United States Forest Products Annual Market Review and Prospects: Country Market Report, 2022-2026

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Abstract

Interest rates, resulting from efforts by the United States Federal Reserve Board of Governors to reduce inflation, the European Union Deforestation Regulation, housing affordability, the Russia-Ukraine and Israel-Palestinian conflicts, and international trade disputes are affecting all facets of the United States economy and forest products markets. Presented are data and information on the current state of the United States economy and wood products markets, and near-term prospects. This report is supported by conventional information and statistical data regarding forest product markets in terms of consumption, consumer credit, industrial production, prices, and trade. Information on sawn softwood and hardwood, softwood and hardwood log trade, wood-based panels, paper and paperboard, fuelwood, forest product prices, and new housing sales and starts are presented. Policy initiatives, which may affect domestic markets and international trade in wood products also are discussed. Selected data are provided for the years 2010 through 2026, with estimates for 2024, and forecasts for 2025 and 2026.

Keywords: United States wood product's markets, composite wood products, engineered wood products, European Union deforestation regulation, fuelwood, furniture, forest product markets, forest products prices, hardwood lumber and log markets, international wood products trade, log and lumber exports and imports, new housing construction, repair and remodeling, roundwood/pulpwood, softwood lumber agreement, softwood lumber and log markets, structural and non-structural panels, woody biomass consumption and production, and biomass and wood energy.

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Executive Summary

This market report provides an analysis and evaluation of the status and near-term prospects for the United States economy and forest products markets. Unless otherwise noted, all monetary values are provided in constant 2017 U.S. dollars.

With forecast estimates of gross domestic product (GDP) annual rate of growth of 2.0 percent in the years 2024 to 2027, the United States' economic outlook is for modest growth (Federal Open Market Committee (2024b)). The Federal Reserve Bank of Philadelphia (2024) Survey of Forecasters estimates differed, with GDP growth estimated at 2.6 percent for 2024, forecasted to decline to 1.9 percent in 2025, 2.3 percent in 2026, and decreasing to 2.0 percent in 2027.

New housing construction and existing house sales were negatively influenced primarily by increasing interest rates (the 30-year fixed rate average mortgage rose from 5.3 percent in 2023 to 7.2 percent in May 2024). Housing affordability is problematic for millions of potential house buyers in the U.S. As of October 17, 2024, the aggregate 30-year interest rate was 6.44 percent (Freddie Mac 2024). Total housing starts and single-family starts were 8.6 and 10.8 percent less in 2023, respectively, compared to 2022. Observed values for 2023 were mixed as compared to 2022: new house sales improved 3.9 percent, total private residential investment declined 5.9 percent, and investment in private non-residential structures increased 18.4 percent. In contrast, manufactured home shipments and residential repair and remodeling investment decreased by 21.0 percent and 6.8 percent, respectively between 2022 and 2023.

Housing construction and sales have an explicit effect on many wood products markets, as reflected by overall declines in levels of production and consumption across most wood product categories over the 2022-2023 period. Softwood lumber production recorded a minor decrease (less than one percent), apparent consumption also declined. In addition, both imports and exports declined year-over-year, with imports decreasing 6.9 percent and exports decreasing 0.2 percent year-over-year. Production of structural panels (oriented strand board and coniferous plywood) decreased 4.6 percent and 1.0 percent, respectively.

Sawn hardwood production data indicated a dramatic decrease between 2022 and 2023 (22.4 percent) and production in the first half of 2024 continued this decline (8.8 percent from the same period in 2023). Furniture shipments also decreased in 2023, relative to 2022. Paper and paperboard production remain in a long decline with 2023

pulpwood production and consumption roughly 16 percent less than 2022 levels. In contrast, wood pellet production continued its upwards trend, increasing 3 percent between 2022 and 2023. The first half of 2024 shows production slightly less than that of the first half of 2023, however (about half of a percent less, weight based).

The upcoming implementation of the European Union Deforestation Regulation (EUDR) is considered problematic by United States wood products manufacturers. As it currently is written, most producers indicate they will have difficulty adhering to the regulatory components of the EUDR.

In summary, the EUDR implementation, housing affordability, inflation, interest rates, trade tensions, events in nature, and geopolitical issues are affecting forest products markets, production, and consumption, a pattern that also holds true for world economies.

United States General Economy

Analysis of the United States (U.S.) GDP indicates signs of slow to moderate economic growth, with the first quarter of 2024 resulting in a rate of 1.4 percent, followed by a 3.0 percent rate in the second quarter (U.S. Bureau of Economic Analysis (BEA) 2024). The Federal Reserve Board of Governors, FOMC (2024b) and the Federal Reserve Bank of Philadelphia (FRBP) Third Quarter 2024 Survey of Professional Forecasters (2024) forecast modest to moderate growth in 2024. The U.S. real GDP growth forecast was revised downwards for 2024, from 2.1 to 2.0 percent (FOMC 2024a, b) and the FRBP (2024) forecast increased from 2.5 to 2.6 percent. Steady GDP growth is forecasted for the 2025-2027 period, with GDP forecasts at 2.0 percent for those years (FOMC 2024b).

Unemployment forecasts for 2025-2026 by FOMC (2024b) has the median estimate of the natural rate of unemployment ranging from 4.1 (2025) to 4.2 percent (2026), while the FRBP (2024) median estimate of the natural rate of unemployment ranges from 4.3 (2025) and 4.2 percent (2026). The FOMC (2024b) projects the 2024 unemployment rate at 4.4 percent, an increase from the 2023 estimate of 4.1 percent FOMC (2023a).

Core inflation, as measured by personal consumption expenditures (PCE), was estimated at 2.6 percent for 2024, decreasing to 2.2 percent in 2025, and 2.0 percent in 2026 and 2027 (FOMC 2024b). Real PCE increased 6.0 percent between 2022 and 2023 (from $17.51 to $18.57 trillion, nominal) and 5.0 percent between first half of 2024 and the same period in 2023 (BEA 2024).

The headline Consumer Price Index (CPI) for personal consumption expenditures was estimated at 2.8 percent for 2024, and projected to decrease to 2.3 percent in 2025 and 2026 (FRBP 2024).

Consumer spending, and associated consumer credit, are often attributed as the primary drivers for the aggregate U.S. economy. Consumer spending accounted for 68.9 percent of GDP in 2023 (Council of Economic Advisers 2024). The Federal Reserve Bank of New York (FRBNY 2024) stated that total household debt (nominal values) was $17.80 trillion in the second quarter of 2024. Included in this total were house mortgages of $12.52 trillion and home equity line of credit balances of $380 billion, student loans of $1.58 trillion, auto loans of $1.63 trillion, credit card debt of $1.14 trillion, and $540 billion of "other" loans.

Industrial production is an economic indicator measuring real output for all facilities located in the U.S., which includes manufacturing, mining, electric, and gas utility installations. Total industrial production index for August 2024 was 103.1 (FOMC 2024d), no change from August 2023 (FOMC 2023b). The preliminary estimate for manufacturing capacity utilization index was 78.0, which was 1.1 percent less than in August 2023 (78.9) (FOMC 2024d, FOMC 2023b).

As presented in Table 1, total private residential fixed investment was $1,074 billion in 2023, a 7.9 percent decline from 2022. Total private residential fixed investment in the first half of 2024 was $1,144 billion, an 8.3 percent increase as compared to the first half of 2023. Total 2023 nonresidential fixed investment in structures was near $839.8 billion, a 19.9 percent increase from 2023 ($700 billion). For the first half of 2024 ($882 billion) nonresidential investment was 8.0 percent greater than the first half 2023 (BEA 2024a).

