

Market Report:

Principal Components Analysis of Timber Stocks

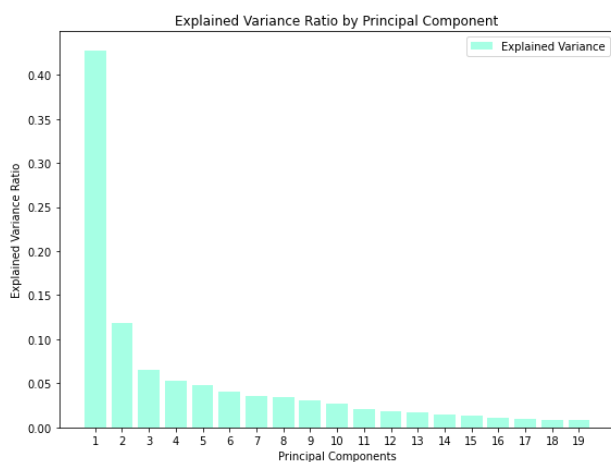
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1. Assumptions

The analysis below is performed on weekly time series of adjusted stock returns over the period July 2014 – June 2024. The stocks included in the analysis are timber stocks ranging from timberland owners to manufacturers of wood products and distributors of wood products and other building materials. These represent the core universe of the Timber Finance Forest-Based Construction Basket.

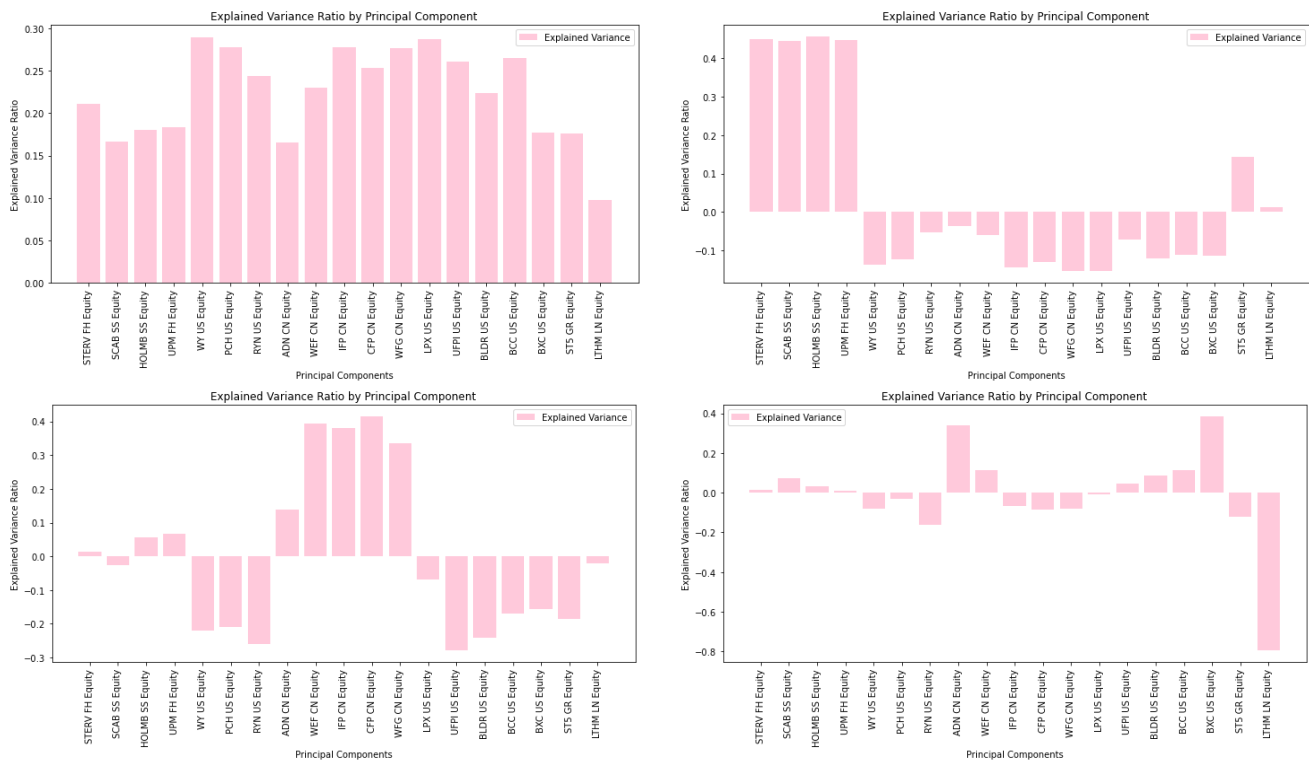
2. Overview

In this section, the entire universe of timber stocks with a focus on or at least significant exposure to timber construction is considered for PCA analysis.



