



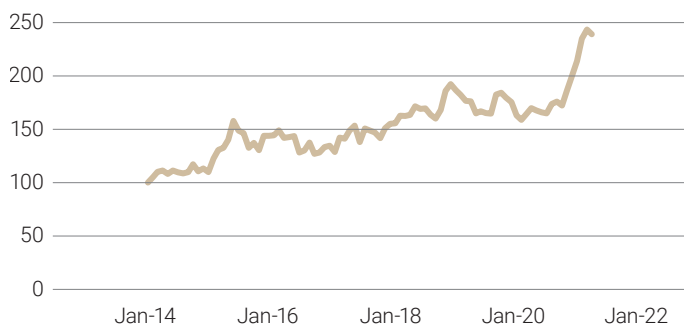
BUILDING MATERIALS

Demand creates supply
bottlenecks, inflationary pressures,
and new opportunities

Even before the pandemic, demand for building materials was picking up as low interest rates fueled a construction boom. Over the past 18 months, lockdowns and stimulus checks encouraged home renovations, and greater remote work accelerated the exodus from cities to suburbs. At the same time, labor shortages and health and safety requirements at production plants limited the output for key materials, limiting supply. Demand is expected to remain strong due to backlogs and continued government stimulus, such as the proposed \$1.2 trillion infrastructure bill.

