

Global Equity Annual Program Review

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Annual Program Review Outline

Section	Page
Executive Summary	3-7
Executive Summary: Global Equity (GE)	3
Major Accomplishments (2018-2019)	4
Major Initiatives (2019-2020)	5
Performance for Period Ending June 30, 2019	6-7
I. Program Overview	9-15
Program Role	10-11
Investment Beliefs	12
Governance & Sustainability Integration	13-15
II. Investment Review	16-21
Investment Objective	17
Investment Performance for Period Ending June 30, 2019	18
Portfolio Positioning	19
Trend in Implementation	20
Trend in Active Risk	21
III. Business Review	22-27
Investment Office Organization Chart	23
Functional Organization Chart	24
Staffing Overview	25
Business Overview	26
Program Expenses	27

Executive Summary | Global Equity (GE)

1. Program Purpose – Manage GE portfolio in support of the Total Fund

- Deliver multiple equity betas with low active risk and an efficient cost structure
- Contribute to the long-term sustainability of the Total Fund through prudent fund management
- Participate in capital market surveillance and perspective to impact asset allocation decisions

2. Performance & Positioning – Large and multi-faceted portfolio

- Assets under management: Global Equity - \$185.9B and Affiliate Funds – \$18.6B
- GE PERF returns as of 06/30/19 were 11.1%, 6.7%, 12.3%, and 6.1% for 10, 5, 3, and 1-year periods
- Risk mitigation strategies in place to moderate impact to the Total Fund during severe drawdown
- Strategic asset allocation and index investing employed for Affiliate Funds

3. Culture – One team, one mission

- Strong and integrated team focused on role and impact to the Total Fund
- Inclusive and collaborative culture within Global Equity, INVO, and CalPERS
- Committed to continuous improvement, technology use, and cost efficiency

Executive Summary | Major Accomplishments

2018-2019 Major Accomplishments

- Implemented ALM Strategic Review outcomes for all trusts - PERF & Affiliates
- Advanced Strategy Rationalization and Active Risk Reduction
- Made progress on ESG Strategic Plan implementation
- Launched the California Employers' Pension Prefunding Trust (CEPPT)

Executive Summary | Major Initiatives

2019-2020 Major Initiatives

- Complete Strategy Rationalization and Active Risk Reduction
- Continue the multi-year implementation of the ESG Strategic Plan
- Complete selection of next generation GE Portfolio Construction platform & begin integration
- Evaluate alternative strategic benchmarks that more effectively capture equity market betas
- Integrate risk exposure management across public and private equities

Executive Summary | Global Equity Performance

For Period Ending June 30, 2019

Program	Ending Market Value (MM)	% of Program Assets	10 YR		5 YR		3 YR		1 YR	
			Net Return	Excess bps	Net Return	Excess bps	Net Return	Excess bps	Net Return	Excess bps
Public Equity	185,910	100%	11.06	20	6.67	(8)	12.26	(25)	6.08	(16)
Public Equity - Cap Weighted	131,352	71%	10.95	20	6.46	(9)	11.90	(27)	5.06	(20)
*Index-Oriented Strategy	88,841	68%	11.15	9	6.82	9	12.49	11	5.51	7
*Traditional Active	27,079	20%	11.13	98	6.29	(15)	11.06	(43)	4.30	(64)
*Alternative Beta	15,431	12%	10.65	47	5.50	(67)	11.30	(83)	4.42	(71)
Public Equity - Factor Weighted	54,558	29%	--	--	--	--	--	--	13.41	(10)

