Economic and Construction Industry Trends

July 2023

Niladri Sannigrahi
AFSB, CPCU, PE
Senior Director, Portfolio and Risk Management

Table of contents

General economic outlook

Ongoing recovery and a slow growth

U.S. economy continues slow growth amidst a cloudy outlook

2023 U.S. GDP Growth Forecast
+1.1%
The World Bank

2022 annual growth
2.1%

June 2023 Unemployment
3.6%
Bureau of Labor Statistics

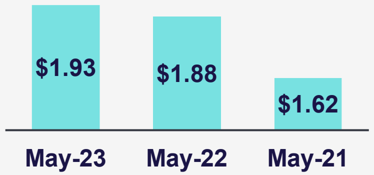
Unchanged from
3.6%
in June 2022

June 2023 YOY Inflation (CPI)
3.0%
Bureau of Labor Statistics

Down from
8.9%
in June 2022

Construction Spending

Total Spending ($T)
Change from May '22
+2.4%
Census Bureau



Non-Residential ($B)
Change from May '22
+17.3%
Census Bureau

2021-22 change & 2023-26 growth in Construction Starts

Texas
+42%

+22%

California
-2%

+25%

Florida
+7%

+24%

New York
+54%

+25%

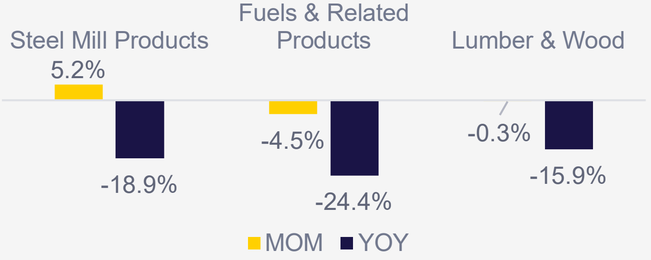
Architecture Billings Index
(ABI)

Mar '23	Apr '23	May '23
50.4	48.5	51.0

Above 50

Below 50

Input Prices
(PPI Percent change to May 2023)



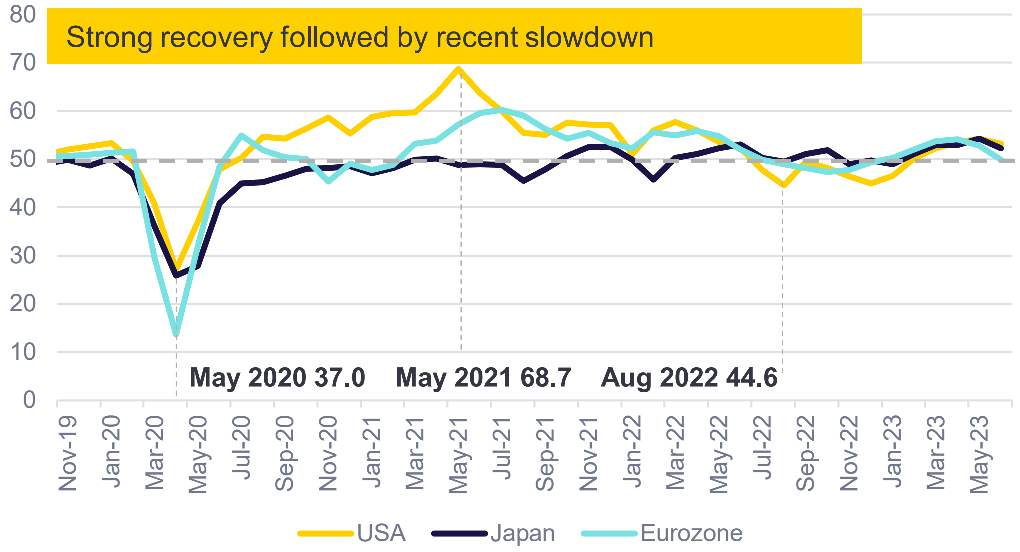
The American Institute of Architects

Bureau of Labor Statistics

Dodge Data & Analytics, Bedford, MA (877-784-9556)

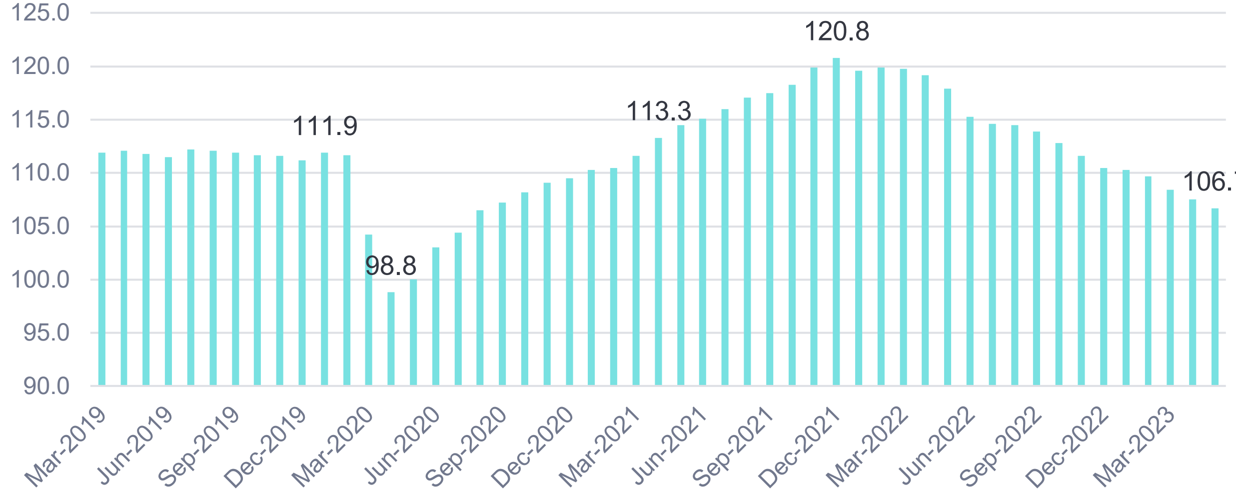
Global recovery continues, but with weakened momentum

Composite Purchasing Managers Output Index*



*Purchasing Managers Index – measure of manufacturing and services activity. (>50 = expansion)
Sources: WSJ, IHS Markit (Eurozone, U.S.); IHS Markit/CIPS (U.K.); au Jibun Bank (Japan)

