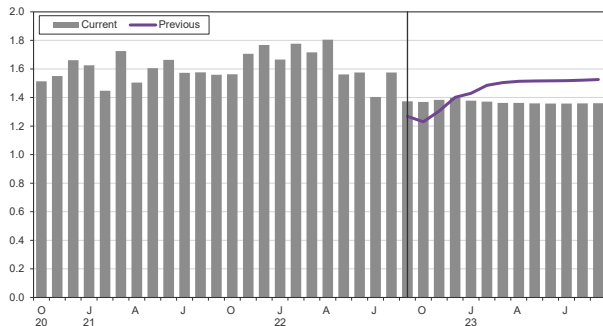


Lumber Commentary Dashboard

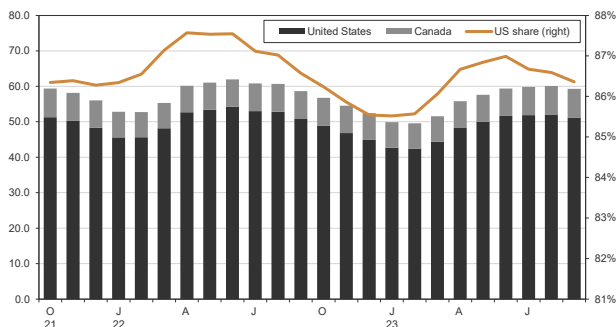
Key concepts

US housing starts – million units (seasonally adjusted annual rate)



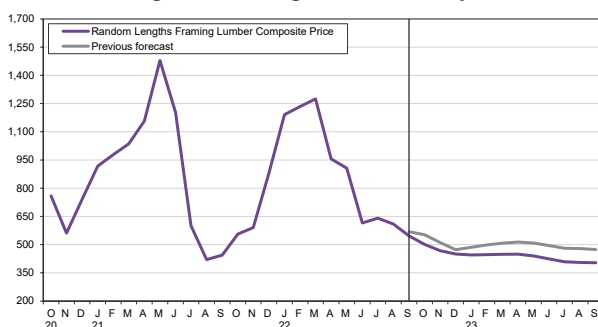
Source: US Census, Fastmarkets RISI.

US and Canadian lumber domestic consumption – BBF (annual rate)



Source: Fastmarkets RISI.

Random Lengths Framing Lumber Composite Price



North American lumber forecast summary

	Domestic consumption	Demand on mills	D/C ratio	Prices (Random Lengths Framing Lumber Composite Price)
2022:	57.3 BBF (-3.5%)	57.7 BBF (-4.0%)	79%	\$783/MBF (-8.5%)
2023:	55.8 BBF (-2.6%)	57.2 BBF (-0.9%)	78%	\$422/MBF (-46.1%)

End-use indicators

US housing starts ↓	Repair and remodeling →	Mobile home production ↓
2022: 1.550 million (-3.7%)	2022: \$138.1 billion (-3.8%)	2022: 113,736 (+7.5%)
2023: 1.365 million (-12.0%)	2023: \$138.1 billion (+0.0%)	2023: 106,939 (-6.0%)
Manufacturing index →	Nonresidential construction ↓	
2022: 0.947 (+3.6%)	2022: \$178.0 billion (+1.9%)	
2023: 0.959 (+1.3%)	2023: \$171.5 billion (-3.6%)	

Changes

- In light of the Fed's increasingly hawkish stance on inflation and more signs a deeper recession is in the cards, we have revised down North American demand on mills by 1.4 BBF in 2022 and 4.0 BBF in 2023.
- We have also revised down our capacity outlook this month, which will leave North American lumber capacity down 1.5 BBF from our prior forecast. Half of those losses are accounted for by further capacity losses in BC, with the remainder being historical revisions to capacity carried into the forecast.
- The pricing outlook has been revised down significantly in 2023: the FLCP is now expected to average \$422/MBF, down \$63/MBF from our last forecast.

North American lumber markets

Excess mill inventory is still weighing heavily on the market. Demand conditions continue to deteriorate, reflected by shipments of lumber continuing to outpace orders in 2022. Dealers and wholesalers are increasingly bearish on market prospects, reinforcing lean inventory management. Curtailment announcements are supporting prices but are too few to balance the market. Offshore markets remain especially soft.

Lumber Commentary

A MONTHLY ECONOMIC ANALYSIS OF THE NORTH AMERICAN SOFTWOOD LUMBER MARKETS

Introduction

Housing starts surprised on the upside in August, with the big driver being multifamily construction, though we still are forecasting a challenging fourth quarter as affordability issues remain acute. According to the US Census, housing starts rose 12.2% from July and were essentially flat from a year ago to 1.575 million units. The single-family market rose 3.4% from July to 0.935 million units, an unexpectedly strong showing given that mortgage rates have climbed to over 5.5%. Meanwhile, multifamily construction maintained momentum, with rental rates remaining strong, expanding 28% to 0.640 million units, its highest level going back to at least 1986. Total units under construction also reached a record high, surpassing the last cyclical peak in 2005. Total housing permits are weakening and declined by 10.0%, to 1.517 million units, the lowest levels since August 2020.

The expectation for a decline in housing in 2022 remains in place as buyers balk at higher rates and prices and more builders experience cancellations. The inventory of unsold new homes remains very high, rivaling levels following the Great Recession. On the supply side, builder material costs outside of wood products are trending upward, and builders are starting to see buyer interest deteriorate somewhat as mortgage rates spike. Cancellation rates for some builders are increasing as more potential buyers are priced out of the market, while buyer lists are shrinking. Builders generally have enough backlog to last the year, because completion times continue to lengthen. As a harbinger of things to come, the National Association of Home Builders' (NAHB) Housing Market Index (HMI) fell to 46, a rapid rate of decline from the 83 posted at the start of the year. Housing starts are forecast to fall about 4.0% in 2022, but we have dramatically revised down our outlook for 2023. Inflation is broadening, suggesting that the Federal Reserve will have a tougher fight bringing it to heel. With rates likely to stay higher longer, we are calling for housing starts to now decline 11% in 2023, with most of the deterioration occurring on the vulnerable single-family side.

Lumber markets have stabilized and are seeing the lowest level of volatility in years. Little in the way of speculative buying is occurring, with most market participants appreciating the more measured tone to the market. The forecast detailed in this month's *Lumber Commentary* continues to call for prices to trade in a far narrower range than what the market has experienced since 2020. While downstream inventories are still lean, prompt inventory at the mill level has helped keep a lid on prices. Market participants are also very wary of what the fourth quarter of 2022 could bring for both housing and wood demand. The bearish sentiment appears

Economic insights

- **Lumber market slated for a recession**
- **Over 1 BBF of closures slated for BC**
- **Historic run in industry profitability is over**

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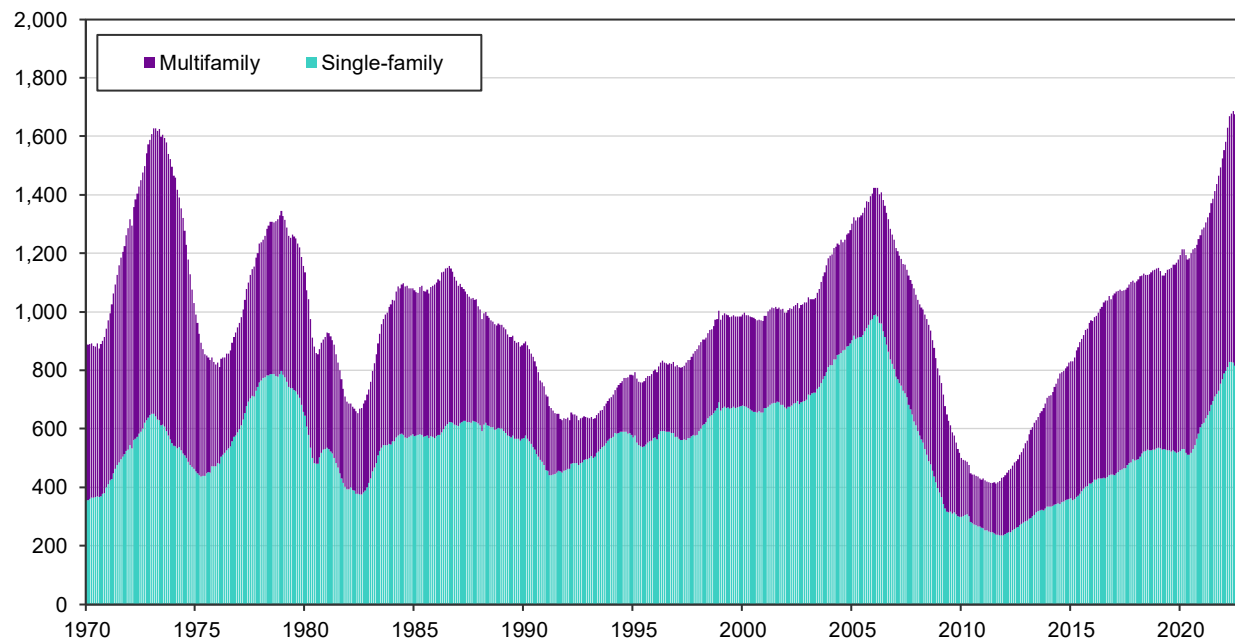
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Figure A

Privately-owned housing units under construction in the United States

Thousand units



Source: US Census, Fastmarkets RISI.

to be growing more entrenched. While the data is not suggesting a complete collapse in either housing construction or demand for panels and lumber, the last two years have led to an extra sense of caution when it comes to buying patterns. Many buyers of wood are anxious to avoid being caught on the wrong side of the market again. Meanwhile, fiber constraints in British Columbia are still challenging the market there. Canadian producers are facing compressed margins at current price levels and historically elevated log costs in British Columbia. Stumpage rates should continue to fall in the coming quarters, but more mill temporary curtailments and permanent closures in BC are likely due to the weak market conditions and the distance prices still have to fall.

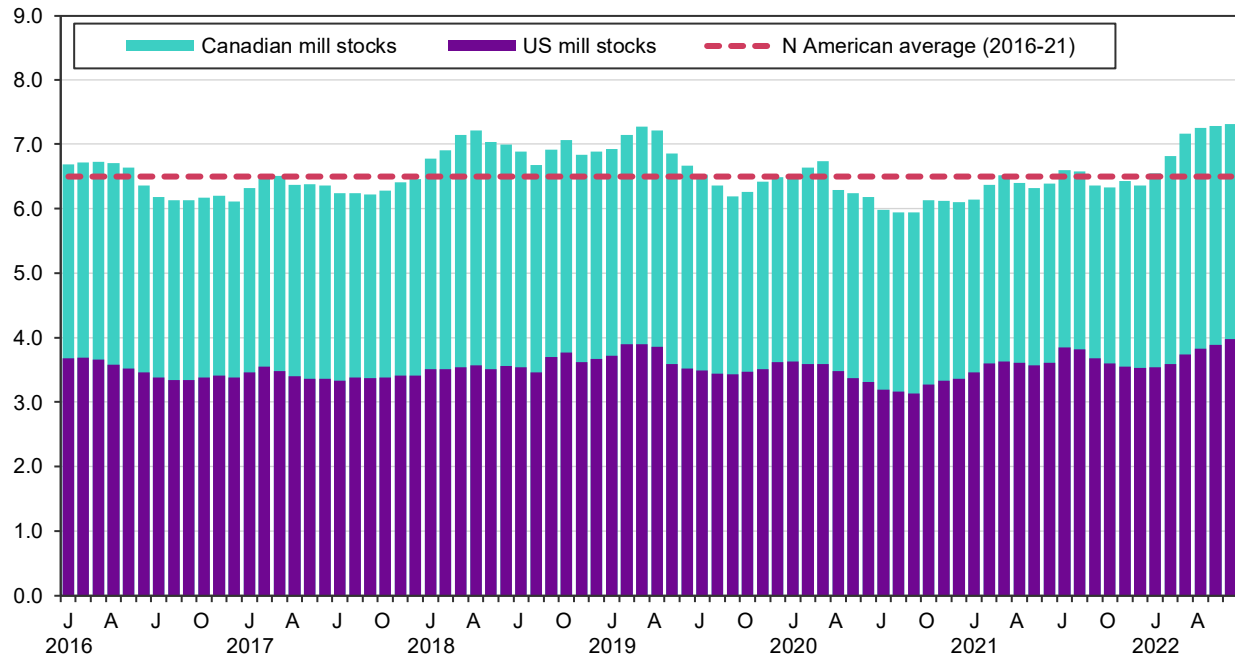
Lumber markets

The tide continues to shift in favor of buyers as the outlook for housing deteriorates further, finished inventory at the mill level remains bloated (Figure 1) and dealers batten down

the hatches for what is expected to be a tough fourth quarter. Industry participant feedback indicates that mills are still delivering wood promptly and often earlier than initially quoted. The high frequency market data from the Western Wood Products Association (WWPA) corroborates this, as reported shipments continue to outpace new orders in recent weeks, reflecting the cautiousness of dealers and wholesalers as they manage inventory to protect against perceived downside risks to both price and demand.

The leading market indicators for wood products demand do not provide much hope for a rebound. The [Random Lengths Dealer Survey published for August continues to show lumber sales expectations deteriorating](#) in the coming months, which also falls in line with other leading indicators like the NAHB's HMI and new home sales reported by the US Census. Implied inventory in the dealer and wholesale segment of the supply chain remains somewhat light by historical standards, as we reported in July (Figure 2),

Figure 1
North American softwood lumber mill inventories
Billion board feet



Source: Fastmarkets RISI.

but in the context of excessive mill inventories and deteriorating demand – both seasonally and cyclically – the strategy appears to be playing out favorably for buyers.

Potential disruptors that could suddenly swing the market back in favor of mills seem to be dwindling. Transportation challenges that plagued the market in the first half of the year continue to improve in both flatbed and rail. Wildfire impact remains fairly muted thus far compared with recent years. And for the most part mills are now fully staffed after a challenging couple of years coping with COVID-related labor disruptions. The main catalyst that has the potential to shift the market at the moment is new curtailment announcements, which market participants continue to anxiously speculate over. Canfor’s recently announced market curtailments at its BC operations – which will pull 200 million board feet (MMBF) from the market for the remainder of the year – generated a pop in the futures market this week. But even that was short-lived as traders continue to point to weakening future demand and a need for much larger-scale cuts to truly balance the market.

While domestic challenges remain at the front of the minds of traders and mill operators, there is now greater awareness of what appear to be much worse economic conditions offshore. China’s property market malaise paired with its persistent efforts to enforce its zero-COVID policy is translating to very little opportunity for mills to push volumes offshore as domestic construction activity slumps. Europe’s problems, in many ways, look even worse as industrial curtailments increase to manage energy shortages stemming from the Ukraine-Russia conflict and resulting sanctions. A deep recession awaits Europe, which will greatly reduce domestic construction activity and lumber consumption. The specter of a global economic downturn only adds to the bearish sentiment, despite the silver lining that “it could be worse here.” There is really nowhere for sawmill output to land offshore, which is somewhat of a different dynamic than we have seen in periods of weak market conditions in North America over the last few decades.

