Q3 2022

Market Conditions Report

DPR CONSTRUCTION

Contents

On the cover: A DPR project in Dallas, TX

INDUSTRY INSIGHTS

Photo courtesy of Katee Callicutt.

The Fed and Interest Rates

Inflation in the United States has been extremely high in just about every category.

The Federal Reserve has steadily increased interest rates since 2021 in an attempt to curb inflation. While recently published statements state that core inflation has moderated this past month, a 0.1% reduction cannot temper the increases over the past year.

The role of the Fed is complex as their primary goals are to maximize employment and drive stabilization of prices. They do this by lowering and raising these interest rates. The direct impacts are simply:

When the rates are low, your dollars go further, spending goes up, businesses tend to invest and expand and growth in the market occurs (typically).

When rates are high, the economy cools off and spending becomes more conservative due the high interest on your dollars.

This also has a direct impact on employment which need to be addressed:

When the interest rates are low, businesses tend to hire more readily. When the supply of jobs is high from businesses and the demand for services and goods is high, this will drive costs higher and along with that, wages for workers.

When interest rates are high, the economy will typically react by getting tighter on spending and expanding, that includes filling new jobs and therefore unemployment might see an uptick.

Employment related issues, specifically in construction, have just been exacerbated by the current high rates.

So What?

So how does this actually impact construction? Are we seeing a direct correspondence of the Fed interest rate hikes as it relates to building projects?

The impacts we are experiencing are translated through the entire supply chain in some form, but it's difficult to directly connect the two data points.

Some questions to consider:

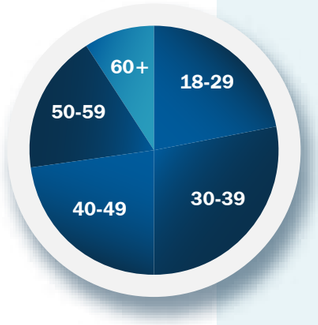
- What if a building is being funded solely by a private company? They aren't borrowing money from the bank, does an inflated rate affect their dollars?
- If materials for the project need to be procured by a trade partner and housed in their warehouse, how did they pay for that material? Did they have to pay an inflated rate on borrowed dollars? Possibly.
- If the rates are high and funds are tight for that trade partner did they have to make staffing cuts? Will reduced staff lead lower production rates on site? Possibly.

Impact: Ensuring People Power on Projects

According to the Associated Builders and Contractors (ABC) / FMI 2022 Workforce Development survey released in May, the amount of investment that General Contractors and Trade Contractors are making in their own people is exceeding pre-pandemic levels. In 2021, of those contractors polled, over $1.6B spent on leadership, safety and trade skill development training. That's $100M over 2019 spending and nearly $300M over the 2020 spend. Getting people on board is part of the battle, but ensuring that those workers are equipped to tackle their job has been paramount.

61% of the 14,646 respondent companies indicated that there is a "very severe" or "severe" skilled labor shortage. It's not a myth, it is a real issue.

In construction, positions are needed across the board, both at a craft and skilled trades level through management positions. 45% of the responses indicated that the biggest factor of the shortage is the exodus of the 'baby boomers.' According to the survey responses, 22% of the workforce is between the ages of 18-29, with the largest percentage (28%) group landing between 30-39, 23% between 40-49, 18% between 50-59 and only 9% being 60+.



As mentioned in past Market Conditions reports, construction has proven to be an essential business and offers an incredible amount of opportunities. Combine those factors with the continual wage growth over time, and **we can influence the next generation to make a lifetime career in construction.**

Inflation

To get a complete picture, it is important to view indices over time. 'Moderating' or 'leveling off' at a micro or monthly level can be deceiving. Though it might be accurate to say inflation is going down, we are still currently WAY above a perceived normal.

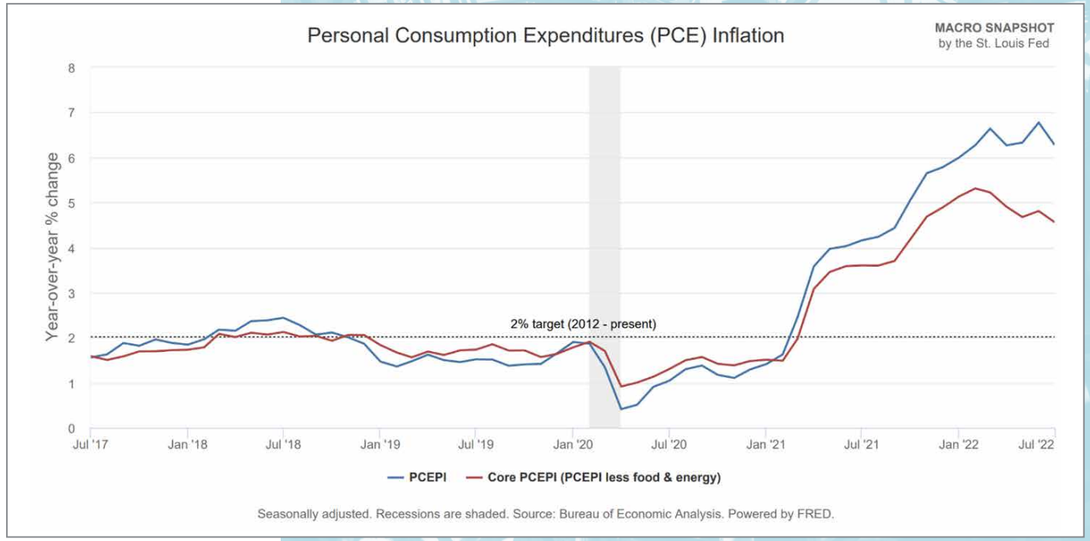
With inflation above 8%, the rate is 4x the expected 2-3% projected by the Fed. It will take a long time to inch closer to some of the 'back in the day' numbers. Every index indicates an escalated state when you look at the last year.

Each of the indices referenced looks at the forecast differently. But what is NOT different is the slope of the curve since July of 2019. **Let's look at what these three inflation indices are using to factor their rates for inflation.**

The Personal Consumption Expenditures Price Index (PCE) is a measure of the prices that people living in the United States pay for goods and services. This index is known for capturing inflation across a wide range of consumer expenses and reflecting changes in consumer behavior. This index considers personal and disposable income as well to attempt to capture increased compensation that leads to more spending in the market.

> **SO WHAT?** Prices inflated at a typical targeted rate of 2% in the last decade. This chart tells us that the consumer's costs have **escalated at a rate three to four times** the targeted rate. This is one of the Fed's primary ways of setting monetary policy. It is aggregated through survey data from businesses indicating what they are spending on goods, the census bureau, and other agency reports.

The Consumer Price Index (CPI) is based upon a 'basket of goods' and services methodology. It is based on the prices of food, clothing, shelter, fuel, service fees and sales taxes. Those get aggregated and put in a blender and the index reflects monthly percent changes. The fact that it considers oil and food costs makes this index more volatile. This index is focused on the consumer, hence the name.



