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THE CONSTRUCTION
ASSOCIATION

CONSTRUCTION INFLATION ALERT

In late March, the Associated General Contractors of America (AGC) posted the Construction Inflation Alert, a document to inform project owners, government officials, and the public about the extreme cost increases and supply-chain disruptions affecting construction. The current version updates the Alert to reflect the continued volatility in materials costs, as well as lengthening lead times for both production and deliveries.

Although the overall economy has strengthened significantly in the past few months and appears to be headed for further growth, the construction industry has experienced a much more uneven recovery. Lagging demand for numerous types of nonresidential construction is keeping many contractors from passing on their added costs. This combination of steeply rising costs and nearly stable bid prices threatens to push some firms out of business and keep the industry's unemployment rate unacceptably high.

This report is intended to provide all parties with better understanding of the current situation, the impact on construction firms and projects, its likely course in the next several months, and possible steps to mitigate the damage. The document will be revised to keep it timely as conditions change. Please send comments and feedback, including price and supply-chain information, to AGC of America's chief economist, Ken Simonson, ken.simonson@agc.org.

2021

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Rising costs, flat project pricing

Figure 1 illustrates the threat. The red line (“Input costs”) shows the change from June 2020 to June 2021 in the price of all materials and services used in construction, while the blue line (“Bid prices”) measures the far smaller change in what contractors say they would charge to erect a set of nonresidential buildings. This latter line, essentially a measure of bid prices, rose only 3.4% over 12 months. In contrast, the line measuring the cost of contractors’ purchases soared 26.3% over the same interval.

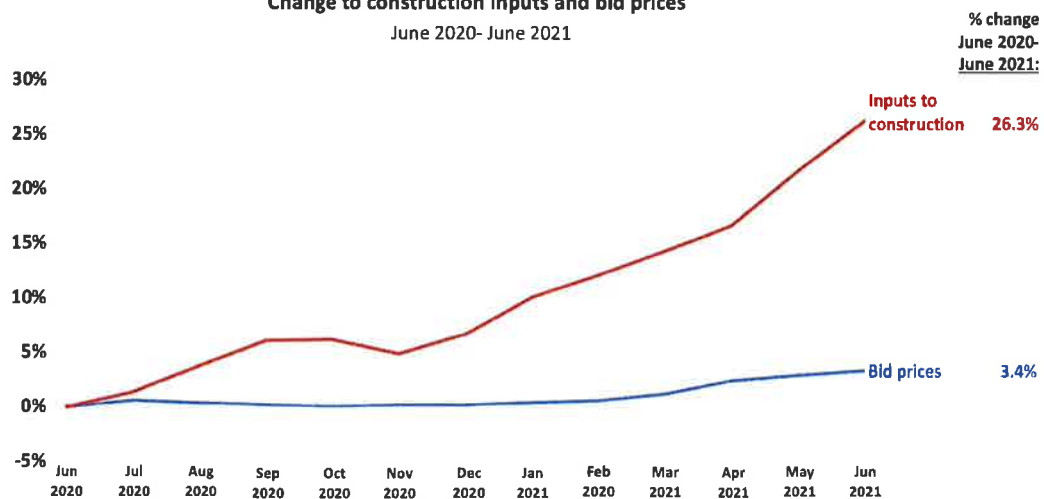
26.3%

Input costs for construction soared 26.3% from June 2020 to June 2021

In other words, if a contractor or subcontractor submitted a fixed-price bid in June 2020 based on materials costs at that time but did not buy the materials until a year later—a common occurrence—its cost for the materials would have risen an average of more than 26%. Given that materials often represent half or more of the cost of a contract, such an increase could easily wipe out the profit from a project and potentially put the contractor out of business.

FIGURE 1

Change to construction inputs and bid prices
June 2020- June 2021



Source: Bureau of Labor Statistics, producer price indexes (PPIs) for new nonresidential building construction (bid prices) and inputs to construction, not seasonally adjusted

In fact, Figure 1 understates the severity of the current situation for many contractors, in two respects. First, the two lines are calculated from producer price indexes (PPIs) posted monthly by the Bureau of Labor Statistics (BLS). The most recent PPIs are based on prices BLS collected around June 11.

