



Photo: Thornton Tomasetti, Inc.

Structural Steel | An Industry Overview & Economic Forecast

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2024 RMSCA Economic Forecast

February 22, 2024





Industry Trends | What are you seeing?



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1

Materials

Material Banks
(more overseas currently) - some local requirements at the city level for reuse of materials (e.g. Rheaply)

Lower embodied carbon

Hybrid steel + timber

Construction

3

Deconstruction as a design driver

Prefabrication/Off-site labor (**don't view steel fabrication as offsite labor)

Greater emphasis on DEI in work force. Increasing WMBE goals for projects, whether mandated by the client or not.

Growing the next generation pool of skilled labor

Greater emphasis on improving work environment on site and in the site office.

More reuse / less demolition

Safety

2024 TRENDS

2

Market Sectors

Facilities supporting decarbonization (manufacturing of green energy technologies)

Quick, affordable adaptive reuse; repurposing building stock with fast, affordable, and sustainable solutions

Affordable Housing is a challenge

Battery, clean energy & chip manufacturing

Adaptive reuse

Resort Development

Data centers

Other

4

AI



AISC Business Barometer



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The AISC Business Barometer Report

Business Barometer Report National Business Conditions Summary

American Institute of Steel Construction | 2022 Q4

How It Works

The Business Barometer is based on the theory that what people believe will happen is what ultimately does happen—within certain well-defined areas. Essentially, it is a business-confidence survey, focused on a specific industry.

In business, at any instant in time, all CEOs have in their mind a current picture of where their business is and where it is headed near term. Looking beyond the realm of hard data available, this is an intuitive approach that enables executives to predict, make decisions on equipment/service purchases and hiring, and forecast company growth. These instinctive “gut feelings” indeed drive the economy on both micro and macro levels. When executives feel that conditions are improving within their own business, they make capital expenditures, hire people, and expand into new markets. This leads to healthier business conditions overall. The same holds true for worsening conditions. Of course, external factors, such as the 9/11 attacks, the invasion of Iraq, or the pandemic can catch everyone by surprise.

Combining the intuitive feelings of many executives within an industry provides a good predictor of where an industry is truly headed. These instincts are true indicators and can be validated by actual sales data and by interviewing industry executives.

Through this method, the AISC Business Barometer gives America's structural steel industry a valuable snapshot of what is going on and what the future may bring.

Respondents

The respondents are CEOs or top executives at firms serving the nation's steel construction industry. Most firms participate in multiple markets, and many participate in multiple regions.

Interpreting the Charts

Present and Future Charts

Built on a scale of 0 to 100, ratings range from bad (0) to excellent (100), with most results falling in the fair (25) to very good (75) range. Present values indicate industry executives' perceptions of current business conditions, while future values provide a measure of expectations for impending business conditions. When future values are higher than present values, improving conditions will generally prevail, although the actual difference in percentage may not predict the next quarter's exact performance. Actual ratings such as “good” or “fair” are relative. The numeric value provides a measure of business conditions in that a higher value is always better than a lower value.

Business Activity

Business activity charts compare today's conditions to what they were three months ago. Looking at common measures of business activity, such as tonnage sold, tonnage shipped, bidding, order backlog, profits, lead times (for both fabricated and purchased steel), and material prices gives a relative measure of the current health of the industry. Results are presented on a scale of 0 to 100, with 50 being the neutral point. Values greater than 50 indicate increasing business activity or an expanding industry, while values less than 50 indicate declining business activity or contracting industry conditions.

Using the Business Barometer in Your Company

The Business Barometer Report should serve as another tool to help you measure your company's individual performance against industry-wide conditions. Compare your current and future business plans against measurements by region, company type, or market sector. If your performance is significantly different from that of your industry peers, ask yourself some questions: What might you be doing differently? Should you be pursuing different markets? Is now a suitable time to hire more people?

Market Definitions

- **Industrial** Manufacturing and processing facilities of all types
- **Commercial** Stores, warehouses, and shopping centers
- **Office** Office buildings of all types
- **Parking** Auto service and parking garages
- **Assembly** Schools, houses of worship, theaters, arenas, libraries, and museums
- **Residential** Hotels, motels, apartments, and dormitories
- **Medical** Health facilities of all types
- **Public** Prisons, government buildings, and police/fire stations
- **Bridges** Bridges
- **Miscellaneous** Other construction



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National Business Conditions Summary

Respondents report good to very good national business conditions across all regions and sectors with slightly stronger current business conditions in the Southeast and West and public and parking sectors. Those in the Southwest reported conditions that are still good but less robust. For the third quarter, respondents expect future business conditions to deteriorate in all regions and most sectors, the one exception is the bridge market, which reports continuing strong business conditions.

All end markets/sectors reported strong current business conditions, particularly in the parking and public sectors. The latter showed the most improvement, followed closely by the bridge market, while industrial and commercial sectors cooled slightly. Respondents from the bridge sector expect business conditions to remain strong, but those in all other sectors report weakening conditions going forward.

Current business conditions are strong nationwide, though respondents in the Southwest were slightly less optimistic. Respondents reported improved conditions in the Southeast. Respondents in all regions expect weaker future business conditions, with lower expectations in the Southwest and West.

Business activity is strong by all measures, but respondents reported lower shipped tonnage. Material costs and lead times for fabricated and purchased steel dropped.

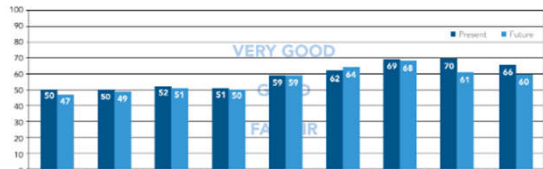
The national average backlog remained virtually unchanged at 23 weeks—well above the long term average of almost 16 weeks! The Southeast has the longest backlog, and

the West has the shortest backlog. By sector, parking has the longest backlog, while residential has the shortest. The public and parking sectors had the largest increase in backlog.

For the fourth quarter in a row, respondents said they're seeing more projects put on hold; 21% of them now report that trend. As you would expect, there was a corresponding decrease in the number of respondents reporting fewer projects put on hold (down to 36%). The remaining 53% of respondents report no change in the number of projects on hold.

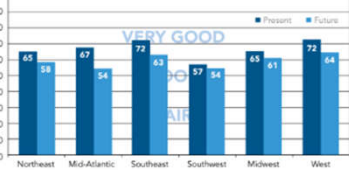
Labor capacity is up (to 81%), continuing a trend from the last two quarters. The majority (65%) of respondents are working at 90% or more of shop capacity, a slight increase from last quarter. In the next six months, 80% say they can add to future labor investment, down slightly from the previous quarter.

Positive commentary exceeded negative by 1.5 to 1—still very good, but the ratio continues to decline indicating lower expectations for the future. On the positive side, 19% describe business conditions as strong or good with 8% citing “big” or “mega” projects coming in-house. About 3% referenced increasing bidding activity, a relatively low level possibly portending slowing business activity. On the negative side, 10% are concerned about the economy/interest rates/recession. Labor shortages were noted by 8% as a limiting factor in their company's ability to handle existing and potentially available work. Many cited working at capacity, as demonstrated by the data, but none mentioned concerns about material costs.



Regional Conditions

Current business conditions are “good” to “very good” in all regions, with more strength in the Southeast and West regions. The Southwest region had slightly less robust current business conditions and the largest decline compared to last quarter. All regions expect slowing conditions in the future. For further details on each region see the regional trends graphs on pages 9–14.



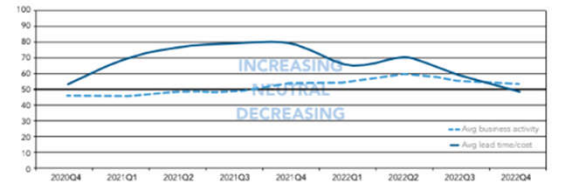
AISC Business Barometer Report

2 of 14 | 2022 Q4

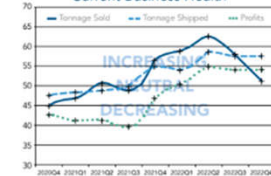
Business Activity

Slower rates of growth in all business activity metrics are driving a slower rate of increase in average business activity. Material costs have dropped significantly, and lead times for both purchased and fabricated steel are increasing at a much slower pace.

Current business health and business potential metrics all remain positive, but they're increasing more slowly. Bidding activity is constant, and the order backlog is still expanding (albeit at a slower pace). Profits and tonnage shipped continue to increase, but tonnage sold continues to weaken. Lead time/material cost metrics are improving as a result of a large decline in material costs as well as smaller drops in lead time on fabricated steel and lead time on purchased steel.



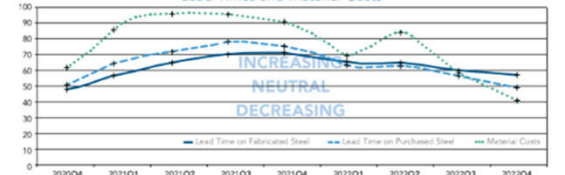
Current Business Health



Business Potential



Lead Times and Material Costs



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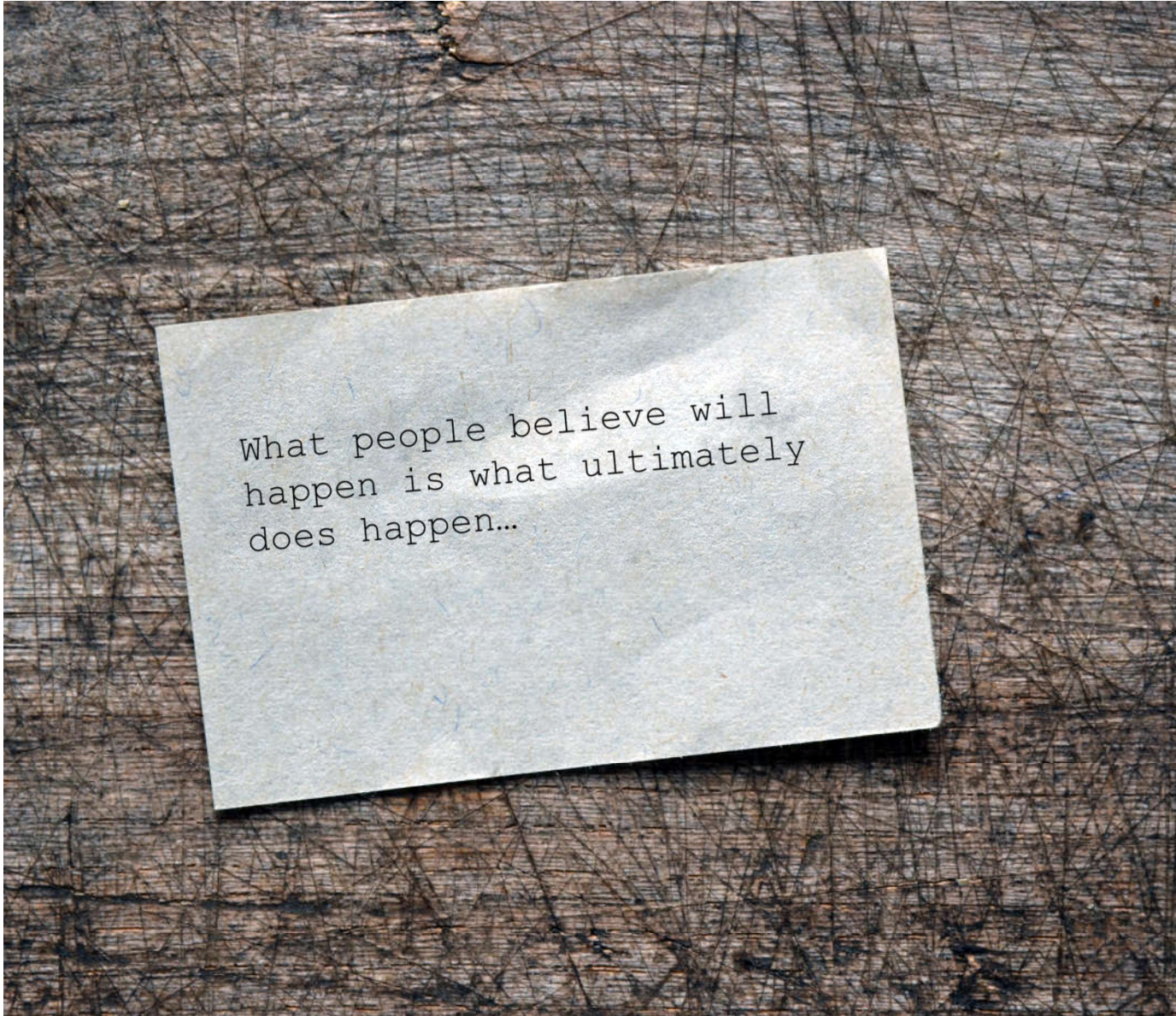
Business Barometer

CEO and top executives at steel firms across the country (over 200).

Business-Confidence survey based on the steel industry.

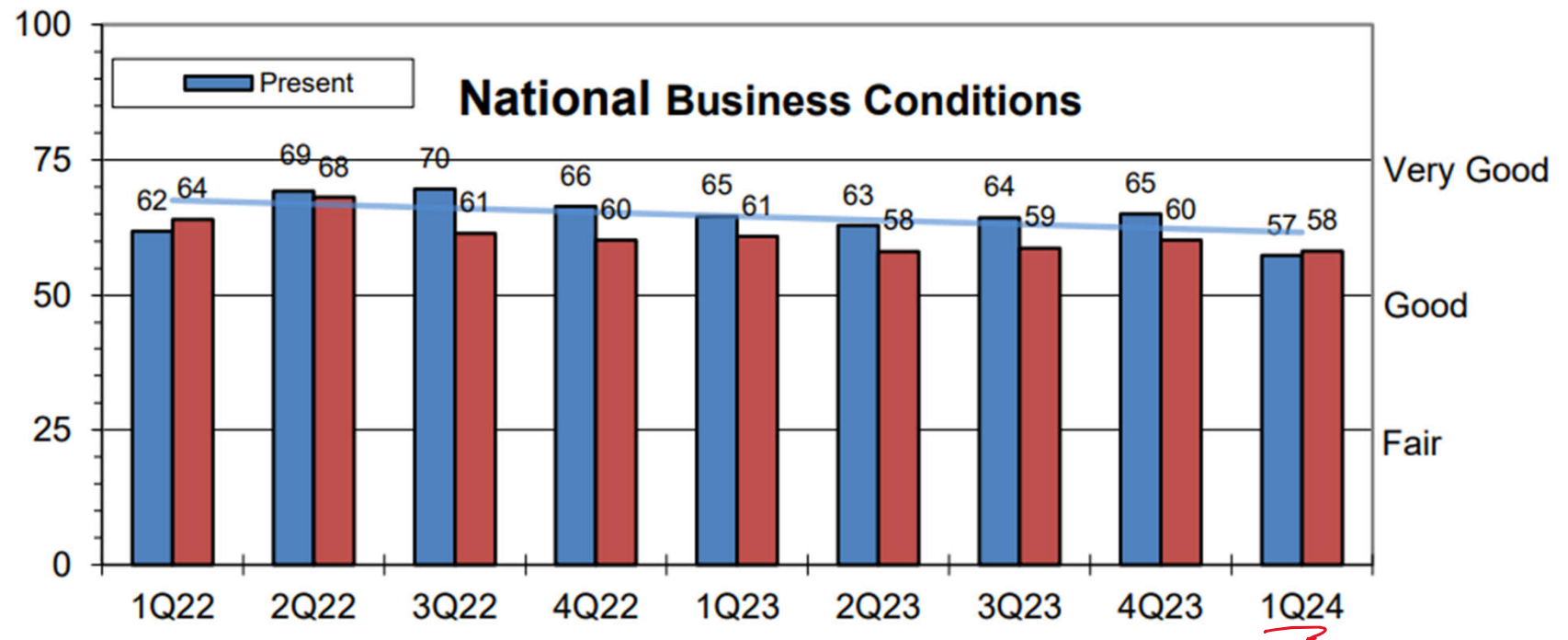
“Gut” feelings drive the economy on micro and macro levels.

Forward look at business conditions and emerging trends.



What people believe will happen is what ultimately does happen...