Major Market Developments in the United States Affecting Forest Products Consumption

New housing construction and housing sales

New single-family starts and sales are vital for the wood products industry, with new housing units consuming more value-added wood products than any other wood-utilizing sector. In 2023, new housing starts began a decline, primarily due to rising interest rates and increasing prices. Housing affordability is a major obstacle to existing and new house sales. In May 2024, affordability was at its lowest level in more than 30 years (Fleming and Kushi 2024.). According to Herbert (2024), potential house purchases are out of

reach for millions of Americans. The 30-year conventional loan rate was 6.44 percent as of October 17, 2024, which was substantially less than one year ago (7.63 percent), a decrease of 15.6 percent (Freddie Mac 2024). This may ease affordability issues.

In 2023, total housing starts were 1,420,000 units and single family starts were 947,000 units (seasonally adjusted annual rate (SAAR)), reflecting an 8.5 percent and 5.8 percent decrease from 2022, respectively (Table 1). Total multifamily starts also decreased 13.5 percent between 2022 and 2023, from 547 to 473 thousand units (SAAR). In the first half of 2024, total housing starts averaged 1.374 million units and single family starts were 1.034 million units. Total starts were 3.3 percent less compared to the same period in 2023 (1.415 million units) and single family starts were 17.0 percent more than reported for the first half of 2023 (930 thousand units). Multifamily starts, in the first half of 2024, averaged 339 thousand units, or 36.7 percent less than reported for the same 2023 period (Census 2024a).

The Mortgage Bankers Association (MBA) (2024) estimates total housing starts for 2024 at 1.360 million units (SAAR), which is 4.3 percent less than in 2023 (Table 1). The single family estimate for 2024 is 1.020 million units (SAAR), an increase of 7.5 percent from 2023. Projections for 2025 are 1.404 million total units and 1.094 million single family units. New house sales (SAAR, Table 1) are estimated at 696 thousand units in 2024 and projected to 794 thousand units in 2025, and 810 thousand units in 2026 (MBA 2024).

Total housing permits in 2023 were 1,511,102 units and single family permits were 919,973 units (SAAR), 10.1 percent and 5.5 percent decline from 2022, respectively. Multifamily permits decreased 17.6 percent from 2022 to 2023, from 651,302 to 536,413 units. In the first half of 2024, total permits were 1,475 million units (a decrease of 2.2 percent) and single family permits were 986 thousand units (SAAR), an increase of 14.7 percent from same period in 2023. Multifamily permits averaged 489 thousand units (SAAR) in the first half of 2024, a 24.6 percent decrease from the same period in 2023 (Census 2024b).

In 2023, total housing completions were 1.453 million units and single family housing completions were 1.003 million units (SAAR), resulting in a 4.4 percent increase and 1.9 percent year-over-year decrease, respectively. Multifamily housing completions were 359,900 units in 2022 and 439,500 units in 2023; a 21.8 percent increase. In the first half of 2024, total housing completions were 1.601 million units and single family completions were 1.022 million units (SAAR). Total completions and single family completions were 8.2 percent and 1.2 percent greater than recorded in the same period in 2023, respectively. Multifamily completions averaged 579 thousand units (SAAR) in the first half of 2024, 23.1 percent more than reported for the same period in 2023 (Census 2024a).

Table 1. Selected U.S. economic indicators, 2021–2025.

	Actual		Estimate[b]	Forecast[b]	Forecast[c]
Indicator	2022	2023	2024	2025	2026
Gross domestic product (billion 2017 dollars)	25,744	27,361	27,908	28,466	29,035
New housing starts (thousand units; SAAR)	1,553	1,420	1,360	1,404	1,431
New single family starts (thousand units; SAAR)	1,005	947	1,020	1,094	1,125
New multifamily starts (thousand units; SAAR)	547	473	341	310	306
New housing sales (thousand units; SAAR)	641	666	696	794	810
Manufactured housing shipments (thousand units; SAAR)	113	89	100	153	164
Total residential fixed investment (billion 2017 dollars)[d]	1,166	1,074	1,224	1,305	1,387
Total nonresidential fixed investment-structures (billion 2017 dollars)	700	840	882	966	1,050
Furniture and related products (Index: 2017 = 100)	90.7	81.2	77.0	81.1	84.7
Paper products (Index: 2017 = 100)	93.4	85.7	87.9	111.1	116.7
Wood products (Index: 2017 = 100)	99.9	94.2	92.1	92.2	92.5
Total industrial production (Index: 2017=100)	102.7	102.9	103.1	103.6	104.7

Sources: [a] BEA 2024a, c; Census 2024a, b, d; FOMC 2024c, f, g; FRBP 2024; MBA 2024.
[b] Congressional Budget Office 2024; FOMC 2024c, f, g; MBA 2024; Karan and Pang 2022; USDA FS estimates based on historical and first half 2024 data.
[c] Congressional Budget Office 2024; FOMC 2024c, f; FRBP 2024; MBA 2024; Karan and Pang 2022; USDA Forest Service estimates based on historical and first half 2024 data; Y Charts 2024.
[d] 2024 estimate developed by USDA Forest Service

New house sales were 666 thousand units (SAAR) in 2023 (Table 1), a 3.9 percent increase from 2022. During the first half of 2024, new house sales were 677 thousand units, a 1.3 percent improvement from the 668 thousand units sold in the same period in 2023 (Census 2024c). Decreasing new house construction has been attributed to increased mortgage costs, a lack of construction workers, regulatory burdens, stringent builder financing requirements, student loan debts accrued from higher education, shifting attitudes towards home ownership, under-employment, and stagnant-to-declining median incomes.

Existing housing sales are important for the residential repair and remodeling (R&R) subsector. In 2023, a total of 4.090 million units (SAAR) were sold, an 18.7 percent decline from 2022 (5.030 million units). Decreasing sales continued into 2024 with approximately 4.125 million units sold in the first half of 2024, a 3.0 percent decline from levels observed in the first half of 2023 (FRED 2024). The median age of a U.S. housing unit is 40 years and increasing – 1981 is the median year in which a residential structure was built (Census 2024d) and 88.1 percent of total houses were built before 2009 (Census

2024e), which highlights the potential of residential repair and remodeling (R&R) to wood products consumption.

Manufactured housing fabrication and sales has historically played a pivotal role in meeting U.S. housing demand. Manufactured housing (e.g., mobile, modular, etc.) production and shipments, while increasing, remains well less than the greatest shipment years of 1973 (580 thousand units) and 1998 (373 thousand units). Shipments in 2023 were 89,000 units, a 21.2 percent decrease from the previous year (Table 1). In the first half of 2024, shipments stood at 85 thousand units, 29.1 percent lower than the first half of 2023 (Census 2024f). Karan and Pang (2022) projected approximately 143 thousand units to be shipped in 2024, 153 thousand in 2025, and 164 thousand in 2026.

Construction expenditures

U.S. Census-Construction (2024e) estimates of residential construction expenditures (SAAR) indicate 2023 total residential construction at $862.9 billion, with single family at $392.1 billion and multifamily at $131.9 billion. R&R expenditures (nominal dollars) in 2023 were estimated at $339.9 billion. Total, single family, and R&R expenditures all decreased from 2022 to 2023 (6.0 percent for total residential, 13.5 percent for single family, and 4.5 percent for R&R). Multifamily data indicate a 20.0 percent improvement in the same time period.