Although there is reason to believe we could still see higher-than-normal volatility compared

with pre-2020 levels as buyers potentially get overly bearish on market prospects, producer inventory gluts like we are seeing now are powerful in capping upside momentum if demand improves or supply shocks hit the market. In many ways, this is shaping up to be a repeat of 2018/2019 when the boom and bust of prices due to similar transportation

bottlenecks out of Canada took over a year to unwind, creating very little urgency for buyers as prompt mill wood was readily available once rail velocity improved. And while curtailments in BC will likely be the mechanism to balance the market as mills pierce through breakevens, most other North American producers remain cash positive at these prices, meaning

Table 1

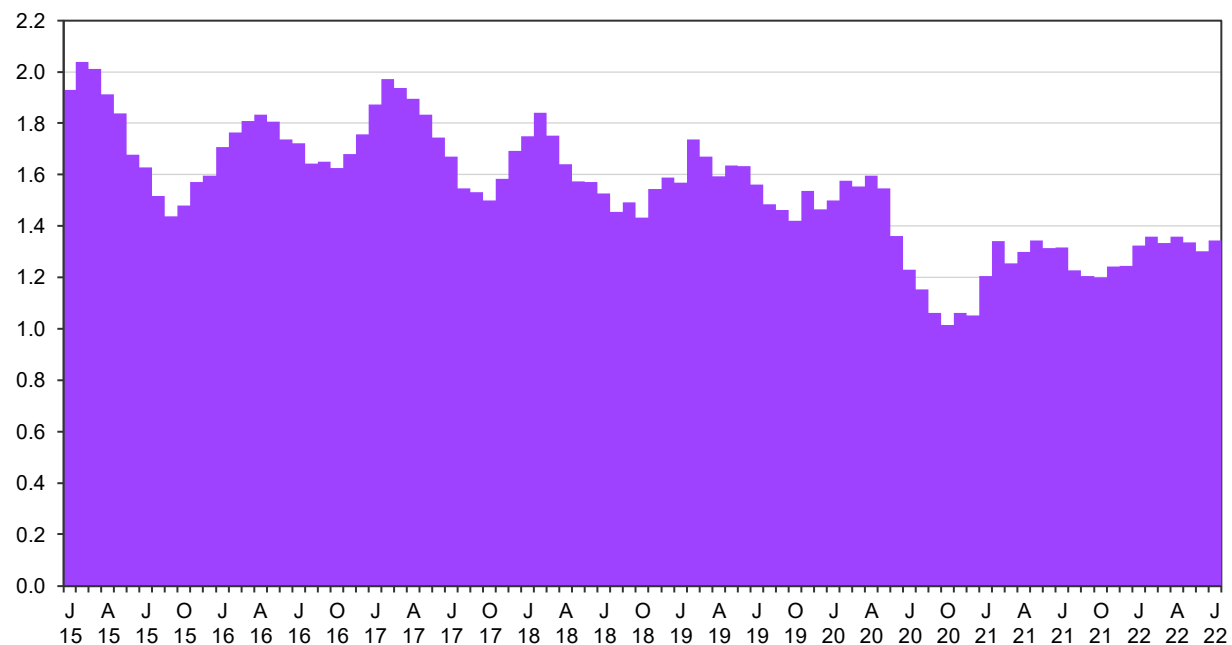
Monthly wood products demand indicators

	History			Estimates and forecast		
	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22
Housing starts (millions, SAAR)	1.58	1.40	1.58	1.37	1.37	1.38
Single-family starts (millions, SAAR)	1.01	0.90	0.94	0.82	0.82	0.83
Mobile home production (thousands, SAAR)	130.86	114.66	101.19	106.85	106.85	106.77
Residential improvements (billions, 2005 \$)	12.61	12.93	12.91	12.64	11.79	11.26
Manufacturing index (2007=1)	0.94	0.95	0.95	0.95	0.95	0.95
% change, annual rate	-6.3%	7.8%	1.0%	2.6%	0.3%	0.8%
Furniture and related production (2007=1)	0.67	0.67	0.65	0.66	0.66	0.68
% change, annual rate	-20.3%	-9.1%	-22.8%	17.7%	1.8%	26.3%

Figure 2

US retail and wholesale inventory for softwood lumber

Months of supply



Source: Fastmarkets RISI.

lumber production will keep flowing outside of BC. We suspect this market correction will be prolonged and push into 2023, as we have another inventory unwind that needs to be realized to balance the market.

End-use markets

US housing

After falling across the board by around 11% in July, housing starts surprised many by increasing 12.2% in August to a seasonally adjusted annual rate (SAAR) of 1.575 million. However, this increase was nearly all on the multifamily side, and even that was nearly all in the US South. Single-family starts increased 3.4% to 935,000 (SAAR) in August, 14.6% below August 2021 single-family starts. Multifamily starts, on the other hand, increase 28% from July to 640,000, 33% higher than the August 2021 rate. Multifamily starts in the South increased 85% month over month and made up over half of all multifamily starts in the country; multifamily starts in the rest of the US declined 7.5%. Increasing interest rates in a high-price environment are taking a toll on new home affordability, which is putting a damper on new home construction. There were just over 1.7 million (seasonally adjusted) total housing units under construction in August, an all-time high, another headwind for new home construction. Rents have been increasing, and these headwinds for the single-family side have coupled with tailwinds for the multifamily side to shift the share of new starts in the multifamily direction. Single-family starts were as high as 79% of all new starts in December 2020 and have since fallen to 59% in August. This shift was gradual throughout 2021 and early 2020 but has accelerated since the beginning of summer when mortgage rates rose above 5% for the first time in more than a decade. New single-family permits have been declining by an average of 4.7% month over month since February, and multifamily permits had been increasing by an average of 3.2% until August figures were released, dropping the average into negative territory for that period. We expect multifamily to remain strong relative to single-family, but we do not foresee multifamily starts surpassing the August rate during this forecast period, nor the

share of total starts. We anticipate housing starts will total 1.55 million in 2022, of which we project 998,000 will be single-family. This would be the lowest single-family share since 2015. While single-family starts have averaged 1.08 million (SAAR) so far this year, we expect the remainder of the year to be weak. We are calling for the pace of multifamily construction to continue at about the pace it has been thus far this year, ending 2022 at 552,000 units, an increase in 16.5% over 2021, which itself showed an increase of 20.7% over 2020. In 2023, we expect declines across the board as annual starts will be compared to 2022, when starts were extremely strong in the first quarter and remained moderately strong in the second. We are calling for 1.36 million housing starts in 2023, a decline of 12%, with single-family and multifamily declining 14.7% and 7.0%, respectively.

- After falling 11% to 1.4 million (SAAR) in July, housing starts increased 12.2% in August to 1.575 million (SAAR), equal to the revised June rate. The August starts figure was essentially equal to the August 2021 rate. The trend in recent months of weakness on the single-family side coupled with strength in the multifamily side continued. Single-family starts increased just 3.4% in August to 935,000 (SAAR) after a 10.8% drop in July, while multifamily starts increased 28% in August to 640,000 units (SAAR) following an 11% decline in July. The single-family starts figure in August was 14.6% below the year-ago figure, while the multifamily starts figure was up 33% year over year.
- Permits declined 10% month over month in August to 1.517 million (SAAR), representing a 14.4% year-over-year decline. Single-family permits declined for the sixth consecutive month to 899,000 (SAAR). Multifamily permits declined 17.9% month over month to 618,000 (SAAR). This was the lowest since November 2021 and a year-over-year decline of 13.1%, but still elevated historically. In 2020, the average monthly rate for multifamily permits was 491,000; in 2021, it was 615,500.
- Beginning in mid-2020 and until very recently, the gap between housing starts and

Table 2

US housing market

	Jul 22	Aug 22	% ch	Aug 21	% ch	Average		% ch
						YTD 2022	YTD 2021	
Housing starts (millions, SAAR)								
Total	1.404	1.575	12.2%	1.576	-0.1%	1.635	1.590	2.8%
Single-family	0.904	0.935	3.4%	1.095	-14.6%	1.082	1.128	-4.0%
Multifamily	0.500	0.640	28.0%	0.481	33.1%	0.553	0.462	19.6%
Mobile home production (millions, SAAR)								
	0.115	0.101	-11.7%	0.105	-3.9%	0.117	0.105	11.2%
Existing homes sales indicators								
Home sales (millions, SAAR)	4.82	4.80	-0.4%	5.99	-19.9%	5.49	6.09	-9.9%
Inventories of unsold homes (monthly rate)	3.20	3.20	0.0%	2.60	23.1%	2.41	2.31	4.3%
Median home prices (thousand dollars)	399.20	389.50	-2.4%	361.50	7.7%	387.96	341.15	13.7%
	Jun 22	Jul 22	% ch	Jul 21	% ch	Average		% ch
						YTD 2022	YTD 2021	
New homes sales indicators								
Home sales (millions, SAAR)	0.59	0.51	-12.6%	0.73	-29.6%	0.67	0.81	-17.7%
Inventories of unsold homes (monthly rate)	9.20	10.90	18.5%	6.00	81.7%	7.94	4.89	62.6%
Average home prices (thousand dollars)	457.30	546.80	19.6%	462.10	18.3%	516.70	430.70	20.0%
Mortgage rates (%)								
30-year fixed	5.52	5.41	-2.0%	2.87	88.5%	4.65	2.93	58.6%
5/1 adjustable rate mortgage	4.28	4.29	0.2%	2.49	72.3%	3.57	2.71	31.6%

completions has been increasing. In the first four months of 2022, the average difference between monthly starts and completions was 408,000. In May and June, it was 122,000 and 184,000, respectively. It was then negative in July for the first time since May 2020. But starts outpaced completions by another 233,000 in August. Units under construction have been steadily increasing since late 2020 and sit at 1.702 million (SAAR) as of August, 20.5% higher than August 2021.

- The unemployment rate increased from 3.5% in July to 3.7% in August. The Labor Force Participation Rate ticked back up to its March level and post-virus high of 62.4% in August, exactly 1 percentage point below where it was in February 2020. Total nonfarm employment increased 315,000 in August after gaining 526,000 in July. Average hourly earnings were up \$0.10/hour to \$32.36/hour, up 5.2% from a year prior.
- The National Association of Realtors (NAR) reported that existing home sales fell 5.7% in July and 0.4% in August to 4.8 million (SAAR), 19.9% below August 2021 and the seventh consecutive month of decline. The median sales price fell 3.5% followed by 2.4% to \$389,500, a year-over-year increase of 7.7%. For comparison, June's median sales price was 12.8% higher than the previous June.
- According to the US Census Bureau, there were month-to-month declines in new single-family home sales of 7.1% in June followed by 12.6% in July. The July sales figure of 511,000 (SAAR) was 29.6% below July 2021. There were 464,000 new houses for sales at the end of July, enough for 10.9 months of sales at the current sales pace. The inventory of new single-family homes for sales has increased 28.2% from a year ago, and when viewed in terms of months

Figure 3

US housing production

Million units (SAAR)



Table 3

US demand indicators

	Quarterly						Annual		
	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2021	2022	2023
Housing starts									
Millions, SAAR	1.65	1.45	1.38	1.37	1.36	1.36	1.61	1.55	1.36
% change, year ago	3.5%	-7.5%	-17.6%	-20.2%	-17.4%	-6.4%	15.4%	-3.9%	-11.9%
Manufacturing index									
2007=1	0.95	0.95	0.95	0.96	0.96	0.96	0.92	0.95	0.96
% change, year ago	4.2%	3.5%	2.4%	1.7%	1.0%	1.1%	5.7%	3.6%	1.3%
Mobile home production									
Thousands, SAAR	125	108	107	107	107	107	106	114	107
% change, year ago	17.3%	0.6%	0.0%	-7.7%	-14.4%	-0.3%	11.7%	7.3%	-5.8%
Nonresidential construction									
Billion 2005 \$	47.5	46.0	42.9	36.2	45.6	45.9	174.6	178.0	171.5
% change, year ago	-6.3%	4.3%	-1.6%	-13.0%	-4.0%	-0.3%	8.0%	1.9%	-3.6%
Residential improvements									
Billion 2005 \$	36.4	38.5	33.8	29.0	36.4	38.7	143.6	138.1	138.1
% change, year ago	-9.0%	-2.5%	-1.0%	-1.4%	-0.1%	0.6%	1.4%	-3.8%	0.0%
Exchange rate									
USD/CAD	0.78	0.78	0.77	0.77	0.76	0.77	0.80	0.78	0.77

Table 4**Demand for North American softwood lumber and capacity**

Billion board feet

	Quarterly						Annual		
	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2021	2022	2023
US consumption	13.4	13.0	11.7	10.8	12.5	12.9	51.3	49.8	48.2
% change, year ago	-1.9%	-3.1%	-6.2%	-7.2%	-6.4%	-1.0%	-1.2%	-3.0%	-3.2%
Canadian consumption	1.9	2.0	1.9	1.8	1.9	2.0	8.1	7.6	7.7
% change, year ago	-8.1%	-6.4%	-2.6%	0.7%	-0.2%	2.2%	2.7%	-6.7%	1.4%
Offshore exports	0.6	0.7	0.8	0.8	0.8	0.8	3.1	2.7	3.1
% change, year ago	-3.6%	-24.7%	-8.0%	26.1%	20.2%	13.6%	-3.4%	-12.3%	14.0%
Offshore imports	0.67	0.61	0.51	0.48	0.47	0.44	2.4	2.4	1.8
% change, year ago	-5.5%	-1.6%	-2.6%	-19.5%	-30.3%	-28.0%	11.1%	-0.5%	-24.0%
Total demand	15.2	15.1	13.9	12.9	14.7	15.3	60.2	57.7	57.2
% change, year ago	-2.6%	-4.8%	-5.9%	-4.0%	-3.5%	1.2%	-1.3%	-4.1%	-0.9%
North American capacity	18.3	18.3	18.3	18.4	18.4	18.4	72.4	73.3	73.7
Demand/capacity	83%	82%	76%	70%	80%	83%	83%	79%	78%

of sales, inventory is up 81.7% from a year ago, when there was enough inventory for 6 months of sales. A year prior to that, in July 2020, there was sufficient inventory for just 3.6 months of sales. The median sales price dipped 5.9% in June but gained 5.9% back in July and was \$439,400 for that month, 8.2% above what it was in July 2021. The inventory of unsold homes at the end of August was 1.28 million and was equivalent to 3.2 months of sales in both July and August.

- Mobile homes are an attractive option at the lower end of the shelter market when rents and home prices are skyrocketing. Mobile home production increased by double digits in 2016 and 2017 and then by 3.6% in 2018. However, discriminatory zoning, placement restrictions and a lack of policy support are headwinds for the industry, and production declined by 1.8% in 2019. The economic impact of COVID-19 and the measures to curb it put further pressure on the industry, and production was flat in 2020. In 2021, production increased 11.8% to 105,900 units. After a relatively strong first half of the year, our forecast is now for mobile

home production to grow 7.4% in 2022 for an annual production total of 113,700. Our forecast for 2023 remains at 107,000 units.

