

The background of the entire page is a photograph of a tree trunk with rough, dark bark, viewed from a low angle looking up. Green leaves are visible in the upper left and right corners, partially obscuring the sky.

Measuring US Timberland Performance

Comparison of NCREIF indices

Copenhagen, March 15

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Executive Summary

The Timberland Property Index (TPI) and Timberland Fund and Separate Account Index (TFSAI) are the two benchmarks available for timberland investments in the United States. The TPI reports returns on an un-levered basis (gross of structure costs and fees), while the TFSAI reports levered returns net of costs and fees – the latter being most comparable to returns seen by investors.

The TFSAI distinguishes between two investment vehicle types: commingled funds, which are probably a better benchmark for investments with leverage, and separate accounts, which are more appropriate for investments with no or low leverage. The TFSAI does not distinguish between regions in the US but is, like the TPI, weighted towards the US South. Investors with a different regional exposure would have to adjust benchmark returns using regional TPI returns.

The TPI is most suitable to benchmark unlevered, gross of structure costs and fees returns, though all effects of leverage are not eliminated from the index as some properties have been managed to service debt.

Performance to date shows that an appropriate (low) level of gearing has been important to achieve higher timberland returns, as the cyclical downturn in the US construction sector has been detrimental to funds with higher leverage. The return spread between moderately geared investments (separate accounts) and investments with higher leverage (commingled funds) are beginning to narrow as the debt-to-value is coming down in funds.

1 Introduction

This paper outlines the key attributes of the most commonly used benchmarks for US timberland investment returns; the Timberland Property Index (TPI) and the Timberland Fund and Separate Account Index (TFSAI), both developed by the National Council of Real Estate Investment Fiduciaries (NCREIF). The indices are considered representative, though with limitations depending on the investment type.

2 Attributes of the TFSAI and TPI

The following sections outline some of the key attributes of the TFSAI and TPI and what investors need to consider when using them as benchmark indices. Appendix 1 summarizes the differences between the TPI and the TFSAI.

2.1 Market share

The TPI index is composed of timberland properties purchased and held by institutional investors, or by timberland investment management organizations (TIMOs) on their behalf. It only includes properties located in the US.

The TFSAI index includes most of the same timberland, but:

- Performance is reported on a structure (fund or separate account) level with multiple properties under management in each structure
- It includes structures that are invested at least 95% of their capital in the US.

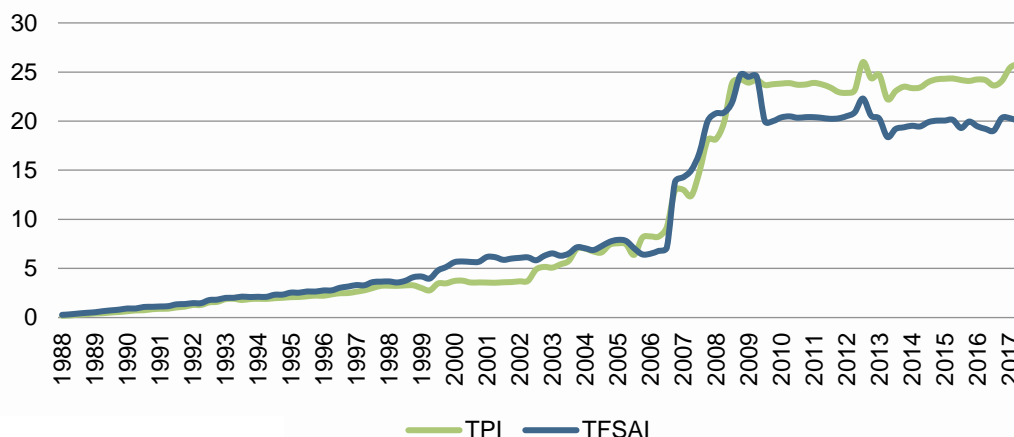
As shown in Figure 1, the coverage of the TFSAI and TPI grew rapidly between 2006 and 2009, primarily because institutional investors increased the pace at which they were investing into the asset class and new entrants joined.

