ACEC/Massachusetts

Private Market Resources & Economic Outlook

Erin McLaughlin

April 20, 2021



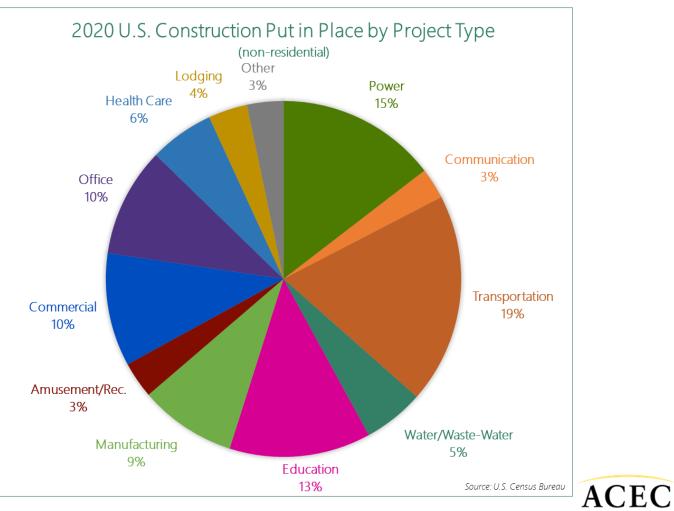
Introduction

Erin McLaughlin

Vice President, Private Market Resources American Council of Engineering Companies (ACEC)

- Lead ACEC's analysis of private market and economic trends, and connects these to policy implications for the engineering industry
- Joined ACEC in 2017
- 18 years with A/E and CRE firms
- MS / Transportation Planning MBA / Management BA / American-Urban Studies
- Certificate in Economic Measurement
- Former President of CREW (Commercial Real Estate Women) Northern Virginia





American Council of Engineering Companies

Construction Put in Place – Annual Numbers 2020 vs. 2019

Construction Put in Place	2020	2019	% Change
Total Construction	\$1.430 T	\$1.365 T	+4.8%
Residential (private)	\$607.9 B	\$544.4 B	+11.7%
Private (non-residential)	\$471.5 B	\$486.3 B	-3.0%
Public	\$351.0 B	\$334.4 B	+5.0%



Construction Put in Place – February 2021

	February 2021	February 2020	% Change
Total Construction	\$1.517 T	\$1.441 T	+5.3%
Residential (private)	\$717.9 B	\$593.0 B	+21.1%
Private (non-residential)	\$447.8 B	\$495.8 B	-9.7%
Public	\$351.25 B	\$352.4 B	-0.3%

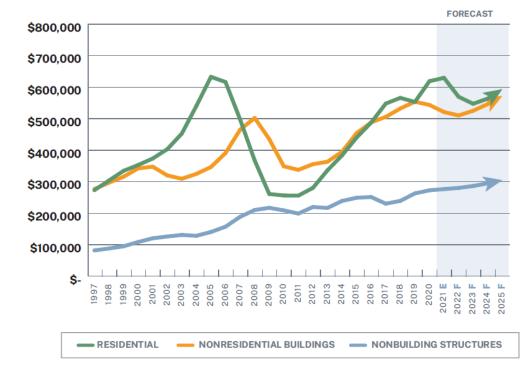


Construction Put in Place – January 2021

	January 2021	January 2020	% Change
Total Construction	\$1.521 T	\$1.438 T	+5.8%
Residential (private)	\$713.0 B	\$589.1 B	+21.0%
Private (non-residential)	\$447.03 B	\$497.3 B	-10.1%
Public	\$361.5 B	\$351.3 B	+2.9%



Design/Construction Spending Outlook





SOURCE: FMI FORECAST Q1 2021

Source: FMI, 4.8.21

A/E Revenues Peaked in 2019

Great Recession began in Q4 of 2008

- A/E revenues steadily increased since last recession, peaking in 2019 at \$350.47B
- The bottom was 2010
- Growth non-existent for four years (2009-2013)
- Of course not all recessions are the same





Q4 2020 A/E Revenues Flat from Q3

The U.S. Census Bureau's 'advance estimate' of total A/E revenues for Q4 2020 is \$80.02B, a +0.3% increase from Q3 (previous quarter).

This is a 10.8% decline YOY (Q4'20 vs. Q4'19).

The decline was substantial from Q1 to Q2 of 2020 (beginning of pandemic), but has been relatively flat since Q2.