- The sharpest decline in the National Association of Home Builders (NAHB)/Wells Fargo Housing Market Index (HMI) came in July with a drop of 12 points. The index fell further to 49 in August and 46 in September. As of September, the only component still above 50 on the 100 scale is current single-family sales. The components measuring single-family sales and traffic of prospective buyers each fell 1 point in September to 46 and 31, respectively. August and September are the first months with negative overall HMI ratings since April and May of 2020. An HMI reading above 50 indicates a favorable outlook on home sales, while one below 50 indicates a negative outlook.
- Throughout 2020 and 2021, low mortgage rates allowed housing demand to remain strong despite increasing home prices. In 2022, inflation concerns have led the Federal Reserve to begin raising interest rates. The 75-basis-point hike in the federal

funds target rate on June 15 was the largest single increase since 1994. The target rate was increased by another 75 basis points in late July, and again the day after August housing starts were released. The average 30-year fixed rate mortgage rate had flirted with 6% in June, declined somewhat in July and August, then finally broke 6% in mid-September for the first time since 2008.

US repair and remodeling

We have made some revisions to our estimates of US repair and remodeling (R&R) spending in 2022 as well as our forecast going forward. After increasing 6.9% in 2020 and 1.4% in 2021, we are calling for real R&R spending to decline in 2022 by 3.8% to \$138.1 billion (2005 dollars). We are also calling for spending to be flat in 2023. This is a considerable downward shift from our previous forecast, which had R&R spending remaining at 2021 levels for the next few years. Inflation is eating away at consumer budgets, and spending priorities are shifting from goods to services. The DIY boom of 2020, which we have discussed at length, also shifted some future demand into that time period.

- Retail sales at building materials, garden equipment and supplies dealers, a reasonable proxy for R&R expenditures, grew more than 12% per year in 2020 and 2021. On a seasonally adjusted basis, year-to-date sales through August were up 7.4% in nominal terms, with both July and August registering increases of just over 1% from the months prior. Fastmarkets estimates year-to-date sales in real terms through August are down 8.9% from 2021.
- Home Depot and Lowe's gave their second quarter earnings calls in mid-August. Home Depot reported a year-over-year change in net sales of 6.5%, with comparable transactions up 5.8% after an 8.4% year-over-year decline in the first quarter. Lowe's reported second-quarter sales were virtually identical to the second quarter of 2021, with comparable transactions down 6.4%.
- The median sales price of existing homes in August was \$389,500, a decline of 0.4% after July's larger drop and up 7.7% from August

2021, according to the NAR. The year-over-year change in existing home prices has been declining since February, when it was 17.1%. The Case-Shiller 20-City Composite Home Price Index for June showed an 18.7% year-over-year increase in home prices.

- The NAHB's Remodeling Market Index (RMI) declined from 86 in the first quarter to 77 in the second. The current conditions index fell 6 points to 83. The future indicators index dropped 10 points to 72.
- The Leading Indicator of Remodeling Activity (LIRA), released by the Joint Center for Housing Studies (JCHS) of Harvard University, projects home improvement spending will continue to grow at a rapid pace through 2022 and the first quarter of 2023 before leveling off and declining slightly in the second quarter of 2023. This most recent projection shows a smoother growth profile than the first-quarter LIRA projection. The LIRA projects rolling four-quarter home improvement expenditures will grow from \$405 billion in the second quarter of the year to \$446 billion in the second quarter of 2023.

Industrial production

- Since our last edition of the *Lumber Commentary*, the Federal Reserve issued its annual revisions to the industrial production indices, which brought downward revisions to the data since April. Total industrial production decreased 0.2% in August after increasing 0.5% in July. Manufacturing was up 0.1% after increasing 0.6% in July, mining was flat following a 1.0% increase the previous month, and utilities lost 2.3% in August following a 1.2% drop in July. After this round of revisions, industrial production in August was up 3.7% from its year-ago level, while manufacturing was up 3.3%, mining was up 8.4% and utilities were down 1.6%. Our industrial production forecast calls for 4.2% growth in 2022 and 1.4% growth in 2023.
- Manufacturing production increased 0.1% from July to August and was up 4.5% year-to-date through August.

- The Institute for Supply Management's Purchasing Managers' Index (PMI®) measured 52.8% in both July and August, with both months tied for the lowest reading since June 2020. While the index is slipping closer to 50%, it has been showing growth in manufacturing activity for 27 months straight. A reading above 50% indicates that the manufacturing sector is generally expanding, while a reading below 50% indicates that it is generally contracting.

Nonresidential construction

- With the outbreak of COVID-19 in early 2020 and the measures introduced to curtail it, nonresidential construction spending declined by an estimated 19.8% to \$161.7 billion (2005 dollars) for the year. As the economy struggled to fully recover in 2021, we estimate nonresidential construction expenditures grew 8% to \$174.6 billion (2005 dollars) for the year. Our forecast has not changed much this month, but with some data revisions that mostly impacted the early months of 2022, we now estimate 2022 spending will increase 1.9% overall to \$174.6 billion (2005 dollars), before declining 3.6% to \$171.5 billion (2005 dollars) in 2023.
- The American Institute of Architect's Architecture Billing Index (ABI) was 53.2 in June, declined to 51.0 in July, and was back up to 53.3 in August. The new projects inquiry index declined from 58.2 in June to 56.1 in July, then rose to 57.9 in August. The new design contracts index read 52.2 in June, 52.9 in July and 52.3 in August. A score above 50 indicates an increase in business, and the ABI has been above 50 every month since February 2021.
- The value of nonresidential construction starts increased 79% in July, according to Dodge Data and Analytics. August figures have not yet been released as of this writing. The numbers were boosted by four large manufacturing projects but would have increased by 16% even without those. Institutional starts rose 28%, while commercial starts fell 11%. Year to date through July, nonresidential construction starts were up 22% from the first seven months of 2021, institutional starts were up 2%, commercial starts were up 13% and manufacturing starts were up 185%.

Furniture production

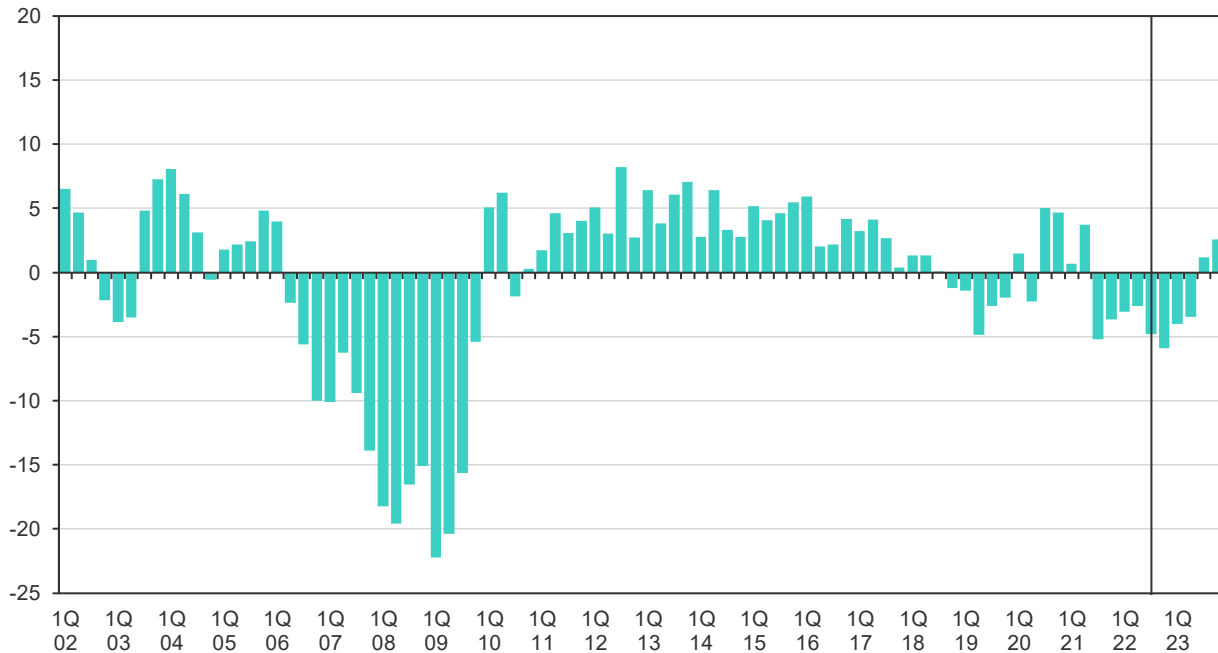
Following two years of consecutive declines, furniture production in the United States returned to a growth trajectory in 2021. Production grew 3% last year, after declining by 6.5% in 2019 and 9.6% in 2020. The annual revision of industrial production and capacity utilization issued in June lowered the profile of furniture production for 2019-20, while the 2021 index was revised upward from the previous growth of 1.8% to 3%. Further revisions since then show furniture production year-to-date through August up 4.6% from the first eight months of 2021, rather than the 7% it had been on pace for. Furniture production in August was down 2.1% from July's downwardly revised figure and was down 0.5% from the previous August. Revisions also show a clearly negative trajectory, and the number of furniture manufacturing employees has been trending down since March as well. According to Smith Leonard PLLC's Furniture Insights survey of furniture producers and distributors, cancellations increased in May and again in June. This has helped clear backlogs, which were down 17% year over year in June. New orders were down 27% year to date through June, and shipments were up 7%. Even with these signs that furniture production is slowing, the strength of the first half of the year leaves our forecast at 3.1% growth in 2022 overall followed by 0.8% growth in 2023.

- US furniture production decreased 2.1% in August, and the Federal Reserve's revisions reveal it has been declining since March. August production was down half of a percent compared to August 2021.
- Furniture production year to date through August was up 4.6%.

Demand

After advancing 5% to 59.9 billion board feet (BBF) in 2020, US and Canadian lumber consumption in 2021 stalled and fell by almost 1% to 59.4 BBF, as the end of the do-it-yourself

Figure 4
Total North American softwood lumber consumption
Year-over-year percentage change, quarterly



Source: Fastmarkets RISI.

(DIY) boom more than offset the strength of demand in new construction activity. Given the increasingly hawkish tone of the Federal Reserve as it raises interest rates to fight the highest inflation since the 1970s – pulling mortgage rates up with it – we have further downgraded our demand outlook in the US and Canada this month. Our forecast now calls for US and Canadian lumber consumption to drop 4% (2.1 BBF) to 57.3 BBF. This is about 1.5 BBF lower than July’s forecast.

We still believe contractor-driven R&R and the record backlog of new homes still under construction will buoy wood demand somewhat, but it will not be enough to compensate for the substantial reduction in single-family starts that is now emerging and gaining steam. Builders are scrambling to prevent the housing market from becoming quickly oversupplied as buyer demand drops off with mortgage rates rocketing over 6% in September. Given the heavy backlogs on the industrial side of the market, domestic demand for low grades of lumber should be

resilient but will continue to cool into 2023. The DIY side of the market also continues to see demand decline from 2021 with heavy building material inflation constraining the number of projects homeowners can take on and vacation travel returning with a vengeance. Stagflation will probably remain the key macro storyline over the next 12 months as the North American economy enters a mild recession.

Although the picture looks somewhat grim in the near term, we do believe any sort of recession in housing will be brief. The fundamentals of the current situation are very different than those that caused the housing crash that began in 2006. The demographic picture will remain solid for the next five to ten years. Household balance sheets are still healthy, and even factoring in declines in the stock market and the potential for pockets of home price depreciation, US consumers are positioned to weather the storm. The work-from-home movement also appears to be here to stay in some capacity, which should continue to support home improvement

projects and enhance worker mobility, further underpinning residential construction activity.

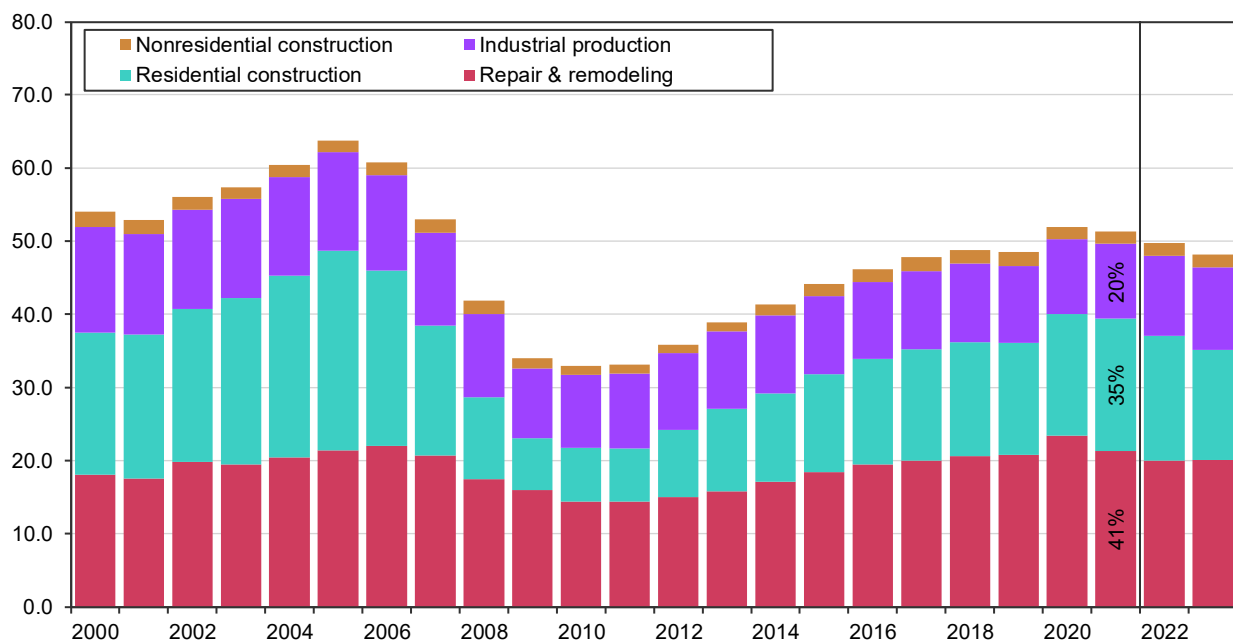
The rebound we expect in housing will be predicated on inflation cooling to the extent that the Federal Reserve is able to ease its hawkish stance, which we believe could materialize next year after rate hikes hammer the demand side of the economy and the supply-chain challenges from COVID-19-related disruptions continue to ease. The Fed will still need to be vigilant given that inflation currently appears sticky, but we suspect the economy will be in recession with mild employment impacts by the first half of 2023. Once the recession and looser supply chains begin to alleviate inflation, the Fed will likely pause the rate hikes and ultimately even lower rates as it works to stave off a more serious recession. Mortgage rates will probably come off the very high levels we see today into the second half of 2023, pulling prospective homebuyers off the sidelines for a 2024 rebound in housing.

However, 2023 is still slated for a fair amount of pain for wood products producers as these adjustments to demand will take time to materialize, and builders have huge backlogs to clear before ramping up production again. As a result, we are calling for North American lumber consumption to fall further in 2023, dropping another 3% to 55.8 BBF, about 4.8 BBF lower than July’s forecast.

US softwood lumber consumption

It will come as a surprise to many that US softwood lumber consumption fell slightly in 2021, slipping to 51.3 BBF. While consumption was strong in all end-use categories except nonresidential construction at the start of the year, a combination of demand destruction from the extremely rapid rise in lumber prices and supply-chain woes that have lengthened build times contributed to the poorer-than-expected performance in lumber consumption for the year.

