



PENSION RESERVES
INVESTMENT
MANAGEMENT BOARD

Presentation to the State Retiree Benefits Trust Fund Board

***PRIM Board Organizational Update
PRIT Fund and SRBT Fund Performance Review
Municipal Outreach Update***

Thursday, December 6, 2018

By

***Paul W. Todisco, Senior Client Services Officer, PRIM Board
Francesco Daniele, Senior Client Services Officer, PRIM Board
Samuel Olivier, Client Service Analyst, PRIM Board***

***Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer***



Top 10 Accomplishments

1. Strong relative and absolute investment performance
2. Exceptional staff with low turnover
3. National recognition for PRIM and its staff
4. Project SAVE
5. Timely asset allocation decisions
6. Re-engineered Hedge Fund program – Portfolio Completion Strategies
 - a. Direct hedge funds
 - b. Hedge fund replication
 - c. Alternative risk premia harvesting strategies
 - d. Equity risk mitigation
7. Enhanced manager search and selection process
8. Private Equity co-investment
9. Direct Real Estate
10. Deployed risk management platform and framework



Summary of Recent National Recognition

- ❑ Christina Macarelli, **CAIA**, Investment Officer- Real Estate and Timberland, successfully completed both exams and has earned the CAIA, Chartered Alternative Investment Analyst designation. (November 2018)
- ❑ CFA Society Boston has elected Michael Trotsky, CFA, Executive Director and Chief Investment Officer to serve as Vice Chair of the Board of Directors. (June 2018)
- ❑ PRIM's Private Equity Portfolio has been ranked #1 among 163 U.S. public pension funds based on 10 year annualized returns as of June 30 2017 by the American Investment Council's 2018 Public Pension Study.
- ❑ PRIM was nominated for **"Team of the Year"**, 2017 by *Institutional Investor Magazine*, a well regarded global publication in the asset management industry.
- ❑ *Trusted Insight*, a global network of institutional investors, recently named PRIM Executive Director and Chief Investment Officer, Michael Trotsky, CFA, as one of its 2017 "Top 30 Public Pension Chief Investment Officers." After reviewing the performance of public pension funds across the country, Trusted Insight selected honorees based on superior 1-, 3, and 5-year performance and "industry leading investment strategies." (November 2017)
- ❑ PRIM was nominated again for Institutional Investor Magazine's 15th annual **Large Public Fund of the Year Hedge Fund Industry award**. The award recognizes excellence in innovation and thought leadership in the Hedge Fund space. (May 2017)
- ❑ PRIM was awarded the **Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting** for the 13th consecutive year. (May 2018)
- ❑ Eric Nierenberg, Ph.D., Director of Hedge Funds & Low Volatility Strategies, was awarded Institutional Investor magazine's **Large Public Fund of the Year Award**. The award recognizes performance innovation, achievements and contributions to the industry in the past year. (June 2016).
- ❑ Michael Trotsky, CFA, Executive Director and Chief Investment Officer, was awarded *Chief Investment Officer Magazine's "CIO Innovation Award."* (December 2015)
- ❑ Michael Bailey, Senior Investment Officer – Director of Private Equity, was nominated for the *Investor Intelligence Award for Excellence in Private Equity*. The award recognizes the most outstanding and innovative public plan sponsors in North America. (December 2015)
- ❑ *Private Equity Growth Council* ranked PRIM's private equity program FIRST (#1) among 155 U.S. public pension plans. (December 2015)



Mission

- ❑ **PRIM is a \$73.8 billion investment fund that invests public employee pension benefits.**
 - PRIM does not administer benefits.
 - PRIM has a highly talented, experienced and focused investment staff.
- ❑ **PRIM's Mission is to relieve the pension funding burden on the taxpayer.**
 - PRIM is a self-funded agency which generates asset returns for Massachusetts.
 - In the past five years, PRIM's returns have contributed over \$17.2 billion to pension funding.
 - The Project SAVE initiative realized \$181 million in value for the fund.
- ❑ **PRIM is independent and governed by a nine-member Board of Trustees.**
 - The Massachusetts State Treasurer is the Chair of the PRIM Board.
 - A robust committee structure lends advice regarding investments and operations.



PRIT Fund Overview

❑ Oversight and staffing:

- 9 appointed and elected trustees
- 4 advisory committees consisting of 37 industry professionals and board members
- Staff of 45 professionals

❑ Core Fund Facts

- \$73.8 billion AUM as of 09/30/2018
- 46 public markets portfolios
- 14 real estate, timber and REIT managers
- 100+ private equity managers; 200+ partnerships
- 39 portfolio completion strategies managers





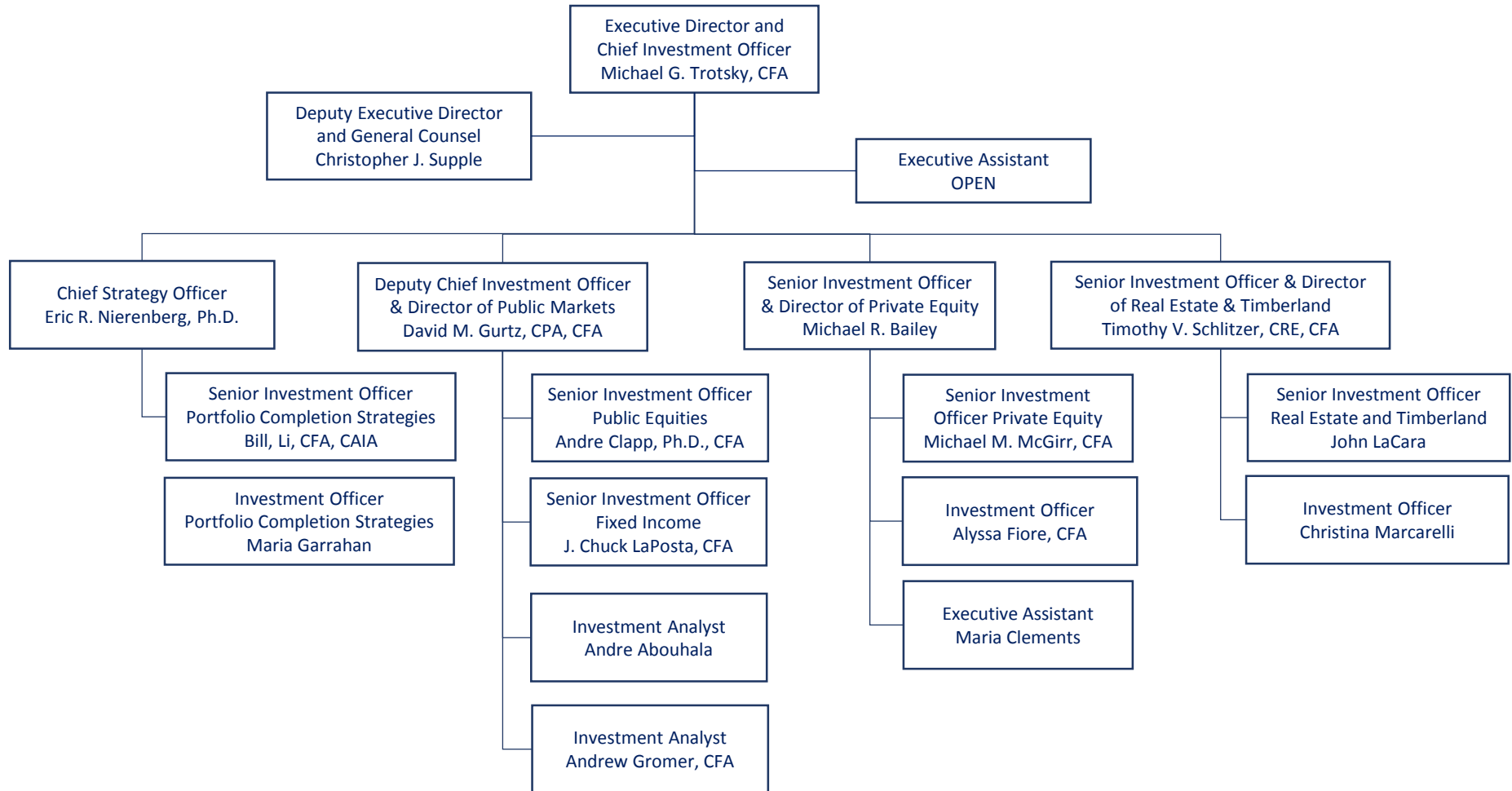
PRIM Board Organizational Update



PRIM Board Membership



PRIM Investment Organizational Chart



PRIM Advisory Committees Membership

Investment Committee

(12 Members)

The Committee advises the Board with respect to the asset allocation policy of PRIM and related investment policies, and assist the Board in overseeing the investment program. The mandate of the Investment Committee does not include real estate and timber.

