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Managing Director & Principal*

October 22, 2014

Mr. Henry Jones
Chair of the Investment Committee
California Public Employees' Retirement System
400 Q Street
Sacramento, CA 95814

Re: Forestland Program Review

Dear Mr. Jones:

You requested Wilshire's opinion with respect to the Forestland Portfolio Program Update. In addition to our duties as the General Pension Consultant to the Investment Committee, Wilshire acts as the Investment Committee's Forestland Consultant.

Overview and Opinion

Wilshire believes that a successfully implemented Forestland portfolio will help CalPERS meet its long-term return goals and will provide diversification and some protection against inflation. However, as we have noted in the past, the CalPERS Forestland portfolio exhibits some structural weaknesses that have limited its effectiveness. Staff is aware of these drawbacks and is evaluating potential ways to improve the effectiveness of the Forestland Program and to assess its impact on the total fund.

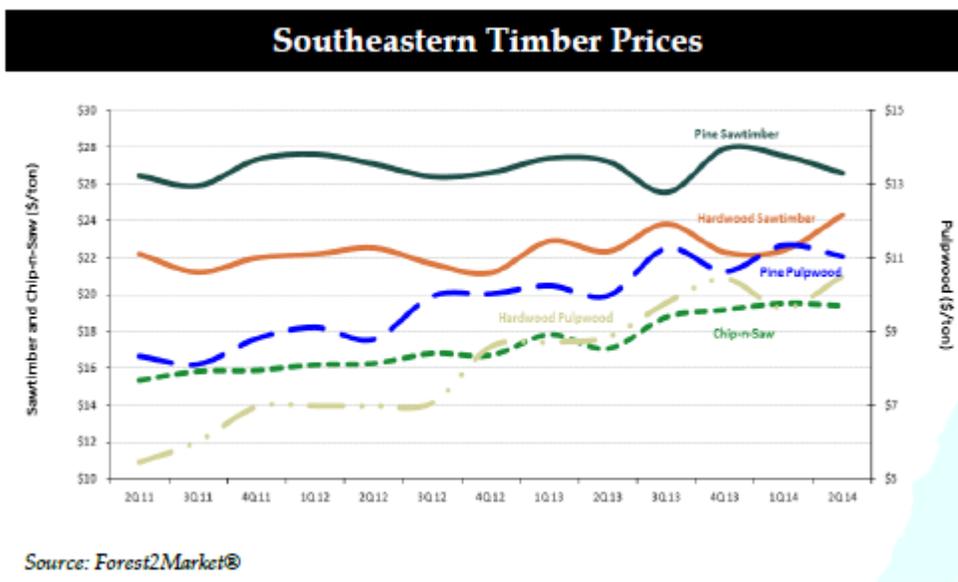
The portfolio continues to deviate significantly from the NCREIF Timberland Index with respect to leverage and geographic exposure, which has caused performance to lag over the past several years. While Wilshire believes that having an internationally diversified portfolio is appropriate for CalPERS, it does introduce misfit risk when comparing the program to the NCREIF benchmark. The U.S. portion of the portfolio continues to be concentrated in the Southeast with no meaningful exposure to other regions (namely, the Northeast and Pacific Northwest). We recognize that this portfolio does not lend itself well to minor adjustments and that any changes are likely to take a significant period of time to materialize.

Strategic Role and Investment Beliefs

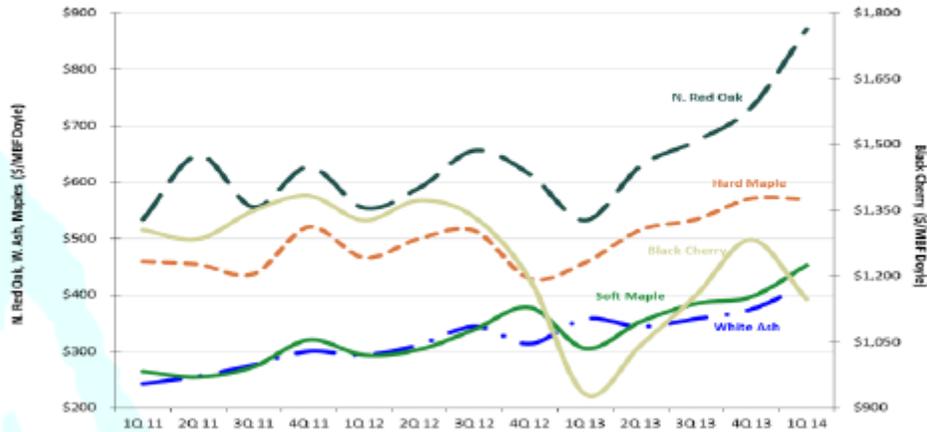
The strategic role of the Forestland Program is to provide cash flow and appreciation while serving as a long-term hedge against inflation. Overall, Forestland as an asset class is supported by a number of CalPERS' Investment Beliefs. First, Investment Belief 1 states that "Liabilities must influence the asset structure." Forestland has moderate-to-high- expected returns that generate cash and should act as an indirect hedge to inflation. Clearly, Forestland requires a long-term investment horizon and thus identifies well with Investment Belief 2, which states "A long time investment horizon is a responsibility and an advantage." Forestland also addresses Investment Belief 4 regarding multiple forms of capital – specifically in terms of how environmental practices can impact the long term returns of the Program.

