



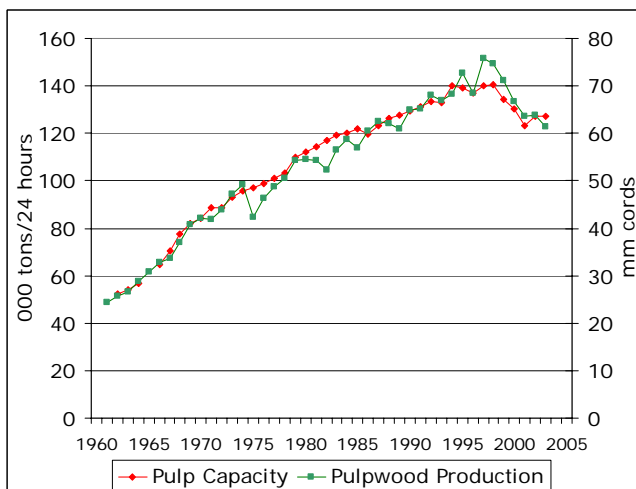
## A Brief History of Pulpwood in the South

It is always useful to have a good market for pulpwood. Forest stands of any type in any region always contain some volume of small or poor quality trees. Pulpmills provide a high-volume outlet for these trees.

The USDA Forest Service (USFS) has been reporting pulpmill capacity and pulpwood production in the South since 1962 in an annual Resource Bulletin entitled Southern Pulpwood Production. Responsibility for the publication alternated between the Southeast Forest Experiment Station in Ashville, NC and the Southern Forest Experiment Station in New Orleans, LA until the two were combined as the Southern Research Station in the mid-1990s.

Figure 1 compares pulpmill capacity and pulpwood production across the South from the early 1960s to 2003.

**Figure 1. Pulp Capacity and Pulpwood Production in the Southern United States**



Source: USDA Forest Service

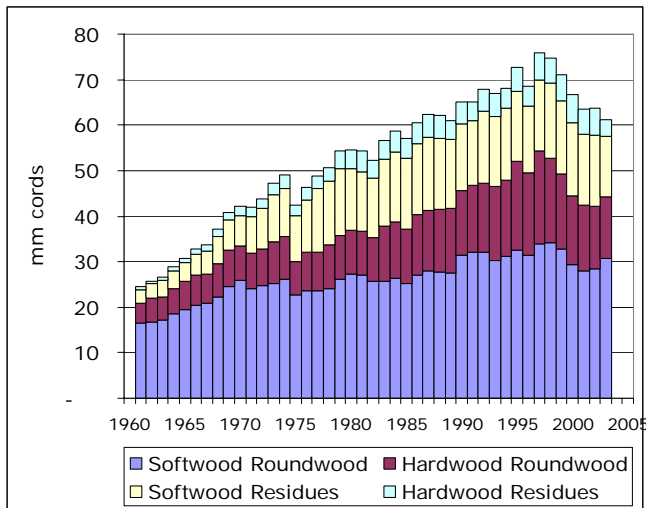
The USFS commonly reports pulp capacity (red line) in terms of tons per 24 hours. Mills generally run 24 hours per day, 7 days per week, for 48 to 50 weeks per year. The green line shows millions of cords of “pulpwood” produced per year. This volume consists of roundwood and residuals. The residuals consist mostly of sawmill chips, but include a small volume of chips made from other residual products such as veneer log cores. The two lines track each other pretty closely. On average, it appears to take 500 cords per year of pulpwood to supply each ton per 24 hours of mill capacity.

The two data series are not perfectly correlated because the red line shows pulpmill *capacity*, not *production*. Pulpwood production fell almost 14 percent in 1975. We cannot tell from the data supplied by the USFS, but it is reasonable to assume that pulp production fell that year as well, even as capacity increased.

While pulpwood production has had its ups and downs over the years, it appears to have peaked in 1997. This was a time of major paper industry consolidations, when large companies became much larger and began “rationalizing” production. The drop in pulpwood production accompanied the drop in pulpmill capacity shown in Figure 1.

The USFS breaks down the pulpwood production by species and product. The annual volume of softwood roundwood generally increased through the late 1990s (Figure 2), but fell steadily as a percent of total pulpwood production from 67 percent in the early 1960s to about 45 percent of the pulpwood volume since the mid-1980s (Figure 3).