1. Deborah B. Goldberg, Chair, Ex Officio Board Member
2. Paul E. Shanley, Board Member
3. Ruth Ellen Fitch, Board Member
4. Joseph C. Bonfiglio, Massachusetts & Northern New England Laborers' District Council
5. C. LaRoy Brantley, Investment Consultant
6. Michael Even, CFA, President and CEO, Numeric Investors
7. Constance M. Everson, CFA, Managing Director, Capital Markets Outlook Group
8. James B. G. Hearty, Partner, Clough Capital
9. Peter Monaco, Managing Director, Raptor Group
10. Philip Rotner, Chief Investment Officer, Boston Children's Hospital
11. Glenn P. Strehle, CFA, Treasurer Emeritus, MIT
12. Timothy L. Vaill, Special Advisor

Real Estate Committee

(10 Members)

The Committee advises the Board in setting investment policy within the real estate and timber portfolios and assist the Board in overseeing these portfolios.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Lydia Chesnick, Esq., Partner, Bernkopf Goodman LLP
3. Robert Gifford, Robert Gifford Advisory
4. Jill S. Hatton, Chair, CRE, Real Estate Investment Professional
5. Anthony E. Hubbard, Esq., CVS Corporation
6. Jack Lutz, PhD., Forest Research Group
7. William F. (Bill) McCall, Jr., CRE, McCall & Almy, Inc.
8. Garlan Morse, Jr., CRE, Morris and Morse Company, Inc.
9. Peter F. O'Connell, Marina Bay Company
10. Carly Rose, Public Safety Union Member



PRIM Advisory Committees Membership

Administration and Audit Committee

(10 Members)

The Committee assists the Board in overseeing all issues related to the governance, administration, and audit functions of PRIM, and to provide recommendations for the Board's consideration.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Robert L. Brousseau, Chair, Board Member
3. Theresa T. McGoldrick, Esq., Board Member
4. Patrick E. Brock, Chairman of the Hampshire County Retirement Board
5. Joseph A. Connolly, Senior Managing Director Strategic Development, TerraCap
6. Karen E. Gershman, CPA, Chief Operating Officer, Health Advances
7. Eileen Glovsky, Treasurer Appointee
8. James B. G. Hearty, Partner, Clough Capital
9. Dennis J. Naughton, Board Member
10. Michele A. Whitham, Esq., Founder & Principal, Whitham Law LLC

Compensation Committee

(5 Members)

The Committee assists the Board in overseeing staff compensation and benefit policies. The Administration and Audit Committee is responsible for assisting the Board on other human resource matters.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Robert L. Brousseau, Board Member
3. Patrick E. Brock, Chairman, Hampshire County Retirement Board
4. Joseph A. Connolly, Senior Managing Director Strategic Development, TerraCap
5. Michele A. Whitham, Esq., Founder & Principal, Whitham Law LLC



Organizational Update

☐ PRIM New Hires and Promotions

- Sara Coelho, Corporate Accountant – November 2018
- Grace Gao, Investment Research Analyst- Strategy Group- October 2018
- Liu Liu, Investment Analyst- Strategy Group- September 2018
- Maureen Aquino, Receptionist – August 2018
- Iris Sosa, Executive Assistant -- August 2018
- Sylvia Argiropoulos, Administrative Assistant Real Estate and Portfolio Completion Strategies – June 2018
- David Griswold, Director of Information Technology – June 2018
- Jennifer Kuhn, Director of Human Resources – May 2018
- Maria Garrahan, Investment Officer – Portfolio Completion Strategies – January 2018
- Edward Caron, Investment Operations Analyst -- November 2017
- Anthony (Tony) Falzone, Chief Operating Officer (COO) -- September 2017
- Deb Coulter, CPA, Chief Financial Officer (CFO) -- September 2017
- Matthew Liposky, Chief Investment Operating Officer (CIOO) -- September 2017
- David M. Gurtz, CPA, CFA, Deputy Chief Investment Officer- Director Public Markets -- September 2017
- Maria Clements, Administrative Assistant Private Equity -- September 2017
- Eric Nierenberg, Ph.D, Chief Strategy Officer – May 2017

☐ Maintained low employee turnover while adding key staff

- PRIM staff and advisors considered to be the strongest in its history
- Key additions are to deepen the investment and operations teams

Implemented PRIM Professional Development Program

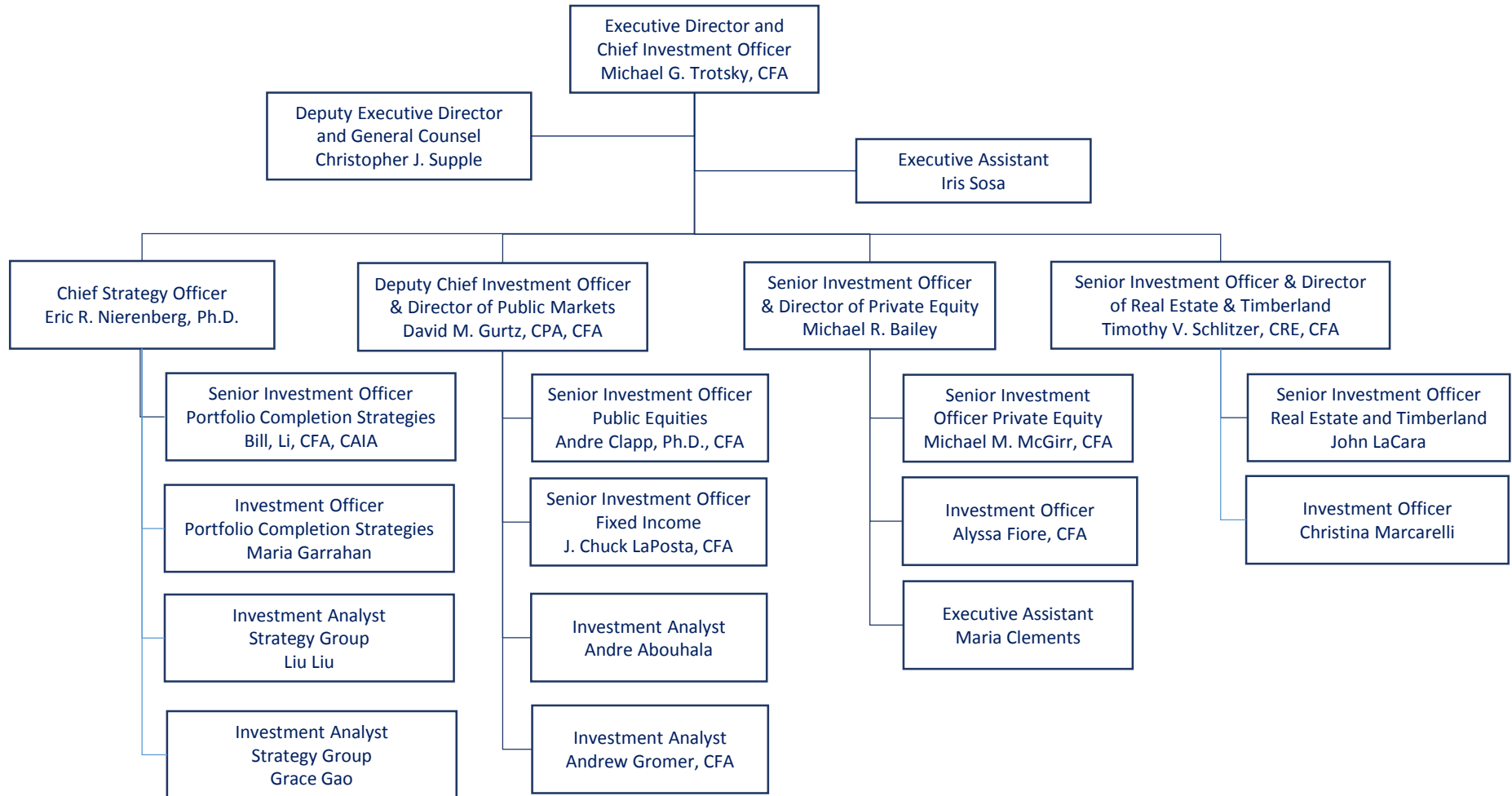
- A cross-training and career development program
- Designed to develop employee interdisciplinary skills and to reduce organizational silos
- Allows high-performing employees to grow their expertise beyond their core responsibilities
- Participants will rotate through private equity, real estate, hedge funds, and risk management for four-month intervals to learn, contribute, and encourage cross fertilization of ideas and initiatives

☐ Implementation of PRIM Investor Advisory Council

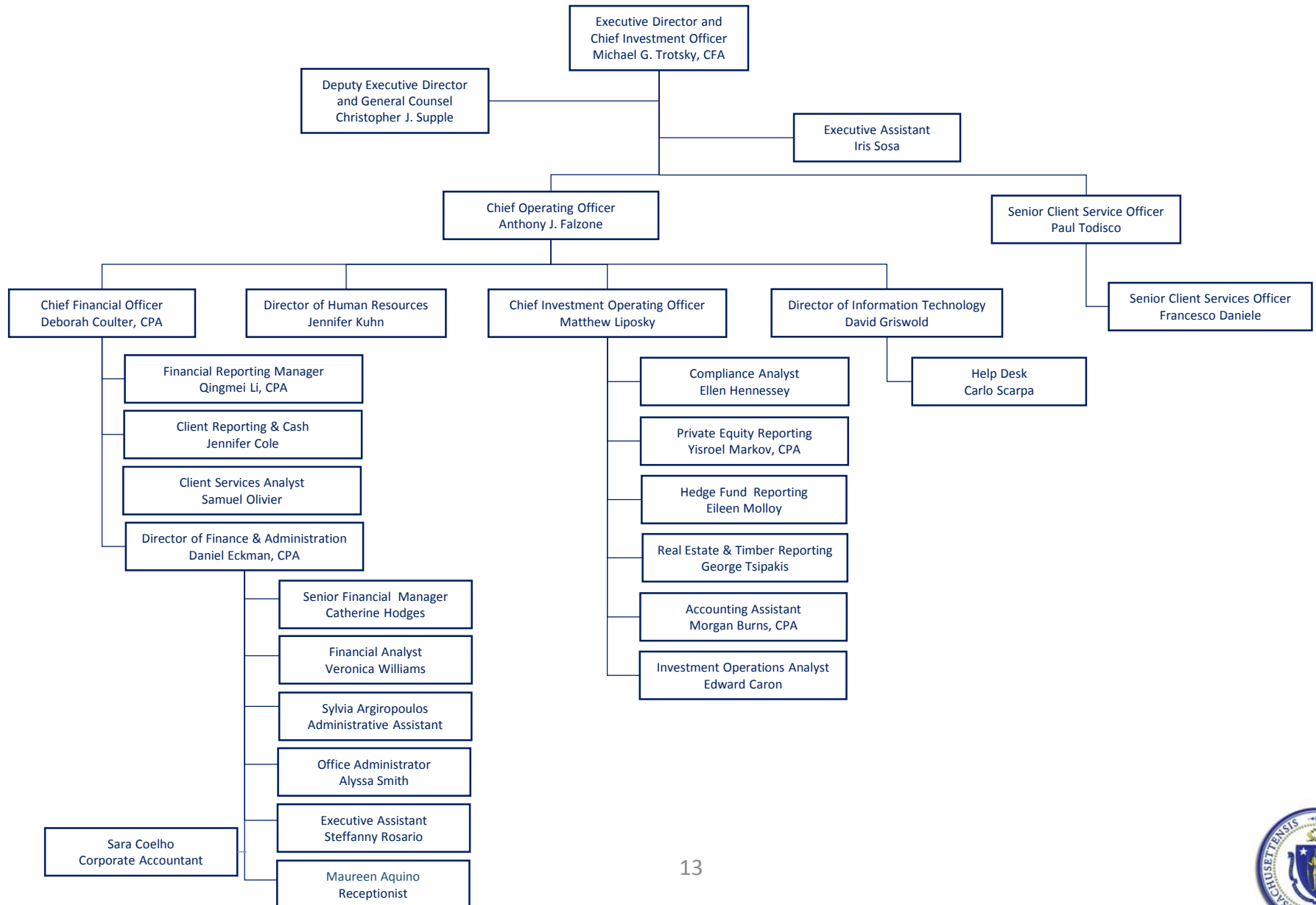
- Consists of Representatives from around the state who will serve two-year term
- Good forum to provide regular feedback to report back to the Board



