

CONSTRUCTION ECONOMIC INSIGHTS

FIRST QUARTER 2024

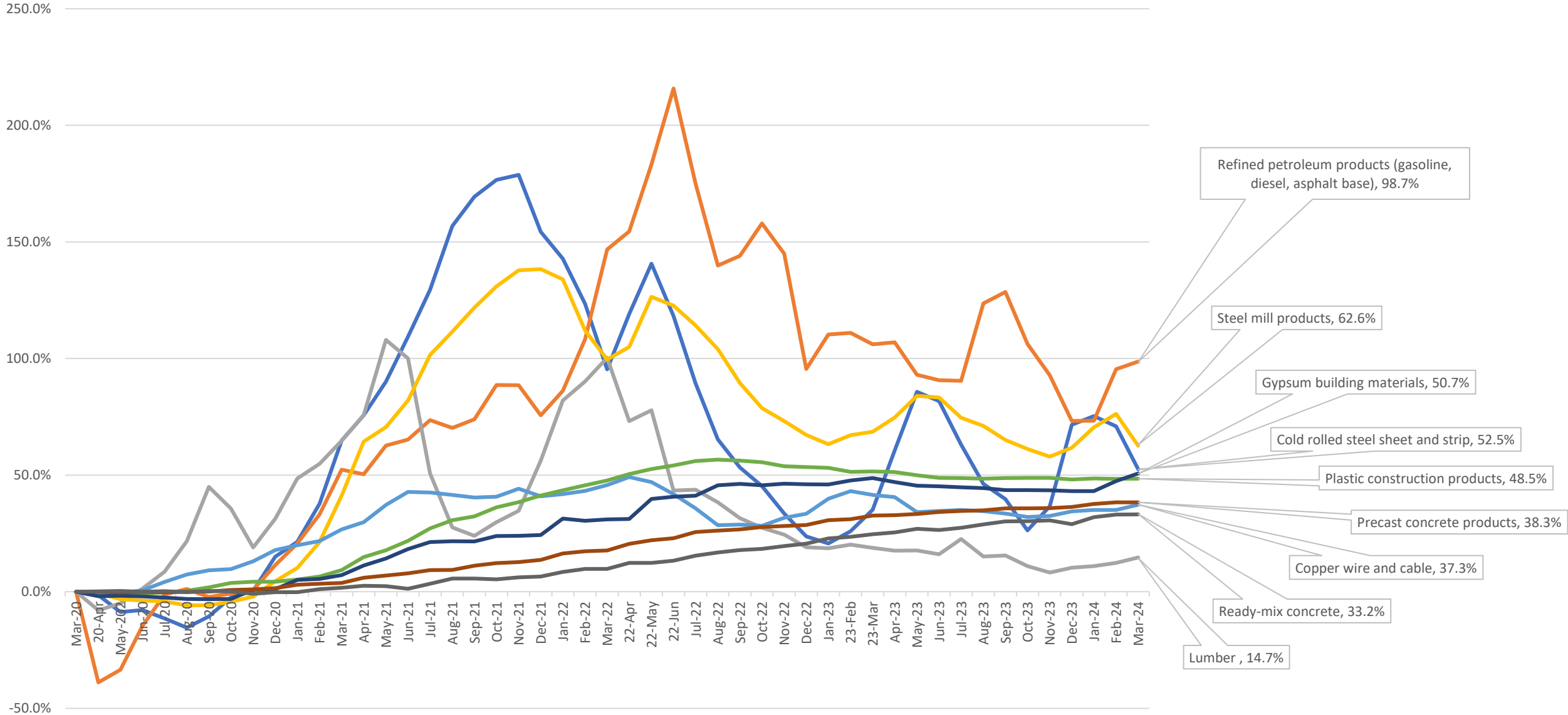
Building Costs in Flux: Analyzing Inflation's Effect on Construction Materials

This report contains insights and analysis of the trends in construction material prices, drawing on data from the U.S. Bureau of Labor Statistics, to highlight significant swings over the last four years and recent months. It focuses on key materials like steel, concrete, gypsum, lumber and petroleum-based products, emphasizing the volatility in prices amid global economic shifts and supply chain challenges.

Inflation and supply chain bottlenecks have significantly impacted construction material prices over the past 48 months. The recent stabilization or decline in some prices suggests improved supply chains, but consistent cost increases in key materials highlight the need for strategic planning and lean building processes to optimize costs, improve efficiency and mitigate risk.

