



Where to in 2022?

Three Leading Economists Light the Way





Hello.
NICE TO MEET YOU

Paul Hart

VP, Product Marketing for Data Innovation

ConstructConnect



Joining us today...

- Jennifer Riskus, AIA
- Ken Simonson, AGC
- Alex Carrick, ConstructConnect

| Today's program

- 1 Welcome
- 2 AIA Continuing Education credits
- 3 Jennifer Riskus, AIA
- 4 Ken Simonson, AGC
- 5 Alex Carrick, ConstructConnect
- 6 Q&A

| BEFORE WE GET STARTED

- Interact with the presenters anytime! Submit questions through the question feature available in the on-screen panel.
- An on-demand version will be provided via email within 72 hours of the event.
- The recording of this webcast will also be posted next week on our Economic Resources page.
- Quarterly Construction Starts and Put-in-Place Forecasts available:

www.constructconnect.com/economic-resources

| COURSE NUMBER: CCAIAEW112021

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LEARNING OBJECTIVES

- Review the 2021 U.S. economy including employment, interest rates, materials, foreign trade, and construction starts
- Understand and discuss historical data and key construction forecasts for all segments of the industry
- Anticipate business opportunities, target growth markets, compare sales performance against market performance, and create more informed and successful sales and business plans
- Understand the impact of current market conditions and how those will impact the performance of various construction sectors

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AIA
Continuing
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Jennifer Riskus

Director of Market and Economic Research

The American Institute of Architects

Trends and Outlook for the Residential Sector



Major housing market indicators are generally very positive

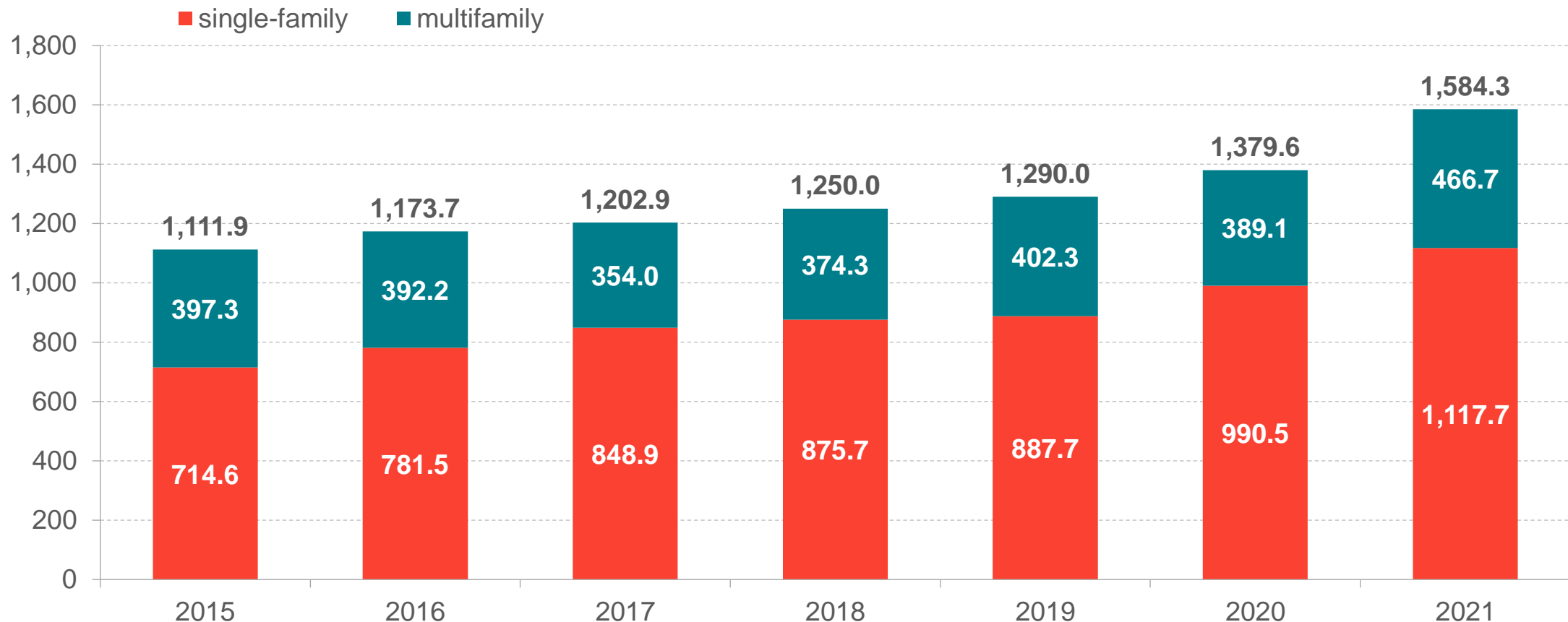
	Q3—2021	Q3—2020	Percent Change
Single-family housing starts (SAAR, Thous. Units)	1,092	1,041	+4.9%
Multi-family housing starts	493	399	+23.6%
Existing single-family home sales (SAAR, Mil.)	5.24	5.56	-5.8%
House prices (Median sales price, existing s-f homes, Thous. \$)	\$365.2	\$315.4	+15.8%
Retail sales – building material and supply stores (NSA, Bil. \$)	\$36.8	\$33.4	+10.2%

* Note: September 2021 values estimated for starts, home sales, prices, and retail sales.

Sources: US Census Bureau, New Privately Owned Housing Units Started and Retail Trade Report; NAR, Existing 1-Family Home Sales and Median Sales Price.

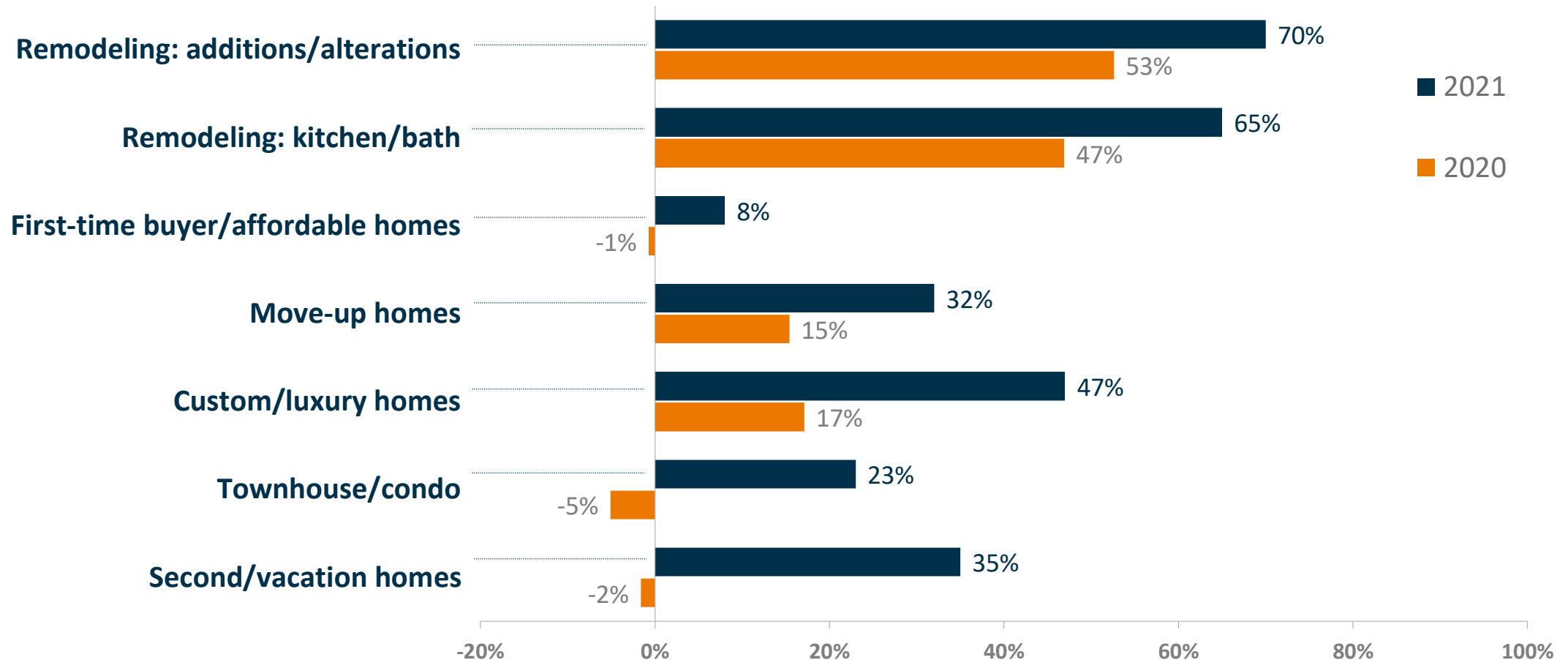
Even with pandemic, housing starts continued to see improvement last year and this year

Annual housing starts (000's)



Architects' view of housing sectors: home improvements strong, upper-end healthy, affordable sector still a problem

% of respondents reporting sector "improving" minus % reporting "weakening;" data from Q2 2021 compared to Q2 2020



| Issues facing the home building market

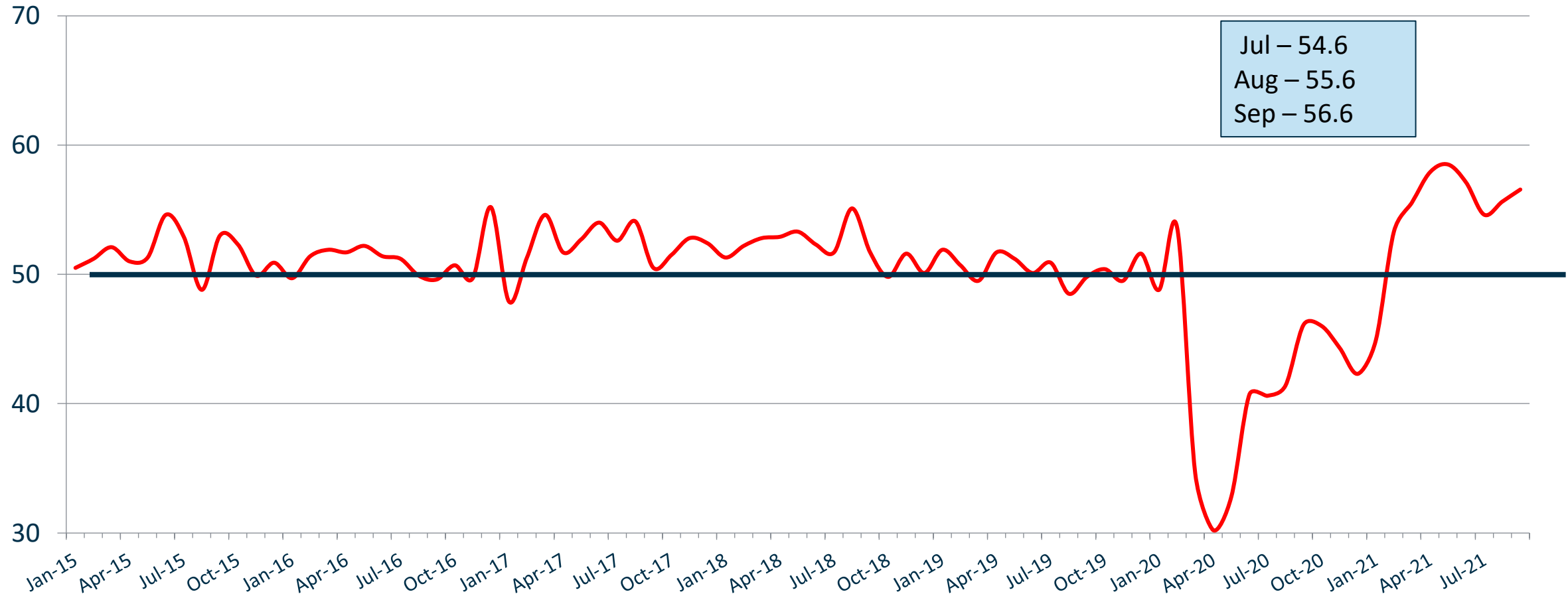
- Rising demand coupled with a **low inventory** of homes has rapidly pushed up **house prices**.
- ...Making homeownership **unaffordable**, particularly in key coastal markets.
- Rampant **inflation** has made it more expensive to build homes, and **rising mortgage rates** makes it more expensive to buy them.
- ...while **supply chain disruptions** have made some products available only with extremely long lead times.
- There is an emerging **construction labor shortage** that is likely to get worse.
- All of the above are all creating problems as **housing demand** promises to remain strong in the coming years.



Trends and Outlook for the Nonresidential Building Sector

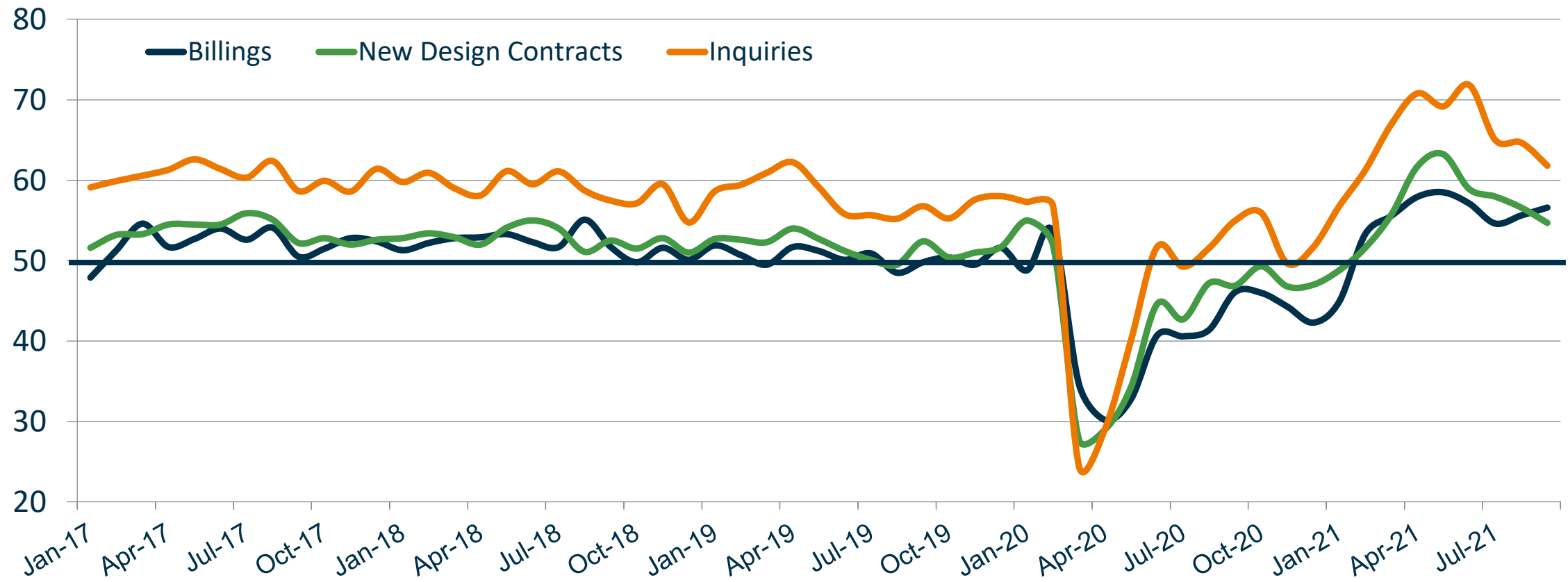
Architecture firm billings have remained at elevated levels in recent months

Diffusion index: 50 = no change from previous month, seasonally adjusted



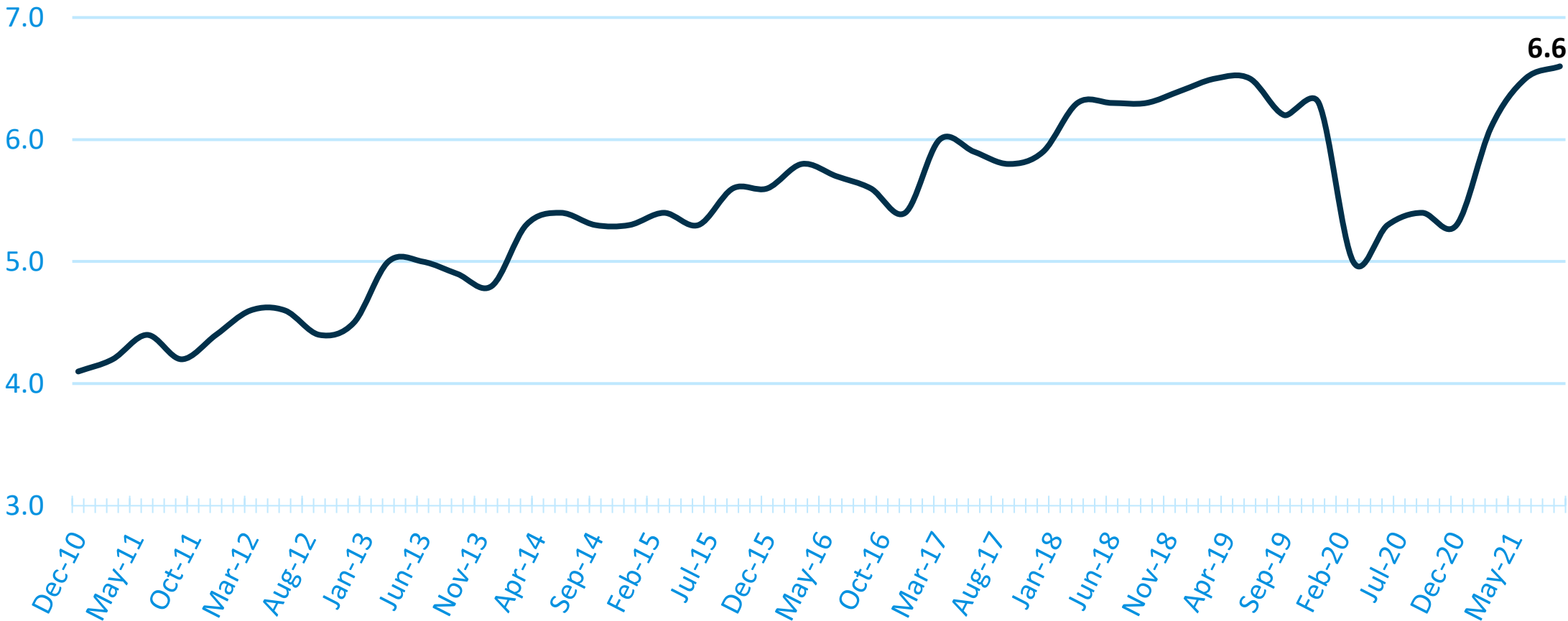
New design contracts and inquiries also indicate a significant amount of future work in—or soon to enter—the pipeline...

