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The unprecedented lumber shortage, in 8 charts

BY

LANCE LAMBERT

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Homebuyers across the nation are up against one of the tightest housing markets in modern history. It's so hot that even amid a pandemic, median home prices are [up 16% over the past year](#). Building more homes would be the most straightforward way to help buyers. But construction is constrained by scarcity of a formerly plentiful and cheap commodity: lumber.

Since the onset of the pandemic, lumber prices are up a staggering 308%, to an all-time high of \$1,459 per thousand board feet, according to industry trade publication Random Lengths.

That exorbitant price might even make the housing shortage worse, especially for people in the lower- to middle-income range. Parsons Avenue Redevelopment Corporation, a small nonprofit that develops affordable housing, was planning to build a 12-unit housing project this summer in Columbus. But Brian Higgins, executive director at the nonprofit, tells *Fortune* the current price of lumber has likely put it on hold.

Lumber prices "added over \$200,000 to the project, which is approximately a 10% bump in the overall construction cost of the building," Higgins said. "In our case, this is something that we cannot simply pass on to the end user, since that would defeat the purpose of trying to create affordable housing."

How did we get here? Consider it a perfect storm set into motion by the pandemic. At the same time that state-mandated lockdowns caused sawmills to halt production, bored, quarantining Americans were rushing to [Home Depot](#) and Lowe's to buy up materials for do-it-yourself projects. That caused lumber inventory to plummet. It only got worse from there: Recession-induced record-low interest rates helped to spur a housing boom. As of this spring, home construction was at its highest levels since 2006. Production has swung back at sawmills, but capacity is too limited to match the explosion on the demand side.

Still, that narrative misses much of the nuance of this once-in-a-lifetime run. To really understand this unprecedented surge in lumber prices, you need to look at the data. That's why *Fortune* built eight charts to better explain the historic shortage.

Wood production fell during lockdowns—but has since rebounded

Industrial production index of wood product

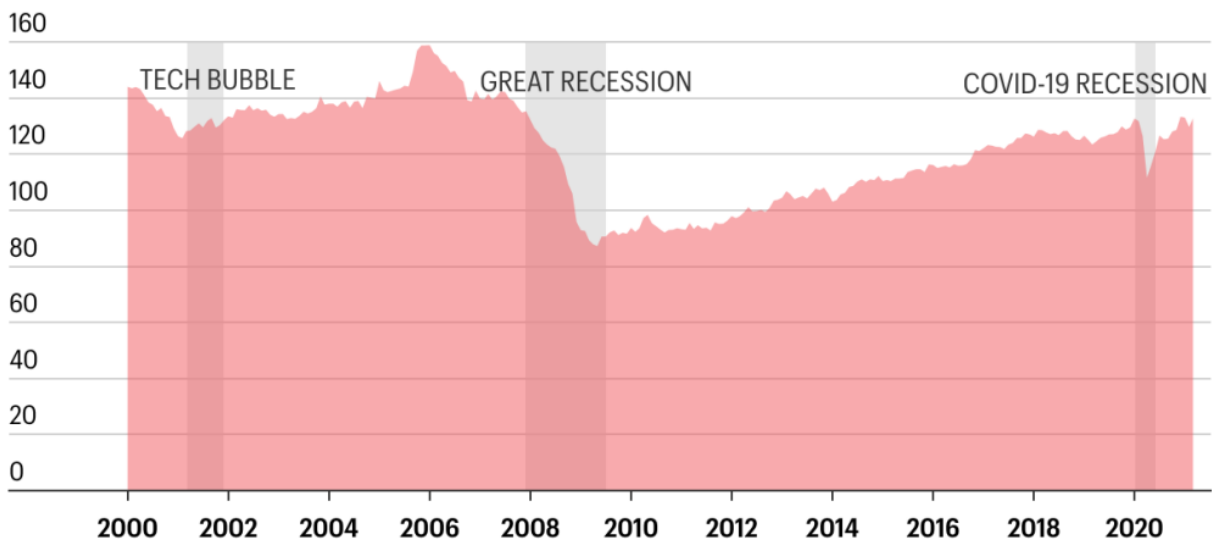


CHART: LANCE LAMBERT • SOURCE: BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM (US)

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The onset of the pandemic caused the sharpest economic shock in U.S. history. In a two-month span, [22.4 million Americans lost their jobs](#), while economists were openly questioning if we'd entered another depression. With the economy in a tailspin, sawmills initiated layoffs and scaled down

production. By April 2020, U.S. [wood production](#) was down 16% from January 2020.

