



PRESENTATION TO THE **STATE RETIREE BENEFITS TRUST FUND BOARD**

PRESENTED BY
Francesco Daniele, Director of Client Services

August 12, 2021

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

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A blue-tinted photograph of a city skyline, likely Boston, viewed from across a body of water. The skyline includes several tall skyscrapers and a mix of lower-rise buildings. In the foreground, there is a paved walkway with benches and some greenery on the left side.

PRIM BOARD & PRIT FUND OVERVIEW



AS OF JUNE 30, 2021

PRIT Fund Snapshot

PRIT FUND FACTS

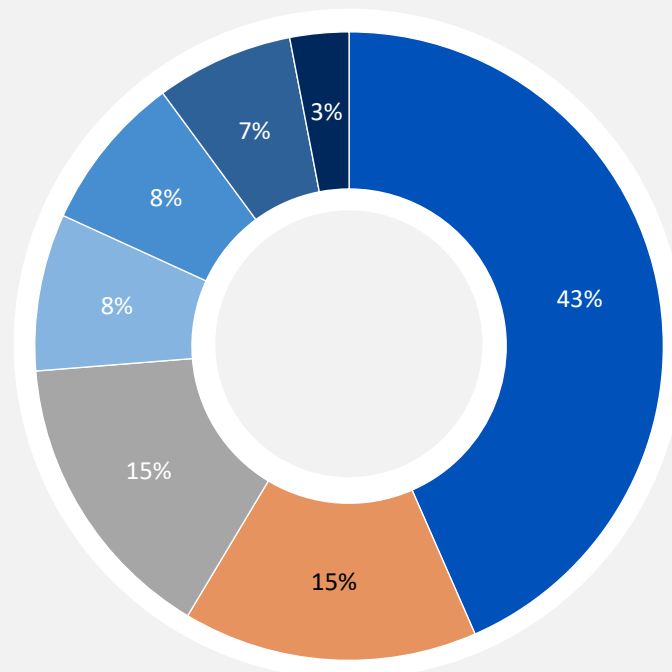
- \$95.7 billion AUM
- 51 public markets portfolios
- 16 real estate, timber and REIT portfolios
- 100+ private equity managers;
200+ partnerships
- 32 portfolio completion strategies managers

OVERSIGHT AND STAFFING

- 9 appointed and elected trustees
- 4 advisory committees, consisting of 35 industry professionals and Board members
- Staff of 49 professionals
 - 2 PhDs
 - 27 Masters
 - 11 CFAs
 - 6 CPAs
 - 2 CAIAs
 - 1 FRM
 - 1 CRE
- 19 CFA Investment Foundations Program Certificate Holders

ASSET ALLOCATION

(as of 6/30/21)



TARGET RANGES

(approved 2/24/21)

- Global Equities 34% - 44%
- Core Fixed Income 12% - 18%
- Private Equity 11% - 17%
- Portfolio Completion Strategies 7% - 13%
- Real Estate 7% - 13%
- Value-Added Fixed Income 5% - 11%
- Timberland 1% - 7%

About PRIM



\$95.7 billion investment fund that invests public employee pension benefits

- PRIM has a professional, experienced and focused investment staff.
- PRIM does not administer benefits.

PRIM's mission is to relieve the pension funding burden on the taxpayer

- Self-funded agency which generates asset returns for the Massachusetts pension system.
- PRIM's Project SAVE initiative is achieving over \$250 million annualized value enhancing activities for the fund annually.

PRIM is independent and governed by a nine-member Board of Trustees

- Massachusetts State Treasurer is the Chair of the PRIM Board.
- A robust committee structure lends investment and operational expertise to the decision-making process.



PRIM Core Beliefs

We believe that any investment must be evaluated on three equally important parameters: return, risk and cost.

We don't make tactical asset allocation decisions or investment decisions based on market or economic predictions. Instead, we engineer a strategic, long-term asset allocation strategy that we hope will stand the test of a long-time horizon.

We value a basis point of cost reduction more than a basis point of return. Because we can count on cost savings every year, but nobody ever really knows what the markets will deliver.

PRIM Top 10 Accomplishments

1

Stable organization: Exceptional staff with low turnover supported by a strong, stable Board and Committee structure

2

National recognition for PRIM and its staff

3

Strong relative and absolute investment performance

4

Sophisticated risk management platform and framework

5

Methodical asset allocation decisions

6

Project SAVE

7

Re-engineered Hedge Fund program – Portfolio Completion Strategies

- Direct hedge funds
- Hedge fund replication
- Emerging manager direct hedge fund
- Hedge fund and other credit fund co-investment

8

Enhanced manager search and selection process

9

Private Equity co-investment

10

Direct Real Estate Program

PRIM Board



Chair
DEBORAH B. GOLDBERG
State Treasurer and
Receiver General,
Commonwealth of Massachusetts



**Ruth Ellen
Fitch**

Appointee of
the State
Treasurer



**James B.G.
Hearty**

Designee
of the
Governor,
Ex Officio
Member



**Peter
Monaco**

Appointee
of the
Governor,
Non-State
Employee or
Official



Carly Rose

Appointee
of the
Governor,
Public Safety



**Theresa F.
McGoldrick,
Esquire**

State
Retirement
Board
Member
(SRB)



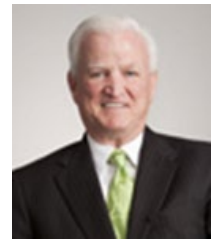
**Dennis J.
Naughton**

Teachers'
Retirement
Board
Member
(TRB)



**Robert L.
Brousseau**

Elected
Representative
State Teachers'
Retirement
System



**Paul E.
Shanley,
Esquire**

Elected
Representative
State
Employees
Retirement
System



PRIM Advisory Committees

Investment Committee

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. Members include:

1. **Deborah B. Goldberg**, Chair, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
2. **Joseph C. Bonfiglio**, Massachusetts & Northern New England Laborers' District Council
3. **C. LaRoy Brantley**, Investment Consultant
4. **Michael Even**, Former President and CEO, Numeric Investors
5. **Constance M. Everson**, CFA, Managing Director, Capital Markets Outlook Group
6. **Ruth Ellen Fitch**, Esq., Board Member, Former President and CEO, the Dimock Center
7. **James B. G. Hearty**, Board Member, Former Partner, Clough Capital (Ex Officio)
8. **Peter Monaco**, Board Member, Managing Director, Raptor Group
9. **Phillip H. Perelmutter**, Former Managing Partner, Wellington Management
10. **Philip Rotner**, Chief Investment Officer, Boston Children's Hospital
11. **Paul E. Shanley**, Esq., Board Member, Director of Professional Liability, Amity Insurance
12. **Glenn P. Strehle**, CFA, Treasurer Emeritus, MIT
13. **Timothy L. Vaill**, Former Chairman and CEO, Boston Private Holdings

Real Estate Committee

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

1. **Jill S. Hatton**, CRE, Chair, Real Estate Investment Professional
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Lydia Chesnick**, Esq., Partner, Bernkopf Goodman LLP
4. **Robert Gifford**, RGA Corp.
5. **Anthony E. Hubbard**, Esq., CVS Health
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**, Board Member, Public Safety Union Member



PRIM Advisory Committees

Administration and Audit Committee

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. Members include:

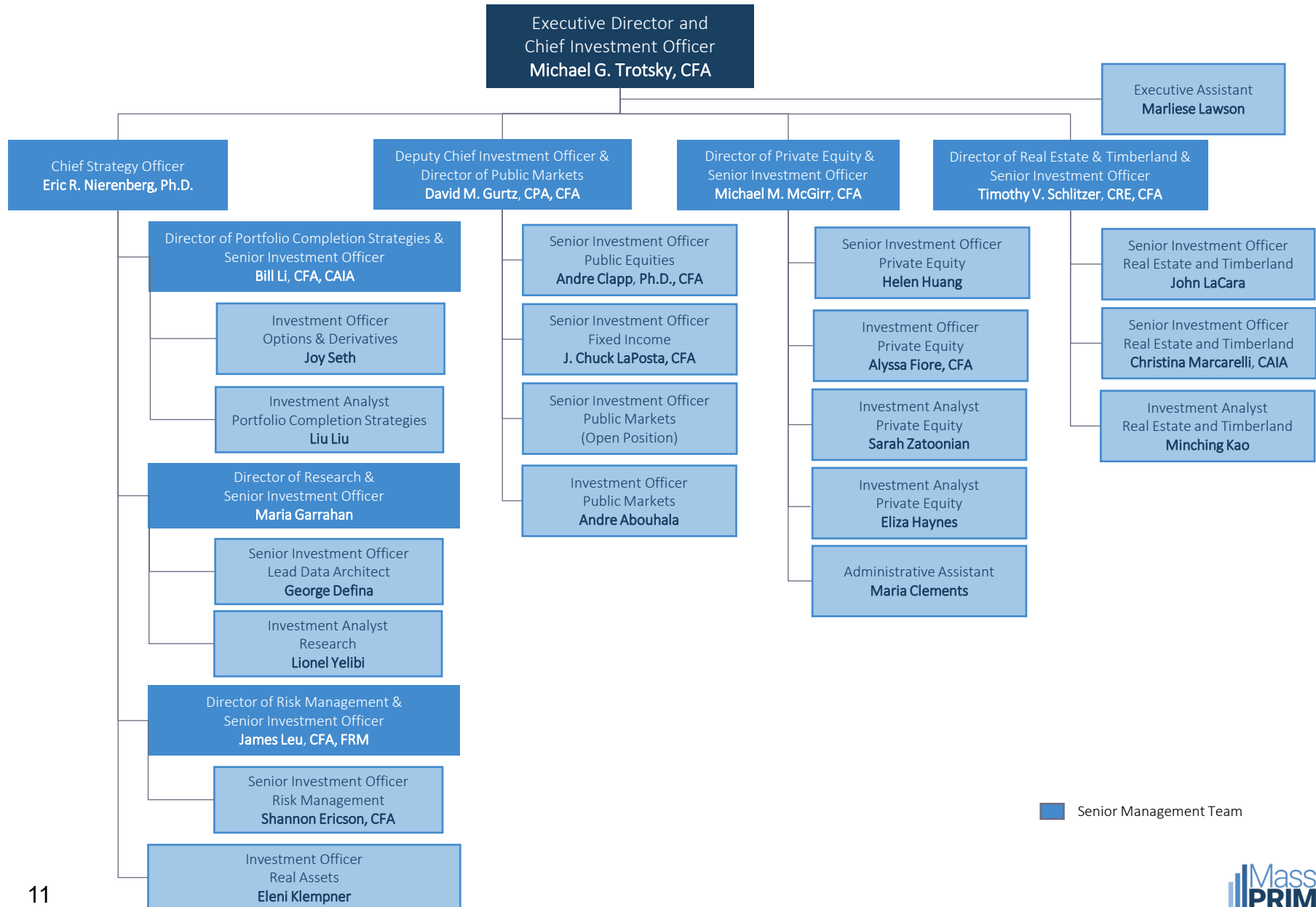
1. **Robert L. Brousseau**, Chair, Board Member, Retired Teacher, Town of Wareham School System
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board
4. **Karen E. Gershman**, CPA, Former Partner and Chief Operating Officer, Health Advances
5. **James B. G. Hearty**, Board Member, Former Partner, Clough Capital (Ex Officio)
6. **Theresa F. McGoldrick**, Esq., Board Member, National Executive Vice President, National Association of Government Employees (NAGE)
7. **Dennis J. Naughton**, Board Member, Retired Educator, Millis Public Schools
8. **Michele A. Whitham**, Esq., Founder & Principal, Whitham Law LLC

Compensation Committee

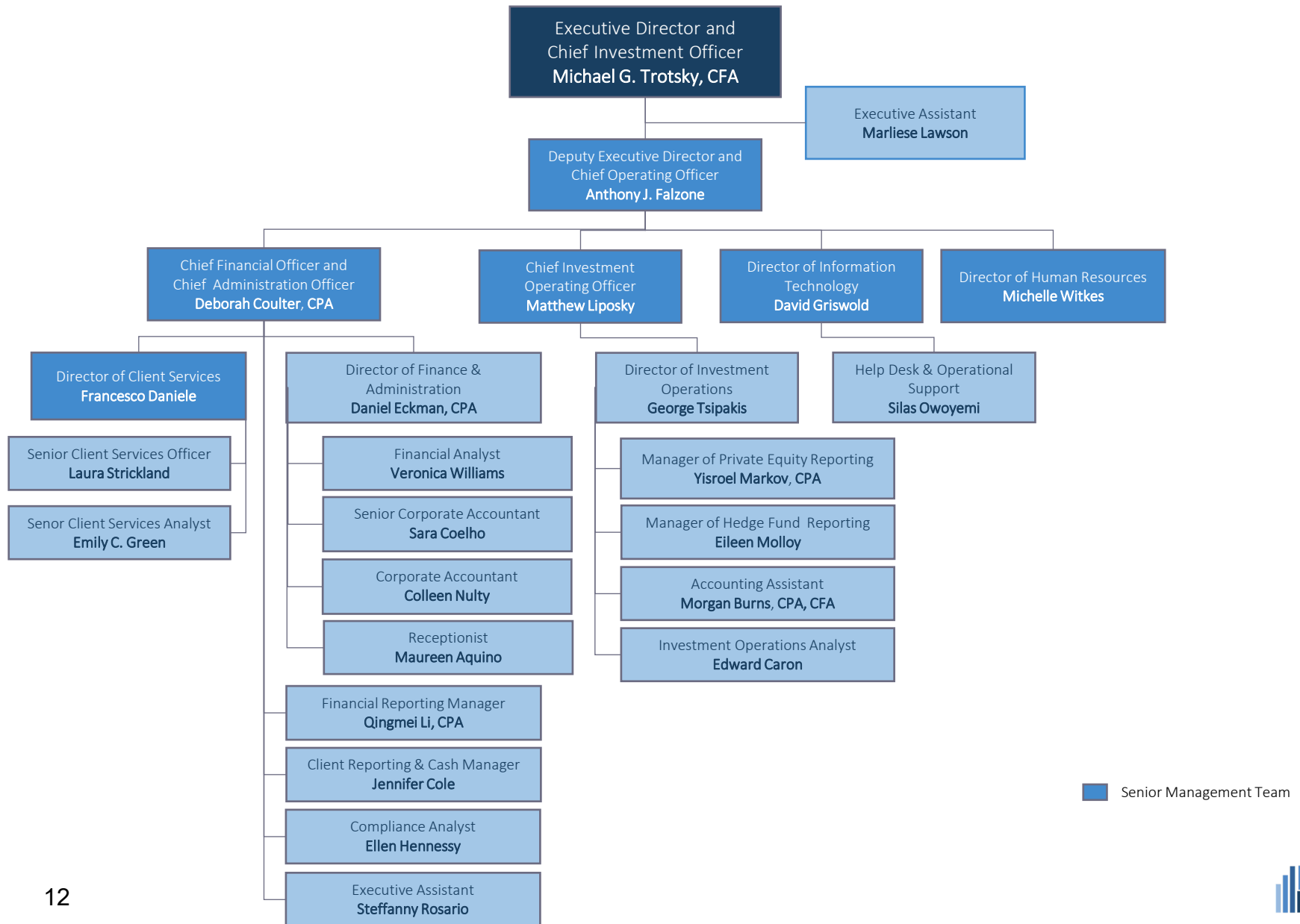
The Committee assists the Board in overseeing staff compensation and benefit policies. The Administration and Audit Committee is responsible for assisting the Board on other human resource matters. Members include:

1. **Michele A. Whitham**, Esq., Chair, Founder & Principal, Whitham Law LLC
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Robert L. Brousseau**, Board Member, Retired Teacher, Town of Wareham School System
4. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board

PRIM Investment Team



PRIM Finance and Operations Team



External Advisors

Fund Advisors

- **Aberdeen Asset Management** – Portfolio Completion Strategies
- **Albourne** – Operational Due Diligence
- **Callan Associates** – Public Markets
- **Hamilton Lane** – Private Equity
- **International Woodland Company** – Timberland
- **NEPC, LLC** – Asset Allocation
- **NewAlpha Asset Management** – Portfolio Completion Strategies

Independent Auditors

- **KPMG, LLP** – PRIM Board and PRIT Fund, Real Estate, Timber, and SASE 16 Reviews

Other

- **Seven Letter** – Communications
- **Edgewater Technology** – IT support

Custodian

- **BNY Mellon Corporation**

A blue-tinted photograph of a city skyline at dusk or dawn, viewed from across a body of water. In the foreground, there is a paved walkway and some greenery on the left. The city skyline features several prominent skyscrapers, including the Freedom Tower. The water reflects the city lights.

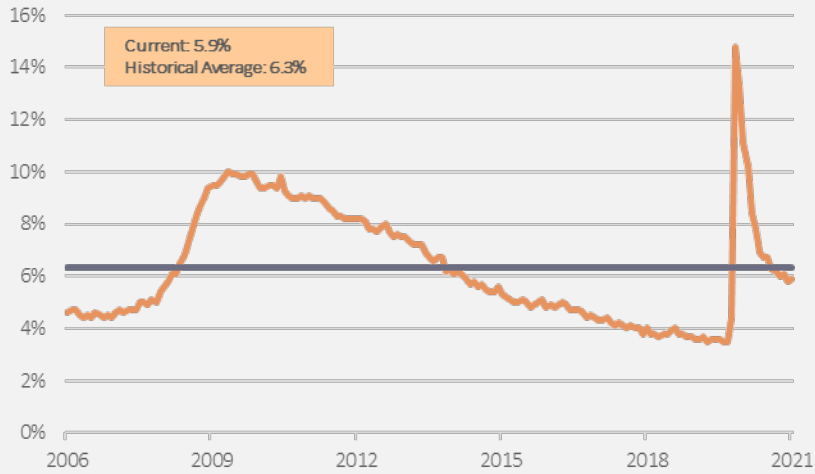
ECONOMIC UPDATE

**Mass
PRIM**

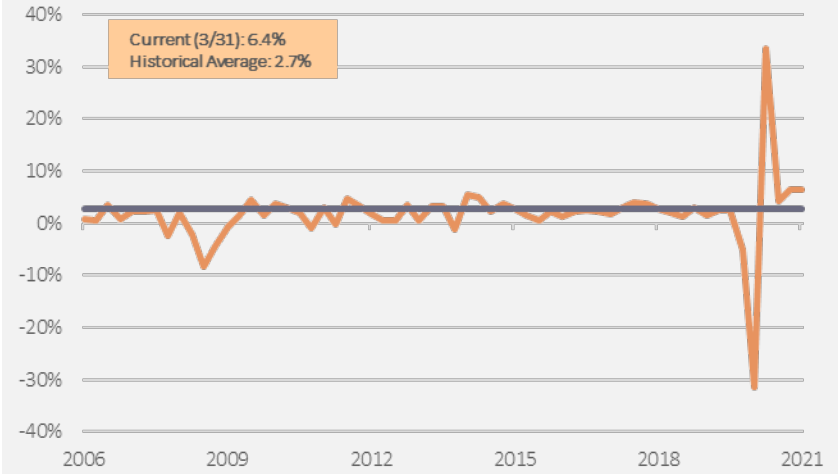
AS OF JUNE 30, 2021

U.S. Economic Data

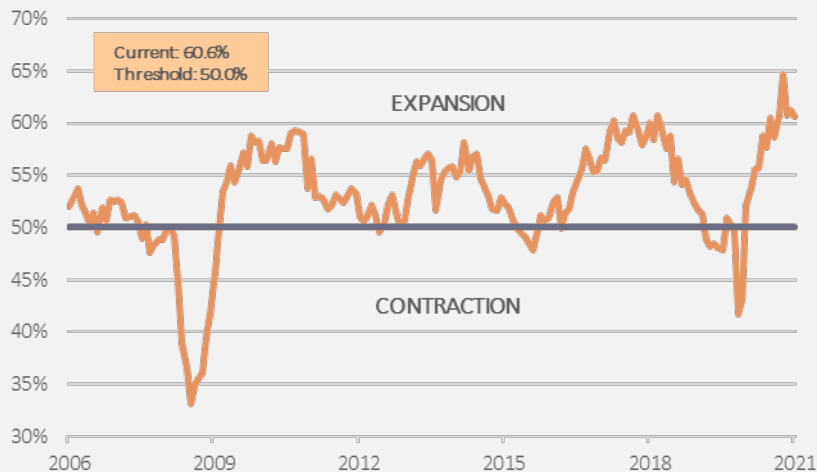
UNEMPLOYMENT RATE



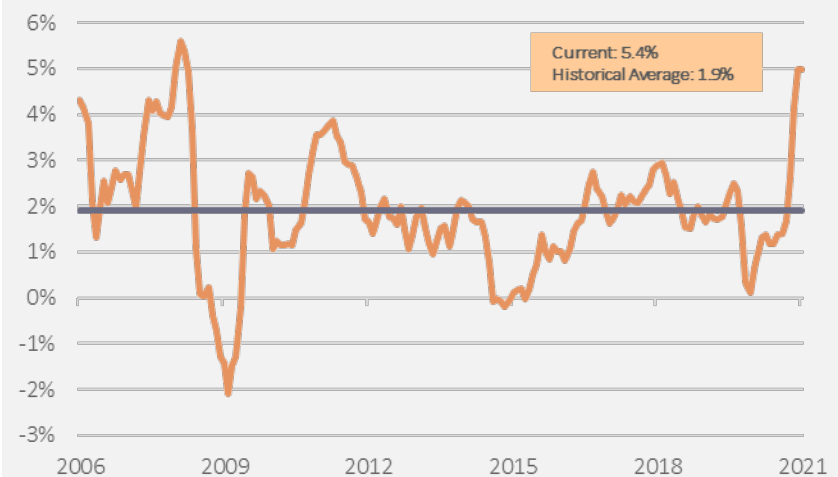
GDP GROWTH RATE



MANUFACTURING PMI

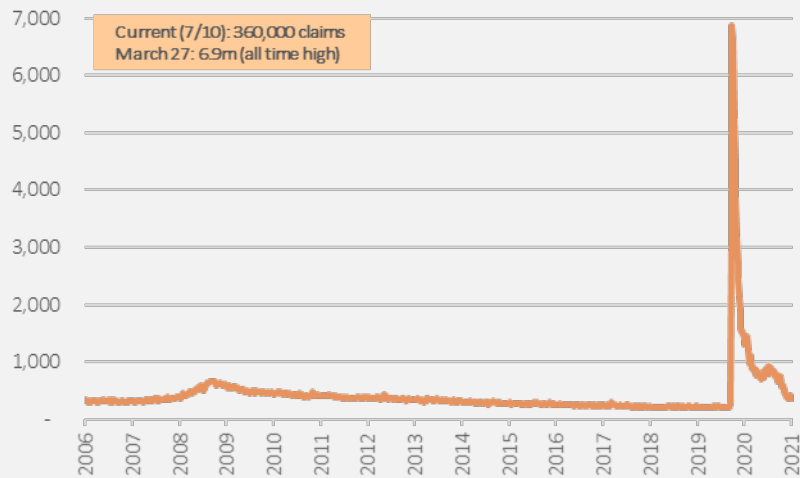


CONSUMER PRICE INDEX

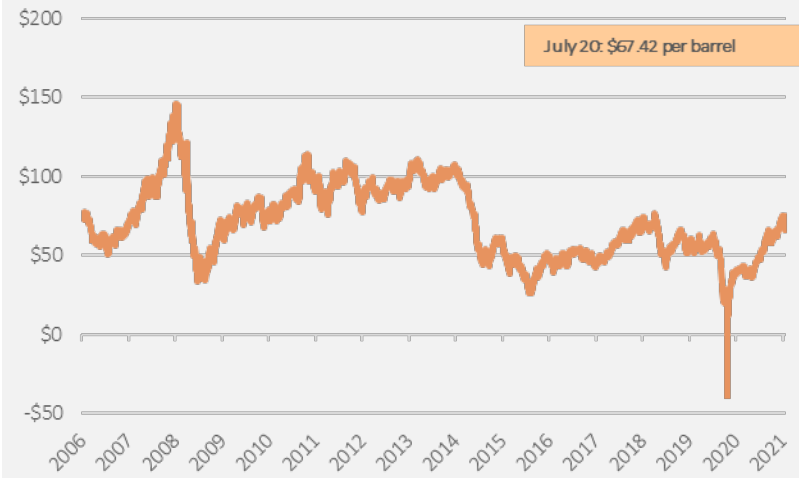


U.S. Economic Data

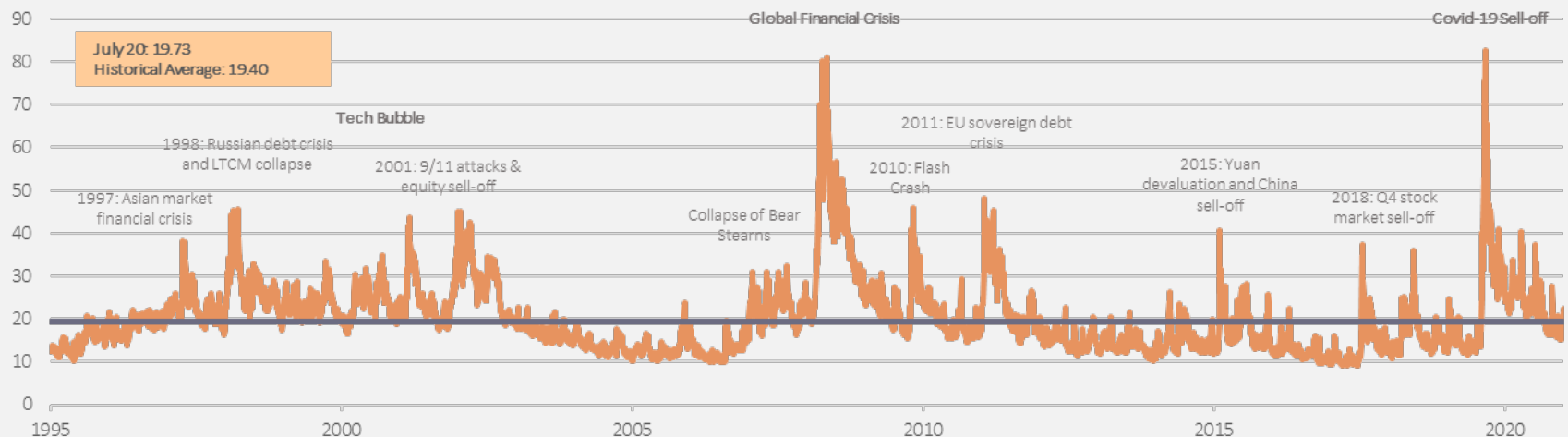
WEEKLY INITIAL JOBLESS CLAIMS (IN MILLIONS)



WTI CRUDE OIL (\$/BBL)