*Reflects percentage of program assets relative to Cap Weighted Segment

Executive Summary | Affiliate Funds Performance

For Period Ending June 30, 2019

		Ending Market Value (MM)	% of Total Fund Assets	10-Yr		5-Yr		3-Yr		1-Yr	
				Net Return	Excess bps	Net Return	Excess bps	Net Return	Excess bps	Net Return	Excess bps
Defined Benefit, Health, And OPEB Plans											
SK2CA1	Judges' Retirement Fund	16	0.1	0.57	8	1.01	14	1.54	16	2.42	10
SKDKA1	Judges' Retirement System II Fund	1,696	9.1	9.41	32	5.02	25	7.95	36	6.75	33
SK3CA1	Legislators' Retirement System Fund	114	0.6	7.67	50	4.09	24	5.51	32	7.32	22
SKB3	Health Care Fund	478	2.6	4.48	59	3.11	16	2.35	3	7.87	(0)
SK3KA1	Long-Term Care Fund	4,770	25.6	6.97	30	3.42	11	4.22	1	7.15	(8)
SKB0	CERBT Strategy 1 Fund	7,877	42.3	9.40	33	5.04	38	8.22	39	6.18	18
SKB7	CERBT Strategy 2 Fund	1,299	7.0	-	-	4.57	35	6.82	39	7.04	11
SKB8	CERBT Strategy 3 Fund	625	3.4	-	-	4.00	33	5.32	34	7.20	10
Supplemental Income Plans (457/SCP)											
SKEW	CalPERS Target Income Fund	103	0.6	5.46	(9)	3.26	11	4.21	8	6.46	10
SKEZ	CalPERS Target 2015 Fund	89	0.5	6.59	(13)	3.17	11	4.08	8	6.06	10
SKF1	CalPERS Target 2020 Fund	166	0.9	7.12	(9)	3.14	11	4.46	7	5.43	11
SKF2	CalPERS Target 2025 Fund	168	0.9	7.95	(6)	3.68	12	5.81	6	5.13	13
SKF3	CalPERS Target 2030 Fund	145	0.8	8.64	(7)	3.91	11	6.63	4	4.48	12
SKF4	CalPERS Target 2035 Fund	84	0.5	9.22	(13)	4.24	12	7.58	2	3.99	13
SKF5	CalPERS Target 2040 Fund	76	0.4	9.69	(10)	4.63	13	8.71	0	3.94	14
SKF6	CalPERS Target 2045 Fund	40	0.2	9.96	(11)	5.14	13	9.70	(1)	4.28	14
SKF7	CalPERS Target 2050 Fund	20	0.1	9.95	(12)	5.14	13	9.70	(1)	4.28	14
SKDU	CalPERS Target 2055 Fund	9	0.0	-	-	5.15	14	9.70	(1)	4.27	13
SKHA	CalPERS Target 2060 Fund	2	0.0	-	-	-	-	-	-	-	-
SKEO	SSgA STIF	106	0.6	-	-	1.06	19	1.63	24	2.68	37
SKDI	CalPERS SIP US Short Term Bond Core	35	0.2	-	-	1.33	(12)	1.48	(11)	4.20	(7)
SKDH	CalPERS SIP US Bond Core	59	0.3	-	-	3.01	6	2.34	2	7.92	6
SKDJ	CalPERS SIP Real Asset Core	7	0.0	-	-	(0.25)	(11)	4.02	(17)	1.87	(17)
SKDF	CalPERS SIP Russell All Cap Core	559	3.0	-	-	10.23	4	14.01	(1)	9.00	2
SKDG	CalPERS SIP Global All Cap EX-US Core	68	0.4	-	-	2.47	22	9.18	1	0.59	33
SKZRA1	Total Affiliate Investment Programs	18,610	100								

Appendix

I. Program Overview



I. Program Overview

II. Investment Review

III. Business Review

Program Role | Execute CalPERS Strategic Plan

CalPERS 2017-22 Strategic Goal

Strengthen the **long-term sustainability** of the pension fund, cultivate a **risk-intelligent** organization, and **reduce cost and complexity**.



Investment Office Mission (Generate Returns to Pay Benefits)

Manage portfolio in a cost effective, transparent, and risk-aware manner

Vision

- **Investment Beliefs** and **CalPERS Core Values**: principles underlying our investment decisions
- Operate with a focus on **repeatable, predictable, and scalable** portfolios and practices
- Seek **alignment of interests** with our primary stakeholders, our business partners, and ourselves
- Use clearly articulated **performance, risk, and cost metrics** to evaluate our value-add to the funds
- Investment and business activities are supported by a **solid platform of effective risk management and controls**

Program Role | Equity Risk Premium

Global Equity is responsible for CalPERS investments in securities traded in global public equity markets, and is the principal asset class providing growth exposure in the strategic asset allocation.

- 2017 Asset Liability Management (ALM) Workshop:
 - The role of equities is “total return oriented and to capture the equity risk premium (ERP), defined as the excess return over risk-free government bonds, by means of ownership risk in companies and exposure to corporate earnings growth. The major driver is appreciation, with some cash yield (growth and liquidity)”
- Drivers of total performance
 - Price appreciation
 - Cash yield
- Risks
 - Economic: High sensitivity to global economic growth variability
 - Liquidity: Portfolio expected to remain highly liquid

Investment Beliefs | Alignment and Integration

The Investment Beliefs are not a checklist to be applied by rote to every decision. They are a guide for making judgmental decisions that often require balancing multiple, inter-related decision factors.

