### Program Performance Review

<table>
<thead>
<tr>
<th>As of June 30, 2017*</th>
<th>1-YR</th>
<th>3-YR</th>
<th>5-YR</th>
<th>10-YR</th>
<th>20-YR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity ($25.9b)</td>
<td>13.9%</td>
<td>8.1%</td>
<td>11.5%</td>
<td>9.3%</td>
<td>11.3%</td>
</tr>
<tr>
<td>PE Policy Benchmark</td>
<td>20.3%</td>
<td>9.9%</td>
<td>13.7%</td>
<td>13.0%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>(6.4)%</td>
<td>(1.8)%</td>
<td>(2.2)%</td>
<td>(3.7)%</td>
<td>1.7%</td>
</tr>
<tr>
<td>CalPERS GE Policy Benchmark (as of 3/31/17 to match PE one quarter lag)</td>
<td>16.2%</td>
<td>5.5%</td>
<td>9.2%</td>
<td>4.9%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>(2.3)%</td>
<td>2.6%</td>
<td>2.3%</td>
<td>4.4%</td>
<td>4.4%</td>
</tr>
</tbody>
</table>

*Source: State Street*
Program Characteristics

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Net Asset Value*</th>
<th>Current*</th>
<th>Target</th>
<th>5-Year Net Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyouts</td>
<td>$15.3</td>
<td>59%</td>
<td>60%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Growth/Expansion</td>
<td>$4.4</td>
<td>17%</td>
<td>15%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Credit Related</td>
<td>$3.0</td>
<td>12%</td>
<td>15%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Opportunistic</td>
<td>$2.1</td>
<td>8%</td>
<td>10%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>$1.0</td>
<td>4%</td>
<td>&lt;1%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Total</td>
<td>$25.9</td>
<td>100%</td>
<td>100%</td>
<td>11.5%</td>
</tr>
</tbody>
</table>

- All strategies are within policy range

*Based on NAV as of June 30, 2017; $s in billions; Includes currency and distributed securities in the amount of $93mm
Source: State Street
**2016-17 Activities**

- Committed $3.3b to new opportunities
- Private Equity Accounting and Reporting Solution (PEARS)
  - Rolled out two releases - final release expected by October 2017
- Transparency – Institutional Limited Partners Association (ILPA) Template
  - 77% of Strategic funds provided template as of Q1 2017
- Costs – external management fees of 91 bps of AUM and profit sharing paid was $455m relative to CalPERS realized gain of $3.5b

**2017-18 Objectives**

- Allocate up to $4b
- Collaborate with Global Equity on the implementation of the Growth asset segment
- Refine business model
- Implement reporting requirements of AB 2833
Appendix
## Review Outline

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>I. Program Overview</td>
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<td>Sustainable Investment Practices</td>
<td>25-26</td>
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### Sections
- Liabilities
- Long-Term Horizon
- Stakeholders
- Three Forms of Capital
- Accountability
- Strategic Allocation
- Risk Reward
- Costs Matter
- Multi-faceted Risk
- Resources/Process
I. Program Overview
Private Equity: Program Role

• Primary Role
  – Private equity allocations are a means of enhancing equity returns through an active, value-added approach. The major driver for returns is appreciation, aided by leverage, with negligible cash yield.
    – 2017 Asset Liability Management (ALM)

• Driver of total performance
  – Price appreciation

• Risks
  – Growth risks
  – Illiquid
  – Leverage
  – Unfunded commitments
Program Investment Philosophy

- Long-term investment horizon
- Manager selection and alignment of interest are important to PE’s success
- Over-diversification negatively impacts performance
- Costs matter
Policy Benchmark

Current

- 67% FTSE U.S. Total Market + 33% FTSE All World ex U.S. + 300 bps
  - Lagged one quarter
  - Attempted to reflect actual geographic exposures

Effective July 1, 2018

- FTSE All World, All Capitalization (Global Equity) + 150 bps
  - 2013 CMA expectations had a 158 bps spread between GE and PE
Program Characteristics