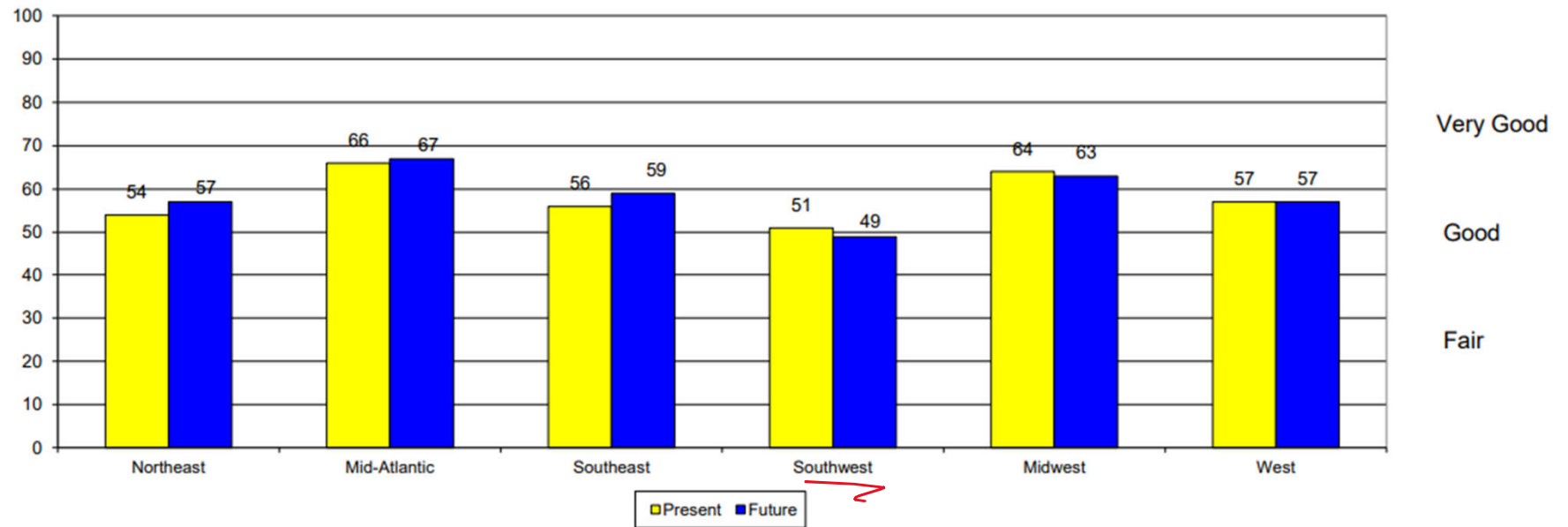
Business Conditions



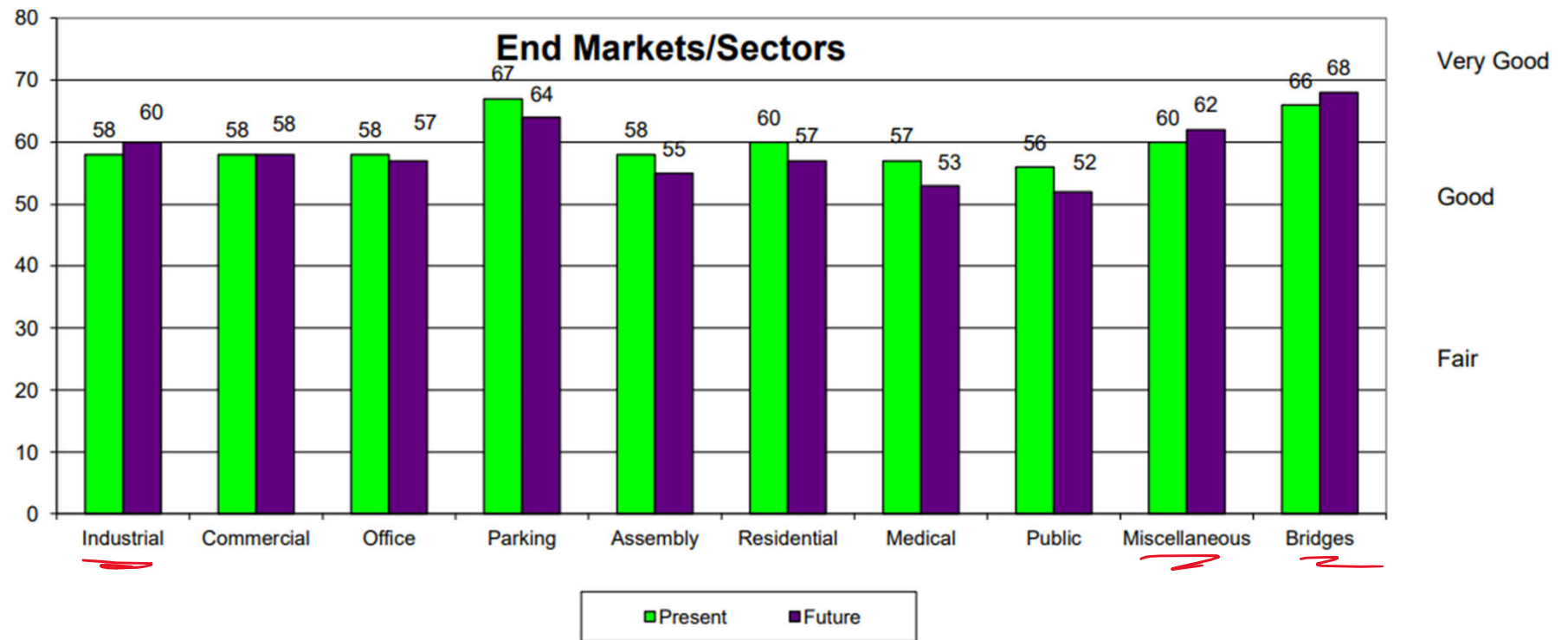
Business Conditions by Region



Regional Business Conditions

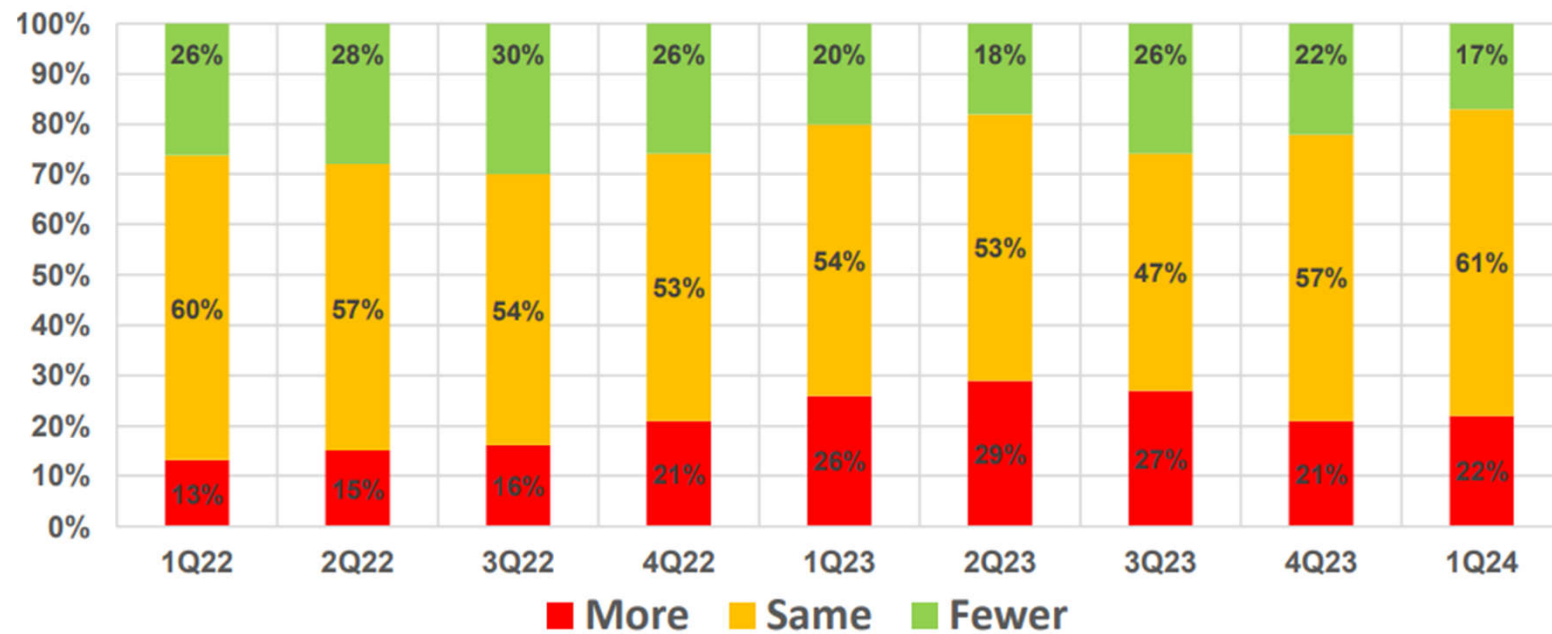


Business Conditions by Market

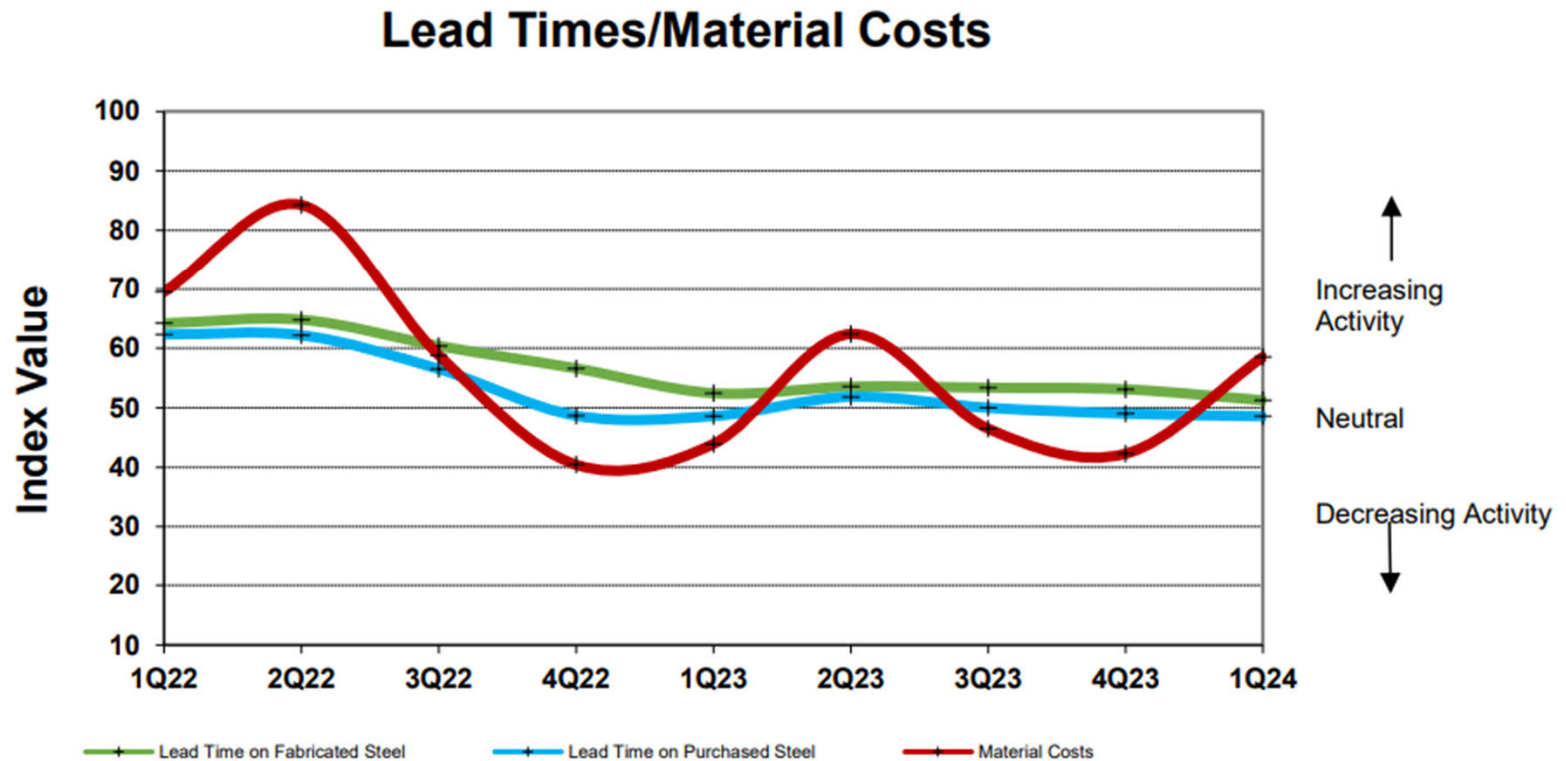


Projects on Hold

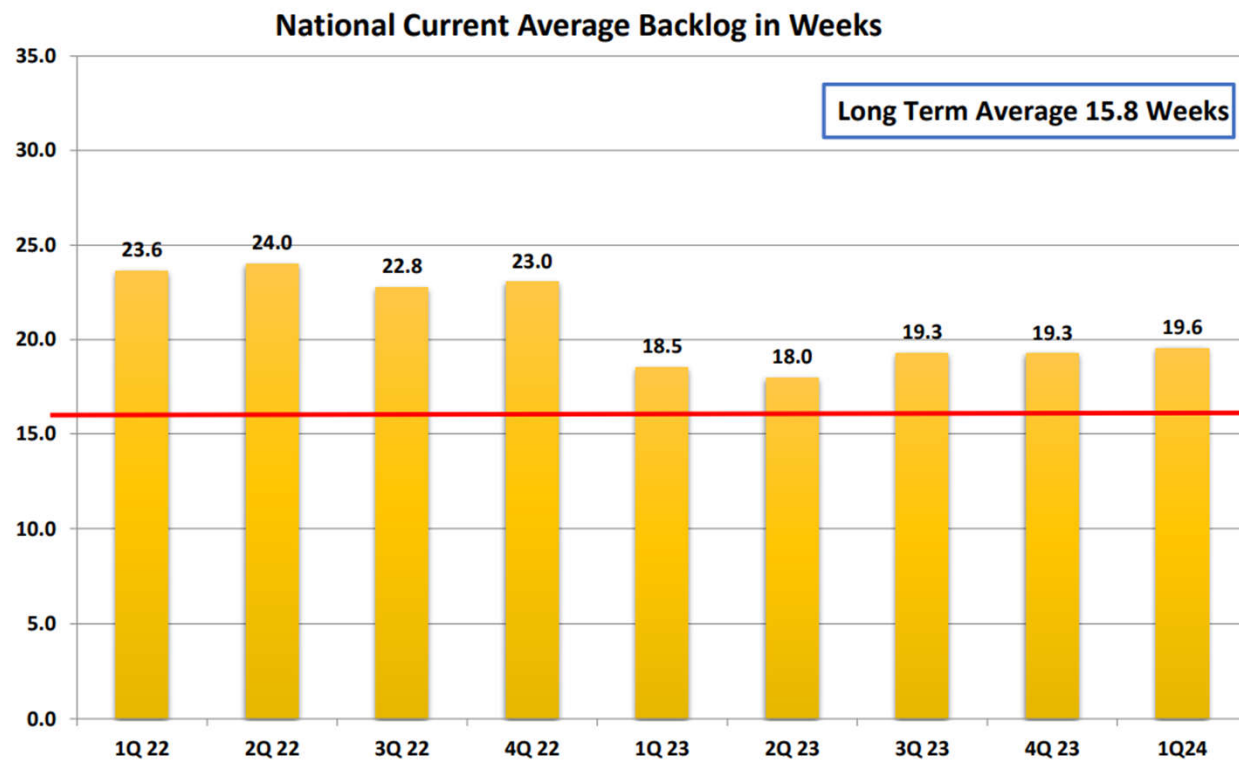
Projects Being Put On Hold



Lead Times and Material Costs



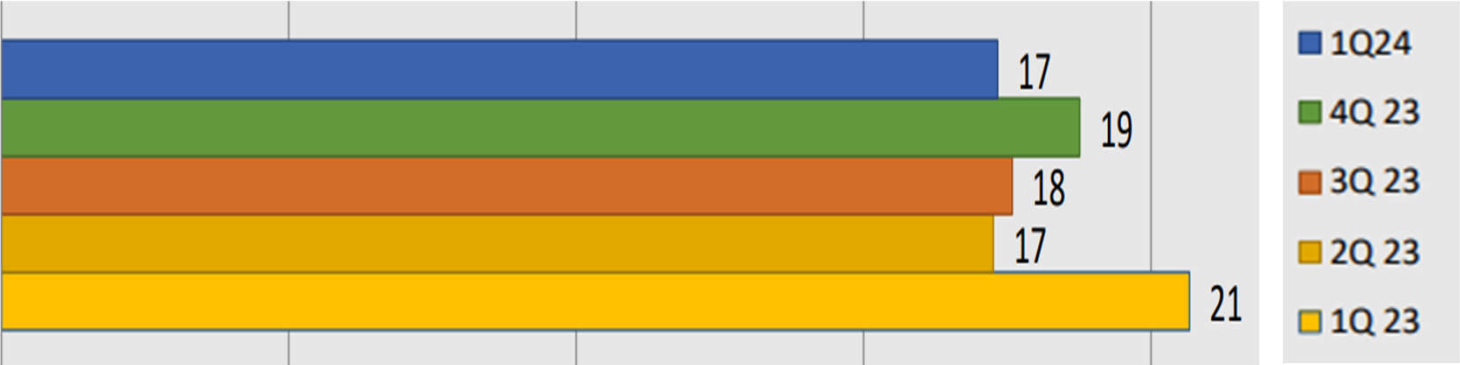
Backlog



Backlog

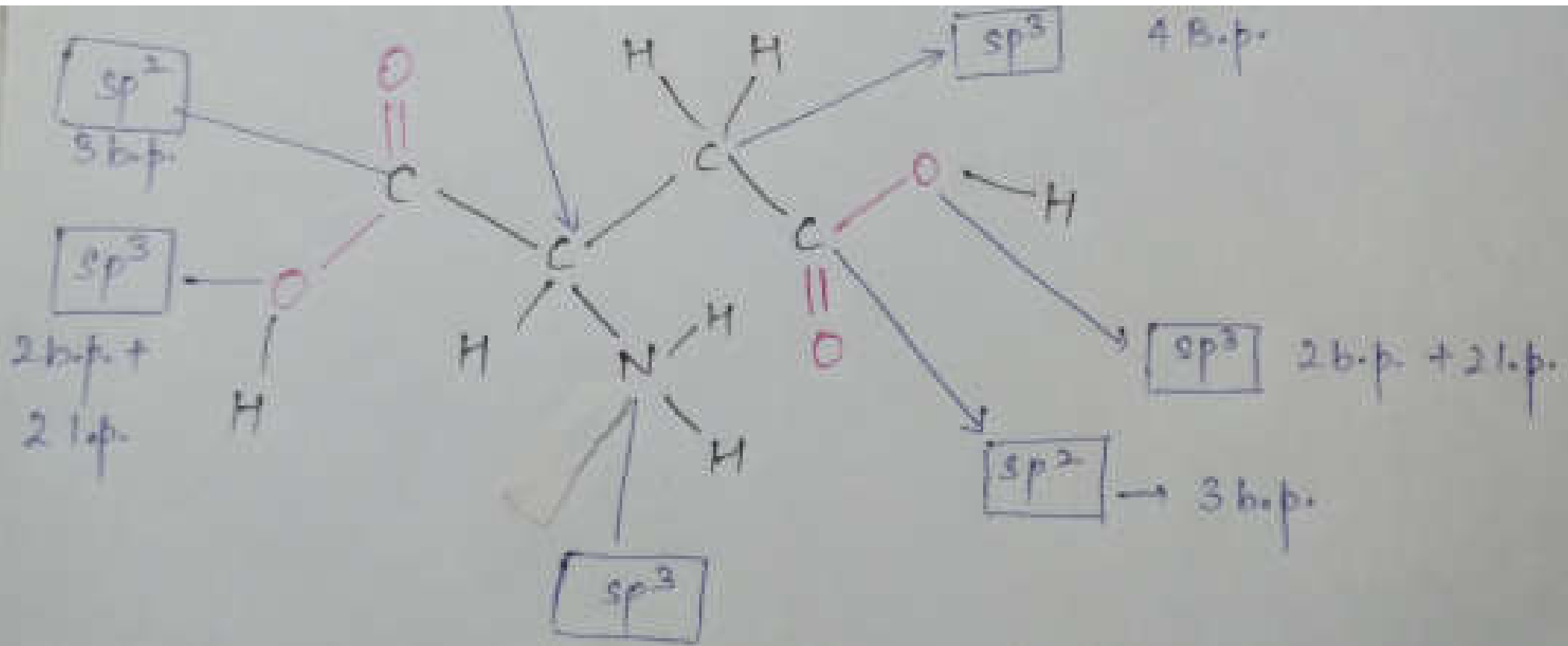


Southwest



Key Takeaways

- **Current Business Conditions remain “Good”** in all Regions/Sectors with some softening over the last eight (8) quarters
- **Business Activity is still increasing** albeit at a slower pace
- **Material costs are again increasing** but following a seasonal trend
- **Average Order Backlog is 19.6 weeks**, steady over the last three (3) quarters
