



**OREGON  
STATE  
TREASURY**

# Oregon Investment Council

**January 31, 2019**

**Rukaiyah Adams**  
Chair

**John Skjervem**  
Chief Investment Officer

**Tobias Read**  
State Treasurer



Investment Division  
16290 SW Upper Boones Ferry Road  
Tigard, OR 97224  
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# OREGON INVESTMENT COUNCIL



## Agenda

**January 31, 2019**  
**9:00 AM**

Oregon State Treasury  
Investment Division  
16290 SW Upper Boones Ferry Road  
Tigard, OR 97224

<u>Time</u>	<u>A. Action Items</u>	<u>Presenter</u>	<u>Tab</u>
9:00-9:05	1. <b>Review &amp; Approval of Minutes</b> December 12, 2018	<b>Rukaiyah Adams</b> <i>OIC Chair</i>	1
9:05-9:10	2. <b>Proposed 2020 OIC Meeting Dates</b>	<b>John Skjervem</b> <i>Chief Investment Officer</i>	2
9:10-9:25	3. <b>Committee Reports and CIO Remarks</b>	<b>John Skjervem</b>	3
9:25-10:10	4. <b>Blackstone Capital Partners VIII, L.P.</b> <i>OPERF Private Equity Portfolio</i>	<b>Michael Langdon</b> <i>Senior Investment Officer, Private Equity</i> <b>Tom Martin</b> <i>Managing Director, TorreyCove Capital Partners</i> <b>Joseph Baratta</b> <i>Global Head of Private Equity, The Blackstone Group</i>	4
10:10-10:15	5. <b>Annual Placement Agent Report</b>	<b>John Hershey</b> <i>Director of Alternative Investments</i>	5
10:15-10:20	6. <b>Investment Policy Updates</b> <i>Oregon Public Universities</i>	<b>Jennifer J. Peet</b> <i>Corporate Governance Director</i>	6
10:20-10:35	7. <b>Investment Beliefs Update and Discussion</b> <i>OPERF</i>	<b>Allan Emkin</b> <i>Managing Director, Pension Consulting Alliance</i>	7
10:35-10:45	----- <b>BREAK</b> -----		

Rukaiyah Adams  
Chair

John Russell  
Vice Chair

Rex Kim  
Member

Patricia Moss  
Member

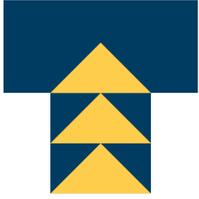
Tobias Read  
State Treasurer

Kevin Olineck  
PERS Director



TAB 1 – REVIEW & APPROVAL OF MINUTES

December 12, 2018 Regular Meeting



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# State of Oregon

## Office of the State Treasurer

16290 SW Upper Boones Ferry Road  
Tigard, Oregon 97224

### OREGON INVESTMENT COUNCIL

DECEMBER 12, 2018

#### Meeting Minutes

Members Present: Rukaiyah Adams, John Russell, Tobias Read, Rex Kim and Kevin Olineck

Staff Present: John Skjervem, Darren Bond, Perrin Lim, David Randall, John Hershey, Deena Bothello, Karl Cheng, Anna Totdahl, Roy Jackson, Austin Carmichael, Paul Koch, David Elott, May Fanning, Jen Plett, Debra Day, Kelly Cook, Dana Millican, Ben Mahon, Paul Koch, Jo Recht, Tom Lofton, Lisa Pettinati, Geoff Nolan, Garrett Cudahey, Angela Schaffers, Aliese Jacobsen, Eric Messer, Amanda Kingsbury, Mark Selfridge, Jackie Steffens, Michael Langdon, Joe Hutchinson, Michael Viteri, Jennifer Peet, Kim Olson, William Hiles, Michael Mueller, Kristel Flores, Tiffany ZhuGe, Andy Coutu, James Sinks, Jenny Dalto, Dmitri Palmateer, Amy Wojcicki, Michael Kaplan, Robin Kaukonen, Chris Ebersole and Faith Sedberry

Consultants Present: Tom Martin and David Fann (TorreyCove); Allan Emkin, Christy Fields and Brandon Ross (PCA); Janet Becker-Wold and Jim Callahan (Callan)

Legal Counsel Present: Steven Marlowe, Department of Justice

The December 12<sup>th</sup>, 2018 OIC meeting was called to order at 8:59 am by Rukaiyah Adams, OIC Chair.

#### I. **9:00 am Review and Approval of Minutes**

**MOTION:** Chair Adams asked for approval of the October 31st, 2018 OIC regular meeting minutes. Member Russell moved the motion, and Treasurer Read seconded the motion which then passed by a 4/0 vote.

#### II. **9:04 am Committee Reports and CIO Update**

**Committee Reports:** Mr. Skjervem gave an update on the following committee actions taken since the October 31<sup>st</sup>, 2018 OIC meeting:

##### **Private Equity Committee**

December 7, 2018	ClearVue Partners III	\$200M
	USV 2019 & USV Opportunity 2019	\$50M





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**V. 10:56 am Capital Markets Policy Updates – OPERF**

Jennifer Peet, Corporate Governance Director, and Michael Viteri recommended the following: 1) updates to two policies governing the OPERF Fixed Income Portfolio; and 2) benchmark changes for two mandates within the OPERF Public Equity Portfolio.

- 1. Fixed Income:** Staff recommended revisions to certain fixed income policies consistent with similar revisions proposed and approved at the October 31 OIC meeting. Specifically, staff recommended reducing the number of policies in the OPERF Fixed Income Portfolio from three to two, as follows:
  - a. INV 401: Strategic role of Fixed Income for OPERF;
  - b. INV 402: Internal Fixed Income Portfolio Investments; and
  - c. INV 403: Fixed Income Investments: Investment Manager Selection, Monitoring, and Termination (RETIRE and fold relevant portions into INV 401).
- 2. Public Equity:** Due to FTSE Russell decommissioning certain benchmarks, staff recommended making benchmark changes for the following two externally-managed mandates:
  - a. DFA Global ex-U.S. Micro Cap Value – from the Russell Global ex-U.S. Microcap Index to the FTSE Global ex-U.S. Micro Cap Index; and
  - b. EAM International Micro Cap – from the Russell Global ex-U.S. Microcap Index to the FTSE Global ex-U.S. Micro Cap Index.

**MOTION:** Mr. Russell moved approval of the staff recommendations, and Treasurer Read seconded the motion which then passed by a 4/0 vote.

**VI. 11:26 am Q3 2018 Performance & Risk Report – OPERF**

Karl Cheng, Senior Investment Officer, Portfolio Risk & Research and Janet Becker-Wold, Senior Vice President, Callan LLC, presented the quarterly OPERF investment performance and risk report for the calendar year and cumulative period ended September 30, 2018.

**VII. 12:12 pm Fixed Income Review – OPERF and other OST-managed funds**

Geoff Nolan, Senior Investment Officer, Fixed Income, Tom Lofton, Investment Officer, Fixed Income, and Garrett Cudahey, Investment Officer, Fixed Income, delivered the annual Fixed Income Portfolio Review and shared with the Council their plans for the Portfolio in 2019.

**VIII. 12:13 pm Asset Allocation & NAV Updates**

Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended October 31, 2018.

**IX. 12:13 pm Calendar – Future Agenda Items**

A calendar listing of future OIC meetings and scheduled agenda topics was included in the Council's meeting material.

**X. 12:14 pm Open Discussion**

Treasurer Read shared some thoughts about the Council's investment beliefs and suggested that more explicit language related to diversity and inclusion should, in his opinion, be included in the belief statements. He noted the Investment Division's good progress in this area, and said he would like to make advancing diversity and inclusion an enduring theme of Treasury. Treasurer Read then made an open request of staff and Allan Emkin, Managing Director, Pension Consulting Alliance (PCA), to provide the



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Council with a proposed belief statement amendment that would project a more explicit and forceful position in support of diversity and inclusion.

Chair Adams then told the audience that each Council member would be putting in extra work across multiple Council objectives in the coming months. Specifically, she mentioned that she and Mr. Skjervem will be working together on governance issues, while Mr. Skjervem, Vice Chair Russell and Member Olinek would work together to foster open interaction in preparation for both the Council's annual Strategic Asset Allocation presentation in April and the PERS Board's biennial rate crediting process in July. Finally, she mentioned that Member Kim is working with Mr. Skjervem and other investment staff on the Strategic Asset Allocation presentation, and encouraged the audience to contact individual OIC members with any questions.

**12:18 pm Public Comments**

Jim Baker, from the Private Equity Stakeholder Project, updated the Council with his concerns related to Endeavour Capital, with which Oregon has previously invested. Mr. Baker indicated that Endeavour Capital would soon seek additional capital from the Council, and argued that based upon the firm's recent investment track record, a new capital commitment from Oregon could not be justified. Mr. Baker then discussed the firm's investments in bail bonds and for-profit colleges, both of which he described as unsuccessful and inconsistent the Council's fiduciary duty.

Chris Groener, Lead Representative for United Food and Commercial Workers Union Local 555, then addressed the Council. Mr. Groener said his union represents over 25,000 workers in retail grocery, food processing and healthcare throughout Oregon, and that other union representatives had shared similar concerns about Endeavour Capital during the public comment period of the Council's September meeting.

Mr. Groener then read aloud a letter written by Oregon State Rep. Rob Nosse in which Rep. Nosse also expressed concerns about Endeavour Capital and the Council's previous investments therewith.

Ms. Adams adjourned the meeting at 12:30 pm.

Respectfully submitted,

*May Fanning*

May Fanning  
Executive Support Specialist

TAB 2 – Proposed 2020 OIC Meeting Dates

# OREGON INVESTMENT COUNCIL

## Proposed 2020 Meeting Schedule

Meetings Begin at 9:00 am

**Oregon State Treasury  
Investment Division  
16290 SW Upper Boones Ferry Road  
Tigard, OR 97224**

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Thursday, January 30

Wednesday, March 11

Wednesday, April 22

Wednesday, June 3

Wednesday, July 22

Wednesday, September 9

Wednesday, October 28

Wednesday, December 9

## TAB 3 – Committee Reports and CIO Remarks

January 31, 2019

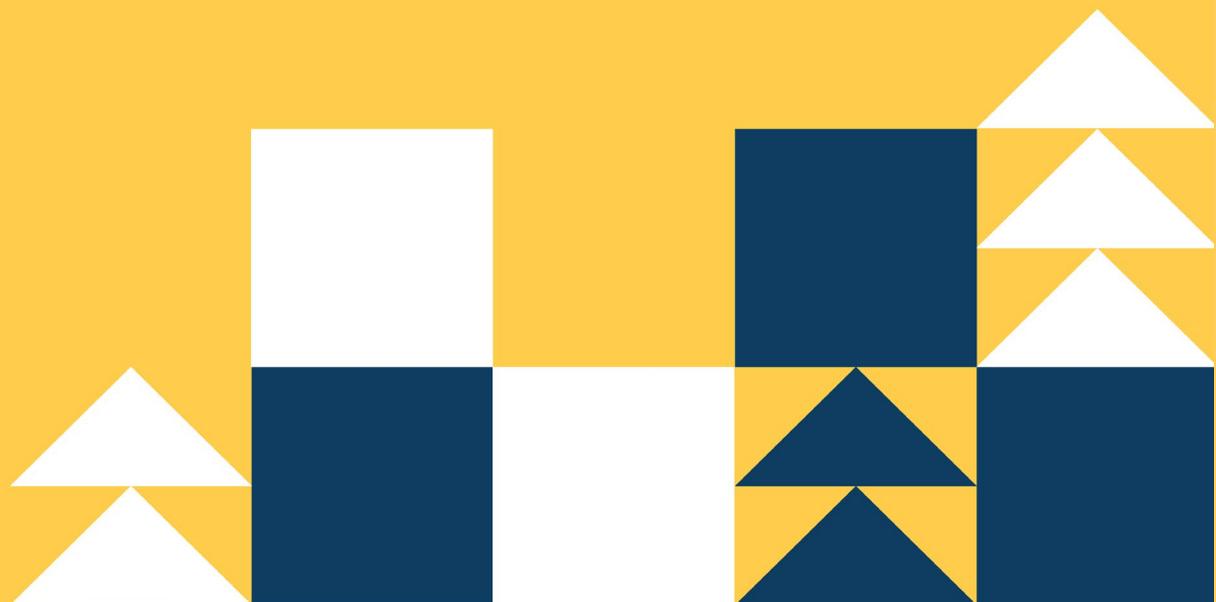
Oregon Investment Council

# Opening Remarks

John D. Skjervem, Chief Investment Officer



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## 2018 OPERF Investment Performance

Preliminary as of January 18: 0.48% net

## Private Equity Portfolio

Blackstone Capital Partners VIII

## Alternatives Portfolio

Brookfield Infrastructure Fund IV

## Policy Updates

Placement Agent Report, PUF and Investment Beliefs

## Private Equity Annual Review & 2019 Plan

Mr. Langdon's Opus

January 31, 2019

Oregon Investment Council



TAB 4 – Blackstone Capital Partners VIII, L.P.

OPERF Private Equity Portfolio

## Blackstone Capital Partners VIII, L.P.

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### Purpose

Subject to the satisfactory negotiation of all terms and conditions with Staff working in concert with legal counsel, Staff recommends approval of an up to \$500 million commitment to Blackstone Capital Partners VIII, L.P. (“BCP VIII” or “Fund VIII”) as part of the OPERF private equity portfolio. Approval of this proposed commitment would represent the continuation and extension of an existing OPERF relationship with The Blackstone Group L.P. (“Blackstone”, the “GP”, or the “Firm”), including previous private equity commitments totaling \$850 million across three partnerships since 2011.

### Background

Founded in 1985 by Stephen Schwarzman and Peter Peterson, Blackstone is the world’s largest alternative investment management firm with nearly \$500 billion of total assets under management across all investment platforms. Headquartered in New York City, the Firm currently has more than 2,300 employees operating out of 24 offices around the world. Trading under the ticker “BX”, Blackstone has been a New York Stock Exchange listed limited partnership since 2007 with a current market cap of nearly \$40 billion.

Blackstone’s original investment practice is private equity which currently accounts for more than a quarter of the Firm’s overall assets under management. This includes the flagship Blackstone Capital Partners fund series where the GP has raised nearly \$70 billion of total capital commitments across seven previous partnerships since 1987. The Firm is currently targeting at least \$20 billion of capital commitments for BCP VIII as a continuation of that fund series. Since 2012, Blackstone’s private equity business has been led by Joseph Baratta (Global Head of Private Equity) who oversees a team of 150 investment professionals including 24 Senior Managing Directors based in New York, London, Mumbai, Hong Kong, Singapore, Sydney, and Tokyo.

### Strategy

In private equity, Blackstone will typically make 12-15 control or control-oriented investments per annum requiring \$50 million to \$1 billion or more of equity. The Firm seeks to create well diversified portfolios investing in North America (~60%), Western Europe (~25%) and Asia (~15%). Blackstone specializes in large and complex transactions where hands-on, operational intervention can create meaningful value. Following a thematic investment approach, the GP targets investments in the following sectors: Financials; Consumer/Leisure; Energy; Industrials; Healthcare; Technology, Media and Telecomm; Chemicals; and Services. The Firm is currently emphasizing value-oriented opportunities across four key transaction types where Blackstone feels well positioned. These transaction types include 1) Large-scale buyout/P2P/carve-outs, 2) buy & builds, 3) cyclical energy dislocations and 4) Asia control opportunities.

### Issues to Consider

#### Attributes:

- **Solid Long-Term Results.** Since 1987, the Blackstone Capital Partners funds have invested more than \$50 billion (as of 6/30/18) generating a gross return of roughly two times cost and a net IRR since inception in the mid-teens. The GP’s results have been consistently attractive as compared to both the broader private equity industry and public equities.
- **Broad Global Platform.** As noted above, Blackstone is the world’s largest global alternative asset management firm with nearly \$500 billion of assets under management. In private equity alone, Blackstone’s current portfolio consists of nearly 100 companies with roughly \$80 billion of annual revenue, and 500,000 employees. The GP’s expansive global operation creates a network effect

that can be leveraged for gaining market and sector insights, sourcing and winning investment opportunities, unlocking operational efficiencies and securing attractive financing.

- **Portfolio Operations Group.** To implement Blackstone’s operational-focused strategy, the GP currently employs a 36-member Portfolio Operations Group led by Dave Calhoun (Senior Managing Director), who previously was the CEO of Nielson (a BCP V portfolio company) and Vice Chairman of General Electric. At the senior level, Mr. Calhoun is supported by Harish Manwani (former COO of Unilever) and Marc Bolland (former CEO of Marks and Spenser and WM Morrison Supermarkets). The broader operations team brings functional expertise across an array of disciplines, including procurement, lean processes, healthcare cost containment, data science, IT, talent management and sustainability.

#### Concerns:

- **Blackstone Leadership Transition.** Early in 2018, Jonathan Gray was named President & Chief Operating Officer of The Blackstone Group taking on an important leadership role that Hamilton E. “Tony” James had occupied since 2002. [Mitigant: While this change represents a material succession event, the ascension of Mr. Gray into this position had been carefully managed and communicated over several years. Mr. Gray has been heavily involved in a senior executive capacity for some time during which Mr. James gradually transitioned additional responsibilities to him. Mr. James now serves as Executive Vice Chairman, while Mr. Schwarzman continues in the Chairman & CEO role. Finally, as noted above, leadership of the private equity business has been stable with Mr. Baratta serving as Global Head of Private Equity since 2012.]
- **Potential Conflicts.** Across the Blackstone platform, the GP is a significant investor in real estate, credit, infrastructure, hedge funds, and opportunistic private investments. The GP further has ancillary private equity platforms focused on energy, Asia, healthcare and investments with extended target hold periods. While the breadth of the Firm’s global platform brings clear synergies, the allocation of investment opportunities across platforms can become complex. [Mitigant: At this stage, Blackstone has been operating as a multi-platform manager for more than two decades. As a result, the GP has a robust and tested allocation process, and OST has represented OPERF on the Blackstone Capital Partners Limited Partner Advisory Committee for some time which allows for close monitoring of these issues.]

#### **Terms**

Legal negotiations are not final, but Staff views the proposed terms as in-line with market. Further information on the proposed terms for OPERF can be found in the TorreyCove materials. Please note that Staff has not interacted with a placement agent in connection with the BCP VIII fundraising process.

#### **Conclusion**

Staff recommends an up to \$500 million commitment to Blackstone Capital Partners VIII, L.P., which represents, in Staff’s opinion, an attractive, core opportunity for the buyout segment of the OPERF private equity portfolio.



## MEMORANDUM

**TO:** Oregon Public Employees Retirement Fund ("OPERF")  
**FROM:** TorreyCove Capital Partners ("TorreyCove")  
**DATE:** January 23, 2019  
**RE:** Blackstone Capital Partners VIII, L.P. (the "Fund")

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### Strategy:

Blackstone Capital Partners VIII will target control and control-oriented private equity investments on a global basis. Geographically, the Fund will primarily invest in North America, with approximately one-third allocated to Western Europe and Asia. Blackstone will continue to pursue a value-oriented, sector-based approach to private equity investing with a focus on large, complex transactions where it can leverage its scale and operating capabilities. The Fund's five primary transaction types will include large buyouts, middle-market buyouts, buy-and-build platforms, growth equity, and development projects in energy/power. The sectors in which Fund VIII will invest include energy, financial services, healthcare, industrials, business services, and technology. Regardless of sector, Blackstone underwrites transactions based on unlevered free cash flows. At the outset, Blackstone factors in what it can do for the business to drive higher cash flows post-acquisition. It then prices these cash flows, current and future, to generate an unlevered return in excess of what could reasonably be earned by investing in an unlevered public company. At this point Blackstone decides how much debt the target company can reasonably afford to enhance equity returns. Leverage employed will vary from deal to deal.

Please see attached investment memorandum for further detail on the investment opportunity.

### Allocation:

A new commitment to the Fund would be allocated 100% to the Corporate Finance investment sub-sector and will further be categorized as a Domestic investment. As of the September 30, 2018 report, OPERF's allocation to Corporate Finance is listed in the table below. It is important to note that since allocation is based on fair market value, a commitment to the Fund would not have an immediate impact on OPERF's current portfolio allocation. Commitments to the Fund are complementary to OPERF's existing fund commitments and provide the overall portfolio with a further degree of diversification.

As of September 30, 2018	Target	FMV	FMV + Unfunded
Corporate Finance	60-85%	75.3%	77.7%

### Conclusion:

The Fund offers OPERF an opportunity to participate in a differentiated portfolio of private equity investments with relatively attractive overall terms. TorreyCove's review of the General Partner and the proposed Fund indicates that the potential returns available justify the risks associated with an investment in the Fund. TorreyCove recommends that OPERF consider a commitment of \$500 million to the Fund.



# TORREYCOVE

CAPITAL PARTNERS

TorreyCove's recommendation is contingent upon the following:

- (1) Satisfactory negotiation or clarification of certain terms of the investment;
- (2) Satisfactory completion of legal documents;
- (3) Satisfactory continuation and finalization of due diligence;
- (4) No material changes to the investment opportunity as presented; and
- (5) Confidentiality maintained regarding the commitment of OPERF to the Partnership until such time as all the preceding conditions are met.

## TAB 5 – Annual Placement Agent Report

## Annual Placement Agent Disclosure

January 31, 2019

### Purpose

In accordance with its Policy COM 201: Conflict of Interest and Code of Conduct, OST shall disclose, in all investment recommendations to the Oregon Investment Council, any Placement Agent used by the investment firm *that has had any contact with Treasury investment staff*. Staff shall present to the OIC an annual summary of the foregoing, which will also be made available to the public on the Treasury website.

### Placement Agent Contact Summary for Calendar Year 2018

#### Partnership

#### OPERF Commitment

#### Placement Agent

None

Note that Placement Agents are retained by investment funds' General Partner, and OST investment staff does not rely on such placement agent firms for access or analysis.

TAB 6 – Investment Policy Updates  
Oregon Public Universities

## **Public Universities Common Investment Policy**

### **Purpose**

The Oregon State Treasury (OST) seeks to revise and expand its existing policy framework for the investment of Oregon public university moneys. This presentation is to inform and seek approval from the Oregon Investment Council (OIC) for a permanent and comprehensive policy for this public university investment program.

### **Background and Objective**

The OIC approved the establishment of the Public University Core Bond Fund (PUF) and related guidelines in 2014. For public universities, OST's existing investment program offers internal investment management services in the form of the PUF (a fixed income vehicle), as well as a limited selection of external investment management options.

The Oregon University System was dissolved in 2015 with all seven system members adopting independent boards. In conjunction with this change, ORS Chapter 352 provided the legislative authority for Oregon public universities to invest moneys including the ability to enter into investment agreements with OST.

Currently, one public university has moneys managed through OST by external managers, and an additional public university recently engaged OST with a similar request.

With the potential of additional public universities seeking OST internal and external investment management services, OST seeks to establish a comprehensive policy (the "Common Policy") to establish such a program.

The purpose of the Public Universities Common Policy is to provide guidance to OST investment staff regarding the investment, exchange, liquidation and reinvestment of invested moneys per the request of any university that has also entered into an agreement with OST. Guidelines for the PUF and for any individual university investment program, managed internally or externally by OST, will be subordinate to the Public Universities Common Policy.

### **Recommendation**

Staff recommends that OIC approve the Public Universities Common Policy as submitted herewith.

# **PUBLIC UNIVERSITIES COMMON POLICY**

## **INTRODUCTION & OVERVIEW**

### **Summary Policy Statement**

Oregon law allows “public universities” as defined in ORS Chapter 352 (each, a “University”), to enter into agreements with the Oregon State Treasury (“OST”) to establish a separate or commingled fund (each, “University Invested Moneys” or “Invested Moneys”) in order for OST to receive, hold, keep, manage and invest moneys of such University. OST offers internal investment management services, as well as a limited selection of external investment management options, for the University Invested Moneys.

Invested Moneys invested pursuant to this policy are expected to follow a long-term investment strategy. This policy establishes a coordinated program for investing and spending to minimize the risk to the principal of any Invested Moneys, and produce a reasonable total return.

### **Purpose and Goals**

The purpose of this policy is to provide guidance to OST investment staff regarding the investment, exchange, liquidation and reinvestment of Invested Moneys per the request of any University that has also entered into an agreement with OST pursuant to ORS 352.410(10)(a) and ORS 352.135. These rules are established under the authority of, and do not supersede, ORS Chapter 293 and ORS Chapter 352. All modifications to this policy will be made in writing and approved by the OIC.

### **Applicability**

Classified represented, management service, unclassified executive service.

### **Authority**

ORS Chapter 293.  
ORS Chapter 352.

## **POLICY PROVISIONS**

### **Definitions**

None.

# Policy Statements and Strategies

## A. OBJECTIVES

1. The investment objective of each participating University is to seek consistency of investment return with emphasis on capital appreciation, while meeting liquidity needs, over long periods of time. Universities may work with OST to develop custom investment guidelines provided that such guidelines are no less restrictive than this policy. OST may limit investment programs or options in its discretion.

## B. ASSET ALLOCATION

1. OST may invest University Invested Moneys within the following exposure ranges:

Asset Class	Minimum	Maximum
Public Equity	0%	65%
U.S. Public Equity	0%	65%
International Public Equity – Developed	0%	40%
Emerging Markets Public Equity	0%	20%
Fixed Income	35%	100%
Investment Grade	35%	100%
Below Investment Grade	0%	20%

OST, in conjunction with the University, will establish target asset allocations within the ranges noted above to achieve the investment goals of the Invested Moneys, taking into consideration the appropriate level of portfolio risk. The University is expected to provide broad investment goals to OST staff, including spending rate information and other information necessary to provide input into the asset allocation process.

2. Limitations: Not more than sixty-five percent (65%) of the moneys contributed to endowment funds managed by OST may be invested in common stock and mutual funds, in the aggregate.

## C. STRATEGIES

### 1. INTERNALLY-MANAGED PROGRAMS

- a. Deposits and Distributions. The University will adopt and communicate to OST a policy on investment inflows and amounts necessary for distribution from the University Invested Moneys for spending purposes.
- b. Custodian Bank. OST will determine custodial responsibility and the selection of a securities lending agent for all securities.
- c. Asset Class Mandates.
  - i. Equity: None
  - ii. Fixed Income: Actively managed intermediate term core bond fund

2. **EXTERNALLY MANAGED PROGRAMS.** Universities will have access to investment products offered by external investment managers who have previously entered into an investment management agreement with the OIC (“IMA”).

- a. External investment managers will have discretionary authority to direct investments of University Invested Moneys.

- b. OST will have full discretion over external investment managers, including their selection, and asset class strategies. Manager selection and asset class strategies are subject to OST fiscal and staffing constraints and OST staff fiduciary obligations.
- c. Once the manager is selected, the investment guidelines attached to its IMA will be applied as the investment strategy for the University Invested Moneys.
- d. Asset Class Mandates.
  - i. Equity: Passive ACWI IMI index
  - ii. Fixed Income: Actively managed Core+ bond fund

#### **D. COMPLIANCE**

The OST Compliance program will a) monitor and evaluate portfolios and asset classes and determine compliance with OST policies and contractual obligations; b) identify instances of non-compliance and develop and execute appropriate resolution strategies; c) provide relevant compliance information and reports to OST management and the University, as appropriate; and d) when applicable, verify resolution by the appropriate individual or manager within the appropriate time frame.

#### **E. REPORTING REQUIREMENTS**

1. OST investment staff will monitor investment results on a quarterly basis. Such review will include, but is not limited to: a) performance relative to objectives; b) compliance with policy and guidelines; and c) trading activity. OST staff will report investment results, or other information to the University upon request.
2. For any University in an externally managed investment program, a representative of OST will meet with the University at least annually, to review the following with respect to each external manager: (i) past performance; (ii) asset allocation and returns; and (iii) risk profile.

### **Exceptions**

None.

### **Failure to Comply**

Implementation of this Policy, including investment manager selection, shall be the responsibility of OST staff subject to the necessary approvals from the OIC. Failure to comply with this policy may be cause for disciplinary action up to and including dismissal.

## **PROCEDURES AND FORMS**

Appendix A: PUF Investment Program and Reporting Requirements

Appendix B: Southern Oregon University Investment Program and Reporting Requirements

Appendix C: Western Oregon University Investment Program and Reporting Requirements

# ADMINISTRATION

## Review

OST staff will review this policy at least every two years, and will bring any modifications to the OIC. OST staff will notify the OIC of any new appendices.

## Feedback

Your comments are extremely important to improving the effectiveness of this policy. If you would like to comment on the provisions of this policy, you may do so by e-mailing the Policy Analyst. To ensure your comments are received without delay, *please list the policy number and name in your e-mail's subject*. Your comments will be reviewed during the policy revisions process and may result in changes to the policy.

TAB 7 – Investment Beliefs Update and Discussion

OPERF

# **Oregon Investment Council**

Statement

of

Investment and Management Beliefs

Adopted: October 30, 2013

Revised: January 31, 2019

## **Contents**

### Preamble

1. The OIC Sets Policy and is Ultimately Responsible for the Investment Program
2. Asset Allocation Drives Risk and Return
3. The Equity Risk Premium Will Be Rewarded
4. Private Market Investments Can Add Significant Value and Represent a Core OIC/OST Competency
5. Capital Markets Have Inefficiencies That Can Be Exploited
6. Costs Directly Impact Investment Returns and Should Be Monitored and Managed Carefully
7. Fair and Efficient Capital Markets are Essential for Long-Term Investment Success
8. Diversity, in All Aspects, is Accretive to Meeting OIC Objectives.

### **Preamble**

This Statement of Investment and Management Beliefs enumerates fundamental investment and management principles that guide the Oregon Investment Council (“Council” or “OIC) in performing its fiduciary and statutory obligations which include establishing policies for the investment and management of “investment funds” as defined in 293.701(2). The Oregon State Treasurer, largely through the Investment Division of the Office of the State Treasurer (“Treasurer” or “OST”), provides staff support for the Council and, as the Council’s statutorily designated “investment officer” (together with such other persons determined qualified by the Council to conduct investment and management functions on its behalf), invests and manages in accordance with Council policy those moneys made available by the Council for such purposes. The Treasurer may also adopt additional policies governing its investment and management functions. The OIC and OST recognize that their respective authority to establish and implement such policies is grounded in and bounded by fiduciary and statutory foundations to their authority which charge them with exercising a duty of exclusive loyalty to fund beneficiaries by ensuring that related moneys are invested as efficiently and productively as possible while adhering to applicable standards of prudent judgment and care. Accordingly, the following statements and accompanying OIC policies are intended to be in harmony with and promote the fulfillment of such obligations.

## **OREGON INVESTMENT COUNCIL**

### **Statement of Investment and Management Beliefs**

#### 1.) THE OIC SETS POLICY AND IS ULTIMATELY RESPONSIBLE FOR THE INVESTMENT PROGRAM

**A. Investment management is dichotomous -- part art and part science.**

- To calibrate both governance and daily operating activities with the appropriate balance between art and science, the Beliefs will be anchored where and whenever possible to industry best practices as illuminated by academic research and experiential rigor.

**B. The OIC is a policy-setting council that largely delegates investment management activities to the OST and qualified external fiduciaries.**

- The OIC sets strategic policy which includes, but is not limited to, Asset Allocation, Portfolio Construction, Risk Measurement and Performance Monitoring. The OIC's purview also includes establishing and defining its philosophy as manifest in this Statement of Investment and Management Beliefs.
- The OIC tasks OST staff, external managers, consultants and other service providers with policy implementation.

**C. The OIC is vested with the authority to set and monitor portfolio risk. Both short-term and long-term risks are critical.**

- The OIC must weigh the short-term risk of principal loss against the long-term risk of failing to meet return expectations.

**D. To exploit market inefficiencies, the OIC should be long term, contrarian, innovative, and opportunistic in its investment approach.**

- The OIC should generally prepare for and accept periods of extreme price/valuation volatility and/or related market dislocations and endeavor to act expeditiously during such periods if and when deemed advantageous.

#### 2.) ASSET ALLOCATION DRIVES RISK AND RETURN

**A. Asset allocation is the OIC's primary policy tool for managing the investment program's long-term risk/return profile.**

- Decisions regarding strategic asset allocation will have the largest impact on the investment program's realized return and risk and hence will be made judiciously and receive special emphasis and attention.
- The timing and magnitude of projected employer contributions and future benefit payments have significant cash flow implications and thus will receive explicit consideration during the OIC's asset allocation decision-making process.

**B. Portfolio construction, including diversification and correlation considerations, is essential to maximizing risk-adjusted returns.**

- Empirical rigor, coupled with sound judgment, is required in the portfolio construction process to effect true diversification, while discipline is required to maintain diversification through and across successive market cycles.
- Risk is multi-faceted and may include, but is not limited to, the following types of specific risks: principal loss; opportunity cost; concentration risk; leverage and illiquidity risk; volatility and

valuation risk; interest rate and inflation risk; and environmental, social and governance (ESG) risks.<sup>1</sup>

3.) THE EQUITY RISK PREMIUM WILL BE REWARDED

**A. Over the long-term, equity-oriented investments provide reliable return premiums relative to risk-free investments.**

- Although returns for risk taking are not always monotonic or consistently rewarded over time, bearing equity risk commands a positive expected return premium provided such risk is reasonably priced.

4.) PRIVATE MARKET INVESTMENTS CAN ADD SIGNIFICANT VALUE AND REPRESENT A CORE OIC/OST COMPETENCY

**A. The OIC can capitalize on its status as a true, long-term investor by making meaningful allocations to illiquid, private market investments.**

- Private markets provide a diversifying risk/return profile relative to public market analogues.
- Private markets offer excess return opportunities that may be exploited by patient, long-term investors.

**B. Dispersion in private market investment returns is wide; accordingly, top-quartile manager selection, diversification across vintage year, strategy type, and geography, and careful attention to costs are paramount.**

- Private market investment success is predicated on identifying skilled managers and developing long-term investment relationships with those managers that enable the application of skill to manifest in the form of excess returns.
- Proper investment pacing, including deliberate vintage year diversification is also an integral element of superior private market investment results.

5.) CAPITAL MARKETS HAVE INEFFICIENCIES THAT CAN BE EXPLOITED

**A. Inefficiencies that can be exploited by active management may exist in certain segments of the capital markets.**

- While largely efficient, select segments of the capital markets can sometimes be successfully exploited by skilled active management.
- The nature (i.e., perceived magnitude and likely duration) of such inefficiencies should inform the proposed active management strategy (e.g., discretionary or systematic).

**B. Passive investment management in public markets will outperform the median active manager in those markets over time.**

- Active management should therefore be a deliberate choice and applied only to those public market strategies/managers in which the OIC enjoys a high degree of confidence that such strategies/managers will be sufficiently rewarded on a risk-adjusted basis and net of all fees, factor exposures and related transactions costs.

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<sup>1</sup> Concepts of risk and associated measurement techniques are evolving. Heretofore underdeveloped, the identification and measurement of ESG risks is improving which will enable new risk management applications in both security selection and portfolio construction processes.

- 6.) COSTS DIRECTLY IMPACT INVESTMENT RETURNS AND SHOULD BE MONITORED AND MANAGED CAREFULLY
- A. All fees, expenses, commissions, and transaction costs should be diligently monitored and managed in order to maximize net investment returns.**
- While all costs should be monitored and controlled, these costs should also be evaluated relative to both expected and realized net returns.
- B. External incentive structures should be carefully evaluated to ensure proper alignment with investment program objectives.**
- Fee and incentive structures drive both individual and organizational behavior.
  - These structures (particularly in private market strategies) should be carefully evaluated and monitored to ensure that the goals and incentives of individual investment professionals and their respective organizations are well aligned with the specific investment objectives established by the OIC and/or OST staff.
- 7.) FAIR AND EFFICIENT CAPITAL MARKETS ARE ESSENTIAL FOR THE LONG-TERM SUCCESS OF OIC/OST INVESTMENT ACTIVITIES
- A. The OIC recognizes that the quality of regulation and corporate governance can affect the long-term value of its investments.**
- The Council promotes competitive and transparent market structures to ensure accurate and timely price discovery/asset valuation.
- B. The OIC also recognizes that voting rights have economic value and therefore must be treated as a fund or beneficiary asset.**
- The OST shall vote shares in its capacity as fiduciary and based solely on the economic merits of specific proxy proposals.
- 8.) DIVERSITY, IN ALL ASPECTS, IS ACCRETIVE TO MEETING OIC OBJECTIVES
- A. By embracing and enhancing diversity and inclusion efforts, the OIC ensures that the investment program will be exposed to and informed by a wide range of perspectives, ideas and opinions.**
- The OIC believes a wide range of perspectives, ideas and opinions will ultimately produce better investment outcomes.