Diffusion index: 50 = no change from previous month, seasonally adjusted



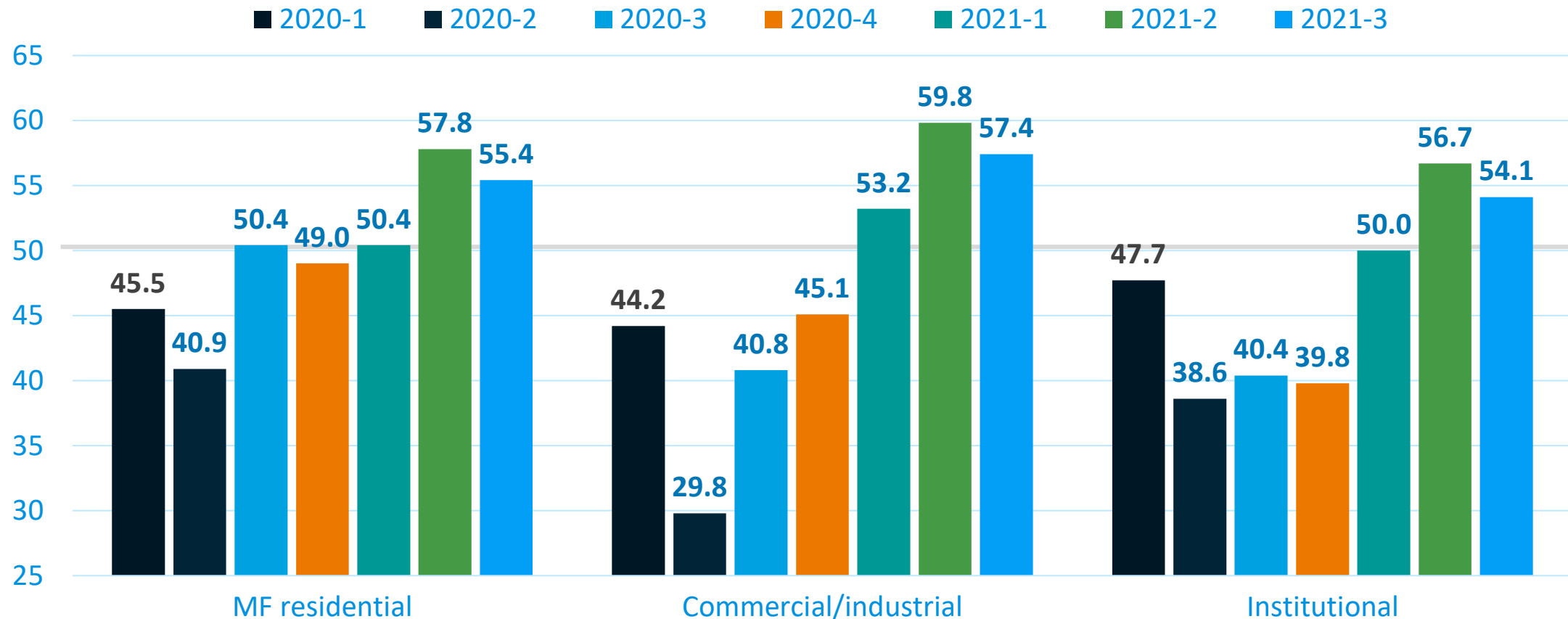
... And architecture firm backlogs returned to a post-Great Recession high in September

Average backlog at architecture firms (months)



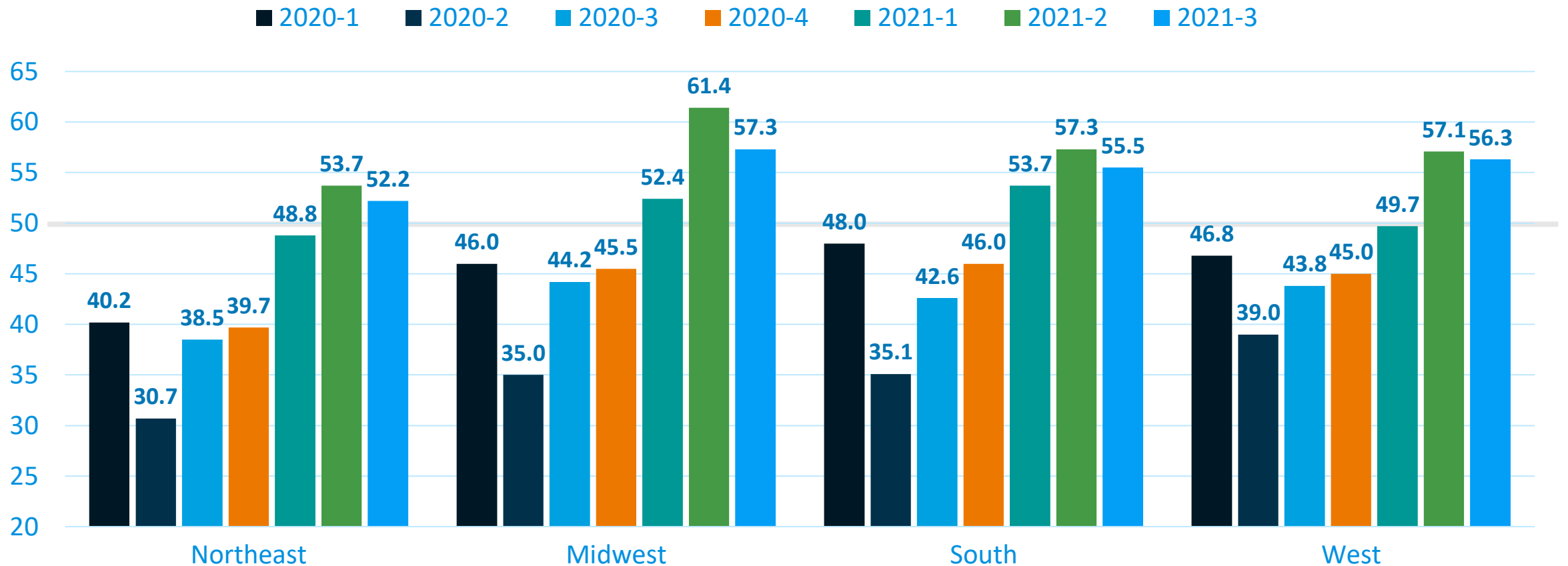
Firm billings strengthened at firms of all specializations leading into the third quarter of 2021...

ABI scores by quarter for 2020 and 2021



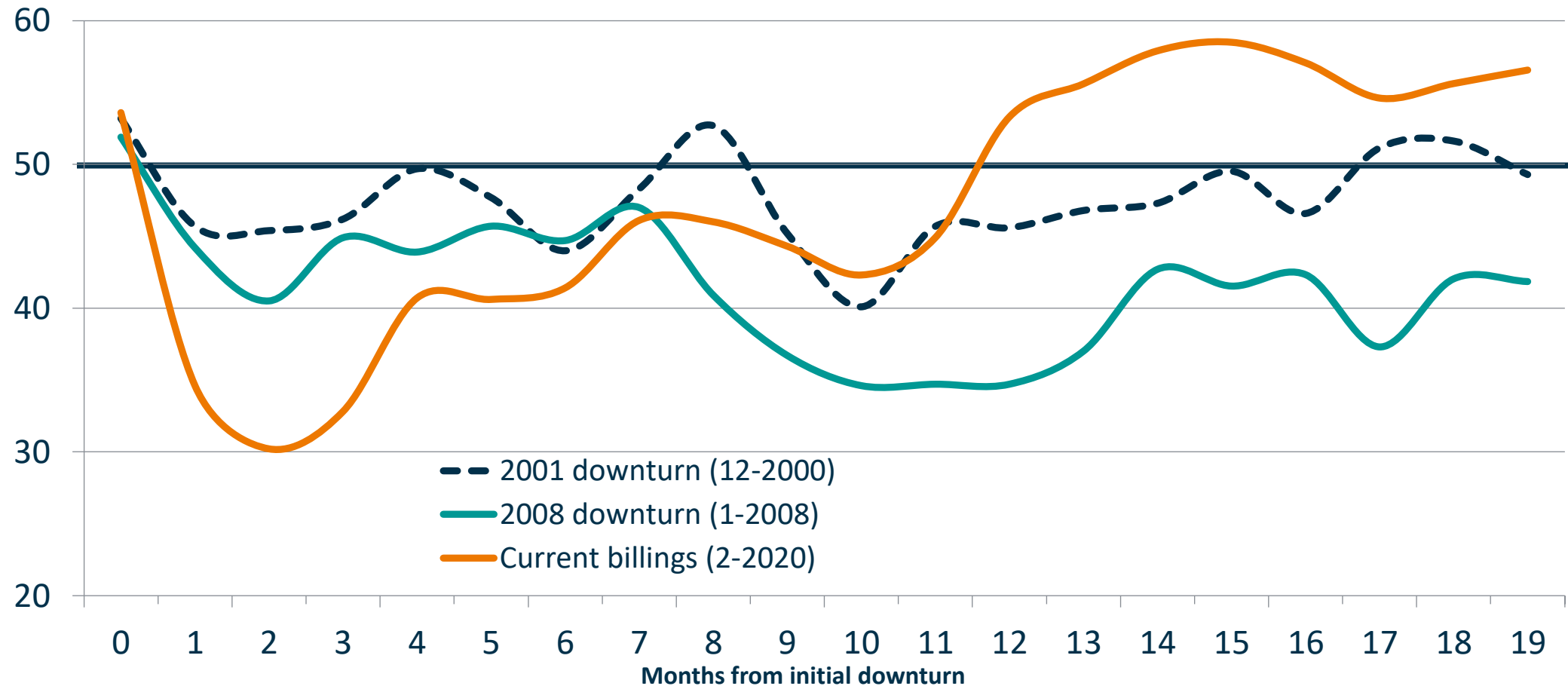
| ... As well as at firms in all regions

ABI scores by quarter for 2020 and 2021



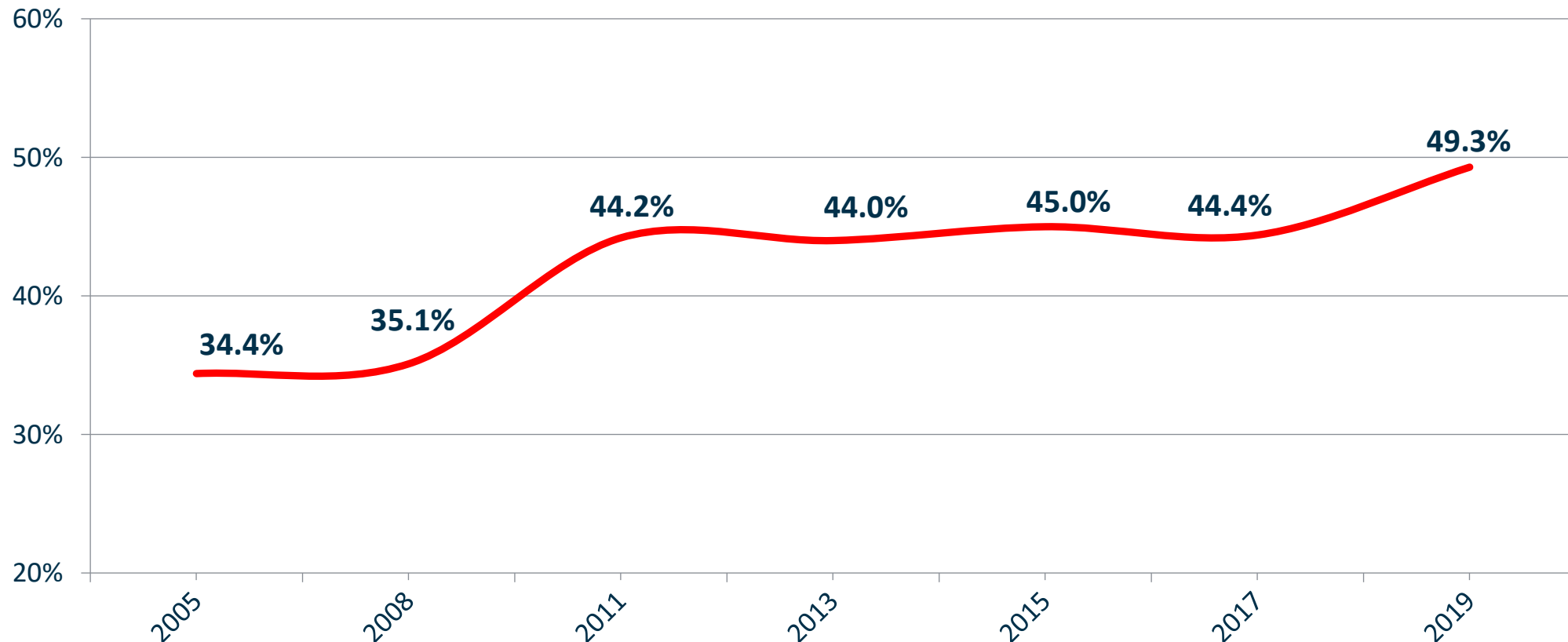
Current ABI downturn was sharper than in previous two recessions, but has recovered more quickly

Diffusion index: 50 = no change from previous month, seasonally adjusted



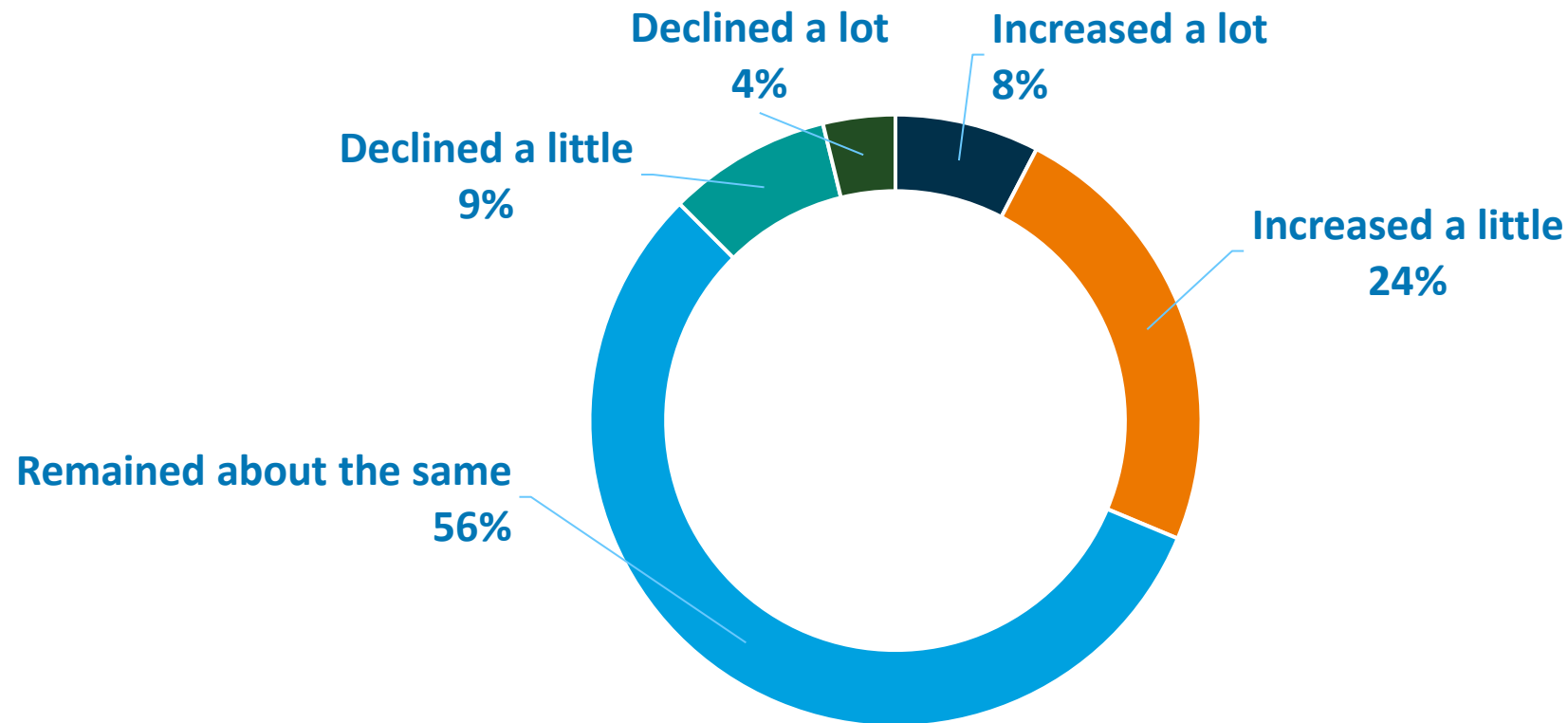
Work on existing facilities has been a growing share of design activity over the last 15 years

Renovations, rehabilitations, additions, and historic preservation as percent of firm building design billings



