

United States Construction Market Trends

Q3 2022

September 2022
FOR INTERNAL USE ONLY



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Introduction

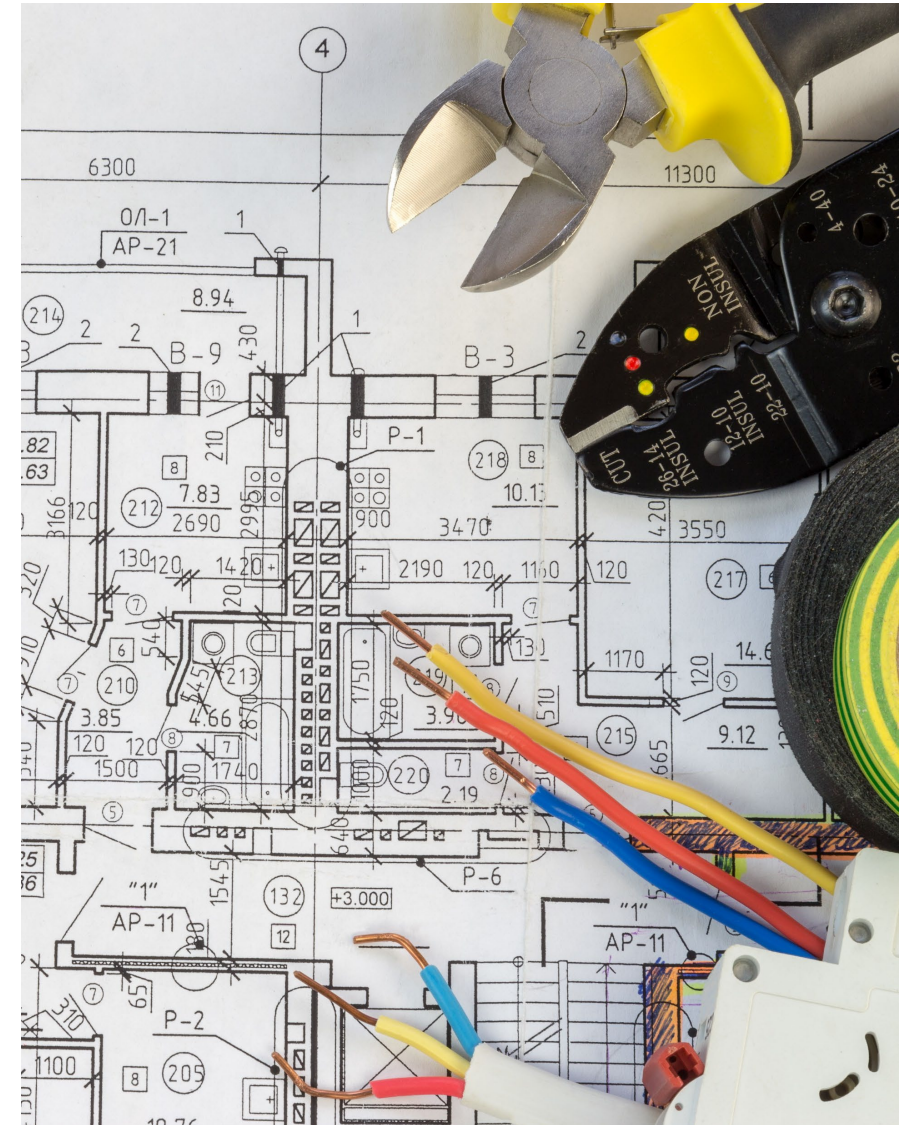
Executive Summary

The Current Situation

- Labor remains a key issue, and the bottom line is that there continues to be more openings than people looking for work. Construction and national unemployment rates are 3.9% and 3.6% respectively.
- The construction employment cost index is up 1.8% from last quarter showing continued cost increases for construction labor.

Supply Chain & Material Availability

- While some items have become more readily available (steel beams and joists, lumber), others remain difficult to obtain (roofing insulation and membranes, HVAC equipment), and others still (aluminum storefront and glass, utility piping, lighting controls) are now facing difficulties to procure.
- Gasoline and petroleum costs have come down from their highs in June, but are still much higher than this time last year (+\$0.69/gallon and +\$18.40/barrel respectively).
- The general freight trucking index was nearly flat (1%) since last quarter indicating a potential cooling of supply chain costs.



Executive Summary

Contractor Confidence & Construction Volume

- Construction spending is flat since last quarter, while commercial construction volume is down by 1% according to the St. Louis FRED. However, ENR is reporting month-over-month growth for non-public office and commercial construction since last month, at 3.5% and 2.1% respectively.
- Contractor confidence is mixed: some publications are showing positive conditions (AIA, ABC, Dodge), while others are showing lower confidence this quarter (ENR).

Cost Escalation

- The Producer Price Index (PPI) for net inputs to construction industries and goods remains high compared with last year, 17.4%, but has slowed and declined month-to-month since June 2022 to -1.8%. This recent slowdown indicates a potential cooling in overall construction material costs.
- The current CPI inflation rate is **8.3%**, down from 8.5% last month and the highest rate in 40 years of 9.1% in June 2022.
- 2022 is still expected to end with higher-than-normal escalation in the range of **9-11%**.



INTRODUCTION

A Timeline of Recent Impacts

Discovery, Shut-Downs, Recovery and Beyond

The last 30 months have represented an unprecedented time for the construction market.



Residential Building Boom Begins

From May 2020 to June 2022, residential construction spending increases **55.4%**. This drives up costs for both lumber and labor.



US Lowers Key Tariffs

In response to skyrocketing costs, the US removes steep tariffs on EU aluminum & steel (late 2021) and Canadian softwood (early 2022).



Inflation & Escalation Continue

Market projections indicate continued “higher than normal” labor and material cost escalations for the foreseeable future.



2020

2021

2022



China’s “Zero COVID” Lockdowns

China struggles to meet manufacturing demand, putting additional strain on the US construction industry.



Key US Ports Jammed

Labor shortages cause backups at two key California ports, which handle ~40% of US imports.



Russia Invades Ukraine

Invasion drives up fuel costs worldwide and impacts the chipmaking industry (reliant on Ukrainian neon and Russian palladium); aluminum markets also impacted.

CBRE Construction Trends Methodology

Identify, Analyze, React and Adapt to Market Issues

The data collected and used in this report primarily incorporates industry information and quarterly publications ending **Q2 2022**. Where current updated data is available, those items have also been included here.



Identify

- Collect and assemble data from leading industry sources and attempt to accurately forecast future market trends.
- Find opportunities for vendor partners to work with project teams to help mitigate risk.

Analyze

- Determine the root causes of material and labor cost changes, as well as supply disruptions through data trends.
- Break down compiled data into usable segments in order to create an effective plan.
- Predict future issues related to cost and market availability.

React

- Allow for material substitutions where applicable, appropriate and advisable
- Find opportunities for vendor partners to work with project teams to help mitigate risk
- Plan projects accordingly with accurate cost escalations

Adapt

- Maintain constant communication with Clients and keep decision makers updated of changes to the market
- Make conscious decisions to allow for optimal solutions
- Award projects as quickly after proposals are received as possible



Material

The background of the slide is a close-up, perspective view of several parallel steel rebar rods. The rods are arranged in a grid-like pattern, receding into the distance. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the texture and metallic sheen of the rebar. The left side of the image is faded into a light grey overlay where the text is located.

MATERIAL IMPACTS

Material Impacts

*Volatility Continues to Dominate
Commodities Pricing and
Construction Materials Costs*

Producer Price Indices Take A Dive

- The PPI for Building Materials and Supplies Dealers Index dropped 9% from last quarter representing what may be some relief for escalated material costs.
- PPI for Inputs to Nonresidential Construction also declined month-to-month but are still significantly higher than this time last year.

Major Commodities Costs Continue to Shift

- Commodities are the initial raw materials that are manufactured from factories or mills, such as bulk steel bar, or cement.
- Many primary commodities have come down from their initial peaks but are still much higher than pre-pandemic.
- The top quarterly movers in terms of cost include pre-stressed concrete, residential appliances, and steel.

Construction Materials

- Construction material costs are the final products arriving on the jobsite. These costs are separate but affected by raw commodities, freight, taxes, storage, distribution costs and supplier premiums.
- These costs dropped sharply this past quarter but are still about 20% higher year over year.

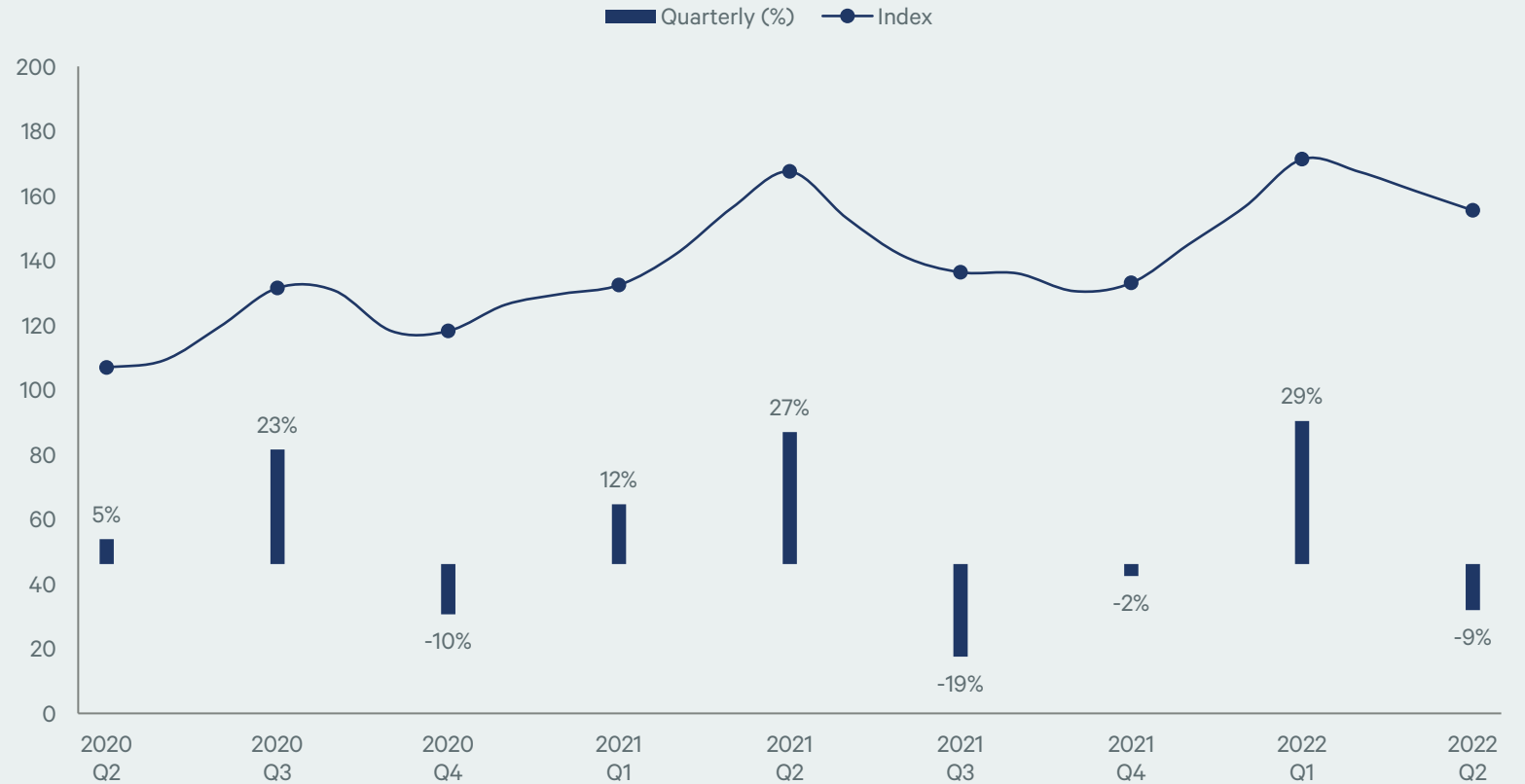
Producer Price Index: Building Materials Dealers

Sharp Quarterly Decrease Shows Potential Signs of Relief

Prices charged by producers as they exit through factory gates had a **-9%** quarterly decrease as commodity values softened.

Amid continued instability for material costs and availability issues, a downward trend in these costs could mark the beginning of the end to pandemic-era material cost escalations.

GRAPH: Building Materials and Supplies Dealers PPI



Source: PPI industry data for Building materials and supplies dealers | BLS, CBRE Cost Consultancy
Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

Construction Material Costs

Material Costs Still Higher Than Last Year With Signs of Potential Softening

Engineering News-Record (ENR) publishes monthly 20 city averages for cost indices, wages and material prices. The cost index average continued to rise year over year for construction materials but were down **-14.9%** from May to September.

Construction materials continue to face strained manufacturing conditions, reduced supplies, and lead time issues which are keeping material costs elevated from last year.

The Producer Price Index (PPI) for net inputs to construction industries and goods remains high compared with last year, **+17.4%**, but has slowed and declined month-to-month since June 2022 to **-1.8%**.

This recent slowdown indicates a potential cooling in overall construction material costs.

GRAPH: ENR Materials Cost Index (YTD)



GRAPH: PPI for Inputs to Nonresidential Construction



Source: ENR Construction Confidence Index | ENR, CBRE Cost Consultancy

Major Commodities Costs *Lumber & Wood, Iron & Steel, and Copper Costs Remain Erratic*

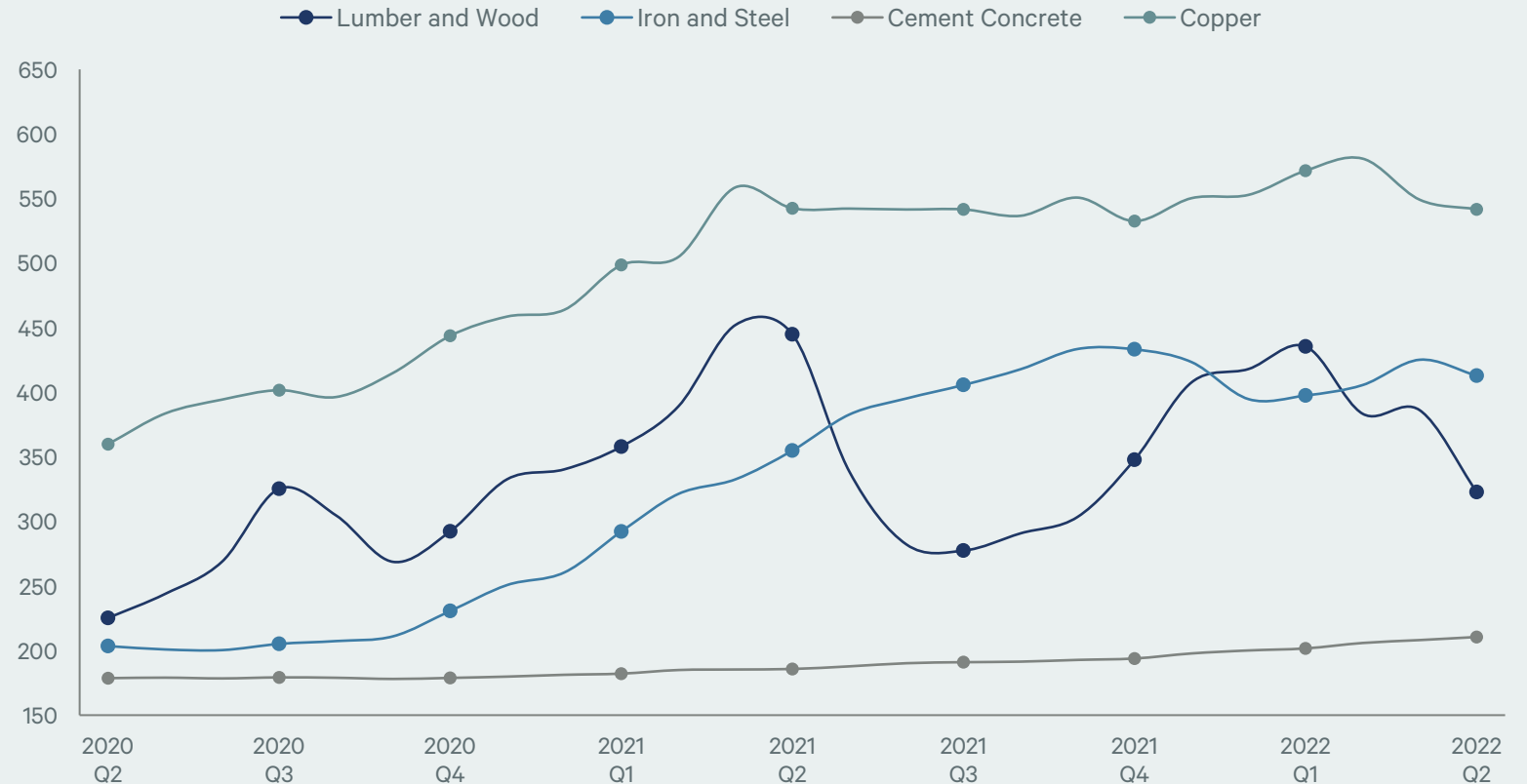
After a spike in Q1 2022, lumber costs decreased 26% in Q2 2022. This was partially due to Canadian lumber imports which have benefited US lumber producers by increasing local production volumes. Supply is currently sufficient to meet the demand.