TAB 8 – Brookfield Infrastructure Fund IV, L.P.

*OPERF Alternatives Portfolio*

## Brookfield Infrastructure Fund IV, L.P.

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### Purpose

Staff and TorreyCove recommend a \$400 million commitment to Brookfield Infrastructure Fund IV, L.P. ("BIF IV" or the "Fund") for the OPERF Alternatives Portfolio, subject to the satisfactory negotiation of terms and conditions with Staff working in concert with legal counsel. This proposed commitment represents the continuation of a relationship on behalf of the OPERF Alternatives Portfolio.

### Background

Brookfield Asset Management, Inc. ("Brookfield" or the "Firm") is a publicly-listed global alternative asset manager (NYSE: BAM) with approximately \$330 billion in assets under management across a range of strategies including real estate, infrastructure, renewable power, timberland, agriculture and private equity. The Firm has a long history of investing in and operating infrastructure assets, dating back to its founding in 1899. Brookfield is currently one of the largest specialized investors in infrastructure, with \$108 billion in infrastructure assets under management.

Oregon's relationship with Brookfield dates back to 2013 and consists of three mandates across three equity strategies:

- Timberland – \$50 million to Brookfield Timberlands Fund V, L.P. in 2013;
- Agriculture – \$100 million to Brookfield Agriculture Fund II, L.P. in 2015; and
- Infrastructure – \$400 million to Brookfield Infrastructure Fund III, L.P. in 2016.

The Firm is seeking \$17 billion in capital commitments for BIF IV, inclusive of Brookfield's own 25%-of-total-fund commitment. The Firm plans to hold a first close on or about March 31, 2019, and is targeting a 10% net internal rate of return for BIF IV.

### Discussion/Investment Considerations

Consistent with its history, Brookfield will focus Fund capital on high-quality infrastructure investments, primarily in the transportation, renewable power, utilities, energy, and data sectors. With BIF IV, the Firm will emphasize geographies where Brookfield has an operating presence, namely North America, Europe, South America, and Australasia. Brookfield is differentiated by its owner-operator legacy, and a key feature of the BIF IV strategy is the Firm's operations-oriented investment approach. This approach benefits the Fund by incorporating technical insight into investment valuation and execution as well as through "hands-on" asset management that enhances operational performance. Brookfield will leverage the scale and expertise of its existing operating platforms in order to add value post-acquisition. The Firm pursues sufficient influence over its investments through control or co-control positions in order to execute its investment strategy, and will target investments ranging from \$500 million to \$1.5 billion in size.

### Attributes:

- *Deep and experienced team.* As a firm, Brookfield has over 100 years of infrastructure investing experience. Over the past 18 years, Brookfield has deployed over \$40 billion of equity capital in more than 100 infrastructure investments. BIF IV investment activity will be led by infrastructure CEO Sam Pollock and renewables CEO Sachin Shah, supported by a senior leadership team that averages 20 years of infrastructure investing experience and 13 years of Brookfield tenure. As experienced investors in, and operators of, a wide variety of infrastructure assets, the team possesses a breadth of experience that enables Brookfield to evaluate and optimize the widest possible opportunity set on behalf of the Fund.

- *Operational expertise.* The Fund will be managed by Brookfield’s infrastructure group, which is one of the world’s largest owners and operators of infrastructure assets. Brookfield’s infrastructure platform includes over 200 investment professionals and 31,000 operating employees across five continents. Staff believes this vertical integration sets Brookfield apart from other infrastructure investors in that it allows the Firm insight and management capability in all phases of the investment cycle.
- *Global and mature asset focus.* The Firm’s focus with BIF IV will be mature, “core-type” infrastructure investments, a strategy that complements OPERF’s existing infrastructure portfolio. Brookfield remains consistent in applying core principles of acquiring high quality assets, investing with discipline, and enhancing value during ownership.
- *Market opportunity.* Infrastructure represents a compelling investment opportunity given the substantial gap between investment demand and capital supply. The infrastructure investment sector is experiencing substantial growth due to the scale of investments required to modernize existing, and develop new, infrastructure. At the same time, traditional suppliers of infrastructure capital, such as governments and utilities, continue to face capital constraints. Given current market dynamics and Brookfield’s impressive track record, Staff believes the investment opportunity set remains compelling.
- *Alignment of interests.* Brookfield is typically a large limited partner in every investment vehicle it sponsors and will contribute at least 25% of the Fund’s aggregate commitments. Additionally, senior executives and other employees of Brookfield are substantial owners of BAM (employees own approximately 20% of BAM).

#### Concerns:

- *Political/regulatory risks.* The political and regulatory environment for infrastructure is evolving and changes may have an adverse effect on the Firm’s ability to pursue its BIF IV investment strategy. [Mitigant: All investments in the infrastructure sector are subject to the aforementioned risks. Staff finds the risk/reward tradeoff to be reasonable and supported by: a) the team’s experience and technical expertise; b) the Firm’s diversification strategy for BIF IV; and c) Brookfield’s demonstrated ability to navigate such risks.]
- *Competitive market for investment opportunities.* Interest from institutional investors in real assets, including infrastructure strategies, remains high. As more capital enters the market for private infrastructure, expected returns may be driven down. [Mitigant: Staff has confidence in Brookfield’s financial discipline and expertise in originating, structuring, and executing infrastructure transactions. Moreover, Brookfield focuses on transactions generated by established relationships, thereby reducing competition.]
- *Currency risk.* As a global fund, the majority of BIF IV portfolio investments are expected to be outside the U.S. While drawdowns and distributions are in U.S. dollars, investments will be made in local currencies. [Mitigant: Due to the long investment horizon, currency risk is not expected to be a material component of total return. In addition, Brookfield adopts a hedging strategy for each investment, further managing currency risk.]
- *Significant unrealized value.* As of September 30, 2018, Funds I, II and III have an unrealized carrying value of \$18.1 billion across 32 investments. Managing the unrealized portfolio will require significant time and attention from the investment and operating teams. [Mitigant: Brookfield feels that it is adequately staffed to manage prior funds and simultaneously deploy Fund IV, with opportunistic hires as the only currently-planned staffing additions. Brookfield has demonstrated, through the deployment and management of prior funds, its ability to navigate these challenges successfully.]

#### **Terms**

Fund terms include a management fee on committed capital with a standard carry and preferred return. The Fund will have a four-year investment period and a 12-year term, subject to two one-year extensions options

with the consent of the Fund's limited partners' advisory committee. During fundraising efforts, no placement agent had contact with Treasury staff.

**Conclusion**

The Alternatives Portfolio target allocation to infrastructure investments is 25%, with a range of 20% to 30%, or approximately \$2.3 billion at current OPERF NAV. To complement this allocation's current \$1.8 billion NAV, Staff considers BIF IV an anchor commitment within the OPERF infrastructure portfolio. Brookfield is differentiated by their vertical integration and focus on mature, core infrastructure assets, and a commitment to BIF IV would provide an attractive complement to other existing portfolio positions.

Staff also believes the BIF IV strategy represents a natural extension and leveraging of Brookfield's industry-leading real assets investment platform as well as an opportunity to increase OPERF's exposure to a high conviction manager in an attractive sector. The depth and experience of the Brookfield team is notable, with the operations-oriented approach resulting in excellent market intelligence which should benefit BIF IV returns. At a macro level, requirements for infrastructure investment are massive, underpinning positive demand dynamics for capital, and Staff believes Brookfield is well positioned to capitalize on the Fund's target opportunity set.



## MEMORANDUM

**TO:** Oregon Public Employees Retirement Fund ("OPERF")  
**FROM:** TorreyCove Capital Partners ("TorreyCove")  
**DATE:** January 23, 2019  
**RE:** Brookfield Infrastructure Fund IV, L.P.

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### Strategy:

Brookfield intends to pursue the same investment strategy implemented in the Firm's prior funds. Consistent with the predecessor fund, Fund IV will focus on making control or co-control investments in high quality core infrastructure assets that provide essential services or products to the underlying economy. Given the targeted fund size, Brookfield expects to complete between 20 to 25 investments that require \$500.0 million to \$1.5 billion of equity per transaction. BIF IV will target a diversified portfolio in geographies in which the Firm has an operating presence, notably North America, Europe, South America, and Asia Pacific. As a historical owner and operator of businesses, Brookfield looks to differentiate itself as a strategic participant rather than purely a financial investor. Furthermore, Brookfield deploys a contrarian strategy by identifying sectors or geographies that are out of favor and present attractive pricing opportunities and the ability to utilize the Firm's operational expertise. The Fund IV portfolio is expected to provide gross and net returns of at least 13.0% and 10.0%, respectively. Similar to prior funds, targeted portfolio companies for Fund IV will continue to be high quality core infrastructure assets that typically provide inherent regulatory or contractual protection, have high barriers to entry, and capture inflation. Furthermore, the Firm believes it is well positioned to take advantage of current market trends such as governments and companies with overleveraged balance sheets, shifts towards energy decarbonization, and the exponential growth in global data consumption. As such, Brookfield will target opportunities in sectors where it has a competitive or informational advantage, specifically in the transportation, renewable power, utilities, energy, and data infrastructure sectors.

Please see attached investment memorandum for further detail on the investment opportunity.

### Conclusion:

The Fund offers OPERF an opportunity to participate in a differentiated portfolio of private investments with relatively attractive overall terms. TorreyCove's review of the General Partner and the proposed Fund indicates that the potential returns available justify the risks associated with an investment in the Fund. TorreyCove recommends that OPERF consider a commitment of \$400.0 million to the Fund. TorreyCove's recommendation is contingent upon the following:

- (1) Satisfactory negotiation or clarification of certain terms of the investment;
- (2) Satisfactory completion of legal documents;
- (3) Satisfactory continuation and finalization of due diligence;
- (4) No material changes to the investment opportunity as presented; and



**TORREYCOVE**  
CAPITAL PARTNERS

(5) Confidentiality maintained regarding the commitment of OPERF to the Partnership until such time as all the preceding conditions are met.

TAB 9 – Private Equity Annual Review and 2019 Plan

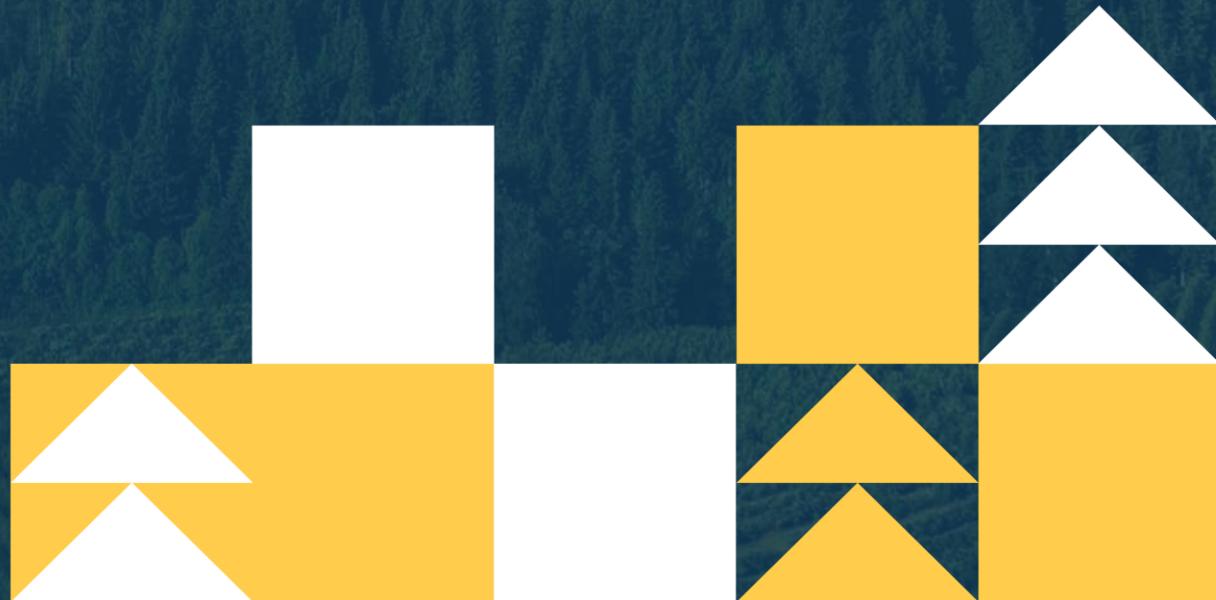
OPERF Private Equity Portfolio

January 31, 2018

# OPERF Private Equity Annual Review & 2019 Plan



OREGON  
STATE  
TREASURY



# Agenda

- Executive Summary
- Investment Environment
- OPERF 2018 Private Equity Year In Review
- OPERF Private Equity Performance Review
- OPERF Private Equity Portfolio Update
- 2019 Private Equity Plan
- Closing

# Executive Summary

## Key Takeaways...

1. Long-term performance is solid on an absolute basis with results over the past decade exceeding prospective return assumptions
2. Long-term relative performance still impaired by the impact of a commitment pacing surge in the 2005-2008 vintages
3. Recent results look promising driven by strong performance from the maturing 2012-2015 vintages
4. The current underlying portfolio exposures from recent vintages seem reasonably positioned should the environment change
5. Significant changes to OPERF's private equity implementation have been made in recent years, better positioning the program to deliver amid changing industry dynamics

# Investment Environment – Appendix A

## • M&A Activity

- Developed market deal volumes remained strong as has been the case since 2014. Private equity's share of that activity in 2018 was a robust 34%
- At more than 10x enterprise value-to-EBITDA, M&A transaction multiples remain high by historical standards, but multiples are broadly in line with where the market has been since the end of 2015

## • Corporate Leveraged Finance

- U.S. leveraged finance new issue volumes were strong again in 2018 at roughly \$900 billion gross and \$370 billion net
- Leveraged Buyout (“LBO”) leverage multiples for new deals are up to nearly six times (and potentially higher without EBITDA adjustments), but coverage ratios have not meaningfully declined
- U.S. non-investment grade corporate credit has grown at a mid-teens compound annual growth rate (“CAGR”) since the start of 2012 vs. a low-teens CAGR for overall corporate credit. Despite strong investment activity, LBO transactions have not been the driver of growth in this cycle

## • Private Equity Returns

- On an absolute basis, returns for the asset class (using the ILPA All Funds index as a proxy) are solid at 17% for the one year period through 6/30/18 and 11%, 13%, and 10% for the 3, 5, and 10 year periods, respectively
- The relative return picture is more mixed with solid alpha generation relative to public equities in the short- (1 year) and long-term (15-20 years) but challenging results in between. The challenges come from funds raised in the 2005-2010 timeframe, and the issue is compounded by the outsized magnitude of the 2005-2008 vintages
- Investments made after 2011 have produced solid relative returns, but those results get overshadowed in the 3, 5, and 10 year asset class level returns due to sheer scale and lackluster performance of the 2005-2008 vintages

## • Private Equity Activity

- At 9/30/2018, YTD fundraising was 32% and 7% behind the 2017 pace in the U.S. and Europe, respectively. In the U.S. in particular, there were fewer large funds formed which accounts for the step down in pacing, but the market remains hot overall as measured by the time it takes to get to a final closing
- New private equity deal activity has been strong across the developed markets through the first three quarters of 2018, continuing a trend that began in 2016
- As with new deal activity, private equity exits remain on the strong pace that we have seen since 2016 in both the U.S. and Europe

## • General Industry Observations

- Themes from the past few years are largely unchanged, but we are increasingly seeing signals of late cycle behavior

**The market remains hot, but returns from recent vintages have been solid**



# PE 2018 Year In Review – Priorities

- OST Staff achieved solid progress on all four initiatives set out in the 2018 PE Annual Review & Plan:

## 2018 OST Private Equity Staff Priorities

- 1. \$2.5-3.5 billion of new fund commitments
  - 10-15 commitments with a continued focus on an average commitment size of \$250-300 million
- 2. Exploit opportunities to reduce fee drag
  - Continue to exploit negotiated fee and carry discount opportunities
  - Identify a discretionary co-investment solution
- 3. Private Equity Team Capacity
  - Recruit, onboard, and integrate new team capacity
  - Two IOs joined in Q1 – one additional IO recruitment to kick-off over the next 12 months
- 4. Continue to pursue enhancements to due diligence and monitoring processes
  - With additional staff capacity, enhanced data capture, and monitoring output was the 2018 focus

# PE 2018 Year In Review – Priorities

- OST Staff self scoring relative to annual objectives has improved over time:

**PE 2018 Year In Review – Priorities**

- OST Staff achieved solid progress on all four initiatives set out in the 2018 PE Annual Review & Plan:

**2018 OST Private Equity Staff Priorities**

1. \$2.5-3.5 billion of new fund commitments
  - 10-15 commitments with a continued focus on an average commitment size of \$250-300 million
2. Exploit opportunities to reduce fee drag
  - Continue to exploit negotiated fee and carry discount opportunities
  - Identify a discretionary co-investment solution
3. Private Equity Team Capacity
  - Recruit, onboard, and integrate new team capacity
  - Two IOs joined in Q1 – one additional IO recruitment to kick-off
4. Continue to pursue enhancements to due diligence processes
  - With additional staff capacity, enhanced data capture, and more focus

 OREGON STATE TREASURY

PE Annual Review & 2019 Plan

**OPERF Private Equity 2017 Year In Review - Initiatives**

**2017 OST Private Equity Staff Priorities**

1. \$2.5-3.5 billion of new fund commitments
  - The OIC approved \$3.3 billion across 14 commitments
2. Exploit opportunities to reduce fee drag
  - Roughly a quarter of OPERF's commitments (by \$) in 2017 are positioned to benefit from a 25% discount to headline carried interest
3. Continue to pursue enhancements to due diligence and monitoring processes
  - Incremental progress was not achieved in 2017 as staff strength
4. Continue to explore options to reduce the administrative burden of monitoring the Program's long-dated fund portfolio
  - Staff continues to collaborate more closely with TorreyCove to alleviate this burden
5. Private Equity Team Capacity
  - Team capacity stood at 1/3 of target for most of 2017 as re

**OPERF 2016 Private Equity Year In Review – Initiatives**

**2016 OST Private Equity Staff Priorities**

1. **\$2.5-3.5 billion of new fund commitments**  
COMPLETED – the OIC approved roughly \$3 billion of new commitments over the course of 2016
2. **Private Equity Consultant RFP**  
COMPLETED – a search process was initiated in the spring of 2016 which culminated in a recommendation at the September 14 OIC meeting to engage in a non-discretionary consulting contract with TorreyCove. That recommendation was approved and a new contract was finalized in December
3. **Effect continued enhancements to due diligence and monitoring processes**  
ONGOING – Staff implemented enhancements to both due diligence and monitoring procedures during the year, but further enhancements are needed on both fronts. Enhancements to date have focused mostly on implementing more uniform processes and improved documentation
4. **Study solutions for the Program's long-dated fund portfolio**  
ONGOING – Staff explored a range of solutions to reduce the administrative burden of monitoring the program's mature vintage year exposures. To date, none of the third party options explored has seemed compelling enough from a cost/benefit perspective to pursue. Staff and TorreyCove are currently focused on establishing a more collaborative and targeted coverage model for the program's legacy relationships
5. **Collaborate with audit team on 2016 process audit**  
COMPLETED – PE Staff was shadowed on two due diligence projects in the first half of the year. The output of that audit process was presented by OST's internal audit team at the September 14 OIC meeting as part of the 2016 Operational Review
6. **Support risk team on integration of private markets into Aladdin**  
ONGOING – in 2015 and 2016, PE staff and TorreyCove facilitated a quarterly feed of portfolio level exposures into Aladdin. Staff and TorreyCove will look for further opportunities to enhance the quality and granularity of that data as deemed necessary by the Risk Team

# PE 2018 Year In Review – Approvals

- Over the course of 2018, the OIC approved 12 new private equity commitments totaling \$3 billion

- **Pacing** – the \$3.0 billion is on target relative to plan (\$2.5-3.5 billion per annum) and compares to \$2.3 billion, \$3.0 billion, and \$3.3 billion for the 2015, 2016, and 2017 approvals, respectively
- **Strategy** – 80% Buyout and 20% Growth Equity/Venture Capital
- **Geography** – 63% North America, 25% Europe, 11% Asia, and 1% Rest of World
- **Gross-to-Net Spread Mitigation** – material reductions to both management fee and carried interest exposure realized. Roughly two times the success achieved in the 2017 vintage with mechanisms in place to make this a permanent and scalable feature of the program’s implementation going forward

	FUND NAME	STRATEGY	SEGMENT	GEOGRAPHY	COMMIT (MM)
1	A&M Capital Europe	Buyout	Middle Market	Europe	€ 135 *
2	A&M Capital Partners II	Buyout	Middle Market	North America	\$ 200
3	Bridgepoint Europe VI	Buyout	Upper Middle Market	Europe	€ 281 *
4	Hellman & Friedman Capital Partners IX	Buyout	Large Buyout	NA/Europe	\$ 280
5	KSL Capital Partners V	Buyout	Middle Market - Leisure	NA/Europe	\$ 200
6	Pathway Private Equity C-III	Buyout	Diversified	Global	\$ 250
7	TPG Partners VIII & Healthcare Partners	Buyout	Large Buyout	NA/Europe	\$ 500
8	Vista Equity Partners Fund VII	Buyout	Large Buyout	North America	\$ 500
<b>BUYOUT SUB-TOTAL</b>					<b>\$ 2,403</b>
9	General Atlantic Separate Account	Growth	Generalist	Global	\$ 250
10	GGV Capital VII, VII Plus & Discover II	Venture	Multi-Stage	US/China	\$ 100
11	USV 2019 & Opportunity 2019	Venture	Multi-Stage	US	\$ 34
12	ClearVue Partners III	Growth	Consumer	China	\$ 200
<b>GROWTH/VC SUB-TOTAL</b>					<b>\$ 584</b>
<b>TOTAL</b>					<b>\$ 2,987</b>

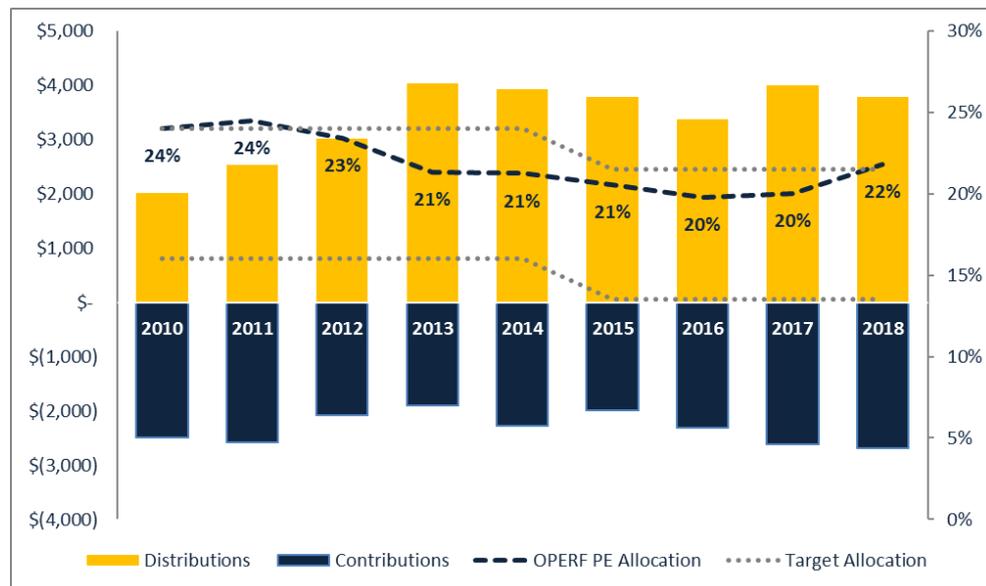
\* - Euro/USD - 0.88



# PE 2018 Year In Review – Cash Flows

- **In 2018, the private equity portfolio processed capital calls totaling \$2.7 billion and distributions totaling \$3.8 billion for net distributions of \$1.1 billion**

- Since 2012, the private equity portfolio has processed \$16 billion of contributions and \$26 billion of distributions - **\$10 billion of net distributions**
- At June 30, 2018, the private equity portfolio’s net asset value of \$16 billion represented roughly 22% of the full OPERF portfolio. This is slightly above the top end of the fund’s target allocation range (17.5% +/- 4%)
  - This represents a year-over-year uptick in allocation despite a consistent pacing strategy designed to move into the lower half of the target allocation range in a controlled manner over time
  - The short term uptick in allocation is partially attributable to the continued slow run-off of pre-global financial crisis (“GFC”) vintage investments and partially due to strong relative performance from maturing post-GFC vintages – both discussed in more detail below
  - It is also important to note that the portfolio generated more than \$700 million of net distributions in the second half of the year



# Performance Review – Relative Performance

- **For the year ending 6/30/18, the portfolio underperformed the policy benchmark (Russell 3000+3%) by 1%**
  - PE performance relative to public equities remains challenging in the 3, 5, and 10 year periods, but performance looks better when compared to global public equity indices
- **For the year ending 3/31/18, the portfolio outperformed the secondary benchmark (Cambridge Associates Pooled Average) by 0.5%**
  - Over the past decade, OPERF’s horizon performance has been index like as compared to the broader private equity asset class. This is not surprising given the large scale and broad diversification of the portfolio

<b>6/30/2018</b>	<b>1 YR.</b>	<b>3 YR.</b>	<b>5 YR.</b>	<b>10 YR.</b>	<b>20 YR.</b>	<b>SINCE INCEPTION</b>
OPERF Private Equity	17.3%	10.9%	13.0%	9.9%	10.4%	15.5%
Policy Benchmark - Russell 3000 + 3%	18.3%	14.3%	17.0%	13.9%	10.2%	15.4%
<i>OPERF PE Value Add (bps)</i>	<i>(100)</i>	<i>(340)</i>	<i>(400)</i>	<i>(400)</i>	20	10
MSCI ACWI IMI + 3%	15.7%	10.9%	13.9%	10.3%	9.1%	N/A
<i>OPERF PE Value Add (bps)</i>	160	0	<i>(90)</i>	<i>(40)</i>	130	N/A
Custom + 3%*	16.2%	12.1%	15.0%	11.5%	9.4%	14.5%
<i>OPERF PE Value Add (bps)</i>	110	<i>(120)</i>	<i>(200)</i>	<i>(160)</i>	100	100
<i>* Uses a combination of the MSCI North America, Europe, &amp; Asia Pacific indices to approximate OPERF PE's regional exposures</i>						
<b>3/31/2018</b>	<b>1 YR.</b>	<b>3 YR.</b>	<b>5 YR.</b>	<b>10 YR.</b>	<b>20 YR.</b>	<b>SINCE INCEPTION</b>
OPERF Private Equity	17.7%	11.1%	12.3%	10.0%	10.4%	15.4%
Secondary Benchmark - Cambridge Associates Pooled Average	17.2%	11.5%	12.9%	9.2%	12.3%	13.2%
<i>OPERF PE Value Add (bps)</i>	50	<i>(40)</i>	<i>(60)</i>	80	<i>(190)</i>	220



# Performance Review – Vintage Performance

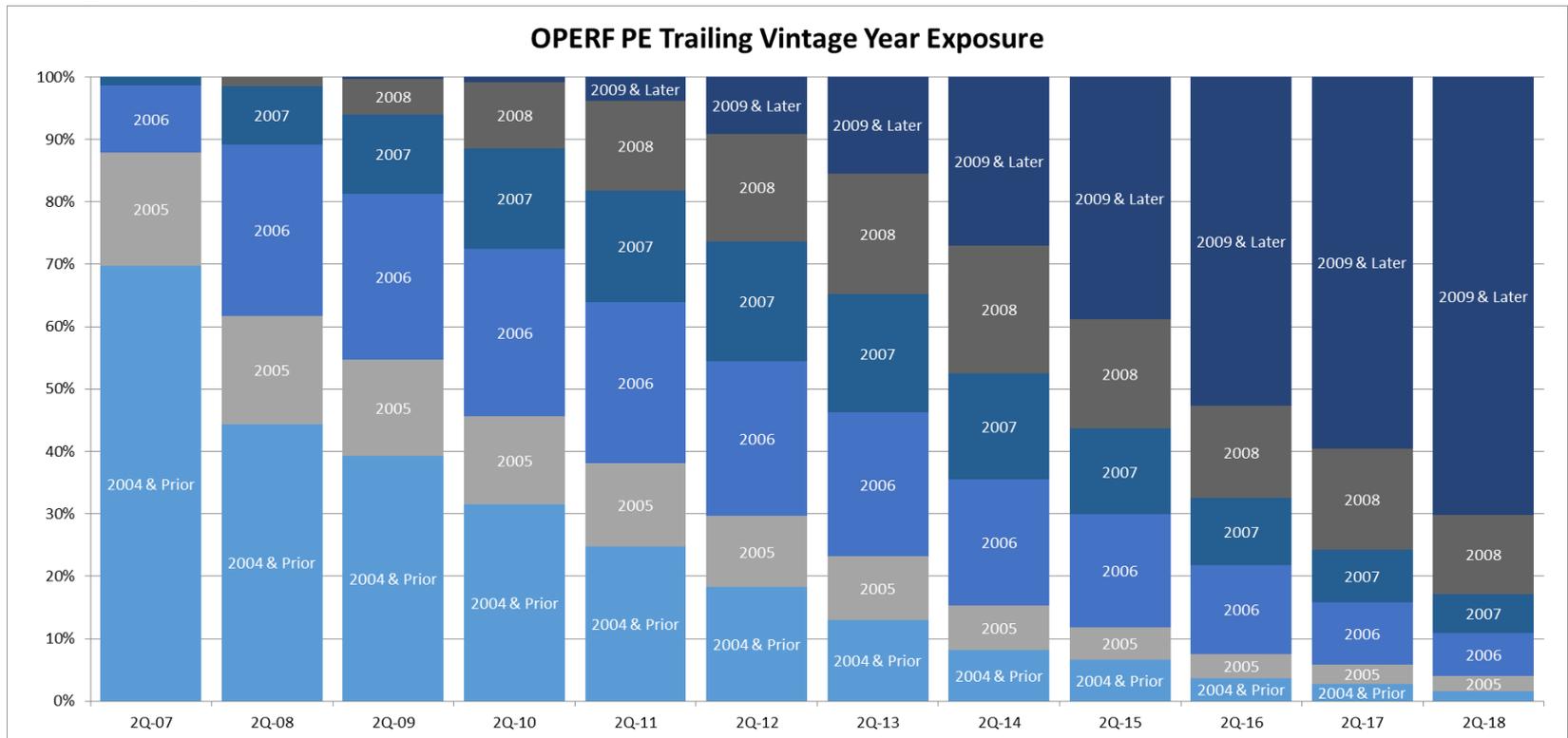
- As of 6/30/2018, the program generated a net IRR and multiple of total value to paid-in capital since inception of 16% and 1.7x, respectively
  - As noted in the past, the portfolio's performance over the past decade has been dominated by the decision to rapidly increase commitment pacing in order to increase OPERF's allocation to the asset class starting in May 2005. The 2005-2008 vintages (highlighted in the red box) still account for roughly 30% and 40% of since-inception commitments and contributions, respectively
  - Outside of the 2005-2008 timeframe, performance has generally been solid on both an absolute and relative basis. In particular, the 2012-2015 vintages (highlighted in the green box) are maturing productively

Vintage Year	Commitment (mm)	Contributions (mm)	Unfunded Commitment (mm)	Distributions (mm)	Fair Market Value (mm)	Net IRR	Net TVPI	IRR Quartile Rank - ILPA All Funds	TVPI Quartile Rank - ILPA All Funds	Estimated Value-Add vs. Russell 3000 mPME	Estimated Value-Add vs. MSCI World mPME
1981-1999	\$ 7,038	\$ 8,596	\$ 5	\$ 15,502	\$ 5	17.1%	1.97x	N/A	N/A	N/A	N/A
2000	450	553	31	830	21	11.1%	1.73x	2nd	2nd	5.1%	4.7%
2001	1,040	1,131	56	1,926	94	19.6%	1.88x	2nd	2nd	11.7%	11.2%
2002	1,350	1,749	15	3,065	41	18.0%	2.02x	2nd	2nd	10.2%	10.6%
2003	475	522	11	989	20	14.6%	2.08x	2nd	1st	8.1%	9.1%
2004	950	970	40	1,814	70	17.2%	2.00x	1st	1st	10.7%	12.8%
2005	2,271	2,521	56	3,282	398	7.0%	1.52x	3rd	3rd	(0.4%)	2.5%
2006	4,433	4,905	187	5,980	1,115	7.1%	1.51x	3rd	3rd	(1.7%)	1.7%
2007	3,314	3,510	145	4,300	1,013	9.3%	1.58x	3rd	3rd	(2.4%)	1.4%
2008	4,344	4,532	441	5,067	2,045	12.3%	1.65x	2nd	2nd	(1.5%)	2.5%
2009	387	365	24	347	124	6.9%	1.32x	4th	4th	(7.4%)	(3.2%)
2010	1,020	1,093	110	919	871	13.3%	1.76x	3rd	2nd	(0.6%)	3.3%
2011	2,429	2,458	348	1,823	1,892	13.2%	1.59x	2nd	2nd	0.2%	3.8%
2012	2,001	2,025	280	1,266	2,068	20.5%	1.75x	1st	1st	8.1%	11.5%
2013	1,515	1,403	277	508	1,516	16.6%	1.50x	2nd	2nd	4.3%	7.4%
2014	984	708	344	159	840	18.7%	1.47x	2nd	1st	5.3%	8.2%
2015	2,893	1,962	1,135	277	2,215	19.3%	1.30x	2nd	1st	4.5%	7.5%
2016	2,616	1,312	1,353	33	1,410	9.8%	1.10x	2nd	2nd	(4.7%)	(1.4%)
2017	3,775	370	3,425	2	363	(2.3%)	0.99x	N/A	N/A	N/A	N/A
2018	2,596	69	2,529	0	68	(6.6%)	0.98x	N/A	N/A	N/A	N/A
<b>Total</b>	<b>\$ 45,880</b>	<b>\$ 40,754</b>	<b>\$ 10,812</b>	<b>\$ 48,090</b>	<b>\$ 16,188</b>	<b>15.5%</b>	<b>1.67x</b>				

# Performance Review – Vintage Exposure

- As of June 30, 2018, the 2005-2008 vintages continued to represent about 28% of the portfolio's current net asset value. This is down from 38% a year earlier

- The chart below presents the development of the portfolio's vintage year exposures going back to June 30, 2007
- As we consider the portfolio's three, five, and ten year returns, it is important to note that those timeframes commenced with the weak performing 2005-2008 vintage cohort representing 55%, 72%, and 56% of net asset value, respectively



# Performance Review – Vintage Cohorts

## • OPERF 2005-2008 Vintages

- The portfolio’s performance challenges in the last decade are attributable to these four vintages. Performance for this cohort underperforms the policy benchmark (Russell 3000+3%) across all timeframes. With a starting value of \$10 billion, these four vintages have generated \$10 billion of net distributions and \$4 billion of gains over the past five years

## • OPERF 2009-2018 Vintages

- Investments made since the GFC have performed better posting performance that easily exceeds the policy benchmark over the 1 and 3 year periods. With more consistent pacing pre- and post-financial crisis, the full program would have generated improved performance relative to the policy benchmark (discussed further on the “Portfolio Update – Pacing” slide)

## • OPERF 2012-2018 Vintages

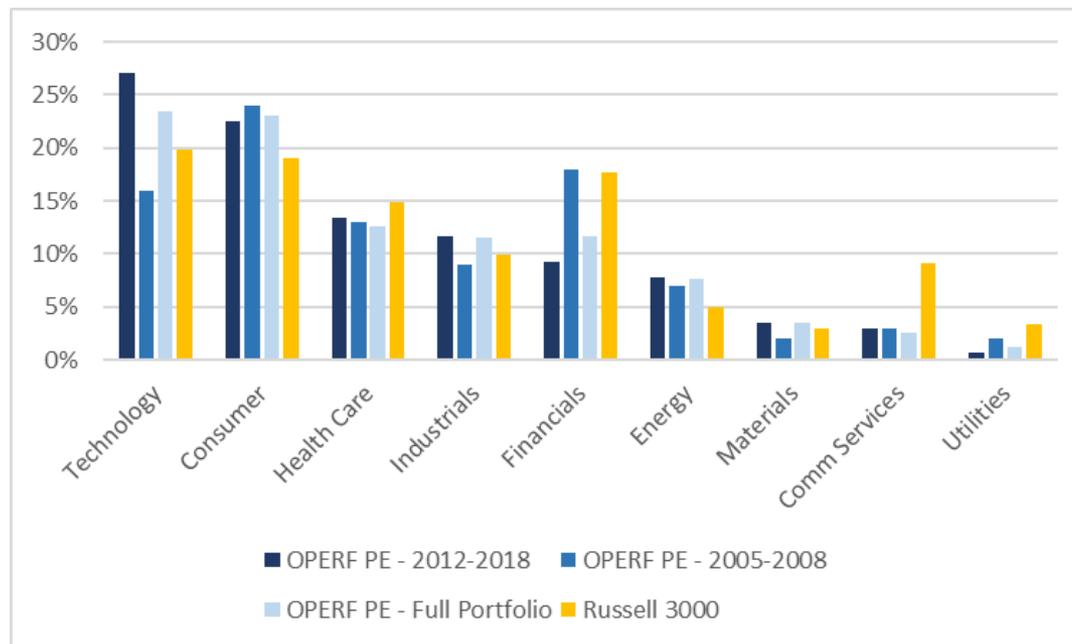
- Performance since 2012 is strong. The results for this cohort far outpace the policy benchmark over the 1, 3, and 5 year periods. Since inception (2012), with \$16 billion of committed capital, these vintages have generated a net IRR of 18%, a net multiple of total value to paid-in capital of 1.4x and a net multiple of distributions to paid-in capital of 0.2x

HORIZON IRRs BY VINTAGE COHORT - AS OF 6/30/18				
	1 year	3 years	5 years	10 years
OPERF 1981-2018	17.3%	10.9%	13.0%	9.9%
Russell 3000+300bps	18.3%	14.3%	17.0%	13.9%
OPERF 1981-2008	10.9%	6.0%	11.1%	8.8%
OPERF 2009-2018	<b>20.9%</b>	<b>15.5%</b>	<b>15.9%</b>	N/A
OPERF 2005-2008	10.9%	6.6%	11.1%	9.3%
OPERF 2009-2011	17.4%	10.7%	13.2%	N/A
OPERF 2012-2018	<b>22.5%</b>	<b>19.0%</b>	<b>18.6%</b>	N/A

# Performance Review – 2012-2018 Vintages

- **The 2012-2018 vintage cohort had a current net asset value (“NAV”) of \$8.5 billion representing more than half of the program’s current value as of June 30, 2018**

- The chart below presents sector exposures based on current NAV for OPERF’s 2012-2018 vintages, 2005-2008 vintages, and all vintages. The chart also presents sector exposures for the Russell 3000
- The 2012-2018 vintage cohort is currently overweight technology and underweight financials. Conversely, the current NAV of the 2005-2008 vintages is overweight financials and underweight technology
- Of note, there is a mismatch in the chart below in the communication services sector which is primarily media and telecom related in private equity while the public equity allocation is dominated by Facebook, Google, Netflix, etc.