Figure 5
US lumber domestic consumption by end use
Billion board feet



Source: Fastmarkets RISI.

US lumber consumption will drop again in 2022, reflecting the significant downgrades to our new residential construction and R&R forecasts this month as the Federal Reserve's increasingly hawkish tone raises the prospects of a more severe recession over the coming months. There will be pockets of strength, like the large-scale home renovation and industrial markets, but it will be difficult for these to counter the slowdown underway in housing starts as builders switch gears to prioritize homes still under construction and deliver those quickly to generate cashflow. We are calling for US consumption to fall 3% (1.6 BBF) to 49.8 BBF, remaining below the levels from 2020. This is down 1.1 BBF from July's forecast.

The Federal Reserve will likely have to reverse course by the middle of 2023 to prevent a deeper recession from taking hold across the economy and as inflation begins to cool, allowing interest rates to moderate and even fall on long bonds. In response, R&R and new residential construction will stabilize and rebound as home-buyer demand returns, although much of this demand bounce will not be realized until 2024, based on our latest macroeconomic baseline. Next year will remain a challenging one for mills, with US consumption falling another 3% (1.6 BBF), leaving demand at 48.2 BBF or 4 BBF lower than July's forecast. This will be the lowest demand levels the US has seen since 2017, marking a major setback for what has been a tightening market.

Consumption of softwood lumber in **new residential construction** is expected to fall 6% in 2022 to 17.0 BBF, reversing course from the strong growth recorded in the prior two years as wood-intensive single-family construction drops off markedly in the second half. Part of this is also exacerbated by the major correction in the share of less wood-intensive multifamily units in total housing starts, which will jump from 29.5% in 2021 to 35.6% in 2022, based on our latest forecast. Losses in demand via residential construction will accelerate in 2023, dropping demand in the category by a whopping 12% and leaving demand at 15.0 BBF in 2023, its lowest level since 2016.

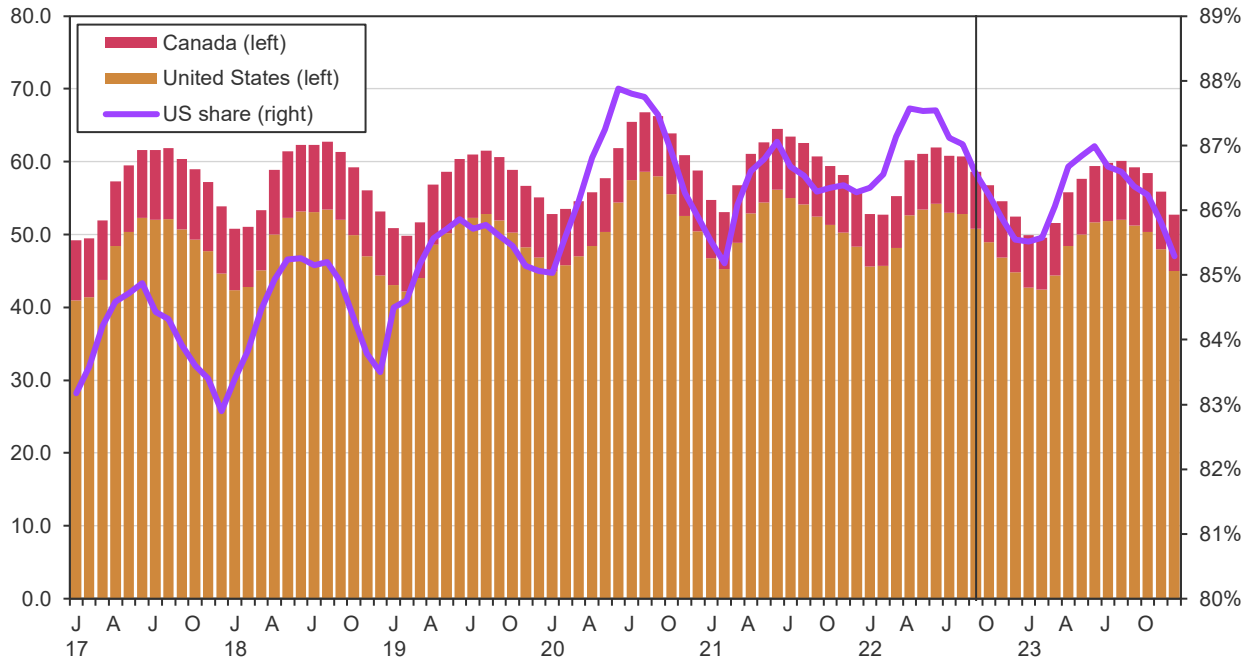
- We estimate demand in residential construction expanded by an impressive 9% in 2020 and 2021 to 18.1 BBF in the latter year. This was the fastest growth in lumber demand for this sector since 2015 when consumption advanced by 11% year on year.
- The residential construction share of lumber consumption will slip from 35% in 2021 to 31% in 2023. Challenges and hurdles in the construction industry, such as labor, land, permitting and zoning, will make it difficult, if not impossible, for demand to rise back to the peak levels of 43% seen at the height of the market in 2005.
- At 15.0 BBF in 2023, lumber consumption in residential construction will still be more than 12 BBF below the previous cyclical peak of 27.3 BBF in 2005. For reference, demand for the category posted an average of 16.8 BBF in the 1990s.

The long-term outlook for **R&R** growth continues to be very positive due to the likelihood that the trend of working from home will continue and an aging housing stock and what will likely be a constrained shelter market will push homeowners to spend aggressively on improvements to their existing home. However, significant demand destruction resulting from dramatic price moves for lumber as well as some normalization in travel activity during the summer months saw demand in the category tumble in 2021. It seems clear now that this is playing out again in 2022 through home centers. One silver lining: most reports and anecdotal data point to strength in contractor-driven renovation activity, although it may be somewhat curbed by supply-chain and labor disruptions. We project R&R demand for lumber will fall by 6% in 2022 to 20.0 BBF after dropping a whopping 9% in 2021.

In 2023, lumber demand in R&R is called to advance moderately by 1% to 20.1 BBF as the drag from the DIY demand correction will have mostly subsided. A mild technical recession in early 2023 that drives modest job losses, very high inflation and fading mortgage refinancing activity will suppress growth in wood-intensive R&R activity. This will leave R&R demand in 2023 about 3% below pre-pandemic levels.

- We are now calling for another down year for the DIY segment due to vacation travel powering higher – despite soaring gas and jet fuel prices – inflation impacting consumer budgets and stubbornly high retail lumber prices likely keeping some projects sidelined in the first half of the year. While the professional side of the market has been resilient with heavy backlogs, we now do not believe it will be enough to offset the ongoing correction on the DIY side of the market.
- R&R will remain the largest end-use market for softwood lumber in 2023, although its share of US lumber consumption will fall to 42%, well off the phenomenally high share of 45% seen in 2020. The rising age of the housing stock, a dearth of housing inventory for sale, soaring home equity and the ongoing trend of working from home will all continue to support R&R's outsized share of lumber demand over the coming decade despite near-term weakness as the US economy enters a recession.
- **Industrial** demand for lumber continues to rebound off the lows seen last spring, with global demand for manufactured goods booming and companies adapting operations to the pandemic environment. Positive growth has continued into 2022 with industrial demand for lumber expected to advance 6% to 10.9 BBF, fully recovering to pre-COVID-19 levels. However, demand in the category will slow in 2023 as manufacturing backlogs wind down and industrial activity decelerates as the US economy enters a recession. This will moderate industrial lumber demand growth to 3% to hit 11.3 BBF in 2023. While manufacturing output will have a sluggish year, industrial wood demand will be a bright spot for demand, supported by a ramp-up in public works projects tied to the recently passed Infrastructure Investment and Jobs Act.
- Industrial production in manufacturing took a major hit at the outset of the COVID-19 pandemic, and until recently was restrained by supply-chain challenges. We estimate that lumber demand for industrial applications fell 2% in 2020 but rebounded modestly in 2021 to 10.3 BBF.
- Readers should note that demand for lumber in the industrial end-use category was well outpaced by actual manufacturing growth as measured by the Federal Reserve's index, which was over 6% in 2021. The spike in wood usage that came from the construction of outdoor dining shelters and similar structures in the depths of the pandemic in 2020 accounts for the difference. Nonresidential R&R falls under our industrial category. So, the unusual one-off addition to demand which kept industrial lumber consumption relatively elevated compared with the decline in manufacturing activity in 2020 is now reversing; with fewer restaurants and bars adding outdoor structures, wood usage in the industrial category fell in 2021, and hence, lumber consumption growth in the category slowed relative to manufacturing output.
- The share of the industrial segment in US lumber consumption will rise from 20% in 2021 to 23% in 2023, with growth taking some share back from residential construction applications as infrastructure spending ramps up in the coming years. The industrial segment will remain the third-largest major end-use market for softwood lumber.
- Lumber consumed in **nonresidential construction** is projected to rebound this year after two years of suppressed commercial construction activity due to the COVID-19 pandemic. The rebound in commercial construction will push lumber demand for the category back up to 1.8 BBF in 2022; however, this is still below 2019 (1.9 BBF). Lumber demand in nonresidential construction will remain flat in 2023 as starts show weakness for the year due to the economic slowdown brought about by the Fed raising interest rates faster than anticipated.
- Lumber demand in the nonresidential category declined by an estimated 11% in 2020 and a further 4% to 1.6 BBF in 2021 as declining nonresidential construction starts reduced wood demand.
- Historically, wood products have found it challenging to increase market share in

Figure 6
US and Canadian lumber domestic consumption
Billion board feet (annual rate)



Source: Fastmarkets RISI.

the nonresidential construction segment, and this will probably continue to be the case. However, penetration of mass timber products could present some upside risk for this category, although the impact will likely be more meaningful over a much longer time horizon. The category will account for 4% of US softwood lumber consumption in 2021, keeping it the smallest end-use market.

Canadian softwood lumber consumption

We estimate Canadian demand rose about 3% to 8.1 BBF in 2021, recovering some of the losses seen in 2020. While the Canadian market for wood has been hampered to some degree by the impact of COVID-19, lumber demand bounced back, with Canadian residential construction soaring to record levels, similar to the trend in the United States, due to buyers looking for larger homes in the suburbs to better handle the impact of the pandemic.

However, much like what we are seeing with the US business cycle, the Canadian economy will also fall into recession in the coming months as the global macroeconomic environment deteriorates rapidly. The Bank of Canada has raised interest rates by 300 basis points since March, which is having a material impact on domestic home prices and housing activity, especially given most mortgages in Canada are variable rate. R&R demand should also follow suit as economic conditions continue to get worse, putting broad downward pressure on wood consumption. Industrial demand could show some resilience, however, as commodity demand in the energy and battery materials space keeps Canada’s industrial economy resilient even as the consumer side of growth takes a hit.

We now project Canadian lumber consumption will decline by 7% in 2022, pushing annual consumption to 7.6 BBF. We expect Canadian lumber demand to stabilize by 2023, keeping consumption at 7.7 BBF for

Table 5**US lumber imports and exports**

Million board feet

	Total 2021	Apr 2022	May 2022	Jun 2022	Jul 2022	YTD			Shares YTD	
						2022	2021	% ch	2022	2021
Imports¹										
Canada	13,699	1,100	1,197	1,175	1,066	7,621	8,240	-8%	84%	85%
Other	2,311	215	202	237	241	1480	1402	6%	16%	15%
Total	16,010	1,316	1,399	1,411	1,307	9,102	9,642	-6%	100%	100%
Exports										
Canada	411	29	33	32	29	198	260	-24%	26%	33%
Central America	305	18	28	28	20	160	175	-9%	21%	22%
Mexico	434	35	35	45	40	254	190	33%	33%	24%
Japan	62	4	5	4	5	40	31	28%	5%	4%
Other Asia	125	7	9	7	7	57	57	1%	7%	7%
China	80	3	2	3	3	18	35	-49%	2%	4%
Other	82	6	6	7	7	41	40	4%	5%	5%
Total	1,499	103	118	126	110	767	788	-3%	100%	100%

1. Note: US import data from Canada listed in this table sourced from Statistics Canada.

the year. Canadian demand for lumber will be on par with levels seen back in 2013.

North American offshore trade

Net exports of softwood lumber from North America continued to tumble in 2021. Net offshore shipments fell to 0.7 BBF for the year, their lowest level since 2006. While economic activity was on a path of recovery last year for many offshore economies, the exceptionally tight lumber markets in North America kept a substantial volume of lumber within the domestic market. Offshore imports from Europe continued to soar, further depressing the North American trade balance for lumber. And even as markets loosened notably in the summer of 2021 when prices crashed from record highs, efforts to swing volumes to the offshore market were restricted by bottlenecks and backlogs at US and Canadian ports, forcing some volumes to remain in the North American market.

The trade outlook continues to be a major drag for North American lumber producers. The global economy appears to be entering a major downturn due to supply-side energy and

food price shocks stemming from the Russia-Ukraine war. This has also been exacerbated by a rapid strengthening in the US dollar relative to most other currencies. Particularly concerning are developments in China. Not only are US and Canadian softwood lumber volumes being disrupted by sanctions against Russian and Belarussian lumber, but China's domestic economy remains in turmoil as it attempts to suppress outbreaks of Omicron cases domestically via its draconian zero-COVID policy, essentially locking down tens of millions of its citizens in recent months. China has recently loosened some these unpopular restrictions but is struggling to "reopen" as new waves of the very contagious Omicron variant hit its surprisingly under-vaccinated population. Port disruptions from the recent COVID waves appeared to have subsided now, but were onerous constraints impacting the flow of goods to and from the country not long ago.

