



Storing on the Stump

Rationale, Limitations and Evidence of Recent Storing

There are several characteristics of timberland investment that usually appear on a list of positive attributes: timberland is an inflation hedge, it is not correlated with financial markets and timber can be “stored on the stump”.

Some recent projects have had us combing through our files looking at timberland property data and we found what appears to be evidence of significant on-the-stump-storing in the US South over the past 10-15 years¹. In this *Research Note*, we examine the rationale for storing on the stump and some limitations to the strategy, and the evidence of recent storing.

Rationale

The ability to store on the stump means that, when timber prices are low, you can hold on to your trees—not harvest them—and let them keep growing until you can get a price you like for them.

While you are holding on to your trees, they are growing. In the US South, that growth might be at the rate of 8-10 tons per acre per year. In the North it might be at a rate of 1 ton per acre per year. In addition to the gross addition to volume, some of your trees will be growing themselves into more valuable product classes, from pulpwood to chip-n-saw or sawtimber into poles (depending on local markets).

It is always pointed out that other real assets don't have this characteristic. In agriculture, when your tomatoes are ripe, they must be harvested, whether

you like the current price for tomatoes or not. If you have an empty apartment unit, it will not increase in value (or grow another bedroom) while you wait a few months or years for a higher rental payment.

Some research we did several years ago suggests even a very small increase in expected sawtimber prices can justify holding timber for a year and a fairly modest increase in expected prices can make it worthwhile to hold onto your trees for several years.

Limitations

But, storing on the stump is not automatic or absolute: there are some factors that can limit your ability to store all your trees on the stump indefinitely.

Cash

Most timberland investments need to generate at least *some* cash each year.

Timberland is subject to property tax by local or county governments. While this is usually less than \$10/acre in most states—and often *much* less, the money to pay those taxes might have to come from timber sales each year.

Some timberland properties are financed in part by debt. The loan may require that payments be made from income generated by the property, so timber would likely have to be cut to make those payments—even if timber prices are not as high as the timberland owner might like.

Some investors need cash, and some of that cash may have to come from timber sales. The timber REITs may need to sell timber to pay dividends.

¹ Gaps in our data make it impossible to determine exactly when the rate of storage began—but our position as economist allows us to make assumptions at will.

Individuals may need to sell some timber when prices are low if the house needs a new roof or a kid or grandkid is heading off for college and needs help with tuition.

Non-Cash

There are also some non-cash reasons for cutting timber when prices are low.

The first is that many institutional-sized timberland properties have wood supply agreements attached to them. These usually require a certain volume of timber to be supplied to one or more wood-consuming mills each year—even if timber prices are not as high as the timberland owner might like.

The second non-cash reason for cutting instead of storing is the need to maintain a logging force. It may be better in the long-run to keep at least a core logging force working than to stop all harvesting. If you shut down your operations completely, the people who were logging for you will go find other places to work.

Modern logging equipment is very costly. A fully equipped logging crew will likely be running over \$1mm worth of equipment and many logging companies run more than one crew at a time. The company has to make payments on that equipment and they cannot wait while you store on the stump.

Very few loggers are on the ground wielding chain saws anymore. They sit in a climate-controlled cab with joy-stick controls, microprocessors and digital displays. The skills needed to run this equipment deep in the woods are the same as those needed to operate construction equipment in town, right next to a Starbucks or Krispy Kreme and with fewer poisonous snakes, ticks and other critters trying to make life less pleasant.

If you shut down your harvesting operations for 3 months or a year—or 5 years, the logging company will find trees on someone else's land to harvest or lose its equipment to the bank. The equipment operators will head off to the big city to find other work. When you decide it is time to start harvesting trees again, these people will not be available.

Another non-cash reason for cutting timber when prices are low is that your forest might need it (eventually). Plantations are planted at densities (number of trees per acre) that assume the stand will be harvested at a particular age. The stand will keep growing past that age, but at some point the stand will become too crowded and growth will slow. Reaching this over-crowded state can take years, but the low pine sawtimber prices since 2008 mean that some stands have been storing trees for nearly 8 years now.