Short Name	Investment Belief
1 Liabilities	Liabilities must influence the asset structure
2 Long-Term Horizon	A long time investment horizon is a responsibility and an advantage
3 Stakeholders	CalPERS investment decisions may reflect wider stakeholder views
4 Three Forms of Capital	Long-term value creation requires effective management of three forms of capital: financial, physical, and human
5 Accountability	CalPERS must articulate its investment goals and performance measure, and ensure clear accountability for their execution
6 Strategic Allocation	Strategic asset allocation is the dominant determinant of portfolio risk and return
7 Risk Reward	CalPERS will take risk only where we have a strong belief we will be rewarded
8 Costs Matter	Costs matter and need to be effectively managed
9 Multi-faceted Risk	Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error
10 Resources / Process	Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives

Governance & Sustainability | GE Integration

GE integrates environmental, social, and governance (ESG) considerations as follows:

1. Votes all public company proxies (11,000+ company meetings, 100,000+ resolutions) in a manner consistent with CalPERS' Governance & Sustainability Principles and Investment Beliefs
2. Actively engages portfolio companies on climate change, corporate board diversity, executive compensation and other ESG considerations to promote long-term value creation
3. Requires external managers to exercise best judgment to integrate environmental, social, and governance (ESG) considerations into their investment philosophy, strategies, and processes
4. Leverages external and internal partnerships to actively engage global asset owners and managers, companies, data providers, regulators, and standards-setting bodies on material ESG factors
5. Continuous ESG research, development & integration of best practices, proxy voting enhancements, and evolution of Governance & Sustainability Principles

Governance & Sustainability | 2019 Proxy Season Outcomes

- **Made progress in improving corporate board diversity**
 - 53% of companies engaged since July 2017 added a diverse director to their boards (361 of 682 companies). All S&P 500 companies now have at least one female director on their boards (as of July 2019)
 - Voted “against” 255 directors at 97 companies where diversity engagements did not result in constructive outcomes. In 2018, we voted against 468 directors at 145 companies due to lack of progress on diversity engagements
- **Enhanced executive compensation voting**
 - Voted “against” 53% of executive compensation proposals, up from 43% last year. The 5-year average prior to staff’s January 2018 implementation of the enhanced compensation analysis framework was 16% “against”
 - Developed and implemented a new proprietary 5-year quantitative pay-for-performance model
- **Successfully executed shareowner campaigns**
 - Shareowner campaigns targeting 145 companies resulted in 83 settlements, 38 ongoing engagements, 23 proxy solicitations, and 1 company received SEC No Action relief
 - 29% of the Japanese companies we engaged in 2017 requesting that they consider increasing the level of board independence to at least 1/3 have since reached that threshold (248 out of 864)

Governance & Sustainability | 2020 Proxy Season Outlook

- **Climate Action 100+** : Engage portfolio companies to ensure that their strategies take into account the risks and opportunities arising from climate change. Specifically, engage companies to improve governance of climate-related risks and opportunities, curb greenhouse gas (GHG) emissions, and strengthen climate-related financial disclosures
- **Corporate Board Diversity**: Continue to engage companies to improve corporate board diversity, and use proxy voting and shareowner campaigns to bring about change where engagements have not led to positive outcomes
- **Compensation**: Ensure that the design and practice of compensation at portfolio companies appropriately incentivizes management and employees to generate long-term sustainable returns in alignment with the interests of long-term investors
- **Proxy Voting Enhancements**: Apply enhanced voting practices specifically targeted at compensation (say-on-pay), board quality (competence, independence, and diversity), and global harmonization of voting practices (board independence, committee independence)

II. Investment Review

Program Overview

Investment Review

Business Review

Investment Objective

GE is managed in alignment with the CalPERS Total Fund Investment Policy's investment objectives as follows:

1. The Program seeks to meet or exceed the return generated by global public equities as represented by the benchmark, specified in the CalPERS Total Fund Investment Policy benchmark appendix, while managing volatility relative to this benchmark.
2. The Program seeks to utilize active management in an effort to earn a rate of return in excess of the benchmark. The degree of active management deployed is constrained by various risk limits for the asset class to manage relative volatility.

