A CASE FOR DEVELOPING SOUTHERN PINE FIBER CONTRACTS

by J. P. Olmedo, Jr.
International Paper Company

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Thank you Ray.

Thus far the presentations delivered have focused on the potential growth of the Southern Forest Products Industry over the next decade. The conclusion one arrives at is that investment in southern fiber resources and forest products facilities is sound over the planning horizon. The trend process, however, disguises the cyclical nature of our industry and the fact that a poorly timed investment and consequential result can forestall carefully planned and targeted strategies envisioned in the original plan.

In the solid wood products sector for instance, I am sure many of you are well aware of the price volatility inherent in the commodity based softwood lumber and plywood markets. (Slide 1). Using the price history of southern pine half-inch exterior plywood as an example, we find many instances of sharp price volatility between 1968 and 1977. From a low of $71 in early 1968, prices advanced to $124 by early 1969, only to fall back to $71 again in late 1969. In January 1971 prices were $77, raced to $155 by the spring of 1973 in conjunction with the housing boom and then dropped to $93 in the fall. The latest illustration of price volatility traces the rise in quotes from $93 in late 1974 to almost $200 today, more than a doubling in price. In all of these cases the factors behind the price action were similar. Namely, the customary boom/bust housing cycle, albeit blended with price controls, oil embargoes.
The consequence of volatile prices and cyclical construction activity is wide fluctuations in earnings and quality of earnings. Such variation causes concern among potential investors and lenders alike. Just think how enthusiastic Mr. Wangel's company would be if production came on stream in the fall of 1973 instead of the boom period of 1977.

Traditionally the forest products industry accepted market volatility as an inherent business risk. Producers tended to produce as efficiently as possible at all times and hoped a profit could be realized when the product was ready for market. Additionally, they searched for markets for residuals. The general theme was produce more and liquidate inventories in a soft market to generate adequate cash flow. Producers fortunate enough to have a liberal amount of fee timber and the foresight to anticipate market downturns could manage their cutting schedules to ensure larger amounts of lower cost wood would be utilized in a weak market. This practice enabled them to manage their profit margins to a certain extent.

Wholesalers and other distributors confronted with similar cyclicality typically adopted a back to back order pricing strategy in a soft market, limited speculation in a rising market, and were reluctant to forward contract or forward price lumber of plywood beyond the customary three week shipping period.
These traditional practices were adequate when there were ample supplies of timber, labor, capital, at reasonable costs. We now find, however, all of these elements are becoming more costly and tighter in supply. Thus, the business stakes are higher and the need to minimize risk is essential to survival.

Since 1969 those in the lumber and plywood business have had available to them a marketing pricing tool that could alleviate their price risk and enhance their ability to manage their business effectively throughout a cycle. This tool, hedging, has been used over a century in the grain industry as a means of averting the price risk characteristic in the feast/famine agri-business.

(Slide 2). The forest products industry has employed this tool successfully over the past seven years. Many major producers and marketeers of forest products have joined the futures ranks. Their participation has increased impressively.

(Slide 3). As evidenced on this chart, since 1969 lumber trading volume has increased from 744 contracts to 350,530 contracts. In terms of product volume, about 30 million board feet was traded in 1969 and 35 billion board feet in 1976 - 14% greater than U.S. softwood lumber production in that year. The growth in plywood trading is equally impressive. In 1969, 393 contracts representing 27.2 million square feet of plywood was traded. By 1974, 340,000 contracts approximating 29.3 billion square feet was traded, almost twice national production. In 1976, an equivalent 21 billion square feet of plywood was transacted.
The astounding success of these markets can be attributed to timely contract modifications which encouraged increased industry participation, maturation of markets and participants, and indeed the usefulness of these markets as price risk management vehicles.

Before discussing how southern pine producers and distributors hedge, and developing the rationale for southern pine futures related contracts, let's review the basic concepts of hedging and terminology of the business. First, what is hedging? (Slide 4). Hedging means price insurance or transfer of price risk. For example, hedging protects something one owns or plans to own from an adverse price change. In the case of a southern pine lumber producer, hedging would mean price protection from a decline in lumber prices. One hedges in the Chicago based commodity futures markets and shifts or transfers his price risk by buying or selling a futures contract. (Slide 5). A futures contract is an agreement to buy or sell a specified quantity and grade of a commodity to be delivered at a designated date. The existing lumber and plywood futures contracts specify 2x4 dimension KD Hem.-Fir lumber and half-inch CDX Western made plywood, respectively. The lumber contract size os 100 MBF and plywood contract unit is 76 MSF. Contracts are traded in alternate months starting with January.
A future contract can be satisfied by actually delivering the commodity specified at the designated time or by "offsetting" the position. (Slide 6). Offsetting, which is the alternative selected more than 95% of the time, simply means the purchase of a previous futures sale or sale of a previous futures purchase. It's like buying a share of stock at a low price and selling it for a profit at a higher price or shorting the stock by selling it at one price and buying it back at a lower price. The transaction entails a paper trade and not physical activity.

