



The Tao of Timberland—another Update

We have written about the Tao of Timberland back in 2008 (Volume 5, Number 2) and 2014 (Volume 11, Number 2).

As we said then, the NCREIF Timberland Index is the best available indicator of timberland returns. However, it is not the timberland equivalent of the S&P 500, but is perhaps the timberland equivalent of the Dow Jones Industrial Average (the Dow).

Limited Scope

To review what we've said before, the Dow is a frequently reported indicator of the US stock market. Most newscasts and newspaper reports on the market will note that the Dow is up or down. But the Dow includes only 30 stocks, and most people think the S&P 500 is a better indicator of the broader market. We expect that very few people use the Dow as a **B**enchmark for measuring the stock market, though if the Dow is having a very bad or very good day, chances are good that the S&P 500 is down/up as well.

Just as the Dow is a limited indicator of stock returns, the NCREIF Timberland Index is a fairly limited indicator of timberland returns. It reports only US timberland investments that are mostly fee-owned. The market value of the 13.2 million acres in the Timberland Index as of Q2 2020 was \$24.0 billion, but the Index does not include all of the timberland held by institutional investors in the US, nor the 17 million acres of timberland held by the four publicly-traded timber REITs¹, nor the nearly 270 million acres held by families and individuals. And there are timberland investments made up of leased lands and timber rights.

¹ The four publicly-traded timber REITs are Catchmark Timber, PotlatchDeltic, Rayonier and Weyerhaeuser. There were five timber REITs in 2008, but Plum Creek has become part of Weyerhaeuser.

And more timberland investment money from the US and other countries has been ending up in other countries. For example, US-based TIMOs are now some of the largest timberland owners in New Zealand and they have become significant owners of timber rights in Australia. Brazil and Uruguay are also popular targets for US institutional investment money.

Appraisal-Based

Another thing that makes the NCREIF Timberland Index a less-than-perfect **B**enchmark is that most of its appreciation return is based on appraisals, not transactions. While the S&P 500 returns are based on transactions that involve hundreds or thousands of shares of each company in the index each *day*, there are simply not enough transactions on average in a given *year* to have a transactions-based timberland index.

This is not a huge issue, especially when the market understands it, but does make the NCREIF Timberland Index less like the S&P 500.

Not Investable

Unlike the Dow (or the S&P 500), it is not possible to duplicate the NCEIF index holdings in a timberland portfolio.

Quarterly Volatility

The appraisal basis of the Timberland Index really has an impact when people try to use the quarterly returns in their analyses. Historically, most timberland properties in the index have been appraised annually, and usually in the fourth quarter. There were also a sizeable portion of properties that were appraised in the second quarter. Very few properties were appraised in the first and third quarters.

Large returns in the first or third quarter are usually caused by the sale of a large property or several properties in that quarter where the transaction price is higher than the most recent appraised value(s).

