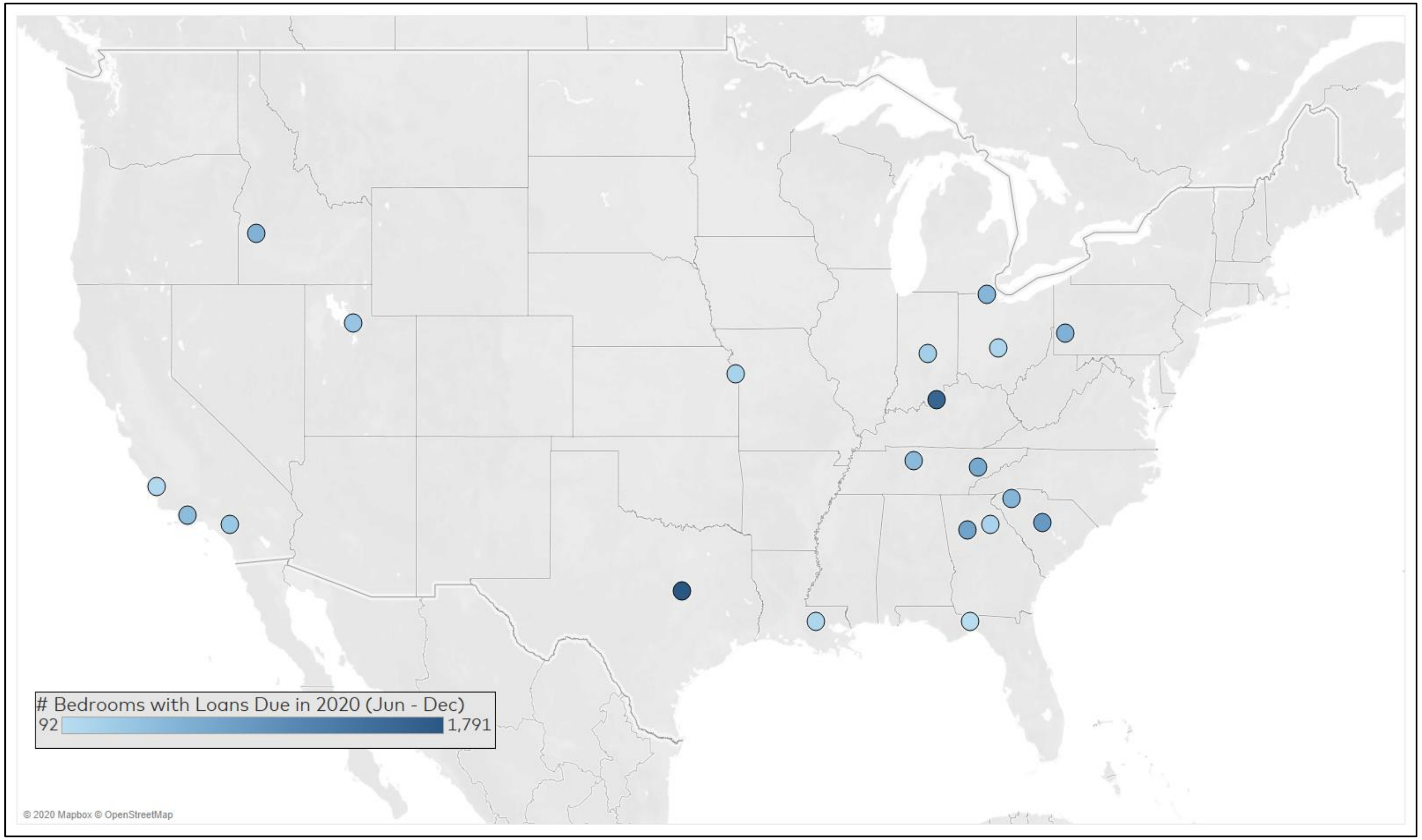
Potential Distress Areas:
Number of Under Construction Properties Less Than 50% Pre-Leased



Market	Properties
Austin	18
Dallas	18
Denver	18
Atlanta	15
Phoenix	12
Carolina Triangle	9
Orlando	8
Boston	7
San Antonio	7
Charlotte	6
Fort Worth	6
Houston	6
Inland Empire	6
Metro Los Angeles	6
Seattle	6
Tampa	6

Source: Yardi Matrix

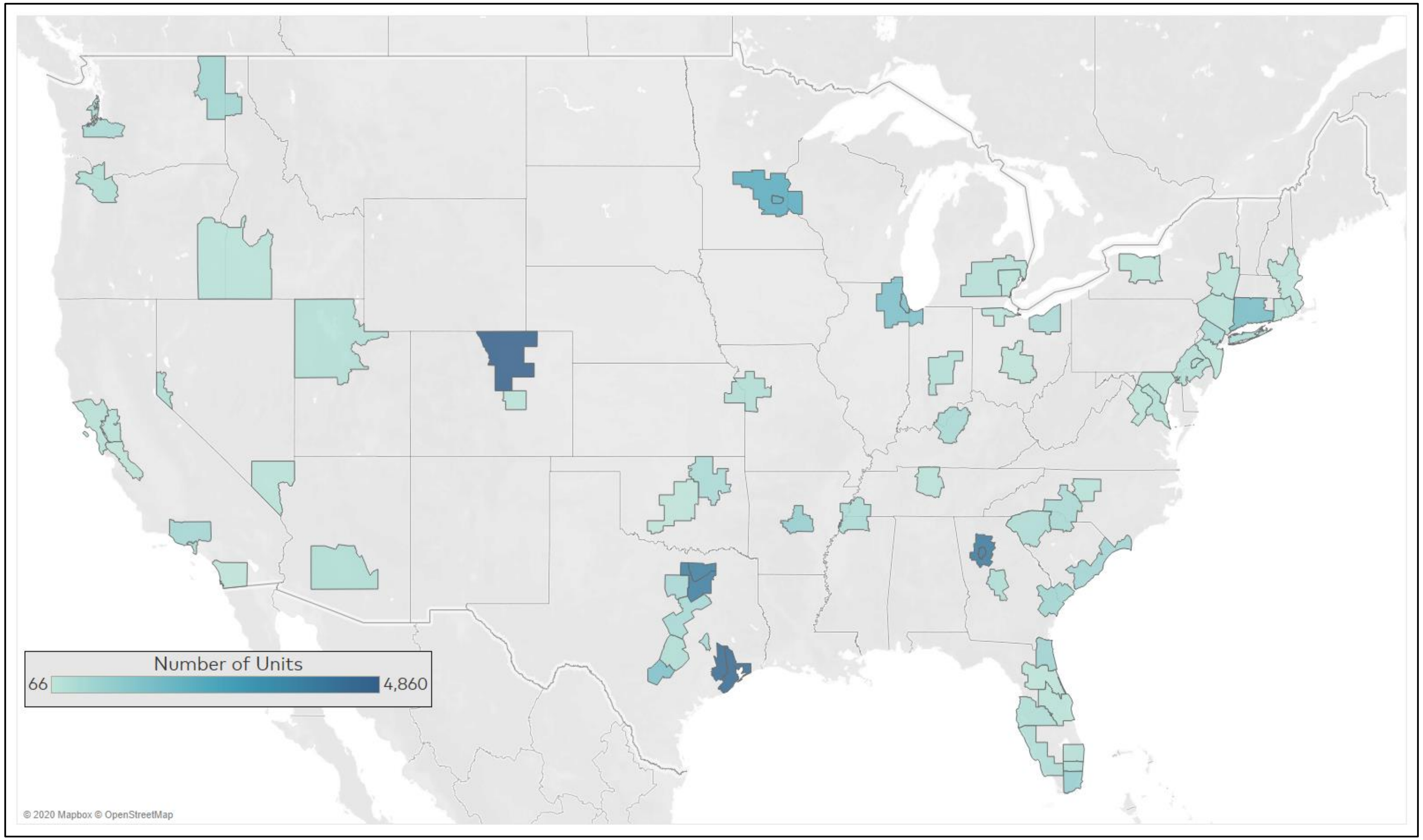
Potential Distress Areas: Student Housing Loans Maturing June-Dec 2020



