Forest Research Group

# Forest Research Notes

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## That Was Then, This Is Now--Again

In *That Was Then, This is Now* (Forest Research Notes Vol 4 No 2), we compared asset returns for the first two decades of the NCREIF Timberland Index. We now have a third decade to look at. How has timberland performed against other asset classes? It depends of the decade we examine.

### Returns

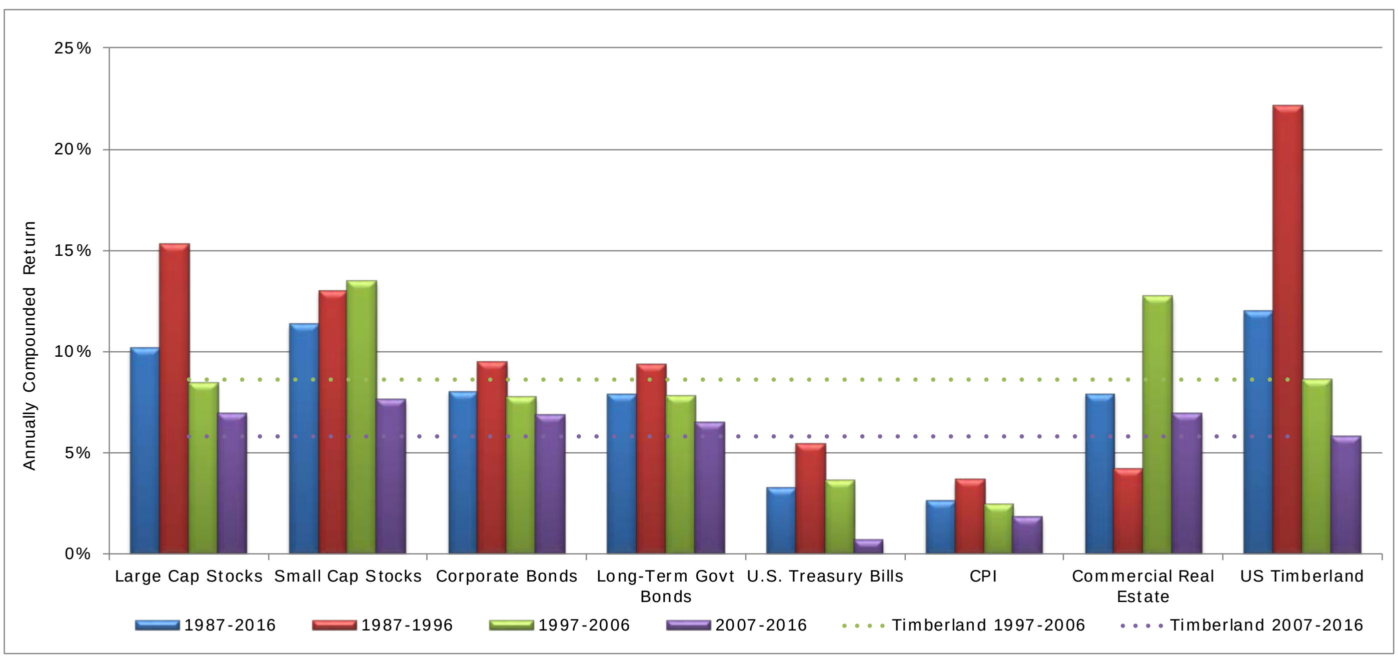
Figure 1 shows returns for a variety of asset classes for four periods: the thirty years from 1987 to 2016 and for each of the three decades within those 30 years. Timberland has earned higher returns than any of the other assets for the entire 30-year period (blue bars), with annually compounded returns of 11.98 percent. Small cap stocks was the next highest asset with annually compounded returns of 11.33 percent.

Timberland was very obviously the top performer for the first decade (red bars, 1987-1996).

It is a little less obvious how timberland compared to the other assets in the following two decades, so we added the dotted lines to help.

Small cap stocks and commercial real estate showed higher returns than timberland for the second decade (green bars, 1997-2006), with large cap stocks within 20 basis points of timberland. Timberland returns were lower than those for all the other asset classes except treasury bills (and inflation) in the third decade (purple bars, 2007-2016). The difference in returns ranged from 180 basis points lower than small cap stocks to 65 basis points lower than long-term government bonds.

**Figure 1. Returns for Various Asset Classes, 1987-2016 and by Decade**




*Sources: Morningstar, NCREIF*

## Correlation Coefficients

Figure 2 shows correlation coefficients for various asset classes and investment periods.

