STATE RETIREE BENEFITS TRUST FUND BOARD

PRESENTED BY

Francesco Daniele, Director of Client Services

Emily Green, Senior Client Services Analyst

MARCH 13, 2025

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

All figures as of 12/31/2024 unless otherwise noted

PRIM BOARD & PRIT FUND OVERVIEW

Mass PRIM

AS OF DECEMBER 31, 2024

PRIT Fund Snapshot

As of December 31, 2024

PRIT FUND FACTS

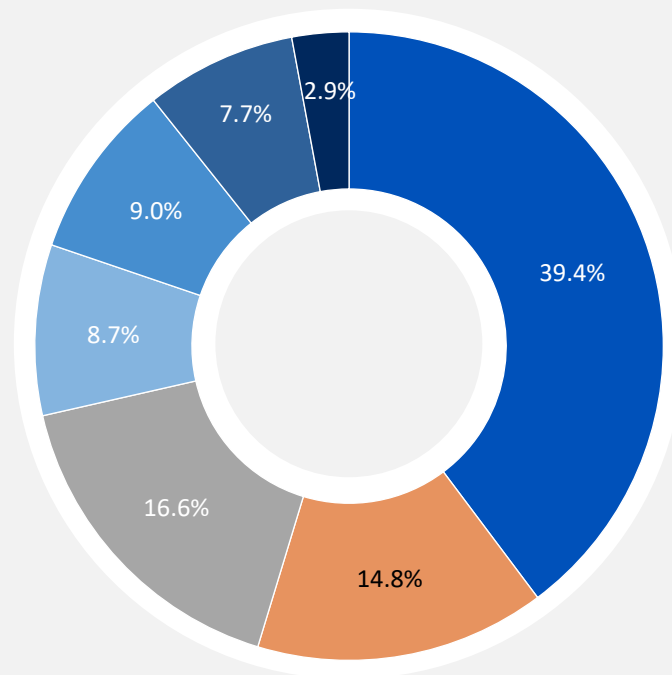- $109.7 billion AUM
- 72 public markets portfolios
- 15 real estate, timber and REIT portfolios
- 100+ private equity managers; 400+ partnerships
- 31 portfolio completion strategies managers

OVERSIGHT AND STAFFING

- 9 appointed and elected trustees
- 5 advisory committees, consisting of 43 industry professionals and Board members
- Staff of over 60 professionals
  - 31 Masters
  - 17 CFAs
  - 6 CPAs
  - 3 CAIAs
  - 3 JDs
  - 1 FRM
  - 1 CRE
  - 13 CFA Investment Foundations Program Certificate Holders
  - 2 CFA Private Markets and Alternative Investment Certificate Holders

3

ASSET ALLOCATION
(as of 12/31/24)

39.4%
14.8%
16.6%
8.7%
9.0%
7.7%
2.9%

TARGET RANGES
(approved 2/27/2025)

- Global Equities 31% - 41%
- Core Fixed Income 12% - 18%
- Private Equity 13% - 19%
- Porfolio Completion Strategies 7% - 13%
- Real Estate 7% - 13%
- Value-Added Fixed Income 6% - 12%
- Timberland 1% - 7%

Mass PRIM

About PRIM

$109.7 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 nearly $300 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.

5

PRIM Board

Chair
DEBORAH B. GOLDBERG

State Treasurer and
Receiver General,
Commonwealth of Massachusetts

Ruth Ellen Fitch	Catherine D'Amato	Mark Lapman	Carly Rose	Theresa F. McGoldrick, Esquire	Dennis J. Naughton	Robert L. Brousseau	Paul E. Shanley, Esquire
Appointee of the State Treasurer	Designee of the Governor, Ex Officio Member	Appointee of the Governor, Non-State Employee or Official	Appointee of the Governor, Public Safety	State Retirement Board Member (SRB)	Teachers' Retirement Board Member (TRB)	Elected Representative State Teachers' Retirement System	Elected Representative State Employees Retirement System

6

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. **Catherine D'Amato**, President and CEO, The Greater Boston Food Bank
5. **Michael Even**, Former President and CEO, Numeric Investors
6. **Constance M. Everson**, CFA, Managing Director, Capital Markets Outlook Group
7. **Ruth Ellen Fitch**, Esq., Board Member, Former President and CEO, the Dimock Center
8. **James B. G. Hearty**, Board Member, Former Partner, Clough Capital (Ex Officio)
9. **Peter Monaco**, Managing Director, Raptor Group
10. **Phillip H. Perelmuter**, Former Managing Partner, Wellington Management
11. **Philip Rotner**, Chief Investment Officer, Boston Children's Hospital
12. **Paul E. Shanley**, Esq., Board Member, Former Director of Professional Liability, Amity Insurance
13. **Glenn P. Strehle**, CFA, Treasurer Emeritus, MIT
14. **Timothy L. Vaill**, Former Chairman and CEO, Boston Private Holdings

Mass**PRIM**

PRIM Advisory Committees

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. **Jack Lutz**, PhD., Forest Research Group
6. **William F. (Bill) McCall, Jr.**, CRE, McCall & Almy, Inc.
7. **Garlan Morse**, Jr., CRE, Morris and Morse Company, Inc.
8. **Peter F. O'Connell**, Marina Bay Company
9. **Carly Rose**, Board Member, Public Safety Union Member

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. **Catherine D'Amato,** President and CEO, The Greater Boston Food Bank
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

PRIM Advisory Committees

Stewardship and Sustainability Committee

The Committee assists the Board in overseeing all issues related to the development and ongoing implementation of an ESG framework and related engagement activities, and to provide recommendations for the Board's approval. Members include:

1. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
2. **Ruth Ellen Fitch**, Esq., Board Member, Former President and CEO, the Dimock Center
3. **Theresa F. McGoldrick**, Esq., Board Member, National Executive Vice President, National Association of Government Employees (NAGE)
4. **Dennis J. Naughton**, Board Member, Retired Educator, Millis Public Schools
5. **Michael Even**, Former President and CEO, Numeric Investors
6. **Poonam Patidar**, Member, Mintz
7. **Mary Cerulli**, Founder, Climate Finance Action
8. **Marcela Pinilla**, Director of Sustainable Investing, Zevin Asset Management

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. **Deborah B. Goldberg**, Chair, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
2. **Robert L. Brousseau**, Board Member, Retired Teacher, Town of Wareham School System
3. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board
4. **Catherine D'Amato**, President and CEO, The Greater Boston Food Bank
5. **Marian A. Tse**, Retired Partner, Goodwin Procter

Recent Recognition

The Allocator from With Intelligence Lifetime Achievement Award
The Allocator from *With Intelligence* presented Michael G. Trotsky, CFA, PRIM's Executive Director and Chief Investment Officer, with its Lifetime Achievement Award. The publication called PRIM "a beacon of public service and investment prowess for the people of the Commonwealth of Massachusetts." (October 2024)

2023 Chief Investment Officer Power 100 List
Michael G. Trotsky, CFA, PRIM's Executive Director and Chief Investment Officer, was named to the 2023 CIO Power 10 List by the publication, *Chief Investment Officer*. The designation honors leaders "who continue to guide their funds through volatile times and are disciplined enough to navigate whatever is ahead." (November 2023)

