Forest2Market’s On-line Timber Pricing Service

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Note about author: PETER J. STEWART - President/CEO and Founder
Pete is a 15-year veteran of the forest products industry. As President/CEO and founder of Forest2Market, Inc., he continues to take the lead in developing new products for the forest products industry. Prior to founding Forest2Market and developing the industry's first ever real time pricing service, he led the development of the industry's first web based forest inventory management and mapping system with his previous employer.

Prior to these leadership roles in technology, Pete was responsible for forest planning and harvest scheduling for $350 million of institutional forestland. He also was actively involved in many of the major southern timberland transactions between 1994 and 1999. Pete has a B.S. in Forestry from Texas A&M and a M.S. in Forest Economics from the University of Georgia.

Forest2Market (F2M) is an on-line timber transaction database for the US South. Formed in 2000, Forest2Market provides real time, transaction level stumpage data in 11 southern states. F2M has progressively added raw material pricing capabilities over the past four years. After launching its online stumpage pricing service in July 2000, F2M added delivered pricing capabilities by June 2001, a suite of publications by January 2002, culminating with its first chip pricing publication by April 2004.

The exponential data and customer growth has made F2M’s pricing service the industry standard. Figure 1 describes growth in both market penetration and individual product prices over the first four years.
One of Forest2Market’s base business premises is that the southern wood supply system is inherently inefficient. This inefficiency costs both buyers and sellers in real financial terms. Large trends driving industry changes are underway:

- Increasing demands by Wall Street on the forest products industry. The industry’s chronically low returns have pushed forest products companies to consolidate and spin off low yielding timberland assets
- Quick and prominent rise in timberland as a financial vehicle
- Continued fragmentation of the individual private landowner base

These larger trends have focused the industry on new ways to understand the timber market in real and meaningful ways. Forest2Market is able to take advantage of these trends by:

- Catering to forest investment groups by providing clearer and more documented timber sales and market data
- Provide individual timberland owners high quality and timely timber price information
- Provide forest products companies reliable benchmarks, transfer price and supply agreement pricing data

*Figure 1 depicts market penetration and data growth from 2000 to 2003.*
One advantage that the US South has over many other world markets is that it is, from a market perspective, relatively stable and very large. There are approximately 67,000 annual, individual timber sales contracts in the US South, amounting to around 230 million tons of wood, with a value of about $6.2 billion.

The vast number of transactions and the poor price discovery (among other things) have led to dramatic price volatility. It is common for unit pricing on pulpwood to vary 200% in any one market, year over year. With little price discovery or mechanisms to better understand the mechanics of timber pricing, this volatility has been engrained and accepted in the industry for the last 30 years.

Additionally, the forest industry’s wood supply chain has the classical characteristics of a manufacturing supply chain. It is very long, has large in-process inventories, many suppliers, many middle men, is capital intensive, has a large unknown supply base and poor price discovery.

A graphic depicting the supply chain and common returns on capital for the various participants along the chain demonstrates its length and complexity.
Codification is Key to F2M Data

One key to Forest2Market’s success is the development of a codified transaction data collection system. Forest2Market collects 17 separate variables attendant to each timber sale. Each variable or attribute has a discrete set of choices (lists from a drop down menu). Each choice has a clear definition. For example, the “Access” attribute has five choices – one choice being “Tract access abuts a paved road,” the second being, “Tract access abuts a dirt county road” and so on.

Typical data includes:

- Average diameter at breast height (DBH) by sawtimber product
- Accessibility
- Loggability
- Quality
- Buyer type
- Seller type
- Price by product
- Volume by product
- Stand type
- Type of harvest
• Type of sale
• Location
• Rainfall and weather patterns

Forest2Market also verifies all data in five ways:

• Each customer (or data contributor) is pre-qualified by Forest2Market
• Each unit price goes through a variance test
• Duplicates are eliminated by a de-dup routine
• Sales are reviewed by a forester with 15 years of buying and selling experience
• Call backs and audits are performed

Another very important aspect of Forest2Market’s data set is its sheer breadth of data. Since October 2000, Forest2Market has collected over 18,000 individual timber sales equating to 60,000 individual product prices. The annual run rate is between 5,000 and 6,000 individual sales.

A snap shot of F2M’s web site displays the breadth of timber sales data and the detail associated with each sale.

