

Rising Interest Rates and Timberland Returns

Introduction

Will timberland returns rise or fall with raising interest rates? This is the main question to be addressed by this paper. The slow but steady recovery of the global economy following the Great Financial Crisis (“GFC”) has brought this question to the forefront. The Federal Open Market Committee’s fed funds base rate increase in December 2016 and additional increases planned for 2017 make it more likely the U.S. is moving toward a higher rate environment.

Based on our research, we believe that timberland returns are less affected by monetary policy and changes in interest rates and more by general economic growth and key valuation drivers for this asset class. We reviewed the performance of U.S. timberland investments during periods of rising interest rates, both in nominal and real terms and have determined that:

- In the period 1987 to 2016, we found a positive correlation of timberland returns to nominal interest rates represented by the 10-Year Treasury rate (yield).
- Timberland returns are more robustly correlated with economic growth as measured by U.S. Gross Domestic Product (“GDP”) than 10-Year Treasuries.
- We conclude that future returns from timberland will be driven by fundamental demand for forestry products and not necessarily by interest rates.

Case Study: Will U.S. timberland returns rise or fall with rising interest rates?

We selected the United States for our case study primarily due to the availability of return data from privately held timberland investments. The National Council of Real Estate Fiduciaries (“NCREIF”) Timberland Property Index reports U.S. returns quarterly, beginning with data from 1987. As of Q4 2016 it reported 454 properties representing 13.6 million acres with an asset value of \$24.2 billion.

About Campbell Global

Campbell Global brings more than three decades of experience and leadership to sustainable timberland and natural resource investment management. As a full-service firm, we acquire and manage timberland for investors, while seeking to provide the highest quality service and expert management. Known for expertise and integrity, we seek to deliver superior investment performance by focusing on unique acquisition opportunities, client objectives, and disciplined management.