- **Projects “On Hold” is steady** with a slight decline in “Fewer Projects On Hold”



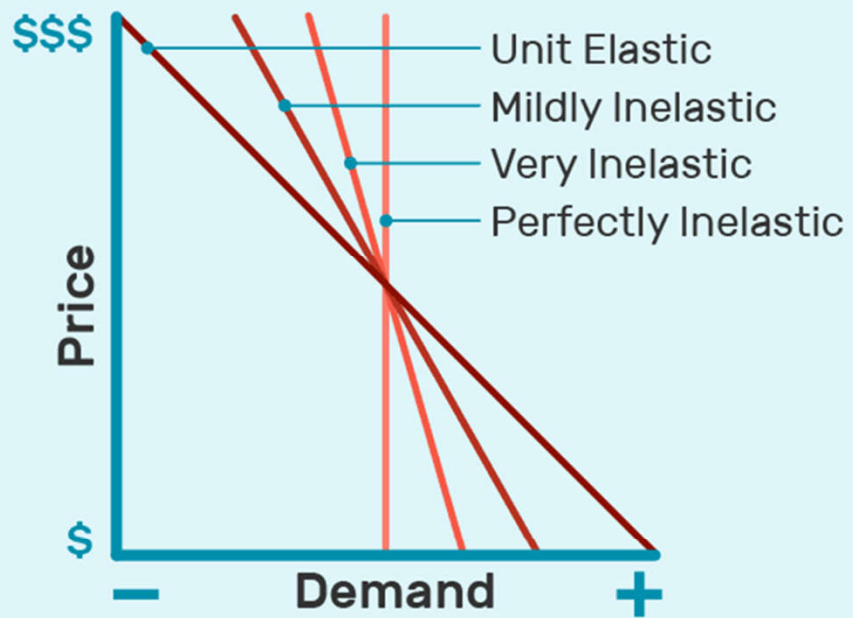
So...What is Happening, Anyway?



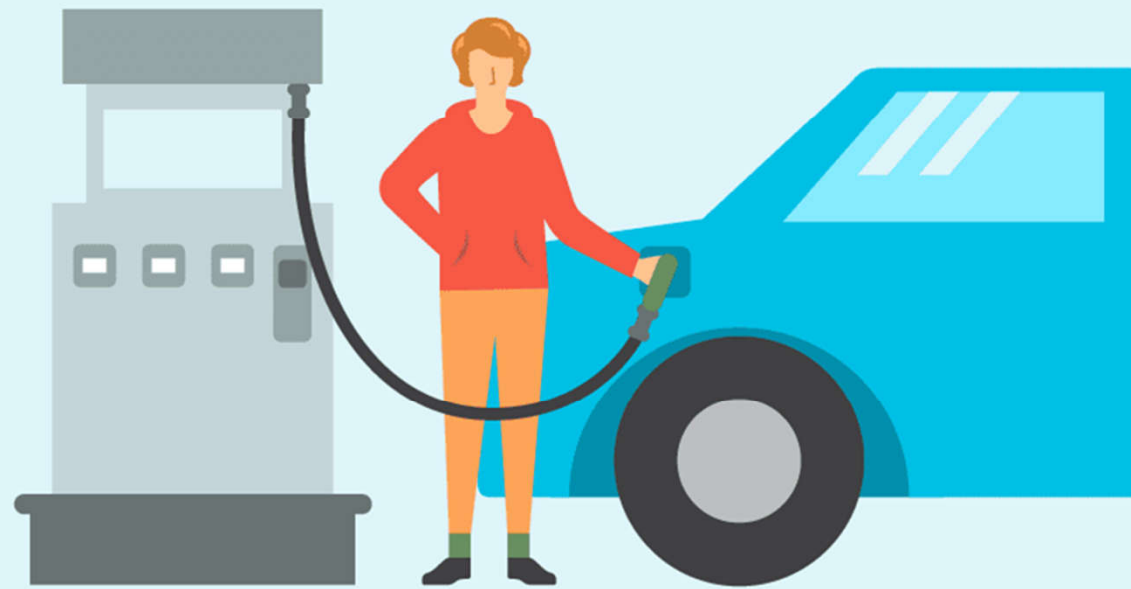
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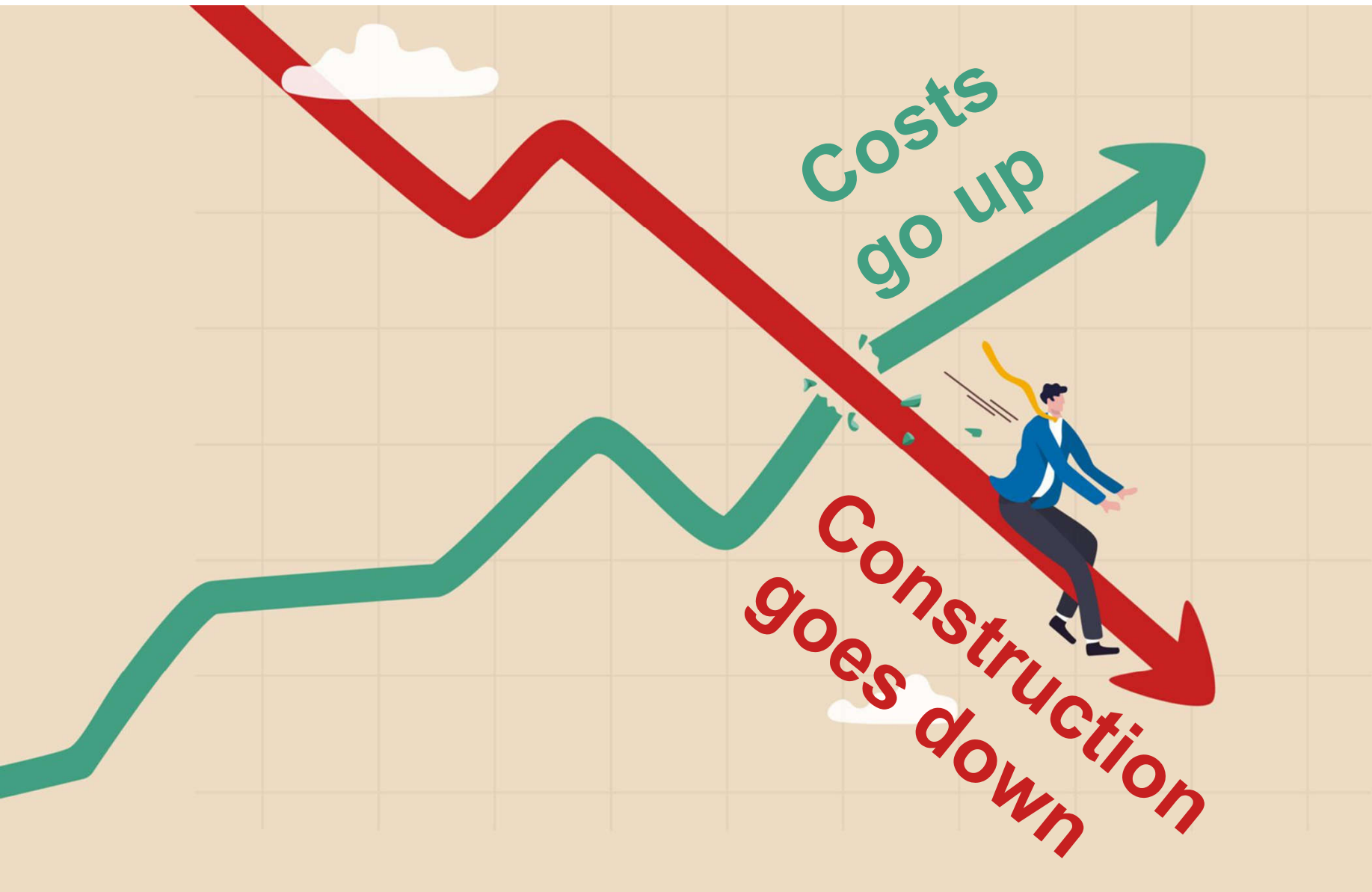
Basic Facts and Premises

1. When prices increase, activity decreases
2. Construction costs are up
3. The non-residential building construction market is cyclical
4. Non-residential construction activity always lags the general economy
5. Money costs more as interests rate rise



Gasoline has shown inelastic demand. Consumers buy nearly the same amount as the price increases.

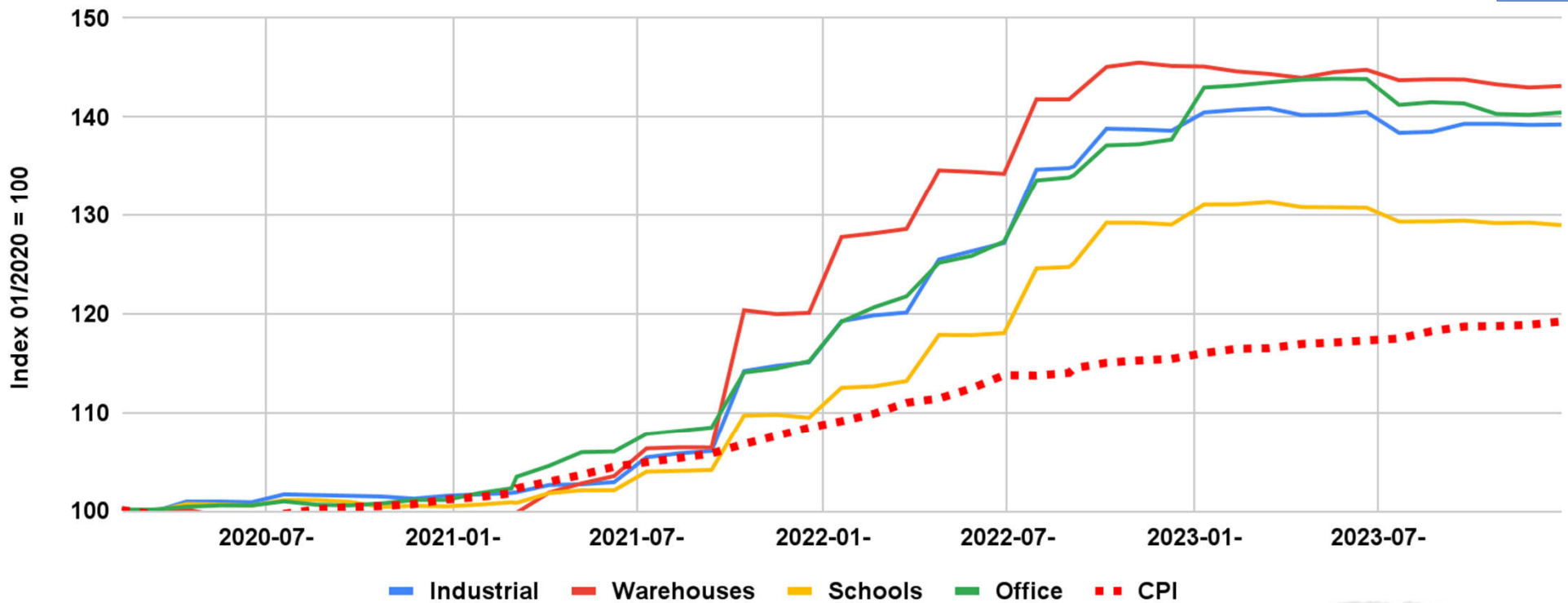




Construction Costs Are Up

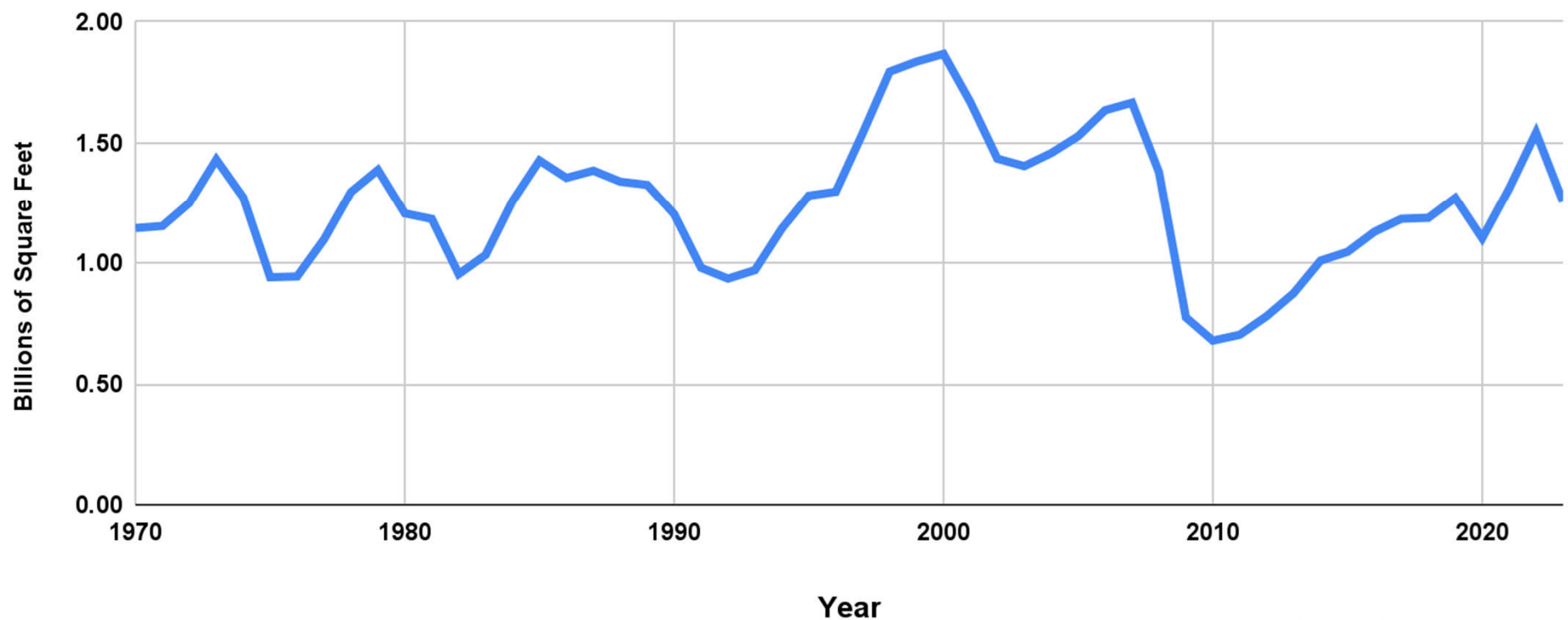
CONSTRUCTION COST INDEX BY PROJECT TYPE AND CPI