2021 Expected to Decline Further

Engineering and Design Services Real Economic Output in the United States: History & Forecast (2000-2025)

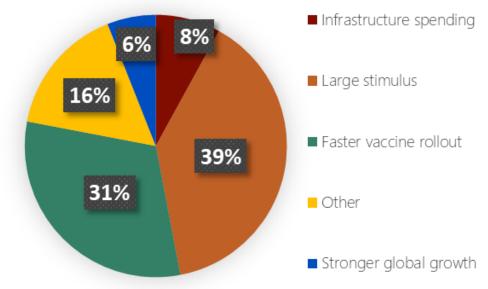


Bureau of Economic Analysis (BEA), US Census Bureau, Rockport Analytics Note: 2020 is preliminary and subject to revision



'Upside Risks' to Economy – March 2021

Macroeconomic Forecasters were asked: What is the greatest upside risk to the economy?



Source: National Association for Business Economics, March 2021



NABE Outlook Survey – March 2021

What is the greatest *downside* risk to the U.S. economy through 2021, considering both probability of occurrence and potential impact?

Downside Risk		Percent of Responses
A variant of the coronavirus against which the vaccines are ineffective		67%
Slow vaccine distribution		10
Fiscal policy inaction/policy g	ridlock	10
Monetary policy missteps		0
Substantial stock market dec	line or market volatility	2
A widening federal deficit		4
Trade policy (increased protectionism)		0
Elevated continuing UI claims due to COVID-19		0
Global growth slowdown		0
Increasing number of bankruptcies		0
Other (please describe):		6
Don't know / not sure	Continued COVID-19	0
Source: NABE	spread greatest	
	downside risk.	



NABE Outlook Survey – March 2021

How much additional stimulus might be needed to get U.S. real GDP back to its pre-COVID peak?

Expectation	Percent of Responses
Less than \$500 billion	22%
\$500 billion - \$1.0 trillion	39
\$1.1 - 1.5 trillion	24
\$1.6 - 2.0 trillion	4
\$2.1 - 2.5 trillion	2
\$2.6 - 3.0 trillion	2
More than \$3.0 trillion	2
Don't know / not sure	4

Source: NABE

About \$1T in stimulus seemed to be the number necessary ('sweet spot') to drive growth back to pre-COVID numbers.

On March 11th (*after this survey*) Pres. Biden signed \$1.9T American Rescue Plan Act of 2021.



NABE Outlook Survey – March 2021

When will we return to Pre-COVID levels? Predictions from survey:

- GDP H2 2021 (say 52% of panelists)
- Employment 2023 or later (59% of panelists, non-farm payrolls)
- Consumer spending H2 2021 (31%, of panelists, +27% say H1 2022)

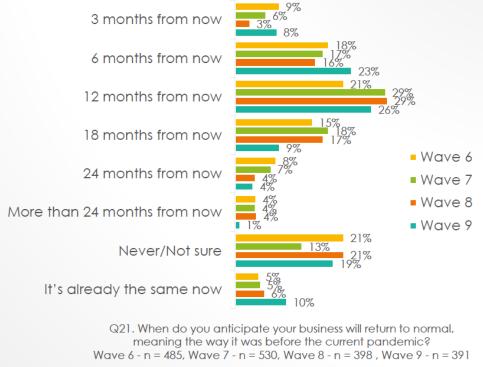
Source: NABE

'H2' = second half of year 'H1' = first half of year



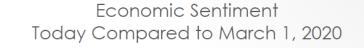
ACEC Member Firms' Expectation for 'Normal"

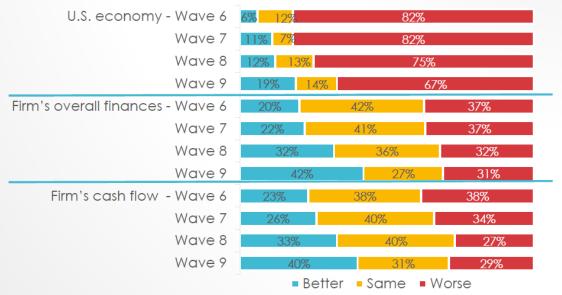
Anticipation of Business Returning to Normal*



Source: ACEC Research Institute, March 2021 ACEC AMERICAN COUNCIL OF ENGINEERING COMPANIES

ACEC Member Firms' Economic Sentiment





Q4. Compared to March 1, how do you feel about each of the following today? "Not sure" responses omitted from calculations Wave 6 - n = 492 - 491, Wave 7 - n = 536 - 535, Wave 8 - n = 411 - 409, Wave 9 - n = 407 - 405

Source: ACEC Research Institute, March 2021

ACEC AMERICAN COUNCIL OF ENGINEERING COMPANIES

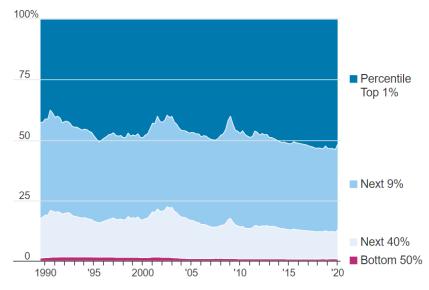
Two Economies / 'K'-Shape Recovery?