Institutional Investor's Next Generation Recognition Award
Bill Li, CFA, CAIA, Director of Portfolio Completion Strategies received *Institutional Investor's* Next Generation Recognition. The award honors "distinguished leaders within the allocator community for their outstanding contributions to portfolio construction." (May 2024)

Commonwealth Citations for Outstanding Performance
Veena Ramani, Director of Stewardship, and George Tsipakis, Director of Investment Operations, were named 2024 recipients of the Commonwealth Citation for Outstanding Performance by Treasurer Deborah B. Goldberg. (October 2024)

GIPS® Compliance
For the 7th consecutive year, PRIM has completed the CFA Institute's Global Investment Performance Standards (GIPS®) verification.* PRIM is one of only a handful of large public pension plans to comply with the GIPS® standards. Additionally, Matt Liposky, PRIM's Chief Investment Operations Officer, was appointed by the CFA Institute to chair the GIPS® Standards Asset Owner Subcommittee. (August 2024)

Certificate of Achievement for Excellence in Financial Reporting – Government Finance Officer Association
PRIM was awarded the Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting for the 19th consecutive year. (June 2024)

PRIM Ranked #4 For Assets Managed by Diverse Managers by Pensions & Investments
PRIM was ranked fourth among the largest 200 funds in the U.S. for assets managed by diverse managers. This is an indication that PRIM's ongoing efforts over the years, combined with the new FUTURE initiative are putting PRIM at the top of the rankings in terms of progress. (February 2024)

Institutional Investor's Alpha Edge Award
PRIM's Private Equity team won Alpha Edge recognition for Alpha Generation from *Institutional Investor*, which cited PRIM's strong leadership culture, collaboration, and thesis-driven approach to manager selection as well as PRIM's annual commitment modeling process and strong long-term performance in the asset class. (July 2023)

Private Equity Women Investor Network Limited Partner of the Year
Private Equity Women Investment Network (PE-WIN), which is the preeminent organization for senior-level women investment professionals in private equity, recognized PRIM as "Limited Partner of the Year" for "empowering women in private equity." The award reflected both PRIM's work on investing with women and diverse managers via the FUTURE Initiative and the strong leadership presence of women on PRIM's Private Equity team. (July 2023)

PRIM's Private Equity Portfolio Ranked #4 by the American Investment Council
PRIM's Private Equity Portfolio was ranked 4th among 200 U.S. public pension funds based on 10-year performance by the American Investment Council's Public Pension Study. PRIM is the only fund that has been in the top five every year the study has been conducted, including #1 rankings in 2019, 2018, 2015, and 2013. (June 2024)

ECONOMIC BACKDROP

AS OF DECEMBER 31, 2024

U.S. Economic Data

WEEKLY INITIAL JOBLESS CLAIMS (IN MILLIONS)

Week Ending January 25: 207k claims

WTI CRUDE OIL ($/BBL)
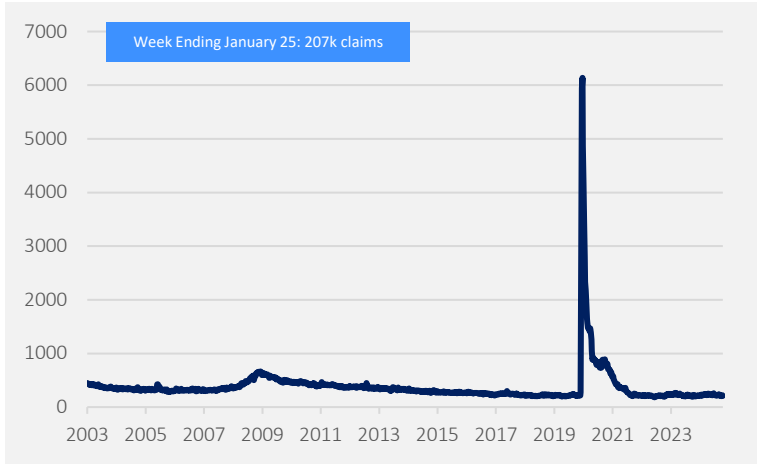
January 29: $72.61 per barrel
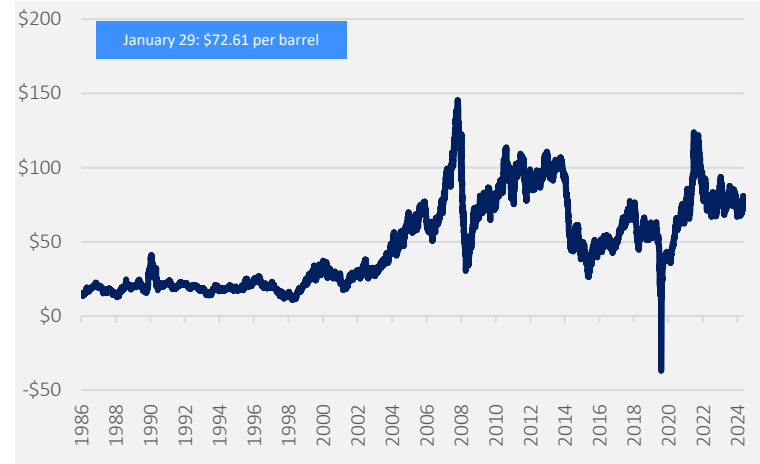
CBOE MARKET VOLATILITY INDEX (VIX)

January 29: 16.56
Historical Average: 19.54

Global Financial Crisis

Covid-19

1998: Russian debt crisis and LTCM collapse

Dot-Com Bubble

2001: 9/11 attacks & equity sell-off

2008: Collapse of Bear Stearns & Lehman Brothers

2010: Flash Crash

2011: EU sovereign debt crisis

2015: Yuan devaluation and China sell-off

2018: Q4 stock market sell-off

2022: Inflation, Rate Hikes, and Russia-Ukraine War

2024: Yen Carry Trade Unwind

Source: FactSet, PRIM Staff. All data as of December 31, 2024, or most recent report.