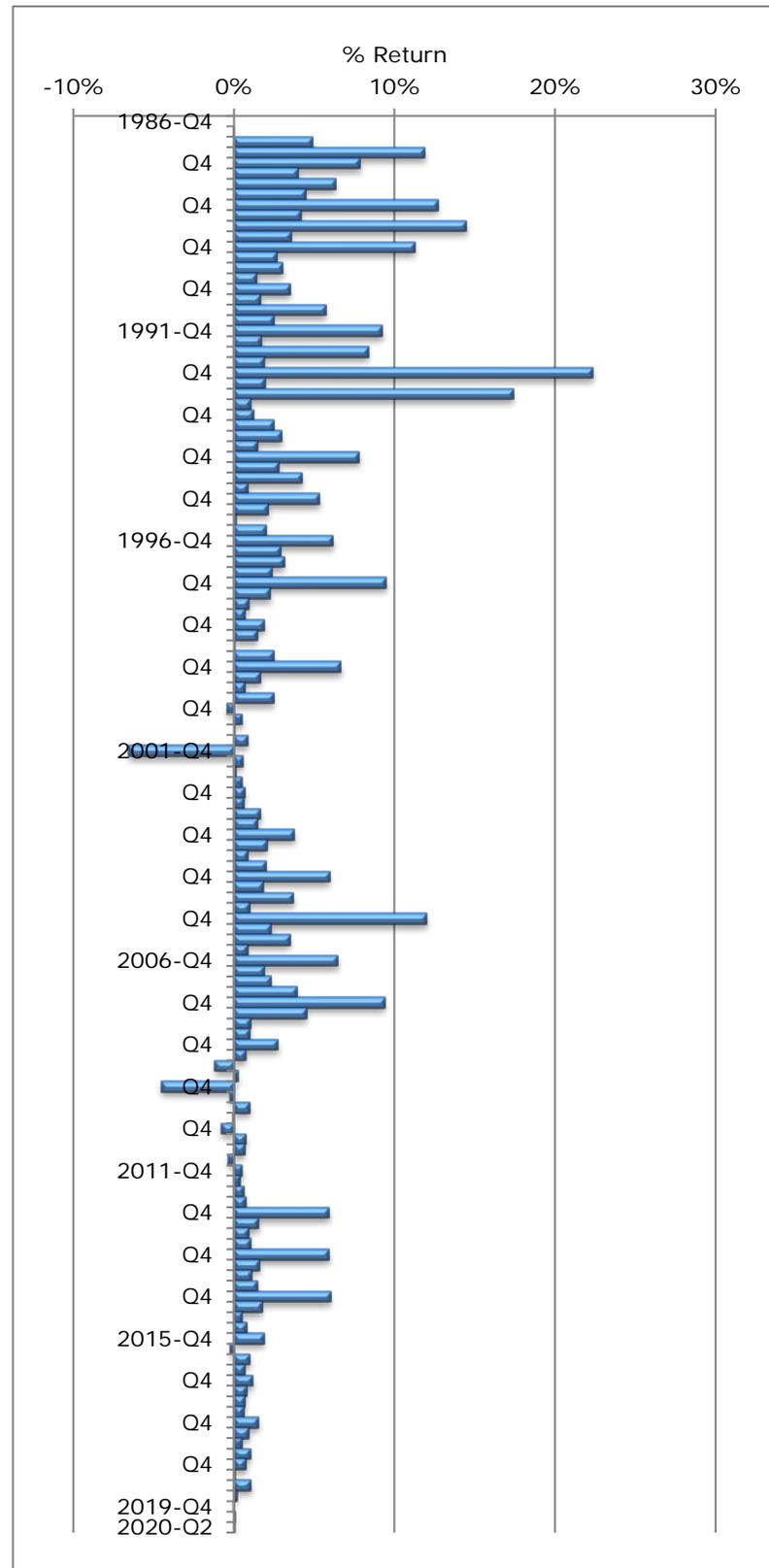
There has been a continued trend towards shifting appraisals into the fourth quarter. This provides a year-end value for investors' books, which makes auditors happy, but distorts the quarterly returns even more. Appraisers would be very happy to spread those appraisals across the calendar, as they must now spend most of the year-end holiday season inspecting properties and crunching numbers.

Figure 1 shows quarterly total returns through Q2 2020 for the Timberland Index. We have labeled the fourth quarter in each year to help illustrate the apparent seasonality of the returns. The quarterly returns are quite volatile, with larger (usually higher) returns in the second and fourth quarters in the early 1990s and larger returns in the fourth quarters since 2000 or so.

This variation in returns is completely unrelated to how trees grow in any region of the United States.

A survey of western timberland owners and managers a few years ago found the most of the growth in the Pacific Northwest takes place in the third quarter. But, the NCREIF index does not reflect this.

Figure 1. Quarterly NCREIF Timberland Returns



Source: NCREIF

In central Maine², the leaves begin appearing in mid-May (second quarter) and have turned color by the end of September. This means most of the growth occurs between June 1 (third month of the second quarter) and September 30 (third month of the third quarter). So, most of the growth occurs in the third quarter, but the NCREIF index, again, does not reflect this.