- Housing and stock market indicators show that there are essentially "two economies" at play in the U.S., one for white-collar workers who can largely work remotely, and another for service/consumersector employees.
- Stock market shows this: top 10% of earners own 87% of U.S.; top 1% owns about 50% (Q1 20).

Shares of Wealth

The top 10% of earners owned 87% of all U.S. stocks outstanding in the first quarter of 2020.

Share of stocks held by each income group



Source: Federal Reserve



What is a 'Shecession'?

- One has to do a double take when reading headlines in the business news like "The U.S. economy lost 140,000 jobs in December. All of them were held by women" (CNN.com, January 8, 2021). Could that be right? The unfortunate answer is yes.
- The COVID-19 recession has not affected everyone the same—and it has been particularly impactful to U.S. women.
- When the Bureau of Labor Statistics (BLS) released its monthly job numbers for December it showed that for the first time, jobs held by women disappeared at a faster clip then those held by men.
- According to BLS, the country lost a net 140,000 payroll jobs in December, due to 156,000 women losing their jobs and men gaining 16,000 jobs. The only other month there has been such a drastic dip is September, when 865,000 women left the labor force—four times the rate of men. (Many blamed the start of the virtual school year for the September decline.)
- This meshes up with the research the Bipartisan Policy Center has done on the subject. In its Impact of COVID-19 on the Workforce survey conducted in October 2020, BPC details that among women with children under two years old, 42% have left work during the coronavirus pandemic, and women are twice as likely as men to say they left work for caregiving responsibilities due to childcare provider or school closures.





- 1. Commercial & Residential Real Estate
- 2. Intermodal & Logistics
- 3. Energy & Utilities
- 4. Health Care & Science+Technology

Four Private-Market Sectors

Commercial & Residential Real Estate



Energy & Utilities



Client types:

Real Estate Developers Home Builders Retailers

	Example Clients	Fortune 2019 Ranking	
;	Walmart	1	
	CBRE	146	
	D.R. Horton	194	
	Lennar	154	
	JLL	189	

Client types:ExampleEnergyDuke ErUtilitiesPG&ETelecommunicationsPominicDominicDominic

	Example Clients	Fortune 2019 Ranking
	Exelon	93
	Duke Energy	126
	PG&E	183
S	American Electric Power	192
	Dominion Energy	238

Intermodal & Logistics

Client types:
Ports & Intermodal
Railroads

Logistics/Freight
Delivery
<i>,</i>



Example Clients	Fortune 2019 Ranking
UPS	41
Fedex	47
Union Pacific	134
Waste Management	213
CSX	260

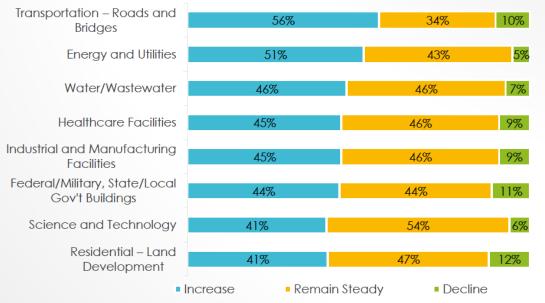
Health Care & Science+Technology

Client types:
Medical Facilities
Laboratories/Pharma
Universities
Data Centers

Example Clients	Fortune 2019 Ranking
Johnson & Johnson	37
Procter & Gamble	45
Pfizer	61
Merck	76
Community Health Systems	223

ACEC Member Firms' Market Positions

Future Expectations of Firms' Market Positions



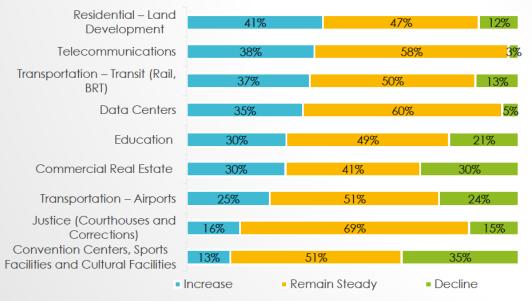
Q18. For each market listed, please indicate if you expect your firm's position in the market to grow, decline, or remain steady over the next 12 months. "Not Sure" responses omitted from calculations. Wave 9 - n = 291 - 156

Source: ACEC Research Institute, March 2021



ACEC Member Firms' Market Positions

Future Expectations of Firms' Market Positions (cont'd)



Q18. For each market listed, please indicate if you expect your firm's position in the market to grow, decline, or remain steady over the next 12 months. "Not Sure" responses omitted from calculations. Wave 9 - n = 291 - 156