(Slide 7) Convergence is the theory behind hedging. It essentially means that the futures price and cash price will tend to come together as the futures contract expires. In other words, the price of a November lumber futures contract and the existing cash quote for lumber traded in the cash market will be nearly equal by November when the futures contract expires. Why? Well, if November lumber futures was cheaper than the lumber that could be bought in the cash market, an astute lumber buyer would buy futures and take delivery. This would create upward buying pressure in futures and tend to push the price of futures up to cash. Conversely, if November lumber futures offered a higher return than the cash market, the smart producer or seller of lumber would sell futures and deliver the commodity. This would apply downward price pressure and force futures down to prevailing cash.
Now let's turn to a hedge example to pull together the theory, mechanics, and results of application.

Assume a lumber producer determines in April that lumber prices are going to decline in the fall due to a seasonal abatement in construction activity and a moderate increase in production following summer vacation and maintenance schedules. Furthermore, he knows that a price of $182.00 for lumber or more in September would afford him a target return of 17% ROI, a very acceptable level. No buyer is willing to guarantee this producer a price of $182 for his planned September production. However, because this producer has a reputation for quality and service, a buyer is willing to enter into a forward supply contract whereby he would receive one car of lumber in September. The lumber would be priced at time of shipment (PTS).

To assure himself the 17% ROI and $182 price, the producer has the opportunity to sell a September futures contract quoted at $182 in April. The mechanics and hedge results in a declining or rising market look like this:

(Slide 8) Exhibit E1
(Slide 9) Exhibit E2
(Slide 10) Exhibit E3
(Slide 11) Exhibit E4
(Slide 12) Exhibit E5
(Slide 13) Exhibit E6
As noted in these examples, the producer was able to assure himself his 17% ROI regardless of which direction the market ultimately went. Of course, he lost an opportunity to realize a larger return in a rising market. However, he could have suffered a worse return if he had not hedged when the market dropped. Consistently employed hedging does allow one to manage his price risk and earnings.

The example shown assumed the grade of lumber hedged was the type specified in the lumber futures contract. That would represent the ideal hedge situation because the futures price reflected the value of his product and in the event the buyer did not honor his contract commitment, the producer could deliver his lumber to an anonymous futures contract buyer when the contract expired. More often than not, most hedgers hedge lumber and plywood grades not specified by the futures contracts. They can do this because most commodity grades prices tend to move in tandem. Thus, if the producer knows the historical relationship between his product's price and that represented in the futures market, he can make an intelligent judgement of how to hedge his product and at what price. Several traders assess the relationship through correlation analysis and regression studies. The limitations confronting the hedger when hedging non-contract futures grades are the inability to deliver the commodity when the contract expires, and the possibility of the historical relationship between the futures contract grade price and his commodity becoming distorted. Despite these disadvantages, most have found it worthwhile to hedge the general price trend which affords most of the price protection and not become too concerned about the inability to hedge prices to the exact penny.
Many Southern pine lumber and plywood producers have hedged their commodities in the western-oriented futures markets. However, the number of opportunities is limited since the workable hedging situations infrequently develop. Let's review one lumber sell-hedge to see how it worked under real market conditions.

A lumber producer analyzed the historical relationship between southern pine random length 2x4 No. 2 and hem-fir random length K.D. 2x4, the futures grade and found that, in general, southern pine prices traded at a higher price than hem-fir. Moreover, when southern pine prices were ten or more dollars under hem-fir, the spread narrowed with either hem-fir prices declining or southern prices advancing, or both moving together simultaneously.