<table>
<thead>
<tr>
<th>Investment Type</th>
<th>Net Asset Value (NAV)*</th>
<th>% of NAV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds</td>
<td>$17.1</td>
<td>66%</td>
</tr>
<tr>
<td>Fund-of-Funds</td>
<td>$3.1</td>
<td>12%</td>
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<td>Co-Investments/</td>
<td>$2.1</td>
<td>8%</td>
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<tr>
<td>Direct Investments</td>
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<tr>
<td>Separate Accounts</td>
<td>$3.5</td>
<td>14%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$25.9</td>
<td></td>
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</table>

* Based on NAV as of June 30, 2017; $s in billions; Includes currency and distributed securities in the amount of $93mm; Source: State Street

**Based on Market Value as of December 31, 2016; Source: PEARS

By Geography**

- United States: 63%
- Europe: 21%
- Emerging Markets: 12%
- Other: 4%

By Industry**

- Health Care: 12%
- Financials: 17%
- Information Technology: 16%
- Consumer Related: 22%
- Industrials: 11%
- Energy: 10%
- Other: 4%
Investment Process

Investment Review Committee (IRC)
- **Purpose**: Consistent review of investments and portfolio
- **Timing**: Weekly
- **Participants**:
  - 1 Managing Investment Director (MID); 2 Investment Directors (IDs) (PE)
  - 1 MID (Real Assets)
  - 1 ID (Global Fixed Income)
  - 1 Investment Manager (IM) (Trust Level Portfolio Management)
  - 1 IM (ICOR)
  - Board Consultant

**Portfolio Construction**
- Pacing Analysis
- Forward Calendar
- House View
- Sourcing
- Screening
- Due Diligence
- Portfolio Rebalancing

**Risk, Research, Analytics & Performance**
- Portfolio diversification
- Purchase price multiple
- Market Overview
- Capital Allocation and pacing
- Benchmark
- Risk analysis
- Performance attribution

**Administrative**
- Annual capital allocation and pacing recommendation, Market Overview, and House View
- Monitor existing portfolio and develop portfolio insight

**Due diligence and approval of new investments**
- Investment Underwriting:
  - Sourcing
  - Due Diligence
  - Investment Recommendations
  - Legal Negotiations
- Investment Management:
  - Quarterly Monitoring Report
  - Company level performance
  - Capital Calls
  - Manager, market & co. level updates
  - Communication with other LPs
  - Review of quarterly financials
II. Investment Review
Market Environment - Fundraising

- Strong fundraising market and record levels of dry powder ($906b*) is creating a competitive environment for purchasing assets
- Fundraising for Buyout strategy accounted for 55% of overall fundraising in 1H 2017

Source: Preqin

*Excludes Real Estate and Infrastructure
Market Environment – Valuations

High valuations continue to make it challenging to find attractively valued assets

Source: Preqin
Market Environment – Exits & Liquidity

(US $ in Billions)

PE Buyout Exits

- Exit markets were robust over the last few years but slowed down in 2016 and 1H 2017 amidst a decrease in M&A and IPO activity
- 12% decrease in exits between the 1H 2016 and 1H 2017
- Q2 2017 had the lowest number of quarterly exits since 2010

Source: Preqin
Commitments and Unfunded

As of June 30, 2017
Source: PEARS

CalPERS Investment Office Private Equity
As of June 30, 2017

PE provided net cash flow of $28 billion since FY 2010/2011

Source: PEARS Cash Flow Report
Private Equity 3-Year Rolling Excess Returns

1 - YEAR EXCESS RETURNS

ROLLING 3-YEAR EXCESS RETURNS

PE Portfolio Key Risks

• Vintage year concentration:
  ➢ 44.3% of the NAV is concentrated in Vintage Years 2006 – 2008

• Transparency:
  ➢ Slow adoption by other industry participants of the ILPA Fee Reporting Template
  ➢ Limited visibility on portfolio positions

• Unfunded Commitments: $14.3b

As of June 30, 2017
III. Business Review
Private Equity Functional Organizational Chart

Managing Investment Director

Investment Underwriting

Risk, Research, Analytics & Performance / Investment Management Group

Administration

As of September 1, 2017
Staffing Overview

TOTAL PROGRAM
- 35 total positions within Private Equity

STAFFING UPDATES
- Hired 2 investment staff
- 8 Private Equity professionals appointed to more senior positions
- 10 professionals transferred to other areas of INVO