CBOE MARKET VOLATILITY INDEX (VIX)



The background of the slide is a photograph of a city skyline, likely Boston, featuring several tall skyscrapers and a prominent cable-stayed bridge. The image is overlaid with a semi-transparent blue filter. In the center, the text "PRIT FUND" and "ASSET ALLOCATION TARGETS" is displayed in white, bold, sans-serif font. Below this, the "Mass PRIM" logo is visible, consisting of the word "Mass" in a serif font above the word "PRIM" in a bold, sans-serif font, with a stylized graphic of three vertical bars to the left.

PRIT FUND ASSET ALLOCATION TARGETS

Mass
PRIM

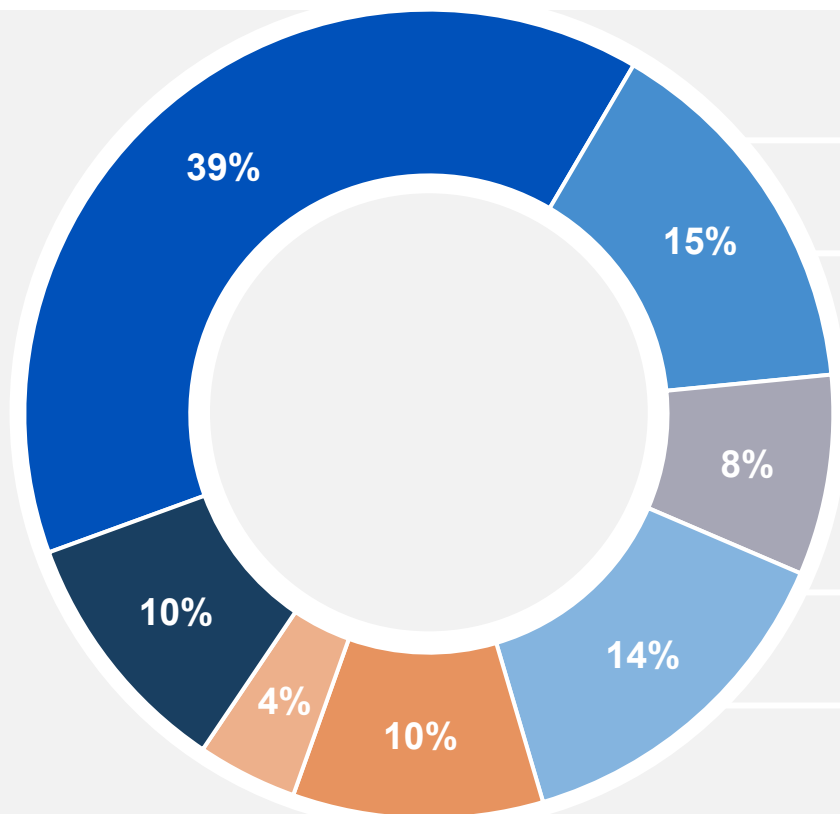
Changes to Target Ranges – PRIT Fund Asset Allocation

Approved February 24, 2021

Increase in Allocation Range	Same Allocation Range	Decrease in Allocation Range
Private Equity: Target Band moves up 1%	Global Equity: Target Band stays the same Core Fixed Income: Target Band stays the same Value-Added Fixed Income: Target Band stays the same Real Estate: Target Band stays the same Timberland: Target Band stays the same	Portfolio Completion Strategies: Target Band moves down 1%

PRIT Asset Allocation

Approved February 24, 2021



	AA 2020 Approved Range	AA 2021 Approved Range	Within Range
Global Equity (including Hedged US Equity)	34% - 44%	No Change	Yes
Core Fixed Income	12% - 18%	No Change	Yes
Value-Added Fixed Income	5% - 11%	No Change	Yes
Private Equity	10% - 16%	11% - 17%	Yes
Real Estate	7% - 13%	No Change	Yes
Timberland	1% - 7%	No Change	Yes
Portfolio Completion Strategies	8% - 14%	7% - 13%	Yes

The ranges in the PRIM asset allocation reflect the long-standing use of bands around a midpoint. Managing the asset allocation to a particular midpoint in the range is not always possible, practical or advisable.

