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MEKETA
INVESTMENT GROUP

MEMORANDUM

TO: Members of the Investment Committee, CalPERS

FROM: Meketa Investment Group

DATE: March 16, 2020

RE: Semi-Annual Real Estate Performance Review as of December 31, 2019

In our role as the Board Real Estate Consultant, Meketa Investment Group ("Meketa") conducted a semi-annual performance review of the Real Estate Portfolio ("the Portfolio") based on data provided in Wilshire's California Public Employees' Retirement System ("CalPERS") Real Assets Performance Analysis Review for the period ended December 31, 2019, and selected CalPERS reports.[1] This memorandum provides the Portfolio performance data and information on key policy parameters, along with summary market commentary.

Portfolio Performance[2]

The Portfolio's deep geographic and property type diversification is serving the System appropriately as different sectors experience varying demand and supply dynamics. Across real estate markets, no property type or geographic region outperforms over the long-term, so diversification is critical to reducing risk and generating returns.

Returns are moderating both for CalPERS and the broader property markets. CalPERS' Real Estate Portfolio returns trailed the benchmark over all periods except the 1-year period. The Real Estate Portfolio continues its positive transformation towards a primarily income-oriented portion of the Real Assets Program and Total System Portfolio, providing positive cash flow to the System with which to pay benefits and a counterweight to public markets' debt and equity risks.

[1] Real Assets Program Allocation, Characteristics, and Leverage Reports (pdf) and Datasheets (Excel), Period Ending September 30, 2019, and Real Assets Quarterly Performance Report, Partnership Financial Statements as of September 30, 2019.

[2] Per Wilshire's CalPERS Real Assets Performance Analysis Review for the period ended December 31, 2019, reported with a 1-quarter lag, so effectively as of September 30, 2019.

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Net Returns %	1 Year	3 Year	5 Year	10 Year
Real Estate Returns	6.3	6.0	8.0	8.5
Real Estate Policy Benchmark[1]	4.6	6.3	8.3	10.2
Over (under) Performance	1.7	(0.3)	(0.3)	(1.6)

Among core real estate holdings, retail property investments in malls, to which CalPERS has an overweight compared to the benchmark, showed a marked decline in appraised value. Similar retail holdings by open-end funds that comprise the benchmark were slower than CalPERS to show value impairment. A number of open-end funds in the benchmark recognized write-downs primarily in the third and fourth quarters of 2019. This compares to CalPERS whose valuation adjustments were recognized during primarily the second half of 2018 and the first part of 2019. This is despite the fact that CalPERS' retail portfolio includes assets of equal and generally higher quality than those in the benchmark.

Legacy investments, particularly higher risk international assets, continue to be a drag on performance in all measurement periods. Notably, Staff has decreased, primarily through dispositions and domestic core asset acquisitions, the proportion of the Portfolio that consists of poorer performing legacy assets from more than 50% five years ago to less than 15% today, and Staff remains laser focused on managing these legacy assets down to zero in the near term. Stronger performance from office, industrial, multifamily and data center investments, as well as the Emerging Manager program, offset the weaker performing sectors to some degree.

As of this reporting period, the core portfolio, representing 82.8% of the Real Estate Portfolio, produced strong longer term net returns of 10.9% for the five-year return against MSCI/PREA benchmark returns of 8.3%.

Net Returns (%) As of September 30, 2019	NAV (billion)	1 Year	3 Year	5 Year	10 Year
Core	$30.5	6.5	6.6	10.9	13.2
Value Add	$2.7	3.9	4.2	5.4	4.8
Opportunistic	$3.6	8.1	4.9	3.0	3.6
Real Estate Policy Benchmark[1]		4.6	6.3	8.3	10.2

[1] The Policy Benchmark for the Real Estate Program as of July 1, 2018 is the MSCI/PREA U.S. ACOE Quarterly Property Fund Index (Unfrozen), Net of Fees. From July 1, 2011 through June 30, 2018, the Policy Benchmark was the NCREIF Fund Index Open-End Diversified Core Equity, Net of Fees. The. Policy Benchmark results are shown on a blended basis during the relevant trailing periods.

Virtually all core properties are held directly in lower cost separate accounts (as opposed to investing in open-end commingled pools). These long-term strategic partnerships anchor the Portfolio and are populated with assets of the highest quality and location, with strong, well-diversified, credit-worthy tenant bases that generate stable, durable income streams. It is important to note that just four years ago, the core portion represented 55% of the Real Estate Portfolio, and that efforts continue to transition the Portfolio away from legacy, non-strategic risks towards higher quality, stabilized assets that serve the role of the asset class.

Key Policy Parameters

The Real Estate Portfolio is compliant with all key parameters related to diversification and other limits applicable at the Portfolio level, as demonstrated in the following table.