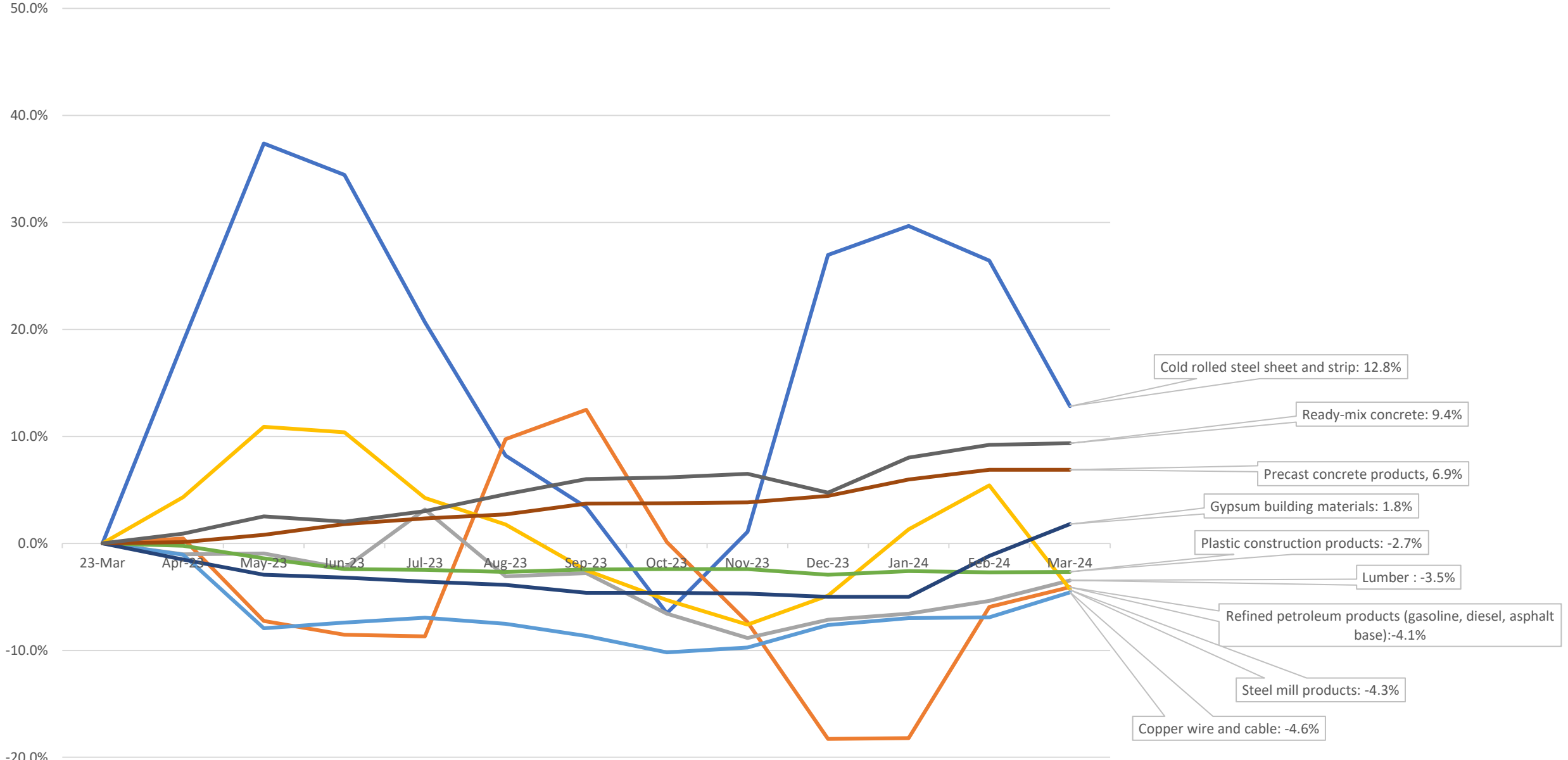
Price Changes for Selected Construction Materials

