



Pension Reserves Investment Management Board

---

March 13, 2023

Dear Potential Provider:

The Massachusetts Pension Reserves Investment Management Board ("PRIM") is requesting responses from firms interested in providing **Investment Performance Reporting Services**.

The Procurement Officer for this Request for Proposals (RFP) is Jessica Murphy. For responses to be considered by PRIM, each prospective provider must respond to the RFP by submitting an electronic copy of its response, including attachments, via e-mail to [rfpresponses@mapension.com](mailto:rfpresponses@mapension.com). The response must be received by **3:00 p.m., ET, Friday, April 14, 2023**.

Further instructions for response submission are included in the RFP. Questions concerning the RFP must be submitted to [rfpresponses@mapension.com](mailto:rfpresponses@mapension.com) by **3:00 p.m. ET, Friday, March 31, 2023**.

We appreciate the time and effort required to respond to this RFP. Each respondent submitting a response to PRIM can be assured that commensurate time and effort will be expended in evaluating each response. We look forward to your response.

Sincerely,

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



Pension Reserves Investment Management Board

---

*[THIS PAGE INTENTIONALLY LEFT BLANK]*



Pension Reserves Investment Management Board

---

***REQUEST FOR PROPOSALS (RFP)***

**Investment Performance Reporting Services**

***March 13, 2023***

**Table of Contents**

	<u>Description</u>	<u>Page</u>
I.	Introduction/Purpose	1
II.	Background Information	1
III.	Scope of Services	3
IV.	Response Specifications	3
V.	Selection Process and Selection Criteria	6
VI.	Minimum Qualifications	6
VII.	Tentative Timeline	7
VIII.	Questionnaire	8
IX.	Representations and Warranties	14
X.	Fee Proposal	14
XI.	Exhibits	14

**Exhibits**

	<u>Description</u>	<u>Page</u>
A.	Operating Trust Agreement	15
B.	PRIM Service Providers	16
C.	PRIM Disclosure Statement	17
D.	TREASURER'S PRINCIPAL BOARDS, COMMISSIONS AND AUTHORITIES	21
E.	PRIM Performance Report	23

## **I. INTRODUCTION/PURPOSE**

The Massachusetts Pension Reserves Investment Management Board ("PRIM") is soliciting responses from firms interested in providing Investment Performance Reporting Services. More detailed descriptions of these services are set forth in Section III of this RFP under the heading "SCOPE OF SERVICES."

## **II. BACKGROUND INFORMATION**

### **A. Legal Structure of PRIM**

PRIM was created in 1983 by the Commonwealth of Massachusetts through legislation (Chapter 661 of the Acts of 1983, as amended by Chapter 315 of the Acts of 1996) to provide general supervision of the investments and management of the Pension Reserves Investment Trust (PRIT) Fund. The PRIT Fund was created by the same legislation and is the investment portfolio for the assets of the State Employees' and State Teachers' Retirement Systems, as well as local retirement systems that choose to invest in the PRIT Fund.

PRIM is governed by a nine-member board of trustees (the "Board"). The trustees include: (1) the Governor, *ex officio*, or her designee; (2) the State Treasurer, *ex officio*, or her designee, who shall serve as Chair of the PRIM Board; (3) a private citizen, experienced in the field of financial management, appointed by the State Treasurer; (4) an employee or retiree, who is a member of the State Teachers' Retirement System, elected by the members of such system, for a term of three years; (5) an employee or retiree, who is a member of the State Employees' Retirement System, elected by the members of such system for a term of three years; (6) the elected member of the State Retirement Board; (7) one of the elected members of the Teachers' Retirement Board chosen by the members of the Teachers' Retirement Board; (8) a person who is not an employee or official of the Commonwealth appointed by the Governor; and (9) a representative of a public safety union appointed by the Governor. Appointed members serve for a term of four years.

The mission of the PRIT Fund is to ensure that current and future pension benefit obligations are adequately funded in a cost-effective manner. PRIM therefore seeks to maximize the total return on investments within acceptable levels of risk for a public pension fund. Under current law (as amended by Section 45 of Chapter 68 of the Acts of 2011), by the year 2040, the PRIT Fund will have grown, through annual payments in accordance with a legislatively approved funding schedule and through total investment return of the PRIT Fund, to an amount sufficient to meet the then existing pension obligations of the Commonwealth. The Commonwealth has adopted a schedule of state pension appropriations that assumes a long-term actuarial rate of return for the PRIT Fund of 7.00%.

The nine-member board of trustees, as trustees for each retirement system that invests in the PRIT Fund, has the authority: to employ an Executive Director, outside investment managers, custodians, legal counsel, consultants and others as it deems necessary; to formulate policies and procedures; and to take such other actions as necessary and appropriate to manage the assets of the PRIT Fund.

PRIM is the legal custodian of the PRIT Fund and has fiduciary responsibility for the assets transferred to the PRIT Fund by state and local retirement systems. PRIM selects the PRIT Fund's investment managers and advisors, reviews and evaluates total PRIT Fund and individual investment manager performance, and performs various other activities in the daily management of the PRIT Fund. As of December 31, 2022, the PRIT Fund had net assets totaling approximately \$92 billion.

PRIM is governed by Massachusetts General Laws, Chapter 32 and oversees the PRIT Fund under the terms of its Operating Trust dated July 15, 1988, and amended on September 22, 1998 (a copy of which is available at [www.mapension.com](http://www.mapension.com)). The members of the Board, in conjunction with the Executive Director, who serves at the pleasure of the Board, determine policies and make decisions concerning the administrative and investment operations of the PRIT Fund.

PRIM has established advisory committees (Investment, Administration & Audit, Real Estate & Timber, ESG, and Compensation) to provide a broad range of input to the Board. These committees are generally composed of several Board members and several non-Board members having investment and/or business and/or other relevant expertise. Significant policies and investments are ultimately approved by the Board.

**B. Massachusetts General Laws (MGL Chapter 32)**

PRIM is governed by Massachusetts General Laws ("MGL"), Chapter 32, Sections 22 and 23 (web link: <https://malegislature.gov/laws/generallaws/parti/titleiv/chapter32>) and oversees the PRIT Fund under the terms of PRIM's Operating Trust dated July 15, 1988 and amended on September 22, 1998. The members of the Board, in conjunction with the Executive Director, determine significant policies and decisions concerning the administrative and investment operations of PRIM and the PRIT Fund.

**C. Massachusetts Conflict of Interest Law (MGL Chapter 268A)**

The Massachusetts Conflict of Interest Law (web link: <https://malegislature.gov/Laws/GeneralLaws/PartIV/TitleI/Chapter268A>) applies to PRIM and can have application to persons performing services to PRIM by contract.

**D. Massachusetts Open Meeting Law (Chapter 30A, Sections 18-25)**

The Massachusetts Open Meeting Law (MGL Chapter 30A, Sections 18-25, web link: <https://www.mass.gov/the-open-meeting-law>) is designed to ensure transparency in public policy deliberations. The Open Meeting Law requires, with some exceptions, that meetings of public bodies such as PRIM be open to the public.

**E. PRIM's Advisors**

Outside advisors and managers (some of whom are identified in **Exhibit A**) are engaged for their expertise and retained to assist PRIM in the areas of general portfolio strategy and investments and related services. BNY Mellon is the PRIT Fund's custodian and is responsible for providing record-keeping and analytic performance valuations for the PRIT Fund.

### III. SCOPE OF SERVICES

The purpose of this Request for Proposals (RFP) is to solicit Proposals from qualified firms to provide Investment Performance Reporting Services for a five-year term with two (2) additional mutual one (1) year extension options. The reporting service should include agile reporting capability in a secure platform that will include software implementation services, ongoing training, and technical support. The reporting service should include the following functionality:

The selected respondent(s), upon execution of a contract, shall, as requested by PRIM, and subject to Massachusetts law and policies:

1. Provide executive level monthly and quarterly performance reporting packages using the performance book of record from custodian.
2. Report historical and extended period performance, on both a daily and monthly basis.
3. Provide access to online performance and analytical tools.
4. Implement integration capabilities with PRIM's custodian and other third-party systems.
5. Provide Gross of Fee and Net of Fee performance reporting on all accounts, asset classes and Total Fund levels.
6. Report at the security level (holding level) for client accounts (Participant Accounts).
7. Provide benchmark performance comparison.
8. Provide attribution at Total Fund level, asset class, sub asset class, manager and security level.
9. Provide contribution to return capabilities.
10. Offer enhanced reporting capabilities, including download/export of data and ad-hoc reporting.
11. Provide comprehensive, customizable reporting.
12. Offer peer benchmark/universe comparison capabilities.
13. Calculate daily and monthly performance at security, manager, composite, asset class and total fund levels.
14. Construct composites and custom benchmarks.
15. Customize performance calculations.

### IV. RESPONSE SPECIFICATIONS

#### A. Deadline For Proposals

Proposals, including all attachments, must be delivered electronically via e-mail to Jessica Murphy at [rfpresponses@mapension.com](mailto:rfpresponses@mapension.com), by 3:00p.m. ET, April 14, 2023 (the "Response Deadline"). The e-mail subject header should be in the following format: "PRIM Investment Performance Reporting Services RFP Response – Name of Responding Firm."

The questions and/or requests made in this RFP should be duplicated in their entirety in the respondent's proposal, with each question and/or request repeated before the answer or response.

**Any response received after the response deadline will not be considered.**

All electronic (email) documents submitted must be 40MB or smaller in size. If necessary, the Respondent should separate the RFP submission into multiple emails to ensure the 50 MB size

requirement is not exceeded. The Respondent is responsible for ensuring that a complete electronic RFP response is received prior to the response deadline.

Copies of this RFP can be obtained electronically on the PRIM website at [www.mapension.com](http://www.mapension.com).

**B. Required Enclosures and Attachments**

**1. Cover Letter**

The response must be accompanied by a cover letter, which will be considered an important part of the response, and which shall be signed by at least one individual authorized to bind the respondent contractually. This cover letter must include: (a) the respondent's name and address; (b) name, phone number, and email address of the person proposed to be the principal contact; (c) the title or position which the signer of the cover letter holds in the firm; and (d) a statement to the effect that the response is a firm and irrevocable offer of the respondent.

**2. Responses to Minimum Qualifications (Section VI)**

The respondent must describe in sufficient detail how the firm meets the Minimum Qualifications.

**3. Responses to Questions (Section VIII)**

The respondent must provide complete response to the questions contained within this RFP.

**4. Representations and Warranties**

The Representations and Warranties contained in Section IX hereof, signed by an authorized officer of the respondent, must be included as an attachment to the cover letter referenced in Section IV.B.1 above.

**5. Disclosure Statement**

Attached to this RFP as **Exhibit B** is a PRIM Disclosure Statement. Each firm submitting a response must complete the PRIM Disclosure Statement and submit it as an attachment to the cover letter referenced in Section IV.B.1 above. **YOU MUST COMPLETE THE PRIM DISCLOSURE STATEMENT OR YOUR SUBMISSION MAY NOT BE CONSIDERED.**

**6. Fee Proposal**

The fee proposal of the proposing firm must be submitted on the form contained in Section X hereof (the Fee Proposal).

**7. Form ADV**

If applicable, the firm must submit to PRIM in electronic form its full Form ADV (Parts I and II).

**C. Public Record and Website Posting**

In accordance with Chapter 66, Section 10 and Chapter 4, Section 7(26) of the Massachusetts General Laws, upon the expiration of the response deadline, responses to this RFP could be deemed to be public records, and as such could be subject to requests for public disclosure. Additionally, in accordance with Chapter 66, Section 19(b)(v) of the Massachusetts General Laws, the RFP Response that is submitted by the respondent(s) selected to provide services to PRIM will be posted on PRIM's



website ([www.mapension.com](http://www.mapension.com)).

**D. Withdrawal/Irrevocability of Responses**

Respondents may withdraw and resubmit responses prior to the Response Deadline. No withdrawals or re-submissions will be allowed after the Response Deadline.

**E. Waiver/Cure of Minor Informalities, Errors and Omissions**

PRIM reserves the right to waive or permit cure of minor informalities, errors or omissions prior to the selection of finalists, and to conduct discussions with any qualified proposers and to take any other measures with respect to this RFP in any manner necessary to serve the best interest of PRIM and its beneficiaries.

**F. Communications with PRIM**

Respondents may withdraw and resubmit responses prior to the Response Deadline. No withdrawals or re-submissions will be allowed after the Response Deadline.

The Procurement Officer for this RFP is:

Jessica Murphy  
Manager of Performance Reporting  
Pension Reserves Investment Management Board  
84 State Street  
Boston, Massachusetts 02109  
[rfpresponses@mapension.com](mailto:rfpresponses@mapension.com)  
Telephone: (617) 946-8419

As of **March 13, 2023**, persons and entities intending to submit a response should not contact any PRIM staff or any other PRIM committees, members of the PRIM Board, or employees of the Massachusetts Treasury, other than the Procurement Officer(s) identified above. An exception to this rule applies to persons and entities currently doing business with PRIM, but any such contact made with persons other than the Procurement Officer must be limited to that business and must not relate to this RFP. In addition, respondents should not discuss this RFP with any employee of PRIM's custodian, PRIM's managers, consultants, legal counsel or other PRIM advisors.

**FAILURE TO OBSERVE THIS RULE IS GROUNDS FOR DISQUALIFICATION**

**G. Questions Regarding this RFP**

All questions concerning this RFP must be received by the Procurement Officer(s) by **3:00 p.m. ET, March 31, 2023** (the "Question Deadline"), in writing, via e-mail sent to [rfpresponses@mapension.com](mailto:rfpresponses@mapension.com). Questions received before the deadline will be answered and circulated by e-mail to all respondents who have proposed a question. Respondents that have requested prior to the deadline, in writing, a copy of the questions and the responses will also receive them. Questions, or requests for a copy of the questions and the responses, that are received after the Question Deadline will not be considered.

#### **H. Incurring Costs**

PRIM will not be liable for any costs incurred prior to entering a contract with the selected respondents or proposers.

#### **I. Rejection of Responses; Cancellation**

PRIM reserves the right in its sole discretion to reject any response, as well as the right to reject all responses submitted in response to this RFP, and to cancel and rescind the procurement at any time, for any reason or for no reason.

### **V. SELECTION PROCESS AND SELECTION CRITERIA**

PRIM will evaluate each response to determine if it was submitted in accordance with the requirements set forth in this RFP, including whether the proposing firm meets the Minimum Qualifications of Section VI.

