Current State of the Hardwood Industry

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Northern Research Station

The Future of the Hardwood Lumber Industry Conference
Nov. 2, 2016
Outline

• Overview of hardwood industry trends
  - production, employment
• Impacts of secondary woodworking on hardwood demand
  - housing
• Export trends for hardwoods
• Questions/comments
The major markets for hardwood lumber

• Appearance-based:
  – Furniture
  – Cabinets
  – Flooring
  – Millwork
  – Exports

• Industrial:
  – Pallets
  – Railroad ties
U.S. hardwood lumber consumption by market segment*

* Exports excluded

Luppold and Bumgardner. 2016.
### U.S. hardwood lumber exports

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (billion bd. ft.)</th>
<th>Percentage of total consumption plus exports</th>
<th>Percentage of appearance-based consumption plus exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>0.9</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>1999</td>
<td>1.2</td>
<td>9%</td>
<td>16%</td>
</tr>
<tr>
<td>2002</td>
<td>1.2</td>
<td>10%</td>
<td>17%</td>
</tr>
<tr>
<td>2006</td>
<td>1.3</td>
<td>11%</td>
<td>21%</td>
</tr>
<tr>
<td>2009</td>
<td>0.8</td>
<td>10%</td>
<td>25%</td>
</tr>
<tr>
<td>2014</td>
<td>1.7</td>
<td>17%</td>
<td>37%</td>
</tr>
<tr>
<td>2015</td>
<td>1.5</td>
<td>16%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Luppold and Bumgardner. 2016
Where the hardwood lumber volume went, 1999

- Pallets, 35.4%
- Railway ties, 5.3%
- Furniture, 19.5%
- Millwork, 17.7%
- Cabinets, 11.5%
- Exports, 10.6%

Source: Luppold and Bumgardner

Where the hardwood lumber volume went, 2015

- Pallets, 34.9%
- Railway ties, 12.8%
- Furniture, 7.0%
- Millwork, 18.6%
- Cabinets, 9.3%
- Exports, 17.4%
Hardwood lumber price index

Data source: U.S. Dept. of Labor; Luppold and Bumgardner
Preliminary comparison of production plus imports and consumption plus exports 1999 to 2000

Source: Luppold
Price of 1C lumber versus the price of stumpage in Ohio

Sources: Luppold; HMR; ODNR/OSU
Impacts of secondary hardwood markets and housing
Consumption = value of shipments + imports – exports
Import share = imports/consumption

Market share estimates of imports in the U.S.

Data sources: U.S. Census Bureau; International Trade Admin.
Why makes the Holmes County furniture cluster a viable model?

Customer driven . . .
- Customers select style, stain, and species, making each order unique - - customization
- Like the U.S. cabinet industry!

Extremely fluid production process . . .
- Production of specific products (e.g., tables, chairs). A dining room group could be constructed by multiple producers - - specialization

Supply chains . . .
- Finishers receive pieces from multiple shops
- Many operations use the same set of 15+ stains
- **Outsourcing** components locally = aggregate productivity
Major U.S. import sources
Household & Institutional Furniture & Cabinets (NAICS 3371)

Data source: International Trade Administration
Housing market’s importance to woodworking employment

Data sources: US Census Bureau; Bureau of Labor Statistics
Employment indexes for last two economic recession periods

2000 and 2007 = 100

Millwork  - Pallets  Cabinets  WHF

Employment indexes for last three economic expansion periods

Index of sawmill employment and number of sawmills in the Appalachian Region

Data source: Bureau of Labor Statistics
Multi-family percentage of total housing market (single family + multi-family)

Data source: U.S. Census Bureau

Value per start in 2015:
SF = $306,508
MF = $130,883
Seven years of studies in collaboration with Virginia Tech, the U.S. Forest Service, and Woodworking Network/FDMC
Year-over-year changes in sales volume

<table>
<thead>
<tr>
<th>Year</th>
<th>% losing sales volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>81</td>
</tr>
<tr>
<td>2010</td>
<td>50</td>
</tr>
<tr>
<td>2011</td>
<td>38</td>
</tr>
<tr>
<td>2012</td>
<td>31</td>
</tr>
<tr>
<td>2013</td>
<td>25</td>
</tr>
<tr>
<td>2014</td>
<td>21</td>
</tr>
<tr>
<td>2015</td>
<td>20</td>
</tr>
</tbody>
</table>