Iron and Steel costs increased slightly in Q2 2022 after a decline in Q1 2022. The increased costs for raw steel mill materials and high input cost in production have influenced iron and steel costs upward, however, softened demand for steel is now pushing the cost down again.

Concrete costs have continued to rise at a steady level as major structural and infrastructure projects have increased demand.

Copper and copper products costs have remained relatively level after a steady increase throughout 2020 and early 2021.

GRAPH: Major Construction Commodities PPI



Source: Lumber and Wood, Iron and Steel, Cement Concrete, Copper and Copper Products Producer Price Index by Commodity, Index 1982=100 | St. Louis FRED, CBRE Cost Consultancy
Note: Line graph reflects trends

Commodity Cost Changes

Top Quarterly Movers Contribute New Additions to a Volatile Market

This quarter, the top three (3) commodities that have seen steep cost increases are as follows:

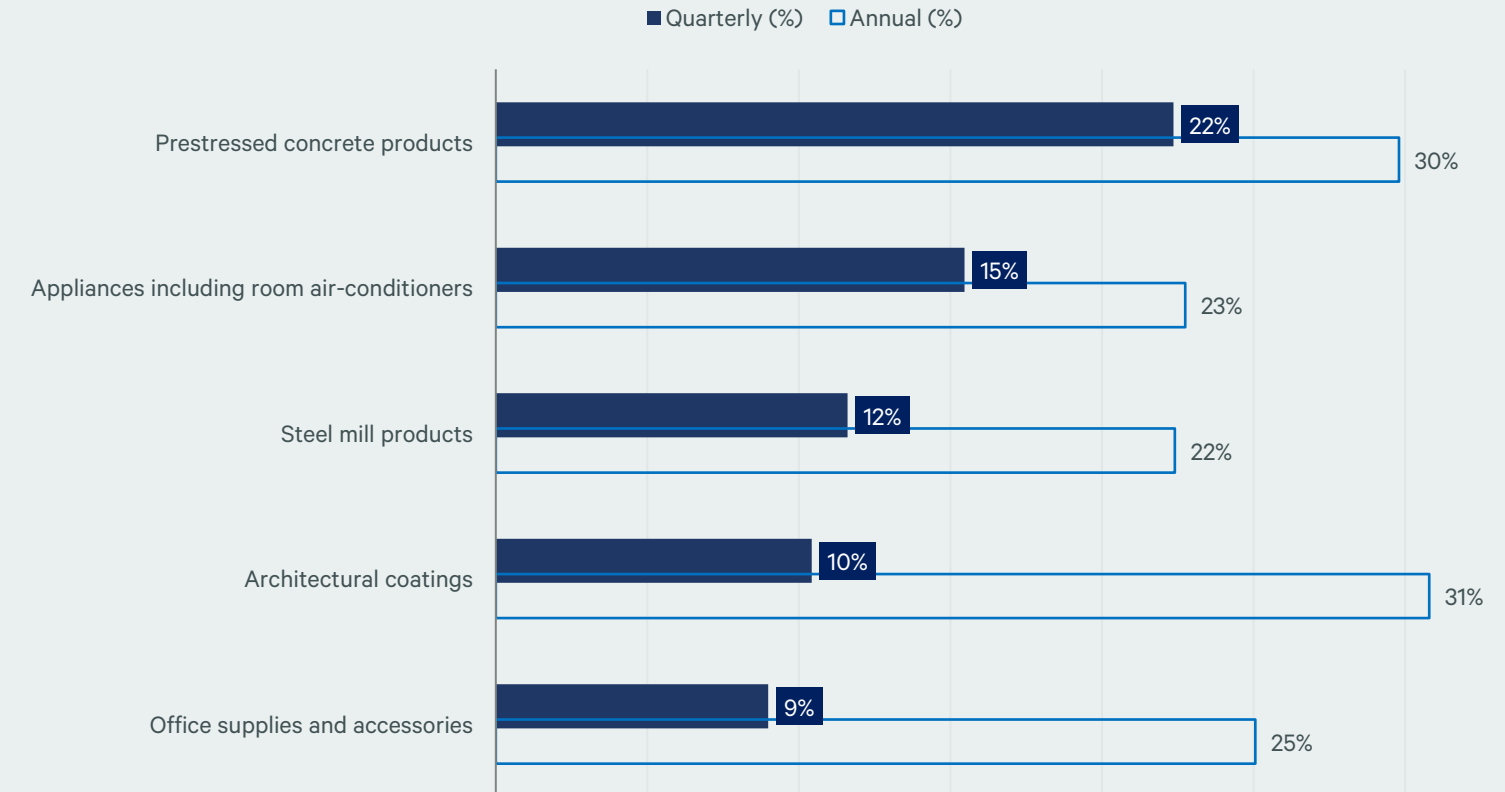
- Prestressed Concrete: **+22%**
- Appliances: **+15%**
- Steel Mill Products: **+12%**

Other construction products facing significant cost increases this quarter include:

- Finishes: Architectural Coating
- Specialties: Office supplies, accessories etc.

Along with architectural coatings, finishes such as gypsum board (8%), and paint (7%) are seeing cost increases as well.

GRAPH: Top 5 Quarterly(%) Cost Movers



Source: Bureau of Labor Statistics, CBRE Cost Consultancy

Major Commodity Cost Fluctuations

Volatility of Commodities Remains Consistently Inconsistent

- It is anticipated that costs will continue fluctuating in the coming quarters due to:
 - Recession fears,
 - Continued inflation, and
 - Unforeseen supply chain disruptions.

CHART: Divisional Commodity Changes (%)

DIVISIONAL COMMODITY PRICE MOVEMENT		2020 Jun	2020 Sep	2020 Dec	2021 Mar	2021 Jun	2021 Sep	2021 Dec	2022 Mar	2022 Jun	
Metals	Steel Mill Products	Quarterly (%)	-3.82%	-2.09%	10.97%	35.09%	28.90%	21.86%	7.44%	-16.23%	11.61%
		Annual (%)	-12.02%	-9.75%	5.23%	41.18%	89.20%	135.49%	128.00%	41.37%	22.40%
	Iron and Steel	Quarterly (%)	-3.37%	0.84%	12.43%	26.66%	21.46%	14.30%	6.78%	-8.23%	3.85%
		Annual (%)	-8.54%	-3.34%	11.29%	38.75%	74.40%	97.69%	87.77%	36.05%	16.33%
Woods, Plastics, & Composites	Softwood Veneer and Plywood	Quarterly (%)	5.20%	53.48%	-11.65%	40.08%	56.97%	-57.04%	16.85%	55.70%	-16.51%
		Annual (%)	5.08%	75.84%	54.68%	99.83%	198.15%	-16.55%	10.37%	22.67%	-34.75%
	Plywood	Quarterly (%)	3.08%	32.08%	-8.44%	28.22%	44.26%	-44.57%	11.40%	36.52%	-11.22%
		Annual (%)	3.33%	43.75%	30.73%	59.83%	123.68%	-6.13%	14.22%	21.61%	-25.16%
Thermal & Moisture	Thermoplastic Resins & Plastics Materials	Quarterly (%)	-8.86%	6.92%	8.63%	21.65%	14.64%	4.85%	-4.62%	-3.66%	7.74%
		Annual (%)	-10.85%	-4.63%	7.18%	28.76%	61.96%	58.84%	39.47%	10.45%	3.81%
	Aluminum sheet, plate, and foil mfg	Quarterly (%)	-10.47%	7.64%	3.60%	5.69%	13.22%	7.15%	-1.21%	18.82%	-7.90%
		Annual (%)	-18.43%	-9.29%	-4.08%	5.51%	33.44%	32.83%	26.66%	42.40%	15.83%
Electrical	Copper & Copper Alloy Sheet, Strip & Plate	Quarterly (%)	1.61%	13.81%	8.96%	8.18%	6.19%	0.39%	-0.17%	13.61%	-3.74%
		Annual (%)	-0.86%	12.89%	20.15%	36.30%	42.46%	25.66%	15.13%	20.91%	9.59%
HVAC & Mechanical	Parts and accessories for AC and heat transfer equipment	Quarterly (%)	0.27%	0.60%	1.14%	6.73%	4.91%	3.88%	4.40%	4.01%	4.74%
		Annual (%)	1.27%	3.01%	4.18%	8.89%	13.92%	17.64%	21.44%	18.34%	18.15%
	HVAC and Commercial Refrigeration Equipment	Quarterly (%)	0.19%	0.44%	0.32%	2.39%	3.19%	3.87%	4.41%	7.56%	4.68%
		Annual (%)	1.94%	2.26%	2.32%	3.37%	6.46%	10.10%	14.59%	20.38%	22.11%
Utilities	Plastic Sewer, Storm Drain, & Water Main Pipe	Quarterly (%)	-1.33%	10.98%	7.28%	6.44%	35.81%	12.01%	13.59%	4.67%	6.00%
		Annual (%)	-2.62%	7.75%	16.65%	25.05%	72.12%	73.71%	83.92%	80.86%	41.15%

Source: Bureau of Labor Statistics, CBRE Cost Consultancy
 Note: Annual changes are measured month to month



Supply Chain



SUPPLY CHAIN IMPACTS

Supply Chain Disruptions

Russian Invasion of Ukraine and Strained Labor Remain Key Impacts

Russian - Ukrainian War Continues

- The Russian invasion of Ukraine and subsequent war now enters its seventh month. With that has come uncertainty around crop harvests and sanctions that have been felt worldwide.
- Increased petroleum and fuel costs have been affecting supply chains and manufacturing capabilities. Additionally, reduced availability of key commodities including aluminum, palladium, and other metals is affecting the semiconductor and chipmaking industries, and storefront production.

Strained Labor Pool

- The unemployment rate for manufacturing now sits at 3.3%. Manufacturers are having trouble finding adequate labor.
- The shipping and trucking industry has also seen low unemployment rates (4.6% in August) that has contributed to slow supply chains and material availability delays.

The Inflation Reduction Act

- The Inflation Reduction Act was signed into law in August with provisions to implement a 15% corporate minimum tax and provide significant investment in clean energy projects and supply chains.
- Critics claim it will hurt non-Union construction workers and have little effect on inflation, while supporters claim it will reduce the national deficit, strengthen America's manufacturing base and create construction jobs.

Gasoline & Crude Oil Costs

Gasoline Costs Continue to Trend Downward from Their Mid-Summer All-Time Highs

Increased fuel costs have contributed to already strained supply chains as well as elevated material costs nationwide.

With these increases, petroleum-based products such as plastics and asphalt will continue to face challenges to maintain current price levels. However, average regular gas costs have declined by more than \$1.00/gallon from their all-time highs (\$5.01/gallon) in June and have **decreased 17.2%** since last quarter.

+\$0.69 / Gallon



Reported 9/6/2022

Increase in the US National Yearly Average for a gallon of regular gasoline according to USEIA

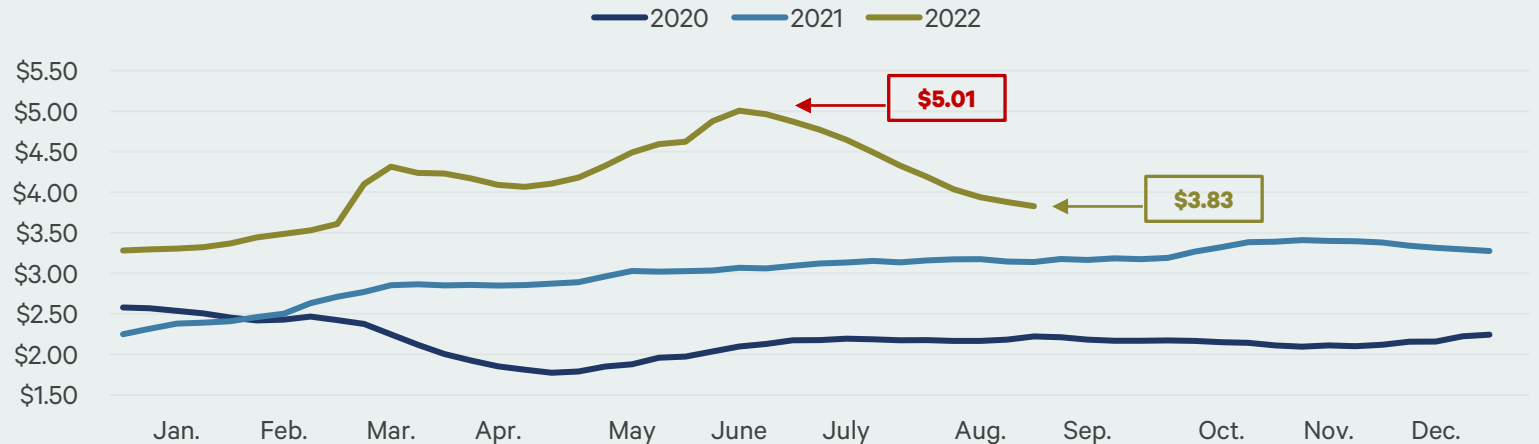
\$86.75 / Barrel



Reported 9/7/2022

Cost of a barrel of US WTI Crude Oil; +\$18.40/barrel (+26.9%) higher than this time last year.

GRAPH: US Regular Retail Gasoline Price Comparison (\$/Gallon)



Source: US Energy Information Administration, AAA

Supply Chain Impacts

Aluminum Products Biggest Lead Time Mover This Quarter

Supply chain chaos continues throughout the industry. Product availability will continue to face challenges in production and delivery.

Key Factors Currently Impacting Material Availability

- Ongoing Supply and Logistics Issues
- Shutdowns in Manufacturing Hubs
- Rise in Energy Costs
- Increased Construction Project Volume
- Skilled Labor Force Scarcity
- Continued Surge in Inflation

+14 weeks
aluminum storefront

Reduced production from China in late-2021 and the invasion of Ukraine and subsequent sanctions on Russia have reeked havoc on the aluminum industry as Russia is the 3rd largest producer of aluminum in the world, followed by China and India, respectively.

+4 weeks
utility piping

All types of utility piping inclusive of PVC, concrete and HDPE have seen availability concerns for myriad reasons: municipal infrastructure projects, increased demand for concrete nationwide and skyrocketing petroleum costs.

+6 weeks
metal studs

Increased demand, coupled with raw material availability issues have contributed to recent increased delays for drywall related items such as metal studs.

Lead Time Projections

No Relief for Long Lead Items Including Roofing Insulation and HVAC Equipment

The supply chain remains in a fragile state with extremely long lead times for certain items. Some materials have become more readily available, but that is not the overall trend. The logistics industry remains strained at best with a lack of skilled drivers, increased costs of trucking materials, continued congestion at American ports, and political tensions increasing overseas.