Since then, additional price increases have taken effect or been announced by producers of numerous materials. Notably, prices for many types of steel have continued to set new records. Prices have also increased for numerous plastic resins and products. Various cement and concrete suppliers increased prices on July 1 or announced increases effective in August or September.

Since BLS collected prices for the June PPIs, retail diesel fuel prices increased a further 3%, or 9 cents per gallon, as of August 2. Those increases affect contractors directly in the cost of fuel for their off-road equipment and trucking fleets. In addition, fuel surcharges are likely to go up on deliveries of materials and equipment, and hauling away of dirt, debris and equipment from construction sites.

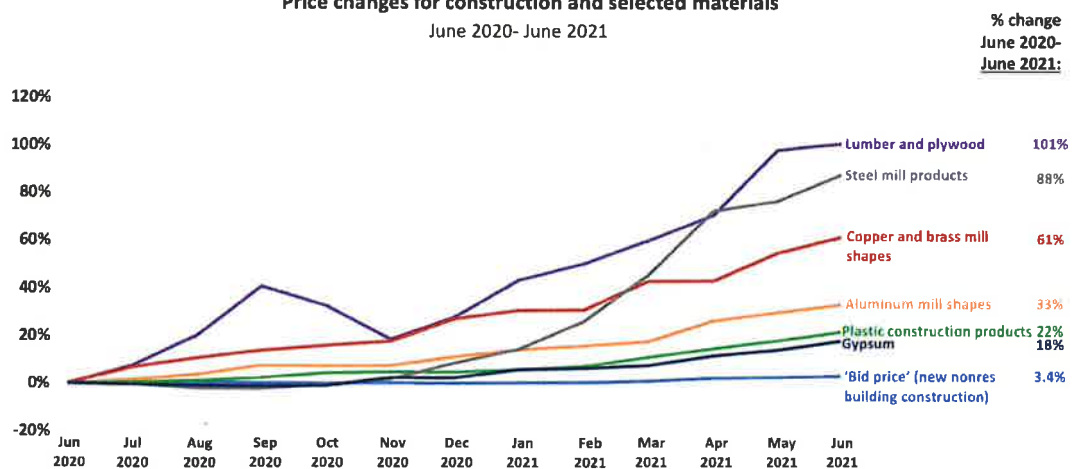
Second, many projects or subcontractors' packages are heavily weighted toward materials that have risen much more in price than the overall PPI for inputs. Figure 2 shows the change in PPIs from June 2020 to June 2021 for six widely used materials. The index for lumber and plywood doubled, rising 101%. The PPI for steel mill products soared 88%; for copper and brass mill shapes, 61%; and for aluminum mill shapes, 33%. Thus, contractors whose purchases are weighted toward any of these broad classes of materials are likely to have experienced even greater total increases in costs than the overall PPI for inputs suggests.

Even material prices that have not jumped as much as the 26% increase in the overall PPI for construction inputs have nevertheless risen far more than contractors' bid prices. For instance, the PPI for plastic construction products rose 22% from June 2020 to June 2021 and the index for gypsum products climbed 18%. An index for truck transportation of freight increased 15% over 12 months.

88%
 The price index for steel mill products jumped 88% from June 2020 to June 2021

FIGURE 2

Price changes for construction and selected materials
 June 2020- June 2021



Source: Bureau of Labor Statistics, producer price indexes (PPIs) for new nonresidential building construction (bid prices), gypsum products, wood, metal products, and plastic products, not seasonally adjusted

3.4%
 The price index for contractors' "bid prices" rose only 3.4% from June 2020 to June 2021

Two set of prices have declined since mid-June. Lumber prices, as measured at the mill by the trade publication Random Lengths and in the futures market on the Comex division of the CME commodities exchange, plunged from early May to mid-July. Comex copper futures also dropped. However, both commodities have recently been fluctuating in price, and prices are far above pre-pandemic levels.

Moreover, these price cuts may not show up at the local distributor level or the construction site to the same degree, or with predictable timing. As noted, the rising cost of trucking may negate some of the cost savings at the mill. And the price in any one locality will depend on current demand, inventories and expected supply.

Furthermore, there is no assurance that recent price decreases will last. Lumber prices plummeted from then-record highs in September 2020 to November before reversing course and rising to new heights for the next six months.

