



PRESENTATION TO THE STATE RETIREE BENEFITS TRUST FUND BOARD

PRESENTED BY

Francesco Daniele, Senior Client Services Officer

Laura Strickland, Senior Client Services Officer

Emily Green, Senior Client Services Analyst

June 11, 2021

Deborah B. Goldberg, Treasurer and Receiver General, Chair

Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer

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PRIM BOARD & PRIT FUND OVERVIEW

 Mass
PRIM

AS OF MARCH 31, 2021

PRIT Fund Snapshot

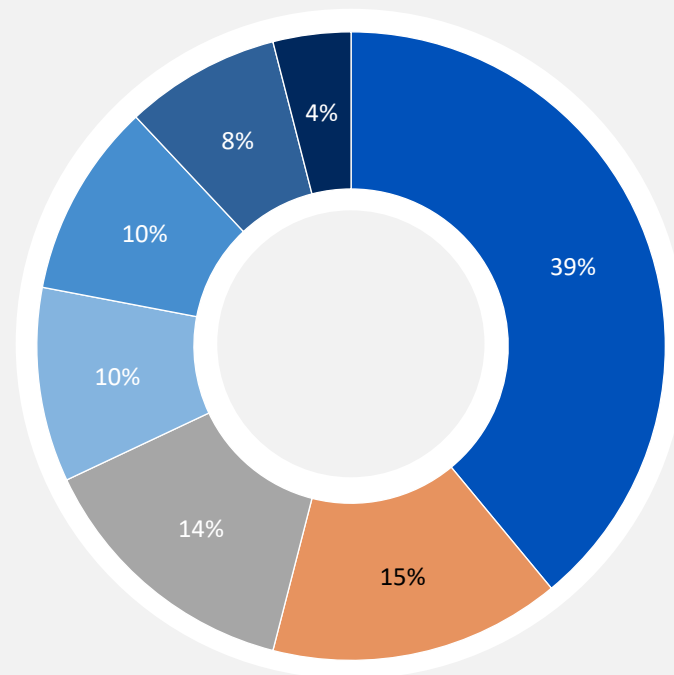
PRIT FUND FACTS

- \$90.1 billion AUM
- 50 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 34 industry professionals and Board members
- Staff of 50 professionals
 - 2 PhDs
 - 11 CFAs
 - 6 CPAs
 - 2 CAIAs
 - 1 FRM
 - 1 CRE
- 19 CFA Investment Foundations Program Certificate Holders

ASSET ALLOCATION



TARGET ASSET ALLOCATION

(as of 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



\$90.1 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 approaching \$200 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. Perelmuter**, 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:

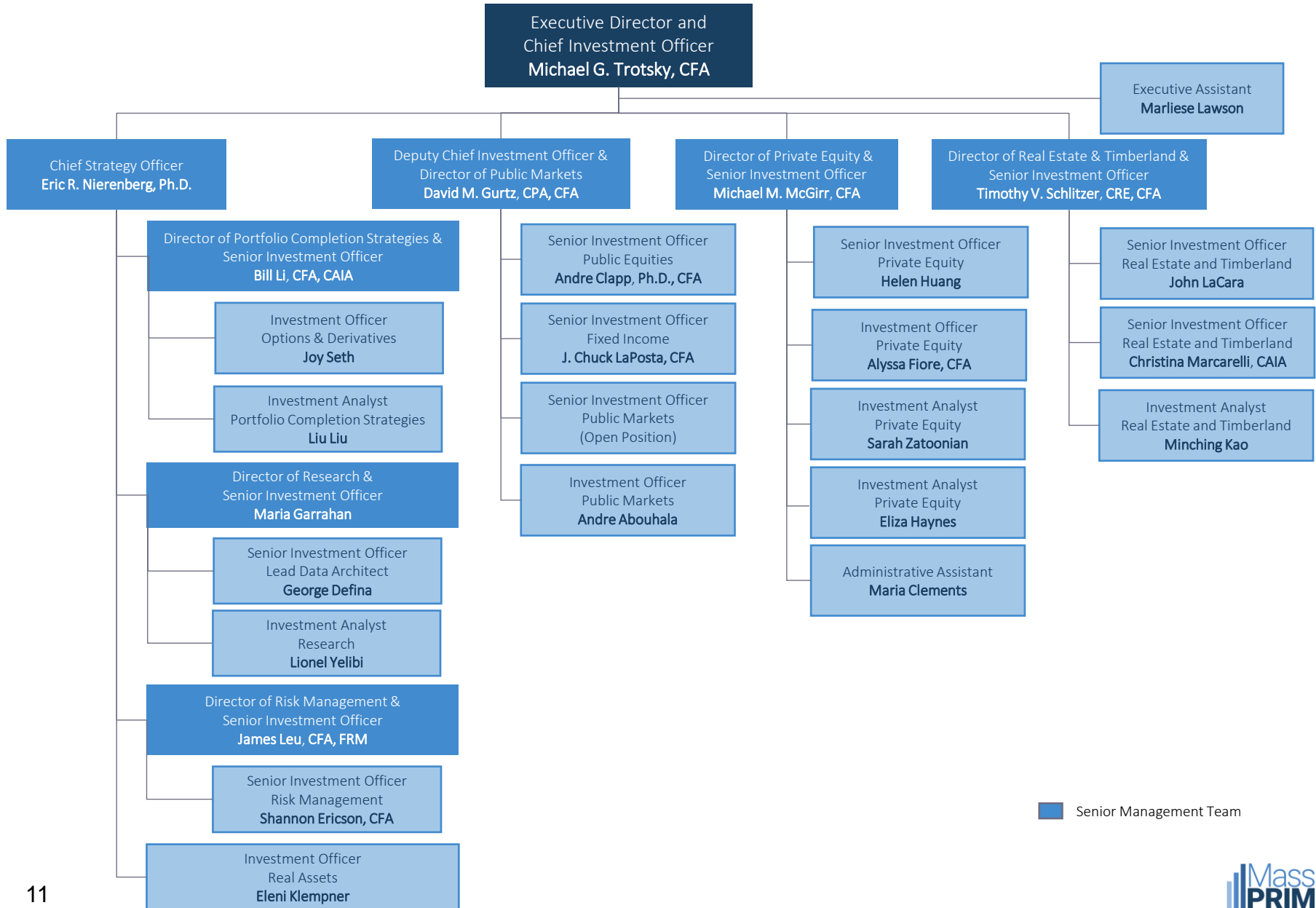
1. **Robert L. Brousseau**, Chair, Board Member, Retired Teacher, Town of Wareham School System
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board
4. **Karen E. Gershman**, CPA, 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:

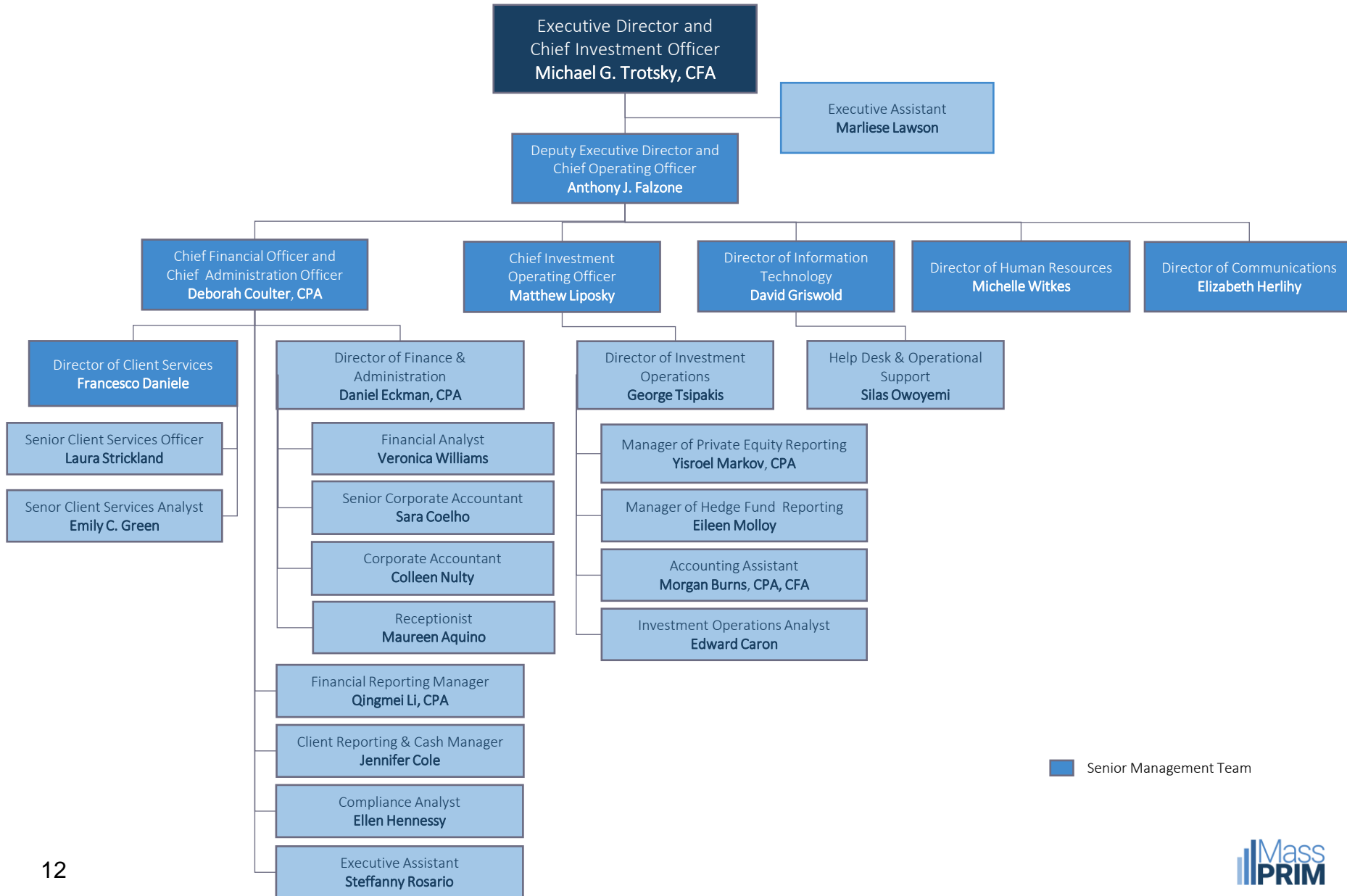
1. **Michele A. Whitham**, Esq., Chair, Founder & Principal, Whitham Law LLC
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Robert L. Brousseau**, Board Member, Retired Teacher, Town of Wareham School System
4. **Patrick E. Brock**, Chairman,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

PRIM Investment Team



Senior Management Team

PRIM Finance and Operations Team



External Advisors

Fund Advisors

- NEPC – Asset Allocation
- Callan Associates – Public Markets and Real Estate
- Aberdeen Asset Management - Hedge Fund and Real Estate
- Hamilton Lane – Private Equity and Real Estate & Timberland
- Bard Consulting - Real Estate & Timberland
- Chatham Financial Group – Real Estate & Timberland
- Eigen 10 Advisors - Real Estate & Timberland
- Harvest Capital Partners - Real Estate & Timberland
- Legacy Appraisal Services – Real Estate & Timberland
- RCLCO Fund Advisors - Real Estate & Timberland
- Real Estate Fiduciary Services – Real Estate & Timberland
- Buckhead Resources – Real Estate & Timberland
- Coast and Harbor – Real Estate & Timberland
- Meketa Investment Group - Real Estate & Timberland
- Albourne – Operational due diligence

Independent Auditors

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

Other

- O’Neill and Associates – Communications
- Edgewater Technology – IT support

Custodian

- BNY Mellon Corporation

A photograph of a city skyline at dusk, with buildings illuminated against a dark blue sky. In the foreground, there is a waterfront promenade with a cobblestone path, a low stone wall, and some greenery. The water reflects the city lights.

ECONOMIC UPDATE

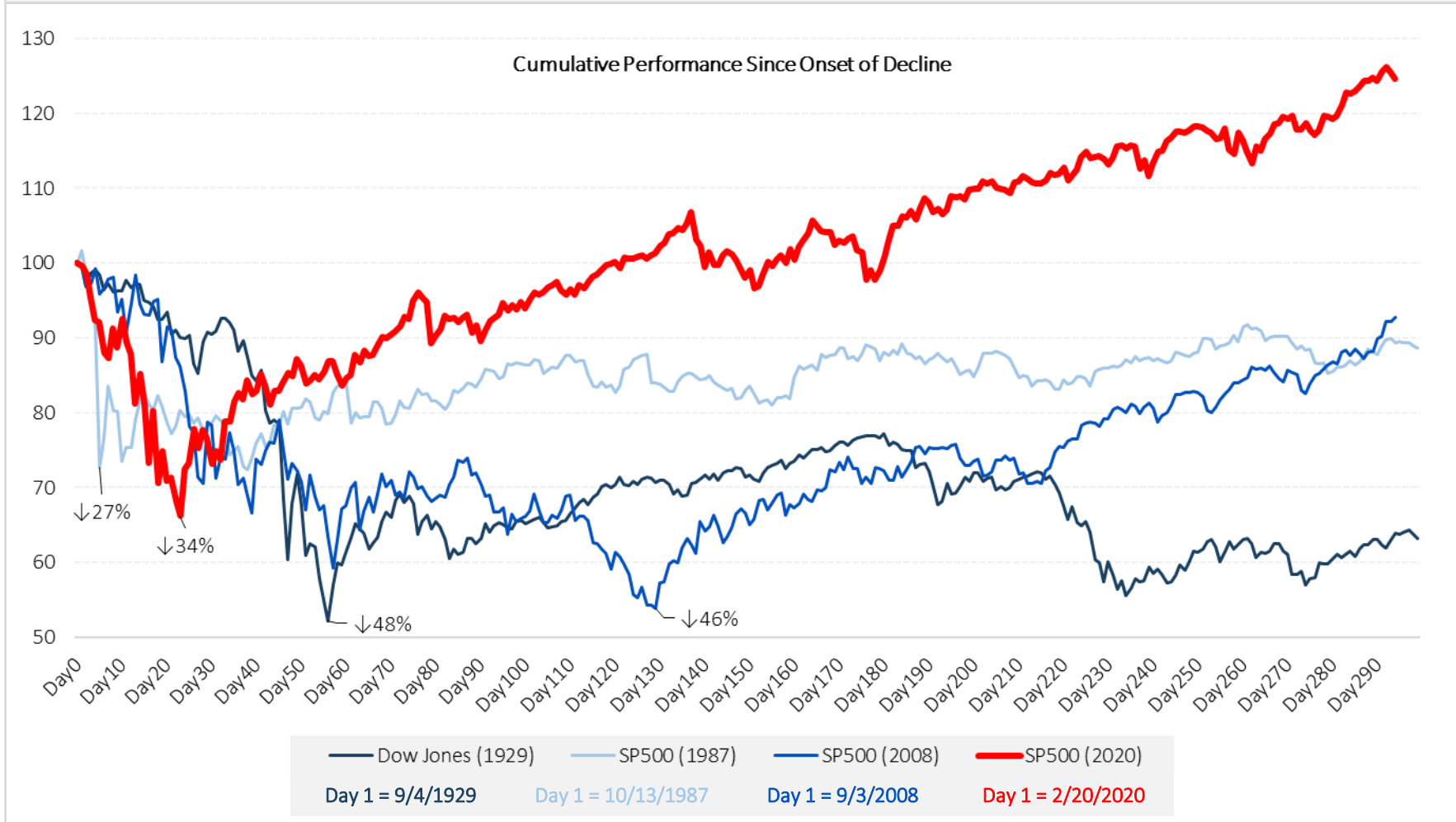
The logo for Mass PRIM, featuring the word "Mass" in a sans-serif font above the word "PRIM" in a bold, sans-serif font. To the left of the text are three vertical bars of increasing height, resembling a bar chart.

