Forest Research Group

Forest Research Notes

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The Tao of Timberland—an Update

We last wrote about the Tao of Timberland back in 2008 (Volume 5, Number 2). Recently we have heard people talk about the NCREIF Timberland Index as if it was the timberland equivalent of the S&P 500.

As we said back in 2008, 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 said six years ago, 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.

Like the Dow, 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 13.7 million acres in the Timberland Index as of Q2 2014 was $23.4 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 five publicly-traded timber REITs[1], nor the nearly 270 million acres held by families and individuals. And there are timberland investments made up of leased lands and timber rights.

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 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 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.

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.

[1] The five publicly-traded timber REITs are Catchmark Timber, Plum Creek, Potlatch, Rayonier and Weyerhaeuser.

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).

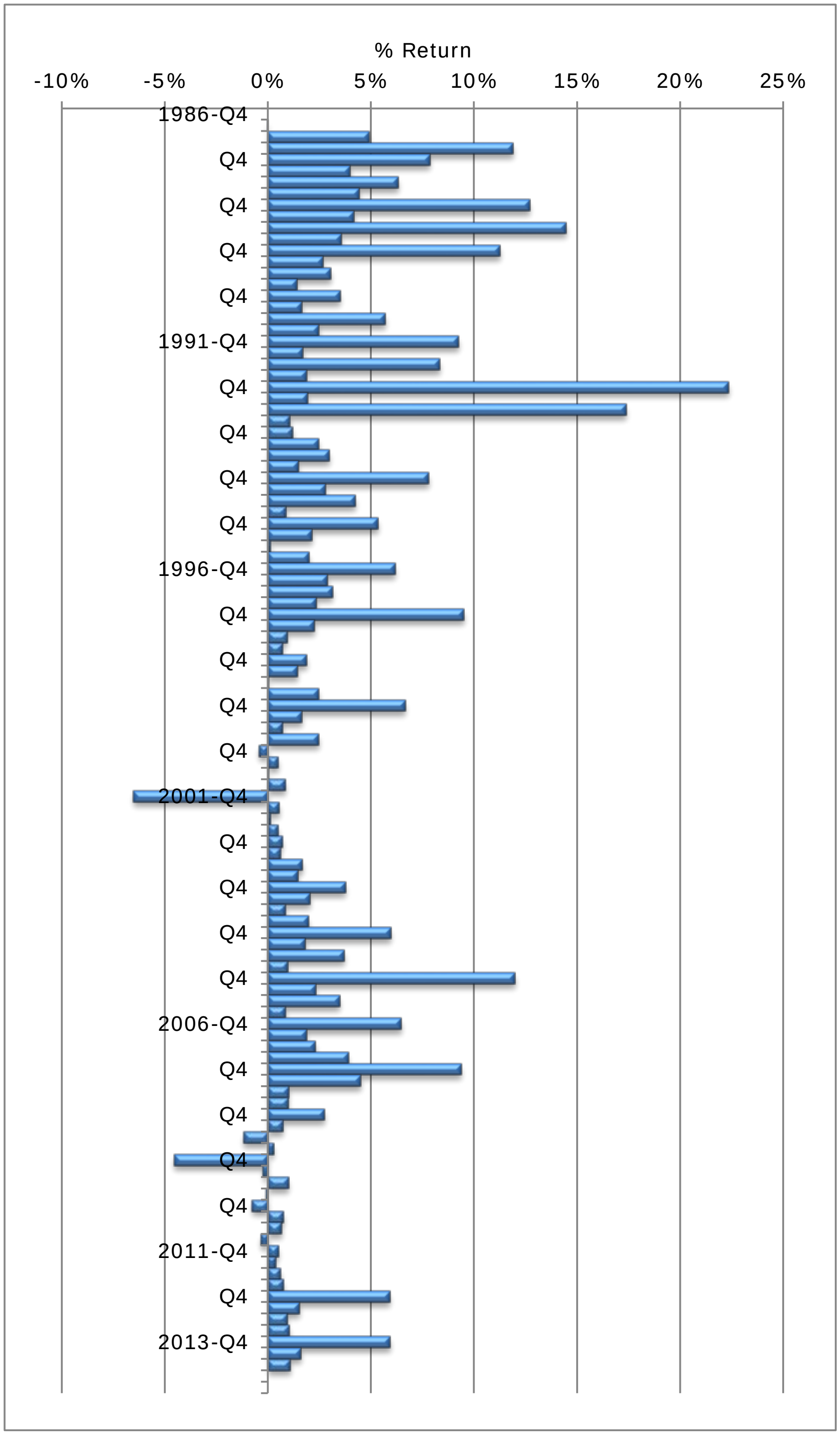
Based on recent conversations with investors, investment managers and appraisers, there has been a trend towards shifting more and more appraisals into the fourth quarter. This provides a year-end value for investors' books, but distorts the quarterly returns even more.