Proposals will be evaluated by an Evaluation Committee which may include members of the PRIM Board, its advisory committees, and staff (the "Evaluation Committee"). If helpful to PRIM's evaluation, the Evaluation Committee may invite one or more respondents to PRIM for an interview.

The Evaluation Committee will assess the respondent's qualifications based on the following criteria:

1. Stability and experience of the firm.
2. Experience and stability of the team proposed to be dedicated to PRIM.
3. Ability to present enhanced executive level reporting and customization.
4. Increased efficiencies for staff in producing data and reporting.
5. Overall platform functionality and ease of use.
6. Breadth and depth of reporting and analytical capabilities.
7. Client references.
8. Fee proposal.

The Evaluation Committee will then submit its results and make its recommendation to the PRIM Investment Committee, which will make a recommendation to the PRIM Board. The Investment Committee may accept the recommendations of the Evaluation Committee, and/or may recommend other or additional respondent(s) to the PRIM Board. The selections(s) will ultimately be made by the PRIM Board.

### **VI. MINIMUM QUALIFICATIONS**

A respondent must meet the following minimum qualifications to be given further consideration in PRIM's search for an Investment Performance Reporting Services provider(s). Failure of a respondent to meet the minimum qualifications applicable to the services for which it is submitting a Proposal will result in the Proposal's rejection.

#### **Minimum Qualifications.**

**Please describe how your firm meets the Minimum Qualifications as outlined below:**

1. The responding firm must have been in business for a minimum of three years providing performance and analytical services, as of December 31, 2022.
2. As of December 31, 2022, the responding firm must have been primarily responsible for providing Investment Performance Reporting Services to institutional asset allocators (public pension funds, private pension funds, endowment and/or foundation clients) with aggregate assets of at least \$25 billion.

## **VII. TENTATIVE TIMELINE**

The following is the tentative time schedule for the RFP. All dates are subject to modification by PRIM with notice, and any such modifications will be posted on PRIM's website.

Issuance of RFP:	March 13, 2023
RFP Question Deadline:	March 31, 2023, 3:00 p.m. ET
RFP Response Deadline:	April 14, 2023, 3:00 p.m. ET
Notification of Finalists:	On or before April 28, 2023
Evaluation Committee Interviews*:	Week of May 8, 2023
Investment Committee Meeting:	August 1, 2023
PRIM Board Meeting:	August 15, 2023
Projected Commencement Date:	September 1, 2023

\*Any interviews will be held either at PRIM 's offices in Boston, MA or remotely via virtual conference.

Any questions should be directed to the Procurement Officer at: [rfpresponses@mapension.com](mailto:rfpresponses@mapension.com).

*[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]*

## VIII. QUESTIONNAIRE

RESPONSES SHOULD BE AS OF FEBRUARY 28, 2023

Respondent: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone #: \_\_\_\_\_

Email Address: \_\_\_\_\_

Contact: \_\_\_\_\_

Signed: \_\_\_\_\_

Name (print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Please provide complete responses to the following questions:

### A. Scope of Services

Please describe in sufficient detail below how the services set forth in the Scope of Services in Section III will be provided.

### B. Company Background and General Description

#### 1. What is your firm's structure?

- a. Please describe the history, organizational structure and size of the firm.
- b. The location of your firm's headquarters, any branch offices, and primary location where the relationship will be serviced.
- c. Describe ownership structure. If applicable, what percentage of the parent company's revenue does your firm comprise and has it changed over the life of the arrangement or the last 10 years.
- d. Identify any affiliated companies, joint ventures, and other entities that contribute to your firm's management.
- e. List all firm owners, whether they are individuals, employees, or partnerships and percentage ownership held by each.

#### 2. Provide an organizational chart.

- a. Describe any material changes in your organization (changes in ownership, staff, business, etc.) over the past three years in detail.
  - b. Describe any structural or financial changes contemplated in the next year (e.g., ownership, merger and acquisitions, products, etc.)? Please explain in detail.
  - c. What percentage of your firm's revenue was derived from the provision of performance reporting or like services in each of the last three calendar years?
3. During the past five years, has your firm or any of its affiliates, or the owners or employees of any of them, been the subject of any of the following (whether resolved, pending or threatened):
  - a. any examination (routine or otherwise) by the SEC or any other governmental regulator, agency or self-regulatory body?
  - b. any investigation or proceeding by any governmental regulatory or law enforcement agency, including, but not limited to any SEC or state investigations?
  - c. any litigation or other proceeding alleging fraud, breach of fiduciary duty, bad faith, willful misconduct or breach of any investment advisory, investment management or similar agreement?

If the answer to any of the foregoing is "yes", please provide a description of each relevant matter, including dates, parties, nature of the matter and current status.

To the extent not included in your response to the foregoing questions, during the past ten years, has your firm or any of its affiliates, or the owners or employees of any of them, been the subject of any conviction, plea of nolo contendere, judgment, administrative action, consent decree, sanction, license suspension or revocation, damages award, reparations, arbitral award or negotiated settlement in connection with any examination, investigation, litigation or proceeding of a type described in (a)-(c) above?

If the answer to the foregoing is "yes", please provide a description of each relevant matter, including dates, parties, nature of the matter and the resulting resolution.

4. Describe in detail any potential conflicts of interest your firm may have in providing to PRIM the services described in this RFP. Include potential conflicts posed by any activities of affiliated or parent organizations, brokerage activities, investment banking activities, or any past or current relationships with PRIM Board members, PRIM Committee members and/or PRIM investment staff, investment managers or investment consultants.
5. Describe the disaster recovery plan in place should your facilities become inoperative because of fire, earthquake, flood, etc.

### **C. People/Organization**

1. Provide a list of all professional personnel and biographical information who would be responsible for providing services to PRIM and include a brief narrative biography of each person.

Name	Title	Current Responsibilities	Education & Professional Designations	Years with Firm	Years of Experience

2. Would PRIM have a dedicated point of contact(s)? Please provide a detailed description of the support model being proposed with resumes of the individuals who would provide primary support and customer service to PRIM.
3. Please list any senior professionals that left in the past three years. Please discuss the causes and impact of that turnover.
4. Please provide staff turnover data in the table below.

	YTD 2022	2021	2020	2019
Professionals Gained				
Professionals Lost				
Total Professionals at end of Period				

5. The breakdown of staff on contract versus permanent employees and what percentage are based in the United States
6. Describe the access and interaction PRIM staff would have with your organization's staff.
7. Provide information on the team that would assist with client onboarding.
8. Describe your on-going support model post-client onboarding.
9. Describe the level of technical support (including any API usage) offered within the standard support contract and pricing proposal submitted.
10. How do you provide system documentation?
11. Describe any training you offer clients, and any additional costs associated with training.
12. Discuss your organization's compensation and incentive policies for employees.
13. Please provide Client Retention/Turnover data in the table below.

	YTD 2022	2021	2020	2019
Clients Gained				
Clients Lost				
Total Clients at end of Period				

14. Is your organization a Minority Business Enterprise, a Women Business Enterprise or a Veteran Business Enterprise, certified by the Massachusetts Supplier Diversity Office (SDO) or by an agency equivalent to the SDO (and if so please indicate the name of the equivalent agency)?
15. Is your organization a Disability-Owned Business Enterprise, an LGBT-Owned Business Enterprise, a Veteran-Owned Business Enterprise, a Service-Disabled Veteran-Owned Business Enterprise, a Service-Disabled Veteran Disability-Owned Business Enterprise, or Veteran Disability-Owned Business Enterprise appearing in either:
  - a. the Directory of Certified Businesses maintained by the Massachusetts Supplier Diversity Office (SDO) and its certifying partner organizations (the U. S. Business Leadership Network, the National Gay and Lesbian Chamber of Commerce, and the U. S. Department of Veterans Affairs); or
  - b. the directory of an equivalent certifying agency (and if so please indicate the name of the equivalent certifying agency)?
16. The PRIM Board believes that diversity of thought leads to better decision making. Please describe how your organization works to foster diversity of thought. Please describe how your firm recruits and retains diverse employees, ensures wage-equality within your organization and the diversity of your top management and if applicable, on your board of directors. Please limit your response to no more than 1 page.

#### D. Client Coverage and References

1. Please indicate the composition of your firm's client base using the number and percentages of clients. Please explain if your firm's client base is heavily weighted to any particular type of client.

Client Type	Number	Percentage
Public Pension Funds		
Non-profits		
Corporations		
Other (Specify)		
TOTAL		100%

2. Please provide three (3) client references, including a name and contact information of an individual at each who can provide a reference for the respondent, of recipients of the respondent's board governance and fiduciary education consulting services, with emphasis on public pension plan clients.

#### E. Investment Performance Reporting Services

1. Describe the client onboarding process and support model with an estimated timeline.
2. Does the software/service have the capability to or currently receive a feed from BNYM for accounting and/or performance data?
3. What levels of data can be received from the Custodian (security level, account level and consolidated levels)?

4. How many BNY clients currently utilize your software for performance reporting?
5. Does the software/service have a capability to calculate performance independently from the Custodian, as a shadow book?
  - a. If yes, is there a reconciliation between custodial performance vs the organization's Performance?
  - b. Please provide the methodologies used for performance calculations.
    - i. Do clients have the option to choose methodology, for example, in the event of significant cash flows?
  - c. Does your software/service calculate both gross and net returns?
6. Describe the quality assurance process used to ensure data is accurate.
7. Does the software/service have capability to report security level performance based on data from BNYM performance?
8. Can the software/service provide daily, monthly, quarterly, calendar, fiscal year-to-date, as well as annualized historical returns and since inception performance returns?
9. Does the software/service have capability to report historical performance based on data from BNYM performance (i.e. backload historical performance provided by Custodian)?
10. Are there any limitations (e.g., length of time or amounts) on historical performance data maintained for clients? Can data be easily downloaded?
11. Who retains ownership and control of the client data loaded in your system? How do you ensure client data is not used internally or externally by non-PRIM employees?
12. Describe the firm's investment in performance reporting resources (personnel, technology, etc.).
13. Describe the process the firm takes to stay current on performance reporting best practices and trends. Please describe the evolution of the firm's performance reporting techniques and processes.
14. Review Appendix E, for PRIM's current performance reporting package. Describe in detail how your service/software can enhance this reporting package.
15. Describe in detail your standard and most commonly used reports.
16. Provide samples of an executive level performance reporting package.
17. Can reports be tailored to meet individualized client needs? What level of customization is possible?
18. Describe any data storage limitations (length of time, amount) and your approach to archiving data.
19. Is the reporting system cloud based, if so which platform?
20. If the reporting system is not cloud based, what are the system requirements for local installation?
21. Provide a list of benchmarks which are included as part of reporting service. How does your firm access client benchmarks?
22. Describe your benchmark capabilities. Are clients able to create custom benchmarks?
23. Does the software/service have the capability to associate multiple benchmarks to a single fund or account?
24. Describe comparison and analysis capabilities for peer groups and public market equivalents. What Universes are available to clients? Do you maintain your own comparative universes?
25. What types of analytics are available for different asset classes?
26. Describe risk management capabilities within the software/service.



27. Describe your organization's approach to cyber security and explain how PRIM data accessed by your employees remains secure and safe.
28. Describe your firm's philosophy for process and version control and system maintenance (e.g. system enhancement implementation, maintenance windows, notification to users, etc.)
29. Describe your firm's experience providing help desk and end user support for a user head count similar to PRIM.
30. Describe your firm's philosophy on leveraging the cloud for data center cost savings and disaster recovery purposes.
31. Describe your organization's competitive advantage relative to other performance reporting services.

*[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]*

**IX. Representations and Warranties**

All respondents are required to submit an executed copy of the following Representations and Warranties as an attachment to the cover letter described in Section IV.B.1. of this RFP:

- A. Respondent warrants that all the information it provides in the response to this RFP is true and correct and does not omit any material facts or responsive information.
- B. Respondent warrants that it will not delegate its responsibilities without prior approval from PRIM.
- C. Respondent warrants that it has not been in bankruptcy and/or receivership.
- D. Respondent warrants that it has completed, obtained, and performed any and all necessary registrations, filings, approvals, authorizations, consents or examinations required by a government or governmental authority for provision of the proposed services.
- E. Respondent warrants that it will adhere to its fee proposal outlined in the Fee Proposal of Section X.
- F. Respondent warrants that it meets all the Minimum Qualification requirements set forth in Section VI of this RFP.
- G. Respondent either (Please check the appropriate box):

☐ warrants and agrees, without exception, to all the provisions of PRIM's standard form of Investment Advisory Agreement, including Schedule A thereto, attached to this RFP as Exhibit D; or

☐ warrants and agrees to all provisions of PRIM's standard form of Investment Advisory Agreement, including Schedule A thereto, attached to this RFP as Exhibit D, except as specified below:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

**X. Fee Proposal**

Please provide your most competitive fee proposal for all services listed in the Scope of Services section of this RFP. Please provide itemized list of add-on services and associated fees.

**XI. Exhibits**

**EXHIBIT A**

Operating Trust Agreement

<https://www.mapension.com/records-of-interest/>

**EXHIBIT B**

PRIM Service Providers

<https://www.mapension.com/investments/#prit-fund-service>

**EXHIBIT C**  
PRIM Disclosure Statement

**COMMONWEALTH OF MASSACHUSETTS  
PENSION RESERVES INVESTMENT MANAGEMENT BOARD**

**DISCLOSURE STATEMENT**

FIRM: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Firms seeking to provide investment management, consulting, custody, recordkeeping, auditing, and other professional services (the “engagement”) to the Commonwealth of Massachusetts Pension Reserves Investment Management (“PRIM”) Board and/or the Pension Reserves Investment Trust (“PRIT”) Fund must complete a disclosure statement providing complete and accurate responses to the questions below. Firms selected to provide such services to the PRIM Board and/or the PRIT Fund have a continuing obligation to update responses to these questions, in writing, immediately upon any change to such responses. The questions in this Disclosure Statement should be read broadly, and any perceived ambiguity should be resolved in favor of disclosure. Any questions concerning the disclosures required should be directed to the PRIM Board.

1. Provide a general description of your firm’s organizational structure, identify any managing partner(s), members of the management committee, officers and/or directors, and, for any affiliate entities, the managing partners, officers, and directors (all such individuals or entities hereinafter collectively referred to as the “Firm”).

***[Insert response here.]***

2. Identify any relationship of the firm, its joint ventures, consultants, lobbyists, subcontractors or third-party contractors that relate in any way to the engagement.