Contrasting the first half of 2024 and the first half of 2023, total residential construction expenditures increased 8.5 percent, from $853.5 to $925.7 billion- and single-family spending improved 14.6 percent, from $392.1 to $463.5 billion. Expenditures for multifamily construction decreased 3.3 percent (from $135.4 billion to $130.9 billion) and R&R spending increased 6.2 percent (from $332.3 billion to $386.6 billion) (Census 2024a).

Residential R&R currently utilizes a greater quantity of wood products than new housing construction and extends to a variety of projects, some that require substantial amounts of solid wood products and others that do not. In general, major repair and remodeling activities are classified as maintenance and repairs, additions and alterations, and major replacements. Maintenance and repair expenditures are for upkeep of a residential property rather than additional investment in the property. Addition and alteration expenditures are for enlargements or improvements to or within the residential structure, or the property. Major replacements are construction improvements to the property and are closely related to maintenance and repair.

Harvard University's Leading Indicator of Remodeling Activity (LIRA) indicated that residential R&R expenditures increased 7.2 percent (to $479.9 billion, nominal) from 2022 to 2023. In 2024, LIRA estimated first through fourth quarter 2024 expenditures (nominal dollars) for R&R at $464, $468, $474, and $450 billion, respectively. After a modest downturn, homeowner expenditures for improvements and repairs are expected to trend up through the first half of 2025…" (LIRA 2024).

Nonresidential expenditures are currently being affected by work-at-home, electronic commerce, and the over saturation of commercial office buildings. Nonresidential construction is typically segmented into several categories, including commercial, conservation and development, educational, health care, lodging, manufacturing, office, and religious construction subsectors. Investments in office and multifamily buildings are experiencing a decline due to increased interest rates, work from home, and a current surplus of office buildings, and a perceived glut in multifamily apartments (Dougherty, Bensin, and Barley 2024). Investment in these nonresidential subsectors (Table 1) was estimated at $839.8 billion (SAAR) in 2023, a 19.91 percent increase from the $700.5 billion reported for 2022. In the first half of 2024, total spending for these subsectors increased by 8.0 percent to $882 billion from $816 billion (SAAR) in the first half of 2023 (BEA 2024a).

Overview of United States Forest Products Markets

With ample forest resources and vast production capacity, the U.S. leads global production and also is one of the largest consumers of wood products, playing an essential role in global forest products markets. The U.S. is the world's largest producer of industrial roundwood (i.e., wood in rough form, whole and/or chipped logs used in industrial manufacturing) (19 percent in 2020), wood pellets (17 percent), and pulp for paper (26 percent). The U.S. is the second leading producer of sawnwood (17 percent), wood-based panels (9 percent), recovered paper (18 percent), and paper and paperboard (17 percent). The U.S. is a leading consumer of industrial roundwood (18 percent), sawnwood (22 percent), wood-based panels (13 percent), recovered paper (12 percent), and paper and paperboard (16 percent) (FAO 2022).

The United States forest products industry, comprised of National Industrial Classification System (NAICS) sectors 321 (wood products), 322 (paper and paperboard products), and 337 (furniture), contributed $161.4 billion to the U.S. real GDP in 2023

and $162.5 billion in 2022 (0.63 percent and 0.59 percent of total GDP ($25,744 billion and $27,361 billion), respectively) (BEA 2024b).

Four major production indexes for forest products include furniture and related products, paper products, wood products, and total industrial production (Table 1):

- Furniture and related products are key indicators for higher-grade hardwood lumber. This index decreased 10.5 percent from 2022 to 2023 and declined 5.0 percent to 77.0 from August 2023 to August 2024 (Table 1) (FOMC 2024f).
- Paper products are an important indicator for pulpwood and wood residues, as well as recycled fiber. This index declined 8.2 percent from 2022 to 2023 and improved 3.8 percent to 87.9 from August 2023 to August 2024 (Table 1) (FOMC 2024e).
- Wood products are an important indicator for the overall forest products industry. This index decreased 5.7 percent from 2022 to 2023 and decreased 1.6 percent to 92.1 from August 2023 to August 2024 (Table 1) (FOMC 2024e).
- Industrial production and capacity utilization are principal indicators for pallet lumber, containerboard, and discrete grades of paper. This index increased 6.6 percent from 2022 to 2023 and was 103.1 in August 2024, no change from August 2023 (Table 1) (FOMC 2024d).

In 2023, the U.S. wood industry produced 63.578 million m^3 of softwood lumber (Western Wood Products Association (WWPA) 2024) and 13.084 million m^3 (nominal) of sawn hardwood (Hardwood Market Report (HMR) 2024) (Table 2).

Structural panel (softwood plywood and Oriented Strand Board or OSB) production was 19.97 million m^3 and 4.48 million m^3 of particleboard (Table 2). Engineered products manufactured in 2023 include 1.78 million m^3 of laminated veneer lumber (LVL); 350.4 thousand m^3 of glued laminated timber (Glulam); and 122.8 million linear meters (LM) of I-Joist (APA 2024).

Table 2. Prospects and statistics for forest and wood products, 2022 – 2025[a, b]

Sawn Softwood (Coniferous)

	2022	2023	2024[b]	2025[b]
Production	64,326	63,578	62,393	63,074
Imports	36,344	33,829	34,495	34,889
Exports	2,539	2,533	2,721	2,598
Consumption	98,131	94,874	94,167	95,365

Sawn Hardwood (Deciduous)

	2022	2023	2024[b]	2025[b]
Production	16,869	13,084	11,986	14,684
Imports	792	615	635	681
Exports	3,326	2,719	2,992	2,950
Consumption	14,335	10,980	9,629	12,415

Oriented Strand Board (OSB)

	2022	2023	2024[b]	2025[b]
Production	13,592	12,962	12,822	12,623
Imports	6,198	5,716	5,445	5,603
Exports	160	152	174	175
Consumption	19,630	18,526	18,093	18,051

Coniferous Plywood (Softwood)

	2022	2023	2024[b]	2025[b]
Production	7,075	7,006	7,489	7,601
Imports	2,031	1,570	1,804	1,820
Exports	416	303	304	305
Consumption	8,690	8,273	8,989	9,116

Hardboard

	2022	2023	2024[b]	2025[b]
Production				
Imports	249	173	104	104
Exports	224	99	99	99
Consumption				

Medium Density Fiberboard (MDF)

	2022	2023	2024[b]	2025[b]
Production	2,667			
Imports	2,407	1,751	2,942	3,032
Exports	372	413	413	413
Consumption	4,702			

Particleboard

	2022	2023	2024[b]	2025[b]
Production	4,488	4,489	4,874	5,322
Imports	1,192	948	1,281	1,186
Exports	483	429	409	410
Consumption	5,197	5,008	5,746	6,098

Roundwood Pulpwood

	2022	2023	2024[b]	2025[b]
Production	159,145	134,139	135,348	136,444
Imports	63	38	37	39
Exports	75	50	50	51
Consumption	159,133	134,127	135,335	136,432

[a] All volumes are reported in thousand m^3.
[b] USDA FS estimates.
Sources: American Forest and Paper Association (AF&PA) 2024; APA 2024; Composite Panel Association 2024; HMR 2024; U.S. Department of Agriculture (USDA), Foreign Agricultural Service (USDA FAS) 2024, WWPA 2024.

In 2023, the U.S. produced nearly 134 million m^3 of pulpwood used in the production of wood pulp for paper and paperboard products and in particle board, oriented strand board, and fiberboard production. Pulpwood production in 2023 declined 15.7 percent from the approximate 159.1 million m^3 produced in 2022 (Table 2). Domestic paper and paperboard production declined 7.2 percent, from 65.3 million metric tons (MMT) in 2022 to 60.6 MMT in 2023 (AF&PA 2023, 2024).