AS OF MARCH 31, 2021

Unprecedented Sharp Decline and Recovery

As of April 20, 2021

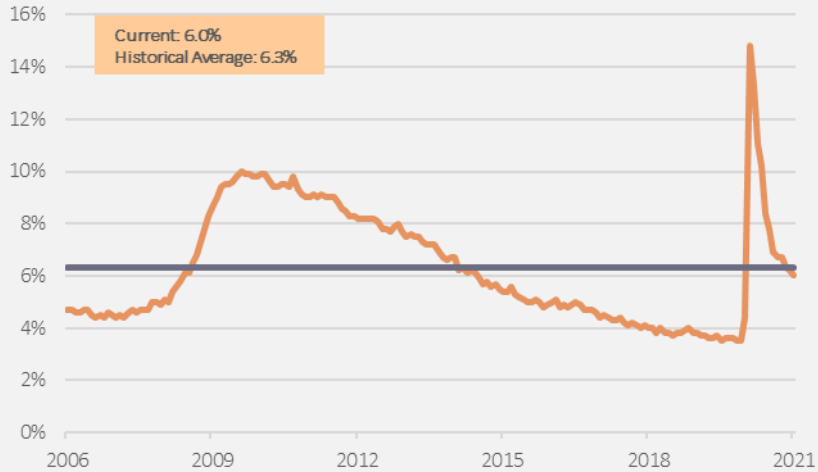
- Velocity of COVID-19 sell-off surpassed that of GFC.
- Rebound velocity also surpassed that of previous sell-offs.
- S&P 500 reached new high in April 2021.



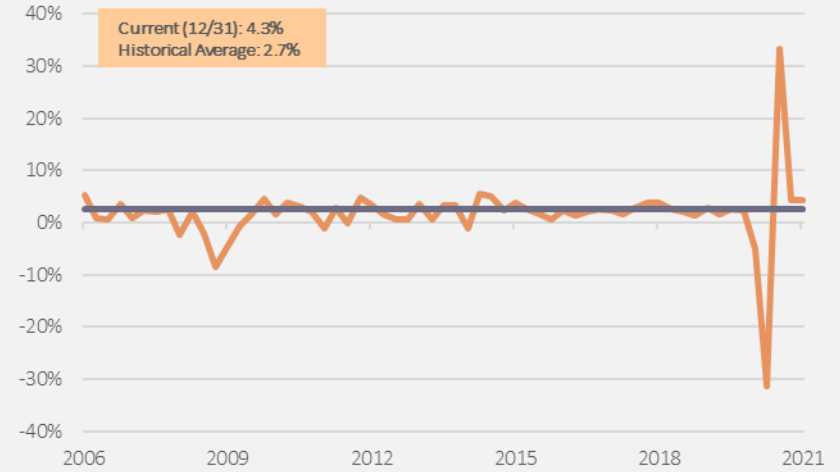
Source: FactSet, PRIM Staff.