***[Insert response here.]***

3. Aside from the engagement, describe any services provided by the firm to the PRIM Board and/or the PRIT Fund.

***[Insert response here.]***

4. Aside from the services described in response to Question 3, above, describe any services and/or donations provided by the firm to the Office of the State Treasurer and Receiver General or any trust, board, commission or authority of which the State Treasurer and Receiver-General is a member or trustee by virtue of her office. (A list of such entities is attached.)

***[Insert response here.]***

5. Aside from the services and/or donations described in responses to Questions 3 and 4, above, describe any services provided by the firm to any of the political subdivisions of the Commonwealth.

***[Insert response here.]***

6. Did or will the firm provide or share, agree to provide or share, or arrange to provide or share any compensation or benefit, direct or indirect, to any individual or entity for assisting the firm in:
- a) Obtaining the engagement; or,
  - b) Performing the services required by the engagement.

If the answer to Question 6 is "yes," provide for each the individual or entity

- a) The name and address of such individual or entity;
- b) A description of the assistance provided; and
- c) The compensation or benefit.

***[Insert response here.]***

7. Does the firm have any ongoing relationship, arrangement or agreement with any individual or entity with respect to sharing compensation for services to:
- a) The PRIM Board and/or the PRIT Fund;
  - b) Any trust, board, commission, or authority of which the Treasurer is a member or trustee by virtue of her office; or
  - c) The Commonwealth of Massachusetts or its political subdivisions?

If the answer to Question 7 is "yes," provide for each such individual or entity

- a) The name and address of such individual or entity;
- b) A description of the relationship, arrangement or agreement; and,
- c) The compensation shared.

***[Insert response here.]***

Signed under the penalties of perjury this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

Name: \_\_\_\_\_  
(Print)



Pension Reserves Investment Management Board

---

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

*[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]*



**EXHIBIT D**

**TREASURER'S PRINCIPAL BOARDS, COMMISSIONS AND AUTHORITIES**

**TREASURER'S PRINCIPAL BOARDS, COMMISSIONS AND AUTHORITIES\***

1. Advisory Board to the Comptroller – M.G.L. c. 7A, § 2
2. State Retirement Board – M.G.L. c. 10, § 18
3. State Lottery Commission – M.G.L. c. 10, § 23
4. Board of Bank Incorporation – M.G.L. c. 26, § 5  
(Division of Banks and Loan Agencies)
5. Water Pollution Abatement Trust (now known as the Clean Water Trust) – M.G.L. c. 29C, § 2
6. Pension Reserves Investment Management Board – M.G.L. c. 32, § 23(2A)
7. Massachusetts Convention Center Authority – Chapter 190 of the Acts of 1982 §§ 31-48
8. Massachusetts School Building Authority – M.G.L. c. 70B, §§ 1A & 3A; *see also* M.G.L. c. 10, § 35BB
9. Teachers' Retirement Board – M.G.L. c. 15, § 16
10. Alcoholic Beverages Control Commission – M.G.L. c. 10, § 70
11. Health Care Security Trust – M.G.L. c. 29D, § 4
12. Commissioners on Fireman's Relief – M.G.L. c. 10, § 21
13. Economic Empowerment Trust Fund – M.G.L. c. 10, §35QQ

\* The above-listed Boards, Commissions or Authorities are any which are a Treasury Department, Division or Affiliated Entity or by statute have a position which may be held by the State Treasurer and Receiver General or her designee.

**EXHIBIT E**

**PRIM Performance Report (Sample)**



Pension Reserves Investment Management Board

---

*[THIS PAGE INTENTIONALLY LEFT BLANK]*

---

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

mapension.com | 84 State Street, Suite 250, Boston, MA 02109 | (617) 946-8401



# PRIT FUND REVIEW

Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer  
Michael McElroy, CFA, Director of Public Markets

November 15, 2022

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

A blue-tinted photograph of a city skyline, likely Boston, featuring a large bridge in the foreground and several skyscrapers in the background. The image is used as a background for the title and logo.

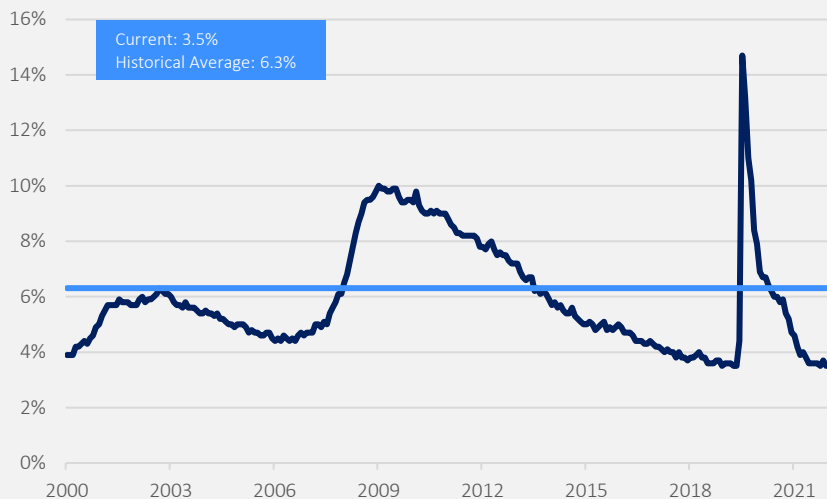
# ECONOMIC BACKDROP

Mass  
PRIM

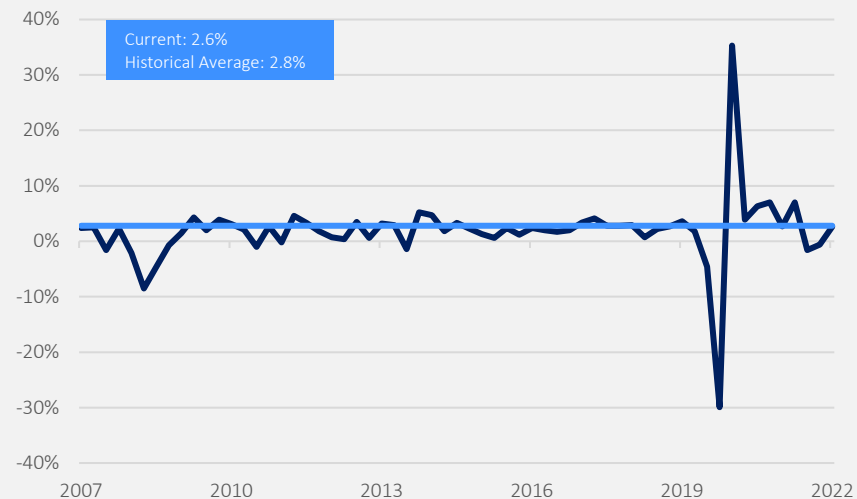
AS OF SEPTEMBER 30, 2022

# U.S. Economic Data

## UNEMPLOYMENT RATE



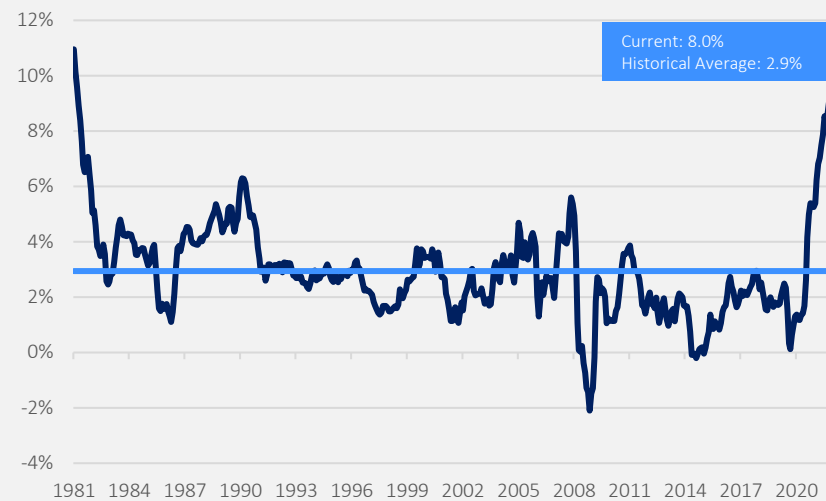
## GDP GROWTH RATE



## MANUFACTURING PMI

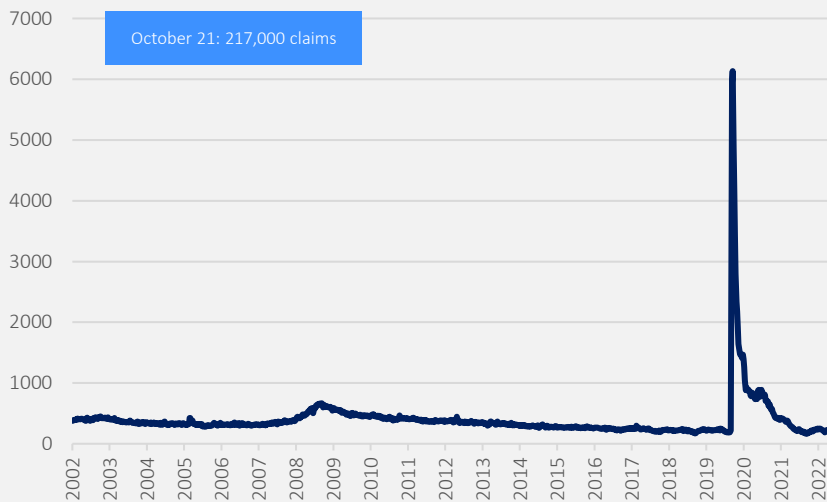


## CONSUMER PRICE INDEX



# U.S. Economic Data

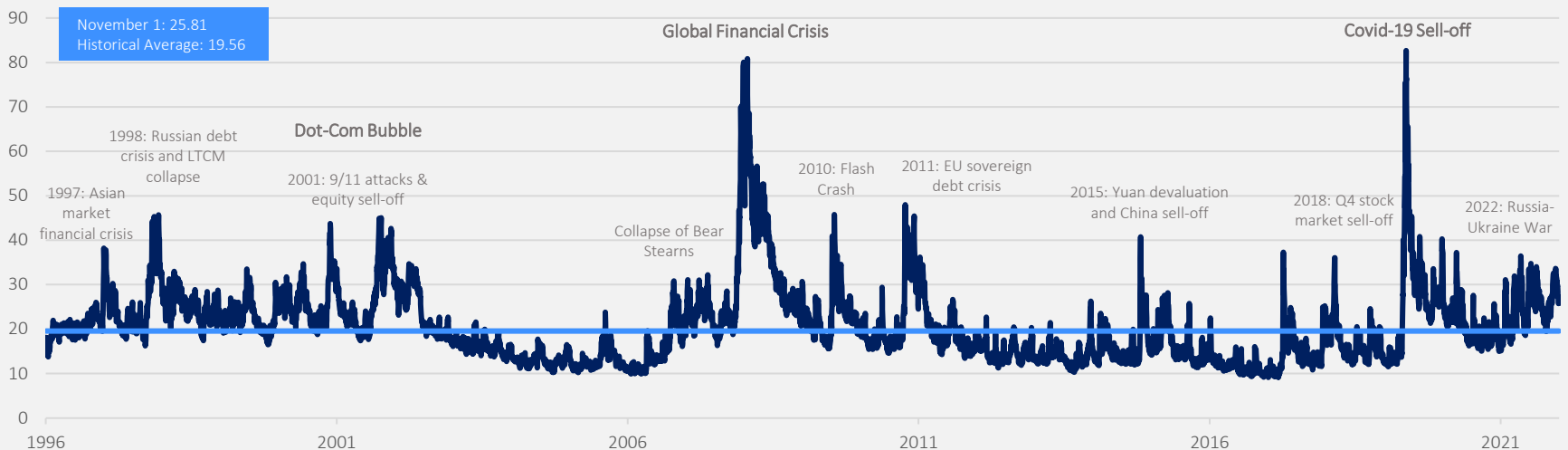
## WEEKLY INITIAL JOBLESS CLAIMS (IN MILLIONS)