As mentioned, the U.S. has access to ample forest resources and has extensive production capacity; however, the U.S. forest products industry currently is undergoing massive stress with an aging work force, loss of markets, and most striking – the

shuttering of numerous primary and secondary manufacturing facilities. The American Loggers Council (2024) states that U.S. firms shuttered 54 plants, and more than 10,000 jobs have been lost since 2023. Since the beginning of 2024, 18.2% of U.S. softwood mills (71 mills) have been shuttered and 18.0 percent of hardwood mills have been shuttered or idled (four mills idled; 89 mills shuttered) (Forisk 2024).

Timber Products Production, Trade, and Consumption Statistics and Projections

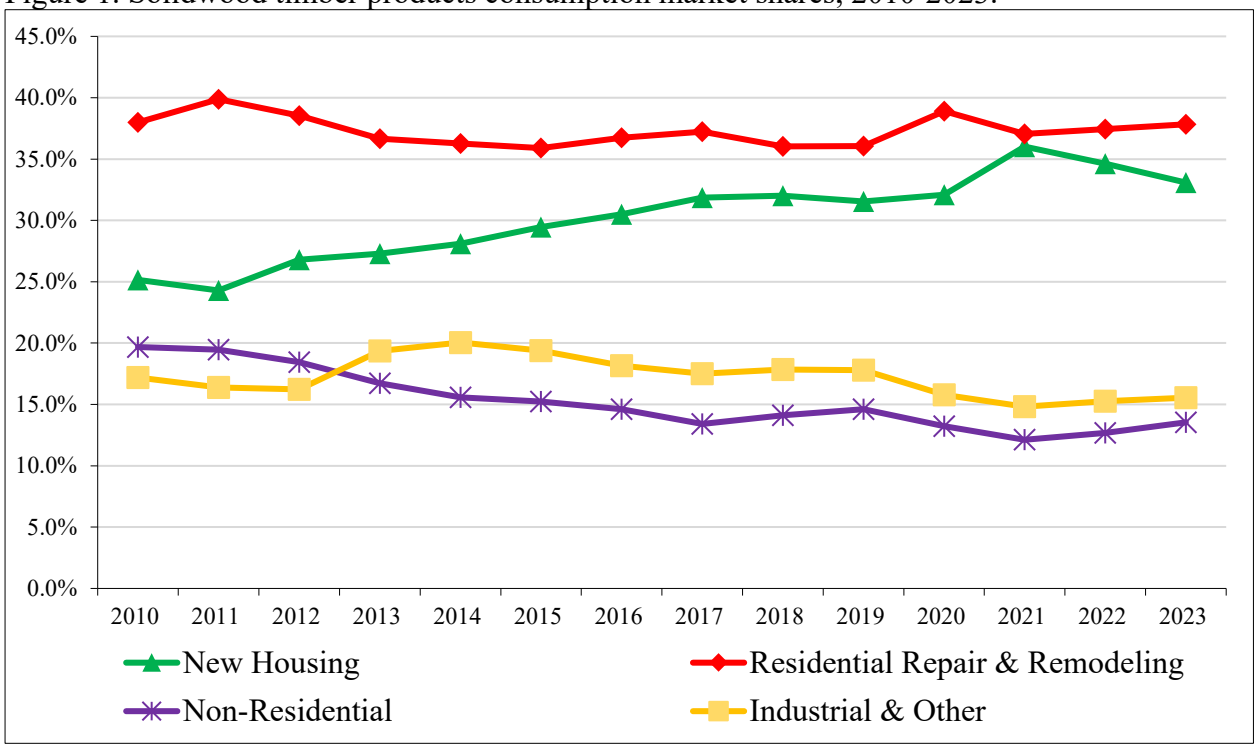
Statistics for U.S. solid wood and biomass products consumption, production, and trade are collected periodically by U.S. governmental agencies and by industry associations. These statistics provide an overview of wood consumption and of production sectors of the U.S. economy, indicating change over time. The information does not provide the detail required to assess in-depth changes of consumption and production for discrete end-use markets. In this report, markets of interest include new housing construction (single-family, multi-family, and manufactured/modular); repair and remodeling of existing residential structures; low-rise nonresidential buildings and 'other' nonresidential construction types; furniture and other manufactured wood products; and packaging and shipping. These end-use markets typically account for 80 to 90 percent of all solid wood products consumption (McKeever and Howard 2011).

The following section provides data, estimates, and forecasts along with narratives from industry professionals for leading sectors and sub-sectors of the U.S. wood product's markets. Estimates and forecasts for wood products are presented in Table 2, with values reported in 1,000 m^3. Data for 2024 are estimates while year 2025 is an USDA FS forecast.

United States Wood Product's Markets

With plentiful forest resources and exceptional production capacity, the U.S. is the world's leading producer and one of the largest consumers of wood products (Fig.1). As such, the U.S. continues to play a significant role in global forest products markets. The U.S. is the world's leading consumer of industrial roundwood and pulp for paper; the second largest consumer of sawnwood, recovered paper, and paper and paperboard; the largest producer of industrial roundwood, wood pellets, and pulp for paper; and the second leading producer of sawnwood, wood-based panels, recovered paper, and paper and paperboard (FAO 2021).

Figure 1. Solidwood timber products consumption market shares, 2010-2023.



Sources: HMR 2024, WWPA 2024.

Sawn Softwood

The largest value-added market for sawn wood products is the housing construction sector. Since 2010, consumption of sawn softwood by the housing sector (new construction plus R&R) has increased in market share (Fig. 1), from 69.1 percent in 2015 to 70.5 percent in 2023 (WWPA 2024). Single family U.S. housing construction improved during the first half of 2024, as single family starts were 17.0 percent more than reported for the first half of 2023 (Census 2024a). The R&R sector has been a substantial consumption sector of sawn softwood lumber, with apparent consumption at roughly 36.566 million m^3 in 2023 (WWPA 2024). Construction of new housing units has not kept pace with population growth, supporting the potential for future sawn wood markets.

The WWPA (2024) reported U.S. nominal sawn softwood lumber production of nearly 66.032 million m^3 in 2023, a 1.4 percent decrease from the 66.967 million m^3 produced in 2022 (Table 2). The U.S. South estimate estimates are slightly less 2023 production (39.160 million m^3, a 0.15 percent decrease from 2022 levels) and production also declined in the U.S. West (a decrease of 3.2 percent, from 24.940 million m^3 to 24.143 million m^3). During the first half of 2024, U.S. softwood lumber production decreased 3.2 percent (31.1 million m^3) compared to the same period in 2023 (32.2

million m^3). In 2023, apparent consumption was 94.876 million m^3, a decrease of 3.3 percent from 2022 (98.131 million m^3) (Table 2).

Sawn softwood lumber imports decreased 6.9 percent in 2023 to 33.829 million m^3, from 36.344 million m^3 in 2022. In the first half of 2024, U.S. softwood lumber imports increased 0.3 percent (to 17.248 million m^3) from the 17.191 million m^3 of lumber imports observed in 1H2023 (USDA FAS 2024).

In 2023, sawn softwood lumber exports were 2.533 million m^3, or 0.2 percent less than 2022 (2.539 million m^3). Sawn softwood exports increased 4.7 percent (1.360 million m^3) in the first half of 2024 when compared to the same period in 2023 (1.299 million m^3) (USDA FAS 2024).