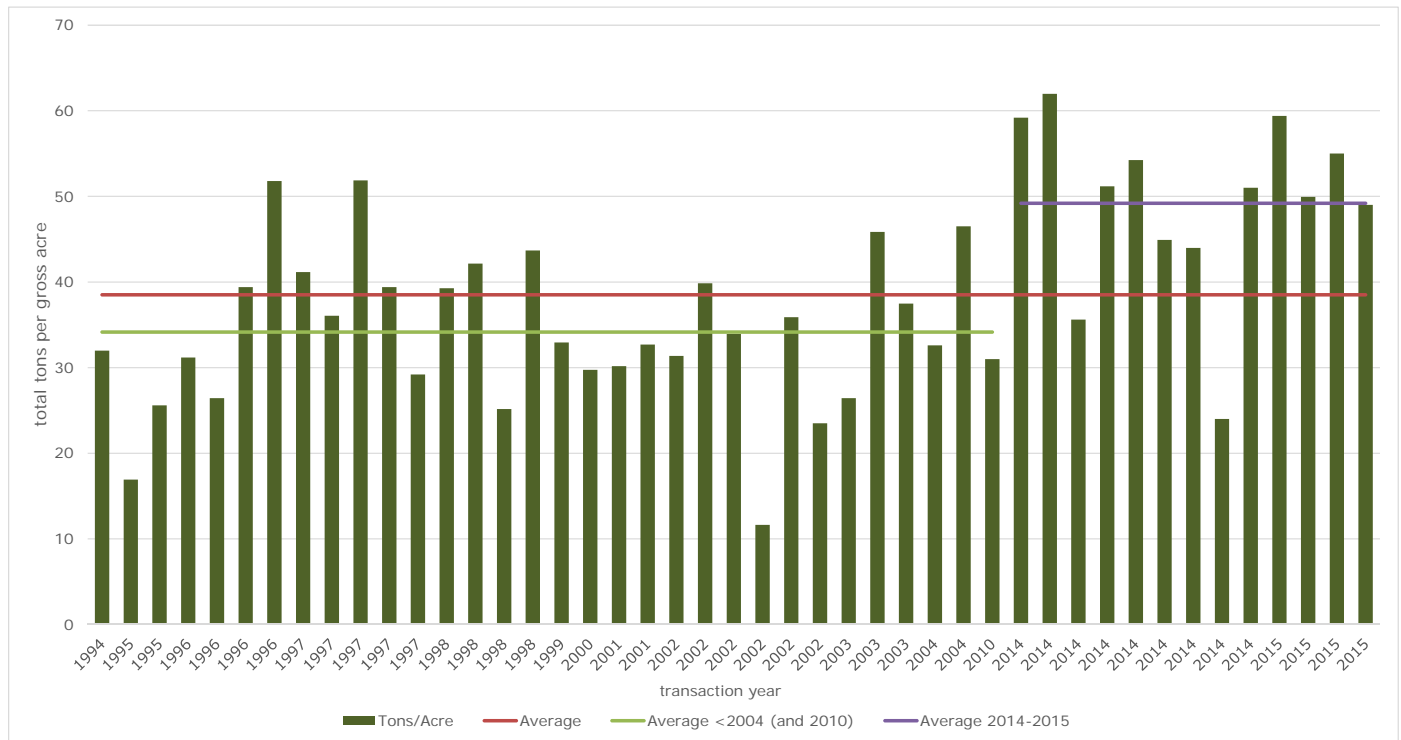
Evidence of Storing

We speculated on how much timber might be stored on the stump back in Vol 8 No 4, *Housing Starts and Lumber Production*. Using softwood lumber production as an indicator of demand for softwood timber, we estimated then that about a year's worth of timber harvests had been stored on the stump between mid-2008 and year-end 2011.

A recent project had us modeling a “typical” southern pine property for the US South. Of interest to us was the physical attributes rather than the values—such things as total acres, the area of premerchantable timber and the volume of merchantable timber. We found some significant changes in the physical attributes of institutional-sized timberland properties between the mid-2000s and the mid-2010s that provides physical evidence of timber being stored on the stump.

We have data for 31 properties measured between 1994 and 2004, data for 13 properties measured in 2014 and 2015 and data from one property from 2010. (The 2010 property's physical attributes were more similar to those from the early group than to the 2014-2015 group, so it was included in the early group). The properties range in size from just over 2,000 acres to just over 400,000 acres and they range all the way across the South, from Virginia to Texas. The quantity of available data varies among the properties, but we have been able to find some interesting things that pertain to storing timber on the stump.

Figure 1. Total Tons Per Gross Acre



Source: Forest Research Group

Timber Inventories

Inventories of merchantable timber have increased 44 percent in the South between 2004 and 2015. Figure 1 shows total tons of merchantable timber per gross acre.² The pre-2005 average is 34 tons per acre, while the 2014-2015 average is 49 tons per acre.

While some of the increase in volume may be due to improved genetics and silviculture practices, we showed in Vol 12 No 3 *Limits to Growth* that these would *at most* have increased standing volumes by a little over 25 percent over the past 10 years (2.4% per year). The rest of the increase, we assume,³ has come from storing trees.

² This number was available (or could be calculated) from all 45 properties. This is not a perfect measure (or indicator of value) because it does not give us any idea of how much of the volume is pine vs. hardwood, or if the low volume per acre is due to a relatively high number of non-forested acres on the property.