U.S. Economic Data

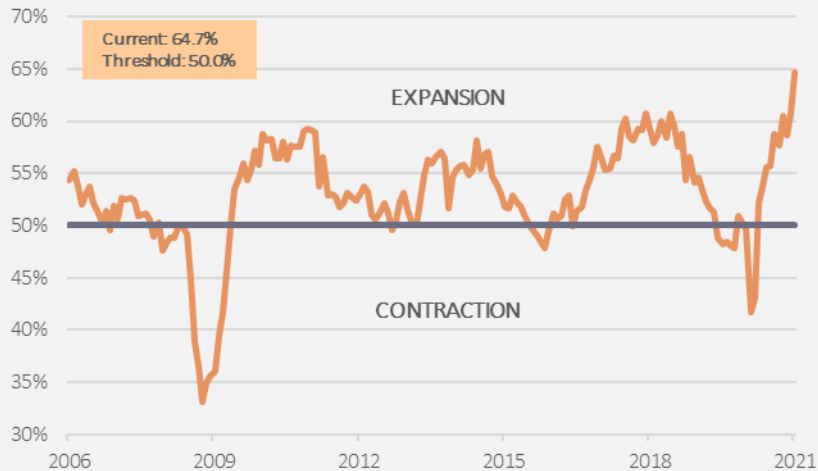
UNEMPLOYMENT RATE



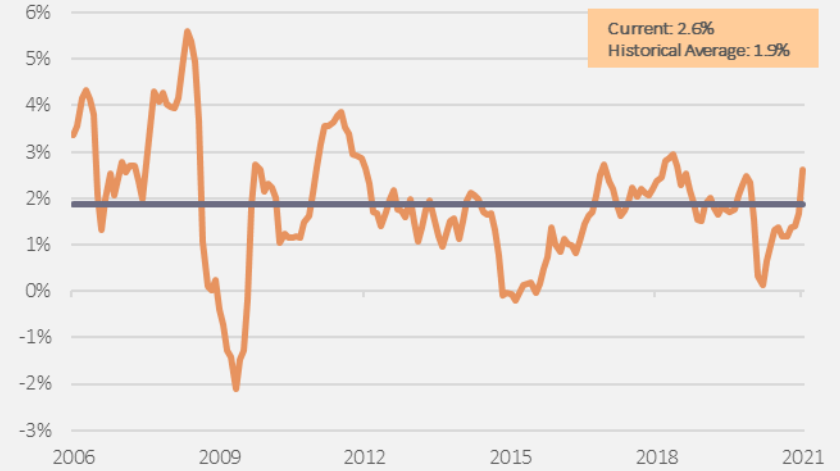
GDP GROWTH RATE



MANUFACTURING PMI

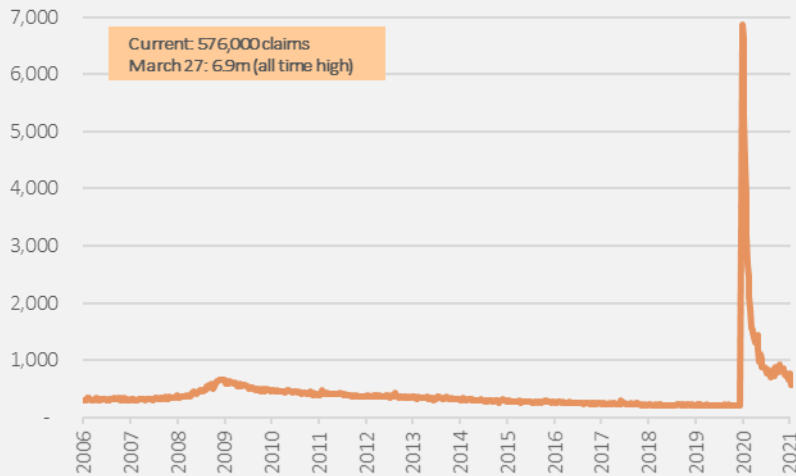


CONSUMER PRICE INDEX



U.S. Economic Data

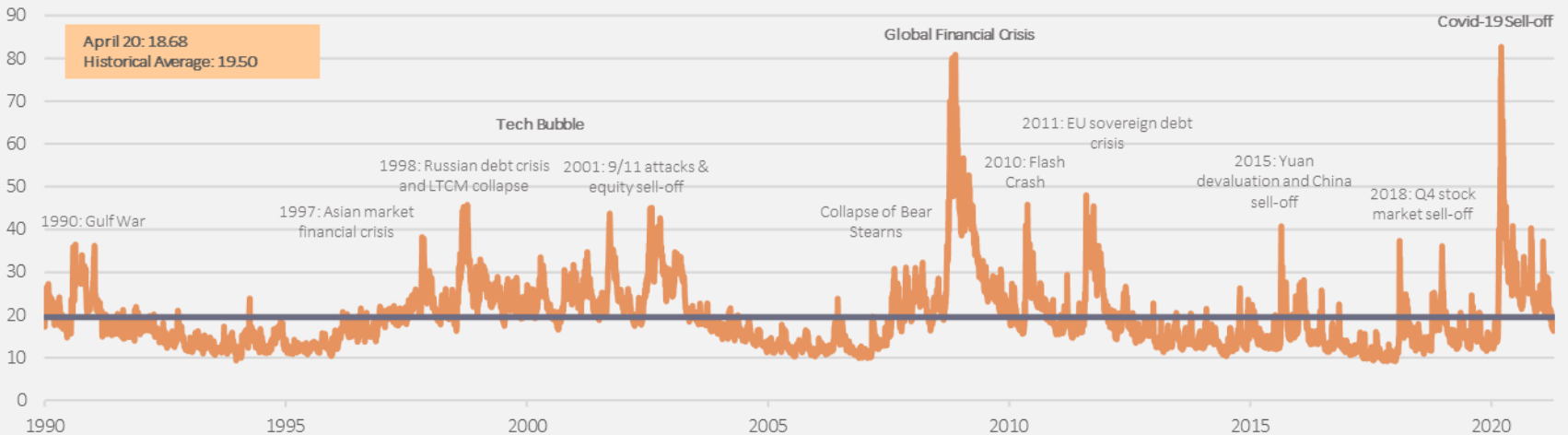
WEEKLY INITIAL JOBLESS CLAIMS (IN MILLIONS)



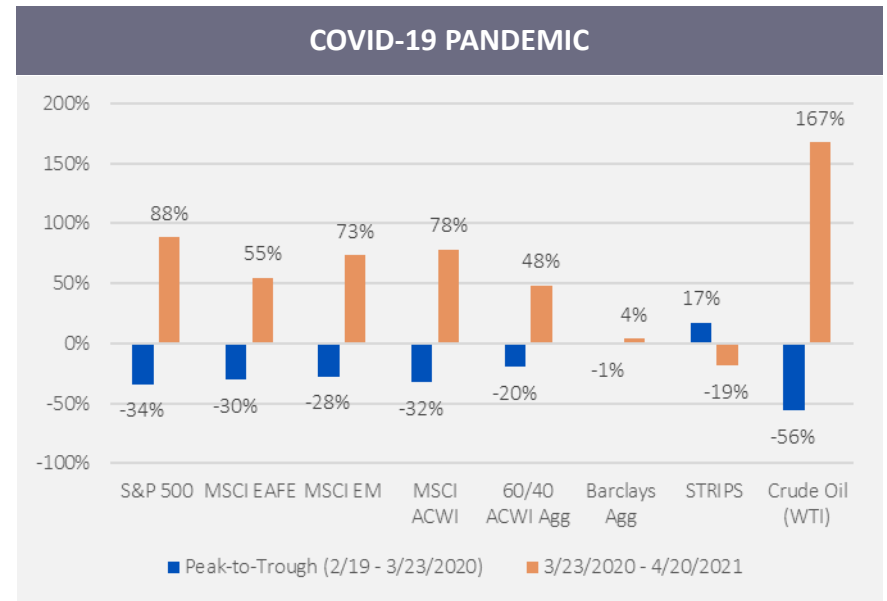
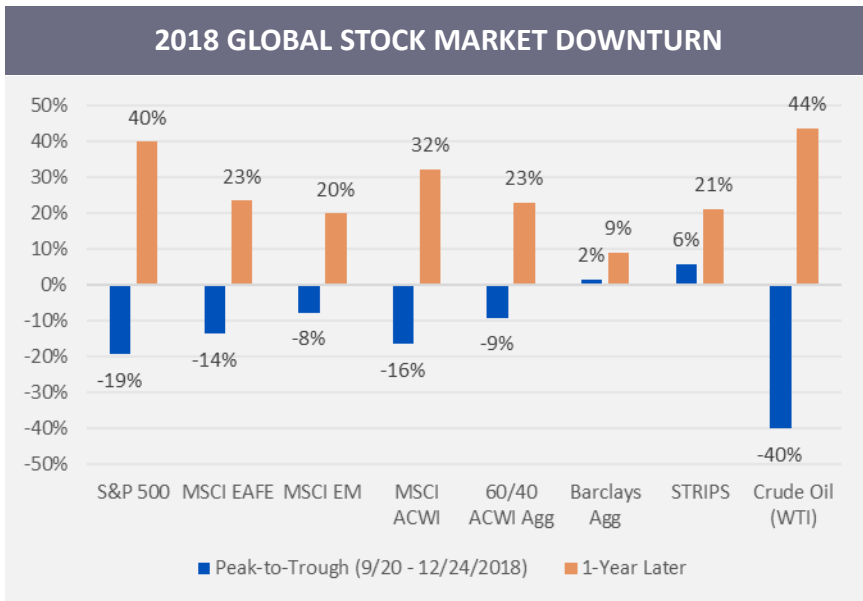
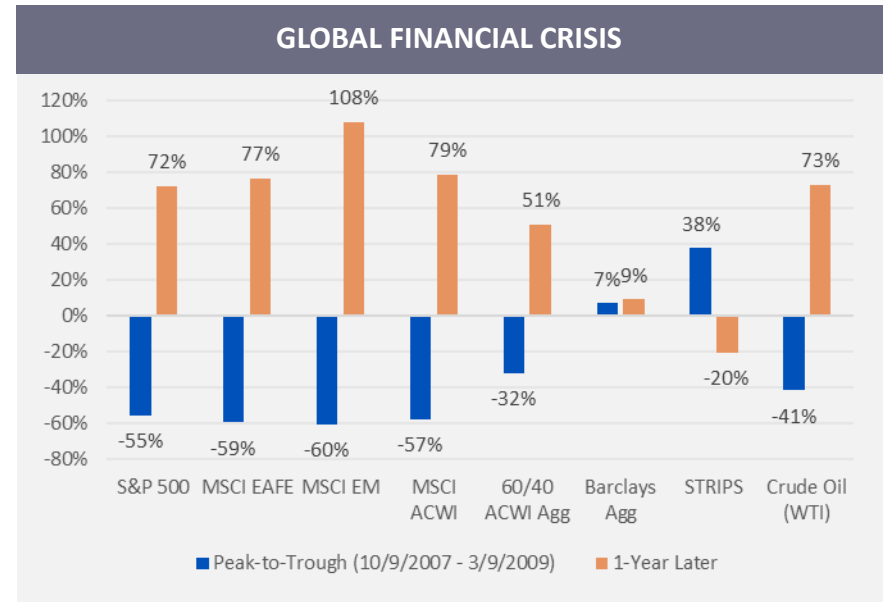
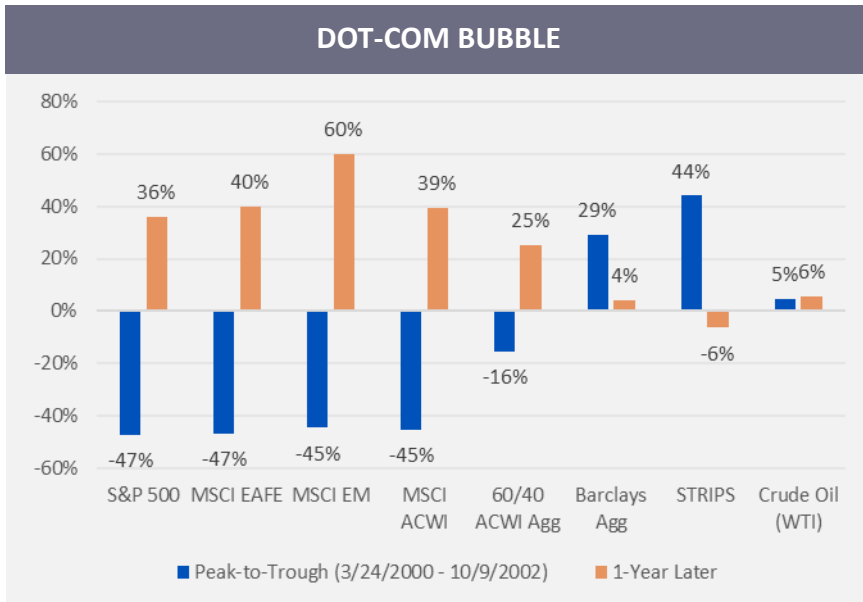
WTI CRUDE OIL (\$/BBL)