The drop in the TFSAI market value after 2009 is likely due to the exclusion of structures that expanded their non-US timberland holdings to more than 5% of their portfolio. Any properties located in the US in such funds would, on the other hand, still be included in the TPI.

On a value basis, as of September 30, 2017, the TPI represents approximately 60% of TIMO-managed timberland in the US, valued at about USD 43 billion¹, while the TFSAI represents about 47%. Not included in any indices is timberland owned by public timber REITs, which is valued at USD 33 billion as of January 2018.

¹ Sources: FORISK and IWC's internal database MIRA.

Figure 1 Quarterly market value (USD billion)

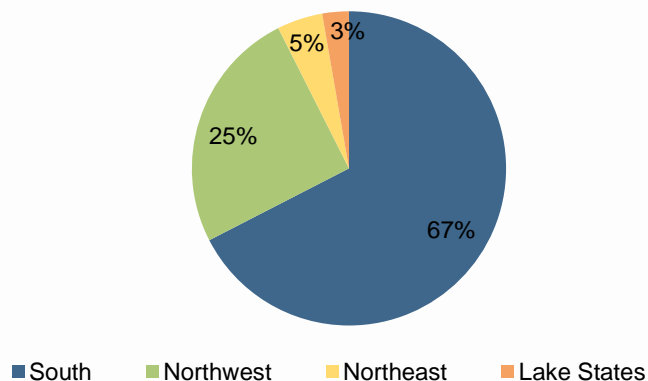


2.2 Regional coverage

Regional returns are available within the TPI index that is weighted towards the South (see Figure 2). Investors that have a different regional exposure in their US timberland portfolio should therefore, and can, adjust the TPI accordingly.

The TFSAI does not report regional returns, but the index’s regional allocation is similar to the TPI, though with a larger exposure to the US South (75%) and a smaller exposure to the Northwest (18%).

Figure 2 Regional distribution of TPI by market value (as of September 30, 2017)



2.3 Return and leverage

The performance of the TPI and TFSAI are not directly comparable. The TPI reports unlevered returns, calculated on a property’s total market value before interest payment on debt, whereas the TFSAI reports returns on investors’ equity after interest payments.

In the TFSAI, NCREIF aggregates returns reported by the TIMOs in compliance with the REIS Fair Value Accounting Policy Manual. Fund properties must be valued in a manner similar to valuation requirements for the TPI, which include an independent external appraisal performed in accordance with the Uniform Standards of Professional Appraisal Practices (USPAP).

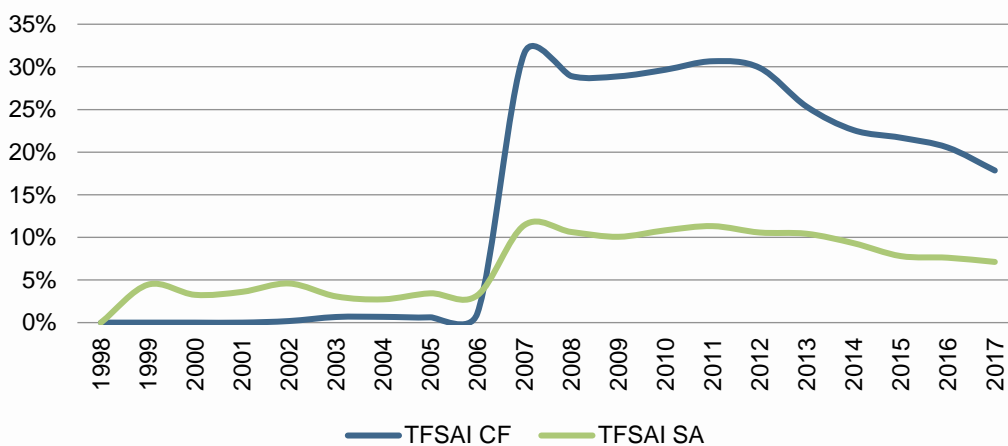
In the TPI, returns are calculated by NCREIF with data supplied by TIMOs, using a formula that NCREIF also applies to commercial real estate². Due to the method for calculating TPI returns, it is worth noting that timberland sales and purchases in the TPI can generate higher capital appreciation returns than those calculated by TIMOs³. There is a quite strong correlation between sales and purchases (as a percentage of total TPI market value) and capital appreciation (pairwise correlation = 0.46), but how much is driven by market related factors and how much is due to methodology is difficult to quantify without property level data at hand. The overall effect is believed to be minor, as transaction volume on average per year has been between 2 to 3% of the TPI market value, and few years have showed an unusual high transaction activity (e.g. 13% in 2001 and 8% in 2005).

