



Forest2Market[®]

*Interaction Between a Forest Products Recovery and
Uncertain Bioenergy Progress*

3rd Annual Biomass Supply Chain Conference

Indianapolis, Indiana

Contents

- Forest2Market Overview
- Trends and Drivers in Biomass Pricing
- State of Forest Products Industry
- Biomass market matures
- What happens to volume and price post recovery
- Why develop your own supply chain



Forest2Market

Overview

- Founded in 2000
- 20 professionals
- Headquartered in Charlotte, NC; Western office in Eugene, OR

Strategy

- Transformational data products for the forest and bio-energy industry supply chain
- Deep analytics built over transaction based data sets
- Inject solutions into daily business decisions
- Lead industry adoption to F2M data standards



Forest2Market

Data – Experience – Expertise

- Neutral-third party (independent in ownership and structure)
- Capture of transaction level data is the only way to achieve a true measure of market price. Transaction data is the foundation of all our products and services:
 - Rigorously reviewed by industry professionals
 - Collected and distributed anonymously
 - Broad network of data contributors
 - Lumber manufacturers, paper, chip and bioenergy facilities throughout the Southeast and in the Pacific Northwest
 - Large and small timber buying operations
 - Private and investor owned sellers



Forest2Market

- Relationships
 - 90% Timberland Investment Management Organizations
 - 80% Large forest products companies
 - Lumber manufacturers, treaters, wholesales and traders
 - Bio-energy facilities (pellets and bio-electric)
 - Thousands of landowners, consultants and wood buyers
- Market intelligence
 - Raw Material Benchmarks
 - Custom Analytics
 - Proprietary Supply Agreement Indexing
 - Site analysis/resource studies and long-term forecasts
 - Lumber Price Benchmarks



Forest2Market

Products

Data and Benchmarking

- Stumpage pricing
- Wood raw material cost data; and industry standard benchmarking for the timberland investment, pulp and paper, lumber and panel and bio-energy industries
- Supply chain cost benchmarks, including wood raw material, harvest, haul and G&A
- Lumber price realization benchmarks

Forecasts

- Econometric forecasts to support all product streams
- Proprietary long range resource supply and demand studies

Custom Analytical Services

- Mill site selection and expansion
- Supply chain re-design and development



Trends and Drivers in Biomass Pricing



Pricing Trends

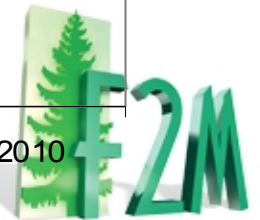
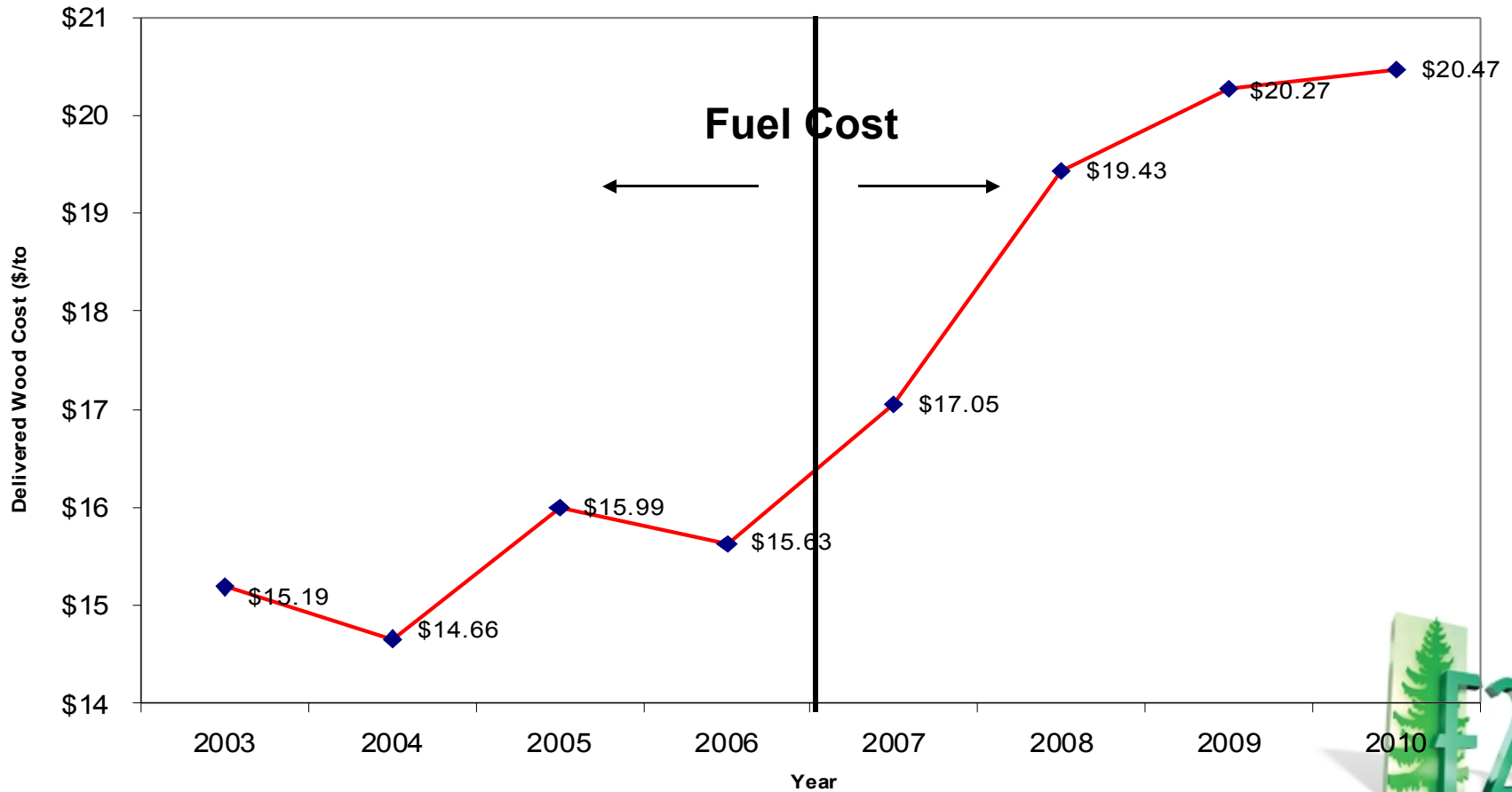
Delivered woodfuel/biomass