CBOE MARKET VOLATILITY INDEX (VIX)



Historical Market Sell-Off Performance



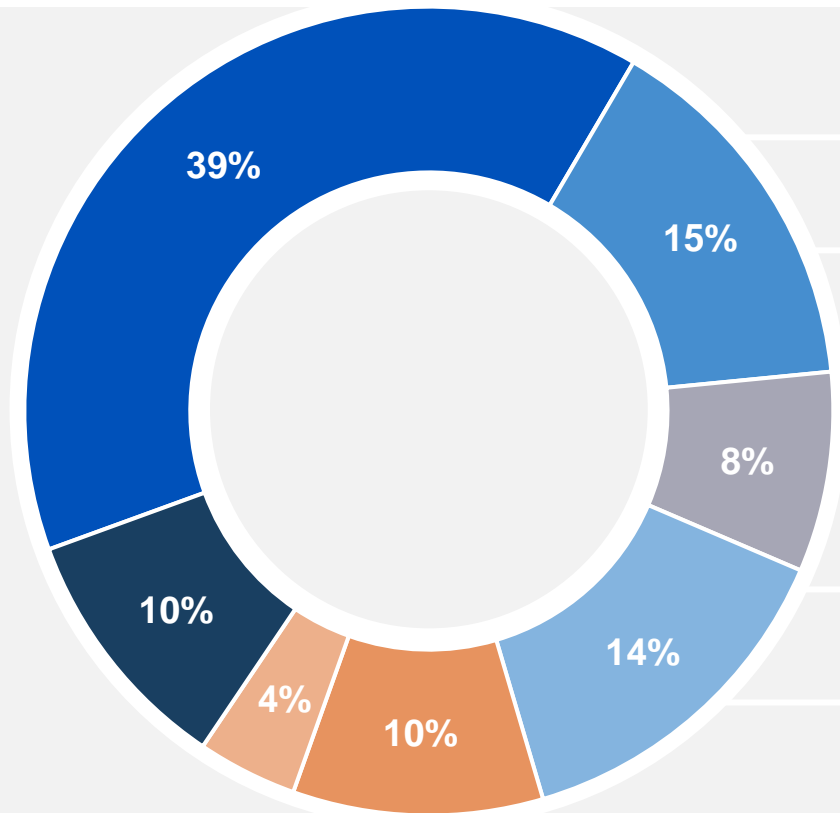


PRIT FUND ASSET ALLOCATION TARGETS

Mass
PRIM

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.

Changes to Target Ranges – PRIT Fund Asset Allocation

Approved February 24, 2021

Increase in Allocation Range

Private Equity:
Target Band moves up 1%

Same Allocation Range

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

Decrease in Allocation Range

Portfolio Completion Strategies:
Target Band moves down 1%

PRIM 2021 Asset Allocation Recommendations

NEPC Capital Market Assumptions with PE and PCS Changes

Asset Classes			12/31/20 Asset Class Assumptions	
	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 modeled 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 sky is a deep blue, and the city lights are beginning to glow. In the foreground, there is a paved walkway with a low stone wall and some greenery on the left. The water of the harbor is visible on the right, with several wooden pilings extending into it.

