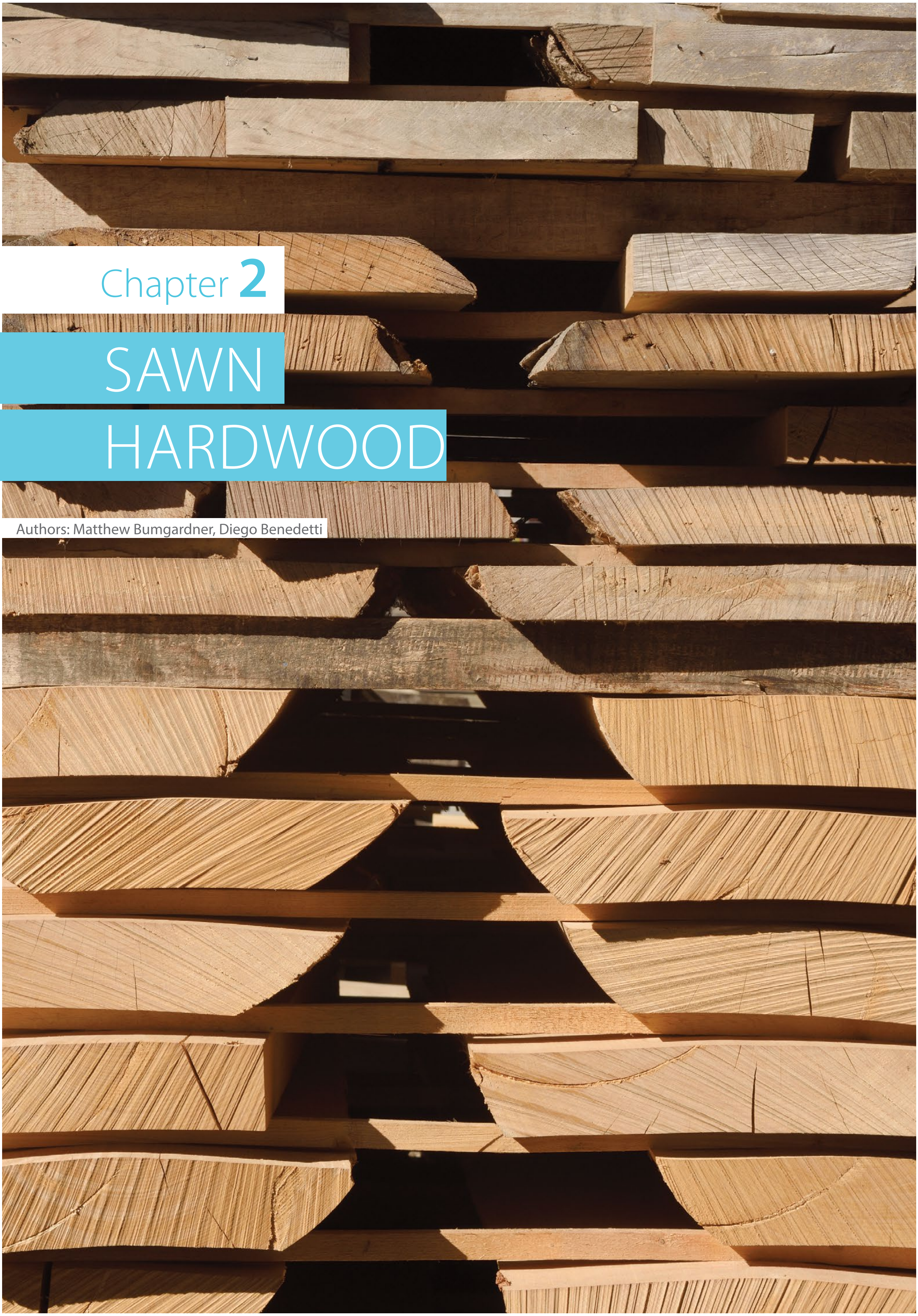

Chapter 2

SAWN HARDWOOD

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Highlights

The UNECE region's market trend for sawn hardwood consumption was positive in 2021 and early 2022 before it significantly deteriorated in the second half of 2022 and the first half of 2023. Sawn hardwood consumption in the UNECE region contracted by 3.3% to 30.3 million m^3 in 2022.