Performance | Public Employees' Retirement Fund (PERF)

For Period Ending June 30, 2019

Asset Class	As of June 30, 2019			10-Yr			5-Yr			3-Yr			1-Yr		
	Ending Market Value (bil)	% of Total Fund Assets	Interim Policy Weight % ¹	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Growth	\$ 212.4	57.4%	58.00%	11.6%	12.1%	(49)	7.1%	7.5%	(37)	12.3%	12.9%	(60)	6.3%	6.3%	6
Public Equity	\$ 185.9	50.2%	50.0%	11.1%	10.9%	20	6.7%	6.7%	(8)	12.3%	12.5%	(25)	6.1%	6.2%	(16)
Cap Weighted	\$ 131.4	35.5%	35.0%	11.0%	10.8%	20	6.5%	6.5%	(9)	11.9%	12.2%	(27)	5.1%	5.3%	(20)
Factor Weighted	\$ 54.6	14.7%	15.0%	-	-	-	-	-	-	-	-	-	13.4%	13.5%	(10)
Private Equity	\$ 26.5	7.1%	8.0%	14.0%	16.6%	(254)	9.6%	10.3%	(80)	12.5%	14.1%	(156)	7.7%	4.0%	368
Income	\$ 106.3	28.7%	28.0%	6.6%	5.2%	137	4.1%	3.5%	56	3.3%	2.7%	62	9.6%	9.3%	31
Long Spread	\$ 56.7	15.3%	15.0%	-	-	-	-	-	-	-	-	-	9.5%	9.0%	49
Long Treasury	\$ 37.8	10.2%	10.0%	-	-	-	-	-	-	-	-	-	10.5%	10.5%	(3)
High Yield	\$ 11.7	3.2%	3.0%	-	-	-	-	-	-	-	-	-	8.4%	8.0%	40
Real Assets	\$ 40.9	11.0%	13.0%	4.1%	8.4%	(430)	7.5%	8.6%	(111)	6.4%	6.8%	(42)	3.7%	6.5%	(283)
Inflation ²	\$ 0.0	0.0%	0.0%	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Liquidity	\$ 3.7	1.0%	1.0%	1.1%	1.2%	(9)	1.3%	1.2%	10	1.7%	1.3%	37	2.6%	2.2%	45
Trust Level ³	\$ 7.0	1.9%	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fund	\$ 370.3	100.0%	100.0%	9.1%	9.5%	(33)	5.8%	6.1%	(23)	8.8%	9.0%	(21)	6.7%	7.1%	(42)



Investment Office
Global Equity

1. Interim policy weight reflects the weights in effect at the beginning of the first day of the subsequent month.

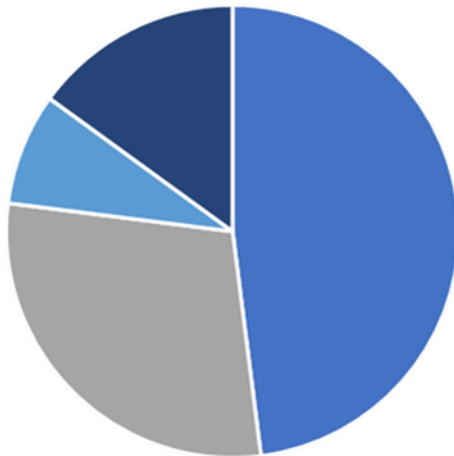
2. As of February 2019, the Inflation program has been liquidated and subsequently linked historical returns are no longer meaningful.

3. Trust Level includes Multi Asset Class, Completion Overlay, Risk Mitigation, Absolute Return Strategies, Plan Level Transition and other Total Fund level portfolios.

Investment Review | Portfolio Positioning

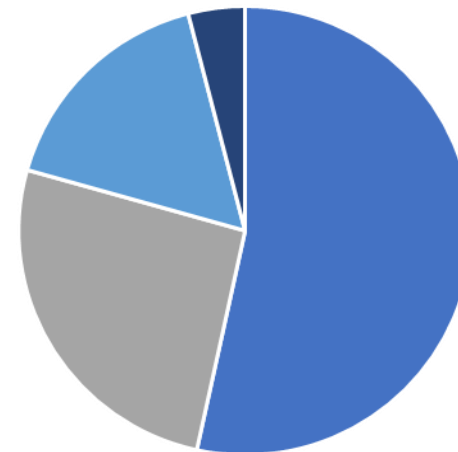
- Total Global Equity Assets: \$185.9 Billion
- 88% Internally Managed, 12% Externally Managed