The chart shows the percentage of businesses losing sales volume each year from 2008-2009 to 2014-2015.
Number of firms

- **Cabinets (NAICS 33711)**
- **Millwork (NAICS 32191)**

<table>
<thead>
<tr>
<th>Year-over-Year</th>
<th>Cabinets</th>
<th>Millwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>08-09</td>
<td>-6.3%</td>
<td>-5.8%</td>
</tr>
<tr>
<td>09-10</td>
<td>-6.0%</td>
<td>-6.4%</td>
</tr>
<tr>
<td>10-11</td>
<td>-6.7%</td>
<td>-5.5%</td>
</tr>
<tr>
<td>11-12</td>
<td>-5.1%</td>
<td>-3.1%</td>
</tr>
<tr>
<td>12-13</td>
<td>-3.3%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>13-14</td>
<td>-1.6%</td>
<td>-1.5%</td>
</tr>
<tr>
<td>14-15</td>
<td>-1.2%</td>
<td>-0.3%</td>
</tr>
</tbody>
</table>

Preliminary data (1st qtr.) positive for 2016

Data source: Bureau of Labor Statistics
Perceived reasons for sales volume declines (for those firms indicating a decline)

1. Competition from non-wood substitute products
2. More domestic competitors entered the market
3. Offshore competition
4. We contracted in proportion with the overall economy
5. Downturn in nonresidential construction
6. Downturn in the remodeling expenditures
7. Downturn in the housing market

Scale: 1=Minor reason to 5=Major reason

Proportion of production volume associated with the single family housing construction market

![Graph showing the proportion of production volume for different percent ranges from 2009 to 2015.](image-url)
Hardwood Export Trends
U.S. hardwood product* exports and imports, 1990-2013

* Includes hardwood logs, lumber, veneer, cooperage, molding, siding, plywood, and flooring

# Top five hardwood lumber-exporting countries*

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>%</th>
<th>2000</th>
<th>%</th>
<th>2011</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>34.3</td>
<td></td>
<td>United States</td>
<td>23.6</td>
<td>United States</td>
<td>22.8</td>
</tr>
<tr>
<td>France</td>
<td>12.1</td>
<td></td>
<td>China</td>
<td>13.0</td>
<td>Belgium</td>
<td>8.9</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>11.8</td>
<td></td>
<td>Canada</td>
<td>11.5</td>
<td>Russia</td>
<td>7.2</td>
</tr>
<tr>
<td>Canada</td>
<td>7.8</td>
<td></td>
<td>France</td>
<td>5.3</td>
<td>Romania</td>
<td>7.1</td>
</tr>
<tr>
<td>Germany</td>
<td>5.8</td>
<td></td>
<td>Romania</td>
<td>5.2</td>
<td>Germany</td>
<td>5.9</td>
</tr>
<tr>
<td>Top 5</td>
<td>71.8</td>
<td></td>
<td>Top 5</td>
<td>58.5</td>
<td>Top 5</td>
<td>51.9</td>
</tr>
</tbody>
</table>

* Temperate Region

U.S. hardwood lumber exports (Top 5 destinations)

- Japan and the UK were slightly higher than Italy starting in 2012, dropping Italy to 7th

Data: USDA Foreign Agricultural Service
Importance of coastal locations to hardwood lumber exporting

<table>
<thead>
<tr>
<th>Port Regions (incl. all port types – water, land, air)</th>
<th>% of U.S. Hardwood Lumber Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Coast*</td>
<td>63</td>
</tr>
<tr>
<td>West Coast</td>
<td>20</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>12</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>5</td>
</tr>
</tbody>
</table>

* 70% of hardwood lumber leaving East Coast ports was destined for East Asia and Southeast Asia

USDA Foreign Agricultural Service 2015
Summary

• Industrial markets fared better than appearance-based markets through the recession/housing downturn
• About half of domestic consumption currently in industrial markets
• Importance of exports
• 6 years of increases in hardwood lumber production since 2009 (+41%)
  – But still 27% below peak year of 1999
Summary

- Secondary employment has improved, but the overall number of firms lagging
  - Similar trend for sawmills
- Surviving companies have seen steady improvements in sales volume since 2009
- Log and stumpage markets returning to a more “normal” pattern; stumpage was affected by housing downturn
Thank you.

Questions?