Source: ACEC Research Institute, March 2021



Market Expectations

U.S. 2021 Segment Performance

2021/2020 Comparison

UP	• STABLE	DOWN
5% or more	0% to 4%	Under 0%
Water Supply	Single-family Improvements Health Care Public Safety Communication Power Highway and Street	Multifamily Lodging Office Commercial Educational Religious Amusement and Recreation Transportation Manufacturing Conservation and Development

Source: FMI, 4.8.21

2021 NORTH AMERICAN ENGINEERING AND CONSTRUCTION OUTLOOK



Commercial & Residential Real Estate



Key drivers/trends:

- Growth of the industrial/distribution market due to ecommerce, often in unexpected urban locations
- 'Retail apocalypse' with stores closing and adaptive reuse of properties
- Focus on limiting buildings' energy usage and carbon emissions
- Decline of the multi-family market
- Expected growth of suburbs and second-tier cities in part due to coronavirus pandemic

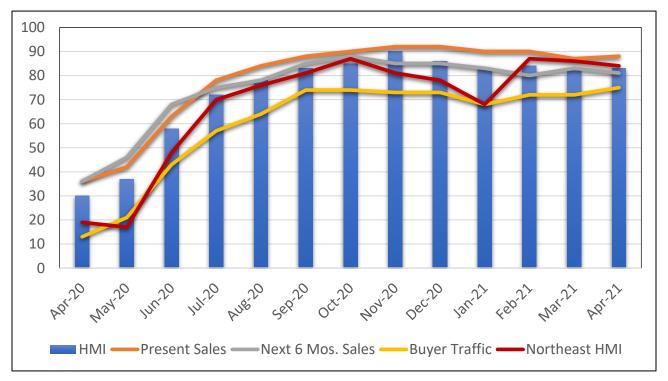
Key: a=actual, e=estimate, f=forecast

Construction Put in Place Forecast by market segment	2019a	2020a	2021e	2022f	2023f	2024f	2025f
Commercial	\$80 B	\$84 B	\$83 B	\$79 B	\$80 B	\$83 B	\$88 B
Office	\$85 B	\$84 B	\$75 B	\$70 B	\$70 B	\$73 B	\$77 B
Lodging	\$33 B	\$29 B	\$24 B	\$21 B	\$21 B	\$22 B	\$24 B
Amusement & Recreation	\$29 B	\$27 B	\$23 B	\$21 B	\$21 B	\$23 B	\$24 B
Residential (single, multi & improvements)	\$551 B	\$616 B	\$627 B	\$567 B	\$545 B	\$561 B	\$591 B

Sources: U.S. Census Bureau & FMI Q2'21



Housing Market Index for Single-Family Residential



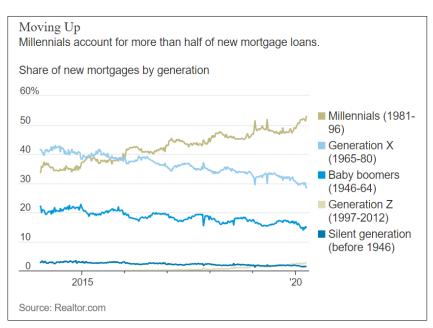


Source: NAHB/Wells Fargo

Demographics: Millennials & Housing Growth

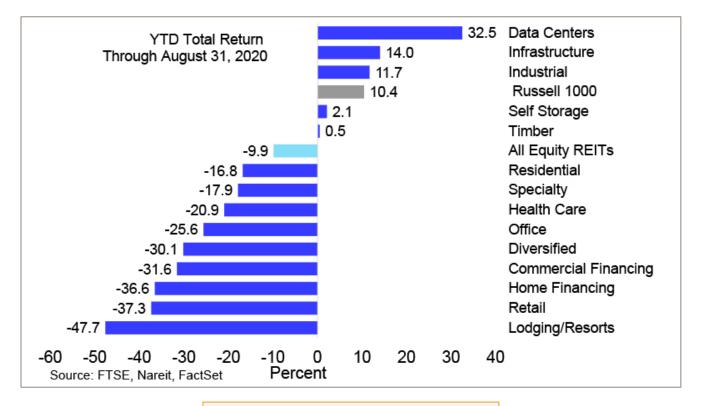
- 2019 Millennials accounted for largest share of all new home loans for the first time
- Millennials (now mid 20s-late 30s) driving housing market
- Were slower to become homeowners compared to past generations (student loans, witness of housing crash in 2008-2009, etc.)
- Suburban growth—may be more like previous generations than once thought
- Also in 2019 Millennials surpassed Baby Boomers as largest living adult generation

Sources: National Association of Realtors, WSJ, Pew Research Center





REIT Performance by Sector Jan.-Aug. 2020



REIT = Real Estate Investment Trust



Intermodal & Logistics



Key drivers/trends:

- Infrastructure challenges related to urban locations and 'last mile' delivery needs
- Growth of Southeastern U.S. ports and their connections
- New inland ports emerging, along with increased investment in rail
- Trade policy issues and recession may hamper growth considerably
- E-commerce continues to be a strong driver

Key: a=actual, e=estimate, f=forecast

Construction Put in Place Forecast by market segment	2019a	2020a	2021e	2022f	2023f	2024f	2025f
Manufacturing	\$80 B	\$72 B	\$68 B	\$71 B	\$75 B	\$77 B	\$80 B
Transportation (buildings)	\$57 B	\$57 B	\$54 B	\$52 B	\$53 B	\$56 B	\$60 B

Sources: U.S. Census Bureau & FMI Q3'21



Growth of Ports & Inland Infrastructure

Top 5 Fastest Growing U.S. Ports

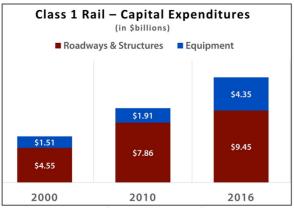
Rank	Port	Import & Export TEUs, 2018	Growth % 2017-2018
1	Wilmington (NC)	226,021	26.2%
2	Houston (TX)	2,230,348	10.3%
3	Savannah (GA)	3,404,558	7.4%
4	Mobile (AL)	269,312	7.2%
5	Jacksonville (FL)	880,220	6.8%

TEU – Twenty-Foot Equivalent Unit, which is used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20-foot by 8-foot shipping container.

Source: The Journal of Commerce

Top 5 Fastest Growing Industrial Real Estate Markets

Rank	Real Estate Market	Market Size (Square Feet)	Growth % 2010-2018
1	Savannah (GA)	45.7 million	45.7%
2	Houston (TX)	63.1 million	35.8%
3	Charleston (SC)	23.8 million	18.8%
4	Miami (FL)	115.5 million	15.7%
5	Seattle (WA)	175.8 million	12.5%



Source: U.S. Department of Transportation, Bureau of Transportation Statistics "2018 Transportation Statistics Annual Report"



Energy & Utilities



Key drivers/trends:

- Sharp decline in oil market in Spring 2020, with volatility expected to continue, but rise expected post-pandemic
- Rising demand for energy due to increase in economic activity post-pandemic
- Focus on energy efficiency goals driven by 'Green New Deal'-type city and state policies; a national political change in 2020-2021 could shift priorities more broadly
- Pre-recession, both solar and wind were growing to meet electricity demand

Key: a=actual, e=estimate, f=forecast

Construction Put in Place Forecast by market segment	2019a	2020e	2021e	2022f	2023f	2024f	2025f
Power	\$114 B	\$119 B	\$120 B	\$119 B	\$122 B	\$125 B	\$130 B
Communication	\$22 B	\$23 B	\$23 B	\$24 B	\$25 B	\$26 B	\$27 B
Sewage & Waste Disposal	\$26 B	\$27 B	\$27 B	\$27 B	\$26 B	\$27 B	\$28 B
Water Supply	\$16 B	\$19 B	\$20 B	\$20 B	\$19 B	\$19 B	\$19 B

Sources: U.S. Census Bureau & FMI Q2'21



Data Centers & Telecommunications

Top 5 Market Trends

- 1. Connectivity Becomes a True Necessity
- 2. Federal Government Ramps Up Broadband Plans
- States Step Up to Coordinate Broadband Initiatives
- 4. Electric Co-Ops Become Key to Broadband
- 5. Focus on Data Center Innovation, Sustainability





Health Care & Science+Technology



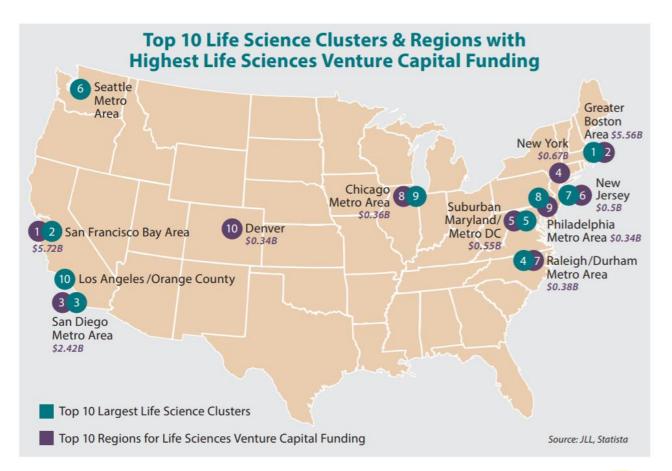
Key drivers/trends:

- Worldwide focus on a coronavirus vaccine shines a light on the biopharma and science and technology (S+T) industries
- Demographic drivers with growth of 65+ population due to aging baby boomers
- Increase of telehealth
- 'Retailing' of health care through CVS Minute Clinics and adaptive reuse of mall space to healthcare space
- Expected demand for changes in HVAC design due to pandemic

Key: a=actual, e=estimate, f=forecast												
Construction Put in Place Forecast by market segment	2019a	2020a	2021e	2022f	2023f	2024f	2025f					
Health Care	\$46 B	\$48 B	\$49 B	\$51 B	\$54 B	\$56 B	\$57 B					

Sources: U.S. Census Bureau & FMI Q2'21

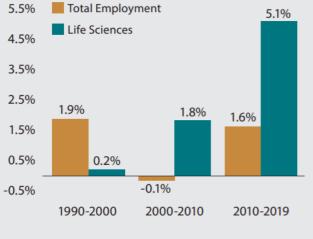






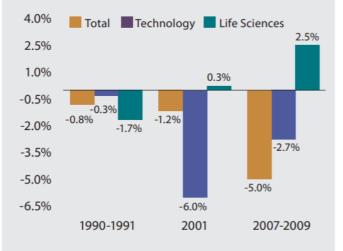
Is HC & S+T Recession Proof?

Life Sciences Employment Growth by Decade



Source: U.S. Bureau of Labor Statistics, Cushman & Wakefield

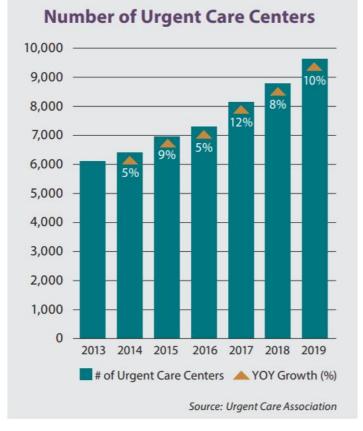
Employment Change in Recessions



Source: U.S. Bureau of Labor Statistics, Cushman & Wakefield



Growth of Outpatient Facilities





Public Sector & P3s



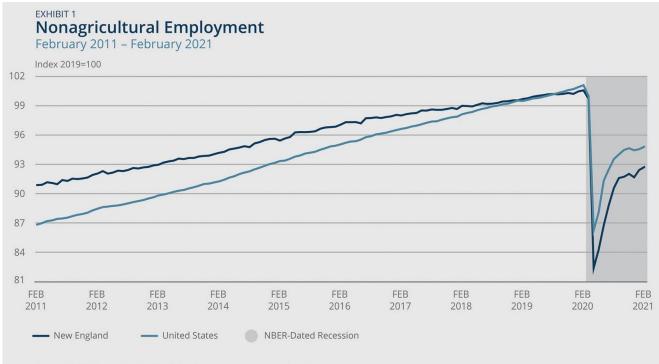
Key drivers/trends:

- Tax revenues from gas, sales, and income taxes expected to drop sharply due to shutdowns and recession
- Need for federal stimulus directed strategically to state and local governments, who for the most part cannot run deficits
- Highway and street funding expected to be a bright spot in the coming years, with a once-expected decrease in car usage likely not to trend as quickly due to pandemic
- The education market (which is the second largest overall by annual construction put in place value) may transform due to financial constraints and focus on virtual classrooms

Key: a=actual, e=estimate, f=forecast

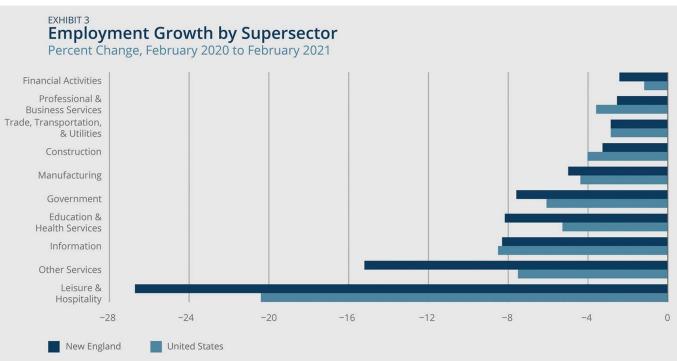
Construction Put in Place Forecast by market segment	2019a	2020a	2021e	2022f	2023f	2024f	2025f
Educational	\$105 B	\$105 B	\$103 B	\$105 B	\$110 B	\$114 B	\$118 B
Highway & Street	\$98 B	\$100 B	\$101 B	\$105 B	\$110 B	\$114 B	\$117 B
Public Safety	\$11 B	\$15 B	\$15 B	\$12 B	\$12 B	\$12 B	\$12 B
Conservation & Development	\$9 B	\$8 B	\$8 B	\$8 B	\$9 B	\$9 B	\$10 B

Sources: U.S. Census Bureau & FMI Q2'21



Source: U.S. Bureau of Labor Statistics. Data are seasonally adjusted.