Sawn Hardwood

The hardwood resource comprises 57.8 percent of the United States timberland acreage and nearly 72 percent of the eastern deciduous forest is owned by private landowners (Alig and Butler 2004). In 2023, top export markets included China (with 33 percent of all hardwood lumber exports), Canada (19 percent), and Vietnam (11 percent). Top import markets included Canada (with 38 percent of all imports), Brazil (16 percent), and Germany (8 percent) (USDA FAS 2024).

Sawn hardwood production (Table 2) was 15.721 million m^3 (nominal) in 2023, a decrease of 13.8 percent from the 18.247 million m^3 produced in 2022. In the first half of 2024, hardwood production was estimated at 7.850 million m^3, a decrease of 13.7 percent from the same period in 2023. In 2023, apparent consumption was 11.166 million m^3, a decrease of 22.1 percent from 2022 (HMR 2024, USDA FAS 2024).

Sawn hardwood exports decreased 18.2 percent from 2022 to 2023 (2.719 million m^3), while imports also declined 22.3 percent to 615 million m^3. In the first half of 2024, sawn hardwood lumber imports increased 2.8 percent (317.7 million m^3) from the first half of 2023, and exports also improved 2.8 percent (1.496 million m^3) (USDA FAS 2024).

Furniture

Historically, U.S. furniture manufacturing was one of the larger consumers of grade hardwood lumber. The golden age of furniture making in the U.S. ran from the early 1970's through the mid-1990's. Furniture manufacturing offshoring, then and now, has multiple negative effects on the U.S. wood products sector, including decreases in sawn hardwood

lumber production and consumption. In 1999, 6.14 million m^3 of sawn hardwood lumber was utilized by U.S. furniture industries; 1.00 million m^3 in 2013; and 1.08 million m^3 in 2020 – a 468.9 percent decline from 1999 (HMR 2023).

Smith Leonard (2024) reported that new furniture orders decreased 6.5 percent (2,096 million) in June 2024 from June 2023 (2.,242 million), while furniture shipments decreased 2.7 percent (to 2,210 million), and order backlogs decreased 6.7 percent (to 2,626 million).

Softwood Log Trade

U.S. softwood log exports were 4.723 million m^3 in 2023, a decrease of 11.1 percent from 5.312 million m^3 2022. The downward trend persisted through the first half of 2024, with exports at 2.448 million m^3, declining 4.6 percent as compared to the 2.567 million m^3 exported during the first half of 2023. The continued decline in exports to China is a principal factor in the overall decrease and as well as the sluggish U.S. housing market.

Historically, U.S. softwood log imports have been a minor constituent of U.S. softwood consumption, with imports ranging from 0.04 percent to 0.96 percent of total U.S. softwood utilization (1965 to 2020). Softwood log imports increased 1.5 percent between 2022 and 2023, from 585 thousand m^3 to 595 thousand m^3 (USDA FAS 2024).

Hardwood Log Trade

U.S. hardwood logs are a valuable U.S. export product while imports are minor in comparison. From 1990 to 2013, Canada imported the most U.S. hardwood logs on a volume basis. Hardwood log exports recorded a substantial decline in 2023 (1,704 thousand m^3), 16.1 percent from 2022 levels. U.S. hardwood log exports were 1,051 thousand m^3 in the first half of 2024, a 6.1 percent decrease from the 1.11 million m^3 reported in the same period in 2023 (USDA FAS 2024).

Traditionally, Canada has provided nearly 95 percent of total hardwood logs imported to the United States. Hardwood log imports decreased by 21.3 percent between 2022 and 2023 (from 221 thousand m^3 to 174 thousand m^3) and exports declined 16.1 percent to 1.704 million m^3 in the same time period. Import volumes increased 59.2 percent in the first half of 2024 relative to the same period in 2023 (from 132 thousand m^3 from 83 thousand m^3) (USDA FAS 2024).

Pulpwood

Roundwood pulpwood production declined by 15.7 percent from 2022 to 2023 (from 159.1 million m^3 to 134.1 million m^3), in response to declining demand from pulp, paper, and paperboard industries, the primary drivers for U.S. pulpwood demand (Table 2). For the past few decades, demand for several categories of papers have declined progressively. Since the advent of electronic media, demand for newsprint, printing (including glossy paper for magazines), and writing paper demand has notably declined. Conversely, the upsurge of on-line shopping (i.e., e-commerce) has increased the demand for containerboard products.

U.S. paper and paperboard production decreased 7.2 percent from 2022 to 2023 (to 60.6 MMT). Production levels decreased from 2022 to 2023 for both paper (11.3 percent decrease) and paperboard production (5.6 percent decrease). Roundwood pulpwood consumption for wood pulp production was down 16 percent from 2022 to 2023, with most feedstock a residual of softwood roundwood (AF&PA 2024).

Structural Panels

Structural panels, which include softwood plywood and OSB, are value-added products commonly used in residential construction. Total structural panel production in 2023 was estimated at 19.97 million m^3, a 3.4 percent decrease from the 20.67 million m^3 reported for 2022. Imports of structural panels decreased 11.5 percent between 2022 and 2023, from 8.229 to 7.286 million m^3, respectively. Export volumes declined 21.0 percent from 2022 to 2023 (from 576,000 m^3 to 455,000 m^3). Lesser trade volumes also were observed when comparing activity over the first half of the year, with 2023 import and export volumes declining 19.9 percent and 16.9 percent, respectively, as compared to 2022 (USDA FAS 2024).

U.S. production of OSB declined 4.6 percent from 2022 to 2023 (to 12.962 million m^3) (Table 2). Apparent OSB consumption decreased 5.6 percent between 2022 and 2023, from 19.630 to 18.526 million m^3 (APA 2024). Imports in 2023 (5.716 million m^3) indicate a decline of 7.8 percent from 2022 levels (6.198 million m^3), while exports decreased by 5.0 percent (from 160 to 152 thousand m^3). In the first half of 2024, OSB imports increased by 10.5 percent (from 2.873 million m^3 to 3.175 million m^3) compared with the first half of 2023, while exports decreased 27.2 percent to 72 thousand m^3 (USDA FAS 2024).

The U.S. produced 7.006 million m^3 of softwood plywood in 2023, a 0.97 percent decrease from 2022. Apparent softwood plywood consumption in 2023 was 4.8 percent less than the 2022 total, at approximately 8.273 million m^3 (Table 2). Softwood plywood

production is projected to be similar to 2023 levels by the end of 2024 (less than half of a percent increase, as projected by APA 2024). Both imports and exports of softwood plywood recorded lesser volumes traded in 2023, with imports 22.7 percent and exports 27.1 percent fewer than in 2022 (Table 2). Comparing the first half of 2024 to the same period in 2023 imports were 22.7 percent greater (881 thousand m^3) and exports were 1.1 percent less (167 thousand $m^{3)}$ (USDA FAS 2024).

Engineered Wood Products

As reported by the APA (2024), U.S. Glulam, I-joist, and LVL production decreased in 2023 compared to 2022. Glulam production was 350 thousand m^3 in 2023, declining 9.2 percent from the 386 thousand m^3 produced in 2022; I-joist production was 122.8 million LM, a 14.5 percent decrease from 2022 (143.59 million LM); and LVL production was estimated at 1.78 million m^3 in 2023, down 12.6 percent from 2022 level (2.03 million m^3). APA (2024) forecasts increased production by the end of 2024, primarily due to the projection of increased use of mass timber in multifamily construction. Projected production levels for 2024 are 5 percent greater for Glulam, 3.5 percent more for LVL, and 5.7 percent greater for I-joist, as compared to 2023.