# Performance Review – 2012-2018 Vintages

- **OST Staff surveyed all managers backed over the 2012-2018 timeframe to explore how that sub-portfolio is positioned relative to public equities**
  - While Staff’s survey methodology was not perfectly scientific, the output provides an indication of how holdings from recent PE vintages are valued, levered, growing, etc. Staff surveyed roughly 40 GPs managing \$14 billion of OPERF commitments across more than 75 partnerships
  - At 9/30/18, those partnerships held investments in roughly 800 portfolio companies with aggregate revenues of over \$500 billion and more than 2.4 million employees. Over 50% of current holdings have been in the portfolio for three years or less putting those companies in the steep part of their expected value accretion curve
  - Like the broader OPERF private equity portfolio, the current holdings of this sub-portfolio are roughly 70% North America based companies and 30% international. Current sector exposures for the 2012-2018 portfolio are outlined on the prior slide
  - The weighted average enterprise value currently stands at ~\$3.0 billion which make OPERF’s PE portfolio companies from recent vintages roughly 1% the size of the average Russell 3000 constituent company and effectively the same size as the average Russell 2000 constituent
  - As outlined on the next slide, OPERF’s 2012-2018 vintage holdings are marked and levered reasonably in line with public equities, but OPERF’s holdings have a superior growth and margin profile. This seems to reflect PE’s rotation into growth sectors and emphasis on more resilient companies over the past decade
  - 95% of the managers surveyed have a formal, codified environmental, social, and governance (“ESG”) policy in place informing their investment process
    - More than 70% produce some form of confidential reporting on ESG to their LPs or Advisory Board, more than 40% report to outside stakeholder groups on ESG, and more than 90% have enhancing ESG policies set as a goal for 2019
    - More than 80% of the managers surveyed have a formal initiative in place to improve diversity & inclusion (“D&I”) within their own ranks, more than two thirds have an initiative in place to address D&I on portfolio company management teams and boards, and roughly 90% plan to enhance their approach to D&I in the coming year

# Performance Review – 2012-2018 Vintages

- The chart below presents the compiled valuation and operating metrics from Staff’s survey with comparisons to public market indices

- Valued at ~13.6x enterprise value-to-EBITDA, OPERF’s recent vintage PE portfolio was marked broadly in line with where the Russell 3000 was trading at 9/30/18 and roughly 33% below where the Russell 2000 was trading. While multiples are high across the board, PE’s valuations are not out of line, and the OPERF holdings have a different sector mix with higher growth and margins than the indices
- With ~4.8x net debt-to-EBITDA, OPERF’s holdings were levered above the Russell 3000 but broadly in line with the Russell 2000. The weighted average time to maturity of the sub-portfolio’s debt was nearly five years, interest coverage ratios are broadly above 2x, and the vast majority of the sub-portfolio’s borrowing was covenant lite
- OPERF’s 2012-2018 holdings generated ~26% revenue growth for the 12 month period ending 9/30/18. That figure includes M&A (at least 300 add-on acquisitions) which probably accounts for 30-40% of topline growth. On an organic basis, OPERF’s holdings likely generated mid-teens revenue growth. Organic growth could not be estimated for the indices, but it is reasonable to assume that OPERF’s portfolio has been more acquisitive than public companies over the last 12 months
- OPERF’s holdings had an average EBITDA margin of ~24% which is above the Russell 3000 and well above the Russell 2000. As a group, these portfolio companies also require reasonably low maintenance capex which implies high cash conversion

As of 9/30/2018	Weighted Average EV/LTM EBITDA	Weighted Average Net Debt/LTM EBITDA	Weighted Average LTM Revenue Growth	Weighted Average EBITDA Margin
<b>OPERF PE 2012-2018 Vintage Holdings</b>	<b>~13.6x</b>	<b>~4.8x</b>	<b>~26%</b>	<b>~24%</b>
<i>Russell 3000</i>	<i>14.0x</i>	<i>2.0x</i>	<i>10%</i>	<i>18%</i>
<i>Russell 2000</i>	<i>18.7x</i>	<i>4.9x</i>	<i>14%</i>	<i>9%</i>
<i>MSCI ACWI IMI Net</i>	<i>11.4x</i>	<i>2.3x</i>	<i>7%</i>	<i>17%</i>

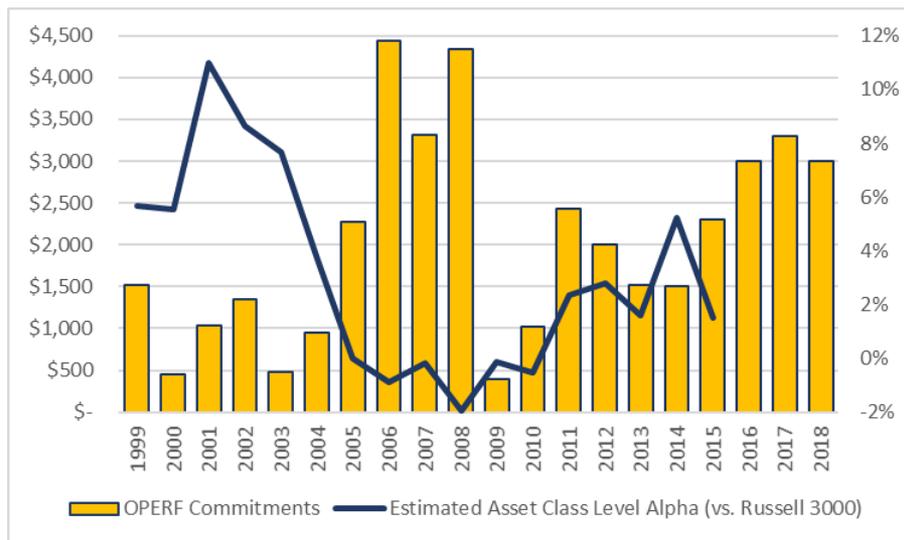
# Portfolio Update – Implementation Strategy

- **OPERF’s implementation approach has changed in the material manner to compete in a complex and competitive industry**
  - From 1981 to 2015, OPERF pursued the “endowment model” in the private equity asset class
    - The endowment model relies mostly on manager selection (primary fund investments) making access and allocation the most important variables
    - Programs that have historically done well pursuing the endowment model often rely heavily on a small universe of best in class venture capital relationships to deliver most of the alpha over the long-term
    - While this model has delivered more recently (i.e. OPERF’s 2012-2015 vintages), based on the scale of OPERF’s PE program, the endowment model is no longer a credible long-term approach
  - Since 2016, the program’s implementation has shifted to a “modified Canadian” model
    - Given the scale of OPERF’s program, the vast majority of the PE manager universe is not addressable. The small (by count) addressable manager universe of larger GPs presents what is expected to be a lower volatility return profile that is less likely to deliver significant excess return relative to public equities (300 basis point per annum or more) in an ever more competitive, complex, and efficient world
    - As a result, large programs like OPERF’s need to be more attentive to pacing management and gross-to-net spread mitigation in order to meet long-term return objectives
    - Unlike some peer funds (sovereign wealth funds and international pension funds), OPERF does not have the resources or transactional flexibility to pursue the full (i.e., direct and discretionary) Canadian model. For this reason, a modified version has been devised to deliver a similar outcome
    - However, as in the endowment model, manager selection remains an extremely important lever as a strong gross return profile is needed to deliver a solid net outcome even with improved economics (e.g., reduced fees and carried interest)

# Portfolio Update – Pacing

- **A foundational principal of the revised implementation model is consistent vintage year pacing in an effort to avoid market timing**

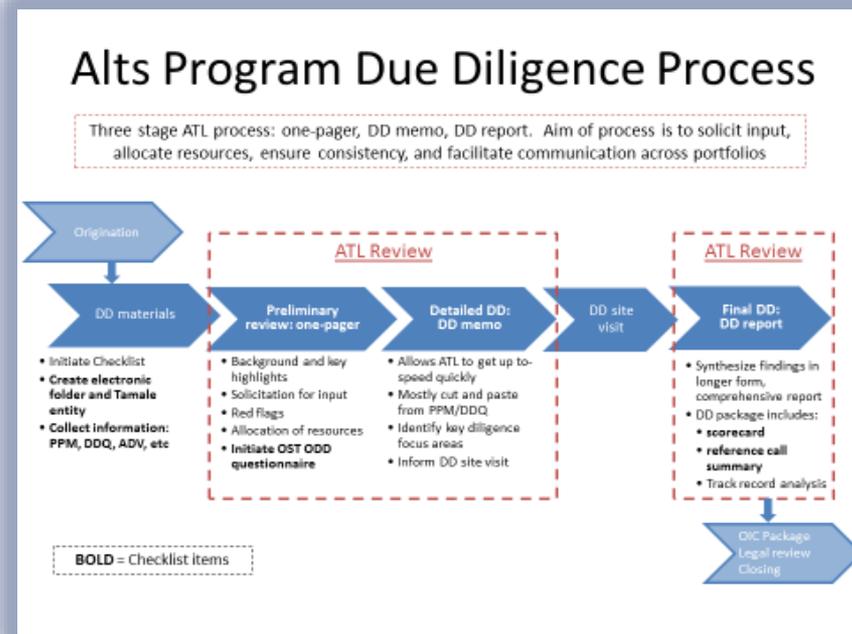
- The chart below shows OPERF’s commitment pacing over the past 20 vintage years. The chart further shows the estimated excess return generation at the asset class level for each vintage (ILPA All Funds Pooled Average – Russell 3000 modified public market equivalent)
  - As the chart depicts, OPERF’s pacing volatility was extreme over the first decade of this data set. This was not the result of a conscious market timing decision as the drivers were a) the decision to increase the strategic target allocation to the asset class starting in May 2005 and b) an apparent urgency to reach that new target in the 2005-2008 timeframe. Since the start of 2016, OPERF has been pursuing a flat pacing model targeting \$2.5-3.5 billion per annum in an effort to avoid being significantly overexposed to any set of vintages in the future. As the chart shows, asset class level alpha generation across vintages is highly volatile (blue line)
  - To give a sense for the impact that volatile pacing can have, indiscriminately cutting each fund commitment by 50% during the 2005-2008 timeframe would have improved the full portfolio’s 1, 3, 5, and 10 year returns by an estimated 300bps, 250bps, 200bps, and 200bps, respectively. The estimated impact of smoothed, gradual pacing growth since 2005 on the full portfolio’s 1, 3, 5, and 10 year returns is plus 400bps, 350bps, 250bps, and 200bps, respectively
  - OST Staff continues to look at pacing management capabilities to create additional flexibility



# Portfolio Update – Manager Selection

- The portfolio’s manager roster has also evolved significantly over the past few years to support a new implementation model

- The program’s current manager roster consists of ~40 managers versus 80+ live relationships in 2015. As the live relationship roster has halved since 2015, the program’s median and mean commitment size doubled to \$200 million and \$250 million, respectively. At the same time, maximum commitment size decreased from \$750 million to \$500 million creating more balanced exposure across live relationships. Today, OPERF is a strategic LP (generally top 5 or 10) in all live relationships
- While changes to the manager roster have been material, changes to the due diligence and monitoring processes have been more significant. This reflects the fact that the consequence of poor manager selection has increased as the manager count has decreased. Across the Alternatives Program, Staff has engaged additional internal resources and capabilities as highlighted in the more rigorous revised due diligence process outlined below



# Portfolio Update – Fee Mitigation

- **Building on changes to the manager roster, OPERF is now well placed to leverage the program’s size and strategic importance to seek material fee and carried interest savings**
  - In 2016, OPERF started leveraging the program’s scale to achieve negotiated and/or structural discounts to management fees and carry
  - In 2017, nearly a quarter of all commitments benefited from negotiated/structured discounts taking all-in carry exposure for the year to below 19% versus the market standard 20% (roughly \$40 million reduction in carried interest exposure)
  - In 2018, an outsourced, discretionary manager was selected to restart the program’s co-investment program. Along with further negotiated/structured discount, this took all-in carry exposure for the vintage below 17% (roughly \$100 million reduction in carried interest exposure)
    - The revised approach to co-investment emphasizes systematic sector, geography, and strategy exposure replication versus discretionary, “rifle shot” deal selection to unlock material economic savings in a scalable manner without adding significant execution or concentration risk
    - The new mandate also allows OPERF to more regularly refresh available capital to provide additional pacing flexibility for the overall program
  - With that foundation, the long-term objective is for gross-to-net mitigation strategies to deliver between a third to half of the PE portfolio’s 300 basis point target outperformance relative to public equities. This objective likely translates to an all-in carry exposure at or below 16% (\$120 million annual reduction in carried interest exposure at \$3 billion pacing)



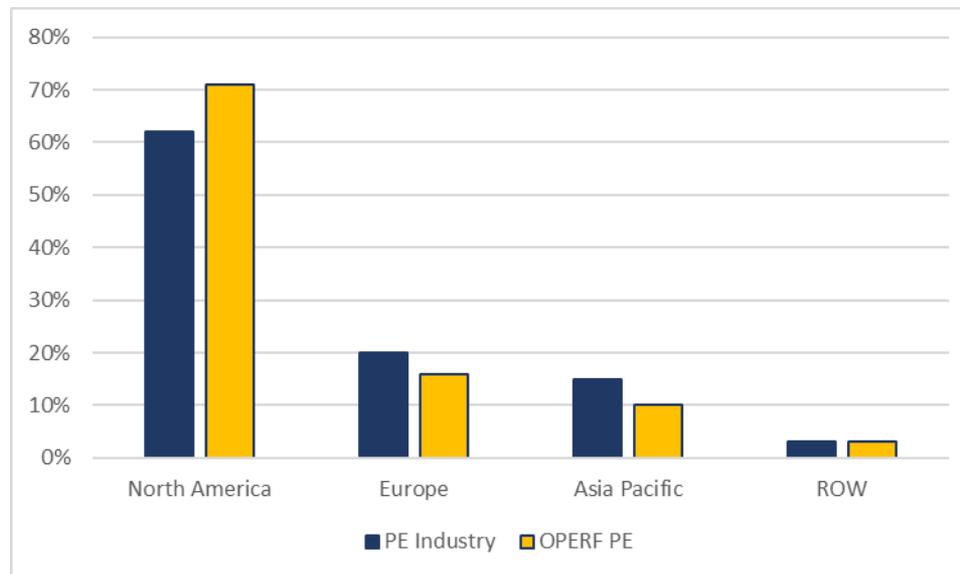
# Portfolio Update – Strategy Allocation

- Due primarily to the size of the OPERF private equity portfolio, the program will continue to pursue a buyout heavy strategy
  - The chart below presents OPERF’s exposure across the three key strategies pursued relative to the respective targets
  - Over time, the 5-15% target to VC & Growth will continue to become more biased to growth equity at the expense of VC as OPERF has low access and investment capacity in VC
  - The special situations allocation has evolved over time into an allocation to corporate distressed debt. As a result, this segment of the portfolio will be more opportunistic and less of a strategic allocation going forward

Q2-2018	COMMITTED	FAIR MARKET VALUE	TOTAL EXPOSURE	TARGET
<b>STRATEGY</b>				
Buyout	79.7%	75.3%	77.6%	60-85%
Special Situations	11.6%	8.9%	9.8%	5-15%
VC & Growth Equity	8.7%	15.8%	12.7%	5-15%
<i>Venture Capital</i>	5.3%	10.4%	6.9%	
<i>Growth Equity</i>	3.4%	5.4%	5.8%	

# Portfolio Update – Geographic Allocation

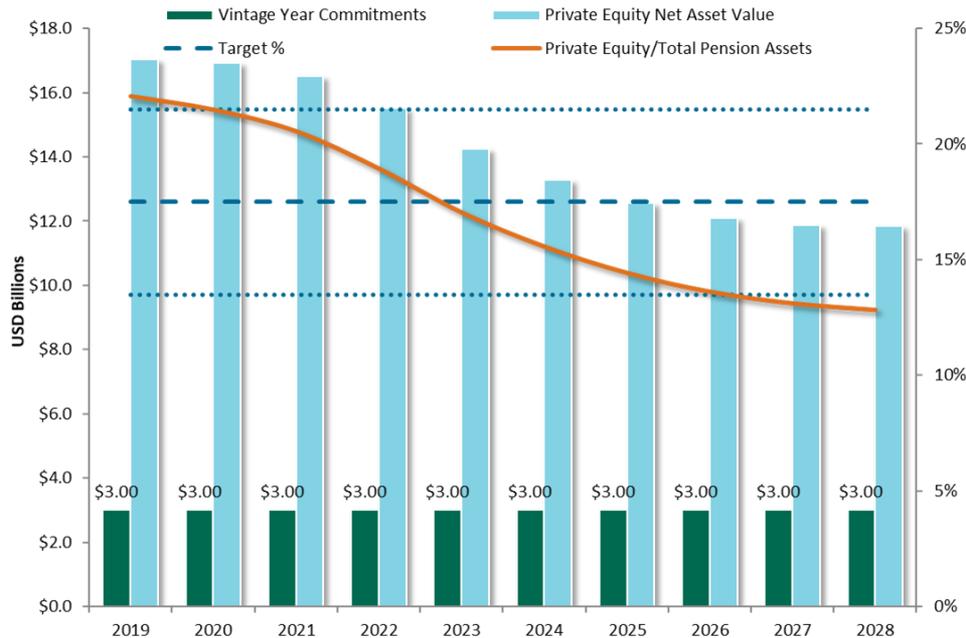
- **OPERF’s current PE exposure (based on NAV) is roughly 70% North America, 15% Europe, 10% Asia, and 5% Rest of World (“ROW”)**
  - Medium-term targets are more in line with where the PE industry currently stands: 60-65% North America; 20-25% Europe; 10-15% Asia; and 0-5% ROW
  - Long-term, the allocation to emerging markets (particularly Asia) will increase at the expense of the developed markets. However, for capacity reasons, OPERF’s allocation can only move as fast as the broader industry develops in emerging markets
  - As noted in previous years, developed market exposure is currently overweight North America at the expense of Europe, but several Euro-focused commitments have been made over the last few years to rectify this imbalance over time



# 2019 Plan – Pacing

- **In keeping with the principal of maintaining flat pacing, staff is recommending \$2.5-3.5 billion of new commitments in 2019**

- OST Staff further anticipates maintaining a \$2.5-3.5 billion annual target pacing approach over the next several vintage years to manage the overall fund’s exposure to private equity back into the middle of the target allocation range in a controlled manner over time
- Consistent with prior years, Staff anticipates recommending 10-15 commitments of \$100-500 million over the course of the year
- The output of the horizon model used to create this forward pacing recommendation is presented in the chart below. Further detail on this exercise is available in TorreyCove’s review of the program (Appendix B). As OPERF’s allocation to private equity is currently at the top end of the target range, additional conservatism was built into this year’s pacing study (slower distributions, lower total plan growth, etc.)



# 2019 Plan – Initiatives

## 2019 OST Private Equity Staff Priorities

### **1. \$2.5-3.5 billion of new commitments**

- 10-15 commitments of \$100-500 million

### **2. Expand on existing gross-to-net mitigation capabilities**

- Continue to exploit negotiated/structured discount opportunities
- Re-launch revised co-investment program

### **3. Explore additional portfolio management capabilities**

- Continue to explore solutions to enhance monitoring and pacing management

### **4. Private equity team capacity**

- Recruit a third Investment Officer and further leverage the Alternative Program's analyst resources

### **5. Continue enhancements to due diligence and monitoring capabilities**

- Enhanced data capture and monitoring output remain focus areas for 2019

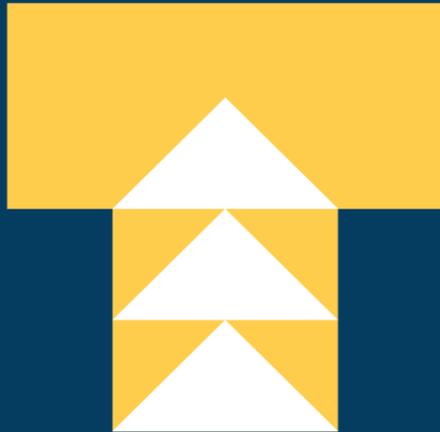
# Closing

## Key takeaways from above...

1. Long-term performance is solid on an absolute basis with results over the past decade exceeding prospective return assumptions
2. Long-term relative performance remains impaired by the impact of a commitment pacing surge in the 2005-2008 vintages
3. Recent results look promising driven by strong performance from the maturing 2012-2015 vintages
4. The current underlying portfolio exposures from recent vintages seem reasonably positioned should the environment change
5. Significant changes to OPERF's private equity implementation have been made in recent years, better positioning the program to deliver amid changing industry dynamics

## The plan for 2019 and beyond builds upon OPERF's revised implementation strategy

1. The plan is designed to deliver on PE's return objective (300 basis points of excess return over public equities) in a risk-aware manner at scale and factoring in all of OPERF's capabilities and limitations
2. No changes are being proposed at this time as no aspect of the implementation plan is tactical in nature. We continue to strive to maintain a long-term mindset as PE is an asset class where consistency is rewarded over time



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# **APPENDIX A**

January 31, 2019

# OPERF Private Equity Annual Review & 2019 Plan

Appendix A – 2018 Private Equity Market Review



OREGON  
STATE  
TREASURY



# 2018 Private Equity Market Review – Agenda

- **Executive Summary**
  
- **Investment Environment**
  - M&A Activity
  - Corporate Leveraged Finance
  - Private Equity Returns
  - U.S. Private Equity Update
  - Europe Private Equity Update
  - General Industry Observations

# Executive Summary

## • M&A Activity

- Developed market deal volumes remained strong as has been the case since 2014. Private equity's share of that activity in 2018 was a robust 34%
- At more than 10x enterprise value-to-EBITDA, M&A transaction multiples remain high by historical standards, but multiples are broadly in line with where the market has been since the end of 2015

## • Corporate Leveraged Finance

- U.S. leveraged finance new issue volumes were strong again in 2018 at roughly \$900 billion gross and \$370 billion net
- Leveraged Buyout ("LBO") leverage multiples for new deals are up to nearly six times (and potentially higher without EBITDA adjustments), but coverage ratios have not meaningfully declined
- U.S. non-investment grade corporate credit has grown at a mid-teens compound annual growth rate ("CAGR") since the start of 2012 vs. a low-teens CAGR for overall corporate credit. Despite strong investment activity, LBO transactions have not been the driver of growth in this cycle

## • Private Equity Returns

- On an absolute basis, returns for the asset class (using the ILPA All Funds index as a proxy) are solid at 17% for the one year period through 6/30/18 and 11%, 13%, and 10% for the 3, 5, and 10 year periods, respectively
- The relative return picture is more mixed with solid alpha generation relative to public equities in the short- (1 year) and long-term (15-20 years) but challenging results in between. The challenges come from funds raised in the 2005-2010 timeframe, and the issue is compounded by the outsized magnitude of the 2005-2008 vintages
- Investments made after 2011 have produced solid relative returns, but those results get overshadowed in the 3, 5, and 10 year asset class level returns due to sheer scale and lackluster performance of the 2005-2008 vintages

## • Private Equity Activity

- At 9/30/2018, YTD fundraising was 32% and 7% behind the 2017 pace in the U.S. and Europe, respectively. In the U.S. in particular, there were fewer large funds formed which accounts for the step down in pacing, but the market remains hot overall as measured by the time it takes to get to a final closing
- New private equity deal activity has been strong across the developed markets through the first three quarters of 2018, continuing a trend that began in 2016
- As with new deal activity, private equity exits remain on the strong pace that we have seen since 2016 in both the U.S. and Europe

## • General Industry Observations

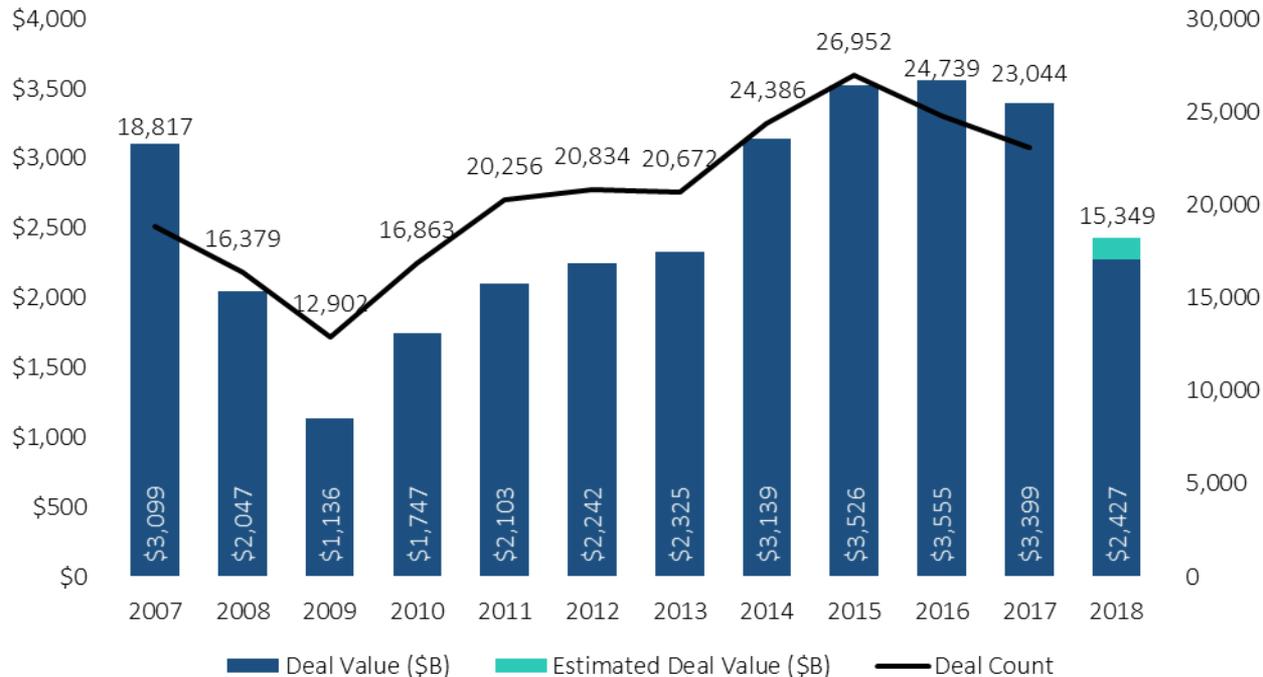
- Themes from the past few years are largely unchanged, but we are increasingly seeing signals of late cycle behavior

**The market remains hot, but returns from recent vintages have been solid**



# M&A Activity – Developed Market Volumes

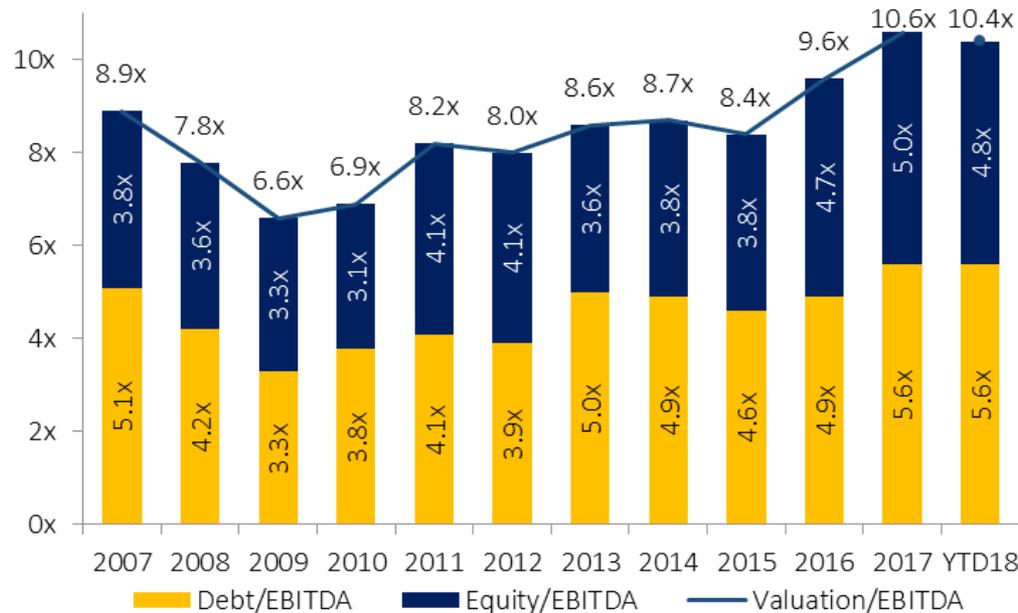
- Through 3Q 2018, Pitchbook recorded over 15k M&A transactions in North America & Europe with an aggregate value of \$2.4 trillion
- Volumes through the 3Q 2018 were 7% behind where they stood at that time in 2017 and roughly 10% behind the pace set in 2015 and 2016
- As in previous years, deal volume in 2018 is roughly 2/3 North America and 1/3 Europe
- The chart below presents the annual developed market M&A volumes since 2007 per Pitchbook



# M&A Activity – Transaction Multiples

- Through 3Q 2018, median transaction multiples were broadly in line with 2017 at 10.4x

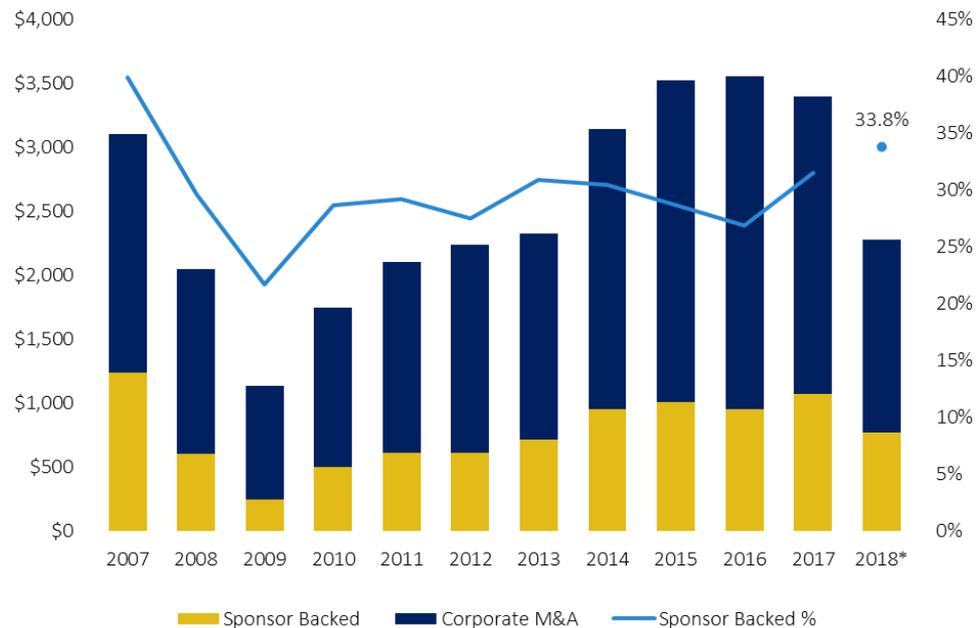
- Valuations remain high by historical standards, but multiple appreciation appears to have flattened over the past few years following a material step-up in 2016
- Debt as a percent of new deal financing remains below 60% (equity contribution still above 40%)
- However, the numbers listed below may be somewhat understated due to unceasingly aggressive EBITDA adjustments (discussed further in the leveraged finance section)
- The chart below presents transaction multiples since 2007



# M&A Activity – Private Equity Market Share

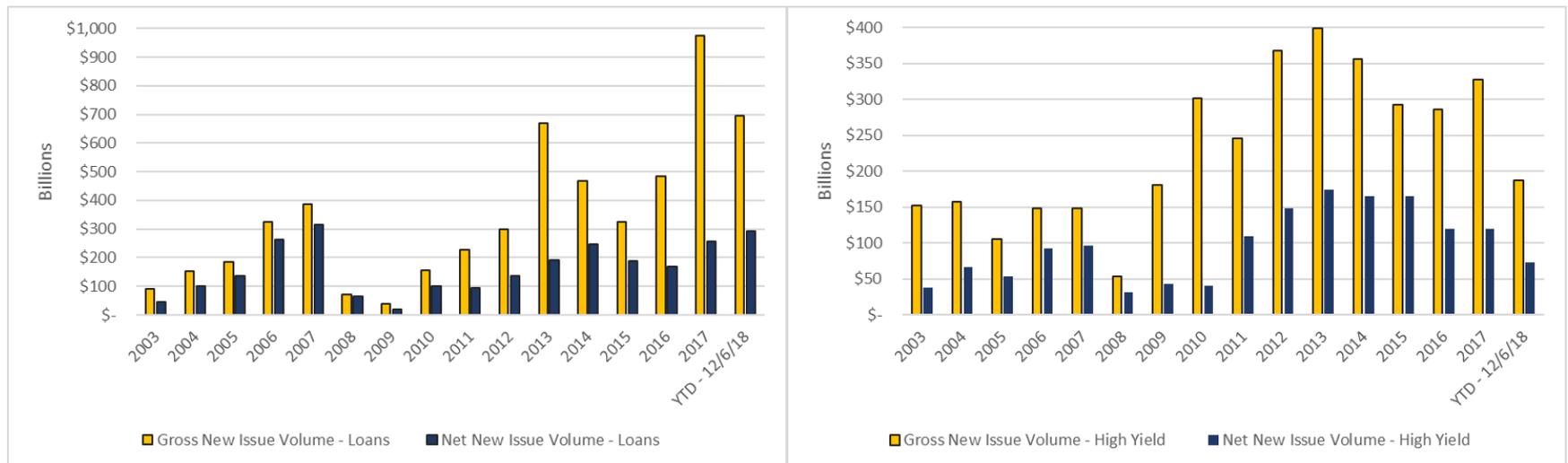
- The share of developed market M&A activity driven by private equity sponsors continued to tick up in 2018