- Tied to fossil fuel price
- Limited by equipment
- Confused by BCAP
- Dominated by forest products industry
 - Supply and demand
- Flat pricing (more or less)
- Marginal product for landowners
- Extra work for logger



Pricing Trends

Forest2Market, Inc
FOB Delivered Price Benchmarks
Delivered Wood Cost (\$/ton) by Year - US South
2003-2010 - Fuelwood



Forest2Market®

State of Forest Products Industry



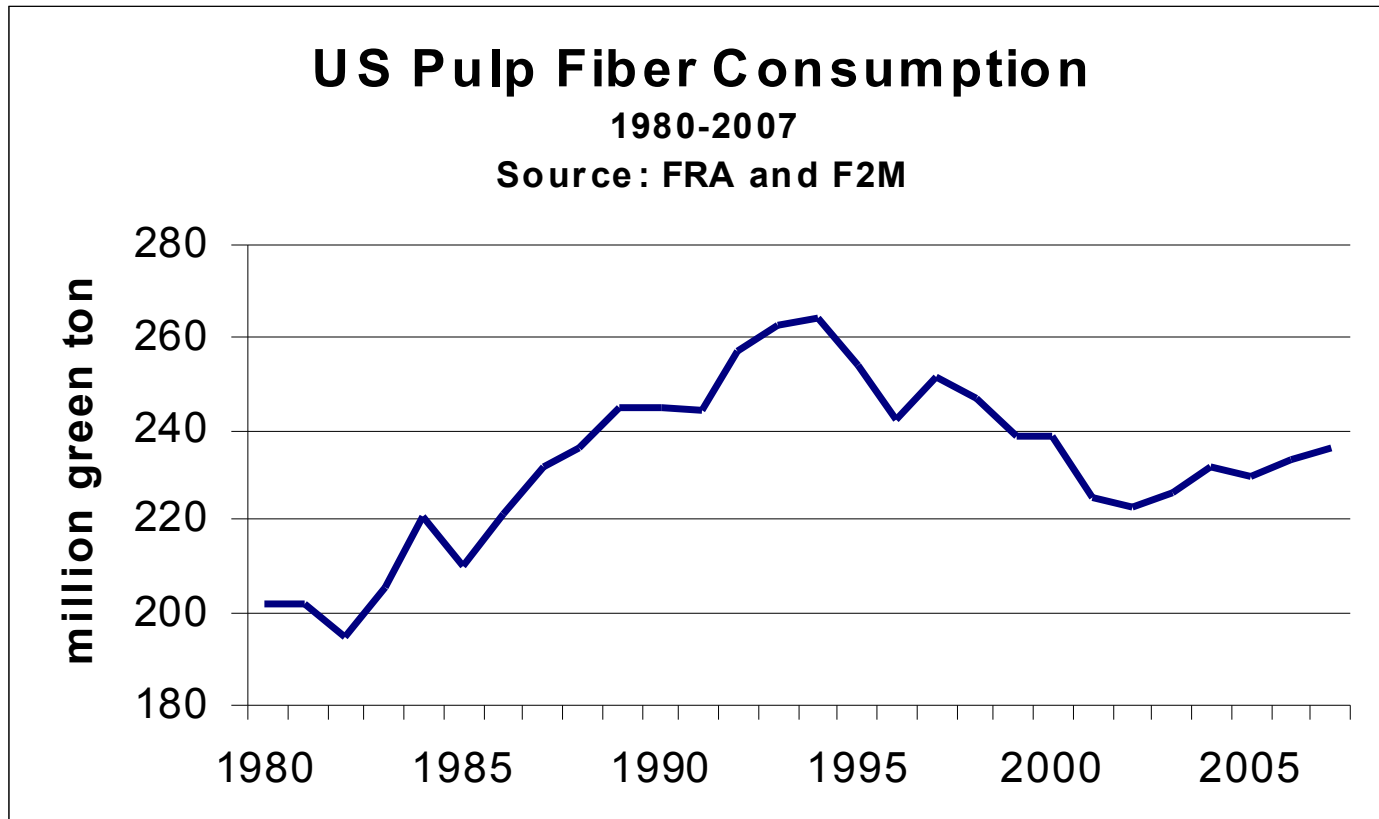
State of Industry

Pulp and Paper

- Generally healthy
 - Shot in arm by Black Liquor Credit and BCAP
- Production trends positive
- Weak grades include
 - Newsprint
 - Uncoated Free sheet (office paper)
- Corrugated paper tied to economy
- Liquid packaging has positive trends