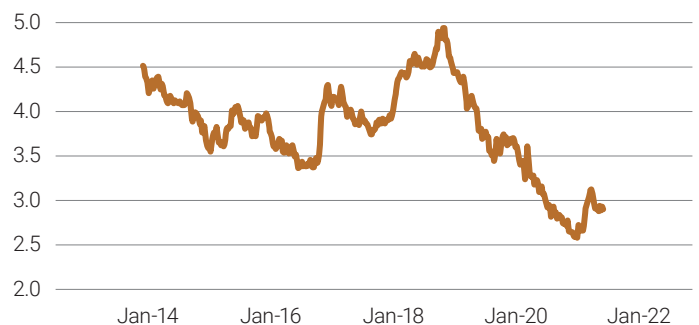
AUTHORIZED HOUSING STARTS NOT STARTED¹

Thousands of Residential Units



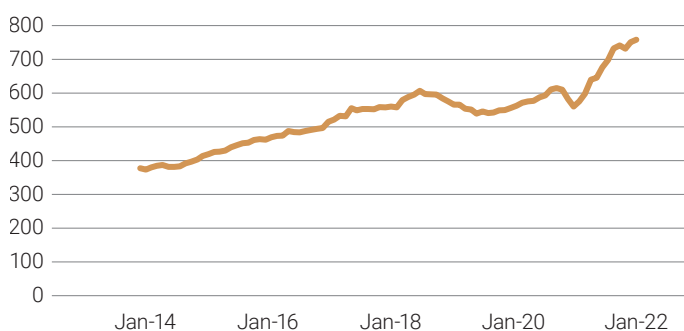
30-YEAR MORTGAGE RATES¹

Annual percentage rate



RESIDENTIAL CONSTRUCTION SPEND¹

Billions of Dollars



NONRESIDENTIAL CONSTRUCTION SPEND¹

Billions of Dollars



1. FRED – Federal Reserve Economic Data

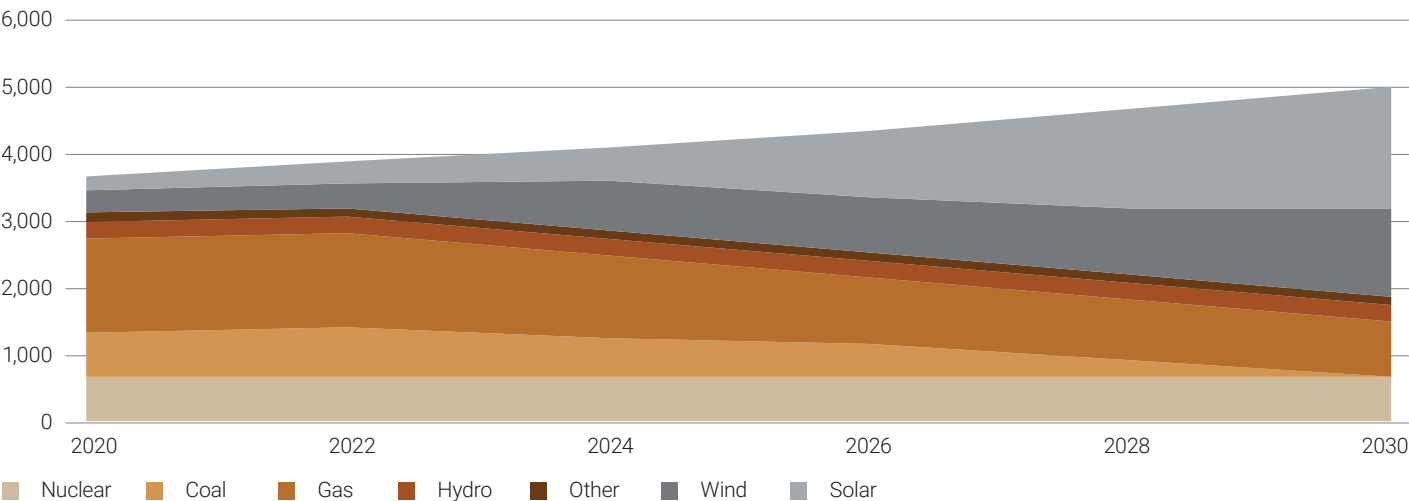
NEW SOURCES OF DEMAND ARE CREATING SIGNIFICANT OPPORTUNITIES

The \$1.2 trillion infrastructure bill currently being negotiated will, if passed, create significant new investments in transportation, clean energy, broadband, and other infrastructure. This includes \$579 billion in new spending and would put more than \$300 billion into transportation, and more than \$250 billion into power, broadband and water infrastructure. It is estimated that every 173,000 miles of major highways and roads and 45,000 bridges in the United States are of poor quality.¹ This eight-year infrastructure plan would drive significant, long-term growth in the building industry.

In addition, new demand patterns are also emerging from the utilization of new climate technologies and new consumer behaviors. The Green Industrial Revolution and climate-focused technologies are putting more of focus on “critical minerals” mining and rare earth metals. China currently produces 35% of nickel, 50 to 70% of lithium and cobalt, and 90% of rare earths.² As electricity generation and storage shifts to cleaner technologies, supply pressures and imbalances will increase.

