Prentiss & Carlisle
update
2nd Quarter 2013

Industry news

- ***Invasive Beetle Confirmed in NH.*** Larvae from the Emerald Ash Borer beetle have been found in the state, threatening Ash trees throughout the Northeast and invoking additional quarantines.
  — *Portland Press Herald*

- ***Comstock Woodlands Receives National Award.*** P&C logging contractor Comstock has been recognized as the 2013 Outstanding Logger by the Forest Resources Association.
  — *Forest Business Network*

- ***Creating Better Forestry Certification through Competition.*** Some industry insiders believe sustainability initiatives such as certification could benefit landowners, mills, and consumers by employing market forces to create competition.
  — *Forbes Magazine*

- ***Maine Scientists Envision Changing Forests.*** The effect of climate change may have significant implications to the makeup, condition, and heath of the state's forests.
  — *Portland Press Herald*

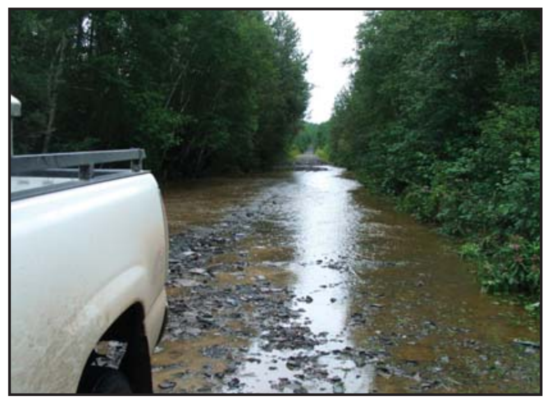
Industry Overview

Forestland Operations

Boxing legend Mike Tyson once said, "Everyone has a plan – until they get punched in the face."

I am reminded of this quote because I began our last quarter's newsletter talking about how critical the planning process is to the entire forestry and logging industry in the Northeast. Seasonal swings in the flow of timber between winter and spring are always dramatic, but this spring has been one of those springs where our industry collectively crumpled up our plans and threw them out the window.

The main culprit has been, as it usually is, the unpredictable weather. This past June was one of the wettest ever throughout almost all regions of the Northeast. In Burlington, Vermont, May and June represented the wettest two-month consecutive stretch in recorded history, according to the National Weather Service.



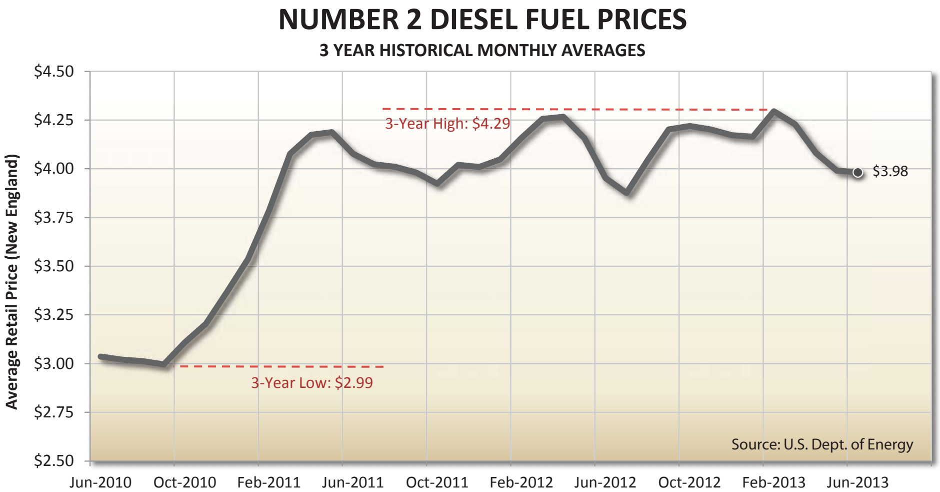
Flooded roads such as this one in northeast Maine have been common sights heading into this summer.

This has wreaked havoc on the stability of the regional wood supply. Usually once the trees leaf out in late May, most of the heavy spring rains are over. That was, in fact, the assumption upon which everyone had developed their plans. With those plans now sidelined, the contingencies start kicking in, and the typical equilibrium between supply and demand is strained. The wood buyers at a lot of our regional mills these days are adjusting their plans a few times each day.