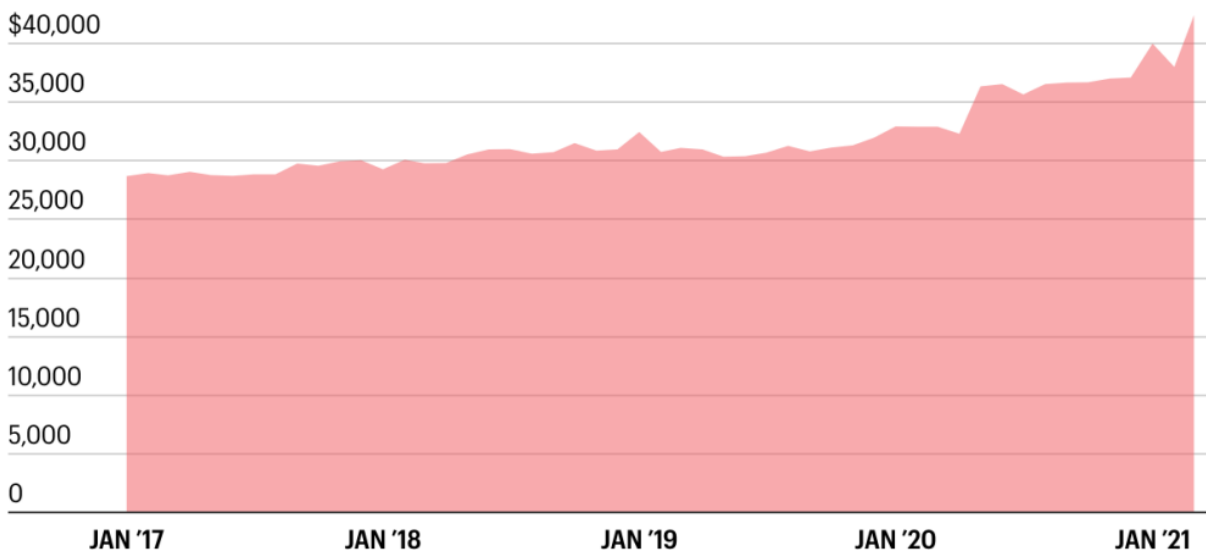
That trend had reversed by the summer of 2020, and by December, wood production was above pre-pandemic levels. However, that's still far behind the boom on the demand side. Why can't sawmills—enticed by sky-high prices—simply ramp up production to meet that demand? Well, sawmills have only so much capacity, and increasing it requires both time and confidence that future sales will remain high.

Another issue: Softwood lumber from Canada, a favorite among U.S. homebuilders, is particularly constrained right now. Stinson Dean, CEO of Deacon Lumber, says Canadian softwood production is limited by factors including British Columbia forest fires, beetle infestations, and the slow growth rate of spruce trees. Not to mention that [tariffs President Donald Trump slapped on Canadian lumber](#) four years ago have made it more expensive for builders to import.

“If the production factors remain that are limiting log supply, I find it hard to believe we return to historical price ranges,” Dean said.