Conference Board Leading Economic Index (LEI)



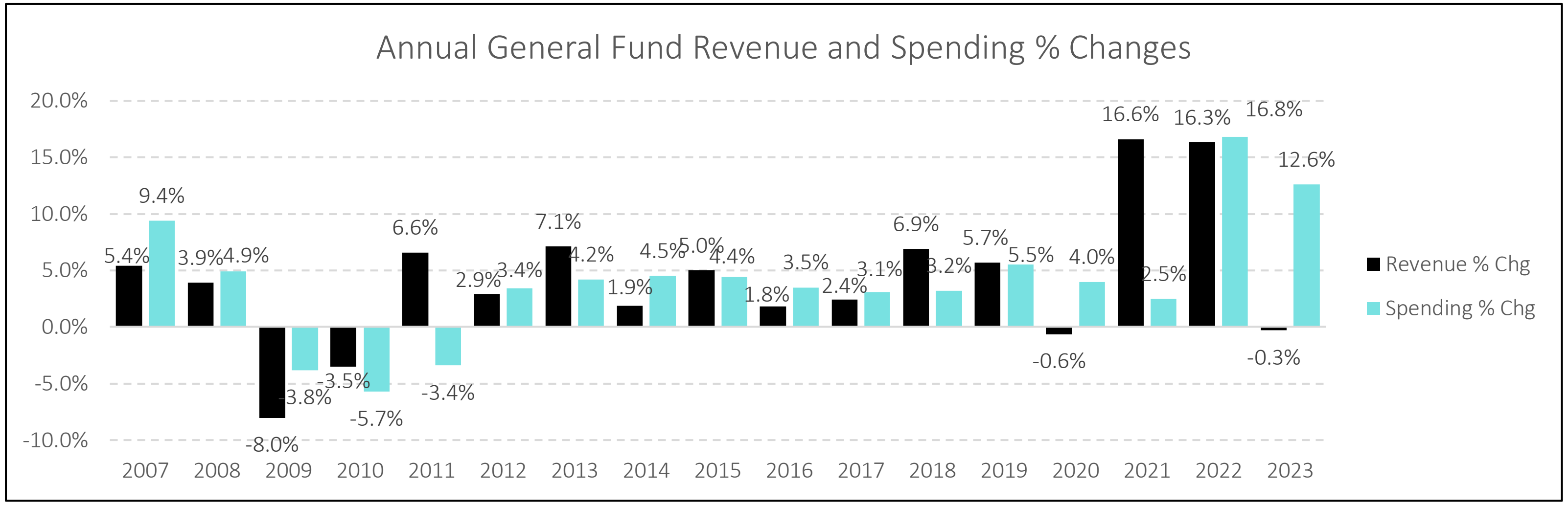
Source: The Conference Board

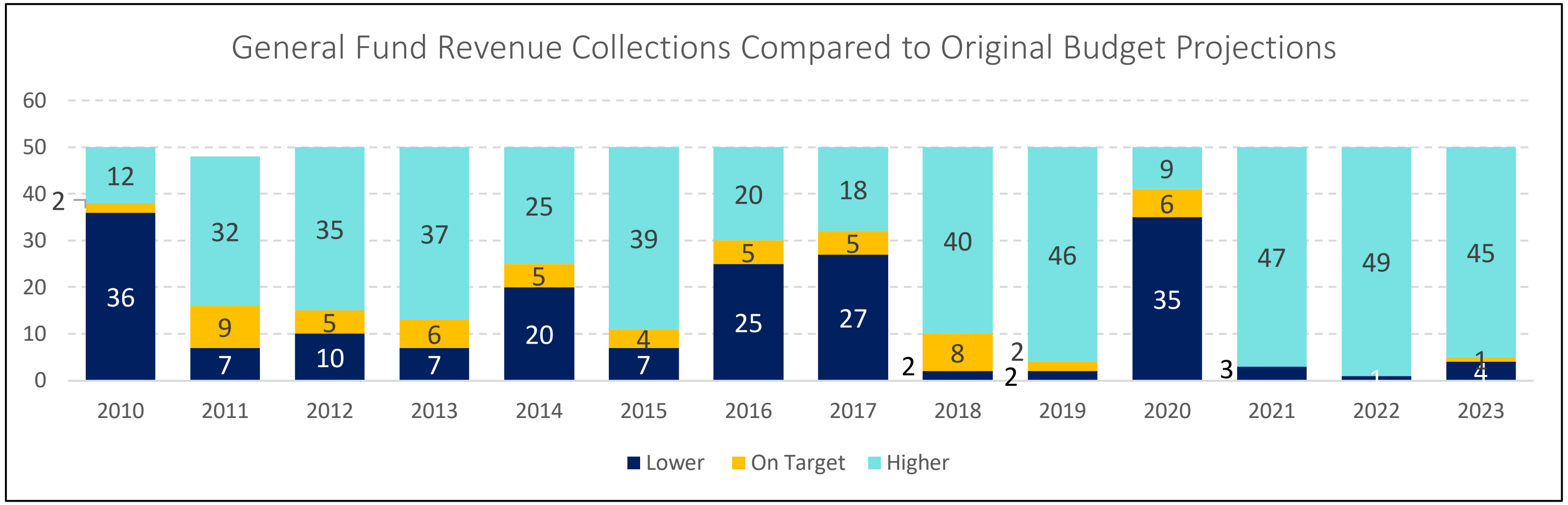
- Six successive months of >50 U.S. Composite PMI reflected strong expansion in the services sector, however May data hints at slowing service growth along with downturn in manufacturing.
- Although above pandemic level lows, the LEI declined for the 13th consecutive month in May, signaling a worsening economic outlook, driven by persistently high inflation, higher interest rates, lower manufacturing orders, and lower consumer expectations.