PRIM 2021 Asset Allocation Recommendations

NEPC Capital Market Assumptions with PE and PCS Changes

			12/31/20 Asset Class Assumptions	
Asset Classes	Proposed Asset Allocation Range		10 Yr. Expected Return	30 Yr. Expected Return
US Equity ¹	21.2%		5.5%	6.4%
International Equities ²	11.8%		5.9%	6.6%
Emerging International Equities ²	5.0%		7.6%	8.4%
Hedged Equity ³	1.0%		4.8%	5.7%
Global Equity	34% - 44%			
Core Bonds	7.0%		1.4%	2.7%
Short-Term Fixed Income ⁴	1.0%		1.0%	2.0%
20+ Yr. Treasury STRIPS	3.0%		0.4%	1.7%
TIPS/ILBs	4.0%		1.0%	2.1%
Core Fixed Income	12% - 18%			
Value-Added Fixed Income ⁵		5% - 11%	4.8%	6.2%
Private Equity		11% - 17%	9.6%	10.2%
Real Estate ⁶		7% - 13%	4.8%	6.0%
Timberland ⁷		1% - 7%	5.4%	6.6%
Portfolio Completion (PCS) ⁸		7% - 13%	4.0%	5.2%
Total Fund Expected Return⁹			5.8%	6.8%

1. Blended allocation to large-cap equity (85%) and small-cap equity (15%)

2. Blended allocation to large-cap equity (90%) and small-cap equity (10%)

3. Modeled as US LIBOR, US large-cap equity, and US small-cap equity

4. Modeled as short-term Treasury

5. Modeled as 50% High Yield and 50% Private Debt

6. Real Estate is modelled as 80% Private Real Estate and 20% REITs

7. Timberland is modeled as Private Real Assets Infrastructure/Land

8. Modeled as equal weighed blend of Hedge Fund Equity, Credit and Macro

9. Asset classes modeled as the midpoint of the asset allocation range

A blue-tinted photograph of a city skyline at dusk, viewed from a waterfront promenade. The foreground shows a cobblestone path and a low stone wall. The middle ground features a body of water with several wooden pilings. The background is filled with various skyscrapers and buildings, some of which are illuminated. The overall scene is serene and urban.

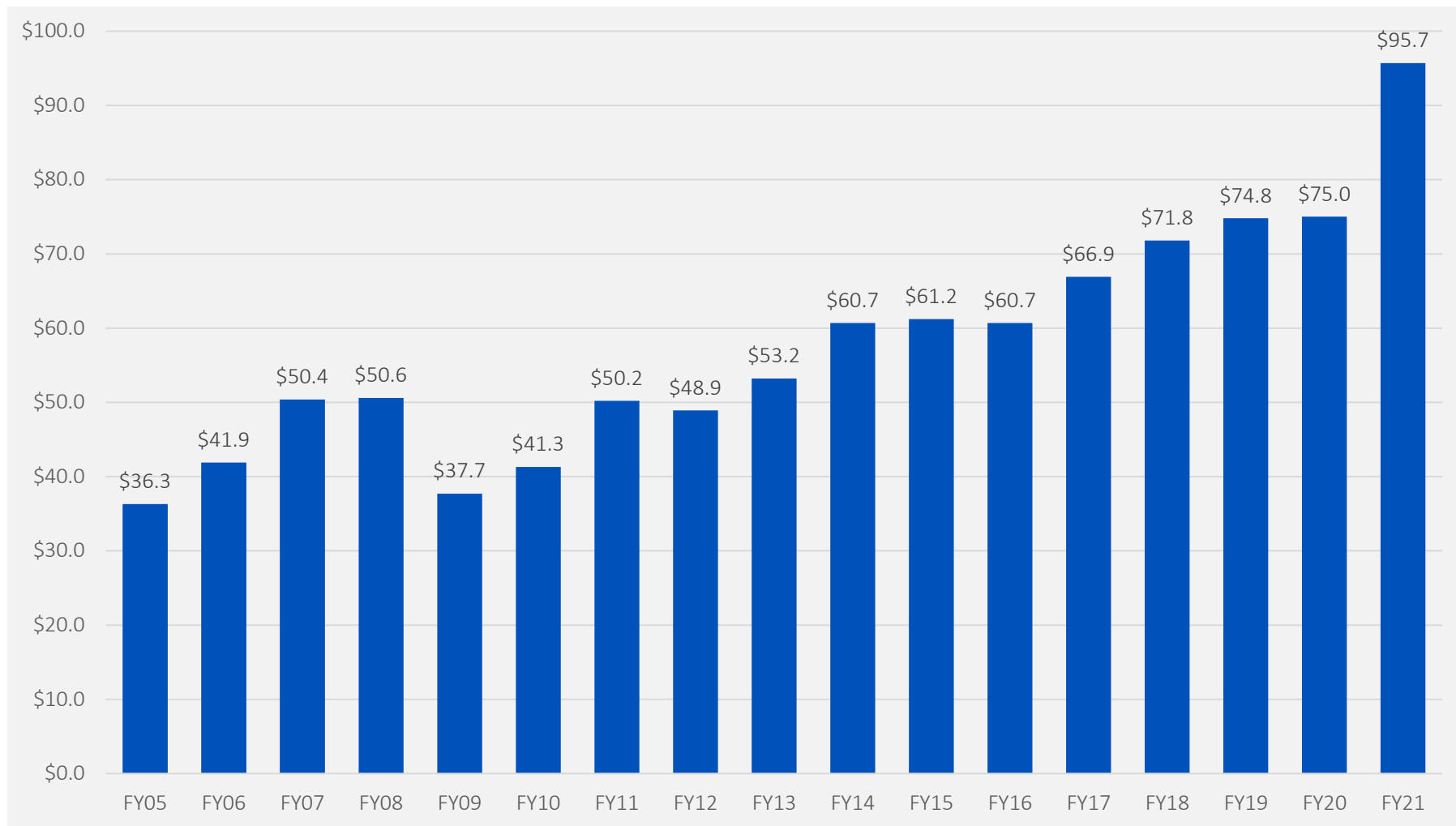
PRIT FUND PERFORMANCE

The logo for Mass PRIM, featuring the word "Mass" in a serif font above the word "PRIM" in a bold, sans-serif font. To the left of the text are three vertical bars of increasing height, resembling a bar chart.