State of Industry



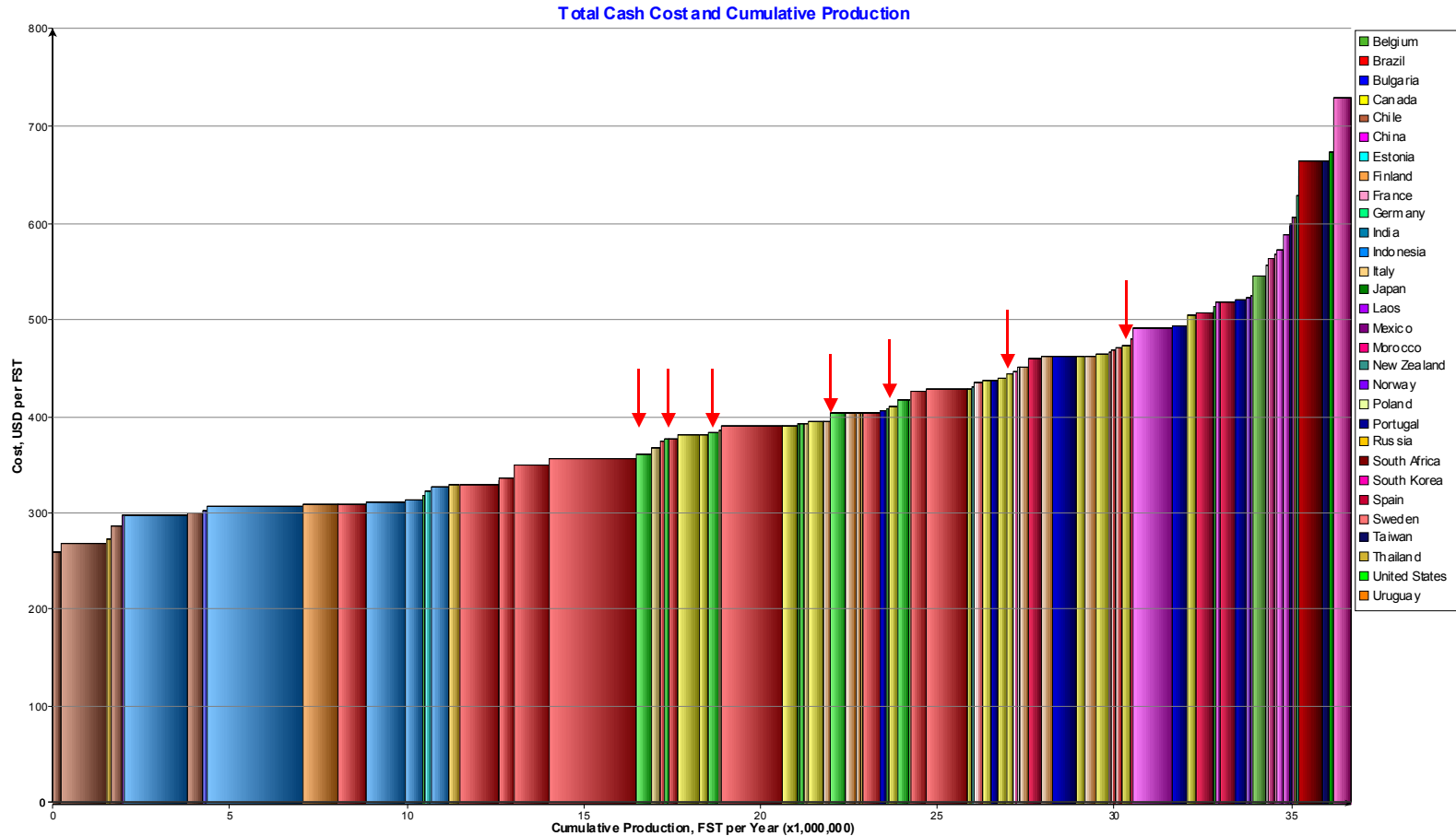
2009 consumption = 238 million tons



Forest2Market®

State of Industry

US pulp producers have a favorable world cost position



© 2006-2009 Fisher International, Inc.
Source: FisherSolve™



Forest2Market®

State of Industry

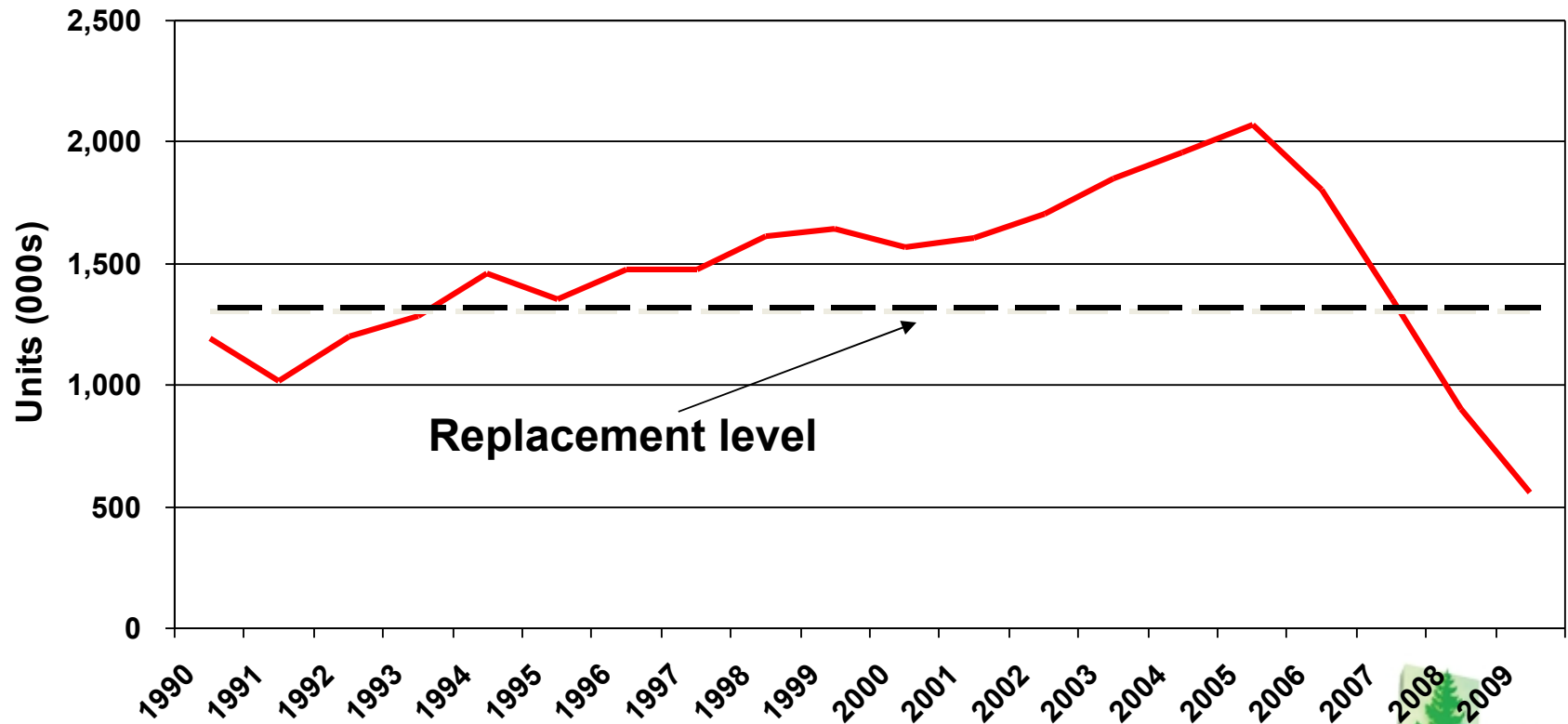
Lumber and Plywood

- Generally poor
 - Housing starts are 25% of highs and 50% of replacement rates
- Production trends are negative
- Pricing is weak, but rebounding