Do-it-yourself took off during the pandemic

Home improvement retail sales, in millions of dollars



RETAIL SALES FOR BUILDING MATERIALS, GARDEN EQUIPMENT, AND SUPPLIES DEALERS

CHART: LANCE LAMBERT • SOURCE: U.S. CENSUS BUREAU

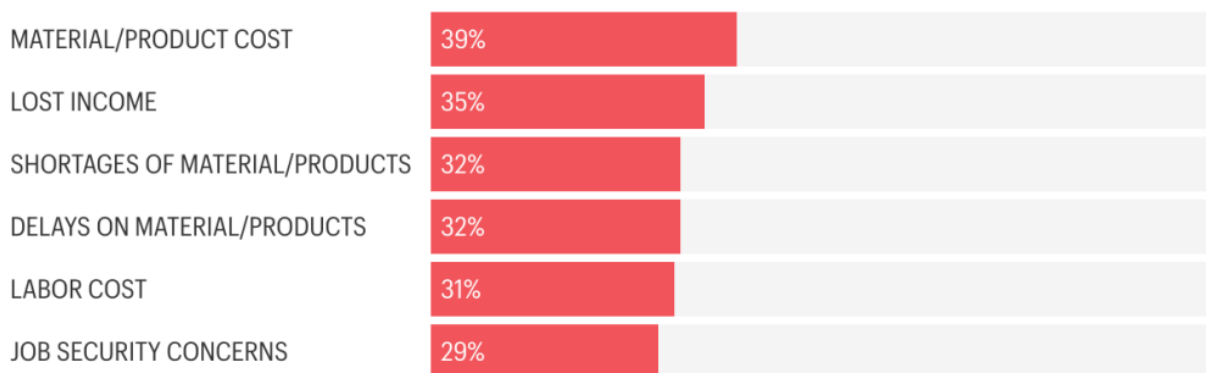
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Essentially from the start of the COVID crisis, do-it-yourself projects boomed. Americans were spending a lot more time at home and finally got around to knocking out projects. During the first two months of the recession, home-improvement sales shot up 13%. That phenomenon caused lumber demand to spike, even as sawmills were halting production.

Now that lumber prices are up 308%, renovations should taper off, right? Nope. In fact, it's the opposite: As of March, monthly home-improvement spending is up 29% from pre-pandemic levels.

Now the DIY boom is facing another test. Just as the forced work-from-home experiment created the DIY bounce, a return to the office could lead to a slowing in the home-improvement business. We'll get a better idea of what's going on [when Home Depot reports its earnings](#) on May 18.

Why homeowners say they delayed home renovation or do-it-yourself (DIY) projects during the pandemic



HOMEOWNERS SELECTED ALL FACTORS THAT ATTRIBUTED TO THEIR DELAY

CHART: LANCE LAMBERT •

SOURCE: FORTUNE-RESEARCHSCAPE INTERNATIONAL POLL OF 1,031 ADULTS BETWEEN APRIL 2 AND 5, 2021

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Over the past 50 years, Michael Hatten has built projects ranging from barns, to fences, to a basement rec room, to a pergola. But the recent spike in lumber prices has the 73-year-old self-described amateur home carpenter rethinking upcoming projects on his Oregon property.

"For the first time in my life, cost of materials has become the primary determinant of whether I take on a project or not," Hatten told *Fortune*. "With common two-by-fours skyrocketing from less than \$2 to over \$6 apiece, I can't just shrug off the price."

He's not alone. Among homeowners, 37% said they've delayed a home project during the pandemic. The top reasons: material cost (39%), lost income (35%), and material shortages (32%). That's according to a [Fortune-Researchscape International poll](#) of 1,031 U.S. adults in April.

All these delayed DIY projects could act as a floor for prices: As lumber costs start to drop, sidelined buyers could jump into the market, thus delaying a larger correction.

Historically low mortgage rates attract home buyers

Average 30-year fixed mortgage rate



CHART: LANCE LAMBERT • SOURCE: FREDDIE MAC

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In 2019, the country began the five-year period when people born between 1989 and 1993, the biggest birth years for millennials, will turn 30—entering the all-important first-time homebuying years. That demographic trend was already making the housing market more competitive.

Then the pandemic struck. To help spur investment during the COVID-19 recession, the Federal Reserve took swift action to lower rates. Mortgage rates soon fell to historic lows, with [fixed 30-year rates bottoming out at 2.65% in December](#). Those rates, coupled with the demographic wave, turned a competitive housing market into a buyer's nightmare. That was further

worsened by remote workers realizing they could actually afford to own if they left the city.