Regional, project by project and case by case may vary, but these are some of the key items that are currently experiencing availability issues. These are not the only items markets are experiencing issues with, but simply some of the most notable at the moment. One item to note for this quarter is the variation in lead times collected across the country. There were significant differences seen based on the contractors surveyed for various reasons for multiple items. The CBRE Market Trends Team has attempted to represent those differences with lead time ranges.

CHART: Lead Time Changes

Trade Item / Material	Current Lead Time	Change from Prev. Quarter	Delta to Pre-Covid
Utility Piping	14-24 weeks	+4 weeks	+100%
Concrete	2-3 weeks	+1.5 weeks	+150%
Steel Beams & Decking	10-14 weeks	no change	+75%
Open Web Joists	12-20 weeks	-6 weeks	+50%
Roofing Membranes	24-36 weeks	-9 weeks	+800%
Roofing Insulation	40-52 weeks	no change	+667%
Wood Doors	18-20 weeks	no change	+233%
Aluminum Storefront Glazing	30-36 weeks	+14 weeks	+433%
Drywall/Metal Studs	14-16 weeks	+6 weeks	+600%
Carpet	10-12 weeks	-2 weeks	133%
Plumbing Fixtures & Equipment	8-12 weeks	+2 weeks	+67%
HVAC AHUs and RTUs	36-52 weeks	+2 weeks	+267%
Switchgear	40-50 weeks	no change	+186%
Lighting and Controls	16-20 weeks	no change	+100%

Source: ENR, Aggregated Multiple General Contractors' Reports

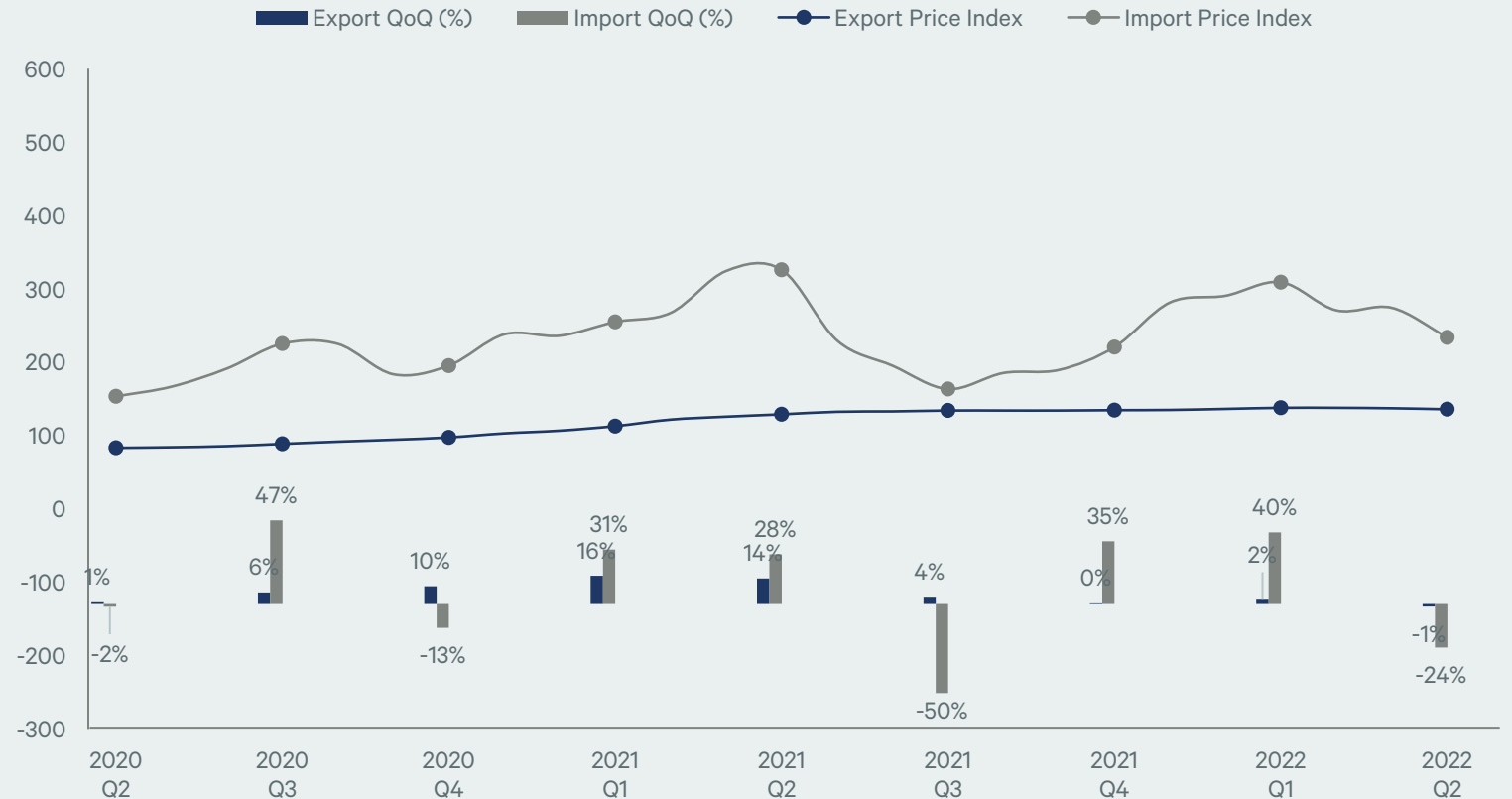
Lumber Products

Fewer Imports Shows Reduced Reliance on Foreign Sources and Lower Demand

The lumber export rate decreased by **-1%** over the past quarter. Lumber import rates dropped significantly in Q2 2022 by **-24%** after steady increases throughout the second half of 2021 and in Q1 2022.

The sudden drop in US lumber imports is partially due to global sanctions against Russia, as well as reduced volume in residential construction which relies heavily on structural lumber.

GRAPH: Lumber Imports vs Exports Index



Source: Logs & Lumber, Export Price Index (End Use), Index 2000=100 | Logs & Lumber, Import Price Index (End Use), Index 2000=100 | FRED, CBRE Cost Consultancy
 Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

Iron and Steel Orders

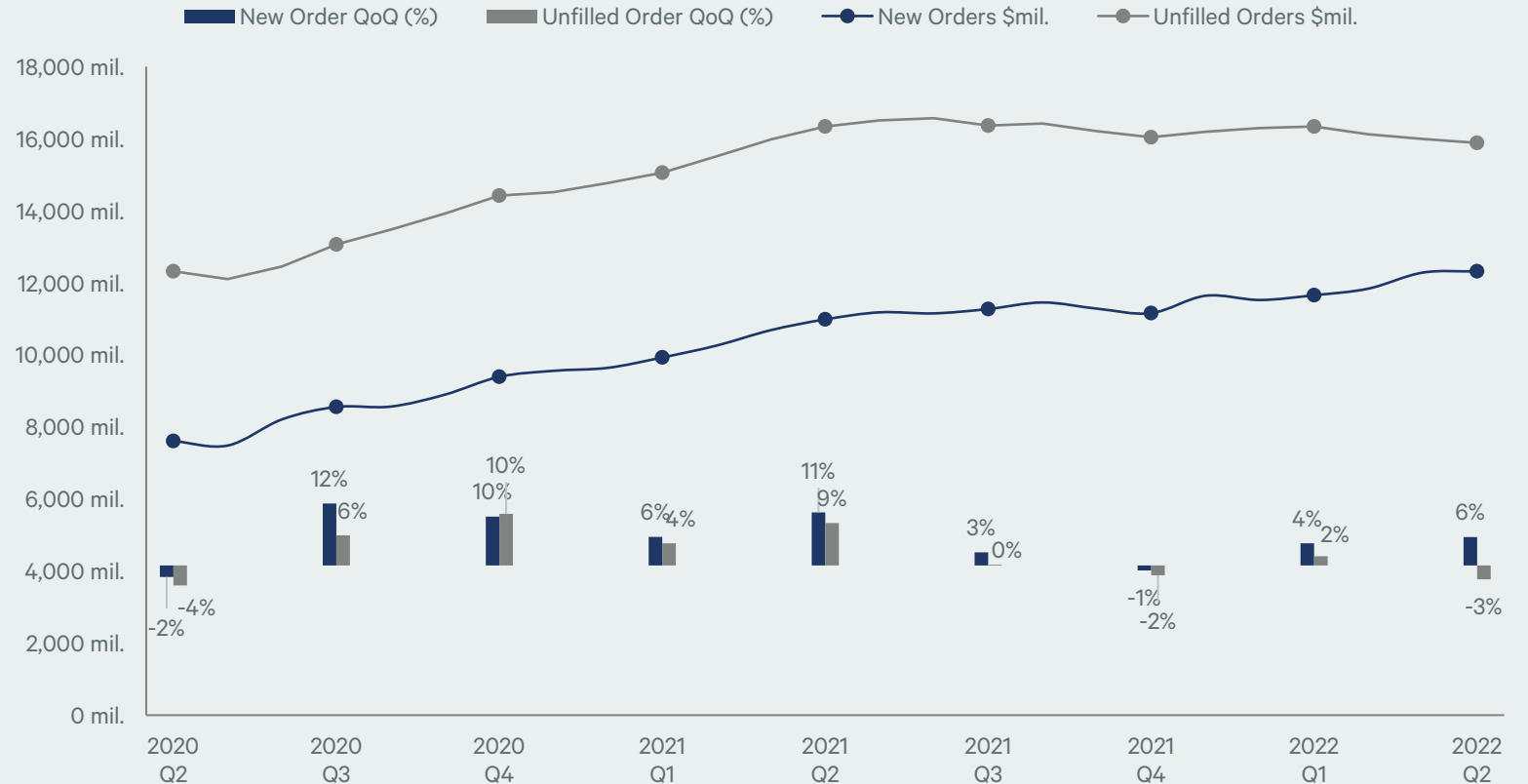
Increase in New Orders Causing Pressures on Steel Demand

Iron and Steel products unfilled orders are showing a slight slow down to **-3%** in Q2 2022. Conversely, demand had been trending upwards for the past seven (7) quarters.

New orders have continued to pick-up with an increase to **6%** last quarter.

New governmental infrastructure projects as well as commercial sector projects, especially warehouse and industrial, are currently increasing starts with more in the pipeline.

GRAPH: Iron and Steel New Orders vs Unfilled Orders



Source: Iron & Steel Products, Export Price Index (End Use), Index 2020=100 | Iron & Steel, Manufacturers' New Orders, Unfilled Orders | FRED, CBRE Cost Consultancy
 Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

Freight Trucking Costs

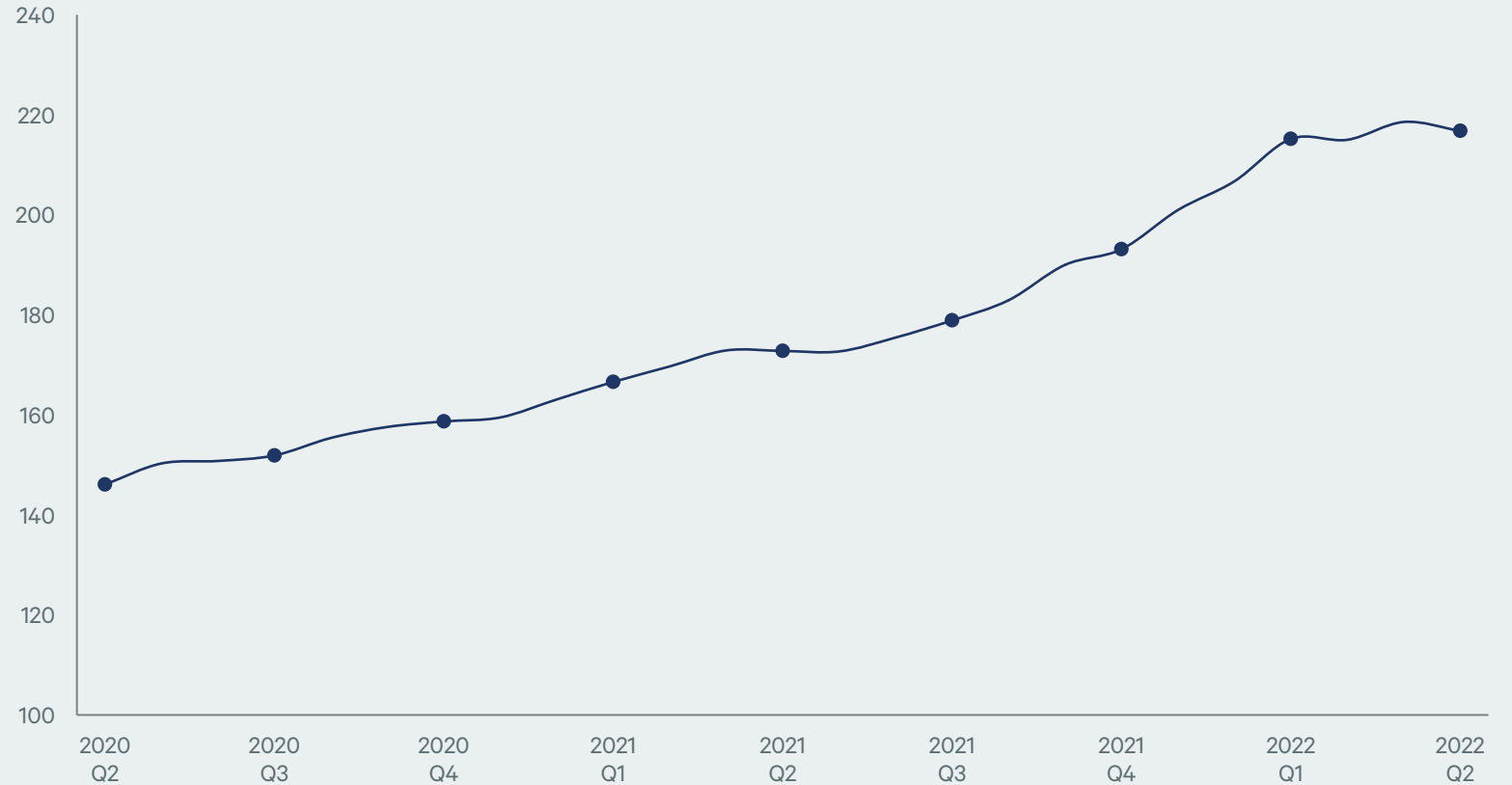
Consistent Increases Over the Past Two Years Show Flattening Last Quarter

The General Freight Trucking compensation index has shown a continuous increase in demand for the US market.

High fuel costs and fatigued labor forces continue to contribute to strained supply chains.

The Index has increased +1% over the past quarter after a 12% increase the previous quarter.

GRAPH: General Freight Trucking US Index



Source: General Freight Trucking, General Freight Trucking, 2003=100 | Bureau of Labor Statistics, CBRE Cost Consultancy



Labor

Construction Labor

Low Unemployment, Increased Volume and Higher Wages Add to An Already Strained Labor Market

Labor Growth, Low Unemployment

- Despite increasing the labor force significantly over the last quarter, construction “quits”, or people leaving the industry, have remained relatively steady (2.5% as of July 2022). This, coupled with already low construction unemployment, 3.9%, has left employers struggling to maintain their crews.
- Coast-to-coast unemployment rates for construction remain relatively low. New Hampshire can boast the lowest quarterly rate with 2.0%, while Nevada has the highest unemployment at 5.1%.

Added Volume, Rising Wages

- Construction wages are up 5.3% over the last year according to the Associated Builders and Contractors from August 2021.
- Total construction volume is up 8.3% while commercial construction volume is up 10.5% over the past year according to statistics provided by the Federal Reserve Economic Data (FRED).
- These two items combined have contributed to labor challenges on jobsites across the country. Due to upcoming national infrastructure projects, a significant number of new jobs will be needed, further straining the current labor situation.