## WTI CRUDE OIL (\$/BBL)



## CBOE MARKET VOLATILITY INDEX (VIX)







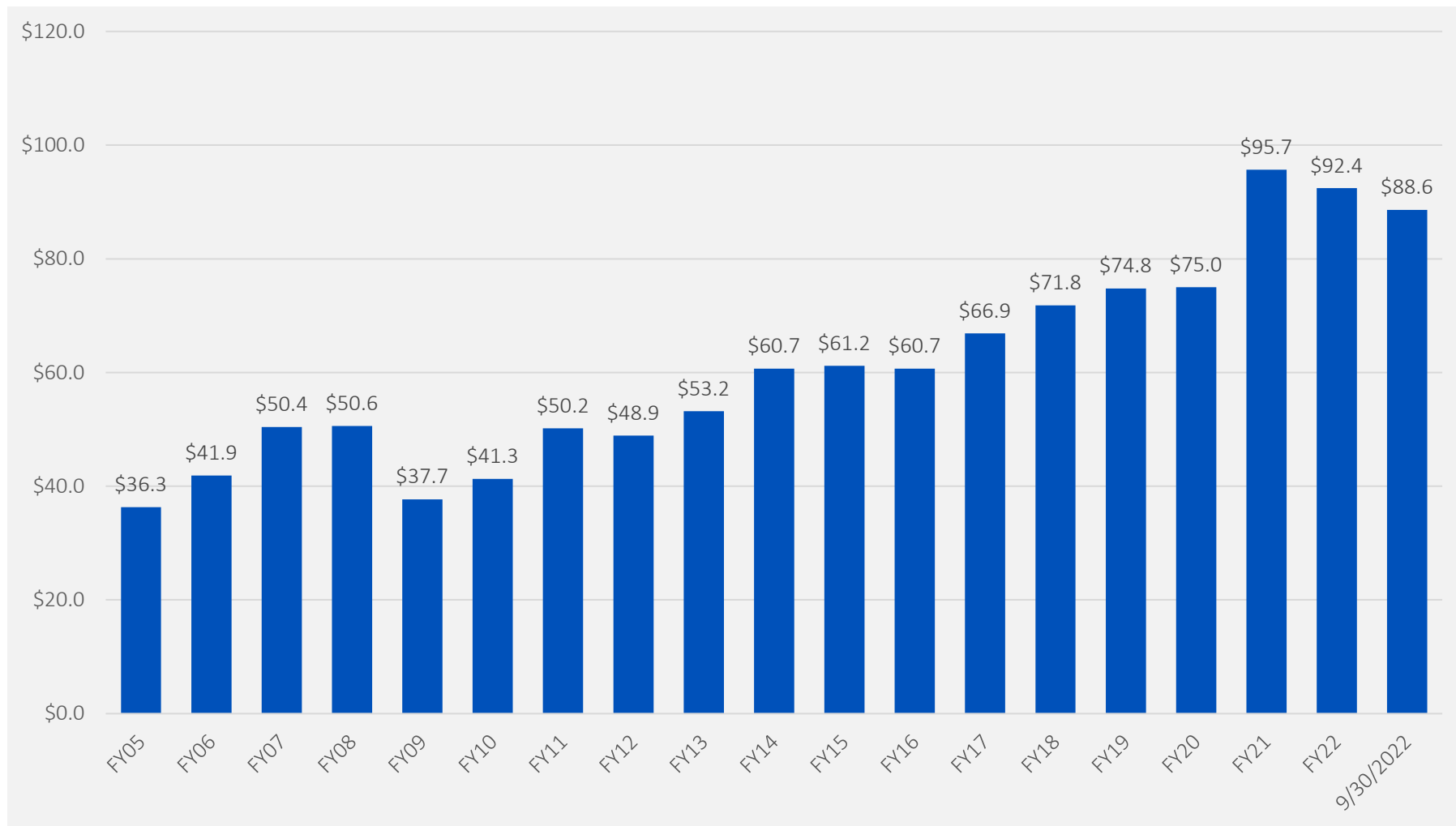
# PRIT FUND PERFORMANCE



AS OF SEPTEMBER 30, 2022  
GROSS OF FEES

# Total PRIT Fund Fiscal Year Market Value

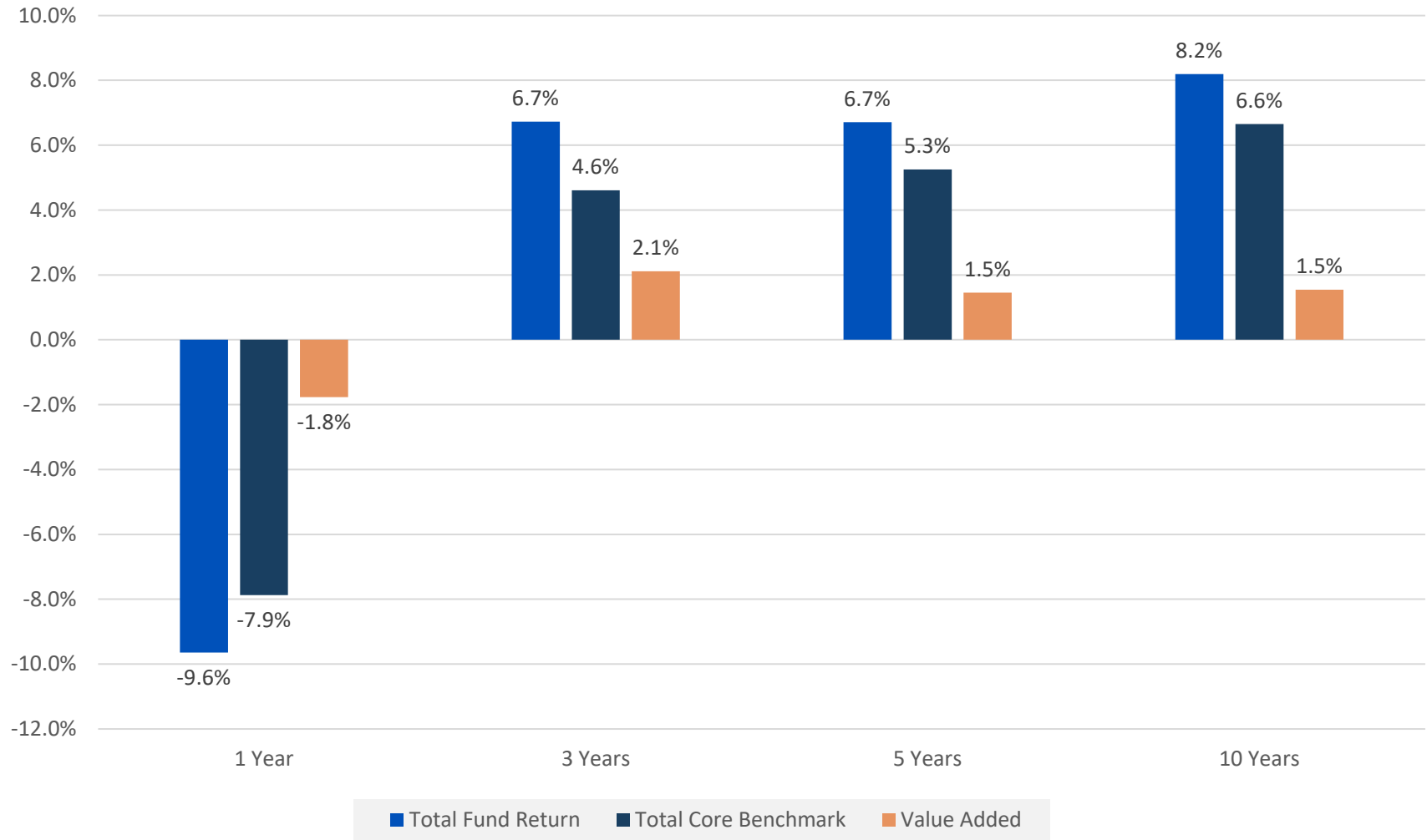
Value (\$Billions)



Source: BNY Mellon. As of September 30, 2022.

# PRIT Fund Total Returns

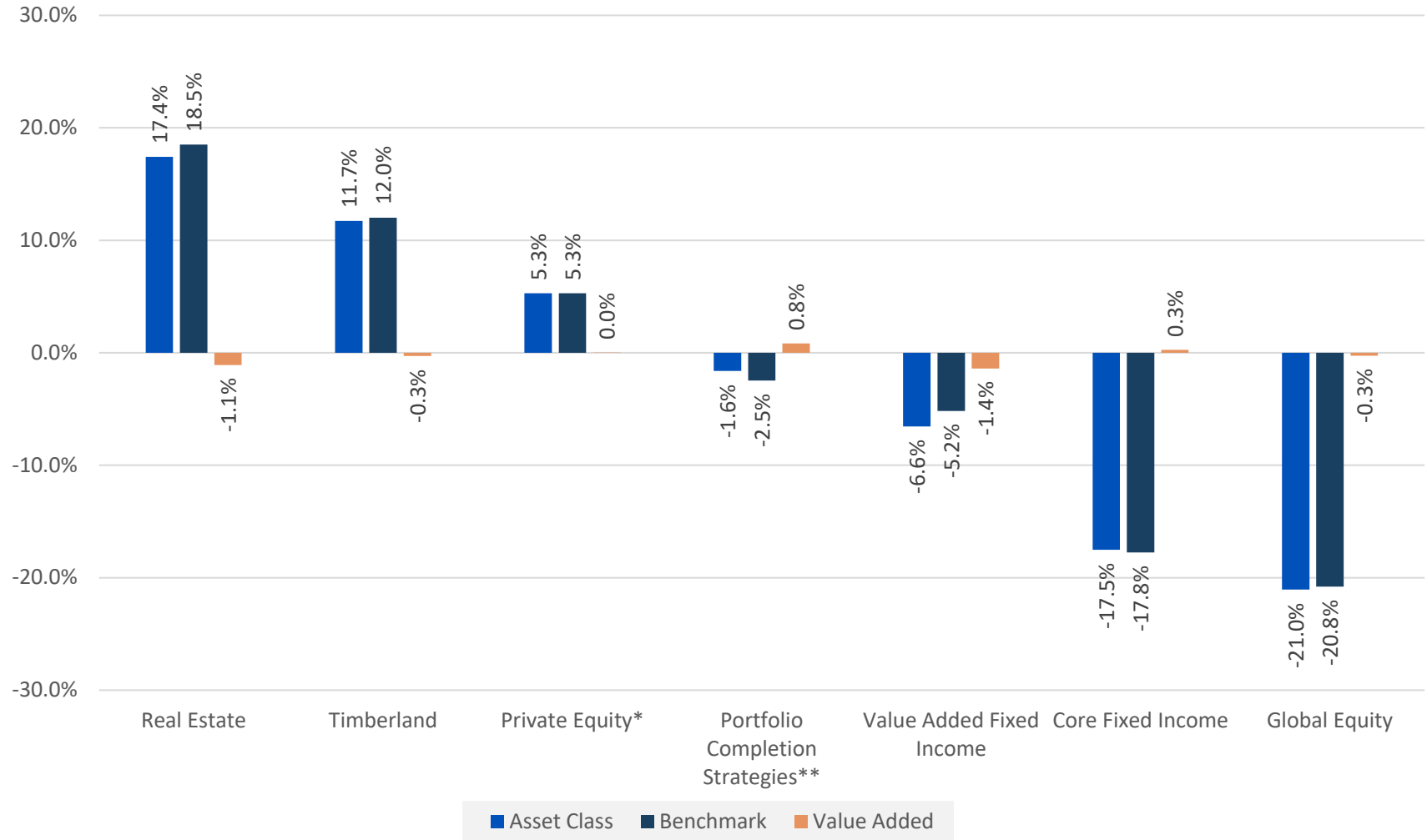
Annualized Returns as of September 30, 2022 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. Total Core Benchmark includes private equity benchmark.

# PRIT Asset Class Performance Summary

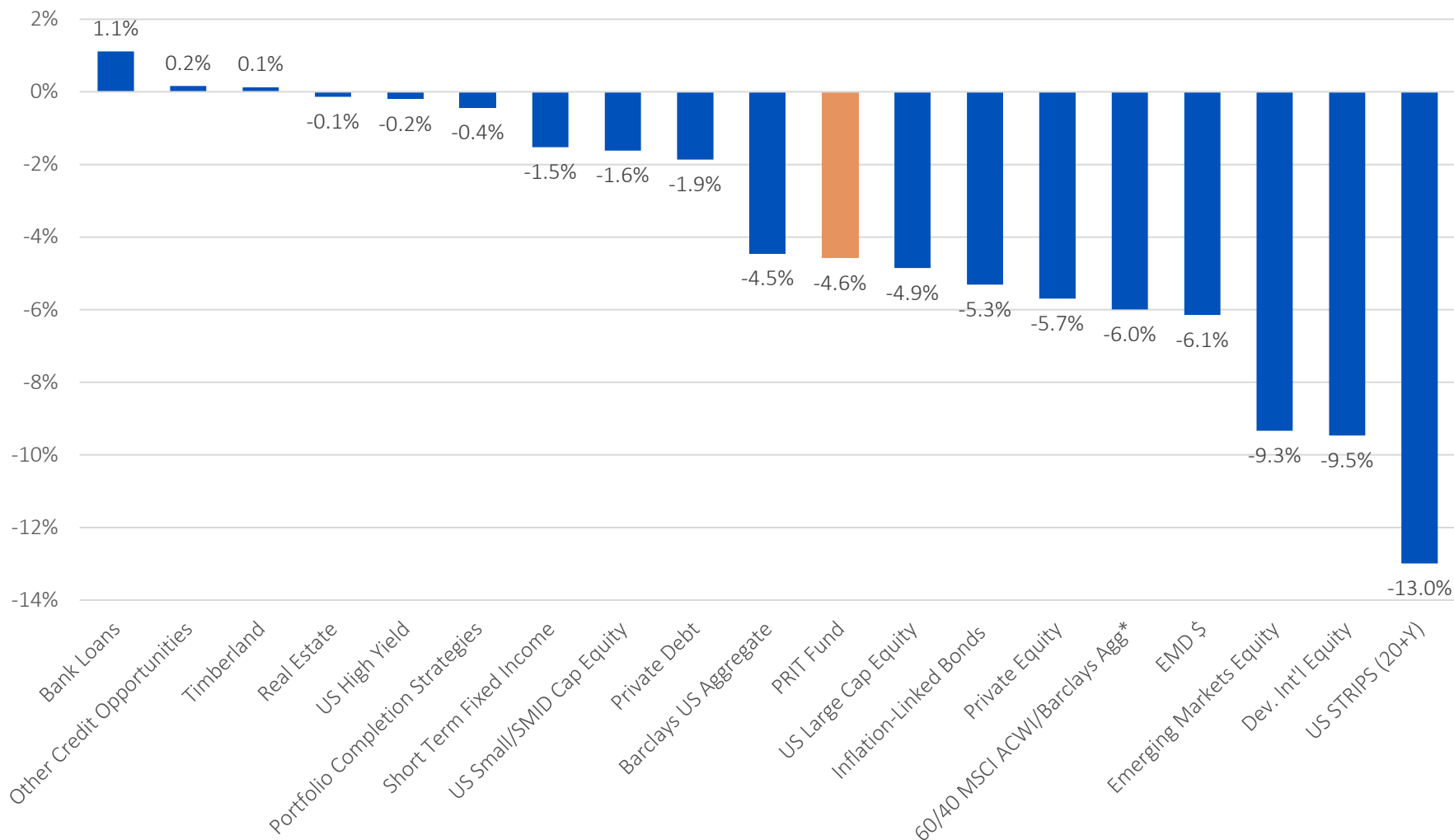
One-Year Ended September 30, 2022 (Gross of Fees)