Student Housing Market	Bedrooms
Central East Texas	1,791
Louisville	1,618
Columbia, SC	924
Atlanta	816
Knoxville	744
Pittsburgh	632
Boise	622
Greenville	590
Toledo	576
Nashville	512
San Fernando Valley	510
Salt Lake City	404
Inland Empire	370
Indianapolis	290
Kansas City	236

Source: Yardi Matrix

Potential Distress Areas:
Construction Loans Maturing June-Dec 2020



Market	Units
Denver	4,860
Atlanta	4,030
Dallas	3,866
Houston	2285
Twin Cities	2253
Bridgeport	1,610
Chicago	1,491
San Antonio	1466
Little Rock	960
Miami	952
Jacksonville	750
Spokane	676
Savannah	668
Charleston	650
San Fernando Valley	626

Source: Yardi Matrix

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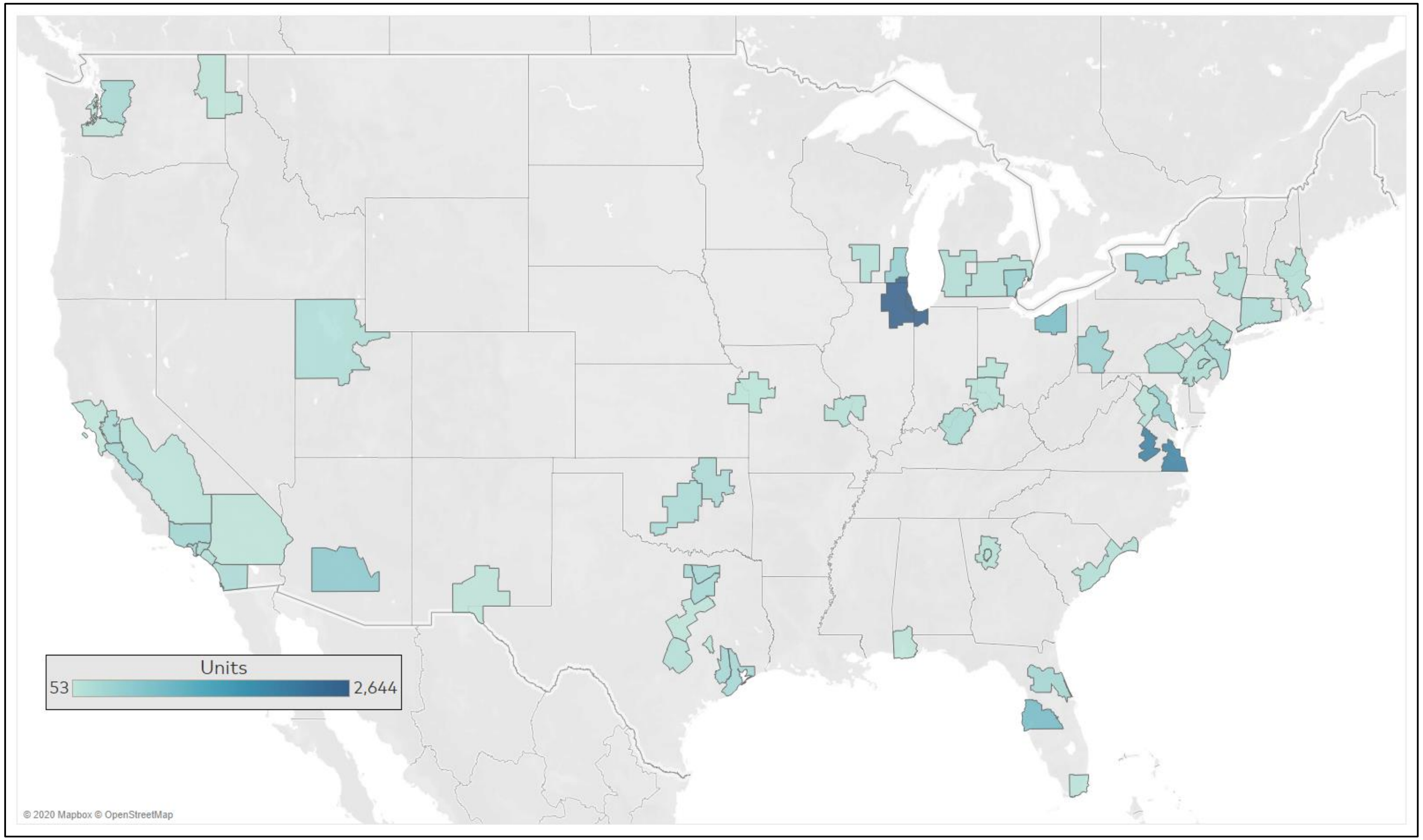
Potential Distress Areas:
Class C Workforce Housing CMBS Loans Maturing June-Dec 2020