In the woods, the foresters are working hard to identify "Plan B" opportunities to harvest on well-drained, gravelly soils. Operating on soils that retain too much water can lead to longer-term damage in the woods, and can exacerbate the drainage problem. Sometimes foresters can keep their planned harvests but are forced to lay out the trails in a more circuitous way in order to minimize rutting. But either way, having to react to changing plans because of foul weather nearly always adds to the costs to prepare and operate a harvest.

Operations continue to be hindered by high diesel fuel costs, which are ultimately borne by the landowner. The volatility in fuel prices seems to have abated over the last 6 months, but has done so near the 3-year high price point. As a result, the fuel premium we've been paying to contractors has stayed relatively steady since April, at $1.84 per ton of delivered wood.

continued...



The price of diesel fuel is only one of the many challenges being faced by loggers today. According to a 2011 study by Timber Harvesting magazine, loggers nationwide are struggling for profitability. More than half of the loggers questioned – 51% – said they either lost money or broke even in 2010. The situation has improved somewhat as the wood flow has become more predictable, but loggers continue to struggle to service both their equipment and their debt and keep high-quality, hard-working employees busy. Moreover, contractors aren't paid unless their wood can be delivered, and when equipment is parked or timber is stranded in the woods, it becomes difficult to keep up with ongoing payments. For loggers, cash flow is critical; we're continually monitoring their health and trying to keep enough wood in front of them to maintain this critical link in the chain.

Wood Markets

After I've said all that, considering the circumstances, you might think that the timber markets are in rough shape. Although it's a little bit of a mixed bag, you'd be pleasantly surprised. While the upswing in some finished product prices that was experienced in the first part of the year tapered off, demand for the raw material has remained strong through June.

P&C DEMAND INDICATORS

Our take on demand in the Northeast timber markets

	Current	Outlook
Sawn Products		
Spruce & Fir	★★★★★	★★★★☆
Pine Logs	★★☆☆☆	★★★☆☆
Hardwood Logs	★★★★☆	★★★★☆
Pulpwood		
Hardwood	★★★★☆	★★★☆☆
Spruce & Fir	★★★★★	★★★★☆
Pine & Hemlock	★★☆☆☆	★★☆☆☆
Biomass	★★★★☆	★★☆☆☆

We like to think about wood markets having two controls: they can hit the gas, or they can hit the brake. While it's been on the gas for the most part, right about this time of year they tend to keep one foot on each pedal. Boosting their confidence have been widely-reported signs of recovery – economic news has certainly encouraged the markets, although it's clear that the initial exuberance has waned slightly. Even so, the overall U.S. economy has experienced modest, but significant improvements over the last 6 months. Higher retail and durable goods sales, strong business investment, combined with the highest consumer confidence showing in the past six years all represent an improved situation vs. this time last year.

continued...

- ***Bill to Arm Maine's Forest Rangers Stalls.***
  In an executive order, Gov. LePage creates a task force to study the legislation, effectively tabling the issue until the next session.
  — Portland Press Herald

- ***Atlas Holdings and Blue Wolf Capital to Acquire Twin Rivers.***
  The owner of a specialty paper manufacturer with locations in New Brunswick and Maine has agreed to sell the company to a pair of private equity firms.
  — PR Newswire

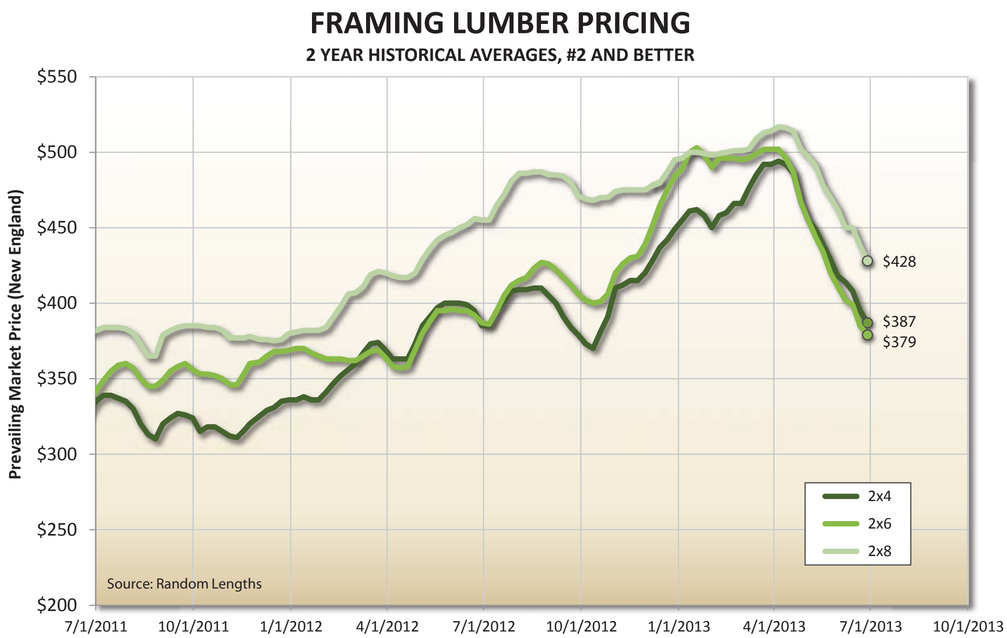
- ***Western U.S. Forest Fires Could Double within 40 Years.***
  Scientists say that climate change is going to make forest fires worse, and believe the fires themselves will exacerbate the problem.
  — Smithsonian Magazine