Avg +41%
(inflation impact
only 19%)

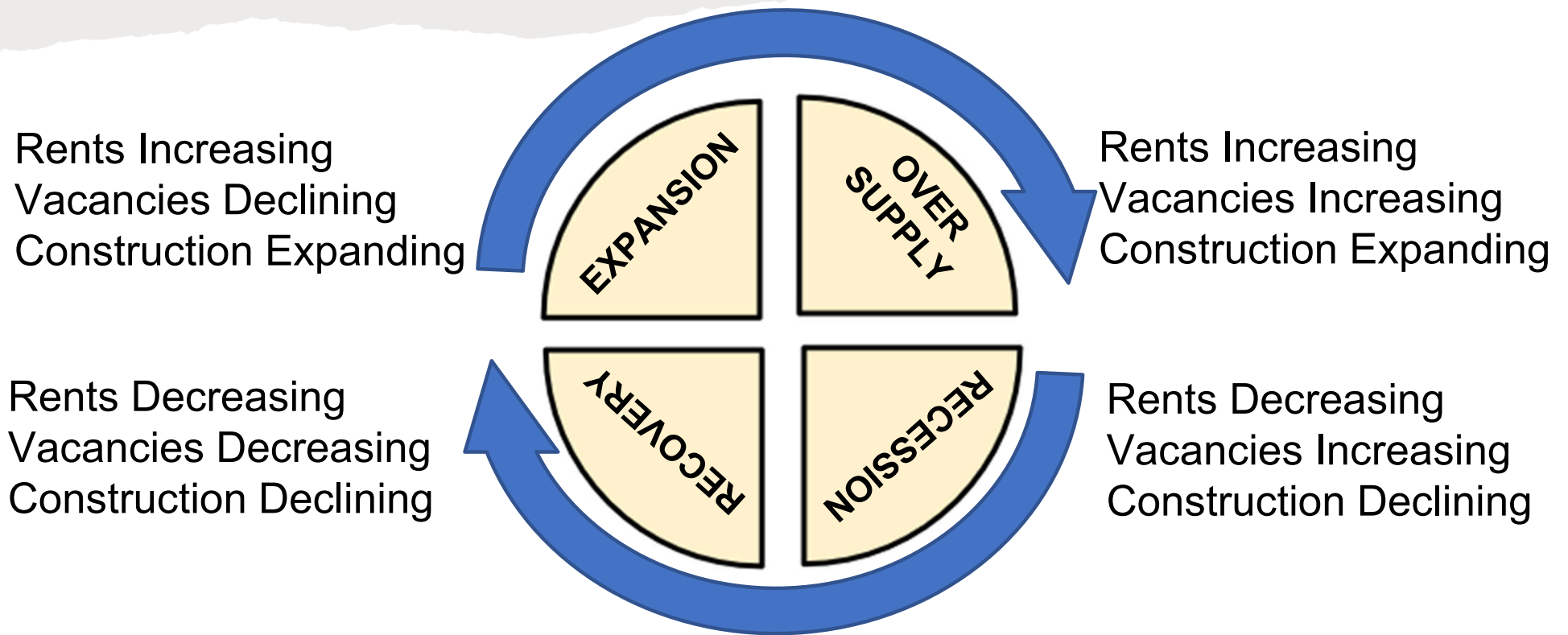


The Non-Residential Construction Market is Cyclical

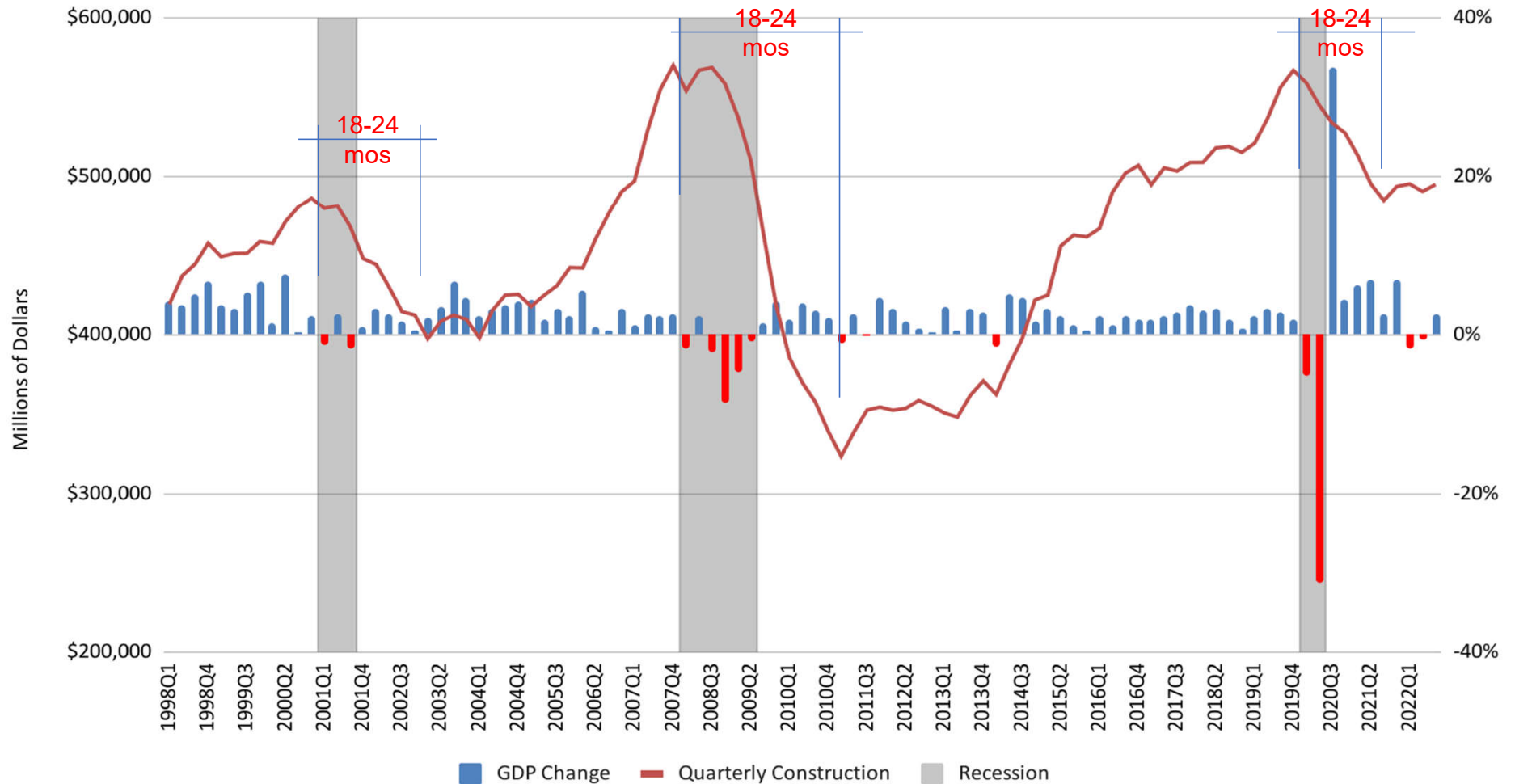
Non-Residential Building Construction



Why is it cyclical?



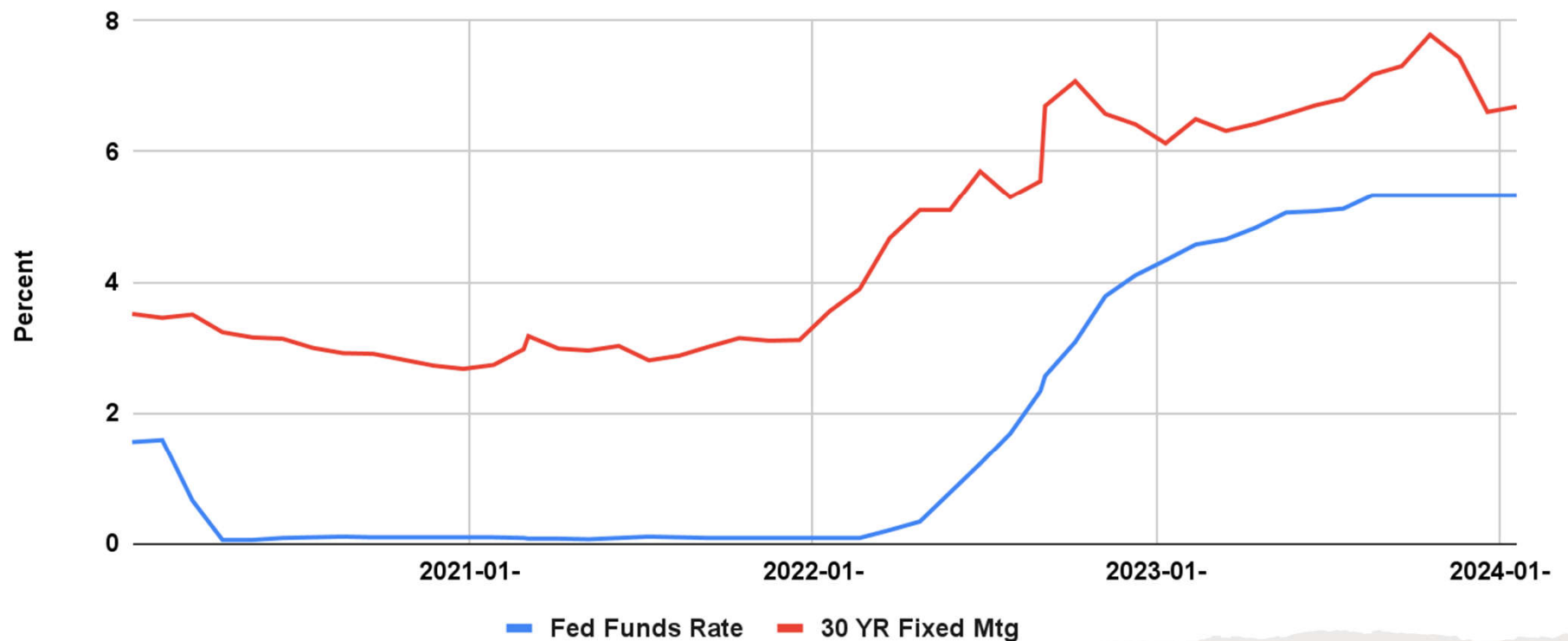
Construction Activity Lags the General Economy



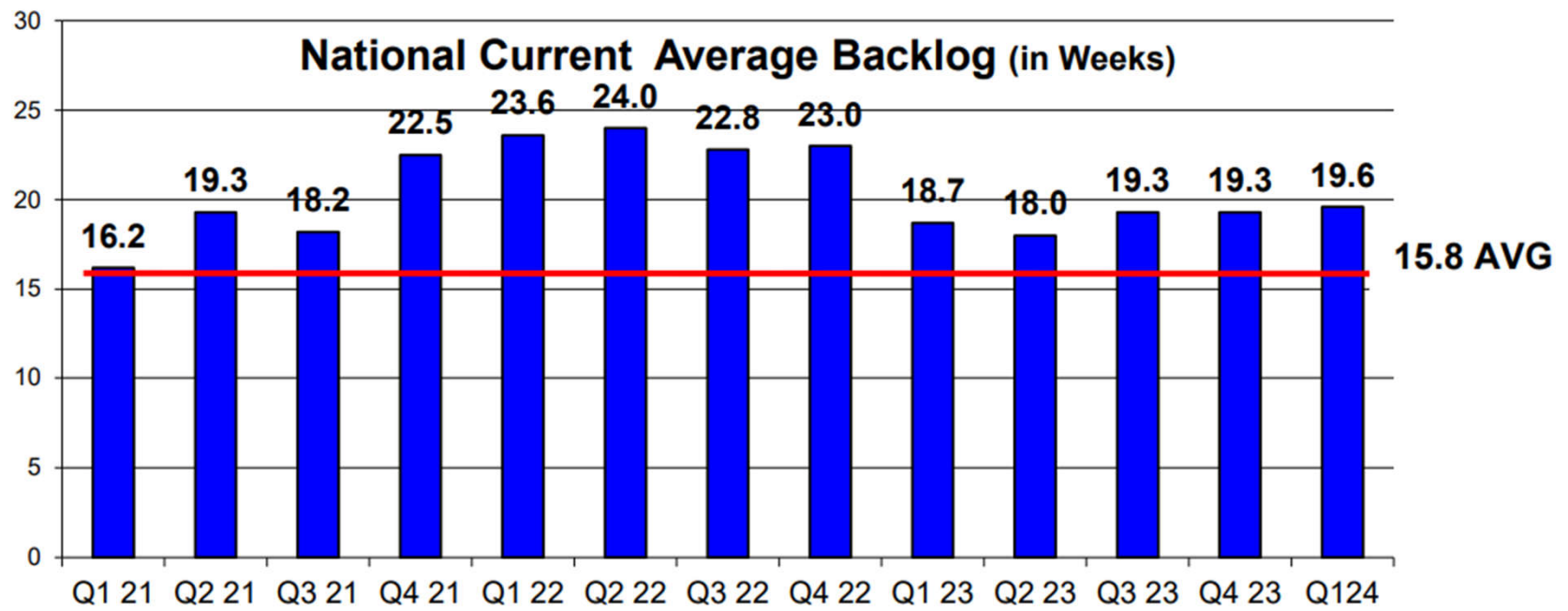
Money Costs More As Interest Rates Rise

Construction Loan Interest Rates:
+3% w/ 30% equity since 2020
\$10M project in 2020 → \$14M in 2024
+\$3 mill in equity
+\$400k interest

Fed Funds Rate and 30 YR Fixed Mtg



“Feeling” the Backlog



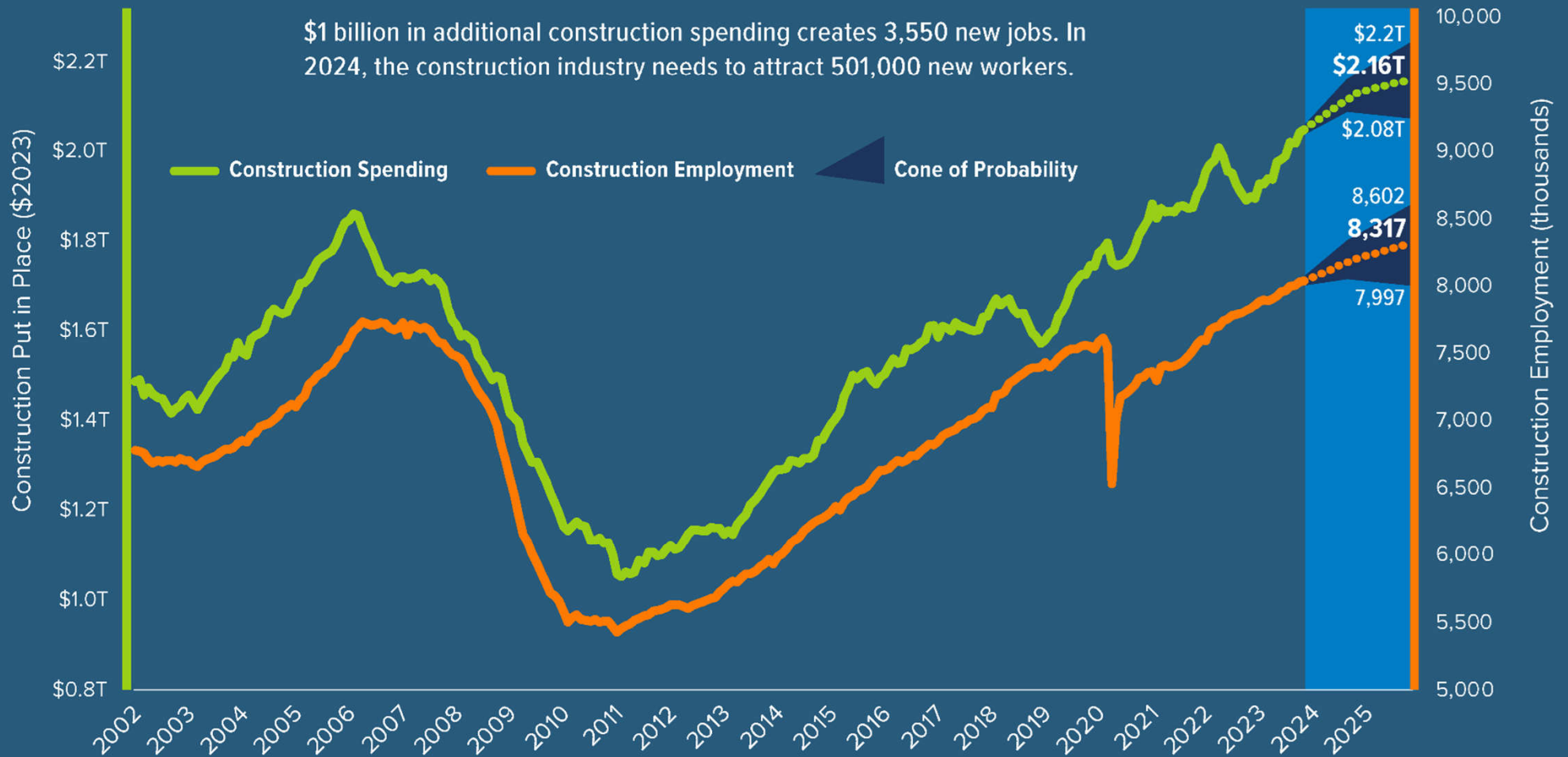
Questions We Must Answer to Help Predict the Future

