PALTRY POLICY AND PROMISES POSTPONED

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Abstract.—For more than fifty years, southern forests have supplied timber resources for extensive wood products operations. Often labeled the "wood basket for the world," the South's timber reserves have provided a firm foundation for unprecedented economic growth. From Virginia to Texas, southern pine has replaced cotton as the region's dominate cash crop. But all of this may be changing. A number of recent studies reveal a near-term decline in softwood inventories in many of the South's major timber markets. This paper will examine some of the reasons why this is happening, and the longer-term implications for the South's forest economy.

INTRODUCTION

Last year in Mobile, we presented a paper describing a model that we were using to forecast wood supplies in local timber markets (Colberg 1992). This was the latest version of a formulation that was developed in 1987, and later used to evaluate wood supplies in a number of industry woodbaskets. Like most models, this one has slowly evolved, with each new generation an improvement over prior versions. The latest improvements result from a major change in underlying assumptions.

We have always been somewhat uncomfortable using Forest Service drain as a surrogate for timber demand. These data represent average annual removals for a previous measurement period, and as a result the information is out-of-date the day a new forest survey is published. With an eight to ten year measurement cycle, current harvest levels are often ten to fifteen percent higher. We have similar reservations with regard to Forest Service growth estimates. The rate reported in the most recent forest survey is an average for a previous measurement period, and results from yesterday's harvest levels, and prior management practices. Current conditions may be altogether different, with growth rates that are higher or lower than prior estimates.

These data can be a serious drawback when we develop timber supply projections to support investments in new manufacturing facilities. The Forest Service measures what has happened in the past; but capital decisions are future oriented. Industry wants information about tomorrow's wood supplies, not yesterday's. This was no problem when net annual growth exceeded average annual removals, and timber inventories were increasing. But recent studies suggest a near-term reversal. It would be unwise to even consider additional conversion capacity without evaluating these emerging trends.

Our model provides a powerful analytical tool for timber-supply studies. Rather than using Forest Service drain, we compile demand-side data based on net wood consumption for the mills that operate in a specific study area. On the supply-side, we develop growth and inventory estimates from an analysis of historical harvest patterns, and the transitions that occur when stands are cut, including the amounts that revert to non-forest categories. Stand volumes and total inventories are compiled using empirical yield tables developed from Forest Service plot data. With these, we can forecast tree and log diameter distributions; worthwhile information for wood-products manufacturers.

This is a much more difficult task than simply pulling growth and drain from the latest forest survey, but once it is done we have a superior product. Rather that using information that is ten to fifteen years old, we have reliable estimates of current demand and forest conditions. We also have a database that is easily adjusted to accommodate alternate assumptions, and "what-if" scenarios.

RECENT TIMBER PROJECTIONS

While there are "pockets of plenty," our studies reveal a decline in softwood growth and inventories in many of the South's major timber markets. We have witnessed this same trend since 1987 when a prototype model was first used to evaluate timber supplies in southeast Georgia. Somewhat hesitant to reveal the results, we were relieved when Cabbage and Harris (1988) reported similar trends using their GRITS model.

The trends in Figure 1 are typical. Here we show softwood growth and drain for a timber market in the Georgia Piedmont. Both are indexed to the year 1983 when the two converged. The solid line represents net annual growth for

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the years 1952 through 1990. Average annual removals are represented by a dotted line. Growth clearly exceeds average harvest levels for more than thirty years, often by as much as a third. But net annual softwood growth peaked in the mid '70s, and thereafter growth declined rapidly. Removals now outpace net annual growth by a sizeable amount.

Timber growth and removals are similar in many respects to our own passbook savings account. If we have a large enough balance, we can continue withdrawing more than we deposit for quite some time, eating into our reserves until we finally reach a point where interest and deposits can no longer support our spending habits. These same relationships exist for timber supplies. The inventories shown in Figure 2 are a direct result of the changes in growth and harvest levels that occur in Figure 1.

Figure 2 shows the downward slide in future softwood inventories that always results when drain exceeds growth for an extended period of time. The upward trend in the 1950s and 1960s slowed as growth and drain converged, falling sharply thereafter. We can continue cutting more than we grow for a number of years, but a decline in future harvest levels is inevitable. Existing softwood inventories can no longer support current removals. We may add volume thirty years hence, but a near-term decline is as certain as tomorrow's sunrise. The trees we would need to support current or projected softwood markets are not in the ground, and growing.

These data represent emerging trends in one Georgia woodbasket. But the results are not unique. Similar trends have been observed in other areas as well. The message is clear: softwood supplies are under pressure throughout the South.

We are not forecasting "timber famine," or any other doomsday scenario. We do suggest that southern timberlands are undergoing a fundamental change. For the past twenty years, we have been adding softwood-based conversion capacity faster than we can grow trees. As a result, softwood inventories are declining in many of the South's principal timber-producing regions.