Housing inventory plunged during the pandemic

Homes listed for sale on realtor.com

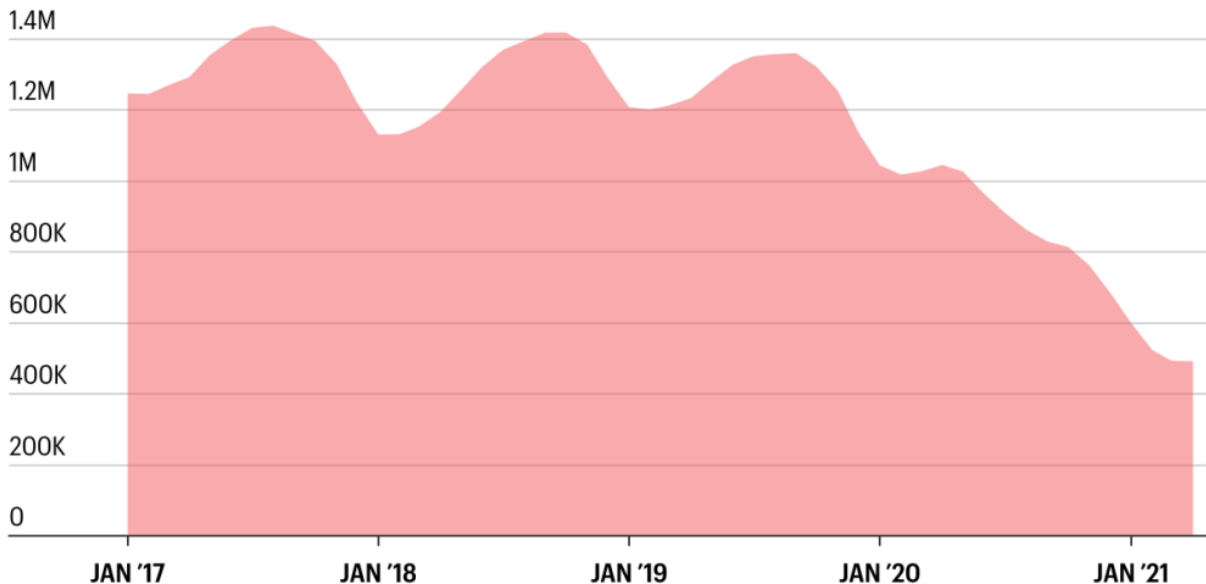


CHART: LANCE LAMBERT • SOURCE: REALTOR.COM

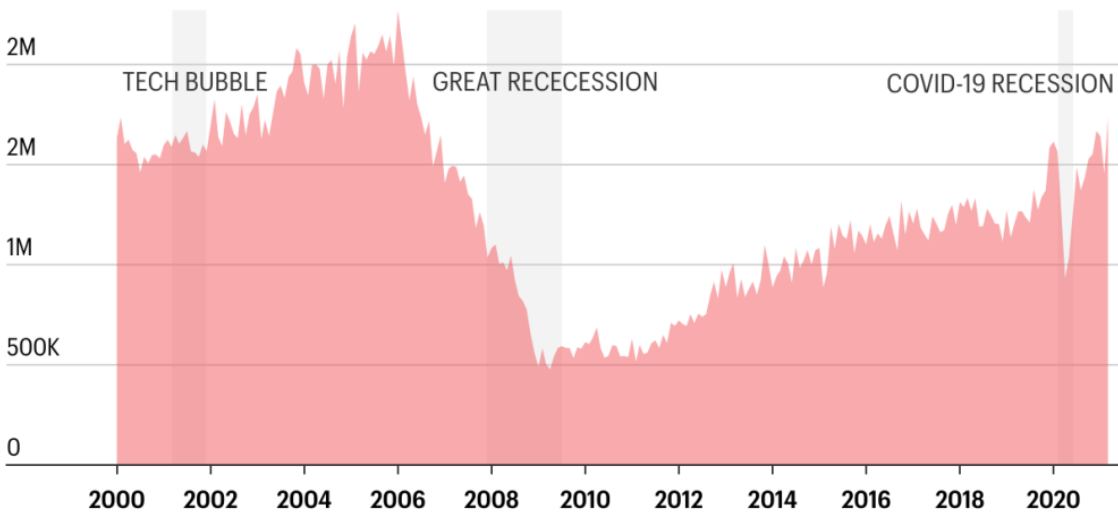
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Normally, during recessions, housing inventory grows. Not this go-around: The housing market saw a rush of buyers into the market, causing housing inventory to tank. According to realtor.com, the number of homes for sale has fallen over 50% since the onset of the pandemic.