Since Pandemic: April 2020 - March 2024



Price Changes for Selected Construction Materials

Last 12 Months: April 2023 - March 2024



U.S. CONSTRUCTION MATERIAL PRICES

APRIL 2023 THROUGH MARCH 2024

OBSERVATION VALUE

BLS PPI Industry Data	23-Mar	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Cold rolled steel sheet and strip	266	316.1	365.4	357.6	321	287.8	275	248.6	268.9	337.7	344.9	336.3	300.1
Refined petroleum products	304.6	305.8	285.3	281.9	281.5	330.5	337.8	304.9	285	256	256.2	288.8	293.7
Lumber	263.9	261.2	261.4	257.7	272.3	255.7	256.5	246.4	240.4	244.9	246.4	249.6	254.7
Steel mill products	318.2	329.7	347.2	345.8	329.5	322.9	311.5	304.1	298	305.2	321.7	332.6	306.8
Copper wire and cable	404.2	401.4	383.1	384.5	385.7	384.2	381.2	377.1	378.3	383.9	385.6	385.8	392
Plastic construction products	350.5	349.9	346.8	344.1	343.9	343.4	344	344.1	344.1	342.7	343.6	343.3	343.4
Gypsum building materials	357.2	353.2	349.4	348.7	347.7	346.9	344.9	344.9	344.7	343.9	343.9	354.1	362
Precast concrete products	428.7	429	430.8	433.5	434.9	435.9	438.6	438.7	438.9	440.5	444.6	447	447
Ready-mix concrete	362.3	364.7	369	367.7	370.3	374.5	378.3	378.7	379.6	374.9	383.6	386.8	387.2

% CHANGE SINCE JULY 2022

BLS PPI Industry Data	23-Mar	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Cold rolled steel sheet and strip	0.0%	18.8%	37.4%	34.4%	20.7%	8.2%	3.4%	-6.5%	1.1%	27.0%	29.7%	26.4%	12.8%
Refined petroleum products	0.0%	0.5%	-7.3%	-8.5%	-8.7%	9.7%	12.5%	0.1%	-7.4%	-18.3%	-18.2%	-5.9%	-4.1%
Lumber	0.0%	-1.0%	-0.9%	-2.3%	3.2%	-3.1%	-2.8%	-6.6%	-8.8%	-7.1%	-6.6%	-5.4%	-3.5%
Steel mill products	0.0%	4.3%	10.9%	10.4%	4.2%	1.8%	-2.5%	-5.3%	-7.6%	-4.9%	1.3%	5.4%	-4.3%
Copper wire and cable	0.0%	-1.1%	-7.9%	-7.4%	-7.0%	-7.5%	-8.6%	-10.2%	-9.7%	-7.6%	-7.0%	-6.9%	-4.6%
Plastic construction products	0.0%	-0.2%	-1.4%	-2.4%	-2.5%	-2.7%	-2.4%	-2.4%	-2.4%	-2.9%	-2.6%	-2.7%	-2.7%
Gypsum building materials	0.0%	-1.5%	-2.9%	-3.2%	-3.6%	-3.9%	-4.6%	-4.6%	-4.7%	-5.0%	-5.0%	-1.2%	1.8%
Precast concrete products	0.0%	0.1%	0.8%	1.8%	2.3%	2.7%	3.7%	3.8%	3.8%	4.4%	6.0%	6.9%	6.9%
Ready-mix concrete	0.0%	0.9%	2.5%	2.0%	3.0%	4.6%	6.0%	6.2%	6.5%	4.7%	8.0%	9.2%	9.4%