- Through 3Q 2018, PE sponsors led 34% of deal activity (as measured by value) which compares to 32% in 2017 and 27% in 2016
- PE sponsors’ share of M&A remains below the peak of 40% set in 2007
- PE sponsors’ AUM reached roughly \$2 trillion by the end of 2017 (33% of which is uncalled commitments). This implies a 5% CAGR of industry AUM since 2006
- The chart below presents PE sponsors’ share of developed market M&A activity per year since 2007



# Corporate Leveraged Finance

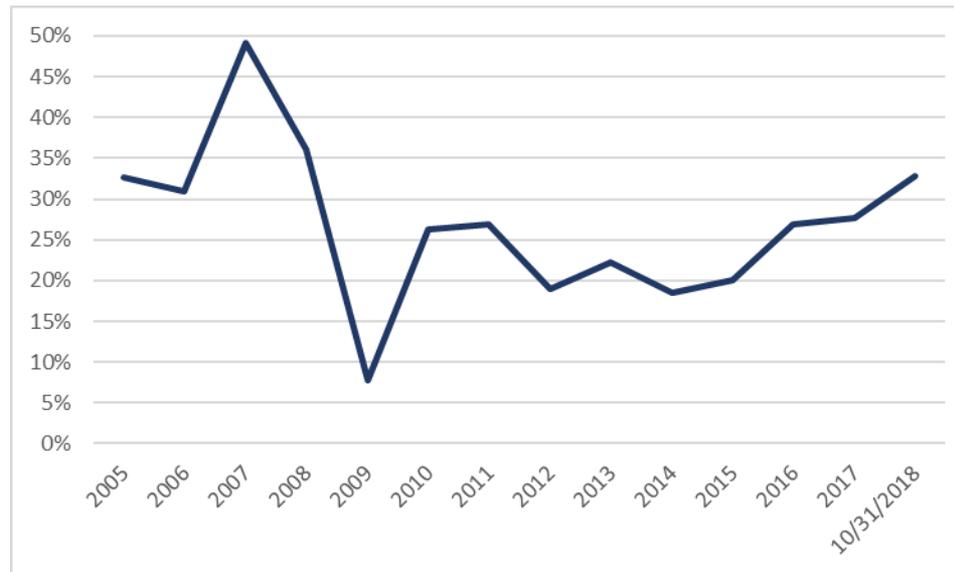
- Through the first week of December, gross new issue volumes for U.S. corporate loans and high yield totaled roughly \$900 billion in 2018
  - This compares to the previous record of \$1.3 trillion of gross new leveraged finance issue volumes set in 2017
  - However, due to significant refinancing activity, net new issue volumes stood at roughly \$370 billion. This is broadly in line with 2017 net activity and about 10% behind the record mark for net new issuance set in 2007
  - These continue to be technically driven markets with collateralized loan obligation formation driving loan activity and fund flows underpinning high yield volumes. The charts below present estimated annual volumes for U.S. loans (left) and high yield (right) since 2003



# Corporate Leveraged Finance

- **The share of net loan and high yield new issue volumes used to finance LBOs during 2018 stood at roughly 30%**

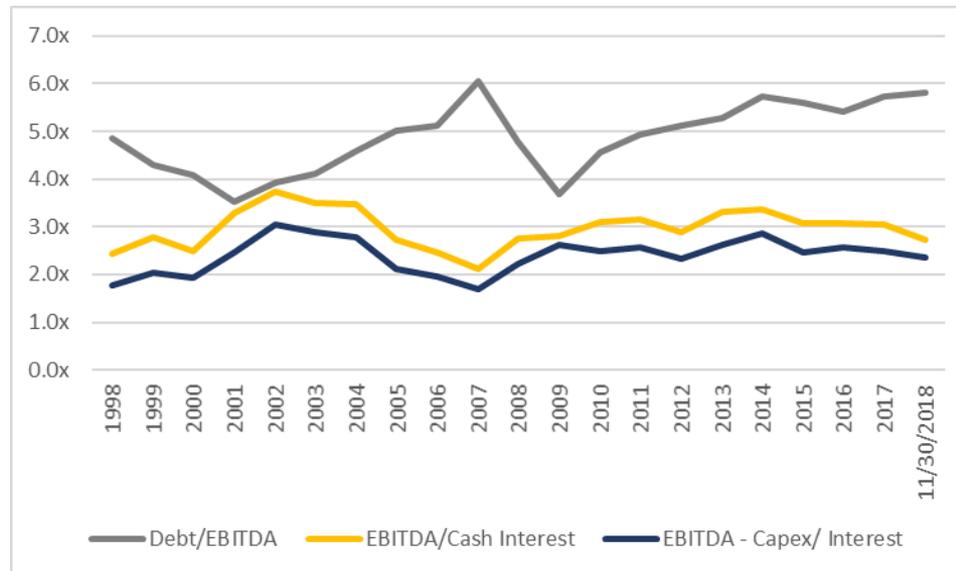
- While higher than in recent years, that 30% share is well below levels seen going into the GFC when the markets were smaller. The chart below shows LBO's share of net financing activity since 2005
- Private equity's total share of leverage finance activity is larger when recap, refinancing, and M&A financing activity for existing portfolio companies are considered



# Corporate Leveraged Finance

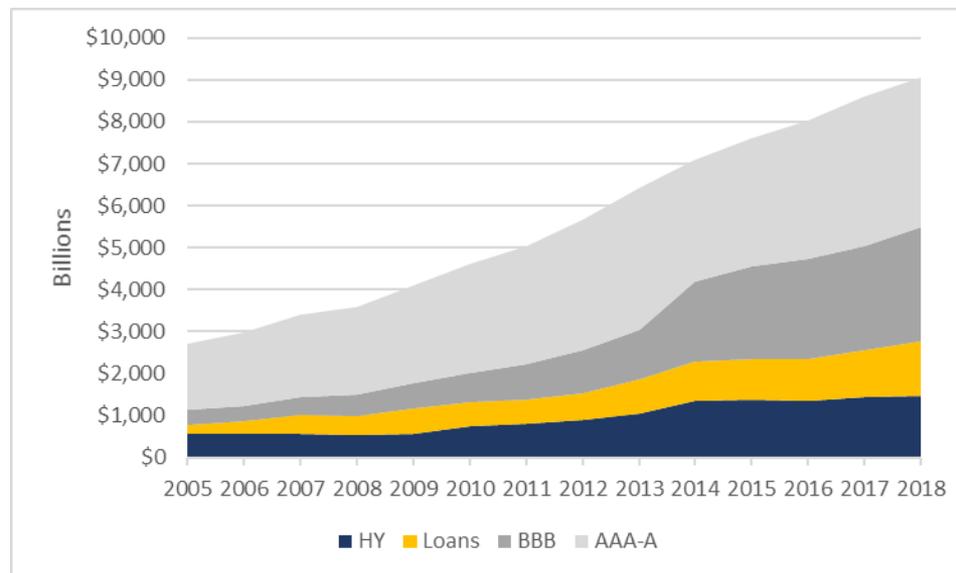
- **In 2018, leverage multiples for new LBO financings matched levels seen in 2007 at roughly 6x debt-to-EBITDA**

- While net debt-to-EBITDA has moved up, coverage ratios have remained largely stable. The chart below shows credit statistics for new LBO financings since 1998
- As leverage has moved up, the quality of businesses acquired by sponsors has also seemingly improved, and new issue volume has been primarily covenant lite in recent years
- Performing deals appear to be delevering reasonably quickly with dividend recap financings moving leverage from below 4x back to roughly 5x on average over the past five years
- Conversely, reported credit stats are potentially favorably biased due to increasingly aggressive adjustments to pro-forma EBITDA in recent years (estimated to be as high as 30% or more in certain cases in 2018)



# Corporate Leveraged Finance

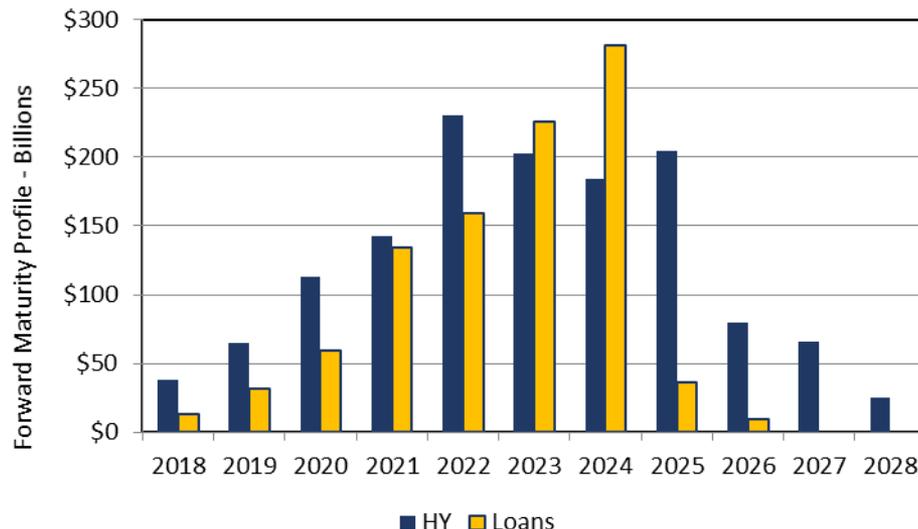
- **The aggregate face value of U.S. non-investment grade corporate credit has grown to nearly \$3 trillion representing a 16% CAGR since 2012**
  - Loan face value grew at a 19% CAGR over this period and HY grew at a 13% CAGR
  - The loan market is more important to the private equity industry, and this is reflected in the sector allocations with technology, healthcare, and business services accounting for  $\sim 1/3$  of activity in loans. In the HY market, telecoms and energy represent about  $\sim 1/3$  of the market
  - The 16% CAGR for non-investment grade face value compares to a 12% CAGR for total U.S. corporate credit driven by a 27% CAGR in BBBs (the lowest investment grade rating) over this period. The investment grade segment is dominated by financials, representing about half of the market. Growth in total outstanding face value of U.S. corporate credit since 2005 is depicted in the chart below



# Corporate Leveraged Finance

- **Based on the current universe of U.S. leveraged finance instruments in circulation, the market does not face material refinancings until the 2021-2025 timeframe**

- The chart below depicts the forward maturity profile for the nearly \$3 trillion of existing U.S. high yield and loan face value
- It is important to note that these markets have processed refinancing volumes averaging roughly 20% of face value annually over the past five years. As long as these markets are healthy, maturities will consistently get pushed out into the future in an orderly manner
- On this basis, private equity backed companies as a group (which rely mostly on the loan market) will not face material maturities before 2021, and we should not anticipate wholesale refinancing challenges unless the new issue market ceases to function in 2019 and 2020



# Private Equity Returns – Absolute

- The chart below presents trailing horizon net IRRs for the ILPA Private Equity Benchmark as of June 30, 2018

- Returns for the asset class were strong over the past year at 17% for the All Funds index
- Asia/Pacific was the best performing segment over this period, but returns in the US and Europe were also solid

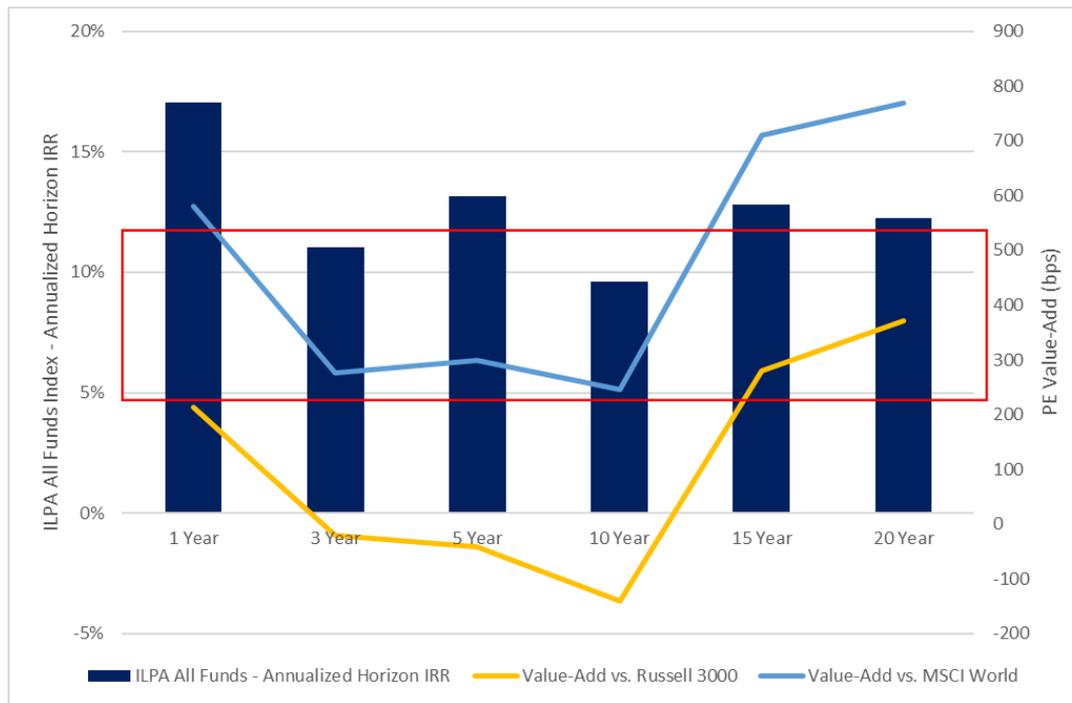
	1 Quarter	1 Year	3 Year	5 Year	10 Year
ILPA All Funds	4.3%	17.0%	11.0%	13.1%	9.6%
ILPA US/CAN Private Equity	5.4%	18.6%	12.3%	14.0%	10.7%
ILPA US/CAN Venture Capital	5.9%	16.0%	6.8%	15.5%	10.1%
ILPA Europe PE & VC (USD)	1.8%	20.6%	17.0%	13.8%	6.8%
ILPA Europe PE & VC (EUR)	7.2%	17.3%	15.4%	16.9%	10.3%
ILPA Asia/Pacific PE & VC	3.8%	20.0%	11.5%	16.9%	13.2%
ILPA Distressed Debt	2.5%	9.1%	8.4%	9.2%	10.0%
ILPA Private Credit	2.4%	10.9%	8.3%	8.9%	10.2%



# Private Equity Returns – Relative

- 1-Year performance is strong, although 3, 5, and 10 year periods are weaker

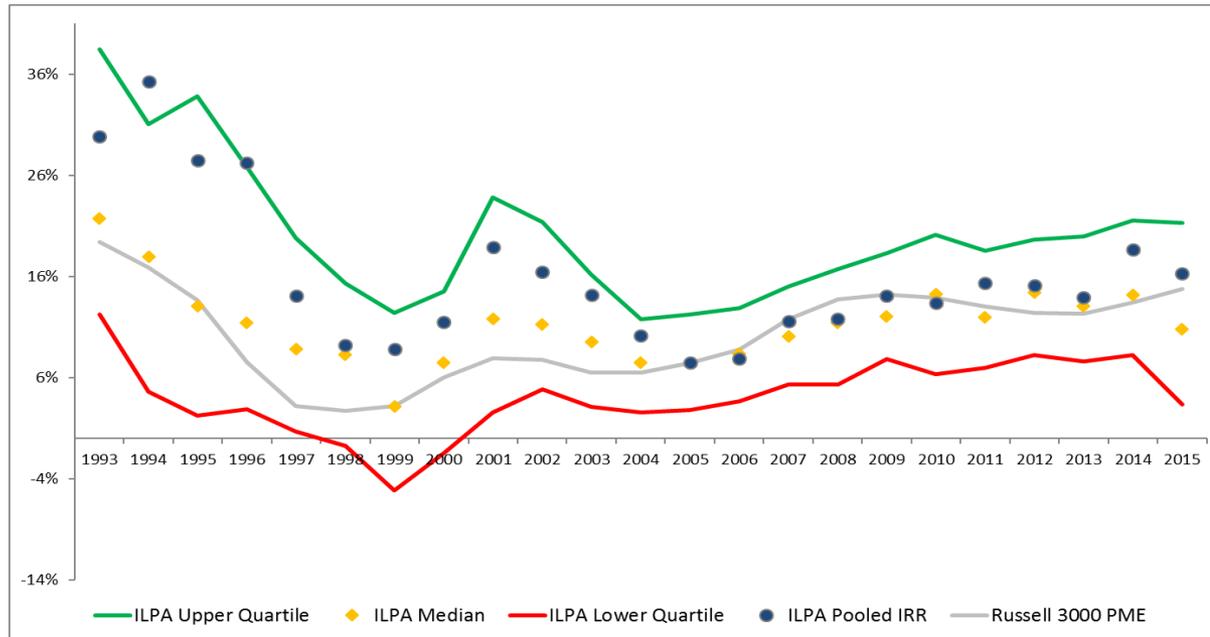
- The chart below compares trailing horizon IRRs for the ILPA All Funds index to a modified public market equivalent (“mPME”) using the Russell 3000 and MSCI World (as of 6/30/18)
- The left axis reflects the annualized horizon net IRR for private equity and the right axis shows PE’s value-add versus public market indices over the various time periods. The red box highlights the zone where PE is adding 200-500bps of outperformance versus public equities
- 1-Year performance has been strong, but relative performance for the 3, 5, and 10 year periods remains challenging



# Private Equity Returns – Relative

- Funds raised during 2006-2008 continue to drag down mid-term PE performance

- The chart below presents the quartile IRR marks, pooled average IRR, and Russell 3000 mPME using the ILPA All Funds index for each vintage year since 1993
- As the chart reflects, investing in private equity in an index like manner (pooled average IRR) would have generally produced alpha relative to the Russell 3000 in each vintage year outside of the 2005-2010 period
- The amount of capital raised between 2006-2008 (highlighted in the U.S. & Europe fundraising slides below) relative to amounts raised in the prior and subsequent vintages explains the challenging 3, 5, and 10 year relative performance presented on the previous slide



# U.S. Private Equity Update – Fundraising

- Through 3Q 2018, \$121 billion had been raised across 143 U.S. private equity funds

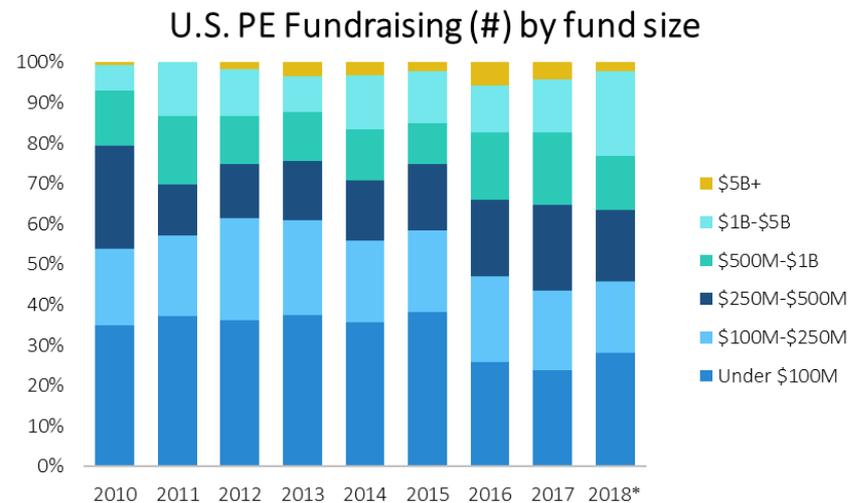
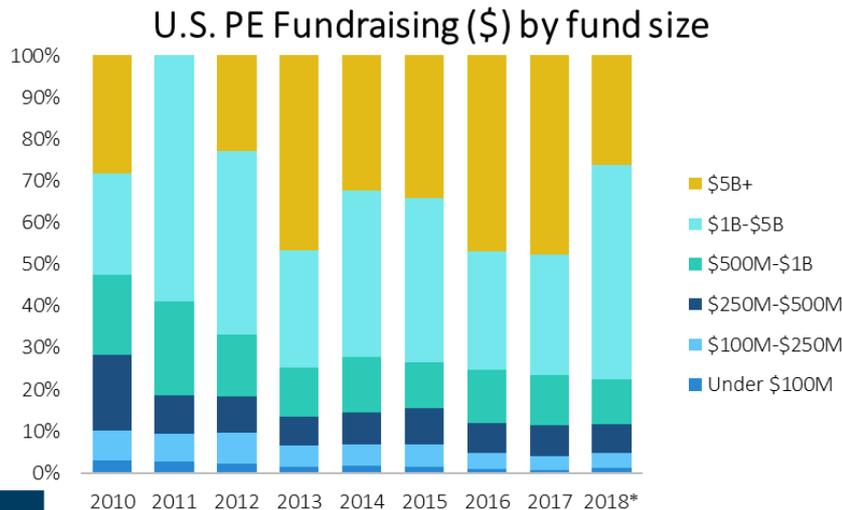
- Fundraising through 3Q 2018 was 32% behind where it stood at that time in 2017 with respect to the quantum of capital raised. The number of new private equity funds formed was also roughly 25% behind where it stood at that time in 2017
- The pace of fundraising remains rapid with the full process taking less than 15 months on average. However, this is broadly in line with the average pacing for closings since 2012, making it the new normal in the U.S.
- The chart below presents the annual U.S. private equity fundraising activity since 2006



# U.S. Private Equity Update – Fundraising

- The slowdown in fundraising through 3Q 2018 is mostly attributable to the large end of the market

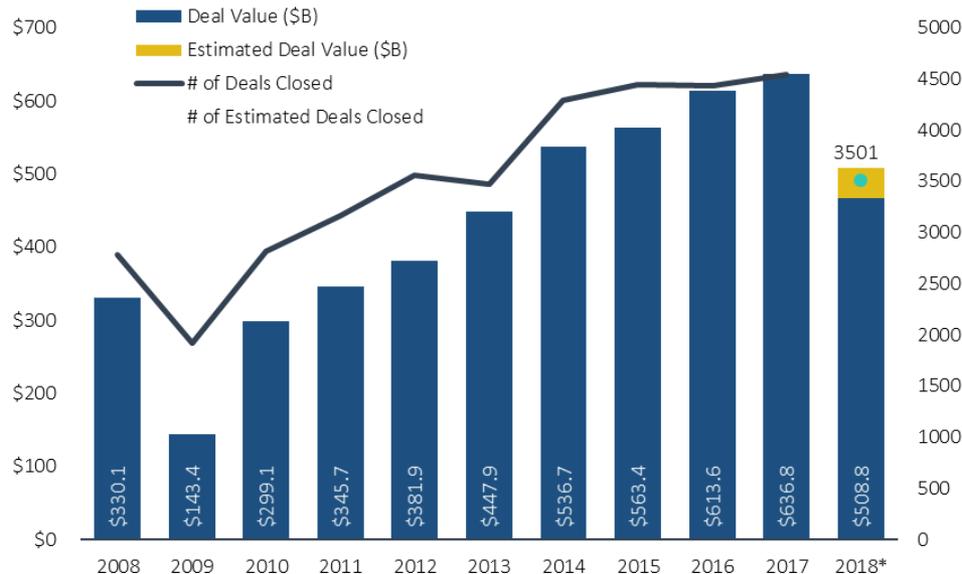
- As the chart on the left reflects, roughly 25% of capital raised in 2018 went to funds targeting \$5 billion or more of capital commitments. This compares to roughly 50% going to this cohort of new partnerships in 2016 and 2017
- The only size cohorts that have not seen a material decline in capital raised in 2018 are the “under \$100 million” and “1-5 billion” groups
- As always, smaller funds dominate by count with 75% of funds formed receiving less than \$1 billion of commitments
- The charts below show the fund size mix for annual U.S. private equity fundraising activity since 2010



# U.S. Private Equity Update – Deployment

- Through the 3Q 2018, roughly 3,500 private equity deals have been announced with a total value of \$509 billion

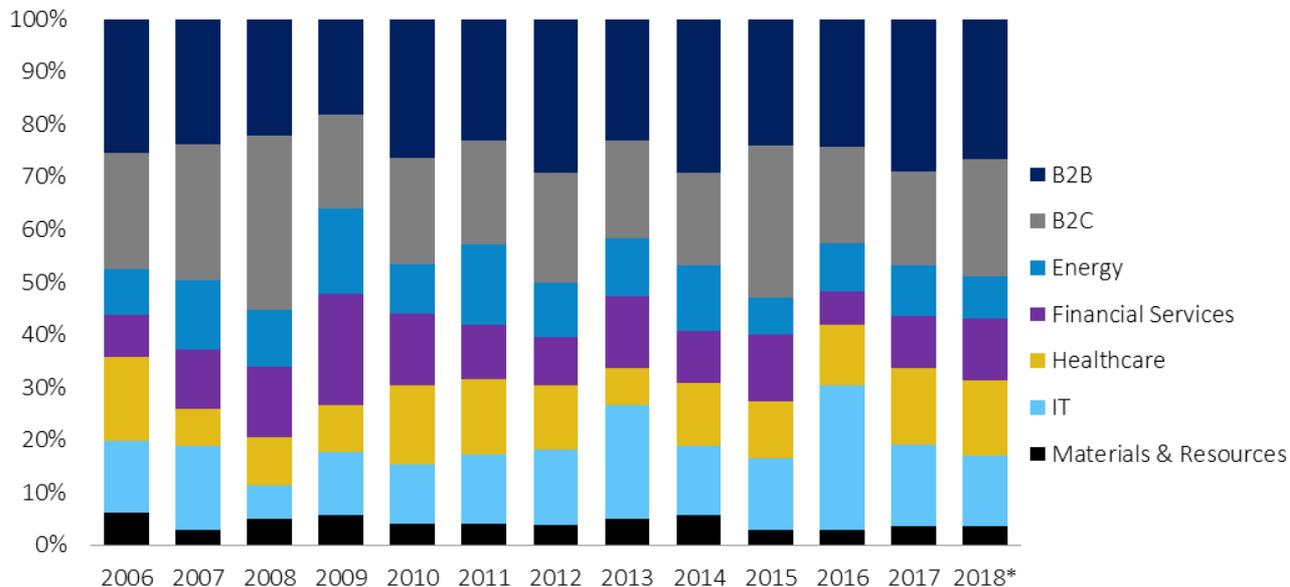
- The pace set through 3Q 2018 was broadly in line with 2017 as measured by both deal count and deal value
- Add-on acquisitions represented roughly two thirds of all deals done in the first nine months of the year. Add-ons have represented over 60% of all deals done since 2009
- Secondary buyout activity was slightly curtailed representing roughly 27% of deals done through Q3 2018 vs. 31% from 2014-2017
- The chart below presents the annual U.S. investment activity since 2008



# U.S. Private Equity Update – Deployment

- As noted in previous years, GPs continue to pursue companies they view as being more resilient with greater revenue visibility and exposure to secular growth trends

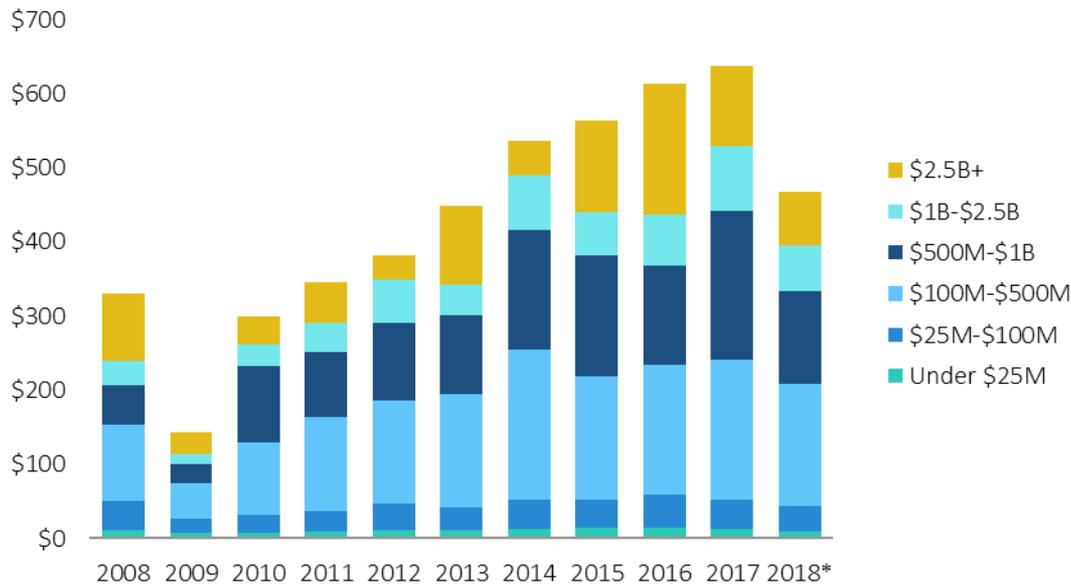
- The allocations to IT and healthcare represented 28% of overall volume through 3Q 2018. Those two sectors have represented roughly 30% of overall activity since 2014. Further, these numbers do not capture the tech-enabled and asset-lite business model trends we are seeing in B2B, B2C, financial services, etc.
- GPs claim that roughly 50% of the companies backed in 2018 (by count) experienced double-digit revenue growth in the 12 months prior to their investment. This sentiment is broadly in line with 2017 and ahead of 2016 (40%) and 2015 (36%)
- The chart below presents the sector mix (by \$) for annual U.S. investment activity since 2006



# U.S. Private Equity Update – Deployment

- **Deals with enterprise values  $\geq$ \$500 million continue to represent more than half of announced deal volume (by \$)**

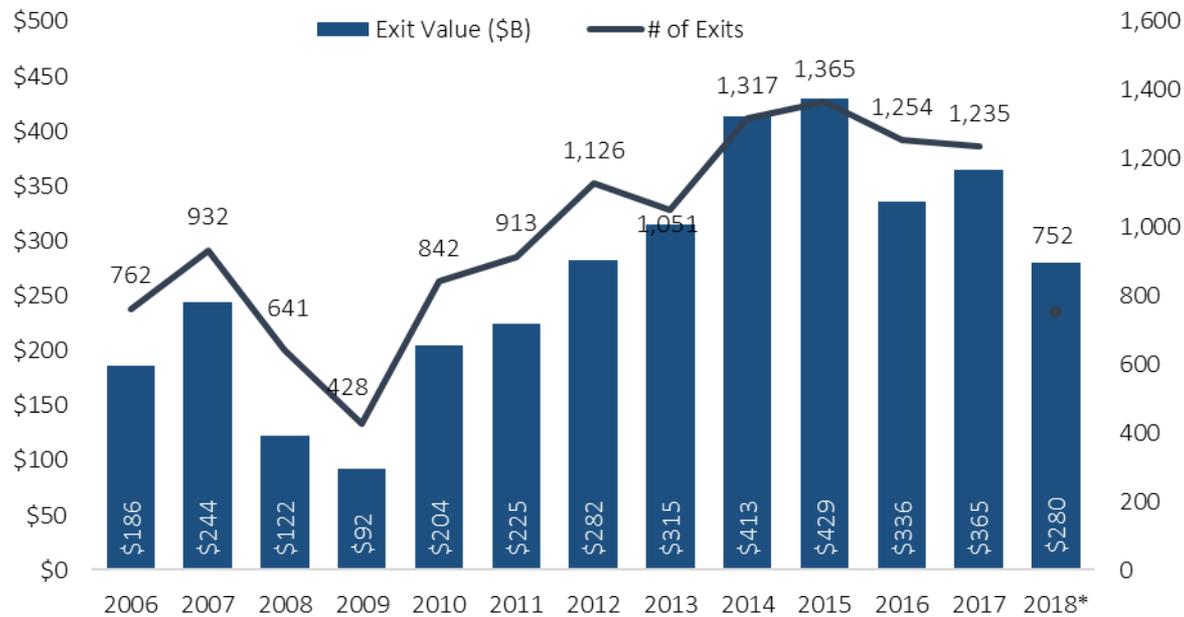
- Deals with EVs  $\geq$ \$500 million represented 55% of volume through the 3Q 2018. This compares to 62% from 2015-2017
- The story looks different if we measure volume by deal count with the  $\geq$ \$500 million cohort continuing to represent less than 10% of deals announced
- The chart below presents annual U.S. investment activity (by \$) across various enterprise value cohorts since 2008



# U.S. Private Equity Update – Exits

- **Through 3Q 2018, over 750 exits of U.S. private equity backed companies have been consummated for a total value of \$280 billion**

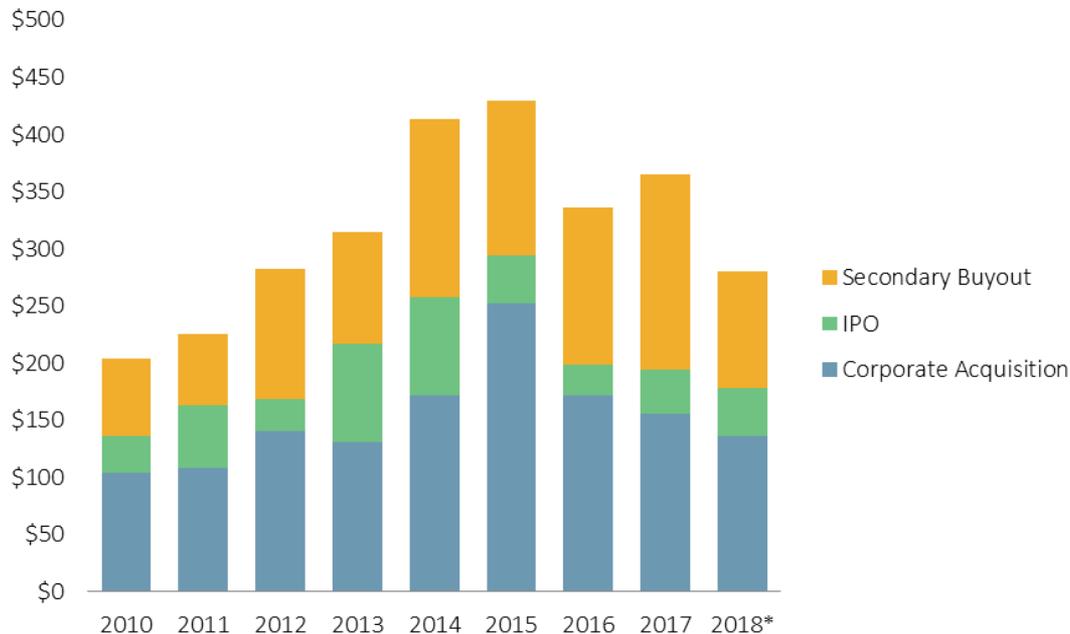
- Exit pace through 3Q 2018 was 5% ahead of 2017 and 15% ahead of 2016
- Year to date mean exit transaction size is roughly 26% ahead of 2017 and 39% ahead of 2016
- The chart below presents the annual U.S. exit activity since 2006



# U.S. Private Equity Update – Exits

- **Through 3Q 2018, the allocation of strategic sale and IPO exits increased at the expense of secondary buyouts**