"Existing inventory had been in short supply for years, but the pandemic made matters worse," Ali Wolf, chief economist at Zonda, told *Fortune*. "Some existing homeowners have been reluctant to put their home on the market due simply to COVID-19 fears," she added, noting that "some feel uneasy about inviting strangers into their home in the middle of a pandemic."

Home construction hits highest level since 2006

New privately owned housing units started



HIGHLIGHTED AREA DENOTES RECESSION

CHART: LANCE LAMBERT • SOURCE: U.S. CENSUS BUREAU

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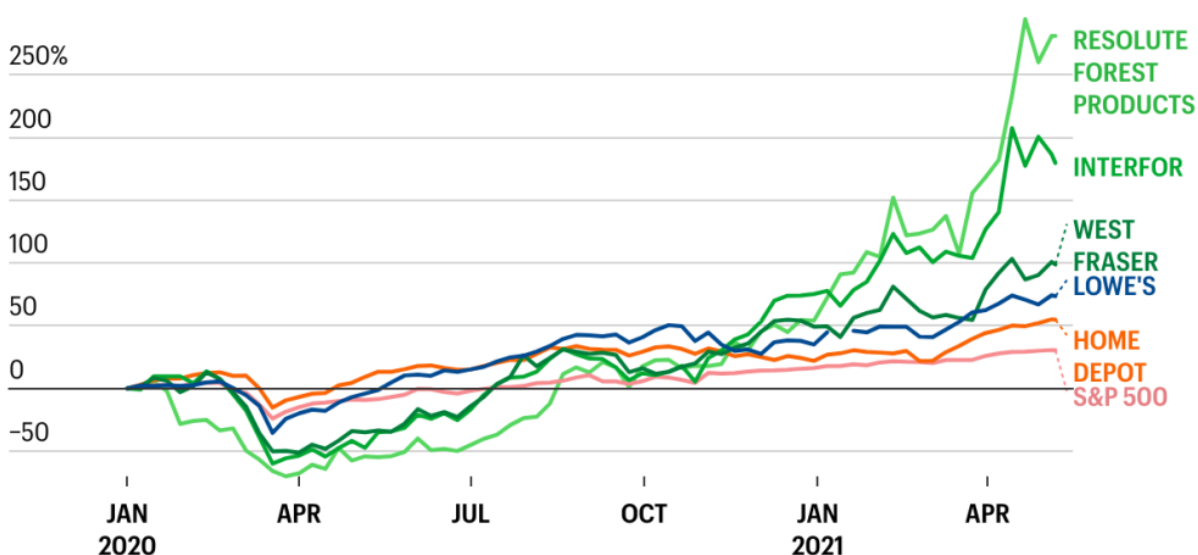
That 50% decline in inventory is key to the lumber shortage. The lack of available homes for resale pushes buyers to turn to new construction. In March, [new housing starts](#) hit their highest levels since 2006. Of course, new homes require a lot of lumber, thus exacerbating the shortage.

This fierce housing market also means buyers are willing to absorb higher cost on the lumber side. If they want a home, they have no choice. The National Association of Home Builders calculates the current [lumber price adds \\$36,000 to the price tag of a typical new single-family home](#). If homebuyers balked at those sky-high prices, lumber demand would drop and prices could finally begin to correct. That hasn't happened yet.

Home construction, or should we say lack of building, in the years following the Great Recession is also the underpinning of our current housing shortage. Builders knew the market would require more homes as millennials aged into homebuying. The subprime mortgage crisis, however, upended home construction and put many builders out of business.

Lumber stocks are soaring

Return of companies with major lumber exposure since Jan. 1, 2020



FOR PURPOSES OF COMPARISON, S&P 500 INDEX RETURN IS ALSO INCLUDED

CHART: LANCE LAMBERT • SOURCE: YAHOO FINANCE

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Home Depot and [Lowe's](#) shareholders have benefited greatly from the DIY boom, with their share prices rising 51% and 71%, respectively, since Jan. 1, 2020. That compares to the 28% gain posted by the S&P 500 over the same period. But Home Depot and Lowe's aren't benefiting that much from the lumber shortage. Instead, the biggest beneficiaries of skyrocketing lumber are the sawmills. That's where capacity is the most limited—and they're the market price-setters.