Market	Units
Chicago	2,644
Richmond	2,045
Tampa	936
Cleveland	886
Phoenix	625
Milwaukee	532
Washington DC	490
Detroit	482
Pittsburgh	467
Los Angeles Metro	434
Rochester	426
San Fernando Valley	378
North Central Florida	353
New Jersey - Central	340
Bay Area - South Bay	329

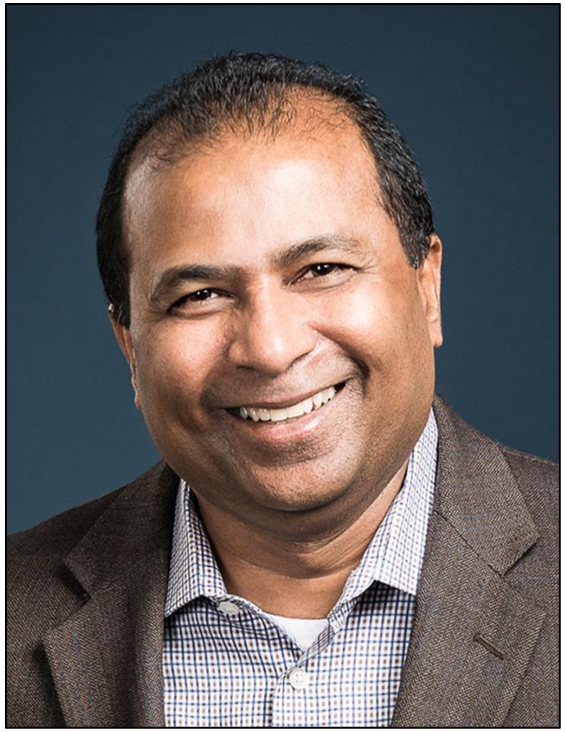
Source: Yardi Matrix

Operational Response

A Conversation with **Greg Slang**

Vice President of Asset Management at Kettler

Greg Slang
Kettler



Dhar Sawh
Yardi

Source: Yardi Matrix; Kettler

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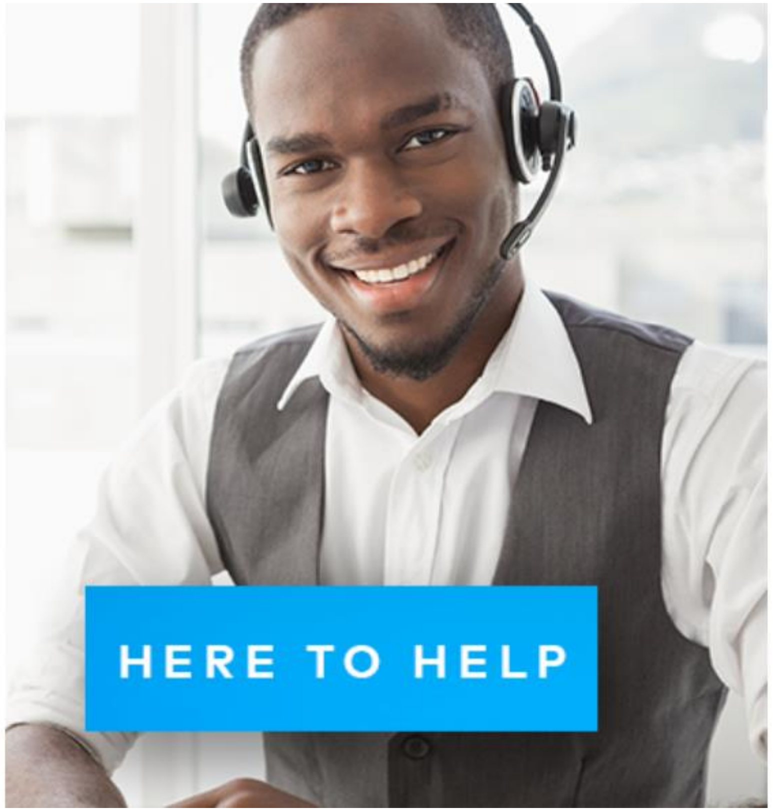
For More on Yardi's Capabilities

Yardi's COVID-19 Resource Page:
https://www.yardi.com/coronavirus/



Source: Yardi Matrix

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Yardi Webinar

OPERATIONAL STRATEGIES FOR BUSINESS CONTINUITY AND RECOVERY

TUESDAY MAY 12, 10A.M. PDT

DHARMENDRA SAWH
Industry Principal,
Yardi

This session will guide you through operational considerations and strategies that can lead to business continuity during the crisis and business recovery afterward.