Figure 1 shows quarterly total returns through Q2 2014 for the Timberland Index (available at http://ncreif.org/timberland-returns.aspx). 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.

In central Maine[2], the leaves begin appearing (and the trees begin growing) in mid-May (second quarter) and have turned color (and the trees have stopped growing) by mid-October (fourth quarter).

Figure 1. Quarterly NCREIF Timberland Returns



Source: NCREIF

[2] For our international readers, 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.

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 does not reflect this.

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

Why is this an issue? All other things being equal (e.g., no change in timber prices), 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 2014. Over the life of the NCREIF index, the first quarter has contributed about 9 percent of the total annual appreciation return while the third quarter has contributed 7 percent. The second quarter has contributed just under 25 percent and the fourth quarter has contributed just under 60 percent.

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

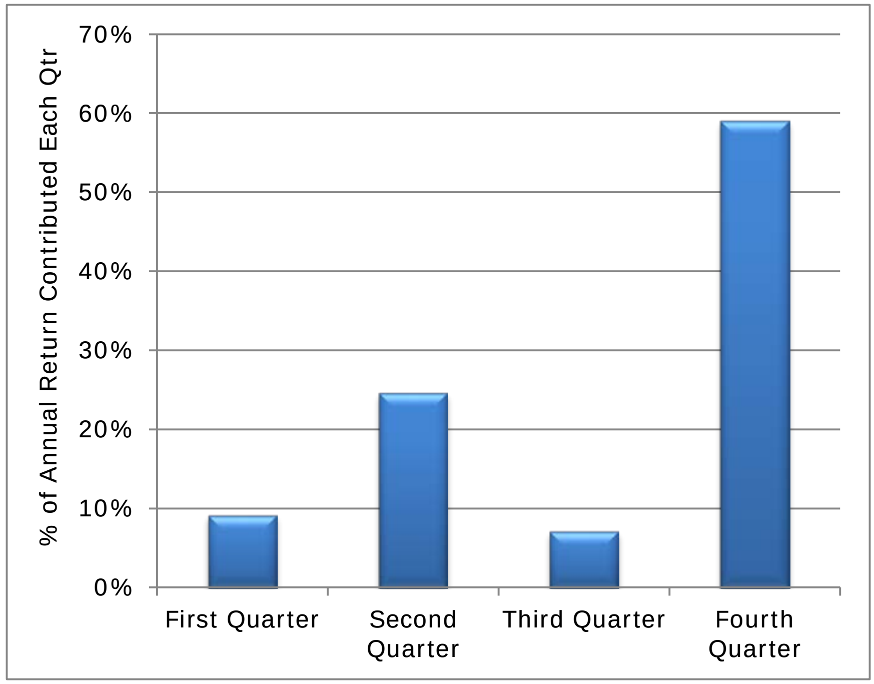


Figure 3. Average Contribution to Appreciation Return by Quarter, for Different Time Periods