U.S. Economic Data

UNEMPLOYMENT RATE
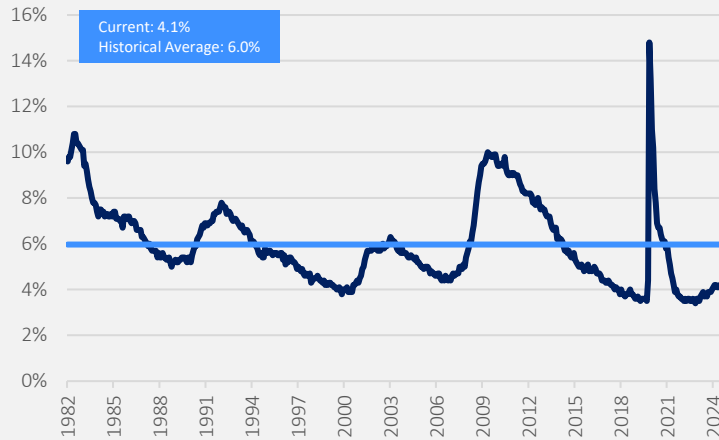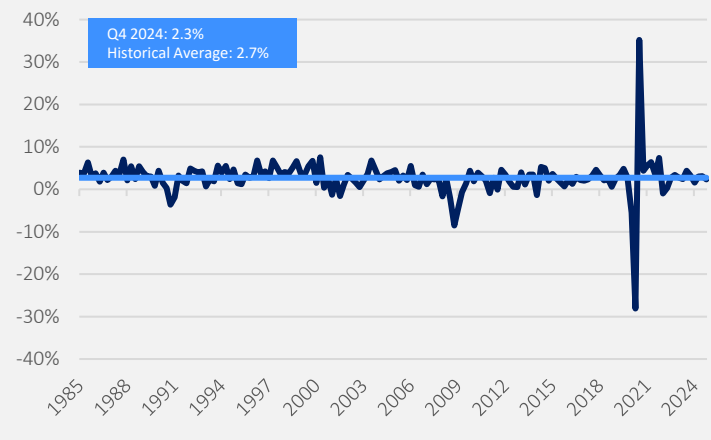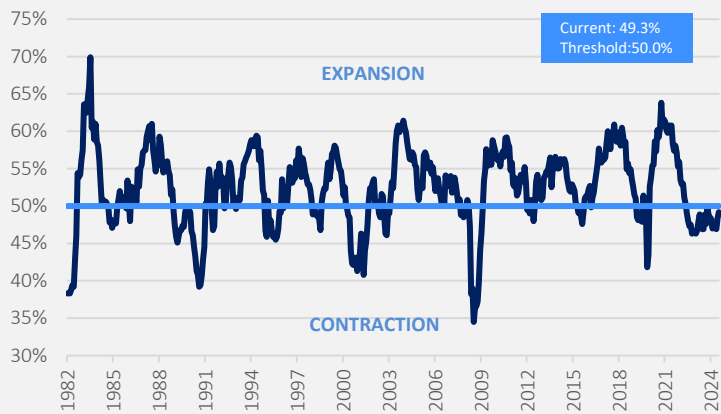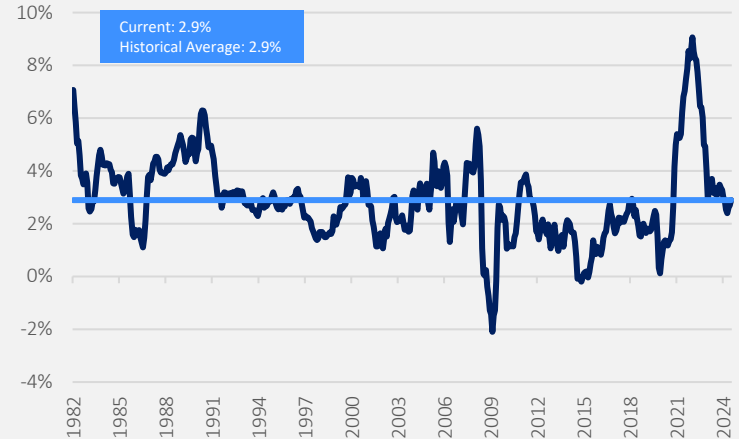
Current: 4.1%
Historical Average: 6.0%

GDP GROWTH RATE

Q4 2024: 2.3%
Historical Average: 2.7%

MANUFACTURING PMI

Current: 49.3%
Threshold: 50.0%

EXPANSION

CONTRACTION

INFLATION RATE (CPI)

Current: 2.9%
Historical Average: 2.9%

Source: FactSet, PRIM Staff. All data as of December 31, 2024, or most recent report.

PRIT FUND
ASSET ALLOCATION TARGETS

PRIT Asset Allocation

Approved February 27, 2025
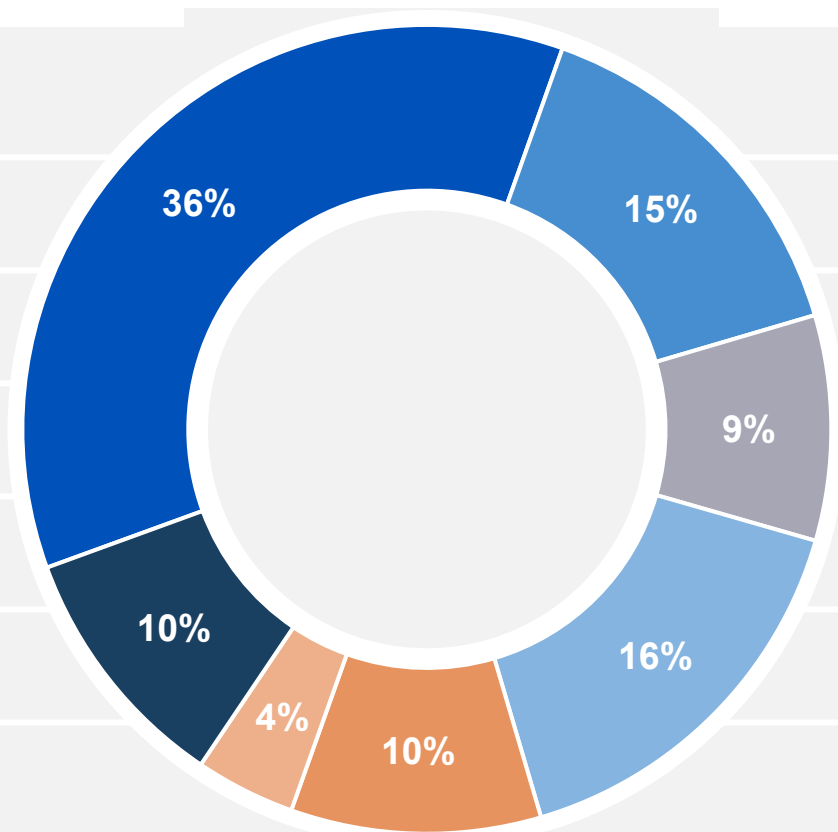
	AA 2024 Approved Range	AA 2025 Approved Range
Global Equity	31 – 41%	No Change
Core Fixed Income	12% - 18%	No Change
Value-Added Fixed Income	6% - 12%	No Change
Private Equity	13% - 19%	No Change
Real Estate	7% - 13%	No Change
Timberland	1% - 7%	No Change
Portfolio Completion Strategies	7% - 13%	No Change

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.

MassPRIM

PRIM 2025 Asset Allocation Recommendations

NEPC Capital Market Assumptions with Value-Added Fixed Income and Global Equity Changes

Asset Classes	Target Range	12/31/24 Asset Class Assumptions	
		10 Yr. Expected Return	30 Yr. Expected Return
US Equity[1]		5.7%	7.2%
International Equities[2]		5.6%	6.9%
Emerging International Equities[3]		7.9%	9.0%
Global Equity	31% - 41%		
Core Bonds		5.0%	5.3%
Short-Term Fixed Income[4]		4.6%	4.4%
20+ Yr. Treasury STRIPS		4.8%	5.3%
TIPS/ILBs		4.6%	4.7%
Core Fixed Income	12% - 18%		
Value-Added Fixed Income[5]	6% - 12%	7.5%	8.0%
Private Equity	13% - 19%	8.6%	10.5%
Real Estate[6]	7% - 13%	5.9%	6.8%
Timberland[7]	1% - 7%	6.0%	6.8%
Portfolio Completion (PCS)[8]	7% - 13%	6.4%	6.8%
Total Fund Expected Return[9]		6.9%	8.0%