CURRENT VACANCIES
- 1 Managing Investment Director
- 1 Investment Officer
- 1 Administrative Support Staff

As of September 1, 2017
## Program Expenses

<table>
<thead>
<tr>
<th></th>
<th>FY 2016-17</th>
<th>FY 2015-16</th>
<th>FY 2016-17 Profit Sharing ($millions)</th>
<th>FY 2015-16 Profit Sharing ($millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AUM ($billions)</td>
<td>Fees &amp; Profit Sharing Paid ($millions)</td>
<td>Fees &amp; Profit Sharing Paid² (BPS)</td>
<td>AUM ($billions)</td>
</tr>
<tr>
<td>Internal Management</td>
<td>$</td>
<td>$8.3</td>
<td>3</td>
<td>$</td>
</tr>
<tr>
<td>External Management¹</td>
<td>$25.9</td>
<td>$828.9</td>
<td>320</td>
<td>$26.4</td>
</tr>
<tr>
<td>Asset Management Fees Paid</td>
<td>N/A</td>
<td>$234.5</td>
<td>91</td>
<td>N/A</td>
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<tr>
<td>Profit Sharing</td>
<td>N/A</td>
<td>$455.1</td>
<td>176</td>
<td>N/A</td>
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<tr>
<td>Change in Accrued Profit Sharing</td>
<td>N/A</td>
<td>$139.3</td>
<td>53</td>
<td>N/A</td>
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<td>Consultants Expense</td>
<td>N/A</td>
<td>$1.3</td>
<td>0</td>
<td>N/A</td>
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<tr>
<td>Technology &amp; Operating Expense</td>
<td>N/A</td>
<td>$10.0</td>
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<td>N/A</td>
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<tr>
<td>Total Program</td>
<td>$25.9</td>
<td>$848.5</td>
<td>327</td>
<td>$26.4</td>
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<td>FY 2016-17 Profit Sharing</td>
<td>$455.1</td>
<td></td>
<td></td>
<td>$489.8</td>
</tr>
<tr>
<td>FY 2016-17 CalPERS Realized Gain</td>
<td>$3,531.6</td>
<td></td>
<td></td>
<td>$3,258.8</td>
</tr>
</tbody>
</table>

¹ The external fee information does not include the GP’s carried interest. The percentage of carried interest earned varies for each private equity partnership, but generally ranges from 10% - 20% of the net profits of the fund, after expenses. Important to note is that our private equity partners participate in this agreed-upon carried interest profit sharing only after a minimum agreed upon return has been obtained by the investor, and all underlying fund expenses have been incurred. The minimum agreed upon return is typically in the range of 6 – 8%.

² All BPS fees paid figures are calculated on Total Program AUM. Some totals may not reconcile due to rounding.
Summary of PE Sustainable Investment Practices

UN PRI Principle 1
“*We will incorporate ESG issues into investment analysis and decision-making processes.*”

- **Due Diligence** - staff is asking questions covering the following areas around the GPs’ practices in the ESG space:
  - Formal ESG policy
  - Pre-investment process
  - Post-investment monitoring of the holdings

- The majority of CalPERS PE’s due diligence questions on ESG overlap with the standard [UN PRI Due Diligence Questionnaire](https://www.unpri.org/documents/due_diligence).

- **Monitoring** - staff is discussing ESG practices across the portfolio.
  - For the top 10 managers by assets under management, staff inquires about ESG issues and practices at the annual Limited Partner Advisory Committee (LPAC) meeting.
Summary of PE Sustainable Investment Practices

Next Steps

- CalPERS staff will engage GPs on ESG concerns and accomplishments across the portfolio
- Broader adoption of ILPA Fee and Profit Sharing template and increased transparency remains a top priority for CalPERS
  - 77% of Strategic funds provided template as of Q1 2017
Conclusion

- Private Equity has exceeded the Global Equity benchmark over the 5, 10 and 20 year horizon
- PEARS implementation nearly complete
- Continue to integrate Environmental, Social, and Governance (ESG) considerations in the investment and monitoring process