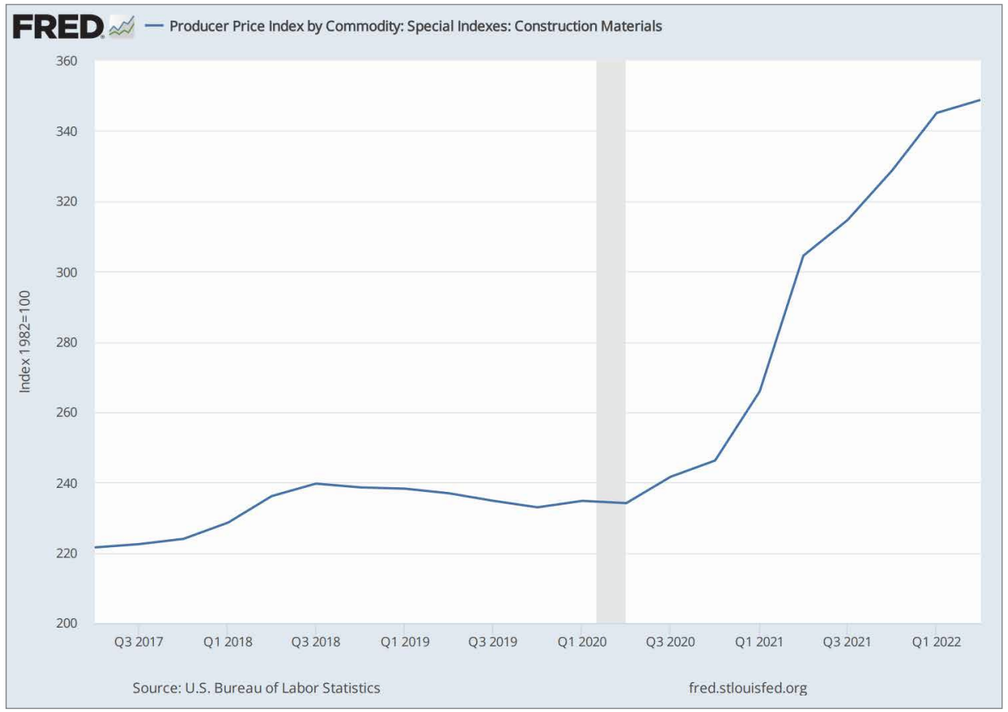
SO WHAT? There are over 90,000 products and services tracked monthly by the Bureau of Labor Statistics. These items and services are tracked at an individual item level and then combined proportionally to the share of spending in that category. This is how the CPI is determined. This measures what it costs you to shop at the grocery store, for example.

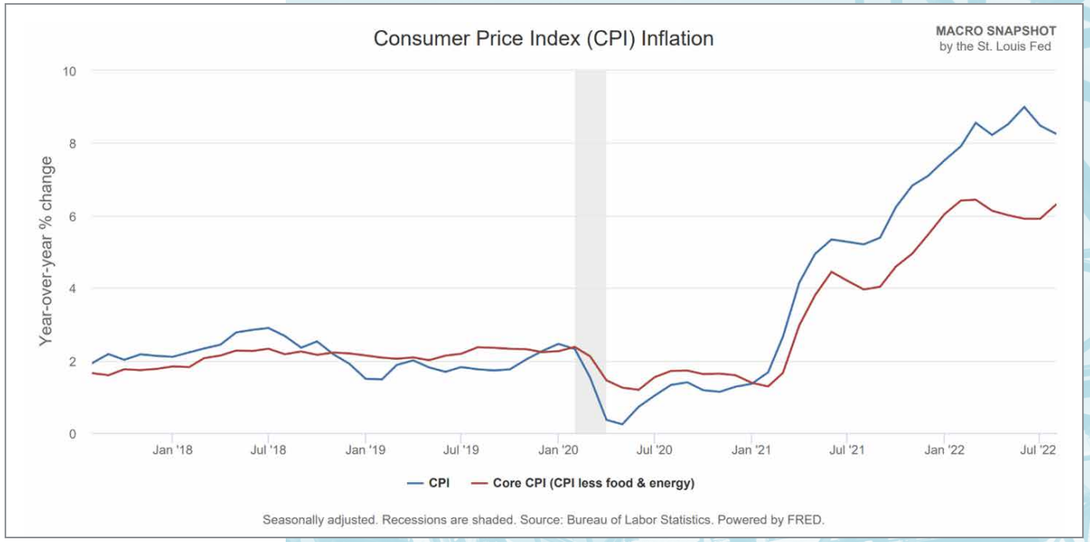
The Producer Price Index (PPI) measures the average change over time in selling prices received by domestic producers of goods and services. This is a look at the market through the eyes of the seller of goods and services. The PPI looks at multiple industries, commodities and demand for goods and services. This is often referenced in contractual negotiations between businesses when applying forecasted costs.

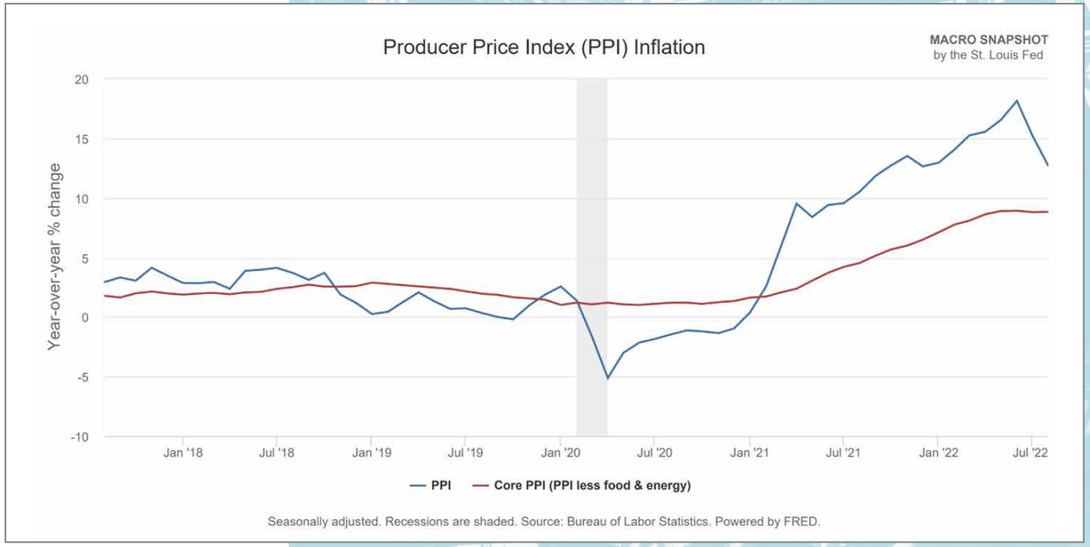
SO WHAT? The Producer Price Index (PPI) doesn't measure housing costs like the Consumer Price Index (CPI), which accounts for about one-third of the items in that index. The PPI, however, is focused on the costs to manufacture the goods and provide these services to the consumer. **The PPI index typically steers the CPI.** If PPI increases, the CPI will typically follow. **PPI is more directly tied to construction and building.** This index does, in fact, break down data by industry, and construction is one of them.

A look at the construction materials chart reflects the impact on the index in the last several years.

- From Q4 2019, the index was at 232 (in 1982 it was 100, as a reference point).
- In Q1 of 2021, it went up to 265.
- In Q2 of 2022, it rose to 348.







Construction Materials Escalation

We are still at historic highs for a significant group of essential building materials.