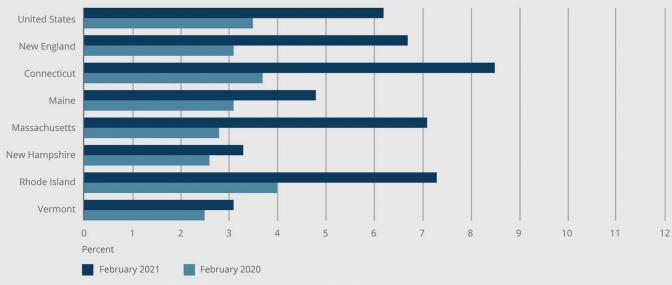


Source: U.S. Bureau of Labor Statistics.

Note: Data are seasonally adjusted. New England's Information supersector is based on data from NH, MA, and CT only.

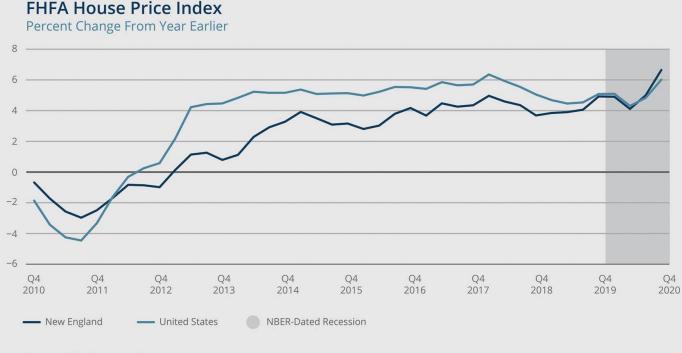


EXHIBIT 4 Unemployment Rates



Source: U.S. Bureau of Labor Statistics. Data are seasonally adjusted.





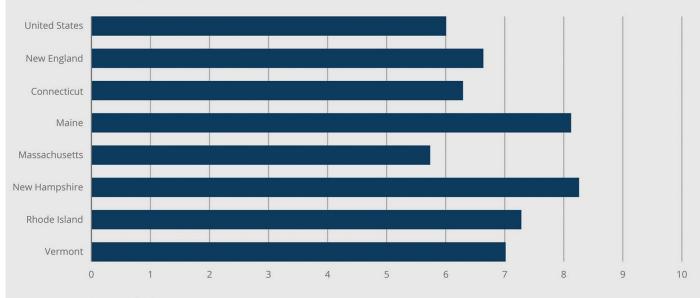
Source: Federal Housing Finance Agency.

EXHIBIT 5



EXHIBIT 6 FHFA House Price Index

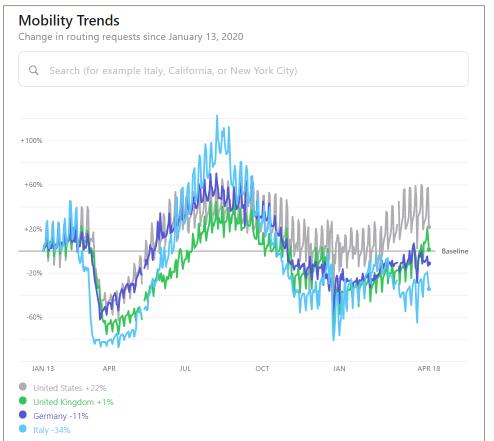
Percent Change, Fourth Quarter 2019 to Fourth Quarter 2020



Source: Federal Housing Finance Agency.

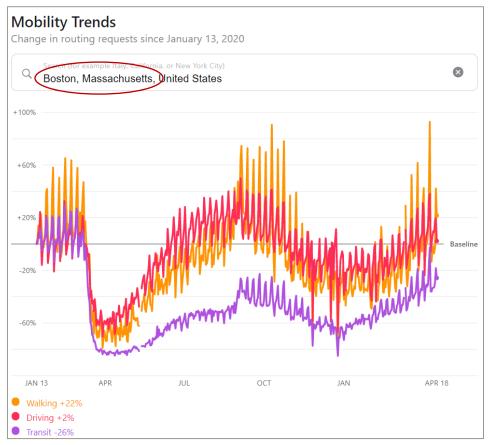


Apple Mobility Trends Link: <u>https://covid19.apple.com/mobility</u>



ACEC AMERICAN COUNCIL OF ENGINEERING COMPANIES

Apple Mobility Trends Link: <u>https://covid19.apple.com/mobility</u>



Source: Open Table Metrics - YOY Data Link: <u>https://www.opentable.com/state-of-industry</u>