PRIM Investment Organizational Chart



PRIM Finance and Operations Organizational Chart



External Advisors

Fund Advisors:

- **NEPC** - Asset Allocation
- **Callan Associates** - Public Markets
- **Aberdeen/Arden** - Hedge Fund Investments
- **Hamilton Lane** - Private Equity
- **The Townsend Group**- Real Estate & Timber
- **The International Woodland Company** - Timber

Independent Auditors:

- **KPMG, LLP** - PRIM Board and PRIT Fund, Real Estate, Timber, and SASE 16 Reviews
- **Deloitte & Touche, LLP** – PRIM Board tax Consultant

Custodian:

- **BNY Mellon Corporation**



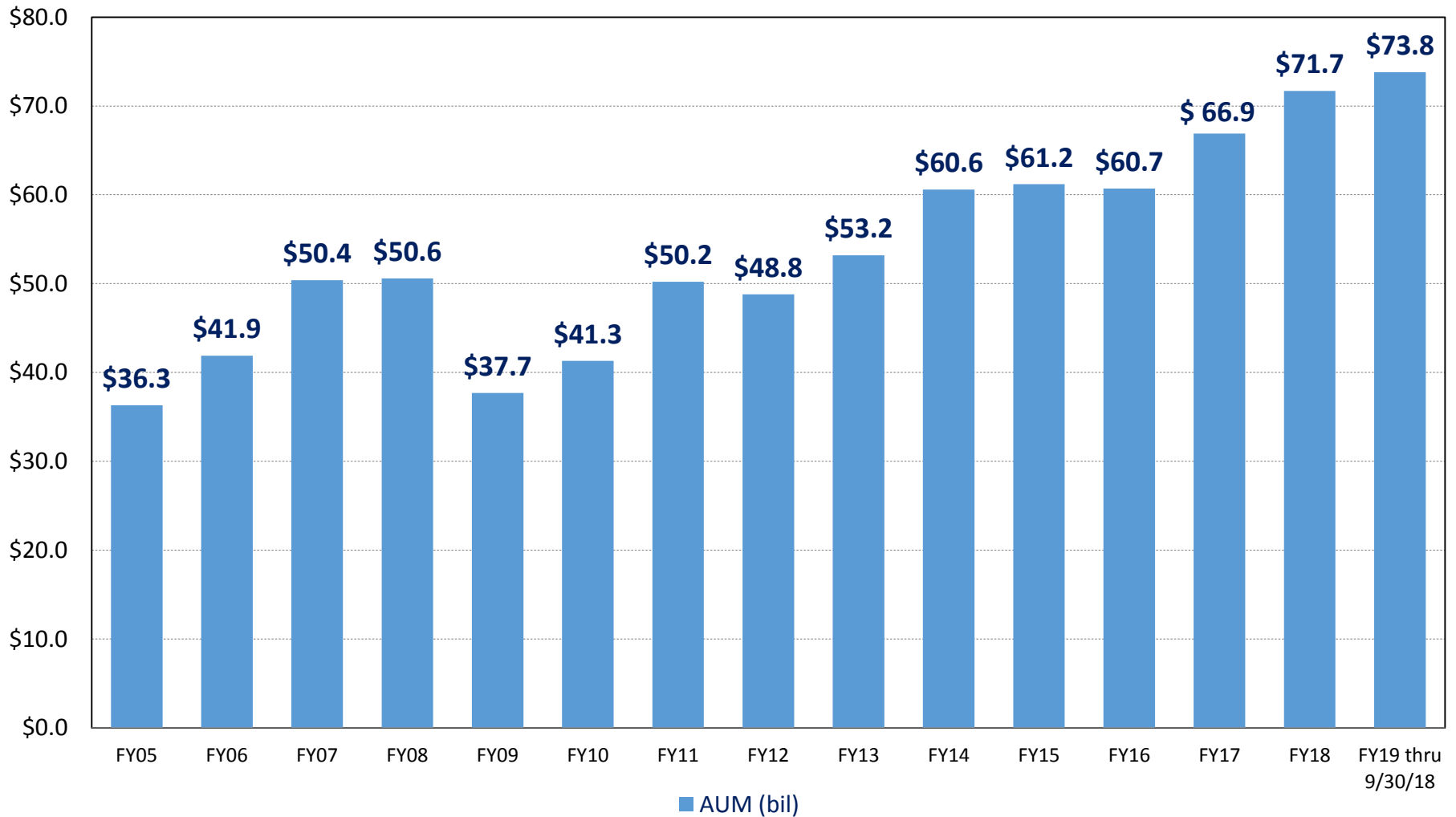


PRIT Fund Performance

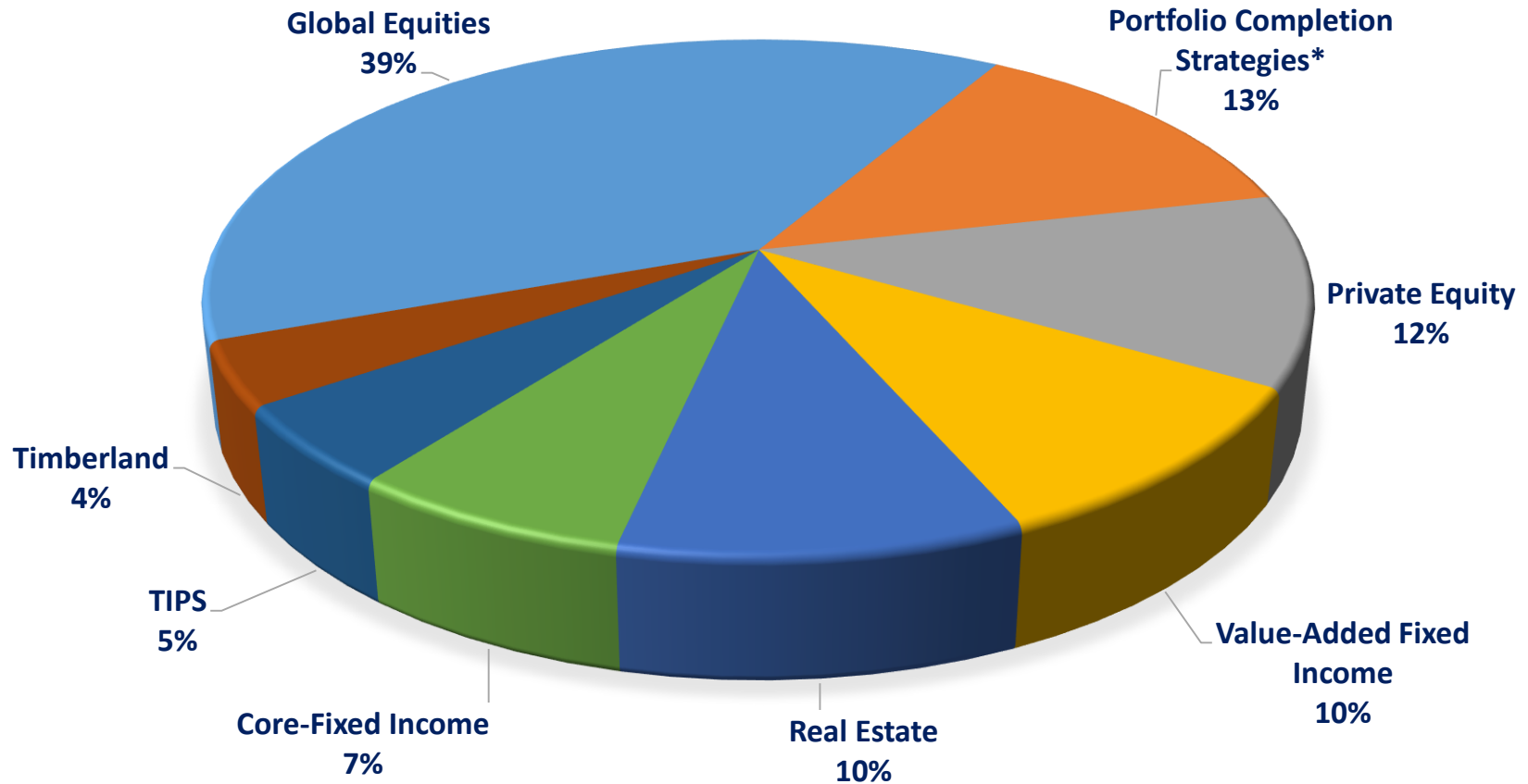
As of August 31, 2018



Total PRIT Fund Fiscal Year Market Value (\$Billions)