³ Economist’s license

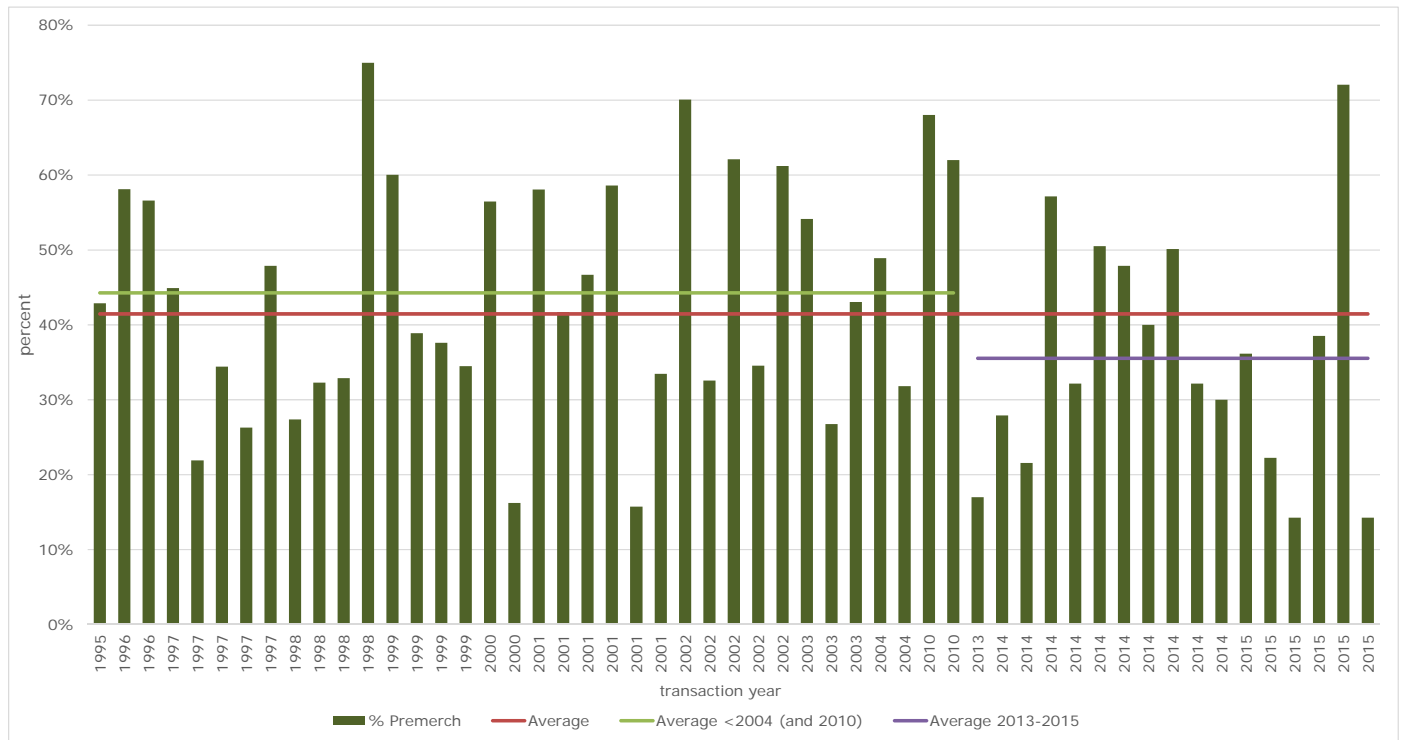
Premerchantable Acres

Storing trees means land is not being harvested and replanted. Not surprisingly, we found a decrease in the portion of land in younger (premerchantable) stands (Figure 2). This chart includes most of the properties in Figure 1, with a few added and a few removed. There are 34 measured between 1995 and 2004, 17 measured between 2013 and 2015 and two from 2010 (included with the early group).

How much premerchantable area should we expect on a “typical” southern pine property? Appraisers generally assume timber becomes merchantable after age 15 and the final harvest occurs somewhere between age 25s and 30. So if a forest is fully regulated⁴ we should find that 50 percent (15/30) to 60 percent (15/25) of the pine land was growing premerchantable timber.

⁴ A fully regulated forest is one where all age classes have the same number of acres, e.g., there are 100 acres of 1-year-old trees, 100 acres of 15-year-old trees, 100 acres of 25-year-old trees, etc. While a nice concept, it is very rare to find a fully regulated forest in the real world. Smaller properties may have no acres in some age classes.

Figure 2. Acres of Premerchantable Pine Stands as a Percent of Total Pine Land



Source: Forest Research Group

Figure 2 shows that the percentage of acres in premerchantable timber has declined from 44 before 2005 (with a lot of variation) 36 percent in the last couple of years (again, with a lot of variation).

SOME Timber is Being Cut!

It should not be assumed from the data shown that *no* timber is being cut on any of these properties. For those properties for which we have data on the number of acres in each premerch age class, there are no properties that have *no* stands less than 10 years old in 2013-2015. This means *some* timber has been harvested on each of these properties in at least *some* of the past 10 years.

Summary

The ability to store timber on the stump is a unique investment characteristic of timberland. There are many reasons why *some* timber might be harvested when prices are low. These range from meeting cash requirements to making sure timber can be harvested in the future.

In *Housing Starts and Lumber Production* we used US softwood lumber data to show that timber was being stored on the stump.

Here we have used information about the physical attributes of southern pine timberland to look at the issue. We found that the average volume per acre is up over 40 percent in the last 10 years and the percent of pine land in premerchantable timber has declined by 20 percent. Both are evidence of timber being stored on the stump.

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