1. Blended allocation to large-cap equity, small-cap equity, micro-cap equity
2. Blended allocation to large-cap equity and small-cap equity
3. Blended allocation to large-cap equity and small-cap equity
4. Modeled as Short-Term Treasury
5. Blended allocation to high yield, bank loans, EMD, private debt
6. Blended allocation to Private Real Estate and REITs
7. Timberland is modeled as Private Real Assets Infrastructure/Land
8. Modeled as equal weighted blend of Hedge Fund Equity, Credit, and Macro
9. Asset classes modeled at the midpoint of the asset allocation range

Source: NEPC

Mass PRIM

PRIT FUND PERFORMANCE

Mass PRIM

AS OF DECEMBER 31, 2024

Total PRIT Fund Fiscal Year Market Value

Value ($Billions)
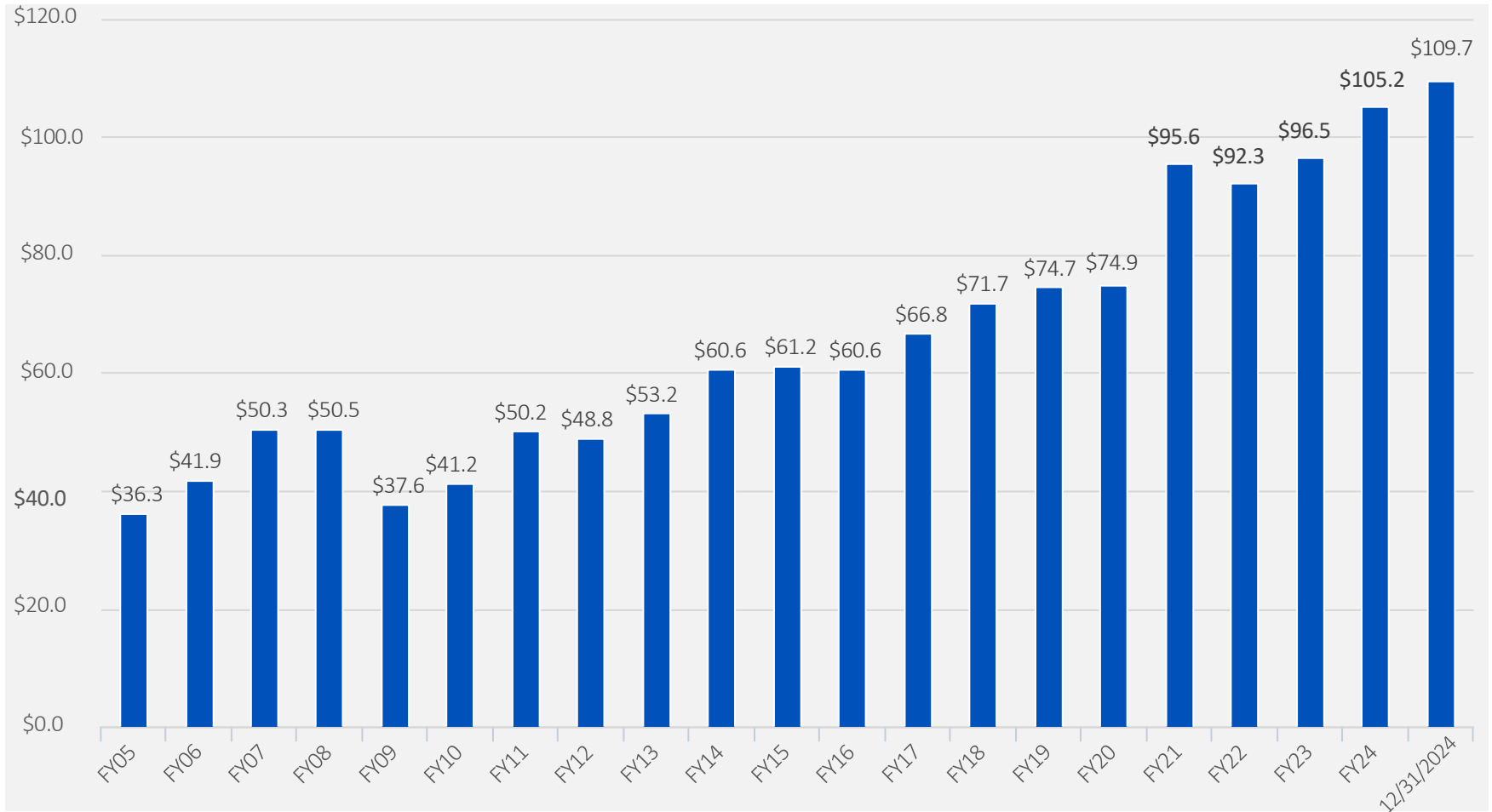
Source: BNY. As of December 31, 2024

18

PRIT Fund Total Returns

Annualized Returns as of December 31, 2024 (Net of Fees)

1 Year: Total Fund Return 9.1%, Total Capital Fund Benchmark 9.7%, Value Added -0.6%

3 Years: Total Fund Return 2.4%, Total Capital Fund Benchmark 4.5%, Value Added -2.1%

5 Years: Total Fund Return 7.7%, Total Capital Fund Benchmark 7.2%, Value Added 0.5%

10 Years: Total Fund Return 7.6%, Total Capital Fund Benchmark 7.2%, Value Added 0.4%

Legend: ■ Total Fund Return ■ Total Capital Fund Benchmark ■ Value Added
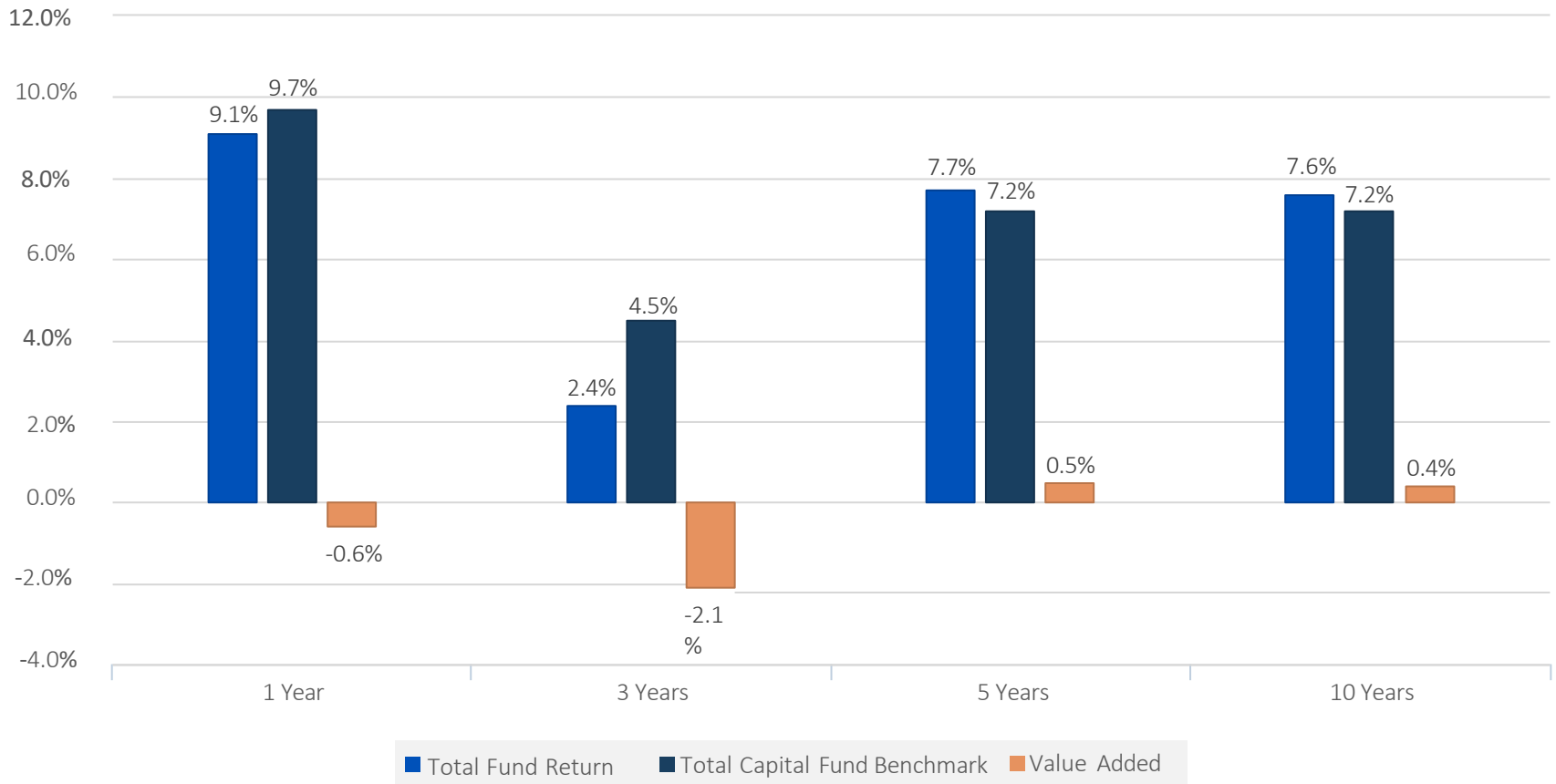
Source: BNY. Totals may not add due to rounding. Total Capital Fund Benchmark includes private equity benchmark.
PRIT Fund Fiscal Year 10-year average ratio of expenses is 0.51%