Furthermore, the TFSAI distinguishes between two types of investment vehicles, commingled funds (TFSAI CF) and separate accounts (TFSAI SA). Commingled funds include many investors and are generally larger (blind pool) funds where investment decisions are vested with the TIMO. Separate accounts normally include fewer larger property investments tailored to one investor who has more authority over strategy and decisions⁴. As of Q3 2017, separate accounts and commingled funds accounted for 58% and 42% of the TFSAI market value, respectively.

The debt-to-gross market value in commingled funds rose sharply to 30% in 2007, when six funds entered the index with a leverage of almost 45% in each fund. For separate accounts, leverage increased moderately to about 10% (Figure 3).

Source: NCREIF

Figure 3 Debt-to-gross market value



There are probably several reasons for this divergence:

- Commingled funds generally cannot invest more than a certain portion of their capital into one single asset and must use co-investments (which means coordination among several investors) or debt if they wish to target larger assets, whereas separate accounts can usually be more flexible and quicker to consider increasing total capital available for a specific deal.

² Hancock Timber Resource Group, Research Notes 2003, The NCREIF timberland property index.

³ See IWC 2012, Measuring timberland performance: NCREIF introduces the Timber Fund and Separate Account index (www.iwc.dk/publications/)

⁴ See IWC Newsletter Issue 42 for further explanation (www.iwc.dk/publications/).

- Commingled funds often allowed TIMOs to use more debt in the anticipation to generate higher returns (as the interest expense was expected to be lower than return before the financial crisis), while the lower debt-ratio for separate accounts probably reflects a more narrow and conservative mandate, where investors have had a more direct influence on debt levels.

2.4 Costs and fees

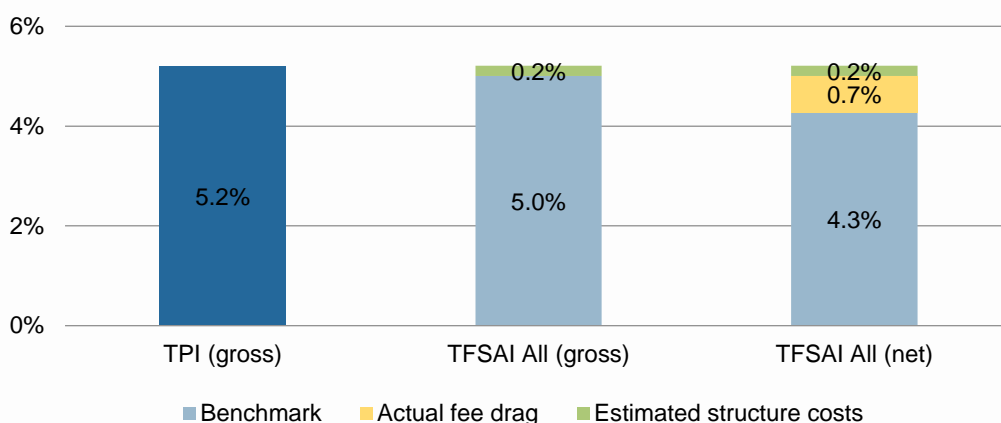
The two indices report returns on a pre-tax basis but differ on other cost components in calculating returns:

- The TPI returns are calculated net of property level costs but gross of structure level costs (interest on debt included) and management and performance fees;
- The TFSAI distinguishes between gross and net returns, where TFSAI gross is net of property and structure costs, but gross of fees, and the TFSAI net is net of all costs and fees.