PRIT Fund Overview – Current Asset Allocation Targets

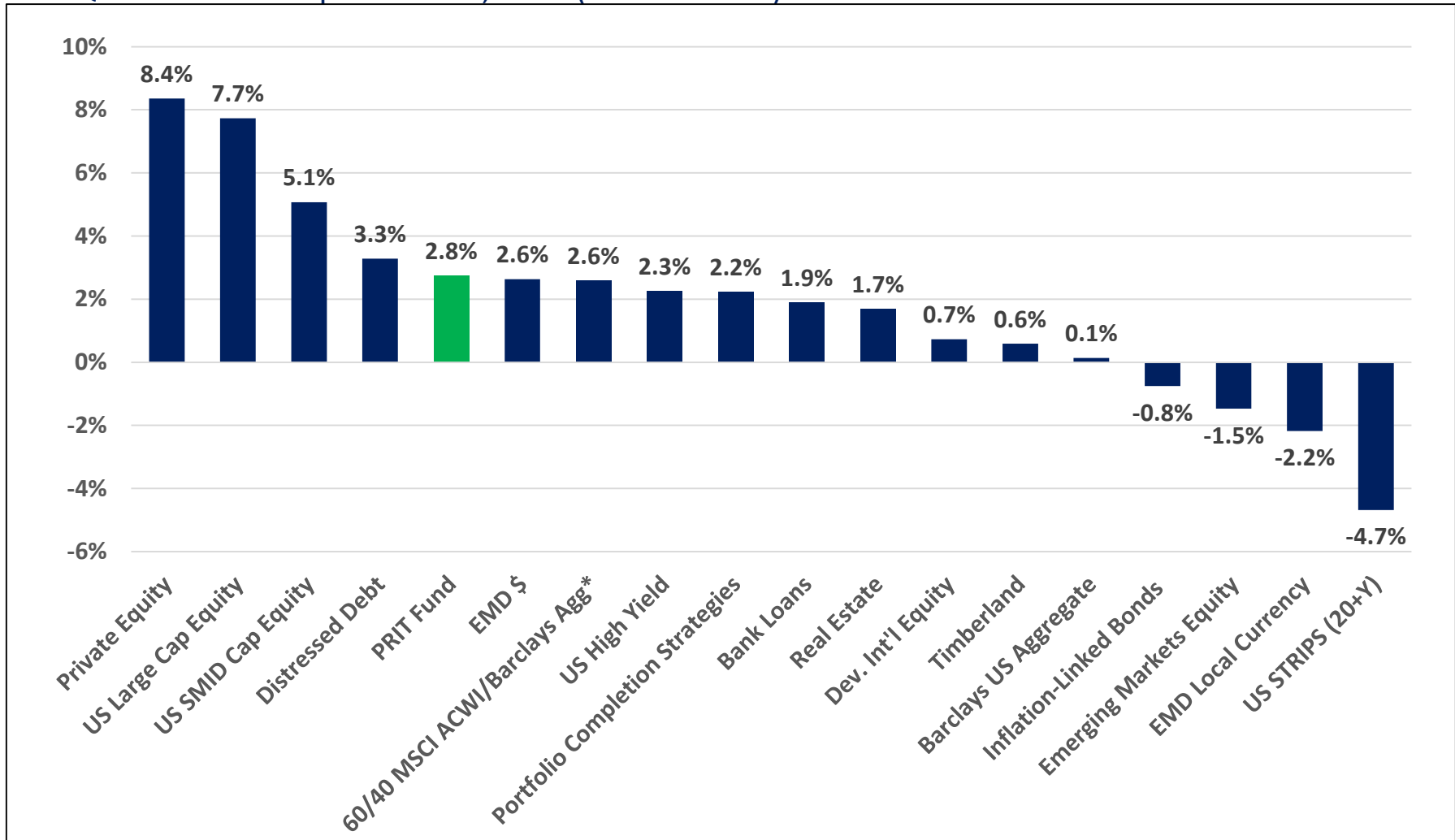


*PCS Includes 9% allocation to Hedge Funds.



Asset Class Performance Summary

One Quarter Ended September 30, 2018 (Gross of Fees)



Source: BNY Mellon, FactSet.

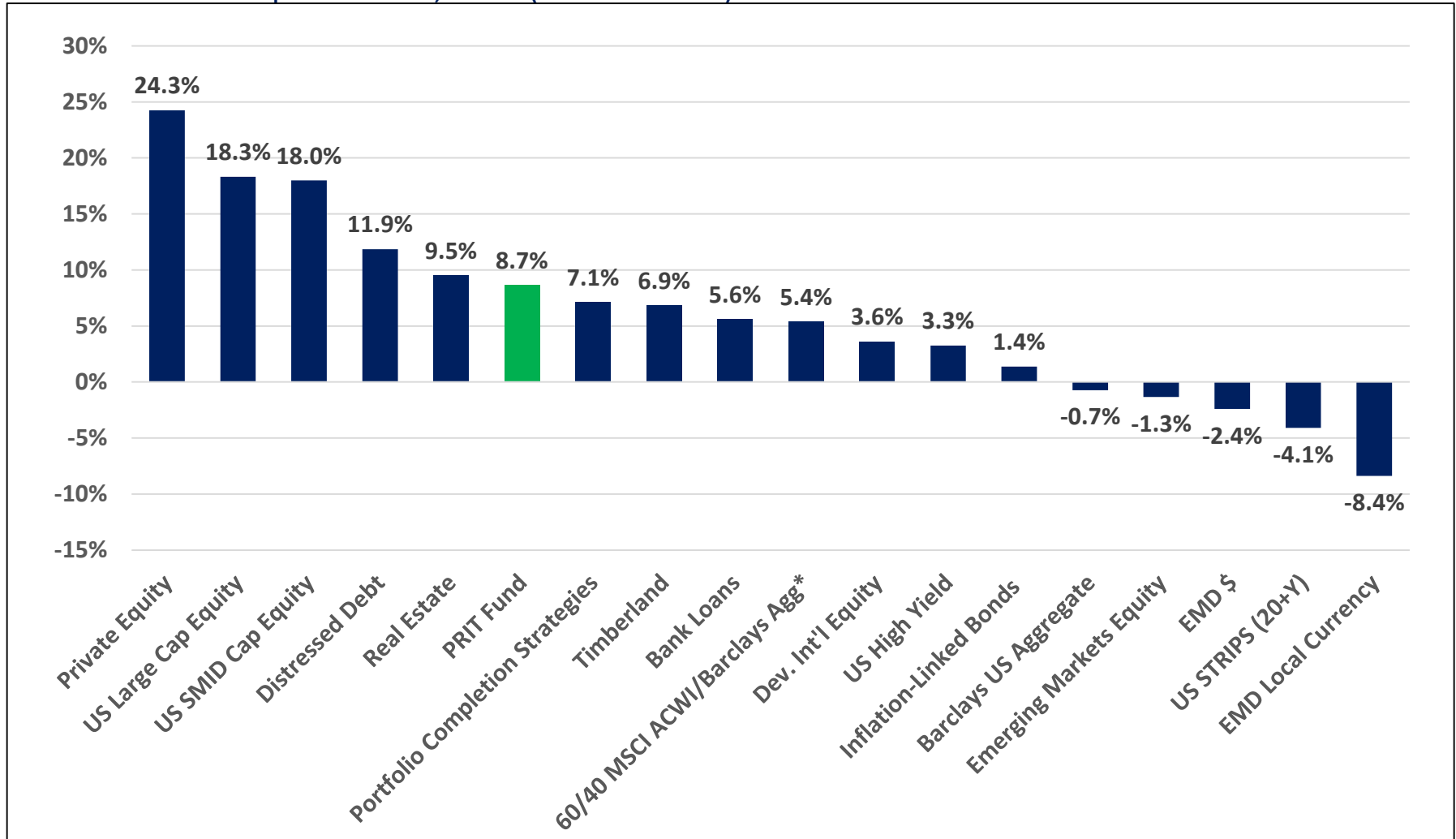
All performance figures reflected are PRIT Fund Asset Class returns.

*MSCI ACWI/Barclays Aggregate is derived from a 60/40 combination of index returns.



Asset Class Performance Summary

One Year Ended September 30, 2018 (Gross of Fees)



Source: BNY Mellon, FactSet.