State of Industry

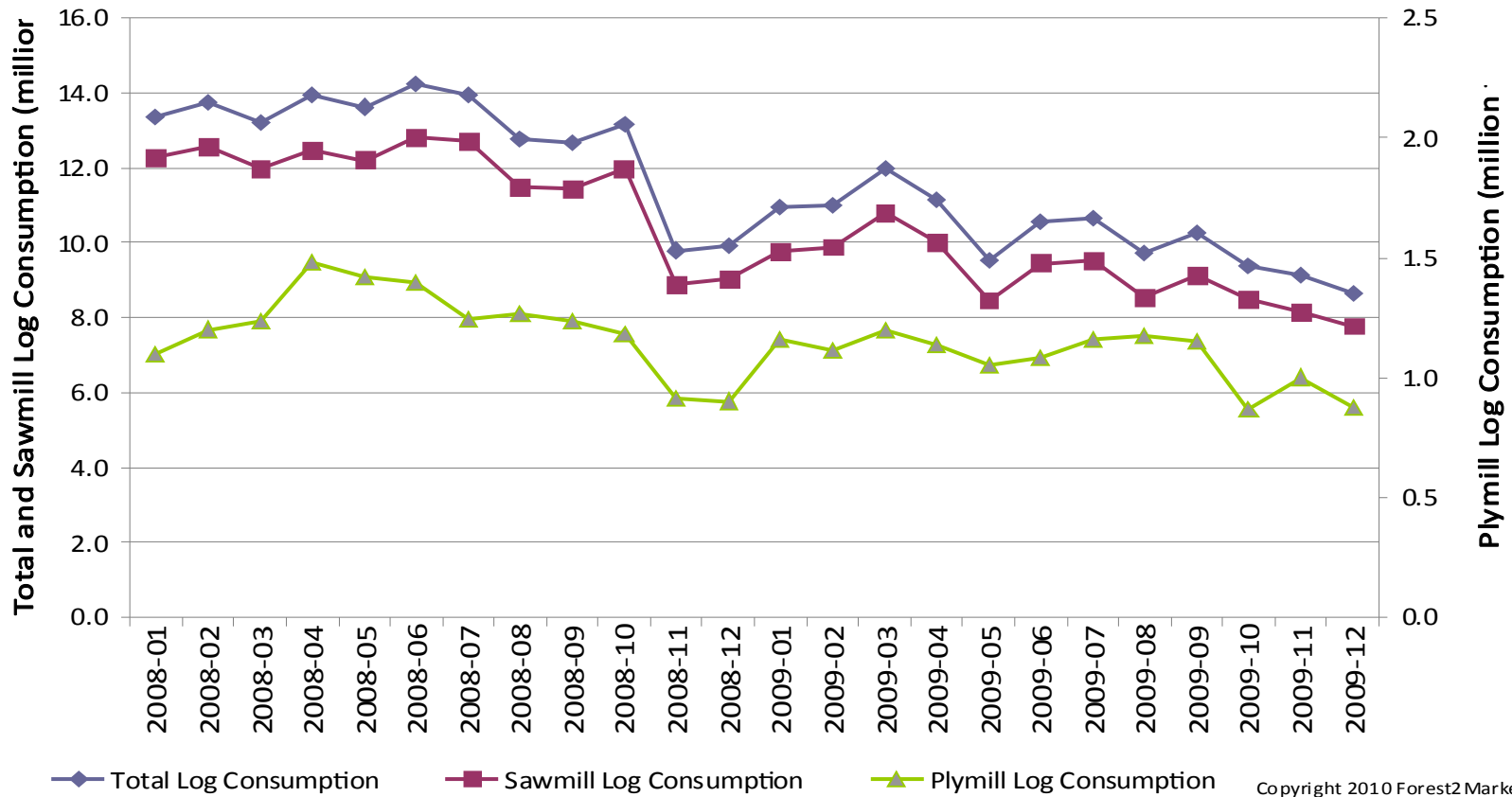
US Housing Starts, Annual Data



State of Industry



U.S. South Log Consumption by Mill Type 2008 - 2009



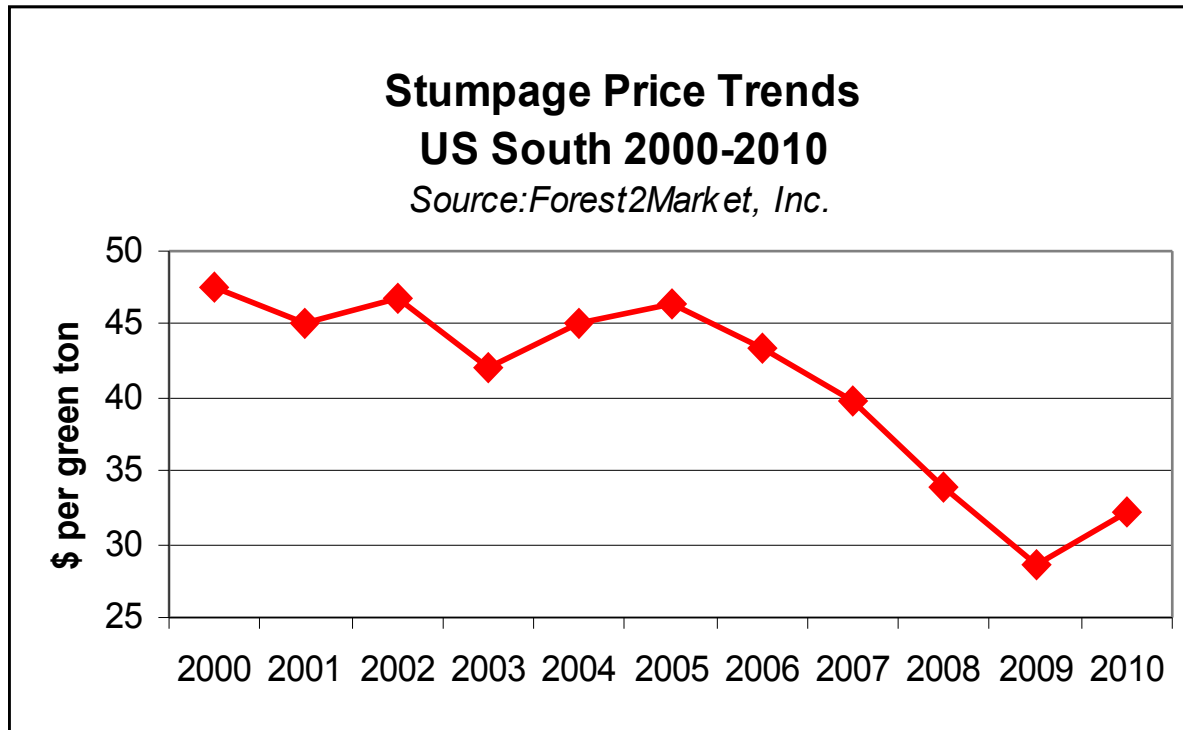
2008 = 154 million tons; 2009 = 122 million tons