PRIT FUND PERFORMANCE

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

AS OF MARCH 31, 2021

Total PRIT Fund Fiscal Year Market Value

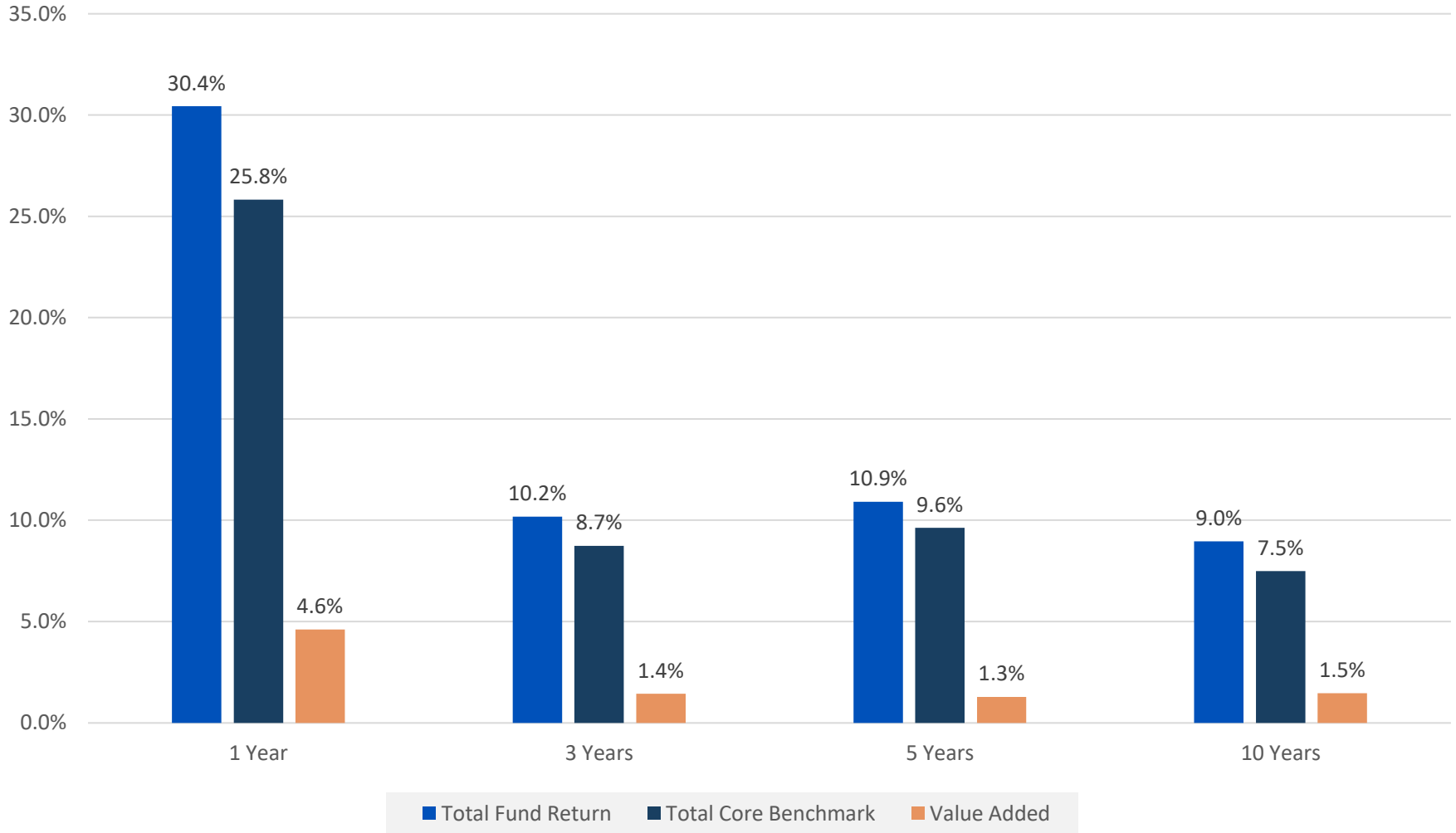
Value (\$Billions)



Source: BNY Mellon. As of March 31, 2021.

PRIT Fund Total Returns

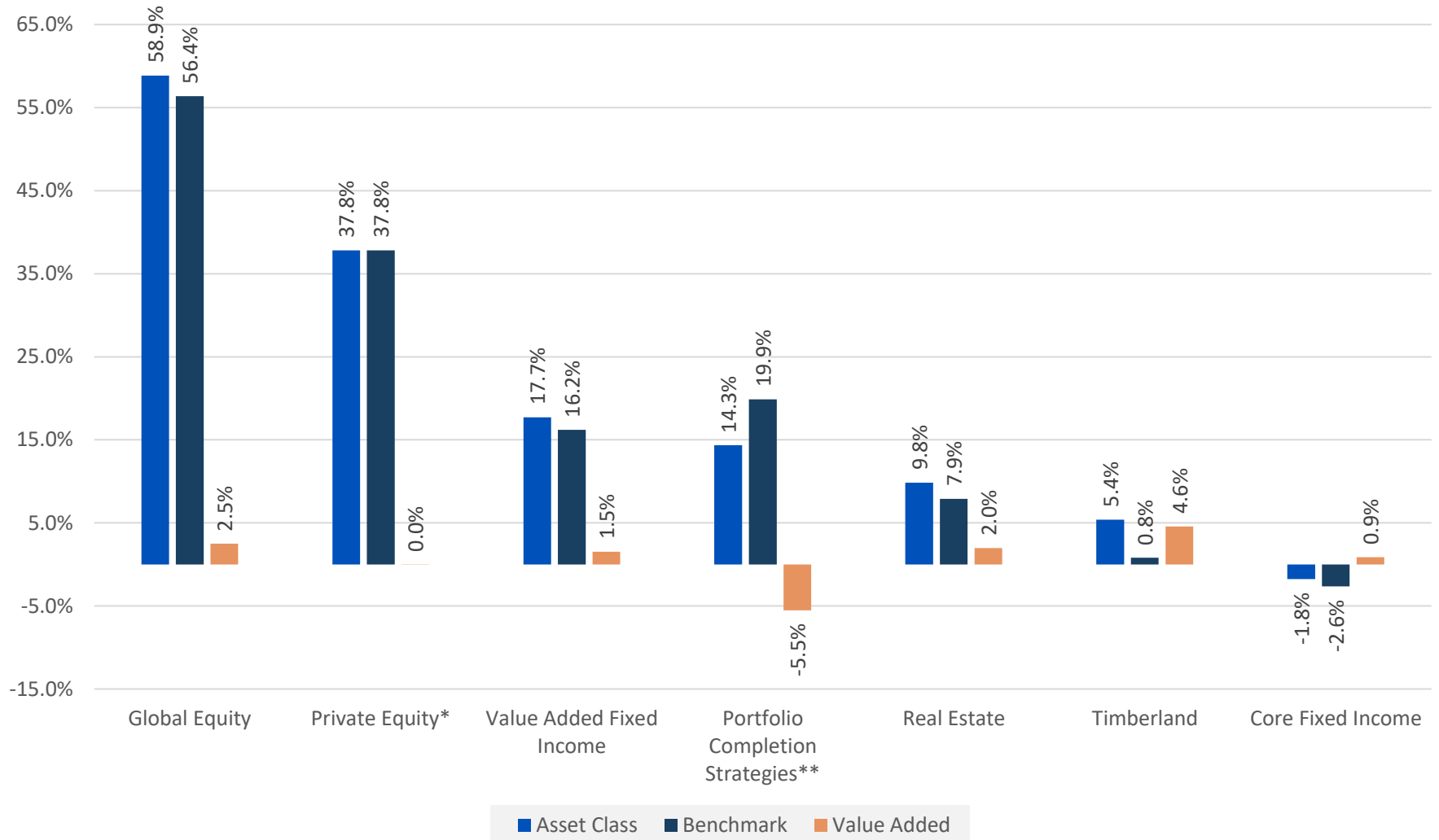
Annualized Returns as of March 31, 2021 (Gross of Fees)