Hardwood Plywood

U.S. hardwood plywood demand is primarily dependent on U.S. production of down-stream products that include kitchen cabinets, recreational vehicles, manufactured housing, fixtures, underlayment, and furniture. Cabinets are an especially important end-use, with large quantities of domestically produced and imported hardwood plywood consumed in cabinet manufacture (U.S. International Trade Commission 2017).

In 2023, hardwood plywood imports (2.745 million m^3) were 24.0 percent less than 2022 and exports declined 21.4 percent to 88 thousand m^3. In the first half of 2024, imports increased 32.3 percent to 1.397 million m^3. U.S. hardwood plywood exports were 8.7 percent less than the same period, declining to 42.0 thousand m^3 (USDA FAS 2024).

Particleboard and Medium Density Fiberboard

Particleboard (a composite wood product) and MDF account for more than one half of all nonstructural panels consumed in the U.S. according to Composite Panel Association data (2023). In 2023, particleboard imports (948 thousand m^3) and were 20.5 percent less than

2022 and exports declined 11.2 percent to 429 thousand m^3. In the first half of 2024, imports increased 7.7 percent to 520 thousand m^3. Particleboard exports were 4.6 percent less than the same period, declining to 200 thousand m^3 (Table 2*)* (USDA FAS 2024).

Production of MDF was 2.667 million m^3 in 2022 (Table 2), a 29.3 percent decrease from the 3.88 million m^3 produced in 2021 (CPA 2023). MDF imports (1,751 million m^3) in 2023 and were 27.2 percent less than 2022. Exports increased 11.0 percent to 413 thousand m^3 in the same time-frame. In the first half of 2024, imports decreased 0.3 percent to 127.588 million m^3. MDF exports were 15.3 percent less than the same period, declining to 242 thousand m^3 (USDA FAS 2024).

Hardboard

Hardboard is used primarily in furniture manufacture and in the construction industry. Hardboard imports (173 thousand m^3), in 2023, were 30.5 percent less than 2022 and exports declined 55.8 percent to 99 thousand m^3. In the first half of 2024, imports decreased 15.2 percent to 73 thousand m^3. Hardboard exports were 37.8 percent less than the same period, declining to 32 thousand m^3 (Table 2) (USDA FAS 2024).

Fuelwood

Fuelwood is a wood fuel where the original composition of the wood is preserved or unaltered from the original form and includes firewood (split wood), hog-fuel (shredded wood), and wood chips (both as by-product of wood processing and from in-forest wood chipped material) (United Nations 2018). Fuelwood in the U.S. is used mainly as main or auxiliary heat source, for cooking, and/or for aesthetic enjoyment by the residential and commercial sectors and for power generation by the electric power and industrial sectors. In 2023, industrial fuelwood production was estimated at 16.9 MMT, a 6.2 percent decrease from 2022 levels (USFS FS estimate).

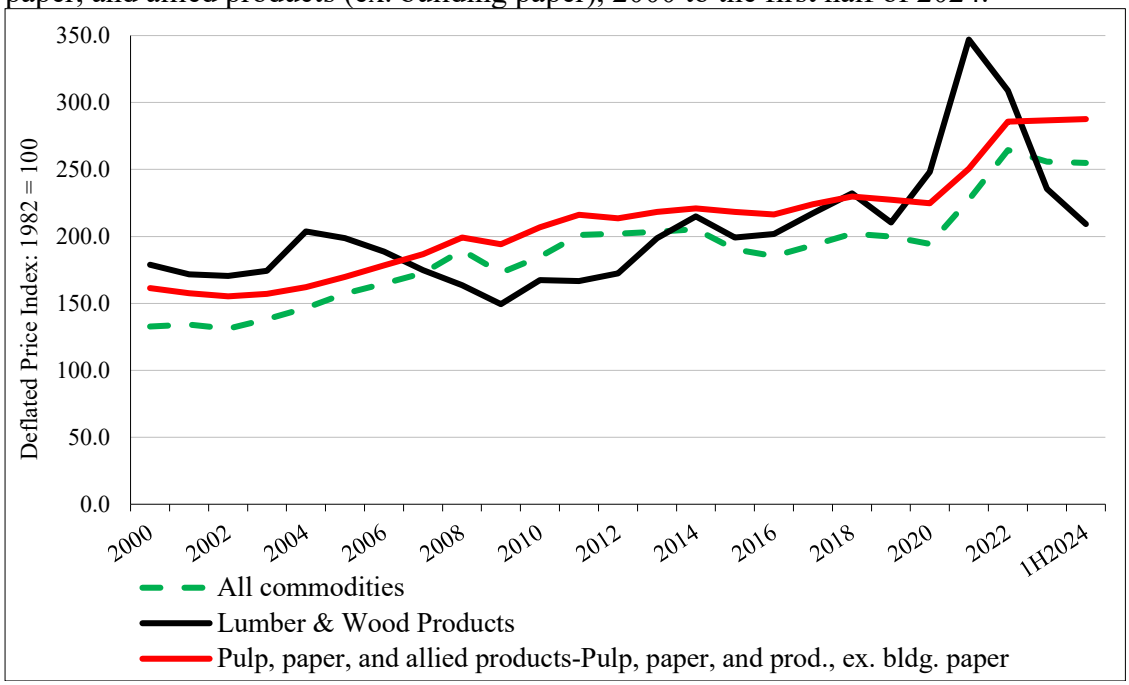
Forest Products Prices

Forest products wholesale prices vary across all wood producing sectors, including all commodities and lumber and wood products (e.g., lumber and wood-based panels). Lumber and wood products (LWP) substantially outpaced the producer price index (PPI) for all commodities in 2020 and 2022. Since 2023, lumber and wood products have decreased substantially as compared to all commodities and pulp and paper products (Fig. 2).

The PPI for LWP decreased from 2000 to 2007 by 36.1 percent. The Great Recession's effect on new building construction, furniture manufacture, and remodeling was the primary contributor to the decline. The LWP index has fluctuated since 2012, rising from 172.5 in 2012 to a record 347.0 reading in 2021.

In contrast, the unadjusted pulp, paper, and allied products, excluding building paper (PPA) PPI has exhibited considerably less overall change until the past three-years. The PPA index increased from 224.7.4 in 2020 to 286.8 in 2023 (Bureau of Labor Statistics (BLS) 2024). Many paper and paper products are essential for daily living and this demand combined with inflation resulted in production prices increasing.

Figure 2. Producer Price Index: All commodities, lumber and wood products, and pulp, paper, and allied products (ex. building paper), 2000 to the first half of 2024.



Source: BLS 2024.