Why is this an issue? All other things being equal, tree growth adds value to a timber stand—more wood means more value. If most timber in the US grows in the third quarter, then the appreciation return should be higher in the third quarter. If we assume timber harvesting occurs year-round and trees grow in the third quarter, then fourth quarter timberland values should be lower than third quarter values as timber is removed from forests that have stopped growing for the winter.

Figure 2 shows the average contribution to appreciation return from each quarter from 1987 through Q2 2020. Over the life of the NCREIF index, the first quarter has contributed about 8 percent of the total annual appreciation return while the third quarter (when the growth occurs!) has contributed 7 percent. The second quarter has contributed just under 24 percent and the fourth quarter has contributed just over 60 percent.

² For our international readers, the state of Maine is in the northeast corner of the US. The city of Bangor in central Maine sits at 45 degrees north latitude and there are usually a couple of weeks in the winter where the low temperature is -20 F/-30 C.

Figure 2. Average Contribution to Appreciation Return by Quarter, NCREIF Timberland Index, 1987-2020

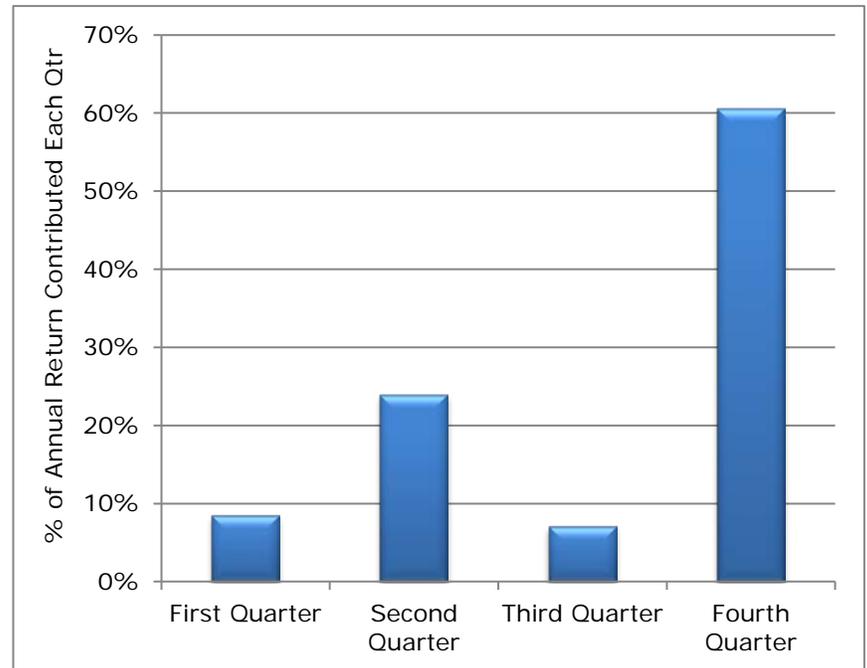


Figure 3. Average Contribution to Appreciation Return by Quarter, for Different Time Periods