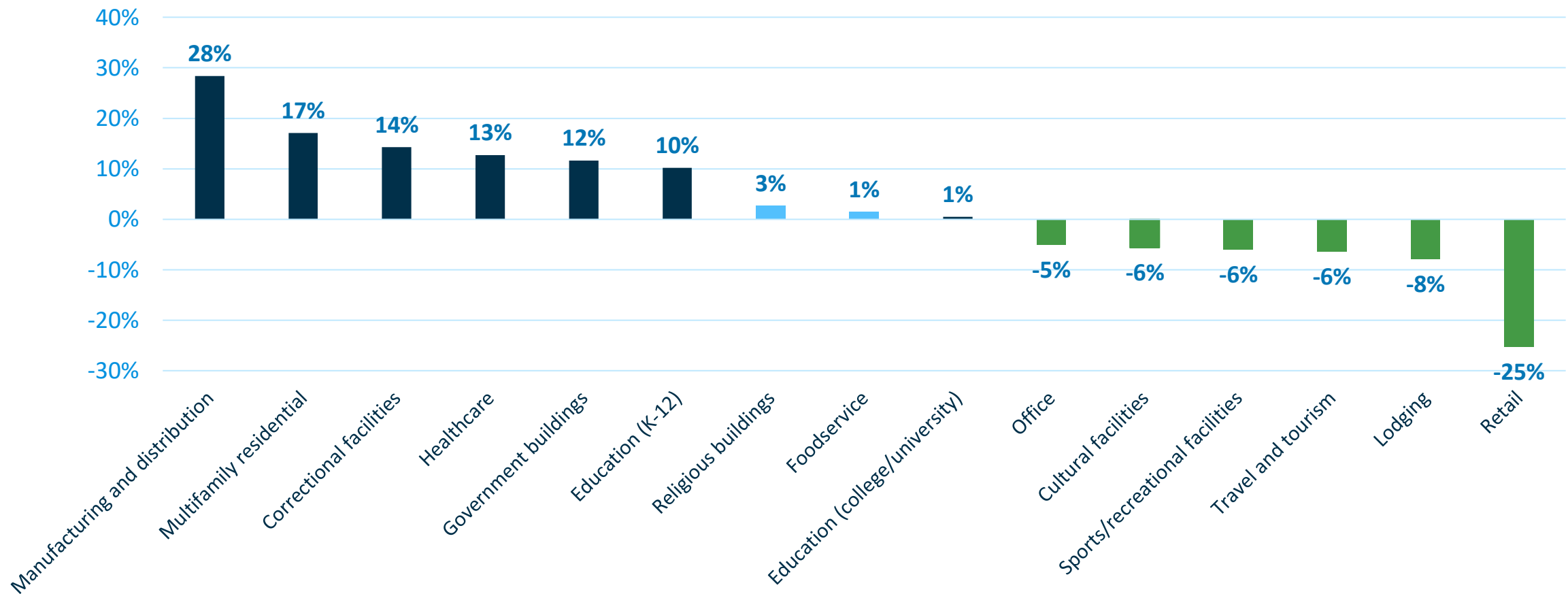
A third of firms indicate that work on existing buildings has increased with the pandemic

Share of firms reporting how the share of billings at their firm for projects dealing with renovations, rehabilitation, retrofits, and historic preservation to existing facilities so far in 2021, compared to pre-pandemic levels



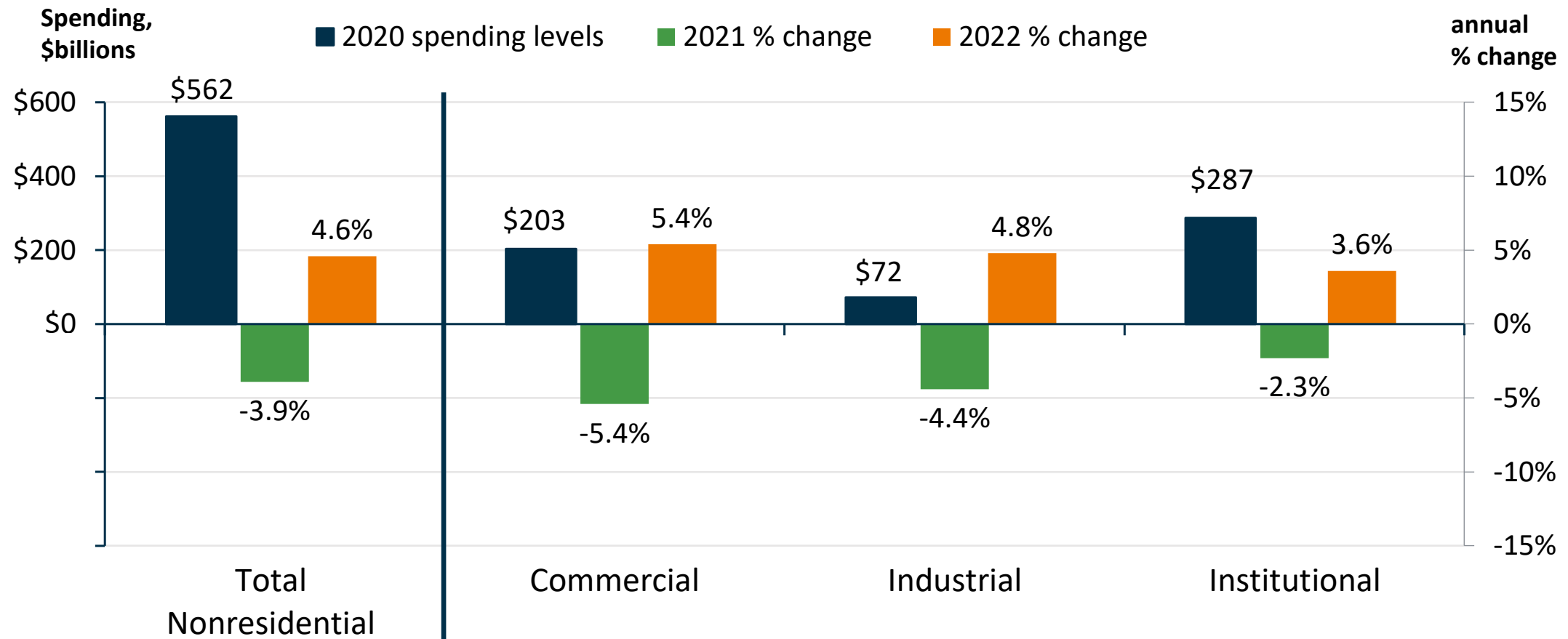
| Manuf./Dist., Multi-fam, And Inst. see most gains from retrofits; commercial generally seeing declines

% of respondents reporting work on existing facilities by building type “increasing” minus % reporting “decreasing” so far in 2021



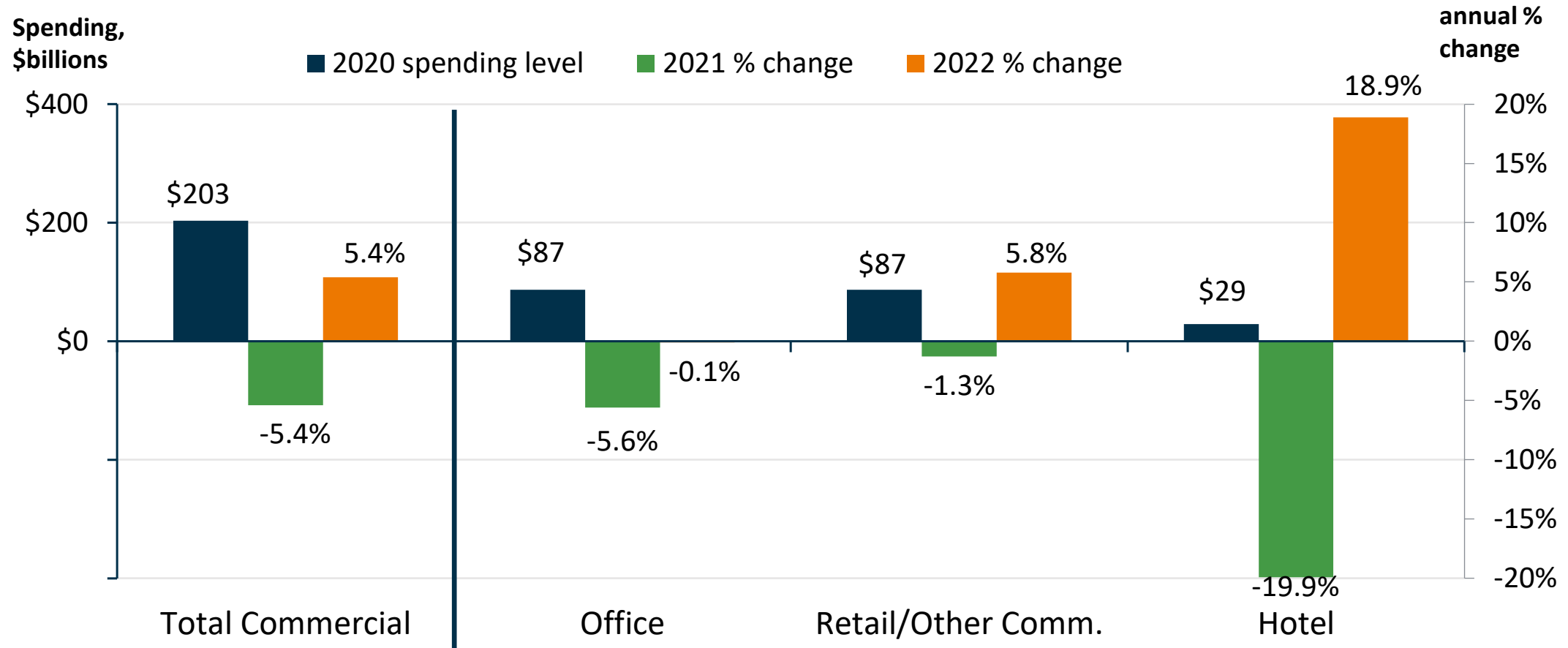
Construction spending declines expected this year, before starting to recover in 2022 across all sectors

Billions \$ / % change - construction spending on nonresidential buildings



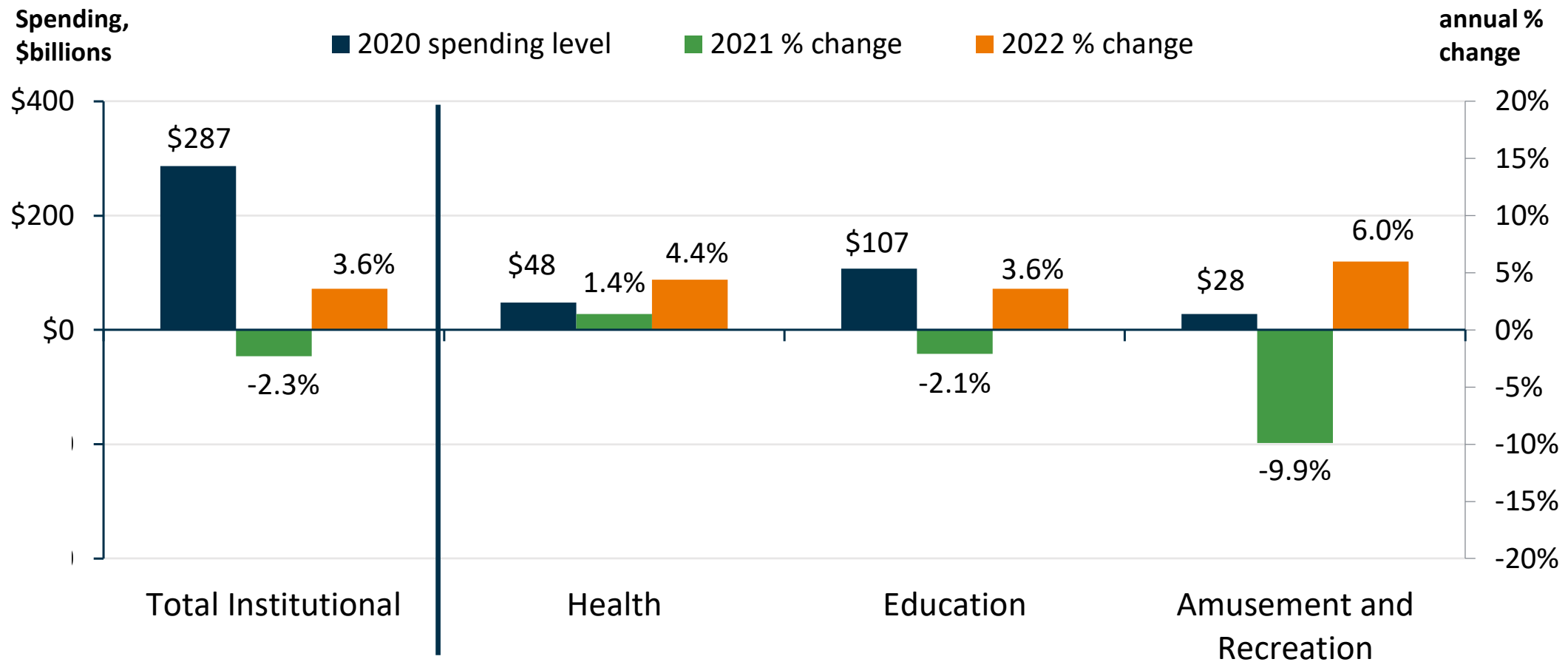
Office and retail to see single digit declines this year, while hotel expected to continue to plummet; recovery in 2022

Billions \$ / % change - construction spending on nonresidential buildings



Institutional sectors vary in forecast this year; expected single-digit recovery in 2022

Billions \$ / % change - construction spending on nonresidential buildings



Potential potholes on the ongoing road to recovery

- Emerging inflation
- Global supply chain disruptions/
rising commodity prices
- Vulnerable labor market
- Ongoing struggles to manage the pandemic
- Potential house price bubble



| Additional resources

- AIA Architectural Billings Index (ABI): aia.org/ABI
- AIA Consensus Construction Forecast: aia.org/CCF
- Economic indicators to track leading economic Key Performance Indicators (KPIs): aia.org/indicators
- AIA Firm Survey Report: aia.org/firmsurvey
- Email us: economics@aia.org



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Ken Simonson

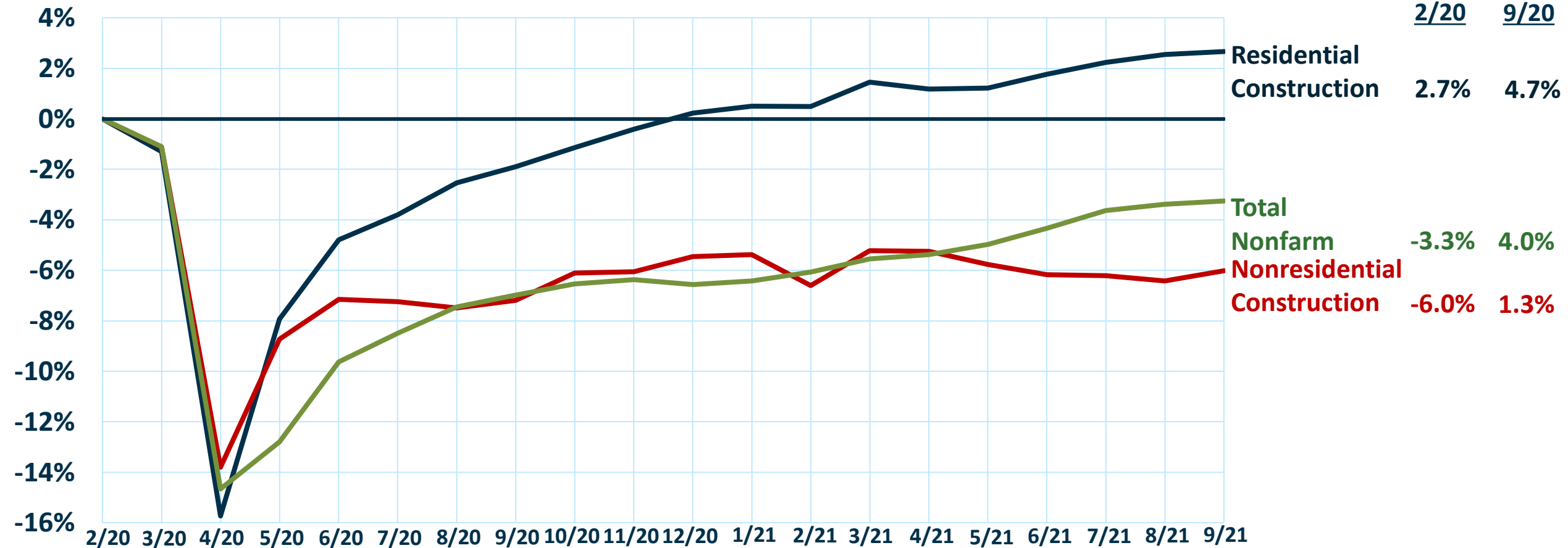
Chief Economist

The Associated General Contractors of America

Total Nonfarm & Construction Employment Feb. 2020-Sep. 2021

cumulative change (seasonally adjusted)

Change to 9/21 from:



State construction employment change Feb. 2020-August 2021

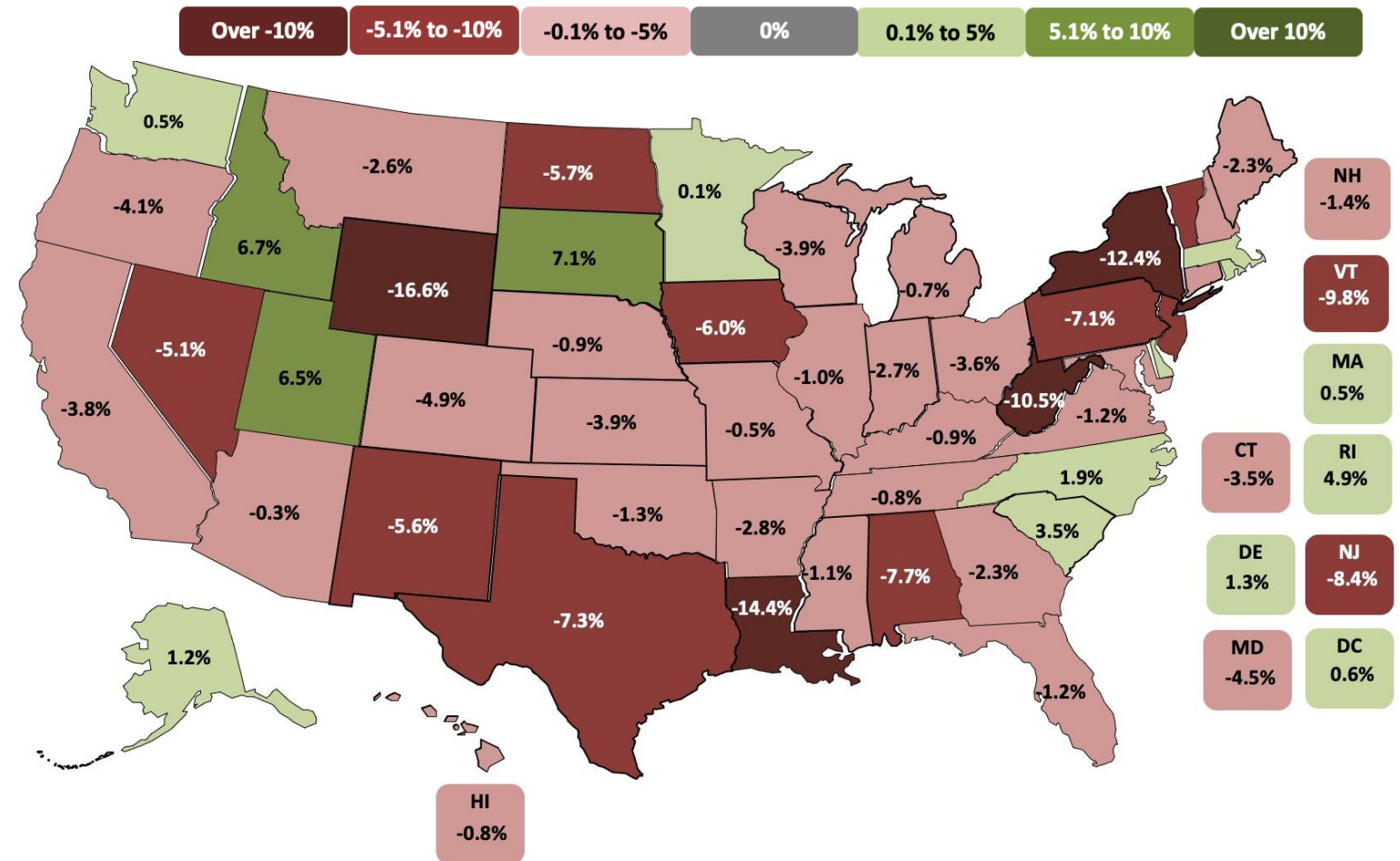
11 states and DC **up**, 39 states **down** (U.S.: -3.0%)