% AUM



■ Index-Oriented ■ Factor Weighted ■ Alternative Beta ■ Traditional Active

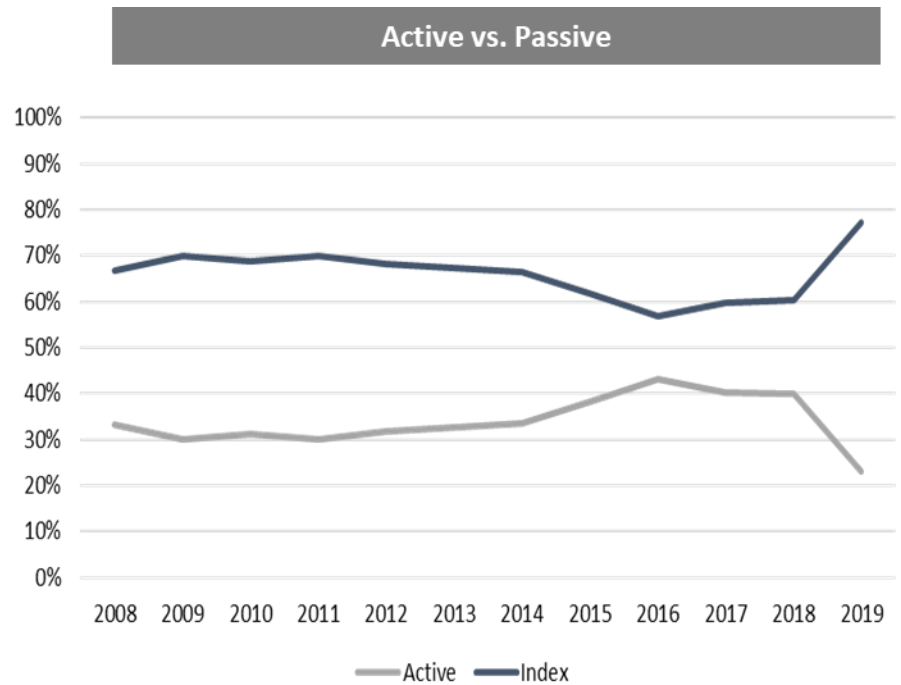
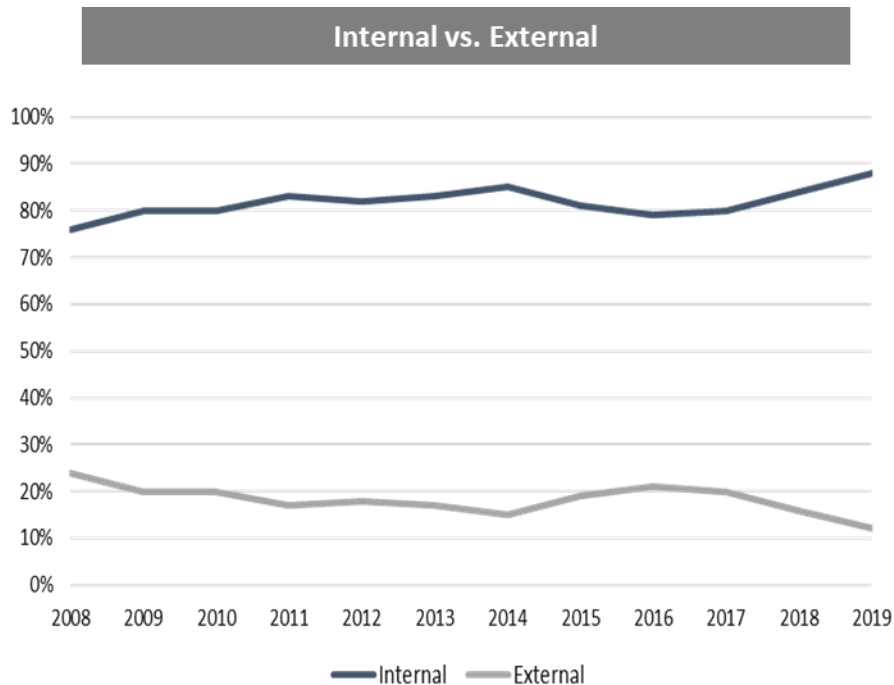
Regional Mandate Mix