- ***Verso Paper Mills in Maine Experience Massive Increase in Natural Gas Costs.***
  Energy costs have spiked in some Maine mills due to increasing national pricing as well as increasing transportation costs.
  — Bangor Daily News

Sawn Products

Softwood Sawstock

One of the big stories over the last quarter was a substantial slip in price for spruce/fir dimensional lumber. One likely culprit is somewhat artificial: triggers baked into the US-Canadian softwood lumber agreement and an automatic reduction in export tariffs that encouraged a flood from western Canadian producers. The effective tax rate for western Canadian exporters has been at or near zero for several months, and starting in August a tariff is triggered once again. This should help stem the decline.



Despite the sharp reversal in price, most mills appear to us to be optimistic on the future for selling their finished products, which is encouraging. In addition, they're doing all the things that you would expect sawmills to do when they are profitable: running weekends, double shifts, extra hours when they can. Raw material inventories at the spruce/fir lumber mills have been generally low, with mills not buying as much as they were consuming. That has been the case right up until the last 2-3 weeks.

The market for pine logs is in the seasonal doldrums due to the fact that pine spoils easily this time of year. To prevent their inventory from spoiling, mills store their logs under water from early June through August. This is a more expensive process to manage, and there is limited available space, so raw material inventories are kept as lean as possible during this time. Once the product is sawn, dried, and dressed it has a much longer shelf life, and so there isn't as much concern with the finished product.

Hardwood Sawstock

Most hardwood finished product prices have been experiencing consistent steady gains over the quarter, with the market demonstrating a clear preference for whiter woods over the darker woods.

Maple grade logs have been leading the pack by a wide margin for some time now. Both Hard & Soft Maple logs have been experiencing very strong demand, and pricing is on an upswing. Although it's typically difficult to move Maple this time of year, our marketing team has had no trouble this year selling it into the markets. Furthermore, Soft Maple is

continued...

- ***U.S. Housing Upswing Good News for Local Forestry Industry.***
  In New Brunswick, mills and landowners alike are optimistic about the prospects for the forestry industry.
  — *CTV Atlantic*

- ***Land-Based Carbon Offsets: False Hope?***
  Leading experts have thrown cold water on the idea that planting trees can offset carbon dioxide emissions from fossil fuels.
  — *ScienceDaily*

- ***How Reporters Miss the Forests and the Trees When Covering Wood Bioenergy Markets.***
  Despite headlines and hype, the general public is operating on a significant oversimplification of the status of the market for woody biomass.
  — *Forisk*

Spoiled pine grows a blue fungus, which can substantially reduce a log's value traditionally worth less than Hard Maple, but we've seen some substitution take place and the pricing gap between the two has come quite a bit closer. Of note, we've been hearing some optimism from our flooring manufacturers – and with some stickiness remaining in the housing market and discretionary spending on the rise, this is no surprise.

Birch demand has tapered, but that has been the tale of two opposites – white birch and yellow birch are distinctly different products in the market we serve. Yellow birch – the darker of the two – has fallen out of favor with consumers and lumber sales are stagnant. White birch, on the other hand, has been relatively consistent, but demand has backed off slightly in the last few months due to what appears to be overbuilt inventories. Some of this is simply timing - orders for their finished products at the mills tend to come in bulk (after all, nobody orders just one popsicle stick) and can arrive with little notice. This complicates inventory management for these sawmills.

