Andrew Junkin, CFA, CAIA
President, Wilshire Consulting

October 17, 2017

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

Re: Real Assets Program Review

Dear Mr. Jones:

You requested Wilshire's opinion with respect to the Real Assets 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. Therefore, Wilshire is providing comments on the total Real Assets Program and the Forestland Program.

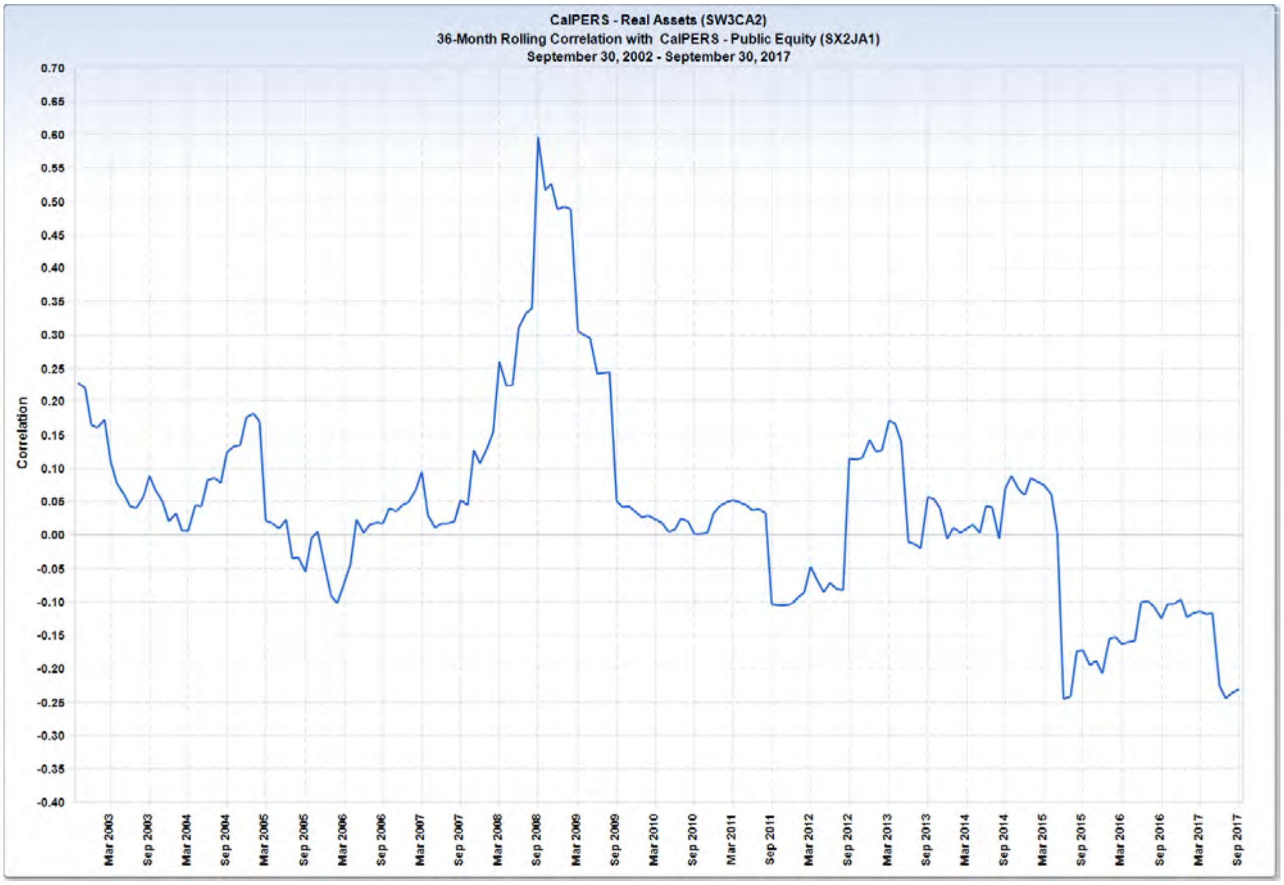
Strategic Role and Investment Beliefs

The strategic role of the Real Assets Program is to provide stable cash flows while serving to provide long-term inflation protection and as an equity risk mitigant. The Real Asset Program is supported by a number of CalPERS' Investment Beliefs. First, Investment Belief 1 states that "Liabilities must influence the asset structure." This is evident in the Real Asset Program's strategic role, which helps provide a hedge for unanticipated levels of inflation which could ultimately increase CalPERS' benefit commitments. The Program requires a long-term investment horizon and thus corresponds well with Investment Belief 2, which states "A long time investment horizon is a responsibility and an advantage." The Real Assets Program also addresses Investment Belief 4 regarding multiple forms of capital – notably, in terms of how environmental practices can impact the long term returns of the Program.

Real Assets Program Overview