SAVE MY SEAT

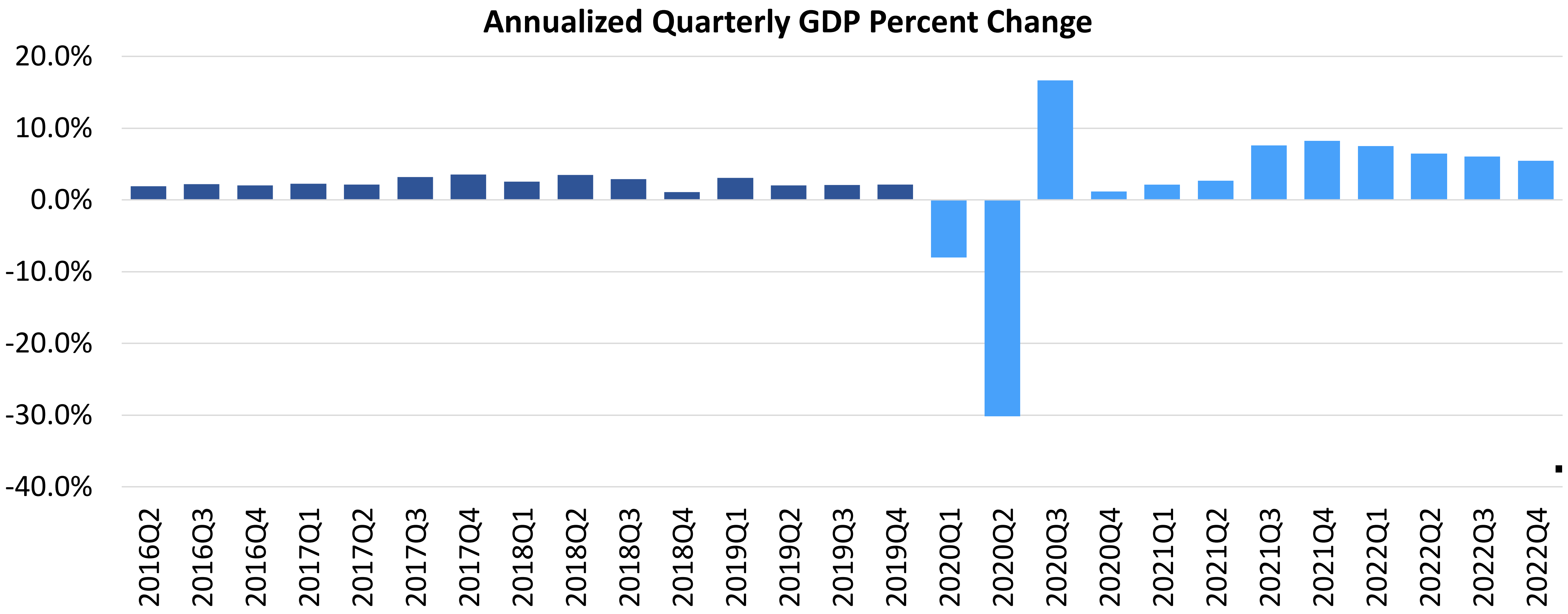
Shape and Timing of Recovery

JPMorgan Chase & Co. Expects 2Q U.S. GDP to Contract a Historic 40%, Revised Down From 25%

- JPMorgan slashed its growth outlook for 2Q to -40% from -25%
- Widespread stay-at-home orders and record-high weekly jobless claims contributed to their revision
- According to the bank, the federal government's $2 trillion stimulus "should provide only a partial offset to ongoing income losses" while adding to the economy's debt load
- The JPMorgan forecast assumes the virus has run its course by June

Source: Yardi Matrix; CNBC.com, "JPMorgan now sees economy contracting by 40% in the second quarter, and unemployment reaching 20%"; Pixabay

Moody's Analytics GDP Projections:
Q2 Revised Down to -30%, but a Bigger Rebound Forecasted



Source: Yardi Matrix; Moody's Analytics; U.S. Bureau of Economic Analysis (BEA)

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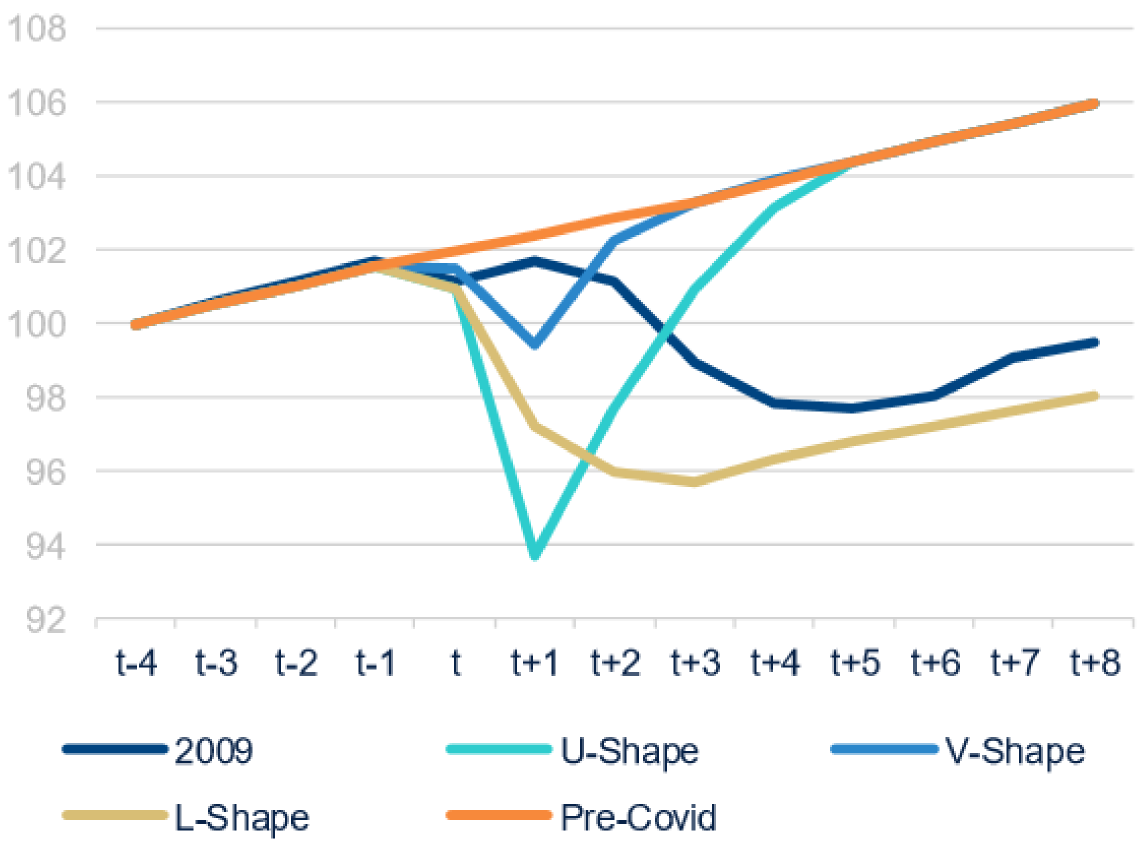
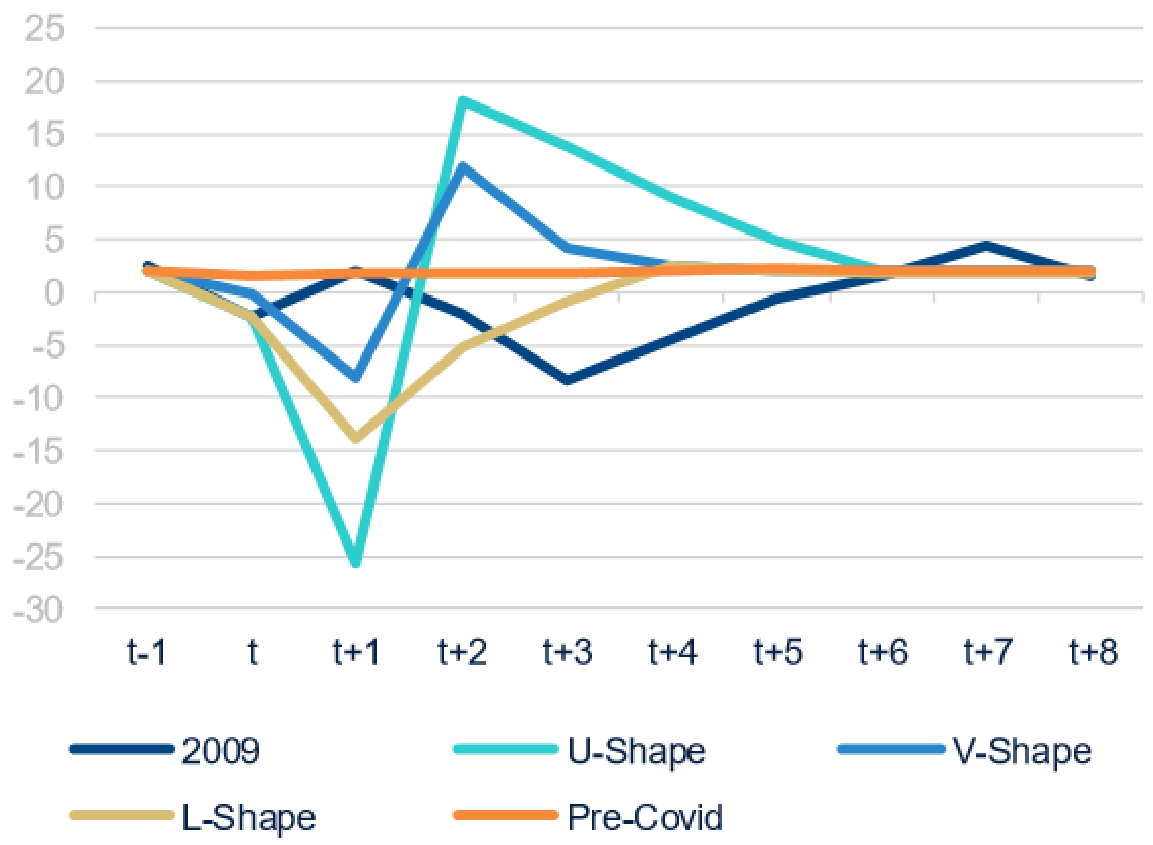
BBVA GDP Scenario a Bit Optimistic, with “U” Return in 5 Qtrs