80% CLEAN ELECTRICITY SCENARIO

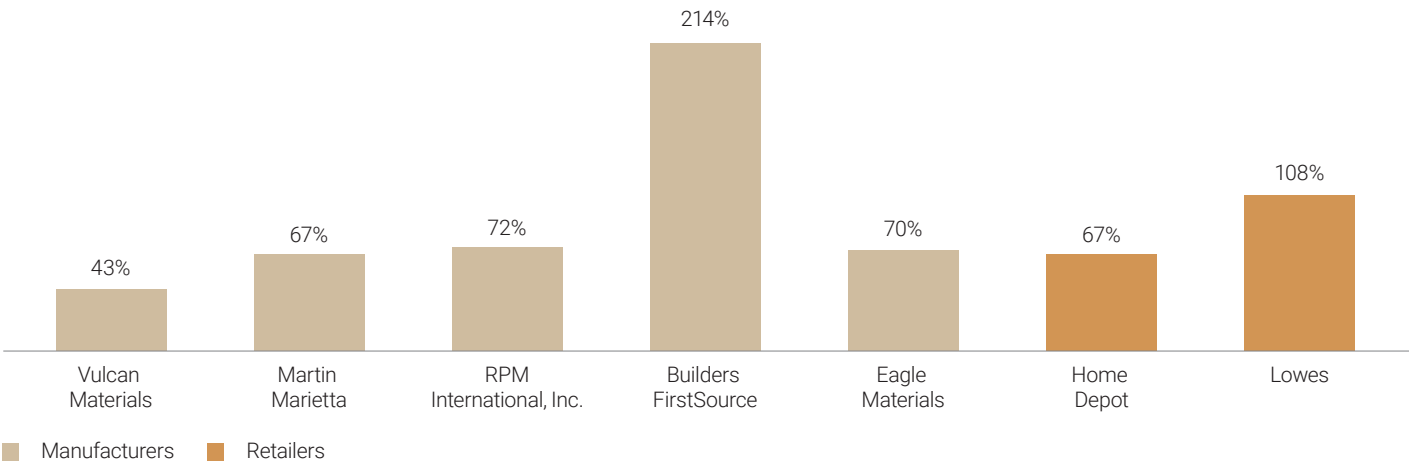
Annual Generation (TWh/YR)¹



1. Nasdaq.com

THE INCREASED MOMENTUM IS REFLECTING IN THE STOCK PERFORMANCE OF MANY MAJOR PLAYERS IN THE INDUSTRY

2-year change in stock price (Jun '19 to Jun '21)



1. HII & Smith: US business galvanized for Infrastructure boom – 2021/05/21
2. RBC Washington Quarterly Green Day, pg.12

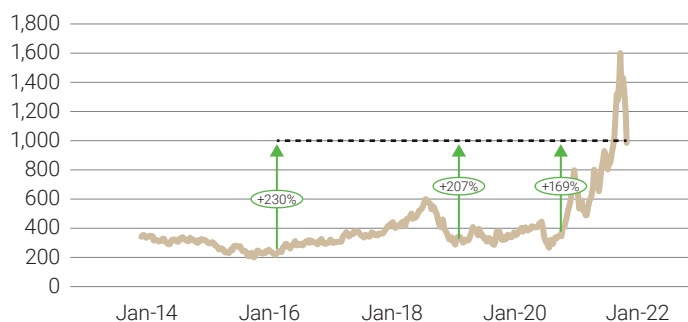


INFLATIONARY PRESSURES HAVE INCREASED

Although prices are increasing generally across the board, some commodities are increasing more than others. And while lumber prices, for example, have fallen by almost 50% from their highs in May, they remain well above historical averages.