U.S. CONSTRUCTION MATERIAL PRICES

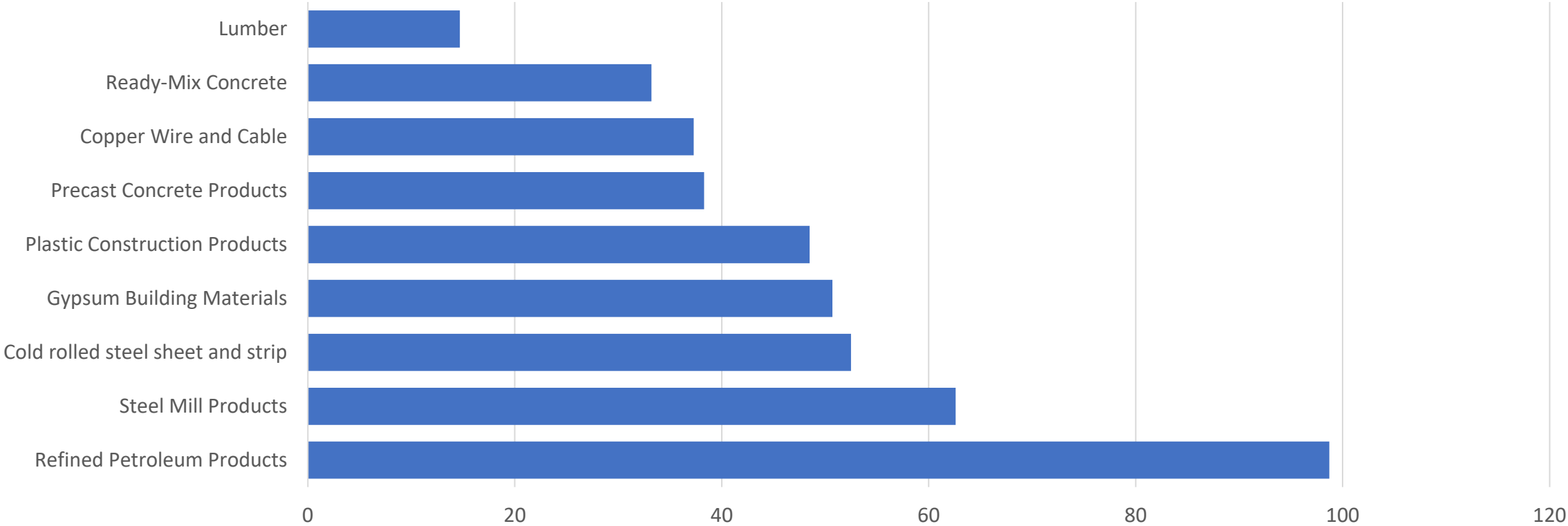
% DIFFERENCE SUMMARIES

BLS PPI Industry Data	Since Pandemic % Change (Apr 20 – Mar 24)	Last 12 Months % Change
Cold rolled steel sheet and strip	52.5%	12.8%
Refined petroleum products (gasoline, diesel fuel, asphalt base)	98.7%	-3.6%
Lumber and wood products	14.7%	-3.5%
Steel mill products	62.6%	-3.6%
Copper wire and cable	37.3%	-3.0%
Plastic construction products	48.5%	-2.0%
Gypsum building materials	50.7%	1.3%
Precast concrete products	38.3%	4.3%
Ready-mix concrete	33.2%	6.9%

U.S. CONSTRUCTION MATERIAL PRICES

% DIFFERENCE SUMMARIES

% Change Since April 2020 (48 Months)



Data source: U.S. Bureau of Labor Statistics

Trends

Long- and Short-Term

Long-term Trends (April 2020 – March 2024)

- Significant increases were observed in specific construction materials, such as steel mill products (+62.6%), gypsum building materials (+50.7%), and plastic construction products (+48.5%).
 - Steel mill products include hot-rolled steel, cold-rolled steel, pipes and tubes, bars and rods, and plates. Cold-rolled steel sheets are hot-rolled steel with additional processing at room temperature to create thinner sheets and improve surface finish.
 - Gypsum building materials include drywall, plaster, ceiling tiles, joint compounds and panels.
 - Plastic construction products include plastic pipes, such as polyvinyl chloride (PVC) and cross-linked polyethylene (PEX), insulation materials, plastic-based flooring materials, siding and panels, windows and doors made from PVC or other plastic composites, plastic roofing and gutters.
- Refined petroleum products showed an even higher increase (+98.7%), highlighting significant volatility in oil-based products.
 - Key refined petroleum products include gasoline, diesel fuel, asphalt and lubricants.
- Other materials like copper wire and cable (+37.3%), precast concrete products (+38.3%), and ready-mix concrete (+33.2%) also saw substantial price increases.
 - Key copper wire and cable products include building wire, power cable, communications cable, magnet wire, and control and instrumentation cable.
 - Precast concrete products include panels, pipes, blocks, pavers, columns, barriers, utility structures and architectural precast concrete elements.
 - Ready-mix concrete is a mixture of cement, water, aggregates (sand, gravel or crushed stone) and sometimes additives to enhance properties like setting time, workability or durability. It is typically used for foundations, slabs, pavements and structures.

Short-Term Trends (April 2023 – March 2024)

- Cold-rolled steel sheets and strips (+12.8%) and precast concrete products (+6.9%) had the highest price increases over the last year.
- However, many construction materials experienced price decreases: refined petroleum products (-4.1%), lumber (-3.5%), steel mill products (-4.3%), copper wire and cable (-4.6%), and plastic construction products (-2.7%).

Summary

Key Observations:

- **HIGH VOLATILITY IN CERTAIN MATERIALS:** Overall, materials that heavily rely on petroleum and energy products exhibit high volatility, significantly impacting construction costs.
- **RECENT STABILIZATION AND DECLINE:** In the past 12 months (April 2023 to March 2024), the prices for some materials stabilized or declined. Notably, refined petroleum products, lumber, steel mill products, and copper wire and cable experienced price declines, which could be attributed to stabilizing supply chains and reduced demand. Concrete products remain relatively stable, yet they consistently trend upward.
- **CONSISTENT PRICE INCREASES IN CONCRETE PRODUCTS:** Precast concrete products (+38.3%) and ready-mix concrete (+33.2%) showed steady price increases, which align with the rising costs of raw materials and labor shortages affecting the construction industry.