Supply-chain issues

Extended and uncertain delivery times for construction items have been an even bigger problem for many contractors than the extreme price increases. Currently, there are delays at every stage of the supply chain.

A leading supplier of building siding material told customers that it would not accept new multifamily contracts from July 1 until November 1. Contractors have reported being told they cannot get bar joists for 11 to 12 months. Roofing contractors have been quoted production lead times for various roofing materials ranging from four to six months, with uncertain availability of fasteners and other essential items. Respondents to a survey conducted by AGC of California reported lead times of “16 weeks to unknown” for items as diverse as lockers, glass, structural steel detailing, ductile iron fittings and other pipe material, insulation, aluminum extrusion, signal poles, and airfield lighting.

Plant or transportation breakdowns that would normally have caused only tight supplies, inventory drawdowns, or localized shortages have had much wider consequences this year. One widespread and long-lasting example has been the impact on construction plastics from the freeze in Texas in February. The freeze and losses of power and water damaged or completely shut down all of the plants that supply the raw materials for all construction plastics. In addition, the freeze burst thousands of polyvinyl chloride (PVC) water pipes, thereby adding to demand.

A very wide array of construction products is made from plastic, resins, or other affected ingredients. These include PVC and fiberglass pipe and plumbing fixtures; vinyl siding and moisture barriers; acrylic and other paints, coatings, and highway marking material; geotextiles; roofing and insulation materials; adhesives and “glues” for the layers and particles of engineered wood products such as plywood, oriented strand board, and I-joists; wraps and packaging; and more.

Other unplanned outages that affect construction have occurred at plants producing cement, semiconductors, chlorine (used in making PVC and other plastics), and steel. Meanwhile, little new capacity has been added as producers struggle to get back to previous levels of capacity utilization.

In addition to increased costs and lead times, contractors are experiencing delivery times that have stretched or become completely unreliable. These problems have shown up at all points in the delivery chain.

Producers in Asia and Europe reportedly cannot get enough containers or berths on container ships to send their products to the United States. Ports are backed up, forcing ships to wait offshore for days before unloading. Shortages of truck drivers and rail cars or train crews mean that containers sit on quays for many days longer than usual. Those shortages are also keeping domestically produced goods from leaving fabrication or storage locations on a timely basis.

As with unplanned factory shutdowns, interruptions in the global transportation network can take their toll on deliveries. The six-day blockage of the Suez Canal exacerbated shortages and delays for containers and ships from Asia and Europe. The unexpected shutdown of the Colonial Pipeline disrupted supplies of diesel fuel as well as gasoline. Massive wildfires in western states and British Columbia have interfered with logging, sawmills, and transport of logs and wood products.

In the face of such volatility and uncertainty, many producers are drastically shortening the duration for which they will hold their prices. This is very problematic for contractors, who must typically guarantee a price to an owner long before placing a firm order for materials. Some contractors report receiving price-increase notices from steel producers the day after they took effect. Others have been told they won't be quoted a price for lumber until it is loaded on a truck for shipment to the contractor.

Not a short-term problem

Some might assume contractors will simply raise their prices to cover the added costs. But current conditions in the industry, as well as the record from previous episodes of escalating materials costs, suggest that the mismatch between materials costs and contractors' prices is likely to persist for an extended period.

The pandemic has caused current production and delivery of many materials to fall short of demand. Initially, a wide range of factories, mills, and fabrication facilities were shut down on their owners' initiative or because government orders deemed them to not be "essential." In some cases, contractors—particularly homebuilders—canceled orders because they no longer saw demand for construction. Once production facilities were allowed to re-open, many of them had trouble getting up to full capacity because their own workers or those of their suppliers and freight haulers may have been ill, quarantined, or required to care for family members at home.

Imported products and components also were subject to production and shipping shutdowns in the early months of the pandemic. This particularly affected many products from China and northern Italy, ranging from kitchen cabinets and appliances to tile flooring to elevators. In recent months, production has increased but containers, ships, port space, and trucking capacity have all experienced bottlenecks that have slowed deliveries.