Pre-Covid vs V, U and L-shape recoveries (Index t-4=100, quarters)

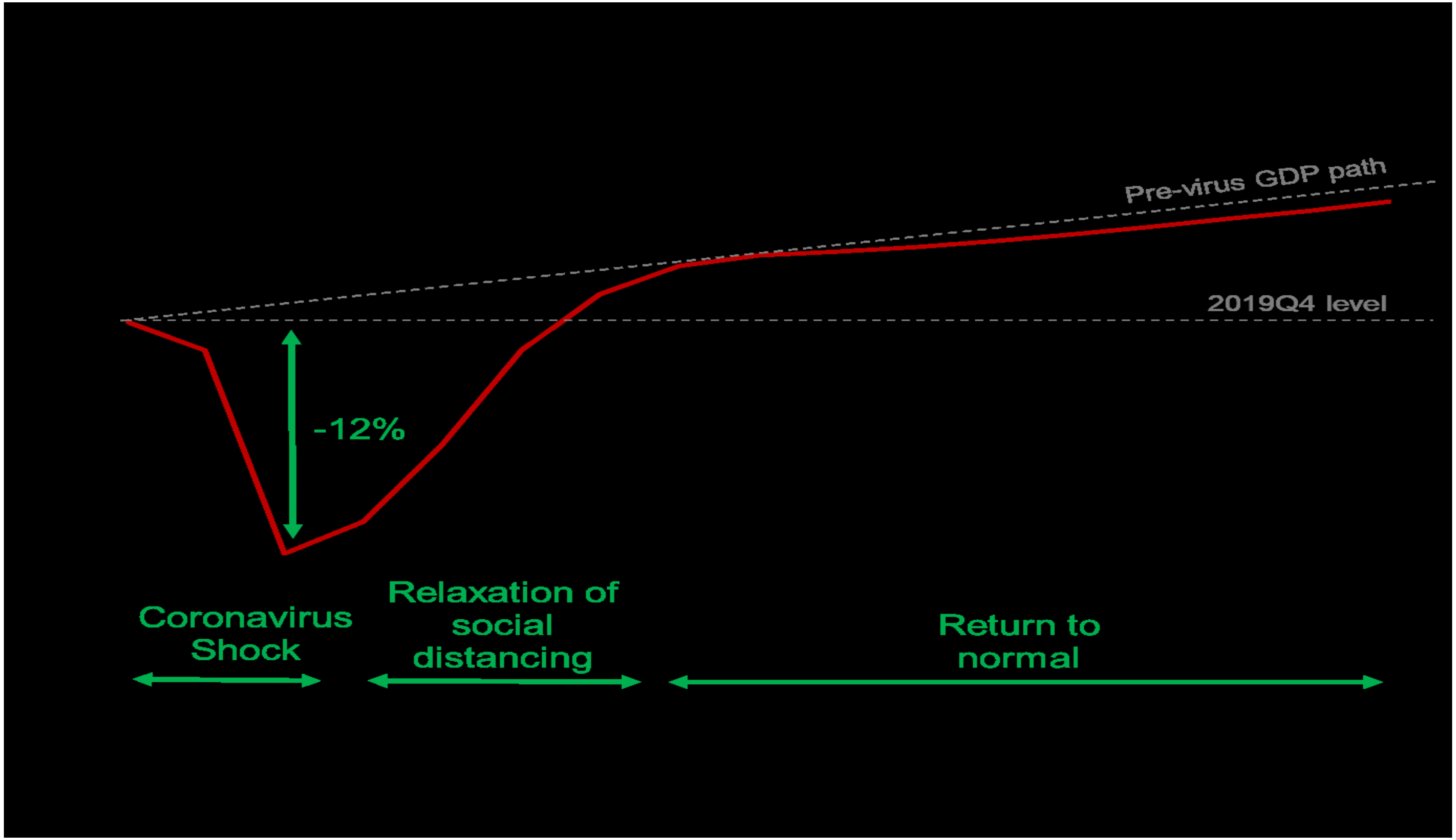


Pre-Covid vs V, U and L-shape recoveries (QoQ % Change, annualized, t=start of recession)



Source: Yardi Matrix; BBVA Research, “When will the U.S. economy recover from the infection?”