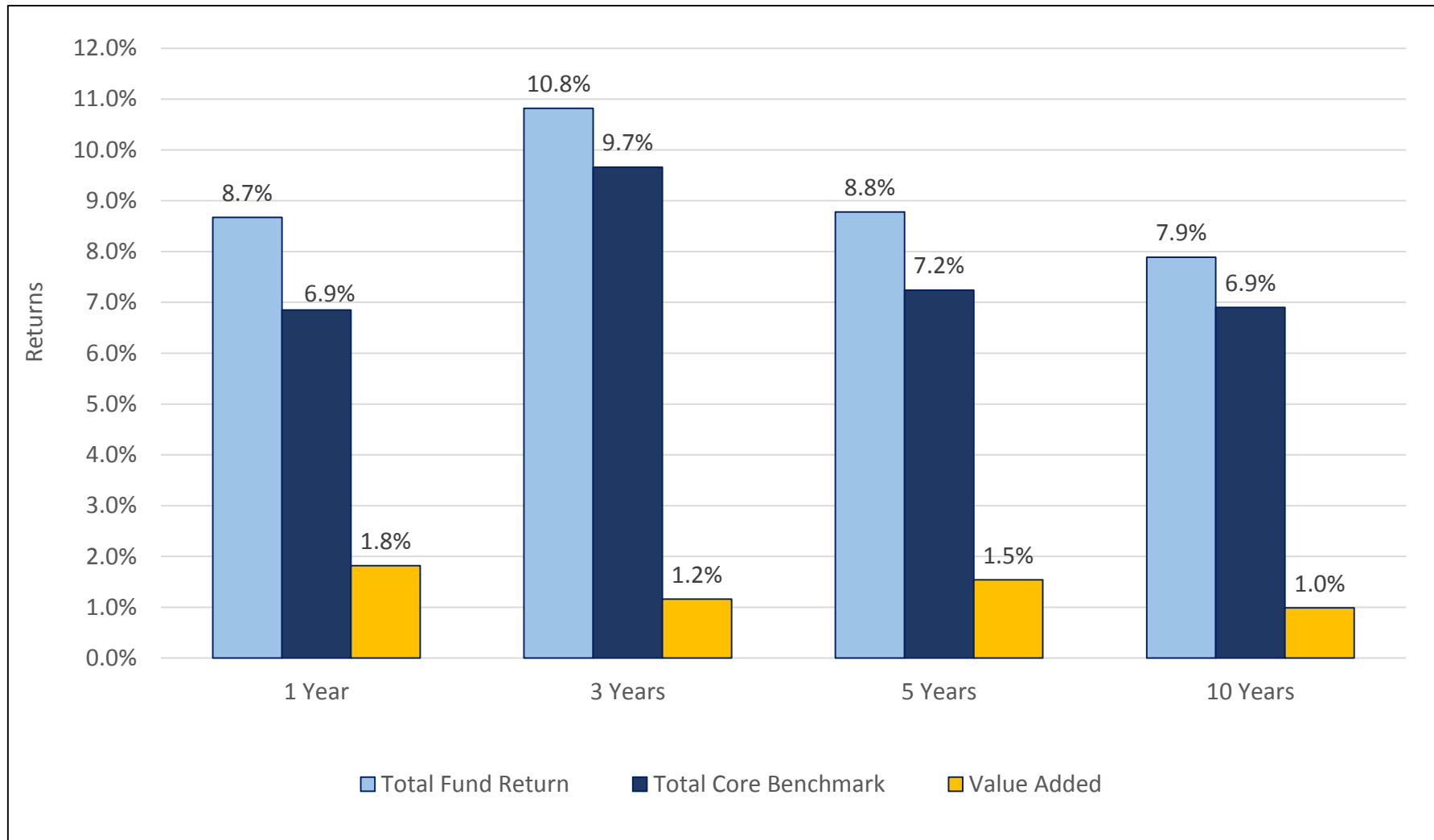
All performance figures reflected are PRIT Fund Asset Class returns.

*MSCI ACWI/Barclays Aggregate is derived from a 60/40 combination of index returns.



Total PRIT Fund Returns

Annualized Returns as of September 30, 2018 (Gross of Fees)



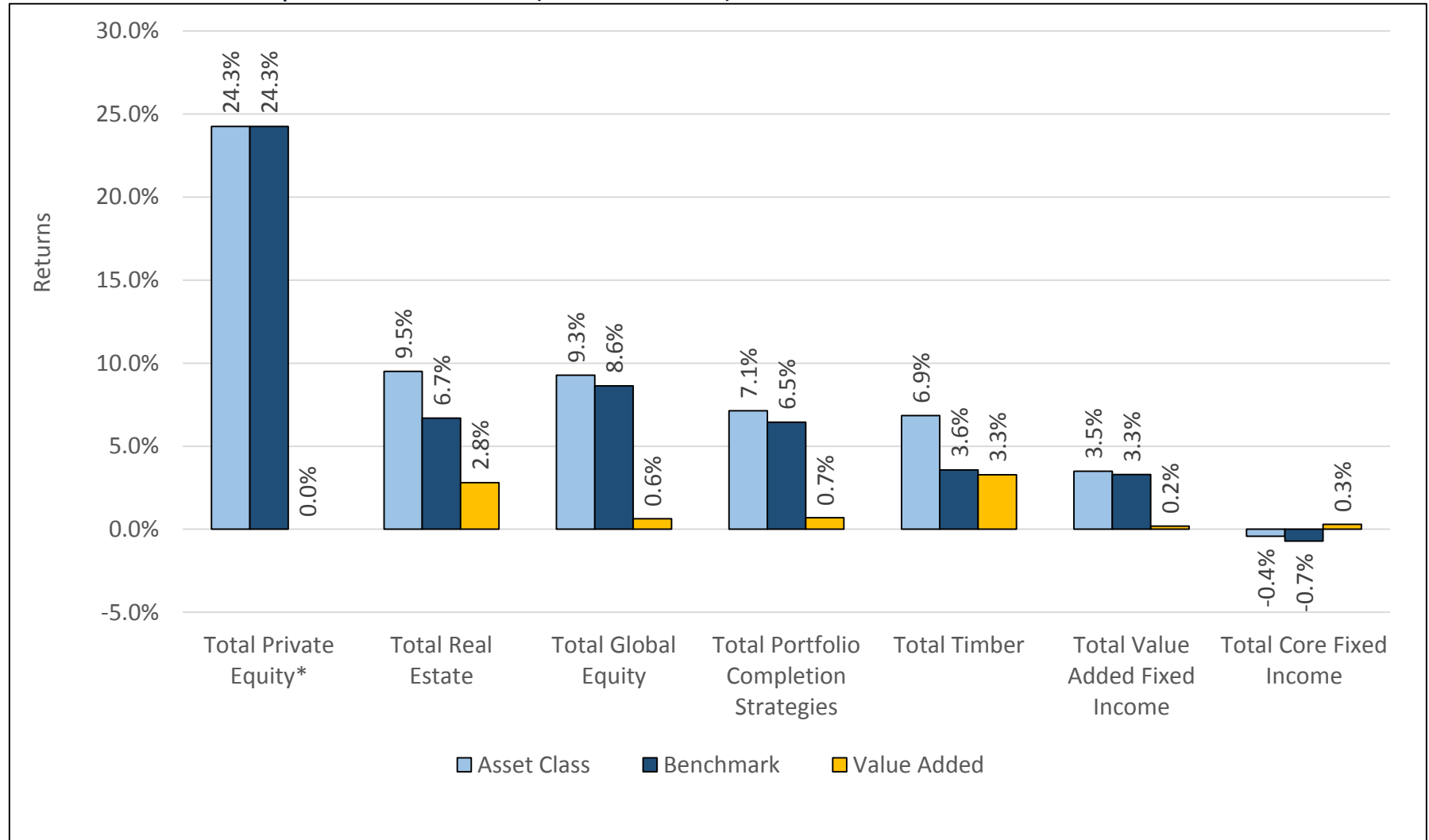
Source: BNY Mellon.

Total Core Benchmark includes private equity benchmark.



PRIT Asset Class Performance

One Year Ended September 30, 2018 (Gross of Fees)



Source: BNY Mellon.

Totals may not add due to rounding.

*Benchmark is actual performance.