PCA analysis highlights a very strong principal component explaining over 40% of the variance in stock returns. All stocks are strongly loaded on this component while North American stocks have somewhat higher loadings compared to their European peers.

The second principal component explains 12% of the variance and loadings point to a Europe vs. North America factor. The third component is mostly a Canadian market factor.



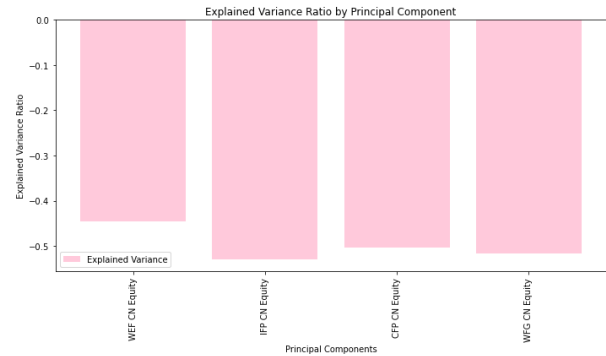
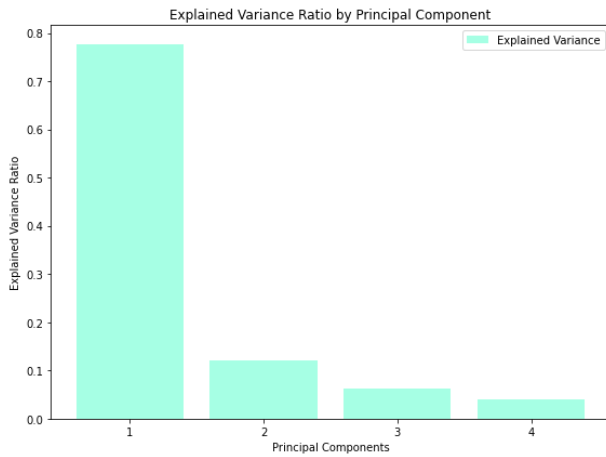
Nordic integrated forest owners and, to a lesser extent, Steico have strong loadings in the fourth component, while Latham, the least liquid in the group, has the strongest loading on the fourth component.

These results highlight that the main shared principal component plays a key role in driving performance at portfolio level. This is consistent with a general stock market factor and the universe's dependence on a shared driver like the construction cycle. The difference in loadings between the North American and the European companies is consistent with the idea that regional (continental) differences play a role, although a smaller one. The fourth component appears to be linked to liquidity, as the least liquid stocks (Latham, Acadian and BlueLinx – the latter used to be highly illiquid in the first part of the sample) have the highest loadings.

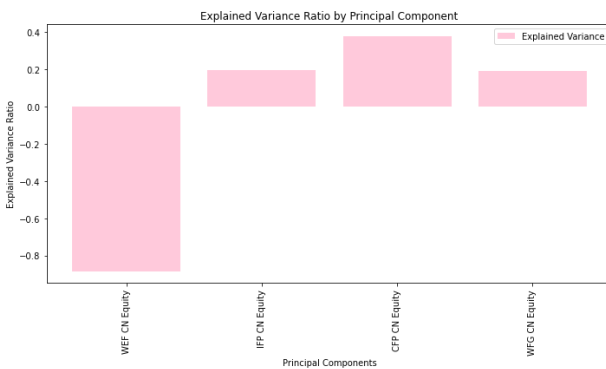
In the next sections, the same PCA analysis is performed within each sub-sector: Primary Products, Secondary Products, Timberland REITs, Integrated Forest Owners.

3. Primary Products

Primary products manufacturers are mainly lumber manufacturers headquartered in Canada: Western Forest Products, Interfor, Canfor and West Fraser Group. Over the period taken into consideration, these companies share a common statistical factor driving returns and explaining almost 80% of the total variance. The first principal component shows significant loadings for all stocks in the sub-sector, highlighting the similarity of such stocks that are mostly (but with nuances) driven by the same commodity: lumber.

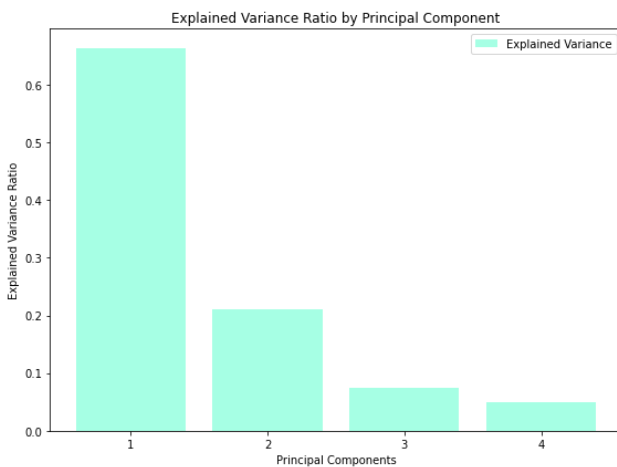


The second principal component has strong (negative) loadings for WEF, the smallest company, while the others are moderately positive.

