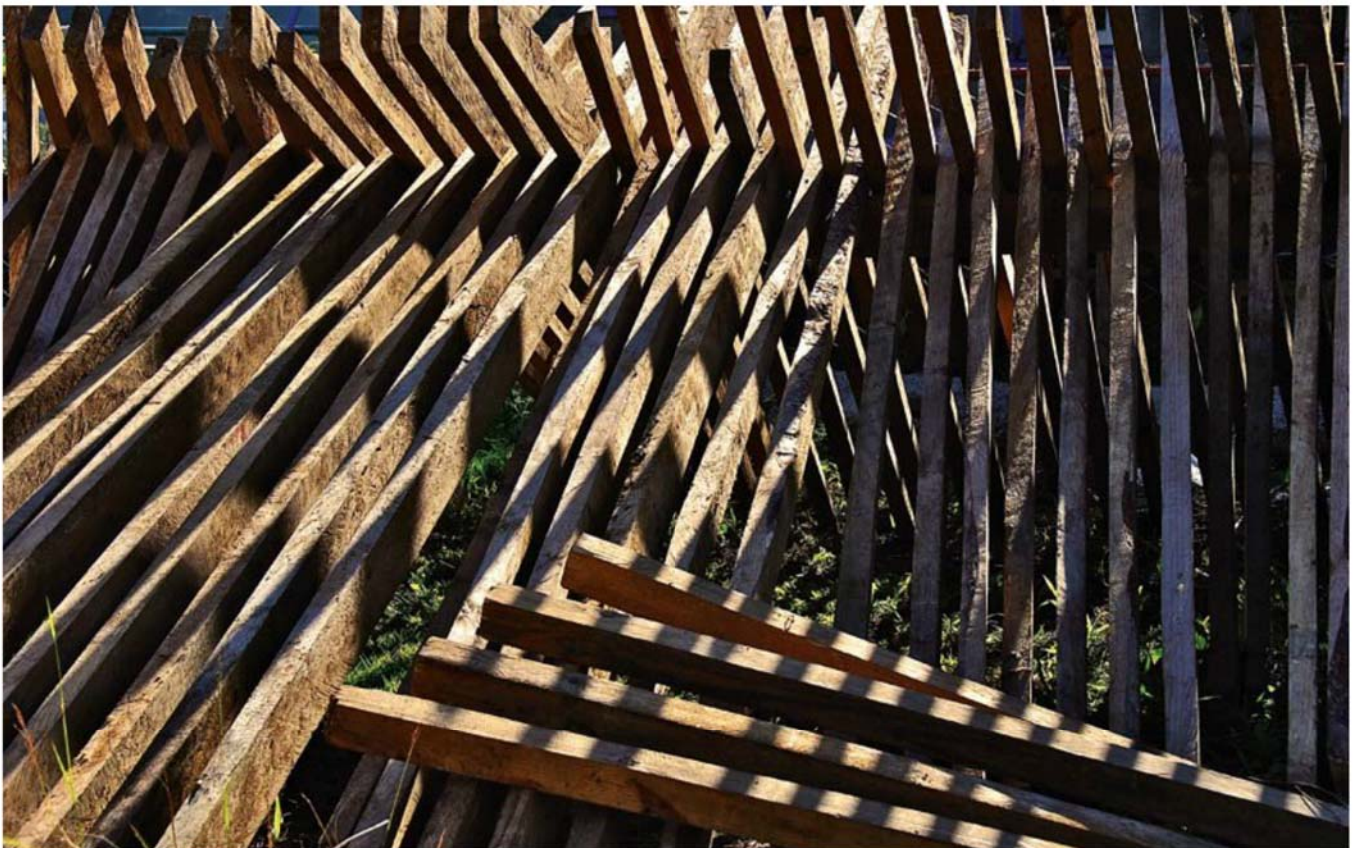


Challenges & Adaptations In The US Hardwood Industry

The 2007 recession has profound impact on the US hardwood industry. As a survey has revealed, the shifts in demand and consumer preferences have caused necessary adjustments by the industry. By Omar Espinoza, University of Minnesota, Urs Buehlmann and Robert Smith, Virginia Tech

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The hardwood products supply chain in the US is comprised of hardwood manufacturers, distribution yards, components manufacturers, and secondary products producers such as furniture, flooring, millwork, and others.

The hardwood sawmill subsector is highly fragmented and consists mainly of many relatively small firms. The average hardwood sawmill has 38 employees, while the figure for softwood sawmills is

93. Thus, differences between hardwood and softwood sawmills exist.

Softwood products are predominantly used for construction, such as construction lumber and plywood, and sawn for maximum throughput. Conversely, most hardwoods are processed to maximise grade (quality), since hardwood species are employed mostly to make appearance products such as furniture, flooring and cabinets.