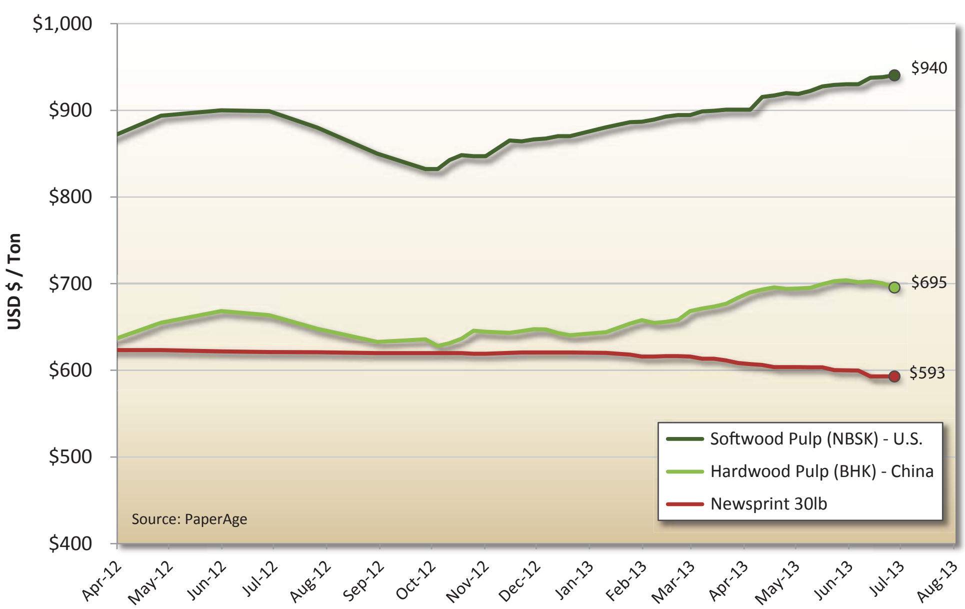
Lower quality hardwood logs, such timber mat logs, continue to be in good demand. We've been hearing whisperings of some new regional entrants into this market – a sign that these specialty products are profitable enough and demand is attractive enough to support additional manufacturing capacity.

Veneer markets have been generally consistent, although the demand for any particular veneer species tends to mirror the demand for the same lumber species. Whiter veneers – with maples leading the way – are experiencing good demand, while the oaks and walnuts are weaker. Although it is a small component of what we sell, we're seeing renewed regional demand in poplar veneer; one manufacturer is using it as filler in some of their plywood offerings.

Pulpwood Products

Finished product pricing on pulpwood has been on a fairly stable upward swing since last November, however we've heard reports of continued sluggish finished product demand. According to data from PaperAge, Northern Bleached Softwood Kraft (NBSK) pulp was up almost 13% since a low point in September. Bleached Hardwood Kraft (BHK) pulp has come up approximately 10% over the same period.

PULP AND PAPER PRICING



continued...

- ***Georgia Company Relocates to Aroostook County Sawmill.***
  A former mill is expected to come back to life and will hire nearly 80 people to manufacture cedar shingles.
  — *Bangor Daily News*

- ***Wood Not So Green A Biofuel?***
  Using wood for energy is considered cleaner than fossil fuels, but a new study finds that logging may release larges amount of carbon stored in soils.
  — *ScienceDaily*

- ***Beware of a Forestry Standard Monopoly.***
  Certain standards are worse than others, and overreliance could lead to loss of landowner value, government tax revenue, and employment.
  — *Forbes Magazine*

- ***Exportation of Wood Pellets from North America to Europe Reached New Record.***
  According to North American Wood Fiber Review, a record volume of 3.2mm tons of pellets was exported to Europe in 2012.
  — *Wood Resources International*

Hardwood Pulpwood

Regionally, we're experiencing very strong demand for our hardwood pulpwood as nearly all of the large consumers have been hungry due to weather. While a sawmill might be able ramp up and down relatively easily, it is critical for a pulp mill to maintain consistent supply because of the substantial fixed costs. Transportation of all products – but most noticeably with hardwood pulpwood – has been affected not only by the weather, but also by summer vacations happening in late June and early July. Until we get a week or two of good dry weather, we expect the demand on hardwood pulpwood to stay consistently high.