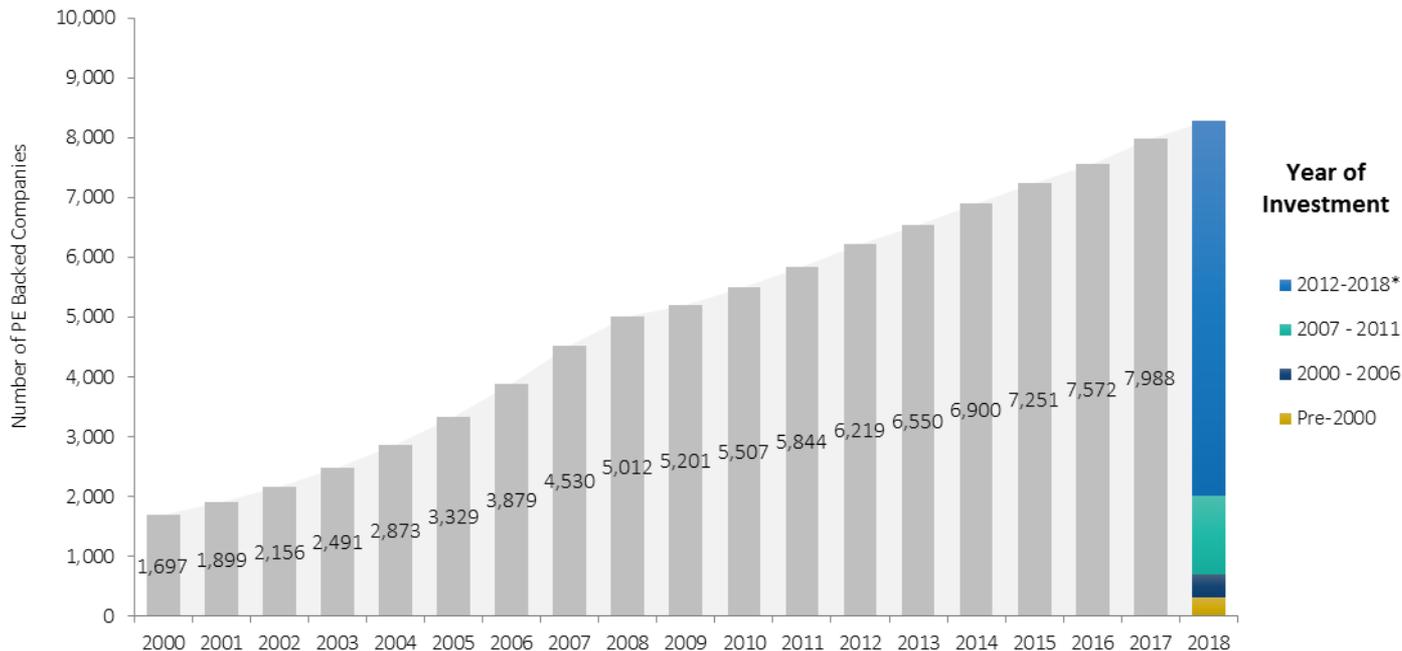
- Through 3Q 2018, corporate acquisitions represented ~50% of all exit volume (by \$) which compares to 43% in 2017. Public market exits represented 15% of volumes which is the largest allocation since 2014. As a result, the allocation of secondary buyout activity decreased to 37% from 47%
- Again, these numbers look different if we measure volume by deal count. On that basis, secondary buyouts represented >50% of deals done
- The chart below presents annual U.S. exit activity by type since 2010



# U.S. Private Equity Update – Exits

- **As of 9/30/2018, the inventory of U.S. private equity backed companies was nearly 8,300**

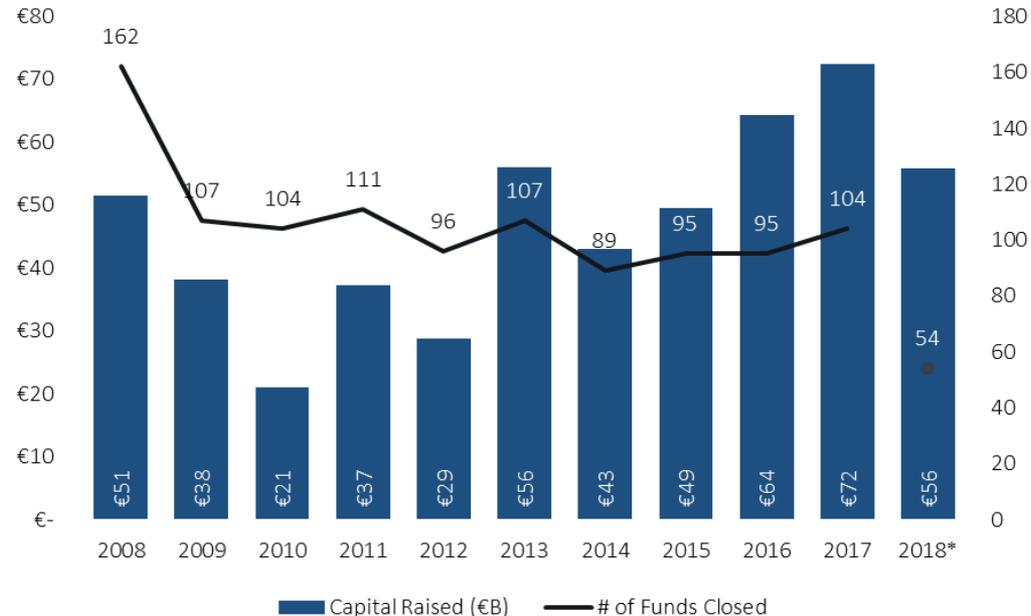
- U.S. private equity backed company inventory has grown at a 7% CAGR since 2006. This is the result of a 2:1 ratio of new platform investments to exits over this period
- As of 9/30/2018, nearly 80% of current inventory was attributable to platform investments made since the start of 2012
- The chart below presents the annual U.S. private equity backed company inventory since 2000



# Europe Private Equity Update – Fundraising

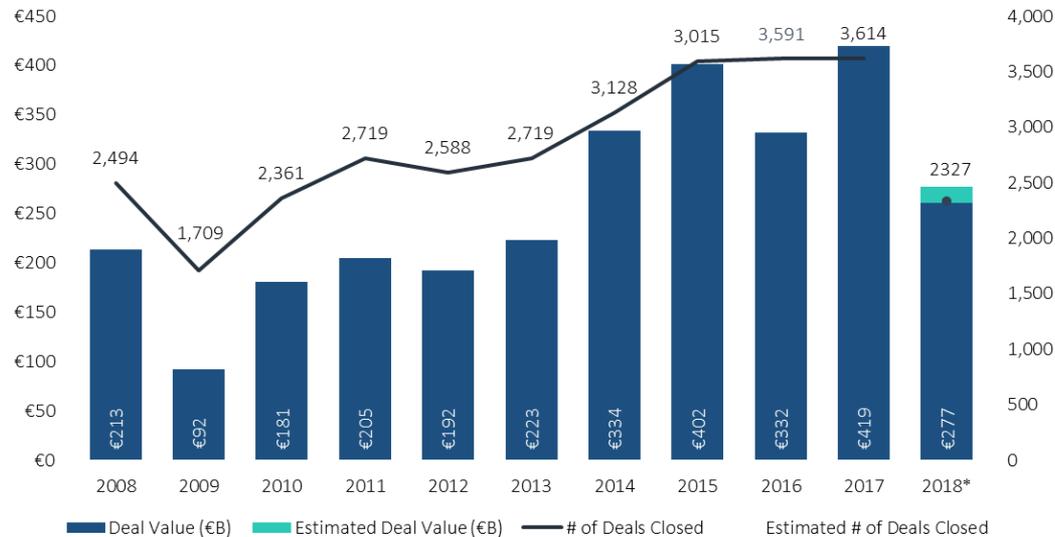
- Through 3Q 2018, €56 billion had been raised across 54 funds

- Fundraising activity was 7% behind the record pace set through 3Q 2017
- Funds targeting €5 billion or more of committed capital have represented close to 70% of capital raised in 2018 as they did in 2017. The previous record for this cohort was 62% in 2013 and the group has represented less than 40% in all other years
- The time to raise a fund in Europe has accelerated in 2018 to roughly match the 15 months required in the US
- The chart below presents annual European private equity fundraising activity since 2008



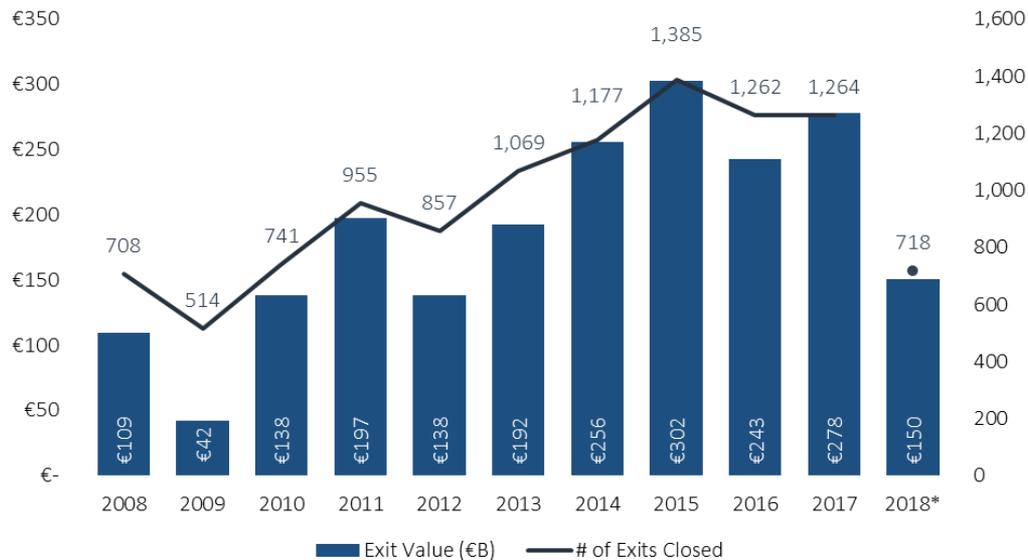
# Europe Private Equity Update – Deployment

- Through 3Q 2018, roughly 2,300 private equity deals have been announced with a total value of €277 billion
  - Deployment through 3Q 2018 was roughly 15% ahead of where it stood at that point in 2017, but, in total, 2017 was a record deployment year on the back of a strong Q4
  - As in the U.S., deals with enterprise values  $\geq$ €500 million represent 57% of volume by value but only 7% by count
  - Unlike the U.S., add-on acquisitions continue to represent about half of deal activity by count
  - Activity in the UK and Ireland continues to represent ~30% of volume (by €) but this includes many portfolio companies with material international operating exposure
  - The chart below presents the annual private equity investment activity in Europe since 2008



# Europe Private Equity Update – Exits

- Through 3Q 2018, more than 700 exits of private equity backed companies have been announced with a total value of €150 billion
  - Exit activity is broadly on pace with where it stood through the 3Q 2017, but a strong Q4 would be required to match the full year pace set in recent years
  - As in 2017, secondary buyouts represent more than half of exit activity (by €). From 2009 to 2015, secondary buyouts represented 38% of all exit volume
  - The ratio of new platform investments to exits has been below 2:1 in Europe which means that PE backed company inventory should be growing at a lower rate than in the U.S.
  - The chart below presents the annual private equity exit activity in Europe since 2008



# General Industry Observations

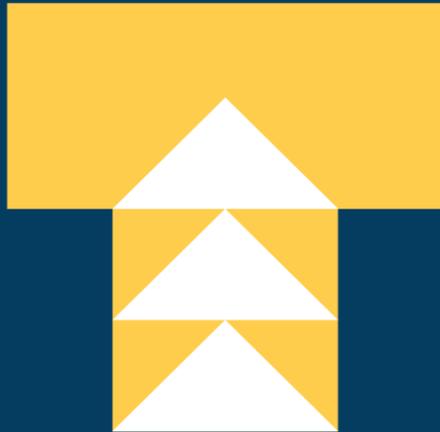
- **Themes from the past few years remain largely unchanged**

- GP stake sale and capital call subscription line usage trends continued to gain momentum in 2018
- In a hot fundraising market, GPs continue to leverage excess LP demand in legal negotiations. While economic terms have not moved materially, we are seeing increasing efforts to unfavorably modify language with respect to fiduciary duties
- With more than a year of evidence since the passage of U.S. corporate tax reform, there does not appear to be any change with respect to how GPs are structuring new buyout transactions. We have also not seen any material adverse impact on deals financed prior to the reform

- **While the trends are unchanged in 2018, we are increasingly seeing signals of late cycle behavior**

- The new “P” word – GPs have always advertised their ability to generate “proprietary” deal flow, but many now openly boast about making “pre-emptive” bids as a way to win transactions in a heavily intermediated and competitive market. In a fully priced world, GPs collectively have settled on a strategy of paying up for quality assets. When done correctly, this strategy has proven to work across cycles, but it’s generally not the case that any approach will hold up with the entire industry is pursuing the same strategy
- In addition to quality, there is a wholesale focus on executing add-on acquisitions as a way to create value and average down purchase price. Again, this is a proven strategy when executed correctly, but poorly executed roll-ups can very quickly result in bad outcomes
- As noted above, we have anecdotally observed increasingly aggressive pro-forma adjustments to reported EBITDA in announced transactions. This has emboldened sellers to bring assets to market early to take advantage of the environment, but more recently, it also appears to have led to an increase in broken sale processes as the market finds its threshold
- Further, in 2018, there was a large wave of highly complex and conflicted cross fund investments (e.g., existing Fund II portfolio company makes a large acquisition which requires an equity investment from Fund III in the combined entity). This may suggest that GPs are struggling to find opportunities that make sense on a stand-alone basis at prevailing market prices
- While the fundraising market has been hot for some time, we would observe that GPs are coming back to market quicker due to an increasing tendency to pursue a 2-3 year deployment pace versus the conventional 3-4 year pace. This is an indication of a hot deal environment, but, as the cycle extends, the trend is reinforced by the GPs’ perverse incentive to deploy the current fund quickly and raise the next before the market turns. It also makes pacing and pipeline management more challenging for LPs
- As the secondary market is growing and maturing rapidly, we are increasingly seeing innovative but complex and conflict riddled transaction proposals. We have been processing mature fund restructuring proposals for some time, but GPs, advisors, and secondary players have become more aggressive over the past few years. More recently, we are seeing proposals to recap more nascent partnerships in ways that start to break down GP:LP alignment. While all of this has a place in a maturing private equity industry, the aggressive pace of innovation may suggest that secondary buyers have more appetite for deals than the current market can satisfy





# OREGON STATE TREASURY

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# **APPENDIX B**

The background of the slide is a close-up photograph of vibrant green leaves on a branch, with some leaves showing signs of being wet with dew. The lighting is bright, creating a fresh and natural feel.

# Oregon Public Employees Retirement Fund

Private Equity Portfolio Review

January 31, 2019

## Executive Summary

### Program Related Commentary:

- ❖ 2018 investment activity consistent with annual plan reviewed at February 2018 OIC meeting
- ❖ Execution focused on continued consolidation of core portfolio and opportunistic additions
- ❖ Scale and creative structuring leveraged to create tangible fee mitigation (reducing gross / net spread)
- ❖ Productive planning session (December 2018) focused on short term execution and longer term strategic focus on generating sustainable alpha at scale
- ❖ Conservative pacing forecast remains oriented around creating the long term foundation for the portfolio: \$3 BN per annum, consistent with last few years
- ❖ Pre-GFC vintage year over-commitment challenge remains
- ❖ Another strong year of distributions
- ❖ Recent vintage performance robust
- ❖ Overall plan and approach remain consistent with last few years of successful execution

### Market Related Commentary:

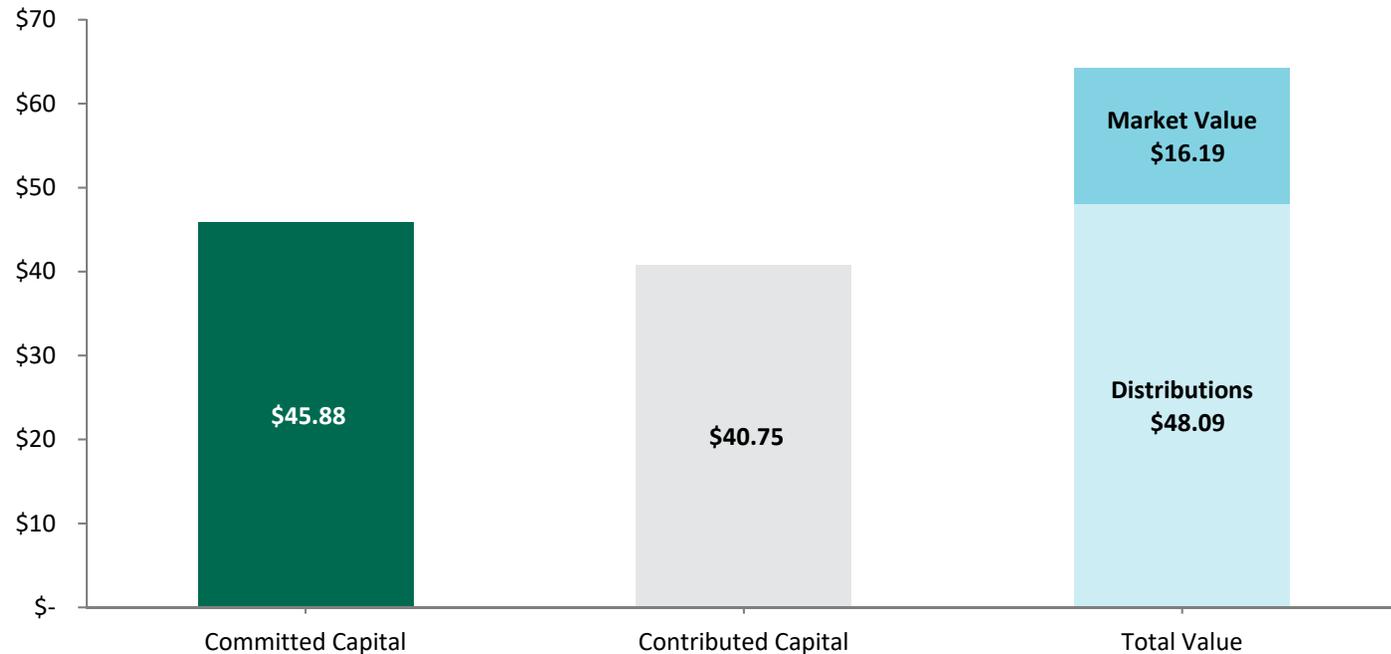
- ❖ Fundraising is robust, deal volume is strong, multiples remain high
- ❖ Add-on acquisitions key component of investment and divestment in high multiple environment
- ❖ Levered loan issuance volumes remain strong, leverage multiples approaching 6x
- ❖ Industry returns remain solid on an absolute basis, with continued mixed results on a relative basis
- ❖ Excess LP demand continues to accumulate for high quality names, fundraising cycles continue to be tight
- ❖ The 3<sup>rd</sup> party market for GP stakes continues to expand down market
- ❖ Subscription lines continue to dilute value of IRR calculations, focus on multiples
- ❖ Government shut down impact unclear on industry
- ❖ Industry wide transparency continues to improve, but standardization and wide spread adoption remain a challenge

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Overview | \$ Billions

*As of June 30, 2018*

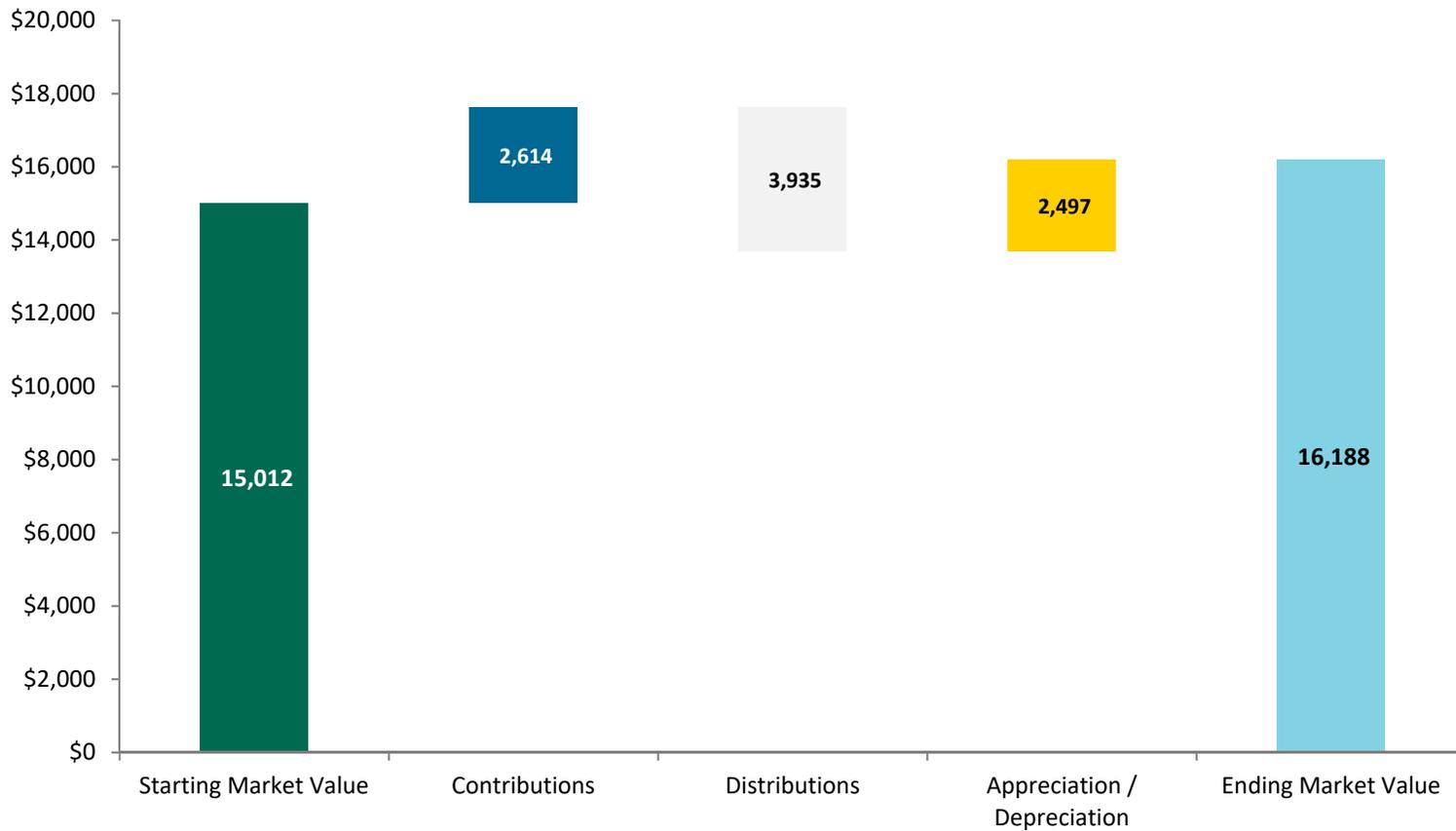
- ❖ Since inception (1981) OPERF has committed \$45.88 billion to 340 investments.
- ❖ The current market value of the portfolio is \$16.19 billion.
- ❖ OPERF has received \$48.09 billion of distributions or 118% of its contributed capital.
- ❖ The private equity portfolio has generated a since inception net IRR of 15.5% and a 1.67x total value multiple.
- ❖ There are currently 101 active managers overseeing 262 active funds holding 2,181 underlying portfolio companies.
- ❖ As of June 30, 2018 the private equity allocation relative to the total plan was 21.8% vs. a target of 17.5%(+/- 4%)



# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Value Bridge | 2018 Activity, \$ Millions

Period: June 30, 2017 - June 30, 2018



## Portfolio Overview | \$ Millions

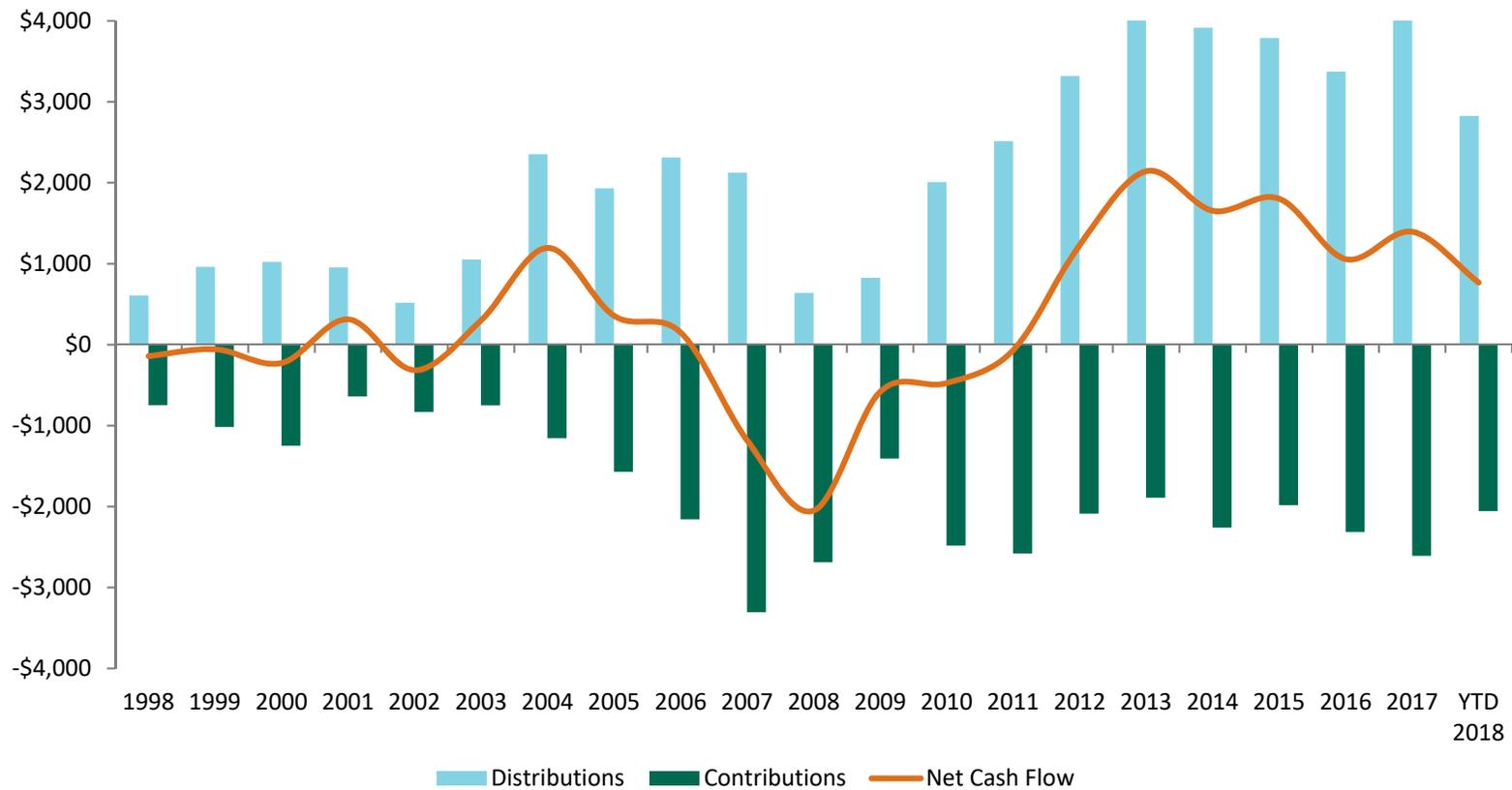
As of June 30, 2018

	As of June 30, 2017	As of June 30, 2018	Annual Change
No. of Active Funds	259	262	1.16%
No. of Active General Partners	100	101	1.00%
Total Commitments	\$43,285	\$44,518	2.85%
Net Contributions	\$33,097	\$35,357	6.83%
Total Unfunded	\$10,478	\$10,812	3.19%
Net Distributions	\$39,111	\$42,692	9.16%
Recallable Capital	\$5,043	\$5,397	7.02%
<b>Market Value</b>	<b>\$15,012</b>	<b>\$16,188</b>	<b>7.83%</b>
Total Value	\$54,123	\$58,880	8.79%
Total Exposure	\$25,490	\$27,000	5.92%
<b>Net Gain/Loss</b>	<b>\$21,027</b>	<b>\$23,523</b>	<b>11.87%</b>
Total Value Multiple (TVM)	1.64x	1.67x	0.03x
Distributions to Paid-in Capital (DPI)	1.18x	1.21x	0.03x
<b>Net IRR</b>	<b>15.4%</b>	<b>15.5%</b>	<b>0.2%</b>

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Cash Flow | Annual Contributions, Distributions & Net Cash Flow, \$ Millions

*Estimated as of September 30, 2018*

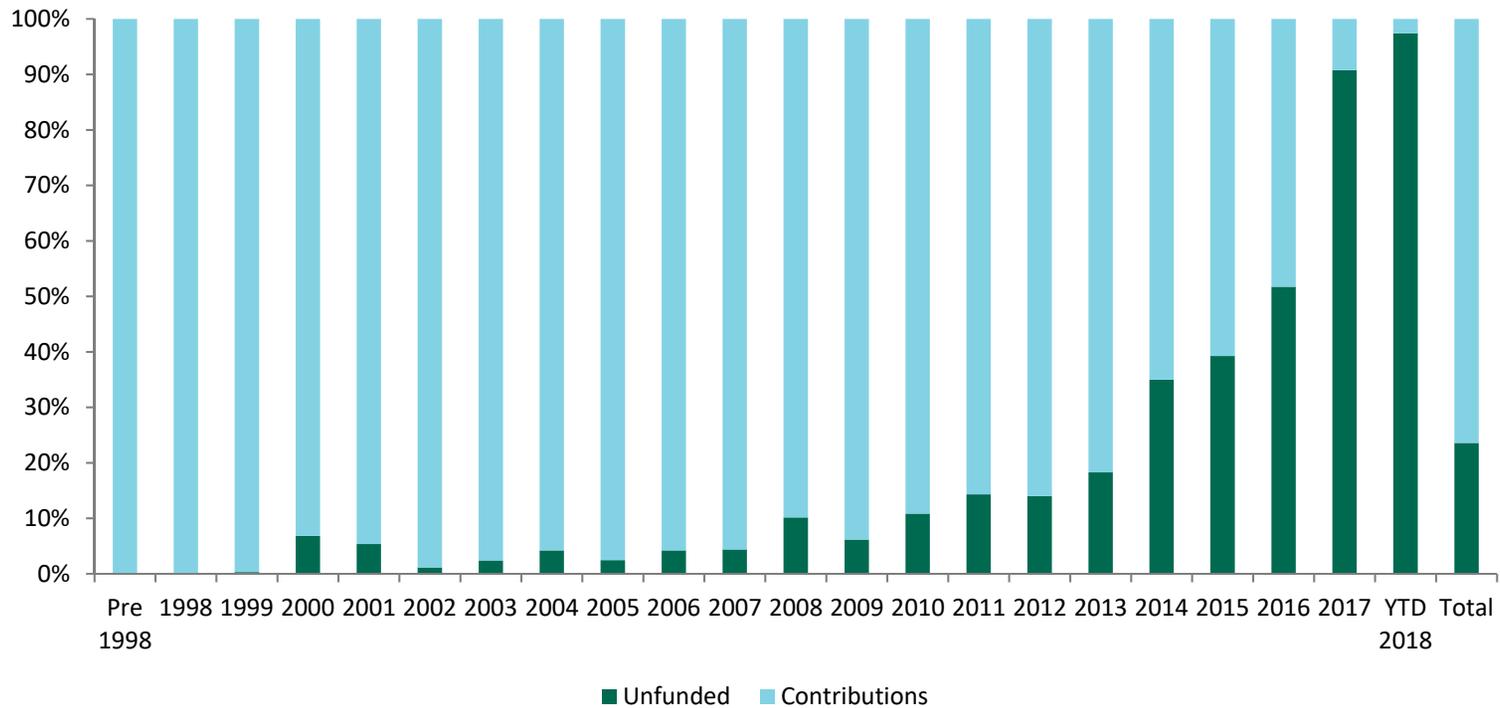


# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Unfunded Commitments By Vintage | % Basis

As of June 30, 2018

- ❖ The total unfunded balance of \$10.8 billion represents 24% of total commitments
- ❖ Vintages 2009 and prior contain \$1.01 billion in unfunded commitments, approximately 9% of the total
- ❖ Vintages 2014-2018 contain 81% of the unfunded total balance

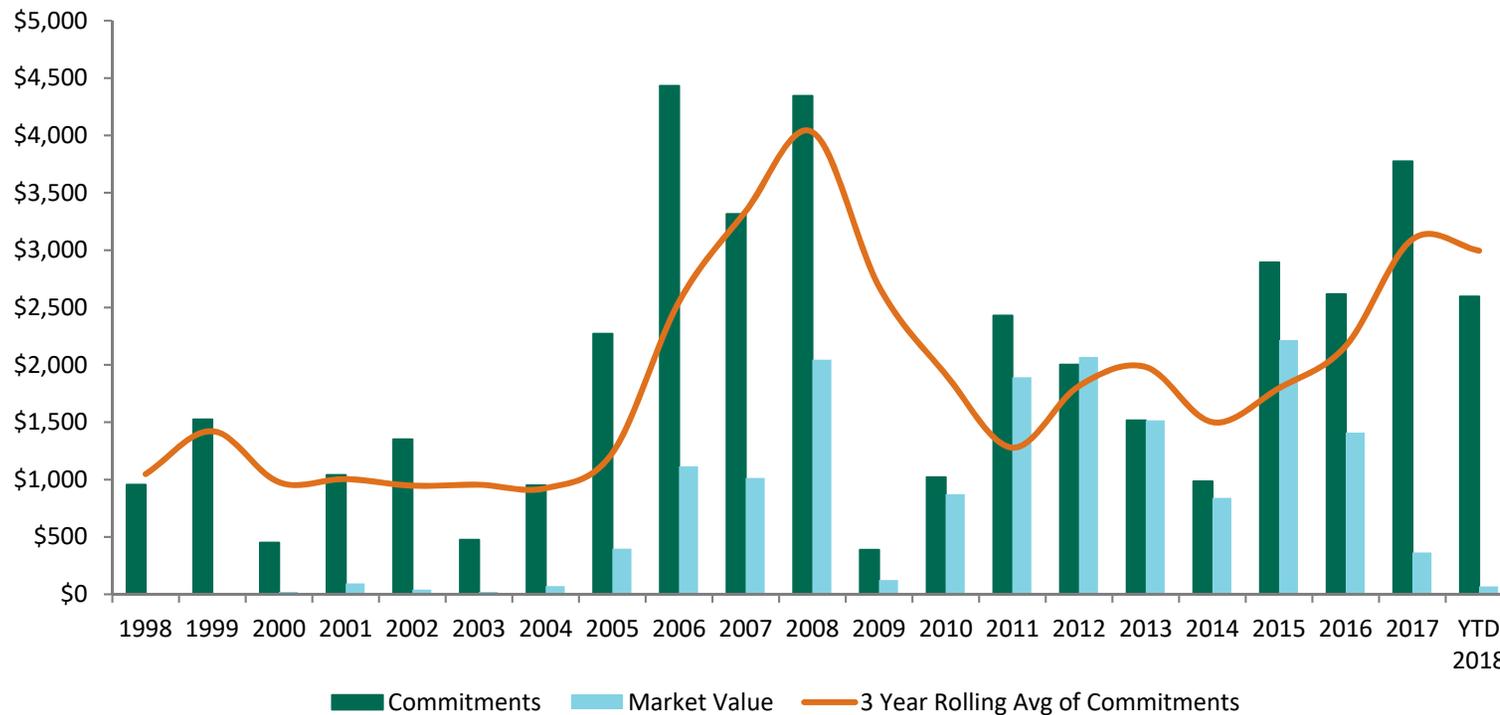


# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Commitments & Market Value | By Vintage Year, \$ Millions

As of June 30, 2018

- ❖ Approximately 30% of current market value is held in vintage years 2008 and earlier, with 84% of that balance concentrated in 3 vintages: 2006, 2007, 2008
- ❖ This dynamic remains a drag on the portfolio



Note: commitments are classified by vintage year defined as date of first cash flow, or date management fees begin to accrue not the fund closing date

## Performance | Portfolio Level Analysis

Public Market Equivalent Analysis	3 YEAR	5 YEAR	10 YEAR	20 YEAR	INCEPTION
<i>As of June 30, 2018</i>					
<b>OPERF IRR</b>	10.9%	13.0%	9.9%	10.4%	15.5%
<b>PME (Russell 3000 +300 bps)<sup>1</sup></b>	14.3%	17.0%	13.9%	10.2%	15.4%
<b>Difference</b>	-3.4%	-4.0%	-4.0%	0.2%	0.1%
<b>Private Market Relative Performance Analysis</b>					
<i>As of June 30, 2018</i>					
<b>OPERF IRR</b>	10.9%	13.0%	9.9%	10.4%	15.5%
<b>Cambridge Associates<sup>2</sup></b>	11.3%	13.4%	9.6%	12.4%	13.3%
<b>Difference</b>	-0.4%	-0.4%	0.3%	-2.0%	2.2%

<sup>1</sup> Data is a dollar-weighted Long-Nickels calculation of monthly changes in the Russell 3000 index plus 300 basis points. Russell Investment Group is the source and owner of the trademarks, service marks and copyrights related to the Russell Indexes. Russell is a trademark of Russell Investment Group.