PRIT Asset Class Performance

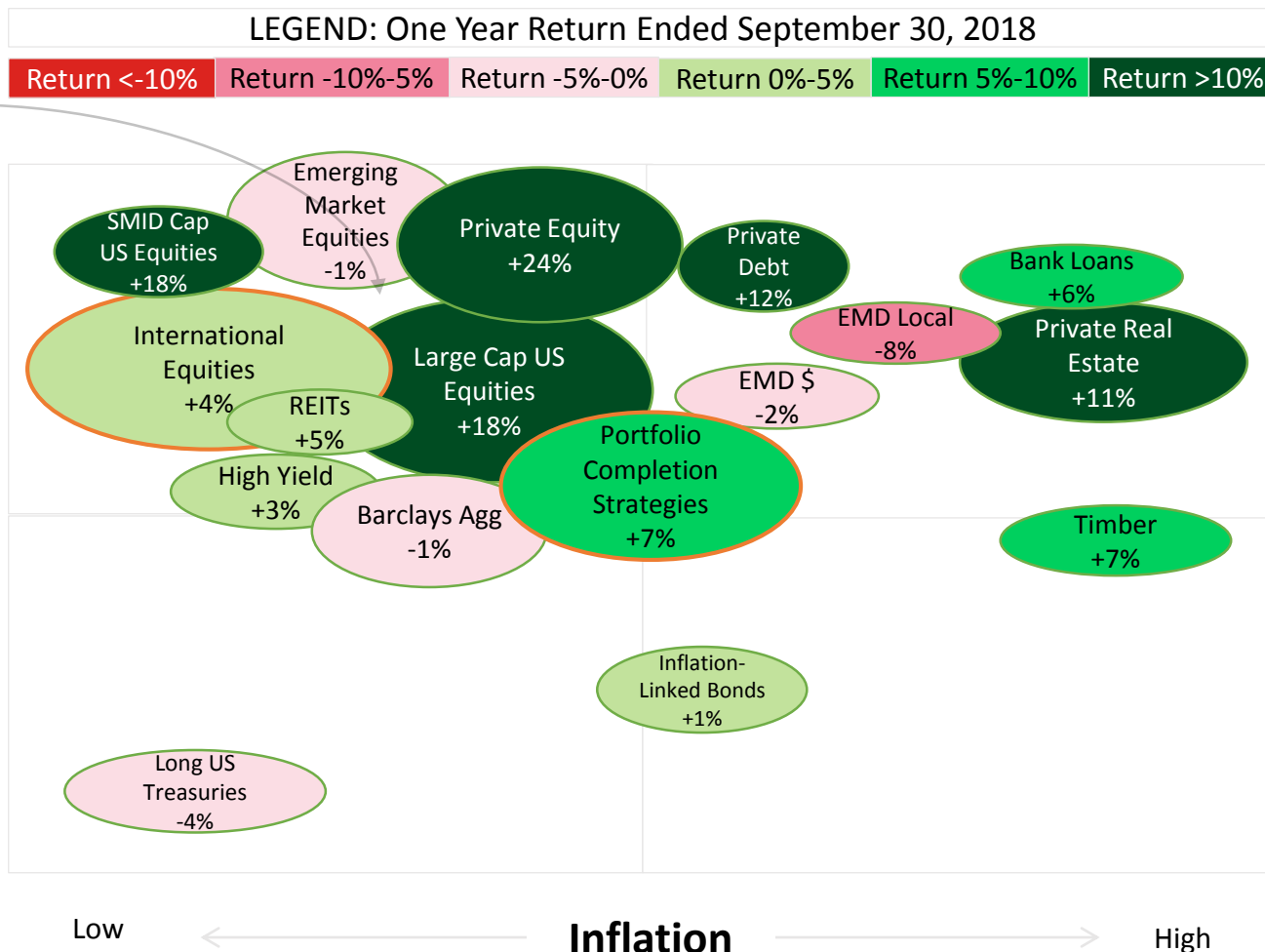
Annualized Returns as of September 30, 2018 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 24.3%	PRIVATE EQUITY 19.3%	PRIVATE EQUITY 20.1%	PRIVATE EQUITY 14.9%
REAL ESTATE 9.5%	GLOBAL EQUITY 14.1%	REAL ESTATE 10.5%	GLOBAL EQUITY 8.9%
GLOBAL EQUITY 9.3%	REAL ESTATE 9.1%	GLOBAL EQUITY 9.1%	VALUE-ADDED FIXED INCOME 7.5%
PORTFOLIO COMPLETION STRATEGIES 7.1%	VALUE-ADDED FIXED INCOME 6.9%	TIMBER 7.2%	REAL ESTATE 7.2%
TIMBER 6.9%	TIMBER 5.6%	PORTFOLIO COMPLETION STRATEGIES 4.9%	CORE FIXED INCOME 4.8%
VALUE-ADDED FIXED INCOME 3.5%	PORTFOLIO COMPLETION STRATEGIES 5.5%	VALUE-ADDED FIXED INCOME 4.4%	PORTFOLIO COMPLETION STRATEGIES 4.6%
CORE FIXED INCOME (0.4%)	CORE FIXED INCOME 2.2%	CORE FIXED INCOME 3.9%	TIMBER 4.6%



Asset Classes & Regimes – One Year Ended September 30, 2018

- GDP Growth: +2.9%.
- Core CPI: +2.2%.
- 30yr yields: +33bps.

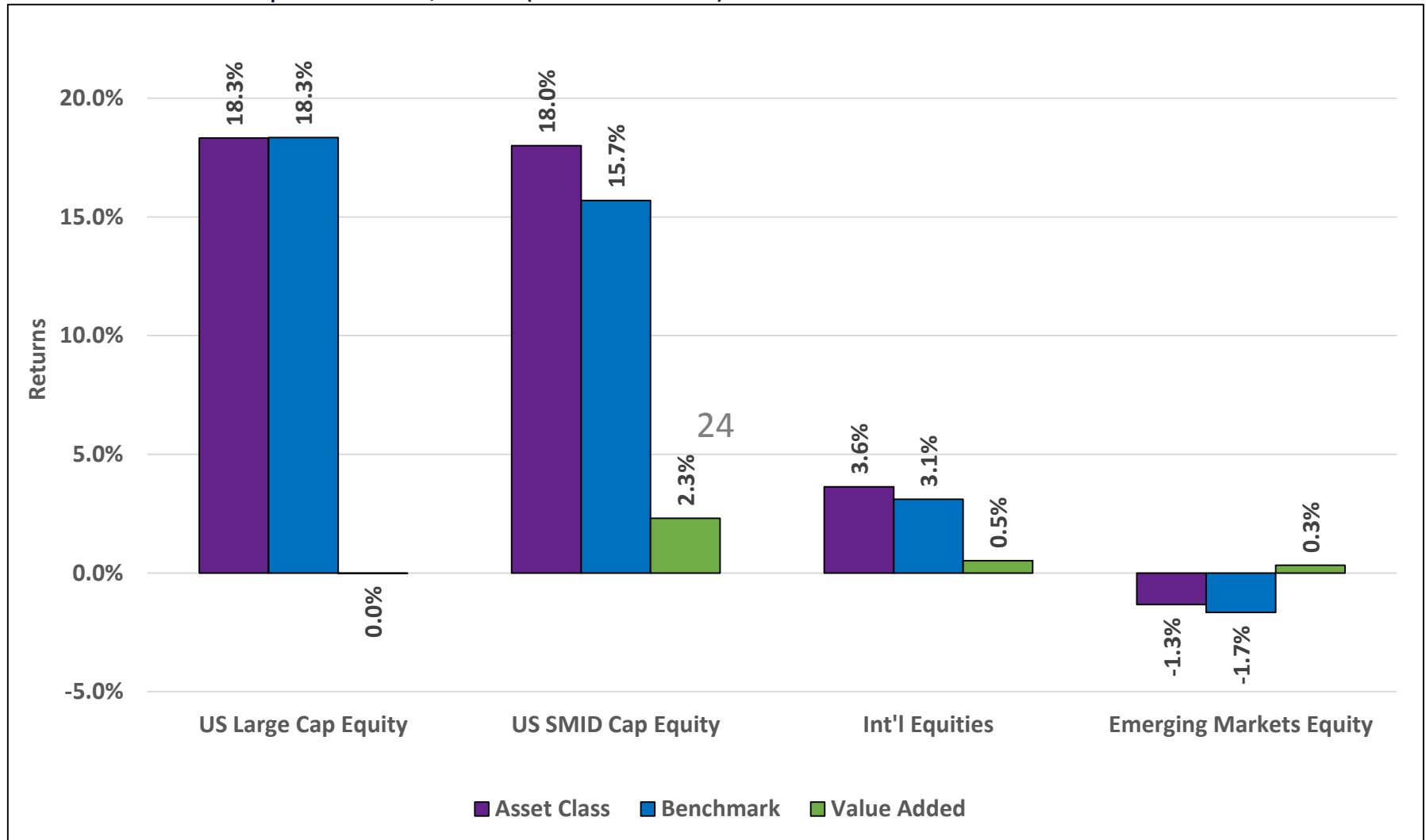


Asset class returns represent PRIM's actual returns, gross of management fees (with the exception of hedge funds, which are net of fees).



Public Markets Performance – Equities

One Year Ended September 30, 2018 (Gross of Fees)

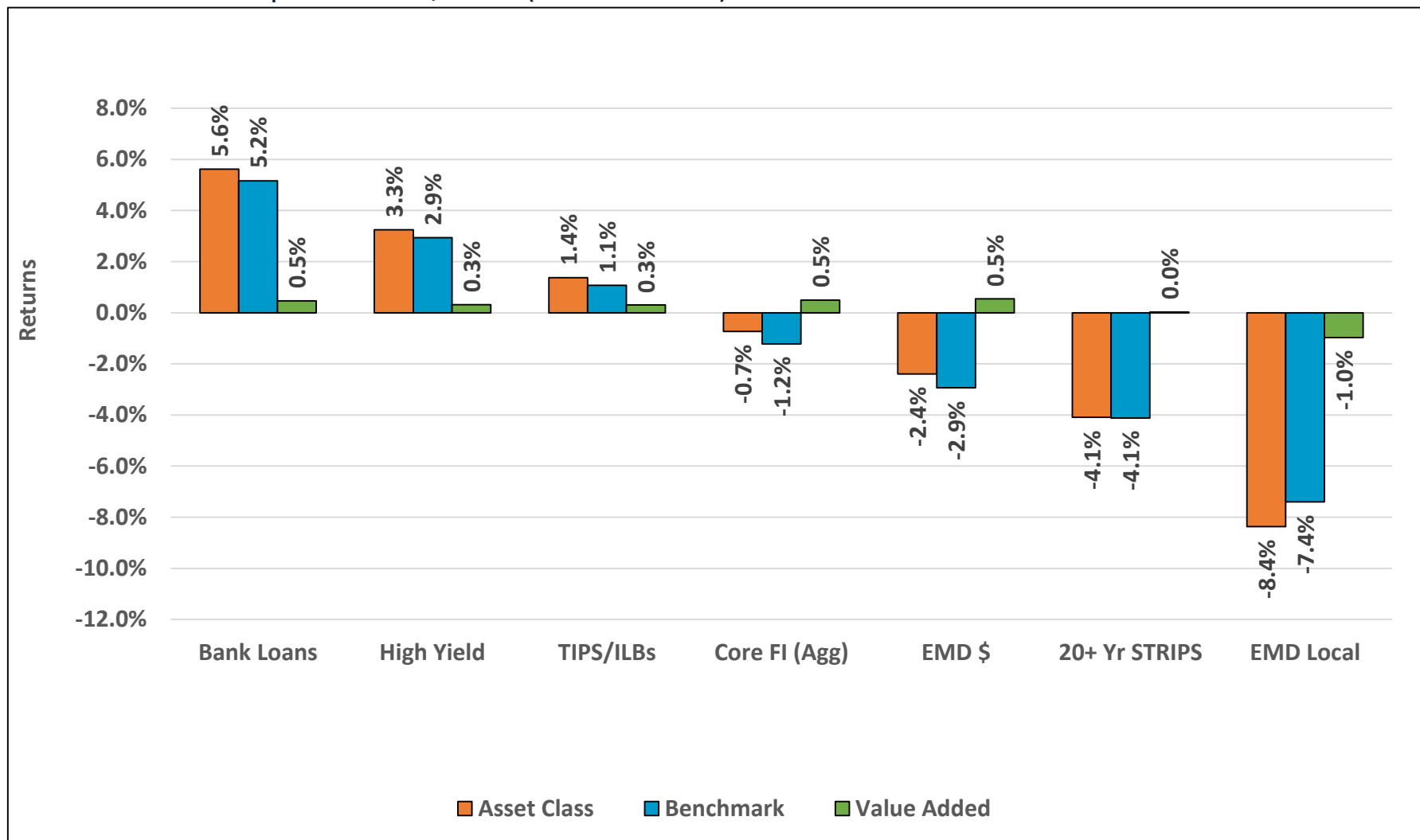


Source: BNY Mellon.
Totals may not add due to rounding.