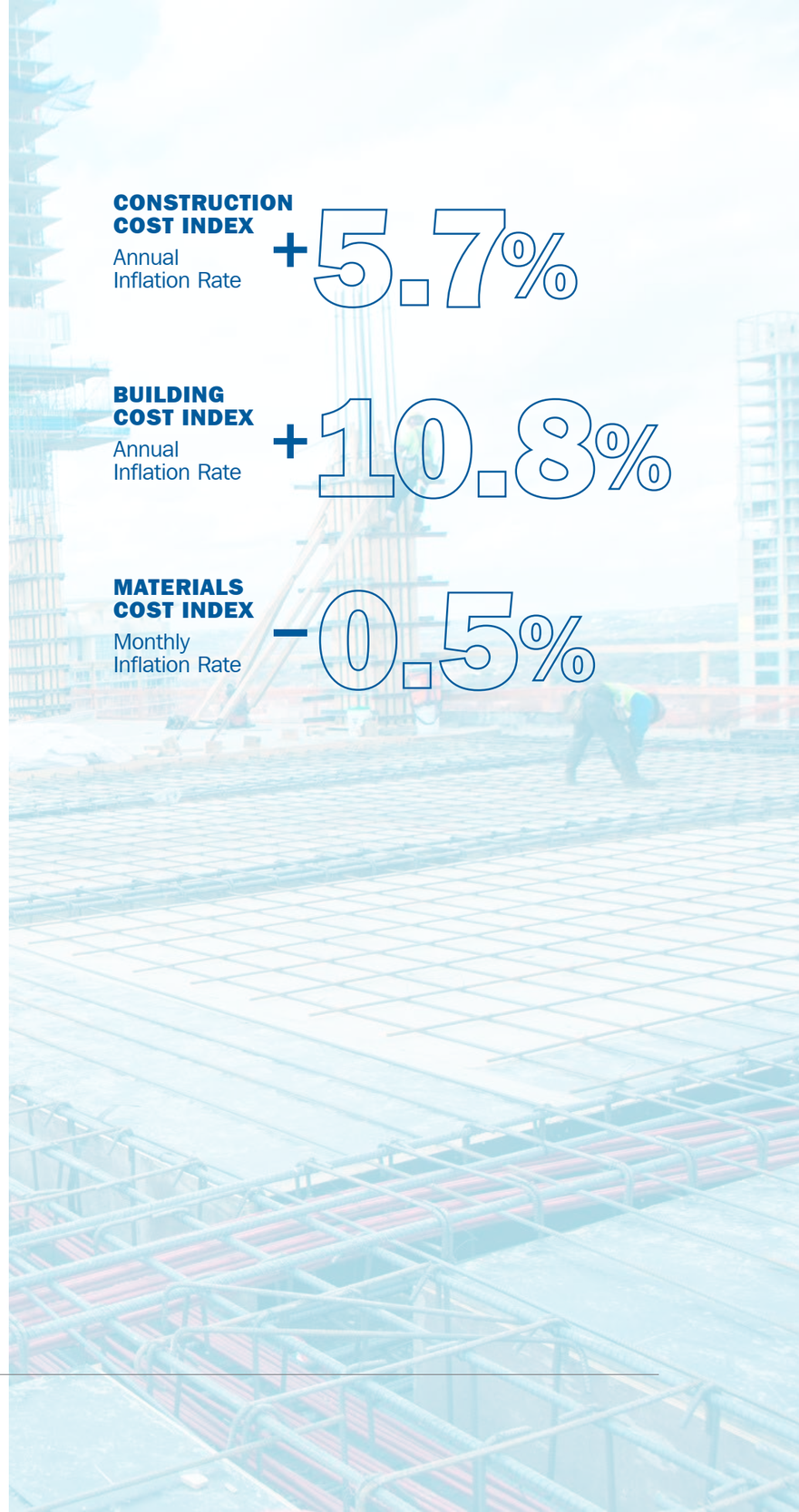
At a high level, Engineering News Record (ENR) does a great job tracking building cost and material cost over time. They are saying that the Construction Cost is up 5.7% from the previous year and the Building Cost is up 10.8%. The Material Cost Index monthly rate has trended down by 0.5% in September. The same index September of 2021 was nearly 20% lower that where it is today overall. It is coming down, but it's still excessively higher than last year.

More granular data on commodities like aluminum sheet pricing show similar trends. Through August 2022 numbers indicate that pricing has dropped by 0.5%, year to year, it is up 23%. **In fact, we predict aluminum and copper to escalate over the next few months, as detailed in our supply chain section.**

Rebar pricing through August 2022 has dropped 2.1%, but is still up 20% from this time last year.

So despite some materials settling or potentially peaking, we are still seeing drastically escalated rates for a host of key building materials.

Make sure to check out our Supply Chain Market Conditions Dashboard for detail surrounding commodities.



MANAGED SUPPLY CHAIN

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Market Conditions Report

Photo courtesy of Mike Goemaat

Supply Chain

Welcome to 2023…where we now know what a semiconductor is, where palladium comes from and what it's used for, and how many containers fit on a ship… all topics that were foreign to many of us only a couple years ago.

We've seen significant pricing concessions on retail items over the last few months due to oversupply, caused by improvement in shipping imports and relief at the ports. We've also seen improvement in many areas of the construction supply chain, including spot price reductions in metals and PVC, and an easing of fuel prices (including diesel) mostly driven by the economic slowdown. In fact, in some cases, it is advised to place cost-advantaged orders for some metal products now, as upcoming infrastructure projects will push demand and pricing up soon.

IMPACT ON METALS

Despite recent spot buy decreases, **certain metals will increase and become constrained longer-term due to factors that will increase demand.** Two examples are copper and aluminum. Electrical conductor demand will increase, due to the electric vehicle and solar products legislation like HR 3684 Infrastructure Investment and Jobs Act and the CA CARB rule requiring 100% of new car sales in California to be zero-emission vehicles by 2035, PG&E's announcement last year that it plans to bury 10,000 miles of power lines in the next decade, the European Green Deal, and other energy-related initiatives, as well as unforeseen supply constraints. **These acts will put additional demand on the grid, which will likely drive a secondary impact that will require additional power generation plants (potentially impacting materials needed by construction of those facilities).**

Further impacting copper wire production: one copper rod mill has closed (Asarco) and it is rumored that two additional mills may close. **An interesting side note to these energy-related actions, is that utility companies have been quietly buying out up to three years of transformers.**

PURCHASING AND EMPLOYMENT

Commodity prices started rising in 2020 as countries began emerging from pandemic restrictions. In the United States consumers bought $1 trillion more goods than expected compared to pre-COVID patterns. Construction spending in July was up 8.5% y/y to $1.78 trillion, but it is not clear if the y/y gain is in units shipped or increases in price. The industry's unemployment rate declined from 4.6% to 3.9% last month compared to August 2021. Average hourly earnings for production and nonsupervisory employees in construction rose 5.9% y/y to $32.57 per hour, and 71% of firms expect to increase the number of employees in the next 12 months.

CONSTRUCTION

One survey reported that 58% of projects that had been canceled, postponed, or scaled back were due to cost increases, and an additional 33% was due to lengthening or uncertain completion times. In fact, 82% of firms (compared to 75% in 2021) reported delays in completing projects due to longer lead times or shortages of materials. On a positive note, that same survey reported that 28% of respondents experienced more projects on which to bid or expanded scope on existing projects.

Geopolitical

FOREIGN CONFLICT IMPACT

In recent news, Ukraine has retaken some towns and villages from Russia; however, the conflict is expected to last into 2023, which may impact supplies of aluminum, steel, copper, nickel (used in batteries), and palladium (used in semiconductors), as well as other metals, and fuel.

We have been told by major manufacturers that the unavailability of the Nord Stream 1 pipeline in Europe will cause significant production issues and will impact both pricing and availability of product, as at current prices, there is simply not enough fuel to produce the material and products consumers want and need.