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 – Third Quarter 2022

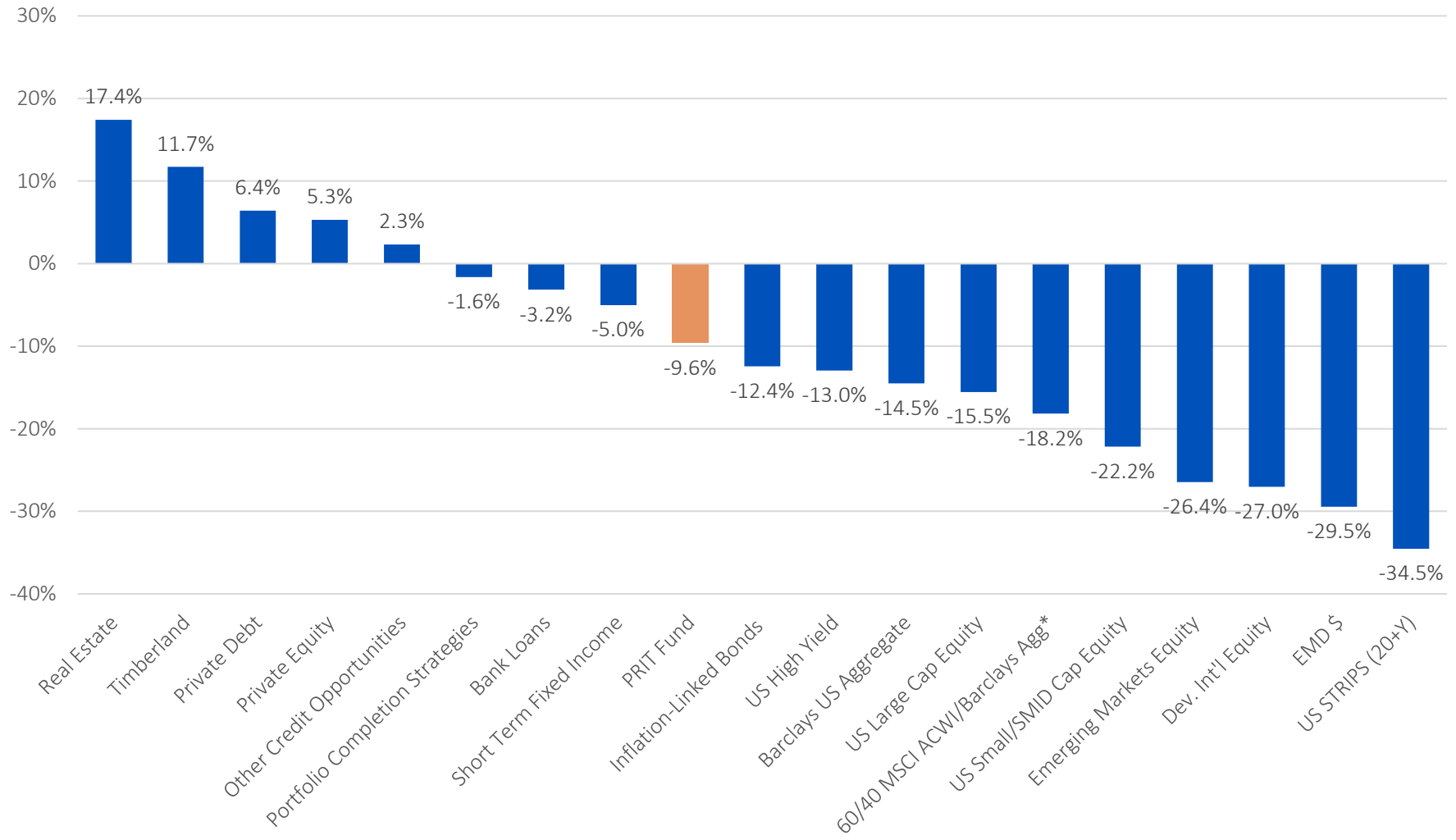
Quarter Ended September 30, 2022 (Gross of Fees)



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 – One-Year

One-Year Ended September 30, 2022 (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 September 30, 2022 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
REAL ESTATE 17.4%	PRIVATE EQUITY 27.4%	PRIVATE EQUITY 24.1%	PRIVATE EQUITY 21.5%
TIMBER 11.7%	REAL ESTATE 13.0%	REAL ESTATE 11.1%	REAL ESTATE 11.1%
PRIVATE EQUITY 5.3%	TIMBER 5.7%	TIMBER 5.1%	GLOBAL EQUITY 7.6%
PORTFOLIO COMPLETION STRATEGIES (1.6%)	GLOBAL EQUITY 4.0%	GLOBAL EQUITY 4.3%	TIMBER 6.3%
VALUE-ADDED FIXED INCOME (6.6%)	VALUE-ADDED FIXED INCOME 3.0%	VALUE-ADDED FIXED INCOME 3.6%	PORTFOLIO COMPLETION STRATEGIES 4.3%
CORE FIXED INCOME (17.5%)	PORTFOLIO COMPLETION STRATEGIES 2.6%	PORTFOLIO COMPLETION STRATEGIES 2.9%	VALUE-ADDED FIXED INCOME 4.2%
GLOBAL EQUITY (21.0%)	CORE FIXED INCOME (3.4%)	CORE FIXED INCOME 0.5%	CORE FIXED INCOME 2.0%

Source: BNY Mellon.





# PUBLIC MARKETS PERFORMANCE

Mass  
PRIM

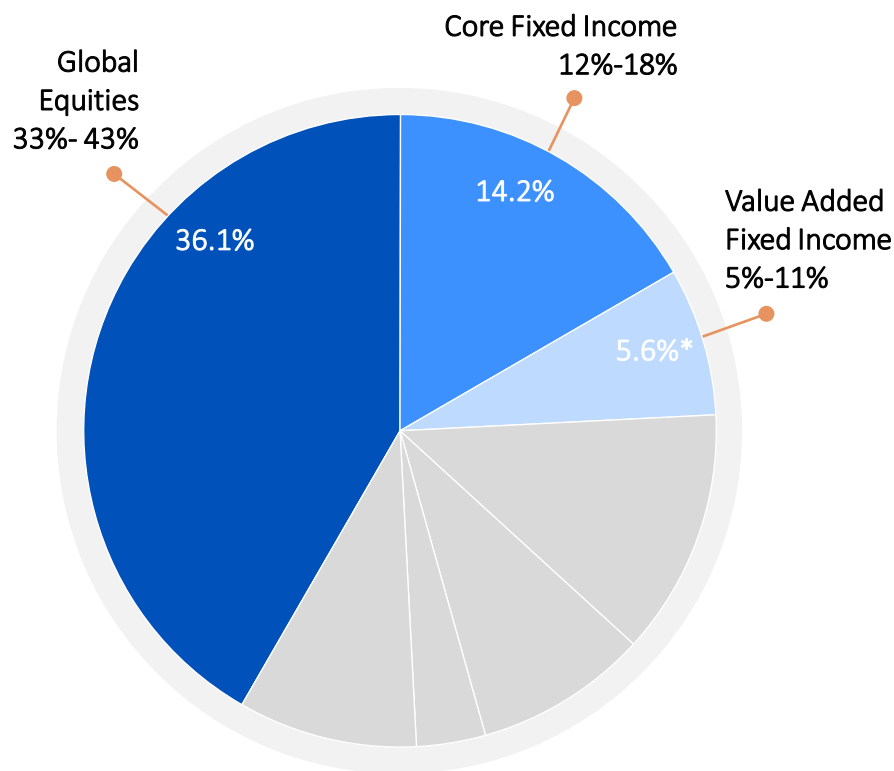
AS OF SEPTEMBER 30, 2022  
GROSS OF FEES



# Public Market Portfolios

## PRIT FUND TARGET ASSET ALLOCATION

Actual Allocation as of September 30, 2022



Source: BNY Mellon and PRIM Staff.

\*Excludes Private Debt allocation.

### \$49.4 billion 55.9% of PRIT Fund

- Global Equities: \$31.9 billion, 36.1% of PRIT Fund
- Public Fixed Income: \$17.5 billion, 19.8% of PRIT Fund\*

### 44% Active / 56% Passive

- Global Equities: 35% Active / 65% Passive
- Public Fixed Income: 59% Active / 41% Passive

### 59 Portfolios

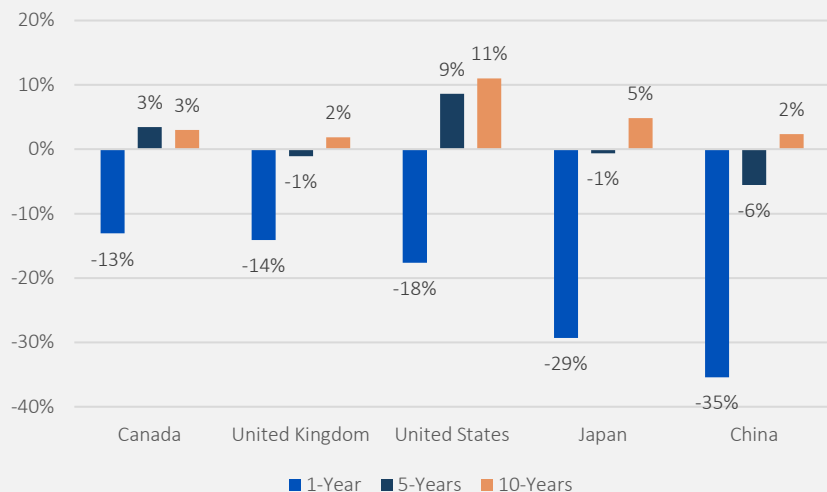
- 29 equity portfolios
- 30 fixed income portfolios

### 15 Asset Classes

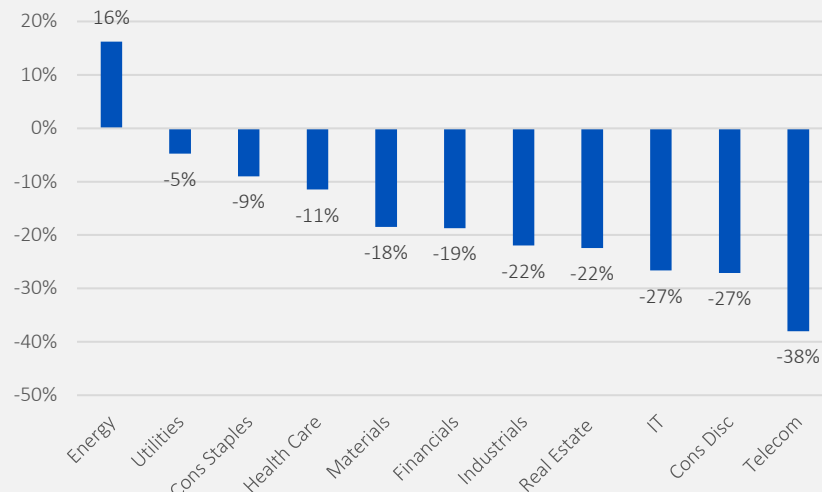
- U.S. Large Cap Equity
- U.S. Small/SMID Cap Equity
- Developed International Equity
- Developed International Small Cap Equity
- Emerging Markets Equity
- Emerging Markets Small Cap Equity
- Core Bonds
- 20+ Year STRIPS
- Short Term Fixed Income
- U.S. TIPS
- Global Inflation-Linked Bonds
- High Yield Bonds
- Bank Loans
- EMD \$
- Other Credit Opportunities

# Public Equity Review

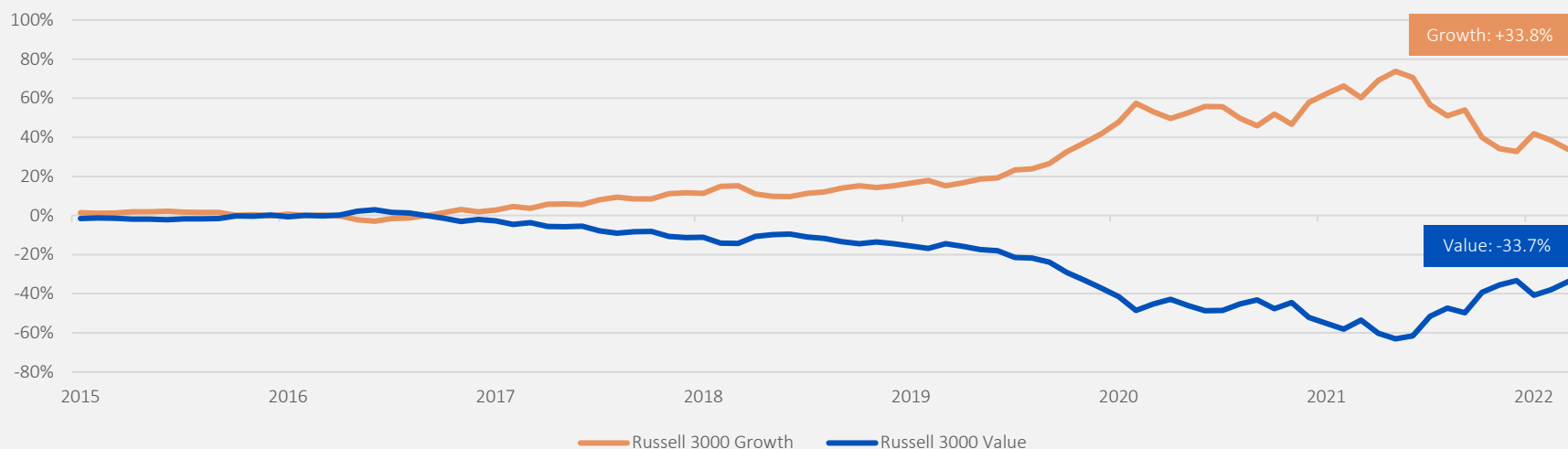
## MAJOR COUNTRY RETURNS (MSCI ACWI)