Softwood Pulpwood

Our softwood pulp mills are also very much hungry for wood due to – you guessed it – the weather. This past quarter, we've heard of two pulp mills in Maine that have be less than two days away from running out of their raw material inventories. This is incredibly lean; if we were to poll a typical pulpwood buyer what the 'comfort zone' would be and you'd probably get a response of two-three weeks. Our three largest regional softwood pulpwood consumers have been stretching it incredibly thin, well under two weeks of inventory. Although it appears they have started to match their consumption with production, it is still not to the point where anyone has a comfortable buffer piled up in their wood yards. One week of rainy weather would put these pulp mills in dire straits again. On the flip side, as a result of the high demand, pulpwood pricing has remained favorable for landowners.

Complicating matters is the mills' continued reach into the higher quality hygrade markets due to the low percentage of spruce/fir timber that ends up in the pulpwood category. When pulp mills can't get the supply they need, their buyers have to seek out higher quality timber that would, under normal circumstances, head to a sawmill. In doing this, they not only have to pay the premium for higher quality product, but they also introduce a whole new set of competitors for their wood supply. The premium paid on hygrade vs. their normal cost can range between 30 – 40%. This is not a sustainable situation for the mills and is sure to have an effect on their bottom line.

Premiums paid for certified wood have been washed out due to the elevated prevailing market price being paid, as well as the overall instability in the markets. As you can imagine, mills appear to be much less concerned with obtaining FSC-certified supply than they are with keeping their mills running. Once this instability gets ironed out and we return to calmer waters, we expect to return to a more noticeable premium on certified timber.

Biomass

There have not been a lot of unexpected developments in the biomass markets lately. As we have repeatedly mentioned, biomass is a very seasonal product in the Northeast. This time of year, mills are trying to simply get enough to run their driers (pulpmills) or their kilns (sawmills), but inventories are very depressed because most biomass is being used on harvest jobs to increase ground stability. Biomass prices have slipped from their spring premiums, but remain a notch or two above where they were last year.

Benjamin D. Carlisle
PRESIDENT

continued...

- ***Supreme Court Gives Landowners Big Win in Florida Case.***
  Landowners are praising the ruling on a two-decade old lawsuit which alleged a regulatory "taking" when a permitting body denied him use of his land without fair compensation.
  — *Miami Herald*

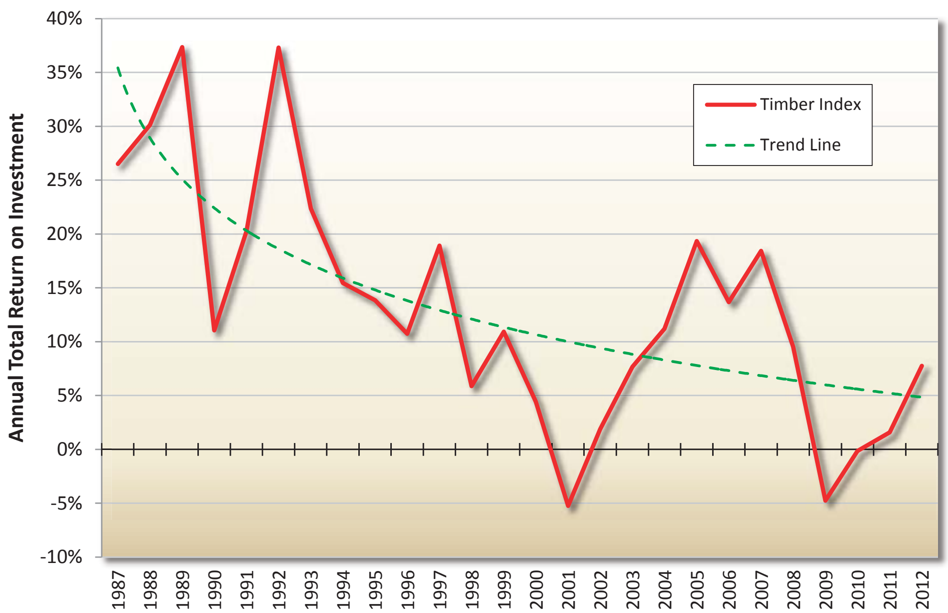
- ***Bond Logjam Hinders Public Access to Land.***
  Gov. LePage says he'll release conservation funds, but his delay already has been costly.
  — *Portland Press Herald*