Author

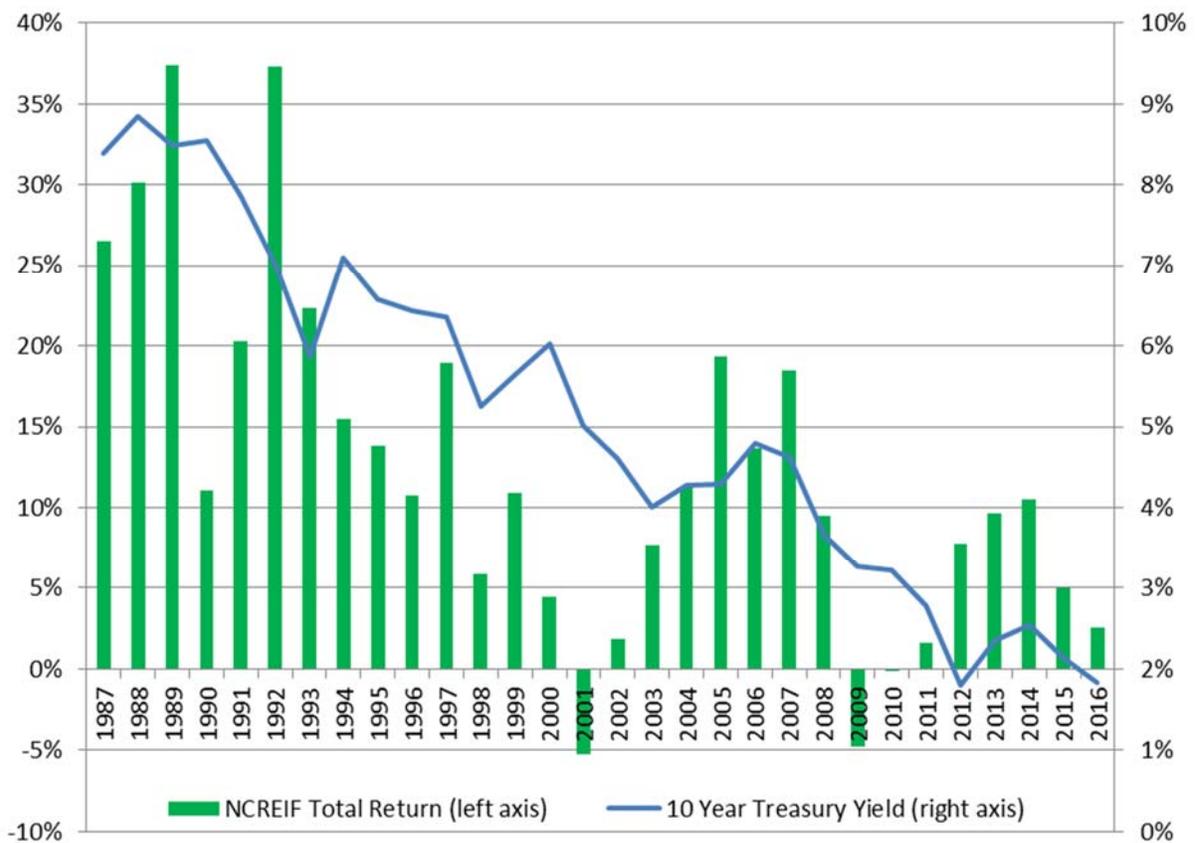


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This paper looks at the potential impact of a rise in interest rates once the Federal Open Market Committee (“FOMC”) determines that employment, inflation, wage growth, and economic growth are headed in the right direction. Since the recession of 2008/2009, the FOMC has kept interest rates near 0% (.25% nominal from 2008 through 2015). In December 2016 the FOMC announced that in view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate from .50% to .75%. Their stance on monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a return to 2 percent inflation. Generally it is expected that the FOMC may raise rates another .50% during 2017.

Assuming continued improvement in the U.S. economy, and the recent action by the FOMC, an inevitable rise in interest rates is likely to occur, albeit at a very moderate pace. What will be the impact of higher interest rates on timberland returns? Before we answer this question, we need to look at two key events of timberland returns since the inception of the NCREIF Timberland Index in 1987 in order to explain some of the return developments in Figure 1.

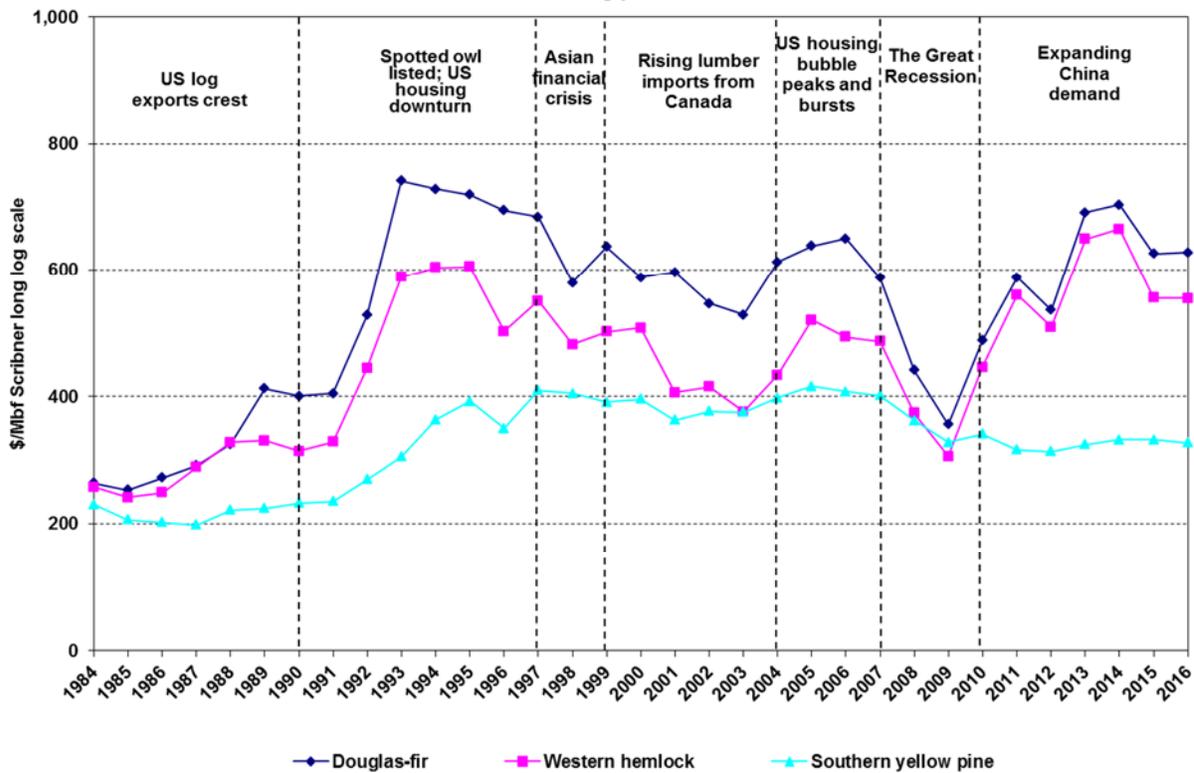
Figure 1. Annualized Returns: NCREIF vs. 10-Year U.S. Treasury



Source: Campbell Global

The first is the federal government’s dramatic reduction in timber harvests from federal public forests in Washington and Oregon in the early 1990s, from over five billion board feet to less than one billion board feet. The result was a dramatic increase in log prices and timberland values for private timberland owners (Figure 2).