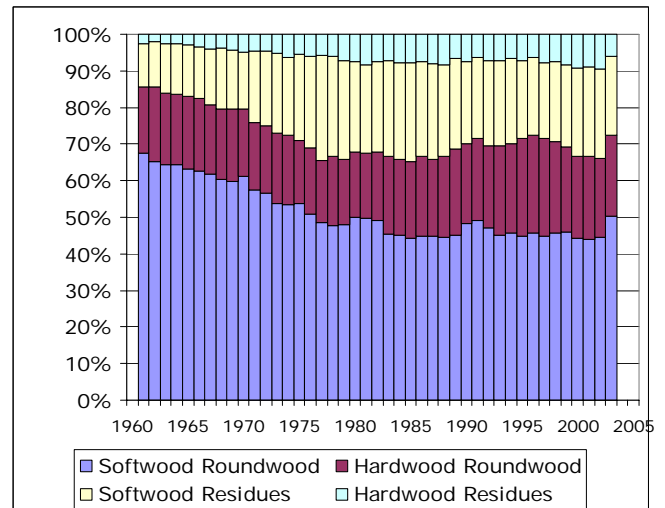
**Figure 2. Pulpwood Production by Species and Product (mm cords)**



Source: USDA Forest Service

Softwood chips increased from about 10 percent of the supply in 1961 to 20-25 percent by the late 1970s and have remained there since. Some of this increase would have come from the development of chip-n-saw mills, which diverted some “pulpwood” volume to lumber production. These small logs would yield one or two 2x4’s and a large volume of pulp chips.

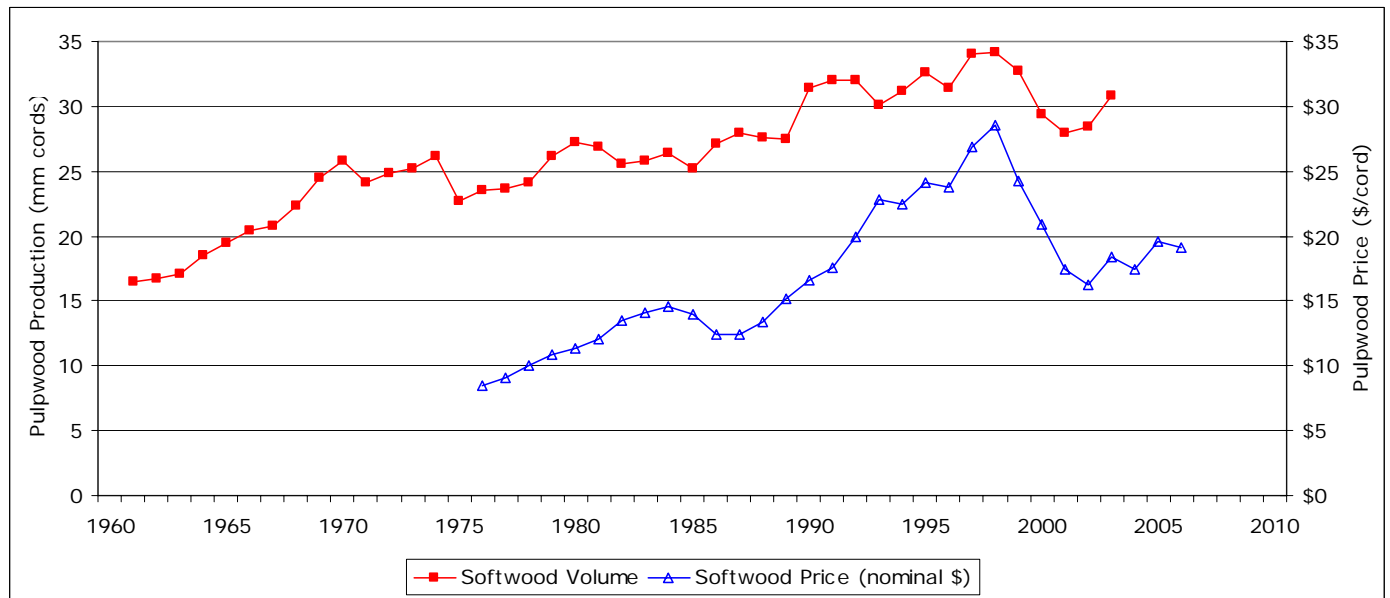
**Figure 3. Pulpwood Production by Species and Product (percent)**



