MEKETA INVESTMENT GROUP

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November 13, 2018

Mr. Henry Jones
Chairman of the Investment Committee
California Public Employees' Retirement System
400 P Street, Suite 3492
Sacramento, CA 95814

RE: PRIVATE EQUITY PROGRAM ANNUAL REVIEW 2018

Dear Mr. Jones:

In our role as the Board Private Equity Consultant, Meketa Investment Group conducted an annual review of the Private Equity Program ("the Program") for the period ending June 30, 2018. Our review covered the Program's investment performance, implementation, compliance with the Investment Policy for the Program, staffing, and overall compliance with CalPERS' Investment Beliefs. Each area is addressed in this letter, first in summary, followed by additional detail. Also, we update our observations related to certain strategic aspects of the Program that we noted in our letter last year, as well as identify certain areas we believe the Board should continue their focus going forward.

Summary Review

Based on our review, Meketa Investment Group identified the following as key developments and observations during the reporting period. All years refer to fiscal years ending June 30, unless otherwise noted.[1]

- **Performance:** The Program's fiscal year end 2018 Net Asset Value ("NAV") was $27.2 billion, an increase (net of cash flows) of $1.3 billion, or approximately 5%, over prior fiscal year end. The Program's 2018 one-year net total return of 16.1% did not meet its Policy Benchmark[2] of 18.6% for the period. The three-year, five-year, and ten-year net returns also did not meet the Policy Benchmark. We note, however, that the Program's performance exceeded the CalPERS Global Equity Policy Benchmark (FTSE All World All Capitalization) in the one-, three-, five-, and ten-year time periods.[3] As such, the Program has delivered a premium above public equity alternative over the longer time-periods.

[1] Financial data are as of March 31 for the fiscal years ending June 30, due to the quarter lag in private investment performance reporting from the managers, while staffing data are as of September 1. Investment performance is shown on a time weighted basis.
[2] The current Policy Benchmark is a Custom FTSE All World, All Cap Equity + 150 basis points, lagged by one quarter. Previous benchmark was blend FTSE US + FTSE AW ex US + 3% lagged 1 quarter from September 2011 to June 2018, Wilshire 2500 ex-tobacco +3% between July 2009 and September 2011, and the Custom Young Fund Index prior to July 2009.
[3] All returns are reported as Total Return net of fees, except if noted.

Additionally, the Program returns have consistently exceeded the CalPERS Total Plan target return.

- **Implementation:** The Private Equity Staff made $5.3 billion of commitments during the fiscal year, slightly below the $6.0 billion target, but up from $3.3 billion committed in the prior fiscal year. In addition, Staff has discussed the Private Equity Strategic Plan which incorporates four pillars (the "Pillars") – Emerging Manager (Pillar 1), Strategic Partner (Pillar 2), Innovation (Pillar 3), and Horizon (Pillar 4). The Pillars are each at different stages of development and Staff will be providing progress reports at future Board meetings.
- **Policy Compliance:** As of the end of the reporting period, the Program was in compliance with the key parameters of CalPERS Investment Policy for Private Equity Program (the "Policy"), including those related to strategy and manager concentration, as measured by NAV.
- **Staffing:** The Managing Investment Director for Private Equity departed in April 2017 and CalPERS has appointed an Interim Managing Investment Director. The search for a permanent Managing Investment Director for the Program is underway. On an overall basis, the Private Equity Unit staffing remained relatively steady (from 35 to 34 positions) in the past fiscal year but is down meaningfully from June 2016. In addition to the Managing Investment Director position, there are four current vacancies.
- **Investment Beliefs:** In our view, the Private Equity Program, as implemented by Staff, is aligned with CalPERS' Investment Beliefs, however the current investment commitment pace is unlikely to meet the long term target exposure to the private equity asset class.

Historically, the Program has delivered strong returns for CalPERS and is expected to remain an important asset class going forward. The Program faces certain challenges, both internal and external, that may impact the ability of the Program to meet its strategic role.

Investment Performance[1]

The Program's NAV at 2018 fiscal year end was $27.2 billion, an approximately 5% increase over the last reporting period's NAV of $25.9 billion. This exposure represents 7.7% of the Total Fund, compared to the 8.0% Target. Additionally, unfunded commitments were $14.2 billion bringing total exposure to $41.4 billion at the end of the fiscal year.

During the fiscal year, the Program experienced a strong net cash inflow of $2.8 billion ($7.4 billion distributions and $4.5 billion contributions) in addition to a $4.1 billion value increase. This is the eighth year in a row that distributions have exceeded contributions.

