Is The Hardwood Market on The Rebound, Maybe then Maybe Not

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Opening Statement

• Hardwood lumber production has declined by 40 percent between 1999 and 2010 and has only increased modestly since then.
• We have permanently lost as much as a third of our hardwood lumber production capacity in the last 5 years – Liquidated or abandon.
• Demand in the first half of 2010 looked promising but started to decline in late 2010 and has continued to be poor -- except for -- residue, crossties, pallet material, crane mats and exports.
Consumption by Major Non-Industrial Users of Hardwood Lumber in 1977

- Millwork
- Flooring
- Exports
- Cabinets
- Furniture
Consumption by Major Non-Industrial Users of Hardwood Lumber in 1997

Million board feet
Non-Supervisory Employment in the Wood Household Furniture Industry 1990 to 2012

Thousands of workers

Housing Starts 1990 to 2005

Thousands of starts yearly

Non-Supervisory Employment in the Kitchen Cabinet Industry 1990 to 2005
Consumption by Major Non-Industrial Users of Hardwood Lumber in 2005

- Millwork
- Flooring
- Exports
- Cabinets
- Furniture

Million board feet
Kitchen Cabinet Imports 1990 to 2012

[Graph showing the import trends of Kitchen Cabinets from 1990 to 2012, categorized by market regions: Europe, N Am, E Asia, and Other. The import values are measured in Millions of 1982 dollars.]
Consumption by Major Non-Industrial Users of Hardwood Lumber in 2005
Consumption by Major Non-Industrial Users of Hardwood Lumber in 2009

- Millwork
- Flooring
- Exports
- Cabinets
- Furniture

Million board feet
Hardwood Lumber Consumption

Million board feet

Flooring  Furniture  Cabinets  Millwork  Pallets  Exports  Crossties

Hardwood Lumber Exports
1990 to 2012 by Region

Million board feet:
- Asia (red)
- Europe (blue)
- N America (green)
- Other (yellow)
The Percent of Hardwood Lumber Consumed for Industrial and Non-Industrial Applications

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>32%</td>
<td>40%</td>
<td>34%</td>
<td>37%</td>
</tr>
<tr>
<td>Non-Industrial</td>
<td>68%</td>
<td>60%</td>
<td>66%</td>
<td>63%</td>
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</tbody>
</table>
### The Percent of Hardwood Lumber Consumed for Industrial and Industrial Applications

<table>
<thead>
<tr>
<th>User Group</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>41%</td>
<td>42%</td>
<td>44%</td>
<td>52%</td>
<td>60%</td>
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<tr>
<td>Non-Industrial</td>
<td>59%</td>
<td>58%</td>
<td>56%</td>
<td>48%</td>
<td>40%</td>
</tr>
</tbody>
</table>
The Percent of Hardwood Lumber Consumed for Industrial and Non-Industrial Applications

<table>
<thead>
<tr>
<th>User Group</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>60%</td>
<td>58%</td>
<td>63%</td>
<td>61%</td>
</tr>
<tr>
<td>Non-Industrial</td>
<td>40%</td>
<td>42%</td>
<td>37%</td>
<td>39%</td>
</tr>
</tbody>
</table>
Industrial Lumber Versus Grade Lumber Price Trends

Deflated price index winter 2000 = 100

- Pallets Cants
- Crossties
- #1C Lumber
Historic Trends for Deflated #1 Common Appalachian Hardwood Lumber Price

Deflated 1982 dollars

Eastern Hardwood Lumber Production

Million board feet

- 6000
- 7000
- 8000
- 9000
- 10000
- 11000
- 12000
- 13000

Year
- 1960
- 1965
- 1970
- 1975
- 1980
- 1985
- 1990
- 1995
- 2000
- 2005
- 2010
Hardwood lumber production in Europe, Japan, North America, and China 1990 to 2011

Billion board feet


Europe
Japan
N. America
China
## Changes in 1C Lumber, Premium Log and Low Grade Log Prices Since the Mid 2000s