Figure 2. Delivered Sawlog Prices in the U.S.



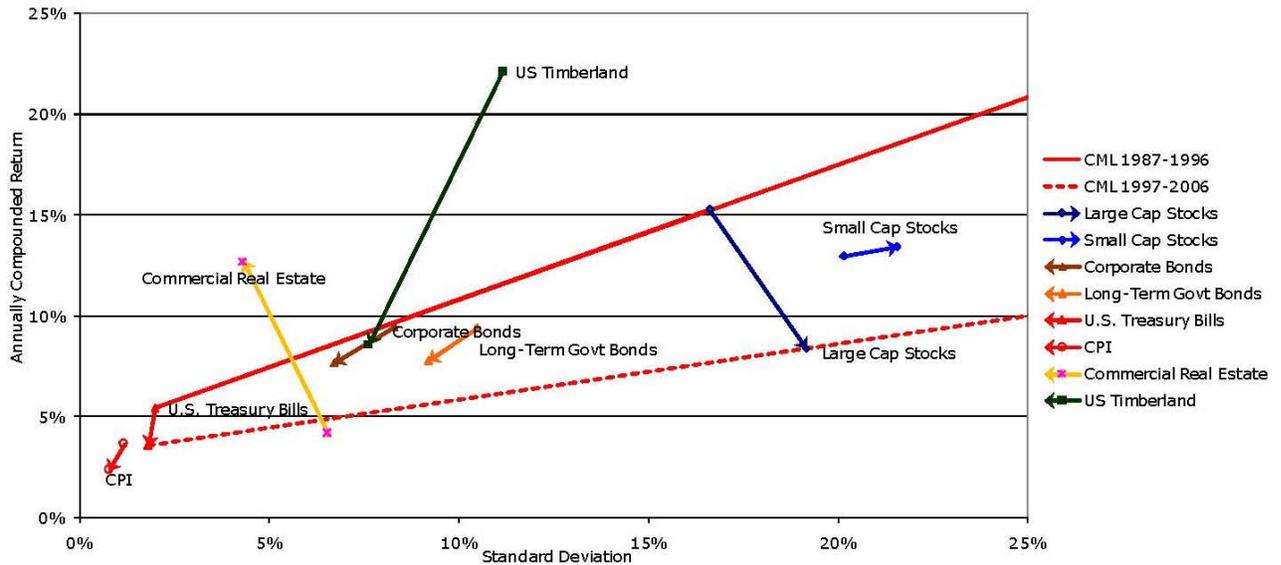
Sources: LogLines, TMS, CG

Source: LogLines, TMS, Campbell Global

Secondly, as timberland investments attracted more institutional investors due to very favorable risk/return metrics, expected returns and discount rates used in valuations declined as timberland investing became more accepted as an asset class. The point made here is that the current risk-adjusted return expectations for timberland investing are more inline on a risk/return basis with other asset classes (Figure 3).

As timberland returns and risk have compressed in line with capital market theory, we think this implies discount rates for timberland relative to other asset classes should not change materially from where they are today. If discount rates increase due to a rise in the risk-free U.S. Treasury rate, it will be a function of higher inflation and economic activity which would generally support higher timberland values.

Figure 3. Capital Market Line



Source: Forest Research Group

To determine if timberland returns move with 10-Year Treasury rates we looked at the correlations of returns to both nominal and real Treasury rates over two time periods. The correlation between nominal U.S. Treasury rates and timberland returns shows a positive relationship for the period 1987 to 2016. We then looked at the period 2008 to 2016, corresponding to the GFC and the period of historic low interest rates, and observe that correlations of timber returns to the nominal Treasury rate actually went negative, but remained positive with respect to real Treasury rates. Notably, the correlation of timber returns to GDP remained significant and consistent, increasing from .44 and .51 (Table 1).

Table 1. Correlation and Returns of 10-Yr U.S. Treasury, Timberland Returns and GDP

1987 to 2016	Correlation
Timber to Nominal Treasury	0.66
Timber to Real Treasury	0.52
Timber to GDP	0.44
2008 to 2016	Correlation
Timber to Nominal Treasury	-0.26
Timber to Real Treasury	0.34
Timber to GDP	0.51

Source: Campbell Global

Another way to evaluate the relationship of timberland returns to U.S. Treasury rates is to take the years in which the 10-Year U.S. Treasury yield increased in real terms (net of inflation) over the prior year. Taking the real yield versus the nominal yield would be a better measure of capturing true FOMC tightening due to a strong economy versus an inflation driven policy move. Interestingly timberland returns have been positive in nine out of these eleven years, averaging nearly 10% (Table 2). We note that in years from 2008 to 2014 the Treasury increase was small and was due primarily to the volatility in demand for Treasuries.