ASIA IMPACTS

Magnesium is the third most used metal in construction and widely used in automobile manufacturing, particularly in electric vehicles. China, which accounts for 87% of the global magnesium output, cut production by 50%-60% in 2021 due to a reduction in energy consumption and emissions/environmental concerns. While a short-term price drop for magnesium—due to market adjustment for reduced demand from customers and recession threat—may offer some good short-term deals, the outlook for future magnesium pricing is rising.

8.5%

Construction spending in July was up 8.5% y/y

3.9%

The industry's unemployment rate declined from 4.6% to 3.9% last month compared to August 2021

China and Taiwan tensions are growing, which may lead to additional challenges and growing risks for semiconductors. The Biden administration unveiled its plan for bolstering domestic chip production in the U.S. by using the $50 billion in funding from the CHIPS and Science Act passed this past summer. This will not have an immediate impact to semiconductors, but should help with supply in two to three years, and help prevent future disruption for goods with semiconductors manufactured in the US. It is unclear if this will help with products that require chips but are manufactured outside the US.

Transportation

PORTS

The WTO latest Goods Trade Barometer released in August showed the volume of world merchandise trade has plateaued and is slowing due to the conflict in Ukraine and pandemic lockdowns in China. Imports at the major container ports are expected to slow significantly for the rest of the year but **2022 should still see a net gain over 2021**. Shippers have shifted away from the West Coast ports to avoid congestion, but backups at East Coast and Gulf ports have climbed. At the height of the West Coast backup there were 150 ships waiting for a berth in North America, with 73% of those floating near LA and Long Beach. As of September 1st, there are 132 ships waiting, but about three-quarters are waiting off the East Coast or Gulf.

FREIGHT RATES

Freight rates for containers and dry bulkers—or vessels carrying raw materials and bulk goods—**have fallen over the past three months.** As of 09/07/22, Asia-US West Coast prices (FBX01 Daily) fell 20% to $4,345/FEU. This rate is 79% lower than the same time last year. Asia-US East Coast prices (FBX03 Daily) decreased 4% to $8,688/FEU and are 61% lower than rates for the same week last year.

RAIL

Surface Transportation Board data says railroads cut their workforce by 45,000 (29%) over the past six years. Coupled with pandemic furloughs, this has created real manpower issues. To gain efficiencies, US freight trains grew 25% in length between 2008 and 2017 (up to three miles in length). Profits for rail carriers have grown, but consistent delivery has declined. **Only 67% of trains now arrive on time**, down from 85% pre-pandemic.

On a positive note, on September 15, there was a temporary deal put in place to avert a rail strike of 115,000 workers and employees which would have further strained the US supply chain.

What Can We Do

COMMERCIAL TRUCKING

Truck tonnage is up 5.1% YoY, but gains are moderating. There is still an estimated shortage of approximately 80,000 drivers. An interesting side note: The Inflation Reduction Act is offering incentives up to $40,000 tax credits for electric truck adoption, likely further impacting copper and demand on the electric grid.

HAVE WE ADAPTED?

At DPR, we're seeing positive results from our collaborative approach in managing supply chain issues with our customers and our internal teams. Our supplier relationship program helps us to address disruptions and provide the forecasts that we share with our clients.

We are currently reviewing our forecast accuracy and expect to have information to provide to you on our next market conditions report. Our quality program ensures we're engaging qualified suppliers. Our sourcing strategy is setting up the right deals as we look into the future. Our procurement strategy ensures efficient, on-time order placement. Our logistics capabilities allow us to deliver on schedule and provide other services, like forward stocking and advance delivery, to adapt in this time.

This past quarter DPR participated in a survey that was led by a large multinational insurance company of 46 large contractors that was specific to supply chain insights, related trade information, and internal company practices and resourcing. Perhaps the most interesting survey question was "Does your organization have corporate Supply Chain and Cost Escalation Leadership in place?" **Of the 46 respondents, only two organizations have dedicated staff focused on the supply chain and overcoming the challenges in our industry. DPR is proud to be one of them.**

As you embark on your capital expenditure projects, partner with a general contractor who has dedicated staff focused on real-time supply chain insights and impacts.

Material Prices

Engineering News Record 20-City Average Material Prices				
Material Description	**September-21**	**September-22**	**$ Change**	**% Change**
Asphalt Paving				
Performance Grade 58 (PG 58)	$453.61 ton	$617.48 ton	$163.87	**26.54%**
Portland Cement				
Type 1	$150.10 ton	$172.48 ton	$22.38	**12.98%**
Crushed Stone				
Base Course	$13.69 ton	$16.88 ton	$3.19	**18.90%**
Asphalt Course	$14.31 ton	$18.41 ton	$4.10	**22.27%**
Sand				
Concrete Sand	$11.36 ton	$16.78 ton	$5.42	**32.30%**
Ready-Mix Concrete				
3000 psi	$130.90 cy	$147.11 cy	$16.21	**11.02%**
4000 psi	$143.60 cy	$155.76 cy	$12.16	**7.81%**
5000 psi	$181.60 cy	$188.68 cy	$7.08	**3.75%**
Concrete Block				
Normal Weight: 8" x 8" x 16"	$175.23 c	$201.97 c	$26.74	**13.24%**
Light Weight: 8" x 8" x 16"	$162.09 c	$178.99 c	$16.90	**9.44%**
12" x 8" x 16"	$231.52 c	$278.92 c	$47.40	**16.99%**
Copper Water Tubing				
Type L - 1/2"	$2.00 lf	$2.49 lf	$0.49	**19.68%**
Type L - 1 1/2"	$8.06 lf	$9.75 lf	$1.69	**17.33%**
Polyvinyl-Chloride Pipe (PVC)				
Sewer - 4"	$1.93 lf	$2.85 lf	$0.92	**32.28%**
Sewer - 8"	$6.10 lf	$8.85 lf	$2.75	**31.07%**
Water - 6"	$6.73 lf	$9.88 lf	$3.15	**31.88%**
Water - 8"	$10.05 lf	$12.93 lf	$2.88	**22.27%**
Water - 12"	$18.69 lf	$22.36 lf	$3.67	**16.41%**
Lumber				
2" x 4" Common S4S (Pine)	$1,280.81 mbf	$1,258.99 mbf	($21.82)	**-1.73%**
2" x 6" Common S4S	$1,153.77 mbf	$1,186.99 mbf	$33.22	**2.80%**
2" x 8" Common S4S	$1,053.08 mbf	$956.24 mbf	($96.84)	**-10.13%**
2" x 10" Common S4S	$1,127.41 mbf	$1,066.41 mbf	($61.00)	**-5.72%**
5/8" CDX Plywood	$1,253.95 msf	$1,241.25 msf	($12.70)	**-1.02%**
3/4" Plyform	$1,313.72 msf	$1,727.33 msf	$413.61	**23.95%**
5/8" Particle Board:Underlayment	$1,019.44 msf	$1,090.50 msf	$71.06	**6.52%**
Gypsum Board (Regular)				
1/2" Gypsum Board	$351.42 msf	$365.92 msf	$14.50	**3.96%**
Wall Insulation				
Unfaced Wall Insulation	$7.25 sf	$9.32 msf	$2.07	**22.21%**
Standard Structural Shapes				
Wide Flange Beams (W8 x 31)	$1,436.20 ton	$1,871.80 ton	$435.60	**23.27%**
Reinforcing Steel (Grade 60, #4 Bar	$1,257.60 ton	$1,509.80 ton	$252.20	**16.70%**
Aluminum Sheet				
3003H14, 36" x 96" Sheet	$266.84 cwt	$328.87 cwt	$62.03	**18.86%**