Industry Labor Force

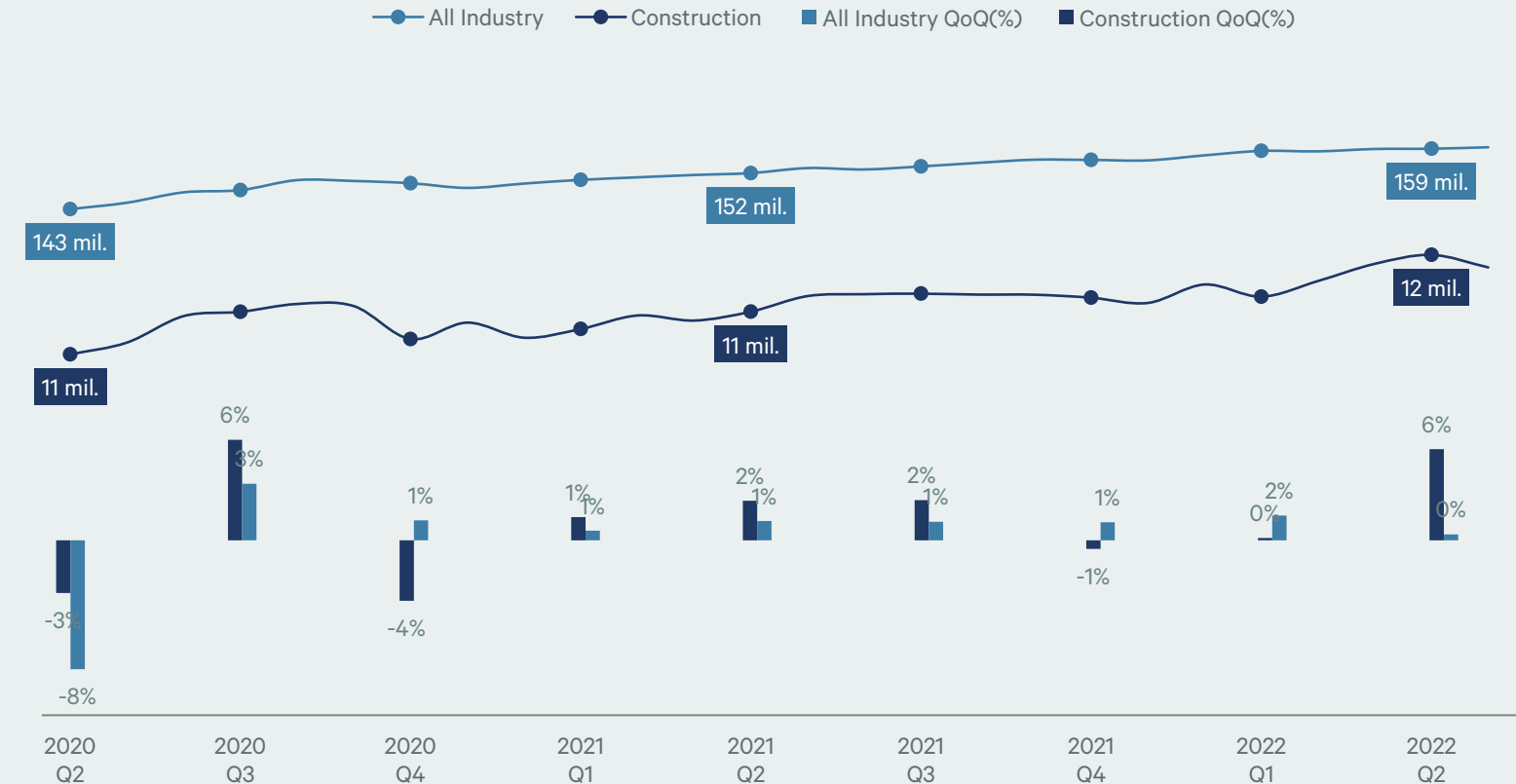
Quarterly Construction Jumps 6%, Faster Than Combined US Industry

All US industry increased its labor force by +4.2% over the past year while the construction industry improved by +7.8% annually.

Despite those already sizeable increases, the construction labor force jumped to a quarterly increase of +6% from Q1 to Q2 2022.

The construction employment rate is expected to continue this upward annual trend as general confidence remains optimistically (but cautiously) strong, with contractors and developers hoping to move forward on a backlog of projects.

GRAPH: Employment Level All Industry vs Construction Industry



Source: BLS, CBRE Cost Consultancy

Unemployment Rates

Construction Unemployment Rates Hit Lowest Levels Since 2019 in July

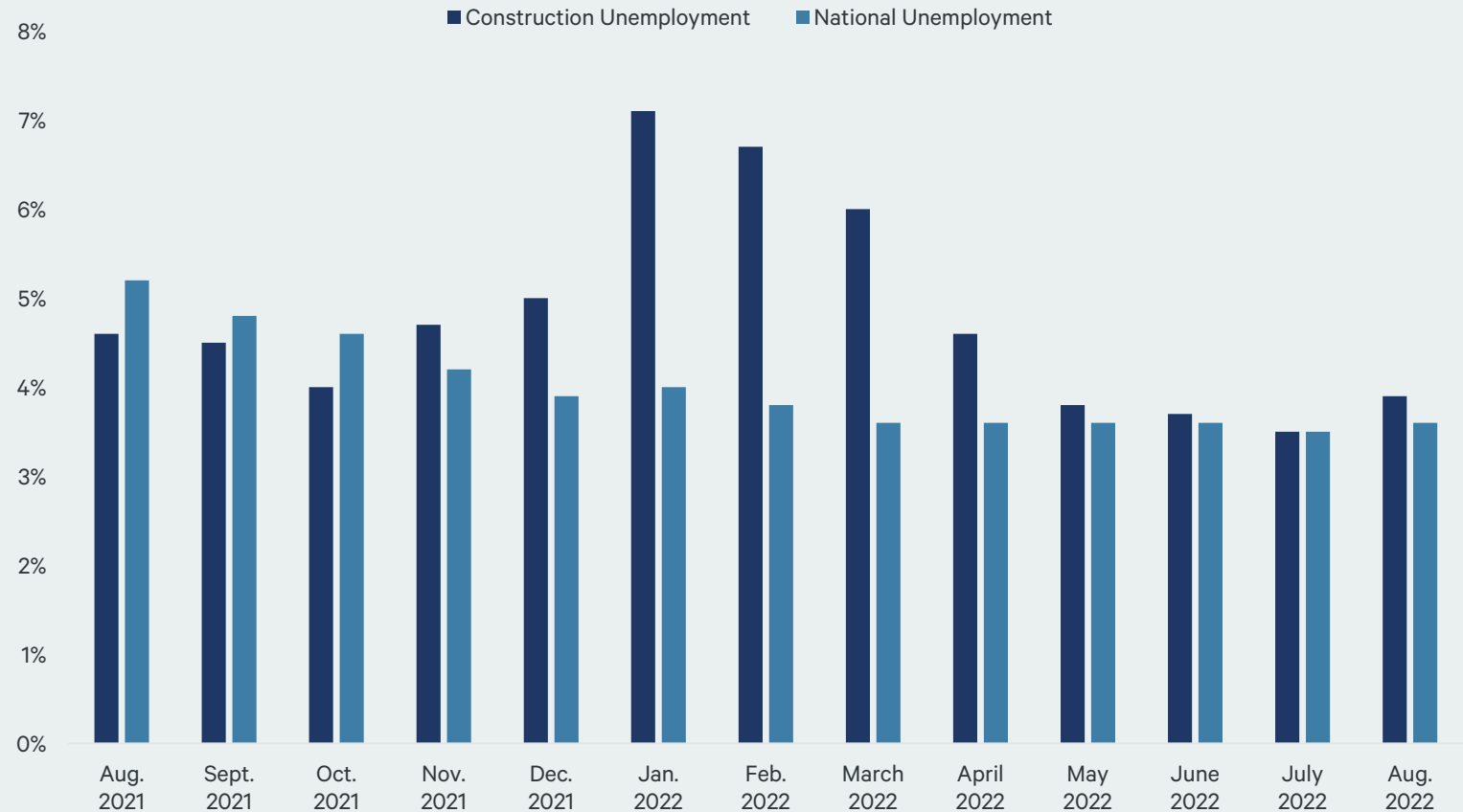
Data provided by the US Bureau of Labor Statistics shows that the national unemployment rate continues to trend downward since the beginning of last year, indicating significant recovery from the initial pandemic shutdowns.

Both national and construction unemployment have remained relatively flat, and closely tied since April 2022. July's rate of 3.5% was the lowest construction unemployment rate since September of 2019. While these rates remain low now, recession fears could spark companies to rethink their employment plans for the coming year.

Construction
Unemployment
August 2022

3.9%

GRAPH: US National vs Construction Unemployment Rates



Source: US National and Construction Unemployment Rates | US Bureau of Labor Statistics, CBRE Cost Consultancy

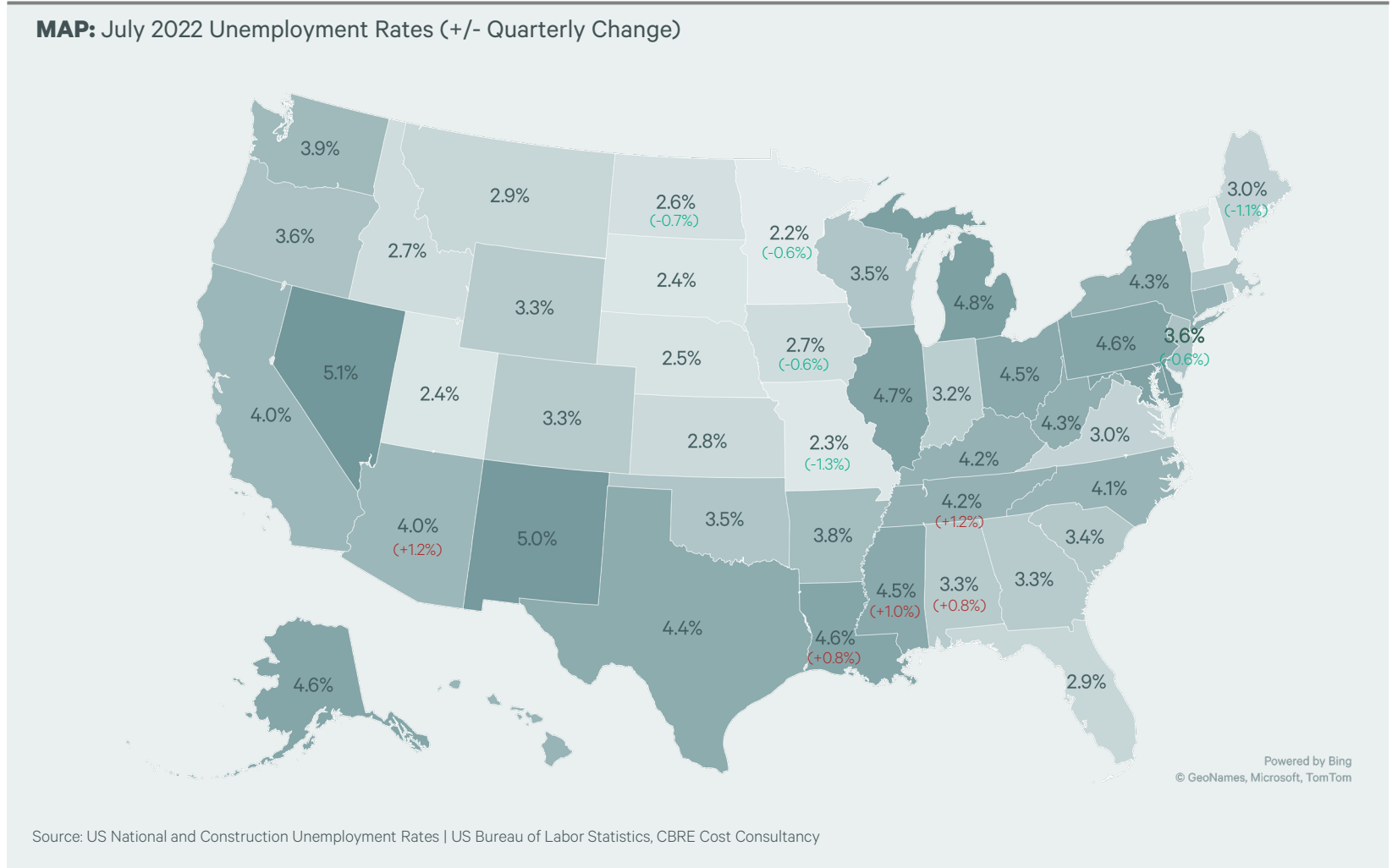
US Construction Unemployment by State

Upper Midwest/West, New England and Southeast Workers Stay Busy

Construction unemployment remains relatively low nationwide and has been closely tied with the national rate for several months. Regionally, New England, West/Upper West and Mid-Atlantic/Southeast remain strong with unemployment rates in the 2% and 3%.

Unemployment Rate Biggest Movers

- Missouri, Maine, North Dakota, New Jersey, and Iowa saw the largest decrease in quarterly unemployment rates.
- Tennessee, Arizona, Mississippi, Louisiana, and Alabama increased the most in quarterly unemployment rates last quarter.



Construction Employment and Wage Rates

Labor Costs Continue Their Upward Rise

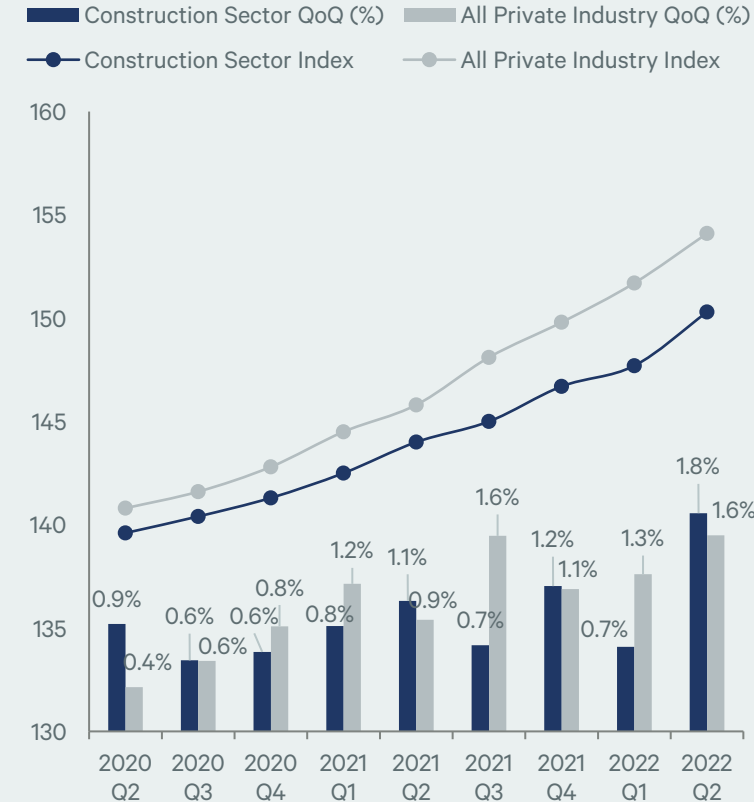
Both construction and private industry employment costs rose throughout Q2 2022. Construction employment wages and salaries have continued to rise due to a continued tight labor market.

The yearly change for hourly wages has been +4.7% for the last two (2) quarters now.

The quarterly increase for Q2 2022 is 1.8% which is more than twice the rate increase from Q1 2022.