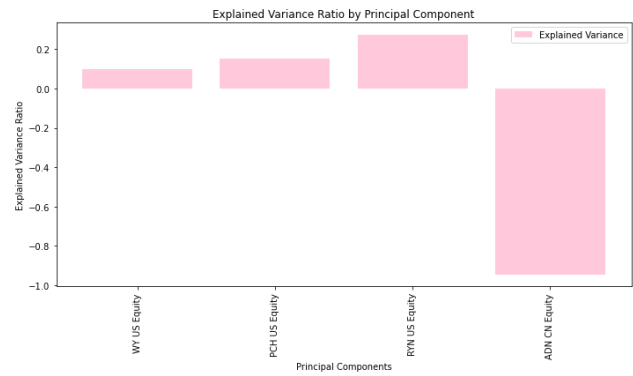
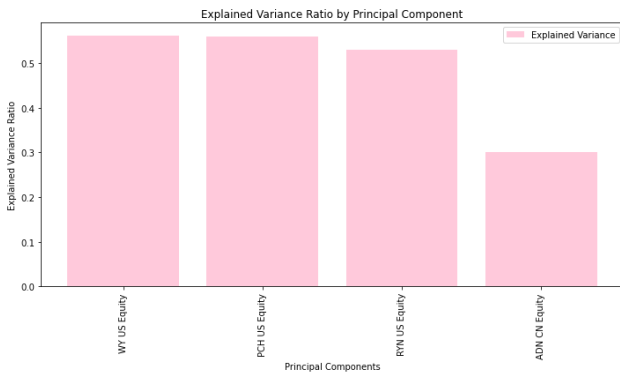


4. Timberland REITs

In addition to the three Timberland REITs, Acadian Timber is included in the sample due to its pure timberland business model. Timberland REITs have mostly exposure to North American timberland, while one company – Rayonier – also has exposure to New Zealand timberlands. From a business point of view, they range from pure timberland ownership to integrated timberland and durable wood products manufacturing.

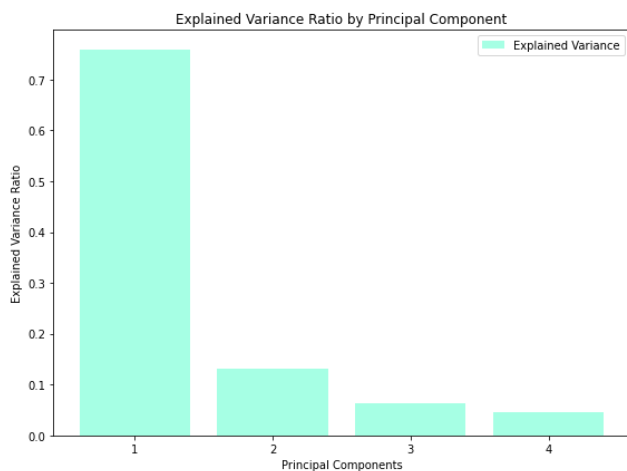


The first principal component explains almost 70% of the variance in weekly stock returns. The weakest loading is for Acadian, which instead has a very strong (negative) loading on the second component. The latter component explains ca. 21% of the variance, which is very significant. Rayonier has a moderately positive loading on this component. Acadian and Rayonier are smaller than WY and PCH and are more “pure-play” timberland owners.

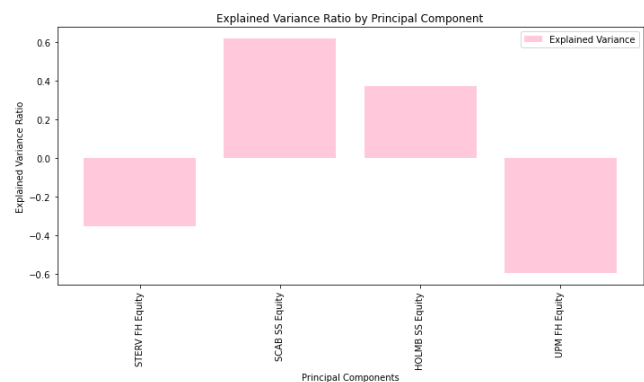
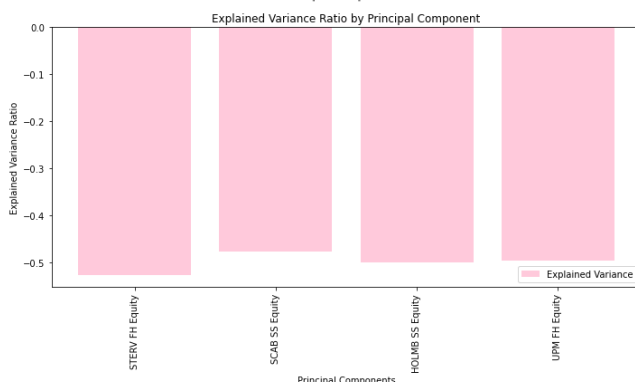


5. Integrated Forest Owners

Integrated forest owners, according to our definition, have very significant forest holdings and a diversified portfolio of forest products, spanning from pulp and paper to durable wood products. They are all based in the Nordics (Sweden and Finland), as the large North American forest owners have exited their pulp, paper and packaging businesses years ago to focus on timberland and, in certain cases, durable wood products.