<table>
<thead>
<tr>
<th>Species</th>
<th>Product</th>
<th>Price high point</th>
<th>Price low point</th>
<th>% change high point and low point</th>
<th>% change high point and fall 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Maple</td>
<td>1C Lumber</td>
<td>Spring 2006</td>
<td>Spring 2009</td>
<td>-45.7</td>
<td>-42.1</td>
</tr>
<tr>
<td></td>
<td>Prime log</td>
<td>Fall 2006</td>
<td>Spring 2009</td>
<td>-43.0</td>
<td>-39.1</td>
</tr>
<tr>
<td></td>
<td>Low grade log</td>
<td>Fall 2006</td>
<td>Fall 2008</td>
<td>-15.6</td>
<td>11.8</td>
</tr>
<tr>
<td>Red Oak</td>
<td>1C Lumber</td>
<td>Spring 2004</td>
<td>Spring 2008</td>
<td>-42.2</td>
<td>-34.1</td>
</tr>
<tr>
<td></td>
<td>Prime log</td>
<td>Spring 2004</td>
<td>Fall 2008</td>
<td>-43.8</td>
<td>-30.7</td>
</tr>
<tr>
<td></td>
<td>Low grade log</td>
<td>Spring 2004</td>
<td>Fall 2008</td>
<td>-12.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Black cherry</td>
<td>1C Lumber</td>
<td>Fall 2004</td>
<td>Fall 2009</td>
<td>-60.3</td>
<td>-58.4</td>
</tr>
<tr>
<td></td>
<td>Prime log</td>
<td>Spring 2004</td>
<td>Fall 2009</td>
<td>-50.3</td>
<td>-50.3</td>
</tr>
<tr>
<td></td>
<td>Low grade log</td>
<td>Spring 2004</td>
<td>Fall 2009</td>
<td>-15.4</td>
<td>6.9</td>
</tr>
</tbody>
</table>
Eastern Hardwood Sawtimber Volume
1952 to 2011

Billion Board Feet ¼” Int.
# Growth of the Five Most Important Species Group 1963 to 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select W. Oaks</td>
<td>42,847</td>
<td>132,426</td>
<td>209.1%</td>
</tr>
<tr>
<td>Select R. Oaks</td>
<td>35,020</td>
<td>116,009</td>
<td>231.3%</td>
</tr>
<tr>
<td>Other R. Oaks</td>
<td>55,397</td>
<td>176,083</td>
<td>217.9%</td>
</tr>
<tr>
<td>Soft Maple</td>
<td>19,216</td>
<td>108,154</td>
<td>462.8%</td>
</tr>
<tr>
<td>Yellow-poplar</td>
<td>21,202</td>
<td>138,637</td>
<td>553.9%</td>
</tr>
</tbody>
</table>
### Utilization and Sustainability for Major Hardwood Species Groups Used in the North

<table>
<thead>
<tr>
<th>Species group</th>
<th>Proportion of inventory</th>
<th>Proportion of harvest</th>
<th>Relative utilization</th>
<th>Growth harvest ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Maple</td>
<td>15.6</td>
<td>19.8</td>
<td>1.26</td>
<td>2.07</td>
</tr>
<tr>
<td>Soft Maple</td>
<td>18.0</td>
<td>14.7</td>
<td>0.82</td>
<td>3.6</td>
</tr>
<tr>
<td>Cottonwood/Aspen</td>
<td>7.0</td>
<td>12.5</td>
<td>1.79</td>
<td>1.62</td>
</tr>
<tr>
<td>Select R Oak</td>
<td>13.8</td>
<td>11.8</td>
<td>0.85</td>
<td>3.56</td>
</tr>
</tbody>
</table>
## Utilization and Sustainability for Major Hardwood Species Groups Used in the South

<table>
<thead>
<tr>
<th>Species group</th>
<th>Proportion of inventory</th>
<th>Proportion of harvest</th>
<th>Relative utilization</th>
<th>Growth harvest ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other R Oaks</td>
<td>27.2%</td>
<td>34.7%</td>
<td>1.27</td>
<td>1.73</td>
</tr>
<tr>
<td>Sweetgum</td>
<td>13.9%</td>
<td>18.6%</td>
<td>1.34</td>
<td>1.58</td>
</tr>
<tr>
<td>Select W Oaks</td>
<td>9.9%</td>
<td>9.3%</td>
<td>0.94</td>
<td>2.48</td>
</tr>
</tbody>
</table>
The Near Term Outlook

- A never ending stream of new regulations
- Rising energy prices
- Economic Uncertainty
- Continued consumer pessimism
- My crystal ball shows no rapid improvement in the economy
Longer Term View

• When the market for hardwood lumber picks up the greatest bottleneck will be loggers and truckers
• The bad market has forced logger out of business and the remaining logger will be operating old equipment
• Trucker that carried logs out of the woods have found employment in gas and oil drilling industry and probably will not return to log hauling
Longer Term View

• The shortage of loggers and truck drivers will most likely be less in states that have a large industrial product sector and no drilling.

• This means that New England will be in better shape than West Virginia and Pennsylvania once demand increases.