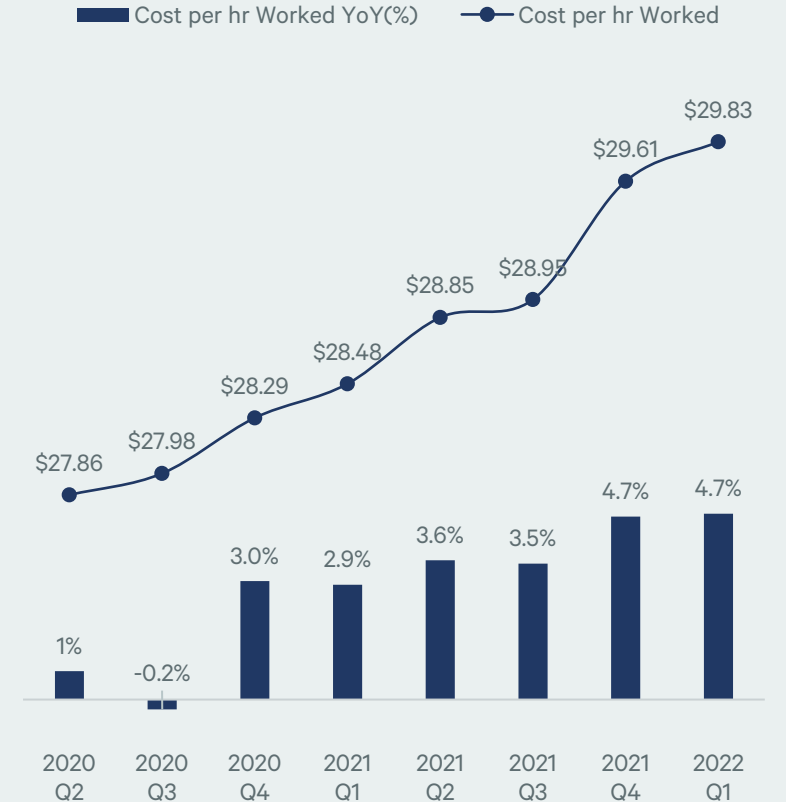
Labor costs will continue to be a challenge for the foreseeable future due to both inflation and staffing demands.

GRAPH: US National vs Construction Employment Cost Index



Source: Employment Cost Index, Wages and Salaries, Index 2005=100 | St. Louise FRED, Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

GRAPH: Wage Cost per Hour Worked for Construction Workers





Construction
Market
Activity

Construction Activity

Increased Volume, Healthy Backlogs, Steady Pipeline, and Moderate Contractor Confidence Define This Past Quarter

Contractors Stay Busy

- General contractors and trade subcontractors report that a significant backlog of work is currently keeping them very busy.
- Architectural billings have long been seen as a key indicator of future construction volume and continue to represent a substantial pipeline of work to come.

Wavering Industry Confidence

- Construction industry market surveys offer mixed messages in terms of contractor confidence.
- Some experts predict continued growth, while others suggest a market cooldown could be brought on by recession fears and economic uncertainty.

Construction Market Activity

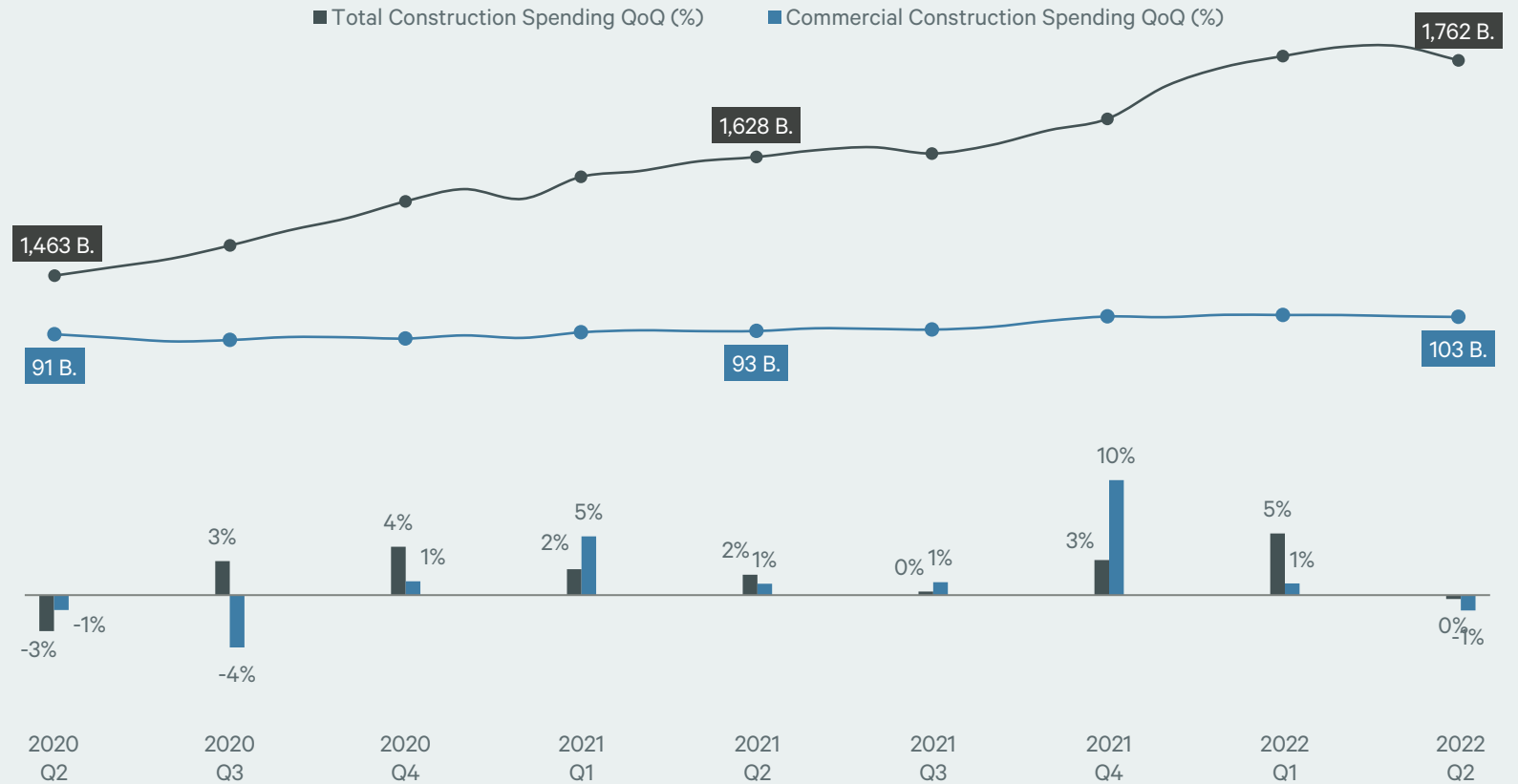
Commercial Volume Down Slightly Since Last Quarter

Total construction spending has recovered since Q2 2020 due to a significant volume of backlogged project restarts.

Total national construction spend shows no change at 0% over the past quarter while the Commercial sector had a slight decline in volume spent by **-1%**.

Market elements such as inflation, recession fears, and higher interest rates may have contributed to a decline in construction project volume.

GRAPH: Construction Spending Nation vs Commercial



Source: Total Construction Spending (Public and Private), Commercial Spending (Public and Private), Millions of Dollars | St. Louis FRED, CBRE Cost Consultancy
 Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

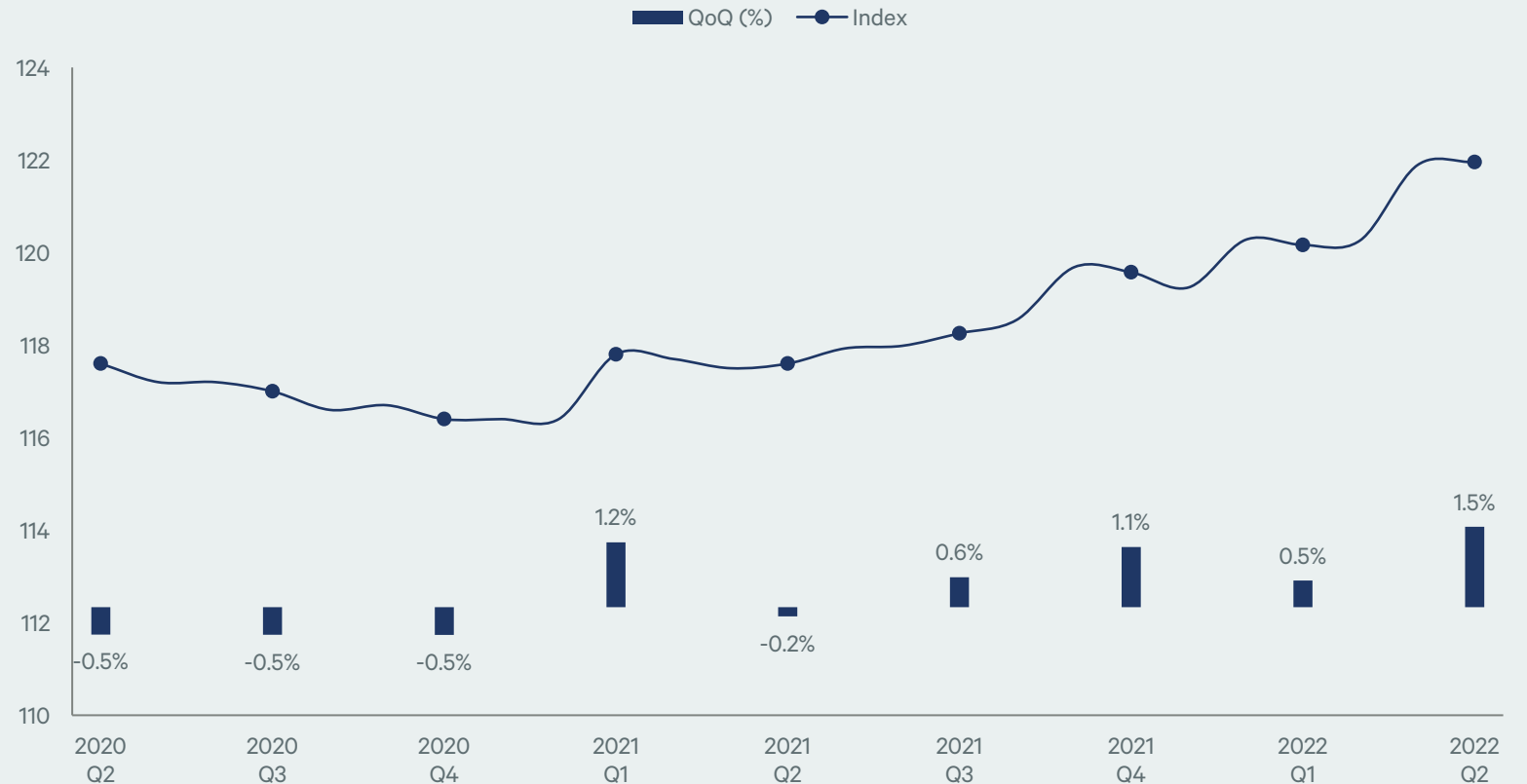
Equipment Rental & Leasing Index

Construction Rental Market Remains Strong with Project Volume

The Construction Equipment Rental and Leasing Index has seen a steady increase since Q1 2021.

Ongoing supply chain issues have negatively impacted construction equipment distribution nationwide as demand has increased due to starts of postponed construction projects as well as new public sector projects.

GRAPH: Construction Equipment Rental and Leasing Index



Source: Construction Equipment Rental and Leasing Index 2003=100 | Bureau of Labor Statistics, CBRE Cost Consultancy
 Note: Line graph reflects trends | Bar graph reflects quarterly increase/decrease changes

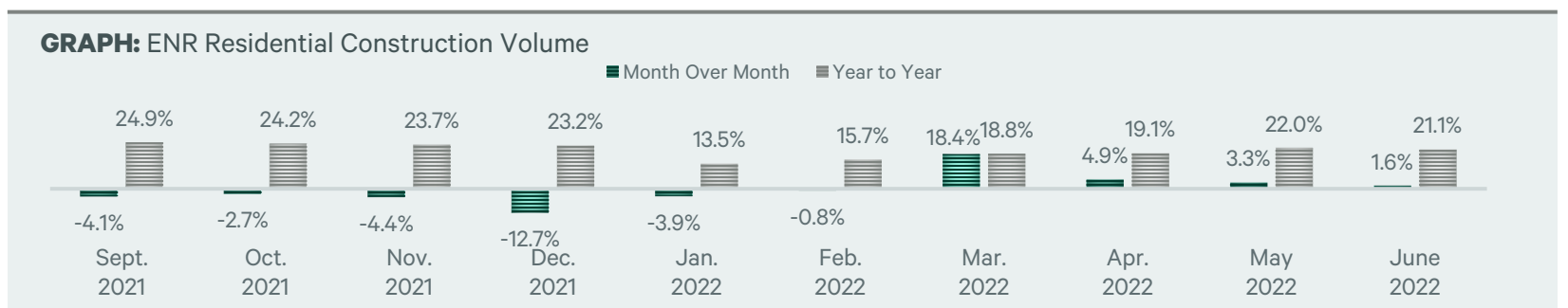
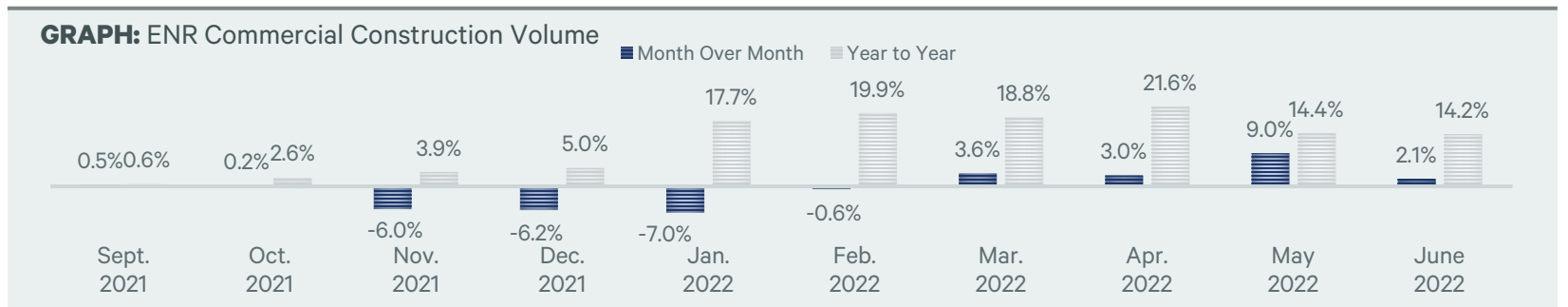
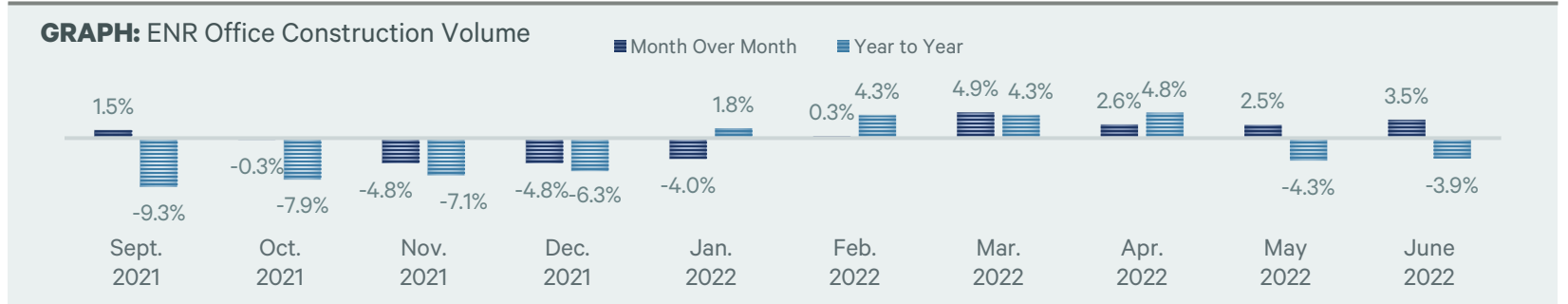
Construction Volume

Lower Office Volume from Q2 2021 and Residential Slowdown Highlight this Quarter

Total year-to-year Office construction volume turned positive to start 2022 but has trended down over the last two months. Month-to-month volume remains positive year to date.

Commercial construction growth in general is now positive compared with last year, and slightly up on a month-to-month basis.

Residential construction remains strong compared with last year's volume and while month-to-month volume remains positive, it has been trending steadily downward since April.