Energy Policy Initiatives

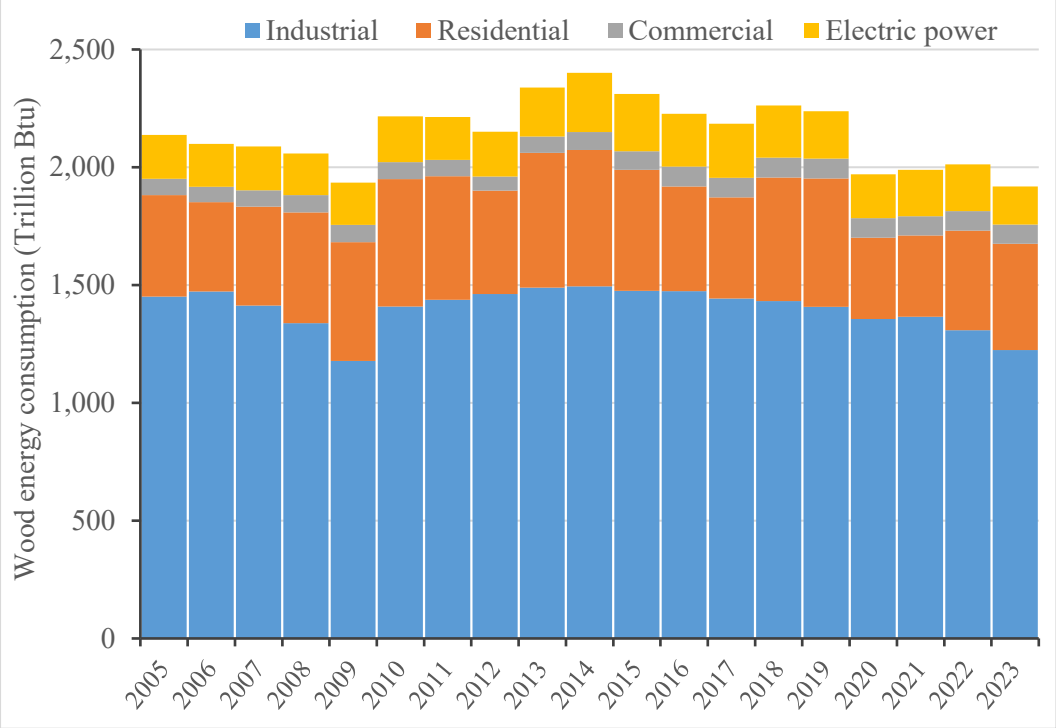
Wood Energy

Until the 1870's, woody materials were the source of nearly all the U.S.'s energy needs, and wood products were utilized for cooking, lighting, and home and industrial heating needs (EIA 2024a). Wood and wood waste was used to generate 1.918 quadrillion (quads) British thermal units (Btu) of energy in 2023, a 4.7 percent decrease from 2022 levels (2.012 quadrillion) (EIA 2024b).

The U.S. wood energy market includes four major sectors, in 2023 consumption by category was: industrial (63.8 percent), residential (23.5 percent), electric power (8.4 percent), and commercial (4.3 percent) (Fig. 3) (EIA 2024b). The industrial sector includes the forest products industry (wood products and pulp and paper), and the quantity of wood energy consumed by the sector has been more closely linked to wood products output than to public policies.

Beginning with the Public Utility Regulatory Policies Act (PURPA) of 1978, wood-based materials for energy production received renewed interest. Since then, public policy has focused on promoting biomass for electricity production; in recent years there has been a shift to greater support to produce liquid fuels for transport (i.e., biodiesel and jet fuel). Federal incentives introduced since 2004 include: a) the Renewable Energy Production Tax Credits, b) Clean Renewable Energy Bonds, c) Qualified Energy Conservation Bonds, and d) Investment Tax Credits (Aguilar *et al*. 2011). These incentives are tailored to the electricity generation sector. The Biomass Crop Assistance Program (BCAP) policy was established to aid in meeting U.S. Federal Renewable Fuel Standards. BCAP mandates increased national blended biofuel production (excluding ethanol from corn starch) at 36 billion gallons by 2022, with 21 billion gallons in the form of advanced biofuels (Spaeth 2008).

Figure 3. Wood energy consumption by primary sector, 2005 to 2023.



Source: EIA 2024c

Bioenergy supply and demand are influenced by policies that seek a reduction of greenhouse gas emissions (GHG) and do not threaten existing bioenergy feedstock production. Wood pellets are recognized as a renewable biomass product, contributing to their increasing demand. The U.S. wood pellet manufacturing sector's expansion originates from steady domestic and increasing foreign demand. During 2023, the U.S. pellet production capacity decreased 3.4 percent, affecting both domestic and utility (export grade) capacity, yet 2023 production increased 3 percent (EIA 2024b) while exports decreased by 2.6 percent (USITC 2024). For instance, financial problems for Enviva, Inc. one of the U.S. largest producers of export wood pellets has created some market uncertainty. Enviva is currently restructuring, after filing for Chapter 11 bankruptcy in early 2024 (Voegele 2024). Nonetheless, by the first half of 2024 wood pellets production was roughly half of a percentage below that of the first half of 2023 (EIA 2024b) and exports were 5.3 percent higher, compared to the same period the previous year (USITC 2024).

Biomass Energy

Biomass energy includes wood and wood processing residues (e.g., fuelwood, wood pellets, lumber and furniture mill sawdust and coarse residue, and black liquor from pulp and paper mills); agricultural crops and residue materials (e.g., corn, soybeans, sugar cane, switchgrass, woody plants, algae, and crop and food processing residues); biogenic materials in municipal solid waste (e.g., paper, cardboard, plant or animal based textiles, food waste, yard trimmings, and wood waste); animal manure; and human sewage. In 2023, biomass provided 5.160 trillion Btu's of energy (a 1.7 percent increase from 2022) and 5.0 percent of the U.S. total primary energy production. Further, 2.053 trillion BTUs of wood energy were produced, and 1,918 trillion Btu's of wood energy were consumed (EIA 2024b).

The utilization of biomass for energy and the simultaneous reduction of GHG's benefit the forest products industry. Biomass is viewed favorably due to potentially reducing GHG's and contributions to other environmental and sustainable energy goals. Thus, biomass complements U.S. environmental and sustainable energy interests.

In 2018, the U.S. Environmental Protection Agency (EPA 2020a) issued a policy statement stating, "EPA's policy in forthcoming regulatory actions will be to treat biogenic CO_2 emissions resulting from the combustion of biomass from managed forests

at stationary sources for energy production as carbon neutral." This carbon neutral designation is viewed as a positive development by much of the forest products industry. And while carbon neutrality is still debated, the Biomass Power Association (2020) stated that 30 million tons of carbon dioxide are removed annually by using biomass energy.

The EPA (2020b) "finalized volume requirements under the Renewable Fuel Standard (RFS) program for 2020 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel, and biomass-based diesel for 2021." Cellulosic biofuel targets require 0.59 billion gallons of production (BGD) in 2020, increasing from 0.42 billion gallons in 2019. Biomass-based diesel was 2.43 BGDs in 2020 and 2021; advanced biofuel was 5.09 BGDs in 2020; and renewable fuel was 20.09 BGDs in 2020.

European Union Deforestation Regulation

The European Union (EU) Deforestation Regulation (EUDR) was enacted into law June 29, 2023, with full implementation to transpire on December 30, 2024, and for small businesses the proposed date was June 30, 2025. Note that the EU is proposing an implementation delay (below). The stated purpose of the EUDR is "promoting the consumption of 'deforestation-free' products and reducing the EU's impact on global deforestation and forest degradation." According to the European Commission, "The main driver of deforestation is the expansion of agricultural land that is linked to the production of commodities like cattle, wood, cocoa, soy, palm oil, coffee, rubber, and some of their derived products, such as leather, chocolate, tyres, or furniture" (European Commission (EC) 2024a).

Components of the EUDR are: due diligence, "to ensure the products are free of deforestation. They come from land that wasn't deforested after December 31, 2020. They must also comply with the laws in the country where they were produced"; traceability: "Operators must collect information, documents and data showing that the product is deforestation-free and legal, such as geolocation coordinates, quantity, country of production, etc."; definitions and obligations where, "Operators must assess whether there is a risk the product does not comply with the rules, and if such a risk exists, adopt risk mitigation procedures"; and country benchmarking, which is defined as, "A benchmarking system operated by the Commission will classify countries or areas into three risk categories according to the risk of producing commodities there that are not deforestation-free" (EC 2024b). It should be noted that all forest products (regardless of country origin) to be exported to the EU will have to adhere to the EUDR as it is the law of the EU.