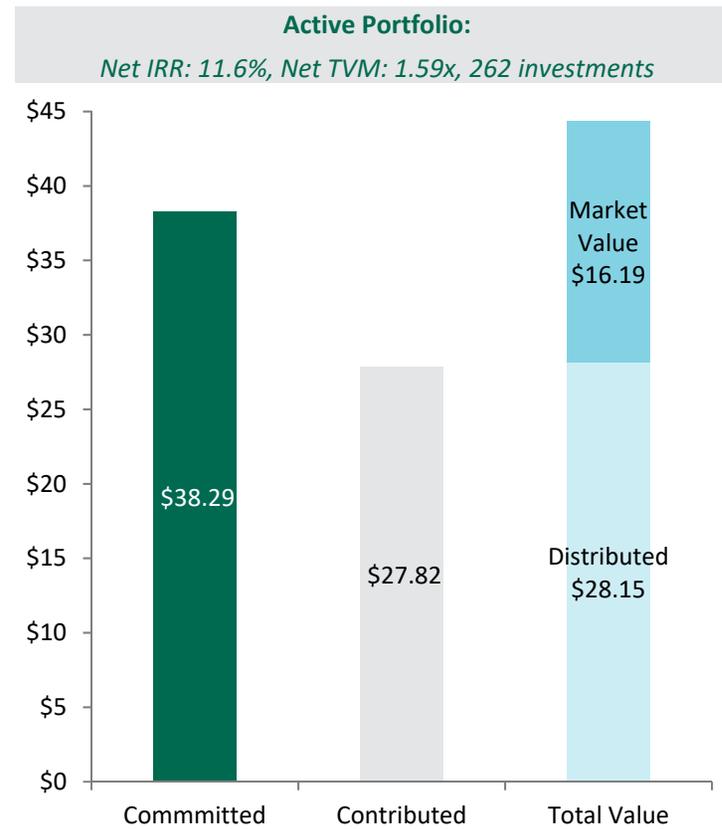
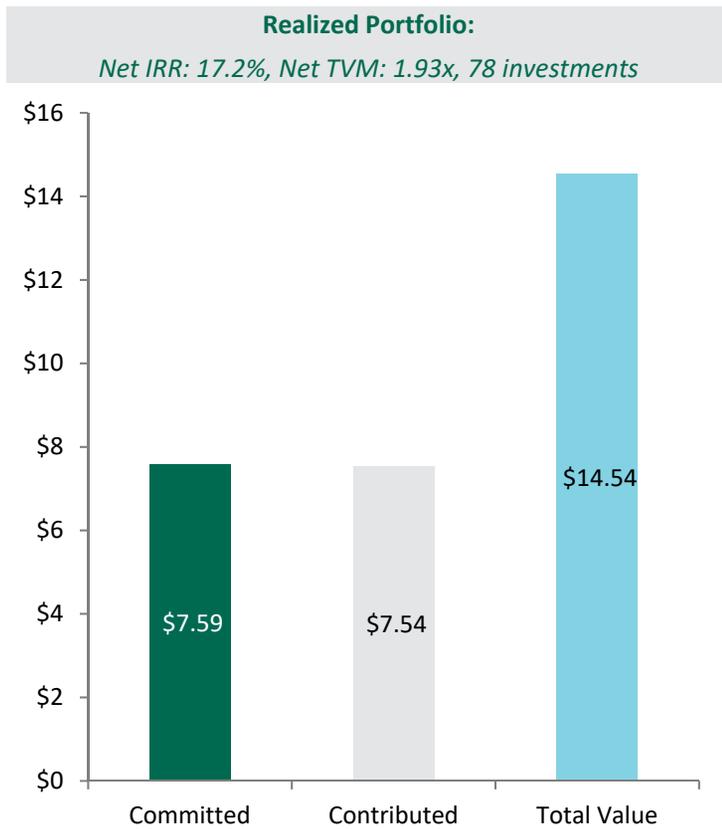
<sup>2</sup> Cambridge Associates Pooled IRR: Private Equity Funds (excluding Timber, Infrastructure and Real Estate) with a geographic focus in Asia/Pacific, Canada, Europe, Global, and United States as of June 30, 2017.

Figures may not foot due to rounding.

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Overview | \$ Billions

As of June 30, 2018



# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

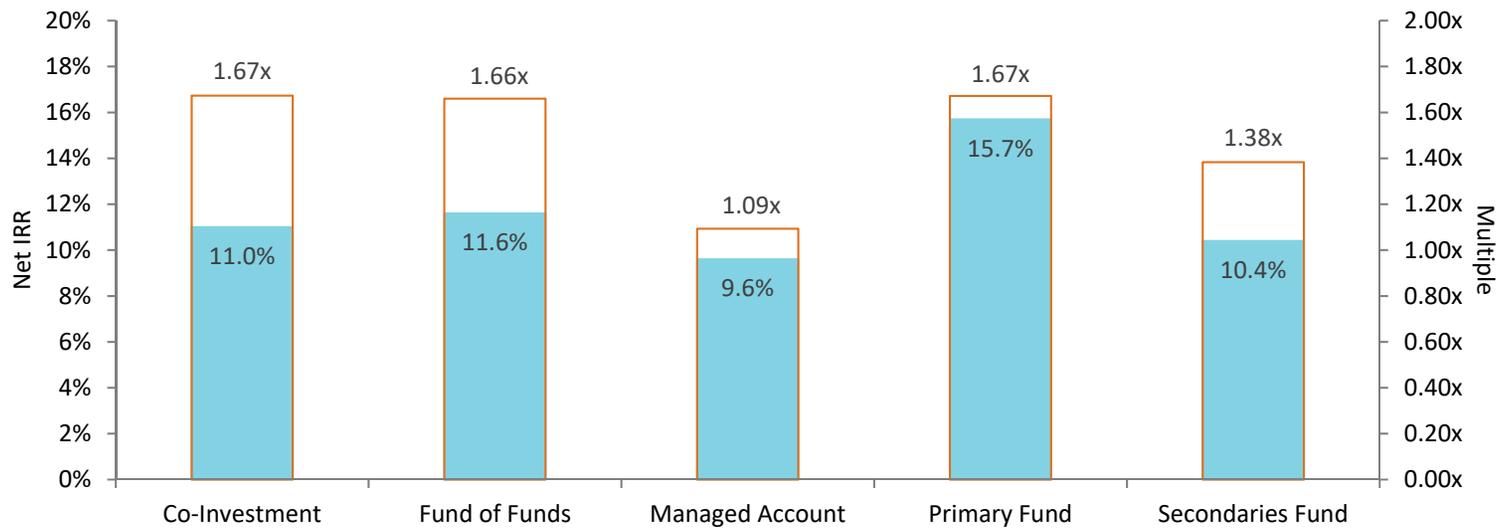
## Performance | Vintage Years 2015 and Prior

As of June 30, 2018

Vintage Year	Count	Commitment	IRR 3 Year	IRR 5 Year	IRR 10 Year	IRR 20 Year	IRR ITD	IRR Quartile	IRR Median	TVPI	TVPI Quartile	TVPI Median
1998	10	955,000,000	-10.60%	7.20%	-1.40%	7.60%	7.50%	3	7.82%	1.39	3	1.40x
1999	14	1,524,320,840	-6.40%	5.20%	6.20%		14.20%	1	2.05%	1.87	1	1.12x
2000	8	450,000,000	-17.90%	-11.30%	3.90%		11.10%	2	4.34%	1.73	2	1.30x
2001	9	1,040,000,000	1.10%	8.10%	5.20%		19.60%	2	10.58%	1.88	2	1.65x
2002	6	1,350,000,000	3.70%	13.80%	7.60%		18.00%	2	11.66%	2.02	1	1.64x
2003	3	475,000,000	-5.10%	13.80%	10.10%		14.60%	2	10.42%	2.08	1	1.58x
2004	14	949,830,016	-1.40%	16.10%	11.90%		17.20%	1	7.79%	2.00	1	1.51x
2005	16	2,270,547,999	5.70%	10.80%	7.50%		7.00%	3	7.05%	1.52	2	1.46x
2006	29	4,432,500,001	4.10%	8.60%	7.60%		7.10%	3	7.48%	1.51	2	1.48x
2007	22	3,314,398,846	8.90%	11.50%	10.10%		9.30%	2	9.19%	1.58	2	1.54x
2008	23	4,344,226,360	7.30%	13.10%	12.50%		12.30%	2	10.03%	1.65	2	1.55x
2009	6	387,000,640	1.10%	3.80%			6.90%	4	13.22%	1.32	4	1.68x
2010	10	1,020,000,000	11.60%	14.20%			13.30%	2	12.70%	1.76	2	1.57x
2011	24	2,428,500,000	11.20%	13.80%			13.20%	3	13.61%	1.59	2	1.56x
2012	14	2,001,202,457	22.10%	21.40%			20.50%	1	12.56%	1.75	2	1.44x
2013	14	1,515,045,380	17.40%	16.70%			16.60%	2	13.37%	1.50	2	1.38x
2014	10	984,000,000	20.50%				18.70%	2	14.12%	1.47	2	1.32x
2015	19	2,892,790,000	20.20%				19.30%	2	14.06%	1.30	2	1.23x

## Performance | Investment Structure

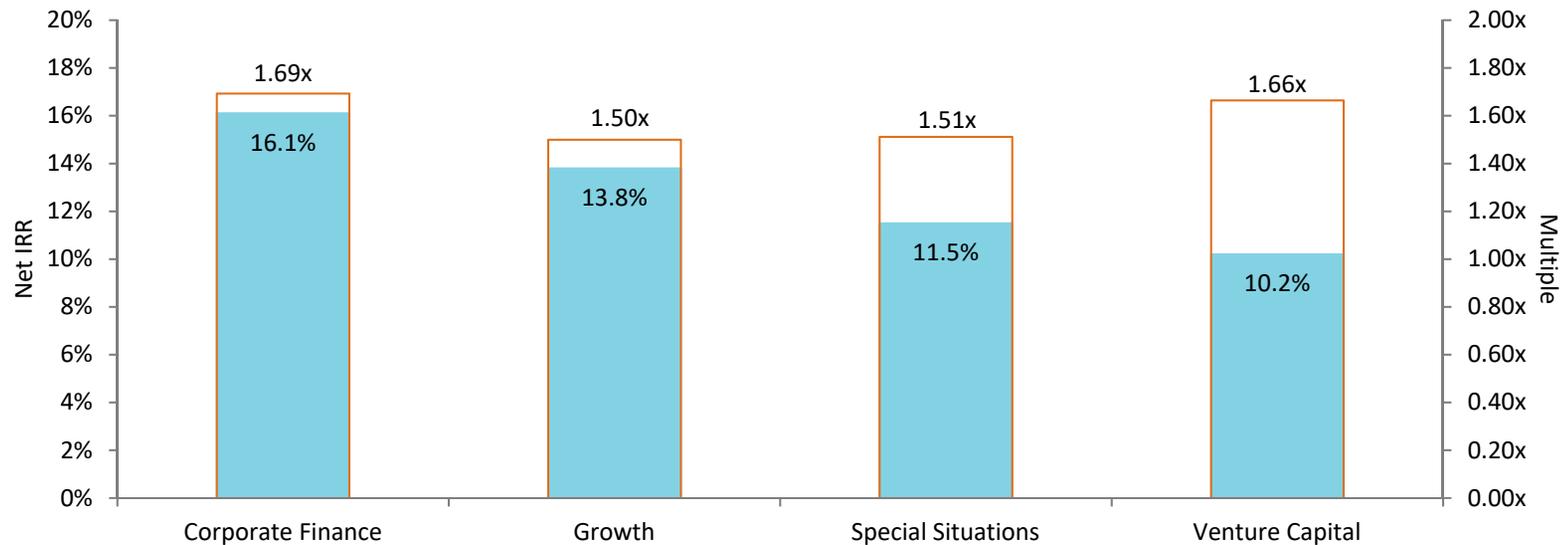
As of June 30, 2018



	Market Value %	Unfunded %	Exposure %	IRR 3 Year	IRR 5 Year	IRR 10 Year	IRR ITD	TVPI ITD
<b>Co-Investment</b>	3.9%	1.2%	2.8%	15.1%	16.3%	11.1%	11.0%	1.67x
<b>Fund of Funds</b>	8.4%	1.7%	5.7%	10.7%	15.1%	10.4%	11.6%	1.66x
<b>Managed Account</b>	1.0%	0.9%	1.0%	9.6%	9.6%	9.6%	9.6%	1.09x
<b>Primary Fund</b>	85.8%	95.0%	89.5%	10.8%	12.6%	9.8%	15.7%	1.67x
<b>Secondaries Fund</b>	0.9%	1.1%	1.0%	3.9%	9.4%	8.5%	10.4%	1.38x
	100.0%	100.0%	100.0%	10.9%	13.0%	9.9%	15.5%	1.67x

## Performance | Investment Strategy

As of June 30, 2018

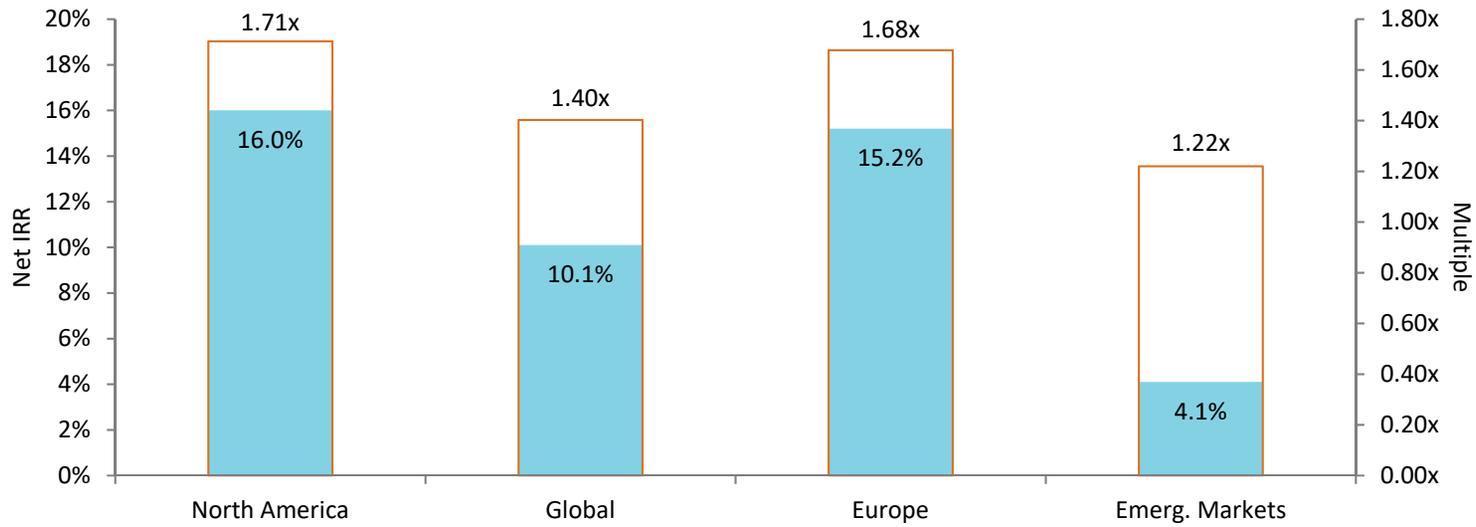


	Target %	Market Value %	Unfunded %	Exposure %	IRR 3 Year	IRR 5 Year	IRR 10 Year	IRR ITD	TVPI ITD
<b>Corporate Finance</b>	60-85%	75.3%	81.0%	77.6%	12.0%	13.5%	9.7%	16.1%	1.69x
<b>Growth</b>	5-10%	5.4%	6.3%	5.8%	19.4%	20.1%	16.5%	13.8%	1.50x
<b>Special Situations</b>	5-15%	8.9%	11.0%	9.8%	5.4%	7.1%	9.7%	11.5%	1.51x
<b>Venture Capital</b>	0-5%	10.4%	1.7%	6.9%	6.9%	14.0%	10.9%	10.2%	1.66x
<b>Total</b>		100.0%	100.0%	100.0%	10.9%	13.0%	9.9%	15.5%	1.67x

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Performance | Investment Geography

As of June 30, 2018

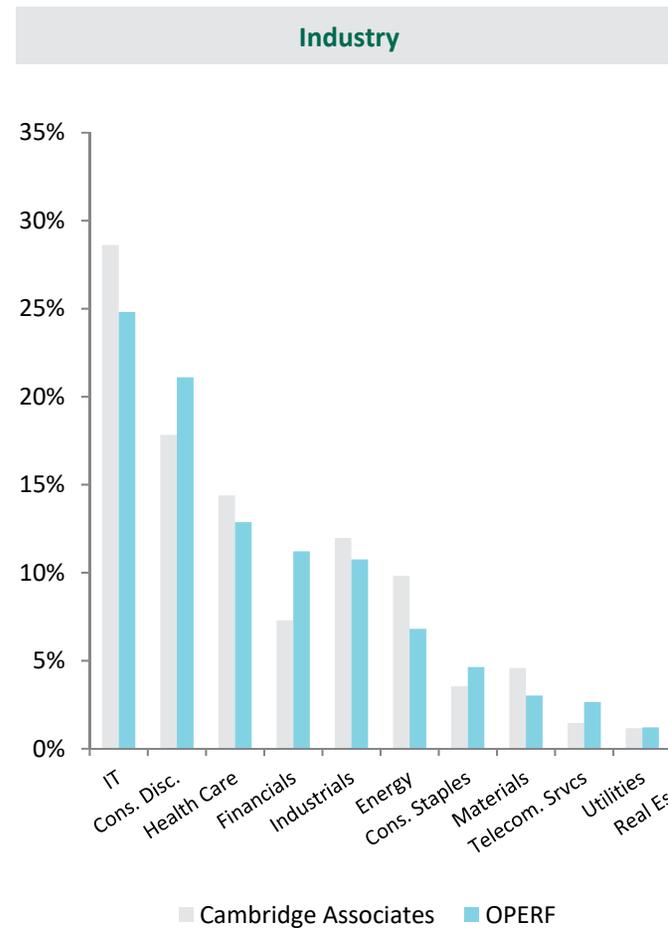
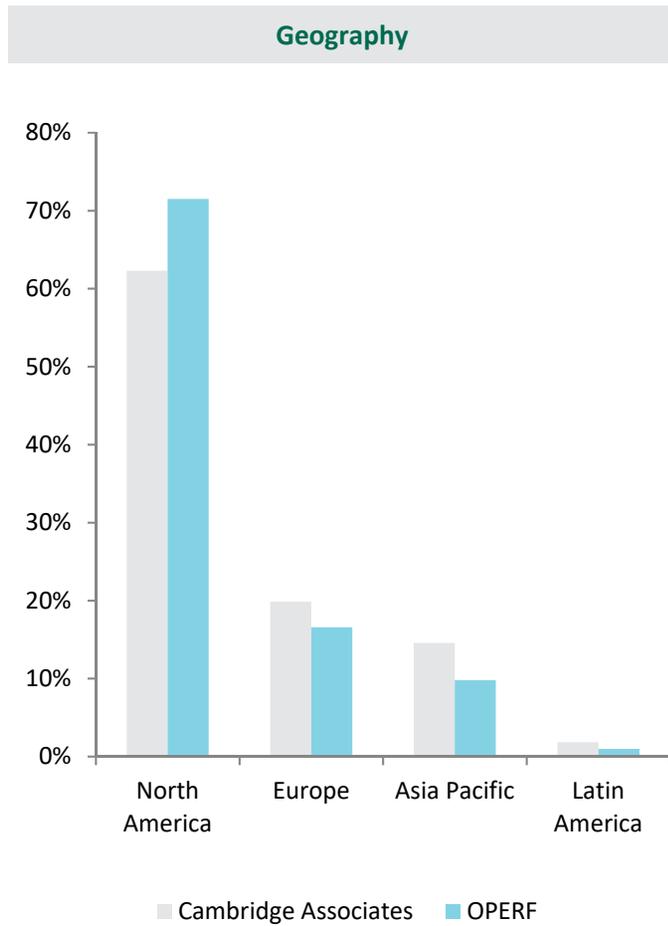


	Target %	Market Value %	Unfunded %	Exposure %	IRR 3 Year	IRR 5 Year	IRR 10 Year	IRR ITD	TVPI ITD
<b>North America</b>	60-80%	73.5%	62.0%	68.9%	10.5%	13.2%	10.6%	16.0%	1.71x
<b>International</b>	20-40%	26.5%	38.0%	31.1%					
<b>Global</b>		11.5%	14.4%	12.7%	10.7%	12.8%	9.4%	10.1%	1.40x
<b>Europe</b>		8.4%	16.3%	11.5%	15.4%	12.8%	6.7%	15.2%	1.68x
<b>Emerg. Mkts.</b>		6.6%	7.4%	6.9%	10.5%	9.6%	7.4%	4.1%	1.22x
					12.4%	12.2%	7.5%	15.5%	1.51x

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Exposure | By Market Value

As of June 30, 2018



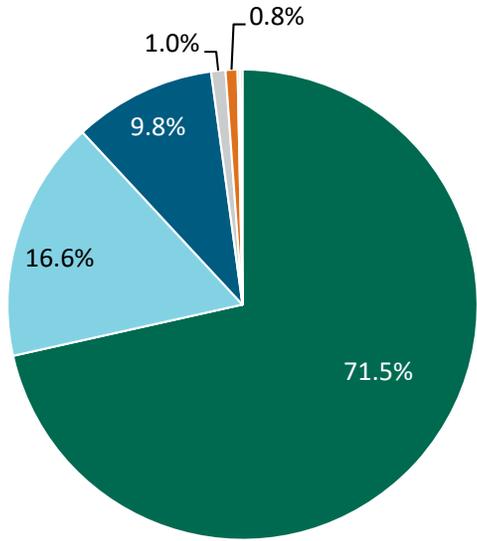
Note: Portfolio exposure is based on fair market value. Benchmark used is Cambridge Associates all private equity data for all vintage years.

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Company Exposure | By Market Value

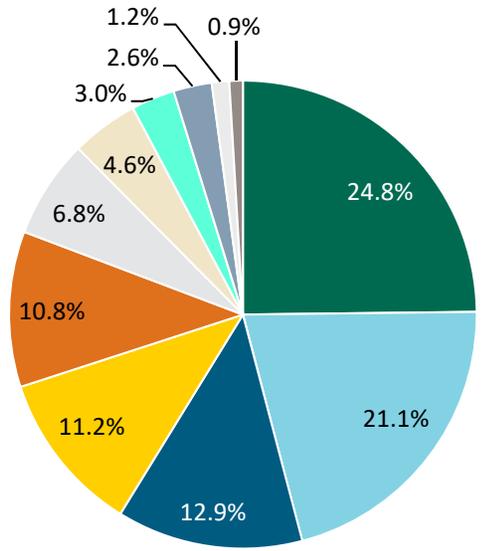
As of June 30, 2018

**Geography<sup>1</sup>**



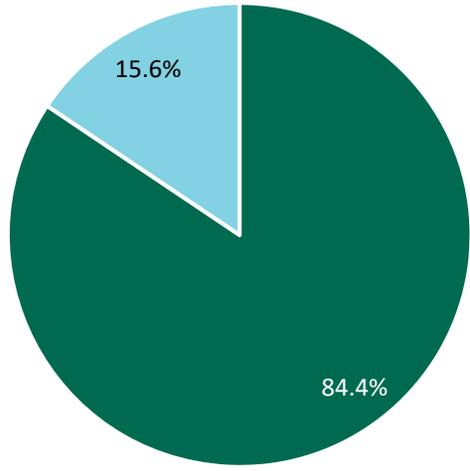
- North America
- Asia Pacific
- Middle East
- Global
- Europe
- Latin America
- Africa

**Industry<sup>1</sup>**



- IT
- Health Care
- Industrials
- Consumer Staples
- Telecom. Svcs.
- Real Estate
- Cons. Disc.
- Financials
- Energy
- Materials
- Utilities

**Public Market Exposure**



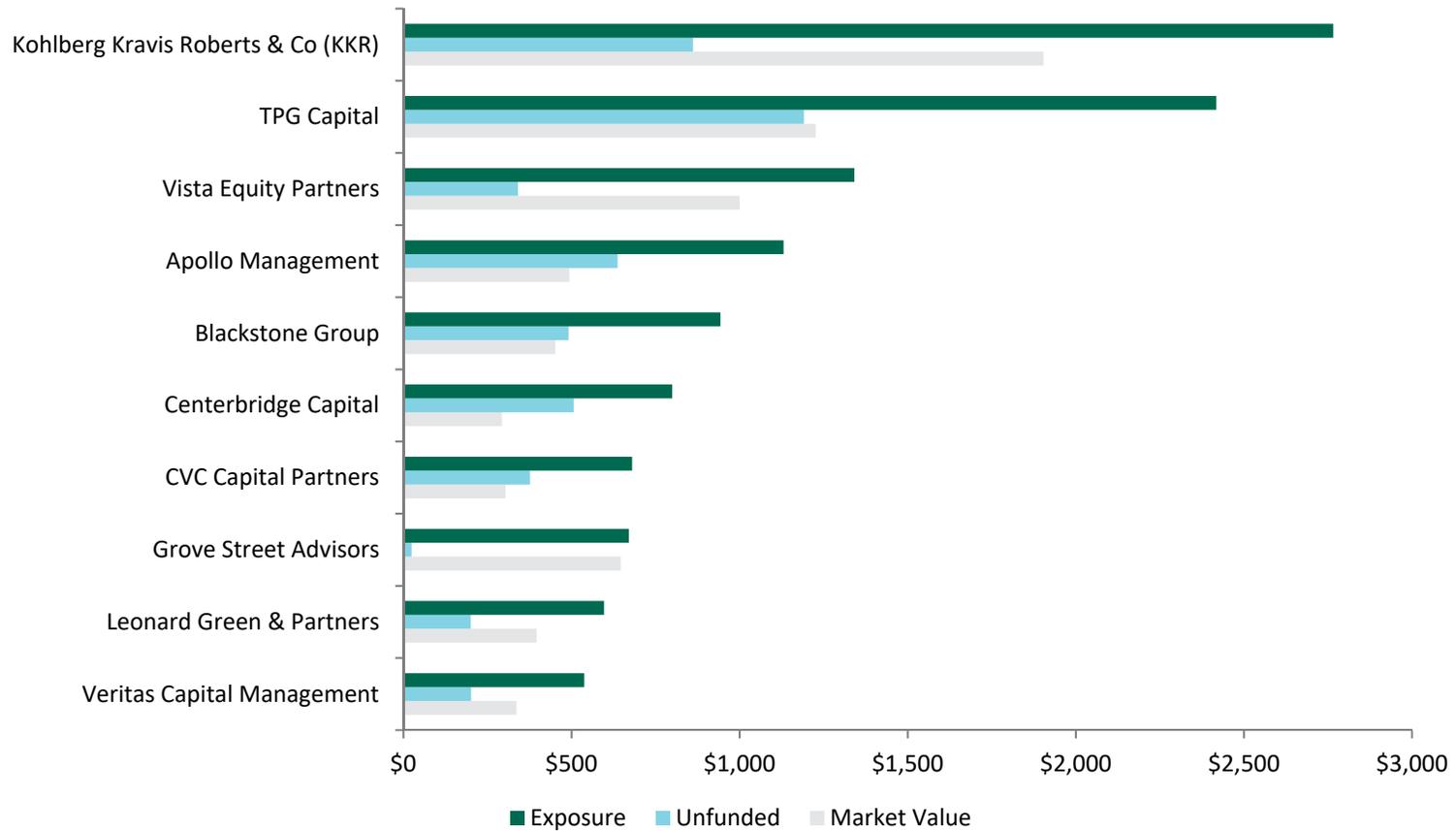
- Private
- Public

<sup>7</sup> It should be noted that the above allocation break-downs do not include investments for which the general partner provides a fair market value but withholds information on other details regarding the underlying investments.

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Top Ten Relationships Portfolio | Exposure, Market Value & Unfunded

As of June 30, 2018

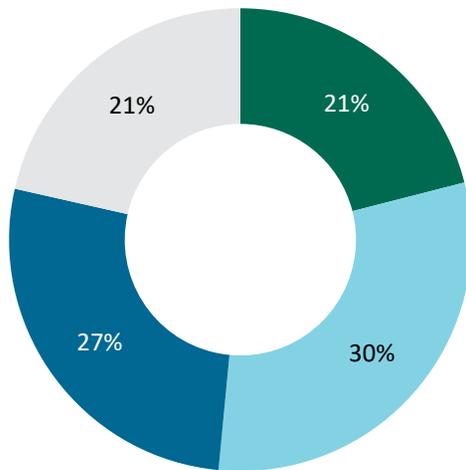


# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Fund Level Quartile Rankings | All Private Equity Benchmark, Based on Number of Funds

As of June 30, 2018

### Inception – 2015

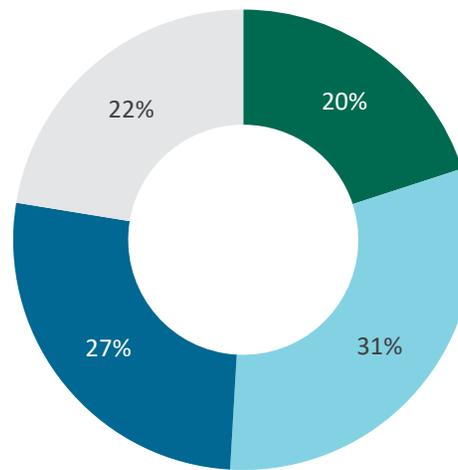


■ 1st ■ 2nd ■ 3rd ■ 4th

OPERF Pooled IRR by Quartile

Quartile	Net IRR
1st	21.4%
2nd	14.4%
3rd	10.2%
4th	-0.2%

### 2005 – 2015

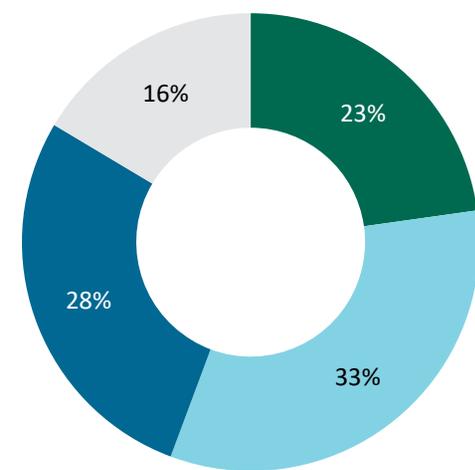


■ 1st ■ 2nd ■ 3rd ■ 4th

OPERF Pooled IRR by Quartile

Quartile	Net IRR
1st	18.0%
2nd	13.7%
3rd	8.5%
4th	0.8%

### 2010 – 2015



■ 1st ■ 2nd ■ 3rd ■ 4th

OPERF Pooled IRR by Quartile

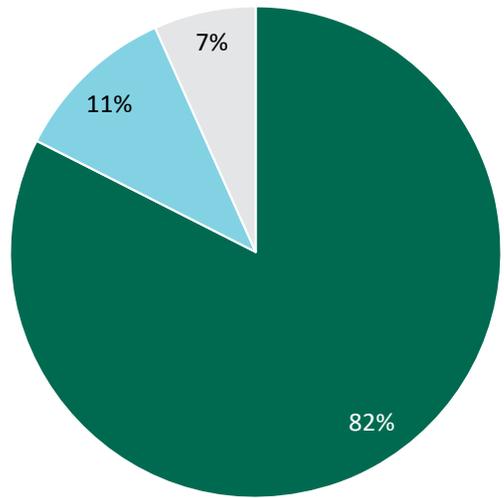
Quartile	Net IRR
1st	28.1%
2nd	17.9%
3rd	12.7%
4th	6.9%

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Portfolio Company Valuation Review

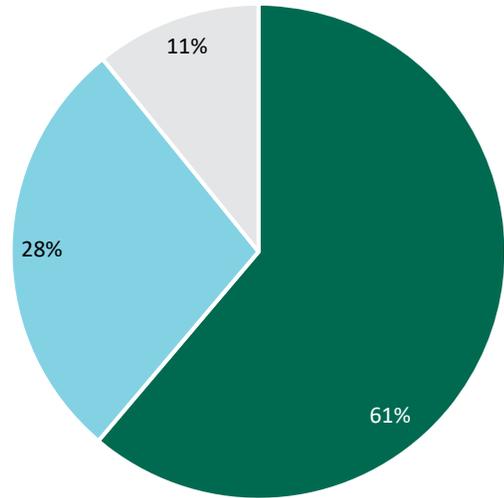
*As of June 30, 2018*

**Market Value**



■ Above Cost   ■ Below Cost   ■ At Cost

**Number of Companies**

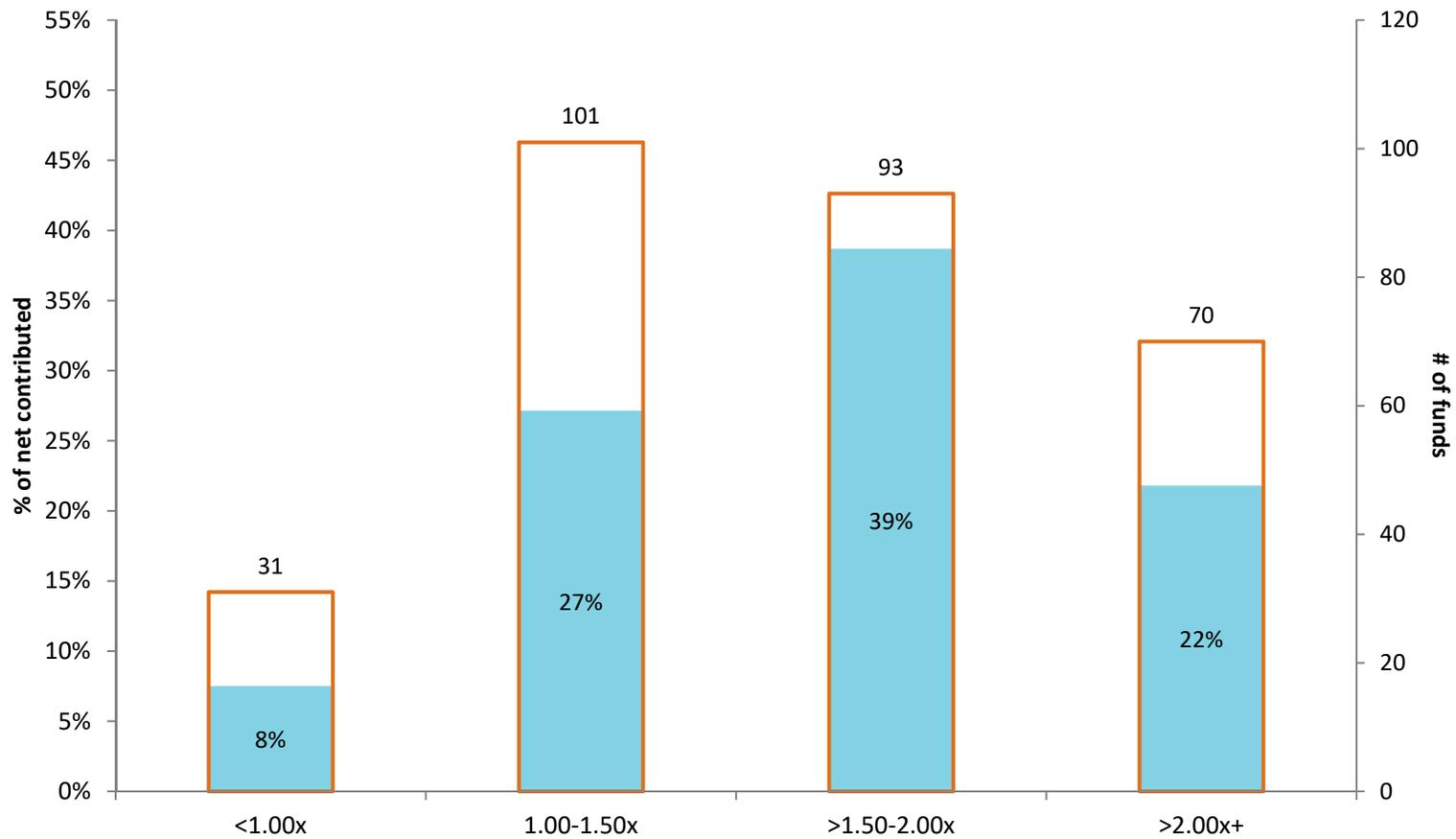


■ Above Cost   ■ Below Cost   ■ At Cost

# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Total Value to Paid In Capital Multiple Analysis | Fund Level, Based on Number of Funds, VY 2015 and earlier

As of June 30, 2018



## 2018 Year in Review

- ❖ Overall activity for the year was in line with the planned target of authorizations in the range of \$2.5 - \$3.5 billion: calendar year 2018 authorized commitments totaled \$2.98 billion.
- ❖ Of the 2018 authorizations, two relationships were new to OPERF. These both included meaningful fee mitigation structures.
- ❖ Strategic co-investment program implemented with 3<sup>rd</sup> party to drive additional capital deployment at attractive economics, leveraging core relationships.
- ❖ Portfolio rationalization continues and is a key factor in planning and underwriting with a general target of 50 GP relationships. This formal process is nearing its completion, but will remain an ongoing exercise with each underwriting.
- ❖ Forward looking pacing remains oriented around creating the long term, sustainable, foundation for the portfolio that will deliver on expectations.
- ❖ Productive planning session (Dec. 18) focused on 2019 investment plan and longer term strategic focus on generating sustainable alpha at scale.
- ❖ The fundraising environment continued to be competitive for quality allocations, cycles shortened, and limited partner bargaining power remained constrained. Windows of opportunity continue to be exploited where possible.
- ❖ The Program continued to sustain its robust net cash flow profile.
- ❖ The Program's relative performance continued to lag the public market benchmark over the last decade.
- ❖ Inception to date performance relative to both benchmarks remains attractive.