The difference between the TPI and TFSAI gross is thus an approximation for structure level costs, although in practice the difference also includes the impact of debt on returns in separate accounts and commingled funds. As shown in Figure 4, the average impact of structure level costs has over the past 10 years been 0.2% per year. Last year, structural expenses decreased to about 0.15%, likely due to the reduction of debt.

Figure 4 Impact of costs and fees on benchmark compounded yearly returns for the past 10 years (as of September 30, 2017)

Source: NCREIF



The differences between the TFSAI gross and TFSAI net are management and performance fees, which have impacted the return with 0.7% per year on average the past 10 years. This fee drag is slowly declining and was at 0.65% in 2017. In a low return environment, performance fees are affected accordingly, but reductions in management fees in response to lower return expectations could also be another explanation for the tendency.

2.5 Benchmark

The TFSAI net is the return most comparable to those an investor sees in its timberland portfolio. Unfortunately, the TFSAI does not report on vintage year for the structures in the index, so an approximation for a benchmark is then how the index has performed according to base year. As aforementioned, regional returns are not included in the TFSAI index.

As can be seen in Figure 5a, leverage has been influential on returns for commingled funds (TFSAI CF). The annualized return has been less than 2% since 2008 – after log prices in the US South fell from 37 USD/ton in 2007 to 27 USD/ton in 2009, a direct consequence of the financial crisis. The subsequent fall in cashflows has reduced the performance of levered funds and the harvesting of the related forests has likely been sub-optimal due to debt covenants to be met. The narrow spread in returns before 2007 (Figure 5b), suggests that it has indeed primarily been debt that has affected fund returns post financial crisis.

Separate accounts (TFSAI SA) have performed better than both the TPI and TFSAI CF, which indicates that these investments have had an appropriate level of gearing. The TPI returns have also been indirectly affected by leverage, as some properties in the index likely have been forced to conduct sub-optimal management choices to cover cost of debt that in turn have affected their asset values.

Source: NCREIF

Figure 5a Annualized returns (as of September 30, 2017)

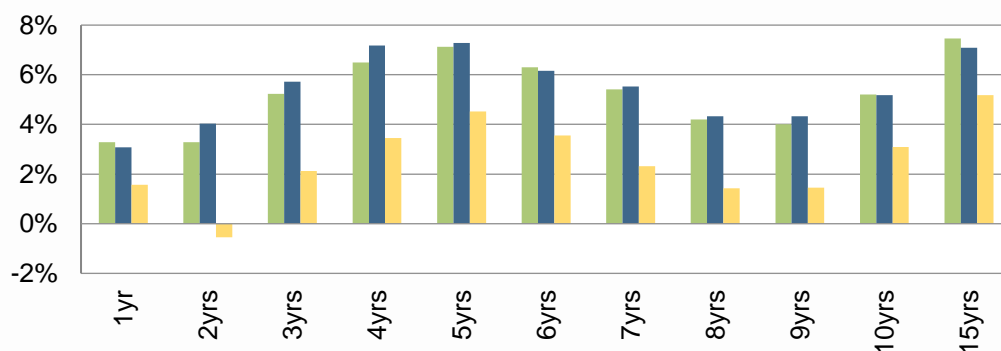
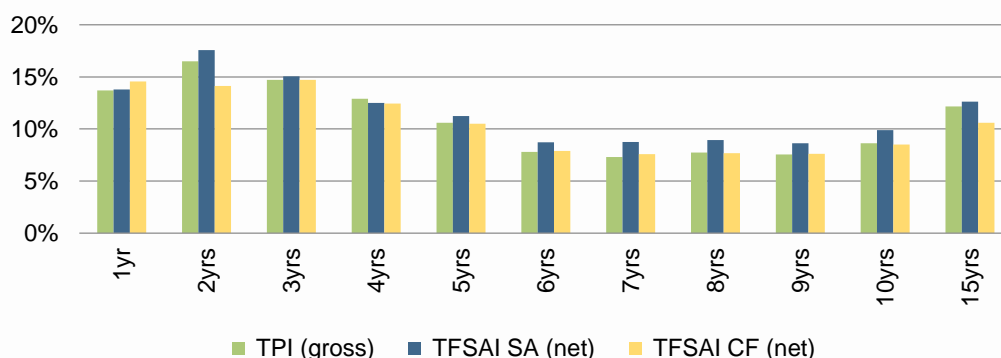