1. What is happening with labor?
2. Have material costs stabilized?
3. What's happening in the general economy?



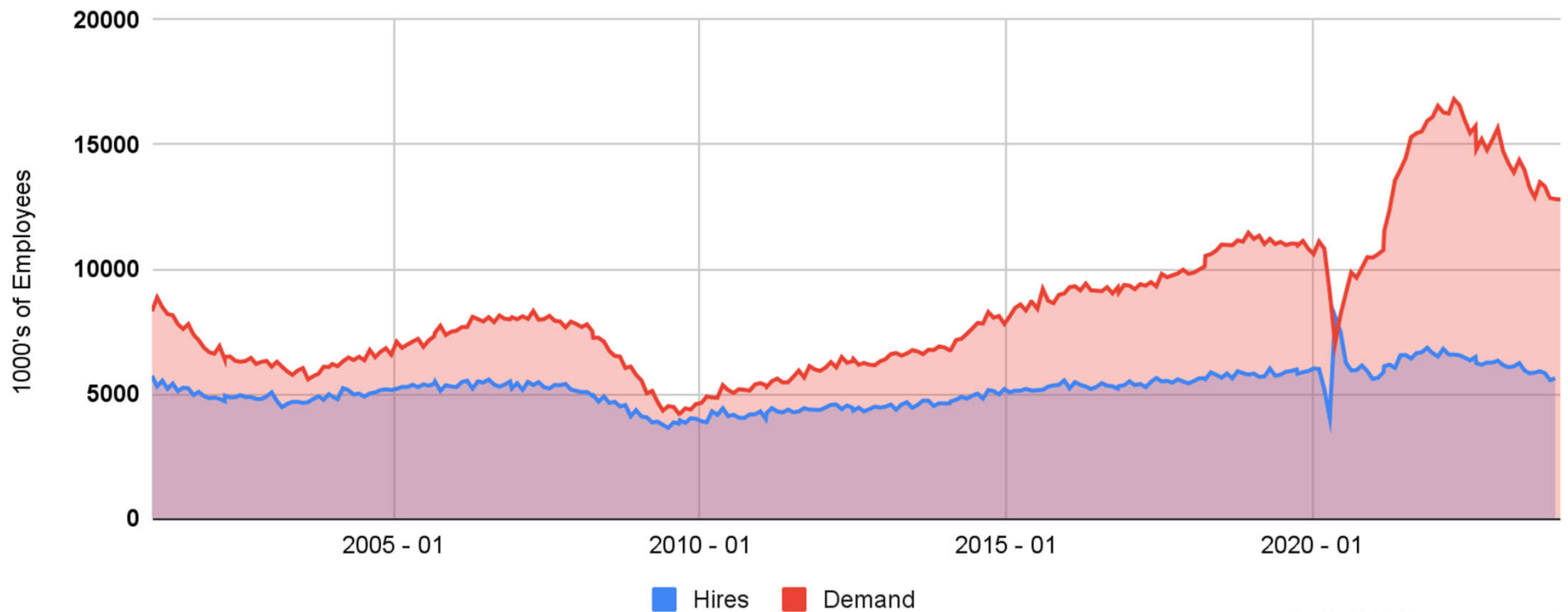
Construction Spending and Employment Forecast (High, Base and Low Scenarios)

\$1 billion in additional construction spending creates 3,550 new jobs. In 2024, the construction industry needs to attract 501,000 new workers.



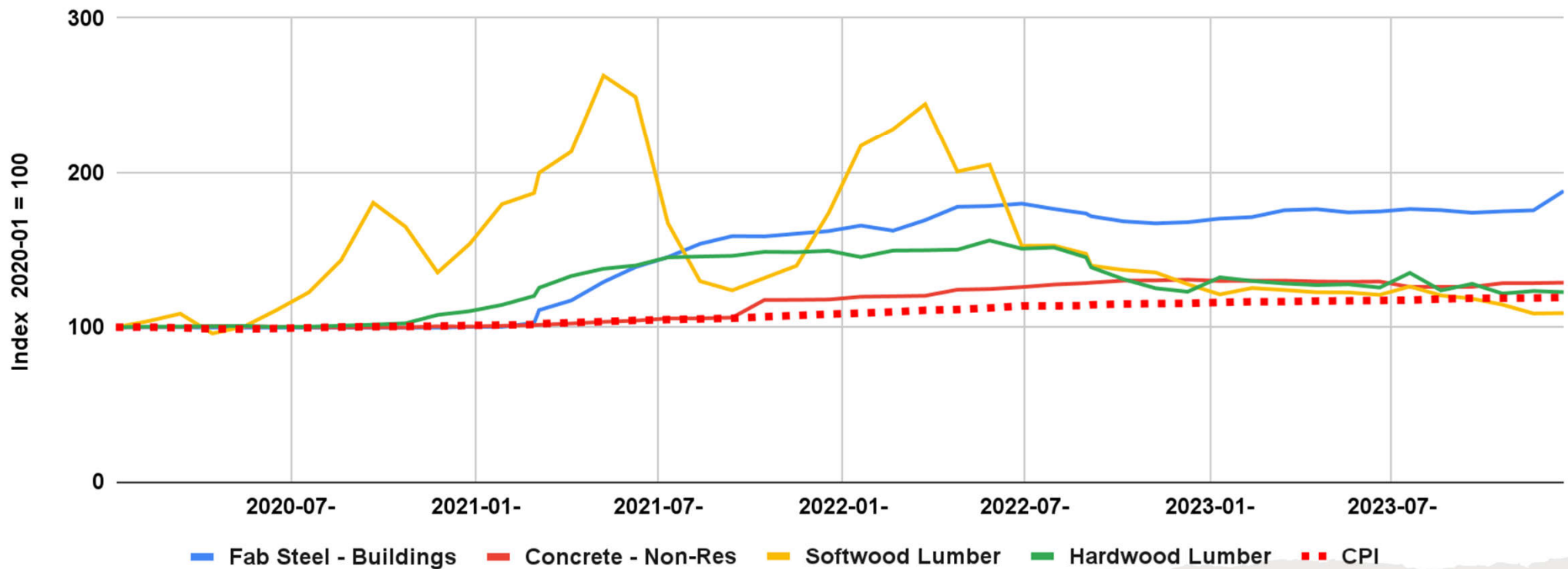
What About Labor?

Hires and Net Demand (Openings + Quits)



What About Material Costs?

Fabricated Structural Steel, Concrete, Wood





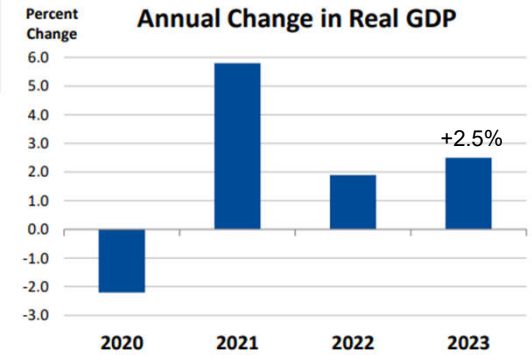
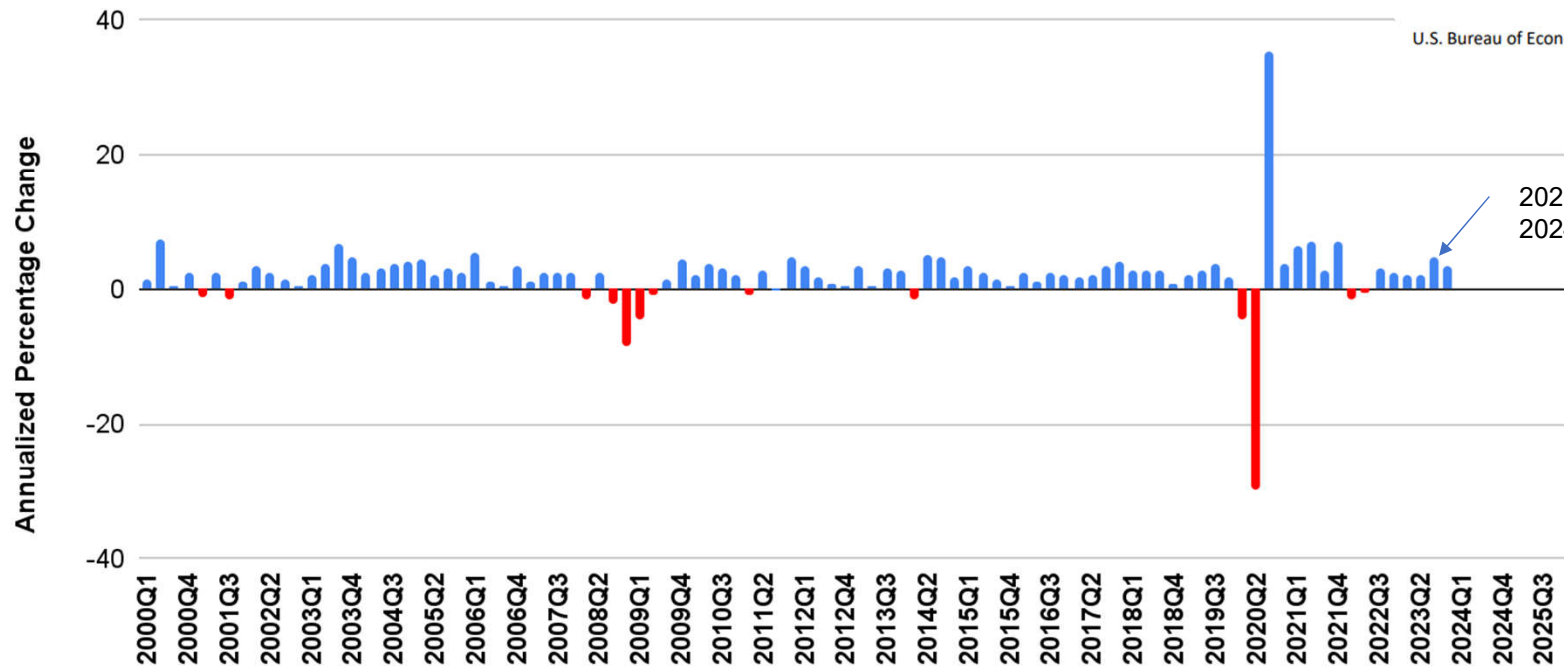
What's Happening in the General Economy?



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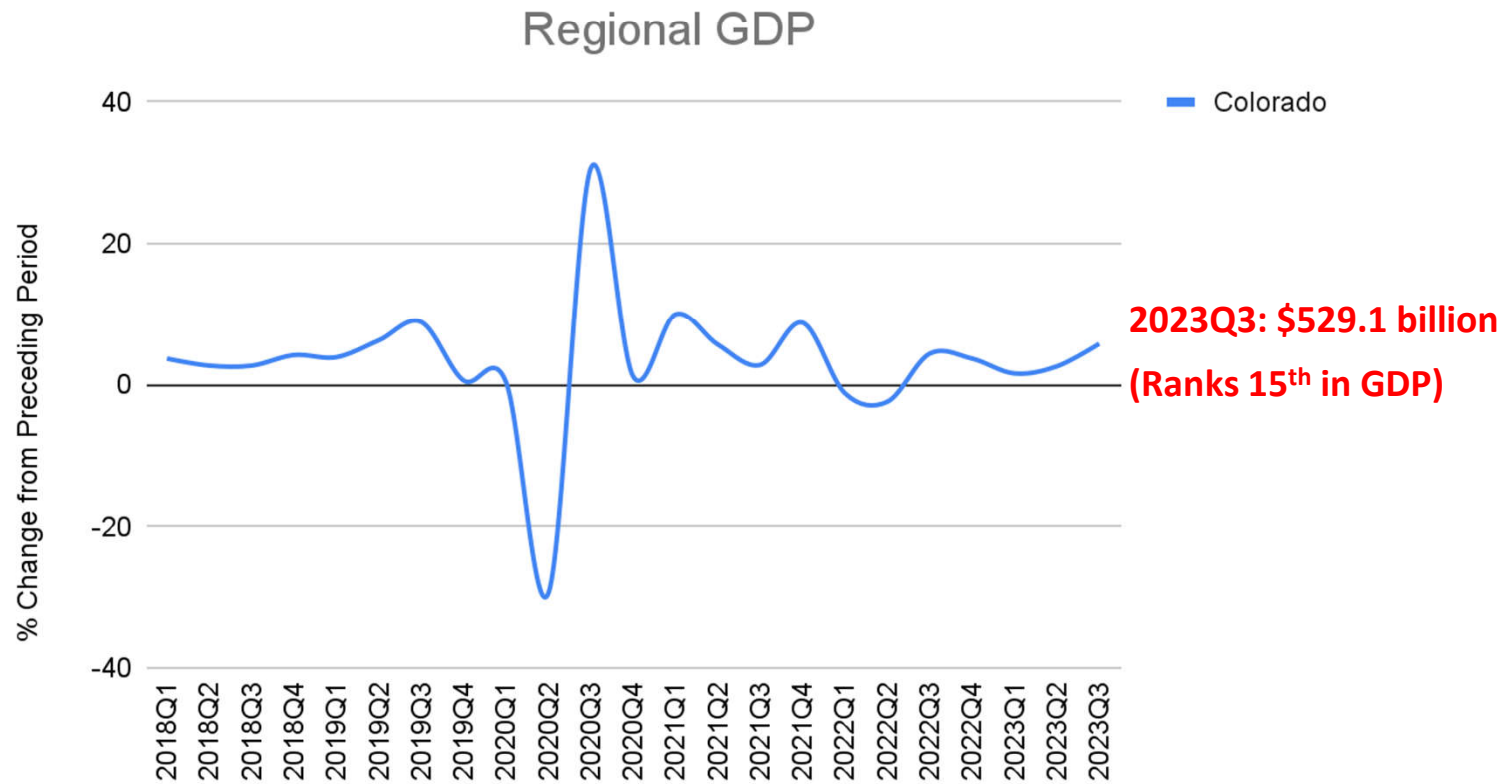
GDP Impacts

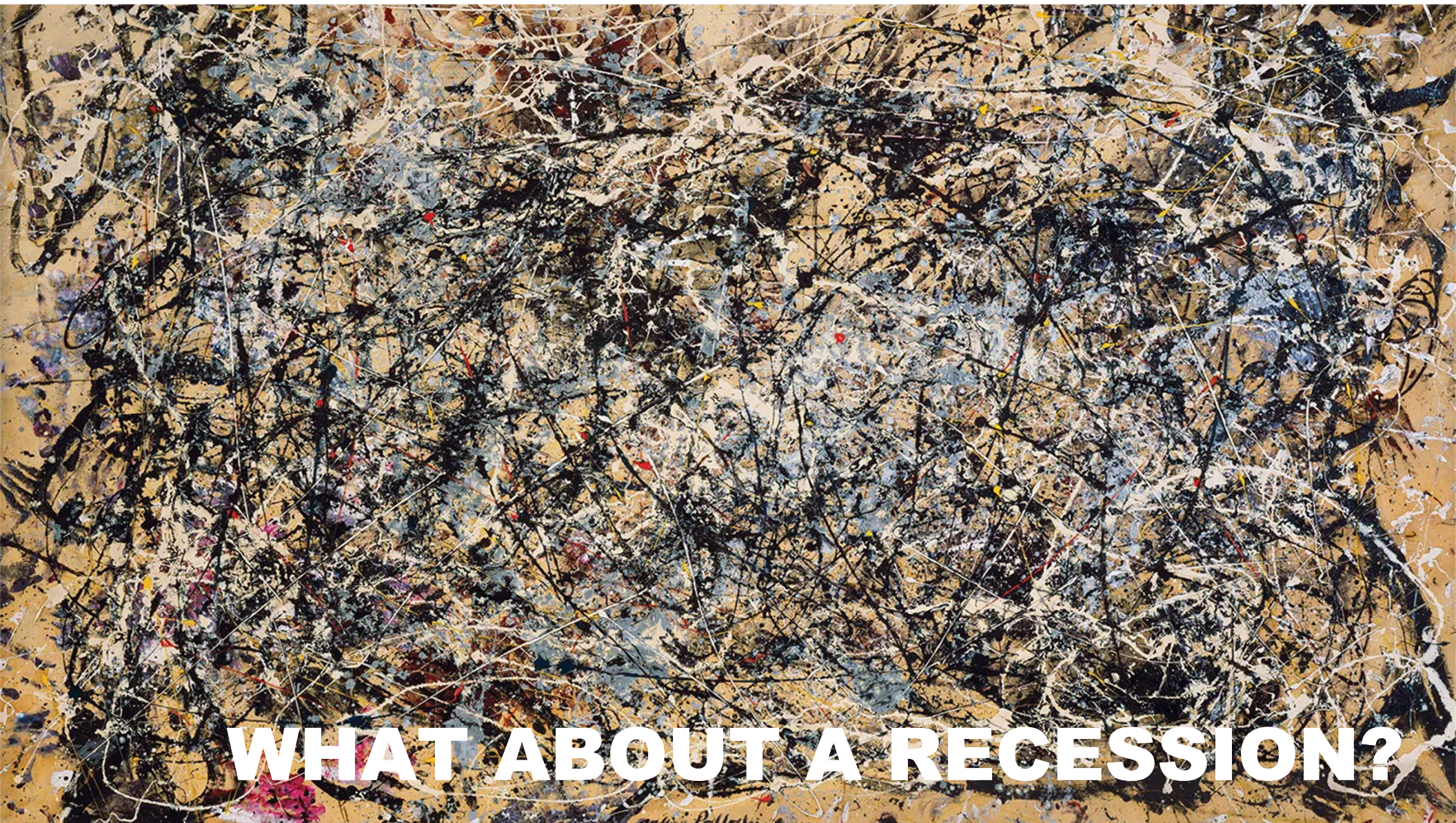
Annualized % Change in Gross Domestic Product (GDP)



U.S. Bureau of Economic Analysis

GDP of Colorado





WHAT ABOUT A RECESSION?