Impacts & Mitigation

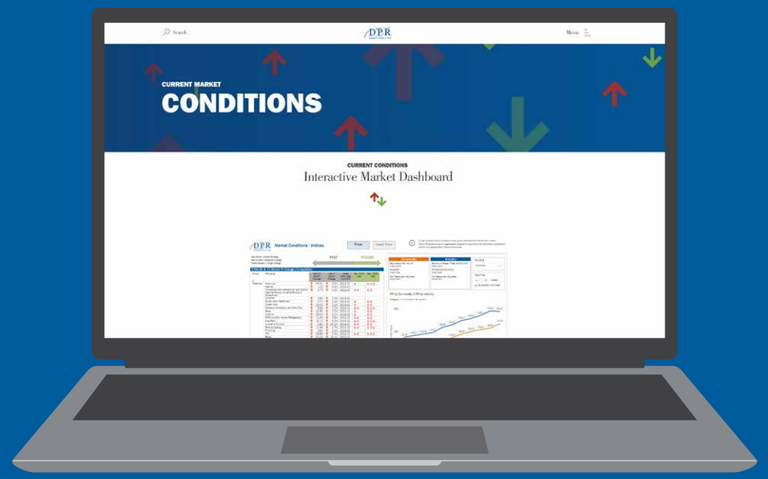
Biggest Impacts

These impacts are based on actual communications received from our suppliers and distributors, and may be different than the Market Conditions Dashboard, as this information is based on specific products compared to the general data in the Market Conditions Dashboard.

LOGISTICS SUMMARY	CAUSE	ACTION
Logistics (Transportation) -5%– 0% / 0 - 1 week's lead time	Spot market rates continue to decrease as capacity exceeds demand. National flatbed rates have dropped from the high-water mark of $3.45 per truck mile in June 2022 to $3.07 per truck mile in August 2022 an 11% price drop.	Schedule material needs well in advance and aggregate when possible, to lock in weekly allocations.

IMPACTED TRADES	CAUSE	ACTION
Ready Mix and Cement 10-35% increase with 3–5-week delays	Shortage of drivers, aggregates, and increasing operational cost coupled with high volume of demand leading to allocations and shortages.	Schedule material needs well in advance and aggregate when possible, to lock in weekly allocations.
Roofing Membrane and accessories 15-45% price increase and continued allocation	Raw material and labor cost increases with large backlog orders has kept factories on allocation and pass-thru on production cost increase.	Continue to include roofing membranes in critical path assessment for early buyout.
Equipment (Genset, Switchgear, Switchboards, VFDs, Chillers) Leadtime 40-98 weeks & price increase 9-16%	Raw material shortage (semi-conductors, copper tapes, aluminum, electrical steel) impacting tier 2 and 3 suppliers resulting in non-communicated and inconsistent delivery to manufacturers leading to last minute shortages and non-guaranteed deliveries.	Early material release and procurement, partial orders and temporary storage should be utilized to lock and reserve components; otherwise, may risk manufacturers rescheduling orders or taking components for other jobs.
Glass 40% price increase **Aluminum** 66-70 weeks lead time	Continued increases across energy, production, labor, and transportation cost coupled with large backlog and continued demand.	Pricing should remain steady for the next 2 quarters but may see further increases in Q1 to Q2 of 2023.

Market Conditions Dashboard



Scan the QR code or click to

view the current market conditions dashboard

https://www.dpr.com/company/market-conditions

Past data reflects the movement of PPI indices, as provided by the US Bureau of Labor and Statistics and is captured and updated monthly.

Future forecast data is gathered through DPR's Supplier Relationship Management Program in coordination with leading industry manufacturers and suppliers. Forecasted data is captured and modeled quarterly as an average of several surveys to multiple suppliers within the trade.

Mitigation Strategies Implemented on Recent Projects

USING TACTICAL SOURCING PROGRAM

Supply chain issues often affect the construction industry regardless of overall market conditions. On the Thursday before the 4th of July weekend, we received a request to help source ballistic panels for prefab security shacks on a major campus project. These panels were needed immediately to complete fabrication, although there was a six to eight week industry lead time. DPR confirmed the specs and sourced these panels with a different manufacturer and had them shipped out the same day for the following week's delivery to complete fabrication and ensure on-time performance.

Why this matters: DPR leans on its teams and thinking outside the box under difficult circumstances can produce great results. In this case, the result was prompt shipment, delivery, and no fabrication delays.

USING OUR QUALITY PROGRAM

As part of our desire to ensure product quality and on-time performance, DPR conducted and validated **quality risk assessment** on nearly 80 manufacturers which supply materials to DPR. This data allows us to understand the material supplier's operation performance gap in detail and enables us to take a pointed mitigation and improvement efforts to protect DPR's best interest during the Material Supplier Pre-Qualification phase.

Why this matters: By ensuring the material suppliers used by DPR can manufacture and deliver their parts consistently per DPR's requirement in order to avoid delays and defects.

USING OUR SUPPLIER RELATIONSHIP PROGRAM

Projects across the country were impacted by **last-minute manufacturer change orders to reprice elevators**, even though the projects had executed POs and payment releases. DPR engaged with manufacturer leadership to aggregate the impact across all projects, looked at root causes, considered national solutions, and leveraged our manufacturer relationships nationally to reduce project schedule and budget impacts.

Why this matters: Developing and leveraging the right relationships, and collecting strong data across our value-chain and projects can mitigate impacts to our project schedules and budgets, helping us to deliver predictable results.

USING OUR LOGISTICS PROGRAM

Holiday weekends present challenges for supply chains and vendors. On the Friday before the 4th of July weekend, we received a request to help export spray foam insulation to Mexico where some components were being prefabricated. We engaged our logistics and customs partners and got the load exported and through customs on an expedited basis, despite the complexities of the materials being exported. This export capability ensured on time arrival of the curtain wall components and helped keep the project on schedule.

Why this matters: DPR leans on its network of logistics and import/export partners to produce immediate results. In this case, the result was prompt shipment, delivery, and on-time fabrication.

USING OUR PROCUREMENT PROGRAM

A project in North Carolina was getting ready for an inspection and **an electrical bulletin was added last-minute**, creating a new lead-time issue with added breakers. The initial manufacturer was unable to provide the breakers in the time needed to keep the inspection on schedule. DPR sourced and procured the breakers and had them to the project site the next day. The solution kept the project on schedule.

Why this matters: Lead-times for many products may be in flux, but DPR's sourcing and procurement capabilities are built on relationships and processes that are able to overcome challenges and help assure projects are on-time and predictable.

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CORE MARKET INSIGHTS

Hear from our core market leaders on Life Sciences, Healthcare, Higher Education, Commercial and Advanced Technology trends

Q3 2022
Market Conditions Report

Photo courtesy of EOA Architects.

CORE MARKET INSIGHTS

Life Sciences

The Life Science Industry remains strong, but uncertainty exists

As we emerge from the COVID-19 pandemic, we reflect on our industry accomplishments. Whether it's R&D, manufacturing, or the supply chain, we have a pandemic-influenced mindset. An 'anything is possible' attitude exists with new ways of thinking and most importantly new ways of acting in place. The collaborative mindset is prevalent and driving industry best outcomes in an uncertain global economy. We must build on our industry momentum, focus on our teams, and continue to adapt to an ever-changing global life sciences market.