However, there are also non-graded

(non-appearance) markets for hardwoods, such as pallets and railroad ties. The focus on grade and appearance of hardwood lumber makes the manufacturing process more labour intensive.

Hardwood lumber manufacturing is energy intensive, in great part due to drying. Hardwoods are dried to relatively low moisture contents (typically 8-10 percent), and many hardwoods are prone to drying defects, thus requiring milder drying schedules.

In fact, drying is the single largest consumer of energy in the hardwood lumber manufacturing process (80 to 90 percent of total energy inputs). Regarding wood species, although US forests contain about 50 hardwood species, the hardwood lumber market is dominated by a few, with red oak, white oak and yellow poplar making up over 60 percent of the total hardwood produced.

The US hardwood industry has been facing significant challenges during the last decades. Some of these are the steady increase in stumpage prices; the growth in imported products from low-cost suppliers; more sophisticated consumers demanding customised products; a more environmentally conscious public demanding that wood-using industries demonstrate their commitment to the responsible utilisation of natural resources; and a depressed domestic market caused by recession.

To learn about changes in the hardwood supply chain and adaptations by hardwood suppliers and distributors, a survey was conducted and some of the results are presented here.

Company Characteristics Of Respondents

A mail survey was sent to a total of 1,219 industry participants and 137 companies returned their questionnaires, resulting in a 14 percent response rate.

Three quarters of responding firms had one production facility. The major activity of firms was hardwood lumber manufacturing, but some were also involved in log merchandising, sales of wood residues, pallet manufacturing, flooring manufacturing, railroad ties production, logging, and kiln drying.

As expected, most firms were located in the South (44 percent), with 30 percent in the Midwest, 22 percent in the Northeast, and one percent in the West. The remaining four percent had operations in more than one region.

More than one-half of respondents

reported having some kind of lumber drying operations. The average lumber output for 2008 was 27,830 cubic metres (11.8 million board feet) for all companies and 17,450 cubic metres (7.4 million board feet) for single-facility respondents.

Effects Of Recession & Increasing Imports

The recession that started in 2007 has had a profound effect on the US hardwood industry. In the US, the demand for hardwood products, such as kitchen cabinets and household furniture, is closely related to new home construction and has suffered as the residential construction industry was hit by the economic downturn, adding to the negative trends already existing due to imported products.

As a result of declining demand, prices of hardwood lumber have fallen considerably. For example, the price of 1-Common green red oak lumber has decreased 40 percent between 2004 and 2009. Hardwood sawmills responding to the survey reported a drop in sales on a volume basis of 13 percent between 2004 and 2008, with sawmills in the Northeast hit the hardest (a drop of 22 percent in sales volume for the same period).

Changes In Customer Base

An important change in the customer base for hardwood lumber manufacturers is the shift from value-added producers (eg: furniture, kitchen cabinets) to industrial users (eg: pallets, railroad ties) as the most important outlet for hardwoods in terms of volume.

This was confirmed by the survey results; reported sales to traditional secondary users of hardwood lumber have decreased sharply during the period from 2004 to 2008.

Another development in this area is the growing importance of lumber distributors and retailers (intermediaries that buy, inventory and resell lumber to manufacturers). Three-quarters of

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Almost a fifth of the total hardwood lumber sold by sawmills went to distributors.

hardwood sawmills reported selling to lumber distributors, and their share in total sales of sawmills has increased by eight percent, on a volume basis.

Almost a fifth of the total hardwood lumber sold by sawmills went to distributors in 2008, up from 14 percent in 2004. One potential reason for the increasing importance of distributors is that lumber distributors may be better positioned to serve a changing customer base.

Secondary wood products manufacturers are becoming 'leaner', for example, they are trimming inventory of raw materials and placing smaller, more frequent orders, effectively shifting inventories upstream the supply chain. Also, smaller manufacturers are becoming more important.

These specialised producers serve niche markets with customised products and services, and are less vulnerable to competition from offshore producers. Lumber distributors provide value-added services to these customers, such as custom sorting, drying, and pre-manufacturing. In the survey, more than four out of ten participants indicated that order sizes have decreased.

Changes in final consumer requirements are reflected in the services demanded by lumber distributors. Respondents were inquired about the services most requested

by lumber distributors. Demands for flexible delivery (quick delivery and just-in-time orders) and order customisation (width, colour, and grade sorting) have experienced the highest growth.