However, even as port issues clear and the country attempts to ease the COVID restrictions, China's own property woes continue to worsen, pushing construction activity well below prior year levels as property

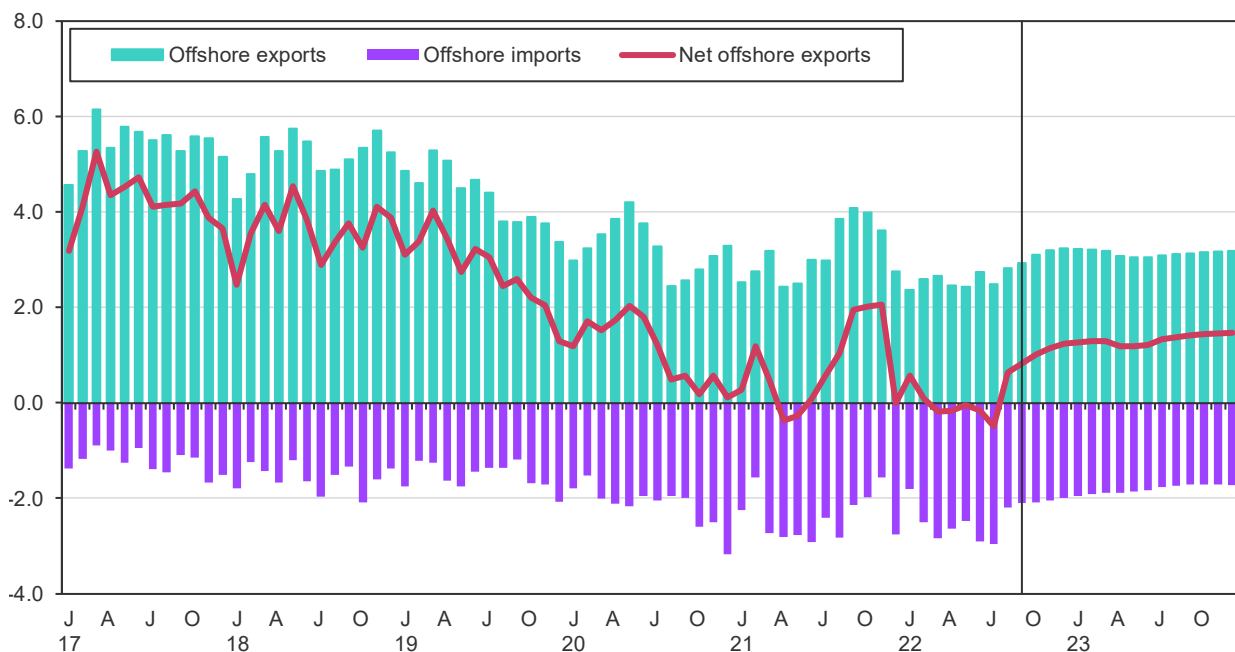
prices fall. This is having a pronounced impact on overall building material demand in the country, including lumber. Year to date through August, China’s total reported imports of softwood lumber were down 24%, according to the Global Trade Atlas. This is particularly detrimental for Canadian producers for whom China is a major destination.

The impact of sanctions on and corporate boycotts of Russian and Belarusian softwood lumber remains an ongoing question as well. We discussed this in detail in a **Viewpoint** several months ago and the preliminary conclusion was that the worst of the supply shock will be mitigated in part by a combination of softened global demand for wood products as energy and food price inflation cools overall economic activity, particularly in Europe. In addition, much of the shunned volumes from Russia should be able to pivot to China and other “friendly” Asian countries, helping lessen the impact on total global softwood supply. Thus far, this largely seems to be materializing as expected,

although Chinese demand seems far more compromised than we originally expected, making it difficult for Russia to easily pivot displaced European volumes as construction activity weakens in the world’s second-largest economy. European sanctions on Russian and Belarusian wood began being enforced in July. Thus, we expect European exporters to pull some shipments to the US to help fill the void left by the lost Russian supply later this year, which could be significant in volume and will further tighten domestic supply; we elaborate on this in more depth in the **“North American offshore imports”** section below.

Our latest forecast calls for softwood lumber net exports from North America to fall from 0.7 BBF in 2021 to 0.4 BBF in 2022. Although we expect exports to remain temporarily suppressed and the pullback of European imports to be delayed to later in 2022, our assumption, given recent developments, is for offshore exports to outpace offshore imports by later this year. We anticipate this trend will continue as the severing of

Figure 7
North American lumber offshore trade
Billion board feet (annual rate)



Source: Fastmarkets RISI.

Table 6**Canadian lumber exports**

Million board feet

	Total 2021	Apr 2022	May 2022	Jun 2022	Jul 2022	YTD			Shares YTD	
						2022	2021	% ch	2022	2021
United States	13,699	1,100	1,197	1,175	1,066	7,621	8,240	-8%	89%	88%
China	758	42	21	54	45	276	330	-17%	3%	4%
Japan	635	39	44	43	47	301	369	-19%	4%	4%
Korea	71	4	4	4	5	26	49	-48%	0%	1%
Taiwan	203	16	17	12	9	102	144	-30%	1%	2%
Other Asia	174	11	11	10	8	84	84	0%	1%	1%
Other	208	18	17	16	14	120	108	11%	1%	1%
Total	15,748	1,231	1,311	1,313	1,195	8,530	9,325	-9%	100%	100%

ties with Russia in the commodity space by Western and NATO-aligned countries will likely be somewhat permanent, which will push net offshore exports up to 1.3 BBF in 2023, 0.5 BBF higher than July's forecast.

Canadian offshore exports

- Canadian offshore lumber exports totaled 2.0 BBF in 2021, down 15% from 2020 levels. Year to date through July in 2022, Canadian offshore exports totaled 908 MMBF, down 16% from last year, impacted by a combination of disruptions at Canadian ports stemming from COVID-19, flooding in British Columbia early in the year and now generally weak offshore demand. Lumber and log inventories in China and Japan remain elevated, which will be a near-term headwind for Canadian shipments to these key markets.
- Demand in China in 2022 has slowed due to ongoing woes in the property market and major lockdown measures to contain the arrival of Omicron, which is severely disrupting economic activity and port throughput. China was Canada's second most important export destination in 2021 following the US, accounting for 37% of Canadian offshore exports for the year. The potential for sanctioned and boycotted Russian lumber to be shipped to China means it could displace Canadian lumber, although how much China will aid Russia is still up for debate. Year to date, Chinese lumber imports are down substantially as domestic demand conditions remain very weak.
- A number of salient factors will weigh on Canadian exports over the medium term, particularly stiffer competition from European producers due to wood availability being boosted in the coming years by the spruce beetle kill in the central part of the continent. As discussed in a recent [Viewpoint](#), Russian lumber will also continue to make headway in China, with more restrictive log export regulations implemented at the start of the year. Additionally, restrained fiber availability from short-term and long-term factors – wildfires and beetle kill, respectively – will also cap exports for British Columbia,
- Canadian offshore shipments are now forecast to fall by 19% in 2022 to 1.67 BBF due to a global economic slowdown, particularly in China as described above, and constraints on port operations in Canada. We then expect Canadian offshore exports to reverse course in 2023, rising 13% to 1.89 BBF as port and rail bottlenecks will have mostly eased by then and global wood products demand slowly rebounds from a global recession in 2022 and early 2023. At this level, offshore exports from Canada will be more than 3 BBF below the 5.4

Table 7

Economic fundamentals of the softwood lumber market

Adjusted to 21-working-day basis unless otherwise noted, billion board feet

	Jun 22	Jul 22	Aug 22	Aug 21
Total US consumption ¹	4.52	4.42	4.40	4.51
Demand and supply for lumber produced in the three major US regions				
Consumption ¹	3.05	2.99	2.97	3.08
New ordering	3.12	3.09	2.65	2.94
Production	3.17	3.11	2.68	2.86
Shipments	3.09	3.15	2.78	2.89
Unfilled orders	1.12	1.06	0.92	1.05
Mill stocks	3.62	3.58	3.48	3.47
Unfilled orders/inventory	0.31	0.30	0.27	0.30
New orders/production	0.99	0.99	0.99	1.03
Demand/capacity	0.87	0.85	0.84	0.89

1. Actual estimated consumption.

BBF posted in 2013 but in line with average offshore shipments in 2000-05 of 2.3 BBF.

US offshore exports

- US offshore shipments finished 2021 at 1.09 BBF, rising 25% from 2020 levels. Offshore exports year to date through July totaled 569 MMBF, up 8% year over year, though far off the elevated levels seen in the second half of 2021. Offshore exports in markets like Mexico and Japan have rebounded rapidly off 2021 levels, though markets like China and Central America have exhibited weakness.
- US offshore exports will hold flat at 1.08 BBF in 2022 and then expand to 1.25 BBF in 2023 as the global economy enters recovery mode and shortages in the domestic market subside, pushing more exports offshore. Lumber exports from the US traditionally rise in weak market conditions as producers look to run mills as full as possible, prompting shipments offshore as the domestic market faces headwinds like we expect in 2023.

North American offshore imports

- After falling 2% in 2019, North American offshore imports returned to a path of

growth in 2020, rising an impressive 40% from the previous year to 2.1 BBF. Offshore imports to the US and Canada hit 2.3 BBF in 2021, up 10% year over year. Offshore imports softened quite sharply toward the end of 2021, however, probably in response to the historic correction in prices over the summer as well as congested ports preventing prompt delivery of offshore lumber shipments.

- Despite the slew of supply-chain disruptions, offshore imports to the US market continued to power higher through the July 2022, totaling 1.48 BBF, up 6% from last year. The monthly shipment figures remain volatile, but still elevated, as they have for the past two years.
- Given the impact of the Russia-Ukraine war and the fallout from sanctions on Russian lumber, we have significantly adjusted our outlook from our “pre-war” February issue of the *Lumber Commentary*. As expected, North American lumber prices have collapsed, which will ultimately entice European lumber suppliers to pivot back to their domestic markets, particularly as supply is tightening there with sanctions on Russian volumes

officially being enforced in July. We calculate that between the sanctions on and boycotts of Russian and Belarussian products and the disruption in Ukrainian production, roughly 5.7 BBF of European softwood lumber supply (annualized on a 2x4 basis) will need to be met by other sources. European net exports of lumber are more than sufficient to cover this deficit, if suppliers choose to pull shipments to other markets, including the US.

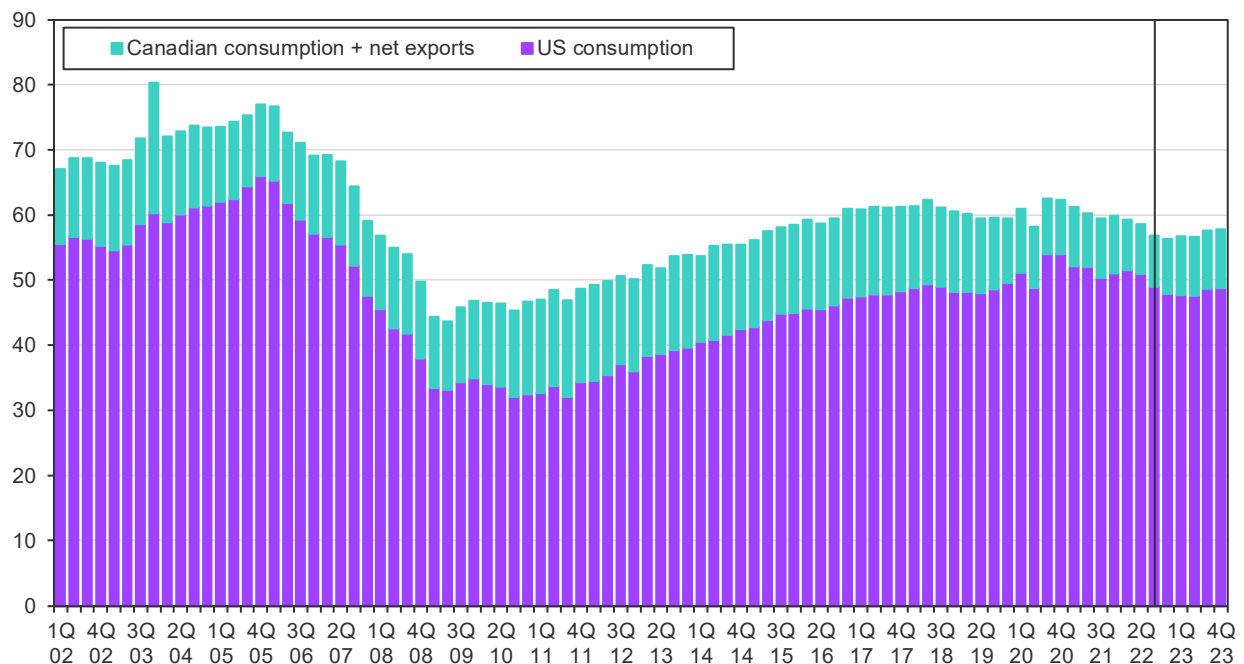
- The US accounts for roughly 20% of European softwood lumber exports, so if we assume the reduction in European lumber exports is proportional across its export partners, that would imply a 1.2-BBF reduction in supply to the US market alone on an annualized basis. We have doubts the pullback will be this aggressive given that demand for lumber in Europe and globally is falling in the face of a global recession, so for now we have assumed that the impact will be closer to 600 MMBF. This will be fully realized by 2023, and offshore prices should become relatively more attractive than the US market.

- Overall, we are calling for North American offshore imports to now remain flat in 2022 at 2.4 BBF. Offshore imports will drop in 2023 as European suppliers pull back some volumes to serve the domestic market, and US demand will also drop as well, pushing offshore imports down to 1.8 BBF in 2023. This is 0.4 BBF lower than July’s forecast. The import share of US and Canadian domestic consumption will decline from a peak of 4.0% in 2021 to 3.6% by 2023. Offshore imports as a share of North American domestic consumption last peaked in 2005 at 4.1%.

Total demand for North American softwood lumber

The COVID-19 pandemic has had a tumultuous impact on North American demand on sawmills over the past two years. After falling 3% in 2019, demand on mills rebounded and grew an estimated 2% to 61.0 BBF in 2020. Rising demand in the US residential construction market fueled the tremendous growth despite major drags

Figure 8
Total demand for North American softwood lumber
Billion board feet (SAAR)



Source: Fastmarkets RISI.

from the export markets and Canadian consumption. However, as mentioned in the “Demand” section, consumption in the US and Canada slowed markedly in the second half of 2021. Because of this and declining net exports, demand on mills in North America fell in 2021, dropping by 1% to 60.2 BBF.

Given our much weaker outlook for domestic consumption in the US and Canada this month, we have revised North American demand on mills down further. Demand on mills is now set to fall 4% to 57.7 BBF this year, down 1.4 BBF from July’s forecast update. Demand on mills will continue to slide in 2023, but the pace will decelerate; demand on mills will drop 1% to 57.2 BBF, aided by stabilizing domestic demand, the pullback of offshore imports and a modest rebound in exports. Note that this is 4 BBF lower than July’s forecast.

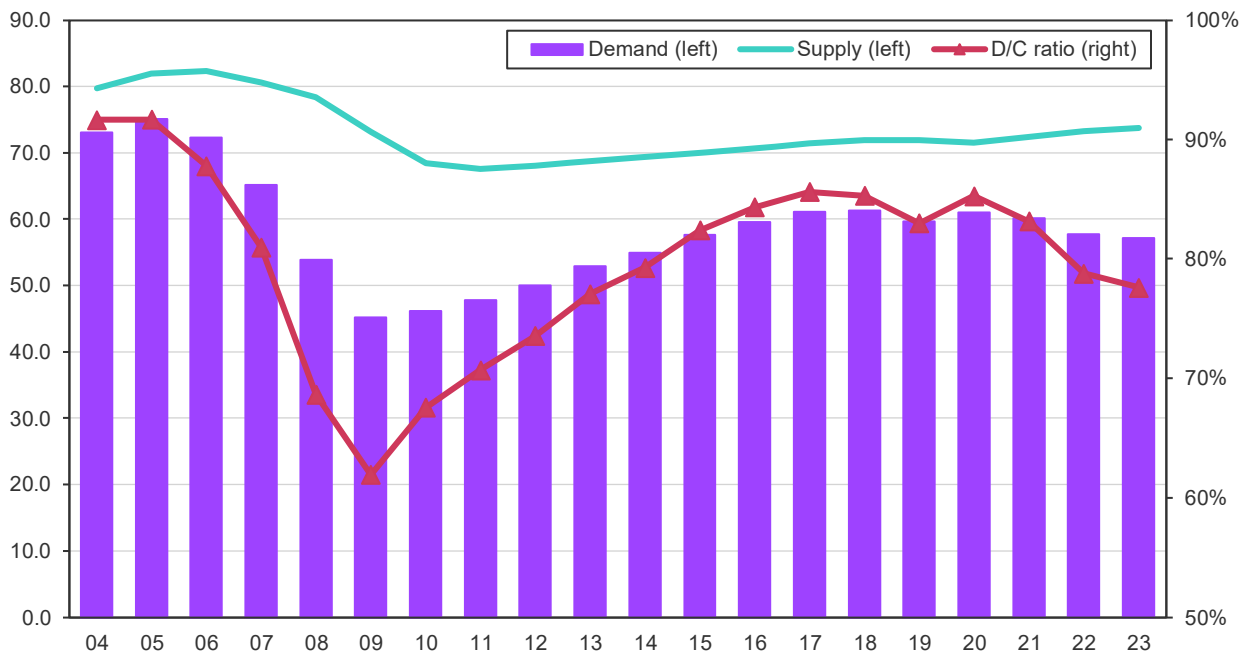
At 57.2 BBF in 2023, demand for North American softwood lumber will still be nearly 17 BBF lower than the previous peak of 75.1 BBF in 2005 and nearly 3 BBF below the average demand level witnessed in the 1990s (average: 59.9 BBF, high: 65.0 BBF, low: 54.0 BBF).

