Sawmill Financial Aspects

GRADEYIELD.xls
Spreadsheet Analysis
Small-Log Sawmill Costs

- Capital cost
- Processing cost
  - Logs
  - Manufacturing
  - Overhead
Small-Log Mill Capital Cost

- **SUBSTANTIAL** capital investment!
- Economy of Scale—investment cost must be supported by allocation of conversion costs
- What is the minimum production rate required to service the investment?
  - PNW & SE—100 MMBF/year
  - Intermountain—50+ MMBF/year
  - Grade/specialty mill—10+ MMBF/year

Carl Mason, HCMA Consulting
Small-Log Mill Capital Cost

- Cost of mill equipment is only 20-25% of total capital investment cost
- Quality of sawmill technology should never be compromised!
- Level of investment is controlled by
  - Available timber supply
  - Financial feasibility
  - Access to capital

Carl Mason, HCMA Consulting
PNW Small-Log Dimension Sawmill Investment Summary

- Minimum sawmill size – 100 MMBF
- Investment - $20 million—turnkey operation
- Payback – 8 years
- Return on Investment – 15% minimum return desired

Carl Mason, HCMA Consulting
Intermountain Small-Log Sawmill
Investment Summary

- Minimum sawmill size – 50 MMBF
- Investment - $8 to 12 million—turnkey operation (highly variable)
- Payback – 8 years
- Return on Investment (ROI) – 15% minimum return desired
Intermountain Small-Scale Sawmill
Investment Summary

- Minimum sawmill size – 10 MMBF
- Investment - $1 to 2 million—turnkey operation
- Payback – 5 years
- Return on Investment (ROI) – 15% minimum return desired
Small-Log Mill Processing Cost
(cost of converting logs to lumber)

70%  -  Log cost

22%  -  Manufacturing cost

8%  -  Overhead costs
Small-Log Mill Processing Cost

- Per unit log cost ($/MBF) is directly related to sawmill efficiency—**maximize lumber recovery**

- All other costs are primarily controlled by volume production—use economies of scale to **drive down per unit costs** ($/MBF)

- These reinforce the importance of reasonable production rate with high recovery

Carl Mason, HCMA Consulting
PNW Dimension Sawmill Profits
(1999 dollars, HCMA Consulting)

- Adjusted log cost—$240/MBF lumber tally
  $600/MBF* log scale ÷ 2½ (lumber yield factor)
- Total manufacturing cost—$100/MBF
- Total cost—$340/MBF
- Sales average—$360/MBF
- Profit margin—$20/MBF (or 5½% before taxes)

* Delivered log cost, bd. ft. log scale basis
Intermountain Sawmill Profits
(P. Pine - Dimension Only)

- Adjusted log cost—$258/MBF lumber tally
- Total manufacturing cost—$105/MBF
- Total cost—$386/MBF
- Sales average—$315/MBF (w/out residuals)
- Profit margin—loss of $71/MBF

* Delivered log cost, bd. ft. log scale basis
Intermountain Sawmill Profits
(P. Pine - Dimension & Boards)

- Adjusted log cost—$295/MBF lumber tally
- Total manufacturing cost—$105/MBF
- Total cost—$400/MBF
- Sales average—$336/MBF (w/out residuals)
- Profit margin—loss of $64/MBF

* Delivered log cost, bd. ft. log scale basis
Intermountain Sawmill Profits
(P. Pine - Dimension, Boards, Shop & Clears)

- Adjusted log cost—$295/MBF lumber tally
- Total manufacturing cost—$105/MBF
- Total cost—$400/MBF
- Sales average—$509/MBF (w/out residuals)
- Profit margin—$109/MBF

* Delivered log cost, bd. ft. log scale basis
Sawmill Bottomline Question

- What is the profit contribution by species?
- How much can I afford to pay for logs?
- What is the best product mix?
- How about log mix?
- Do I lose money on any logs—which ones?
- How much did a sawmill improvement project add to my bottomline?
GRADEYIELD.xls
Preliminary Sawmill Feasibility

- Quick & dirty feasibility spreadsheet
- Cost data
  - Log cost ($/MBF)
  - Sawing cost ($/MBF)
- Product data
  - Product market prices
  - Product recovery and yield from typical logs
GRADEYIELD.xls Input Data

- Log delivered price
- Sawing cost—cost of converting logs into lumber
- Lumber recovery & grade yield
- Lumber & residue market prices
Log and Sawing Costs

- Cost of logs delivered to the yard
  - Log stumpage price
  - Harvest & stand treatment (thinning)
  - Log transportation cost

- Sawing (variable) costs
  - Direct labor
  - Utilities—electricity (or fuel)
  - Sawfiling and regular (daily) maintenance
  - Supplies (saws, lube, oil, grease)
Sawing Cost

Circular Sawmill
- Typical small sawmill
- $105/MBF (average)

Band Sawmill
- Higher production mills
- $100/MBF (average)
Product Prices

- Moulding, Selects & Commons (ponderosa pine boards)
  - C lears—$785 to $1,215/MBF
  - Moulding & Shop grades—$475 to $1,190/MBF
  - #2&Btr. Common—$545 to $675/MBF

- Framing lumber (2x4s)
  - KD dimension—$380/MBF
  - KD studs—$378/MBF

Random Lengths, September 10, 2004
Mill Residue Markets

- Pulp chips (slabs, edgings & trim ends)
- Wood energy (bark, sawdust, shavings)
- Mulch (bark & sawdust)
- Animal bedding (dry planner shavings)
Interpretation of analysis

- Best case scenario
- *Gross Margins*
  - Positive gross margins—deserves further study
  - Negative gross margins—nonviable option

Spreadsheet demonstration