Public Markets Performance – Fixed Income

One Year Ended September 30, 2018 (Gross of Fees)



Source: BNY Mellon.
Totals may not add due to rounding.

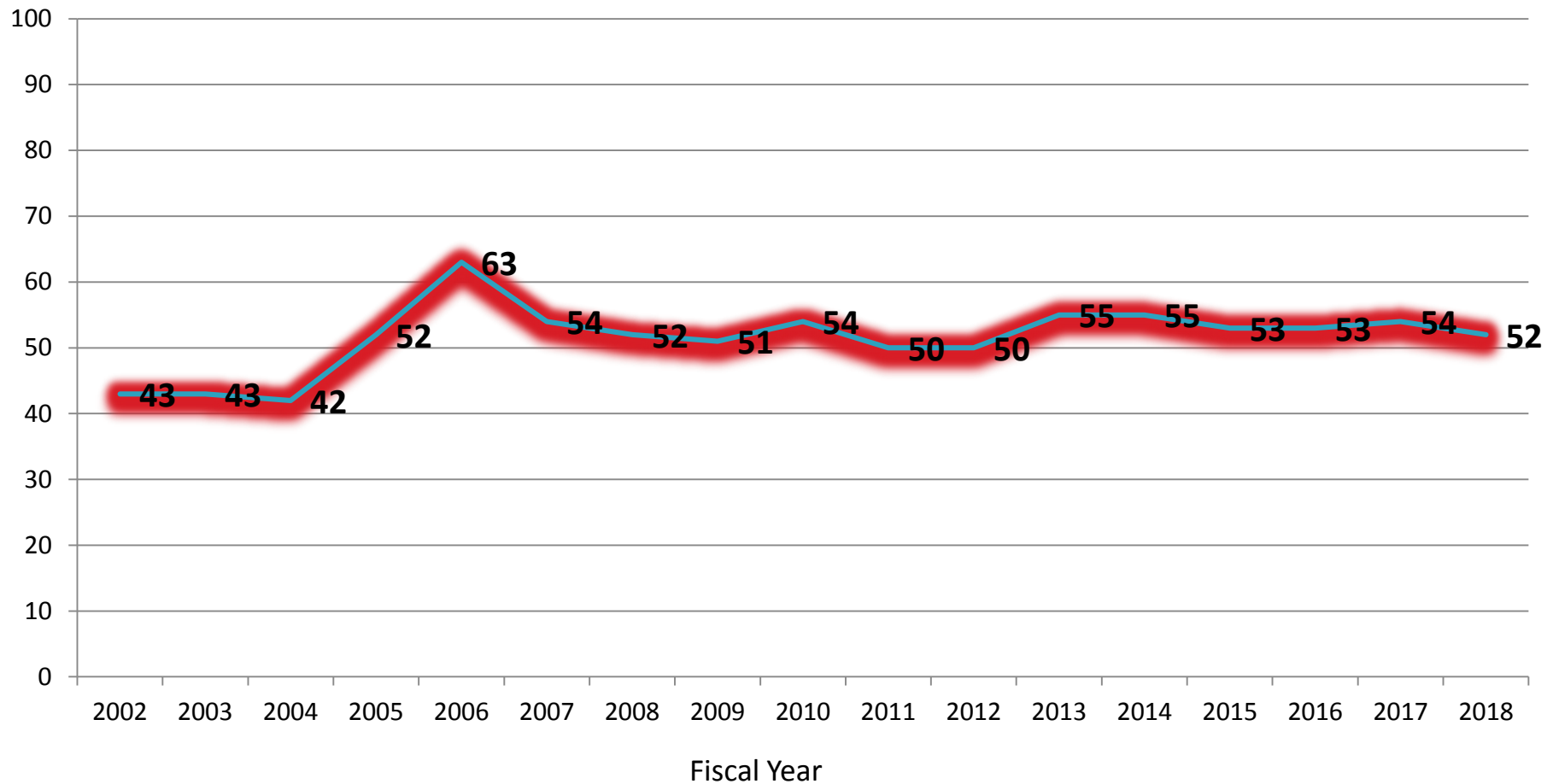


Project SAVE Update

PROJECT SAVE as of 9/30/2018	Annualized Value Target	Annualized Value Realized	% of Target Achieved
INITIAL PROGRAMS			
Hedge Fund-of-Funds Unwind	\$40 mm	\$38.2 mm	96%
Cash Overlay Program	\$20 mm	\$41.9 mm	209%
Public Markets Fee Negotiations	\$1.5 mm	\$1.9 mm	129%
Private Equity Co-Investment	\$25 mm	\$9.4 mm	38%
Hedge Fund Fee Negotiations	\$7 mm	\$57.0 mm	736%
Hedge Fund Replication	\$7 mm	\$14.8 mm	211%
Securities Litigation	\$0.7mm	\$0.6 mm	82%
INITIAL PROGRAMS TOTALS	<u>\$101.2 mm</u>	<u>\$163.9 mm</u>	<u>162%</u>
FOLLOW-ON PROGRAMS			
Real Estate direct- or co-investment	\$2 mm	\$6.6 mm	
Securities Lending	\$15 mm	\$10.5 mm	
Private Equity Stock Distribution	\$0.3mm	\$0.1 mm	
TOTAL PROJECT SAVE PROGRAMS		<u>\$181.0mm</u>	



PRIT Fund Ratio of Expenses in Basis Points





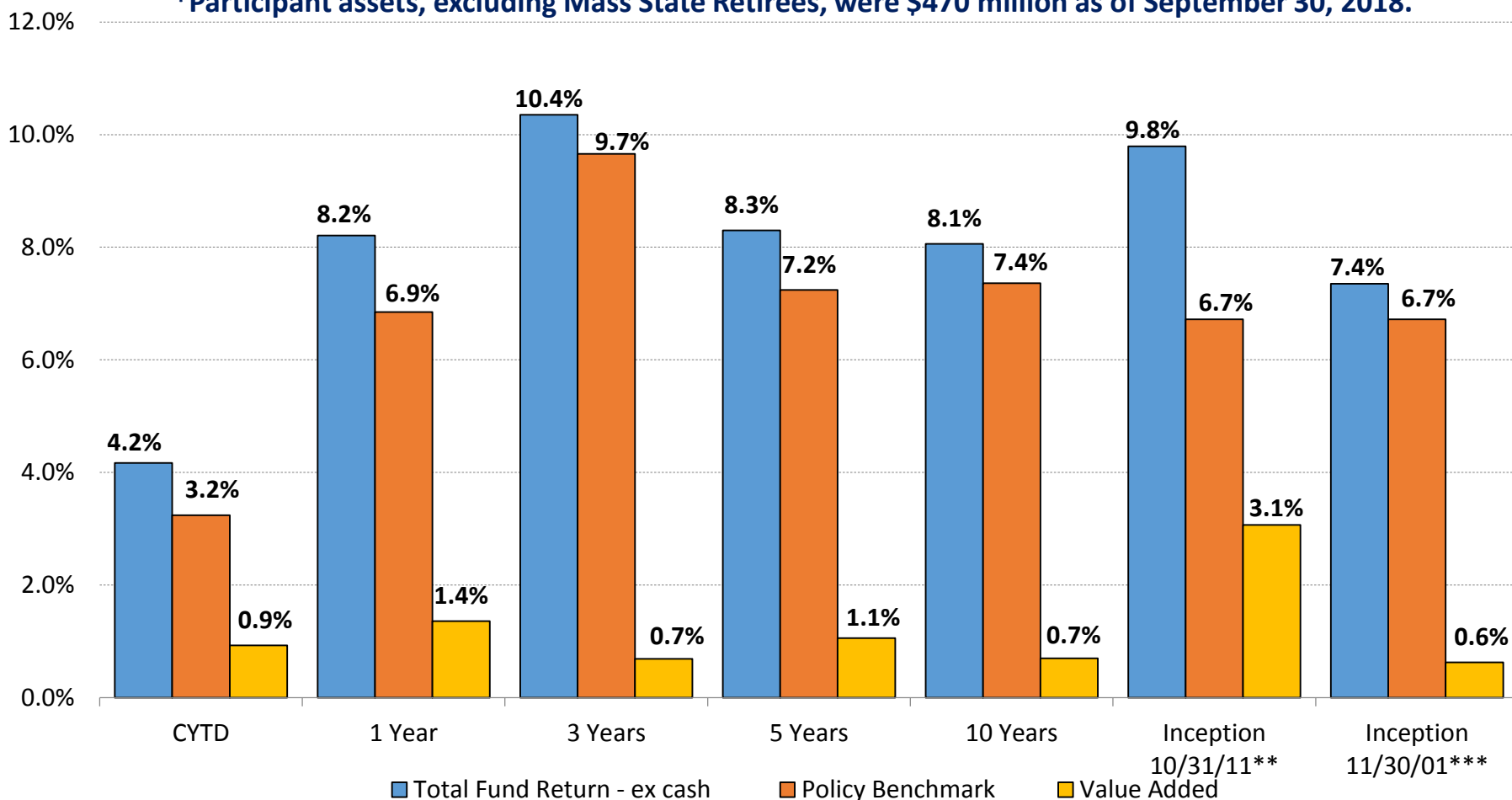
SRBT Fund Performance As of September 30, 2018



Total SRBT Fund Returns (Net of Fees) - \$1.613 Billion*

Annualized Returns as of September 30, 2018

*Participant assets, excluding Mass State Retirees, were \$470 million as of September 30, 2018.