Consider what has been happening in the plywood industry. The first southern pine plywood was produced in 1964. While the industry grew slowly in the '60s and '70s, production soared in the '80s. Output increased 81 percent from 1980 through 1989, rising from 7.4 to 13.4 billion surface feet. Today, southern mills produce more than half the nation's wood-panel output.

Similar trends have occurred in other industry segments as well. Southern pine lumber production swelled 54 percent in the '80s, and pulping capacities increased more than one-quarter. But while manufacturing capacities have increased by a substantial amount, the acreage that we plant after logging has not kept pace.

Figure 3 shows the number of cutover acres seeded or planted on industry and non-industry private land for the years 1956 through 1984. The upward spike in 1960 resulted from a highly successful landowner assistance program established during the Eisenhower administration. It was more than twenty years before the total again reached this same level, and most of this was industry land. Seeding and planting on non-industry private land has remained well below the million acre record set in 1960.

Figure 4 compares changes in planting rates and harvest levels from 1960 through 1990. Note that while removals nearly doubled, the cutover acreage that is seeded or planted is only 13 percent higher, and for most of this thirty year period planting rates were well below 1960 levels. While some of the remaining acreage did reseed to pine, most was downgraded to a lower quality stand. Clearly, softwood planting rates have not kept pace with accelerating harvest levels.

The easiest, and perhaps the wisest thing I could do would be to simply end this discussion now. To go further means putting on my "soothsayers hat," and I'm reluctant to do so because in the past my precognitive skills have been somewhat lacking. Perhaps I've learned that crow is palatable when spiced with hindsight, but for whatever the reason I'm about to satly forth on shaky ground with some personal observations and predictions.

PALTRY POLICY

The pundits and the politicians can debate for years the reasons why timber inventories are declining. Some will offer esoteric explanations such as acid rain, and the hapless non-industry private landowner will no doubt share much of the blame. Most analysts will focus on the symptoms rather than the disease. Hopefully, we can do better. We suggest that there are three fundamental issues that lie at the heart of the problem:

- We can build mills faster than we can grow trees;
- It's the forest economy, stupid!
- Policy, once set in motion, is difficult to reverse.

Data Limitations

Existing timber inventory data has serious limitations when we try using it to support investments in new conversion capacity. The primary reason is that the Forest Service measures what has happened in the past, while capital decisions are future oriented.
But with all the shortcomings, the Forest Service data is still the best available. No other agency has a system of permanent plots scattered throughout the nation, with periodic measurements to determine recent trends, and current inventory levels. It is therefore no surprise that most forest products firms have at one time or another used these data to support investments in added conversion capacity.

This was no problem when there was surplus growth. It’s difficult to pick a poor plant location when nature is growing more timber than we need. But as growth and drain converge, timber supply looms larger and larger as a critical issue. This is especially true if the data suggests a sizable surplus when in fact, there is none.

Consider again the trends in Figure 1. This Georgia timber market was most recently surveyed in 1989. The previous survey was completed in 1982, with growth and drain estimates that were averages for the previous ten-year period. Data reported in 1982 actually represented conditions that existed in 1977 when growth was significantly greater than drain. The uninformed analyst who developed supply estimates in 1985 could easily assume that there were surplus softwood supplies when in fact, inventories were declining.

This was typical in the ’70s and ’80s when many believed the south’s timber-growing capabilities were without limit. Hundreds of firms added conversion capacity based on their own favorable analysis of local timber supplies. But when taken together, we were adding incremental capacity faster than we could grow trees. The problem was not apparent until the mid ’80s when Forest Service measurements revealed a downturn in net annual softwood growth.

Forest Economy

In the last presidential campaign, Clinton used a simple but effective slogan that focused voter attention on the one issue that probably got him elected: "it’s the economy, stupid!" Much the same can be said for timber supplies in the US South. The forest economy is the engine that drives investments in timber production.

Industry-owned land is intensively managed for timber growth, but in our Georgia Piedmont study unit less than 15 percent of the non-industry private acreage is seeded or planted after logging. With little more than 20 percent of the timberlands acreage, industry can do little to reverse what is happening elsewhere. But why is industry planting when the non-industry owner in not? A recent survey of landowner perceptions may provide a partial answer (Zinkhan 1993).

Zinkhan surveyed 46 forest products firms with land ownership in the south, 132 forestry consultants serving clients with southern holdings, and six Timber Investment and Management Organizations (TIMOs) doing business in the twelve southern states. While he was primarily interested in the TIMOs, his survey results reveal a meaningful difference between the industry and non-industry groups in general. Forest products firms invest in timberlands to secure ongoing supplies of low-cost raw materials for their mills. Twenty-one industry respondents expressed no more than a modest interest in financial returns as a criteria for evaluating timberlands investments. Industry prefers land that is well located with regard to existing holdings and their manufacturing facilities. Individuals and the TIMOs, on the other hand, placed expected financial returns at the top of the list.