Key Portfolio Parameter	Policy Range/Limit	NAV 9/30/19 Exposure
Risk Classification	**(%)**	**(%) [1]**
Core	75-100	87.1
Value Add	0-25	7.4
Opportunistic-All Strategies	0-25	5.5
Geographic Region	**(%)[2]**	**(%)**
United States	75-100	92.8
International Developed	0-25	2.7
International Developing	0-15	4.6
International Frontier	0-5	0.0
Manager Exposure[3]	**(%)**	**(%)**
Largest Partner Relationship	20 max	15.0
Investments with No External Manager	20 max	0.0
Leverage[4]		
Loan to Value	50% max	30.7%
Debt Service Coverage Ratio	1.5x min	3.07x

Implementation

The Real Estate Portfolio had a Net Asset Value of $36.8 billion at the end of the current reporting period, representing 85.9% of the Real Assets program and 9.3% of the Total Fund. Including Forestland and Infrastructure, the Real Assets program currently comprises 11.0% of the Total Fund against a long-term target allocation of 13%, within the policy range of 8% to 18%.

The CalPERS business model for real estate uses direct investing to improve control, governance, alignment and transparency and take advantage of the System's size and scale to acquire larger, attractive assets and hold them for longer periods of time. This reduces friction and trading costs, which can be higher in private markets, and decreases exposure to various markets' volatility, which also reduces risk. Separate accounts with expert, aligned fiduciary managers/partners, overseen by Staff with the benefit of independent consultants' prudent person opinions and monitored on behalf of the Trustees by the Board Consultant, provide a replicable, scalable model. As the System grows and markets evolve, this method of investing is practical and helps control risk and reduce costs.

CalPERS continues to be an industry leader in creating and embracing Responsible Contractor Policies and ESG best practices at its properties. Additionally, during the last five years, progress has been made on harmonizing several of the private asset classes under the Real Assets Unit. This has improved continuity of decision making, risk mitigation and reporting, as well as providing increased knowledge across the Investment Office. This is consistent with a one fund, System wide approach rather than a collection of independent asset "silos."

Leverage

At the end of this reporting period, the Real Estate Portfolio had a loan to value ratio of 30.7% and a debt service coverage ratio of 3.1, both well within policy guidelines of <50% and >1.5, respectively. Virtually all the borrowings are fixed rate by contract or through the use of interest rate caps. This is a reasonable amount of debt for a long-term, income-oriented portfolio of high quality assets that balances the competitive market for real estate investing, attractive interest rates, and moderate incremental risk. Staff continues to appropriately manage the structure, term, rate, and covenants of the debt to reduce costs and risks. Note that virtually all borrowings are non-recourse to the System, with collateral limited to the underlying properties. This contrasts importantly with the real estate borrowings during the 1998-2008 period which had a very significant amount of recourse to the Total Fund.

Market Commentary

Competition for acquisitions continues to be fierce as institutions increasingly seek larger private commercial real estate allocations. Low interest rates have driven more assets towards income-producing real estate where the current returns are well in excess of similar duration fixed income choices. A rising public equity market has made more capital available merely from the "Denominator Effect" and a desire to keep fully invested at target percentage levels. This increased supply of capital has caused prices to remain full for the types of assets that CalPERS seeks as consistent with its long-term hold strategy. In addition, higher labor and material costs acting alongside tighter lending regulations are governing the delivery of new supply and contributing to this long streak of healthy real estate fundamentals. CalPERS competes directly with the Open-end Diversified Core Equity (ODCE) funds and other large separate accounts. Many ODCE managers have queues of capital committed and not yet deployed. CalPERS' target for the fiscal year ending June 30, 2020 was to deploy $5.5 billion in new core real estate commitments (not including capital improvements to existing assets).

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Interest rates are still at very attractive levels for spread investing (acquisitions at a first year cash on cash return compared to the 10 year treasury yield), and given the lack of alternatives for current return, serve to maintain strong interest in leveraged property purchases by both institutions, public companies, and private HNW families and partnerships. The favorable treatment awarded taxable property owners in the 2018 Tax Act also stimulated real estate acquisitions.

Loosening of regulated lenders' requirements and the rise of non-regulated lenders are likely to test the limits of disciplined new construction and speculative building—two elements that have often signaled shorter term downturns in real estate values.

Increased interest in Property Technology (PropTech) enhancements such as keyless entry is expected to continue and expand. ESG and sustainability will also benefit from technological enhancements. The proportion of asset value with climate risk is expected to increase and pose potential risks to real estate such as flooding and extreme events which would increase insurance costs.

The economic recovery teeth are historically long, and while demand for space continues to be healthy in all property sectors (except for some noticeable cavities in retail), this take-up may abate following trade wars, changes in regulatory policies, and disruption in traditional space needs (co-living and/or working, aging of America, on-line retailing, data centers, last-mile warehouse and distribution patterns, for example).

Conclusion

The market environment continues to be challenging for core buyers. Nonetheless, CalPERS' continued discipline, long-term investment horizon in this illiquid asset class, and focus on the role of the asset class should continue to serve the needs of the System.

Please do not hesitate to contact us if you have questions or require additional information.

Sincerely,

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Managing Principal

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Executive Vice President

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