General economic outlook

State finances continue to exceed expectations

Less than projected COVID impact and federal stimulus boosted state budgets for 2022 & 2023





- FY 2023 Actual General fund spending at $1.2T grew by 12.6% over FY 2022, following record annual growth of 17% seen the previous year
- 49 states saw revenue collections outperform budget projections in FY 2022 (45 states in 2023)
- Rainy day funds grew to record figures in 2022 after increasing significantly by 58% in FY 2021
- State balances tripled in size in recent years after reaching all-time high in FY 2021

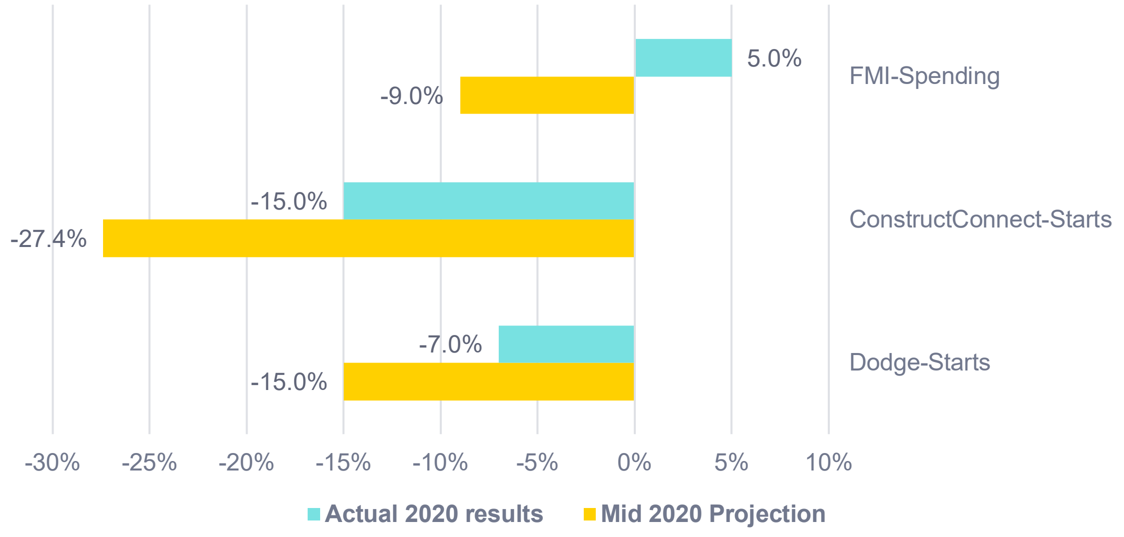
Source: NASBO

Construction industry outlook

Pushing our way forward despite headwinds

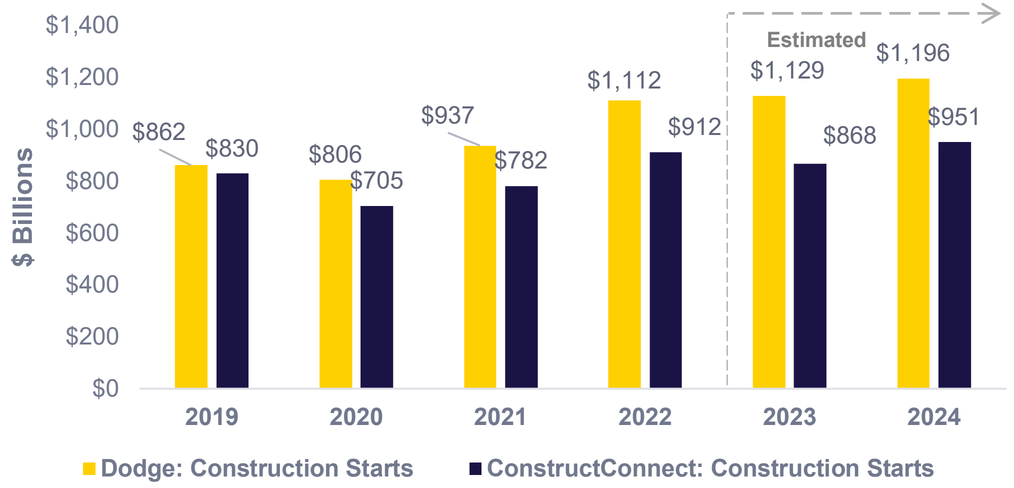
Construction was exposed to wide disruptions from COVID-19 but we saw unexpected resilience and recovery

YOY decline in 2020 ended up less-worse than projected



*Construction Starts indicate overall project costs booked around groundbreaking. In contrast, Construction Spending/Put-in-Place data reflects progress payments as projects proceed. Dodge Construction Starts excludes Additions & Alterations, Architectural & Engineering Services, as well as farm construction and "force account construction."

Strong recovery continued in 2022



- **Dodge** reported an actual decline in 2020 by **-7%** against an expectation of **-15%**.
- A strong rebound at **+16%** started in 2021 and was followed by an even larger gain of **+19%** last year (2X previous forecast).
- **ConstructConnect** reported a steeper decline in starts at **-15%** in 2020 and a rebound of **+11%** in 2021. A stronger growth was seen for 2022 at **+17%**.

Source: FMI, ConstructConnect, Dodge Data & Analytics, Bedford, MA (877-784-9556).

Residential led the recovery in 2021, however market dynamics is more favorable to Non-residential/Non-building starting in 2022

DODGE DATA & ANALYTICS

- 2020 Construction Starts declined at -7%. Non-residential buildings hit hard at -19%. Residential units up by +5%. Non-building -10% driven by Power/utilities.
- Total starts rose +16% in 2021, and 2022 remained strong (+19%) buoyed by non-residential (+46%) with non-building growing at +21%. 2023 is expected to slow at +2%.
- Public works stayed flat in 2020/2021 but grew strongly in 2022 (+19%) & 2023 looks healthy (+18%) fueled by federal spending.