Source: USDA Forest Service

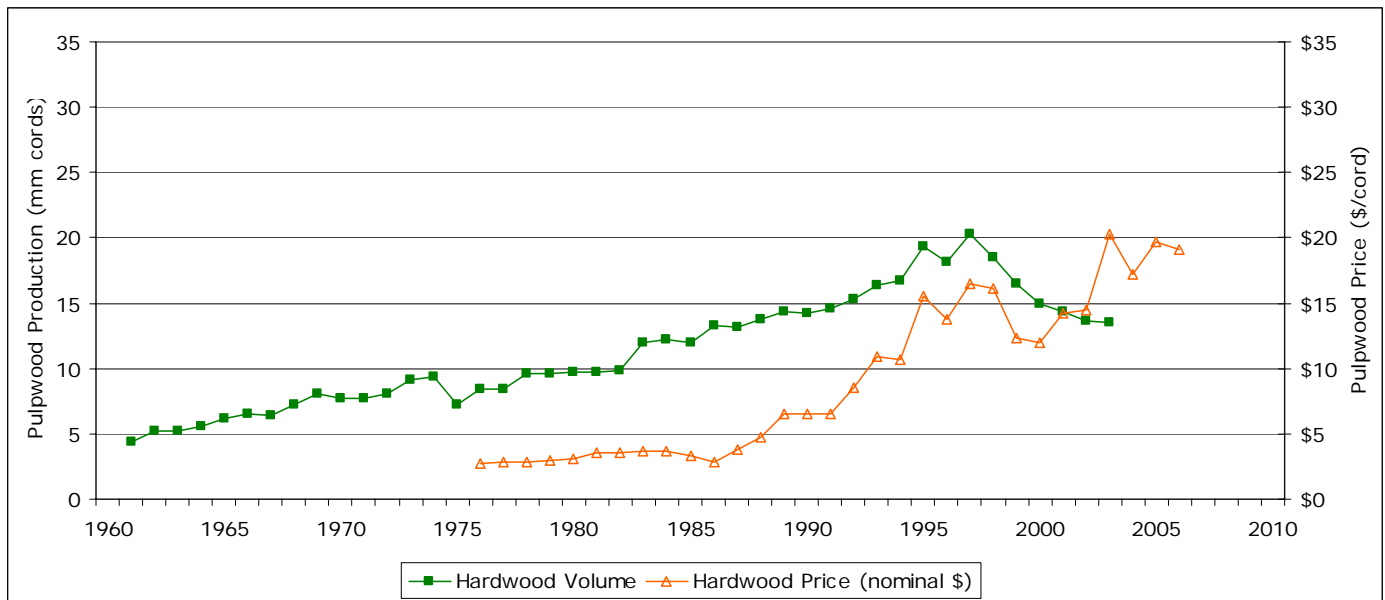
Hardwood fiber sources increased from about 20 percent in the beginning to about 30 percent by the 1990s. The shift in the fiber mix has been encouraged by prices, but limited by technology. Figure 4 shows softwood roundwood volumes and stumpage prices. The nominal price rose at a faster rate than the volume until 1998, but fell sharply after that.

**Figure 4. Softwood Volumes and Stumpage Prices**



Source: USDA Forest Service and Timber Mart-South

Figure 5. Hardwood Volumes and Stumpage Prices



Source: USDA Forest Service and Timber Mart-South

Figure 5 shows hardwood prices and volumes on the same scales as the softwood data in Figure 4. Hardwood volumes and prices have historically been lower than softwood volumes and prices—except that hardwood prices caught up to softwood prices in 2003.

Why were hardwood prices so much lower historically than softwood prices? And why have they stayed so much stronger than softwood prices in recent years? If hardwood was so much cheaper, why not use more hardwood in the pulp mix?

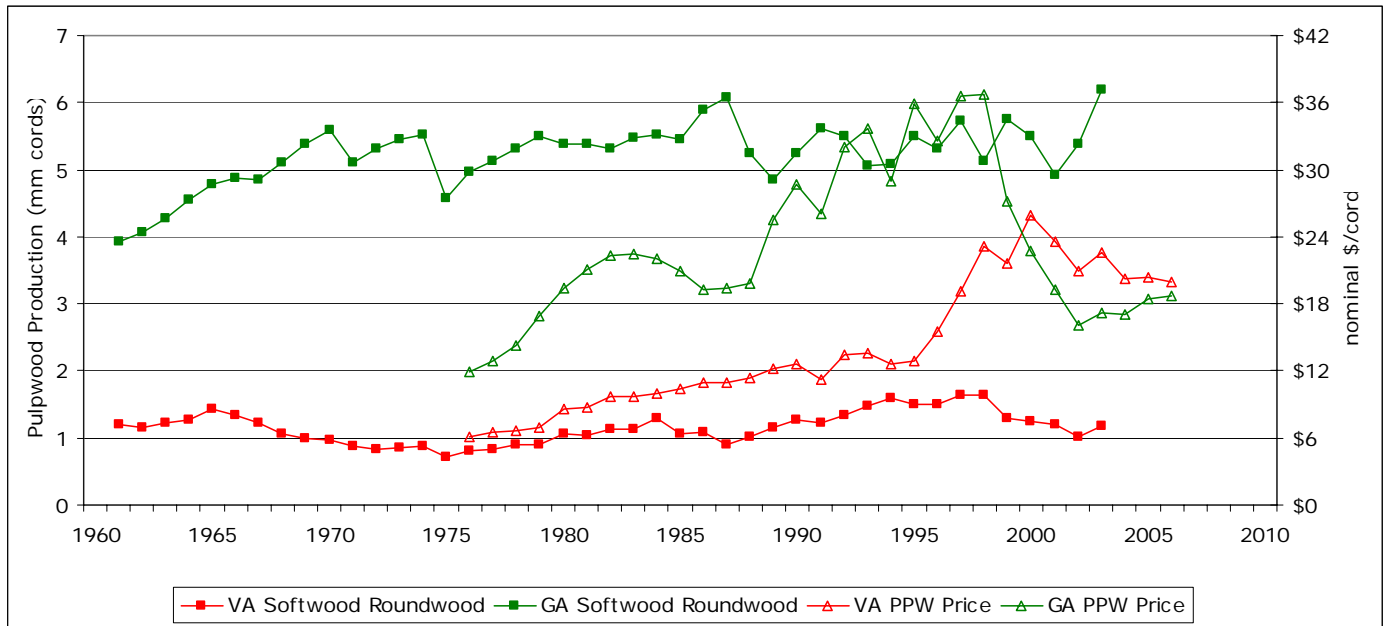
While there are hardwood pulp mills in the South, the region has relied heavily on softwood species for fiber. Those softwood fibers are longer and make stronger papers than hardwood fibers. When possible, mills use hardwood fiber to lower their costs, but too much hardwood affects the strength of the paper being produced. Changing the fiber mix is a complex process that involves analyzing the physical and chemical properties of dozens of species of hardwoods of greatly varying density and fiber strength and making adjustments to the pulping chemicals and temperatures. Significant changes to pulping and refining equipment may require investments of tens of millions of dollars.