What about a recession?

No soft landing: The US economy is going to fall into recession in the middle of 2024, Citi's chief economist says

[Aruni Soni](#) Feb 15, 2024, 11:21 AM MST

Fifth Third chief economist says mild recession possible in 2024



By [WFTV.com News Staff](#) and [Christina Georgacopoulos](#)
February 20, 2024 at 12:41 pm EST



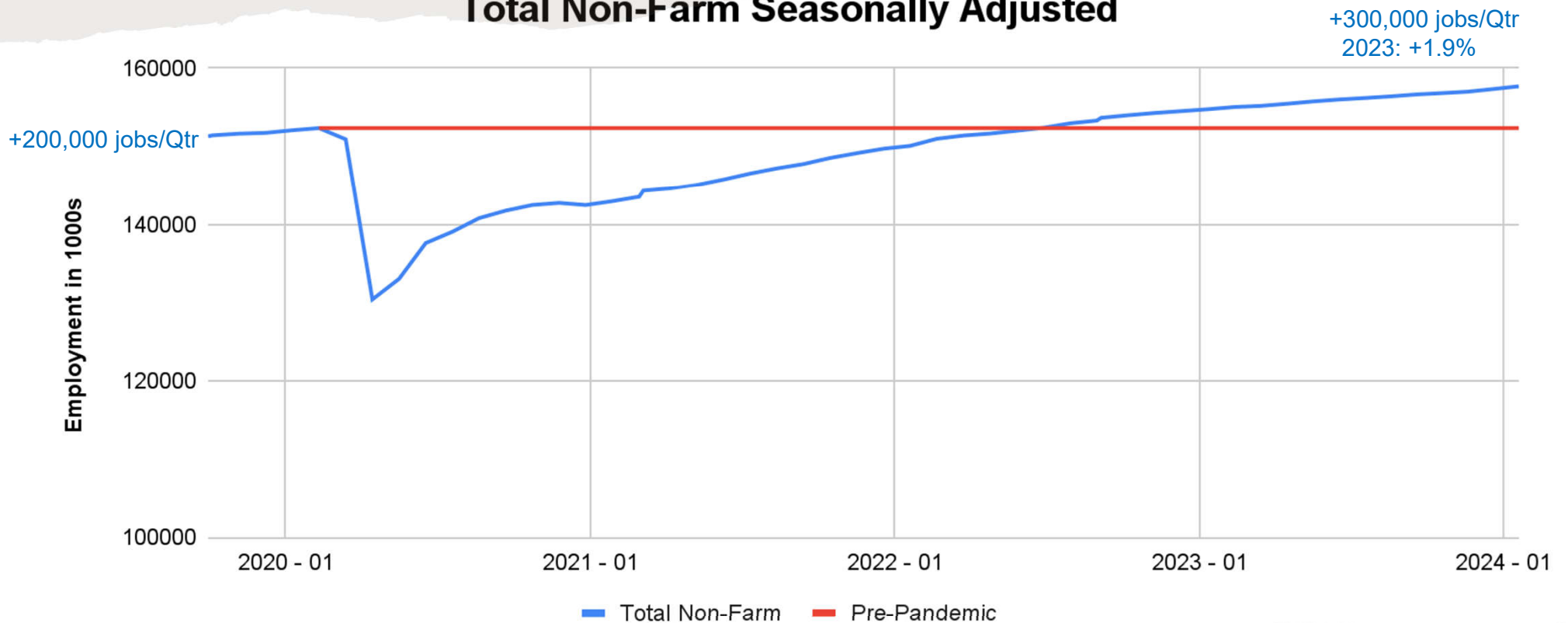
Leading Economic Indicators No Longer Forecasting a Recession

The change is a reflection of the U.S. economy proving stronger than experts have forecast.

By [Tim Smart](#) Feb. 20, 2024, at 10:36 a.m.

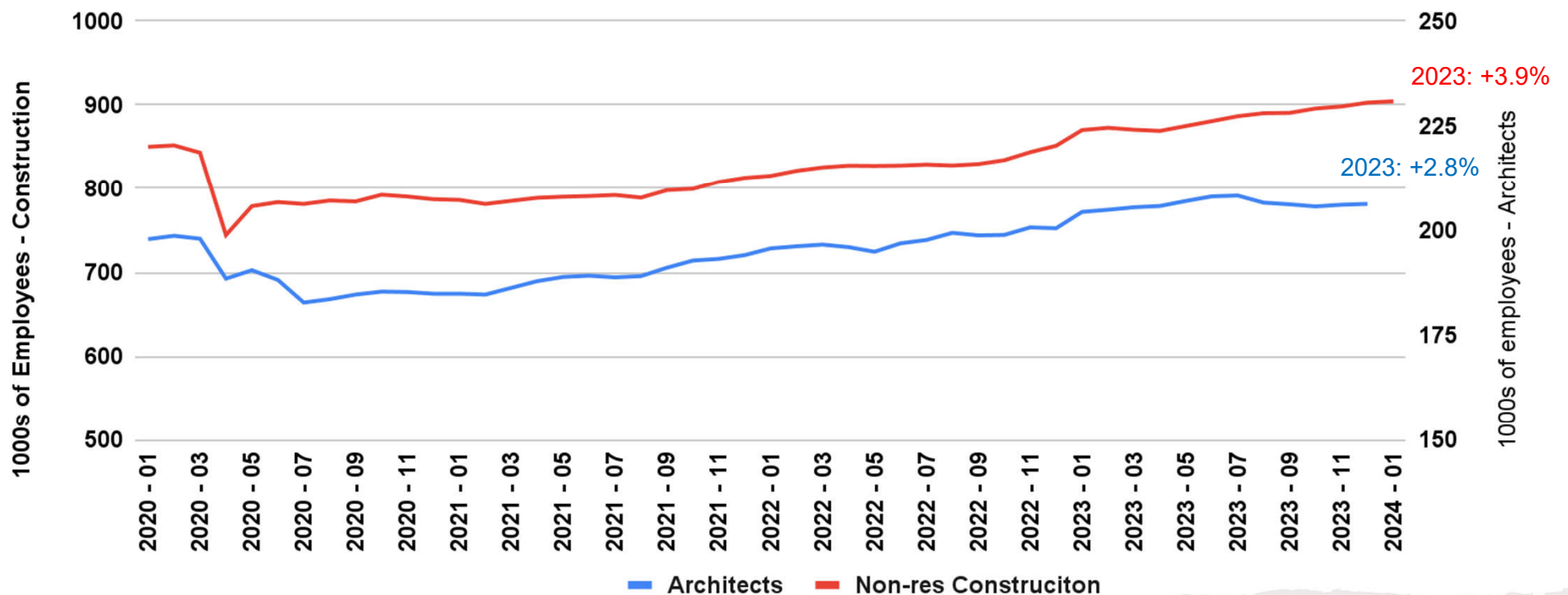
Employment

Total Non-Farm Seasonally Adjusted



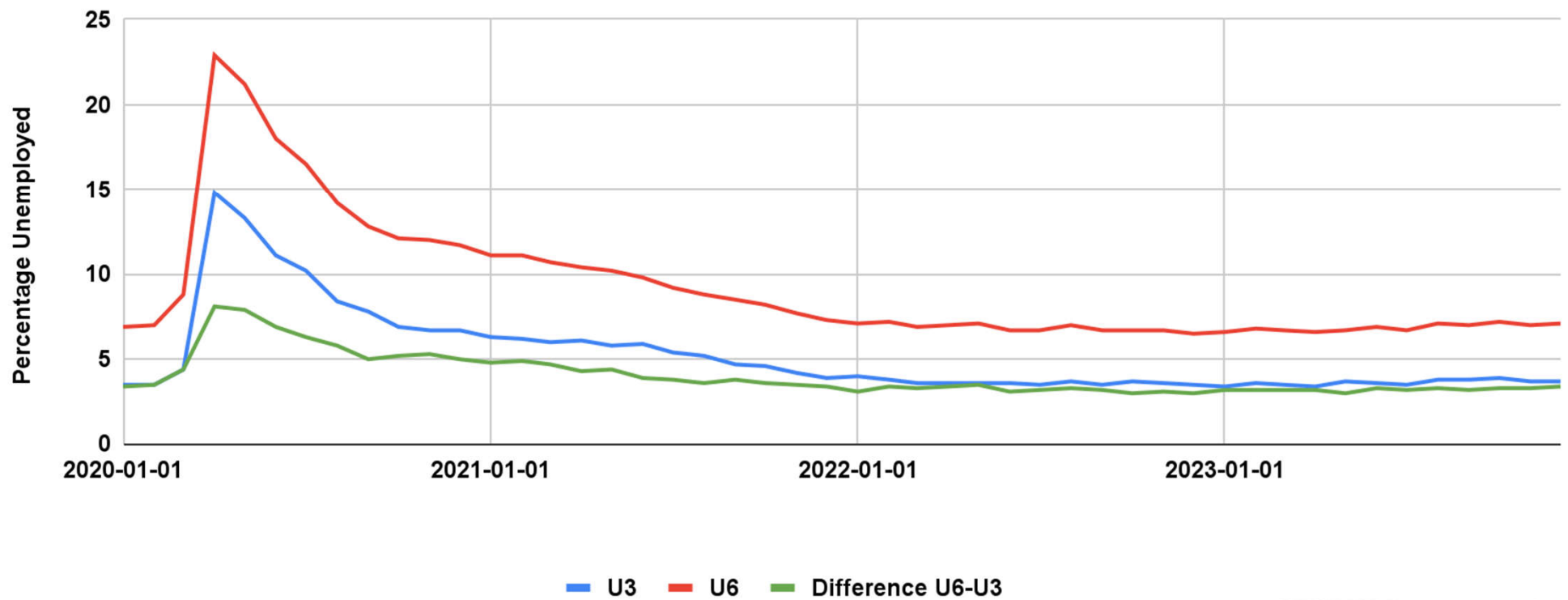
Construction Employment

Non-residential Construction and Architectural Employment

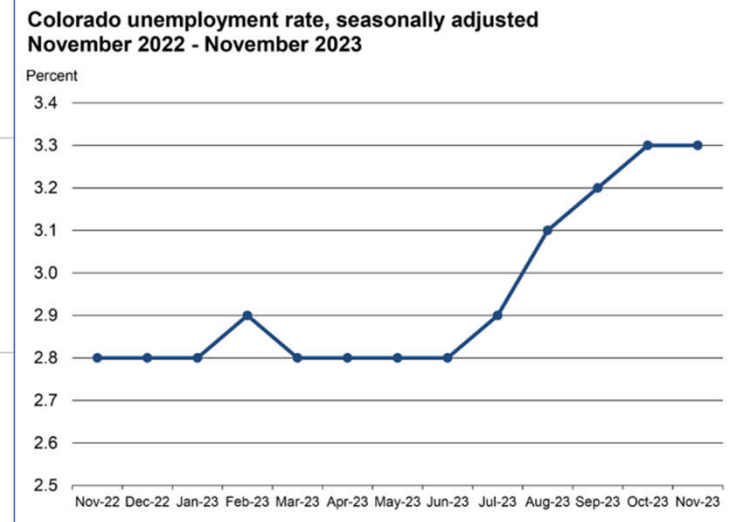
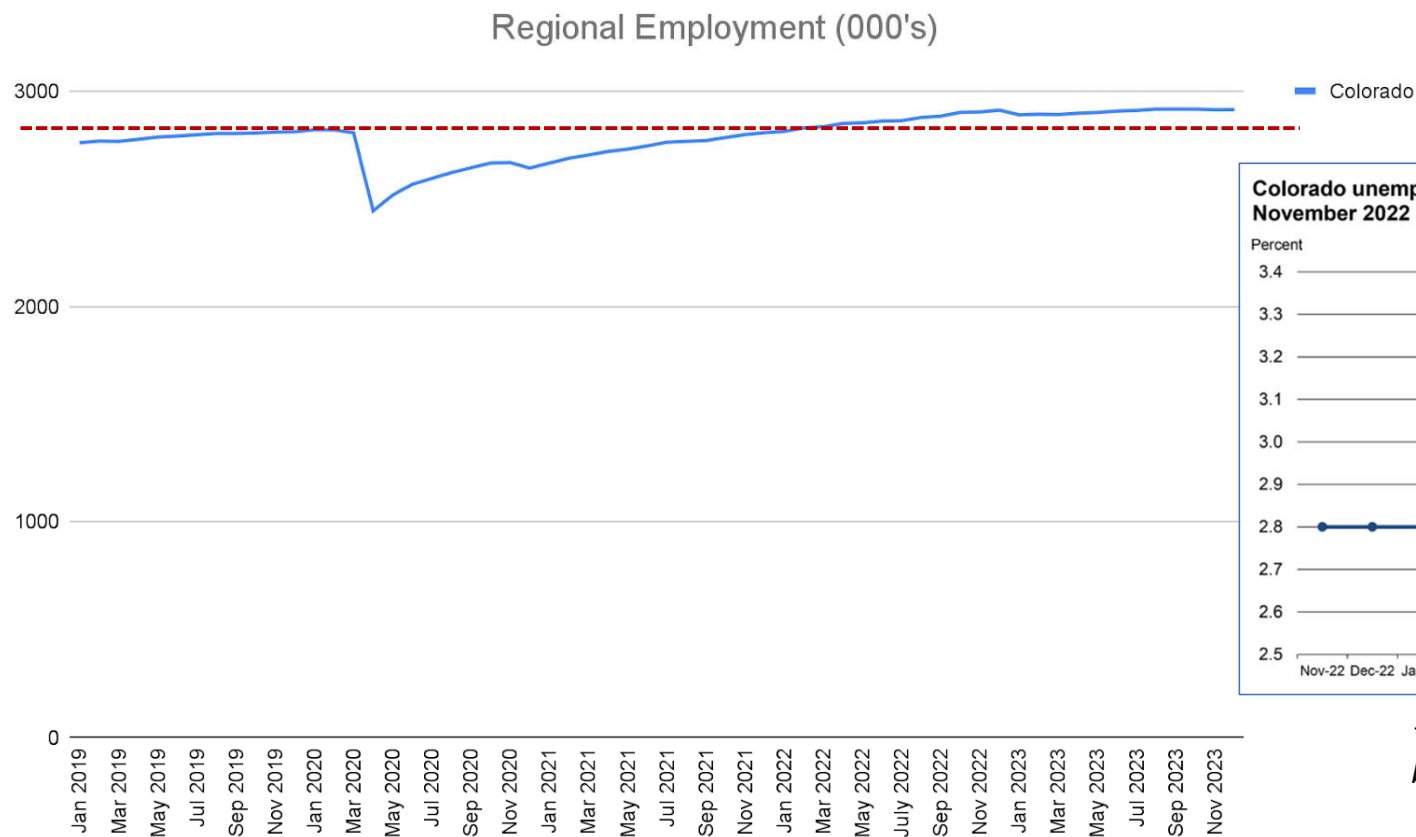