construct connect

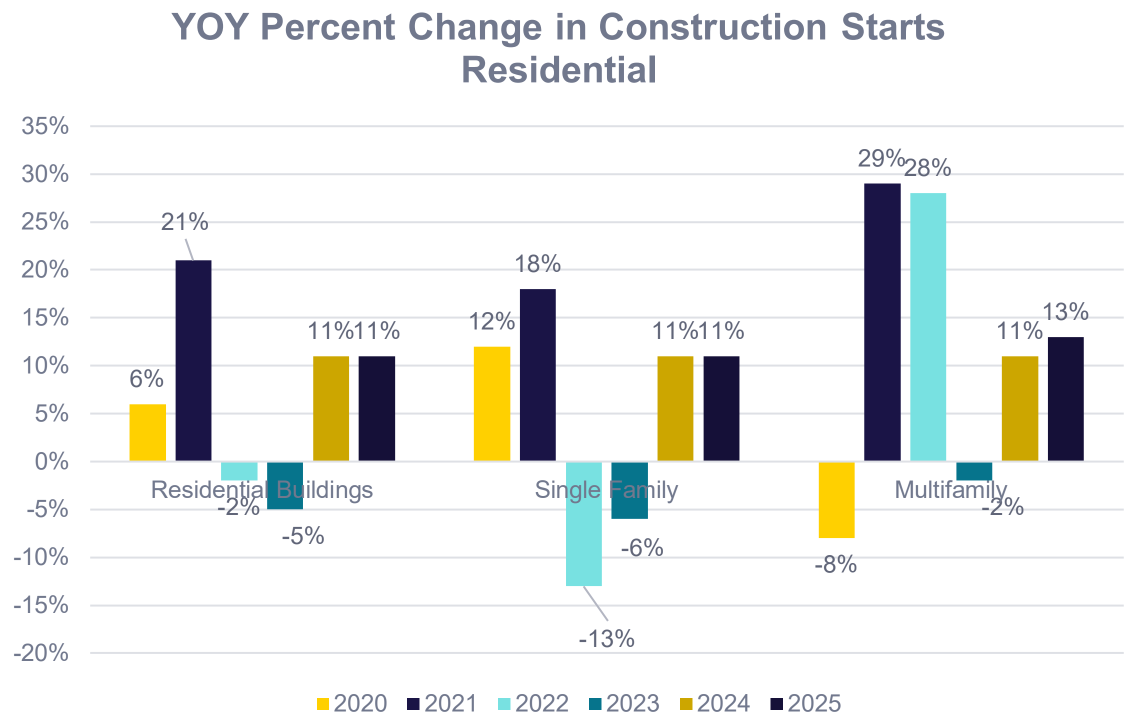
- Annual starts decreased at -15% in 2020, led by the industrial/hospitality sectors and declining mega projects.
- 2021 bounced back at +11% on the heels of new homebuilding increasing at +18%.
- More broad-based growth was seen in 2022 at +17% with a +204% jump in manufacturing that lifted non-residential at +37%.
- 2023 is expected to contract slightly with Non-building/Engineering growing at +3% boosted by IIJA.

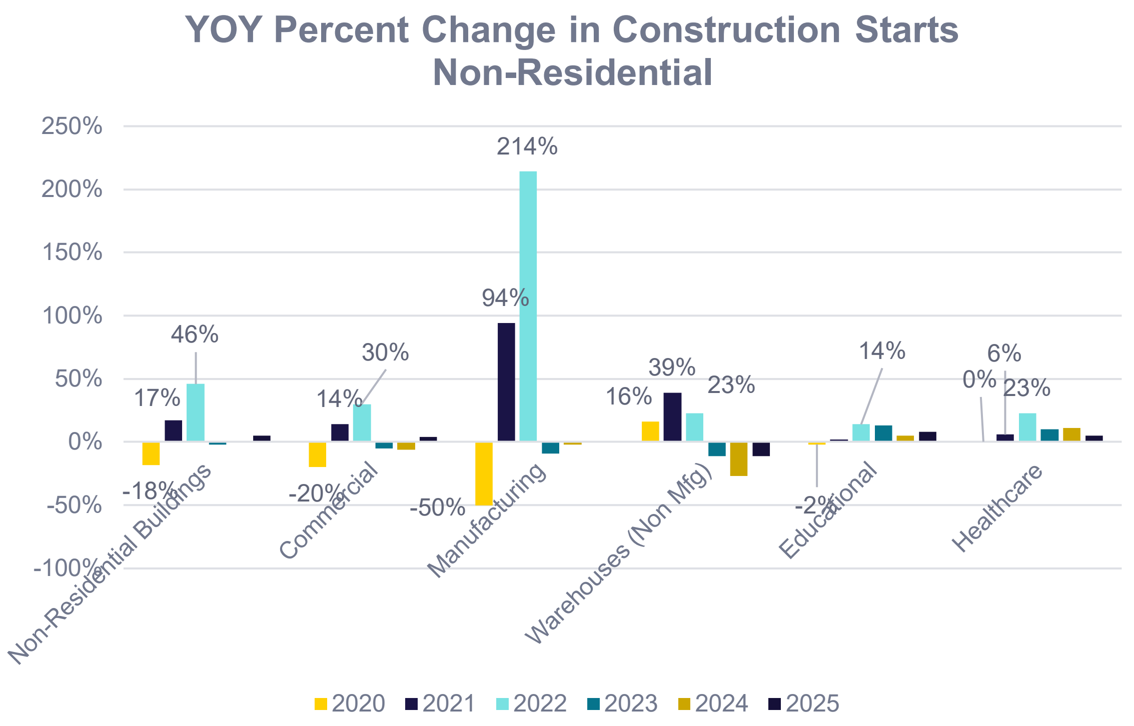
FMI

- 2021 construction spending came in at +8% and 2022 saw similar growth at +11%. Overall economic slowdown will reflect in 2023 (-1%) & 2024 (-5%).
- Residential leading the rebound, up +25% in 2021 and +13% in 2022, however expected to contract in the coming years (2023 -10%, 2024 -15%).
- Q2’23 Nonresidential Construction Index at 48.0 improved slightly from the previous quarter (46.4), however remained below the neutral line indicating slowing opportunities.

Source: Dodge Data & Analytics, Bedford, MA (877-784-9556). ConstructConnect. FMI.