The inception date for the SRBTF's investment in the PRIT Fund General Allocation Account (PRIT GA) was 10/31/2011, when 82% of the fund was transitioned from separate accounts to PRIT GA. The remaining 18% of separate account assets were transitioned over the following 14 months with 100% of assets invested in PRIT GA by 12/31/2012. **The ITD return of 10.1% reflects the inception-to-date return for PRIT GA assets only.

*** The inception date for the TOTAL FUND was 11/30/2001. This ITD value reflects the true inception-to-date return for all SRBTF assets including legacy separate account investments as well as the PRIT GA investments.





SRBT Fund Performance

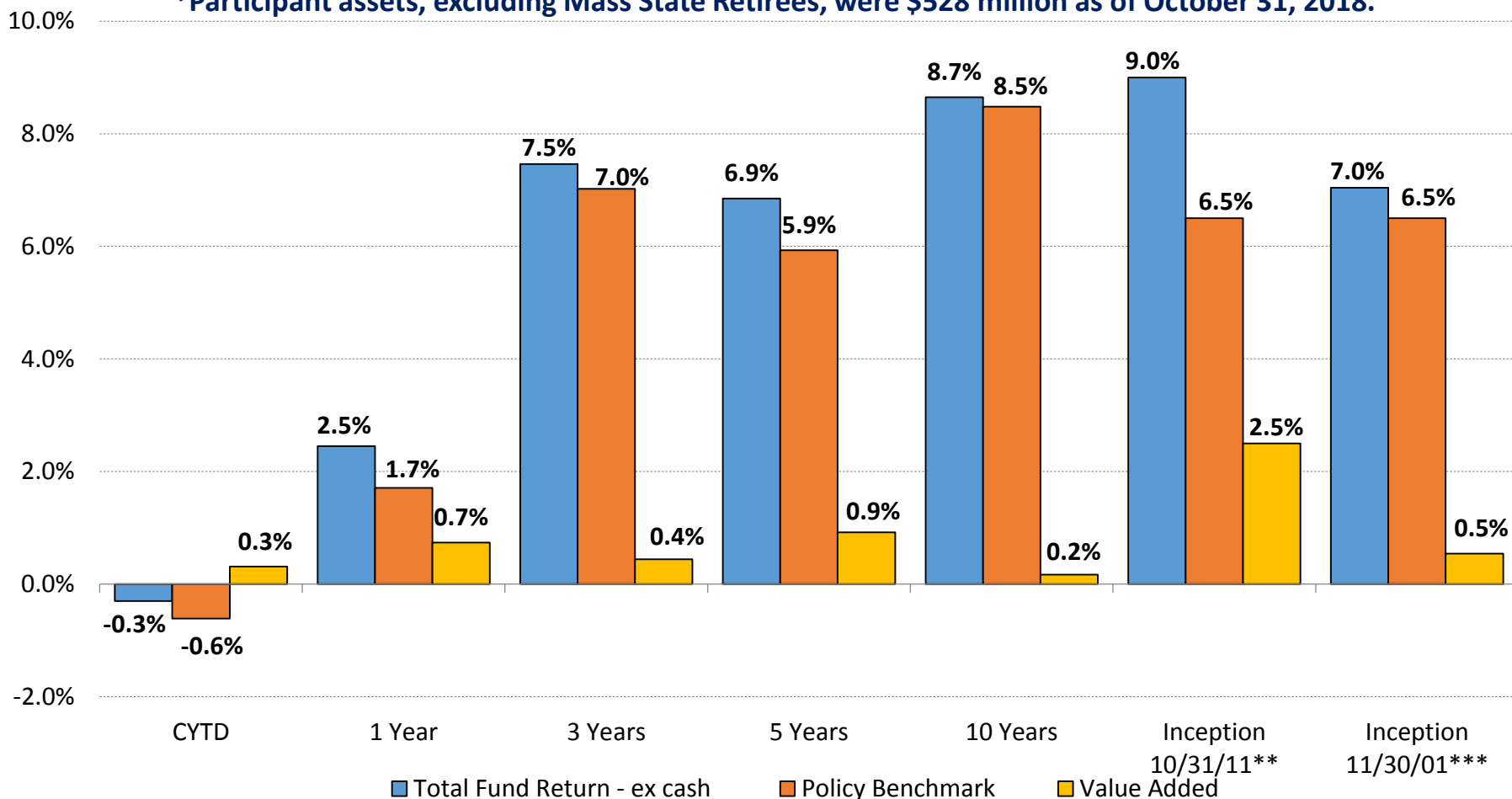
As of October 31, 2018



Total SRBT Fund Returns (Net of Fees) - \$1.622 Billion*

Annualized Returns as of October 31, 2018

*Participant assets, excluding Mass State Retirees, were \$528 million as of October 31, 2018.



The inception date for the SRBTF's investment in the PRIT Fund General Allocation Account (PRIT GA) was 10/31/2011, when 82% of the fund was transitioned from separate accounts to PRIT GA. The remaining 18% of separate account assets were transitioned over the following 14 months with 100% of assets invested in PRIT GA by 12/31/2012. **The ITD return of 10.1% reflects the inception-to-date return for PRIT GA assets only.

*** The inception date for the TOTAL FUND was 11/30/2001. This ITD value reflects the true inception-to-date return for all SRBTF assets including legacy separate account investments as well as the PRIT GA investments.





Municipal Outreach



Municipal Outreach

1. Acton-Boxborough Regional School District
2. Amherst-Pelham Regional School District (OPEB committee considering investment options)
3. Andover
4. Ayer Shirley Regional School District
5. Belmont
6. Bernardston
7. Bridgewater
8. Byfield Water District
9. Cape Cod Regional Transit Authority
10. Chelmsford Water District
11. Dartmouth
12. Dracut
13. Freetown
14. Foxboro
15. Greater Lawrence Sanitary District
16. Greater Lowell Technical Regional High School (Renewed interest in October)
17. Greenfield
18. Groton*
19. Halifax
20. Hanover (RFQ in Process)*
21. Haverhill
22. Hull
23. Longmeadow
24. Lynn
25. Massachusetts Association of Regional Planning Agencies (MARPA)
26. Massachusetts Housing Finance Authority
27. Medway
28. Melrose
29. Mohawk/Hawlemont Regional School District (Buckland)
30. Nauset Regional High School
31. Newbury
32. Pepperell
33. Somerset
34. South Hadley Fire District (Scheduling a meeting date)*
35. Springfield
36. Sudbury
37. Tri-County Educational Collaborative (Franklin, MA)
38. Truro
39. Waltham
40. West Boylston Municipal Light Department
41. West Newbury
42. Woburn

*New listing



Governmental Entities Participating in the SRBTF

- | | |
|---|---|
| 1. Town of Acton | 38. Manchester Essex Regional School District |
| 2. Town of Amherst | 39. Town of Marblehead |
| 3. Town of Ayer | 40. Marblehead Municipal Light Department |
| 4. Town of Bedford | 41. Massachusetts School Building Authority |
| 5. City of Beverly | 42. Mass State Retirees (SRBTF) |
| 6. BiCounty Educational Collaborative, Franklin, MA | 43. Mass Water Resources Authority |
| 7. Town of Blackstone | 44. Town of Medfield |
| 8. Boston Redevelopment Authority | 45. Town of Middleton |
| 9. Town of Boxford | 46. Town of Milton |
| 10. Town of Braintree | 47. Town of Montague |
| 11. Town of Brewster | 48. Nashoba Regional School District |
| 12. Town of Brookline | 49. Town of Needham |
| 13. Town of Burlington | 50. City of New Bedford |
| 14. Town of Chelmsford | 51. City of Newburyport |
| 15. Concord Area Special Education (CASE) Collaborative | 52. City of Newton |
| 16. Town of Cohasset | 53. Town of North Andover |
| 17. Town of Dalton | 54. Town of Northborough |
| 18. Town of Dracut | 55. Old Rochester Regional School District |
| 19. Town of Dedham | 56. Town of Orleans |
| 20. Fall River Housing Authority | 57. Pilgrim Area Collaborative (PAC), Pembroke, MA |
| 21. City of Fitchburg | 58. Town of Provincetown |
| 22. Town of Franklin | 59. Shawsheen Valley Technical High School, Billerica, MA |
| 23. Franklin Regional Council of Governments | 60. Town of Sherborn |
| 24. Town of Harvard | 61. Town of Stockbridge |
| 25. Town of Hingham | 62. Town of Tewksbury |
| 26. Town of Holliston | 63. Town of Wakefield |
| 27. Town of Ipswich | 64. Wakefield Municipal Gas & Light Department |
| 28. Town of Lancaster | 65. Town of Wayland |
| 29. Lawrence Housing Authority | 66. Town of Wellesley |
| 30. Town of Lenox | 67. Town of Westwood |
| 31. City of Leominster | 68. Town of Wilmington |
| 32. Town of Lincoln | |
| 33. Lincoln-Sudbury Regional School District | |
| 34. Town of Longmeadow | |
| 35. Lowell Regional Transit Authority (LRTA) | |
| 36. Lower Pioneer Valley Educational Collaborative | |
| 37. Town of Manchester-By-The-Sea | |