	NAV ($ mm)	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Buyouts	17,390	19.8	12.8	13.5	9.8
Credit	2,608	5.9	2.0	5.3	9.3
Growth/Expansion	4,511	16.9	12.4	13.8	6.0
Opportunistic	1,872	7.2	11.1	12.8	7.4
Venture	783	5.0	-3.0	4.3	3.3
Other	-13				
CalPERS PE Program	**27,151**	**16.1**	**10.4**	**11.9**	**9.0**
Policy Benchmark[2]		*18.6*	*12.3*	*14.2*	*13.5*
Excess vs. Policy Benchmark (%)		-2.5	-1.9	-2.2	-4.4
FTSE All World + 150 bp (%)		*16.9*	*10.3*	*11.4*	*7.7*
Excess vs. FTSE All World + 150 bp (%)		-0.8	0.1	0.5	1.3

The Program's 2018 one-year net total return of 16.1% did not meet its Policy Benchmark[3] of 18.6% for the one-year period. In addition, the Program's three-year, five-year, and ten-year net returns did not meet the Policy Benchmark.

Effective July 1, 2018, the Policy Benchmark was changed to FTSE All World All Capitalization (the Global Equity benchmark) plus 150 basis points. On a *pro forma* basis, the Program's performance exceeded the CalPERS Global Equity Policy Benchmark plus 150 basis points in the three-, five-, and ten-year time periods, but did not for the one-year. As such, the Program has delivered a

[1] Financial data are as of March 31 for the fiscal years ending June 30, due to the quarter lag in private investment performance reporting from the managers.

[2] The current Policy Benchmark is a blended benchmark comprised of two-thirds weighting to the FTSE US TMI return and one-third to the FTSE AW ex-US Index return + 300 basis points, lagged by one quarter.

[3] The current Policy Benchmark is a Custom FTSE All World, All Cap Equity + 150 basis points, lagged by one quarter. Previous benchmark was blend FTSE US + FTSE AW ex US + 3% lagged 1 quarter from September 2011 to June 2018, Wilshire 2500 ex-tobacco +3% between July 2009 and September 2011, and the Custom Young Fund Index prior to July 2009.

premium above public equity alternative over the longer time-periods. Additionally, we note that the Program's performance has been strong and has consistently outperformed the CalPERS Total Plan target.

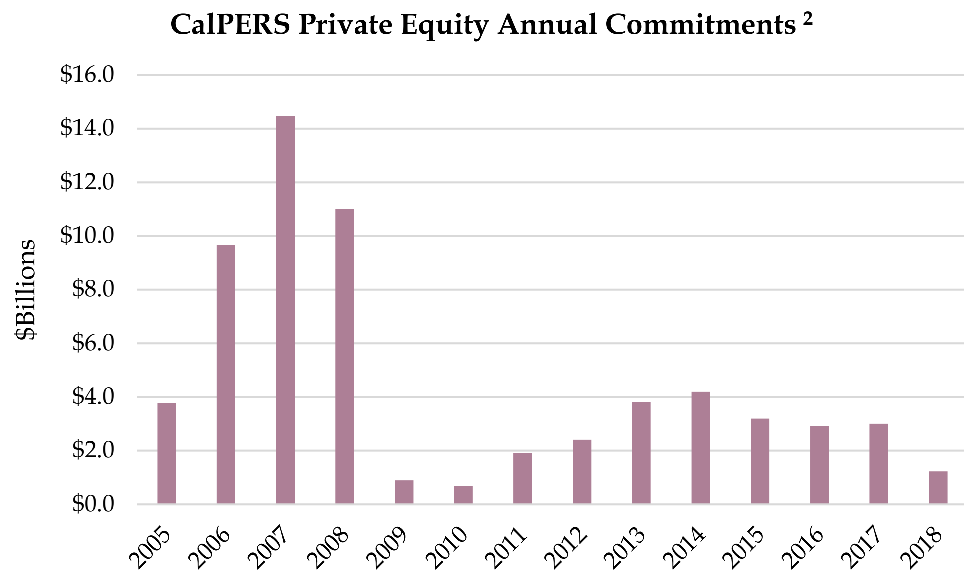
Within the Program, the Buyout and Growth/Expansion strategies, which also have the largest allocation, have contributed to outperformance, while Venture and certain segments of Credit have underperformed historically.