■ Global ■ US ■ International Developed ■ Emerging Markets

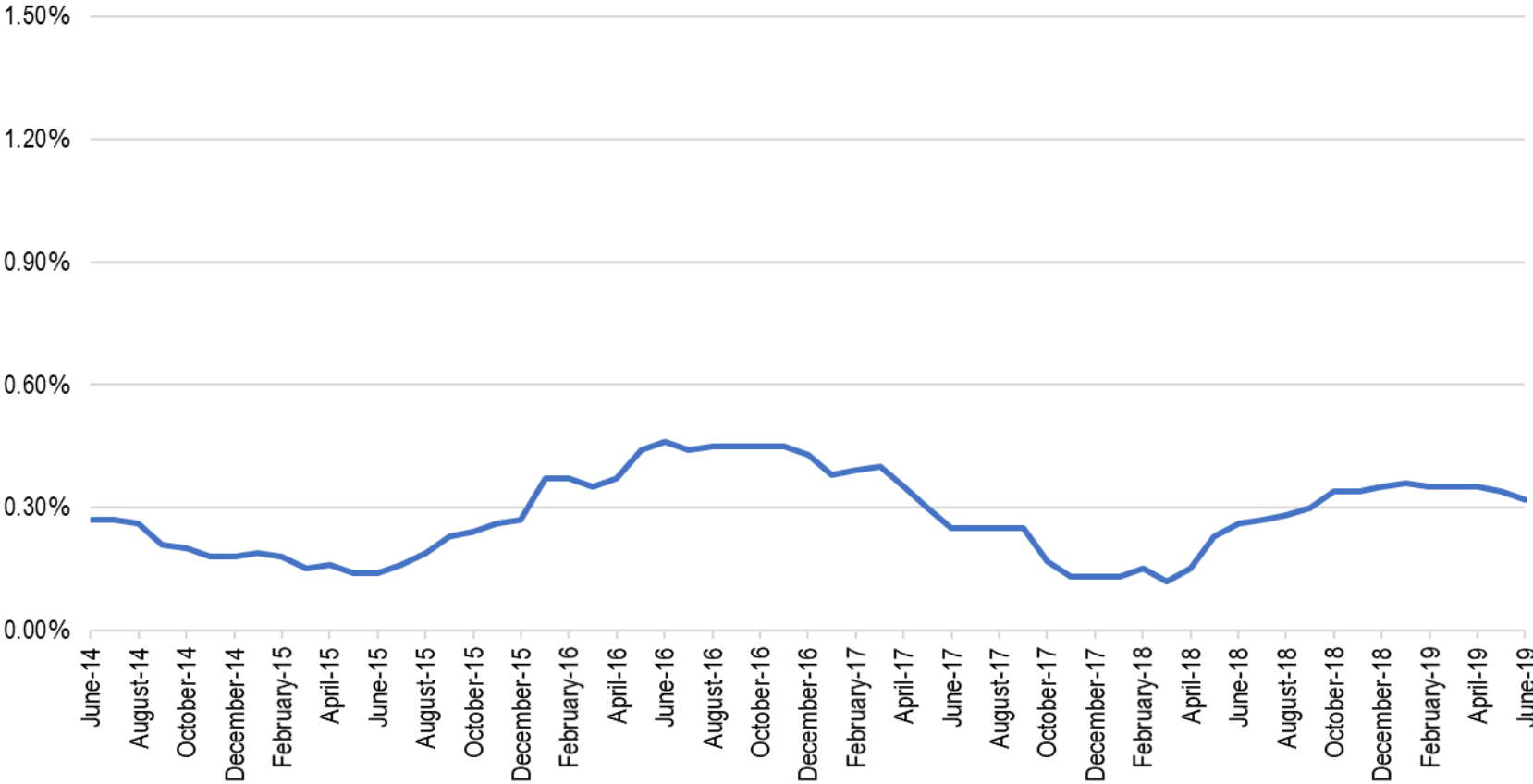
Investment Review | Trend in Implementation

- The percentage of assets managed in-house (88% today) has increased over time
- 77% of Global Equity's assets are now passively managed