Unemployment

Unemployment Rates: U3, U6 and Difference U6-U3



CO Employment

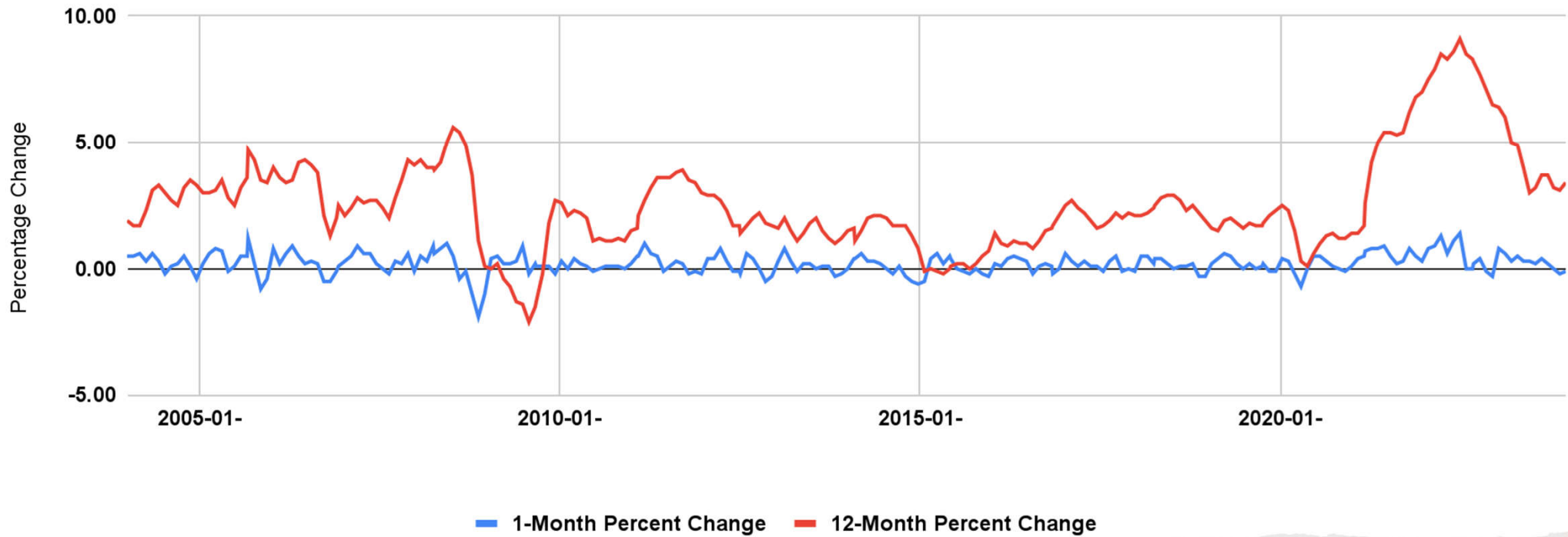


** The CO unemployment rate is below national average.*

Inflation

Inflation: 12 month and 1 month rates

2022: 9.59%
2023: 4.06%
2024: 2.8%
2025: 1.8%
LTA: 3.28%



Hot off the Presses: February 21, 2024

Fed's Bowman Says That Time for Rate Cut Is 'Certainly Not Now'

Fed Minutes Show Embrace of Inflation Progress but No Hurry to Cut Rates

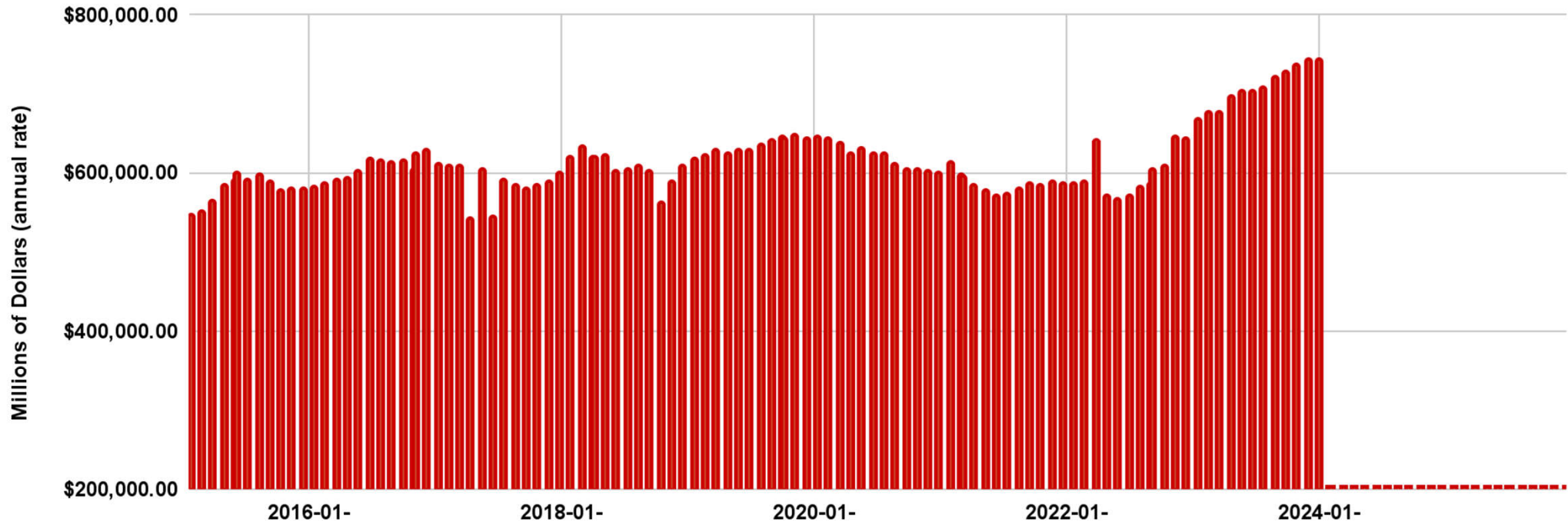
Minutes from the Federal Reserve's Jan. 30-31 meeting showed policymakers thought that risks of an inflation pickup had "diminished."

Fed Minutes Show Most Officials Flagged Risks of Cutting Rates Too Quickly

Fed to cut US rates in June, risks skewed towards later move: Reuters poll

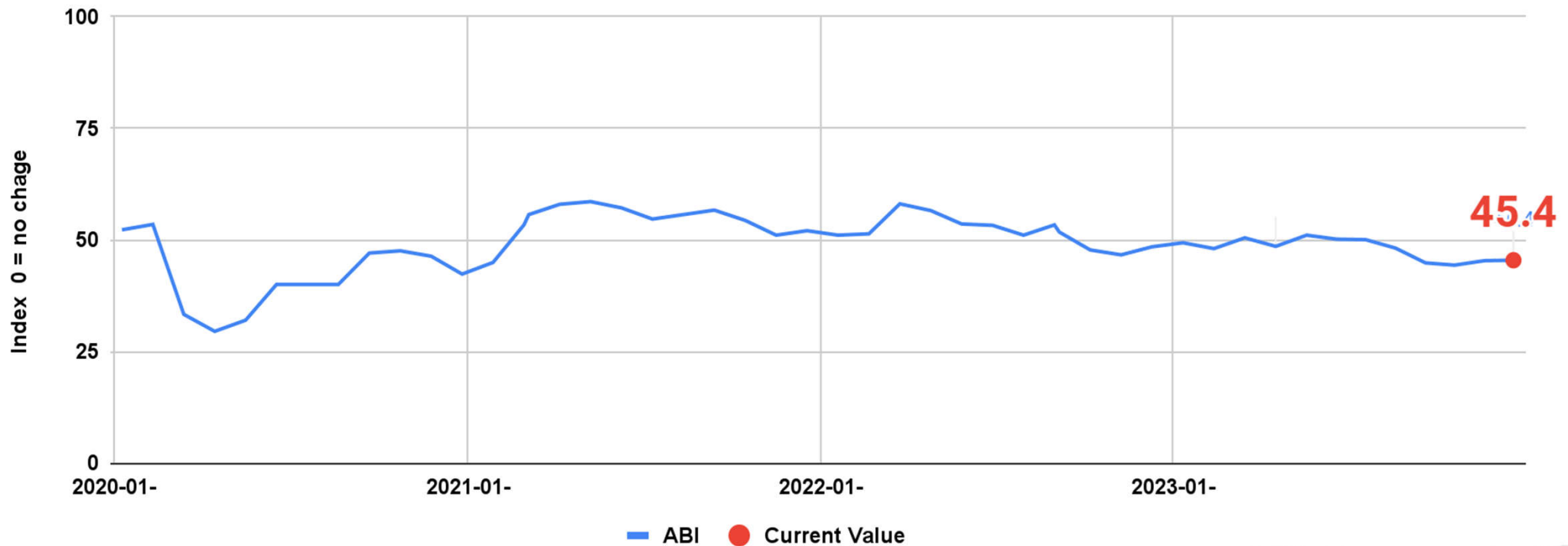
Construction Spending

Total Non-Residential Building Construction - 2017 Dollars Put In Place



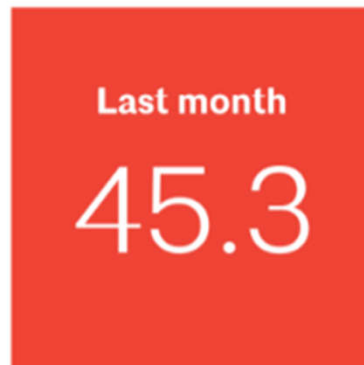
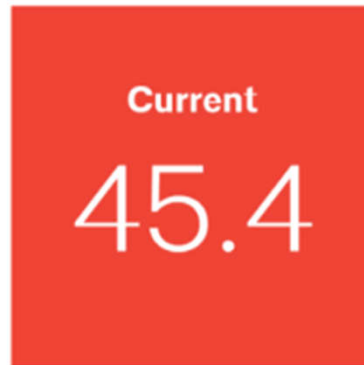
Architectural Billing Index

ARCHITECTS BILLING INDEX

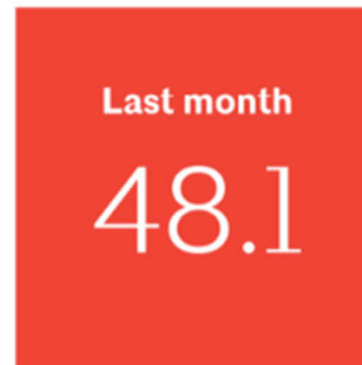
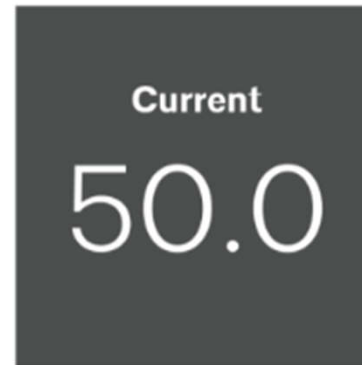


Architectural Billings (January 2024)

Billings



Design Contracts



Above 50



Below 50



50

** The lengthiest period of declining billings since 2010-2011*

Dodge Momentum Index

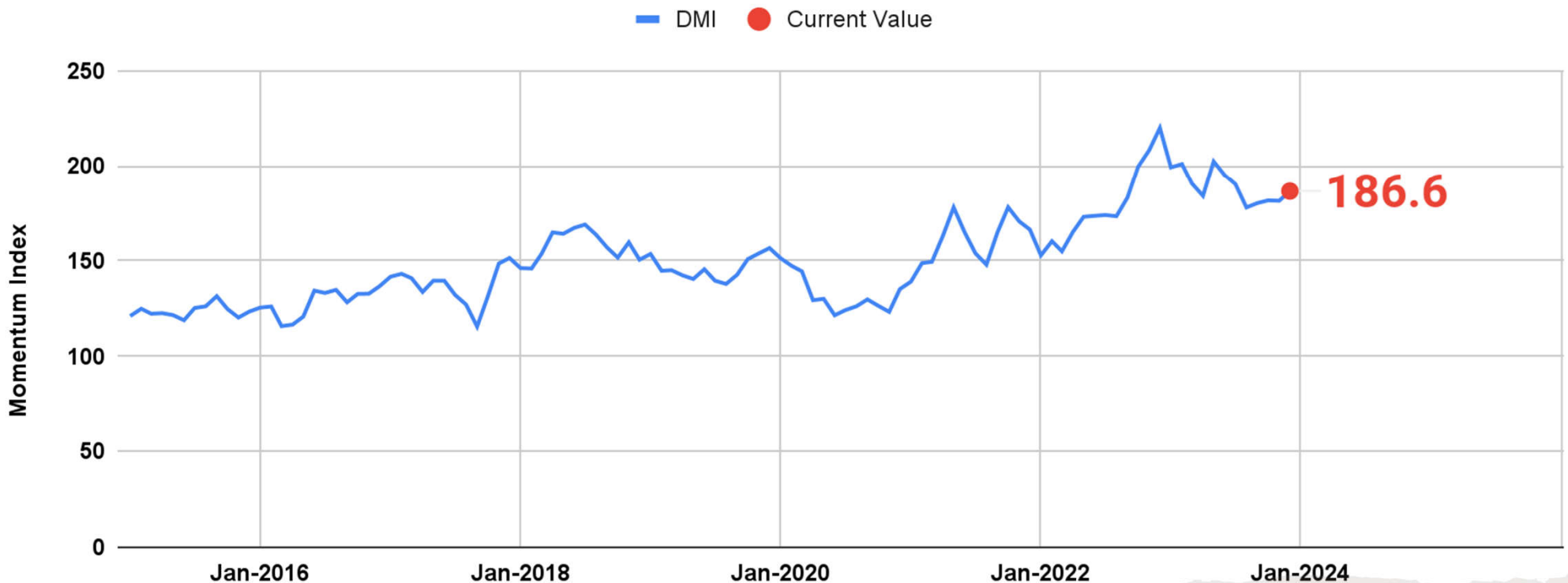
News Release: NREL Selects JE Dunn Construction and SmithGroup as Design-Build Contractor for Newest Laboratory

New Facility Will Accelerate Laboratory-Scale Innovations for Scale-Up and Industry Adoption

Jan. 16, 2024 | Contact [media relations](#)

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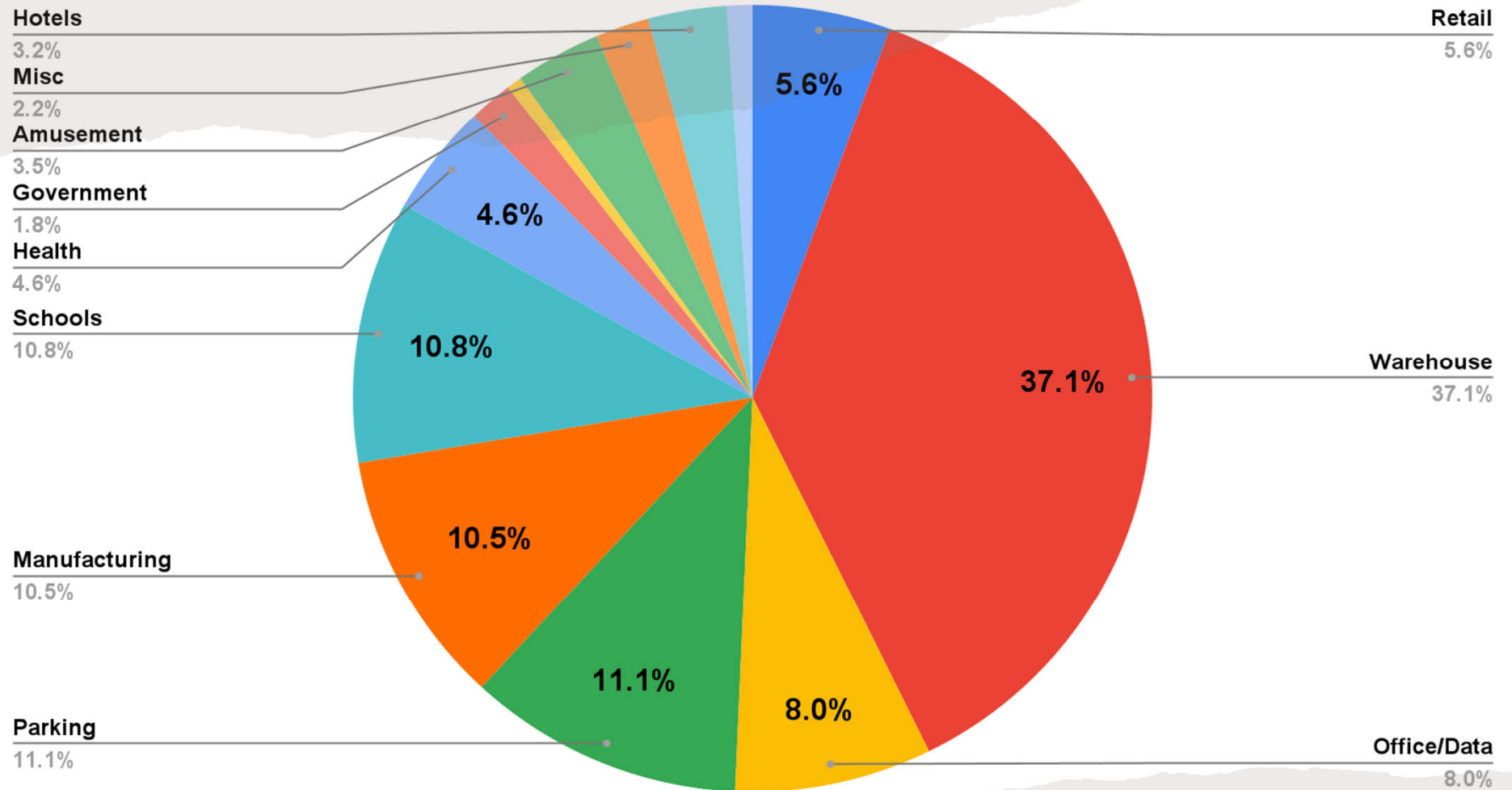
Dodge Momentum Index