At the beginning of 2022, we mentioned the potential downward pressure from the NASDAQ Biotechnology Index, market uncertainty, resource limitations, and inflation as key decision drivers. All of these are influencing the biotech industry as it continues to lose market value with the decline in the NASDAQ Biotechnology Index, tenant demand reduction in key markets, and IPOs nearly stopping.

Even with that said, demand is still elevated especially in the manufacturing space fueled by mRNA technologies, small molecule discovery, cell & gene therapy, global fill-finish requirements, leverage of the CDMO market, and continual North America, EU, and APAC expansions.

R&D / BIOTECH MARKET

The demand for R&D lab space is slowing with regional saturation impacting key markets resulting in project delays, cancellations, and increased tenant leveraging. R&D costs continue to increase with industry estimates of a 10%+ increase in recent years. This, combined with recent government regulations, could impact spending and project volume going forward.

Dennis Kirkpatrick
Core Market Leader

Mike Marston
Core Market Leader

Photo by Halkin Mason Photography

Low performance and return on Biotech investments combined with a recession or similar economic slowdown could impact R&D spending annual growth for an extended period of time. As an example, the 2008 recession triggered R&D spending to flat line for nearly seven years.

The biotech industry continues to lose market value through 2022 with IPOs nearly stopping. The NASDAQ Biotechnology Index is down 26%+ over the last 12 months indicating a market slowdown or correction. This combined with VC funding is causing small or emerging companies to stop or delay promising pipeline candidates to focus cash on priority programs and business needs. As valuations continue to decline, M&A activity is predicted to increase.

CGMP MANUFACTURING SPACE DEMAND CONTINUES

The COVID-19 vaccine approval, small molecule discovery, cell & gene therapy, global fill finish requirements, and leverage of the CDMO market, are **driving a strong outlook in cGMP manufacturing.**

COVID-19 vaccine success continues to drive increased research into new modalities for mRNA therapies driven by lipid nanoparticle drug delivery, both for new vaccines and personalized medicine therapies. The fill finish market is expected to boom, driven by the COVID-19 vaccine filling requirements, global diabetes demand and future mRNA vaccine market projections.

Small molecule drug discovery is continuing to grow. In 2021, 60%+ of new drug approvals were for small molecules including treatments for HIV, cancer, infections, heart and kidney disease and neurological disorders.

Life Science companies continue to push autologous cell therapy manufacturing plans closer and closer to the clinical point of care leading to increased interest from healthcare professionals about cGMP facility requirements and regulatory considerations.

Pressure on the Contract Manufacturing market continues, driven by bulk biologics and fill finish capacity needs. Certain CDMOs are going all in on bulk biologics, primarily driven by international CDMO organizations.

60%+

In 2021, 60+% of new drug approvals were for small molecules including treatments for HIV, cancer, infections, heart and kidney disease and neurological disorders.

Customer Priorities

- **The Life Sciences market remains hot**, and while certain markets such as developer funded expenditures are showing signs of a potential slow down, the cGMP manufacturing expansions continue.
- The North America market is saturated with new projects, emerging major players, and competitors. We must **remain diligent to find the right partners** who have a sustainable future and can weather the uncertainty ahead.
- The supply chain, and especially equipment, remains to be a risk to project budgets and schedules. While some commodity pricing has recovered after early 2022 spikes, the recovery to manufacturers is slower. Projects need to **focus on equipment and material supply chains early** in their projects to make the lead-time adjustments in their schedules accordingly.
- With the high demand for clinical manufacturing space, **repositioning and remodeling existing space** is emerging as the option of choice over new builds.

How We Can Help

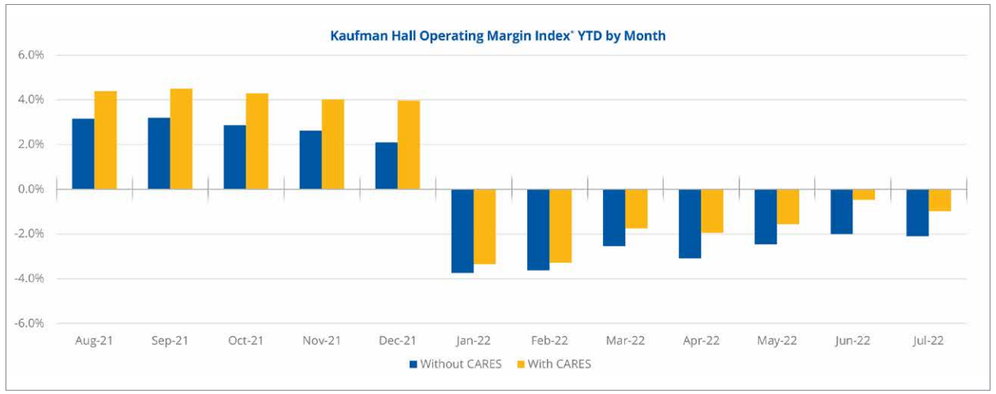
- Supporting the growing cGMP market, we continue to evaluate, expand, and adapt our service offerings to align with industry needs. **Engage earlier to develop current market project strategy** to set up your plan for success.
- Our ability to evaluate structure suitability and infrastructure capability to identify the most viable candidates can **minimize risk, accelerate the planning process, and eliminate design development surprises.**
- Bring **strategic thought leaders from Healthcare and Life Sciences Core Markets to support** the construction of cGMP manufacturing facilities within a clinical environment, helping to progress the quality and cost effectiveness of personalized Cell Therapy care.

CORE MARKET INSIGHTS

Healthcare

A Look Back at 2022

2022 has been an extremely tough year for healthcare providers as they experienced some of the worst margins of the pandemic due to loss of elective, higher margin cases, the cost of hiring travel nurses and incentivizing existing clinical staff to stay, increasing operating costs, decreasing yields on investments and the end of pandemic relief [Cares Act] funding from the federal government does not help the issue. **This is leading to healthcare systems to continue to operate on razor thin margins or in the red.**



Healthcare Systems and Hospital Operating Margins YTD (Source: Kaufman Hall)

-0.98%

Year to date operating margins across all hospitals and health systems was -0.98% through July.

Total costs of operating a hospital rose 7.6% from July 2021.

Hiring rose by 7.2% FTE per bed and labor expenses per discharge rose 13.9% YTD.

Average length of stay also increased for sicker patients driving up costs.

Sean Ashcroft
Core Market Leader

Hamilton Espinosa
Core Market Leader

Photo by Cesar Rubio

Healthcare Industry Trends for 2023 and Beyond

We expect to see more of the same into 2023 and beyond. Many of our clients and providers will continue to see operating losses. Some key trends:

Continued steerage of patients towards an outpatient / ambulatory lower cost of care setting. Medical office buildings and ambulatory surgical centers cost less to build and operate, generate significantly higher profit margins, and allow health systems to weather staffing fluctuations more easily.

Healthcare systems will look for **more profitable, fast-growing service lines** such as orthopedics, oncology, and cardiology.

Over the next five years, ambulatory surgical center volumes are expected to grow 15%, medical office building volumes at 10%, and hospital-based outpatient volumes at 11%. All of these will **drive up the need to deliver lower-cost environments quickly and predictably.**

Behavioral health and adding behavioral health beds will continue to be an area of focus for growth.