Capacity and operating rates

A few major developments have materialized over the past several months on the supply front. First is the **controversial announcement by the provincial government of British Columbia regarding harvest deferrals on old-growth forests**, which took effect immediately on new BC Timber Sales (BCTS) in early November 2021. Our global timber team put together a **Viewpoint** on the topic, summarizing the potential impact of the new policy. Altogether, 2.6 million hectares (ha) are affected, and deferrals on prioritized old growth zones will remain in place for two years until a new harvest policy on old growth forests is put in place.

Based on Fastmarkets RISI estimates, the harvest deferrals could put upwards of 12% of the annual allowable cut (AAC) in jeopardy, which would translate to more than 1 BBF of capacity closures over the long term. However, this is the worst-case scenario, so our base case in our latest five-year forecast assumes roughly 600-700 MMBF of capacity

Figure 9
North American softwood lumber operating rate
Billion board feet, demand/capacity ratio

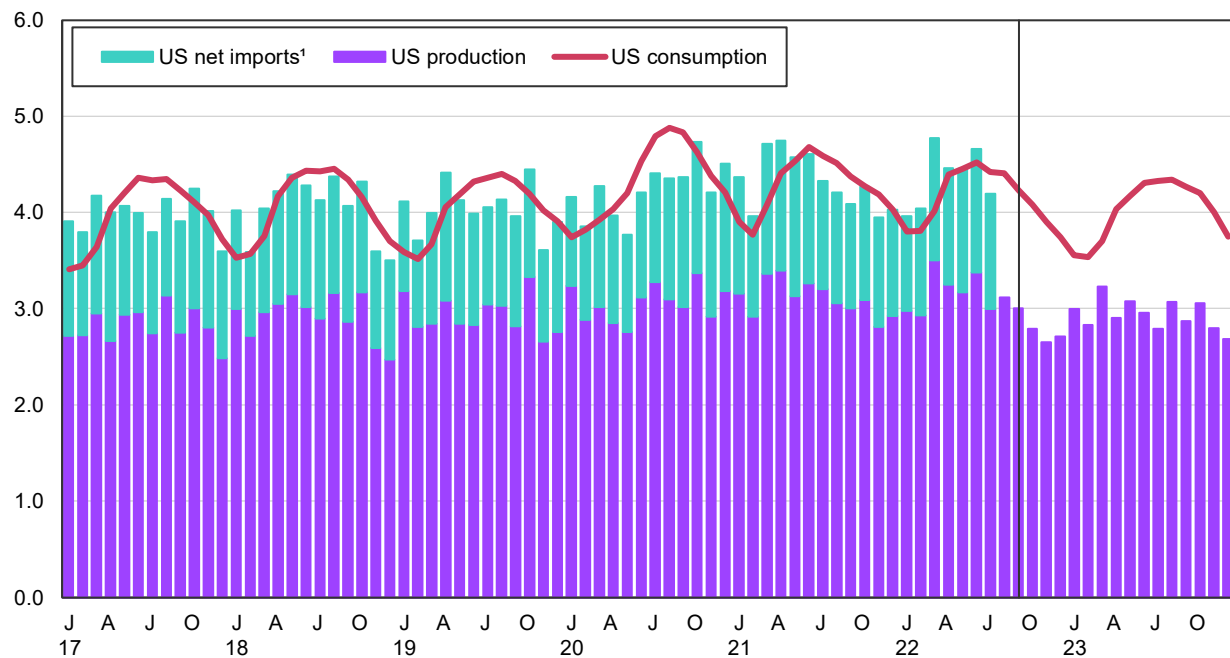


losses in BC through 2026, although the full impact of the policy remains uncertain.

Mills have been playing it fairly close to the vest in terms of announcing market curtailments in recent months, but it is clear some level of reductions are occurring in Western Canada as producers continue to deal with excessive inventory in the face of railcar capacity woes earlier in the year and now rapidly deteriorating demand conditions. Late May and June saw several curtailment announcements, including Canfor, Sinclair and Aspen Planers. Canfor last week also revealed another sizable round of production cuts (200 MMBF) that will be implemented through the rest of the year, and other companies are probably making reductions of their own under the radar. While the total impact on supply remains unclear, our current guesstimate is about 250-300 MMBF per month of capacity in the second quarter was actively curtailed or encumbered due to railcar and log-related issues in British Columbia.

We have made further adjustments to our capacity outlook this month to reflect some preliminary updates from our *North American Lumber Forecast*, which we are in the midst of updating, and a much more bearish outlook for demand. We now expect capacity to grow by just 0.9 BBF in 2022 and slow to only 0.4 BBF in 2023, leaving industry capacity at 73.7 BBF in the latter year, 1.5 BBF lower than July's forecast. Readers should note that about half of the reduction is due to a historical revision we have made to industry capacity in Eastern Canada going back to 2015 that carries through to the forecast. We are still calling for a high volume of temporary curtailments over the coming months given that market prices will be fairly close to cash costs in BC for much of the period. We believe these will ultimately transition to a substantial volume of permanent capacity closures; baked into the forecast is 1.4 BBF of permanent closures in BC (excluding creep capacity) that will be largely realized by late 2024. In August, West Fraser announced the first salvo of permanent cuts, which will total

Figure 10
 US softwood lumber market demand and supply
 Billion board feet per month



1. US net imports = US imports - US exports.

between 170 MMBF in permanent capacity cuts at Fraser Lake and Williams Lake.

Our latest project list shows about 4 BBF of net nameplate capacity slated to come on stream in 2021-23 depending on the start-up times for some projects – most of which will be ramping up in the US South – given the significant supply-chain delays. The big question remains how quickly these new projects can be manned to full capacity with the ongoing labor shortages across the economy.

The demand-to-capacity (D/C) ratio rose from 83% to 85% between 2019 and 2020, reflecting the strong performance in lumber demand, while the capacity base fell modestly on net. Interestingly, industry operating rates in 2021 dropped to 83% as demand calmed in the second half of the year and capacity growth reaccelerated. But readers should note this does not factor in temporary curtailments and labor shortages; adjusted for those, the realized D/C ratio for the year probably averaged about 89% in 2020 and about 85% in 2021. Our forecast is for the unadjusted D/C ratio in 2022 to drop to just 79% – the

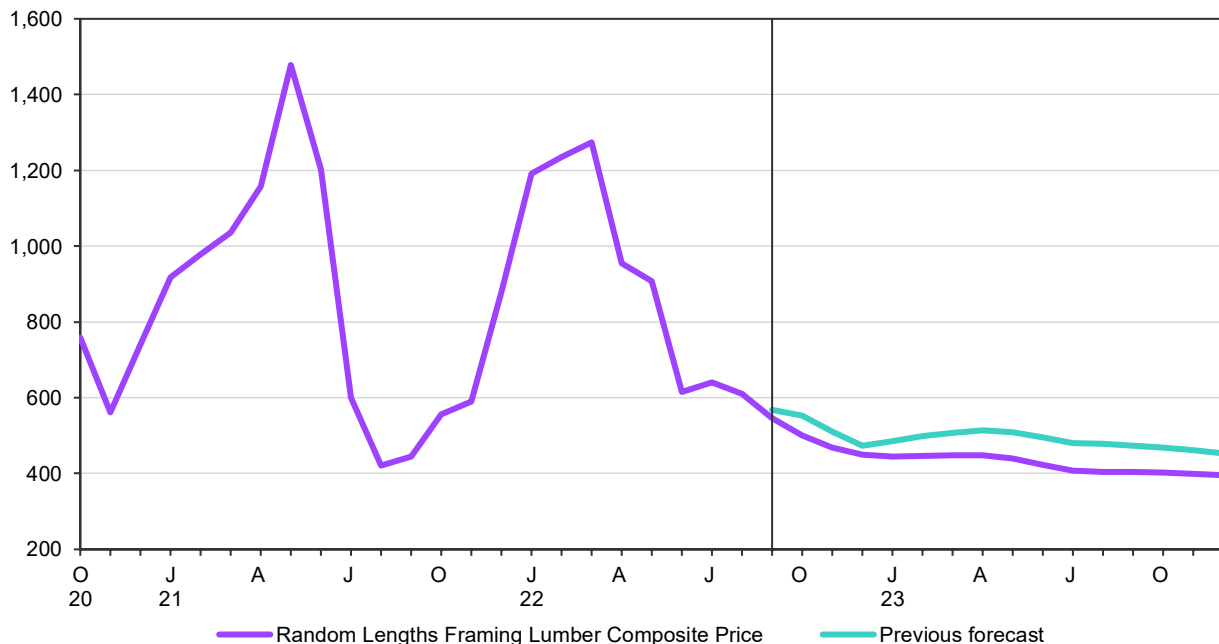
adjusted rate will be approximately 82%, which also factors in existing curtailments to cope with railcar and log issues in British Columbia and the market-related downtime we are assuming for the year. The industry D/C ratio will continue to fall in 2023 to 78% as demand remains suppressed and capacity creeps higher as SYP capacity additions outweigh expected closures in BC.

Prices

The market witnessed another phenomenal year for lumber price volatility in 2021, with the Random Lengths Framing Lumber Composite Price (FLCP) averaging an eye-popping \$855/MBF, well above the \$564/MBF average posted the prior year. Monthly prices fell from substantially more than \$1,400/MBF to almost \$400/MBF, which was equally astounding. This level of variance in pricing has been a nightmare for buyers – and forecasters! – and unlike anything the wood products market has ever seen.

The price rally that began last fall peaked at \$1,275/MBF in March, based on the FLCP. Prices

Figure 11
Random Lengths Framing Lumber Composite Price



in April fell for the first time since August 2021, pushing the FLCP down to \$956/MBF. This reduction of \$319/MBF was the second largest on record, behind only the \$604/MBF drop in July 2021. Since then, prices have continued to collapse, and by August, the FLCP averaged just \$610/MBF. We anticipate the FLCP will average \$547/MBF in September, its lowest level since September of last year (\$444/MBF).

As we have been calling for since the beginning of the year, lumber prices have now undergone a “full” correction. The prolonged nature of the upward price momentum that began last fall was tied almost entirely to supply-side disruptions, particularly in transportation. Although this created a short-run bullish dynamic for lumber prices, once trucking and rail services improved, bloated North American sawmill inventories began to move promptly through the supply chain, resulting in significant downward pressure on prices. As mentioned in the [Lumber markets](#) section, we believe around 700-800 MMBF of excess inventory had accumulated at the sawmill level of the supply chain at the end of the first quarter. Our much gloomier demand outlook this month has pushed us to expect a repeat of the market conditions we saw in 2018/2019, which left prices

dragging across the cash curve for much of 2019 and drove a wave of closures in sawmill capacity,

Our latest cost work suggests breakevens on variable production costs in the BC Interior will probably be around \$500/MBF in the fourth quarter after accounting for likely stumpage cost relief and the current 8.59% duties recently implemented. Costs for West Coast producers were also quite elevated because of recent increases in fiber and other input costs. This will create a wide base of price support at the \$450-500/MBF level for the coming months. Curtailments will remain elevated in the third quarter and probably transition to permanent closure announcements, which will keep some level of price support as demand conditions continue to deteriorate for the rest of year. We expect any upward momentum in prices to be short-lived given the current inventory and demand situation in the market.

We have significantly downgraded our price forecast to reflect the updated demand outlook and worsening inventory situation; we expect the FLCP to average \$782/MBF in 2022, down \$10/MBF from our projections in July. While average prices will be well above historical levels, they will be down 8%

Table 8

Summary of current lumber price forecast: Std & Btr 2x4 lumber

US dollars per million board feet

	Quarterly						Annual		
	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2021	2022	2023
SPF (Western) ¹	866	583	448	433	419	389	880	793	404
% change, year ago	-35.5%	18.1%	-37.1%	-66.0%	-51.7%	-33.2%	58.2%	-10.1%	-48.9%
Douglas-fir (green)	802	427	370	413	426	409	778	662	408
% change, year ago	-35.2%	-3.1%	-34.1%	-60.6%	-47.0%	-4.5%	31.6%	-15.1%	-38.2%
Hem-Fir (Inland)	970	619	520	503	490	460	970	864	474
% change, year ago	-33.4%	13.1%	-34.4%	-62.7%	-49.6%	-25.8%	53.0%	-11.0%	-45.0%
SYP (Westside) ¹	734	668	524	498	484	426	899	831	462
% change, year ago	-36.1%	32.9%	-34.5%	-64.4%	-34.2%	-36.3%	56.4%	-7.7%	-44.2%
RL FLCP ²	826	599	473	447	437	406	855	783	422
% change, year ago	-35.5%	22.7%	-30.1%	-63.8%	-47.1%	-32.3%	51.3%	-8.6%	-45.9%

1. 2&Btr.