Source: ENR Monthly Private Construction Volume | Engineering News Record

Regional Construction Backlog

Southern States Showing Continued Sizeable Backlog of Work

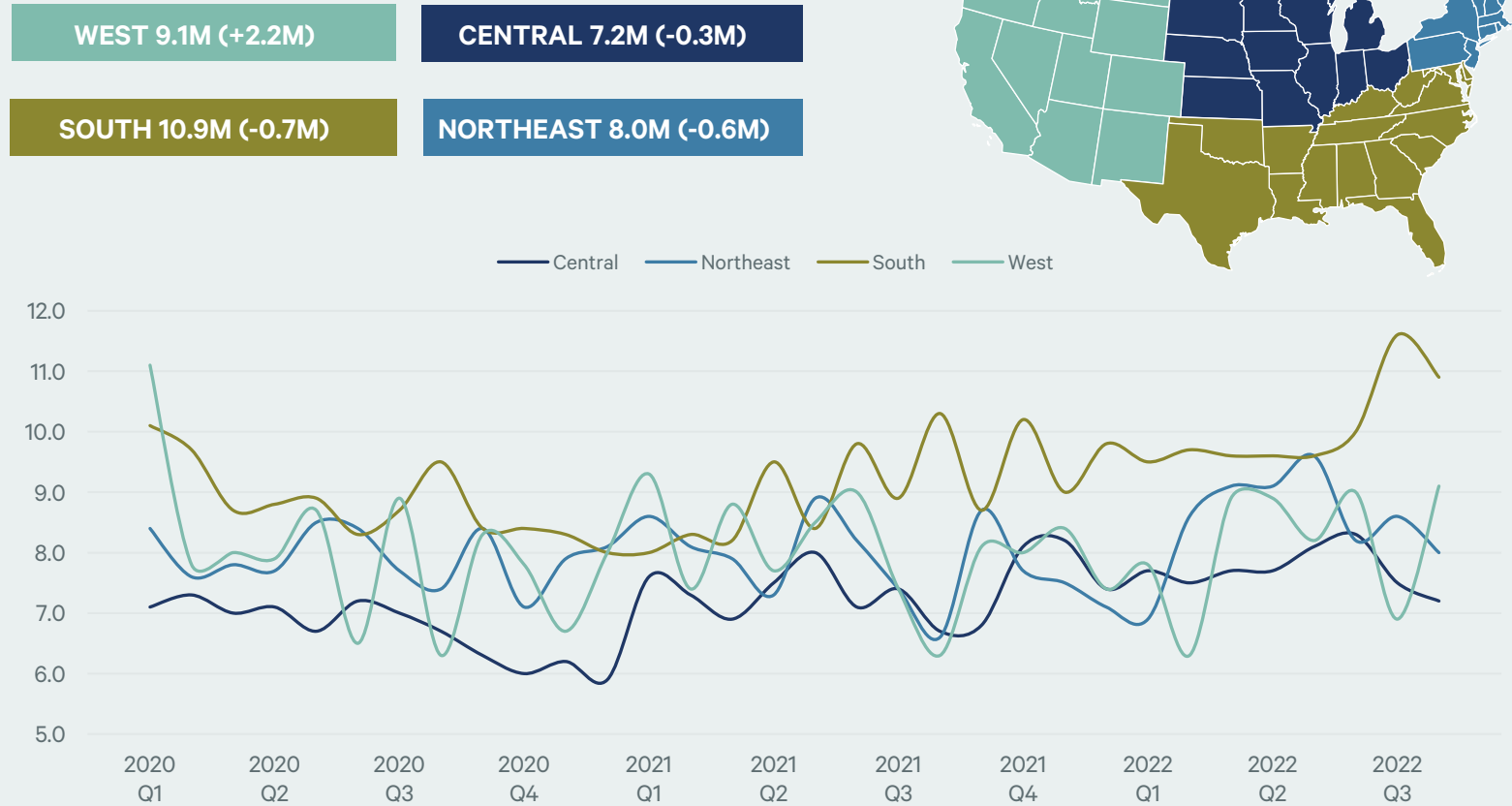
Associated Builders and Contractors (ABC) reported that its Construction Backlog Indicator remained at 8.7 months in August, according to an ABC member survey conducted August 22 to September 7. The reading is up +1.0 months from August 2021.

Higher demand for construction and fewer General Contractors and Subcontractors to build has led to a reduced number of bidders per project.

Construction Margins, such as OH&P, GR/GC have been highly inflated over the past quarter due to reduced competitiveness from GCs.

8.7 MONTHS
(-/+0.0 MONTH)
NATIONALLY

GRAPH: ABC Construction Backlog



Source: ABC Construction Backlog Indicator | Associated Builders and Contractors, CBRE Cost Consultancy

Construction Activity

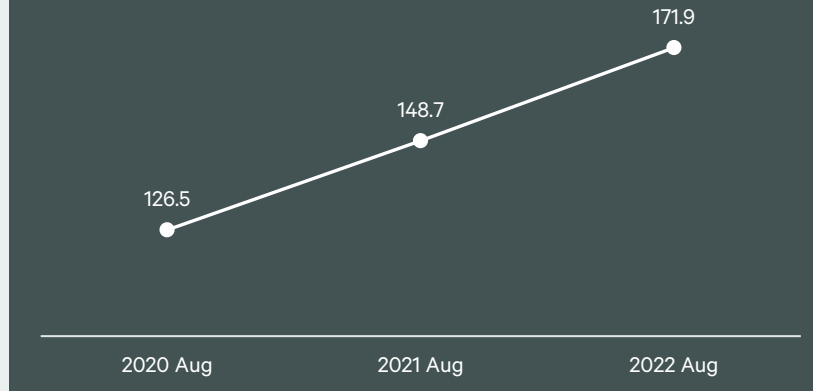
Industry Analysts Expect Continued Growth in the Construction Market

The Dodge Data and Analytics Momentum Index is a measure of the initial report for projects in planning, which have been shown to lead to construction spending.

The AIA Architecture Billings Index is an economic indicator for nonresidential construction activity, with a lead time of approximately 9–12 months out. **Anything above 50.0 represents growth.**

Dodge Data & Analytics Momentum

171.9
Aug. 2022

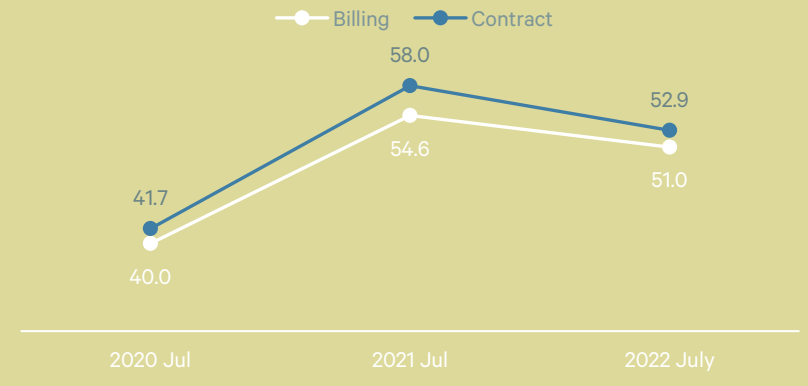


(Index 2000 = 100)

AIA Architecture Billings Index

51.0/52.9

Billings / Design Contracts
Jul. 2022



(Ratings above 50 indicate an improvement in the construction market)

Source: Momentum Index, Dodge Data and Analytics | Architecture Billings Index, American Institute of Architects | CBRE Cost Consultancy

Planned Construction Projects

Index Expects Sustained Growth

The Dodge Momentum Index oscillated over the past year but maintained an overall positive impetus.

The first half of 2022 had an average index of 166 which reflects a significant amount of construction planning.

The August 2022 Index was 172, a decrease of **-7** points from July, showing indications of a potential downturn while currently remaining relatively strong.

GRAPH: Dodge Momentum Index



Source: Momentum Index | Dodge Data and Analytics, CBRE Cost Consultancy

Architectural Billings

Billings Continue Cooldown, But Remain Relatively Firm Nationally

Often seen as the “canary in the coalmine”, architectural billings and contracts have historically been viewed as a solid indicator of where the market is moving.

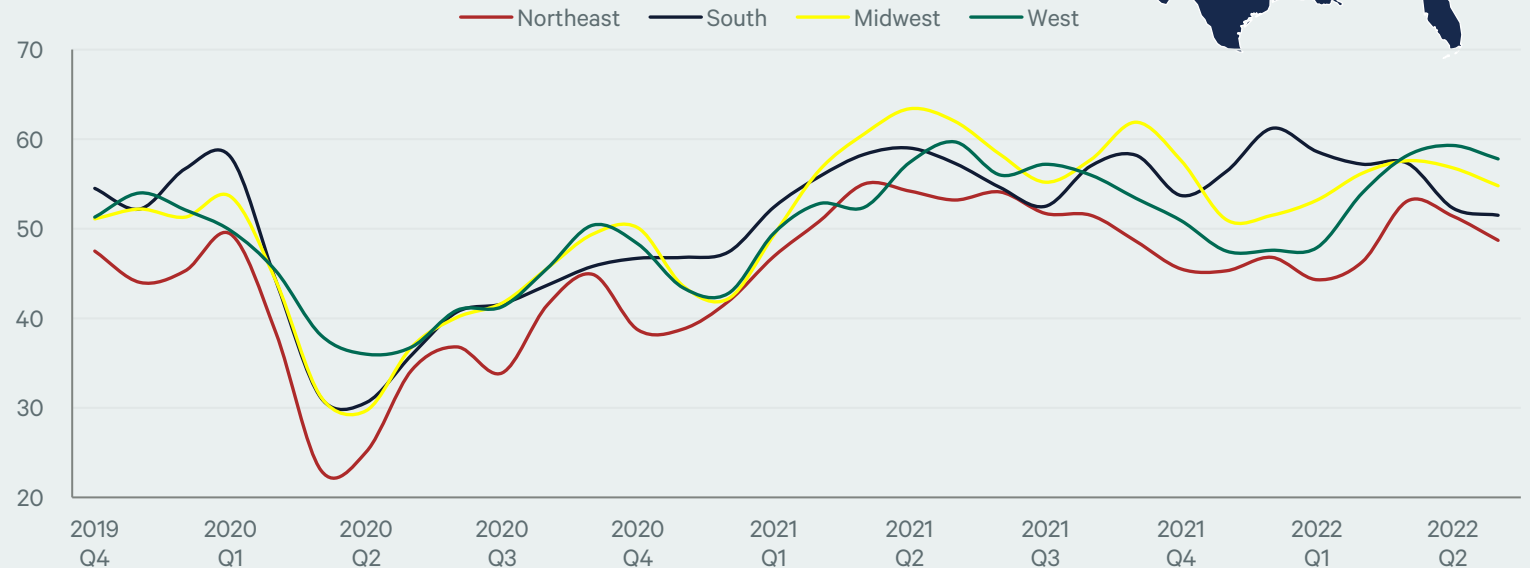
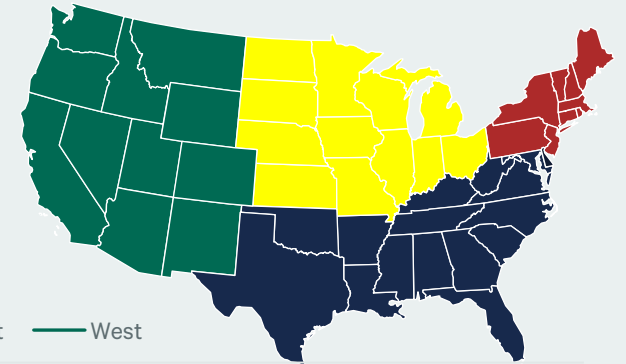
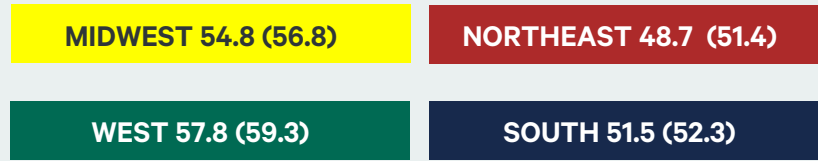
The American Institute of Architects' latest data which was current as of July 2022 shows that the Architectural Billing Index (ABI):

- Fell to 51.5 in the South (down from 52.3 in June),
- Fell in the Northeast to **48.7** (down from 51.4 in June),
- Fell to 54.8 in the Midwest (from 56.8 in June).
- And fell in the West to 57.8 (59.3 in June).

Scores over 50 indicate an increase in firm billings.

51.0 (54.6 IN JUNE)
NATIONALLY

GRAPH: Regional AIA ABI



Source: AIA Architectural Billing Index | American Institute of Architects, CBRE Cost Consultancy

Construction Spending

Projections Show Anticipated Growth In Previously Hard-Hit Sectors; Industrial Soars

The American Institute of Architects' (AIA) Consensus Projected Spending shows previous years spend volume and projected future years spend on recent data.

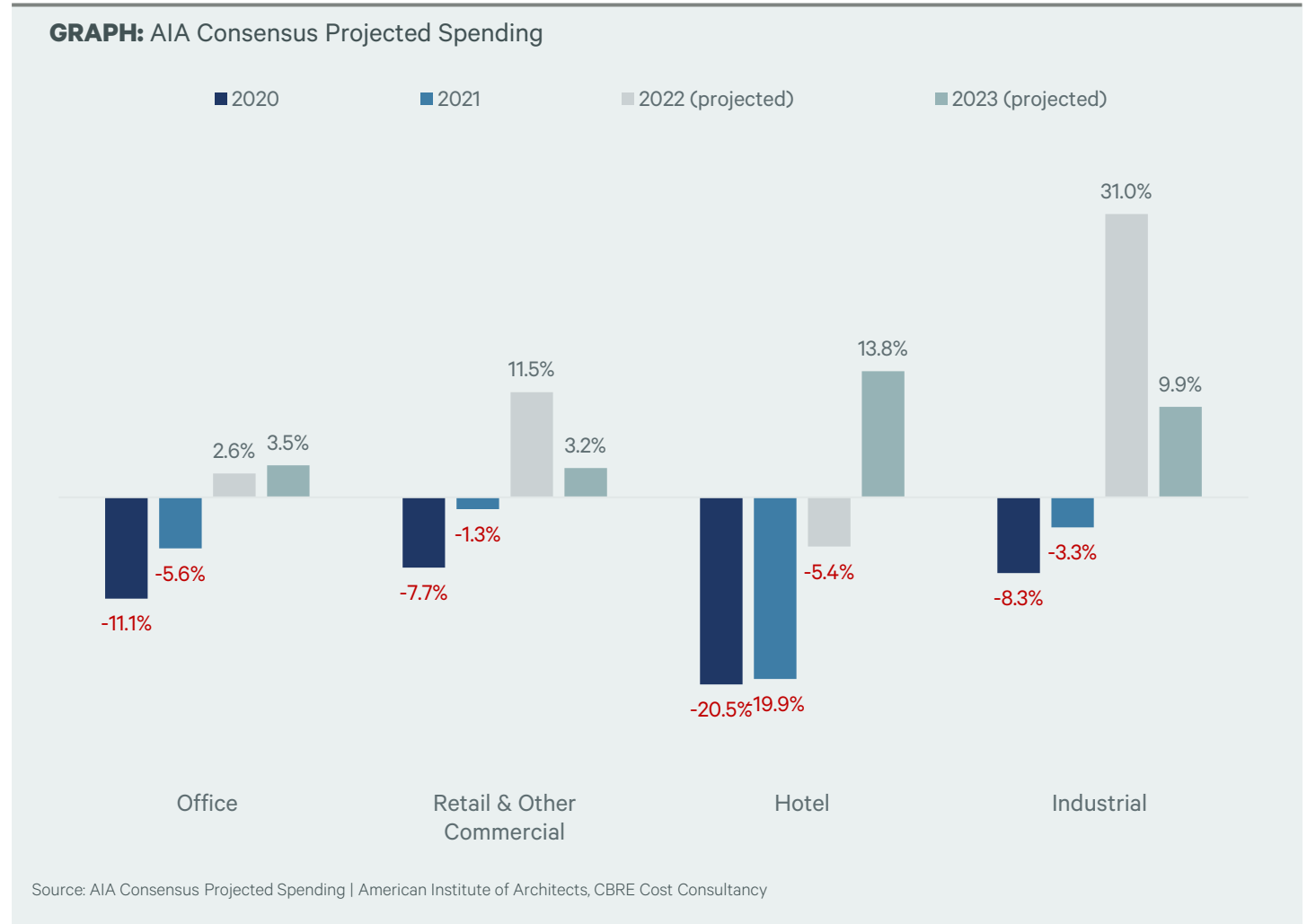
Adjusted projections for the next two years are positive for all construction types through 2023 and are aggregated from several trusted industry publications.