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

PRIT Asset Class Performance Summary

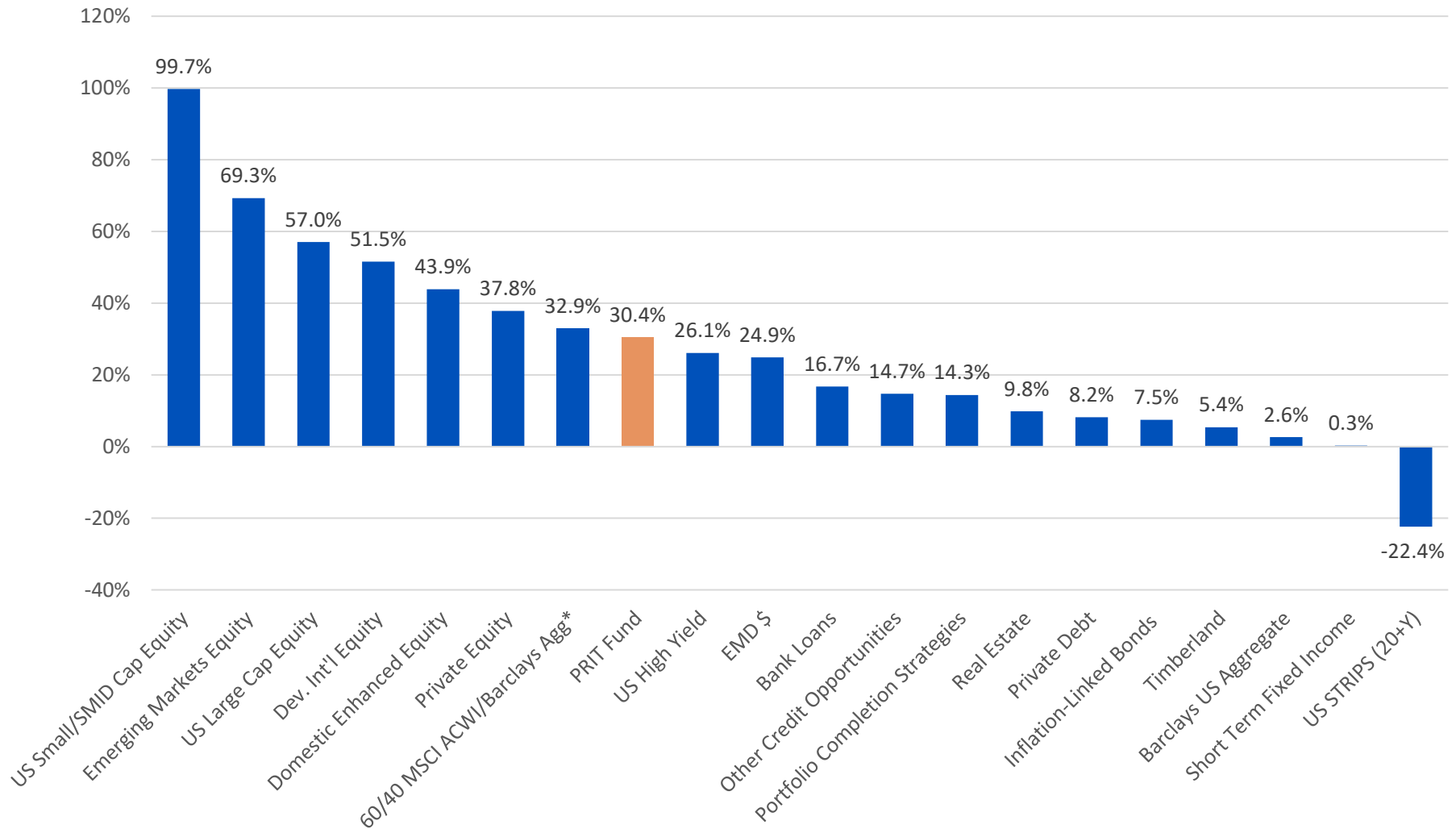
One-Year Ended March 31, 2021 (Gross of Fees)



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

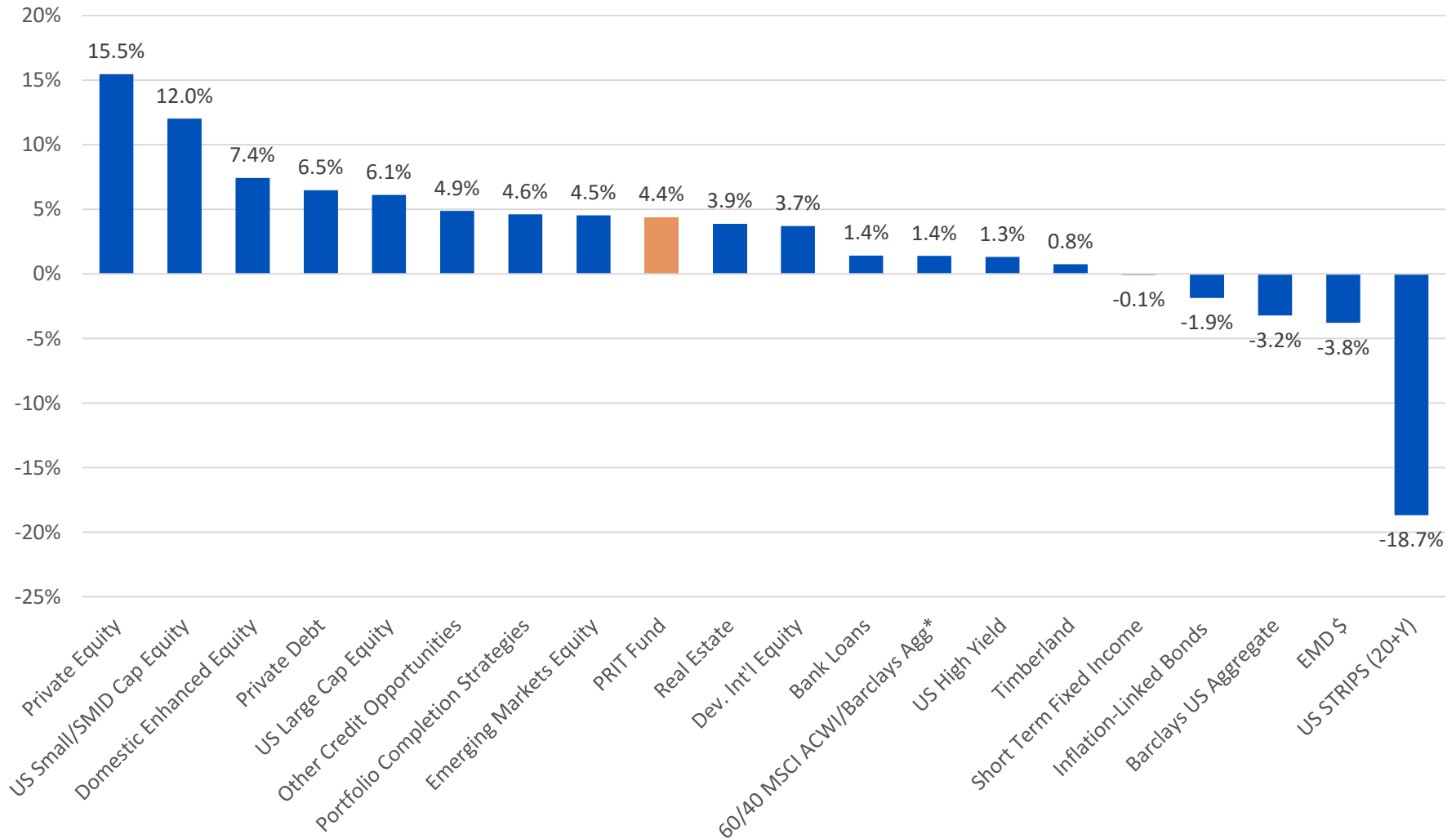
One-Year Ended March 31, 2021 (Gross of Fees)