Top 5

South Dakota	7.1%
Idaho	6.7%
Utah	6.5%
Rhode Island	4.9%
South Carolina	3.5%

Bottom 5

Wyoming	-16.6%
Louisiana	-14.4%
New York	-12.4%
West Virginia	-10.5%
Vermont	-9.8%



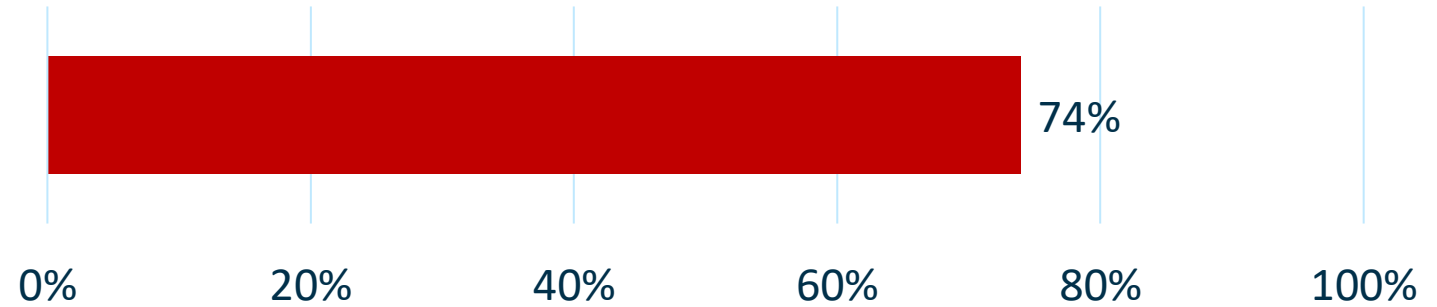
• Note: Shading based on unrounded numbers

2021 AGC Workforce Survey Results

(responses: 2,136)

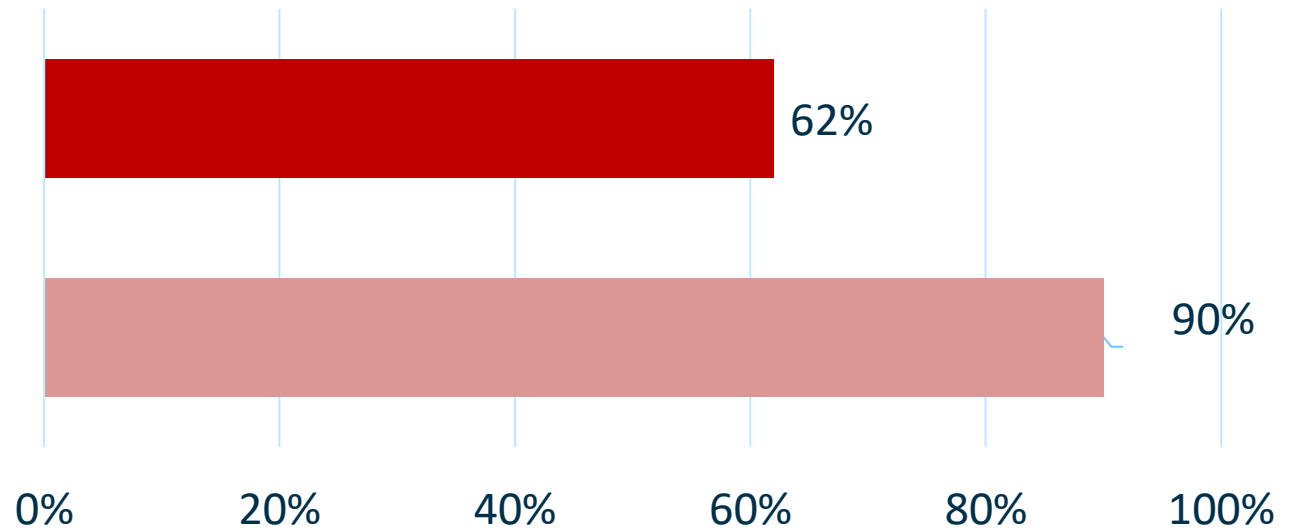
Hiring expectation

Expect to hire in the next
12 months



Need to fill open positions

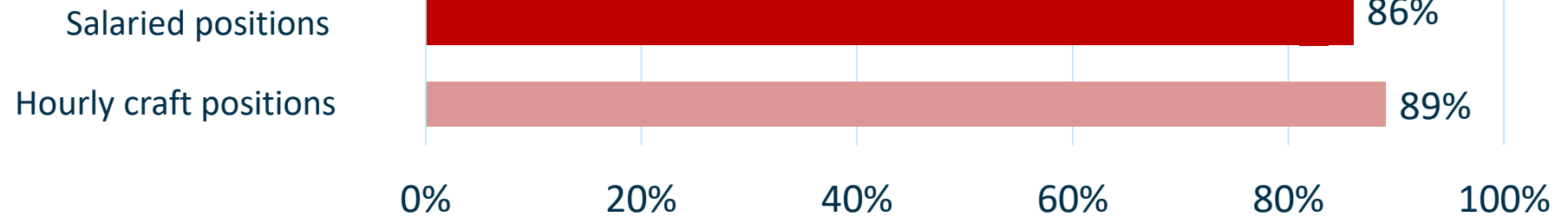
Salaried
positions



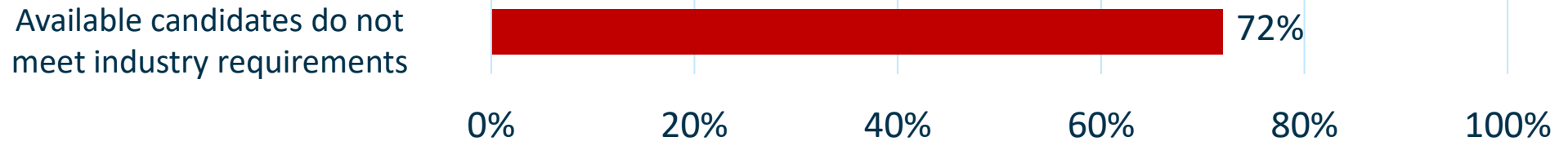
Hourly craft
positions

2021 AGC Workforce Survey Results

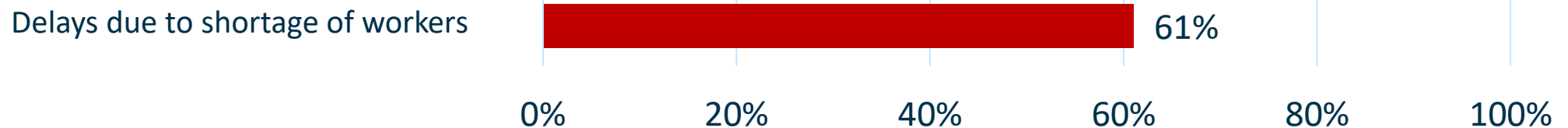
We are having a hard time filling some or all positions



Difficulty finding quality workers

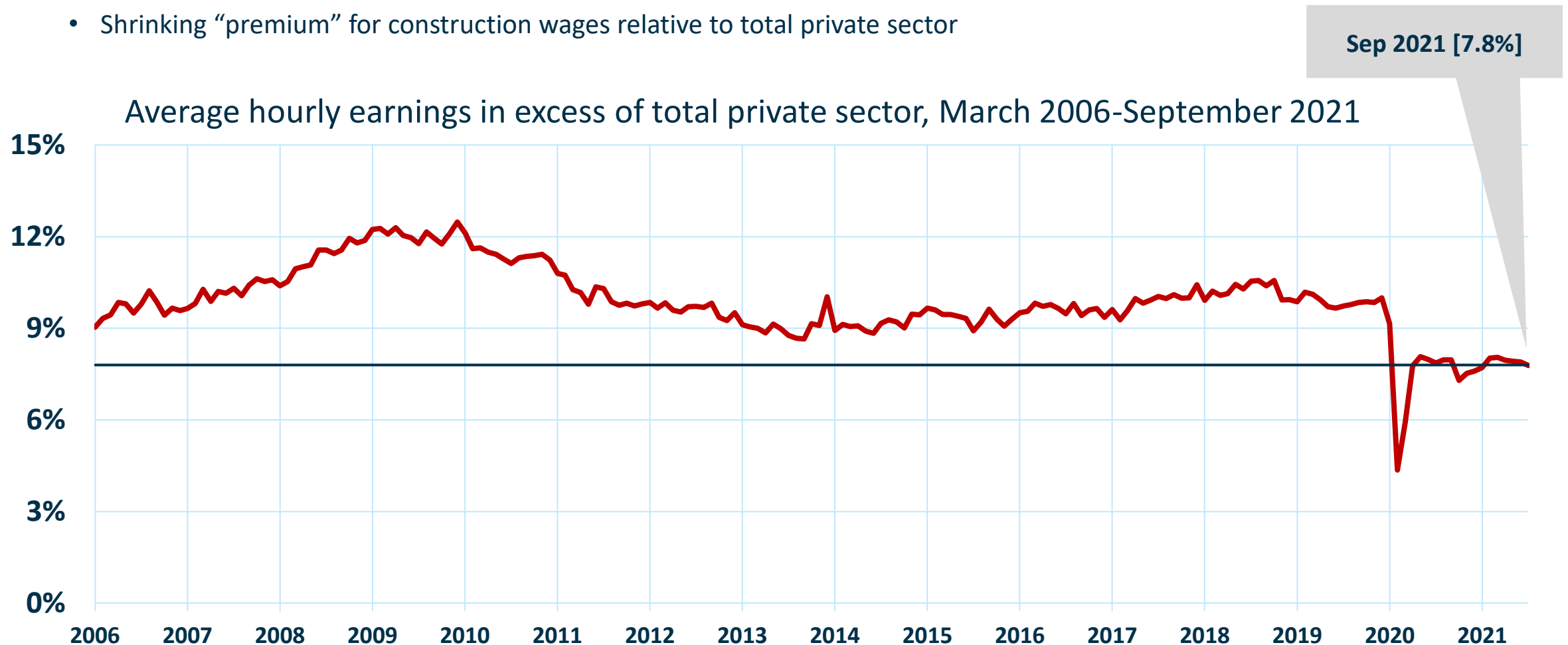


Construction delays



2 concerns about construction worker supply

- Low vaccination rate: 57% for construction workers, 81% for other occupations
- Shrinking “premium” for construction wages relative to total private sector



| Year-to-date construction spending: Jan-September 2021 vs. Jan-September 2020 (not seasonally adjusted)

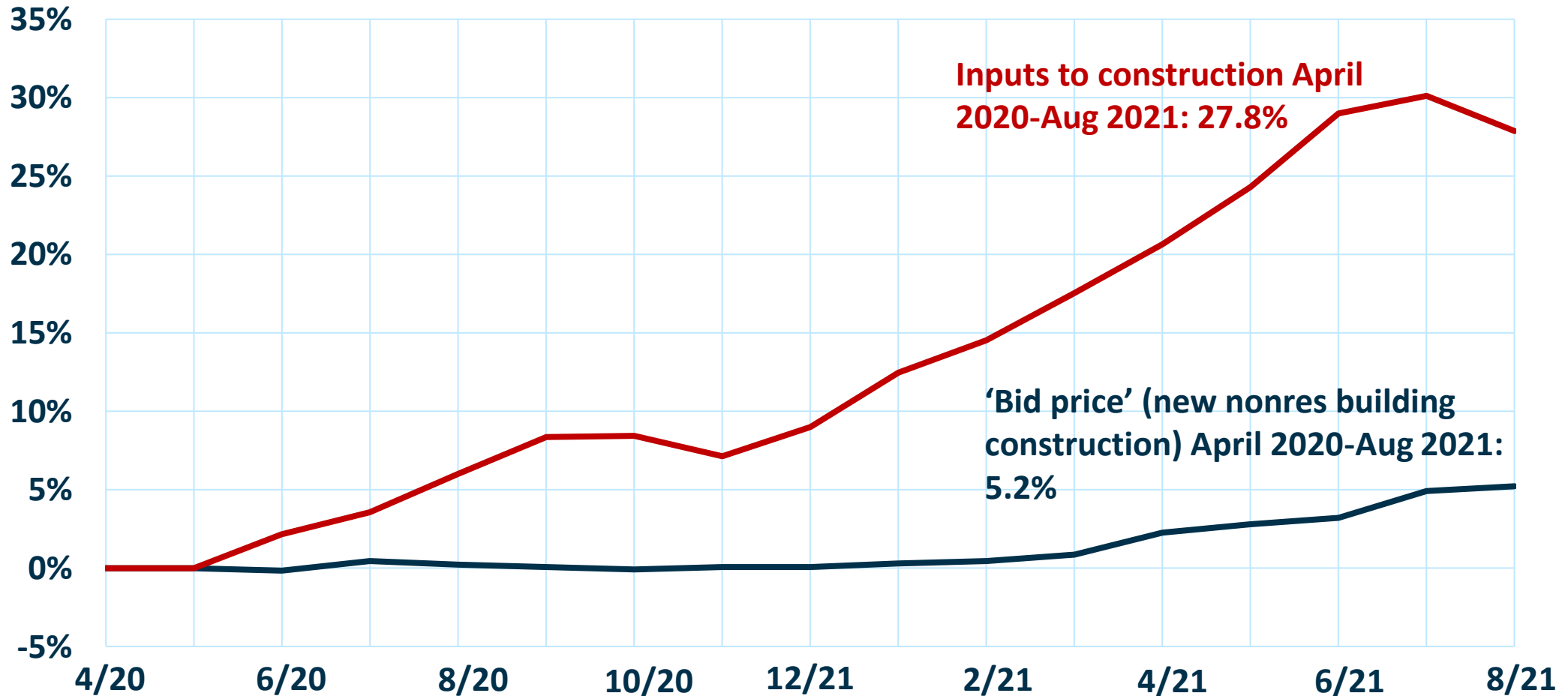
Total 7%; private residential 25% (single-family 37%; multi 18%); private nonres -6%; public -6%

Largest segments (in descending order of 2021 year-to-date spending)

- Power -3% (electric -1%; oil/gas fields & pipelines -8%)
- Education -11% (primary/secondary -8%; higher ed -16%)
- Highway and street -1%
- Commercial 0% (warehouse 12%; retail -13%)
- Office -9%
- Mfg. -0.2% (chemical 6%; transp. equip. 2%; food/beverage/tobacco 20%; electronic/electric -16%)
- Transportation -6% (air -11%; freight rail/trucking -6%; mass transit 2%)
- Health care -1% (hospital 0.4%; medical building 4%; special care -3%)
- Lodging -32%

Construction input and 'bid price' producer price indexes (PPIs)

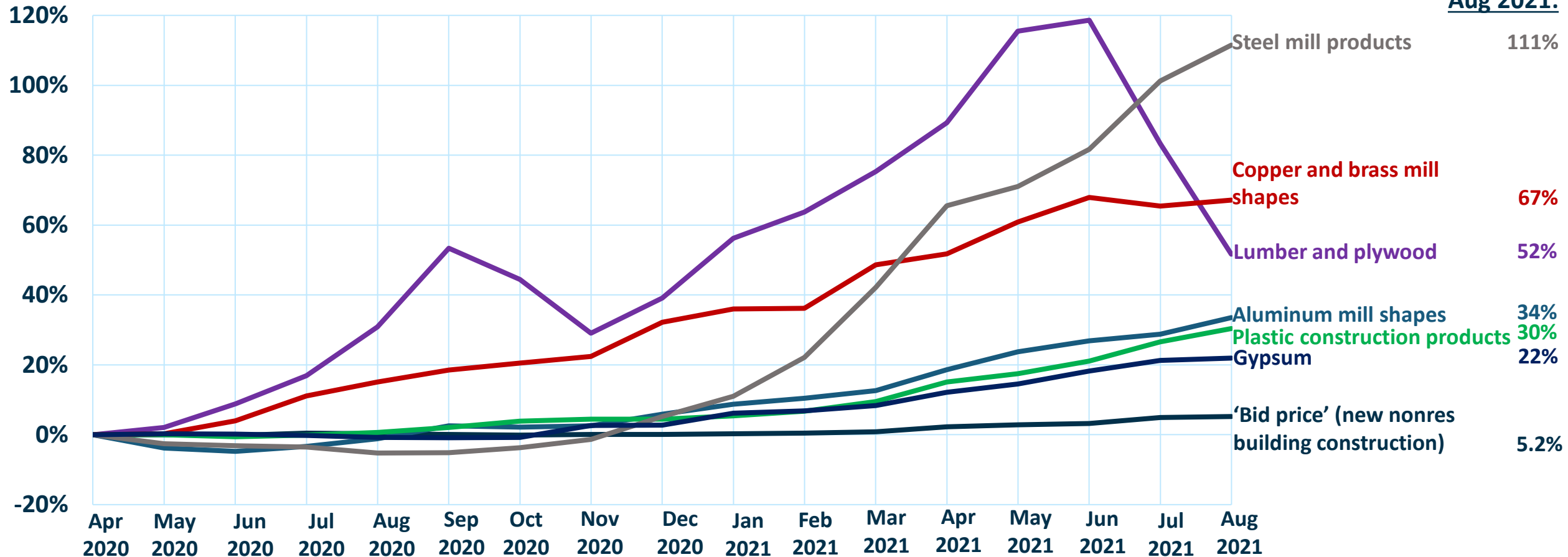
cumulative change in PPIs, April 2020-Aug 2021 (not seasonally adjusted)