The only asset that has been negatively correlated with timberland for the entire 30-year period (blue bars) is commercial real estate, which was also the asset most strongly correlated with timberland at any time (green bars, 1997-2006).

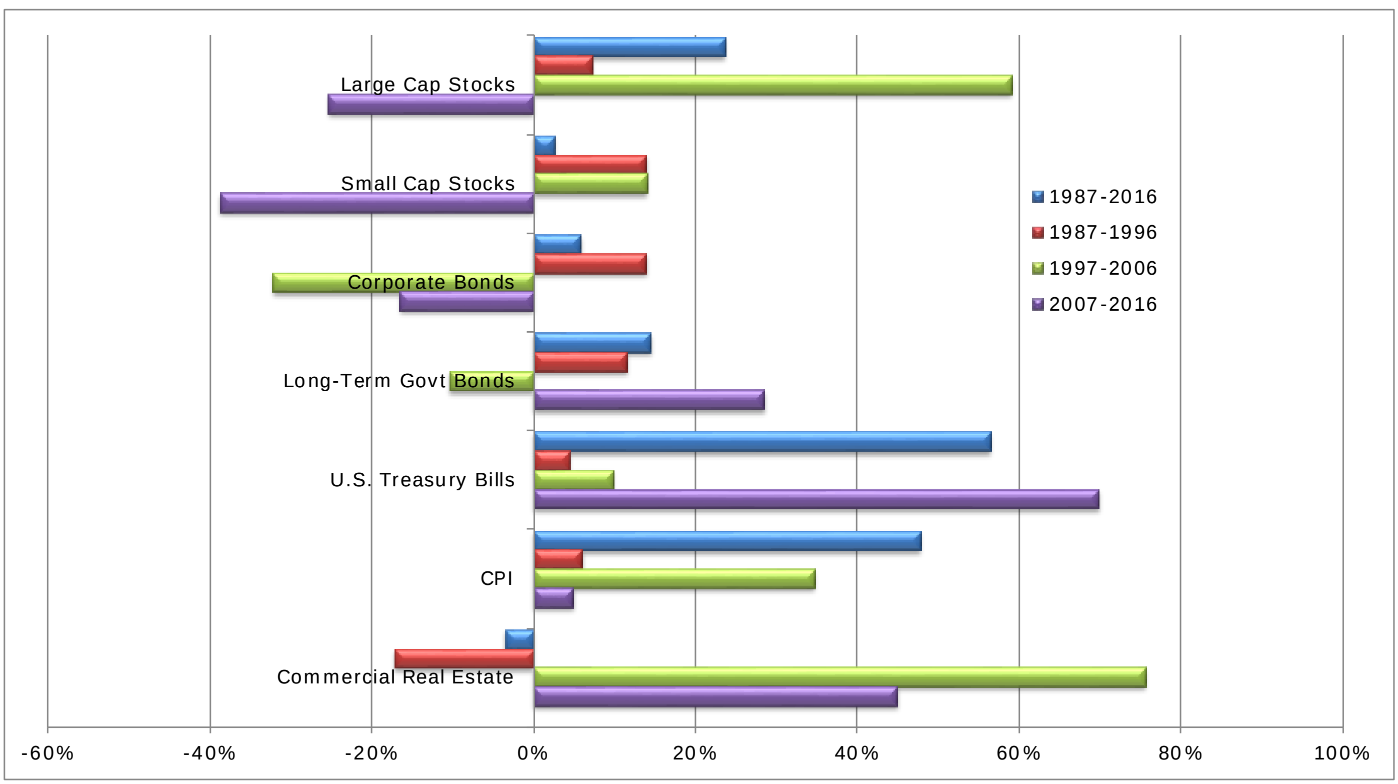
T-Bills and inflation have been strongly positively correlated with timberland for the entire 30-year period. But the correlation with inflation was lower than average in the first (red bars) and third decades (purple bars). (For a more detailed analysis of the correlation between timberland and inflation, see Forest Research Note Vol 9 No 2, *Inflation and Timberland Returns—Update*.)

All other assets have been positively correlated with timberland over the entire 30-year period, but negatively correlated for at least one of the decades.