As anticipated, both Retail and Hotel construction are anticipated to make the biggest gains after being hit extremely hard early in the pandemic.

Intel to Build \$20B Silicon Chip Plant In Ohio With 7,000+ Workers Needed: Industrial and Tech Construction Lead the Way

Intel Corp. broke ground on what they are calling the “largest silicon manufacturing location on the planet” in September 2022 with assistance from the \$52B CHIPS Act recently passed by Congress. The Act’s primary goal is to stabilize the chipmaking industry for the US that has previously relied on internationally-supplied sources.

The Columbus, OH plant will be surrounded by a 500-acre complex with logistics and distribution facilities, and other support buildings requiring significant amounts of construction labor.

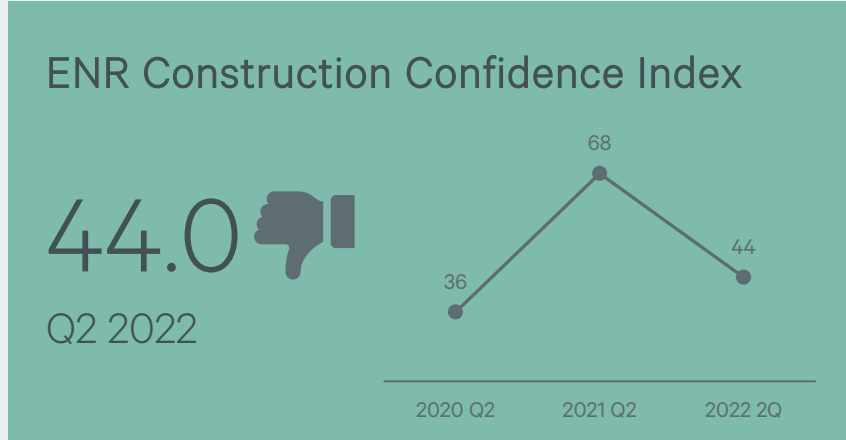


Construction Contractor Confidence

Mixed Confidence Indicators Show Fear of Market Challenges

The ENR Confidence Index measures executive sentiment about where the current market will be in the next three to six months and over a 12- to 18-month period, on a 0-100 scale. **Ratings above 50.0 indicate a growing market.**

The ABC Construction Confidence Index measures contractors' outlooks for the coming quarters in three categories: Sales, Profit Margins, and Staffing Levels. **Ratings above 50.0 indicates expectations of growth in the market.**



(ENR Confidence Index Rating above 50 is considered a growing market)



(ABC Confidence Index Rating above 50 is considered a growing market)



Source: Confidence Index, Engineering News Record | Confidence Index, ABC | CBRE Cost Consultancy

Contractor Confidence

Some Contractors Surveyed Expressed Doubts for the Overall Construction Outlook

The ENR Construction Confidence Index is down **-17** points since last quarter.

Continued inflation and recession concerns are bringing the index down.

A rating above 50 is considered a growing market.



GRAPH: ENR Quarterly Confidence Index



Source: ENR Construction Confidence Index | ENR, CBRE Cost Consultancy

Contractor Confidence

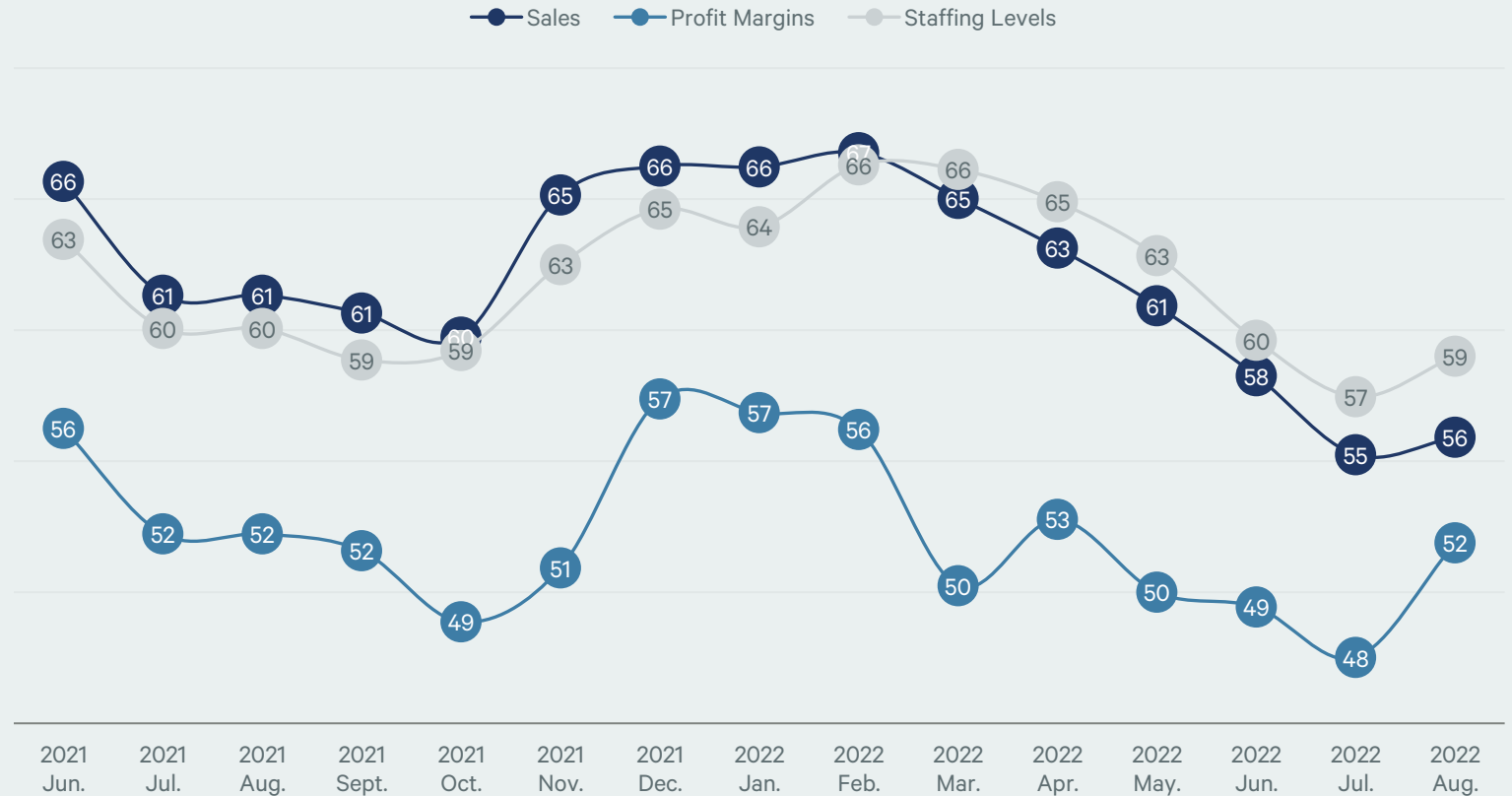
Others Remain Optimistic for Growth in Coming Quarters

All three categories of the ABC Construction Confidence Index show indicators of growth in the market over the next six (6) months.

The Sales Index rose one (1) point, The Staffing Level Index rose two (2) points and The Profit and Margin index rose four (4) points compared with the previous month.

Ratings above 50 are considered positive levels.

GRAPH: ABC Monthly Confidence Index



Source: ABC Construction Confidence Index | ABC, CBRE Cost Consultancy



Construction
Escalation

CONSTRUCTION ESCALATION

Construction Escalation

Continued Inflation Has Influenced Escalation That May Continue Into 2023 and Beyond



Consumer Price Index Inflation Remains Elevated

- The CPI inflation has come down from its 40-year high in June but still sits at an extremely elevated level.
- The Federal Reserve Bank has raised the federal funds benchmark rate in four tranches so far this year to a target range of 2.25% to 2.5%, with many experts believing the key rate will finish the year at 3.25% to 3.5%. Furthermore, it is also anticipated this rate will again be raised next year to a range of 3.75% to 4% in an effort to return inflation to the 2% range.

2022 Cost Escalations Are the Highest In Decades

- This year will be remembered in the industry as having some of the highest cost escalations in decades due to increased demand, rising wages and lowered competitiveness on bid projects.
- Regional cost escalations have acted somewhat independently from city to city, with some of the largest increases seen in the South.

US Inflation Rate

FED Continues to Raise Interest Rates In Attempt to Curb Inflation

Inflation is a decrease in the purchasing power of money, reflected in a general increase in the prices of goods and services in an **economy**.

In August of 2022, the US BLS Consumer Price Index YTD was 8.3%, which continued its downward trend by **-0.2%** from July, and **-0.8%** from the 40-year high of 9.1% in June 2022.

Since March, the Federal Open Market Committee (FOMC) has repeatedly set a higher federal funds rate target to influence economic activity and reduce inflation pressures.

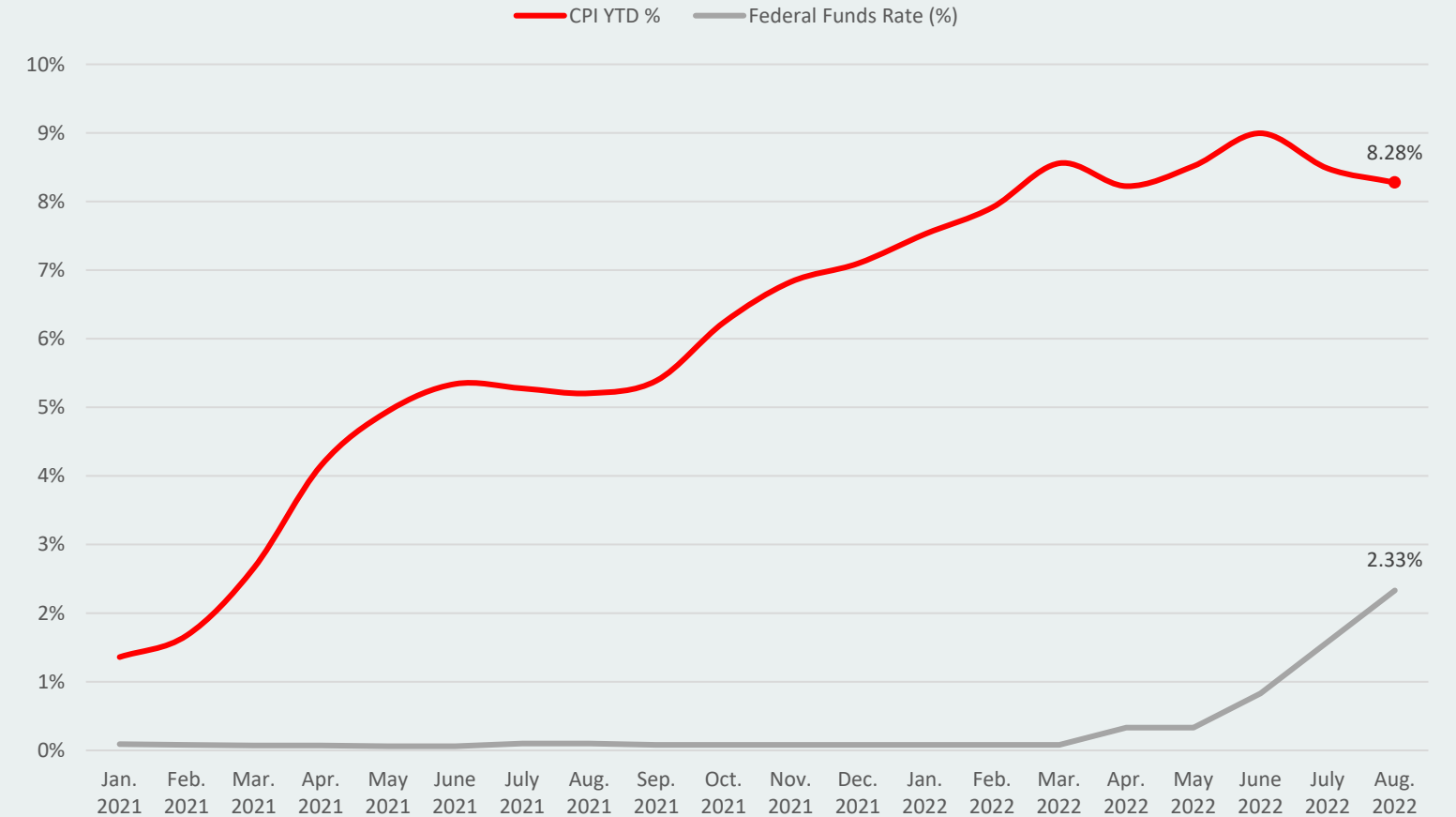
+8.3%

INFLATION

August 2022

June's CPI of 9.1% was the highest since Nov. 1981

GRAPH: CPI Inflation % (YTD) & FFR %



Source: US Bureau of Labor Statistics

Construction Escalation

Indices Offer Differing Opinions

Construction Escalation refers to a rise in the price of construction commodities or services due to a combination of inflation, supply/demand, and other effects such as environmental and engineering changes.

The graphs to the right represent the consensus index values from several trusted industry and government sources.

Differences in results are caused by monitoring different construction components such as labor, material, overheads or a weighted mix.

2022 continues last year's atypical increase with double to quadruple the average of regular years' escalation. All escalation values have already passed a full year's average within a half years' time.

+3-5% /year

Construction Escalation

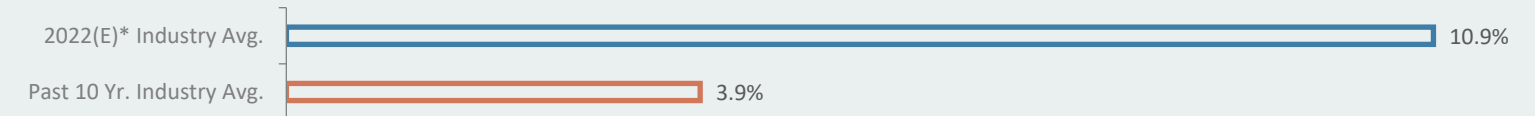
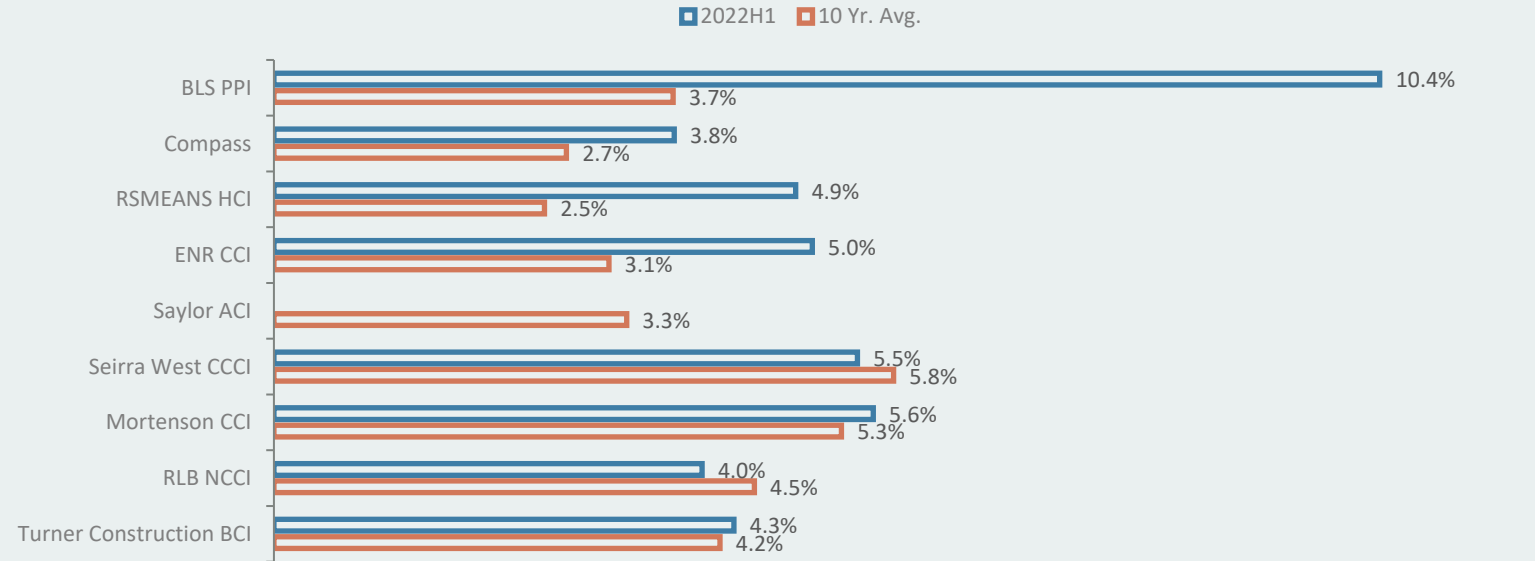
10 year avg. range