- ***Nova Scotia Biomass Plant Now Humming at Full Capacity.***
  The new co-generation plant at the Port Hawkesbury Paper site is expected to produce between 3-4% of the province's overall energy needs.
  — *Cape Breton Post*

Timberland Return on Investment and the Discount Rate

Most institutional timberland investors and asset managers benchmark their investment returns to the NCREIF Timberland Index, or NTI (http://www.ncreif.org/timberland-returns.aspx). The NTI goes back to 1987, when institutional timber investing was still in its youth and the market for investment grade properties was not as efficient as it is today. Buyers in the early years took advantage of these inefficiencies, and were also aided by legislative and administrative restrictions on Federal timber harvests, which pushed up prices and shifted a significant portion of US lumber manufacturing from the West (where federal forests are concentrated) to the South (where private timberland investment is concentrated). As a result, the NTI return on investment from 1987 through 1996 averaged 22.5% annually (Figure 1). Looked at another way, the NTI suggests that $100 invested in timberland at the start of 1987 would be worth $761 at the end of 1996!

Figure 1. Long Term Performance of the NCREIF Timberland Index.



As a benchmark, the NTI tells investors whether their property performed as well as the universe of properties that make up the index. Differences between property returns and index returns might be due to local timber markets, specific property characteristics or manager performance. Of course it may also have to do with the composition or methodology of the index[1].

In addition to its use as a year-to-year benchmark for timberland investments, the NTI sheds some light on the long term performance an investor might expect. These expectations then drive the investor's (and appraiser's) choice of the going-forward discount rate for estimating the present value of projected cash flows from a property. Discounted cash flow analysis is the primary method of property valuation for acquisition or financing purposes. The discount rate is a critical component of the analysis because a small change in discount rate can effect a large change in market value estimate.

In developing the discount rate from NTI performance data, simply looking at the most recent returns would be misleading, given the NTI's volatility. So it makes sense to look at longer term averages, but what term? The following table suggests that this choice is crucial:

continued...

207.942.8295 | fax 207.942.1488 | www.prentissandcarlisle.com
107 Court Street | PO Box 637 | Bangor, Maine 04402-0637

Table 1. Average NCREIF Timberland Index Returns.

	Nominal	Real
Index Life	13.3%	10.1%
20-year	9.2%	6.5%
10-year	8.4%	5.8%
5-year	2.8%	0.7%
3-year	3.1%	0.8%

Clearly most investors would not target the 3 and 5-year average returns, which are barely above what current "risk-free" US Treasury bonds are yielding. The 10 and 20-year averages conform to what has been bandied about the industry for many years, i.e. the timberland discount rate is "between five and seven percent real." But these periods included multiple years of mid to high double digit returns. Does it really make sense to include such years in our expectations given today's investment climate?

A more comprehensive approach than averaging is to develop a theory and model of what drives timberland returns. At the property level, we know such things as timber prices, operating costs, age class distributions, etc. directly determine the property's current and prospective performance. But what explains the macro returns that are indicated by broad averages such as the NTI?

Part of the answer is a factor that is inherent in the valuation of all investment assets – the risk premium. "If investors are risk averse, they need inducement to invest in risky assets. That inducement takes the form of a risk premium, a premium you would demand over and above the risk-free asset to invest in a risky asset.[2]" Using the long-term US Treasury bond yield as a proxy for the risk-free investment, we can compute the timberland risk premium by subtracting the Treasury yield from the timberland return, e.g. in 2012 timberland returned 7.75% and the Treasury yielded 2.54%, indicating a risk premium of 5.21%.

But timberland returns are far more volatile than treasury yields, so we expect the estimate of risk premium to vary from year to year. As Table 2 shows, this again leads to the problem of determining the appropriate term to reflect the risk premium used to calculate the long term expected timberland discount rate.

Table 2. Calculated Nominal Risk Premium From the NCRIEF Timberland Index and Long Term US Treasury Bonds.