Sawn hardwood production in the UNECE region dropped by 2.7% to 35.5 million m^3 in 2022.

In North America consumption (2.2%) and production (1.8%) of sawn hardwood increased in 2022 but preliminary observations for 2023 suggest that both will decline in 2023.

Although exports of sawn hardwood from the United States increased slightly in 2022, Mexico was their only major export market with an increase (+8%).

European sawn hardwood production decreased by 8.8% to 13.4 million m^3 in 2022 and is expected to further contract by 3-5% in 2023.

European sawmills faced strong competition for oak sawlogs from overseas buyers resulting in high prices in 2022. Demand from overseas eased slightly in early 2023.

European producers managed to significantly increase unit prices for overseas sawn hardwood export in 2022.

Production of sawn hardwood in Eastern Europe, Caucasus and Central Asia decreased by 3.8% in 2022 with exports from Belarus dropping by over 60% in 2022.

The sawn hardwood industry is facing stiff competition from non-solid wood and non-wood substitute materials in recent years.

Sawn hardwood production and consumption in the UNECE region is likely to close 2023 below the record low results of 2020 when the pandemic had strongly impacted both production and consumption.

Introduction and overview

The year 2021 witnessed the strong recovery of the sawn hardwood market. This positive trend lasted until mid-2022, when it flipped in the entire UNECE region. Consumption of sawn hardwood dropped in the second half of 2022 resulting in the contraction of annual consumption by 3.3% to 30.3 million m^3. Consequently, sawn hardwood markets in the UNECE dropped back almost to the low levels of 2020 which was heavily impacted by the pandemic. Sawn hardwood production in the UNECE region dropped by 2.7% to 35.5 million m^3.

Sawn hardwood and the United Nations Sustainable Development Goals

Member States of the UNECE contribute roughly 19% of the global sawn hardwood production and account for about 55% of globally exported sawn hardwood. About 38% of the sawn hardwood production of the UNECE is exported.

Strong competition increased prices of hardwood sawlogs – namely white oak - in the past decade, providing forest owners with significant revenues - a very strong incentive to manage their forests sustainably and thus contribute to SDG 15[5].

Prices for hardwood sawlogs are usually well above prices for fuelwood. Under rare conditions (see further below) the sawmill sector may be facing competition over lower quality grade sawlogs (namely beech) from the energy sector and thus interfere with SDG7[6]. Co-products of sawn hardwood production, such as bark, slabs, cut offs, trimmings, etc. are often used for energy generation and thus contribute to SDG7.

Using more hardwood from sustainably managed forests instead of fossil-based product can makes a positive contribution to SDG13[7]. One m^3 of sawn hardwood stores one tonne of CO_2. Using sawn hardwood for long-lived products such as furniture, doors, windows, flooring, pallets, crates and boxes can lock away carbon for decades and thus substitute products with a less favourable carbon balance and contributes to SDG13.

5 SDG15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

6 SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all.

7 SDG13: Take urgent action to combat climate change and its impacts.

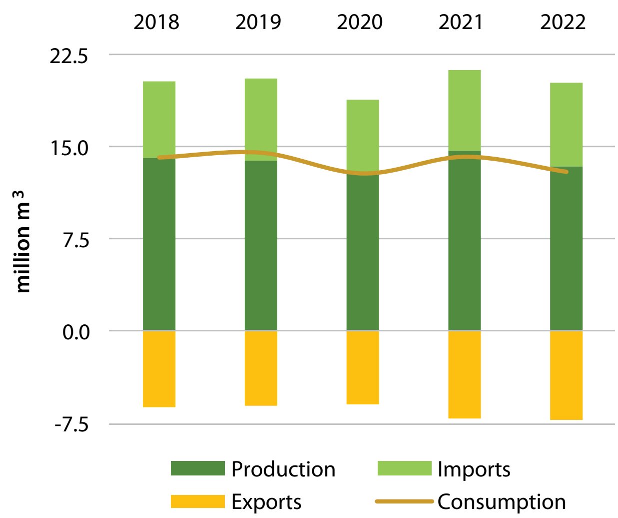
Europe

PRODUCTION

Following very positive market developments in 2021, European sawn hardwood production decreased by 8.8% to 13.4 million m^3 in 2022 (Graph 2.1). All large producing countries such as France, Germany, Romania and Türkiye reported significant declines in production. Croatia, the only exception among the main producing countries, increased production by 9.4%.