Copyright 2010 Forest2Market®



Forest2Market®

State of Industry



Significant downward pressure on sawtimber for some time



Bio-energy Market Trends



Bio-energy Trends

Bio-energy market is maturing

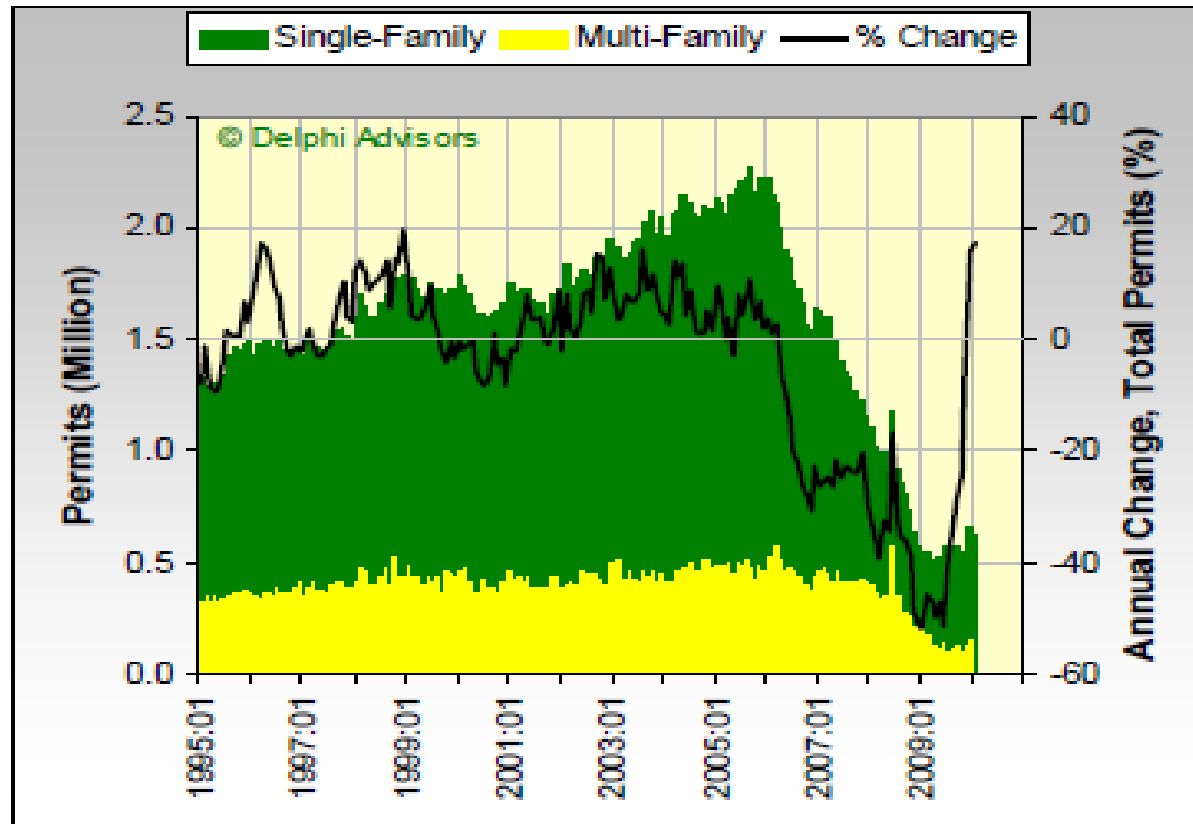
- Northeast US market is 10 years ahead of rest
 - Drove pulp and paper out of business
 - Biomass prices skyrocketed, but then leveled off
 - Few new announcements
- US South will follow same trend (less pulp/paper retrenchment)
- European Utilities nervous about supply are building pellet plants in US or looking for woodchips to burn
- First round of southern bioenergy projects have been sold to utilities
- Financing returning to small plants