Background

As has been the case for several years, the Forestland Portfolio consists of only two assets. However, because the assets hold multiple parcels of forestland, the total portfolio is diversified across the U.S., Latin America, and Asia Pacific markets. Within the U.S., the portfolio is entirely concentrated in the Southern markets with no exposure to the Northeast or Pacific Northwest. While we have no evidence to believe that any one geographic region or type of wood should outperform the others, increasing diversification as the program continues will help to reduce the risk that results from an overconcentration to any particular area or end product. Recent price changes for Southeastern, Northeastern and Pacific Northwest timber prices are shown in the graphs below.ⁱ Since 2011, there has been little change in Southeastern timber prices, particularly relative to Northeastern and Pacific Northwest timber prices.

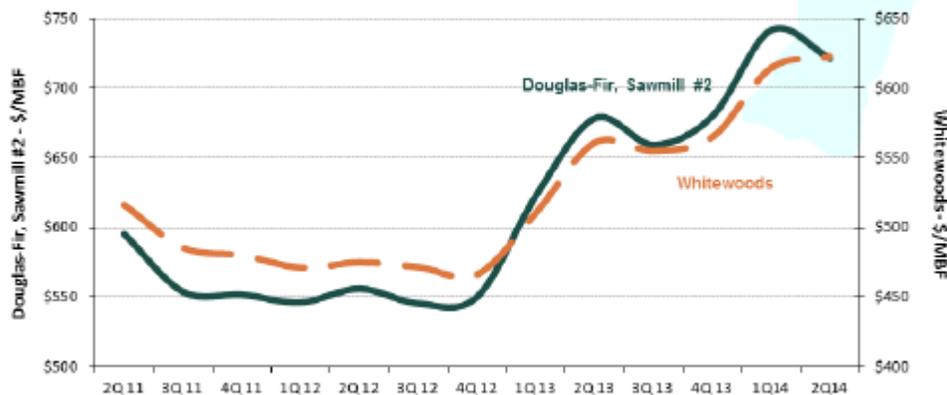


Northeastern Hardwood Timber Prices



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

Pacific Northwest Timber Prices



Source: Log Lines®

Staff notes that modest portfolio adjustments are challenging because the portfolio is approximately at its target weight and there is a relative lack of liquidity in Forestland. Wilshire believes that there will be periodic occasions to buy or sell Forestland at attractive prices and that Staff should be opportunistic when those occasions present themselves. This may result in modest over- or under-allocations to the Program but this approach aligns itself with a number of CalPERS Investment Beliefs – in particular, Belief 2: A long time horizon is a responsibility and an advantage.

In addition to the geographic diversification of the portfolio, Wilshire notes two additional challenges for the Forestland Program. First, the Forestland Program is levered. The



program's benchmark, the NCREIF Timberland Index is unlevered. Frequently, timber and other agriculture-related portfolios are unlevered. While the leverage in the Forestland Program is modest, this divergence creates performance issues.

Second, the size of the program is challenging. It could be argued that a 1% allocation to Forestland is not large enough to have a significant impact on risk and return attributes of the total fund. However, based on recent transaction sizes in the United States, it would be a massive challenge to increase the size of the Forestland Program to something more impactful, say 5%. That 4% increase would represent an increase of roughly \$12 billion. Timber Investment Resources, LLC estimated the size of the total investable size of the global market to be \$467 billion in a 2012 paper – although much of this would not be investable for CalPERS due to the small size of the tracts. Increasing the size of the current Forestland Program to 5% (again, hypothetically) would mean that CalPERS would own roughly 3% of the entire market.

Conclusion

The returns of the Forestland Program have not met its benchmark over recent periods. There are several structural issues present in the portfolio – lack of regional exposure to the U.S. Northeast and Pacific Northwest, leverage, and the timing of the original purchases – that continue to act as headwinds for the Forestland Program to meet its strategic goals. Staff and Wilshire are evaluating the efficacy of the Program.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

A handwritten signature in black ink, appearing to read 'Ann J. ...'.

ⁱ Source: Forest Investment Associates, Quarterly Update, 2nd Quarter 2014