Buildings – contrasting performance across Res and Non-Res

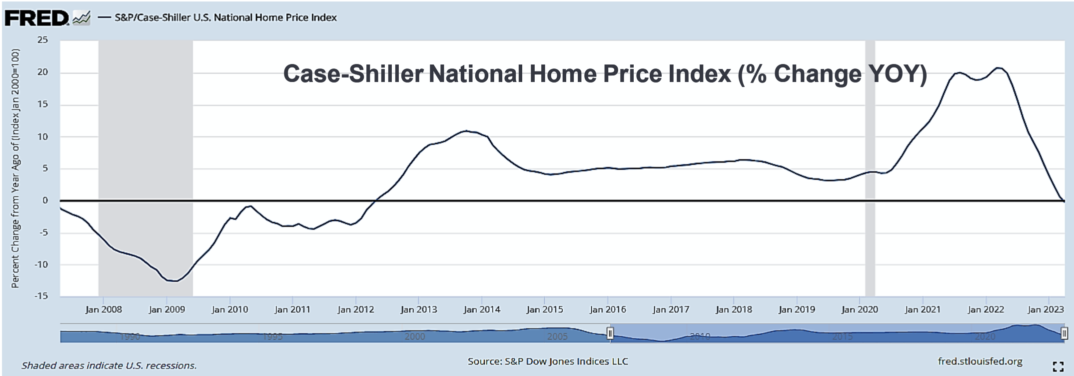




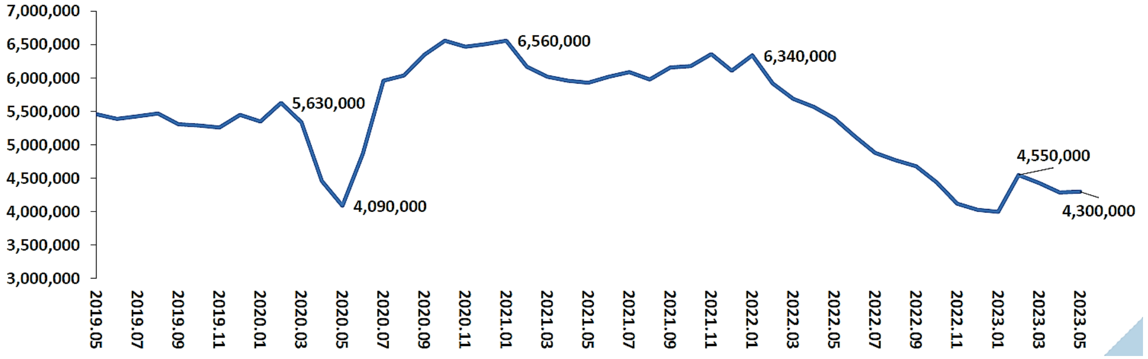
- The Residential sector led the recovery post-pandemic, however monetary tightening has driven a cooling trend especially in single-family homes. Multifamily would see a slight slowdown this year followed by growth in 2024.
- Private non-residential buildings suffered a significant drop in 2020, particularly Manufacturing & Commercial (i/c Retail). Following a strong growth in these projects led by Manufacturing in 2022, a slowdown/flattening is anticipated in the next two years.

Source: Dodge Data & Analytics, Bedford, MA (877-784-9556)

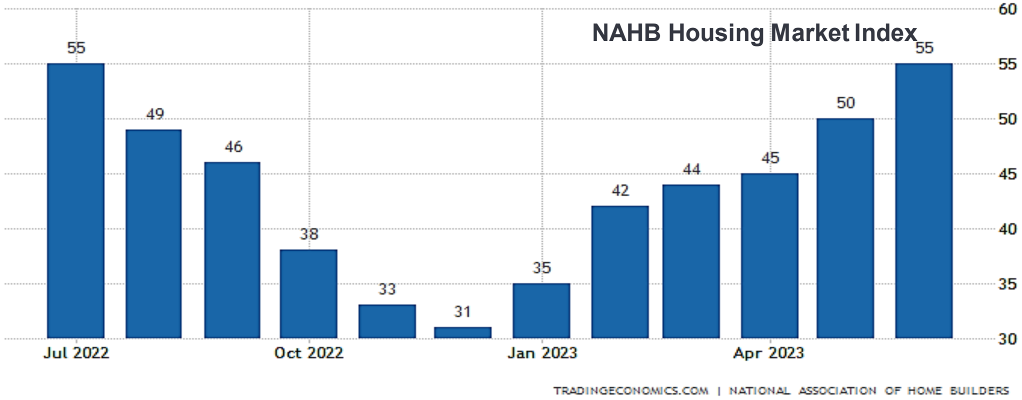
Housing market responding to deflationary pressures



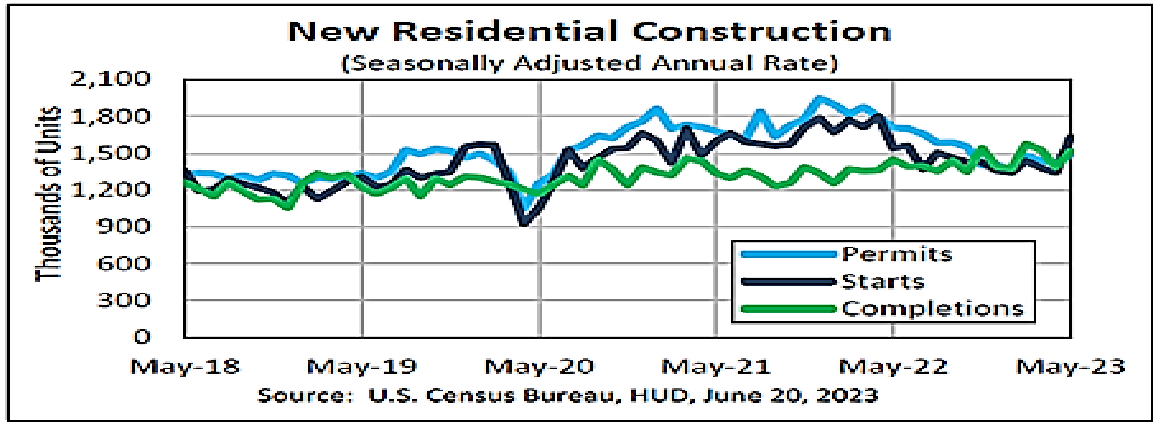
HPI fell 0.3% during the 12 months ending April 2023, the first decline since 2012.



MOM existing home sales up 0.2% in May, down 20.4% YOY (National Association of Realtors).