A Deep Recession with a Return to Trend in 2 Years Seems Likely



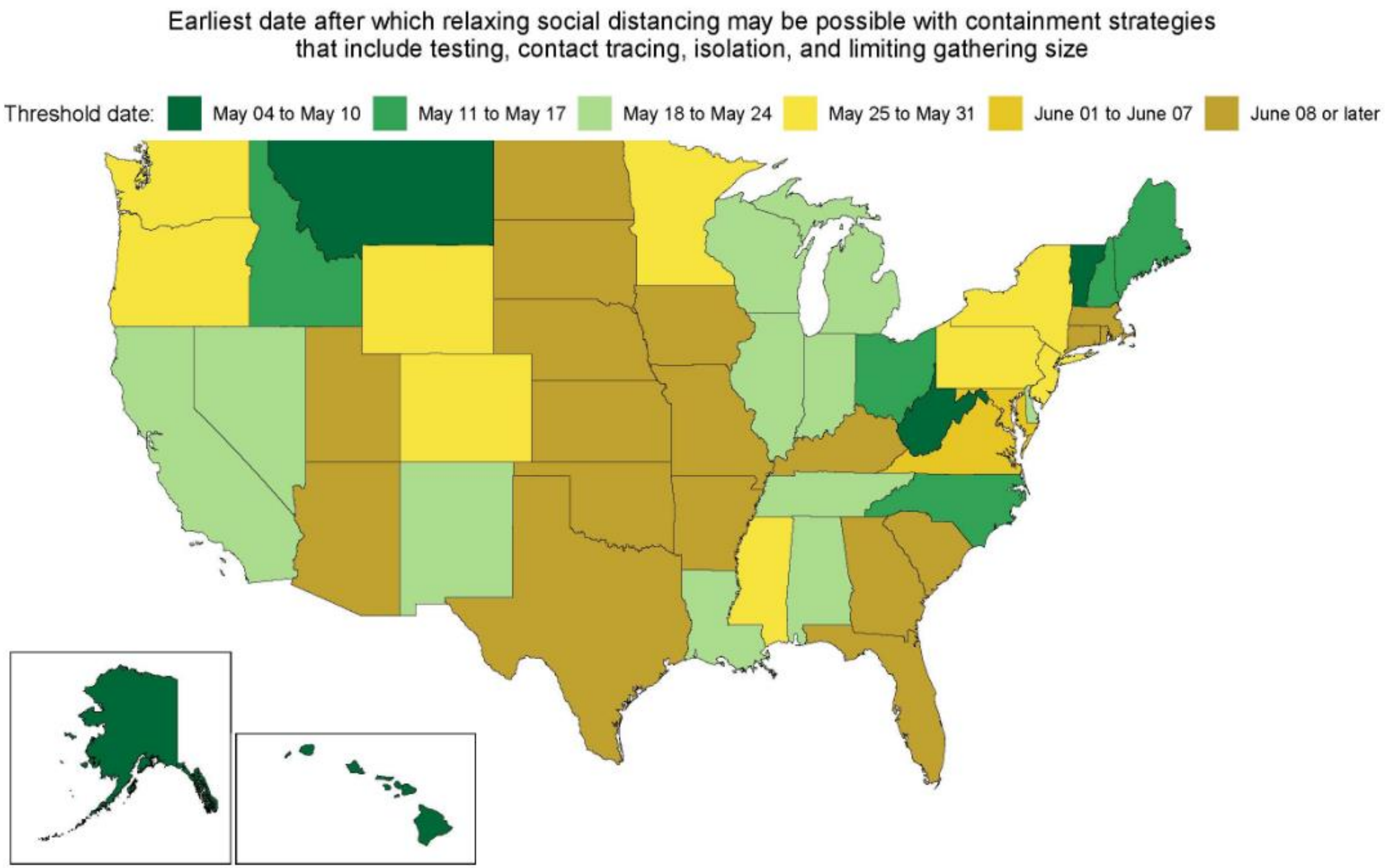
Source: Oxford Economics

When, Where & How Will the Economy Bounce Back?

How long will it take for the economy to recover?

Which areas of the country will bounce back the fastest?

How will we get back to work after the 'stay at home' orders have been lifted?



*Map as of April 22, 2020
Source: Yardi Matrix; Institute for Health Metrics and Evaluation

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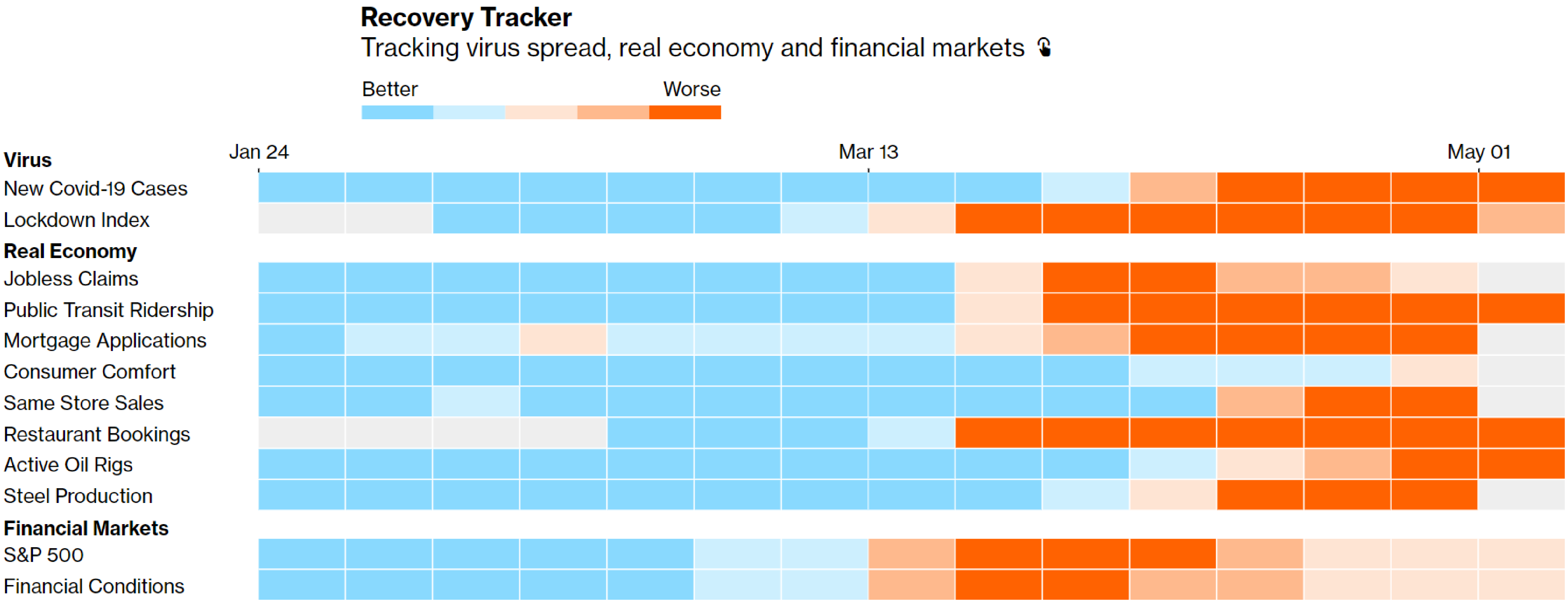
Bloomberg Economics Recovery Tracker