Dramatic shifts in demand triggered, at least in part, by the pandemic have added to price pressures and shortages of goods. Single-family housing starts leaped 31% in the first six months of 2021 from year-earlier levels, creating huge additional demand for wood products and other items that are also used in nonresidential construction. Restaurants that installed decks and railings for outdoor dining, along with offices and other buildings undergoing remodeling, added to demand for these products.

31%

Housing starts leaped 31% in January-June 2021 from the same months in 2020

Yet another cause of higher prices and tighter supply is trade policy actions imposed in 2018-2020. Tariffs or quotas on steel and aluminum from many countries, along with tariffs on hundreds of parts and materials from China, drove up the cost of many construction products and limited the number of suppliers, which has led to longer delivery times. Failure to renew a longstanding softwood lumber agreement with Canada has added to lumber costs.

Although the ostensible purpose of some of the trade actions was to protect and create jobs in the U.S. manufacturing sector—steel in particular—very little capacity has been added so far. Many manufacturers merely raised their prices in tandem with the imposition of tariffs.

PAST EPISODES

The construction industry has endured previous spells of rapid cost escalation. For instance, the PPI for goods used in construction accelerated from a 3.6% year-over-year rate of increase in January 2004 to 10.0% by October of that year and remained above a 5% annual rate for a total of 31 months, before subsiding to a 3.2% rate in October 2006.

Less than a year later, materials costs soared again, rising from a 1.6% annual growth rate in August 2007 to 12.9% in September 2008. The financial crisis that autumn brought rates down rapidly but, again, only for about a year. The inflation rate for materials spiked from 0.4% year-over-year in December 2009 to 5.8% the following April and remained above or close to 4% until early 2012. The most recent episode of large increases in materials costs was from November 2017 through November 2018, when the year-over-year price change ranged from 4.9% to 9.2%.

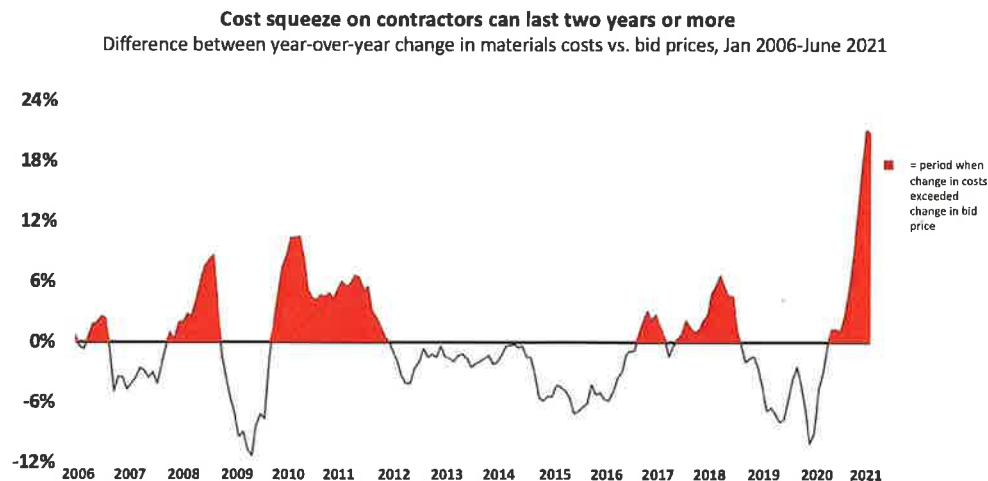
While each of these price spikes eventually subsided, they caused enormous harm to contractors, who generally were not able to pass along the increases for an extended period. Not only were firms that had already signed contracts to deliver a project at a fixed price caught by the increases, but competition kept contractors from raising their bids to match the increases for a year or longer. A comparison of the year-over-year change in the PPI for materials with the PPIs for five types of new nonresidential buildings shows there are periods as long as 28 consecutive months with such price disparities. That is, contractors' bid prices rose less—or decreased—relative to the cost of the goods they purchased. For the most part, these months coincided with periods in which the value of nonresidential construction was stagnating or shrinking.

28 months

Increases in material costs have outpaced bid prices for as long as 28 months

Figure 3 illustrates the gap. The areas in red indicate periods in which the year-over-year change in the PPI for inputs to construction exceeded the PPI for new nonresidential building construction (specifically, warehouses). Similar periods exist for the other new-construction “bid price” indexes: the PPIs for new school, office, industrial and healthcare buildings.