Volume and Price – post recovery



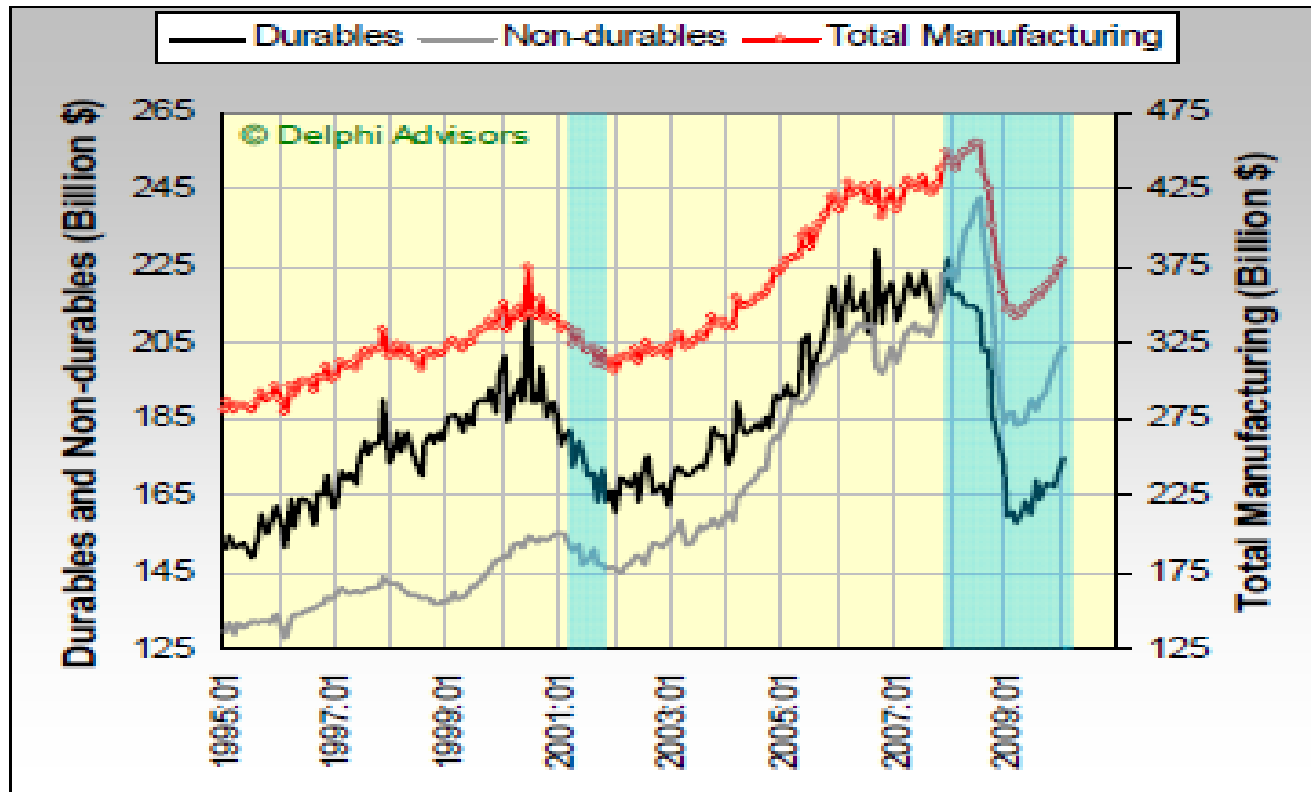
State of Industry



Glimmer of hope in housing permits



State of Industry



Manufacturing output has improved since January and GDP growth is accelerating; 12/09– 5.9%; 1/10– 3.5%; 2/10- 3.8% (est.) and 3/10-3%.



Forest2Market®

Volume Post Recovery Frees up supply

Market Size

Recovery to Replacement Levels of Housing Starts - 1.3 million annually

US Market (green tons)

	<u>Current</u>	<u>Post Recovery</u>	<u>Difference</u>
Mill Residues (bark, chips, etc)	95,000,000	116,250,000	21,250,000
In wood logging slash - potential	63,333,333	77,500,000	14,166,667
Total (green tons)	158,333,333	193,750,000	35,416,667
Difference (green tons)	35,416,667		