Notes: Weekly new Covid-19 cases based on data from Bloomberg News and Johns Hopkins. Lockdown index from Oxford COVID-19 Government Response Tracker from zero to 100. Jobless claims in millions. Mortgage applications are percent changes from the average of the first two weeks in January. Public Transport Use from Moovit, (average of New York area, Chicago and Los Angeles). Restaurant bookings (%YoY) from OpenTable; Store sales (%YoY) from Johnson Redbook sales. Bloomberg Consumer Comfort index levels zero to 100; Oil rigs, steel production and S&P 500 are percent changes from the average of the first two weeks in January. Bloomberg Financial Conditions Index.

Source: Yardi Matrix; Bloomberg Economics

What is Happening in South Korea?

Key in South Korea has been mass testing and strict social isolation

A man in South Korea was confirmed with the virus on Saturday (4/18) – in response, more than 1,000 people are now quarantined after coming in contact (voted in the election, attended Easter church service and visited restaurants)

Guidelines for reopening:

- When meeting in an office, a mask will be required
- At meals, diners will sit next to eachother in a zigzag pattern
- Hotel rooms will be ventilated for 15 minutes after check out
- Visitors at zoos & aquariums must stand 6 feet apart
- Shouting, hugging & high-fives will be discouraged at sporting events
- All churches must take attendance of worshipers, to ease contact tracing
- When people gather for weddings or funerals, they must stay 3 feet apart and a "prevention officer" must be appointed by the venue to take temperatures and monitor coughing

Businesses easing back in:

- **SK Innovation**, a battery maker: about 80% of employees are back and they will get a temperature check at entrance
- **Naver Corp.**, operates South Korea's largest web portal: allowing less than half of its employees to come into the office
- **Netmarble**, mobile gaming firm: employees come into the office three days a week

Source: Yardi Matrix; reuters.com; cnbc.com; Wall Street Journal, "South Korea's Playbook for Reopening: Don't Use Cash, Sit Side by Side"; Pixabay

What is Happening in Europe?

Despite varied success in controlling the outbreak, European countries are starting to lift their lockdowns

DENMARK:

- After Italy, Denmark was the second European country to announce a lockdown
- Reopened daycares and primary schools on April 14, and a host of other professions reopened on April 20

AUSTRIA:

- April 14 non-essential shops less than 400m^2 opened; this will be extended to larger stores on May 1

NORWAY

- Number of daily cases has been falling since March
- Kindergartens reopened on April 20; primary and high schools opened April 27
- Domestic travel is permitted for all non-essential purposes

GERMANY:

- Began to reopen for business April 20
- Lockdown restrictions remain until May 3, some schools plan to reopen May 4

SWITZERLAND:

- Announced a three-stage plan to end its coronavirus shutdown
- On April 27, an approved list of businesses were allowed to open and non-essential medical procedures began again
- On May 11, primary schools and all remaining retail businesses will be allowed to reopen
- On June 8, secondary schools, higher learning institutions, libraries, zoos and museums will reopen

*As of April 28, 2020
Source: Yardi Matrix; Wall Street Journal; Business Insider

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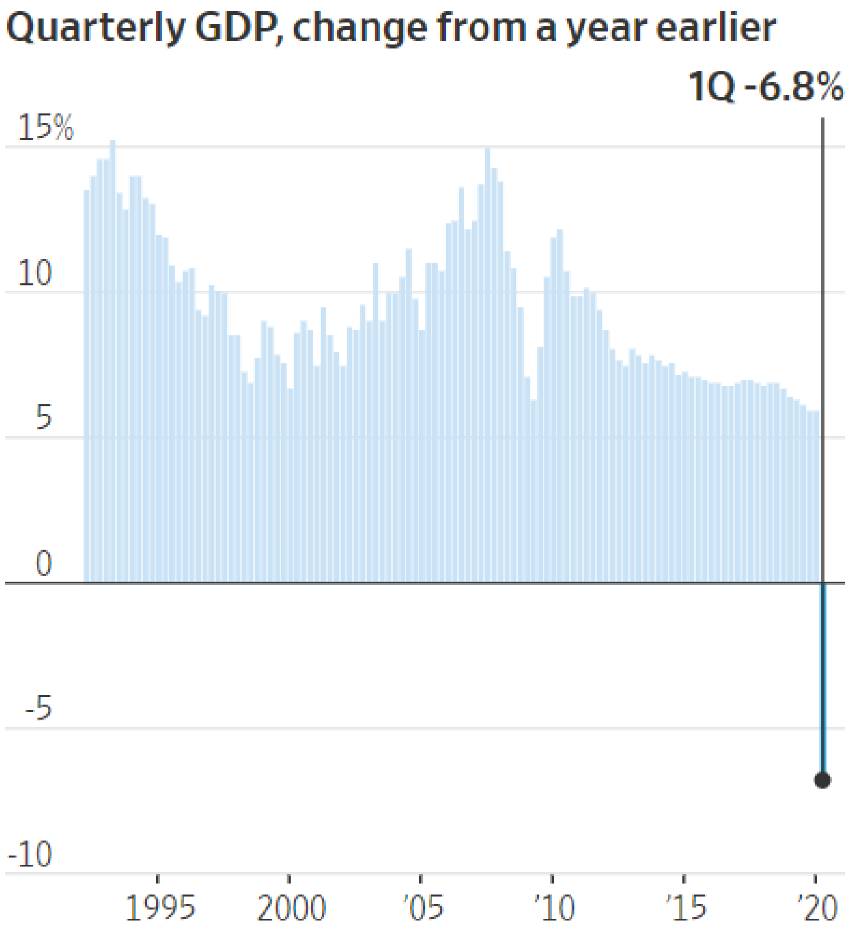
What is Happening in China?