While those individuals who hire a forestry consultant may not be typical non-industry private landowners, the profit motive does have universal appeal. Most forest landowners would probably rank financial returns high on their list of management goals. It’s therefore no surprise to learn that planting levels are highest in those areas where there are above average timber prices. Land-owners plant more of their cut-over acreage in coastal Georgia than they do in the Piedmont because stumpage prices have always been higher.

There’s a message in all of this. Measures that increase stumpage prices will promote added timber production. The higher prices that will no doubt emerge as timber supplies tighten will result in an increase in planting activity. While this may be a welcome trend, the incremental supplies will not be available for twenty to twenty-five years. This does little to solve the immediate problem: how do we wood our mills for the next ten to fifteen.

Policy Issues

As a consultant, I am often asked to prepare a position paper on a variety of forestry-related issues. I enjoy working on these projects because they offer an intellectual challenge. I often learn as much as the client, perhaps more. One lesson I have learned is that public and private policy are both slow to respond to changes in real-world conditions.

The most recent RPA Assessment offers a classic example. This document proclaims a degree of optimism that is not supported by the data. The Forest Service is projecting a steady increase in wood-products consumption even as west coast timber supplies decline. They reason that the shortfall from west coast mills can be met by additional Canadian imports, and a longer-term increase in southern timber supplies.

But there is no quantitative data to support these assumptions. Instead, there is mounting evidence that Canadian forests are being overcut, with little opportunity to increase solid wood exports to US markets (Reed 1992, Colberg 1993). In addition, while one branch of the Forest Service predicts an increase in southern timber supplies based on emerging plantation volumes, a second reports no significant increase
in softwood planting rates in more than thirty years (USDA Forest Service 1992). State and Private Forestry reports 1.62 million acres planted on industry and non-industry private land in 1991, compared with 1.5 million in 1960. An eight-percent increase merits little praise when removals have nearly doubled.

There's no conspiracy here, but with a fifty year history of promoting the south's "timber largess," it is hard to accept a future where supplies are limited. A number of southern states must have the same problem. Several are still promoting unlimited industry growth when recent evidence clearly suggests that such unbounded optimism is no longer warranted.

It's difficult to criticize an industry that has paid the rent for nearly forth years, but private policy is as difficult to change as any in the public sector. A short-term perspective does little to focus attention on critical long-term issues. If additional timber and industry growth are worthwhile goals, then the forest-products sector must play a proactive role. We don't want to belittle all that has been done in the past, but state and federal incentive programs have had little lasting effect on wood supplies. The best results have been in those areas where industry has played a dominant role; creating a partnership with local landowners to promote better management on non-industry private lands. Higher stumpage prices may be required, but this is precisely what is needed to promote added timber production.

PROMISES POSTPONED

Years ago, when we were developing the "third forest," there was an almost euphoric attitude with regard to the south's forest economy. We were indeed the "woodbasket for the world," and there was no limit to what we could do. But performance has not kept pace with promise. Capital was allocated to new mills rather than forest productivity. We added conversion capacity faster than we could grow new trees, and as a result we now face a near-term decline in softwood supplies.

The traditional wood-products businesses will be the first to experience a timber shortage. As sawtimber supplies diminish, wood-products manufacturers will endeavor to stay in business by processing smaller logs. But profits from lumber and plywood manufacturing are driven to a large extent by log diameters. Mill productivity suffers as average log diameters decline. Add to this the higher stumpage prices that will result from increased competition for the remaining sawtimber supplies, and numerous mills will be pushed over the edge. They will be replaced by new sawing technologies that can efficiently process small logs, and engineered wood products.

These same trends will influence raw-materials supplies for the pulp industry. With fewer residual chips, the south's pulp mills will buy more roundwood. As they do, traditional merchantability standards will disappear. Pulp mills and solidwood manufacturers will compete for the same small trees. Recycled fiber will play an important role, but there is a limit to how much recycle we can use in a Kraft industry that requires pulp with superior strength.

Stumpage prices will rise as softwood supplies diminish. This will no doubt result in accelerated planting activity, with added softwood supplies twenty to thirty years hence. The promise offered by "third forest proponents" will be delayed a decade or two.

LITERATURE CITED


Figure 1
Softwood Growth and Drain
Industry and Non-Industry Private Land
Representative Georgia Piedmont Timber Market

Figure 2
Softwood Inventories
Industry and Non-Industry Private Land
Representative Georgia Piedmont Timber Market
Figure 3
Softwood Seeding and Planting in the US South Industry and Non-Industry Private Land

Figure 4
Softwood Harvest and Regeneration Trends 1960–1990