## GLOBAL ONE-YEAR RETURN BY SECTOR (MSCI ACWI)



## VALUE VS. GROWTH: RELATIVE RETURNS VS. RUSSELL 3000 (CUMULATIVE)

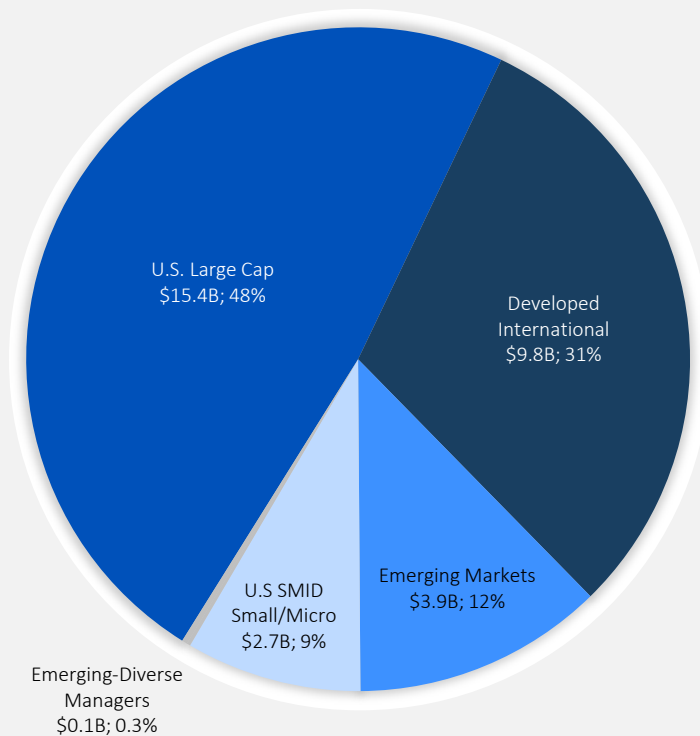


# Global Equity

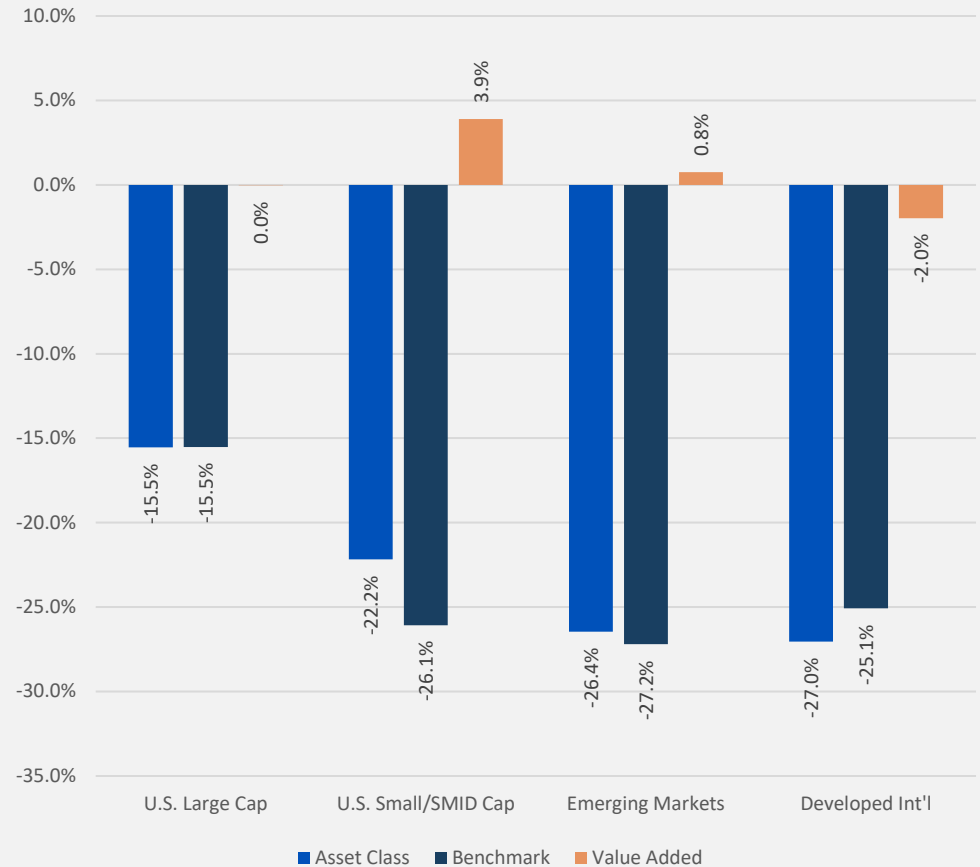
## \$31.9 Billion – 36.1% of PRIT FUND (Target 33%-43%)

### ASSET ALLOCATION

35% ACTIVE/65% PASSIVE



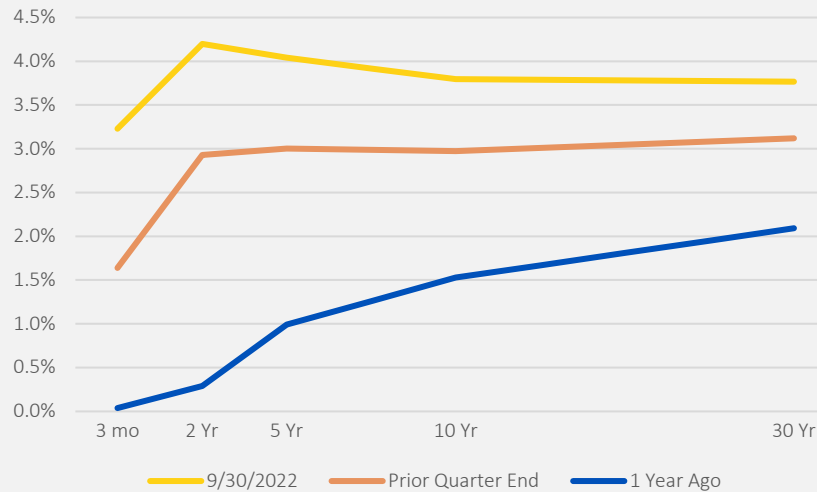
### GROSS OF FEES ONE-YEAR PERFORMANCE



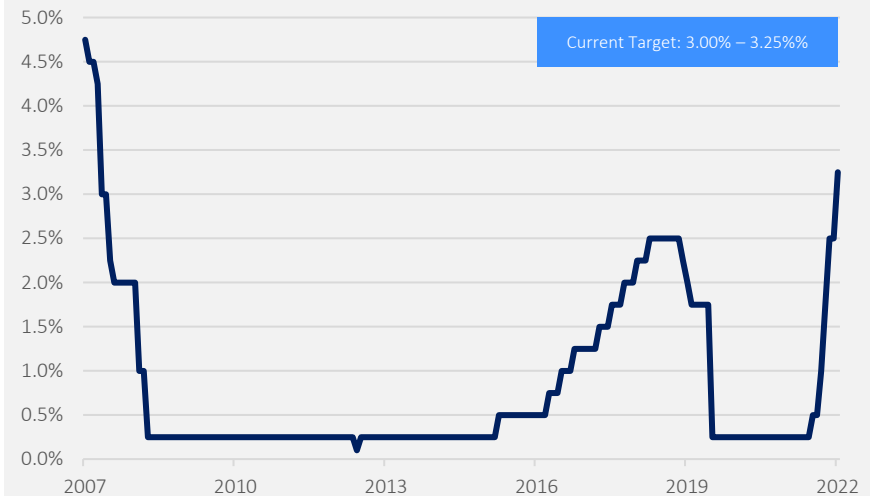
Source: BNY Mellon, PRIM Staff. As of September 30, 2022.

# Public Fixed Income Review

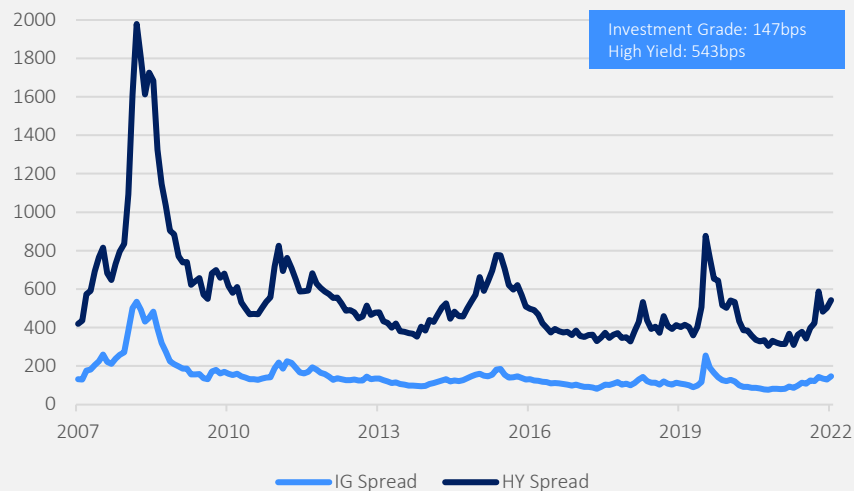
## U.S. TREASURY YIELD CURVE



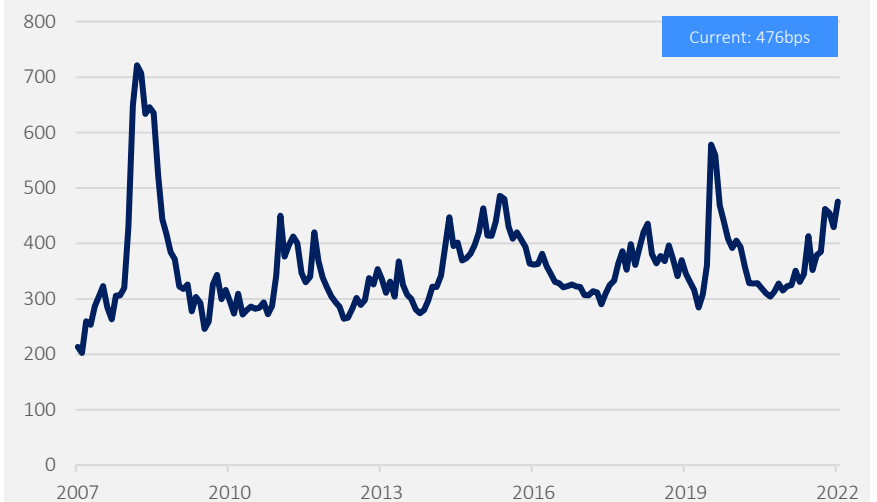
## TARGET FED FUNDS RATE



## U.S. CREDIT SPREADS

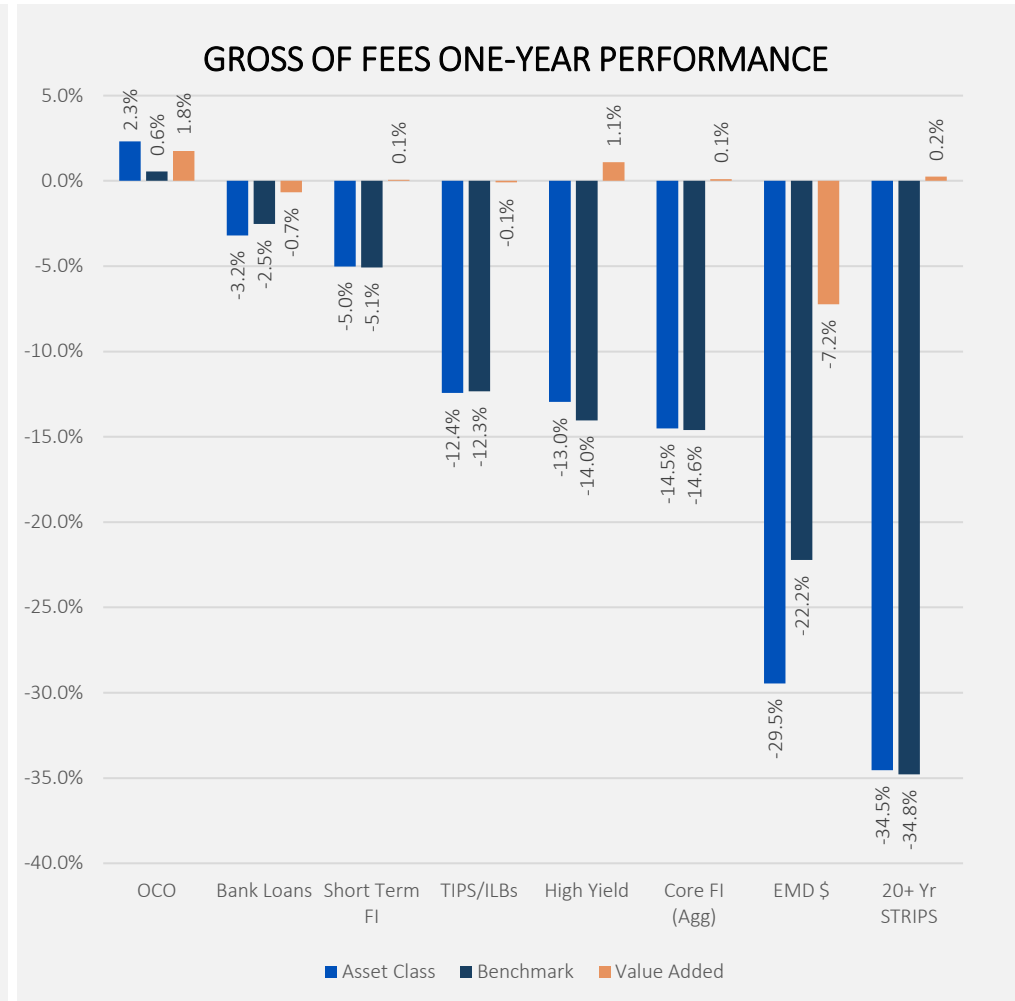
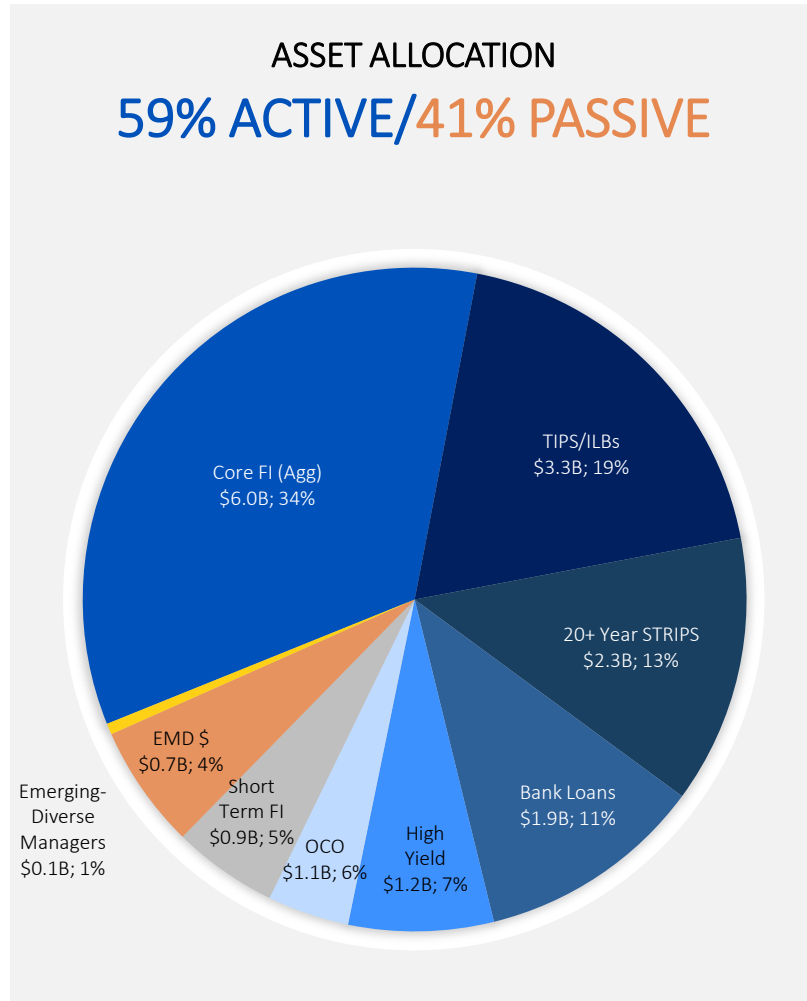


## EMERGING MARKETS DEBT SPREAD



# Core & Value-Added Fixed Income

## \$17.5 Billion – 19.8% of PRIT Fund\* (Target 17%-29%)



Source: BNY Mellon, PRIM Staff. As of September 30, 2022. \*Excludes Private Debt allocation.