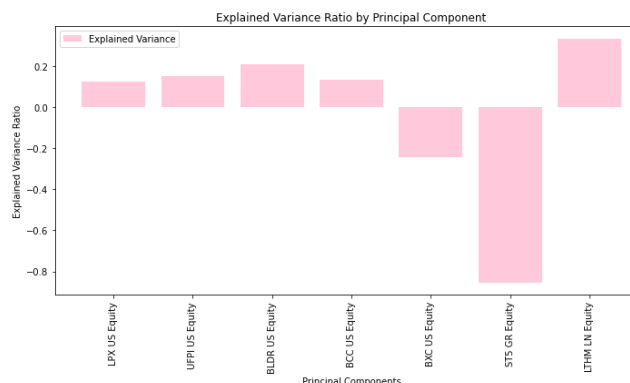
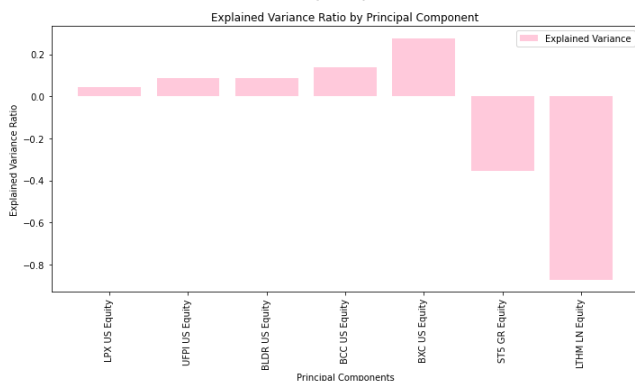
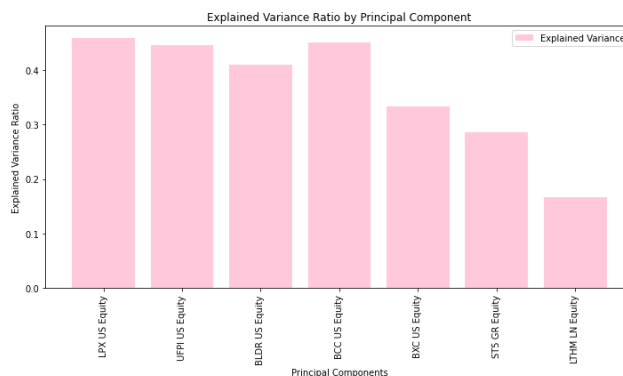
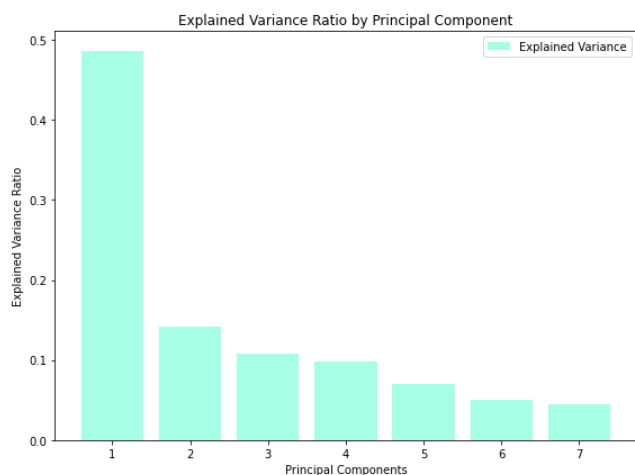
The Nordic integrated forest owners have over 70% of their variance explained by the first principal component. All companies have a similar exposure to this common factor and the differences are marginal.



The loadings on the second principal component (explaining ca. 14% of the variance) are significant and have opposite signs for the two Swedish (Holmen and Svenska Cellulosa) and the two Finnish (UPM-Kymmene and Stora Enso) companies.

6. Secondary Products

Within the Secondary Products category, the main principal component explains almost 50% of the variance, but that is significantly less than in the previous sub-sectors, pointing to more diversity within this group. Steico and Latham, the non-US stocks in the group, display a different behaviour, with lower loading on the first component. Latham is driven by the second and Steico is driven by the third component (explaining 14% resp. 11% of the variance), in each with strong loading.



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