The American Hardwood Export Council ((AHEC) 2024) stated that one of the primary problems arises from Article 9, which states that "…geolocation of all plots of land where the relevant commodities that the relevant product contains or has been made using were produced, as well as data or time range of production. Where a relevant product contains or has been made with relevant commodities produced in different plots of land, the geolocation of all different plots of land shall be included." According to AHEC (2024), geolocation data will have to be collected on all forest products harvested. The major issue is that "More than 90% of U.S. hardwood supply derives from low intensity harvesting of diverse semi-natural forest by non-industrial owners, mainly individuals and families. There are around 9 million family forest owners in the United States, each on average holding less than 10 hectares of land and harvesting once in a generation. Each harvest produces only a small volume of timber, and that small volume is so diverse that it is destined for a large range of applications. Each individual plot of land will only make a very small and transient contribution to the supply base."

According to Hancock and Bounds (2024a), Thomas Vilsack (Secretary, U.S. Department of Agriculture), Gina Raimondo (Secretary, U.S. Department of Commerce), and Katherine Tai (U.S. Trade Representative) requested the EU delay the implementation of the EUDR. They identified four challenges to U.S. producers: 1) a "final version of the EUDR Information System has yet to be established", 2) an "implementing guidance has not been provided" by the EU, 3) a "competent authority to enforce regulation has not been designated", and 4) the EU's "decision to classify all countries as standard risk regardless of forestry practices." Also, a group of bipartisan U.S. Senators urged U.S. Trade Representative Katherine Tai to engage with the EU and EC to "ensure that U.S. wood products manufacturers are treated fairly" by EU regulations (U.S. Senate 2024). On September 24, 2024, a bipartisan group of US Congress House members sent a letter to President Biden urging him to seek a two-year delay in the implementation of the EUDR (Patterson 2024).

In addition, world reaction is congruent with the U.S. response. Brazil (Politico 2024a), Germany, Indonesia, and Malaysia (Politico 2024b) have requested a delay and/or postponement of the EUDR implementation. Ngozi Okonjo-Iweala, Director-General of the World Trade Organization, asked the EU to "relook" at the EUDR as the "EU has not issued clear compliance guidelines" (Hancock and Bounds 2024b). Fairtrade International (2024) stated that it "is very concerned that producer organisations will be cut off from trade with the EU market or pushed out of supply chains by larger producers not because they farm on deforested land, but because they face challenges in collecting, managing, and submitting the necessary data." Multiple wood products associations and countries to those noted here have registered complaints about how the

EUDR is currently written. On 1 October 2024, the European Commission proposed additional time to allow "…Member States and third countries in their preparations for the implementation of the EU Deforestation Regulation. … If approved by the European Parliament and the Council, it would make the law applicable on 30 December 2025 for large companies and 30 June 2026 for micro- and small enterprises" (EC 2024c). Several associations and countries expressed concern that the extension does not address concerns previously voiced by the entities (Palm Oil Monitor 2024). On 16 October 2024, the Council of the European Union "agreed on its position on the targeted amendment of the EU deforestation regulation, postponing its date of application by 12 months. This postponement will allow third countries, member states, operators and traders to be fully prepared in their due diligence obligations…". It is anticipated that the European Parliament will vote on the Commission's proposal in a plenary session scheduled for 13-14 November, 2024 (European Council 2024).

Softwood Lumber Agreement

The Canada–U.S. softwood lumber disagreement had its beginnings in 1982. U.S. softwood lumber producers claim/claimed that the Canadian softwood lumber industry's access to Crown timber is subsidized (i.e., through reduced stumpage fees) by their respective federal and provincial governments. Between 1982 and 1996, U.S. producers sought relief through the U.S. Department of Commerce (DOC), U.S. International Trade Commission, and the World Trade Organization (WTO). Canadian producers have appealed to NAFTA's Chapter 19 dispute-settlement mechanism and the WTO. In 1986, a Memorandum of Understanding (MOU) between Canada and the U.S. created phased in tariffs. Canada withdrew from the MOU in 1991; however, the U.S. applied countervailing duties from 1992 to 1996. The Softwood Lumber Agreement (SLA) was enacted in 1996 and there were several iterations of the initial SLA before 2015.

The most recent SLA was in effect from 2006-2015 and was terminated in October 2015, resulting in Canadian producers having access to U.S. markets without the imposition of tariffs. In the aforementioned SLA, taxes and/or quotas were implemented on a sliding scale (Random Lengths 2021). On August 13, 2024, the DOC announced the results of the first sunset review for sawn softwood products imported from Canada. The combined countervailing duty was increased, ranging from 5.04 to 9.61 percent (Federal Register 2024a, b). On September 12, 2024, Canada informed the U.S-DOC that it would challenge the results of the lumber tariffs announced in August (Woodworking Network 2024).

Summary

In 2023 and the first half of 2024, the U.S. economy was on an uncertain economic foundation due to increased interest rates (the FOMC's initiative is to curb inflation, and this is influencing overall markets), inflation, the Russia-Ukraine war, and international tensions. The FOMC (2024a) revised their 2024 GDP growth projection downwards, to 2.0 percent from 2.1 percent. The FRBP (2024) projection increased; however, from 2.5 to 2.6 percent. The trajectory of the U.S. economy is uncertain at present, though the FOMC reduced the federal funds rate 50 basis points on September 18 (FOMC 2024c).

U.S. housing markets declined in 2023 and into the first half of 2024. Economic policy, housing affordability, and global tensions have constrained new housing construction and sales, and sales of existing houses. In 2023, new construction and R&R continued to be influenced by labor shortages and lot availability. For 2023, total starts were 8.5 percent, and single family starts were 5.8 percent less than reported in 2022. New house sales increased 3.9 percent from 2022, while total residential construction spending decreased 6.0 percent. Single family expenditures declined 21.5 percent from 2022 to 2023, while multifamily spending increased 13.5 percent, and residential R&R's activity increased 6.2 percent.

The decreased values of housing construction observed for 2023 affected many wood products markets. Several wood product categories production and consumption volumes trended downwards in 2023, with only a few sawn product categories reporting gains. Softwood lumber production decreased slightly from 2022 to 2023, and consumption also declined (3.3 percent). Hardwood lumber production and apparent consumption were substantially less in 2023 as compared to 2022 (22.4 and 23.4 percent, respectively). Structural panel products apparent consumption declined in 2023 as well. Wood pellet production and sales increased but at slower rate (3 percent greater in 2023, compared to a 13 percent increase from the 2021-2022 period). Paper and paperboard production remain in a long decline; pulpwood consumption decreased by 15.7 percent in 2023; and furniture production, indexed by the value of shipments, decreased 2.7 percent.

In summary, factors affecting U.S. economic and wood products activity in 2022 and 2023 include the Federal Reserve Board of Governors decision to control inflation, housing affordability, the Russia-Ukraine war, the Israeli-Palestinian conflict, and international trade tensions. These same factors also are affecting world economies.

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Figure Captions

Figure 1. Solid wood timber products consumption market shares, 2000 – 2023.

Figure 2. Wholesale prices of forest products, 1999 – 2023, 1H2024.

Figure 3. Wood energy consumption by primary sector, 2005 to 2023.

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