## Capital Market Line

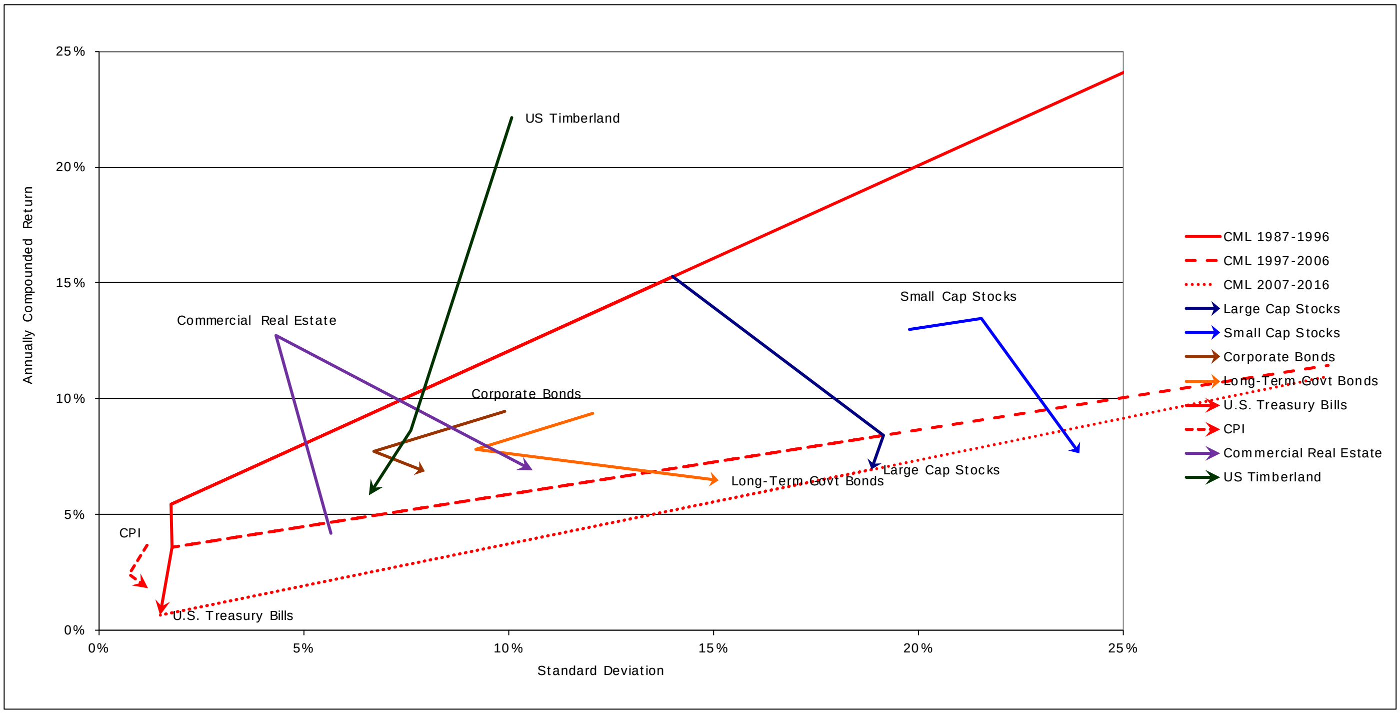
Figure 3 shows a capital market line (CML) analysis for each of the three decades. The downward movement of the CML over the decades shows large cap stocks have seen declining returns (and higher volatility). Timberland has shown a consistently declining volatility, though its returns have been declining as well. Commercial real estate has bounced all over the map. Real estate returns were significantly higher in the second decade than in the first and volatility was lower. Returns dropped and volatility increased in the third decade, to the point where it appears (at this scale) that a line drawn between timberland and real estate would parallel the CML. Corporate and government bonds both shifted to lower returns/lower volatility in the second decade and even lower returns and higher volatility in the third decade.