GRAPH 2.1

Europe: Sawn hardwood production, trade and consumption, 2018-2022



Note: Exports are shown as negative numbers.

Source: UNECE/FAO database, 2023.

After an exceptionally good result in 2021, Türkiye, the largest producer of sawn hardwood in Europe, saw its output drop by almost 22.3% to 3.3 million m^3 in 2022, still the second highest volume on record. The European Sawmill Association[8] (EOS) estimates that France, the second biggest producer of sawn hardwood in Europe, decreased its production by 8%. The EOS expects production in Europe to further contract by 3-5% in 2023.

Hardwood log exports are a structural issue for the European sawn hardwood industry which caused the closure of some sawmills. EOS reports that oak processors in Europe were facing particularly stiff competition for raw material, notably by buyers from China, resulting in high prices for sawlogs in 2022. The problem remained particularly severe in France and in Belgium. In France 30% of oak logs harvested in 2022 were exported to China, which in the end significantly constrained the domestic production of oak sawnwood. With 550 thousand m^3 of oak logs exported to China in 2022, France is by far the largest supplier at global level before the United States with about 300 thousand m^3, while Belgium is the third largest supplier with 75 thousand m^3 (China customs bureau, 2023). The EOS observed a drop in oak log exports at the beginning of 2023.

Hardwood sawmills in central Europe specialized in beech sawnwood production faced competition for raw material with the fuelwood producers for a short period at the end of 2022 driving up prices for beech sawlogs.

In addition, since 2018, sawn hardwood producers have seen their resource base being further constrained owing to quality issues with beech sawlogs which are likely caused by the very dry and hot summers.

CONSUMPTION

The renovation boom observed during the pandemic, when many people who could not spend their money on travel and leisure decided to renovate their homes (see UNECE, 2022), was an important contributor to the lively demand in the hardwood sector, especially in 2021. With the easing of COVID-19 sanitary measures, this trend ended abruptly in 2022.

Consumption of sawn hardwood dropped by 8.7% in Europe to 12.9 million m^3 with varying trends among the large consumer countries. Consumption in France was stable, while it dropped by double-digits in Germany and in Romania. The EOS Hardwood Working Group reported a challenging environment particularly for lower grades, while higher quality grades fared comparatively better at the beginning of 2023.

The parquet (wooden flooring) industry in Europe remains an important consumer of European hardwoods. According to the European Parquet Federation (FEP), production in the parquet sector declined by almost 5%. With the market share of 82.1%, oak remains the main species for the sector. Ash and beech are still the two other most commonly chosen species with 5.3% and 2.5% respectively. Tropical wood species represent just 2.0% of wood used (FEP, 2023).

The parquet industry is also faced with ported limited wood and wood product availability mainly caused by disruptions in supply chains and an overall high demand for wood products in 2021. The war in Ukraine further deteriorated the raw material availability since a significant part of the raw material and semi-finished products used by European parquet producers came from Belarus, the Russian Federation and Ukraine (FEP, 2023).

The furniture market is another important consumer of sawn hardwood and showed strong demand in 2022. Europe is the second largest region for furniture production worldwide after Asia and is a major hub of world trade in furniture.

European furniture production in 2022 increased reaching nearly $558 billion in output (€530 billion), the highest level since 2017. The Italian Centre for Industrial Studies (CSIL) estimates that demand for furniture in Europe will weaken in 2023, owing to high inflation and soaring furniture prices before it might resume in 2024 (CSIL, 2023).

Overall, EOS expects sawn hardwood consumption in Europe to slightly decrease in 2023.