The performance of the Real Assets Program exceeded its benchmark in the 2016-2017 fiscal year, with Real Estate and Infrastructure beating their respective benchmarks, while Forestland continued to lag behind its index. Wilshire continues to believe that the Real Assets Program is appropriately structured and implemented to benefit the entire portfolio.

As has been noted on a number of occasions, over the past few years the characteristics of the Real Assets Program have continued to evolve to more of a "core" program, with a focus on stabilized income generation. This has resulted in the Real Assets Program functioning as a better equity hedge than it has at other times in the past. The graph below shows the rolling 3 year correlation between the return of the Real Assets Program and the Global Equity Program.



The decline in return correlation supports the Real Asset Program's role as an equity risk mitigant. N.B.: this correlation is imprecise as some of the returns of the Real Assets Program are from price changes due to appraisals. However, Wilshire believes that the graph is reflective of changes in correlations based on structural changes within the portfolio.

Forestland Program

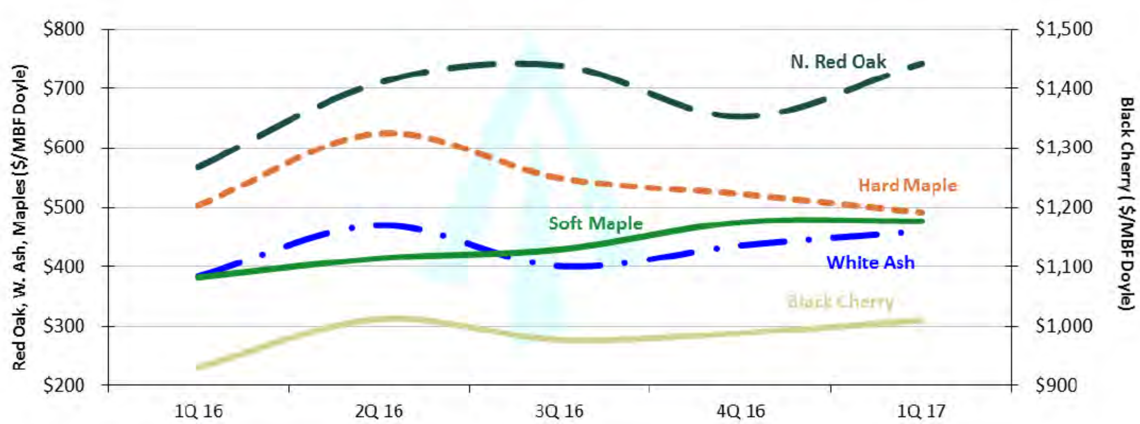
The strategic role of the Forestland Program is to provide cash flow and capital appreciation while serving as a long-term hedge against inflation. The Forestland Program has had poor absolute and relative performance, which will be discussed in greater detail below.