## 2018 Calendar Year Authorized Commitments: \$2.98 billion

### Buyouts

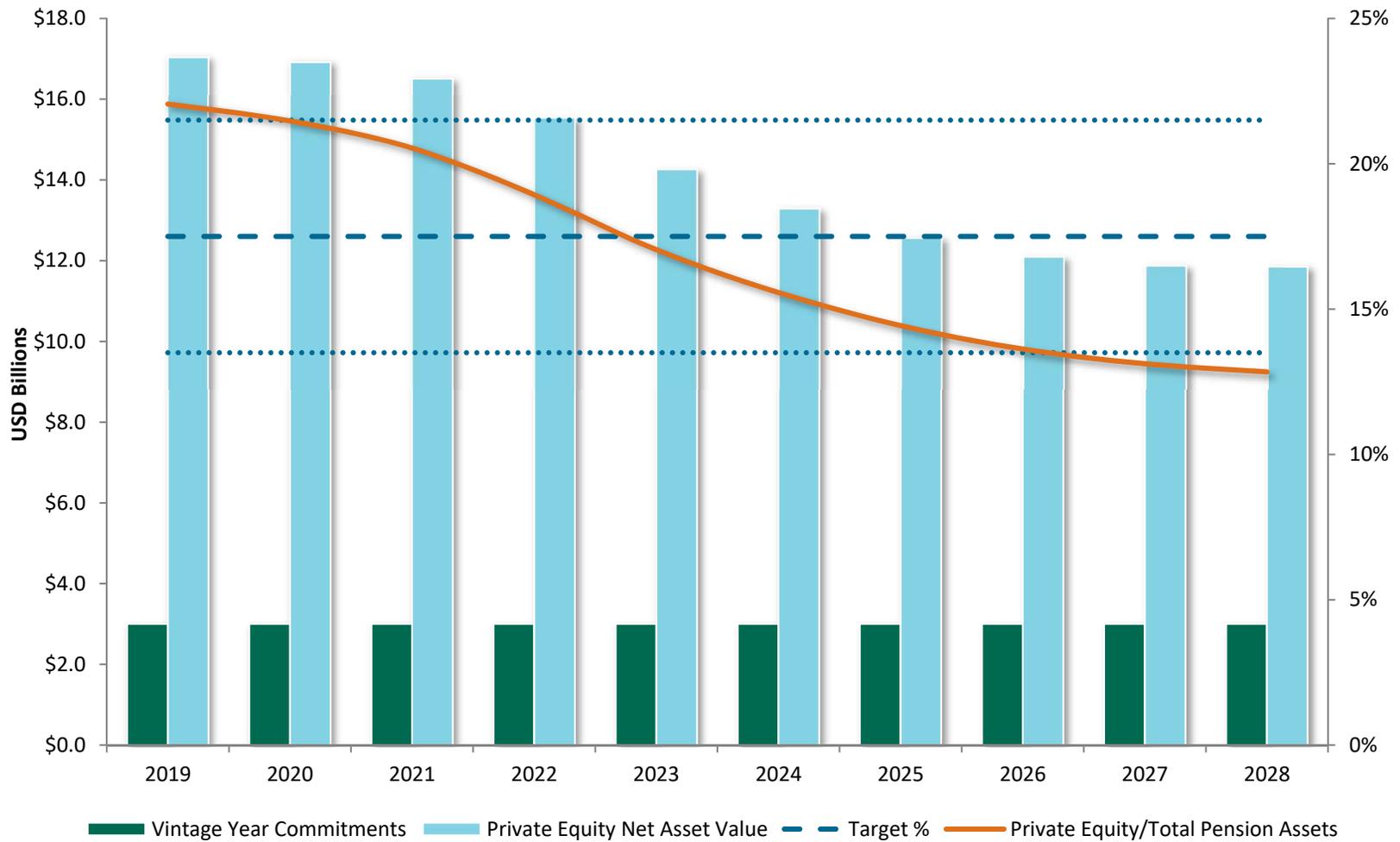
- A&M Capital Europe
- A&M Capital Partners II
- Bridgepoint Europe VI
- Hellman & Friedman Capital Partners IX
- KSL Capital Partners V
- Pathway Private Equity C - III
- TPG Partners VIII, Healthcare Partners
- Vista Equity Partners VII

### Growth / VC

- General Atlantic
- GGV Capital VII, VII Plus, Discovery
- USV 2019, Opportunity
- ClearVue III

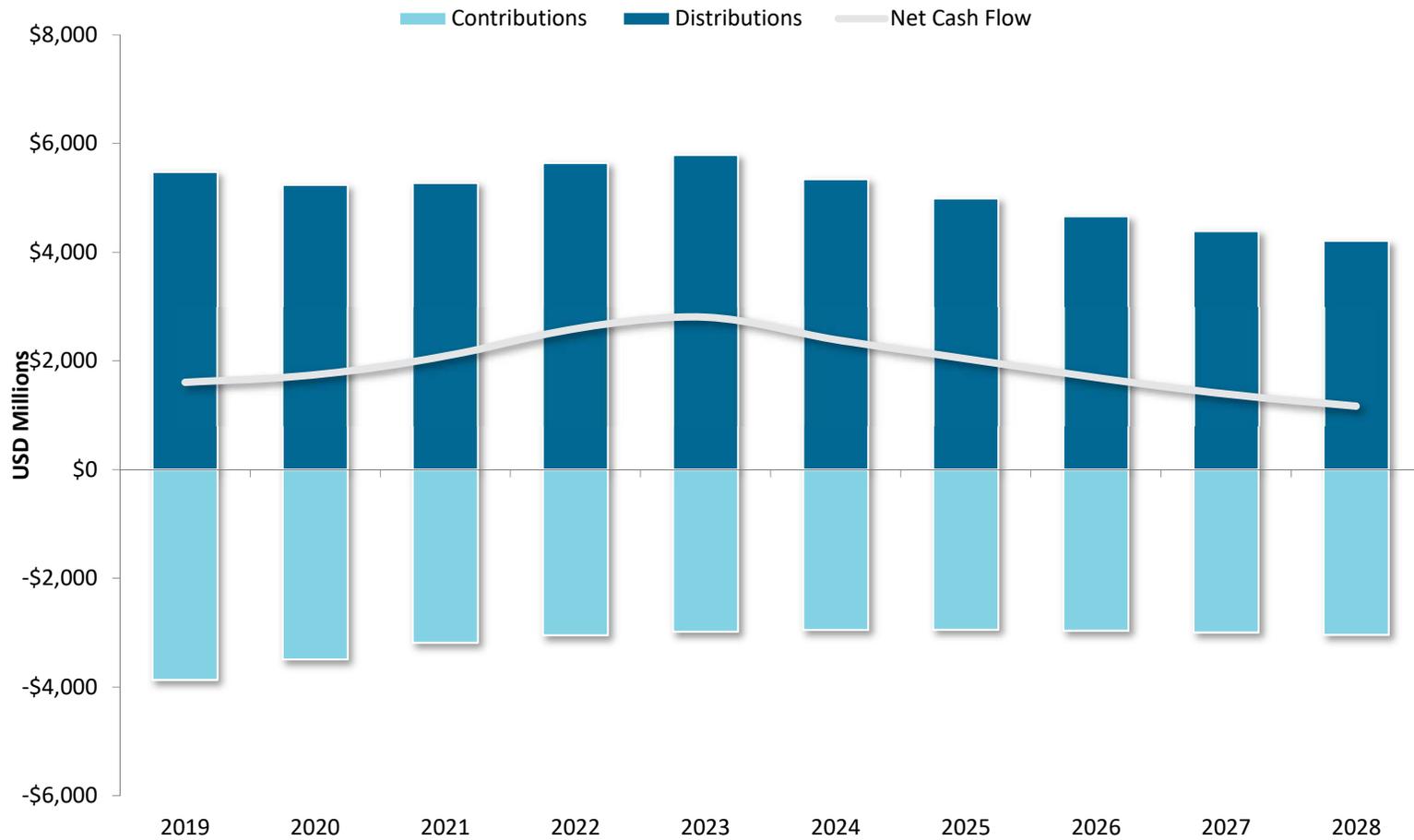
# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Vintage Year Commitment Pacing | Recommendation: \$2.5 - \$3.5 BN per annum



# OPERF PRIVATE EQUITY PORTFOLIO REVIEW

## Forecasted Cash Flows | *Robust Positive Net Cash Flow Profile Sustained*





**TORREYCOVE**  
CAPITAL PARTNERS



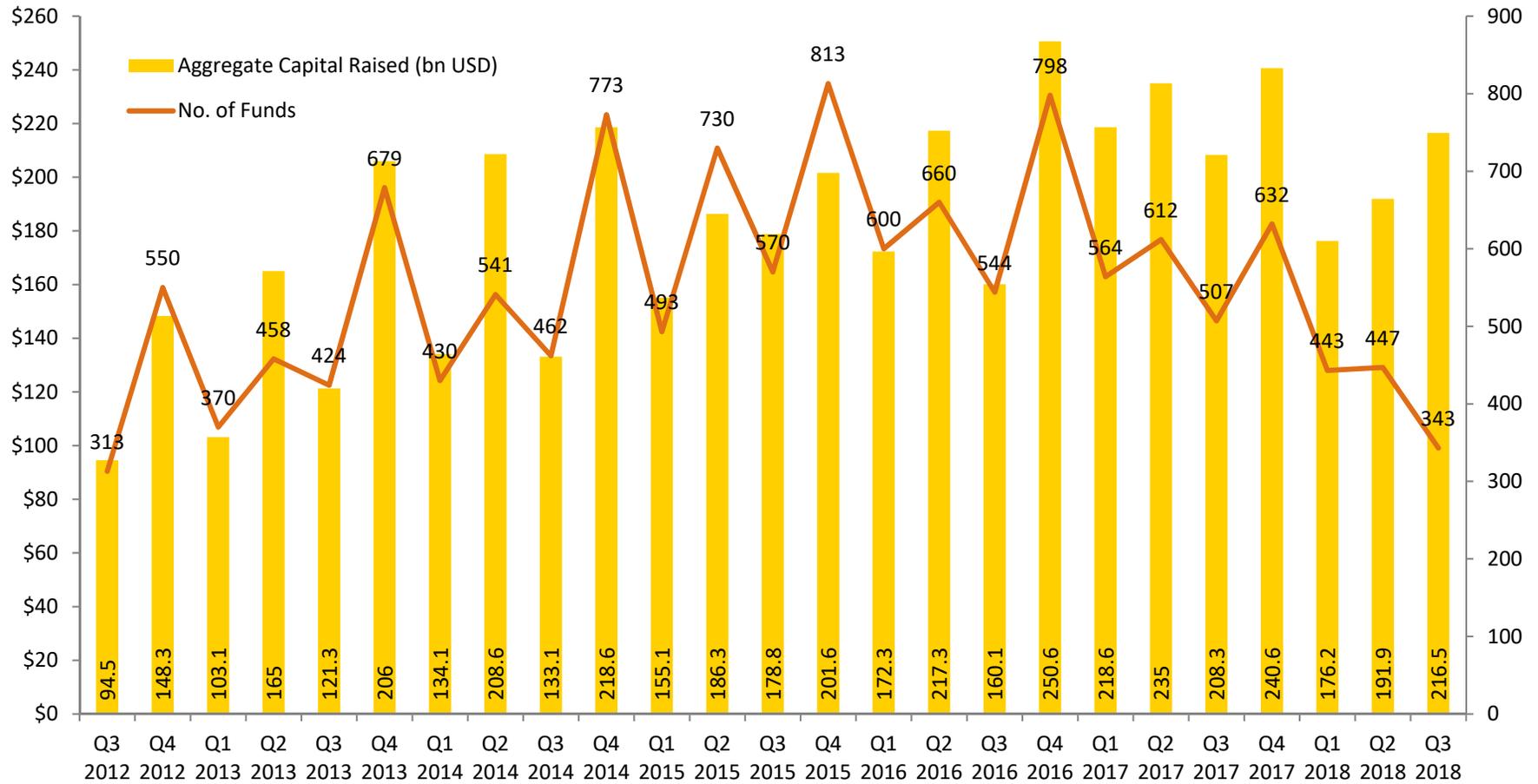
## Appendix

**Market Overview**

# TRENDS IN LIMITED PARTNER DEMAND

AS OF SEPTEMBER 30, 2018

## Global Fundraising by Quarter (\$ Billion)

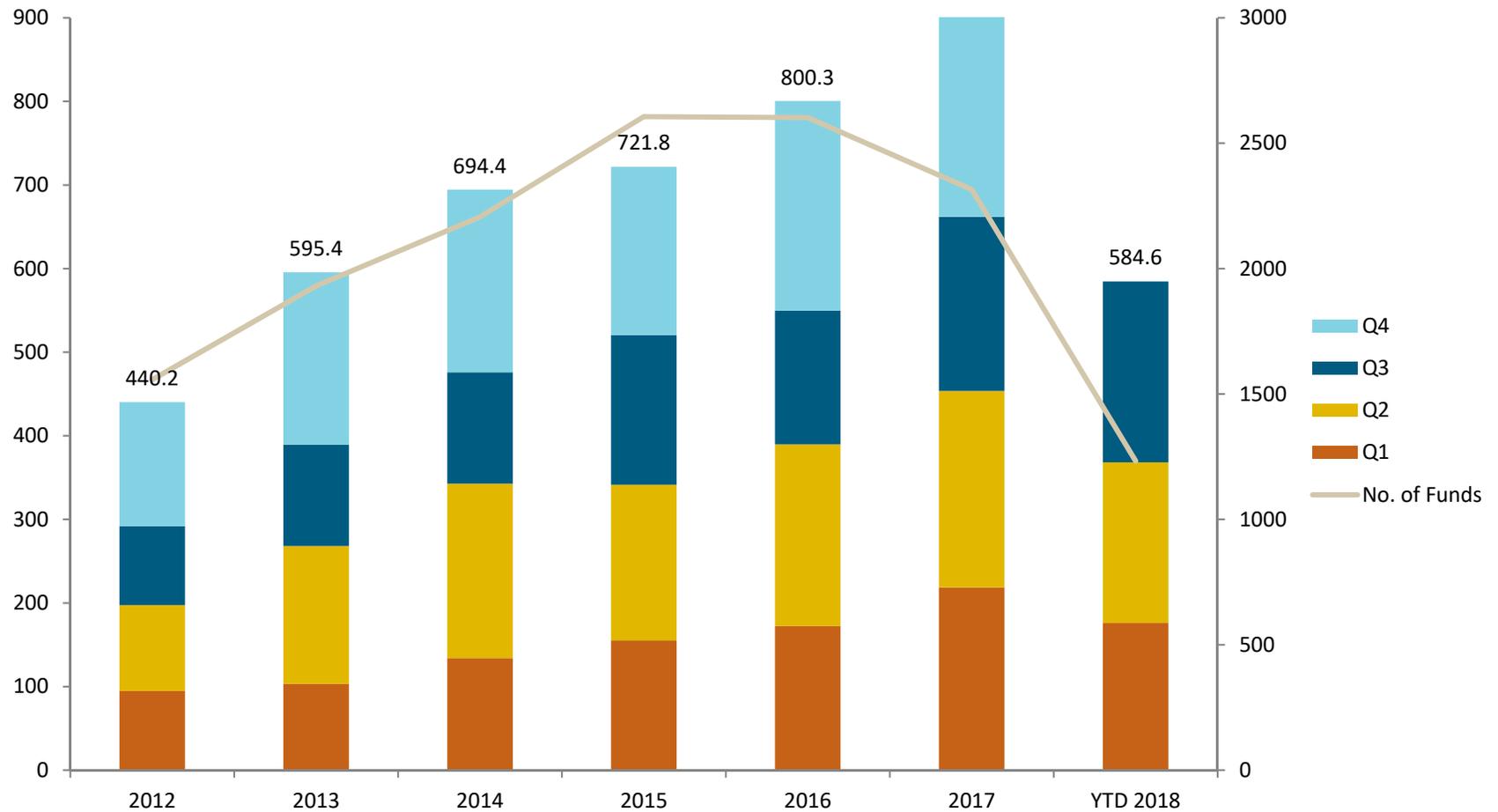


Source: Preqin

# TRENDS IN LIMITED PARTNER DEMAND

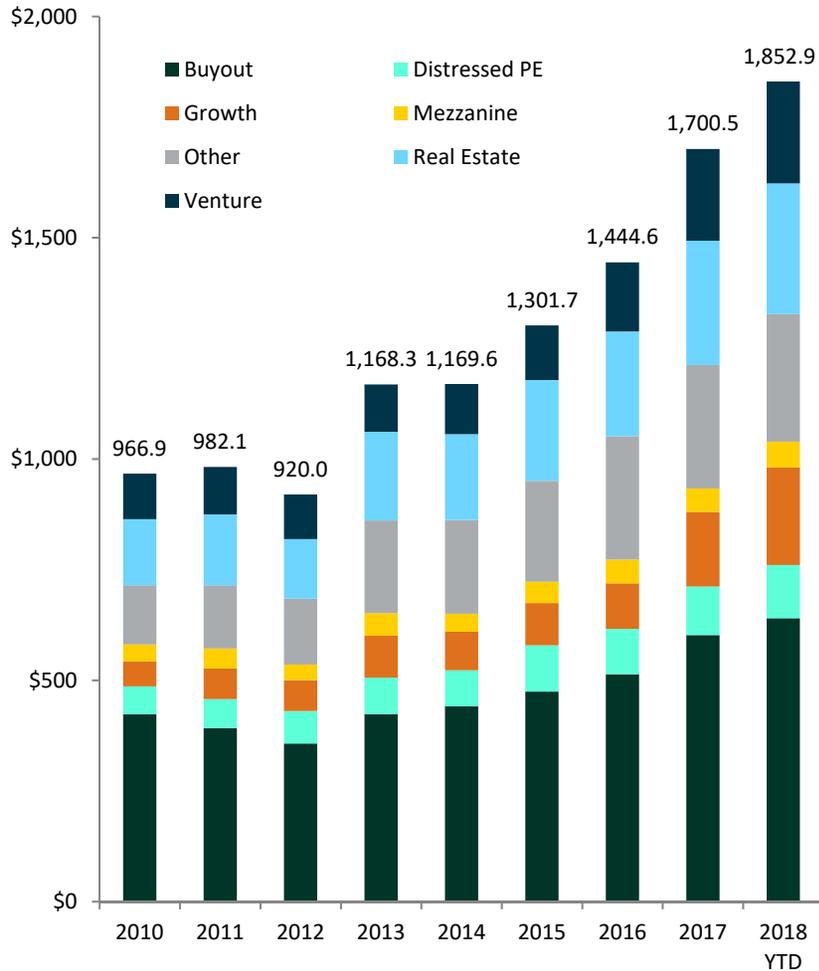
AS OF SEPTEMBER 30, 2018

## Global Fundraising by Year – Aggregate Capital Raised (\$ Billion)



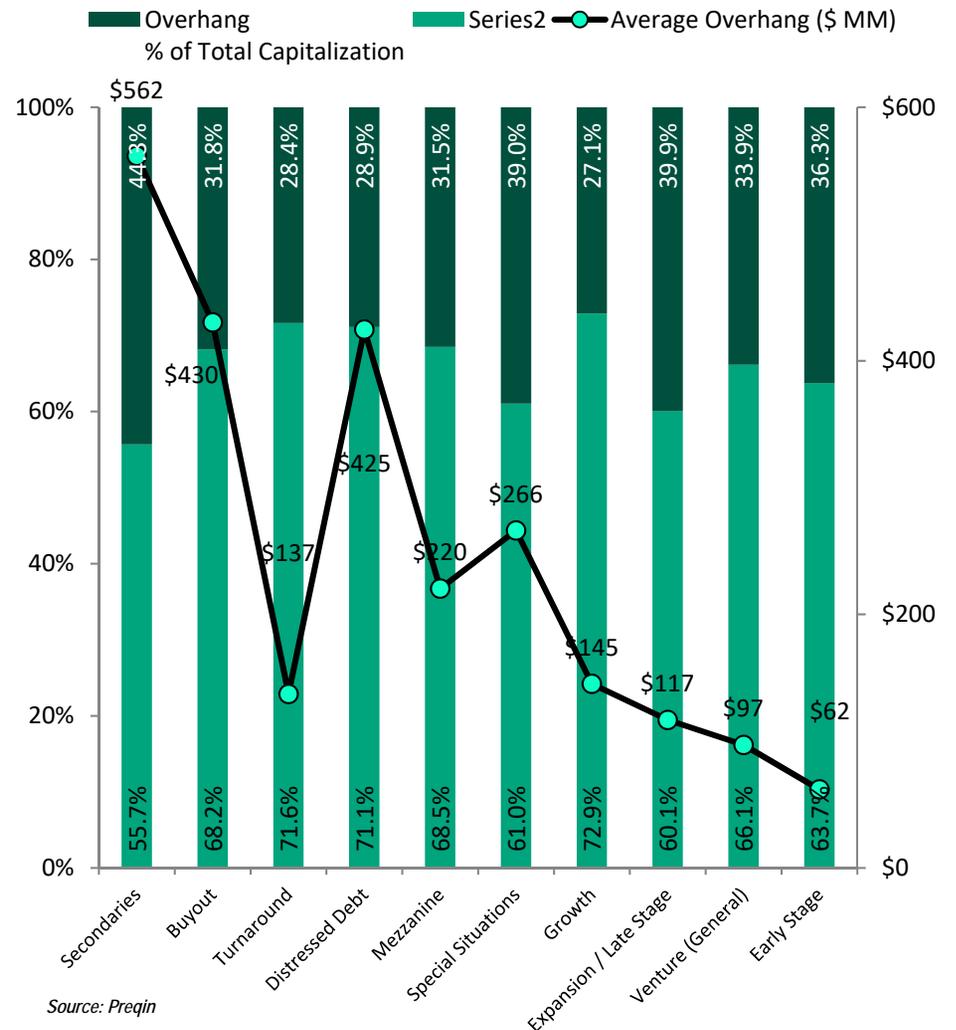
Source: Preqin

## Global Private Equity Dry Powder (\$ Billion)



Source: Thomson Reuters, Preqin

## Overhang - 2007 to 2018 Vintage Years



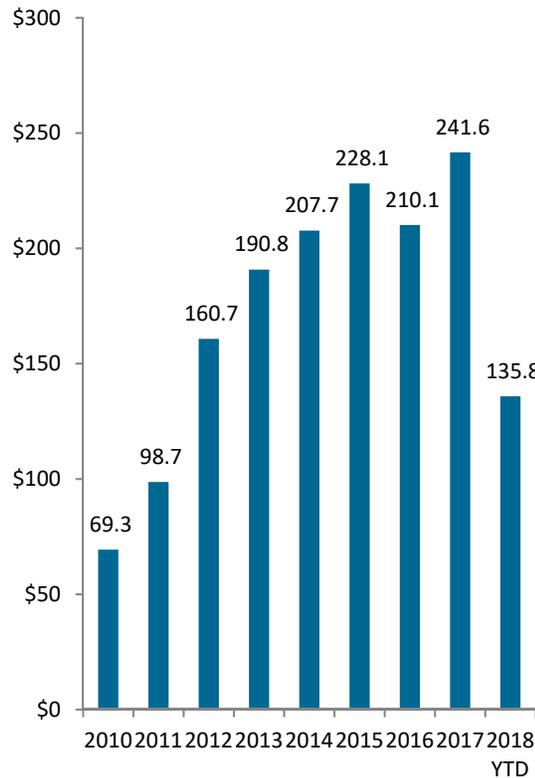
Source: Preqin

# FUNDRAISING ACTIVITY BY REGION

AS OF SEPTEMBER 2018

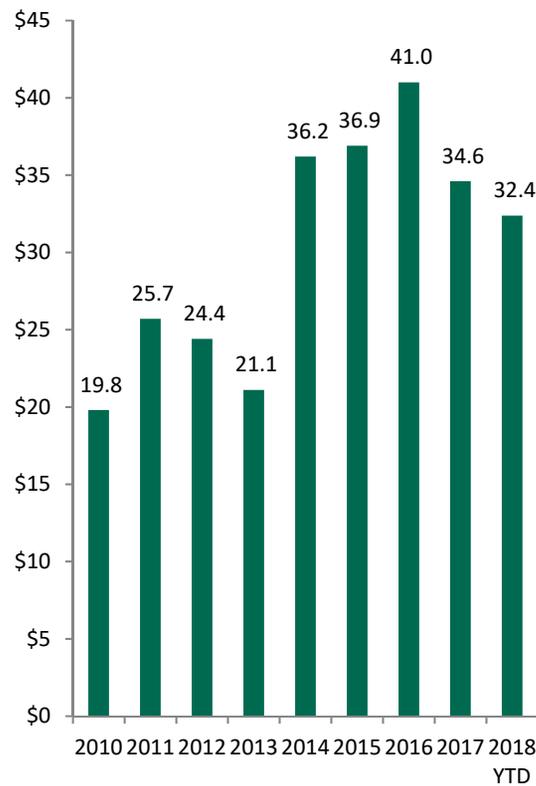
More than 252 funds are fundraising around the world targeting commitments of over \$153.2 billion<sup>1</sup>

**U.S. Buyout and Mezzanine Fundraising** (\$ Billion)



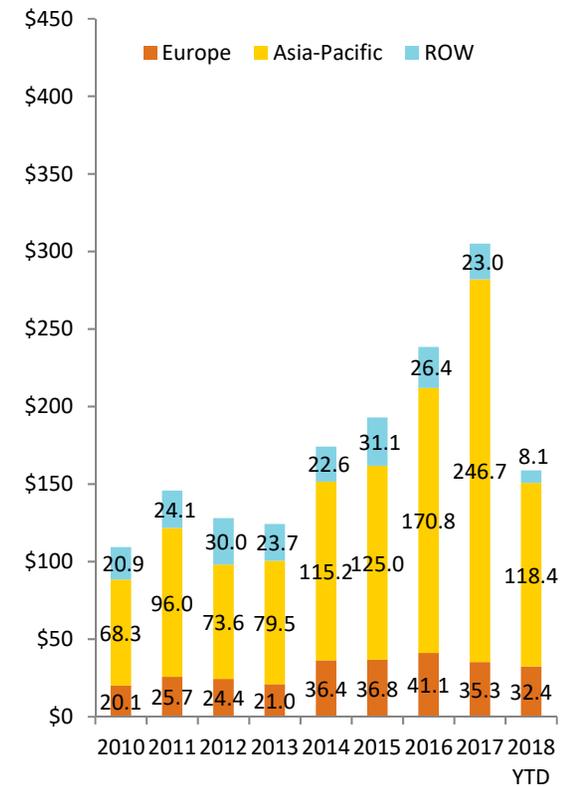
Source: Buyouts as of September 2018

**U.S. Venture Capital Fundraising** (\$ Billion)



Source: Pitchbook & National Venture Capital Association

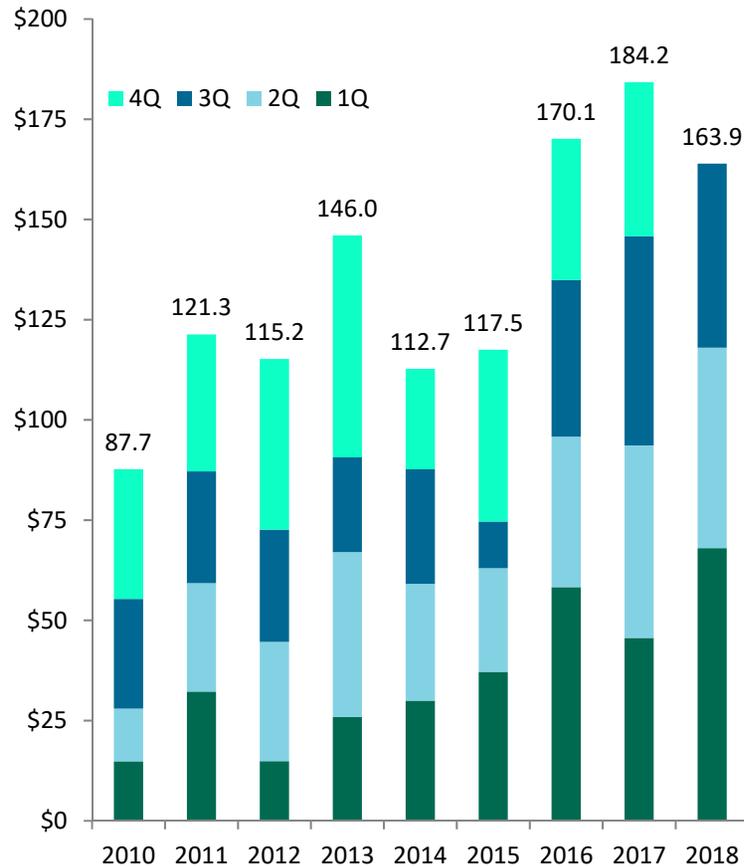
**Non-U.S. Fundraising** (\$ Billion)



Source: Preqin & Asia Venture Capital Association

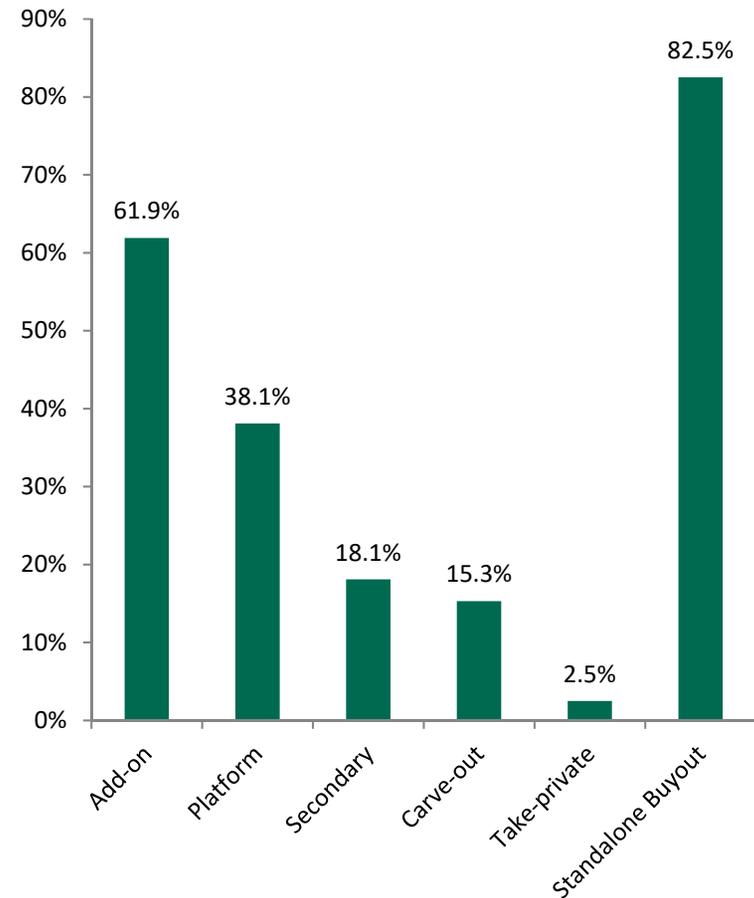
<sup>1</sup> Preqin, 2018 YTD

## U.S. LBO Disclosed Deal Value (\$ Billion)



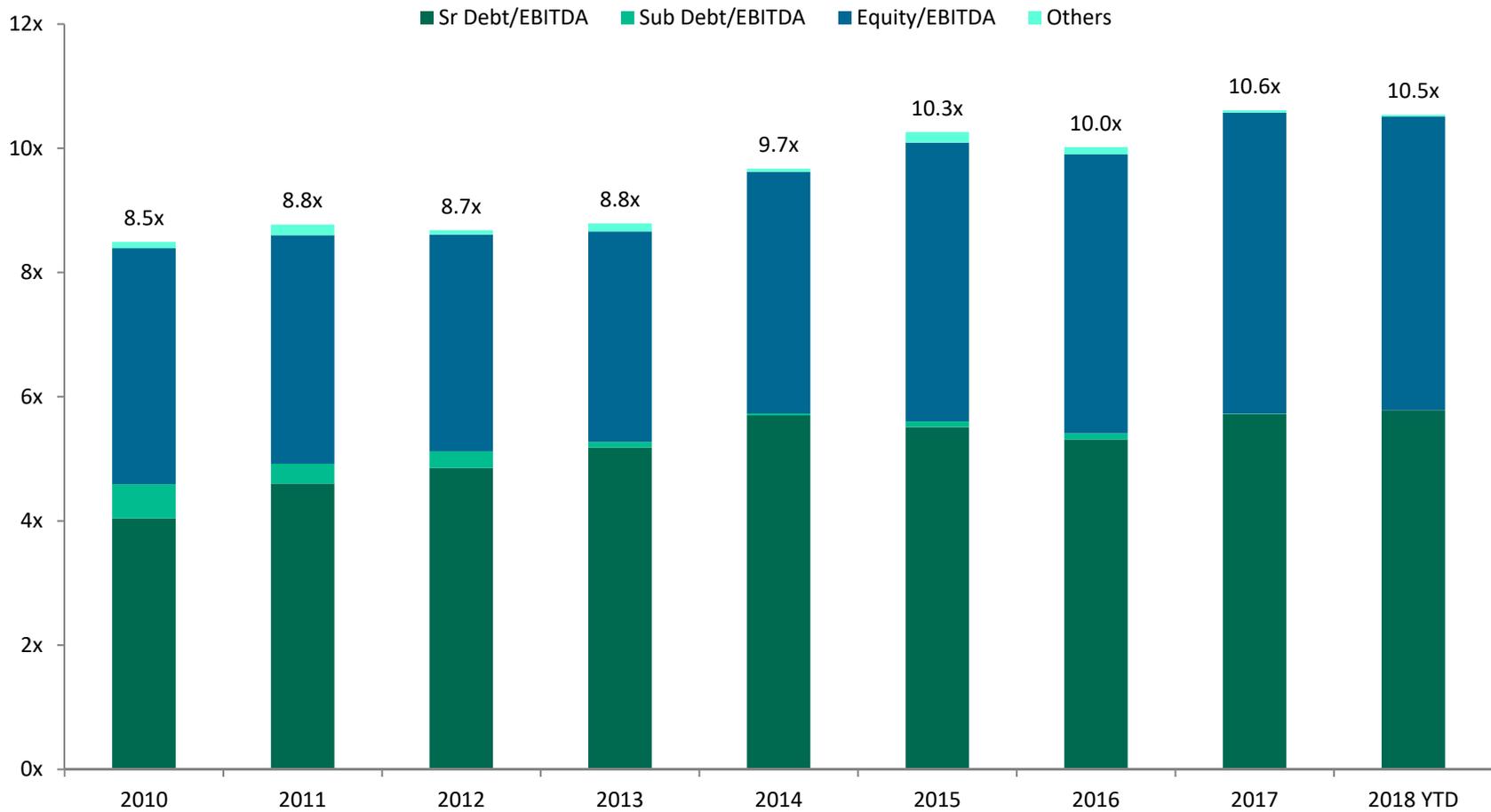
Source: Thomson Reuters, Buyouts  
Note: Numbers through March 2018