8 EOS represents some 35 thousand sawmills in 11 countries across Europe (Austria, Belgium, Denmark, Finland, France, Germany, Latvia, Norway, Romania, Sweden, Switzerland) representing around 77% of the total European sawn wood.

TRADE

European sawn hardwood export and import volumes increased by 2.4% and 3.5% respectively in 2022. This was mainly driven by positive developments in intra-regional trade. Overseas exports of oak, beech, maple, cherry and ash sawnwood declined by 6% to 1.41 million m^3 in 2022. China remained the main market despite a contraction of exports by 23% to 452 thousand m^3. Exports to Egypt decreased by 8% to about 407 thousand m^3, while exports to Viet Nam remained stable at 100 thousand m^3 (Eurostat, 2023c).

European sawn hardwood exporters were able to significantly increase export prices which reduced the economic effect of the decrease in volume. The value of sawn hardwood export to China declined by 9.5% to $263 million. Export unit prices to other main markets were also on the rise. The value of shipments to Egypt rose by 26% to $135 million, to Viet Nam by 26% to $64 million and to the United States by 16% to $60 million (Eurostat, 2023c).

Eastern Europe, Caucasus and Central Asia

The Russian Federation is by far the leading producer of sawn hardwood among countries in the EECCA region, accounting for over 75% of the production. The remaining 15% of the EECCA's production is located in Belarus and Ukraine.

Each of the three main producer countries relies heavily on the export of their sawn hardwood production with shares ranging from 50% in the Russian Federation to 70% and 85% in Belarus and Ukraine. China is the main trading partner of the Russian Federation and increased its market share from 77% in 2021 to 85% in 2022. Ukraine and Belarus historically mainly traded sawn hardwood with countries in Europe (see Graph 2.2).

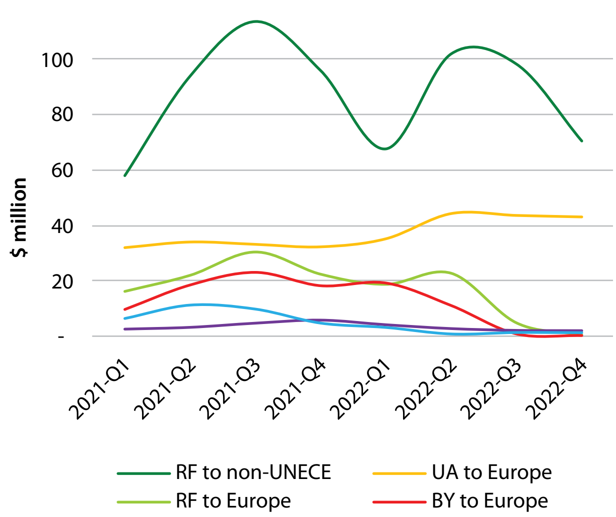
Overall the value of sawn hardwood exported by the Russian Federation and Belarus contracted by 16% and 61% to $397 million and $33 million respectively. The value of sawn hardwood exports from Ukraine increased by 4% to $174 million (UN Comtrade, 2023).

Production of sawn hardwood in the Russian Federation is estimated to have contracted by about 8% in 2022. Belarus with its high dependency on exporting sawn hardwood to Europe may have decreased its production by over 30% in 2023, due to the imposed restrictions in the trade of any wood product[9] from the country imposed by the EU in March 2022 (EU, 2022a).

9 Comtrade Harmonized System code 44: Wood and articles of wood.

GRAPH 2.2

Main sawn hardwood trade flows from Belarus, the Russian Federation and Ukraine 2021 and 2022 ($ million)



Notes: BY=Belarus; RF=Russian Federation; UA: Ukraine.

Source: UN Comtrade, 2023.

North America

PRODUCTION

North American sawn hardwood production increased by 328 thousand m^3 or 1.8% from 2021 to 2022 (Graph 2.3). Individually, the United States production increased by 2.0% and Canadian production declined by 2.4%. Overall, the United States accounted for 95.4% of North American sawn hardwood production in 2022. The increase in production was accompanied by a 3.0% increase in hardwood sawmill employment in the United States[10] (US Bureau of Labor Statistics, 2023).