Mass PRIM

PRIT Asset Class Performance Summary

One-Year Ended December 31, 2024 (Net of Fees)

Asset Class	Asset Class	Benchmark	Value Added
Global Equity	16.2%	16.5%	-0.4%
Portfolio Completion Strategies	13.4%	8.4%	5.1%
Value-Added Fixed Income	10.2%	9.4%	0.8%
Private Equity*	7.8%	7.8%	0.0%
Timberland	3.0%	10.0%	-7.0%
Core Fixed Income	-1.4%	-1.6%	0.2%
Real Estate	-3.1%	-7.4%	4.3%
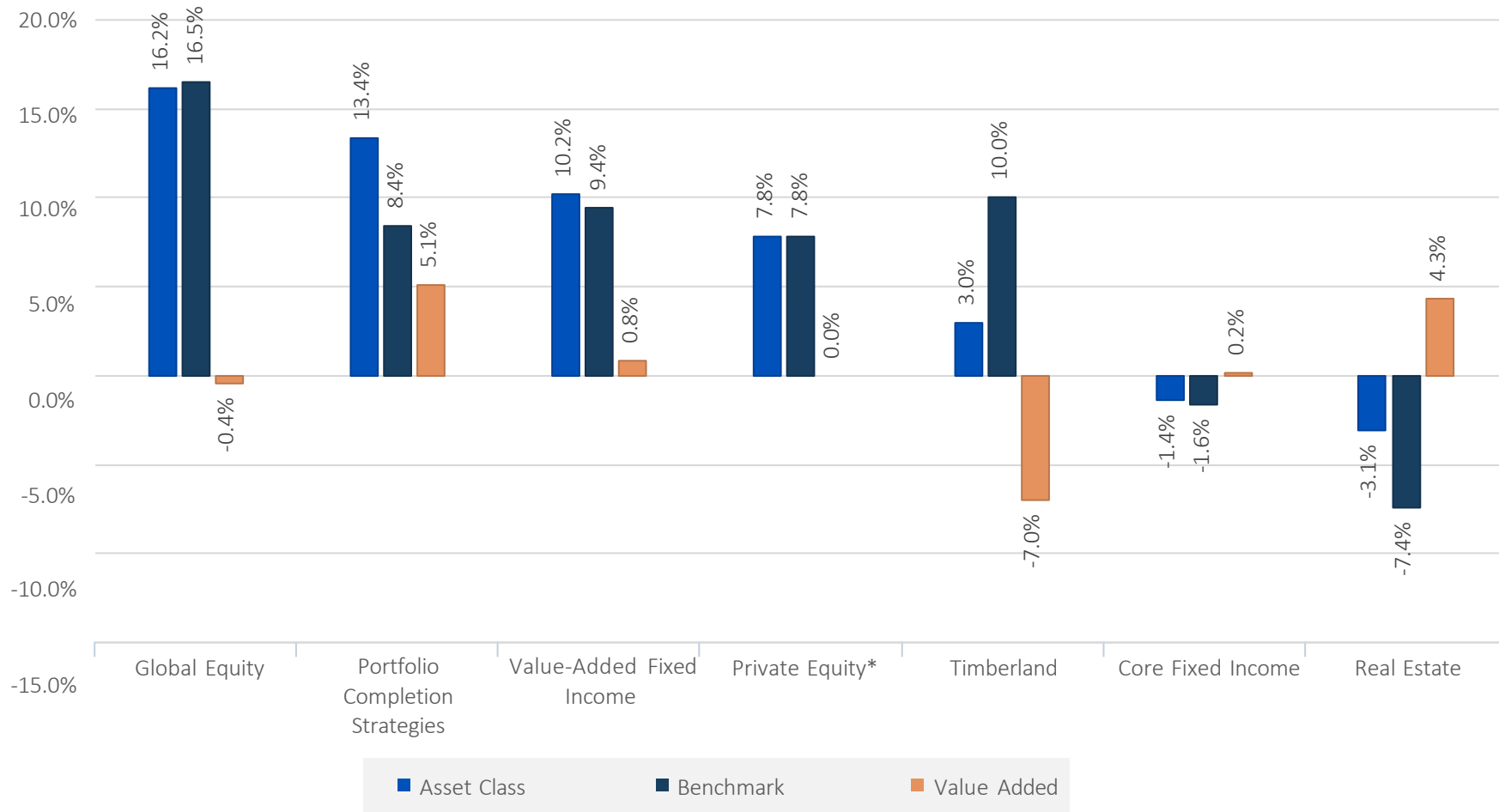
Source: BNY. Totals may not add due to rounding. *Benchmark is actual performance.