Current in-woods biomass recovery is 20 million tons



Forest2Market®

Volume Post Recovery

Stresses infrastructure

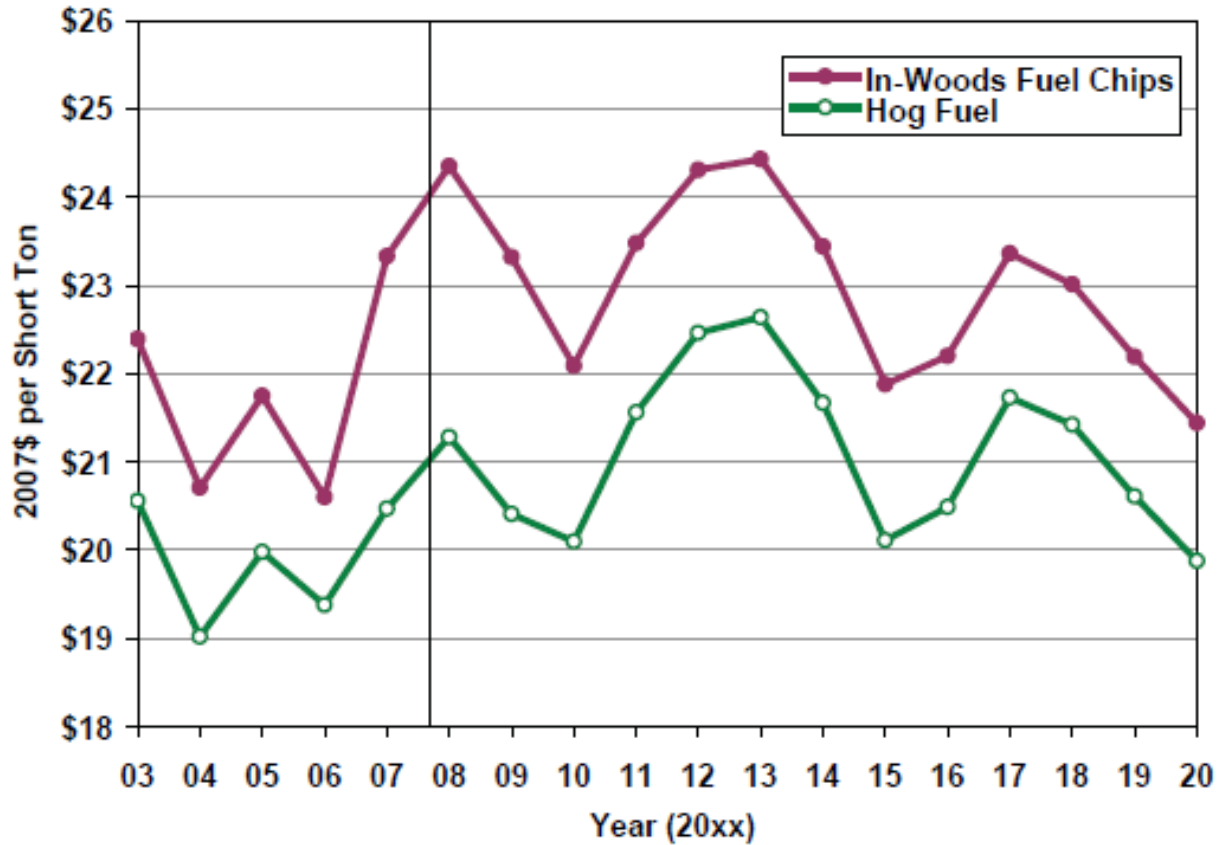
Infrastructure Required

# trucks	2,833
# logging crews	197
trucking employment	3,400
logging employment	984



Volume Post Recovery

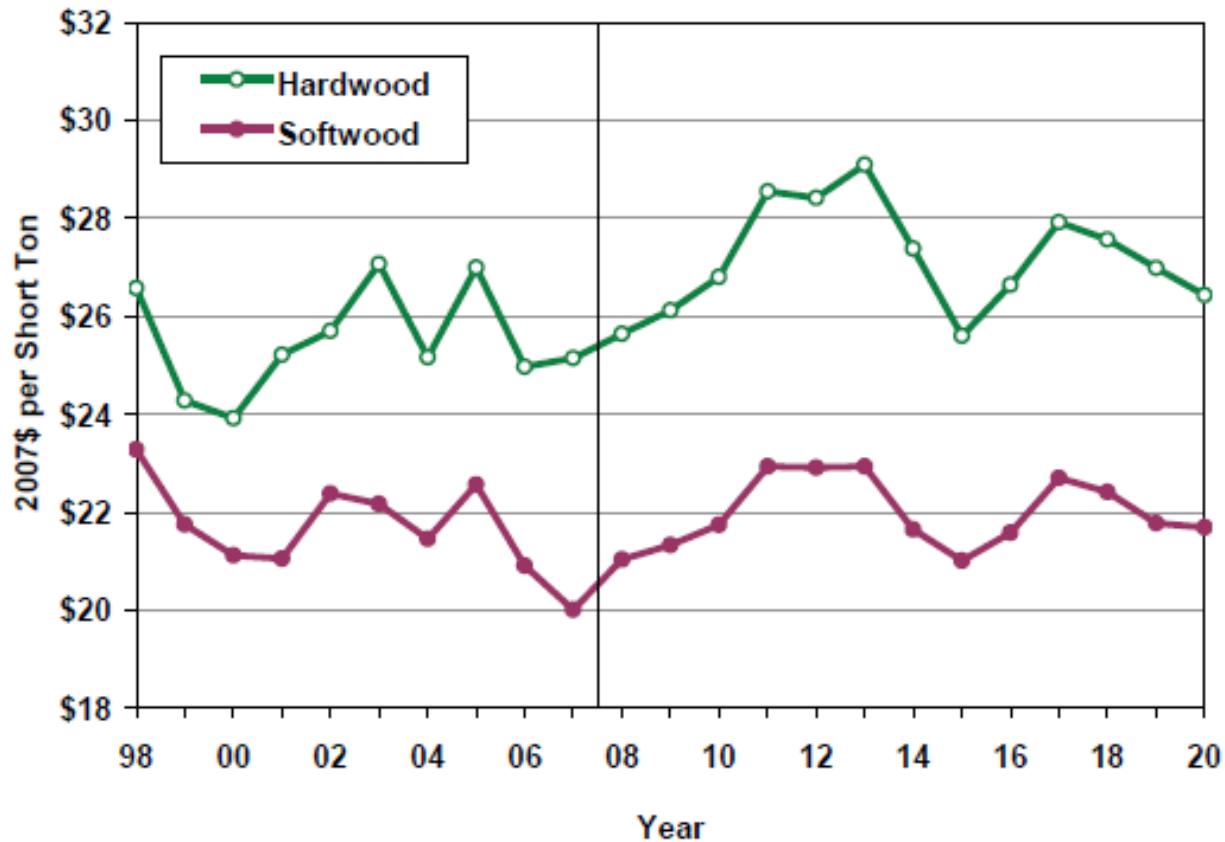
Stresses infrastructure, but little reaction in regional pricing



Forest2Market*

Volume Post Recovery

Stresses infrastructure, but little reaction in regional pricing



Note: Includes cut, skid, load, freight, commission and other related charges.