Implementation

Staff committed $5.3 billion to 18 funds and one Separate Managed Account during the 2017-2018 fiscal year, slightly below the $6 billion commitment budget. The primary driver for the difference in commitments to budget was a planned allocation to an Emerging Manager advisor, which is expected to occur in the current fiscal year. Staff did not report any situations in which it was not able to obtain the commitment allocation it sought from the manager.

Overall, staff received 89 proposals during the fiscal year of which seven were referred to other parts of CalPERS as well as the Emerging Manager advisor. Of the 19 commitments made, 16 were to managers in the Core 30 list, while two were Transition managers, and one was a New manager (but with prior exposure through the Emerging Manger Program). By comparison, CalPERS received 110 proposals during the 2016-2017 fiscal year and committed approximately $3.3 billion to nine funds (all of which were to managers in the Core 30 list).

We note that Staff completed only one Separate Managed Account in the most recent fiscal year, and has not pursued co-investments, both logical investment strategies for a plan like CalPERS. We understand the execution of these strategies remain under consideration and will likely be revisited once a permanent Managing Investment Director is named.



One of the key challenges faced by the Program is to pace its investments in a steady manner and at scale in order to maintain the desired allocation to the private equity class. As shown above, CalPERS annual commitment pace has varied dramatically since 2005. As discussed in prior meetings, Staff believes that they will need to commit $10 billion or more per year in order to maintain an 8% allocation to private equity. As such, Staff has undertaken a number of initiatives to expand the investment set, grow the Program, and generate attractive returns.

- **Strategic Plan:** Staff has proposed a Strategic Plan based on the four Pillars. As discussed, the Pillars are in different stages of development but the concept is to provide a way for CalPERS to invest in attractive opportunities at scale.
- **Expansion beyond Core 30:** Staff has sought to expand the list of managers with a continued focus on high quality general partners. The expansion of the manager set provides opportunity, not only to increase scale, but also pursue strategies beyond the mega and large buyouts in order to add portfolio diversification.
- **Emerging Manager Program:** Staff is increasing the allocation to the Emerging Manager Program (Pillar 1) so that it may focus on larger, potentially more scalable managers. As a result, the gap between an Emerging Manager and CalPERS core managers is expected be somewhat smaller.
- **Consolidation of Growth Segments:** Staff is in the process of consolidating portfolio characteristics of the Private Equity Program with Global Equity. The concept is to have a single asset segment focused on growth. The Growth segment has a 58% target allocation, made up of 8% Private Equity and 50% Global Equity.

As noted above, Staff is working to expand the types of investment structures and strategies it uses to deploy capital. While many initiatives listed below are being considered, others may be less obvious for their potential.

- Increasing the commitment pace to attractive private equity managers both in core large buyouts, as well as other diversifying strategies;
- Create separate accounts with key managers to increase investment flow and capitalize on CalPERS relationship and investment scale;
- Development and execution of effective co-investment and secondary investment programs;
- Consider development of investment co-sponsorship capabilities in-house, potentially with a focus on less risky, core assets;
- Undertake initiatives with Global Equity to explore investments in publicly traded opportunities that provide private equity-like exposure.

The Board, Staff, and Meketa are aware of the challenges facing the Program in making attractive investments in scale. Staff is making efforts to address these challenges including increasing the investment commitment pace from prior years and working to develop each of the four Pillars. Going forward, we recommend that the Board continue to seek regular updates on these initiatives.

Policy Compliance

As of the end of the fiscal year, the Program was in compliance with the key Policy parameters, including those related to strategy and manager concentration, as measured by NAV.

Strategy	NAV[1] ($ mm)	Percent of Total NAV (%)	CalPERS Target[2] (%)	Prior Target Range[3] (%)	New Target Range[4] (%)
Buyout	17,390	64.0	65	50-70	55-75
Credit	2,608	9.6	10	10-25	0-15
Growth/Expansion	4,511	16.6	15	5-20	5-20
Opportunistic	1,872	6.9	10	0-15	0-15
Venture	783	2.9	1	0-7	0-7
Other[5]	-13	NA	NA	NA	NA
Total Program	**27,151**	**7.7[6]**	**8[7]**	**+/- 4%**	**+/- 4%**

[1] Source: State Street.
[2] As of 8/13/2018.
[3] As of 11/14/2011.
[4] As of 8/13/2018.
[5] Includes currency and stock holdings.
[6] PE program NAV as a percent of total CalPERS portfolio as of 6/30/2018.
[7] CalPERS Interim Target is 8% and Policy Target is 12%.

