Andrew Junkin, CFA, CAIA
President, Wilshire Consulting

April 27, 2017

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

Re: Real Assets and Private Equity Benchmarks

Dear Mr. Jones:

Overview and Recommendation

Staff has asked Wilshire to provide our opinion with respect to proposed changes to the benchmarks for Real Assets and Private Equity. The suggested benchmark for Real Assets is the MSCI Investment Property Databank U.S. Core – Fund Level, which is a change from the current blended benchmark of 83% NCREIF ODCE Index (Real Estate component) + 8.5% CPI+4% (Infrastructure Component) + 8.5% NCREIF Timberland Index (Forestland component). The suggested benchmark for Private Equity is the FTSE All Global (All World, All Capitalization) Index plus a return premium (i.e., 3%) which is a change from the current blended benchmark of (67% FTSE U.S. Total Market Index +33% FTSE All World ex-U.S. Total Market Index) + 3%. Wilshire supports both changes, with our rationale detailed below.

Investment Beliefs

Wilshire believes that CalPERS' Investment Belief # 6: "**Strategic asset allocation is the dominant determinant of portfolio risk and return**" should help inform this discussion. Sub-beliefs of # 6 are also relevant:

- CalPERS strategic asset allocation process transforms the fund's required rate of return to the market exposures that Staff will manage.
- CalPERS will aim to diversify its overall portfolio across distinct risk factor drivers.
- CalPERS will seek to add value with disciplined, dynamic asset allocation processes, such as mean reversion. The processes must reflect CalPERS characteristics, such as time horizon and size of assets.

- CalPERS will consider investment strategies if they have the potential to have a material impact on portfolio risk and return.

Discussion – Real Assets

Wilshire believes that the proposed new benchmark for Real Assets is an appropriate reflection of the current investment opportunity set and forces Infrastructure and Forestland to compete with Real Estate assets for a spot in the portfolio by making them "out of benchmark" investments. If the risk, return, or diversification characteristics of a particular investment are not suitably attractive, then CalPERS should not be forced to invest solely to fill an allocation. As the Investment Committee is aware, while Infrastructure has generated excellent returns, finding opportunities in sufficient scale for CalPERS with expected returns that meet CalPERS' target returns has been challenging. Nevertheless, the characteristics of Infrastructure investments are particularly useful for very long term investors such as CalPERS. Therefore, having a more opportunistic approach to Infrastructure investments (i.e., selectively included when the opportunity is justified on a holistic, risk adjusted basis vis-à-vis Real Estate) could allow CalPERS to be more competitive in this market in the future. Further, the current CPI based benchmark does not reflect the underlying volatility or cash flow characteristics of Infrastructure. The property based MSCI benchmark, while an imperfect comparison for Infrastructure, will exhibit some of the same risk characteristics.

As has been discussed with the Investment Committee on numerous occasions, Forestland is another strategy where CalPERS' scale is a detriment in building a sizable portfolio that can "have a material impact on portfolio risk and return" (sub belief four above). While Infrastructure investments have the potential to scale into "materiality," the issues related to increasing the Forestland allocation are more significant. As we noted above, changing the total Real Assets benchmark as proposed would make Forestland an "out of benchmark" investment. This would permit Staff to make opportunistic investments, rather than allocating assets to fill a target allocation. Like Infrastructure, Forestland would have to compete for capital on the basis of risk, return, and diversification.

As the Real Assets Program grows and evolves, changes can be made to the Program's benchmark; for example if either Infrastructure or Forestland demand more meaningful allocations relative to the Real Asset portfolio's primary allocation to real estate. Thus, while Wilshire believes this benchmark change is appropriate now, there could be valid reasons for further changes in the future.

Discussion – Private Equity

Wilshire believes that the proposed change to the Private Equity benchmark is appropriate as it should allow Staff additional flexibility in achieving the overarching investment goals of the

organization. The proposed change would initially align the underlying benchmarks for the public equity and private equity portions of the portfolios. CalPERS has long believed that the global market capitalization weighted equity market is the best representation of the equity opportunity set. This extends that belief to the Private Equity portfolio and does represent a change from the 2/3rds U.S./ 1/3rd non-U.S. benchmark. Though the change is subtle, it could change CalPERS' approach to Private Equity with respect to geographic allocations. While the U.S. private equity market continues to be more developed than many overseas markets, private equity has evolved into a more global opportunity set. Absent any strong convictions to over or underweight certain regions, CalPERS' private equity portfolio would need to evaluate non-U.S opportunities more significantly than has historically been the case in order to align its geographic exposures with the benchmark.

This alignment would permit one significant change in the future. If CalPERS were to merge public equity and private equity into a single "bucket" for exposure to economic growth, private equity could be used more opportunistically, albeit in the context of the longer market cycle inherent in an illiquid asset class - to achieve the excess return targets for the growth allocation. CalPERS could allocate more dollars to high conviction investments or when private equity was expected to achieve abnormally high returns (relative to the "normal" private equity premium expected over public markets). Conversely, CalPERS could allocate less when perceived future returns were less attractive. In essence, private equity could become a potential alpha driver in such a combined growth bucket. That being said, additional governance and portfolio guidelines would need to be developed to control against such "alpha" opportunities interfering with the risk profile dictated by the PERF's strategic asset allocation.

It is important to note that changing the benchmark would not remove the concept of an expected premium return, which is currently established as 3% over public equities. The expected return premium may change over time as part of the ALM process if, for example, the nature of the private equity portfolio or the private equity market changes. In the case of a combined growth bucket, a weighted average of the public equity benchmark and the private equity benchmark would align with the target weights set during the asset allocation process.

Conclusion

Wilshire supports both proposed benchmark changes. The changes should serve to simplify CalPERS' benchmarks for each Program and will force investments to compete for capital in the Real Asset and Private Equity portfolios. While neither of the proposed changes represents a radical departure from CalPERS' current approach, each should provide additional clarity on the roles of asset classes/programs in advance of the upcoming Asset Liability Workshop.

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

Best regards,