Investment Review | Trend in Active Risk

5-Year Trend in Active Risk



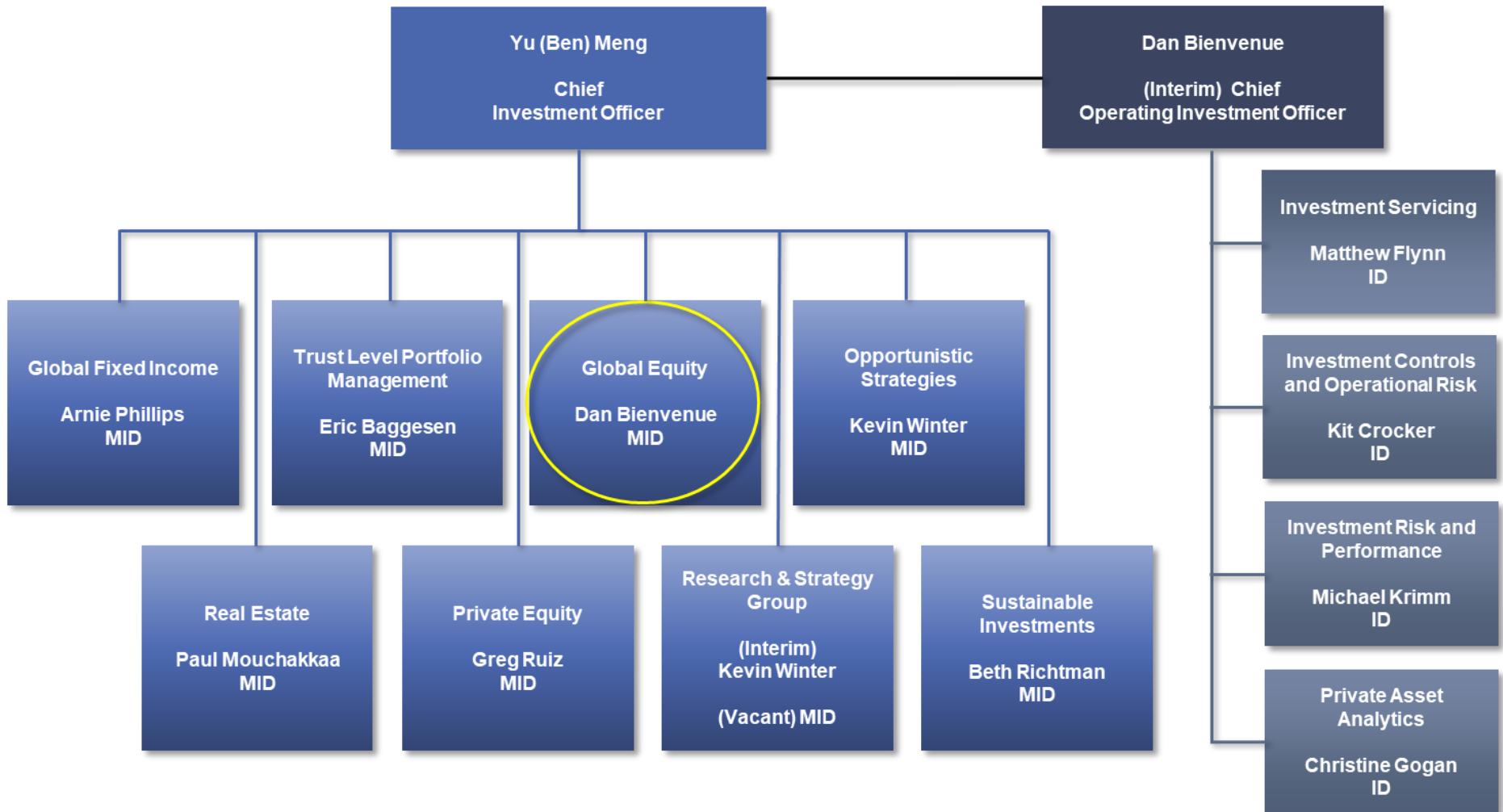
III. Business Review

Program Overview

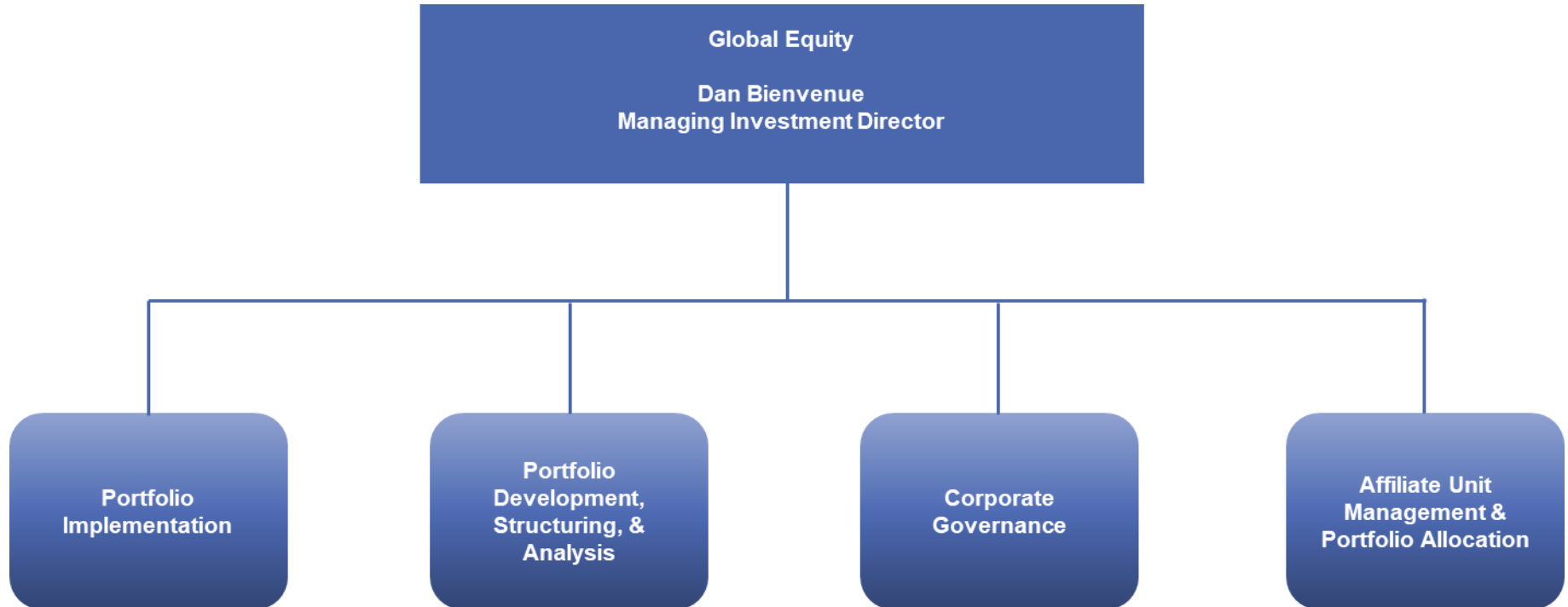
Investment Review

Business Review

Investment Office Organization Chart



Functional Organization Chart



Staffing Overview

TOTAL
PROGRAM
39 FTE

Global Equity Staff

- 1 Managing Investment Director (MID)
- 5 Investment Directors (IDs)
- 7 Investment Managers (IMs)
- 7 Associate Investment Managers (AIMs)
- 16 Investment Officers (7-IO3s, 7-IO2s, 2-IO1s)
- 3 Support Staff (AGPA, AA 1, OT)

STRUCTURAL
UPDATES

GE Organizational Updates

- Appointed 7 Investment Staff
- Transferred 4 Investment Staff
- Appointed 1 Support Staff
- Transferred 14 Support Staff

CURRENT
VACANCIES
2 FTE

Recruitments

- 1 Investment Manager Position
- 1 Investment Officer Position

Business Overview | GE Functions

Global Equity	Global Equity is the principal asset class providing growth exposure in the strategic asset allocation, and its goal is to provide equity beta exposure plus risk-managed opportunistic alpha.
Portfolio Implementation	Execute all aspects of portfolio management: portfolio construction, corporate actions, trade generation & trading strategy, risk and performance analysis.