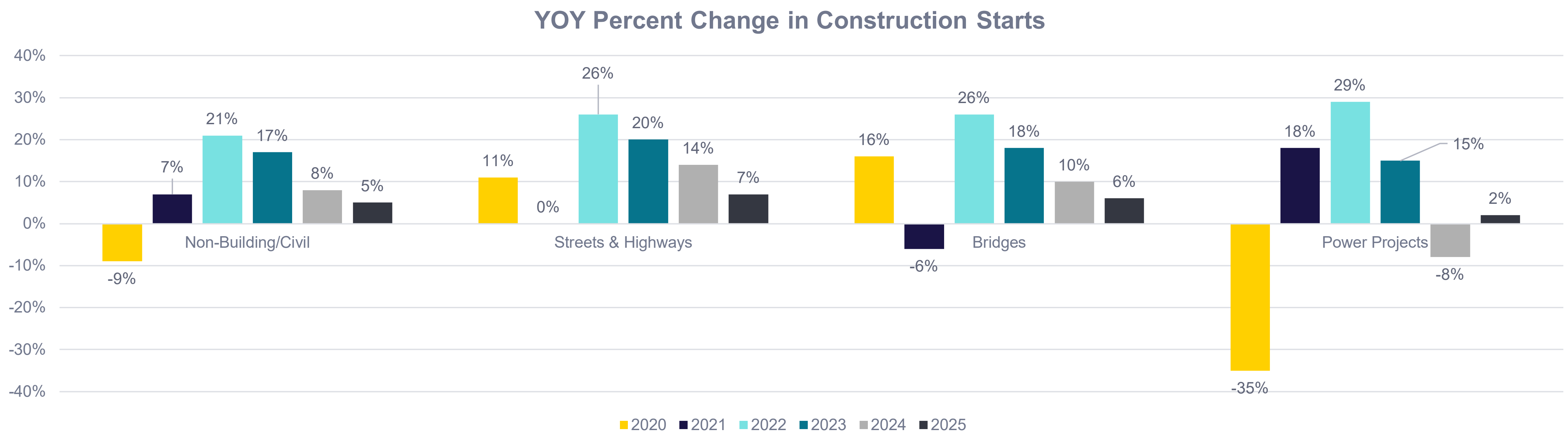
Low housing inventory boosted builders' confidence, traffic of prospective buyers increased.



Private starts rose 21.7% MOM and 5.7% YOY in May.

Home prices, sales, & affordability declined YOY in response to elevated interest & mortgage rates. Builders' confidence rose amid low existing inventory & solid demand, but credit availability concerns persist.

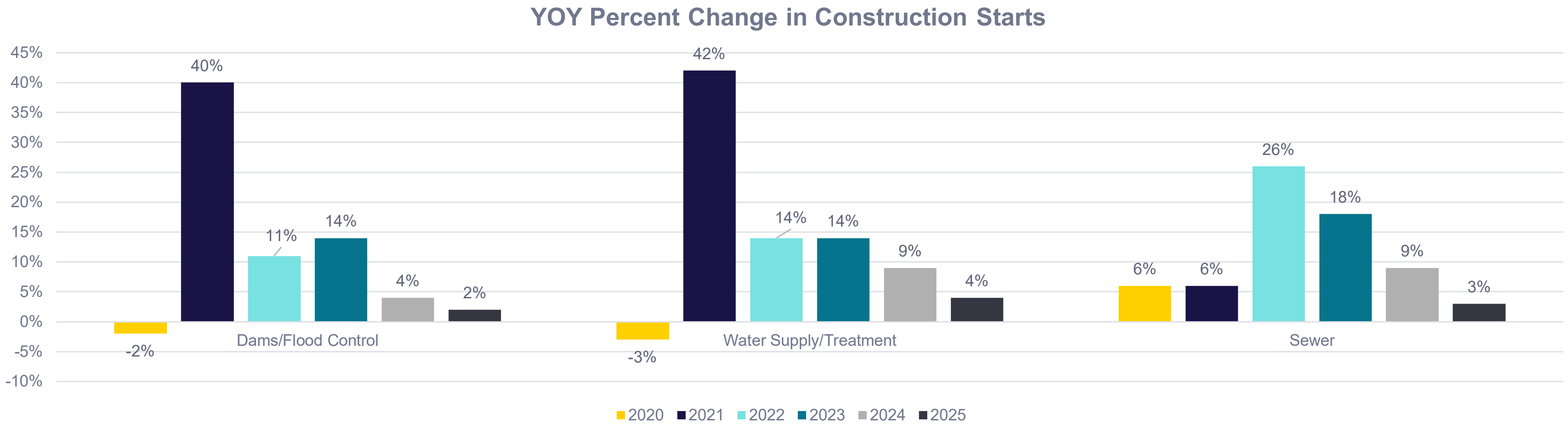
Non-building/Civil – benefit from the infrastructure bill



- The non-building/civil segment rebounded in 2021 and surged in 2022 driven by both public works and power projects and would continue a growing trend in the coming years.
- Highways and bridges performed well in 2020 but saw a slight decline in 2021. Execution of the infrastructure bill would continue boosting the Transportation sector in 2023 and beyond ($283B allocated).

Source: Dodge Data & Analytics, Bedford, MA (877-784-9556).

Water Infrastructure – continued tailwinds for growth



- Starts in Dams/Flood Control as well as Water Supply decreased slightly in 2020, however a strong rebound followed in 2021 and 2022 and growth is still in stock for 2023-24
- Sewer projects have performed well throughout the pandemic and would continue to see a positive trend
- IIJA has earmarked roughly $72B for water infrastructure improvements which has started taking effect, boosting starts in 2023 and beyond

Source: Dodge Data & Analytics, Bedford, MA (877-784-9556)

Construction industry outlook

Inflation, price volatility and labor shortage threaten margins

Current market conditions present a balance of forces

The GOOD	The BAD	The UGLY
• Economic fundamentals solid – strong labor market & wages, personal savings and spending, corporate profits • Balance between cooling demand (e.g. housing) and supply ramp-up (e.g. nearshoring in U.S.) • Construction backlogs near record highs (8.9 mo in May) • Historic investment in Public infrastructure through IIJA & IRA • State revenue collections continue to surpass expectations	• Looming recession, slowcession or stagflation concerns – demand cooling while inflation is too hot • Interest rate environment shifting • Contractor confidence is waning • Material price and delivery uncertainties still exist • Growing concerns over project delays and cancellations due to excessive pricing	• Inflation has significantly transformed from “transitory” into a surging and sustained environment • Consumer confidence and sentiment at historic lows • Continuing global supply chain disruptions • Acute shortage of skilled workers

Price pressures on construction inputs continued in 2022 but some relief has started showing up