20

PRIT Performance By Strategy – One Year

One-Year Ended December 31, 2024 (Net of Fees)
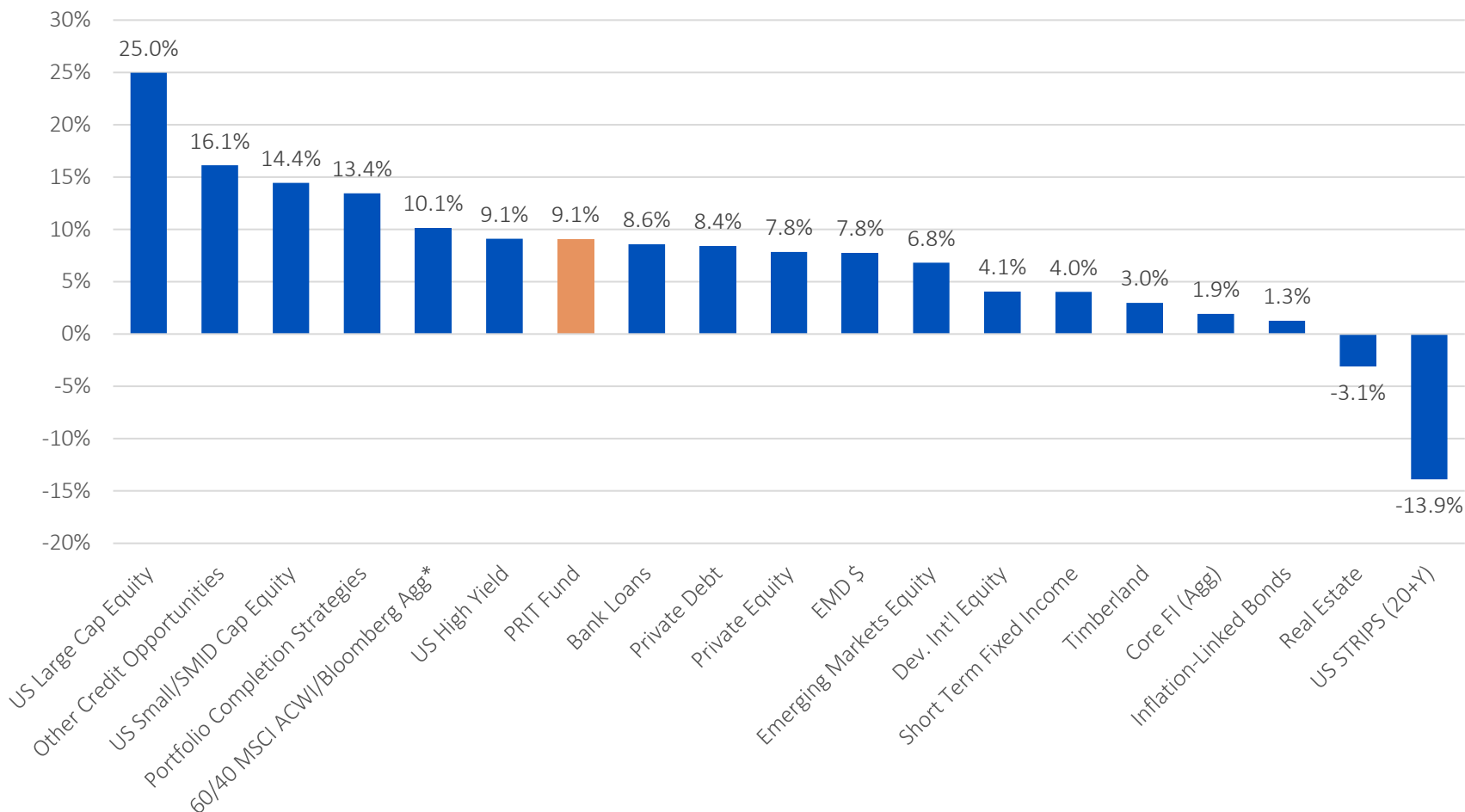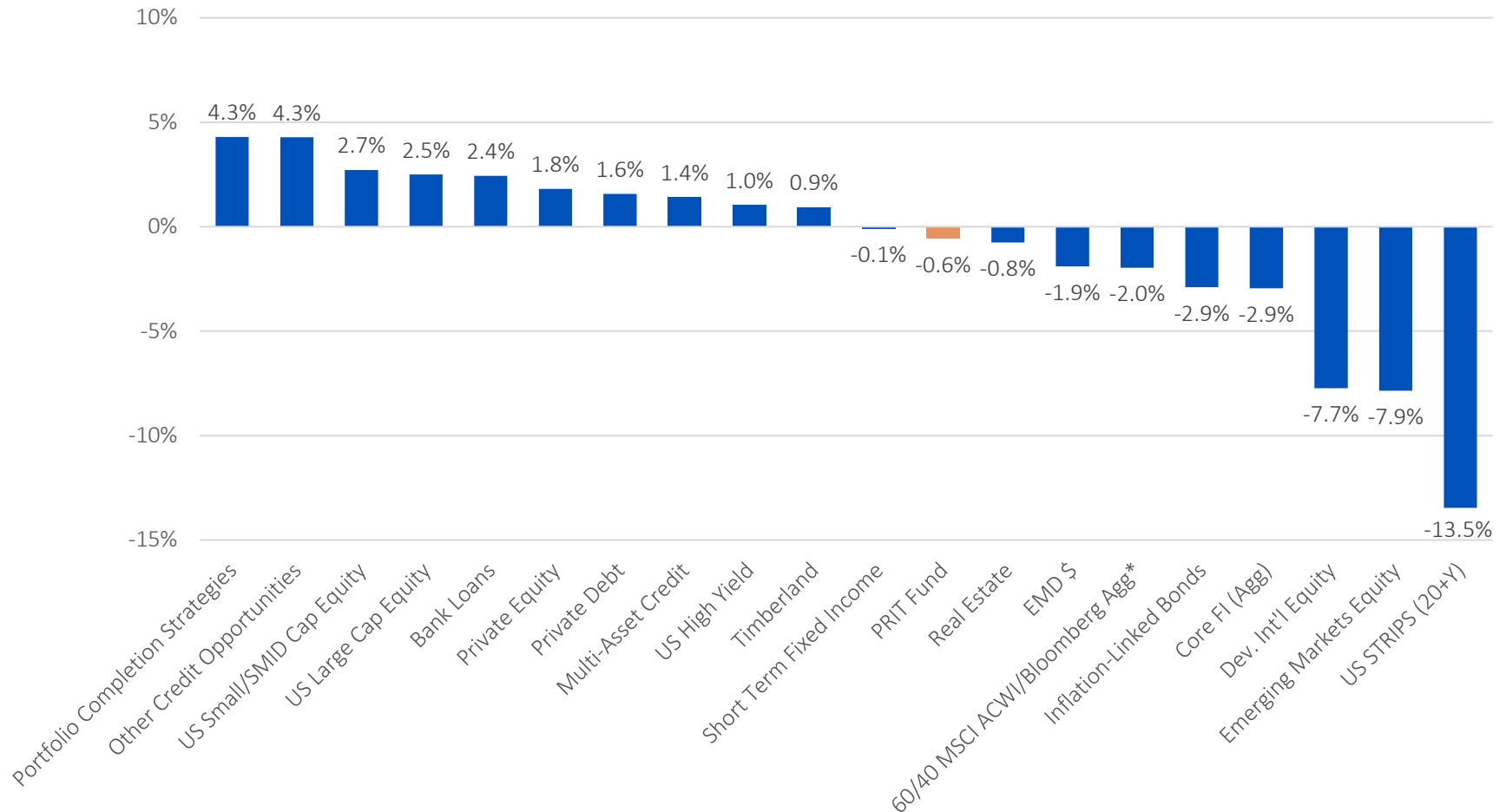

Source: BNY, Solovis. All performance figures reflected are PRIT Fund Asset Class returns. *MSCI ACWI/Bloomberg Aggregate is derived from a 60/40 combination of index returns.