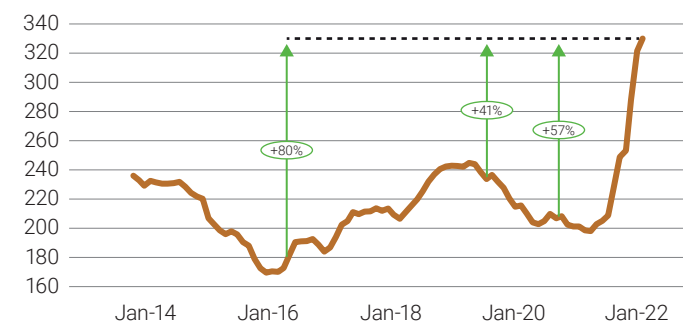
LUMBER FUTURES PRICE¹

\$ per thousand board feed



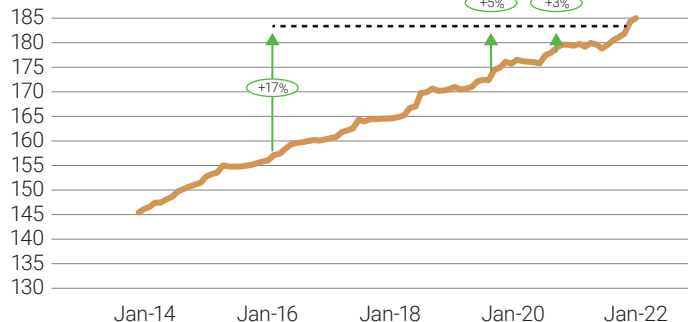
IRON & STEEL PPI²

Index Jun 1983 = 100



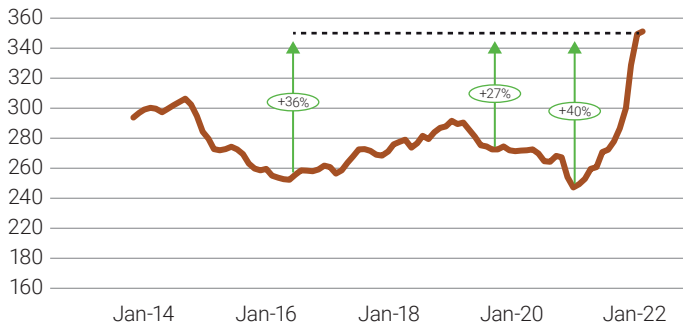
CEMENT AND CONCRETE PRODUCT PPI²

Index 1982 = 100



PLASTICS MATERIAL AND RESINS PPI²

Index Dec 1980 = 100

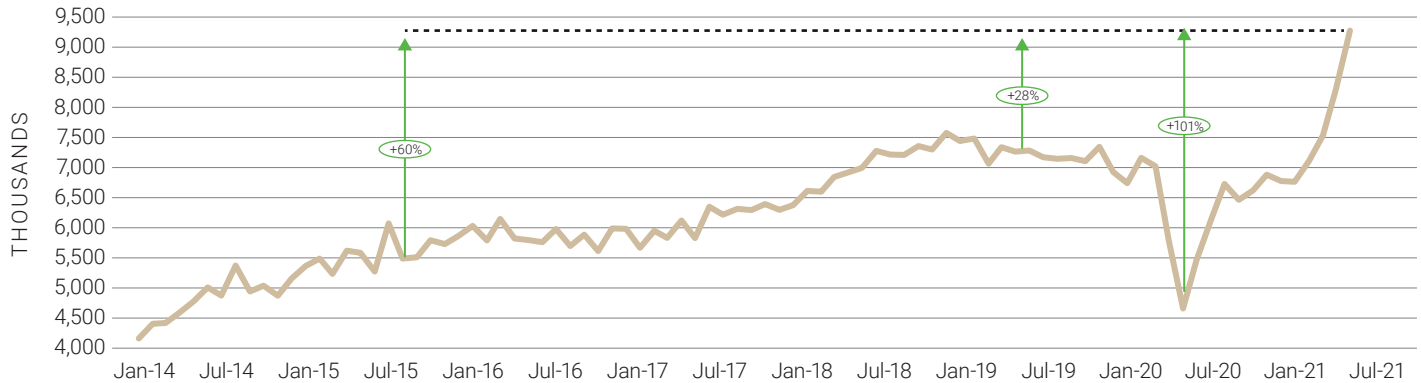


1. Nasdaq.com 2. FRED – Federal Reserve Economic Data

PPI = Producer Price Index

Supply challenges have been exacerbated by labor shortages. Businesses across America are finding it difficult to fill open positions, causing increases in real wages. And as some states recover faster than others, new construction is increasingly concentrated, exacerbating labor shortages these locales.

SUPPLY CHALLENGES HAVE BEEN EXACERBATED BY LABOR SHORTAGES: NONFARM JOB OPENINGS



WHAT YOU SHOULD BE DOING TO ASSURE YOUR SUPPLY CHAIN

1 Improve sales forecast accuracy

- Better understand your customers and make them a stakeholder in your demand forecasting process
- Tie sales force performance objectives with improvement in forecast accuracy

2 Implement a value-cost-risk framework for your supply chain

- In more volatile and uncertain times, companies need a way to improve decision making and manage trade offs
- Developing improved models and data to understand the problems and risks is a critical step in this process

3 Evaluate the ROI from automation investments

- Construction firms are already implementing a number of solutions from cloud-based software to improve workflow to the utilization of drones for more accurate, efficient, site visits or even robotic constructors to provide additional manpower
- As technologies become more financially accessible and user-friendly, builders – both large and small – are beginning to fuse these new tools into their business