Price changes for construction and selected materials

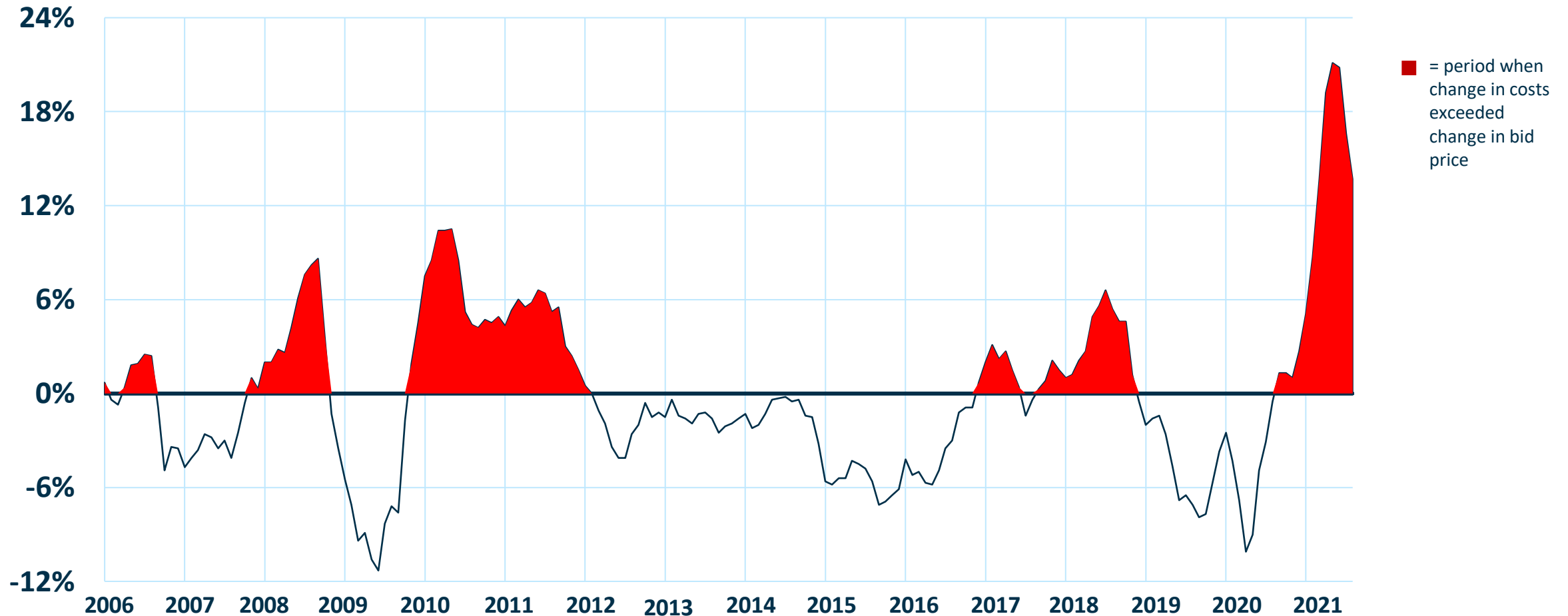
April 2020- August 2021

% change
Apr 2020-
Aug 2021:



Cost squeeze on contractors can last two years or more

Difference between year-over-year change in materials costs vs. bid prices, Jan 2006-August 2021



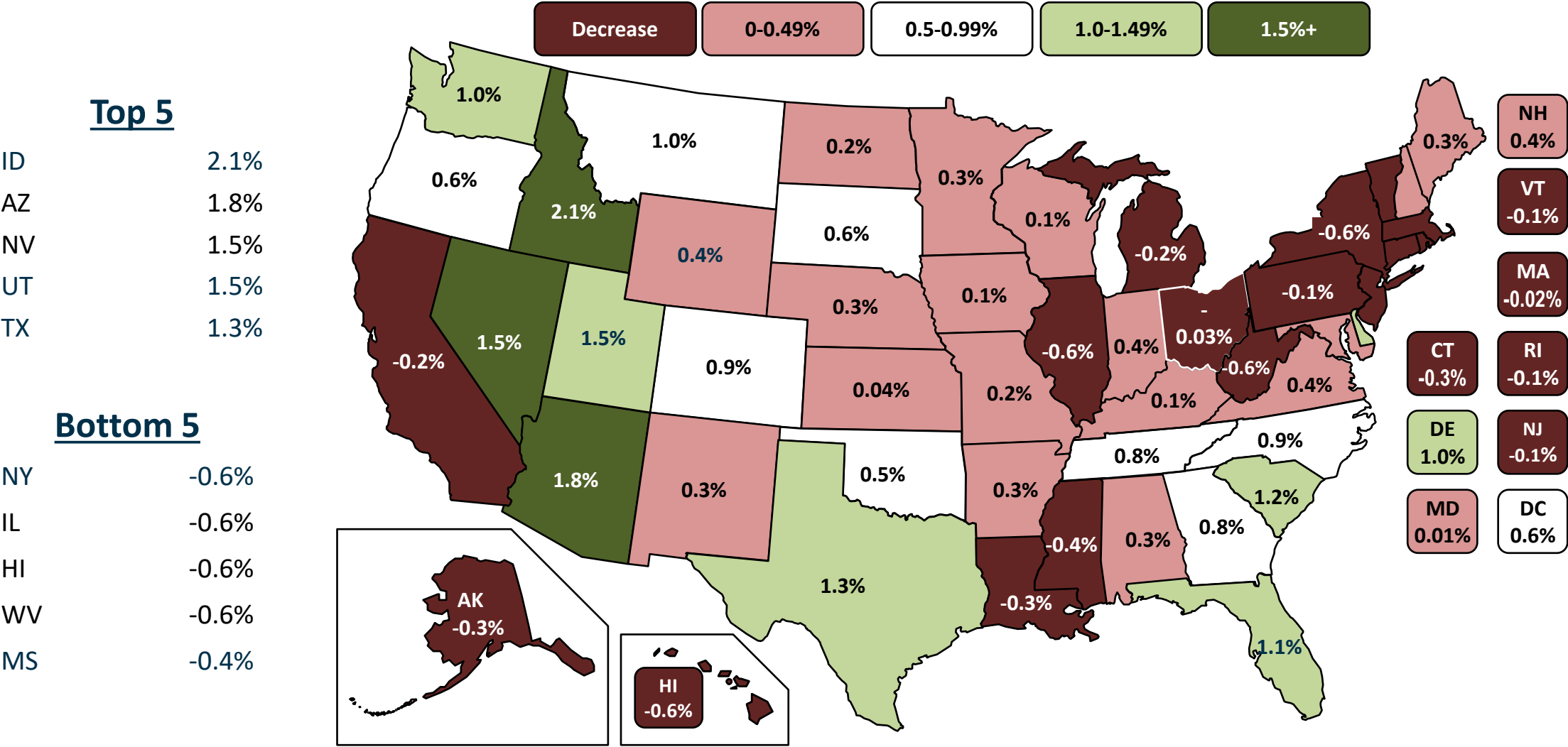
| Medium-term impacts as recovery begins

- Economic recovery looks more certain but virus risks remain, especially for construction: vaccination rate = 57% for construction workers, 81% for other occupations
- Slower rebound than for other sectors as owners, investors/lenders, institutions, and public agencies face uncertainty about future demand, project costs, and completion times
- Continuing cost and supply challenges may lead to more project deferrals
- Best private prospects: remodeling, local distribution centers, data centers, restaurants
- Less demand than pre-crisis for retail, offices, higher ed, lodging & travel-related
- Unclear how states and localities will spend added tax revenue and federal dollars
- Still unclear if/when Senate infrastructure bill will become law

| Long-run construction outlook (post-pandemic)

- Slower population growth means slower demand growth for most construction
- Permanent shift from retail to e-commerce/distribution structures
- More specialized and online healthcare facilities; fewer hospitals, nursing homes
- More wind, solar, battery storage and charging facilities, and related manufacturing
- Less oil drilling and pipeline construction
- Continuing demand for K-12 but much less for higher ed construction
- Not clear if offices will decentralize or remain in less demand
- Not clear yet if urban/rural or state-to-state trends will change

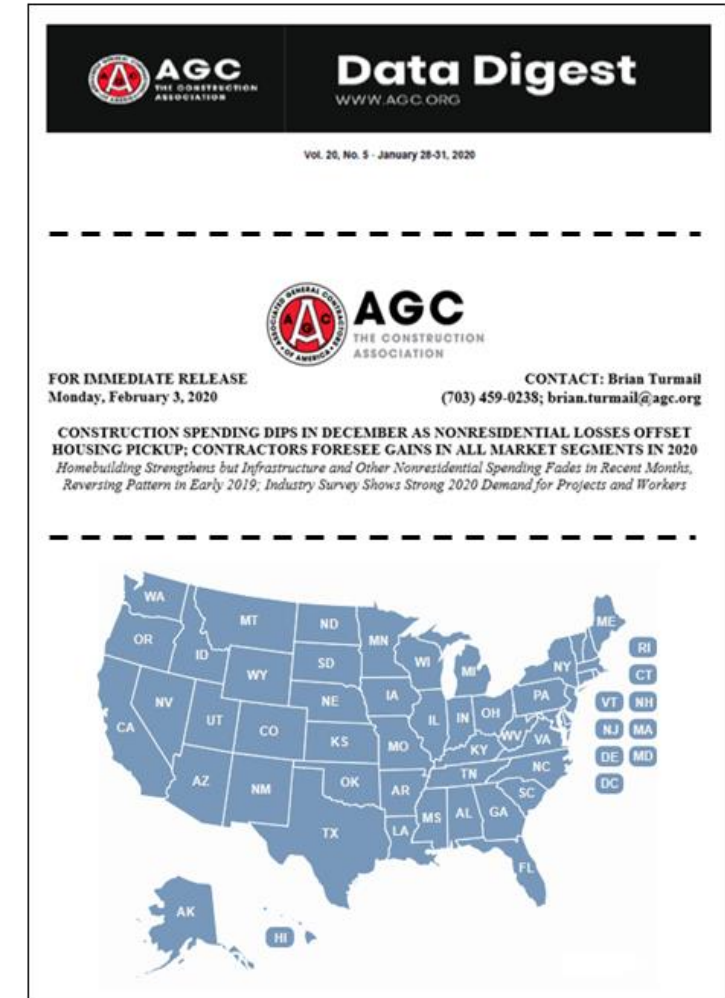
Population change by state, July 2019–July 2020 (U.S.: 0.35%)



| AGC Economic Resources

Email: ken.simonson@agc.org

- *The Data Digest*: weekly 1-page email
subscribe at <http://store.agc.org>
- *Construction Inflation Alert*:
<https://www.agc.org/learn/construction-data/agc-construction-inflation-alert>
- ConsensusDocs Price Escalation Resource Center:
<https://www.consensusdocs.org/price-escalation-clause/>
- Surveys, state and metro data, fact sheets:
www.agc.org/learn/construction-data
- Monthly press releases: construction spending; producer price indexes; national, state, metro employment with rankings





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Alex Carrick

Chief Economist

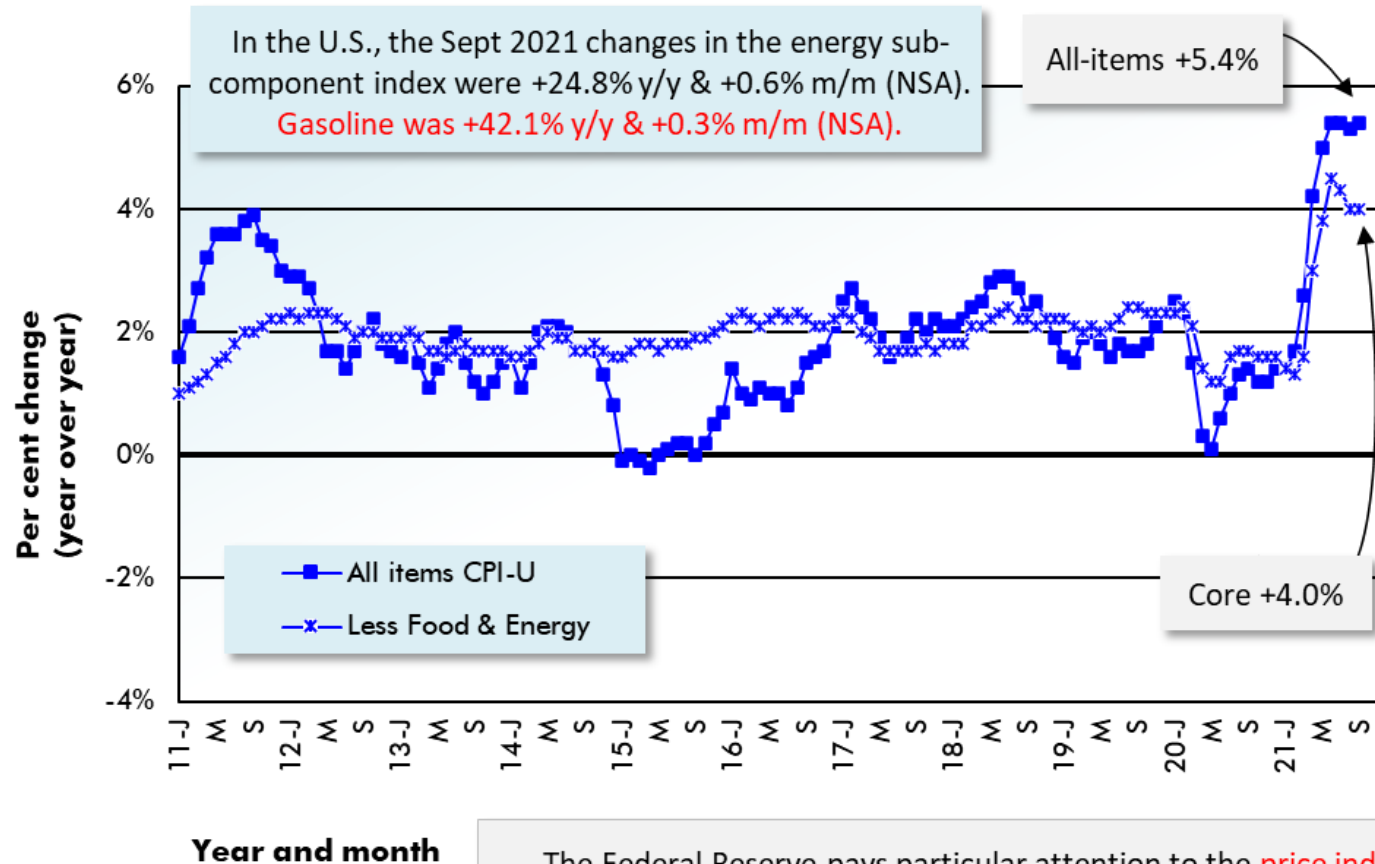
ConstructConnect

| 5 Underlying & Linked Trends to be Discussed Today

- De-carbonization goals
- The push to full-on electrification
- Resource sector rebirth
- A bias towards higher costs & prices
- Attention given to infrastructure spending

Beyond the above, other key issues and questions confronting the construction industry include: the staying power of the housing mini-boom; an aging demographic and slowing population growth; a boost to refurbishments, plus new design features; shifting into an era of low-rise building strength (data & distribution centers); and accelerating tech advances.

U.S. Inflation: All Items (CPI-U) vs All Items Less Food & Energy (i.e., 'Core'*)



The Federal Reserve pays particular attention to the **price index for Personal Consumption Expenditures** (PCE in national accounts), excluding food & energy. In Aug 2021, it was +3.6% y/y.

Year-over-Year Changes in some Sub-Indices:

- car & truck rental, +42.9%;
- used cars & trucks, +24.4%;
- piped gas service, +20.6%;
- hotel/motel rooms, +19.8%;
 - bacon, +19.3%;
- laundry equipment, +19.1%;
 - beef & veal, +17.6%;
 - furniture, +13.7%;
 - televisions, +12.7%;
- boys' & girls' footwear, +11.9%.
-
- sewing machines, -10.3%.

U.S. figure (CPI-U) is All Items Consumer Price Index for All Urban Consumers. (Based on not seasonally adjusted/NSA index values.).
*Core inflation is CPI-U less its often most volatile sub-components, food and energy.
Latest data points are for July 2021.

Data Source:
U.S. Bureau of Labor Statistics (Department of Labor).
Chart: ConstructConnect.