AS OF JUNE 30, 2021

Total PRIT Fund Fiscal Year Market Value

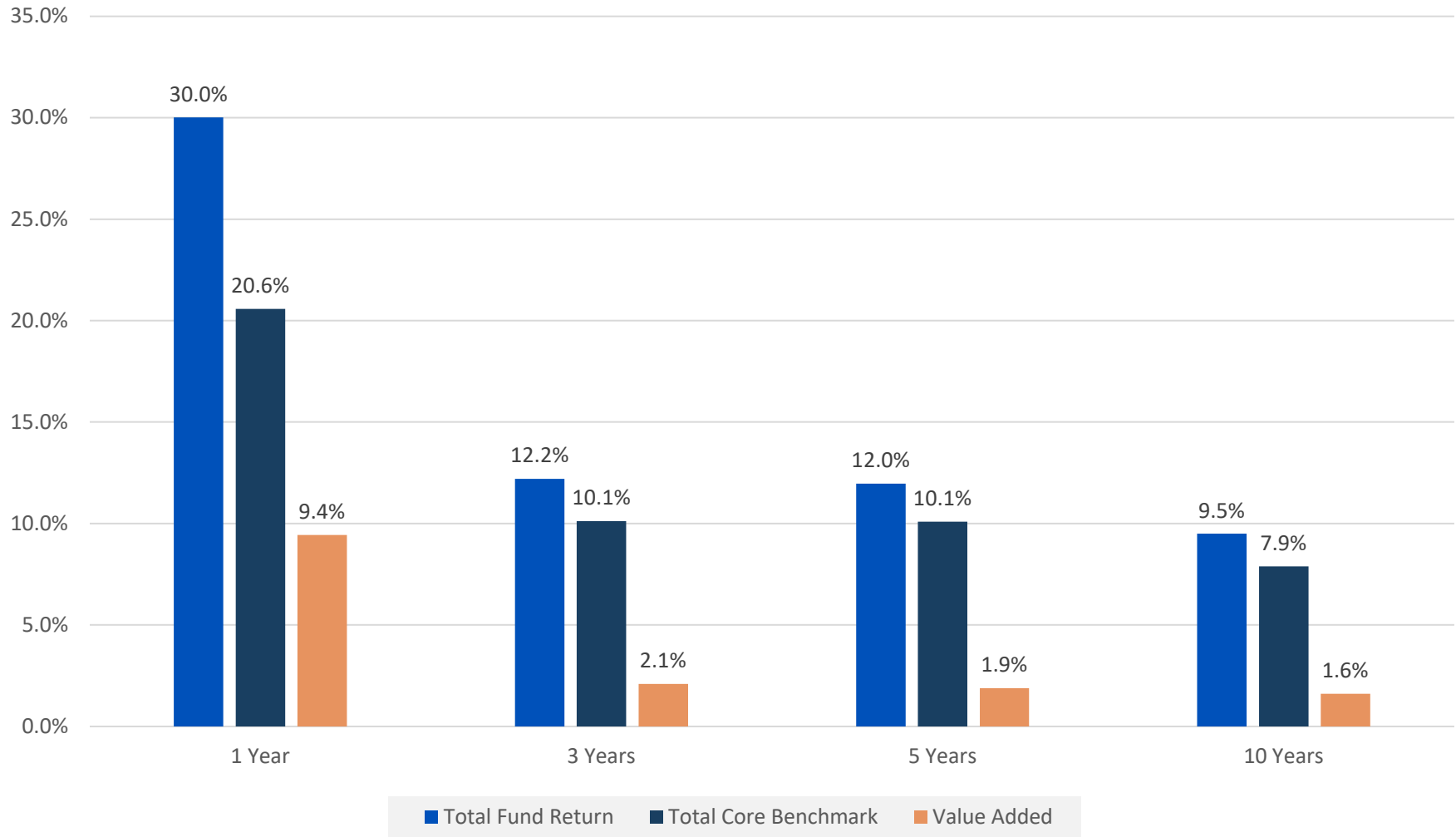
Value (\$Billions)



Source: BNY Mellon. As of June 30, 2021.

PRIT Fund Total Returns

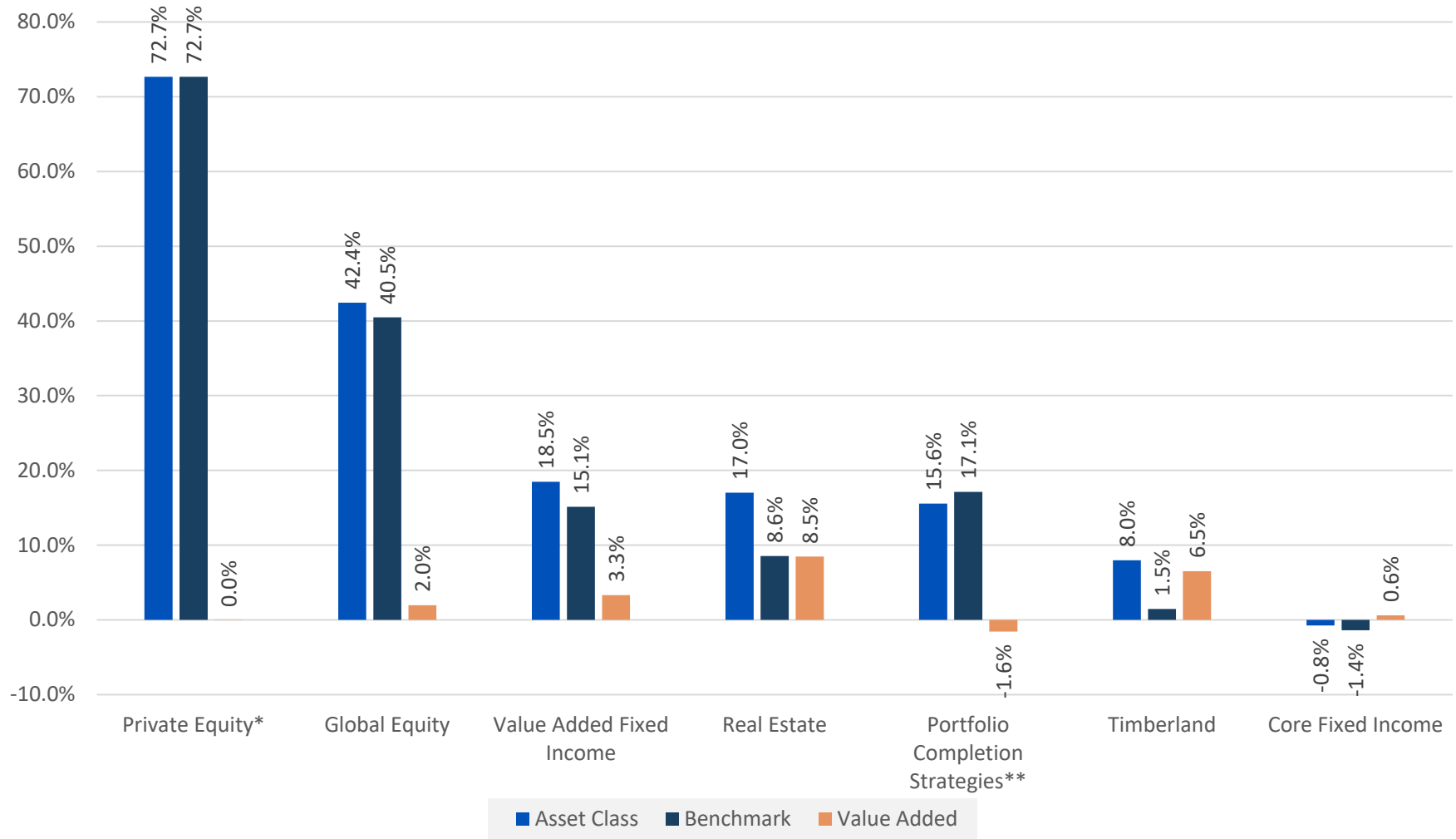
Annualized Returns as of June 30, 2021 (Gross of Fees)



Source: BNY Mellon. Total Core Benchmark includes private equity benchmark.