6 Solutions

For Building Through Supply Shortages, Rising Prices

OWNERS AND DEVELOPERS HAVE OPTIONS TO KEEP BUILDING PROJECTS ON TRACK AND MITIGATE ECONOMIC RISKS.

Volatile prices and procurement delays are nothing new to experienced builders. To be adaptable and efficient – and establish a safe, reliable path to successful project completion – consider the following six solutions:

- 1. BLEND THE TEAM EARLY:** Remember time is money. Early collaboration between architect and contractor – in a design-build or design-assist delivery method – will accelerate schedules and prevent expensive, time-intensive redesign. For speed to revenue, break down barriers and blend the team sooner than later. Also, develop back-up scenario plans in advance. This will allow the team to rapidly and seamlessly shift to an acceptable plan B or C and avoid delays or cost overruns.
- 2. BUILD LEAN:** Lean construction provides greater stability, reliability, efficiency and flexibility. Engage a lean builder to help navigate market conditions and material shortages, and you will maximize ROI. Builders with Lean DNA are master planners and professionally trained in delivering optimally efficient projects, reducing waste during all stages of construction. According to Dodge Data & Analytics' research, "high Lean-intensity projects" are three times more likely to complete ahead of schedule and two times more likely to complete under budget.
- 3. EXPAND THE MATERIAL MIX:** Evaluate and analyze substitute materials and systems. You have a menu of choices for all components of a building, including foundations, superstructures, framing, enclosures, systems, interior building materials and more. Work with your contractor and strategic trade partners early in the design phase to expand acceptable substitutes without compromising on safety, quality, durability or functionality.

Continued...

6 Solutions

For Building Through Supply Shortages, Rising Prices

- 4. INTEGRATE PROJECT SCHEDULING:** Combine all parties' responsibilities into a single schedule and break it down into an extensive amount of detail. This will allow all parties to understand each nuance on the schedule and the various critical paths to project delivery, whether that be permitting, material procurement, trade partner engagement, or various owner related activities. The approach empowers owners to make decisions on budget, schedule and material procurement at the last responsible moment.
- 5. PROCURE MATERIALS EARLIER:** Material prices are moving fast and furiously, at times. Work from real, data-driven expectations and try to make material procurement decisions earlier. Buying critical materials earlier will typically result in cost savings and greater decision-making power about other factors later in the project. It mitigates unknown exposure to shortages and can ensure access to materials when needed.
- 6. ESTABLISH STRATEGIC BUDGET RESERVES & A REINVESTMENT PLAN:** Try to carry extra contingency and avoid building to your max budget upfront. Build a strategic buffer and, more importantly, a schedule of milestones for reassessing risk at the last responsible moment and gradually releasing reserved funds back into the project as risk diminishes. For instance, if your project budget is \$15 million, target \$14.5 million and then systematically release the balance if economic conditions improve. Converting surplus contingency adds real value and allows you to add project wish-list items such as upgraded finish materials, appliances, technology, landscaping and more.

The economy is uncertain, but the risks are tolerable and quantifiable. Smart, experienced builders know how to manage projects through volatility. A combination of these solutions – early builder engagement, lean best practices, collaborative design approaches, alternative material/system flexibility and strategic budget reserves with reinvestment milestones – will help mitigate or avoid potential project delays and cost increases.



Skender

A Lean Builder

ENGAGE A LEAN BUILDER-ECONOMIST.

Lean builders like Skender are vital economists on construction projects. We are routinely engaged early in the process to counsel clients and maximize value through volatile economic markets and material shortages. We research, collect and analyze data, monitor trends, engage our subcontractor network and actively evaluate costs, imports, inflation, labor, supply and demand, lifetime costs, efficiencies, environmental impact and more.

Working in concert with the design team and key trades, a Lean builder helps you navigate current economic conditions to safely deliver your project on time and on budget.

Lean benefits include:

- Reduction in overall cost
- More decision-making power
- Accelerated schedules (speed to revenue)
- Transparent pricing and reliable budgets
- Flexibility to free up contingency for wish-list items at the last responsible moment
- Less risk, fewer mistakes, fewer RFIs and fewer unresolved issues
- More consistent, higher quality services
- Improved communication and collaboration
- High-performing, right-sized teams
- Optimized processes
- Removal of waste

For more information, visit www.skender.com.



Skender

Direct Contacts

Skender is a full-service building contractor and one of the nation's top 100 construction firms, according to *Building Design & Construction*. Headquartered in Chicago with an office in Indianapolis, Skender serves its clients in the Midwest and across the country in the Interiors, Healthcare, Multifamily, Hospitality, Office, Life Sciences, Higher Education, Retail, Municipal, Senior Living and Affordable Housing sectors.

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