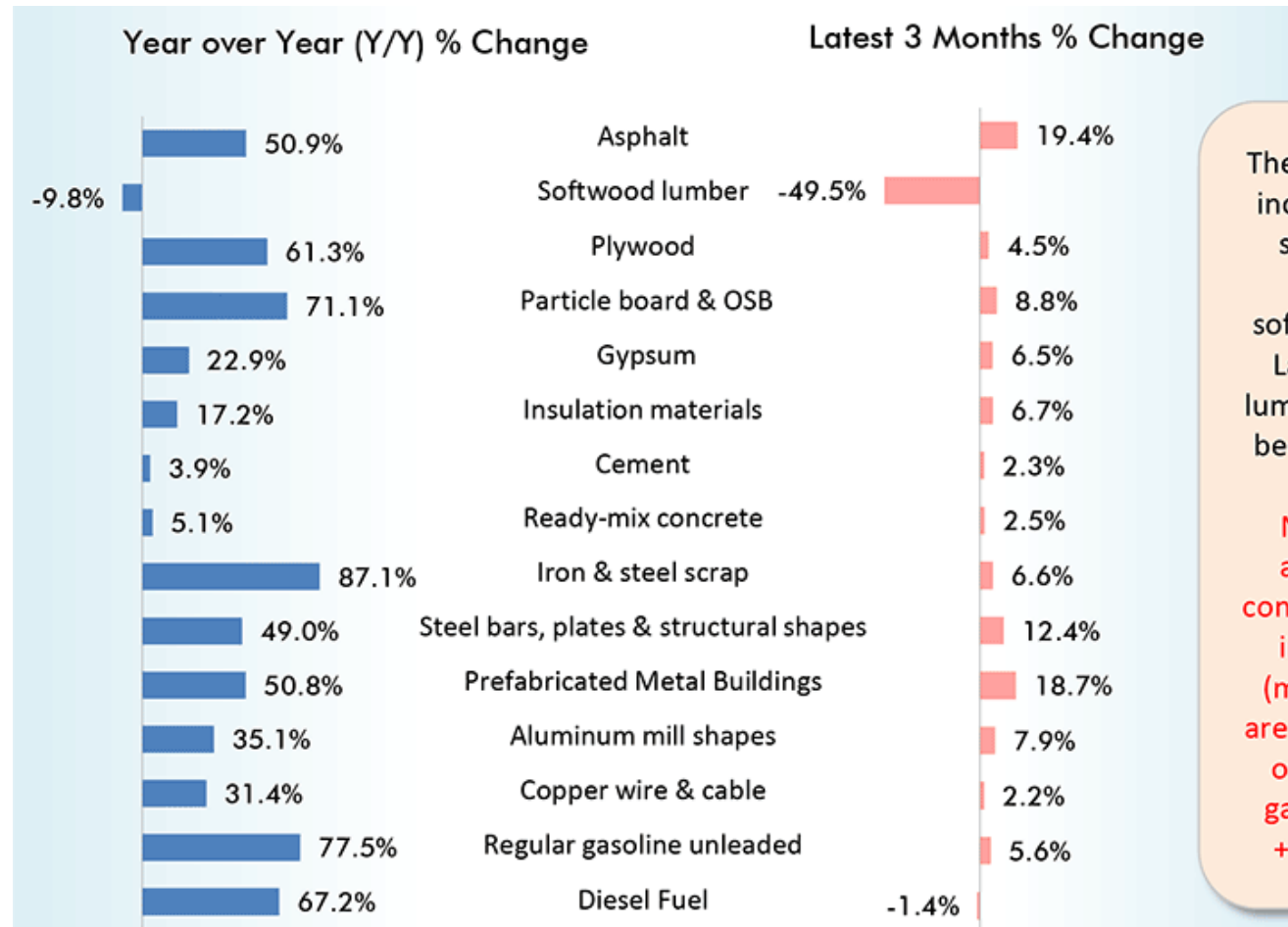
| There's an Important Distinction Between ...

- **Rapid general price inflation** (due to commodity price hikes; climbing wages; shortages & supply interruptions)
- AND
- **Extra corporate expenses** for ...
 - Establishing cyber security;
 - Setting up compliance courses, combined with deeper dive training in best ethical practices for personnel;
 - Adopting procedures to reduce carbon emissions in production processes (steel/aluminum/cement); carbon capture; carbon storage; carbon taxes;
 - Auto 'fleet' conversions to still pricier EVs (i.e., versus combustion-engine locomotion;
 - Renovations/refurbishments of buildings – more entrances & exits; touchless mechanical controls; additional bathrooms per floor/per tenant; HVAC upgrades to bring fresher outside air indoors; easier to clean surfaces;
 - The hiring of more-thorough cleaning services;
 - Ever expanding adoption of high-tech (VR devices and AI; monitoring and signaling systems for preventative maintenance; drones for security and deliveries; Internet of Things (IoT); 5G.

The post-pandemic world will be an expensive place in which to live and do business.

U.S. Construction Material Cost Changes

From Producer Price Index (PPI) Series – August 2021



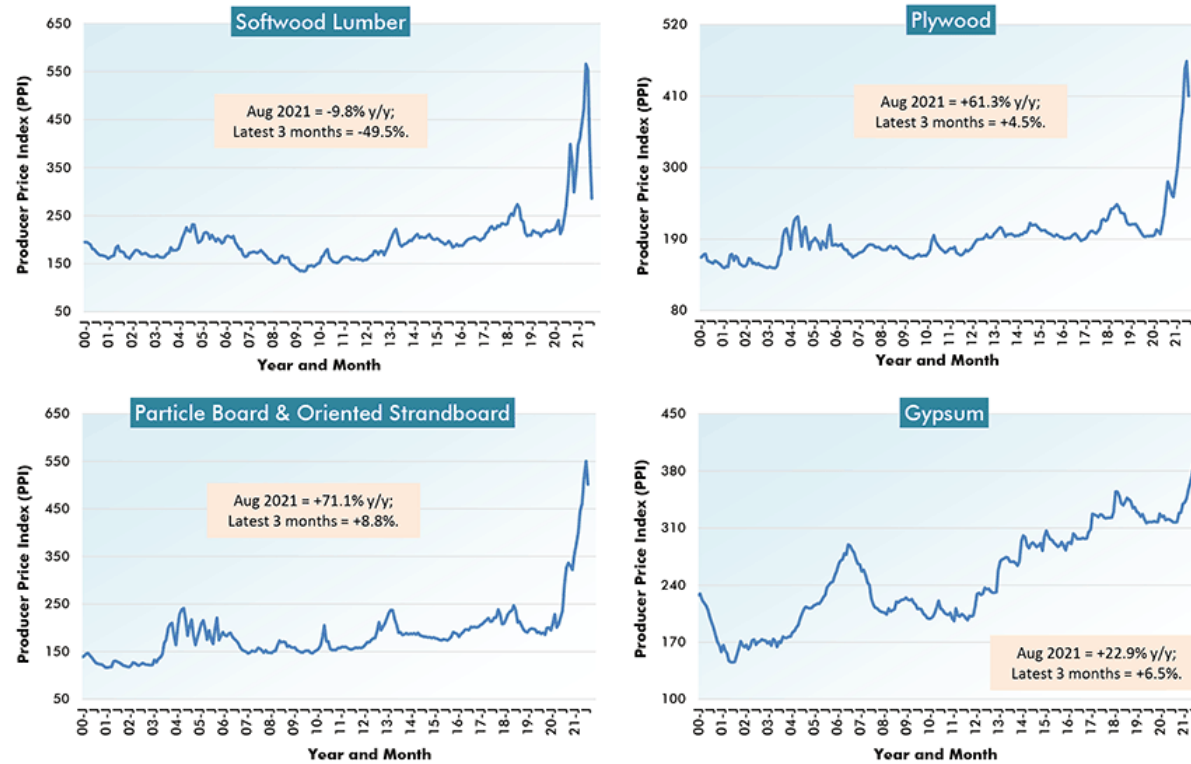
The highest profile increases in early summer were recorded by softwood lumber. Lately, though, lumber prices have been returning to earth.

Nevertheless, among the 15 construction inputs in the chart, 8 (more than half) are recording year-over-year price gains of close to +50% or more.

Data source: Bureau of Labor Statistics (BLS), Producer Price Index (PPI), not seasonally adjusted (NSA) / Charts: ConstructConnect.

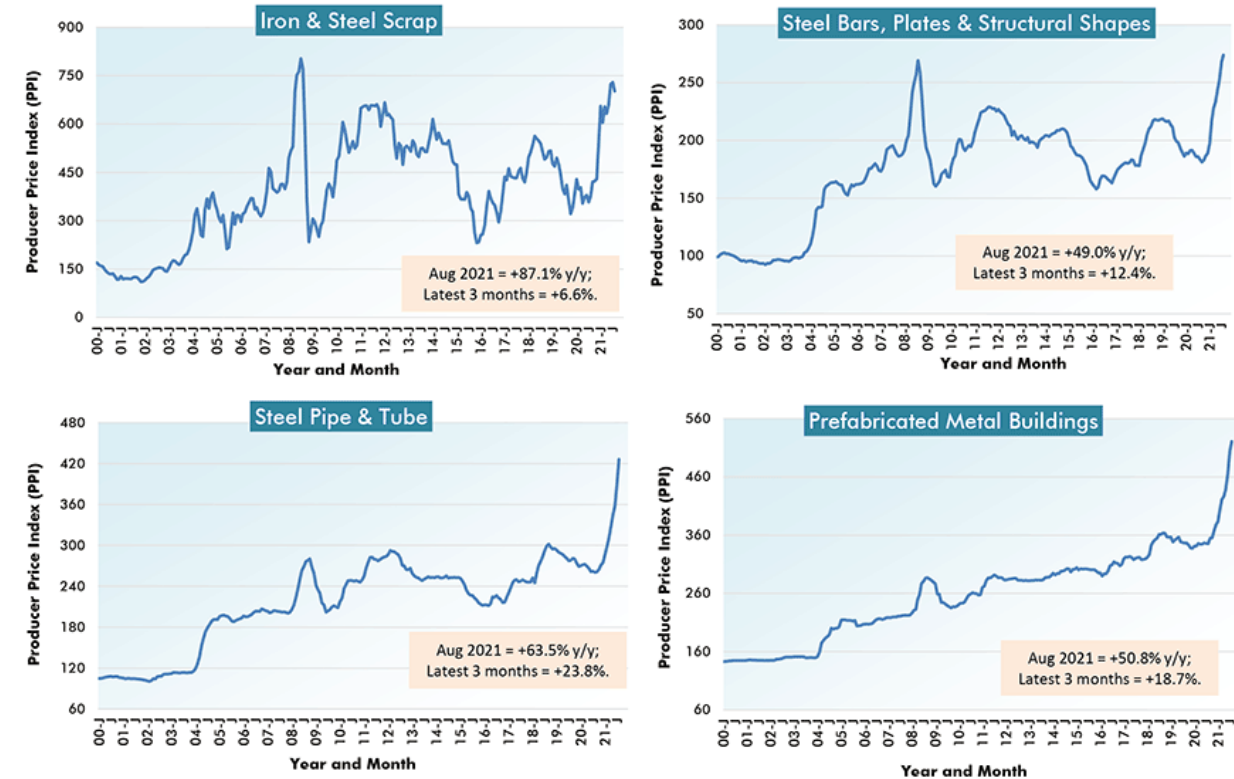
Building Material Costs – Producer Price Index Series

U.S. Construction Material Costs (1) – FORESTRY PRODUCTS From Producer Price Index (PPI) Series



The last data points are for August 2021.

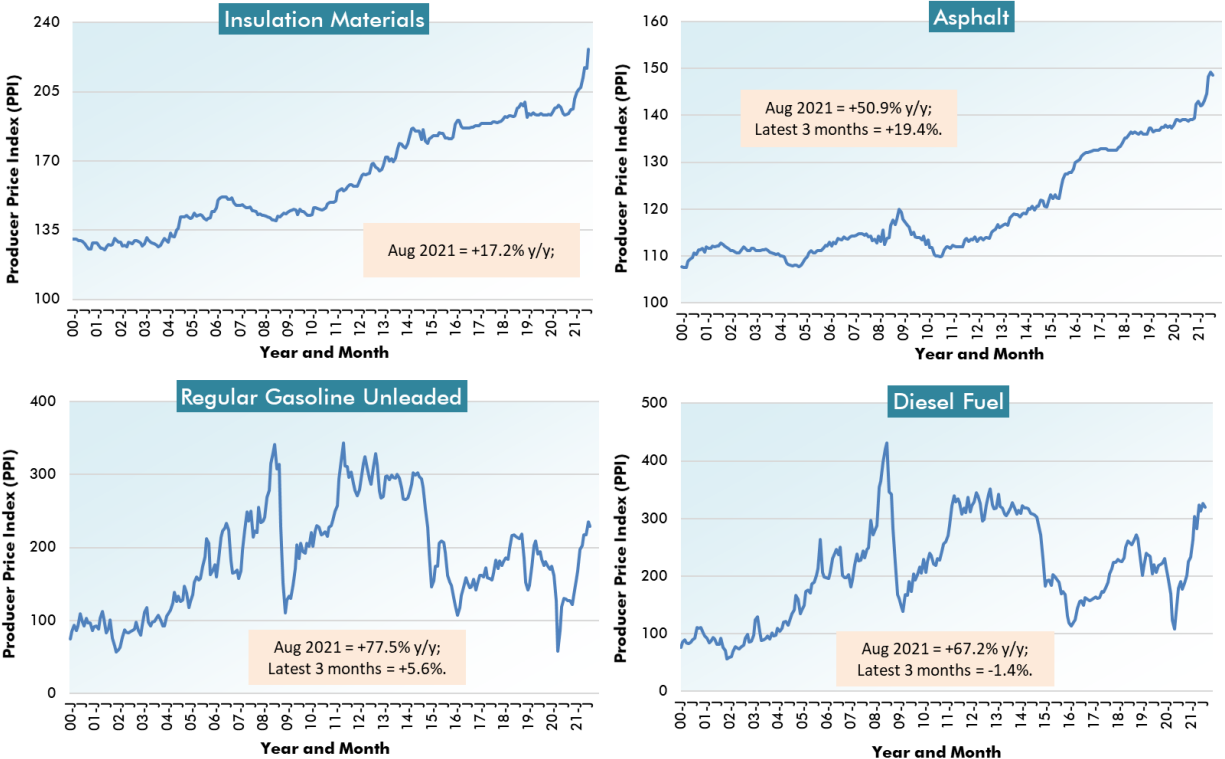
U.S. Construction Material Costs (2) – STEEL PRODUCTS From Producer Price Index (PPI) Series



Data source: U.S. Bureau of Labor Statistics (BLS), Producer Price Index (PPI) series, not seasonally adjusted (NSA)/Charts: ConstructConnect.

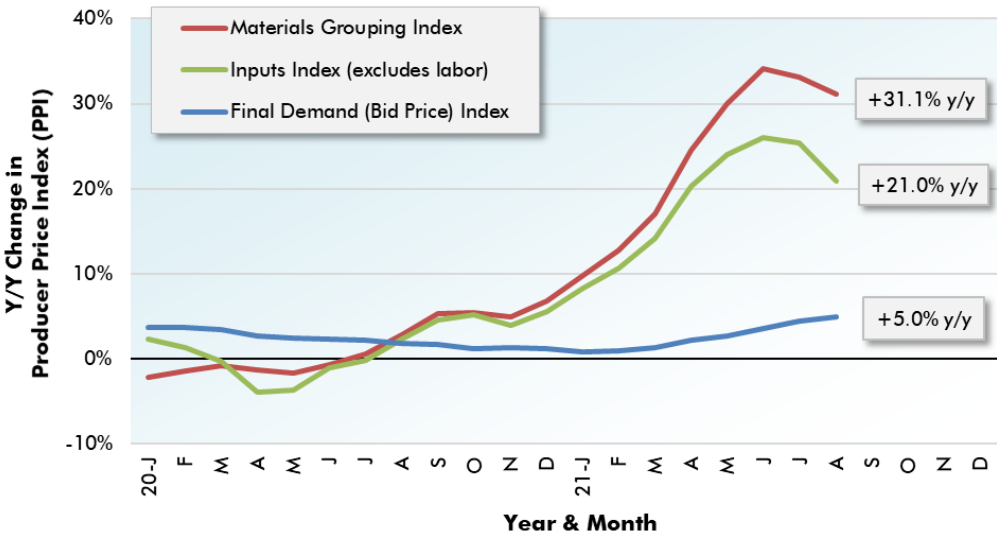
Building Material Costs – Producer Price Index Series

U.S. Construction Material Costs (5) – ENERGY-RELATED From Producer Price Index (PPI) Series



The last data points are for August 2021.

U.S. CONSTRUCTION BID PRICES vs MATERIAL INPUT COSTS – AUGUST 2021



The gap between material cost increases year over year and bid prices year over year has diminished slightly but it still remains immense. The relatively restrained increase in the bid price index is being dictated by the desire to win contract awards in a tough competitive environment.

Data source: U.S. Bureau of Labor Statistics (BLS), Producer Price Index (PPI) series, not seasonally adjusted (NSA)/Charts: ConstructConnect.

U.S. Average Earnings, Hourly and Weekly

U.S. AVERAGE HOURLY EARNINGS, PRODUCTION & NONSUPERVISORY WORKERS ON NON-FARM PAYROLLS

	Sep 20	Sep 21	% Change Y/Y
Total Private	\$24.79	\$26.15	5.5%
Goods-producing	\$25.49	\$26.92	5.6%
Mining & Logging	\$30.36	\$31.72	4.5%
Construction	\$29.09	\$30.79	5.8%
Manufacturing	\$23.01	\$24.18	5.1%
Durable Goods	\$23.99	\$25.22	5.1%
Nondurable Goods	\$21.46	\$22.55	5.1%
Private Service-providing	\$24.64	\$25.99	5.5%
Trade, Transportation & Utilities	\$21.47	\$22.70	5.7%
Wholesale Trade	\$26.93	\$28.01	4.0%
Retail Trade	\$17.78	\$18.68	5.1%
Transportation & Warehousing	\$22.59	\$24.54	8.6%
Utilities	\$38.98	\$40.00	2.6%
Information	\$36.16	\$36.50	0.9%
Financial Activities	\$29.48	\$30.65	4.0%
Professional & Business Services	\$29.50	\$30.94	4.9%
Education & Health Services	\$25.60	\$27.46	7.3%
Leisure & Hospitality	\$14.80	\$16.71	12.9%
Other Services	\$22.61	\$23.38	3.4%

Among the 12 major sub-sectors shown above, construction currently ranks 5th for level of hourly earnings and 4th for year-over-year change in hourly earnings.