FIGURE 3



Source: Bureau of Labor Statistics, producer price indexes for goods inputs to nonresidential construction (material costs) and new warehouse construction (bid prices)

CURRENT DEMAND FOR CONSTRUCTION

The construction market currently is marked by a huge gap between residential and nonresidential activity. Residential construction spending—comprising new single- and multifamily structures, along with additions and renovations to owner-occupied housing—jumped 53% in the first six months of 2021 compared to January-June 2020. Nonresidential construction spending slid 8% during that span.

Employment data show a similar story. Both residential and nonresidential construction employment plunged by 14-15% from February to April 2020. But by June 2021, employment among residential building and specialty trade contractors had rebounded to a higher level than in February 2020, immediately before the pandemic struck. In contrast, nonresidential building, specialty trade and heavy and civil engineering contractors added back barely half of the employees they lost between February and April 2020.

Both of these datasets—spending and employment—indicate that the overall market for nonresidential construction remains weak, even though certain project types and geographic areas are hot. Thus, many contractors are forced to absorb cost increases in order to win the remaining projects that are available to bid on in their specialty or area.

-8%

Nonresidential
construction spending
fell 8% in January-June
2021 from 2020

What can contractors and owners do?

While contractors cannot unplug ports or rescind tariffs, they can provide project owners with timely and credible third-party information about changes in relevant material costs and supply-chain snarls that may impact the cost and completion time for a project that is underway or for which a bid has already been submitted.

Owners can authorize appropriate adjustments to design, completion date, and payments to accommodate or work around these impediments. Nobody welcomes a higher bill, but the alternative of having a contractor go out of business because of impossible costs or timing is likely to be worse for many owners.

For projects that have not been awarded or started, owners should start with realistic expectations about current costs and the likelihood of increases. They should provide potential bidders with accurate and complete design information to enable bidders to prepare bids that minimize the likelihood of unpleasant surprises for either party.

Owners and bidders may want to consider price-adjustment clauses that would protect both parties from unanticipated swings in materials prices. Such contract terms can enable the contractor to build in a smaller contingency to its bid, while providing the owner an opportunity to share in any savings from downward price movements (which are likely at some point, particularly for long-duration projects). The ConsensusDocs set of contract documents (www.consensusdocs.org) is one source of industry-standard model language for such terms. The ConsensusDocs website includes a price escalation resource center (<https://www.consensusdocs.org/price-escalation-clause/>).

The parties may also want to discuss the best timing for ordering materials and components. Buying items earlier than usual can provide protection against cost increases. But purchase before use entails paying sooner for the items; potentially paying for storage, security against theft and damage; and the possibility of design changes that make early purchase unwise.

Conclusion

The construction industry is in the midst of a period of exceptionally steep and fast-rising costs for a variety of materials, compounded by major supply-chain disruptions and stagnant or falling demand for projects—a combination that threatens the financial health of many contractors. No single solution will resolve the situation, but there are steps that government officials, owners, and contractors can take to lessen the pain.

Federal trade policy officials can act immediately to end tariffs and quotas on imported products and materials. With many U.S. mills and factories already at capacity, bringing in more imports at competitive prices will cool the overheated price spiral and enable many users of products that are in short supply to avoid layoffs and shutdowns.

Officials at all levels of government should review all regulations, policies, and enforcement actions that may be unnecessarily driving up costs and slowing importation, domestic production, transport, and delivery of raw materials, components, and finished goods.

Owners need to recognize that significant adjustments are probably appropriate regarding the price or delivery date of projects that were awarded or commenced early in the pandemic or before, when conditions at suppliers were far different. For new and planned projects, owners should expect quite different pricing and may want to consider building in more flexibility regarding design, timing, or cost-sharing.

Contractors need, more than ever, to closely monitor costs and delivery schedules for materials and to communicate information with owners, both before submitting bids and throughout the construction process.

Materials prices do eventually reverse course. Owners and contractors alike will benefit when that happens. Until then, cooperation and communication can help reduce the damage.

No single or simple solution will resolve the situation, but there are steps that government officials, owners, and contractors can take to lessen the pain