	Risk Premium
15-year	2.0%
10-year	4.1%
5-year	-0.9%
3-year	-0.3%

Stephen Hassett has shown for the US stock market that the risk premium for stocks (equity risk premium) over the long term is not a fixed value, but rather varies in proportion to the risk-free rate. This has intuitive appeal, as Hassett describes: "Conventional theory would hold that if the equity risk premium were 6.0 percent and 10-year Treasury yield were 4.0 percent, then investors would expect equities to yield 10 percent, but if the 10-year Treasury were 10 percent, then investors would require a 16 percent return – a proportionately smaller premium. I argue that the equity risk premium is not fixed as in the conventional Capital Asset Pricing Model ... but varies directly with the level of the risk-free rate..." [3]

Adopting this premise, the timberland "risk premium factor" can be estimated using statistical regression analysis. For this analysis, only the period 1995-2012 was examined, because the structural changes in the market and the investment industry have rendered the earlier period irrelevant (who really believes that 25% annual returns are meaningful in today's world?). A simple linear regression estimated that the timberland "risk premium factor" is about 1.61, i.e. predicted timberland returns are 1.61 times the risk-free rate. This leads to a much more stable estimate of risk premium, shown in Table 3. While risk premiums have declined in accordance with the decline in the risk-free rate, there is not the volatility and lumpiness apparent in Table 2, and the range of 2.1% to 2.9% seems plausible.

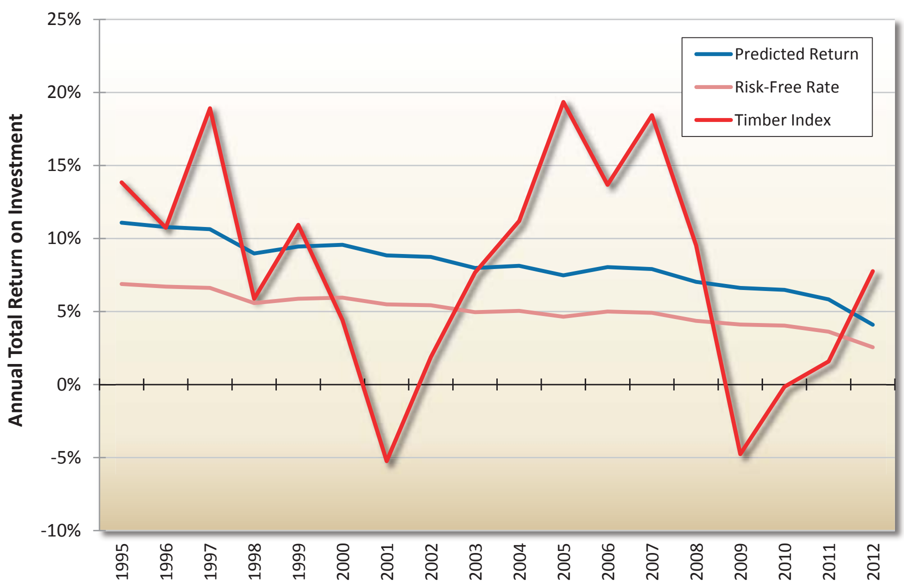
continued...

Table 3. Regression-Predicted Nominal Risk Premium From the NCRIEF Timberland Index and Long Term US Treasury Bonds.

	Risk Premium
15-year	2.9%
10-year	2.6%
5-year	2.3%
3-year	2.1%

The correlation coefficient of .59 was surprisingly strong for this analysis given the few number of observations and the noisiness of the NTI series. The resulting estimates of the nominal timberland discount rate range from 11.1% in 1995 to 4.1% in 2012 (Figure 2). Experience suggests that the lower end of this range may be too low to reflect timberland's riskiness, but we have seen transactions that imply such levels.

Figure 2. Performance of the NCREIF Timberland Index and Predicted Returns Based on Regression Analysis.



In an era of very low risk-free rates, it seems the "five to seven percent real" adage is quite aggressive and probably will not win many timberland auctions today. While still a work in process, the risk premium factor approach more closely ties to economic conditions and has promise as a more structurally sound way to view target returns for timberland investments. Feedback from the reader is encouraged.

Sam Radcliffe
VICE PRESIDENT

[1] The NTI is often criticized because it is based on valuations submitted by asset managers, using methodologies that can vary from manager to manager. Only a portion of the index value is determined by actual property transactions, given the thinness of the institutional timberland market.
[2] "Risk Premiums: Looking backwards and forwards..." Aswath Damodaran, NYU Stern School of Business http://people.stern.nyu.edu/adamodar/pdfiles/country/riskpremiums.pdf
[3] Stephen D. Hassett, 2011. "The Risk Premium Factor: A New Model for Understanding the Volatile Forces that Drive Stock Prices" John Wiley & Sons, Hoboken NJ.