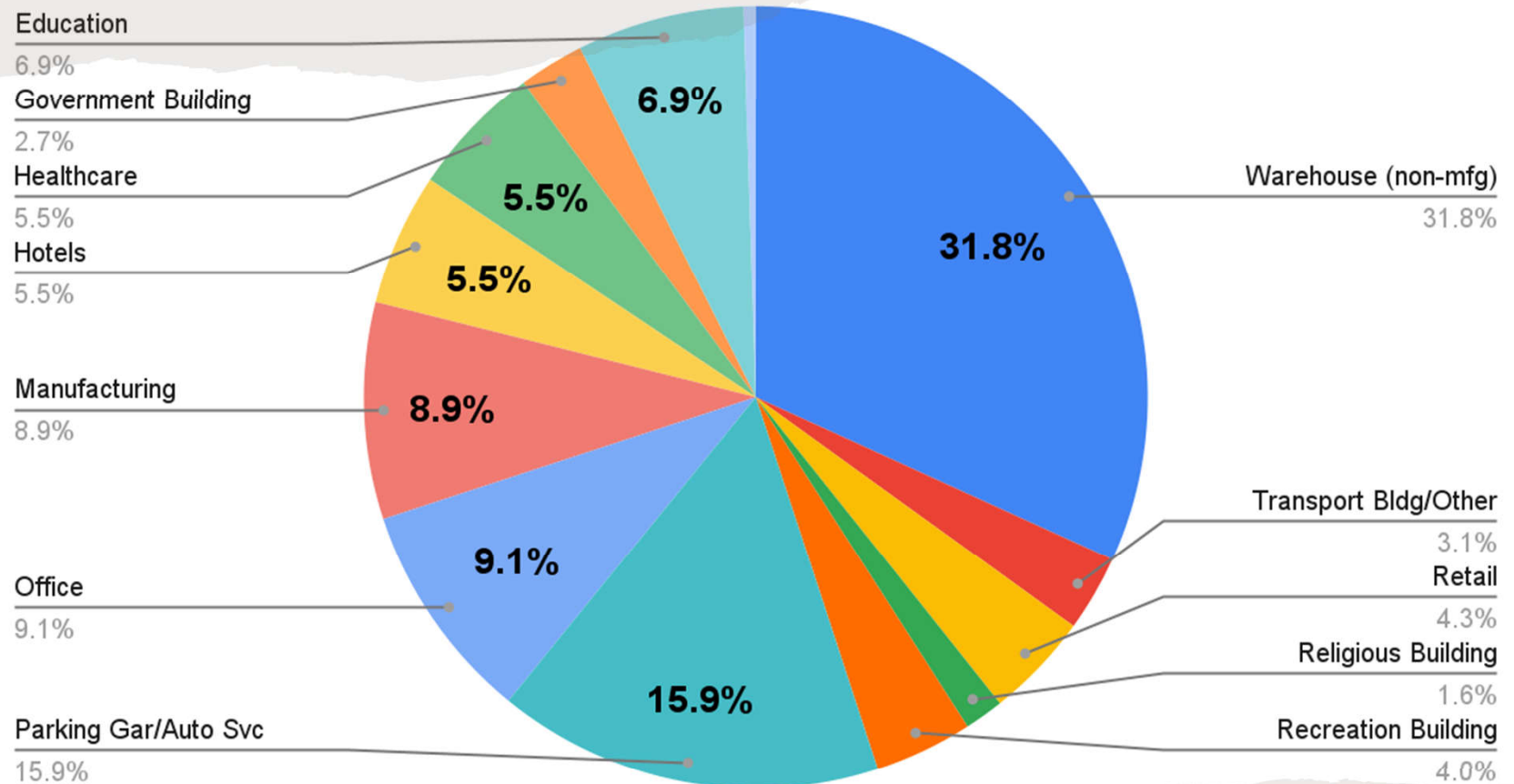
Current Conclusions

1. A recession, or at least minimal economic growth, is probable.
2. Non-residential construction activity will slow.
3. The current backlog level is more a function of the supply chain and labor than an increase in demand.
4. The lag between the general economy and construction activity will be longer because of the current backlog level.
5. There has been an increase in projects being put on hold or cancelled that may be ending.

CURRENT MARKET BREAKDOWN - SQUARE FOOTAGE



CO Breakdown (SF)



What is in the Crystal Ball?





Market Forecast



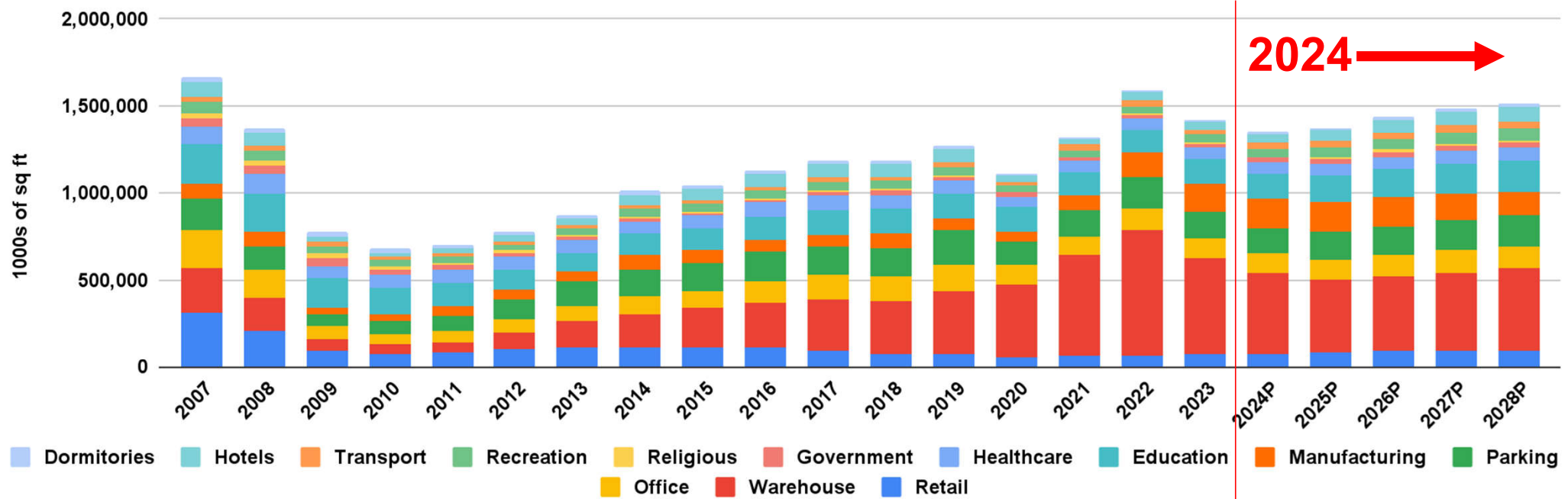
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What is in the Crystal Ball?

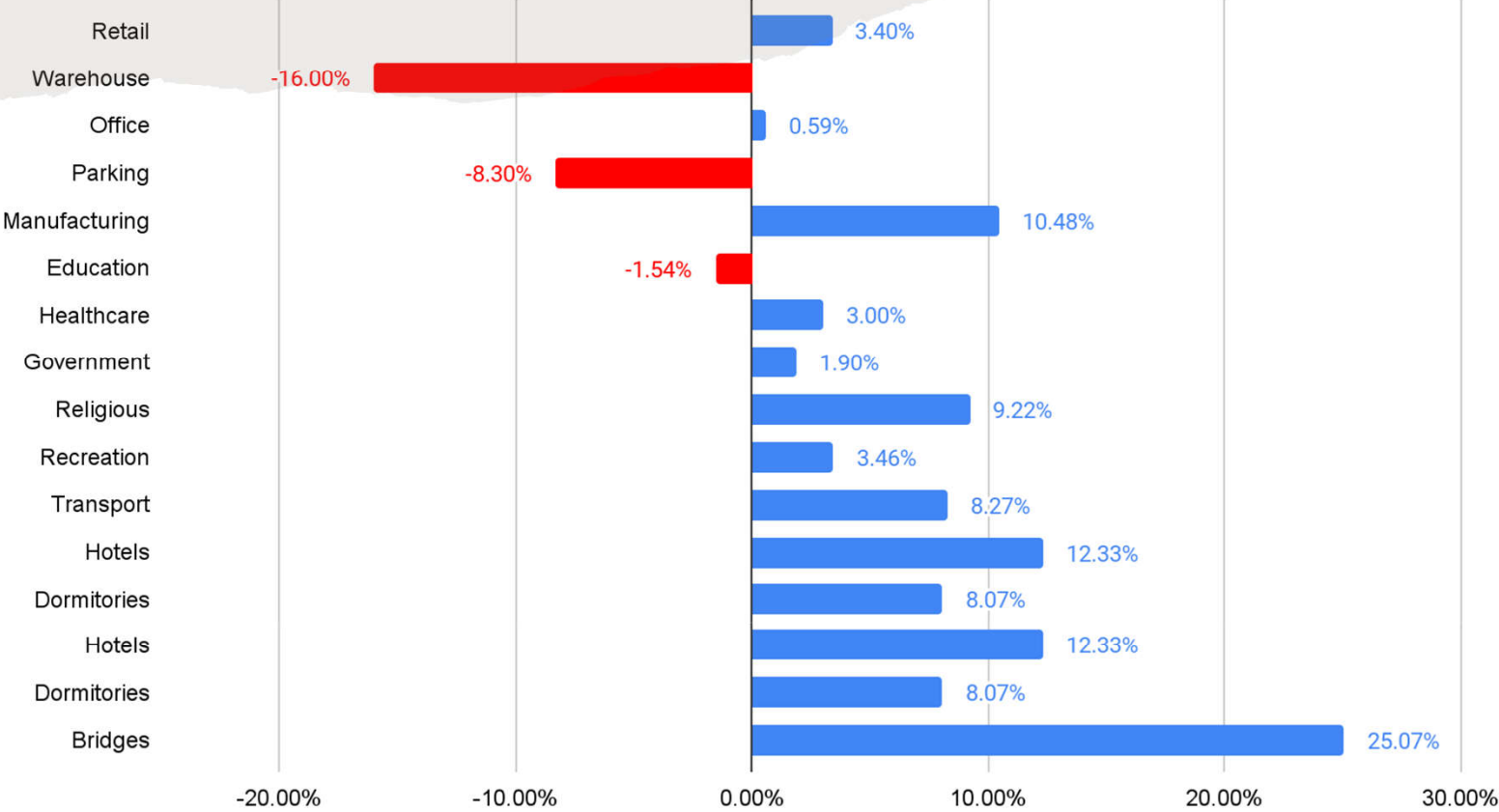
December 2023		% Change from Prior	
		2024	2025
Nonresidential Total	Optimistic	10.60%	7.40%
	Consensus	4.00%	1.20%
	Pessimistic	-2.40%	-4.20%
Commercial	Optimistic	5.70%	5.60%
	Consensus	-0.70%	0.20%
	Pessimistic	-5.30%	-3.40%
Industrial	Optimistic	31.00%	12.50%
	Consensus	8.90%	-0.80%
	Pessimistic	-7.70%	15.10%
Institutional	Optimistic	9.10%	6.40%
	Consensus	5.10%	3.10%
	Pessimistic	-2.10%	-2.10%

Sector Breakdown

Dodge Non-Residential Start Forecast

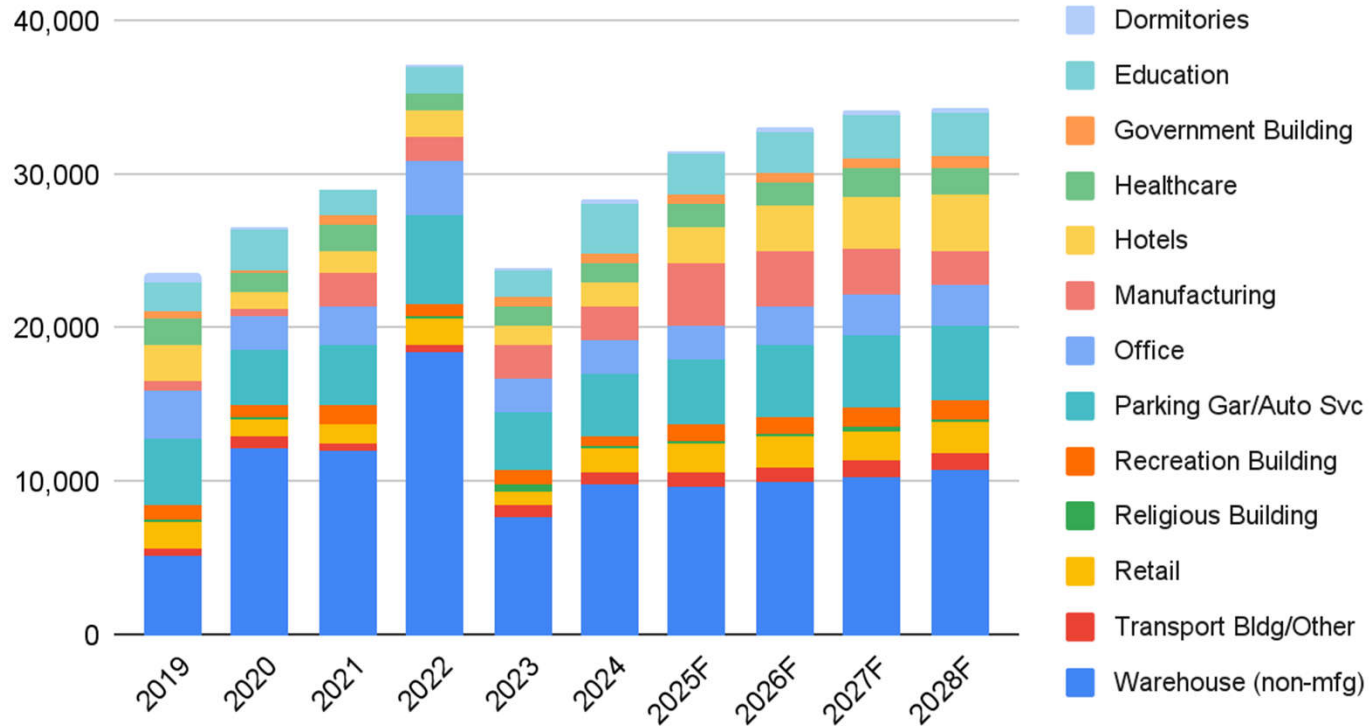


Construction Put In Place (SF): 2024F vs. 2023



CO Sector Breakdown

Regional Non-Residential Construction Starts (000's SF)



What Does the Future Hold?

1. Economic recovery should continue but risk of recession remains.
2. Multifamily, warehouse, retail, office, lodging: slowdown likely due to rising rates.
3. Datacenter and manufacturing construction should remain hot.
4. Labor availability has resumed being the #1 challenge for many contractors.

What Does the Future Hold?

Megaprojects

- Electric vehicles or battery plants, data centers and chip or semiconductor plants
- A wave of planned vehicle battery plants will increase in North America will support the creation of roughly 10-13 million all-electric vehicles per year, according to the U.S. Department of Energy.
- The change in work habits during the pandemic also fueled the need for more data centers. The U.S. had 2,701 data centers in 2022, the largest in the world, followed by Germany.
- Chip plants are largest in size (500-acres-plus), with recent projects costing \$20 billion or more.

What Does the Future Hold?

Data For Better Decision Making

- There could be a boost to construction associated with manufacturing, transportation infrastructure, and clean energy infrastructure, as funds from three key pieces of legislation passed in 2021 and 2022—
 - the Infrastructure Investment and Jobs Act (IIJA),
 - the Inflation Reduction Act (IRA), and
 - the Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act—are expected to flow into the industry.

Onward and Adapt!

- ✓ Changing demands
- ✓ Environmental concerns
- ✓ Growth markets
- ✓ Embrace innovation
- ✓ New ways of doing things





Thank You | Questions?

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