*(This page was intentionally left blank.)*



## **Appendix C**

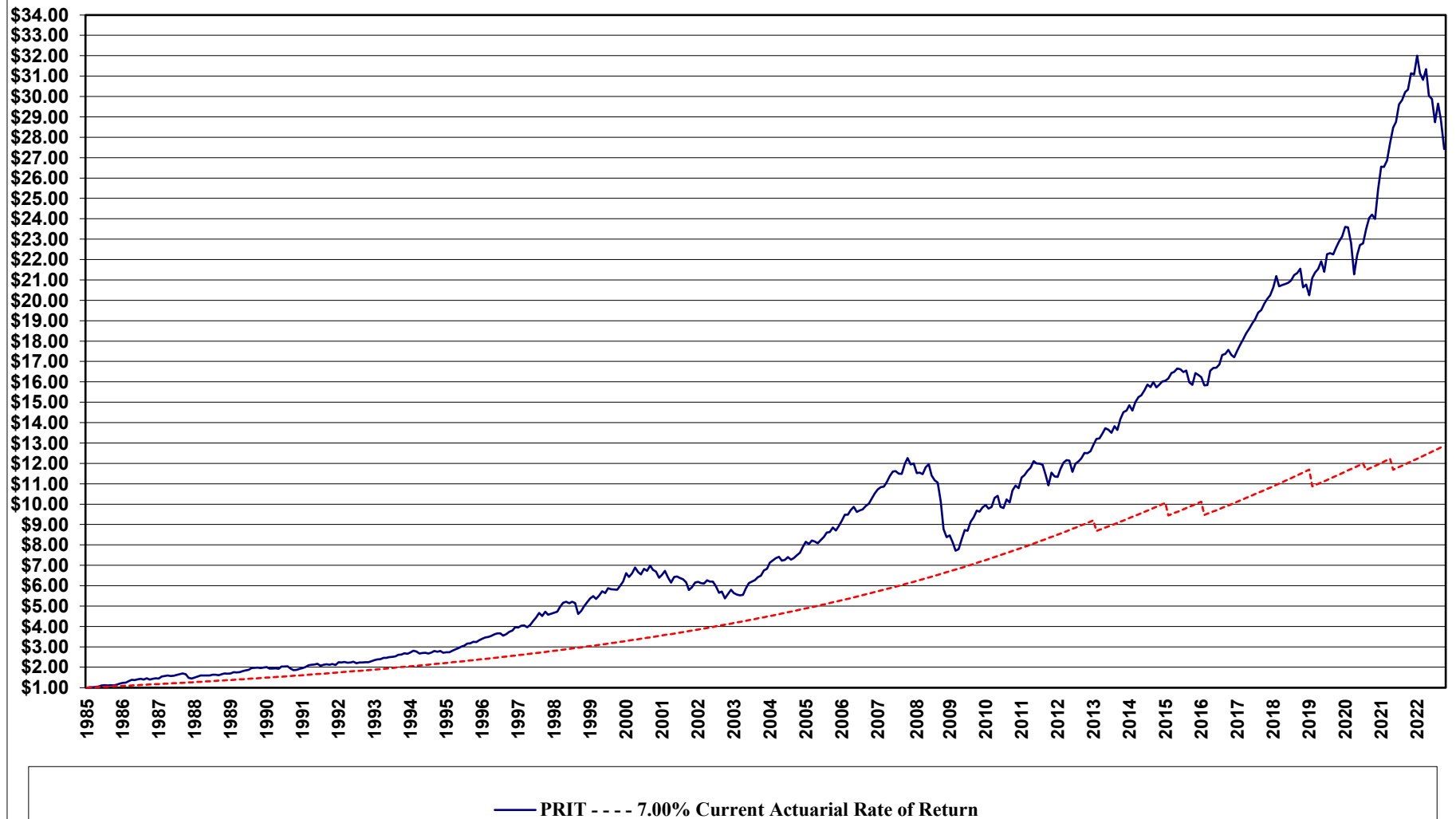
BNY Mellon Gross of Fees Performance Report (September 30, 2022)

*(This page was intentionally left blank.)*



**Pension Reserves Investment Management Board**  
**Performance Measurement**  
**September 30, 2022**

**Growth of a Dollar invested in the PRIT Fund**  
**Monthly, December 31, 1984 to September 30, 2022**  
**\$1.00 invested in the PRIT Fund on January 1, 1985 would have grown to \$27.42 by September 30, 2022**



**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF PLAN PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	Target Allocation Range	Actual Allocation %	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
<b>GLOBAL EQUITY</b>	31,915,847	33 - 43%	36.1%	-9.49	-6.63	-25.65	-21.04	3.95	4.33	7.62	5.76
<b>CORE FIXED INCOME</b>	12,521,309	12 - 18%	14.2%	-5.81	-6.16	-18.82	-17.51	-3.43	0.46	2.04	6.45
<b>VALUE ADDED FIXED INCOME</b>	6,198,480	5 - 11%	7.0%	-2.47	-0.81	-8.15	-6.56	2.97	3.61	4.23	7.27
<b>PRIVATE EQUITY</b>	16,109,605	12 - 18%	18.2%	-0.45	-5.70	-4.25	5.30	27.44	24.08	21.52	16.04
<b>REAL ESTATE</b>	10,013,562	7 - 13%	11.3%	-0.83	-0.13	8.57	17.43	13.01	11.10	11.11	7.21
<b>TIMBERLAND</b>	2,890,251	1 - 7%	3.3%	-0.07	0.12	4.52	11.72	5.71	5.07	6.29	8.10
<b>PORTFOLIO COMPLETION STRATEGIES</b>	7,859,878	7 - 13%	8.9%	-1.58	-0.43	-2.82	-1.62	2.62	2.94	4.27	4.10
<b>OVERLAY</b>	900,786	0.0%	1.0%	-4.94	-4.42	-15.71	-14.17	2.23	1.84		3.50
<b>TOTAL CORE</b>	<b>88,450,853</b>	<b>100%</b>	<b>100%</b>	<b>-5.00</b>	<b>-4.58</b>	<b>-14.38</b>	<b>-9.65</b>	<b>6.72</b>	<b>6.71</b>	<b>8.19</b>	<b>9.13</b>
<i>IMPLEMENTATION BENCHMARK (using short term private equity benchmark) <sup>1</sup></i>				-5.48	-4.13	-13.00	-9.00	6.28	6.46	7.58	9.46
<i>TOTAL CORE BENCHMARK (using private equity) <sup>2</sup></i>				-4.43	-2.70	-11.43	-7.87	4.61	5.25	6.65	9.19
<b>PARTICIPANTS CASH</b>	66,430			0.20	0.56	0.75	0.77	0.61	1.22	0.79	3.44
<b>TEACHERS' AND EMPLOYEES' CASH</b>	73,422			0.20	0.53	0.73	0.74	0.61	1.20	0.78	2.30
<b>TOTAL FUND</b>	<b>88,590,705</b>			<b>-4.98</b>	<b>-4.58</b>	<b>-14.34</b>	<b>-9.62</b>	<b>6.70</b>	<b>6.69</b>	<b>8.17</b>	<b>9.17</b>

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>DOMESTIC EQUITY</b>												
SSGA S&P 500	14,046,038	15.9%	-9.20	-4.85	-23.94	-15.55	8.28	9.44	11.83	12.55	12.51	12/31/2011
RHUMBLINE S&P 500	1,343,028	1.5%	-9.25	-4.91	-23.87	-15.46				-18.02	-18.09	9/30/2021
TOTAL LARGE CAP MANAGERS	15,389,066	17.4%	-9.20	-4.85	-23.93	-15.55	8.29	9.45	11.85	8.19	7.71	7/31/1997
<i>CUSTOM S&amp;P 500 <sup>3</sup></i>			-9.20	-4.84	-23.95	-15.53	8.16	9.35	11.79			
SUMMIT CREEK	421,693	0.5%	-7.29	-3.36	-25.35	-23.27	12.28	12.44		12.42	7.98	5/31/2013
<i>CUSTOM FTSE RUSSELL 2000 GROWTH <sup>4</sup></i>			-8.99	0.27	-29.39	-29.38	2.90	3.59				
FRONTIER	417,240	0.5%	-9.23	-2.65	-16.97	-11.70	7.21	5.44		9.08	6.87	5/31/2013
TOTAL SMALL CAP VALUE	417,240	0.5%	-9.23	-2.65	-16.97	-11.70	7.21	5.18		6.52	6.87	5/31/2013
<i>CUSTOM FTSE RUSSELL 2000 VALUE <sup>5</sup></i>			-10.20	-4.57	-21.12	-17.71	4.79	2.90				
RIVERBRIDGE	339,317	0.4%	-6.80	-0.67	-31.81	-30.59	4.34	8.98		10.36	9.39	5/31/2013
<i>CUSTOM FTSE RUSSELL 2500 GROWTH <sup>6</sup></i>			-8.61	-0.10	-29.59	-29.45	4.74	6.30				
SSGA R2500 <sup>*</sup>	909,577	1.0%	-9.50	-2.81	-23.91	-20.97	5.15	5.36	9.48	10.10	10.19	12/31/2011
TOTAL SMID CAP CORE	909,577	1.0%	-9.50	-2.81	-23.91	-20.97	5.15	5.36	9.40	10.03	10.19	12/31/2011
<i>CUSTOM FTSE RUSSELL PRIM 2500 <sup>7</sup></i>			-9.52	-2.80	-24.03	-21.12	5.37	5.46	9.59			
ACADIAN U.S MICRO CAP	189,703	0.2%	-10.36	-1.28	-16.20	-10.27	22.47			17.08	5.59	5/31/2019
<i>CUSTOM MSCI USA MICRO CAP</i>			-11.42	-5.14	-27.70	-31.36	8.39					
BRANDYWINE U.S MICRO CAP VALUE	148,562	0.2%	-10.68	-8.17	-26.32	-26.28	6.85			5.08	6.28	4/30/2019
<i>CUSTOM FTSE RUSSELL MICRO CAP VALUE</i>			-9.85	-2.20	-21.48	-20.51	7.56					
LORD ABBETT U.S MICROCAP GROWTH	151,620	0.2%	-4.88	8.74	-30.16	-28.76	17.49			12.29	0.91	4/30/2019
DRIEHAUS CAPITAL MANAGEMENT	155,877	0.2%	-6.94	9.04	-32.81	-27.89	23.06			19.50	2.72	6/30/2019
<i>CUSTOM FTSE RUSSELL MICROCAP GROWTH</i>			-9.31	2.33	-31.51	-36.95	4.52					
TOTAL US MICRO CAP EQUITY	645,762	0.7%	-8.42	1.43	-26.21	-23.10	18.11			13.48	3.43	4/30/2019
<i>BLENDED TOTAL US MICRO CAP BENCHMARK <sup>8</sup></i>			-10.07	-1.10	-28.25	-31.93	6.13					
TOTAL SMALL/SMID/MICRO CAP EQUITY	2,733,589	3.1%	-8.54	-1.62	-24.99	-22.17	7.99	7.11	10.04	10.62	9.60	12/31/2011
<i>ASSET CLASS BENCHMARK <sup>9</sup></i>			-9.56	-1.86	-26.35	-26.07	4.09	4.08	8.95			
DOMESTIC EQUITY CASH	(5,507)	0.0%										
<b>DOMESTIC EQUITY</b>	<b>18,117,174</b>	<b>20.5%</b>	<b>-9.10</b>	<b>-4.37</b>	<b>-24.06</b>	<b>-16.52</b>	<b>8.43</b>	<b>9.05</b>	<b>11.53</b>	<b>10.27</b>	<b>10.40</b>	<b>2/28/1985</b>
<i>ASSET CLASS BENCHMARK:</i>			-9.25	-4.40	-24.29	-17.15	7.72	8.41	11.29			
<i>85% CUSTOM S&amp;P500 / 15% TOTAL SMALL/SMID/MICRO CAP EQUITY BM <sup>10</sup></i>												
TOTAL DOMESTIC ENHANCED EQUITY	55,334	0.1%	0.04	1.91	-16.44	-8.18	6.90	7.57		7.90	9.00	7/31/2017
<i>TOTAL DOMESTIC ENHANCED EQUITY INDEX <sup>11</sup></i>			0.04	3.06	-13.58	-5.98	8.33	8.69				
<b>TOTAL DOMESTIC EQUITY</b>	<b>18,172,508</b>	<b>20.5%</b>	<b>-9.08</b>	<b>-4.50</b>	<b>-24.04</b>	<b>-16.50</b>	<b>7.40</b>	<b>8.50</b>	<b>11.25</b>	<b>10.20</b>	<b>10.40</b>	<b>2/28/1985</b>
<i>ASSET CLASS BENCHMARK <sup>12</sup></i>			-9.23	-4.48	-24.14	-17.01	7.59	8.37	11.27			

\* SSGA R2500 reflects a \$352mm withdrawal on 3/2/2021 and is therefore utilizing Time-Weighted Return methodology. The overlay of TWR methodology does not impact composite calculations.