PRIT Performance By Strategy – Fourth Quarter 2024

Quarter Ended December 31, 2024 (Net of Fees)

Strategy	Return
Portfolio Completion Strategies	4.3%
Other Credit Opportunities	4.3%
US Small/SMID Cap Equity	2.7%
US Large Cap Equity	2.5%
Bank Loans	2.4%
Private Equity	1.8%
Private Debt	1.6%
Multi-Asset Credit	1.4%
US High Yield	1.0%
Timberland	0.9%
Short Term Fixed Income	-0.1%
PRIT Fund	-0.6%
Real Estate	-0.8%
EMD $	-1.9%
60/40 MSCI ACWI/Bloomberg Agg*	-2.0%
Inflation-Linked Bonds	-2.9%
Core FI (Agg)	-2.9%
Dev. Int'l Equity	-7.7%
Emerging Markets Equity	-7.9%
US STRIPS (20+Y)	-13.5%

Source: BNY, Solovis. All performance figures reflected are PRIT Fund Asset Class returns. *MSCI ACWI/Bloomberg Aggregate is derived from a 60/40 combination of index returns.

Mass PRIM

PRIT Fund Contribution to Return by Strategy

One-Year Ended December 31, 2024 (Net of Fees)
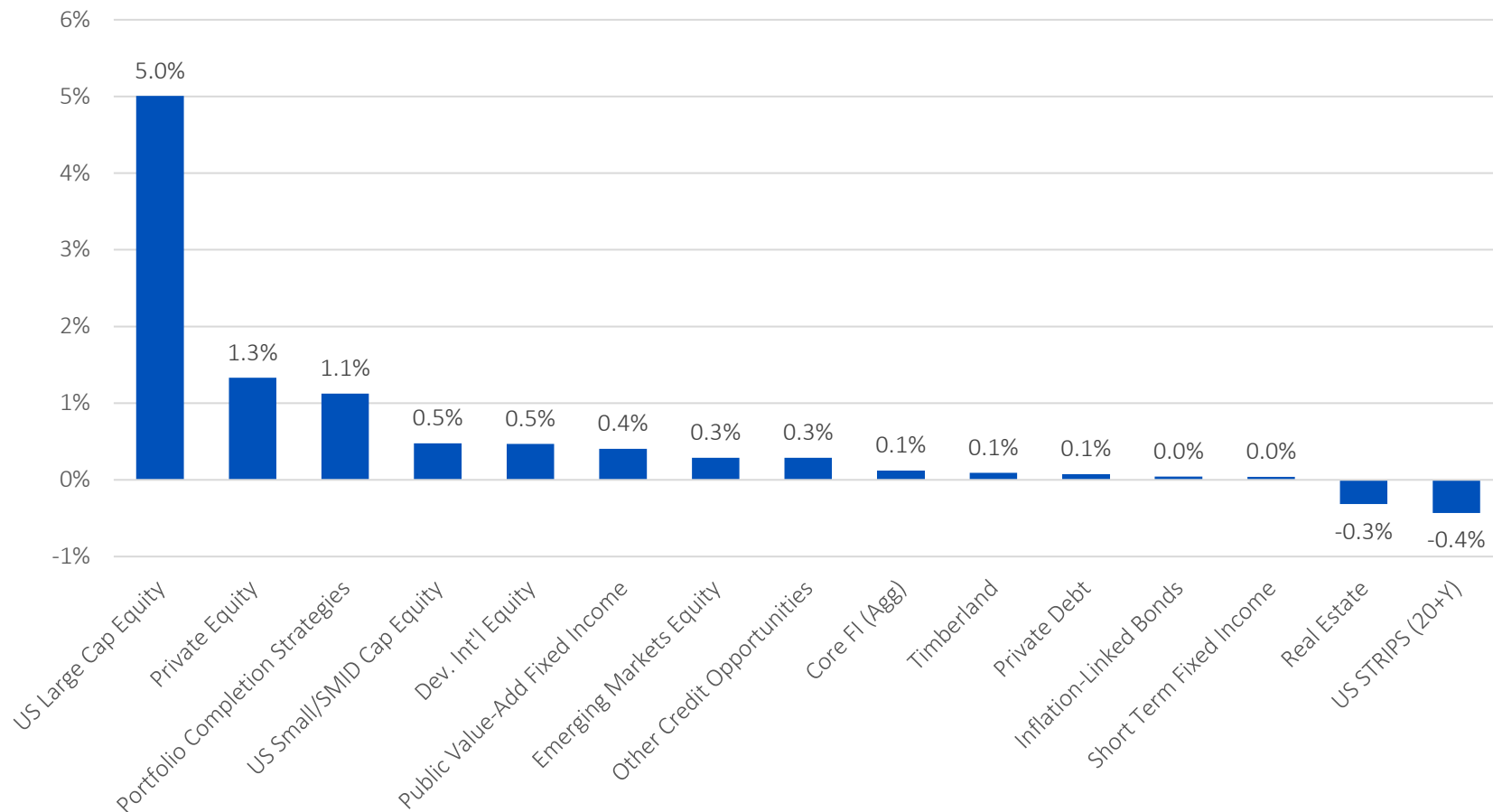
Source: BNY. Totals may not add due to rounding.

PRIT Fund Annualized Returns By Asset Class

As of December 31, 2024 (Net of Fees)

1 Year	3 Year	5 Year	10 Year
GLOBAL EQUITY 16.2%	TIMBER 7.3%	PRIVATE EQUITY 17.0%	PRIVATE EQUITY 16.7%
PORTFOLIO COMPLETION STRATEGIES 13.4%	PORTFOLIO COMPLETION STRATEGIES 6.4%	GLOBAL EQUITY 9.8%	GLOBAL EQUITY 9.2%
VALUE-ADDED FIXED INCOME 10.2%	GLOBAL EQUITY 5.0%	TIMBER 7.3%	REAL ESTATE 6.5%
PRIVATE EQUITY 7.8%	VALUE-ADDED FIXED INCOME 5.0%	VALUE-ADDED FIXED INCOME 5.9%	TIMBER 5.3%
TIMBER 3.0%	PRIVATE EQUITY 2.4%	PORTFOLIO COMPLETION STRATEGIES 5.6%	VALUE-ADDED FIXED INCOME 5.1%
CORE FIXED INCOME (1.4%)	REAL ESTATE (0.9%)	REAL ESTATE 4.5%	PORTFOLIO COMPLETION STRATEGIES 4.3%
REAL ESTATE (3.1%)	CORE FIXED INCOME (5.5%)	CORE FIXED INCOME (1.1%)	CORE FIXED INCOME 1.1%