At current pricing levels, Dustin Jalbert, senior economist at Fastmarkets RISI, where he specializes in wood prices, says some mills are operating at staggering 80% profit margins. That has made lumber stocks among the best investments during the pandemic. Since the beginning of 2020, shares of Resolute Forest Products (ticker: RFP) are up 272%. That compares to a 176% gain for Interfor (ticker: IFSPF) and 94% for West Fraser Timber (ticker: WFG).

The staggering gains are also triggering more investment. On Friday, West Fraser Timber [reported its first-quarter](#) revenue grew 81% from the prior quarter, while its Ebitda more than doubled to \$1 billion. The Canadian

forestry company also [announced](#) it will open a new lumber mill in Dudley, Ga., and reopen a shuttered mill in Quebec to help meet the lumber backlog.

Lumber prices are up 308% since the onset of the pandemic

Lumber price per thousand board feet

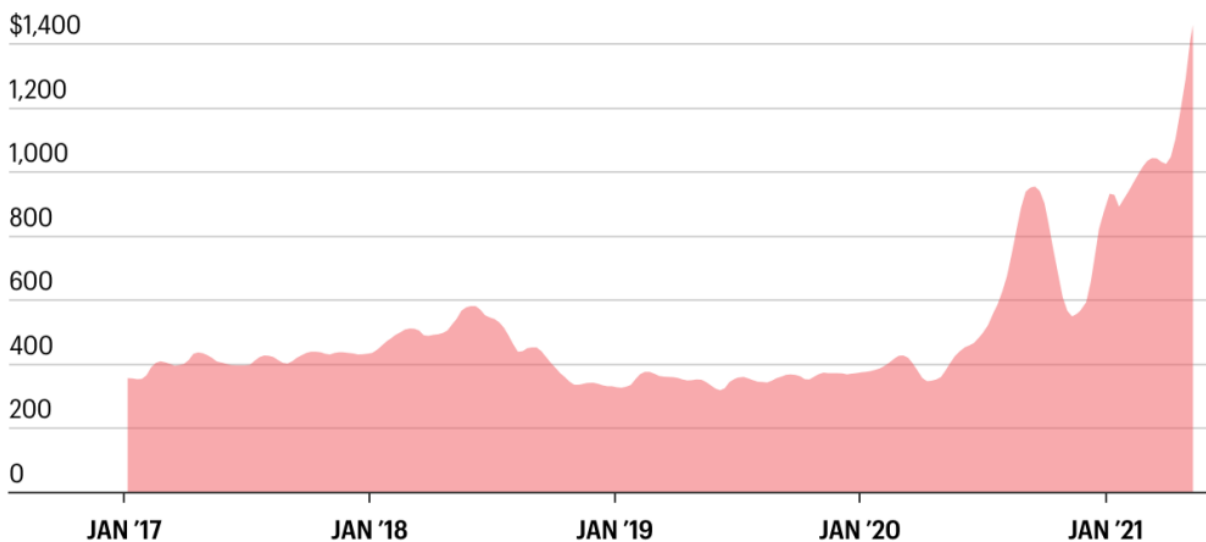


CHART: LANCE LAMBERT • SOURCE: RANDOM LENGTHS FRAMING LUMBER COMPOSITE PRICE

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This perfect storm explains why lumber is up 308% since the onset of the pandemic. On Tuesday, it reached a record high of \$1,459 per thousand board feet. When the crisis started, the price was \$358. And it could soon go higher. Already, panicked builders are bidding up prices in order to secure materials for summer projects. [The July futures contract price](#) per thousand board feet of two-by-fours is \$1,487 as of Wednesday.

Where do we go from here?

"We are approaching month No. 10 of what we believe to be an 18- to 24-month cycle," Kyle Little, chief operating officer at Sherwood Lumber, tells *Fortune*. "Prices are going to trade in a higher-than-normal range through this cycle. Price decline will not happen until there is a slowing of demand."

It boils down to the fact supply can grow only so fast, so in order for prices to correct, demand needs to weaken—something that hasn't materialized in

either home construction or home improvements. Simply put, buckle up: The worst could still be on the way.