Global Timber Trends: Implications for the U.S. Forest Products Sector

Keith Balter
Senior Vice President
February 2005

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Southern Hemisphere Non-Native Plantation Area (Million Hectares)

Oceania
Latin America

1990 2000 2010

0 5 10 15 20 25 30

2,400 2,500 2,600 2,700 2,800 2,900 3,000 3,100


U.S. Newsprint Consumption (Thousand Tones/Quarter)

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Global Competitiveness of U.S. Forestry and Forest Industry

Presentation by
Doug Parsonson

Key Global Trends
- Increasingly, global markets for forest products
- Demand is shifting from "developed" to "developing" markets
- Product innovation and technology are changing the underlying "value" of different fibers and woods
- Trend prices are declining in key product sectors
- Timber supply platforms competing within a globalizing and consolidating industry for markets – and for investments

Increasingly Global Markets……
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**Demand Is Shifting**

Paper & Paperboard Demand Growth Strongest in Emerging Markets

![Graph showing demand growth in different regions.](image)

- China: 4
- Latin America: 2
- Africa: 1
- Asia ex Japan: 3
- Japan: 1
- North America: 4
- Western Europe: 2
- Oceania: 1
- Average 2.2%/a

![Chart showing share of consumption in 2000 (325 million tons).](image)

*Paper & Paperboard Demand Growth—Emerging Growth Markets*

- Demand growth %/a
- Emerging Markets vs. Traditional Strongholds

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**And Production Growth is Also Shifting**

![Graph showing production growth from 2000 to 2015.](image)

- North America & Western Europe still > 50% of the global production in 2015.

Production and Consumption 2000

- North America
- Western Europe
- Eastern Europe
- Japan
- Rest of Asia
- Latin America
- Other regions

Growth of Production 2000 - 2015

- North America
- Western Europe
- Eastern Europe
- Japan
- Rest of Asia
- Latin America
- Other regions

Million tons %/a

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**Trend prices are Declining for Key Products**

![Graph showing real pulp prices from 1970-2002.](image)

- Real pulp prices have declined on average 1-1.5%/a for years

Trend prices are Declining For Key Products

- Real pulp prices
- Nominal prices
- Market pulp/CIF North Atlantic/North Sea port


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Future Trends in US Forestry in a Global Context

Roger A. Sedjo
Presented to the Global Markets Forum
Orlando, Florida
February 15-17, 2005

Overview
General decline in US Competitiveness in resource and manufacturing sectors
- Current Situation in the U.S. Forest Industry
  - Changing Demand Conditions
  - Exchange Rates
  - Environment for the US Forest Industry
  - Rational Response and Recent Industry Behavior
  - Implications for the US industry

Figure 2: World Industrial Roundwood Production

Source: FAO, Rome, selected years
Why Stagnate Demand?

- More efficient use of raw wood.
- Non wood substitutes, e.g., plastic packaging, steel in residential construction.
- Greater recycling, waste paper.
- Aging population in much of wood using industrial world.
- Decreased wood production as centrally planned economies move to efficient markets, e.g., Russian production/consumption decline.

Supply Factoid

According to the FAO, in 2000, 34% of the world’s industrial wood came from planted forests.

By contrast,

In 1950 planted forests made up a negligible portion of industrial wood.

Supply Sources: Globally

- Global harvest shift from foraging natural forests to a tree cropping mode of wood production, especially in subtropical areas.
- Massive areas of forest plantations have been established largely in subtropical areas.
- Tree planting creates opportunities for tree improvement but traditional and genetic engineering.
- Increasing participation of North American and European firms in subtropical plantations.
Summary and Conclusions

- Global demand likely to continue relatively weak while supply sources are growing.
- Much of the new supply will come from biologically advantaged intensively managed plantations outside the US using genetically improved material.
- Implies a continued relative deterioration in the position of the US as a wood producer.
- Tax and certification considerations provide additional incentives for US firms to divest forestlands in the US.
- A long-term weak dollar could help some.
- Overall, expect US industry to continue moving aggressively offshore while, at the same time, reducing and restructuring its domestic timberland holdings.