PRIT Asset Class Performance Summary

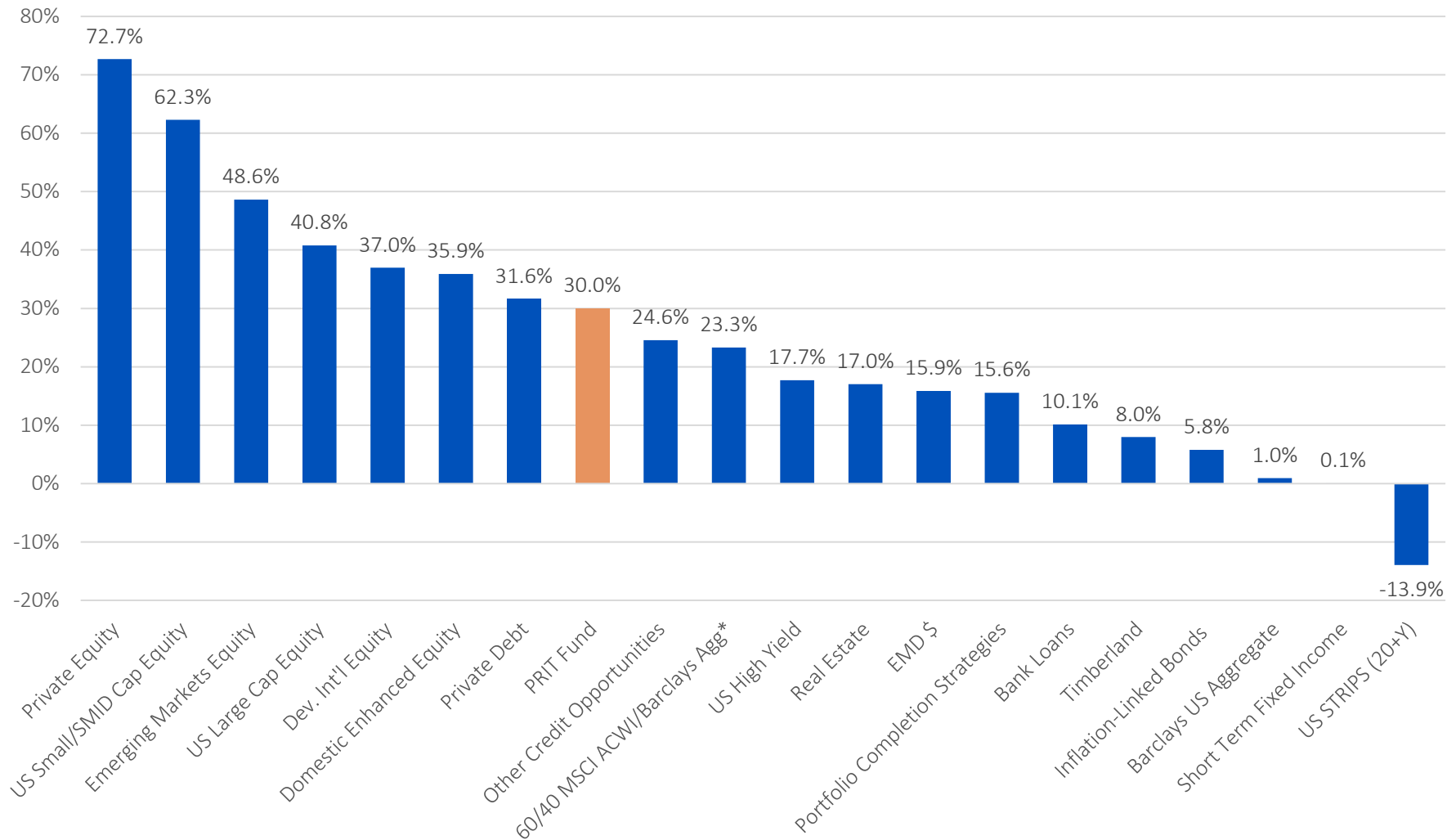
One-Year Ended June 30, 2021 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. *Benchmark is actual performance. **Hedge Fund returns are net of fees.

PRIT Performance By Strategy – One-Year

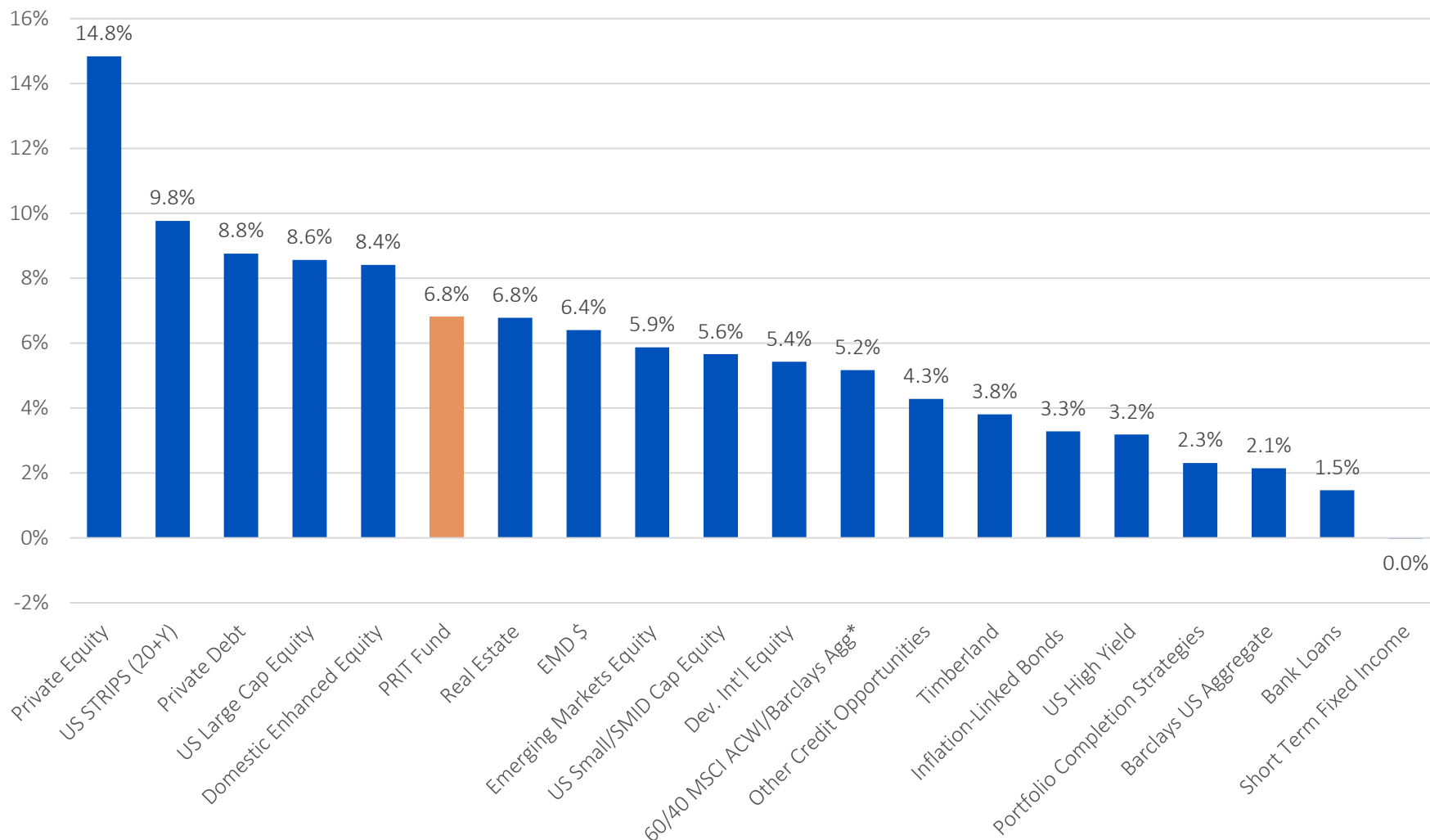
One-Year Ended June 30, 2021 (Gross of Fees)



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.

PRIT Performance By Strategy – Second Quarter 2021

Quarter Ended June 30, 2021 (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.