Figure 3 is a summary table that depicts the breadth of data available on F2M’s website.
F2M Data Describes the Market in New Ways

Forest2Market’s detailed and rigid collection methodology allows for a deeper understanding of the market, particularly the sawtimber market.

A simple example demonstrates how better data brings clarity to the market structure. Forest2Market collects average DBH on each sawtimber product. A simple scatter diagram comparing average DBH to price per ton shows a very strong correlation. This is a relationship that is well known in the industry, but often very difficult to quantify.

Figure 4 shows detailed comparable timber sales available on the F2M website.
Even though this relationship speaks to the influence that tree size has on price, a deeper look reveals the true market structure for pine sawtimber.

Figure 5 depicts the relationship between tree size and price per ton. It is clear that this relationship is strong.

Even though this relationship speaks to the influence that tree size has on price, a deeper look reveals the true market structure for pine sawtimber.
By taking a simple weighted average of price by DBH, a true understanding of the market structure and how each product is priced according to size is revealed. Notice that small chip n saw pricing is almost flat between 7.5-inches and 9.5-inches DBH. Logs in this size range are composed of marginal chip n saw from pine thinnings. It is clear that the market does not differentiate price between these size ranges. Chip n saw only starts picking up value when it reaches 10-inches DBH. Notice also how prices flatten through the true sawtimber product class (13” to 16”), after which prices elevate and eventually flatten.

This is the typical market structure for pine sawtimber in the US South.

**Practical Industry Applications of F2M Data**

F2M data is being used in many practical industry situations. These include:

- Deeper and meaningful price discovery
- Comparative Sales Analysis
  - Appraisals
  - Timber bids
- Comparative/Competitive Analysis
- Supply agreement pricing
- Transfer pricing
- Benchmarking

One of the most straightforward and practical applications of Forest2Market’s data is price benchmarking. Since F2M can demonstrate that for every inch change in DBH, there is a corresponding $2-3/ton change in unit price (see Figures 5 & 6) and that average DBH in any market can swing 2-4 inches from summer to winter, any benchmark that does not incorporate size changes is flawed. In many cases, changes in tree size from period to period clouds the true market trends. It is F2M’s firm belief that the validity of historically commonly accepted industry trend data can be called into question because the sawtimber size issue was not addressed.

As such, F2M has developed the concept of a 14-inch DBH benchmark for pine sawtimber and a 10-inch DBH benchmark for pine chip n saw. F2M chose 14-inch DBH for pine sawtimber because the weighted average DBH of pine sawtimber in the US South is 14.1 inches. While the weighted average DBH of pine chip n saw in the US South is 10.2 inches – thus the 10-inch chip n saw benchmark.
Practical Research Applications

For the academic community, Forest2Market’s data has some very practical research applications. The first is better economic modeling through:

- Statistically sound and high quality data
- Data that is geographically appropriate (down to a county level)

Figure 7 depicts Forest2Market’s 14-inch DBH sawtimber benchmark for Georgia.

Figure 8 depicts Forest2Market’s 10” DBH chip n saw benchmark for Georgia.

Practical Research Applications
• Consistent trend data (benchmarks)
• Expert and professional staff
• Data that is delivered in an MS-Excel format for easy data handling

The second application of Forest2Market’s data is better market segmentation. This allows researchers to:

• Segment data to the county level
• Match timber price data with mill drain data
• Compare and contrast costs across market basins
• Compare pricing patterns and trends to consumption patterns
• Compare pricing to timber supply patterns

The third research aspect - where F2M’s data is perfectly positioned - is to provide base data for research into new financial products for the industry, including modern risk management tools such as Options and Futures. Since Forest2Market’s data is transaction based, price risk can be assigned to discrete markets over discrete time periods. This allows researchers the ability to assign risk to option pricing models (e.g. Black-Scholes).

Conclusions

Forest2Market’s timber data service provides on-line access to comparable timber sales data in the US South. This data can be accessed down to the county level. Forest2Market has developed a series of checks and balances to assure data quality and provides a breadth of sales never available before.

The practical and research implications of this data are numerous. Already embraced as a standard in the industry, Forest2Market’s data provides the deepest level of market understanding available.

Forest2Market provides academic discounts and a free college student program to southern forestry schools.