



Navigating the Uncertain Waters of Construction Cost Volatility

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Navigating the Uncertain Waters of Construction Cost Volatility

Moderator: Mike Bartoli, Gordian

Speaker: Sam Giffin, Director – Data Operations,
Gordian



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MODERATOR



Mike Bartoli

Gordian

Sr. Account Executive, DOD

Fun Facts

- Sports Teams: Braves, Dawgs, Steelers Fan
- Vacation Spots: Emerald Coast, Florida, Recent visit to Utah National Parks
- Enjoy Hiking, Skiing, Biking



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SPEAKER



Sam Giffin

Gordian

Director, Data Operations

Fun Facts

- Based in Atlanta
- Have two kids: Silas and Benjamin, who are my other full-time job.
- Love traveling – favorite vacation spots include South Korea and Barcelona.



Background



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Forces at Play



Pandemic



Material shortages



Supply chain issues



Inflation



International conflict



Cyber security
concerns



Continued Price Volatility



85.7% of equipment costs saw an increase greater than 5%, with the majority of increases coming from operating costs like surging diesel prices. **The average equipment cost increase was 5.3%.**

46% of labor wages increased over 4% and were mainly held in check by union collective bargaining agreements (CBA). Wages are very likely to creep up as CBAs are renewed. **On average, labor wages climbed 3.4%.**

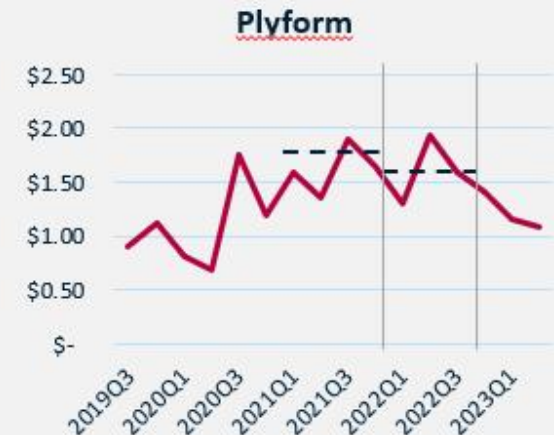


82.5% of construction materials in the RSMeans database experienced a significant cost increase, with an **average increase of 19%**. These soaring costs were driven by inflation, supply chain constraints and operating constraints.



Continued Price Volatility - Lumber

- 2023 lumber prices declined after climbing since 2020
- Typical seasonal peak observed in 2022 Q2
- Pricing regression expected to continue through 2023 Q2



Continued Price Volatility - Steel

- Steady increases from 2021 continued through 2022
- Cost accelerations in late 2022 Q1/Q2 due to supply chain constraints
- Cost stabilizations through 2023 Q2



Open Web Joists, K Series



Metal Decking



Steel Sheet Piling



Structural Steel



Continued Price Volatility – Concrete & Masonry

- High price increases through most of 2022 driven by supply constraints
- 2023 H1 showing signs of price stabilization for most materials



Ready Mix Concrete



Hot Mix Asphaltic Concrete



3/4" Stone Aggregate



Concrete Block



Continued Price Volatility - Copper

- Significant escalations in 2022 Q2 driven by international supply chain
- Copper prices decreased through 2023 Q2



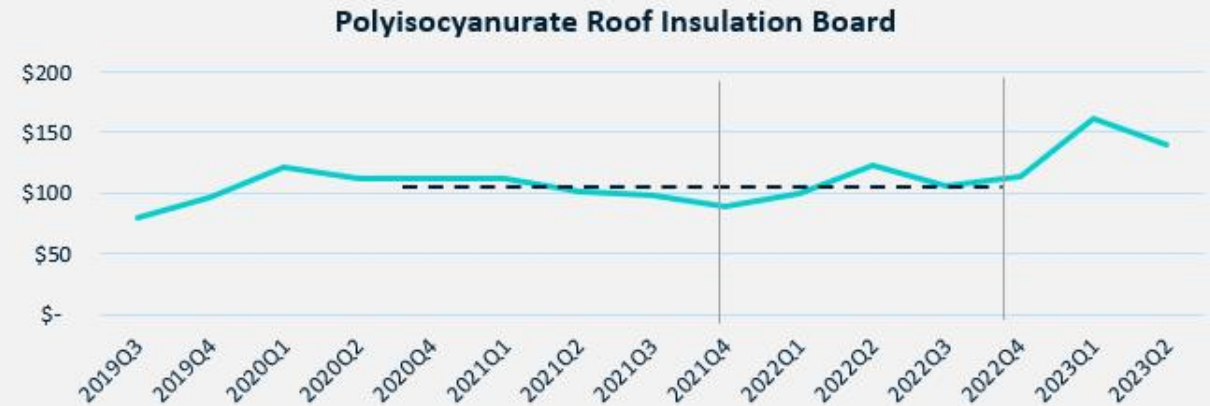
Electric Metallic Tubing (EMT)