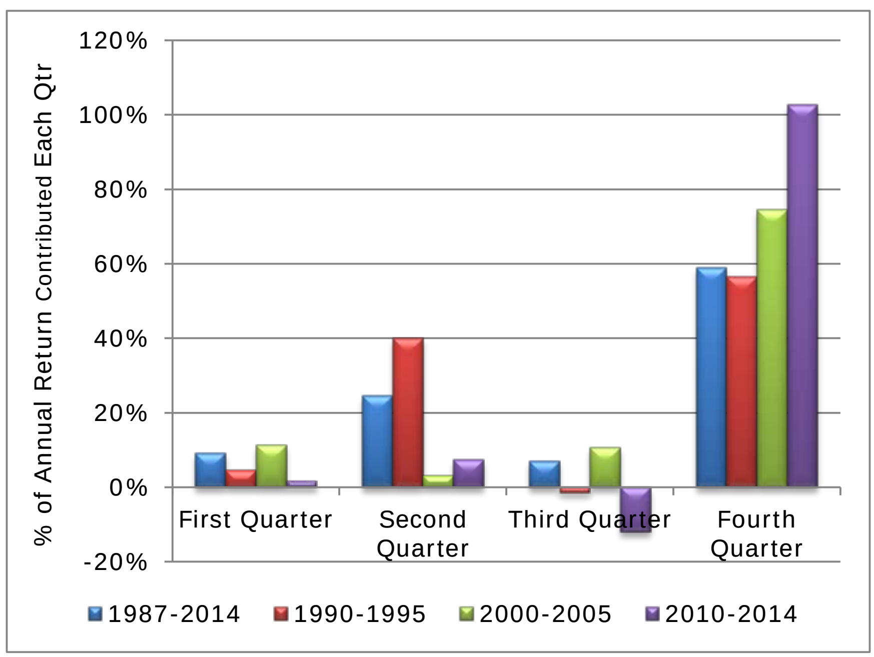
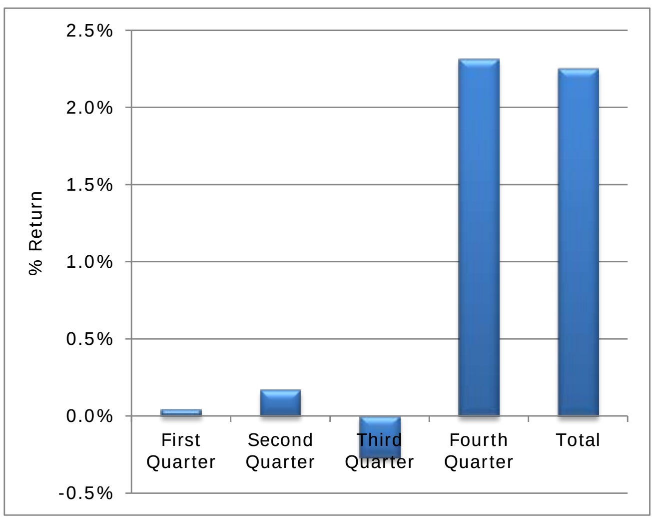


Figure 3 takes the analysis in Figure 2 and looks at different time periods. In the early 1990s, the first and third quarters contributed even less to the total annual appreciation return, but the second quarter's contribution increased to 40 percent. Over the last five years, by the fourth quarter rose to over 100 percent of the annual return.

How can the fourth quarter appreciation returns contribute more than 100 percent of the annual appreciation returns? This happens because the third quarter appreciation returns have been negative over the past five years and the appreciation returns in the first two quarters have been quite low (Figure 4). So the relatively high returns in the fourth quarter are offset by the negative returns in the third quarter.

Figure 4. Average Appreciation Return by Quarter, 2010-2014



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.

Summary

As we said in the beginning, the NCREIF Timberland Index is the best available indicator of timberland returns. But it is important to understand its limitations.

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.

As we said six years ago, 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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