Over the next five years, inpatient volume growth will be flat at 2% at the national level. However, there continues to be demand for inpatient beds especially in high population growth areas (Atlanta, Austin, etc.) but also due to sicker patients staying longer in beds. The **severity and complexity of cases seen continues to increase** resultant from an aging population and deferral of diagnostic and treatment during the pandemic.

Alternative funding models will continue to proliferate, including physician-backed ASCs and private equity real estate ownership models.

Healthcare Providers Priorities

What we are observing from healthcare providers as they respond to current market conditions:

- **Re-balancing of investments** from capital expenditures and executive wages to staff wage and provider experience benefits – a continued push to retain talent in the wake of provider burnout.
- **Market consolidation** to gain leverage, with continued exploration of potential merger and/or acquisition with other providers.
- **Capturing of innovation investment dollars** while capital is still flowing, particularly from VC/PE sources.
- Pursuit of **immediate revenue and asset growth** opportunities to offset declining margins on service and losses on investments.
- **Investing in infrastructure** and partnerships for future site of care shifts.
- **Managing total cost of care**, not just at the acute care level but across the full continuum of their services.

Customer Priorities

Despite soaring expenses, healthcare construction hasn't slowed down yet. Half of surveyed healthcare systems and hospitals expect to **trim their capital expenditures budget in 2023** and will focus their spending on IT/digital health in lieu of traditional bricks and mortar, slowing or repurposing proposed projects, new ambulatory care facilities, facility repairs, renovations and maintenance.

How We Can Help

Healthcare systems will continue to trim costs, find ways to be more efficient (profitable) and look for merger and acquisition opportunities. **We must find ways to help our clients with this.**

The highest cost in running a hospital facility is labor (usually over 55% of total operating costs).

- **Help our design partners to find more efficient workforce coverage solutions in the planning phase.**

Workforce shortages and burnout are adding to labor costs.

- **Help our Owners retain and attract staff by minimizing the disruptions during construction.**

Supply chain continues to be an issue, especially with large mechanical and electrical equipment and sub-components.

- **Accelerate project schedules to get patients and revenue through the door faster and get ahead of further cost escalation.**

MEP services aid in constructing facilities that use less energy, create less waste, and demonstrably reduce total cost of ownership.

- **Be nimble with identifying and defining alternate strategies to meet our clients' objectives through less capital and time-intensive solutions**

CORE MARKET INSIGHTS

Higher Education

The Higher Education Construction Market is trending toward positive gains in the next five years but faces continued headwinds exhibiting both positive and negative attributes we need to watch. On a positive note, overall higher education construction spending is trending for annualized growth forecasted at 3.1%. **Over the last 12 months we have already witnessed 8.5% growth in state spending.** Construction put in place estimates will increase from $16.6B to $18.7B by 2026. Pre-pandemic spending was $18.8B in 2019, suggesting a five-year recovery cycle.

However, as the numbers roll in from 2021, the pandemic has proven to have had harsh impacts on hundreds of universities and colleges.

Through the end of 2021, the total number of public four-year universities decreased 2.3%, and the number of community colleges decreased 2.7%. Four-year private institutions suffered similar reductions at 2.6%. These are brutal closure numbers. Driving the closures was the **exodus of nearly 1.3 million students during the pandemic.** Many financially stressed institutions have turned to mergers. Federal recovery funds provided by American Rescue Plan have proven to be a lifeline for several hundred colleges in the last year[1] but those programs are reaching their endpoints.

+3.1%

Forecasted growth annualized for higher education construction spending.

Greg Fraikor
Core Market Leader

Photo by Bill Timmerman

An additional headwind for the market is that student enrollment continues to decline[2]. Undergraduate enrollment at U.S. postsecondary education institutions declined 4.7% in spring 2022 relative to the same time last year according to the National Student Clearinghouse Research Center, marking the 5th consecutive semester decline in a row. Community Colleges have been hit the hardest with public four-year colleges seeing the second largest decline. Previous semester trends had male enrollments declining (8.6%) which was substantially more than female, but this trend has recently reversed with female enrollment declines outpacing males slightly. The gender gap is an important issue, and we may see some Higher Education facility design trends catering to changes.

Offsetting the decline in undergraduate enrollment however, is an upward trend in graduate student enrollment (10.4% nationally) and with it federally supported research grants rose 3.7% and institutionally supported grants rose 4%. This is a positive and is being reflected in strategic spending in interdisciplinary research and development facilities.

In 2022, national inflation rates hovering at over 8% have generated additional financial stress increasing institutions operational costs, despite $75 billion in federal pandemic relief. Without a reversal in undergraduate enrollment rates, this will likely be translating into higher tuition and fees in the future. Inflation, global geopolitical instabilities, and the corresponding corrections in the equity markets have negatively impacted university endowment investment portfolios in 2022. These impacts have generated some pause in activity on donor/endowment related projects. Staff and faculty retention is also being stressed with inflation adjusted average salaries decreasing 5% over the last two years, representing the greatest decrease in real-wage growth since 1979.

Student housing availability on-campus, and affordable off-campus options continue to be a national issue with 43% of students reporting housing insecurity in the 2021-2022 academic year. Institutions continue to seek creative options to fill the short and long-term needs.

Despite negative undergraduate enrollment trends and continued inflation/recession pressures, post-pandemic construction activity is trending positive and in particular for technically complex interdisciplinary and research buildings, sports facilities and student housing.

-1.3M

Reduction in undergraduate enrollment at U.S. postsecondary education institutions.

An upward trend in graduate student enrollment (10.4% nationally) and with it federally supported research grants rose 3.7% and institutionally supported grants rose 4%.

43% of students reporting housing insecurity in the 2021-2022 academic year.

Customer Priorities & How We Can Help

- We can **expect some project dates to slip** as inflation and supply chain issues cause additional funding challenges and force some masterplan program implementation priority shifting.
- Conversely, we can expect to see some projects that have been put on hold from the pandemic to get released. Maintain **close coordination with our university clients and architects for project release schedules.**
- Continue to educate and collaborate with our clients regarding what we are seeing in **supply chain material pricing and delivery impacts and solutions.**
- Continue to leverage Healthcare, Life Science, Advanced Technology **subject matter expertise** to provide **comprehensive and integrated technical solutions** for our customer's interdisciplinary, research, laboratory and innovation hub projects.

1. https://www.insidehighered.com/news/2021/08/02/number-colleges-shrinks-again-including-publics-and-private-nonprofits
2. https://www.chronicle.com/article/the-shrinking-of-higher-ed

CORE MARKET INSIGHTS

Commercial

Office

Corporate America is uncertain how it intends to entice (or require) workers back to the office, and when paired with rising interest rates, institutions and real estate lending firms are hitting pause on some projects for the balance of this year. Furthermore, there is a surplus of office space throughout U.S. business districts, not pandemic related, but decades in the making due to overbuilding office towers in the 1980's and a failure of landlords to either tear down or convert aged buildings. Based on those challenges, the corporate office market is expected to decline 5% over the next several years.

However, there continues to be a silver lining in the office markets. Many new corporate office projects continue to break ground and command top-tier rents and low vacancies by designing 'trophy' projects in great locations. Experiences and amenities like outdoor space, daycare, catering and 'killer views' are enticing top talent to return to the office to collaborate with peers and embrace company cultures.

-5.0%

Forecasted decline of the corporate office market over the next several years.