Apparent consumption of sawn hardwood in North America increased by 343 thousand m^3 or 2.2% in 2022, driven mostly by the increase in production. There was a slight increase in net imports as well, which also added to consumption.

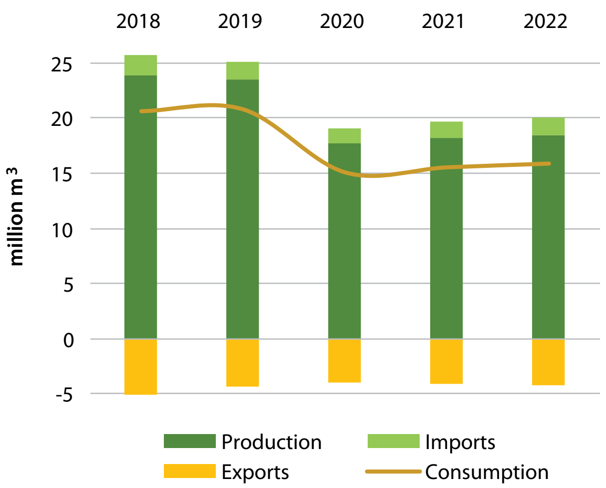
The cooling of the housing market in the United States in 2022 (see chapter 1) is having potential negative implications for the hardwood industry, as single-family housing typically generates greater demand for higher value hardwood

10 The United States Bureau of Labor Statistics does not separate sawmill employment by hardwood and softwood mills. Therefore, this figure is based on sawmill employment in 16 states that are primarily hardwood, as described in Bumgardner *et al.* (2016).

products than multifamily starts. Furthermore, with building costs rising sharply, some builders find themselves over budget toward the end of projects, which might cause them to choose alternatives to hardwood to trim homes (Bodenhamer *et al.* 2022).

GRAPH 2.3

North America: Sawn hardwood production, trade and consumption, 2018-2022

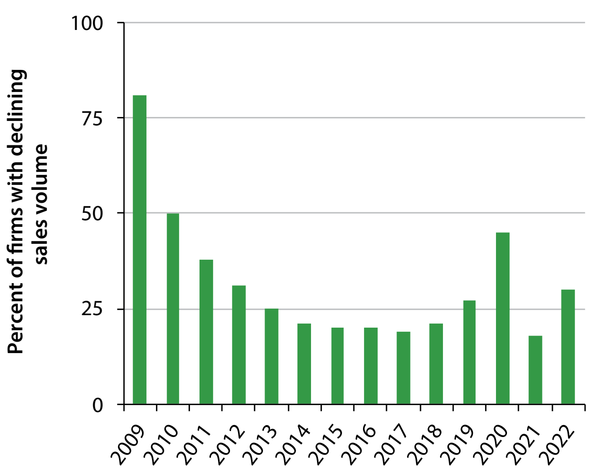


Note: Exports are shown as negative numbers.

Source: UNECE/FAO database, 2023.

GRAPH 2.4

Percentage of North American secondary woodworking firms reporting sales volume declines by year in an annual survey, 2009-2022



Source: Bumgardner, Buehlmann, and Koenig, 2023.

In terms of United States private construction spending, single family housing, multifamily housing, and remodeling increased by 4.4%, 4.4%, and 31.4%, respectively, in 2022 (US Census Bureau, 2023e). While these figures in part reflect inflationary prices in 2022, they show the recent importance of the remodeling markets to the hardwood industry, particularly for higher value products like hardwood flooring, millwork, and cabinets.

Although overall hardwood consumption increased in 2022, the second half of 2022 saw a decline in demand for higher value sawn hardwood. The corresponding peak production month for the United States in 2022 was August (Hardwood Market Report, 2023). Although representing lower overall volume, the peak production month for Canada was November (Statistics Canada, 2023). The decline in grade markets (high quality sawn hardwood) was evidenced, in part, by an increase in the percentage of North American secondary woodworking manufacturers reporting declining sales volume in 2022 compared to 2021 (Graph 2.4). Conversely, demand in industrial markets – mainly pallets and railway sleepers – remained stronger throughout 2022, especially for sleepers.