Figure 5b Annualized returns (as of December 31, 2006)



Worth noting is that the return spread between separate accounts and commingled funds is beginning to narrow as the debt-ratio in commingled funds is decreasing.

Even though leverage is probably the main reason for the difference between separate accounts and commingled fund returns, other factors could contribute as well. First, one could argue that it is more cost efficient to manage fewer and larger properties that often characterizes separate accounts. Second, capital calls to cover shortfalls in cashflows are easier to implement in separate accounts where only one investor is part of the decision-making. In commingled funds, optimal management choices in case of cash constraints may sometimes be more difficult to implement due to legal requirements, the multitude of investors participating, whom might not all be like-minded, and slower processes.

3 Appendices

Appendix 1

Summarizing the differences between the TPI and TFSAI as of September 30, 2017

| | TPI | TFSAI |
|---|--|--|
| Gross market value (USD billion) | 25.84 | 20.02 |
| Leverage | Debt not reported | 15% |
| Area (million acres) | 14.38 | 11.16 |
| Number of properties / funds or separate accounts | 476 | 96 |
| % of TIMO-managed timberland in the US | 60% | 47% |
| Geography | 100% US (returns by regions) | 95% of NAV must be in US (no regional returns) |
| Make-up | Timberland properties with 80% fee simple ownership | 90% of NAV must be timber, timberland or cash equivalent |
| Ownership | Must own 80% or more of fee simple – performance of debt is not measured | Underlying assets can be leased – allows any level of debt |
| Enter-Exit | Sold properties exit the index the quarter they are sold, they can re-enter next quarter if applicable | Can change on quarterly basis as funds enter, are liquidated, or new members enter |
| Return | TWR weighed by total market value | TWR weighed by average market value of equity only |
| Appraisal requirements | Annual | Annual |
| Advisory fee | Not reported | Gross and net returns are reported |

Sources:
NCREIF, FORISK,
IWC

Appendix 2

Annualized returns as of September 30, 2017

| | TPI All | TPI South | TPI PNW | TPI NE | TFSAI All (net) | TFSAI CF (net) | TFSAI SA (net) |
|-------|---------|-----------|---------|--------|-----------------|----------------|----------------|
| 1yr | 3.3 | 2.9 | 5.2 | -3.7 | 2.5 | 1.6 | 3.1 |
| 2yrs | 3.3 | 3.0 | 5.7 | -3.4 | 2.1 | -0.6 | 4.0 |
| 3yrs | 5.2 | 5.0 | 6.9 | 0.6 | 4.2 | 2.1 | 5.7 |
| 4yrs | 6.5 | 6.0 | 9.4 | 0.9 | 5.7 | 3.4 | 7.2 |
| 5yrs | 7.1 | 6.2 | 10.6 | 1.7 | 6.2 | 4.5 | 7.3 |
| 6yrs | 6.3 | 4.9 | 10.8 | 1.6 | 5.1 | 3.6 | 6.2 |
| 7yrs | 5.4 | 3.9 | 10.0 | 2.6 | 4.2 | 2.3 | 5.5 |
| 8yrs | 4.2 | 2.8 | 8.5 | 1.1 | 3.1 | 1.4 | 4.3 |
| 9yrs | 4.0 | 3.0 | 7.1 | 0.9 | 3.1 | 1.4 | 4.3 |
| 10yrs | 5.2 | 4.5 | 7.6 | 0.5 | 4.3 | 3.1 | 5.2 |
| 15yrs | 7.5 | 6.7 | 10.2 | 3.3 | 6.3 | 5.2 | 7.1 |

Source: NCREIF