Background

As has been the case for several years, the Forestland Portfolio consists of 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 concentrated in the Southern markets with no exposure to the Northeast or Pacific Northwest. Recent price changes for Southeastern, Northeastern and Pacific Northwest timber prices are shown in the graphs below.[i] Timber prices in the Southeast have largely declined over the past year, whereas Northeastern and Pacific Northwest timber prices have moderately increased.

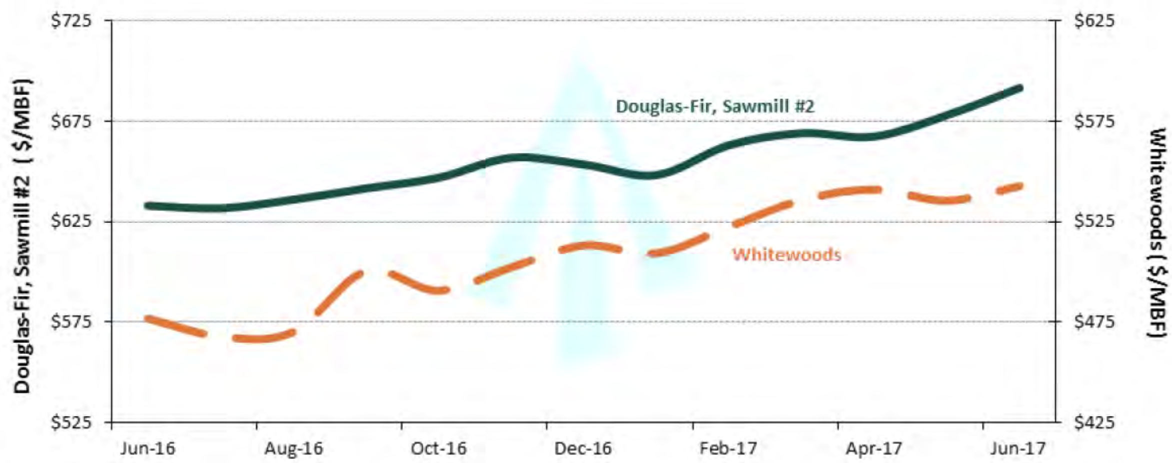
Source: Forest2Market®

Northeastern Hardwood Timber Prices



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

Pacific Northwest Log Prices



Source: Log Lines®

Performance continues to be impacted by the same issues we have noted in the past. First, the leverage in the Program has magnified some poor performance, which negatively affected its relative performance given that the program benchmark is unlevered. Second, the leverage has exacerbated cash flow issues as timber has been harvested to service the debt. So, assets that would otherwise have been allowed to grow and appreciate, have been harvested to manage the debt. Lastly, the geographic concentration in the Southeast has historically positioned the portfolio in a challenging portion of the market. Staff continues to proactively and aggressively manage the assets to address these issues.

As we have noted in a number of prior reviews, the current size of the program is not sufficient to meaningfully affect the performance characteristics of the Total Fund, but has had a meaningful influence on the performance of the Real Assets Program. Increasing the scale of the program to a meaningful size is challenging, given the recent pace of transactions and the total size of the institutionally owned forestland market. Moving to a 5% target, which would be meaningful, would require tens of billions of dollars of transactions and would likely take years to accomplish and would represent a significant portion of the Forestland transaction market. Staff continues to assess the efficacy of the program in light of these constraints.

Conclusion

Wilshire believes that the Real Assets Program continues to evolve to better serve the needs of CalPERS' total portfolio. Performance over the past fiscal year was ahead of the benchmark and over the last five years is in-line with the benchmark. The Forestland Program continues to face several structural issues – 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. Wilshire believes that Staff is acting diligently to address these structural issues.

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

Best regards,

[i] Source: Forest Investment Associates, Quarterly Update, 2nd Quarter 2016

Wilshire Associates
370 Interlocken Boulevard Suite 620 Broomfield, CO 80021 **TEL** 303.626.7444 **FAX** 303.466.1537
www.wilshire.com