(Slide 14) Exhibit E7
(Slide 15) Exhibit E8
(Slide 16) Exhibit E9
(Slide 17) Exhibit E10
(Slide 18) Exhibit E11

Given this illustration you can readily appreciate the advantages of hedging. Furthermore, it should be quite evident that to be a useful marketing instrument hedging practices must not be solely opportunistic, but an integral component of a business system. Unfortunately, because of the relatively few hedging opportunities afforded the prudent southern pine hedger, the opportunistic approach is dominant in the South.
Conditions are rapidly developing which should foster the development of southern pine fiber futures contracts. Starting with the forest resource, the USFS projected that the South will account for larger and larger shares of total U.S. timber production and by 1990 the South will be the leading producing region. Southern sawtimber is anticipated to be widely available and in larger diameter classes.

In concert with the growth in the resource base, we have witnessed the rebirth of the southern pine lumber industry and emergence of the southern pine plywood industry. Lumber production in the South is growing faster than the national average, albeit at a lower base than the West, while southern plywood is escalating at a phenomenal rate. In 1963 no southern pine plywood was manufactured. By 1976 it accounted for 37% of record U.S. production.

The growth of these forest product sectors is linked to their competitive cost profile vs. dominant West Coast production, successful product promotion (especially in the case of southern pine plywood), transportation advantages to growing regional markets. To illustrate the regional growth of southern pine plywood, let's review these statistics. In 1972 about 20% of pine plywood shipments were directed to the growing North Central region and 6% were destined to the Northeast. By 1976, 26% of pine shipments went to the North Central region and 11% to the Northeast.
From a futures point of view, southern pine lumber and plywood futures contracts make a lot of sense. 1) First, they represent growing markets. 2) They are basic commodities with minimal product differentiation, which allows substantial cross-hedging. 3) As the growth of the southern pine plywood and lumber advances, historical price relationships with Western futures contracts will become less predictable, thereby precluding hedge opportunities for Southern producers. 4) The industry wants to hedge and needs a viable hedging mechanism.

The Chicago Exchanges have addressed the subject of southern pine fiber futures contracts. The Chicago Board of Trade, for example, has discussed the concept of a chip, log, or plywood futures contract. Most of the activity is in the study stage and contracts are not likely prior to 1980.

The Chicago Mercantile Exchange has deliberated the adoption of a southern pine lumber futures contract. Members of the Forest Products Advisory Committee have been working on a contract proposal. The principal details of the contract are:

- The contract grade will be #2 KD (1550 f.) southern pine lumber, nominal 2x4s of random lengths.
- The contract unit size will be 60 mbf.
- The lumber will be unitized.
- Delivery basis point will be Hattiesburg, Miss.
Adoption of this type of contract and other prospective futures contracts by the Exchanges and industry will afford southern pine producers, distributors, and marketers an opportunity to minimize price risk and grow the Southern Forest Products Industry to its full potential through all cycles.
SLIDES

SLIDE 1
MONTHLY PRICES OF SOUTHERN PINE PLYWOOD 1968-1977

SLIDE 2
MAJOR FUTURES PARTICIPANTS

SLIDE 3
FUTURES TRADING ACTIVITY

SLIDE 4
HEDGING DEFINED

SLIDE 5
FUTURES CONTRACT

SLIDE 6
OFFSETTING

SLIDE 7
CONVERGENCE

SLIDE 8
E1

SLIDE 9
E2

SLIDE 10
E3

SLIDE 11
E4

SLIDE 12
E5

SLIDE 13
E6

SLIDE 14
E7

SLIDE 15
E8

SLIDE 16
E9

SLIDE 17
E10

SLIDE 18
E11
PRICE OF 1/2 INCH SOUTHERN PINE EXTERIOR PLYWOOD (4 OR 5 PLY) JAN 1968 - JAN 1977
MAJOR FUTURES PARTICIPANTS

- INTERNATIONAL PAPER
- WYERHAEUSER
- LOUISIANA PACIFIC
- GEORGIA PACIFIC
- BOISE CASCADE
- POTLATCH FORESTS
- WILLAMETTE INDUSTRIES
- EVANS PRODUCTS
- GOLD REY FOREST PRODUCTS
- OREGON-PACIFIC INDUSTRIES
- CHAMPION-INTERNATIONAL
- CROWN-ZELLERBACH
HEDGING DEFINED

- PRICE INSURANCE

- TRANSFER OF PRICE RISK
A FUTURES CONTRACT IS AN AGREEMENT TO BUY OR SELL A SPECIFIED QUANTITY AND GRADE OF A COMMODITY TO BE DELIVERED AT A DESIGNATED DATE.
OFFSETTING MEANS THE PURCHASE
OF A PREVIOUS FUTURES SALE OR SALE
OF A PREVIOUS FUTURES PURCHASE.
CONVERGENCE...... FUTURES PRICES