Copper Wire



Continued Price Volatility - Insulation

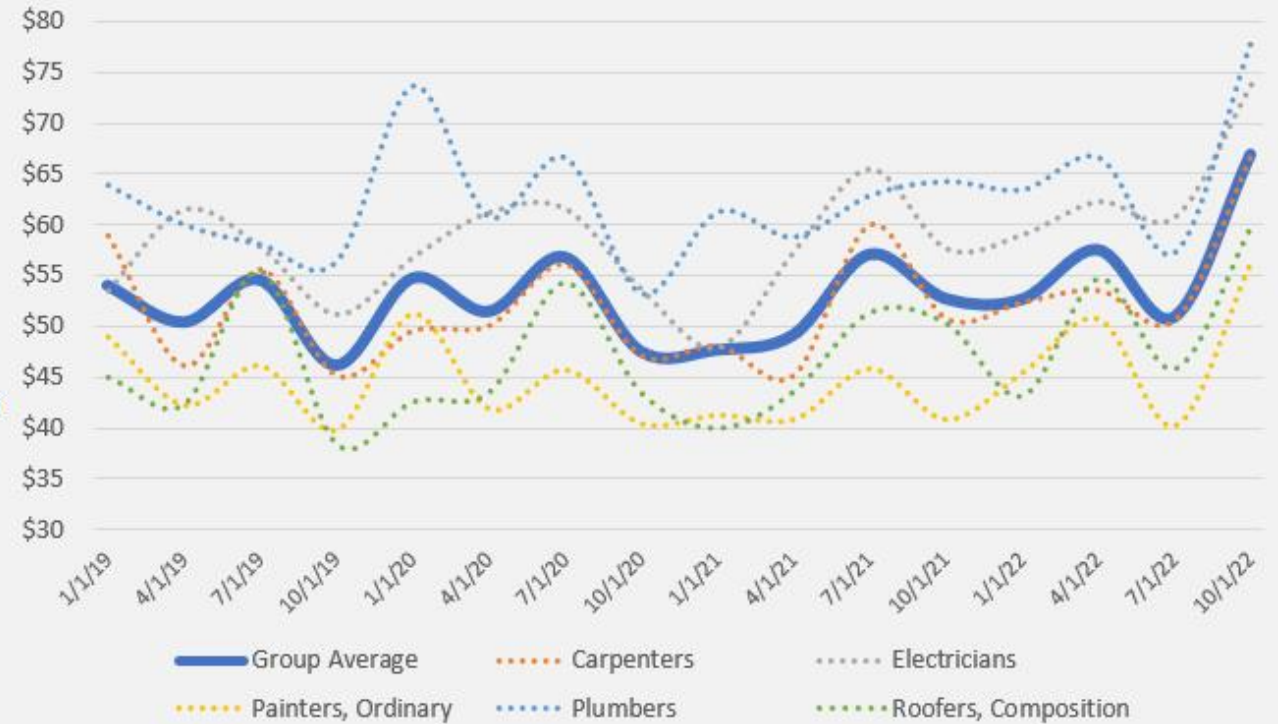


Continued Price Volatility - Labor

- Seasonal volatility masks larger structural labor availability problems.

- Wage spikes in 2022Q4 were an over-correction after downturns in 22Q3

Common Construction Trades Total Cost (Base + Fringe)



Market Challenges

- Difficulty of planning projects with long runways (MILCON budgetary process)
- Extreme reduction in estimate shelf life
- Scarcity of raw materials delaying ships to jobsite with downstream cost impacts
- Continued pressure in lack of skilled labor
- Emerging building technologies shift cost inputs



A Changing Paradigm

Pre-pandemic (2019)

- Program funding experienced YOY volatility
- Material supply was relatively stable and predictable

Post-pandemic (2020+)

- Program funding is available and increasing YOY
- Material supply experiencing unpredictable volatility





Navigating the Current Conditions



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Step 1: Put it in Context

- Dynamics in the market have shifted in the past:
 - Recession of 2008 where we saw 20%+ unemployment in the construction industry
 - Rise of significant technology adoption to automate
 - New emissions, safety, and building regulations
 - Most recently with COVID and the transition to work from home

Each of these changes created challenges but also led to positive outcomes



Step 2: Look Around (Reactionary Measures)

Government

- Expanded DOD program funding to counteract budgeting difficulties
- New building requirements
 - Sustainability
 - Building controls
 - Cyber security