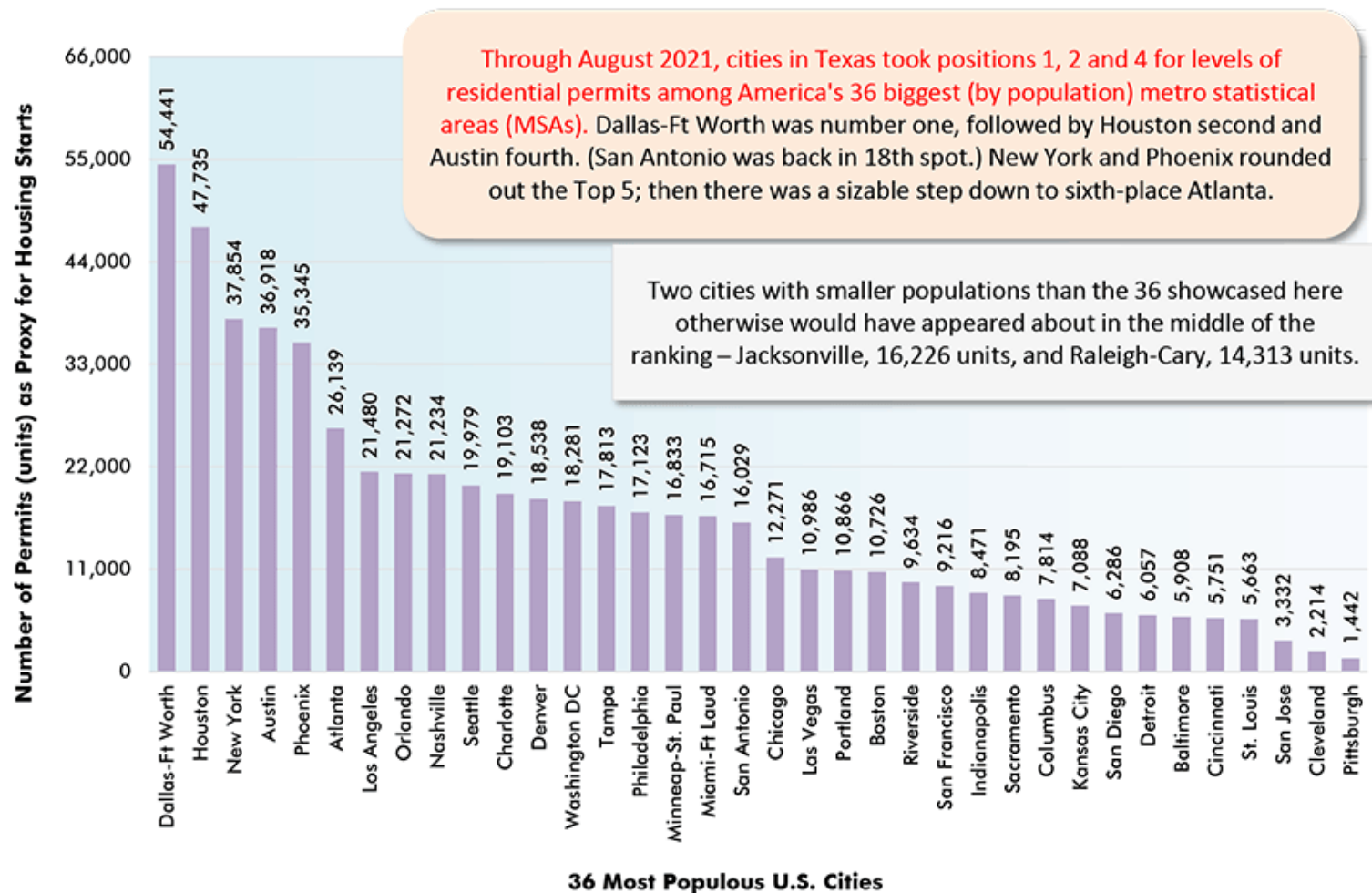
U.S. AVERAGE WEEKLY EARNINGS, PRODUCTION & NONSUPERVISORY WORKERS ON NON-FARM PAYROLLS

	Sep 20	Sep 21	% Change Y/Y
Total Private	\$845.34	\$894.33	5.8%
Goods-producing	\$1,034.89	\$1,114.49	7.7%
Mining & Logging	\$1,366.20	\$1,503.53	10.1%
Construction	\$1,143.24	\$1,259.31	10.2%
Manufacturing	\$948.01	\$1,001.05	5.6%
Durable Goods	\$993.19	\$1,044.11	5.1%
Nondurable Goods	\$875.57	\$933.57	6.6%
Private Service-providing	\$813.12	\$857.67	5.5%
Trade, Transportation & Utilities	\$734.27	\$778.61	6.0%
Wholesale Trade	\$1,036.81	\$1,092.39	5.4%
Retail Trade	\$549.40	\$573.48	4.4%
Transportation & Warehousing	\$865.20	\$944.79	9.2%
Utilities	\$1,680.04	\$1,696.00	0.9%
Information	\$1,308.99	\$1,339.55	2.3%
Financial Activities	\$1,099.60	\$1,146.31	4.2%
Professional & Business Services	\$1,062.00	\$1,126.22	6.0%
Education & Health Services	\$839.68	\$897.94	6.9%
Leisure & Hospitality	\$365.56	\$416.08	13.8%
Other Services	\$707.69	\$729.46	3.1%

Among the 12 major sub-sectors shown above, construction currently ranks 4th for level of weekly earnings and 2nd for year-over-year change in weekly earnings.

Data source:
Table B-8,
*Employment
Situation* report
from Bureau of
Labor Statistics
(BLS).

Year to Date Residential Permits Issued (Units) in the 36 Most Populous U.S. Metro Statistical Areas (MSAs) (Jan-Aug 2021)



At the city level, the number of residential building permits issued serves as a proxy for housing starts.

Data Source:
U.S. Census Bureau.
Chart: ConstructConnect.

U.S. Type-of-Structure Starts Forecasts

(Insight version
of table –
\$ Billions USD)

		Actuals		Forecasts				
		2019	2020	2021	2022	2023	2024	2025
Verticals								
	Airport	7.393	6.028	5.842	6.552	7.519	8.366	9.087
	All Other Civil	31.491	18.159	17.166	22.584	25.729	28.695	30.220
	Bridges	30.186	22.761	18.793	22.402	24.823	27.720	30.428
	Dams / Canals / Marine Work	8.547	8.283	7.066	7.906	8.642	9.316	9.938
	Power Infrastructure	14.697	4.560	9.120	12.609	15.480	17.104	18.627
	Roads	65.315	63.638	69.984	76.794	83.509	90.223	94.210
	Water and Sewage Treatment	31.617	31.247	34.347	37.857	41.495	45.381	48.657
CIVIL		189.247	154.677	162.319	186.705	207.199	226.805	241.167
<i>(Yr/yr % change)</i>		16.1%	-18.3%	4.9%	15.0%	11.0%	9.5%	6.3%
	Offices (private)	36.585	25.880	17.915	20.384	23.178	25.266	26.630
	Parking Garages	3.164	1.740	1.661	2.067	2.440	2.640	2.828
	Transportation Terminals	10.746	2.361	4.096	5.788	7.366	8.499	9.397
Commercial		50.496	29.981	23.673	28.239	32.983	36.405	38.856
<i>(Yr/yr % change)</i>		32.9%	-40.6%	-21.0%	19.3%	16.8%	10.4%	6.7%
	Amusement	7.596	6.304	6.621	7.052	7.956	8.706	9.383
	Libraries / Museums	4.072	3.807	2.542	3.421	4.272	4.614	4.790
	Religious	1.889	1.622	1.068	1.449	1.543	1.596	1.640
	Sports Arenas / Convention Centers	9.835	4.516	4.022	5.302	6.802	7.758	8.206
Community		23.392	16.249	14.254	17.223	20.574	22.674	24.019
<i>(Yr/yr % change)</i>		14.0%	-30.5%	-12.3%	20.8%	19.5%	10.2%	5.9%
	College / University	19.675	17.872	15.450	18.237	19.400	20.601	21.627
	Elementary / Pre School	21.456	19.820	16.957	18.885	20.479	21.502	22.366
	Jr / Sr High School	32.841	27.862	26.867	28.475	29.916	31.172	32.429
	Special / Vocational	1.908	1.954	1.700	1.863	1.997	2.063	2.117
Educational		75.879	67.508	60.973	67.460	71.792	75.337	78.538
<i>(Yr/yr % change)</i>		6.1%	-11.0%	-9.7%	10.6%	6.4%	4.9%	4.2%
	Courthouses	1.568	2.376	2.669	2.783	2.949	3.106	3.243
	Fire and Police Stations	3.260	3.320	2.866	3.183	3.454	3.616	3.708
	Government Offices	11.749	10.661	11.910	12.318	12.932	13.526	13.905
	Prisons	2.111	2.387	2.157	2.465	2.696	2.895	3.037
Government		18.688	18.745	19.601	20.750	22.031	23.143	23.892
<i>(Yr/yr % change)</i>		-2.3%	0.3%	4.6%	5.9%	6.2%	5.0%	3.2%

Winter 2021-2022 Edition.

Arranged to match the
alphabetical category drop-
down menus in INSIGHT.
Source of actuals:
ConstructConnect Insight /
Forecasts: Oxford
Economics and
ConstructConnect / Table:
ConstructConnect.

U.S. Type-of-Structure Starts Forecasts (Cont'd)

(Insight version
of table –
\$ Billions USD)

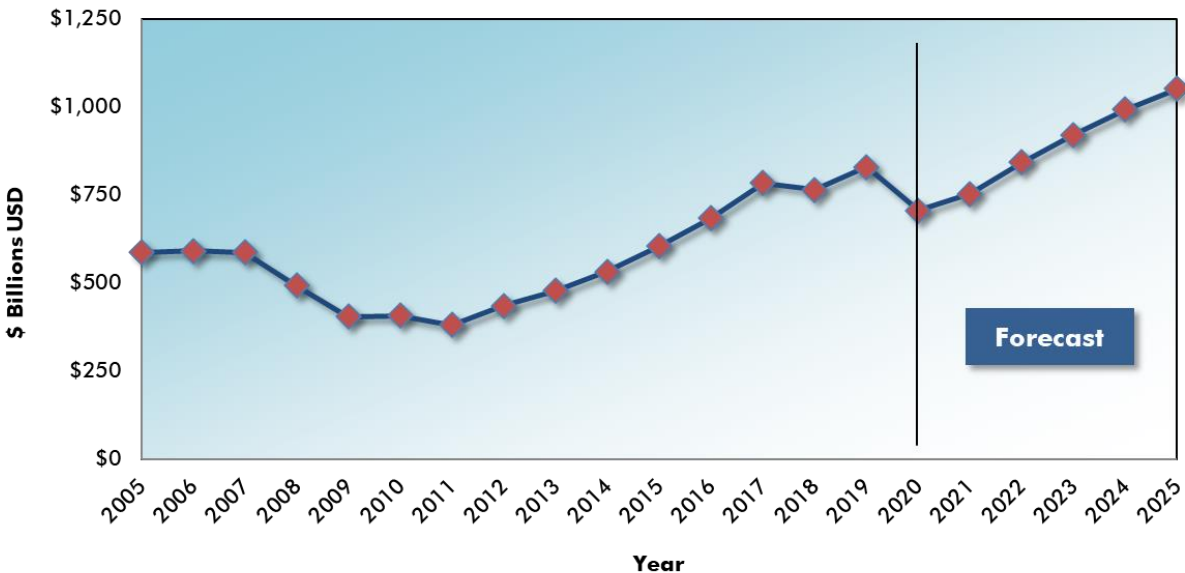
	Actuals		Forecasts				
	2019	2020	2021	2022	2023	2024	2025
Verticals - Non-res Building Cont'd							
Industrial Labs / Labs / School Labs	2.417	2.351	2.466	2.572	2.784	2.908	2.997
Manufacturing	55.810	21.624	29.318	29.074	31.137	34.439	37.094
Warehouses	22.563	26.212	24.091	26.414	28.371	29.712	30.876
Industrial	80.790	50.187	55.875	58.059	62.292	67.059	70.967
(Yr/yr % change)	33.6%	-37.9%	11.3%	3.9%	7.3%	7.7%	5.8%
Hospitals / Clinics	21.790	13.345	16.319	19.055	21.213	22.578	23.829
Medical Misc.	9.342	8.216	7.006	8.052	9.190	9.954	10.616
Nursing Homes	9.599	7.487	5.997	7.209	8.195	8.943	9.727
Medical	40.731	29.048	29.322	34.317	38.597	41.475	44.173
(Yr/yr % change)	5.1%	-28.7%	0.9%	17.0%	12.5%	7.5%	6.5%
Military	5.049	9.207	8.737	9.800	10.446	11.065	11.407
(Yr/yr % change)	-3.5%	82.4%	-5.1%	12.2%	6.6%	5.9%	3.1%
Hotels	23.537	10.219	6.829	9.635	13.348	15.991	17.132
Retail Misc.	7.667	5.794	5.816	6.186	6.419	6.568	6.698
Shopping	16.510	12.276	13.217	15.806	18.295	20.666	22.485
Retail	47.715	28.290	25.862	31.627	38.062	43.224	46.315
(Yr/yr % change)	-7.8%	-40.7%	-8.6%	22.3%	20.3%	13.6%	7.2%
NON-RESIDENTIAL BUILDING	342.740	249.217	238.297	267.475	296.778	320.382	338.165
(Yr/yr % change)	12.2%	-27.3%	-4.4%	12.2%	11.0%	8.0%	5.6%
Multi-Family	99.042	81.854	84.594	96.947	104.449	112.167	118.982
Single-Family	198.784	219.290	266.879	291.390	312.208	332.873	353.588
RESIDENTIAL	297.825	301.145	351.473	388.337	416.658	445.041	472.570
(Yr/yr % change)	0.4%	1.1%	16.7%	10.5%	7.3%	6.8%	6.2%
GRAND TOTAL	829.812	705.038	752.088	842.517	920.634	992.228	1,051.902
(Yr/yr % change)	8.5%	-15.0%	6.7%	12.0%	9.3%	7.8%	6.0%

Winter 2021-2022 Edition.

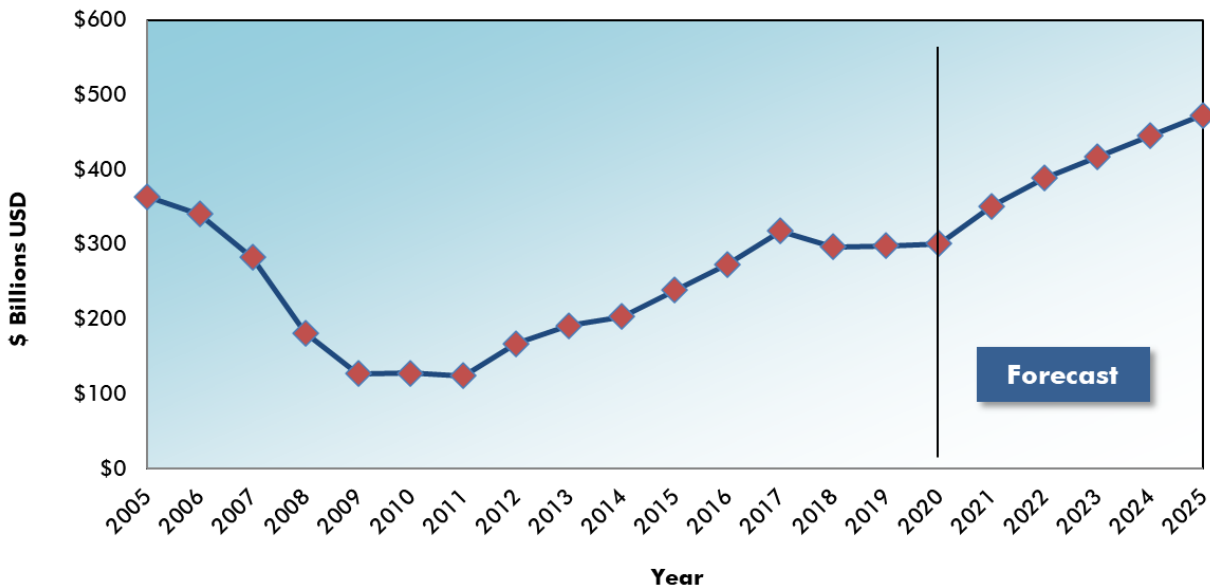
Arranged to match the
alphabetical category drop-
down menus in INSIGHT.
Source of actuals:
ConstructConnect Insight /
Forecasts: Oxford
Economics and
ConstructConnect / Table:
ConstructConnect.

U.S. Construction Starts – ConstructConnect

U.S. Grand Total Construction Starts



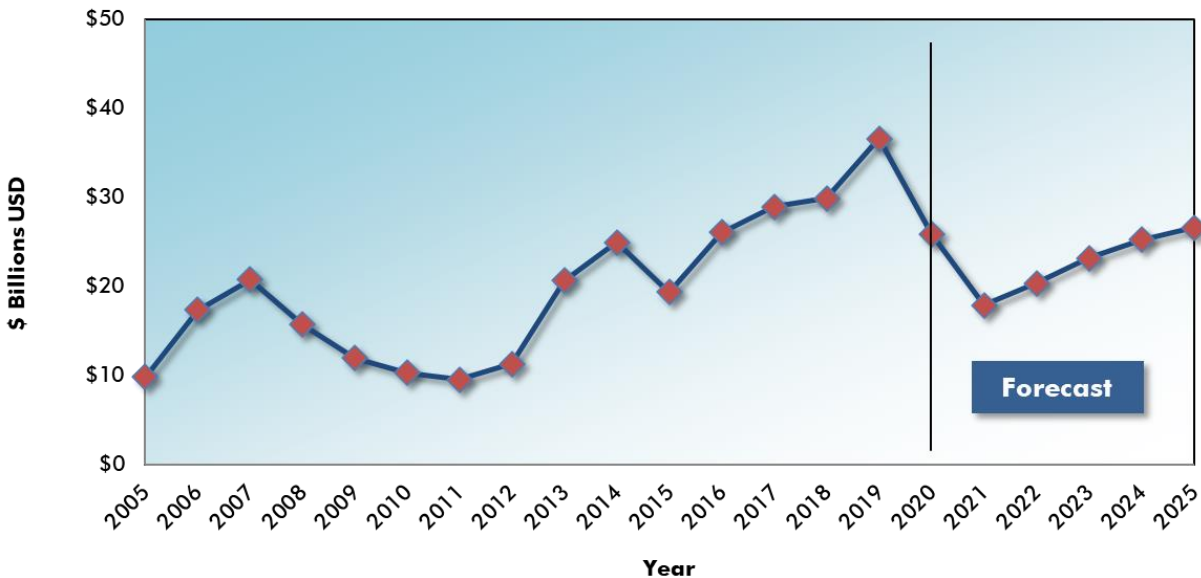
U.S. Total Residential Construction Starts



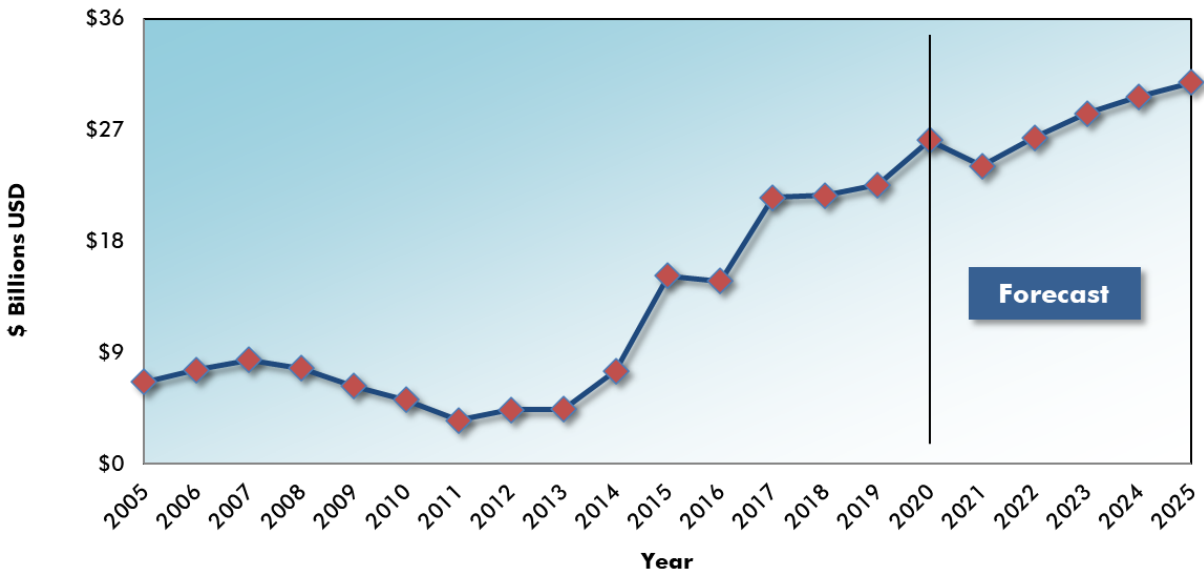
Source of actuals: ConstructConnect "Insight". Forecasts: Oxford Economics & ConstructConnect.
Charts: ConstructConnect.