Materials prices – percent change YOY

MATERIALS PRICE INFLATION THROUGH 2025

	2020	2021	2022	2023	2024	2025
ASPHALT PAVING	–3.1	+3.6	+16.9	–0.8	-5.3	0.4
CEMENT	+1.1	+4.0	+9.7	+5.3	0.4	2.4
REINFORCING BARS	–10.2	+54.3	+15.8	–22.2	-10.7	0.7
CONST. MACHINERY	+1.8	+4.5	+10.5	+5.5	0.0	0.3
FABRICATED PIPE	–0.3	+17.7	+15.4	–9.5	-8.1	-1.1
GYPSUM PRODUCTS	+0.3	+15.9	+17.9	7.5	-6.4	3.9
LUMBER, SOFTWOOD	+30.1	+41.9	–5.4	-31.0	1.5	3.1
PLYWOOD	+13.0	+46.2	–1.9	-26.7	1.3	1.0
AGGREGATES	+4.5	+4.0	+10.1	4.6	1.5	1.8
SHEET-METAL WORK	–0.3	+11.7	+20.1	-3.0	-8.5	-5.7
STRUCTURAL STEEL	–2.3	+26.7	+27.5	-7.7	-9.0	-6.4

SOURCE: IHS GLOBAL INSIGHT INC. NOTE: ESCALATION RATES ARE ANNUAL AVERAGES.

Source: ENR 4Q 2022 Cost Report, IHS Global Insight

Interest rates continue upward – higher for longer

Expected Federal Funds Rate. Source: Federal Reserve.

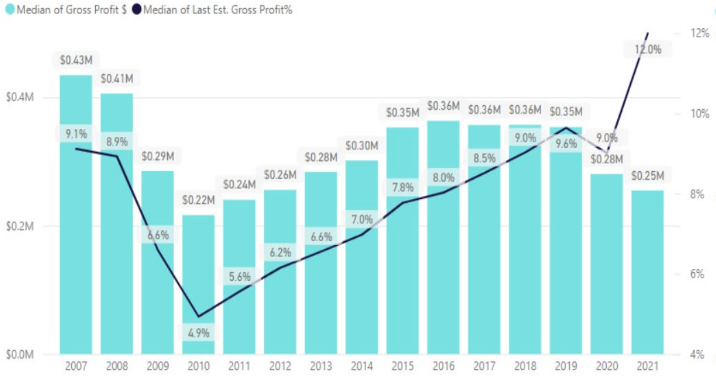
- Global supply chain disruptions continue to impact construction input prices but expected to normalize throughout 2023 and 2024. Meanwhile, contractors would need to consider impact on future bidding estimates, possible use of substitutes and less familiar input materials.
- Following ten successive rate hikes (the biggest since the 1980s) over 15 months, the feds paused in June, however more increases may be in store as Fed Chairman Powell commented, "Nearly all committee participants expect that it will be appropriate to raise interest rates somewhat further by the end of the year." This environment would continue to put additional pressure on contractors looking to sustain a healthy margin amidst escalating prices.

Construction profitability remained healthy despite the pandemic as a rapid recovery continued

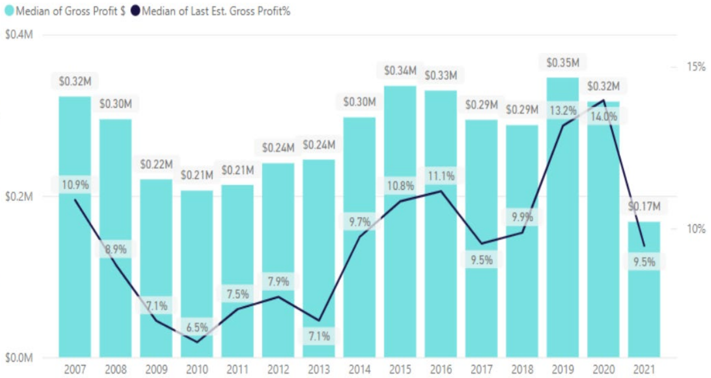
Profitability trends from a sample of Liberty Surety accounts*