Photo courtesy of DPR Construction in Austin, TX

Scott Lyons
Core Market Leader

Office to Lab Conversions

Throughout 2021 and into early 2022 the 12 largest life science markets in the US experienced significant growth and investment in developer led office to lab conversions and ground up lab construction. The demand, however, is waning based on regional saturation and increased R&D costs resulting in project delays and cancellations. A recession or similar economic slowdown could continue to impact R&D investments for an extended period of time.

Hospitality

The U.S. hotel construction pipeline continues to decelerate. The continued increases in debt costs combined with the ongoing supply chain disruptions will likely delay many projects from breaking ground this year, which will lead to a further decline in rooms in construction. On a national basis, new supply will not be a significant headwind for the foreseeable future.

Mixed Use

Whereas office and hospitality are decelerating, multi-family continues to be a very hot market. With unemployment rates very low and the cost of homeownership on the rise, the demand for rentals is continuing to draw developers into mixed-use developments.

Customer Priorities & How We Can Help

- **Supply chain** and inflationary pressures are risks to project budgets and schedules and are starting to cause awarded projects to delay or stall out completely until supply and demand get back in balance.
- **Refreshing or repurposing existing office buildings** to new office or hotel will be an area we continue to explore. The DC market, for example, has a lot of these opportunities and other markets are ripe for redevelopment.
- Stay in sync with Life Science developer work to provide **integrated core market expertise** for customers.

CORE MARKET INSIGHTS

Advanced Technology

Advanced Technology is projected to remain strong considering both the data center and advanced manufacturing sectors are anticipated to grow beyond 20% YoY for the foreseeable future.

DATA CENTER, MISSION CRITICAL

The data center market continues to grow at staggering rates in 2022 and continues to attract new players around the globe at all intersections of the supply chain. For those industry veterans and the newcomers, all are expanding their investments and footprints. We're experiencing a dynamic push-pull between a buyer and seller's market meaning the buyers are leveraging significant scale, but the demand is so significant, the sellers (contractors, vendors and data center operators, etc.) are having to increase their prices and limit commitments, which opens the door for new players to learn as they go.

With the hybrid work model seemingly here to stay, increased social media use, online gaming growth, and streaming services needs are just a few sources driving the unprecedented demand of hyperscalers and cloud providers alike. In addition, the typical enterprise data center customers are also adopting the hybrid public/private clouds and or the balance between on prem vs. cloud for their company's business applications.

In North America, Europe and Asia Pacific, each market has hit new levels of absorption (leased space) and construction projects planned or currently underway. The major cloud providers (AWS, Google, and Microsoft) and Meta are driving the market globally. **There is predictive debate how much they build for themselves vs. how much they will lease, however either way, this will continue to strain the supply is the key message.**

John Arcello
Core Market Leader

Andy Andres
Core Market Leader

Photo courtesy of Gensler

Vacancies are at all-time lows (below ~5% in major markets), while these hyperscalers fight to provide capacity wherever possible.

Capital construction costs are up with both material and labor, lead times and schedules are longer due to the supply chain disruptions and skilled labor shortage.

Land and Power Constraints

In North America, it's widely known two of the largest markets are seeing power availability impacting projects planned in both Santa Clara and Northern Virginia. In Europe, Amsterdam and Dublin have instituted some forms of data center moratoriums as well as Singapore in Asia Pacific.

Globally, JLL has reported there is a pipeline of 314 new hyperscale sites, and at the end of 2024, the number of global hyperscale sites will pass the 1,000 mark, from approximately 500 sites just five years ago. With these cases of power moratoriums, we anticipate projects to be planned/secured further in advance AND developments to be pushed to more secondary markets.

Supply Chain

Data centers are seeing the majority of their projects impacted due to the exponential growth that has happened simultaneously to the global shortage, hence they are deeply exacerbated.

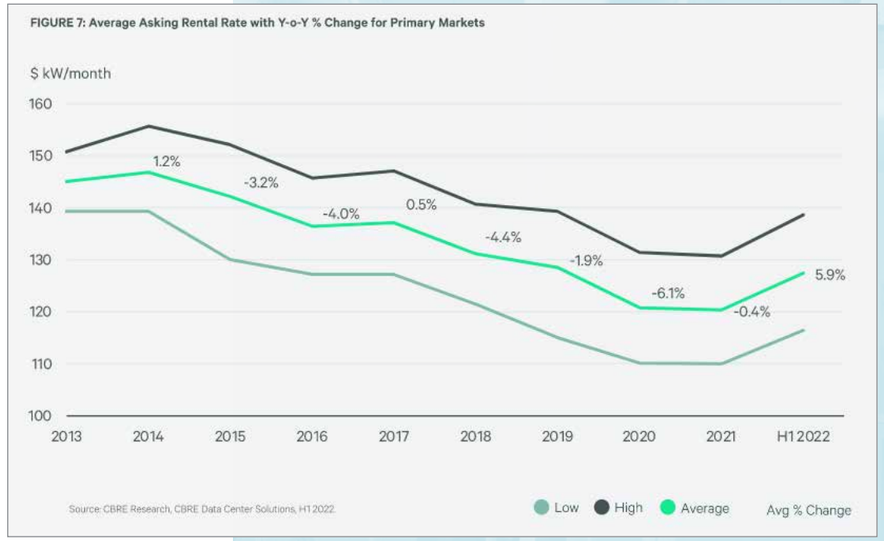
Capital Infusion

Largely due to the hyperscale investment globally, an unprecedented amount of M&A has transpired. In the last year alone major players were acquired by private equity further investing in digital infrastructure such as QTS, Cyrus One and Switch, as well as major acquisitions such CoreSite by American Tower. We anticipate increased interests rates to slow this trend for the immediate future.

ADVANCED MANUFACTURING

In 2021 DPR made the strategic direction to expand our Advanced Technology core market sector into Advanced Manufacturing. The focus is electric vehicles, batteries, and aerospace. These were not exclusive products, but an area of focus. We have since re-engaged more considerations for selective semiconductor opportunities.

- The bipartisan CHIPS and Science Act, in its imperfect ways, will influence spending for U.S. manufacturing for the next several years as corporations make large commitments
- Battery manufacturing companies and technologies will continue to proliferate the market with major projects globally.
- Battery recycling technology will be actively seeking government grant monies to launch their technology from.



For the first time in almost ten years, we are seeing lease rates starting to increase modestly trying to keep up with the rising costs.

How can we help?

With the proliferation of data all around us, we see a long-term opportunity to serve the Data Center business for decades to come. In addition, we have a unique opportunity with our technical skillsets and culture to invest into the Advanced Manufacturing sector that will be interdependent of the tech sector.

- Stay customer focused leveraging top tier customer relationships to retain and grow with them. **Staying indispensable.**
- **Remain highly selective** pursuing projects that the power and major capital equipment availability aligns with business objectives.
- Expect continued over-commitments and underestimating of **supply chain disruptions**; hence we need to stay diligent setting up deals accordingly, with careful attention to schedule.

Q3 2022

Market Conditions Report

Resource Materials

Information in this report is compiled from third-party reporting that is available to the public.
It is not owned by DPR Construction.

United States Census Bureau
https://www.census.gov/

United States Department of Labor
https://www.dol.gov/

United States Energy Information Administration
https://www.eia.gov/

United States Chamber of Commerce
https://www.uschamber.com/

United States Bureau of Labor Statistics
https://www.bls.gov/

Engineering News Record
https://www.enr.com/

American Institute of Architects
https://www.aia.org/

Cumming Corporation
https://cumming-group.com/