Portfolio Development, Structuring, & Analysis	Integrate external and internal sources of investment insights, research and build value added strategies to complement the existing portfolio and improve the holistic opportunity set (e.g. Alt Beta products), and develop a thorough understanding of GE risk and performance characteristics.
Corporate Governance	Actively exercise ownership rights through proxy voting, corporate engagements, and shareowner campaigns to ensure the public companies in which we invest in are managed in such a way as to generate long-term sustainable investment returns consistent with our Total Fund Investment Policy and Investment Beliefs.
Affiliate Unit Management & Portfolio Allocation	Execute all aspects of asset management for affiliate portfolios, and implement and manage asset class & plan level transitions triggered by allocation changes involving global equities for both internally and externally managed portfolios.

Program Expenses

Expense Type	2018-19			2017-18		
	AUM (\$millions)	Fees Paid (\$millions)	Fees Paid ³ (BPS)	AUM (\$millions)	Fees Paid (\$millions)	Fees Paid ³ (BPS)
Internal Management ¹	\$146,310	\$20.9	1	\$135,787	\$16.7	1
External Management ²	\$28,897	\$119.1	41	\$33,968	\$113.5	33
Consultants Expense	N/A	\$1.2	0.1	N/A	\$2.0	0.1
Technology & Operating Expense	N/A	\$15.9	0.9	N/A	\$15.4	0.9
Total Program	\$175,207	\$157.1	9	\$169,755	\$147.5	9