Table 2. Timberland Returns during Increasing U.S. Treasury Rates, in Real Terms

Year	Real Timber Return
1988	25.70%
1991	17.20%
1994	12.77%
1997	17.21%
2001	-6.79%
2006	11.14%
2008	9.43%
2010	-1.65%
2012	6.01%
2013	8.18%
2014	9.72%
Average	9.90%

Source: Campbell Global

Observing that there is a more stable correlation between GDP and timberland returns than there is between Treasury yields and timberland returns, we looked at the years in which there was a negative return from timberland, and noted that this corresponds to the post 9/11 slowdown in 2001 and the recession of 2008/2009 (Table 3). The data supports economic intuition that timberland returns may to a large extent be driven by the business cycle and GDP and not by interest rates. Timberland returns are impacted by spot log prices and expectations for future log prices, driven by supply and demand for wood products, which in turn is driven by the real economy.

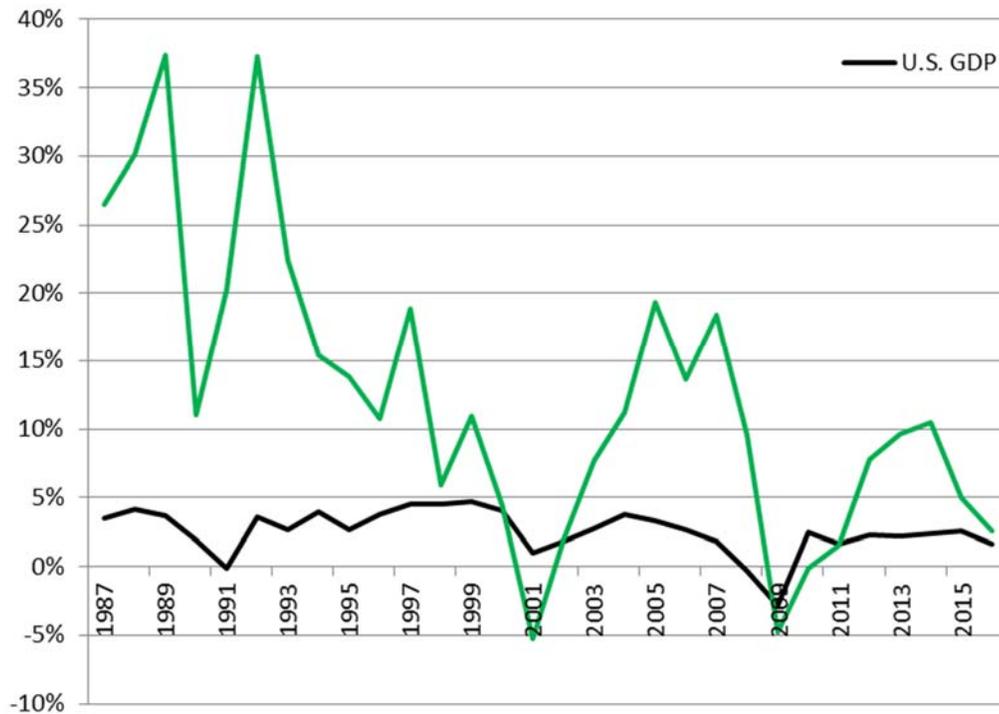
Table 3. Years with Negative Timberland Returns

Year	Return	GDP
2001	-5.24%	1.00
2009	-4.75%	-2.80
2010	-0.15%	2.50

Source: Campbell Global

Lastly we charted timberland returns and GDP (Figure 4). When GDP went negative in 1991 and 2008/2009 during recessions, and nearly negative in 2001 (9/11), timberland returns either fell significantly or actually went negative. Conversely when GDP rebounded, timberland returns increased significantly.

Figure 3. U.S. GDP and Timberland Returns



Source: Campbell Global

Conclusion

We conclude that the historical data over the period 1987 to 2016 indicates a stronger relationship between timberland returns and GDP than does timberland returns and the 10-Year Treasury yields. This would point to moderate to improving timberland returns going forward if economic growth continues.

About the Author

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Mr. Holland, CFA, is Director of Treasury and Risk for Campbell Global. He manages banking relationships, oversees performance reporting for the firm, provides financial and analytical support for acquisitions, develops statistical models, and evaluates financing alternatives. Mr. Holland also implements risk and insurance programs, is a member of the compliance committee, and works on special projects. He is the past President of the CFA Society of Portland, and former Chair of the NCREIF Timberland Index Committee.

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