Meketa Investment Group reviewed all commitments during the 2017-2018 fiscal year and each commitment complied with CalPERS investment policy and limitations.

Each of the Total Fund and Private Equity Policies were modified in June and August, 2018, respectively. Among other items, the target ranges for Buyouts and Credit were modified to more closely reflect the opportunity set available for the Program. As per the letters we provided the Board, we concurred with the changes proposed by Staff.

Staffing and Resources

As of September 1, 2018 the Private Equity Program had a total of 34 positions, compared to 35 at September 1, 2017, and 5 vacancies. As we noted last year, overall Program staff has shrunk from 50 positions at June 30, 2016. The key open position currently is a permanent Managing Investment Director to replace Real Desrochers who left in April 2017.

In the past fiscal year, Staff merged the professionals in Investment Underwriting and Investment Management Group. The concept behind the merger is to help streamline investment underwriting and information sharing among the professionals and provide a more consistent connection between the GP and CalPERS. Staff now has six investment teams to review, underwrite, and monitor investments. We noted the separation of the Underwriting and Investment Manager groups in our prior letter and support this action by Staff. The Risk Research Analytics & Performance ("RRAP") continues to provide investment and portfolio risk reporting for the Program.

We believe the staffing levels are sufficient to execute on the current investment strategy. However, we and Staff believe the Program's investment pace will need to increase in the near future in order to meet CalPERS' objectives. As a result, the Program will likely need staff with additional skills to identify, execute, and monitor an increasingly complex portfolio. We believe the identification of a permanent Managing Investment Director is a key priority hire for the Program.

With respect to Meketa providing resources related to the Program during Fiscal 2017-2018, we supported the Program in the following ways:

- **Private Equity Investment Review Committee ("IRC"):** Attended by phone 29 IRCs, including reviewing materials related to opportunity pipeline, prospect screening, active due diligences, performance analysis and reporting, manager reviews and amendment requests, policy and guidance matters, and providing comments as applicable.

- **Bi-Weekly Call with Senior Leadership:** Received updates on Private Equity Portfolio and related strategies, discussions related to Private Equity Strategic Plan ("Four Pillars"), prospective new investments, existing investments and managers, staffing, policy and guidance, and Total Fund developments.
- **Policy Review and Comment:** Reviewed, provided informal comments, and formal opinions on several proposed policy revisions affecting the Private Equity Program as well as Benchmarking and Asset Allocation.
- **Periodic Reports:** Prepared Annual and Semi-Annual Reports for FY 2017, and H2 2017 and H1 2018, respectively.
- **Investment Review Letters:** Completed 19 investment review letters.

Investment Beliefs

In our view, the Private Equity Program, as implemented by Staff, is aligned with CalPERS' Investment Beliefs and remains largely in line with our observations last year. We highlight several Beliefs that are particularly important to the private equity asset class.

- **Liabilities must influence the asset structure (Belief #1):** Private Equity managers tend to hold investments for multi-year periods in order to generate their returns.
- **A long time horizon is a responsibility and an advantage (#2):** Private Equity is a long-term asset class and matches well with CalPERS' long term liabilities and time horizon.
- **Strategic asset class allocation is the dominant determinant of portfolio risk and return (#6):** CalPERS Private Equity exposure is currently slightly below the Interim Target. However, at current investment pacing, the Program is likely to fall short of the investment target.
- **CalPERS will take risk only where we have a strong belief we will be rewarded (#7):** CalPERS' Private Equity Program has historically produced strong long-term returns.
- **Costs matter and need to be effectively managed (#8):** Private equity is an expensive asset class.
- **Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error (#9):** The private equity asset class has additional risks including illiquidity, transparency, leverage, and currency.
- **Strong processes and teamwork and deep resources are needed to achieve CalPERS' goals and objectives (#10):** CalPERS' private equity team, while large and experienced, has shrunk significantly in recent years. A permanent appointment for the Managing Investment Director remains outstanding. The Program will likely require additional staffing and skills to effectively manage the increasingly complex portfolio.

Conclusion

Historically, the Program has delivered strong returns for CalPERS and is expected to remain an important asset class going forward. The Program has many advantages including large size and an experienced Staff. However, current investment pace is likely to be insufficient to maintain target exposure. Staff will need to continue its work in developing creative alternatives, including the Four Pillars, for deploying assets in attractive investments at scale.

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

Sincerely,

Stephen P. McCourt, CFA
Managing Principal

Steven Hartt, CAIA
Principal

Hannah Schriner
Vice President

SPM/SKH/HPS/nca