2. Random Lengths Framing Lumber Composite Price.

Figure 12

Douglas-fir KD, RL, 2x4 price

US dollars per million board feet

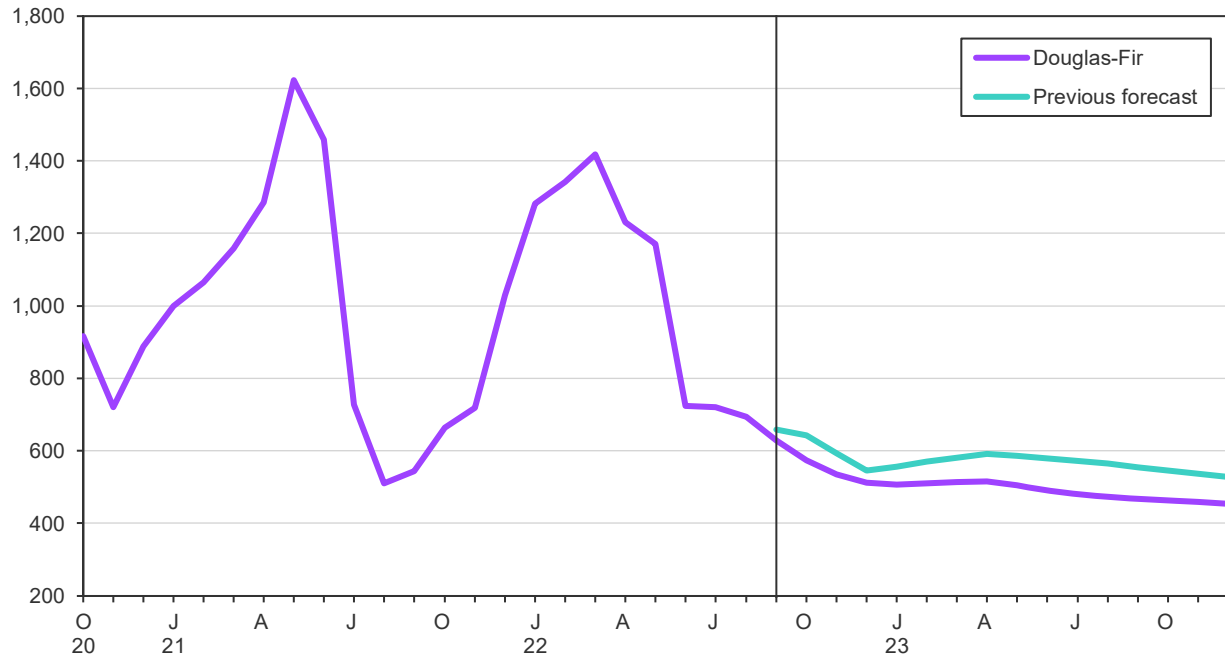
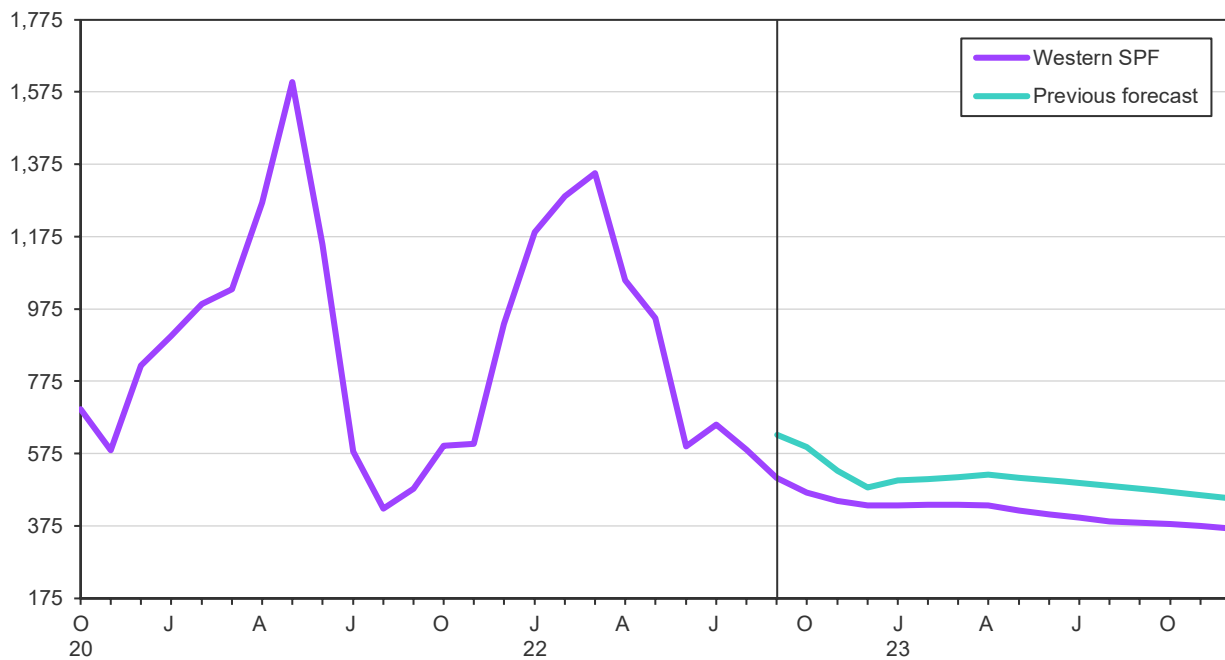


Figure 13

Western SPF KD, 2&Btr, RL, 2x4 price

US dollars per million board feet



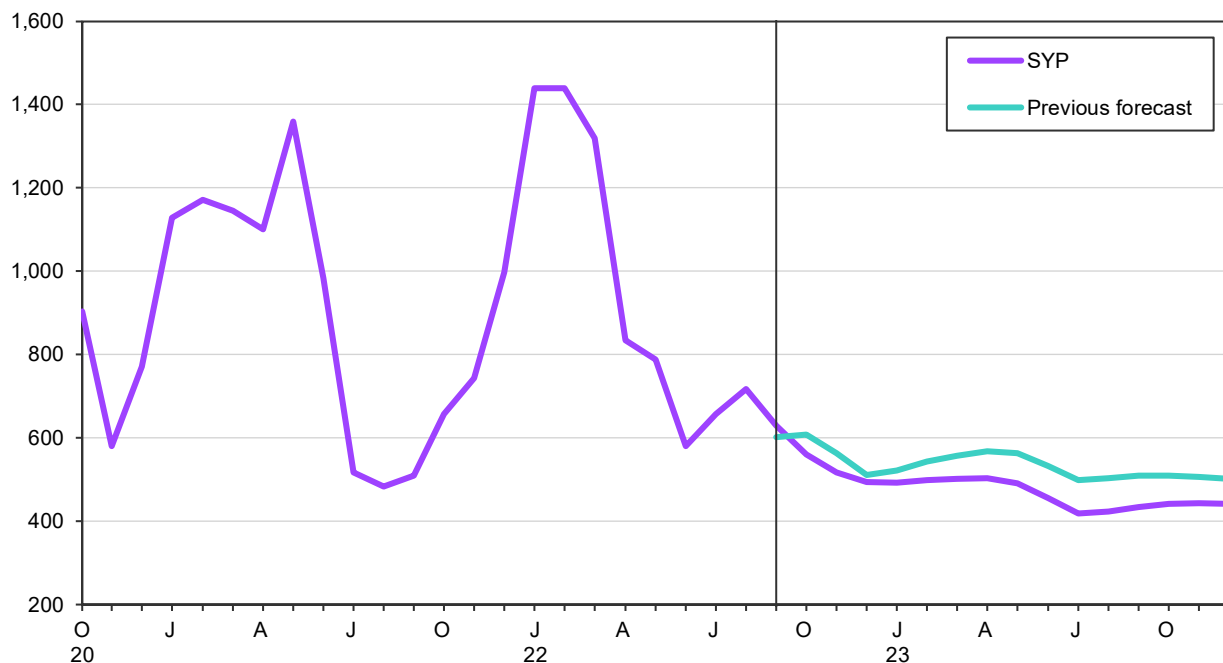
year over year. It will also be a tale of two halves: while the FLCP averaged \$1,030/MBF in the first half of 2022, prices will only average \$536/MBF in the second.

In 2023, we expect lumber prices to continue to soften as logistics constraints ease and demand drops further. The Department of Commerce, for its third annual review process, released final duties on Canadian lumber, which were lowered to an average of 8.59% in August, providing some relief to Canadian suppliers. This was also lower than the preliminary 11.6% announced, giving a little more room than many expected for prices to fall without hitting breakevens for Canadian mills. We also expect further drops in duties next summer as the next annual review will reflect 2021 lumber and log prices, which were historically elevated. While this will provide more relief to Canadian producers, in a buyers' market for lumber, this will probably translate to prices falling further through the end of 2023 as they skip along the top of cost curve. We project the FLCP will average \$422/MBF in 2023, which is \$63/MBF lower than July's

forecast. This will be a much more "normal" pricing environment for the industry, though the average lumber price in 2010-21 was \$413/MBF, so still slightly above the typical prices we were seeing prior to the pandemic.

The spread between southern yellow pine (SYP) and spruce-pine-fir (SPF) 2x4 prices has been extremely volatile since 2020. SYP was a hot product early in 2020 due to robust demand from treaters, with the DIY market supporting lumber demand despite poor new construction activity. Additionally, some buyers more recently turned to SYP from SPF due to the quicker shipping times and lower market risk in the face of the looming pricing correction. Although over the longer term we still anticipate more builders will substitute less readily available SPF with SYP, a historical capacity build-out in SYP will likely compensate for this new demand, keeping the SYP markets fairly competitive as volumes from the region seek a home in the marketplace. Meanwhile, fiber constraints in BC, recent curtailments, both temporary and permanent, and duties on Canadian lumber will hold SPF prices at

Figure 14
 SYP Westside KD, RL, 2x4 price
 US dollars per million board feet



elevated levels. As a result, the SYP/SPF 2x4 ratio is projected to average 1.15 in 2023, below the historical norm, which has averaged about 1.18 over the last two decades.

Looking at the spread of 8-ft Western SPF 2x4 studs versus Western SPF 2&B 2x4 prices, stud prices have been outpaced by other dimensional lumber prices for the better part of a decade. Prior to 2010, the ratio hovered around 1.0 but sank below 0.8 in recent years. However, from April to June 2020, the ratio spiked to levels last seen briefly in 2013, leaving studs actually holding a premium over random length dimensional lumber. This was likely fueled by the strong performance in R&R, with people finding projects to keep them busy while staying at home. Strength in

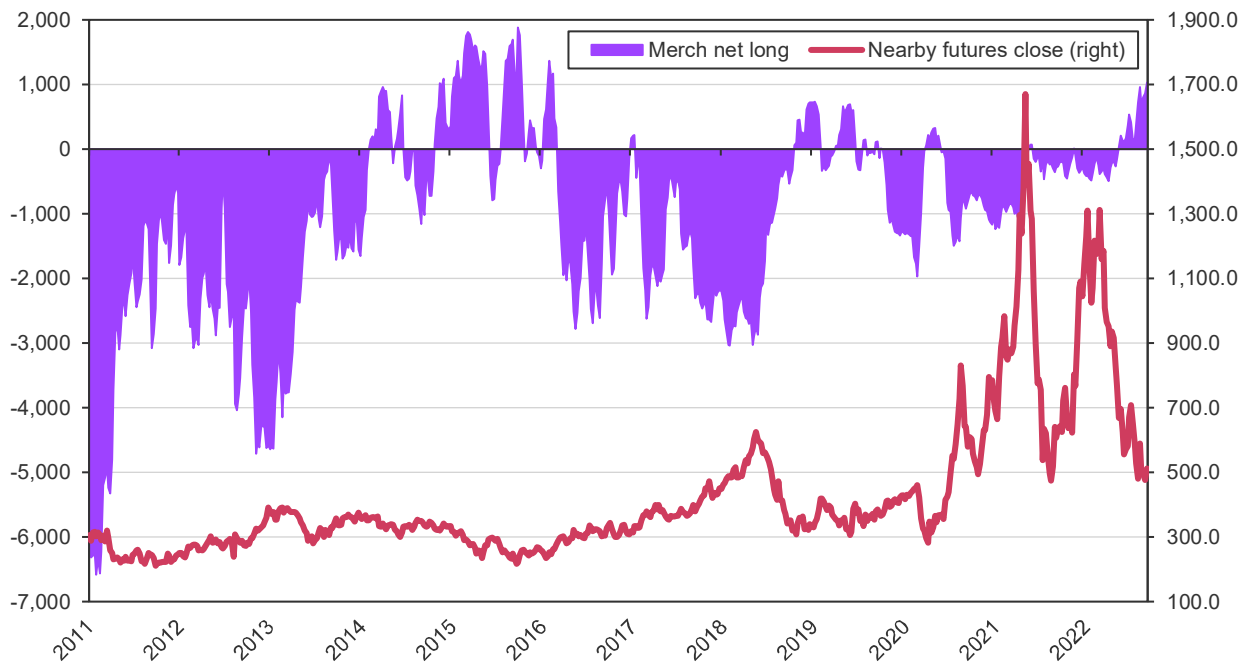
home centers began to cool dramatically in 2021, and we have seen the ratio of studs to dimensional lumber adjust accordingly. We anticipate the stud-to-random-length ratio will average 0.82 by 2023, recovering somewhat from the poor levels in 2018 and 2019.

Wide dimension lumber also appears to be facing a significant crunch given the shortage of I-joists, which is pushing many buyers to turn to solid lumber as a substitute. But weather conditions in 2021 in the US South were damp, making access to larger logs difficult just as the market was calling for more wide items. However, prices for wides have eased recently; wide lumber prices typically pick up in the spring and summer months as home construction

Figure 15

Commercial traders' net long positions and futures week-end close price

US dollars per million board feet



Definitions for Figures 14 and 15:

Producer/Merchant/Processor/User: an entity that predominately engages in the production, processing, packaging or handling of a physical commodity and uses the futures markets to manage or hedge risks associated with those activities.

Money Manager: For the purpose of this report, a “money manager” is a registered commodity trading advisor (CTA), a registered commodity pool operator (CPO) or an unregistered fund identified by CFTC. These traders are engaged in managing and conducting organized futures trading on behalf of clients. An unregistered fund may have a Part 4 exclusion from CTA/CPO registration or be a non-US entity that is unregistered; “hedge funds” are included in this category, regardless of whether they are registered.

ramps us, and as we enter the fall months, the seasonal bump wanes. EWP shortages, while still challenging, are also becoming less acute, putting less pressure on wide dimension lumber. Based on the ratio of SYP 2&B 2x10s versus #2 2x4s, we expect the ratio of wides to narrows to average 0.77 by 2023, which will still be relatively weak by historical standards, thanks to a drop in single-family starts in 2023 and in shortages of engineered wood product substitutes.

For the first time in years, the **risks to the price outlook** appear to finally be subsiding. There are no doubt still risks, but in our opinion the demand picture is becoming much clearer as the Federal Reserve signals its intent to induce a recession. How significant the drop in demand will be into 2023 is open for debate, but it seems more or less certain now that wood product volumes will be moving lower. Although we think the odds of a recession over the coming months are becoming increasingly elevated, and that is our baseline, we emphasize that predicting

the timing of such downturns is incredibly difficult, and we often only know we have been through a recession in hindsight.

Our base case still assumes gradual improvement in controlling the COVID-19 pandemic in North America through 2023, but the possibility for another substantial wave presents one of the larger upside risks to the price forecast. The scale of the anticipated closures in BC also has the potential to sway the forecast in either direction as the impacts of recent harvest deferral policies in the province remain highly uncertain. Transportation uncertainties also stick out as a risk despite the recent improvements we have seen in trucking and rail, particularly with more commodity sourcing occurring within North America as Russian commodities are now sanctioned or boycotted by much of the Western world. Natural disasters like wildfires and flooding are unpredictable factors that can also wreak havoc, although the risks of the first are likely diminishing as we enter the fall months in North America.