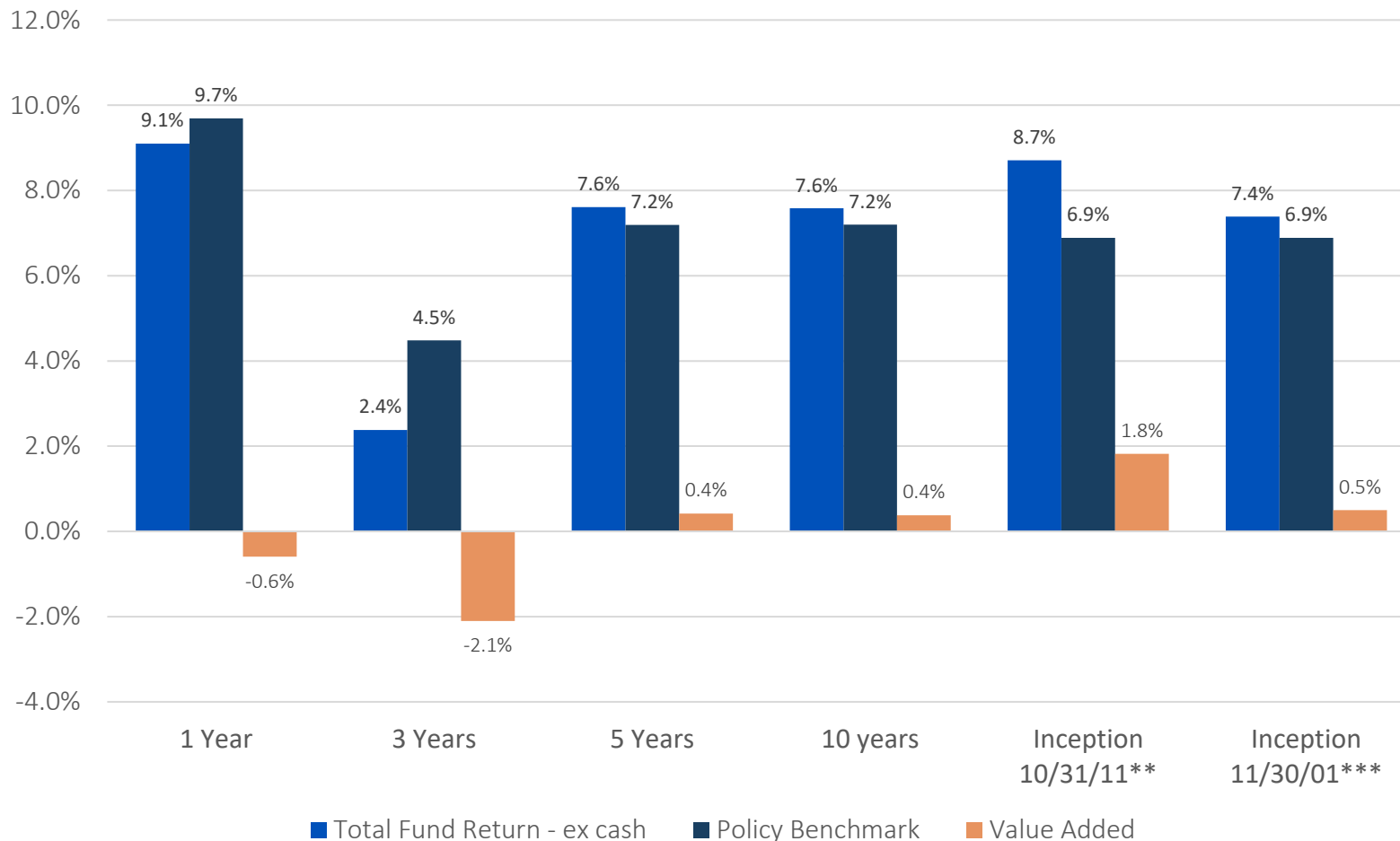Source: BNY Mellon.

STATE RETIREE BENEFITS TRUST FUND (SRBTF)

Mass PRIM

AS OF DECEMBER 31, 2024

Total SRBT Fund Returns

$3.9 Billion* One Year Ended December 31, 2024 (Net of Fees)

Chart legend: ■ Total Fund Return - ex cash ■ Policy Benchmark ■ Value Added

	1 Year	3 Years	5 Years	10 years	Inception 10/31/11**	Inception 11/30/01***
Total Fund Return - ex cash	9.1%	2.4%	7.6%	7.6%	8.7%	7.4%
Policy Benchmark	9.7%	4.5%	7.2%	7.2%	6.9%	6.9%
Value Added	-0.6%	-2.1%	0.4%	0.4%	1.8%	0.5%

*Participant assets, excluding Mass State Retirees, were $1.3 billion as of December 31, 2024

** 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 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

Governmental Entities Participating in the SRBTF

1. Town of Acton
2. Town of Amherst
3. Town of Arlington
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. Blue Hills Regional Technical School District
11. Boston Planning & Development Agency (BPDA)
12. Town of Boxford
13. Town of Braintree
14. Town of Brewster
15. Town of Brookline
16. Town of Burlington
17. Byfield Water District
18. Cape Light Compact JPE
19. Town of Chelmsford
20. Town of Cohasset
21. Concord Area Special Education (CASE) Collaborative
22. Town of Dalton
23. Town of Dedham
24. Town of Dracut
25. Dracut Water Supply District
26. Fall River Housing Authority
27. City of Fitchburg
28. Town of Franklin
29. Franklin Regional Council of Governments
30. Greater Lowell Regional Technical School

31. Hamilton Wenham Regional School District
32. Town of Harvard
33. Town of Hingham
34. Town of Holliston
35. Town of Ipswich
36. Town of Lancaster
37. Lawrence Housing Authority
38. Town of Lenox
39. City of Leominster
40. Town of Lincoln
41. Lincoln-Sudbury Regional School District
42. Town of Longmeadow
43. Lowell Regional Transit Authority (LRTA)
44. Lower Pioneer Valley Educational Collaborative
45. Town of Manchester-By-The-Sea
46. Manchester Essex Regional School District
47. Town of Marblehead
48. Marblehead Municipal Light Department
49. Massachusetts School Building Authority
50. Massachusetts State College Building Authority
51. Mass State Retirees (SRBTF)
52. Mass Water Resources Authority
53. Town of Medfield
54. Town of Middleton
55. Town of Milton
56. Town of Montague
57. Nashoba Regional School District
58. Town of Needham
59. City of New Bedford
60. City of Newburyport

61. City of Newton
62. Town of North Andover
63. Town of Northborough
64. Town of Northfield
65. Old Rochester Regional School District
66. Town of Orleans
67. Pathfinder Regional Vocational Technical School District
68. Pilgrim Area Collaborative (PAC), Pembroke, MA
69. Town of Provincetown
70. Quabbin Health District
71. Town of Reading
72. Reading Municipal Light Department
73. Town of Sharon
74. Shawsheen Valley Technical High School
75. Somerset Berkley Regional School District
76. South Essex Sewerage District
77. South Hadley Fire District #2
78. Town of Stockbridge
79. Town of Tewksbury
80. Town of Wakefield
81. Wakefield Municipal Gas & Light Department
82. Town of Wayland
83. Town of Wellesley
84. Town of Westwood
85. Town of Wilmington
86. City of Worcester

Updated 9/12/2024

![MassPRIM logo]

THANK YOU

Massachusetts Pension Reserves Investment Management Board
53 State Street, Suite 600
Boston, MA 02109
617-946-8401
www.mapension.com

CONTACTS

Francesco Daniele
Director of Client Services
Office 617-946-8416
E-mail: fdaniele@mapension.com

Laura Strickland
Senior Client Services Officer
Office 617-946-8490
E-mail: lstrickland@mapension.com

Emily Green
Senior Client Services Analyst
Office 617-946-8486
E-mail: egreen@mapension.com