Industry

- Alternative building materials and practices
- Smarter building technologies
- More connected software solutions



Step 3: Secure Investment (Contracting)

Move toward sharing risk and better collaboration



Collaborative Contracts

Design-Build
IPD
Early Contractor
Involvement



New Contract Paradigms

PIVOT Contracts
EPA Provisions
Cost-Plus Contracts

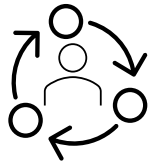


Step 4: Develop Data Technology (Resiliency)

- Data is the key to making the right decisions faster
- Find reputable, independent data sources
 - Flexibility and Accessibility
- Improved predictive modeling
 - Legacy inflation indexes are no longer enough
- More connected software solutions
 - New levels of cyber security

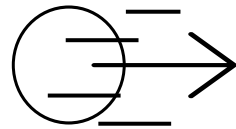


Gordian's Data Engineering Strategy



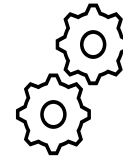
Integrated Workflows

Connecting data offerings to make workflow seamless across the building life-cycle



In Time Data

Expanded data updates to capture market fluctuations while supporting the historical cost trends



Data Accessibility

Providing insights and guidance to support rapid decision making and increasing ROI



Innovating for Impact

Leveraging AI, data science, and novel data advances to make the hidden visible – Recommendations to inform



Step 5: Expand from Foundational Assets

Data Insights Layers

Market
Impacting Cost
Trends

Historical Costs
as Business
Intelligence

Forecast of
Future Cost
Performance



Data Processing Layers

Data Personalization

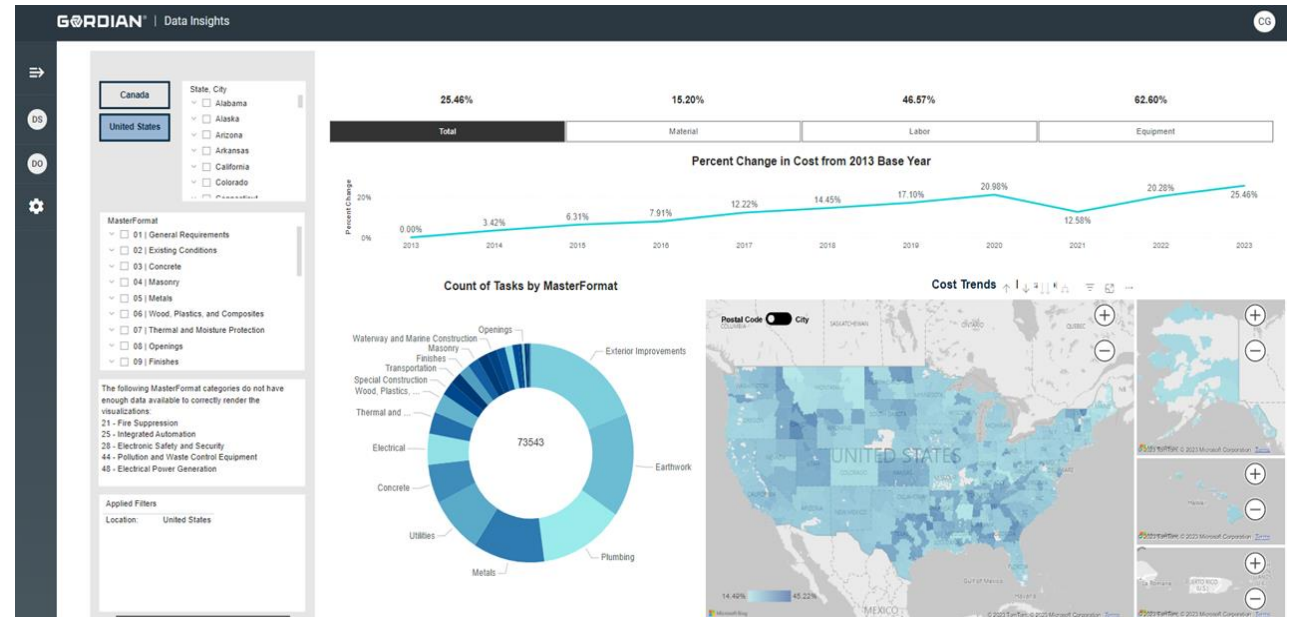
Configured Material, Equipment and Labor Costs

Data Logic

Enhanced Data Science Models to Drive New Market Insights

Data Assets

Scaled Data Collection Processes to Increase Type, Volume, Frequency



Future Trends to Monitor



Buy America



Net-zero Buildings



Market Deglobalization





- Sam Giffin,
s.giffin@gordian.com





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