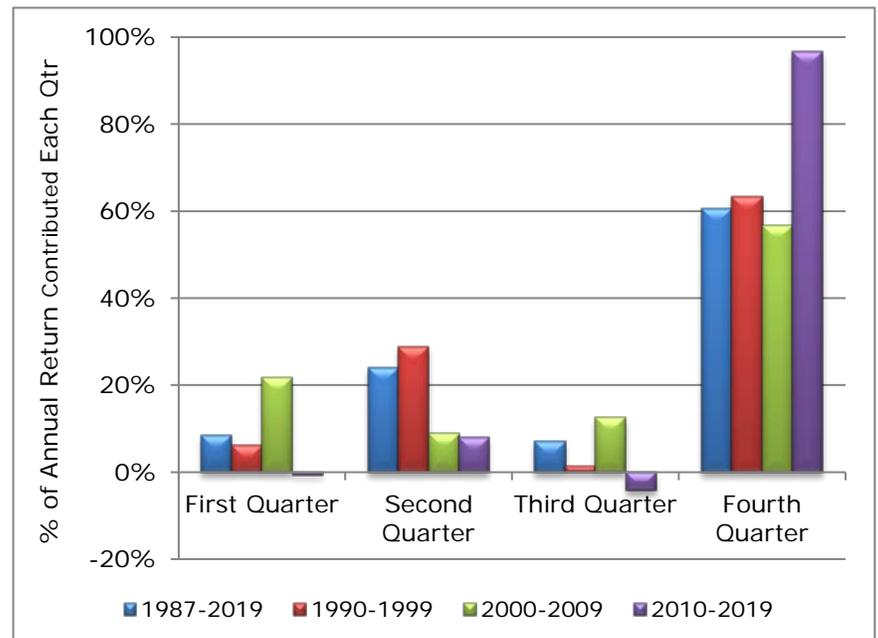


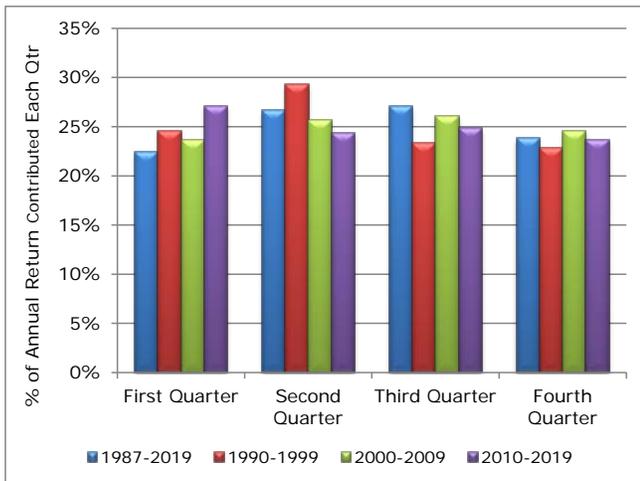
Figure 3 takes the analysis in Figure 2 and looks at different time periods. In the 1990s, the first and third quarters contributed even less to the total annual appreciation return, but the second quarter's contribution increased to nearly 30 percent. Fourth quarter returns in the 2000s fell to "only" 57 percent of the annual total, with a jump in the first quarter. Over the last ten years, appreciation returns in the fourth quarter rose to nearly 100 percent of the annual return as appreciation returns in the first and third quarter have been negative.

Since there is very little tree growth anywhere in the country during the fourth quarter, we suggest that the quarterly returns are not a good indicator of actual changes in timberland values.

Income

Income returns are far less volatile, and more evenly distributed across the year (Figure 4). Returns are lower in the first and fourth quarters, though first quarter returns have been higher over the past 10 years.³

Figure 4. Average Contribution to EBITDDA Return by Quarter, for Different Time Periods



Summary

The NCREIF Timberland Index is still the best available indicator of timberland returns. But it is important to understand its limitations.

³ Drier winters in the South? Less snow in the North and West?

It represents US timberland investments only, and only a subset of those (though it represents a large subset). The index incorporates transactions reported by its contributors, but it relies heavily on appraisals. The annual scheduling of appraisals creates an artificial seasonality to the appreciation returns that does not accurately reflect the real-world changes in value of timberlands in the US.

It appears that more and more appraisals are being shifted to the fourth quarter as shown by the proportion of annual returns that are now appearing in that quarter. This makes the quarterly returns an increasingly unreliable indicator of actual quarterly returns.

The Index is not investible. There is no way to buy any combination of acres of timberland that will provide the same values and returns as the NCREIF index.

As we said in previous *Forest Research Notes*, given its limitations, comparing your timberland investment with the NCREIF Timberland Index should be done with caution. If your returns are, say, 200 basis points lower than the Index, you probably don't need to be worried. Conversely, if your returns are 200 basis points above the Index, you probably shouldn't get too excited.



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