Assessing market impacts on forest conditions in the US South

David Wear
USDA Forest Service
Southern Research Station

Organizing Concept

- Land use and resource decisions are outcomes of landowner decisions influencing a web of economic and social forces.
- US South is unusual - predominately private ownership of forests.
- Laboratory for investigating sustainability.
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Urban Growth Scenario

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Forest Types

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Subregions of Concern

- **Southern Appalachians**
  - Population growth
  - Intensification of agriculture
  - Sensitivity to increased air pollution
  - Rare forest communities at risk.

- **Gulf and Atlantic coastal areas**
  - Hurricanes and wind damage
  - Loss of coastal wetlands
  - Weather-related impacts

- **The Piedmont Crescent**
  - Highest concentration of forest loss to urban uses
  - Susceptibility to fragmentation.
The Appalachian Forest as it relates to Industry

Mark Barford, CF, CAE
Certified Forester #1970
President
APPALACHIAN HARDWOOD MANUFACTURERS, INC.
March 29, 2006

HARDWOOD TIMBER INVENTORY
Merchantable Timber - Billions of Board Feet

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume</th>
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<tbody>
<tr>
<td>1953</td>
<td>414</td>
</tr>
<tr>
<td>1963</td>
<td>452</td>
</tr>
<tr>
<td>1977</td>
<td>569</td>
</tr>
<tr>
<td>1987</td>
<td>715</td>
</tr>
<tr>
<td>1997</td>
<td>899</td>
</tr>
<tr>
<td>2005</td>
<td>1,000</td>
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(estimated)
(Source: USDA Forest Service)

Lumber Production
By State

<table>
<thead>
<tr>
<th>State</th>
<th>Volume (MMBF)</th>
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<tbody>
<tr>
<td>Pennsylvania</td>
<td>1,081</td>
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<tr>
<td>Tennessee</td>
<td>866</td>
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<tr>
<td>Virginia</td>
<td>855</td>
</tr>
<tr>
<td>West Virginia</td>
<td>705</td>
</tr>
<tr>
<td>North Carolina</td>
<td>692</td>
</tr>
<tr>
<td>Kentucky</td>
<td>683</td>
</tr>
<tr>
<td>Georgia</td>
<td>431</td>
</tr>
<tr>
<td>New York</td>
<td>431</td>
</tr>
<tr>
<td>Ohio</td>
<td>318</td>
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<tr>
<td>South Carolina</td>
<td>257</td>
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US Hardwood Lumber Production

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>1997</th>
<th>2005</th>
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<tbody>
<tr>
<td>Pallets</td>
<td>4.6</td>
<td>4.5</td>
<td>3.6</td>
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<tr>
<td>Furniture</td>
<td>2.0</td>
<td>3.0</td>
<td>1.0</td>
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<td>EXPORTS</td>
<td>1.0</td>
<td>1.4</td>
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<tr>
<td>Millwork</td>
<td>1.0</td>
<td>1.3</td>
<td>1.3</td>
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<tr>
<td>Cabinets</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
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<td>Flooring</td>
<td>0.6</td>
<td>1.1</td>
<td>1.4</td>
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<tr>
<td>RR Ties</td>
<td>0.6</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

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Markets are Changing

US furniture has lost about 50% of capacity – and remaining mills are using 50% less lumber!

Industry has shifted lumber exports to new countries without substantial increase in volume

Markets everywhere have become more demanding – length, widths and color requirements.

Higher demand for lower volume species.

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Hardwood Production Concerns

- Overhead costs ridiculous – Workers Comp.
- Trees less available
- Production and employment numbers down
- More logs leaving Appalachia to be processed
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Forestry in Appalachia

- Forest owned 90% by non-government
- TIMO’s largest private landowners
- 10 million landowners
- National Forests are essentially CLOSED
- Regulations and restrictions making active management more difficult
- Diseases and insects pose unknown threats

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Forestry in Appalachia - Harvesting

- Predominately unmanaged cutting – High Grading – little forester involvement
- Little to no clear cutting – little Oak or Cherry regeneration
- Deer browse a significant problem for regeneration
- Logger certification and restrictions make recruiting new forest workers tough... along with better paying competition

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[Image of a logger working in the trees]