## Breakdown of Deal Type in 4Q 2017



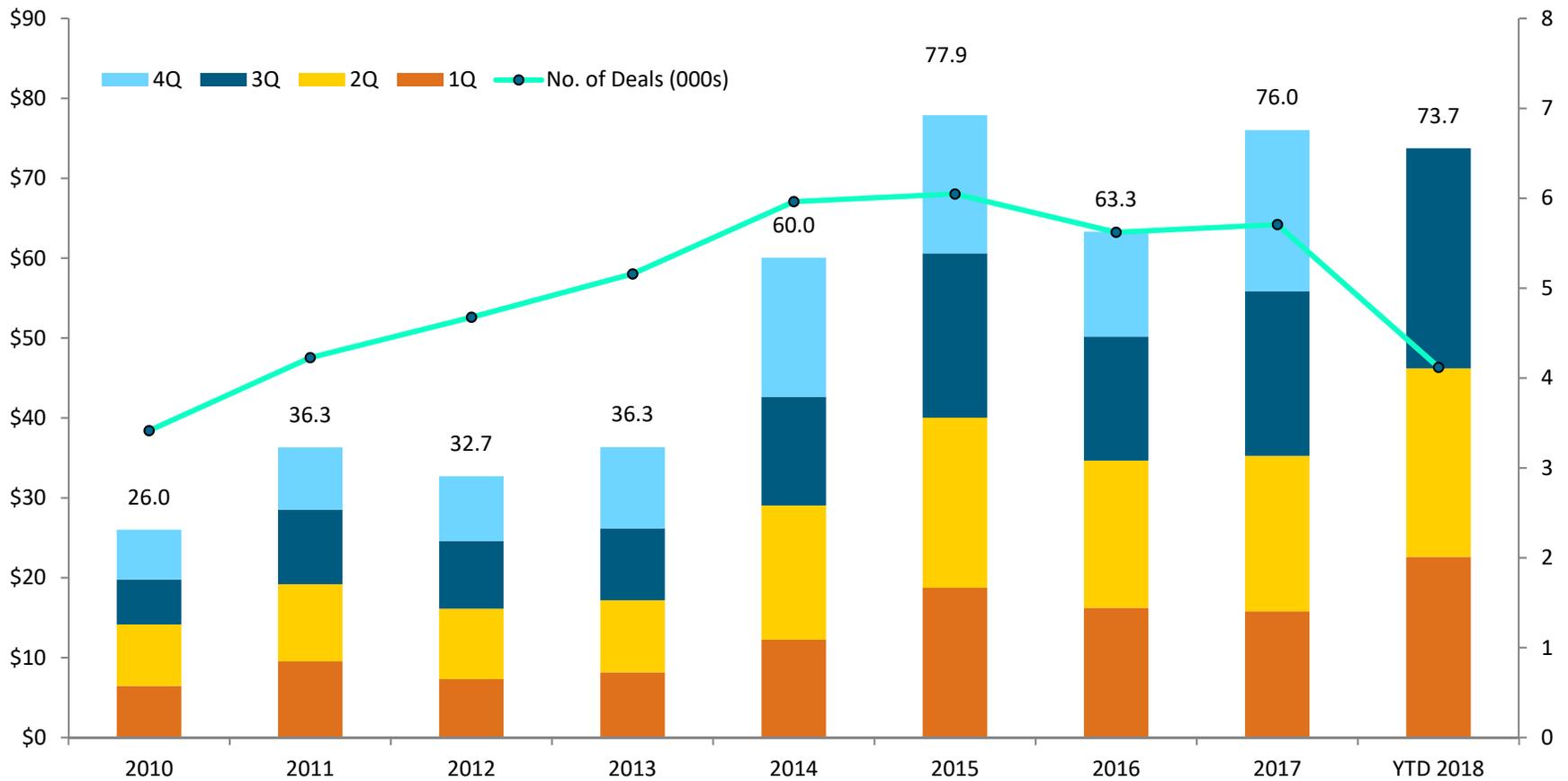
Source: Thomson Reuters, Buyouts Magazine, as of March 2018; the percentages reflect share of 1Q18 closed deals; percentages add to more than 100% since a deal can appear in more than one category. Standalone buyouts are defined as deals that are not either carve-outs or take-privates. Data covers U.S. sponsors operating anywhere in the world.

## Average LBO Purchase Price Multiples



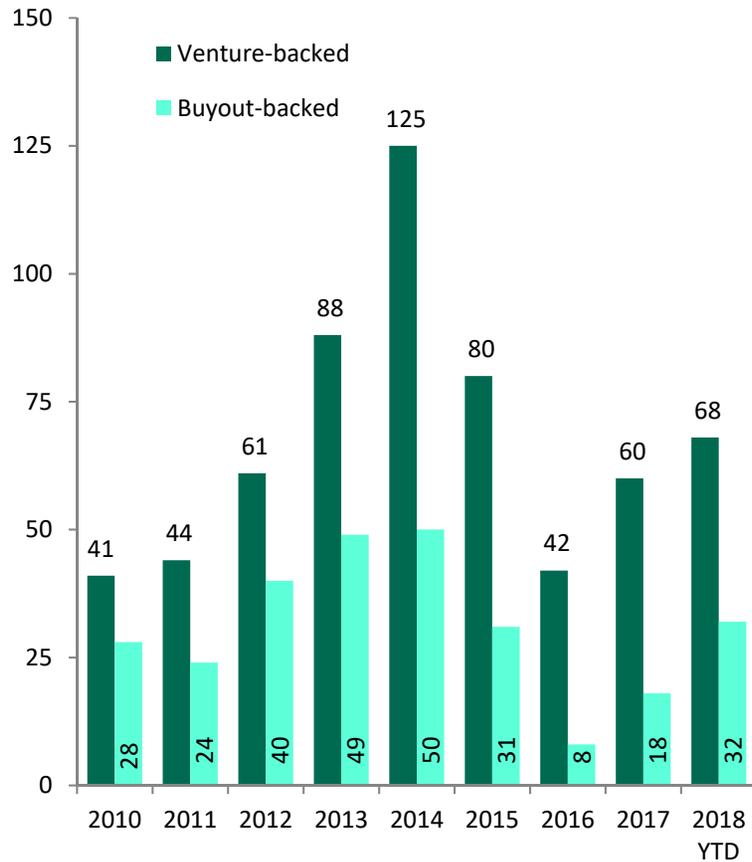
Source: S&P LCD

## U.S. Venture Capital Investment Activity (\$ Billion)



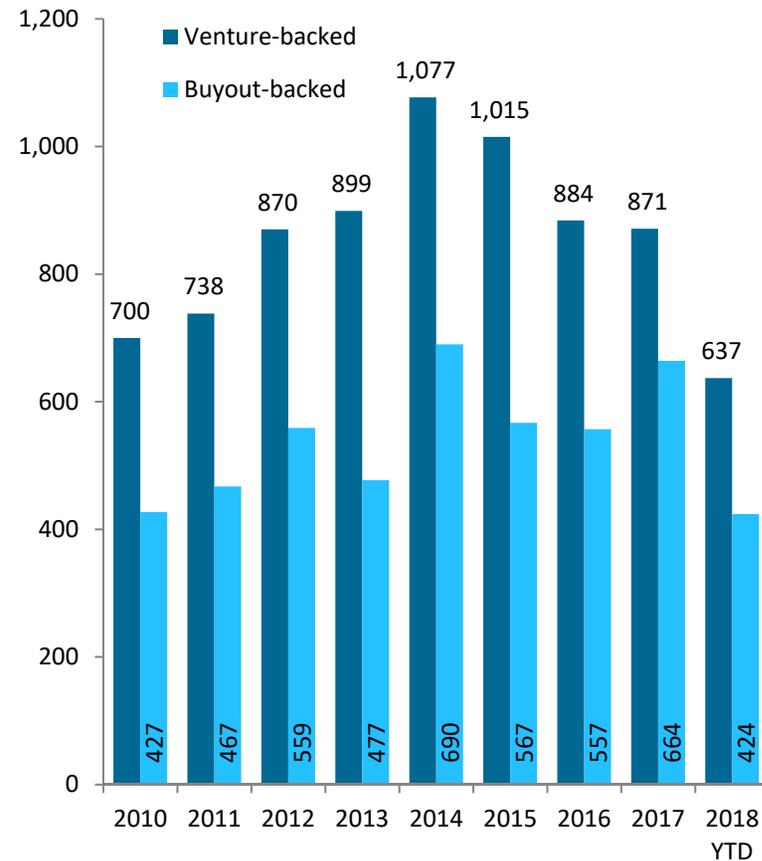
Source: Thomson Reuters & National Venture Capital Association

## Number of U.S.-Based IPOs



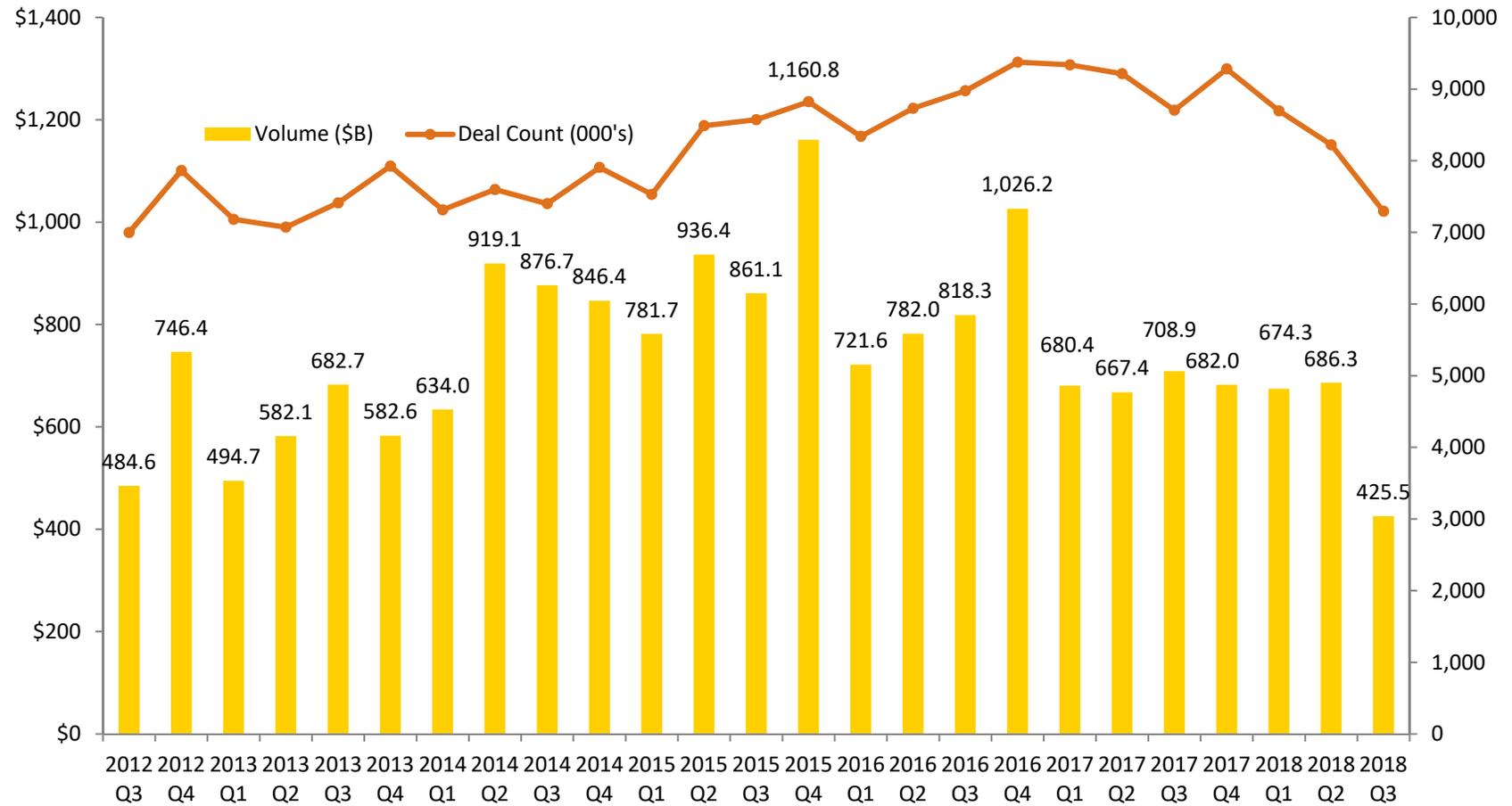
Source: Buyouts, Thomson Reuters & National Venture Capital Association

## Number of U.S.-Based M+A



Source: Buyouts, Thomson Reuters & National Venture Capital Association

## Global M&A Activity (\$ Billion)



Source: Bloomberg

## TAB 10 – Asset Allocation & NAV Updates

## Asset Allocations at December 31, 2018

	Regular Account					Target Date Funds	Variable Fund	Total Fund		
	Policy	Target <sup>1</sup>	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands	\$ Thousands
<b>OPERF</b>										
Public Equity	32.5-42.5%	37.5%	23,891,029	33.0%	503,787	24,394,816	33.7%	893,524	458,050	25,746,390
Private Equity	13.5-21.5%	17.5%	16,037,715	22.1%		16,037,715	22.1%			16,037,715
<b>Total Equity</b>	<b>50.0-60.0%</b>	<b>55.0%</b>	<b>39,928,743</b>	<b>55.1%</b>	<b>503,787</b>	<b>40,432,530</b>	<b>55.8%</b>			<b>41,784,104</b>
Opportunity Portfolio	0-3%	0.0%	1,637,031	2.3%		1,637,031	2.3%	1,275,921		1,637,031
<b>Fixed Income</b>	<b>15-25%</b>	<b>20.0%</b>	<b>14,228,371</b>	<b>19.6%</b>	<b>1,064,843</b>	<b>15,293,214</b>	21.1%			16,569,136
<b>Real Estate</b>	<b>9.5-15.5%</b>	<b>12.5%</b>	<b>8,133,247</b>	<b>11.2%</b>	<b>(8,700)</b>	<b>8,124,547</b>	11.2%			8,124,547
<b>Alternative Investments</b>	<b>0-12.5%</b>	<b>12.5%</b>	<b>6,720,344</b>	<b>9.3%</b>		<b>6,720,344</b>	9.3%			6,720,344
<b>Cash<sup>2</sup></b>	<b>0-3%</b>	<b>0.0%</b>	<b>1,809,238</b>	<b>2.5%</b>	<b>(1,559,930)</b>	<b>249,308</b>	0.3%		9,472	258,780
<b>TOTAL OPERF</b>		<b>100%</b>	<b>\$ 72,456,974</b>	<b>100.0%</b>	<b>\$ -</b>	<b>\$ 72,456,974</b>	<b>100.0%</b>	<b>\$ 2,169,445</b>	<b>\$ 467,522</b>	<b>\$ 75,093,942</b>

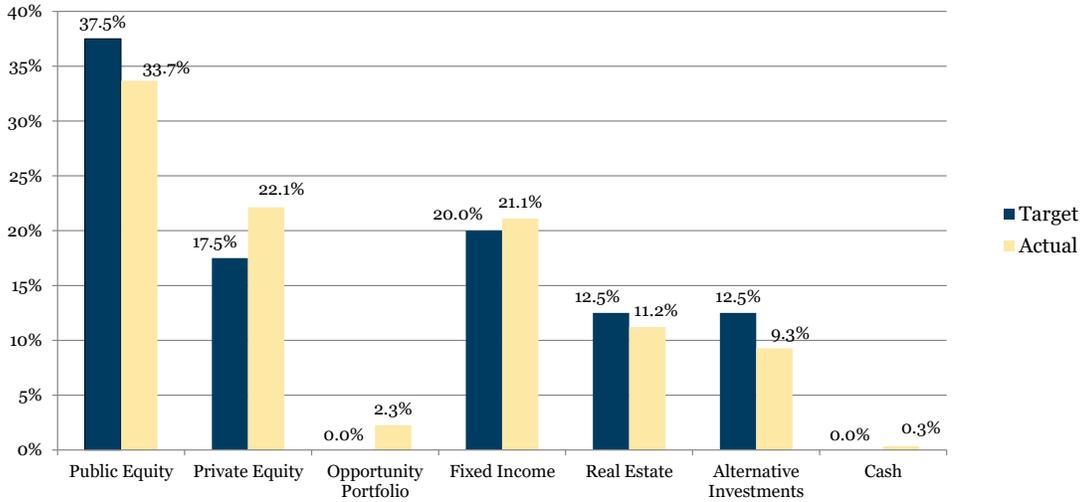
<sup>1</sup>Targets established in June 2015. Interim policy benchmark consists of: 40% MSCI ACWI IMI Net, 22.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 5% CPI+400bps.

<sup>2</sup>Includes cash held in the policy implementation overlay program.

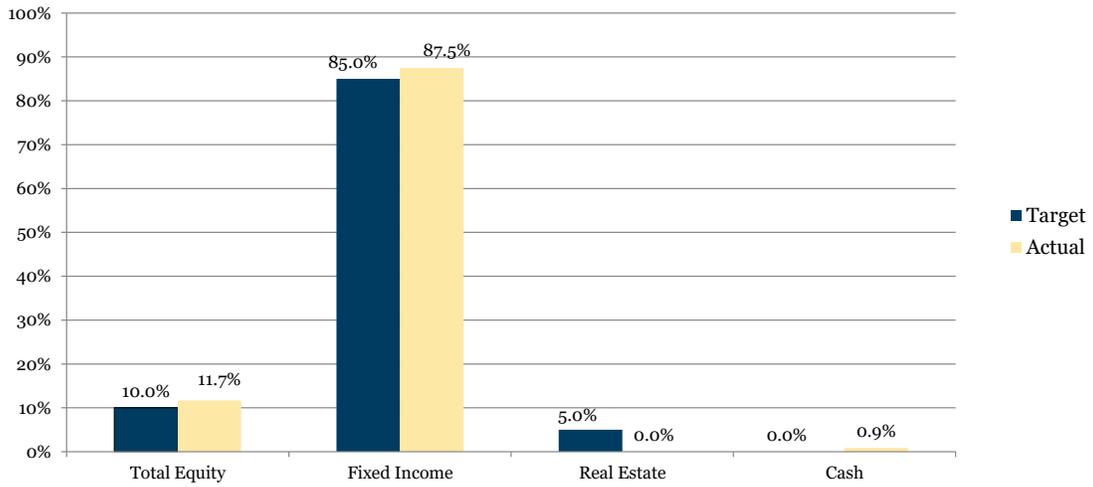
SAIF	Policy	Target	\$ Thousands	Actual
<b>Total Equity</b>	<b>7-13%</b>	<b>10.0%</b>	<b>531,491</b>	<b>11.7%</b>
<b>Fixed Income</b>	<b>80-90%</b>	<b>85.0%</b>	<b>3,988,810</b>	<b>87.5%</b>
<b>Real Estate</b>	<b>0-7%</b>	<b>5.0%</b>	<b>-</b>	<b>0.0%</b>
<b>Cash</b>	<b>0-3%</b>	<b>0.0%</b>	<b>39,431</b>	<b>0.9%</b>
<b>TOTAL SAIF</b>			<b>\$ 4,559,732</b>	<b>100.0%</b>

CSF	Policy	Target	\$ Thousands	Actual
Global Equities	40-50%	45.0%	672,619	42.8%
Private Equity	8-12%	10.0%	214,537	13.6%
<b>Total Equity</b>	<b>58-62%</b>	<b>55.0%</b>	<b>887,156</b>	<b>56.4%</b>
<b>Fixed Income</b>	<b>25-35%</b>	<b>25.0%</b>	<b>440,001</b>	<b>28.0%</b>
<b>Real Estate</b>	<b>8-12%</b>	<b>10.0%</b>	<b>105,759</b>	<b>6.7%</b>
<b>Diversifying Strategies</b>	<b>8-12%</b>	<b>10.0%</b>	<b>89,446</b>	<b>5.7%</b>
<b>Cash</b>	<b>0-3%</b>	<b>0.0%</b>	<b>49,430</b>	<b>3.1%</b>
<b>TOTAL CSF</b>			<b>\$ 1,571,792</b>	<b>100.0%</b>

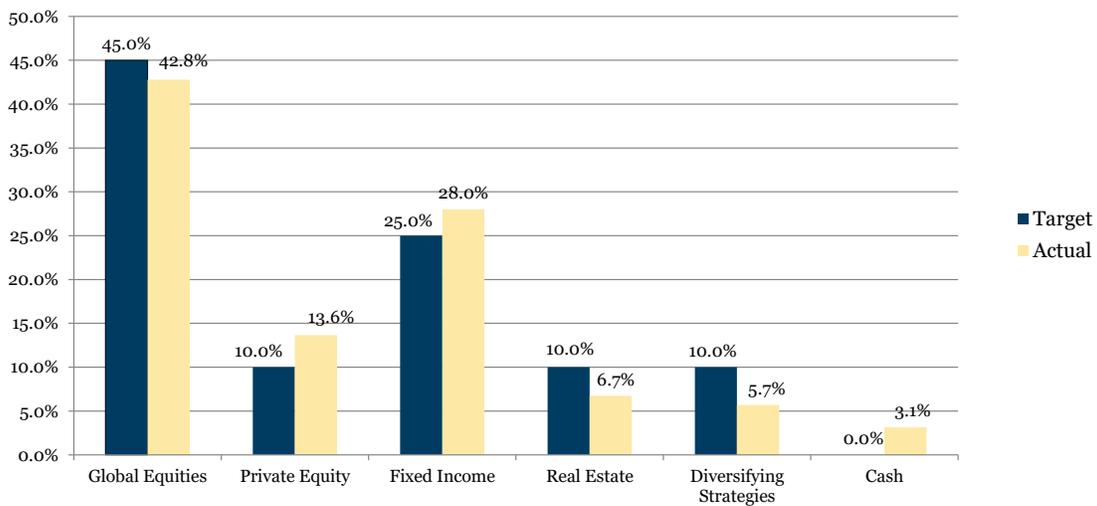
### OPERF Asset Allocation



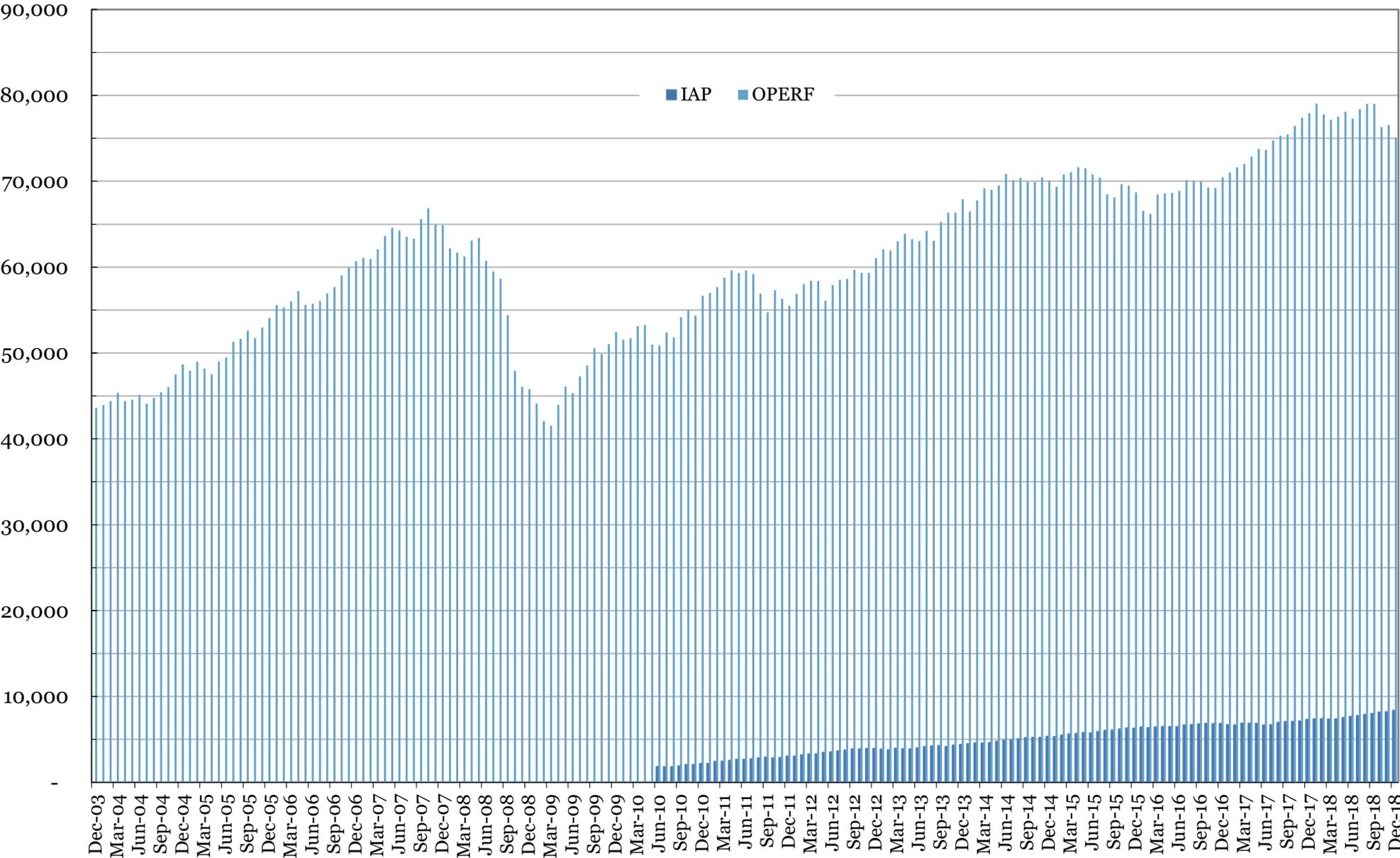
### SAIF Asset Allocation



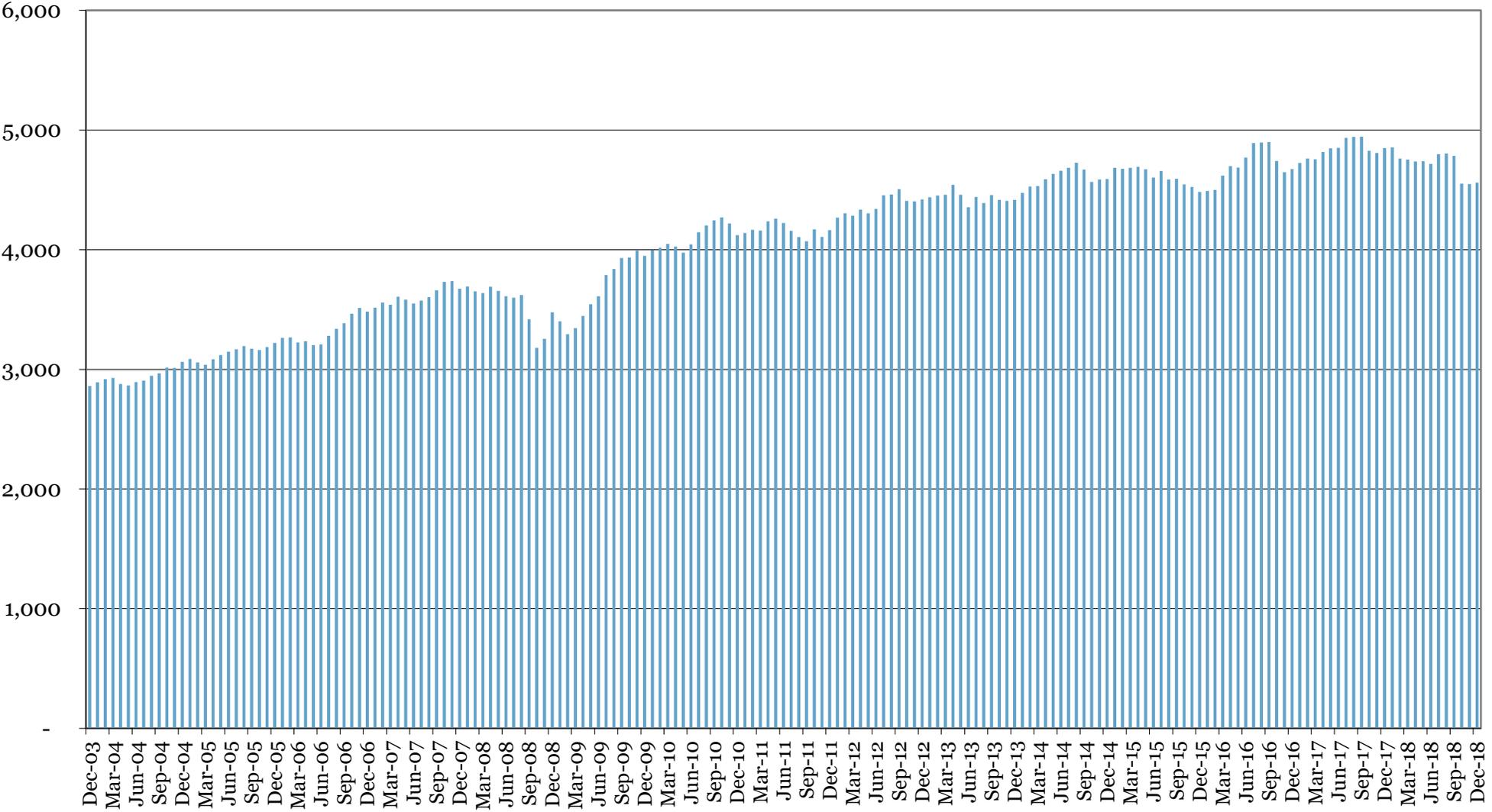
### CSF Asset Allocation



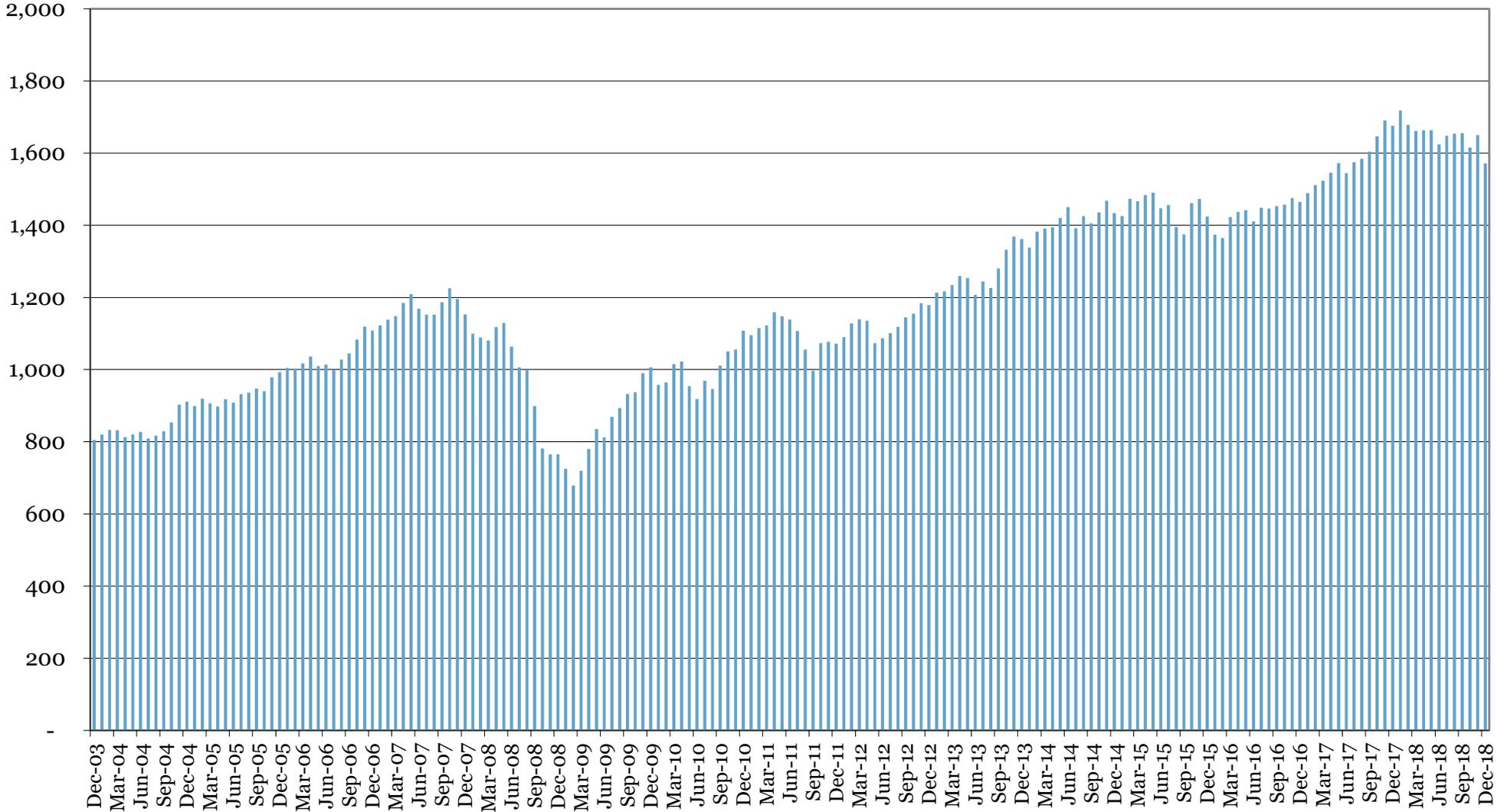
**OPERF NAV**  
**15 years ending December 2018**  
**(\$ in Millions)**



**SAIF NAV**  
**15 years ending December 2018**  
**(\$ in Millions)**



**CSF NAV**  
**15 years ending December 2018**  
**(\$ in Millions)**



## TAB 11 – Calendar — Future Agenda Items

## **2019 OIC Forward Calendar<sup>1</sup> and Planned Agenda Topics**

<b>March 13, 2019:</b>	IAP Update OPERF Liquidity Analysis CSF Annual Review Real Estate Portfolio Review Q4 2018 OPERF Performance & Risk Report
<b>April 24, 2019:</b>	OPERF Asset Allocation & Capital Market Assumptions Update Securities Lending Update OPERF SAA Overlay Review OPERF Liquidity Analysis SAIF Annual Review <sup>2</sup>
<b>June 5, 2019</b>	Alternatives Portfolio Review Q1 OPERF Performance & Risk Report Operations Update Joint PERS/OIC Board Discussion
<b>August 7, 2019</b>	Opportunity Portfolio Review OSGP Annual Review Corporate Governance Update
<b>September 18, 2019</b>	CEM Benchmarking Report Q2 OPERF Performance & Risk Report OSGP Annual Review
<b>October 30, 2019</b>	General Consultant Recommendation Currency Overlay Review Public Equity Program Review
<b>December 11, 2019</b>	Fixed Income Program Review Q3 OPERF Performance & Risk Report

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<sup>1</sup> All meetings on Wednesday, except the first meeting on Thursday, January 31.

<sup>2</sup> Includes Asset/Liability study presentation.