First GDP contraction since reporting began in 1992



Unemployment rate remains near all-time high

Signs of Recovery

- According to a Morgan Stanley survey, 86% of people in 19 provinces were leaving the house for work
- China has approached a number of countries to discuss the easing of border controls – including South Korea & Japan
- Restaurants have re-opened, but temperature checks and continued social distancing measures are common

Source: Yardi Matrix, Wall Street Journal; National Bureau of Statistics

Certain Trends Have Seen a Reversal or Acceleration Due to Impacts of the Coronavirus

***ACCELERATION* OF TRENDS**	**POTENTIAL *REVERSAL* OF TRENDS**
• E-commerce	• Experiences over “Things”
• Virtualization	• Densification
• Local political risk/Higher taxes	• Globalization

Source: Yardi Matrix

Yardi Matrix House View May 2020

The Pain Has Just Started

- The COVID-19 caused downturn has been swift and is deep
    - 30 MM jobless in 6 weeks – depression levels
    - U.S. fiscal/monetary response has been swift too
        - Mitigating losses in the financial markets
        - Initially replacing incomes lost at the bottom of the economic scale
        - Carnage in the energy sector is just as bad as travel and hospitality
        - Impossible to replace a $22 trillion economy, despite best efforts
    - The pain has just started; Q1 GDP -5%, Q2 -20% to -40%; we are just beginning to see the ripple effects

The Shape and Speed of a Recovery Is Dependent First on a Medical Solution, but Second on Political Will

- Scenarios mostly driven by progress on anti-virals & vaccines; we should assume medical science will prevail, but with a lag
- Initial primary public policy goal was to avoid overwhelming the medical system
- Politically, now morphing into implicit partisan driven power objectives – for some, "a tragedy is a terrible thing to waste"
- Under the best of circumstances, and short of a medical solution, the recovery is likely to be partial and slow – think extended "U", leaving =>10% of the workforce idled for an extended period of time
- Recovery likely to be slower in "Blue" states, faster in "Red" States …at least through the Nov. election, for each's political goals
- The resulting explosion of "war-time" government debt will result in higher taxes and inflation- but not for another ~5 years

Source: Yardi Matrix

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Yardi Matrix House View May 2020

Multifamily Has Been Holding Up Well…So Far

- Multifamily has, and is likely to, perform better than office, industrial, and retail; a bit less well than self-storage, manufactured housing & single-family rental
- Purpose-built, Class “A” student has done well so far, but there are a lot of cross-currents to navigate
- April multifamily collections have been pretty good, but cracks are emerging geographically and by asset class
- Leasing season has resumed, and the pace in the last week of April has picked up dramatically
  - Adoption of self-guided tours and automated leasing has helped; consumer preferences adjusting
- Rising concessions on lease-ups are the “Canary in the Coal Mine” of a potential rent roll down
- Short-term rental exposure is another smaller, but potentially concentrated risk factor
- Transfer payments to individuals should limit multifamily property financial distress at least until August
- Political risk is rising in those locations where it existed before
- Position of banks, GSEs, CMBS lenders to forbearances will determine extent of financial distress after that

Society Will be Re-Shaped by an Acceleration of Pre-Existing Trends

- Population movement South & West
- Movement to urbanized suburbs
- Aging of the population
- De-Globalization (trade & immigration)
- E-commerce
- Technology/Automation & remote business tools
- But, we will gather again – humans are social animals and travel, entertainment, and hospitality will re-emerge…slowly

Source: Yardi Matrix

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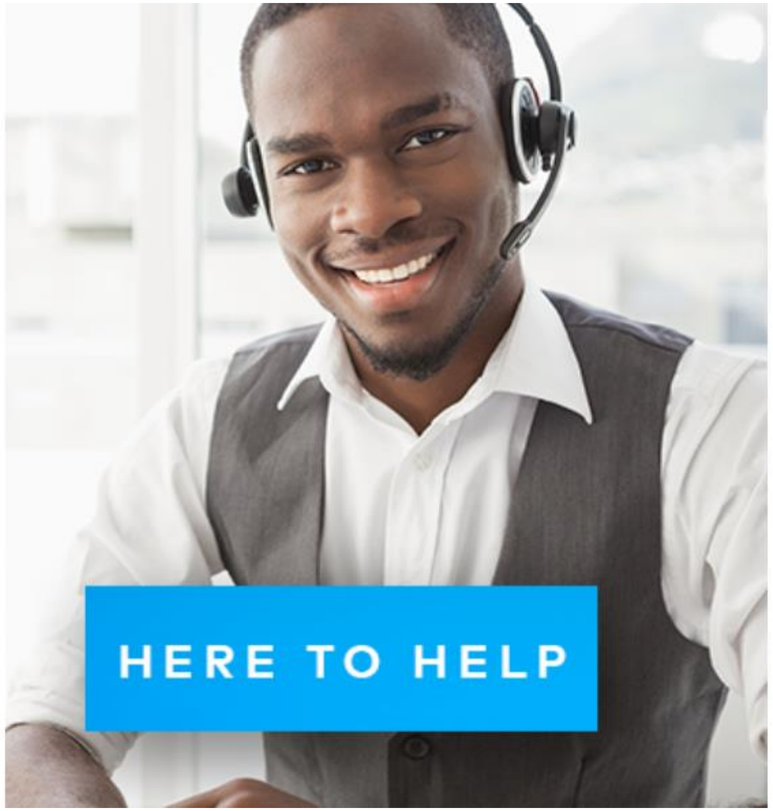

Source: Yardi Matrix

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Yardi Webinar

THANK YOU FOR JOINING TODAY'S WEBINAR.

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