● Median of Gross Profit $ ● Median of Last Est. Gross Profit%

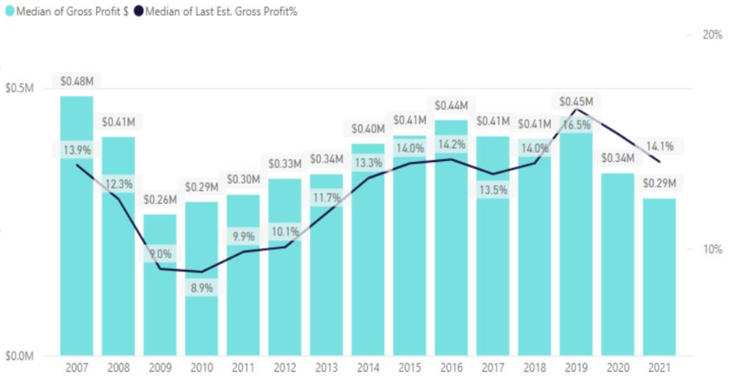
Buildings



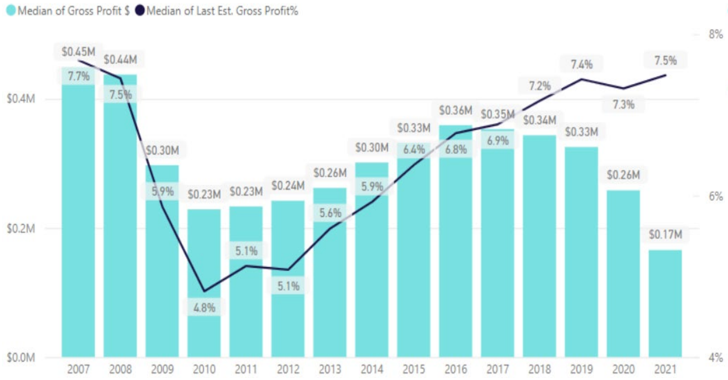
Transportation



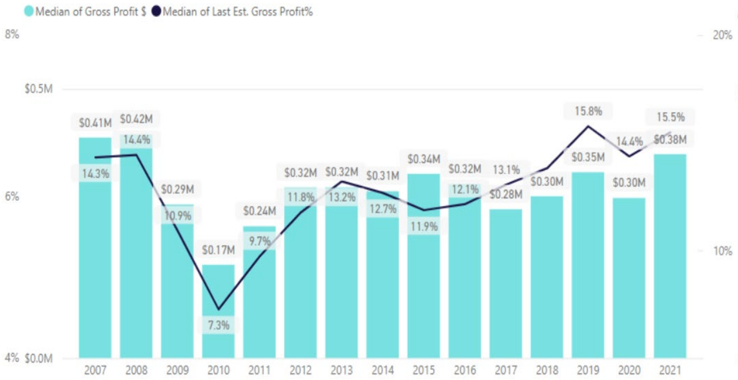
Water Sewer Underground



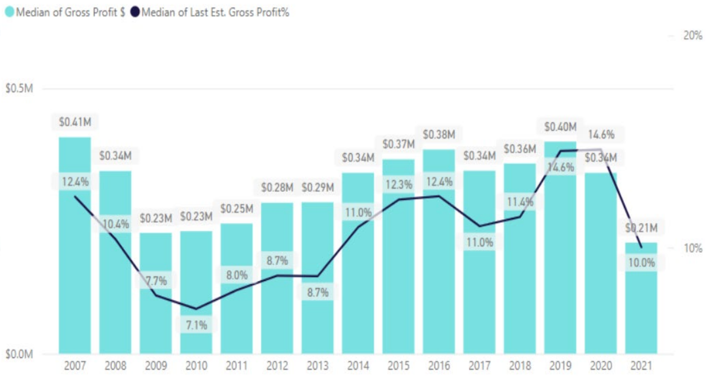
General Contractors



Mechanical/HVAC/Plumbing/Electrical



Heavy Highway



*Data reflects aggregated value for Last/Final estimated gross profit from a representative sample of LMS contract bonds, from 2007 to 2021. Bond Amount >= $1M, Jobs 90% or more complete.

Infrastructure Funding

Significant stimulus to public projects

$1.2 Trillion "Infrastructure Investment and Jobs Act" augmented by CHIPS & IRA

$550B new money over five years

Transportation $283B

- Roads & Bridges $110B
- Rail Service $66B
- Public Transit $39B
- Highway Safety $11B
- Infrastructure Resilience $50B
- Airports $25B
- Ports & Waterways $17B
- EV infrastructure $7.5B

Public Utilities $265B

- Water Infrastructure - $55B
- Broadband - $65B
- Power Infrastructure - $73B

CHIPS & IRA to provide further tailwind

CHIPS and Science Act $52.7B

Bolster American semiconductor research, development, manufacturing, and workforce development and advance U.S. global leadership in the technologies of the future

- Semiconductor chip manufacturing construction $39B
- R&D and workforce development $13.2B
- Investment tax credit for capital expenses 25%

Inflation Reduction Act – Climate Investment $369B

- Energy & climate tax incentives - $68B
    - Energy generation & manufacturing, Carbon sequestration
- Climate, Energy and Environment Investments - $61B
    - EPA, USDA, DOE, DOI

Source: The White House. AGC. PWBM at Wharton School.

Flow of funds from IIJA has started to reach state and local agencies

Projected Additional Starts* for Construction Industry

	Conservative (25%)	Realistic (50%)	Optimistic (60%)
Expected NEW Public construction funding over 5 years	$ 137 B	$ 275 B	$ 330 B
*Assume variable % of total $550B to be dedicated to "true" new projects***			

	2022	2023	2024	2025	2026
Water	$ 3.6 B	$ 9.4 B	$ 11.9 B	$ 7.6 B	$ 3.6 B
Transportation	$ 13.8 B	$ 35.6 B	$ 45.5 B	$ 29.0 B	$ 13.8 B
Broadband	$ 3.3 B	$ 8.5 B	$ 10.7 B	$ 6.8 B	$ 3.3 B
Power	$ 3.3 B	$ 8.5 B	$ 10.7 B	$ 6.8 B	$ 3.3 B

* The "additional starts" may not be purely additive. Part of this amount may be used to offset planned projects that were cancelled or delayed due to the pandemic.
** The scenarios assume 25%, 50%, and 60% of the funds are used for "new" projects. We expect the rest of the fund would serve as new funding source for existing planned projects.

Announced Funding by Mar 31 2023

Category	Funding
⊟ **Transportation**	**$156,394,994,522**
Roads, Bridges and Major Projects	$115,844,875,028
Public Transportation	$16,052,161,556
Safety	$8,276,279,283
Airports and Federal Aviation Administration Facilities	$8,170,786,770
Ports and Waterways	$5,463,290,250
Electric Vehicles, Buses and Ferries	$2,587,601,635
⊟ **Climate, Energy, and the Environment**	**$50,596,536,014**
Water	$24,052,081,792
Resilience	$13,533,930,738
Clean Energy and Power	$9,867,819,260
Environmental Remediation	$3,142,704,224
⊞ **Broadband**	**$2,813,112,779**
⊞ **Other**	**$386,469,709**
Total	**$210,191,113,024**

State Name	%GT Funding	Funding
California	20.67%	$19.96bn
Texas	15.58%	$15.05bn
New York	11.30%	$10.91bn
Florida	9.52%	$9.19bn
Illinois	9.31%	$8.99bn
Pennsylvania	9.18%	$8.86bn
Ohio	7.33%	$7.08bn
Michigan	5.82%	$5.62bn
New Jersey	5.79%	$5.59bn
Georgia	5.51%	$5.32bn

Source: Dodge Analytics (Construction Starts). White House. Data to Decisions GSA.

Summary

The economy has shown strong resilience and rebound in 2021 & 2022, but inflationary pressures can stifle growth in coming years

While labor market remains strong, a sustained recovery could take longer

- With a mild recession likely in 2023, economic projections still have downside risks
- Prolonged tightening of monetary policy to tame inflation is creating recessionary pressures
- Geopolitical tension involving Ukraine and China could further stall growth
- Turmoil in the banking sector could cause additional financial stress across the globe

Construction activities keep forging ahead but uncertainties cast shadows

- Disparity between residential and nonresidential activity remains
- Ongoing labor crunch, volatile project costs, and supply shortage could impact bottom line for contractors despite heavy demand
- Stimulus from the IIJA, CHIPS act and IRA would help in sustaining the momentum in this sector

Thank you!

You can reach me at

niladri.sannigrahi@libertymutual.com