U.S. Construction Starts – ConstructConnect

U.S. Private Office Building Construction Starts



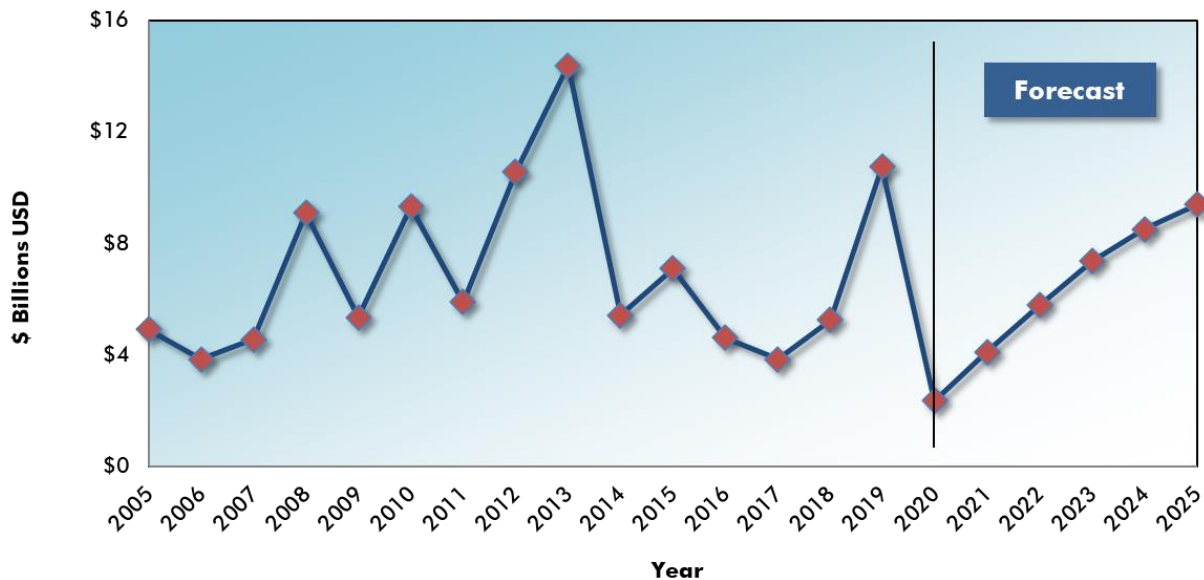
U.S. Warehouse Construction Starts



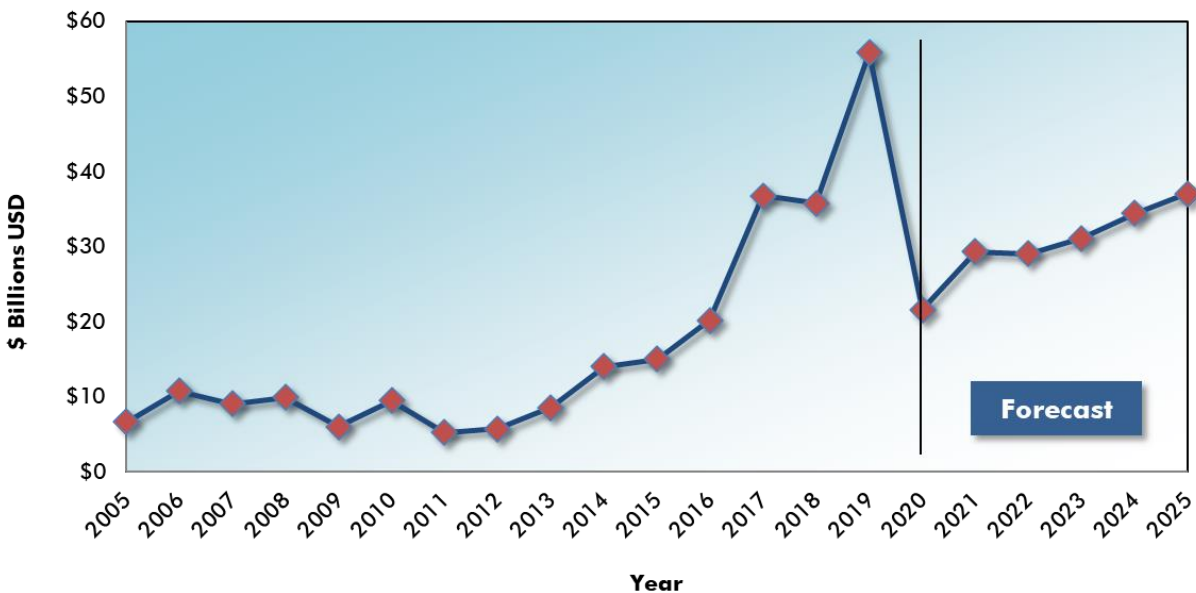
Source of actuals: ConstructConnect "Insight". Forecasts: Oxford Economics & ConstructConnect.
Charts: ConstructConnect.

U.S. Construction Starts – ConstructConnect

U.S. Transportation Terminal Construction Starts



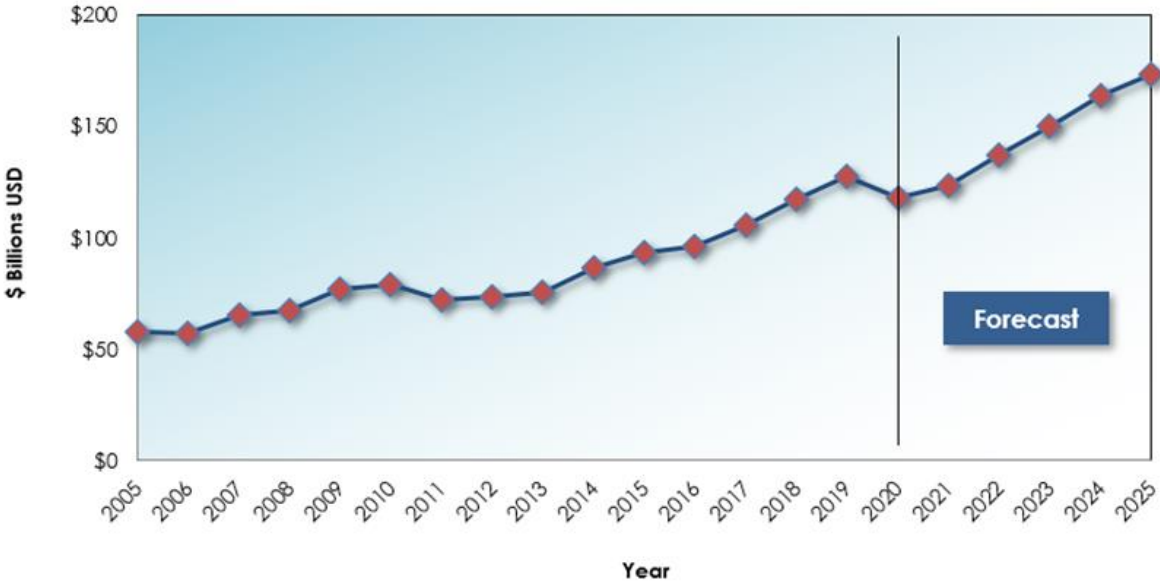
U.S. Industrial/Manufacturing Construction Starts



Source of actuals: ConstructConnect "Insight". Forecasts: Oxford Economics & ConstructConnect.
Charts: ConstructConnect.

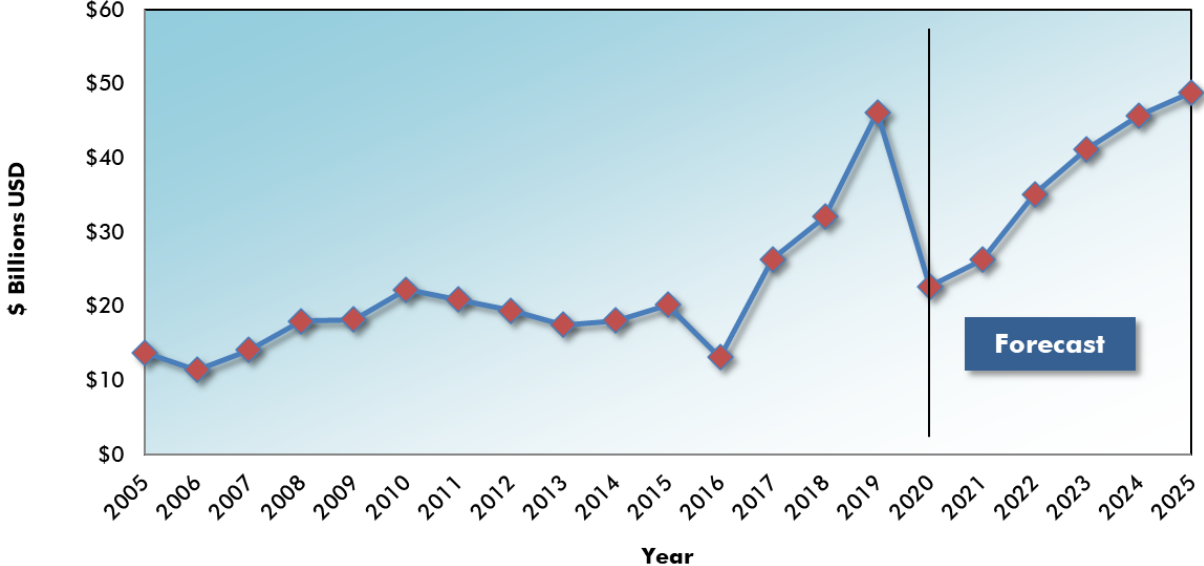
U.S. Construction Starts – ConstructConnect

U.S. 'Hard' Infrastructure Construction Starts



Includes roads, bridges, sewers and watermain, plus treatment plants.
'Soft' infrastructure is schools and hospitals.

U.S. Miscellaneous Civil Construction Starts



Includes electric power, pipeline, railway, runway & tunnel work.

Source of actuals: ConstructConnect "Insight". Forecasts: Oxford Economics & ConstructConnect.
Charts: ConstructConnect.

| A World of Contradictions ...

- The desire for a cleaner environment: the very thing that will increase DEMAND for certain commodities (e.g., nickel and copper to facilitate electrification) is also the very thing that may limit SUPPLY, due to opposition to mining development.

| And a World Full of Hard to Anticipate Ramifications

- Governments pushing for electric vehicles to take a higher market share cuts into their revenue twice: (1) through the cost of tax incentives/subsidies to promote sales; and (2) due to resulting reductions in motor fuel tax receipts.



Economic Resources from ConstructConnect



Fall 2021 (For July 2021 Release)

Construction Starts Forecast

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Highlights

- US construction starts in 2021. This growth was 3.5% y/y, primarily family builds. Non-residential construction, high-contact activities, from pandemic restrict 4.7% y/y despite strong recovery.
- Full vaccination rates of stimulus contributed to 2021 Q2. The \$1.2 trillion package looks increasingly likely to be released. High inflation influenced the Fed to planning two rate hikes.
- We forecast total construction following a severe contraction in residential construction offset by a contraction in non-residential construction. Biden's infrastructure bill engineering, mainly the infrastructure. Non-residential return to growth in 2022 building could still be t
- Total Canadian construction with non-residential an over 25% y/y. Residential that of the U.S. with soft sectors which saw robust infrastructure.
- We forecast Canadian construction then accelerate to 171% return to growth. The rollout means vaccination US, which should pave economy, allowing cost released. Power infrastructure strength going forward to offices and leisure in the forecast period in 2

Total employment in the U.S. rose by +850,000 positions in June. Of note, the jobs count in the 'leisure and hospitality' sector in the latest month soared by +343,000. The U.S. seasonally adjusted unemployment rate economy-wide now stands at 5.9%.

Sources: ConstructConnect/Oxford Economics. Forecast reflects actual starts through Q2 2021.

Wages Advance Might Maintain Moderation

By: Alex Carrick
October 21st, 2021

Concerning the cost of doing business, a lot of attention has been paid to material input prices. But compensation rates have their thumbs, either.

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ECONOMIC NEWS

8 Mid-October Economic

By: Alex Carrick
October 18th, 2021

This isn't a hard point to make. A great deal of emphasis has been placed on decarbonization. A full-court shift to electrification, achieve desired and commendable levels of carbon reduction, though, is how costly this will be. Renewable electric power be the only factor pushing up day-to-day living and business expenses. There are a host of others including investments in cyber security; commitments to employee compliance courses; deeper workplace cleaning efforts; and accelerating adoption of high tech.

Fall 2021 (Published: September 2021)

U.S. Put-in-Place Construction Forecasts

Prepared by Alex Carrick, ConstructConnect® Chief Economist



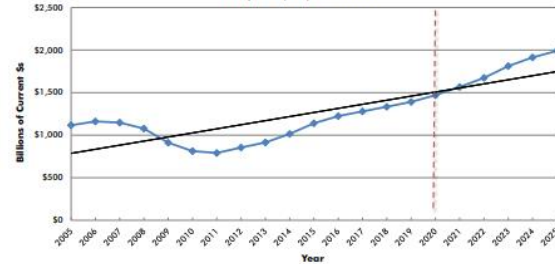
Alex Carrick

Alex Carrick is Chief Economist for ConstructConnect. He has delivered presentations throughout North America on the U.S., Canadian and world construction outlooks. Mr. Carrick has been with the company since 1985. Links to his numerous articles are featured on Twitter @ConstructConn, which has 50,000 followers.

Quarterly U.S. Put-in-Place Forecast Report, Fall 2021

Two of the major themes that will be governing U.S. construction activity as the coronavirus-caused downturn recedes in 2021 will be 'electrification' and 'de-carbonization'. In most ways they are two sides of the same coin, with the former seen by many in public governance, with environmental think tanks, and among the general populace, as the best way to achieve the latter. Spearheaded by the auto sector's commitment to greatly expand EV production, a pronounced shift to more electric power usage, near zero-emitting carbon sources, such as wind and solar, will be demand for nickel in batteries and copper in distribution and transmission lines. Many other resources are also experiencing a rebirth in demand and prices, after lying dormant for the previous dozen years.

Graph 1: U.S. Grand Total Construction Spending Put-in-place (PIP) Investment



Graph includes a linear trend line.
Source: U.S. Census Bureau, Oxford Economics, ConstructConnect
Chart: ConstructConnect

'Starts' versus Put-in-place (PIP) Statistics

'Starts' compile the total estimated dollar value of all projects on which ground is broken in any given month. By way of contrast, put-in-place capital spending statistics are analogous to work-in-progress payments as the building of structures proceeds to completion.

Consider a \$60 million office tower for which ground is broken in June 2021. For the 'starts' series, the entire estimated value (\$60 million) will be entered in June 2021. In PIP numbers, it will be captured as spending of approximately \$15 million in 2021; \$25 million in 2022; and the final \$20 million in 2023.

Methodology of the Expansion Index

This construction Expansion Index is calculated by comparing the total dollar value of construction projects in planning for the current month to the number of projects in planning for that same calendar month in the prior year.

The Expansion Index measures the dollar volume of projects in ConstructConnect's extensive database for states and metropolitan statistical areas (MSAs) across the United States and Provinces/Territories and census metropolitan areas (CMAs) in Canada. This reflects all stages of preparation prior to construction field-work at the beginning of any given month this year versus what was calculated at the same time last year. The types of structures included in these calculations are multi-family residential, nonresidential building, and civil/heavy engineering.

An index value less than 1.0 indicates a market potential that is flat or declining, while an index value above 1.0 speaks of market potential that is increasing. An index value of 2.0 or more indicates the market potential is significantly greater than a year ago.

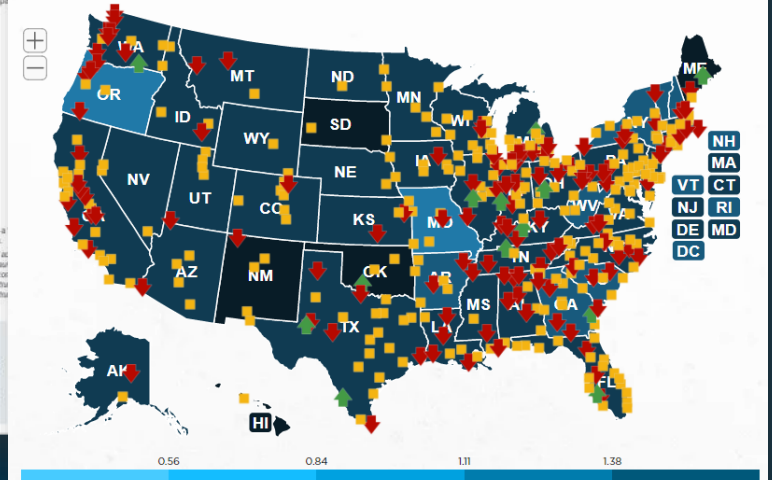
Last Updated: Oct 10th, 2021

USA - October Expansion Index

Click a state or for a zoomed view

➡ >= 2.0 | ➡ >= 1.0 or <= 1.999 | ➡ <= .999

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