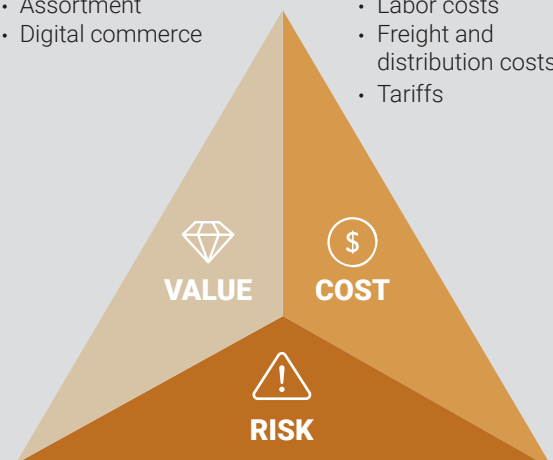
4 Improve hourly labor efficiency

- To adapt to the new reality of labor supply constraints, manufacturers have three key moves in their playbook:
 - 1) Reduce applied hours; 2) Reduce hourly labor costs; and
 - 3) Establish and enforce workforce metrics and policies.

A FRAMEWORK WE CAN USE TO BREAKDOWN THE PROBLEM

How do I deliver greater customer value in a cost effective manner while minimizing business risk?

- Product and quality
- Service and lead time
- Assortment
- Digital commerce
- Commodity prices
- Processing costs
- Labor costs
- Freight and distribution costs
- Tariffs



- Suppliers and partners
- Manufacturing and distribution
- Material supply or inventory
- Technology disruption

Note: List of items not exhaustive

CONTACT THE AUTHORS:

Marc Iampieri

Managing Director
miampieri@alixpartners.com

Joe Myers

Managing Director
jmyers@alixpartners.com

Ashrae Sahni

Director
asahni@alixpartners.com

Yvette Zhang

Senior Vice President
yvzhang@alixpartners.com

Sean Smith

Vice President
spsmith@alixpartners.com

ABOUT US

For more than 40 years, AlixPartners has helped businesses around the world respond quickly and decisively to their most critical challenges – circumstances as diverse as urgent performance improvement, accelerated transformation, complex restructuring and risk mitigation.

These are the moments when everything is on the line – a sudden shift in the market, an unexpected performance decline, a time-sensitive deal, a fork-in-the-road decision. But it's not what we do that makes a difference, it's how we do it.

Tackling situations when time is of the essence is part of our DNA – so we adopt an action-oriented approach at all times. We work in small, highly qualified teams with specific industry and functional expertise, and we operate at pace, moving quickly from analysis to implementation. We stand shoulder to shoulder with our clients until the job is done, and only measure our success in terms of the results we deliver.

Our approach enables us to help our clients confront and overcome truly future-defining challenges. We partner with you to make the right decisions and take the right actions. And we are right by your side. When it really matters.

The opinions expressed are those of the authors and do not necessarily reflect the views of AlixPartners, LLP, its affiliates, or any of its or their respective professionals or clients. This article Building materials: Demand creates supply bottlenecks, inflationary pressures, and new opportunities ("Article") was prepared by AlixPartners, LLP ("AlixPartners") for general information and distribution on a strictly confidential and non-reliance basis. No one in possession of this Article may rely on any portion of this Article. This Article may be based, in whole or in part, on projections or forecasts of future events. A forecast, by its nature, is speculative and includes estimates and assumptions which may prove to be wrong. Actual results may, and frequently do, differ from those projected or forecast. The information in this Article reflects conditions and our views as of this date, all of which are subject to change. We undertake no obligation to update or provide any revisions to the Article. This Article is the property of AlixPartners, and neither the Article nor any of its contents may be copied, used, or distributed to any third party without the prior written consent of AlixPartners.