For example, demand for just-in-time orders have increased by 58 percent during the 2004-2008 period. Width sorting and special grading increased by 48 and 55 percent respectively. Demand for environmentally-certified lumber is not yet a large part of the product mix, but the demand for certified products has had the largest growth of close to 200 percent.

Lumber distributors seem to demand lumber of the highest quality classifications (grades), a typical grade mix for orders was reported to contain 76 percent of 1-Common and FAS grade lumber.

Consumer Preferences

In a trend that was noted by previous studies, there is shift in consumer preferences towards closed-grain, clearer, species, such as maple and yellow poplar. The survey has found that, based on species distribution of sales volume, red oaks and cherry lost 11 and 17 percent market share, respectively, during the period of analysis; and soft maple and yellow poplar on the other hand gained 16 and 14 percent.

Companies also indicated that customers have become more specific with quality and dimension requirements, and demand more flexibility in volume and delivery time.

Environmental Movement

The environmental movement started in the 1960s out of concerns about the unrestricted exploitation of natural resources, and the consequent damage to the environment and its social and economic implications.

Two developments in the environmental movement are particularly significant to the US hardwood industry: the growing importance of forest certification and the emergence of green building standards.



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The former are market-driven initiatives aimed at ensuring the sustainable management of forests and the latter seek to reduce the impact of building construction and use on the environment.

The idea behind forest certification is that consumers would prefer products manufactured in a manner responsible with the environment, and the certification acts as a communication tool to convey this message.

Four forest certification standards are more prominent in the US: the Forest

Stewardship Council (SFI), the Sustainable Forest Initiative (SFI), the American Tree Farm System (ATFS), and the Program for the Endorsement of Forest Certification (PEFC). About a quarter of American forests are managed under guidelines by FSC, SFI, and ATFS.

Green building standards seek to ensure that buildings are built and operated environmentally responsibly and use the least amount of resources throughout their life cycle. There are over 40 regional and national green building systems in the US, with the most prominent ones being the Leadership in Energy and Environmental Design (LEED), the National Green Building Standard, Energy Star, and the Green Globes initiative.

A common criticism to some of the green building standards is that proof of environmentally responsible exploitation of natural resources (forests) is only demanded for wood materials, and not for other materials such as concrete, metals, or plastics.

Furthermore, some of the provisions in green building standards favour the use of renewable materials sourced from short rotation harvests, such as bamboo, over solid wood products, without consideration of the environmental impacts in the life-cycle of these materials.

Hardwood lumber producers were asked about their level of awareness of forest certification and green building systems among hardwood lumber producers. The results showed that, in general, hardwood lumber producers are more familiar with forest certification standards than with green building systems, with the FSC forest certification standard being the most recognised certification programme, and LEED and the National Green Building Standard being the most recognised among green building standards.

Factors Affecting Business

Lastly, when asked about events affecting their businesses, hardwood lumber manufacturers rated the slowing housing



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Construction remains a major driver of demand for hardwood products.

market the highest; not surprising since residential construction is a major driver of demand for hardwood products. Concerns about rising fuel and energy costs were rated the second highest.

The following table lists the factors identified and their average rating.

Factors Affecting US Hardwood Lumber Producers

(1=no effect, 7=major effect).

Slowing housing market	6.2
Fuel costs	5.6
Energy costs for production	5.2
Changing customer demand	5.1
Logging operations	5.0
Labour costs	4.9
Changing raw material base	4.4
Increasing lumber imports	4.4
Globalization	4.4
Interest rates	3.8
Lack of skilled workers	3.3
Certified hardwood lumber	3.2
Truck/driver availability	3.1
E-Commerce	3.0
Carrier required backhauls	2.6
Lumber branding	2.4

Adaptations By The Industry

The US hardwood lumber industry is making strides to adapt in a rapidly changing environment. Companies have responded to changes in the customer base by offering more customised products and services, such as colour sorting or custom grading.

The industry has also followed the market overseas, with a greater volume of high-grade lumber being exported. A decreasing demand from traditional users of hardwood lumber, such as furniture and kitchen cabinet manufacturers, has caused a shift towards industrial products; and the industry has increased lumber sales to intermediaries, such as distributors and retailers.

The environmental movement is recognised as a potential driver for increased sales, but the industry and the public have yet to embrace forest certification. Another development with potential to impact the hardwood industry is the expected increase in demand for wood fibre for energy generation, which may potentially cause an increase in the price of wood fibre, presenting challenges and opportunities to traditional users of hardwoods such as sawmills and their customers.