+8-12% /year

Construction Escalation

Avg. Escalation Range for the year 2022

GRAPH: Past 10Yr. Industry Avg. vs First half of 2022



*2022(E) reflects an industry expectation based on how this year has progressed in the first half thus far

Source: Engineering News Record, Rifer Levett Bucknall, RS Means, Turner Construction, Seirra West, Saylor, Mortenson, Compass International, Bureau of labor statistics

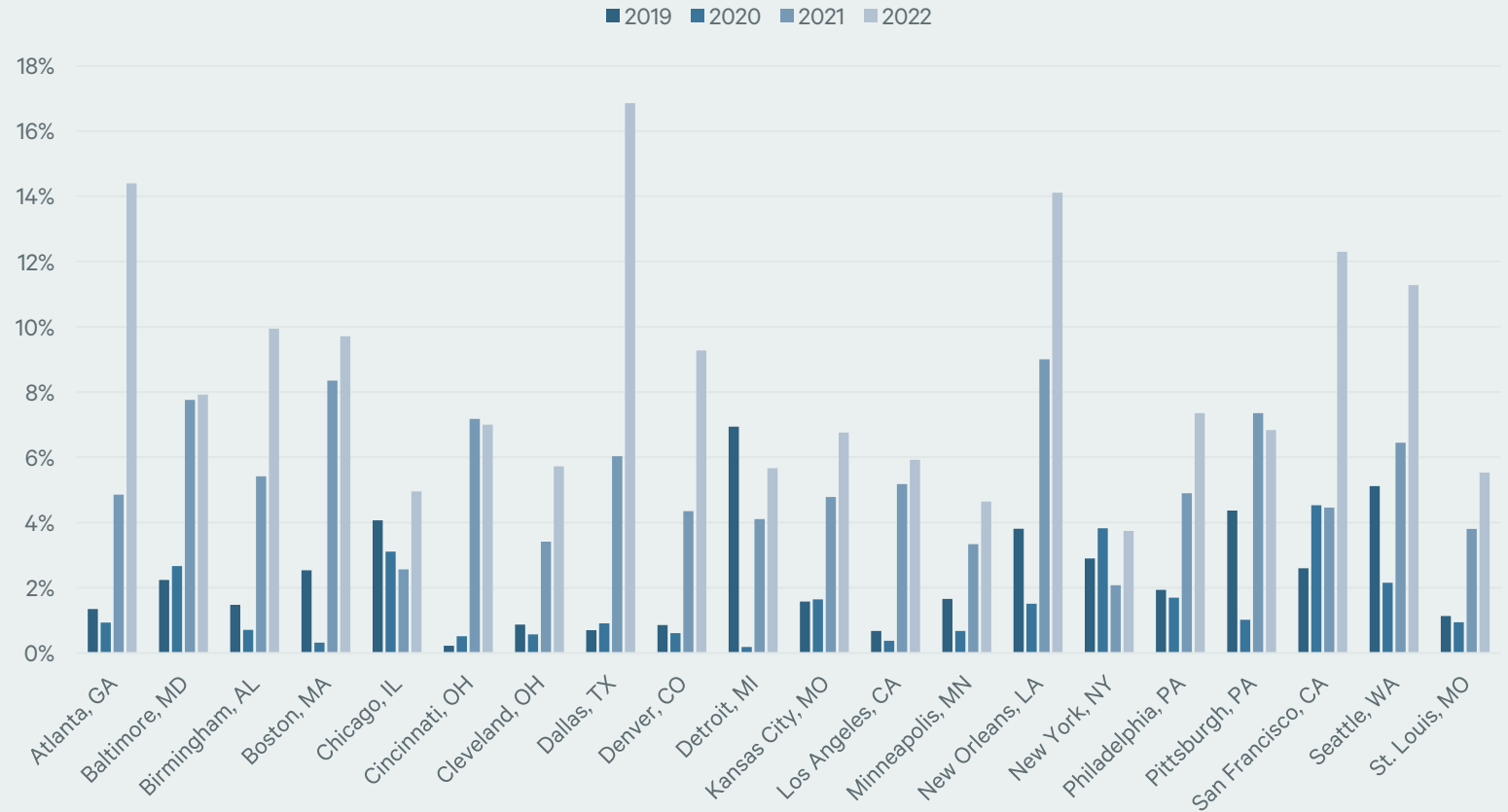
Construction Escalation by Market

Southern States Show Some of the Highest Escalation Rates Nationwide

Market trends tend to behave somewhat differently from city to city. Some have more established construction economies causing less volatility in construction costs. Others are more susceptible to fluctuations caused by outside pressures.

2020 had a clear slowdown for most markets nationwide with few exceptions. 2021 represented a rebound for the industry as costs recovered. The general trend for 2022 was that of hyper-escalation in most markets across the country.

GRAPH: ENR 20 City Historical CCI YTD (%)



Source: ENR City Historical Indices | ENR, CBRE Cost Consultancy

CBRE Construction Index

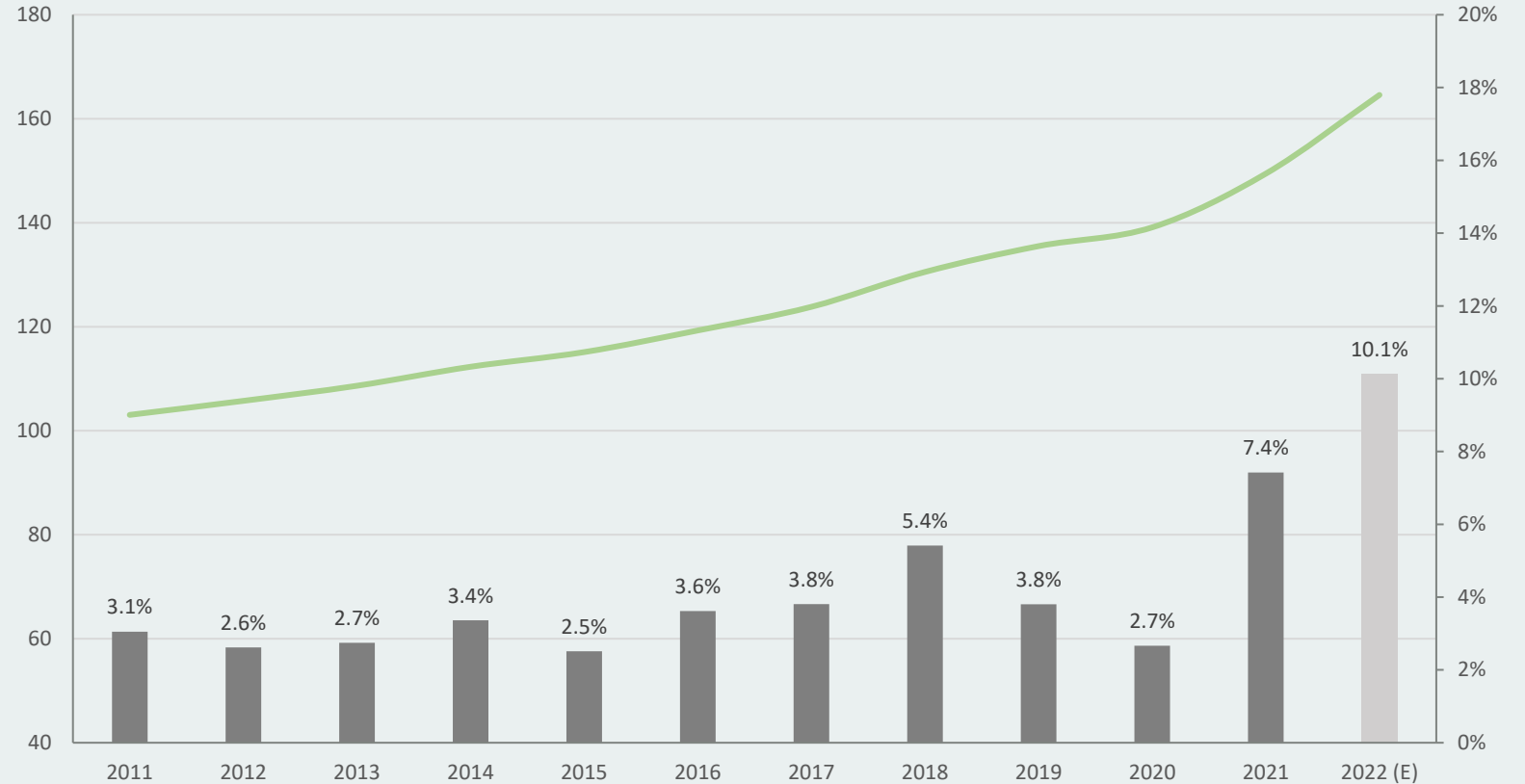
2022 Projections Show Highest Escalation In Recent Memory

The CBRE Construction Cost Index expects an escalation increase exceeding last year's spike and reaching another high between 9-11% for 2022.

+9%-11%

CBRE Index
2022 YoY Escalation (Forecasted)

GRAPH: CBRE Construction Cost Index and Cost Escalation Per Year



Source: CBRE Cost Consultancy
Note: (E) is an expected values

CBRE Construction Index Forecast

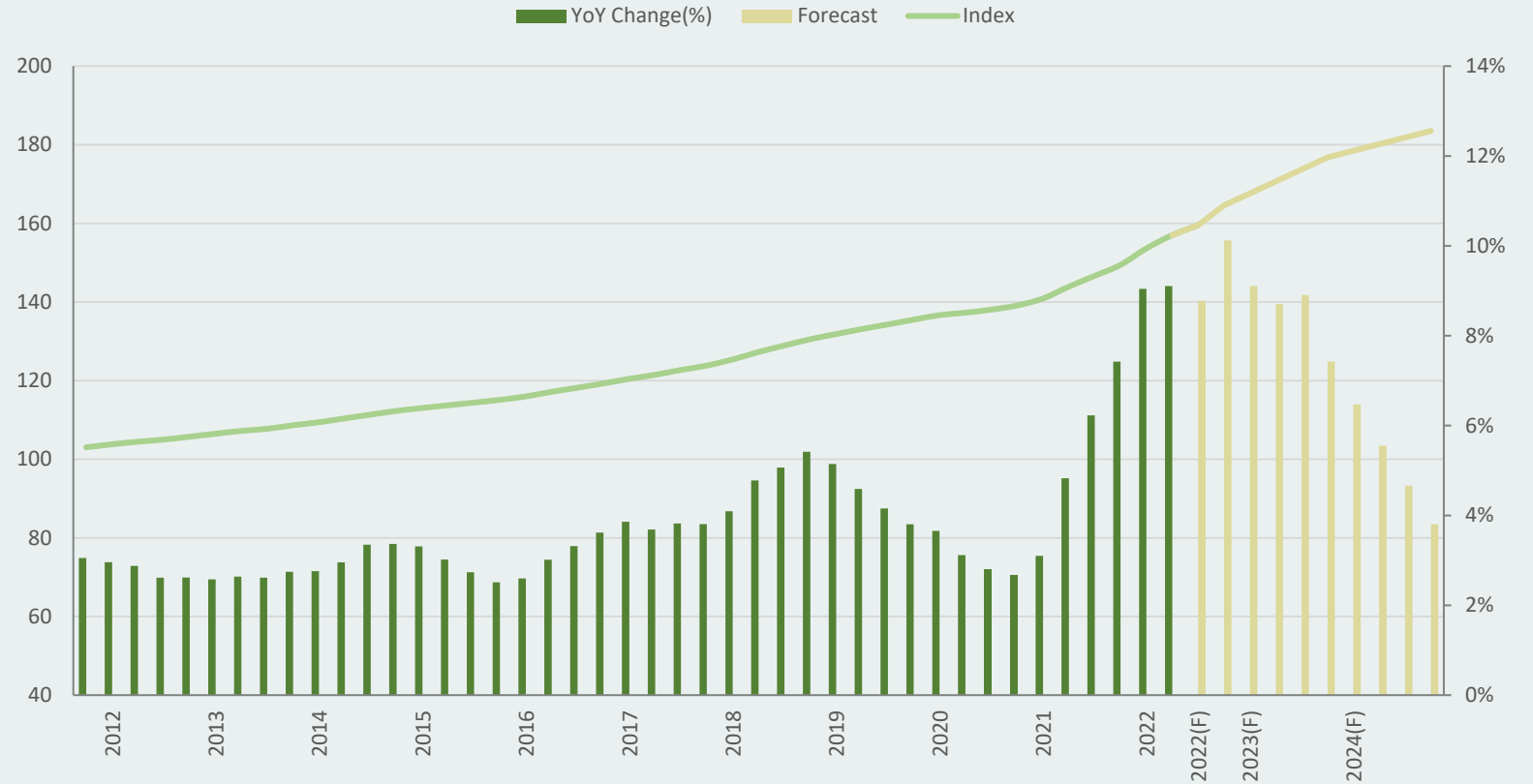
2023 May Still See Significant Cost Escalation, But Not to 2022's Peak Levels

There are multiple scenarios that could potentially occur over the next two years.

CBRE expects escalation to slow down to historically "typical" rates over the next two years. The decline rate is dependent upon both the Federal Reserve Bank interest rate changes, as well as the construction market supply and demand cycles.

One other possible scenario is recession, which would accelerate the decline of construction cost escalation rates earlier than anticipated.

GRAPH: CBRE Construction Cost Index and Quarterly YoY Change



Source: CBRE Cost Consultancy
 Note: (E) is an expected values (F) is for forecasted values



Thoughts & Analysis

CBRE Findings & Analysis

Material

- Volatility of commodities remains consistently inconsistent but is driving towards stability.
- Costs are not anticipated to go back to pre-pandemic levels, but extreme escalations will slow and return to “historic” levels.
- Fluctuating commodity prices are making it more difficult to plan cashflow analysis and implement capital plans.
- It is recommended to allow for creative substitutions where applicable and advisable. This can consist of alternate designs, substitutions, open specifications for equipment, etc.

Supply Chain

- Labor shortages within the supply chain remains a major issue.
- Energy costs and availability continue to be inconsistent due to international conflict and demand, significantly affecting the supply chain.
- Lead times remain long for several key materials and construction components as demand remains high with reduced supply.
- Recommendations include planning ahead and looking further out to help guarantee funding and material availability if possible.

CBRE Findings & Analysis

Labor

- Labor wages continue trending upward and are anticipated to keep climbing.
- Labor shortages are also contributing to project schedule delays.

Construction Market Activity

- Construction volume and contractor backlog remain healthy. The current outlook shows a steady pipeline of future work, but contractor confidence is now mixed with recession fears looming.
- Reduced bid competition due to increased backlog and volume is driving up GC fees and in turn overall project costs.
- Owners should consider a broader supplier pool and alternative procurement routes. An expansion of the search for qualified contractors and subcontractors beyond current relationships when applicable is also advisable.
- It is recommended to award projects quickly after proposals are received. Some contractors and mills are holding prices for a week or less and guaranteeing pricing only after purchase orders are received.

Construction Escalation

- 2022 will end with the highest cost escalations in recent memory, with the expectation to get “back to normal” over the next few years.
- A possible recession could expedite the decline of escalation rates.

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