**Figure 2. Correlation Coefficients for Timberland and Various Asset Classes, 1987-2016 and by Decade**



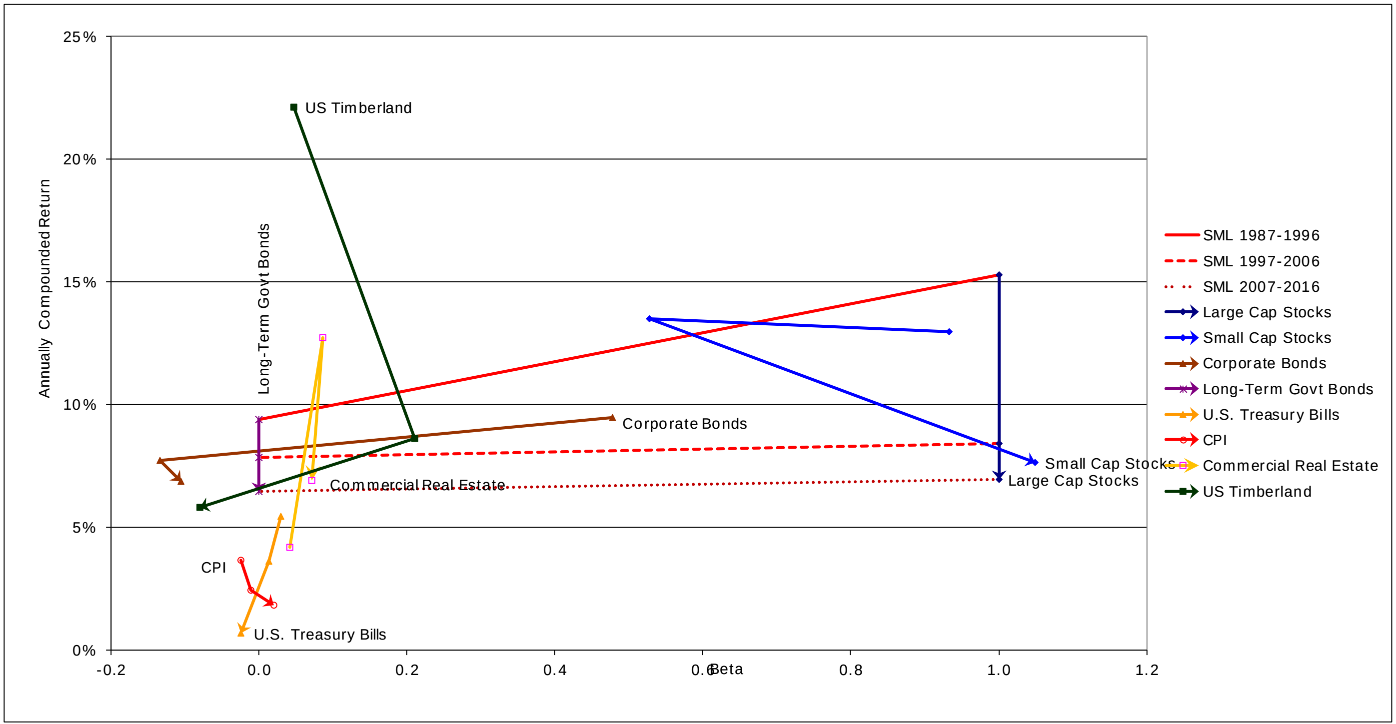

*Sources: Morningstar, NCREIF*

**Figure 3. Capital Market Line by Decade**




*Sources: Morningstar, NCREIF*

**Figure 4. Security Market Line by Decade**




*Sources: Morningstar, NCREIF*

## Security Market Line

Figure 4 shows a security market line (SML) analysis of each of the three decades.[1] As in Figure 3, the lines show how each asset class moved from one decade to the next—the most recent decade is at the arrowheads.

Timberland's beta increased in the second decade, but fell more sharply in the third. It is currently sitting below the SML with a negative beta. Commercial real estate's beta has remained fairly constant over the three decades, but its returns have moved around.

Small cap stocks and corporate bonds saw sharp decreases in beta between the first and second decades (though returns moved in opposite directions). Both then saw an increase in beta in the third decade—though much more so for small cap stocks.

## Summary

### What Does It All Mean?

Same as 10 years ago.

It still means you should not rely exclusively on 20- (or 30-)year-old numbers to make your investment decisions. It means past returns are not guarantees of future returns. The timberland world has been subjected to a shock of some kind every 5-10 years or so. Those shocks have helped create conditions that caused returns in each NCREIF timberland decade to be different from those in the other decades. If we knew what the next shock would be, we could predict what might happen to timberland returns. (Of course, if we knew what the next shock would be, then it wouldn't be a shock, now would it?)

Figure 1 makes us wonder—with returns from almost all asset classes declining over the past 3 decades, how are pension funds and other institutional investors going to meet their financial obligations?

## Events

### Who Will Own the Forest

World Forestry Center, Portland, Oregon
September 12-14, 2017

I will be on a panel discussing the NCREIF Timberland Index and other measures of timberland performance. My presentation is not yet titled, but will look at the NCREIF index (see, for example, *Forest Research Notes* Vol 11 No 2), Timber Mart-South's Southern Timberland Index (see *Forest Research Notes* Vol 13 No 4) and other indices.



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[1] The increasing complexity of the CML and SML charts (compared to the 2-decade analysis in Vol 4 No 2) is caused by the addition of the third decade and makes us think we may want to retire before data are available for the fourth decade in 2027.