Figure 16

Money fund net long positions and futures week-end close price

US dollars per million board feet

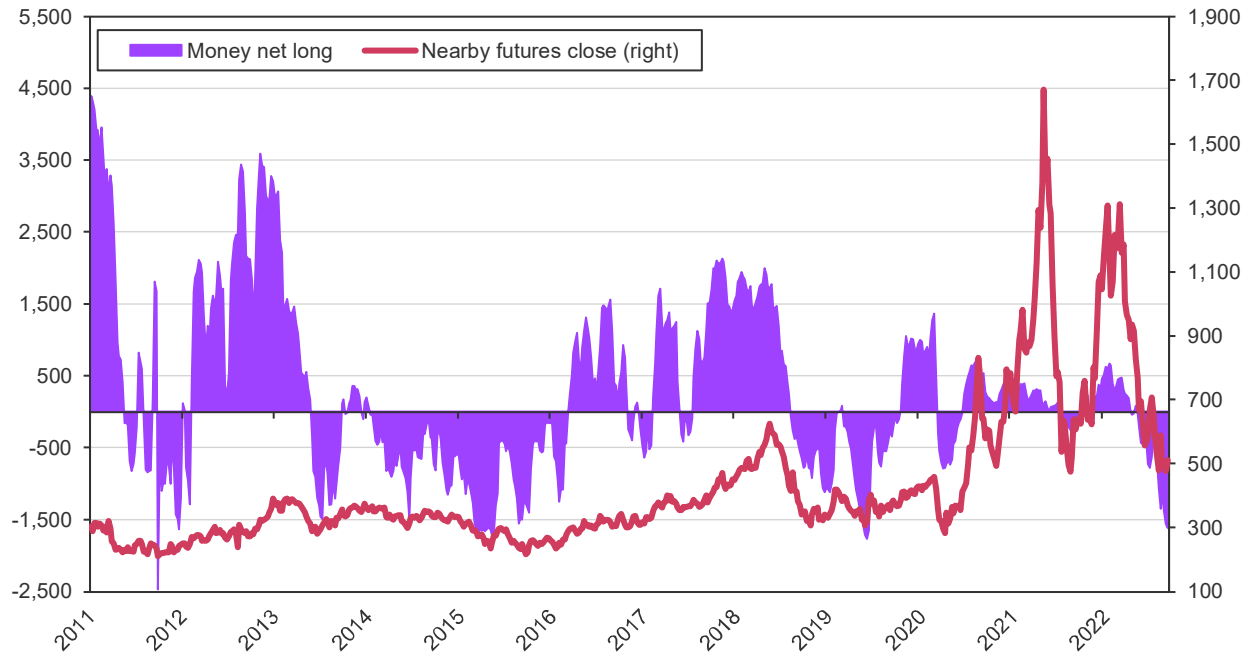


Table A1

Demand indicators

	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023
Starts + mobiles															
SAAR (millions)	1.519	1.676	1.481	1.476	1.491	1.506	1.485	1.477	1.469	1.469	1.465	1.465	1.465	1.466	1.467
Housing starts (SAAR, millions)															
Total starts	1.404	1.575	1.374	1.369	1.384	1.398	1.378	1.371	1.362	1.362	1.359	1.358	1.358	1.359	1.360
Single-family	0.904	0.935	0.824	0.824	0.832	0.839	0.834	0.843	0.842	0.849	0.849	0.846	0.847	0.849	0.860
Multifamily	0.500	0.640	0.550	0.545	0.552	0.559	0.544	0.528	0.520	0.513	0.510	0.512	0.511	0.510	0.500
Housing starts (actual, thousands)															
Total starts	126.1	140.5	119.7	117.2	107.2	98.8	100.9	97.5	112.9	123.7	122.3	124.7	121.8	121.2	118.3
Single-family	83.5	83.1	70.5	70.0	62.2	57.7	58.8	59.1	70.7	79.4	76.5	80.9	78.3	75.5	73.5
Multifamily	42.6	57.4	49.3	47.3	45.0	41.0	42.1	38.5	42.1	44.4	45.8	43.7	43.5	45.7	44.9
Mobile home production															
SAAR (millions)	0.115	0.101	0.107	0.107	0.107	0.108	0.107	0.106	0.107	0.107	0.106	0.107	0.107	0.107	0.107
Actual (thousands)	8.1	8.6	8.9	9.9	8.8	7.7	9.1	8.5	9.8	9.1	9.0	9.3	7.5	9.1	9.0
Residential improvements															
Actual, billion 2005 \$	12.9	12.9	12.6	11.8	11.3	10.7	9.6	9.5	9.9	11.6	12.2	12.6	13.0	13.0	12.7
% change, year ago	-3.9	-2.3	-1.3	-1.3	-0.9	-0.8	-1.5	-1.4	-1.1	-0.4	-0.1	0.2	0.5	0.6	0.7
Nonresidential construction															
Actual, billion 2005 \$	15.5	15.4	15.1	14.8	14.3	13.7	12.0	11.9	12.3	14.6	15.3	15.7	15.4	15.3	15.2
% change, year ago	-6.5	14.7	6.9	-14.5	3.8	10.3	-9.6	-25.7	-0.1	-4.0	-7.1	-0.8	-0.7	-0.9	0.7
Industrial production index (2007=1)															
SAAR	1.032	1.030	1.033	1.033	1.034	1.034	1.036	1.036	1.037	1.038	1.038	1.039	1.040	1.041	1.043
% change (annual)	6.4	-2.0	2.9	0.3	0.9	1.0	1.4	1.0	0.9	0.5	0.9	1.1	1.1	1.4	1.6
Actual	1.029	1.043	1.033	1.033	1.034	1.034	1.036	1.036	1.037	1.038	1.038	1.039	1.040	1.041	1.043
Manufacturing index (2007=1)															
SAAR	0.949	0.950	0.952	0.953	0.953	0.954	0.955	0.956	0.957	0.957	0.958	0.959	0.960	0.961	0.962
% change (annual)	7.8	1.0	2.6	0.3	0.8	1.0	1.4	1.0	0.9	0.4	1.0	1.1	1.2	1.5	1.8
Actual	0.938	0.959	0.952	0.959	0.950	0.943	0.943	0.956	0.966	0.948	0.958	0.976	0.948	0.969	0.962
Furniture and related production index (2007=1)															
SAAR	0.666	0.652	0.661	0.662	0.675	0.670	0.666	0.664	0.653	0.663	0.672	0.680	0.693	0.694	0.696
% change (annual)	-9.1	-22.8	17.7	1.8	26.3	-8.5	-6.7	-3.5	-18.8	20.1	18.0	16.0	24.3	1.9	3.9
Actual	0.676	0.662	0.652	0.660	0.674	0.678	0.657	0.649	0.647	0.644	0.674	0.689	0.703	0.705	0.687
Interest rates															
Prime rate	4.85	5.50	5.49	5.45	5.51	5.54	5.50	5.50	5.50	5.58	5.52	5.41	5.09	4.98	4.93
10-year T-bond	2.90	2.90	3.33	3.37	3.42	2.93	2.90	2.88	2.86	2.87	2.83	2.77	2.63	2.57	2.53

Table A2

Monthly lumber report

Billion board feet

	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023
Total lumber demand	4.42	4.40	4.23	4.08	3.90	3.74	3.56	3.54	3.70	4.03	4.17	4.31	4.32	4.34	4.27
Lumber demand ¹	2.99	2.97	2.87	2.77	2.66	2.56	2.44	2.44	2.55	2.77	2.87	2.97	2.98	2.99	2.95
Demand share ²	0.68	0.68	0.68	0.68	0.68	0.68	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Lumber quantities, three major US producing regions															
New orders	2.94	2.90	2.75	2.48	2.55	2.53	2.78	2.55	3.03	2.72	2.91	2.76	2.63	2.84	2.75
Production	2.96	2.94	2.80	2.60	2.46	2.51	2.79	2.62	3.02	2.71	2.88	2.76	2.60	2.88	2.68
Shipments	3.00	3.04	2.76	2.54	2.48	2.52	2.73	2.56	2.97	2.73	2.95	2.80	2.64	2.90	2.68
Capacity	3.52	3.53	3.54	3.55	3.56	3.57	3.58	3.59	3.60	3.61	3.62	3.63	3.64	3.65	3.66
Unfilled orders	1.06	0.92	0.92	0.85	0.92	0.93	0.98	0.98	1.03	1.03	0.98	0.94	0.93	0.87	0.94
Mill stocks	3.58	3.48	3.53	3.58	3.56	3.55	3.61	3.68	3.73	3.70	3.63	3.60	3.55	3.53	3.54
Dealer stocks	4.66	4.72	4.61	4.39	4.21	4.18	4.47	4.59	5.01	4.96	5.05	4.88	4.54	4.44	4.17
Lumber prices (\$/thousand square feet)															
RL FLCPS ³	641	610	547	501	468	450	445	447	448	449	440	424	408	405	404
DF2&2X4	720	693	629	574	535	512	507	511	514	515	504	491	481	473	467
DFGPO2X4	534	396	351	357	371	383	398	413	428	427	427	424	418	412	396
DFGPOS2X4	628	542	439	409	401	397	399	402	407	404	401	397	391	385	374
DFGPO2&2X10	949	854	669	550	481	435	418	421	435	446	455	460	458	453	439
HW2&2X4	660	643	567	497	473	459	458	461	461	460	446	434	425	416	411
WF2X4	652	629	577	542	517	502	501	503	504	503	490	476	467	459	454
WS2&2X4	655	585	508	467	444	432	432	433	433	432	418	406	398	387	383
WSS2X4	540	461	411	377	347	337	339	343	347	350	343	336	332	325	322
CEGS&B2X4	2,026	1,925	1,790	1,561	1,347	1,167	1,038	944	875	829	805	790	780	777	781
SPW2X4	657	717	630	560	516	495	492	498	502	503	491	456	419	424	434
SPW2&2X6	472	456	361	388	438	480	487	456	411	378	360	348	367	394	396
SPW2&2X10	409	418	386	388	400	407	406	398	386	376	364	346	331	340	342
SPWS2X4	575	653	590	527	464	430	421	425	450	461	454	424	388	380	380
SPE2X4	745	795	642	592	547	522	520	526	530	531	519	483	445	450	461
SPE2&2X6	498	472	396	392	438	475	481	453	412	382	366	354	372	396	398
SPE2&2X10	481	513	476	456	456	455	449	437	422	410	397	376	359	369	371
FL2X4	709	699	642	599	567	546	539	548	544	539	524	508	495	485	478
FL2&2X10	703	711	702	666	614	565	532	522	516	515	510	503	495	488	482
FLS2X4	654	586	513	449	413	400	400	406	409	410	401	392	385	376	372
PPS2S2SHOP6% ⁴	2,020	2,020	2,020	2,021	1,980	1,875	1,707	1,571	1,435	1,310	1,211	1,138	1,056	999	968
PP3Z1X12	940	836	699	609	569	561	563	585	597	591	572	551	519	498	490
IP1X12	1,125	1,106	1,040	969	909	863	828	805	788	771	753	734	713	692	675
SPW4Z2X4	368	340	284	288	293	286	288	298	303	307	304	296	285	275	273
FLECN2x4	354	295	249	231	226	228	235	249	256	259	255	247	241	235	231
HWE CN2x4	301	251	230	213	210	212	219	233	240	245	244	238	232	227	223
DFGPOECN2x4	218	166	127	145	172	173	179	192	197	201	198	192	187	183	179
Demand/supply ratios: Indicators of price movements															
New orders/prod.	0.994	0.986	0.981	0.954	1.038	1.007	0.996	0.972	1.003	1.007	1.009	0.999	1.014	0.985	1.026
Unfilled orders/stocks	0.297	0.266	0.260	0.237	0.259	0.262	0.272	0.265	0.277	0.278	0.271	0.262	0.263	0.247	0.267
Demand/capacity	0.849	0.842	0.810	0.780	0.747	0.716	0.683	0.679	0.709	0.769	0.794	0.818	0.820	0.821	0.807

1. Lumber demand is demand for lumber produced in the three major US producing regions.

2. Demand share is these three regions' share of total demand.

3. Random Lengths Framing Lumber Composite Price.

Key to monthly price forecast tables

Abbreviation	Lumber grade
CEGS&B2X4	Western red cedar/green, framing, random, Std & Btr - 2X4
DF2&2X4	Douglas-fir/kiln-dried, framing, random, #2 & Btr - 2X4
DFGPO2&2X10	Douglas-fir/green/Portland, framing, random, #2 & Btr - 2X10
DFGPO2X4	Douglas-fir/green/Portland, framing, random, Std & Btr - 2X4
DFGPOECN2X4	Douglas-fir/green/Portland, industrial, random, economy - 2X4
DFGPOS2X4	Douglas-fir/green/Portland, stud - 2X4/8 ft PET
FL2&2X10	Fir & larch/kiln-dried, framing, random, #2 & Btr - 2X10
FL2X4	Fir & larch/kiln-dried, framing, random, Std & Btr - 2X4
FLECN2X4	Fir & larch/kiln-dried, industrial, random, economy - 2X4
FLS2X4	Fir & larch/kiln-dried, framing, stud - 2X4/8 ft PET
HW2&2X4	Coast Hem-Fir/kiln-dried, framing, random, #2 & Btr - 2X4
HWECN2X4	Coast Hem-Fir/kiln-dried, industrial, random, economy - 2X4
IP1X12	Idaho white pine/kiln-dried, selects & commons, standard - 1X12
PP3Z1X12	Ponderosa pine/kiln-dried/Inland mills, selects & commons, #3 - 1X12
PPS2S2SHOP6%4	Ponderosa pine, S2S, #2 shop - 6/4
RL FLCP	Random Lengths Framing Lumber Composite Price
SPE2&2X10	Southern pine/kiln-dried/East, framing, random, #2 - 2X10
SPE2&2X6	Southern pine/kiln-dried/East, framing, random, #2 - 2X6
SPE2X4	Southern pine/kiln-dried/East, framing, random, #2 - 2X4
SPES2X4	Southern pine/kiln-dried/East, framing, random, stud - 2X4/8 ft PET
SPW2&2X10	Southern pine/kiln-dried/West, framing, random, #2 - 2X10
SPW2&2X6	Southern pine/kiln-dried/West, framing, random, #2 - 2X6
SPW2X4	Southern pine/kiln-dried/West, framing, random, #2 - 2X4
SPW4Z2X4	Southern pine/kiln-dried/West, industrial, random, #4 - 2X4
SPWS2X4	Southern pine/kiln-dried/West, framing, random, stud - 2X4/8 ft PET
WF2X4	Inland Hem-Fir/kiln-dried, framing, random, Std & Btr - 2X4
WS2&2X4	Western spruce-pine-fir/kiln-dried, framing, random, #2 & Btr - 2X4
WSS2X4	Western spruce-pine-fir/kiln-dried, framing, random, stud - 2X4/8 ft PET

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In alphabetical order, these organizations are:

AF&PA: American Forest and Paper Association

APA: APA – The Engineered Wood Association

CPA: Composite Panel Association

COFI: Council of Forest Industries

SFPA: Southern Forest Products Association

Statistics Canada

US Department of Commerce

WWPA: Western Wood Products Association

Price data for history are as reported in *Random Lengths Weekly Report*. All price forecasts are proprietary to Fastmarkets RISI.

Regional costs of production data are collected and reported annually by Fastmarkets RISI.

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