PRIT Fund Annualized Returns By Asset Class

As of June 30, 2021 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 72.7%	PRIVATE EQUITY 28.8%	PRIVATE EQUITY 25.9%	PRIVATE EQUITY 20.8%
GLOBAL EQUITY 42.4%	GLOBAL EQUITY 14.3%	GLOBAL EQUITY 15.1%	GLOBAL EQUITY 10.4%
VALUE-ADDED FIXED INCOME 18.5%	REAL ESTATE 7.9%	REAL ESTATE 7.9%	REAL ESTATE 10.0%
REAL ESTATE 17.0%	CORE FIXED INCOME 7.0%	VALUE-ADDED FIXED INCOME 7.0%	VALUE-ADDED FIXED INCOME 5.4%
PORTFOLIO COMPLETION STRATEGIES 15.6%	VALUE-ADDED FIXED INCOME 6.9%	PORTFOLIO COMPLETION STRATEGIES 5.2%	TIMBER 5.0%
TIMBER 8.0%	PORTFOLIO COMPLETION STRATEGIES 3.8%	TIMBER 4.8%	CORE FIXED INCOME 5.0%
CORE FIXED INCOME (0.8%)	TIMBER 2.6%	CORE FIXED INCOME 3.5%	PORTFOLIO COMPLETION STRATEGIES 4.5%

Source: BNY Mellon.

A blue-tinted photograph of a city skyline at dusk or dawn, viewed from across a body of water. In the foreground, there is a paved walkway and some greenery on the left. The skyline features several prominent skyscrapers, including the Freedom Tower. The text 'SRBT FUND PERFORMANCE' is overlaid in white, bold, sans-serif font in the center of the image.

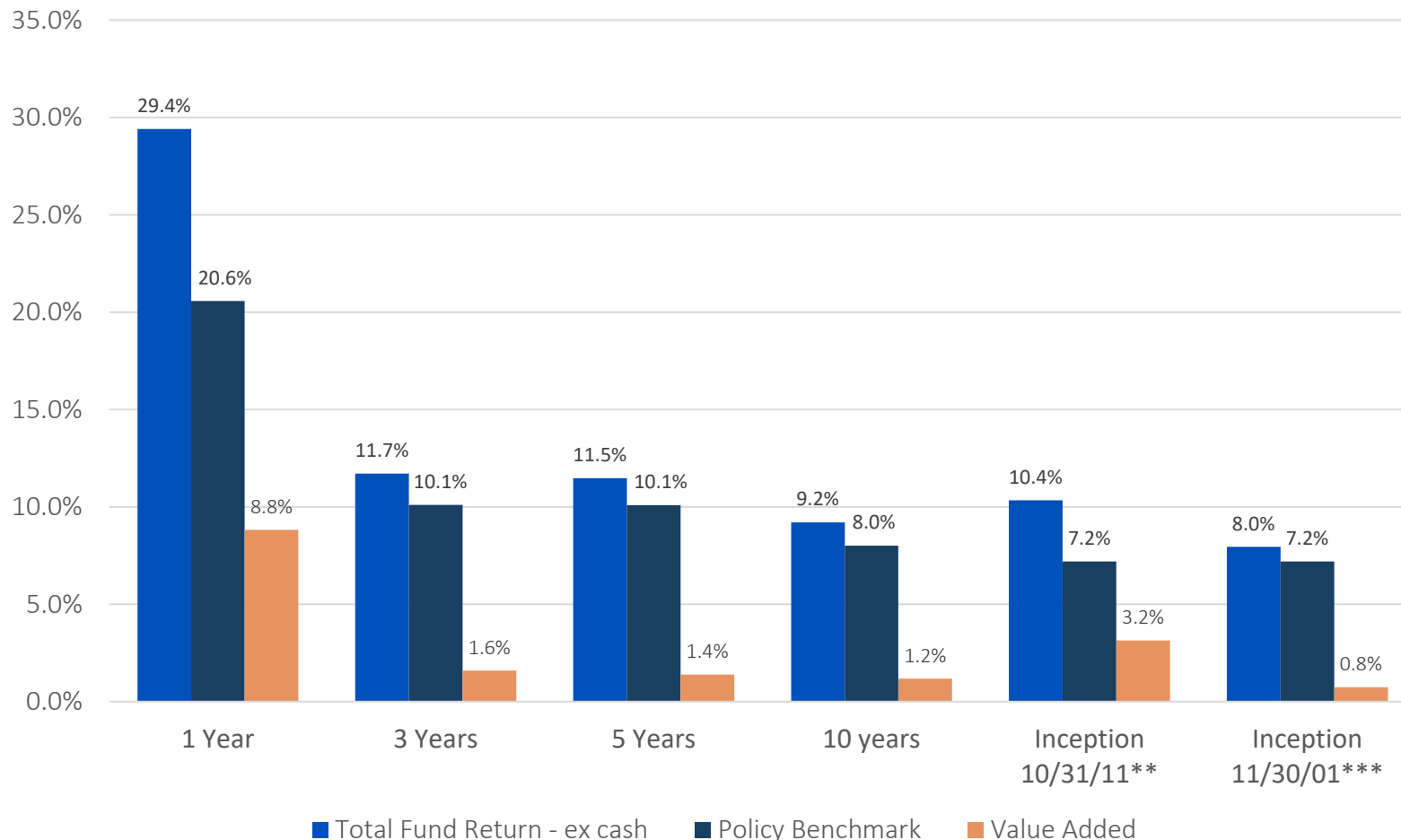
SRBT FUND PERFORMANCE

The logo for Mass PRIM, featuring the word 'Mass' in a serif font above the word 'PRIM' in a bold, sans-serif font. To the left of the text are three vertical bars of increasing height, resembling a bar chart.

AS OF JUNE 30, 2021

Total SRBT Fund Returns

\$2.67 Billion* One Year Ended June 30, 2021 (Net of Fees)



*Participant assets, excluding Mass State Retirees, were \$843.0 million as of June 30, 2021

** The inception date for the SRBT'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. **This ITD value of 10.4% 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 SRBT assets including legacy separate account investments as well as the PRIT GA investments.



MUNICIPAL OUTREACH

 Mass
PRIM

AS OF JUNE 30, 2021



Municipal Outreach

1. Acton-Boxborough Regional School District
2. **Andover***
3. Amherst-Pelham Regional School District
4. Andover
5. Ayer Shirley Regional School District
6. Belmont
7. Bernardston
8. Bridgewater
9. Byfield Water District
10. **Cape Cod Regional Transit Authority***
11. Cape Cod Light Compact (JPE)
12. Chelmsford Water District
13. **Clinton***
14. **Concord***
15. Dartmouth
16. Dracut
17. **Everett***
18. Freetown
19. Foxboro
20. Greater Lawrence Sanitary District
21. Greenfield
22. **Gloucester***
23. Groton
24. Halifax
25. Haverhill
26. Hull
27. Lawrence
28. Longmeadow
29. **Lynn***
30. Massachusetts Association of Regional Planning Agencies (MARPA)
31. Massachusetts Housing Finance Authority
32. Medway
33. Melrose
34. **Middlesex County Retirement System***
35. Mohawk/Hawlemont Regional School District (Buckland)
36. Nauset Regional High School
37. Newbury
38. Pepperell
39. Prospect Hill Academy Charter School
40. **Reading Light Compact***
41. **Saugus***
42. Somerset
43. **Somerville***
44. Springfield
45. Stoneham
46. Sudbury
47. Taunton
48. Tri-County Educational Collaborative (Franklin, MA)
49. Truro
50. Waltham
51. Watertown
52. West Boylston Municipal Light Department
53. Westford
54. West Newbury
55. Weston
56. Winthrop
57. Woburn

*New Listing

Governmental Entities Participating in the SRBTF

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



Massachusetts Pension Reserves
Investment Management Board
84 State Street, Suite 250
Boston, MA 02109
617-946-8401
www.mapension.com

THANK YOU

CONTACTS

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