AND CASH PRICES WILL TEND TO COME

TOGETHER AS THE FUTURES CONTRACT

EXPIRES.
SELL HEDGE PROGRAM
CASH AND FUTURES TRANSACTIONS

APRIL

CASH MARKET:

ARRANGE FORWARD CASH CONTRACT WITH BUYER FOR SEPTEMBER DELIVERY

FUTURES MARKET:

SELL 1 SEPTEMBER FUTURES CONTRACT AT $182.00
SELL HEDGE PROGRAM
CASH AND FUTURES TRANSACTIONS
(CASH DECLINES TO $140)

CASH MARKET:

SHIP LUMBER AND PRICE AT MARKET - $140

FUTURES MARKET:

BUY 1 SEPTEMBER FUTURES CONTRACT AT $140
SELL HEDGE PROGRAM
NET RETURNS
(DOLLARS/1000 BOARD FEET)

. LUMBER DELIVERED TO BUYER $140.00

. FUTURES GAIN
   SOLD 1 SEPTEMBER CONTRACT @ $182.00
   BOT 1 SEPTEMBER CONTRACT @ $140.00
   GROSS RETURN 42.00
   LESS COMMISSION .40
   NET GAIN $ 41.60

. NET HEDGE RETURN $181.60

% GREATER THAN MARKET ALONE: 30%
ROI % GUARANTEED: 17%
SELL HEDGE PROGRAM

CASH AND FUTURES TRANSACTIONS

APRIL

CASH MARKET: ARRANGE FORWARD CASH CONTRACT WITH BUYER FOR SEPTEMBER DELIVERY

FUTURES MARKET: SELL 1 SEPTEMBER FUTURES CONTRACT AT $182.00
SELL HEDGE PROGRAM

CASH AND FUTURES TRANSACTIONS
(CASH ADVANCES TO $220)

SEPTEMBER

CASH MARKET:  SHIP LUMBER AND PRICE
               AT MARKET - $220.00

FUTURES MARKET: BUY 1 SEPTEMBER FUTURES
                 CONTRACT AT $220.00
SELL HEDGE PROGRAM

NET RETURNS
(DOLLARS/1000 BOARD FEET)

- LUMBER DELIVERED TO BUYER $220.00

- FUTURES GAIN
  
  SOLD 1 SEPTEMBER CONTRACT at $182.00
  BOT 1 SEPTEMBER CONTRACT at $220.00

  GROSS RETURN $(38.00)

  LESS COMMISSION .40

  NET GAIN $(38.40)

- NET HEDGE RETURN $181.60

% LESS THAN MARKET ALONE 17%
ROI % GUARANTEED 17%
CASH SITUATION - MARCH 15, 1974

CASH PRICE SYP, R. L. 2x4 = $155

CASH PRICE HEM-FIR R. L. 2x4 = $170

MAY LUMBER FUTURES TRADING AT $178

FORECASTS ARE FOR LOWER PRICES.

SEASONAL IS DOWN.
HEDGE INITIATION

(MARCH 15, 1974)

FUTURES TRANSACTION

SELL 1 MAY FUTURES CONTRACT @ $178

CASH TRANSACTION

PLAN TO PRODUCE 100,000 BD./FT. OF SYP R. L. 2x4 IN MAY

(CASH CURRENTLY $155)
HEDGE LIQUIDATION
(MAY 13, 1974)

FUTURES TRANSACTIONS
BUY 1 MAY FUTURES CONTRACT @ $147

CASH TRANSACTIONS
PRICE AND SHIP 100,000 BD/FT. OF SYP R. L. 2x4 @ $145 (CURRENT CASH PRICE)
HEDGE RESULTS

FUTURES

$178.00 INITIAL SALE

$147.00 LIQUIDATION SALE

$31.00 FUTURES GAIN

CASH

$155 INITIAL PRICE

$145 DELIVERED PRICE

$10 CASH LOSS

AVERAGE SELLING PRICE  $176.00

MBF
HEDGE EVALUATION

A RETURN OF $176/THOUSAND BOARD FEET IS:

1. 21.3% BETTER THAN MAY'S CASH PRICE

2. 20% BETTER THAN INITIAL CASH PRICE WHEN HEDGE POSITION WAS ESTABLISHED.