CONSUMPTION

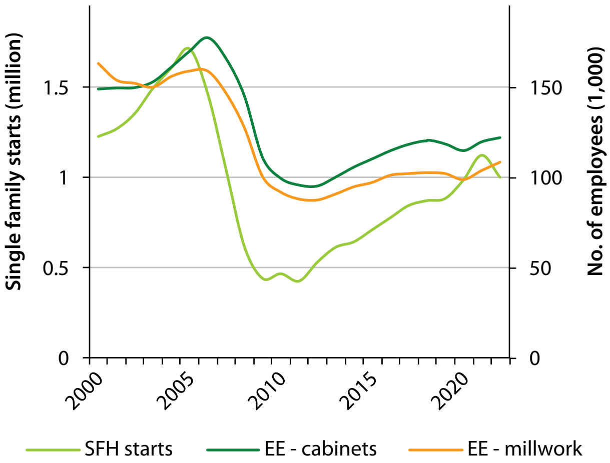
Increased sawn hardwood consumption for 2022 was accompanied by a 2.5% increase in United States industrial production from January through September 2022 (US Federal Reserve Bank of St. Louis, 2023). After September, however, United States industrial production started to decline. Similarly, employment in the wood kitchen cabinet sector (NAICS[11] 337110) was up 1.9% from 2021 to 2022, even though the monthly employment figures for November and December were below 2021 levels (US Bureau of Labor Statistics 2023). Likewise, employment in the millwork sector (NAICS 32191) was up 4.5% in 2021 but slowed toward the end of 2022 (i.e., December 2021 employment was higher than December 2022). Thus, as noted above, there likely was less hardwood consumption toward the latter part of 2022.

As in past years, the hardwood industry is facing stiff competition from non-solid wood and non-wood substitute materials, given current style trends that are geared towards painted finishes (Hardwood Market Report 2023). Therefore, demand for solid hardwood might not be keeping pace with the overall demand for secondary products in the present interior design environment. A positive trend could be developing in hardwood flooring markets, however, as an industry report found that companies expected natural wood colors and finishes to increase in popularity in 2023 (Bodenhamer *et al.*, 2022).

11 North American Industry Classification System (NAICS)

GRAPH 2.5

Single family housing starts and employment in the wood kitchen cabinet and millwork sectors in the United States, 2000 to 2022



Notes: SFH: single family housing; EE: Employees; wood kitchen cabinet (NAICS 337110), millwork (NAICS 32191).

Sources: US Census Bureau, 2023f; US Bureau of Labor Statistics, 2023.

As shown in Graph 2.5, employment in higher value secondary sectors traditionally has been well-correlated with single family housing starts. Higher secondary employment, in turn, suggests greater hardwood consumption.

However, this trend was disrupted in 2022 as employment increased and single-family housing starts decreased. One reason why employment might have increased in the cabinet and millwork sectors, despite sluggish demand as suggested by lower starts, was that companies were increasing hiring to catch up with labor gaps created by COVID-19 disruptions.

TRADE

The total sawn hardwood import in North America was divided somewhat evenly between the United States and Canada in 2022 (UNECE/FAO, 2023). Imports of sawn hardwood in the United States could be broken down by the following shares: 65.3% temperate and 34.7% tropical (USDA FAS, 2023). Temperate species imported by the United States were mainly driven by poplar (*Populus* spp.) imports (mostly from Canada), maple (mostly from Canada), beech (mostly from Germany), and birch (mostly from Canada). The greatest import growth in the United States for a major species from 2021 to 2022, however, occurred for white oak (+26.9%), with France accounting for much of the increase. Tropical imports by the United States increased by nearly 170% from 2021 to 2022, partially a function of 2021 being the lowest year for imports in the United States since 2009 (USDA FAS, 2023).