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 – First Quarter 2021

Quarter Ended March 31, 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 March 31, 2021 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
GLOBAL EQUITY 58.9%	PRIVATE EQUITY 24.5%	PRIVATE EQUITY 22.6%	PRIVATE EQUITY 19.8%
PRIVATE EQUITY 37.8%	GLOBAL EQUITY 11.9%	GLOBAL EQUITY 13.7%	GLOBAL EQUITY 9.7%
VALUE-ADDED FIXED INCOME 17.7%	REAL ESTATE 6.8%	REAL ESTATE 7.1%	REAL ESTATE 9.6%
PORTFOLIO COMPLETION STRATEGIES 14.3%	CORE FIXED INCOME 5.8%	VALUE-ADDED FIXED INCOME 6.7%	VALUE-ADDED FIXED INCOME 5.4%
REAL ESTATE 9.8%	VALUE-ADDED FIXED INCOME 5.0%	PORTFOLIO COMPLETION STRATEGIES 5.0%	CORE FIXED INCOME 4.8%
TIMBER 5.4%	PORTFOLIO COMPLETION STRATEGIES 3.6%	TIMBER 4.3%	TIMBER 4.7%
CORE FIXED INCOME (1.8%)	TIMBER 2.4%	CORE FIXED INCOME 3.8%	PORTFOLIO COMPLETION STRATEGIES 4.2%

Source: BNY Mellon.

A blue-tinted photograph of a city skyline at dusk, viewed from a waterfront promenade. The sky is a deep blue, and the city lights are beginning to glow. In the foreground, there is a paved walkway with a low stone wall and some greenery. The water of the harbor is visible on the right side.

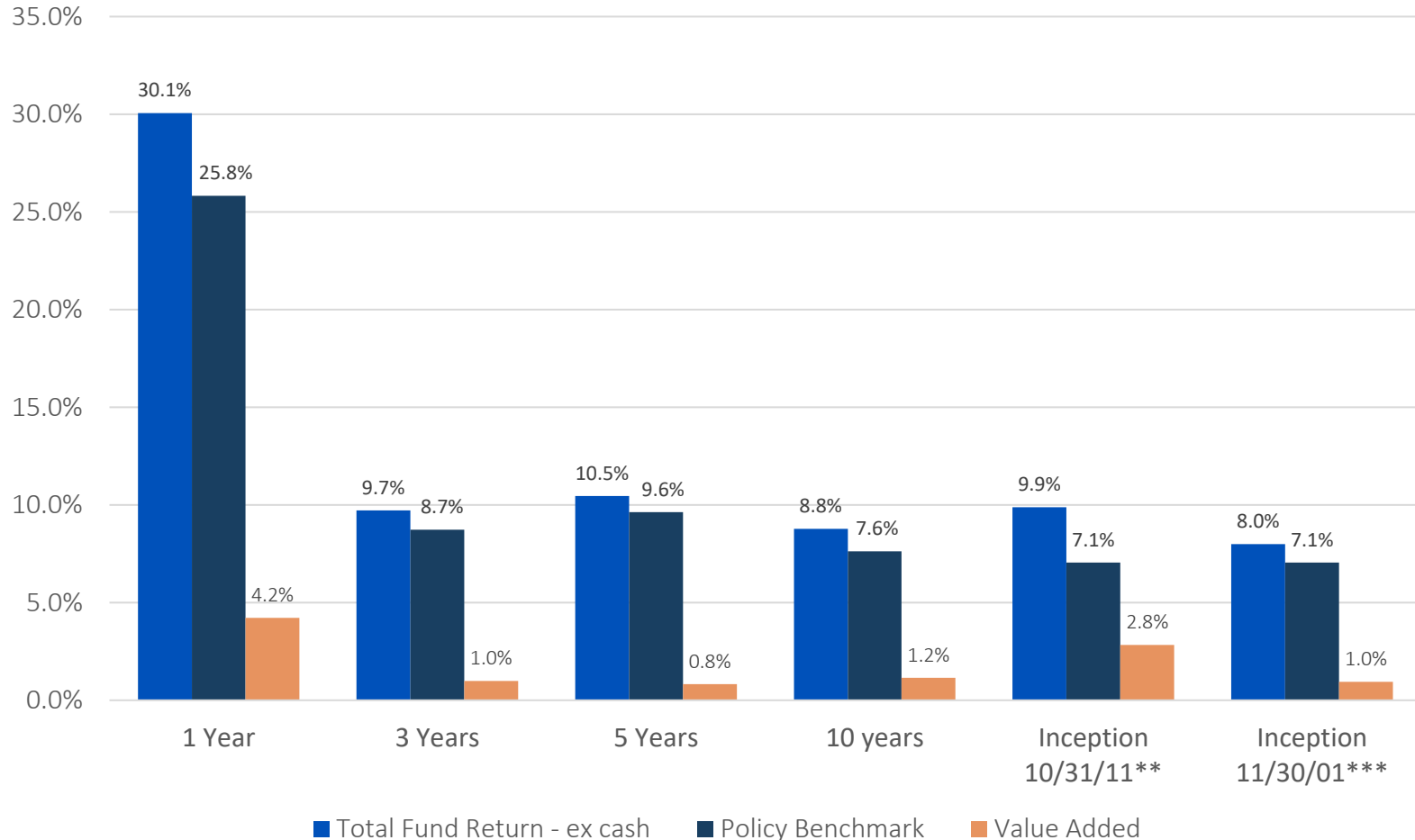
SRBT FUND PERFORMANCE

**Mass
PRIM**

AS OF MARCH 31, 2021

Total SRBT Fund Returns

\$2.48 Billion* One Year Ended March 31, 2021 (Net of Fees)



*Participant assets, excluding Mass State Retirees, were \$770.6 million as of March 31, 2021

** 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. **This ITD value of 9.9% 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.

A nighttime photograph of the Boston waterfront, showing a cobblestone promenade in the foreground, a body of water, and a dense city skyline with illuminated buildings in the background under a dark blue sky.

MUNICIPAL OUTREACH

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 MARCH 31, 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. **Concord***
14. Dartmouth
15. Dracut
16. Freetown
17. Foxboro
18. Greater Lawrence Sanitary District
19. Greenfield
20. **Gloucester***
21. Groton
22. Halifax
23. Haverhill
24. Hull
25. Lawrence
26. Longmeadow
27. **Lynn***
28. Massachusetts Association of Regional Planning Agencies (MARPA)
29. Massachusetts Housing Finance Authority
30. Medway
31. Melrose
32. **Middlesex Country Retirement System***
33. Mohawk/Hawlemont Regional School District (Buckland)
34. Nauset Regional High School
35. Newbury
36. Pepperell
37. Prospect Hill Academy Charter School
38. **Saugus***
39. Somerset
40. Springfield
41. Stoneham
42. Sudbury
43. Taunton
44. Tri-County Educational Collaborative (Franklin, MA)
45. Truro
46. Waltham
47. Watertown
48. West Boylston Municipal Light Department
49. Westford
50. West Newbury
51. Weston
52. Winthrop
53. Woburn

***New Listing**

Governmental Entities Participating in the SRBTF

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



Massachusetts Pension Reserves
Investment Management Board
84 State Street, Suite 250
Boston, MA 02109
617-946-8401
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THANK YOU

CONTACTS

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