Development of Supply Chain

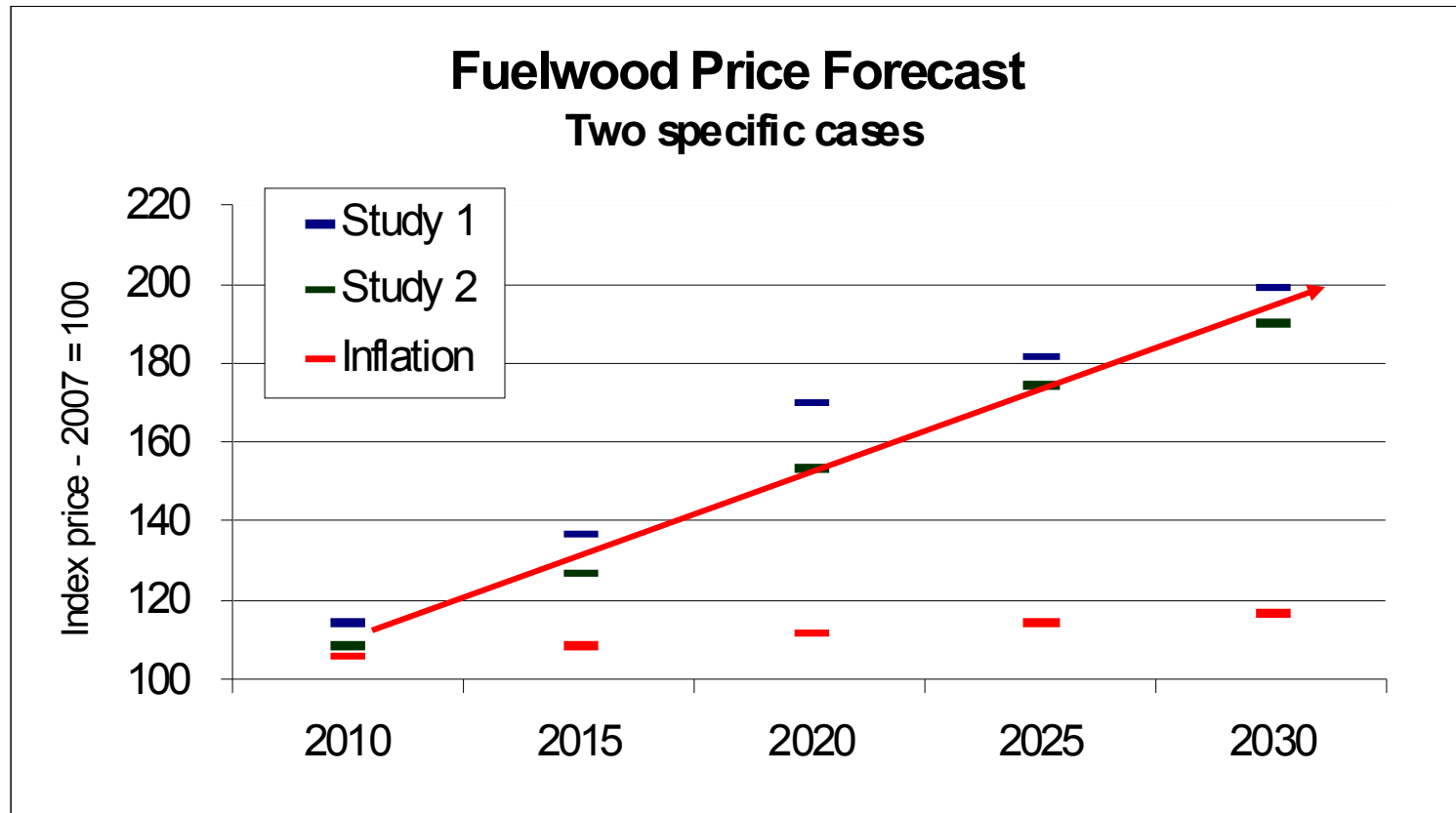


Local Supply Chain Strategies

- ❑ Logistics business
- ❑ Sustainability business



Like Politics, Supply is Local



Forest2Market®

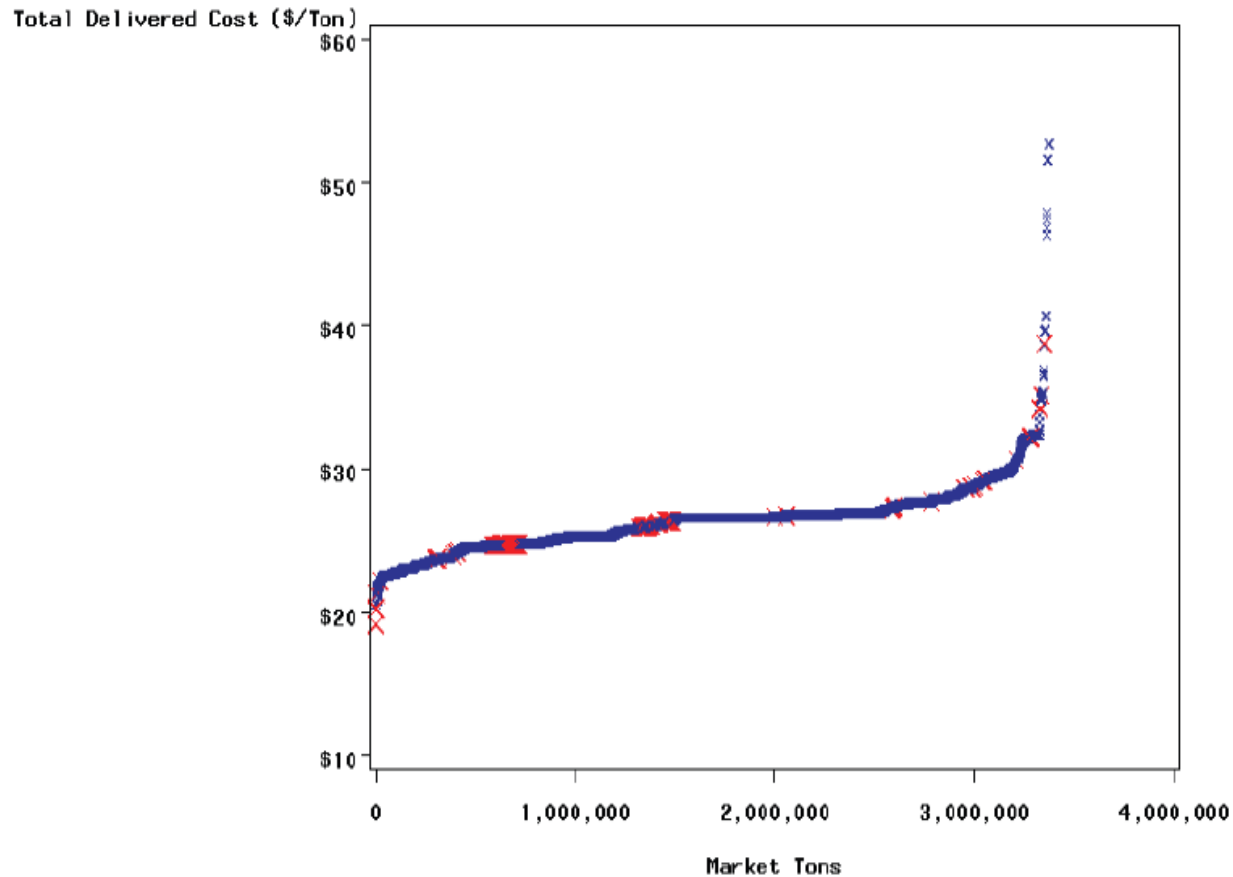
Local Supply Chain Strategies

- ❑ Understand the local resource, then build appropriate size plant
- ❑ Your last ton over the scale can (and usually does) cost twice as much as your first ton
- ❑ Your wood cost assumptions are too low
 - ❑ Test, retest and assume the works
 - ❑ A couple recent examples



Local Supply Chain Strategies

*Pine Pulpwood Marginal Cost Curve
F2M FOB Delivered Benchmarks - 2Q2006
Area 6*



Local Supply Chain Strategies

- ❑ Transparency through the supply chain
 - ❑ If you are new to the supply chain, you never gain from an obscure market

- ❑ Creditworthy trading partners
 - ❑ Are extremely valuable
 - ❑ Most always involve the landowner

- ❑ Hedge risk with price dual price indexes
 - ❑ Fiber supply changes = to changes in power purchase agreement (product produced)



Local Supply Chain Strategies

- ❑ End product and wood basket price movements are not related
 - ❑ So indexing on local wood fiber changes make little sense
 - ❑ But makes perfect sense to the supplier that is buying fiber in the local market

- ❑ Other parts of the supply chain are correlated, however
 - ❑ CPI/PPI is a good measure of supply chain labor and capital cost
 - ❑ Diesel fuel index is a good measure of energy inputs



Local Supply Chain Strategies

- ❑ Term length conundrum
 - ❑ Bioenergy company can't get funding without supply and price assurance – 7-15 year term
 - ❑ Bankers don't want to take price risk
 - ❑ Supplier can't afford to (and won't) deliver on an upside down fixed price contract
- ❑ This situation begs for timberland ownership or a creditworthy trading partner
 - ❑ Involves 7-15 year contracts
 - ❑ Caps and collars on stumpage portion
 - ❑ Indexing strategy on PPI/CPI and diesel
- ❑ In all situations, this will mean a seller premium
 - ❑ The premium is not associated with the supply chain services, its more associated with the security of supply



Forest2Market®

Contact

Pete Stewart

President and CEO

14045 Ballantyne Corporate Place Suite 150

Charlotte, NC 28277

704 540 1440

pete.stewart@forest2market.com