Name	4/18	4/17	4/16	4/15	4/14	4/13	4/12	4/11	4/10	4/9	4/8	4/7	4/6	4/5	4/4	4/3
Global	-41.52%	-60.81%	-24.11%	-39.54%	-39.4%	-42.49%	-41.85%	-29.4%	-27.47%	-28.56%	-28.63%	-31.88%	-34.34%	-29.65%	-13.91%	-32.83%
Australia	-15.29%	153.95%	272.52%	82.36%	99.91%	82.14%	98.24%	108.34%	125.95%	120.35%	124.48%	114.38%	94.41%	236.34%	142.45%	109.35%
Canada	-86.96%	-95.47%	-79.91%	-87.13%	-86.23%	-88.04%	-89.53%	-87.14%	-88.37%	-89.82%	-73.34%	-76.35%	-78.27%	-71.78%	-78.5%	-81.06%
Germany	-97.82%	-96.92%	-97.31%	-97.76%	-97.32%	-98.29%	-98.81%	-98.48%	-98.45%	-98.85%	-98.96%	-99.27%	-99.47%	-98.35%	-97.2%	-98.76%
Ireland	-99.76%	-99.37%	-99.82%	-99.94%	-99.92%	-99.75%	-99.97%	-99.8%	-99.41%	-99.85%	-99.9%	-99.84%	-99.86%	-99.38%	-99.54%	-99.61%
Mexico	12.76%	-64.56%	10.88%	-17.55%	-19.11%	-26.04%	-21.94%	5.45%	4.8%	-3.46%	-10.71%	-12.79%	-10.28%	0.72%	-11.6%	-12.89%
United Kingdom	-37.85%	-39.67%	-35.66%	-46.91%	-43.75%	-43.12%	-20.76%	-99.66%	-99.63%	-99.55%	-99.66%	-99.74%	-99.83%	-99.63%	-99.68%	-99.59%
United States	-37.66%	-62.24%	-19.38%	-33.57%	-34.43%	-37.98%	-38.58%	-19.46%	-16.94%	-17.03%	-17.1%	-20.78%	-24%	-21.62%	-0.96%	-23.51%
4																

Note: Both data for 2021 and 2020 use 2019 as a baseline.

State

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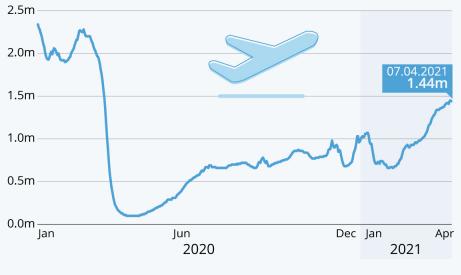
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Name	4/18	4/17	4/16	4/15	4/14	4/13	4/12	4/11	4/10	4/9	4/8	4/7	4/6	4/5	4/4	4/3	4/2
California	80.15%	63.95%	97.25%	80.46%	77.82%	78.85%	86.6%	98.62%	98.62%	99.33%	98.81%	98.69%	100%	100%	100%	90.64%	100%
Florida 🗾	77.21%	63.08%	100%	90.2%	92.73%	93.16%	97.99%	92.69%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Illinois 🗸	47.92%	65.83%	75.69%	62.34%	56.76%	55.67%	64.04%	99.55%	73.86%	75.94%	60.81%	68%	62.87%	58.71%	100%	77.58%	79.27%
Massachusetts	74.41%	73.62%	60.16%	56.45%	58.79%	53.92%	42.67%	60.21%	89.71%	92.23%	74.65%	66.7%	68.07%	67.32%	92.47%	76.29%	85.35%
New Jersey	60.1%	97.38%	100%	71.64%	89.44%	93.17%	89.94%	79.18%	98.87%	100%	100%	100%	100%	100%	100%	80.25%	100%
New York	61.64%	76.98%	73.05%	45.39%	60.34%	59.41%	48.48%	60.97%	77.78%	73.8%	74.53%	66.26%	68.11%	67.6%	95.93%	65.13%	69.81%
Ontario	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.42%	-	54.38%
Pennsylvania	56.73%	73.21%	82.47%	60.52%	66.71%	71.47%	69.66%	75.66%	87.14%	83.36%	85.4%	80.28%	81.36%	90.06%	100%	71.71%	84.54%
Texas	72.54%	60.22%	86.83%	80.09%	87.5%	76.47%	86.2%	100%	100%	95.92%	92.78%	85.66%	82.69%	94.29%	100%	100%	100%
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Note: Both data for 2021 and 2020 use 2019 as a baseline.

American Travelers Are Ready for Takeoff

Seven-day average of travelers passing through TSA checkpoints at U.S. airports



Source: Transportation Security Administration



Source: Statista

Additional Resources

- Private Industry Briefs
- Private Side column in Engineering, Inc. magazine
- Engineering Influence Podcast
- Private/Vertical Roundtable Discussions





Thank You



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