US Economic Activity

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- Consumer Confidence is near a 17 year high.
- Unemployment is 4.1%.
Prior to 2015, the longest up or down trend for total starts in a cycle had been 5 years.

2017 is the eighth consecutive year of total housing start gains.

2017 is the sixth consecutive year of single-family start increases.

Source: US Census Bureau
Graph: HMR

* Annualized
Housing starts rose 118.5% from 2009 to 2017 and are projected to grow 3.7% in 2018.
Single-family housing starts increased 90.9% from 2009 to 2017 and are expected to rise 7.2% in 2018.
Grade Lumber Consumption 2017

- Domestic Markets: 53.0%
- Exports to China: 24.9%
- Exports to Rest of World: 22.1%

Sources: Various Industry and Government Sources and HMR

Graph: HMR
Consumption of Hardwood Lumber by US Domestic Grade Markets

Source: Private, Government, and HMR
Graph: HMR

- Furniture: -2.5%
- Moulding/Millwork: +10.5%
- Cabinets: +7.0%
- Flooring: +2.5%
Percentage of Total US Hardwood Lumber Exports (Volume)

Source: USDA FAS
Graph: HMR

European Union-28
Canada
China
Vietnam
Mexico

*Y-T-D
US Exports of Hardwood Lumber to China

- **1999 - 2006**: US Furniture Manufacturing Shift to China and US Housing Boom
- **2006 - 2009**: US Housing Bust and Worldwide Economic Turmoil
- **2009 - 2017**: China’s Growing Middle and Upper Classes Consuming US Hardwoods

- **1999 - 2006**: + 759.5%
- **2009 - 2017**: + 400.5%

Source: USDA FAS
Graph: HMR
2017 Hardwood Consumption

Grade Lumber: 47.0%

Pallet Lumber/Cants, Ties, Board Road/Mat Timbers, and Other Industrial Products: 53.0%

Grade Lumber: 3.976B Bd. Ft.
Total: 8.461B Bd. Ft.

© 2018 HMR
Consumption Estimates

Sources: RTA and Hardwood Market Report
Graph: HMR
<table>
<thead>
<tr>
<th>Year</th>
<th>Pallets</th>
</tr>
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<tbody>
<tr>
<td>2009</td>
<td>3.0</td>
</tr>
<tr>
<td>2010</td>
<td>3.2</td>
</tr>
<tr>
<td>2011</td>
<td>3.26</td>
</tr>
<tr>
<td>2012</td>
<td>3.27</td>
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<td>2013</td>
<td>3.643</td>
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<tr>
<td>2014</td>
<td>3.685</td>
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<tr>
<td>2015</td>
<td>3.589</td>
</tr>
<tr>
<td>2016</td>
<td>3.265</td>
</tr>
<tr>
<td>2017</td>
<td>3.063</td>
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</tbody>
</table>
### Railway Ties (Billion Board Feet)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0.89</td>
<td>0.89</td>
<td>0.98</td>
<td>1.04</td>
<td>1.11</td>
<td>1.03</td>
<td>1.08</td>
<td>1.09</td>
<td>1.05</td>
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</table>

- **2009 to 2017**: +19.1%
- **2016 to 2017**: -3.4%

Source: Railway Tie Association
Graph: HMR
<table>
<thead>
<tr>
<th>Board Road/Mat</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
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</thead>
<tbody>
<tr>
<td>Timbers</td>
<td>0.175</td>
<td>0.198</td>
<td>0.243</td>
<td>0.267</td>
<td>0.424</td>
<td>0.413</td>
<td>0.365</td>
<td>0.357</td>
<td>0.368</td>
</tr>
</tbody>
</table>

2016 to 2017 + 3.1%
Variance in Consumption of US Hardwoods from Mid-Year to Year-End 2017

© 2018 HMR
Production Peaked in 1999 at an est. 12,619,000,000 board feet

1960 est. 7,672,500,000 board feet

1975 est. 7,157,500,000 board feet

2017 production was 8,308,037,400.

Estimated 57 year average is 9,386,688,000 board feet.

Graph: HMR

Sources: US Census Bureau, US Forest Service, and HMR
Consumption of Hardwood Lumber by Major US Markets and Total Supply of Hardwood Lumber

© 2018 HMR
What are the challenges to the long-term success of US hardwood Sawmills?

Log Exports
US Hardwood Log Exports

Source: USDA FAS
Graph: HMR
US Exports of Hardwood Logs to World Markets

2007

- Maple 16.6%
- Other Temperate 20.2%
- Red Oak 12.4%
- White Oak 15.6%
- Poplar 9.1%
- Walnut

Source: USDA FAS
Graph: HMR
US Exports of Hardwood Logs to World Markets

2017

- Red Oak: 28.9%
- Maple: 17.6%
- Ash: 12.6%
- White Oak: 9.9%
- Other Temperate: 8.3%
- Tropical: 8.3%
- Paulownia: 8.3%
- Western Red Alder: 8.3%
- Birch: 8.3%
- Poplar: 8.3%
- Cherry: 8.3%
- Beech: 8.3%

Source: USDA FAS
Graph: HMR
What are the challenges to the long-term success of US hardwood Sawmills?

Log Exports

Too many eggs in one basket
What are the challenges to the long-term success of US hardwood Sawmills?

Log Exports
Too many eggs in one basket

Wood By-Products
What are the challenges to the long-term success of US hardwood Sawmills?

Log Exports

Too many eggs in one basket

Wood By-Products

Labor
Positives:

• We have an abundant supply of hardwood timber owned by private landowners willing to sell it for the right price.

• We have ample sawmill capacity to supply the industry’s current needs and outlets for total production.

• We have a very stable supply and demand balance.

• And a very resilient hardwood sawmill industry.
Hardwood Market Report
Lumber News Since 1922

A Hardwood Market Report Publication
Covering the Hardwood Industry from Woods to Finished Goods

A Hardwood Market Report Publication
Comprehensive coverage of the temperate and tropical hardwood market

Since 2001
A powerful search engine designed for the hardwood buyer

Contact us for a sample copy!
US Hardwood Log Exports
Excluding Canada

Source: USDA Foreign Agricultural Service
Graph: HMR Executive®

* Annualized
Net Volume of Hardwood Growing Stock on US Timberland

Privately Held

Total Public

Percent Change in Growing Stock Volumes on Public, Private, and Total US Timberland

Source: USDA Forest Service

Graph: Hardwood Market Report