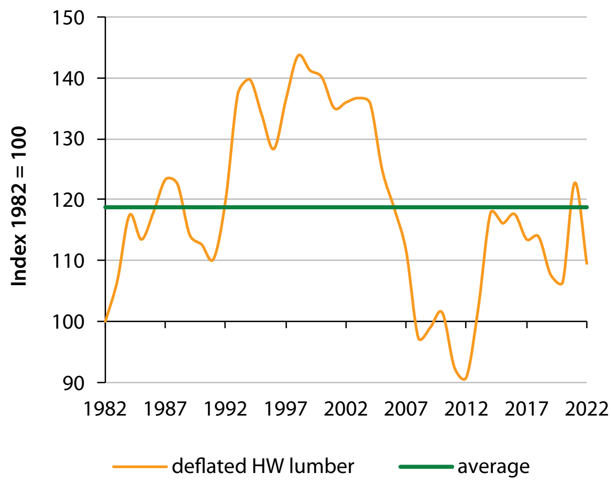
Most North American exports of sawn hardwood (89.5%) originated from the United States in 2022 (UNECE/FAO, 2023). China remained the largest market for sawn hardwood exports from the United States in 2022, accounting for a third of the total volume exported (USDA FAS, 2023). China accounted for 54% by volume of the exports from the United States in 2017 but has since held a smaller market share given trade frictions and generally lower demand (Luppold and Bumgardner, 2021). The four largest export markets for the United States (China, Canada, Viet nam, and Mexico) accounted for a combined 73.7% of exports in 2022. However, Mexico was the only major market that recorded an increase (+8%). Important export species of the United States were red oak (mostly to China), white oak, yellow-poplar ***(Liriodendron tulipifera)*** (mostly to Viet nam), walnut, ash, maple (mostly to Canada), red alder and cherry (mostly to China). Overall, net trade of sawn hardwood for North America represented a 2.65 million m^3 surplus in 2022, a slight decrease (-0.7%) from 2021.

PRICES

The inflation-adjusted aggregate price index (1982=100) for the United States sawn hardwood is shown in Graph 2.6. The index is derived from the United States Bureau of Labor Statistics (2023) "hardwood lumber" series, adjusted for inflation using the producer price index. The index depicts well the impacts of the loss of domestic furniture manufacturing, the Great Recession and associated housing crisis, and shifts to industrial markets on sawn hardwood market prices since the early part of the 21st century (Luppold and Bumgardner, 2023).

GRAPH 2.6

Annual inflation-adjusted United States sawn hardwood price index and average, 1982 to 2022



Note: Index 1982 = 100; HW: Hardwood.

Source: US Bureau of Labor Statistics 2023.

The price index was sharply higher in 2021, however, as the relative strength of the amount of sawn hardwood demanded by secondary manufacturers exceeded the quantity supplied by sawmills given lingering issues in the supply chain. This led to an aggregate price above the long-term average for 2021.

In 2022, the aggregate price was lower as demand was moderate and sawmills had increased production in response to the strong prices in 2021. For 2022, the price index dropped by 10.8% and ended below the long-term average. For perspective, in the Appalachian region of the United States, the price of green 4/4 grade 1 Common Red Oak sawnwood declined by 52% from January to December of 2022, the price of green pallet cants declined by 16%, and the price of green southern Appalachian railway ties (i.e., sleepers) increased by 3% (Hardwood Market Report 2022).

TRENDS IN 2023

Preliminary observations for 2023 suggest a declining production and consumption as both domestic and international demand for sawn hardwood slowed in North America. Sluggish housing markets in both Canada and the United States were creating a strain on hardwood demand. Internationally, export volumes of sawn hardwood from the United States decreased by 20% from January to May of 2023 compared to the same period in 2022, with all major trading partners reflecting declines. Relative bright spots in the United States market included flooring and railway sleepers.

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ABSTRACT

The *Forest Products Annual Market Review 2022-2023* provides a comprehensive analysis of markets in the UNECE region and reports on the main market influences beyond the region. It covers products from the forest to the end user and from roundwood and primary processed products to value-added, housing and wood energy. Statistics-based chapters analyse the markets, sawn hardwood and wood-based panels. The publication is complemented by Data Briefs, a new format of analytical publication of market trends in the UNECE region. Underlying this analysis is a comprehensive data collection. The *Review* highlights the role of sustainable forest products in international markets, discusses policies concerning forests and forest products, assesses the main trends and drivers, and analyses the effects of the current economic situation on forest product markets.

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