Over time, paper makers have been able to increase the percentage of hardwood used. But that increase has driven hardwood pulpwood stumpage prices up. The hardwood prices are unlikely to drop as sharply as softwood prices did recently because those pulp mills that were modified to use more hardwood would have to spend tens of millions of dollars to change them back to the way they were.

### All Pulpwood Is Local

Thomas P. “Tip” O’Neill, former Speaker of the House, used to say “All politics is local”, and the same is true for pulpwood. The charts above look at the South as a whole, but pulpwood markets are local markets. There are some minor physiological differences between the average loblolly pine grown on the Coastal Plain of Virginia and the average one grown in southern Georgia or southeast Texas, but not enough to keep one from being substituted for the other. However, it is not cost effective to haul such low value wood over such long distances. Estimates vary by source (and local market conditions), but the average southern pine pulpwood haul is 60-75 miles.

Figure 6. Softwood Roundwood Volumes and Prices for Virginia and Georgia



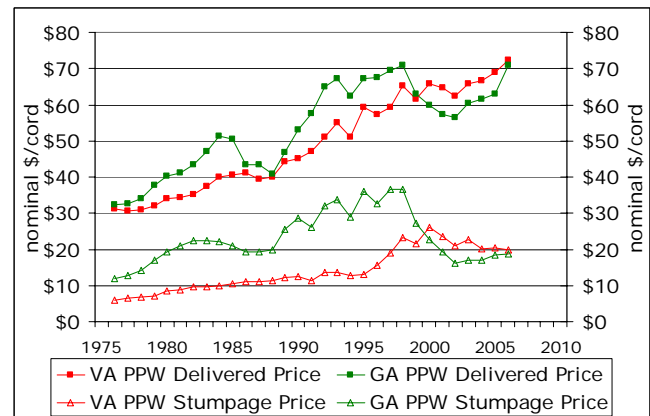
Source: USDA Forest Service and Timber Mart-South

Figure 6 shows softwood roundwood production and pine pulpwood prices for Virginia and Georgia (Texas prices have usually been somewhere in the middle). Both states have seen relatively level production volumes since Timber Mart-South began reporting pulpwood prices in 1976, unlike the South as a whole where production increased until the late 1990s (Figure 4). Georgia pulpwood prices managed to remain about double those of Virginia until 1998, but Georgia’s pulpwood prices plunged along with the southwide average. Virginia’s prices managed to avoid that plunge until 2001.

Pulpwood haulers ignore political boundaries such as state lines, but it has not been economically feasible to haul pulpwood from Virginia to Georgia. Besides the cost of transportation, another key factor in not transporting pine pulpwood from Virginia to Georgia is that delivered pulpwood prices in Virginia have never been that much lower than delivered prices in Georgia (Figure 7).

But even these statewide views are too broad for individual timberland tracts. Pulpwood located on high ground (not prone to winter floods) next to a major highway can be worth far more than the average market price when a pulp mill is running out of wood.

Figure 7. Stumpage and Delivered Prices in GA and VA



Source: Timber Mart-South

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