<b>PENSION RESERVES INVESTMENT TRUST</b> <b>SUMMARY OF MANAGER PERFORMANCE</b> <b>RATES OF RETURN (GROSS OF FEES)</b> <b>Periods Ending September 30, 2022</b>												
	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>INTERNATIONAL EQUITY</b>												
SSGA WORLD EX-US STANDARD *	3,547,304	4.0%	-9.18	-9.17	-25.99	-23.71	-0.73	0.04	4.35	5.30	4.84	3/31/1992
CUSTOM MSCI WORLD EX-US STANDARD NET DIVS <sup>13</sup>			-9.33	-9.26	-26.23	-23.99	-0.98	-0.29	3.90			
MARATHON-LONDON	1,830,728	2.1%	-9.06	-8.77	-25.25	-24.27	0.06	0.35	5.29	7.06	3.86	10/31/1996
BAILLIE GIFFORD	1,331,251	1.5%	-12.37	-8.24	-41.96	-40.36	-3.60	-1.41	4.16	5.69	4.28	8/31/2004
MONDRIAN INVESTMENT	820,869	0.9%	-9.74	-13.93	-22.69	-21.57	-3.06	-1.39	3.74	1.11	1.05	6/30/2008
ARGA	507,453	0.6%	-8.84	-11.55	-23.32	-23.19				4.86	1.39	6/30/2020
XPONANCE	269,951	0.3%	-8.73	-9.59	-28.18	-25.32	-0.45	0.46		3.10	1.79	10/31/2013
TOTAL INTERNATIONAL EQUITY STANDARD (ACTIVE)	4,760,716	5.4%	-10.08	-9.90	-30.50	-29.08	-1.16	-0.20	4.83	5.39	3.19	7/31/1999
CUSTOM MSCI WORLD EX-US STANDARD NET DIVS <sup>14</sup>			-9.33	-9.26	-26.23	-23.99	-1.56	-0.56	3.82			
TOTAL INTERNATIONAL EQUITY STANDARD	8,308,020	9.4%	-9.70	-9.59	-28.73	-26.99	-0.20	0.38	5.13	5.52	3.19	7/31/1999
CUSTOM MSCI WORLD EX-US STANDARD NET DIVS <sup>14</sup>			-9.33	-9.26	-26.23	-23.99	-1.56	-0.56	3.82			
INTERNATIONAL EQUITY CASH	354	0.0%										
SSGA WORLD EX-US SMALL	757,914	0.9%	-11.33	-9.37	-30.84	-30.59				-24.88	-25.09	7/31/2021
CUSTOM WORLD EX-US SMALL NET DIVS			-11.41	-9.45	-31.08	-30.81						
ACADIAN INTL SMALL CAP	294,471	0.3%	-11.30	-8.43	-28.16	-24.57	5.05	2.30		4.99	1.40	4/30/2017
AQR INTL SMALL CAP	183,225	0.2%	-10.63	-8.40	-23.82	-22.63	1.29	-1.17		1.89	1.40	4/30/2017
DRIEHAUS SMALL CAP	101,920	0.1%	-10.07	-9.01	-35.83					-35.83	-31.08	1/31/2022
ARTISAN SMALL CAP	107,557	0.1%	-9.07	-6.05	-32.51					-32.51	-31.08	1/31/2022
TOTAL INTERNATIONAL EQUITY SMALL CAP (ACTIVE)	688,979	0.8%	-10.58	-8.14	-29.39	-27.58	0.61	-0.73		2.28	1.40	4/30/2017
CUSTOM WORLD EX-US SMALL NET DIVS <sup>15</sup>			-11.41	-9.45	-31.08	-30.81	-1.62	-1.46				
TOTAL INTERNATIONAL EQUITY SMALL CAP	1,446,892	1.6%	-10.97	-8.78	-29.97	-29.14	0.15	-1.00		2.03	1.40	4/30/2017
CUSTOM WORLD EX-US SMALL NET DIVS <sup>15</sup>			-11.41	-9.45	-31.08	-30.81	-1.62	-1.46				
<b>TOTAL INTERNATIONAL EQUITY</b>	<b>9,755,266</b>	<b>11.0%</b>	<b>-9.89</b>	<b>-9.47</b>	<b>-28.65</b>	<b>-27.04</b>	<b>-0.93</b>	<b>-0.19</b>	<b>4.57</b>	<b>6.93</b>	<b>5.59</b>	<b>7/31/1986</b>
<b>TOTAL INTERNATIONAL EQUITY BENCHMARK:</b>												
CUSTOM MSCI WORLD EX-US IMI NET DIVS <sup>16</sup>			-9.65	-9.29	-26.99	-25.08	-1.53	-0.65	3.73			

\* SSGA World Ex-US reflects a \$500mm withdrawal on 3/2/2021 and is therefore utilizing Time-Weighted Return methodology. The overlay of TWR methodology does not impact composite calculations.

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>EMERGING MARKETS EQUITY</b>												
AQR EMERGING	600,521	0.7%	-12.37	-13.23	-26.39	-27.11	0.16	-1.51		1.93	0.97	3/31/2015
T ROWE PRICE EM EQUITY STRAT	346,406	0.4%	-11.17	-12.66	-30.10	-32.67	-5.42			-4.90	-3.76	4/30/2018
BAILLIE GIFFORD EMM	652,165	0.7%	-12.64	-11.90	-34.16	-35.35	-3.39	-0.93		2.86	0.97	3/31/2015
DRIEHAUS CAPITAL	815,207	0.9%	-8.08	-7.38	-24.09	-24.96	3.29	2.75		5.22	0.97	3/31/2015
PZENA INV	928,646	1.0%	-9.45	-7.81	-17.05	-18.72	2.73	0.88		4.15	0.97	3/31/2015
TOTAL EMERGING MARKETS CORE	3,342,999	3.8%	-10.48	-10.04	-25.45	-26.79	0.05	-0.01	2.72	8.19	4.48	2/28/1990
CUSTOM MSCI EM STANDARD INDEX NET DIVS <sup>17</sup>			-11.79	-11.63	-26.85	-27.77	-1.79	-1.72	1.25			
CLOSED PORTFOLIOS	5	0.0%										
EMERGING MARKETS CASH	130	0.0%										
ACADIAN	408,756	0.5%	-9.93	-5.52	-21.14	-18.30	10.68	4.75	9.47	9.66	3.24	5/31/2012
WASATCH	143,292	0.2%	-10.72	-4.51	-40.71	-37.01	7.24	5.37	5.26	4.93	3.24	5/31/2012
TOTAL EMERGING MARKETS SMALL CAP	552,048	0.6%	-10.14	-5.26	-27.82	-24.58	9.77	5.10	7.01	6.82	3.24	5/31/2012
CUSTOM MSCI EM SMALL CAP NET DIVS <sup>18</sup>			-10.01	-4.99	-23.91	-22.76	5.91	1.65	3.22			
<b>TOTAL EMERGING MARKETS</b>	<b>3,903,937</b>	<b>4.4%</b>	<b>-10.40</b>	<b>-9.34</b>	<b>-25.74</b>	<b>-26.45</b>	<b>0.89</b>	<b>0.26</b>	<b>2.94</b>	<b>8.29</b>	<b>4.52</b>	<b>2/28/1990</b>
<b>TOTAL EMERGING MARKETS BENCHMARK:</b>												
CUSTOM MSCI EMERGING MARKETS IMI NET DIVS <sup>19</sup>			-11.56	-10.83	-26.52	-27.20	-1.20	-1.44	1.41			
<b>GLOBAL EQUITY EMERGING-DIVERSE MANAGER PROGRAM</b>												
XPONANCE	84,137	0.1%	-10.43	-10.14						-15.64	-17.38	5/31/2022
GLOBAL EQUITY EMERGING-DIVERSE MANAGER PROGRAM INDEX <sup>20</sup>			-10.34	-8.90								
<b>TOTAL GLOBAL EQUITY <sup>21</sup></b>	<b>31,915,847</b>	<b>36.1%</b>	<b>-9.49</b>	<b>-6.63</b>	<b>-25.65</b>	<b>-21.04</b>	<b>3.95</b>	<b>4.33</b>	<b>7.62</b>	<b>5.76</b>	<b>4.90</b>	<b>1/31/2001</b>
<b>ASSET CLASS BENCHMARK: 56.9% DOMESTIC EQUITY BM/43.1%</b>												
CUSTOM ACWI EX-US IMI NET DIVS <sup>22</sup>			-9.65	-6.75	-25.27	-20.79	3.49	3.83	7.05			

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>DOMESTIC INVESTMENT GRADE FIXED INCOME</b>												
BLACKROCK PASSIVE	1,521,243	1.7%	-4.32	-4.71	-14.47	-14.52	-3.19	-0.25	0.86	4.29	4.30	6/30/1995
PIMCO CORE	1,356,359	1.5%	-4.09	-4.38	-14.50	-14.50	-2.55	0.06	1.24	5.89	5.09	9/30/1990
LOOMIS SAYLES CORE	1,690,009	1.9%	-4.12	-4.30	-14.34	-14.29	-2.15	0.77	2.02	6.19	5.19	5/31/1990
AFL - CIO HOUSING INVESTMENT - ETI	128,134	0.1%	-4.12	-4.95	-14.27	-14.39	-3.49	-0.41	0.83	2.88	2.84	8/31/2007
PUGH	442,486	0.5%	-4.25	-4.34	-14.56	-14.64	-2.90	0.11		1.11	0.65	1/31/2016
NEW CENTURY	382,231	0.4%	-4.35	-4.68	-14.98	-15.05	-2.32	0.46		1.29	0.65	1/31/2016
LONGFELLOW	453,119	0.5%	-4.13	-4.19	-14.67	-14.56	-2.62	0.29		1.15	0.65	1/31/2016
<b>TOTAL DOMESTIC INVESTMENT GRADE FIXED INCOME</b> <sup>23</sup>	<b>5,973,989</b>	<b>6.8%</b>	<b>-4.19</b>	<b>-4.46</b>	<b>-14.50</b>	<b>-14.50</b>	<b>-2.68</b>	<b>0.15</b>	<b>1.34</b>	<b>4.28</b>	<b>3.88</b>	<b>7/31/1999</b>
BLOOMBERG U.S. AGGREGATE BOND INDEX			-4.32	-4.75	-14.61	-14.60	-3.26	-0.27	0.89			
<b>BLACKROCK - STRIPS</b>	<b>2,288,926</b>	<b>2.6%</b>	<b>-10.49</b>	<b>-12.99</b>	<b>-37.68</b>	<b>-34.53</b>	<b>-11.79</b>	<b>-2.45</b>		<b>2.39</b>	<b>2.33</b>	<b>4/30/2014</b>
BLOOMBERG US STRIPS 20+ YEARS INDEX			-10.65	-13.13	-38.13	-34.78	-11.86	-2.49				
<b>BLACKROCK - SHORT TERM</b>	<b>895,849</b>	<b>1.0%</b>	<b>-1.17</b>	<b>-1.52</b>	<b>-4.47</b>	<b>-5.01</b>				<b>-0.65</b>	<b>-0.67</b>	<b>12/31/2019</b>
BLOOMBERG U.S. TREASURY: 1-3 YEAR			-1.18	-1.55	-4.52	-5.07						
<b>INFLATION-LINKED FIXED INCOME</b>												
BLACKROCK - TIPS	2,498,351	2.8%	-6.56	-5.18	-13.62	-11.60	0.79	1.94	0.97	4.33	4.37	4/30/2001
BLOOMBERG GLOBAL INFLATION-LINKED: U.S. TIPS			-6.62	-5.14	-13.61	-11.57	0.79	1.95	0.98			
BLACKROCK ILBs	826,960	0.9%	-6.34	-5.70	-17.19	-14.78	-2.10	1.36	2.16	1.49	1.22	10/31/2005
BLOOMBERG WORLD GOV INFLATION-LINKED USD HDG <sup>24</sup>			-6.28	-5.62	-17.24	-14.67	-2.24	1.29	2.07			
<b>TOTAL INFLATION-LINKED FIXED INCOME</b>	<b>3,325,311</b>	<b>3.8%</b>	<b>-6.50</b>	<b>-5.31</b>	<b>-14.55</b>	<b>-12.43</b>	<b>0.02</b>	<b>1.90</b>	<b>1.96</b>	<b>3.23</b>	<b>3.19</b>	<b>4/30/2001</b>
75%BLOOMBERG GLOBAL IL U.S. TIPS/25% BLOOMBERG WORLD GOV IL USD HDG <sup>25</sup>			-6.53	-5.26	-14.52	-12.34	0.04	1.94	1.95			
<b>CORE FIXED INCOME EMERGING-DIVERSE MANAGER PROGRAM</b>												
BIVIMUM	37,690	0.0%	-3.94	-4.33						-5.62	-6.25	6/30/2022
BIVIMUM CORE FI BENCHMARK <sup>26</sup>			-4.32	-4.75								
FIXED INCOME CASH	(457)	0.0%										
<b>TOTAL CORE FIXED INCOME</b>	<b>12,521,309</b>	<b>14.2%</b>	<b>-5.81</b>	<b>-6.16</b>	<b>-18.82</b>	<b>-17.51</b>	<b>-3.43</b>	<b>0.46</b>	<b>2.04</b>	<b>6.45</b>	<b>5.97</b>	<b>9/30/1985</b>
ASSET CLASS BENCHMARK <sup>27</sup>			-5.97	-6.37	-19.16	-17.76	-3.91	0.22	1.79			

<b>PENSION RESERVES INVESTMENT TRUST</b> <b>SUMMARY OF MANAGER PERFORMANCE</b> <b>RATES OF RETURN (GROSS OF FEES)</b> <b>Periods Ending September 30, 2022</b>												
	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>VALUE-ADDED FIXED INCOME</b>												
FIDELITY	439,637	0.5%	-3.98	-0.51	-13.14	-11.73	2.10	3.67	5.11	8.82	7.75	1/31/1990
LOOMIS SAYLES HIGH YIELD	413,095	0.5%	-3.83	-0.17	-15.62	-15.73	-0.30	1.28	3.98	7.39	6.10	7/31/1997
SHENKMAN	383,451	0.4%	-3.31	0.13	-11.78	-11.21	0.45	2.31	3.89	5.59	5.98	4/30/2004
TOTAL HIGH YIELD BONDS	1,236,183	1.4%	-3.72	-0.20	-13.58	-12.95	0.77	2.46	4.36	6.88	6.85	7/31/2001
ICE BOFA US HY MASTER II CONSTRAINED <sup>28</sup>			-4.01	-0.65	-14.58	-14.04	-0.69	1.39	3.86			
EATON VANCE	977,922	1.1%	-2.43	1.22	-3.53	-2.88	1.93	2.80	3.53	4.48	4.45	7/31/2008
VOYA	958,944	1.1%	-2.30	1.00	-4.21	-3.53	1.26	2.45	3.54	4.47	4.45	7/31/2008
TOTAL BANK LOANS	1,936,866	2.2%	-2.36	1.11	-3.87	-3.20	1.60	2.63	3.54	4.47	4.45	7/31/2008
MORNINGSTAR LSTA LEVERAGED LOAN INDEX			-2.27	1.37	-3.25	-2.53	2.21	2.98	3.53			
ASHMORE	350,652	0.4%	-9.66	-8.23	-32.84	-35.75	-11.24	-5.94	-0.23	5.42	5.07	1/31/2004
PIMCO EMD	346,892	0.4%	-5.91	-3.94	-21.12	-21.71	-4.89	-1.32	1.52	5.43	5.07	2/29/2004
TOTAL EMERGING MARKET DEBT	697,543	0.8%	-7.83	-6.14	-27.48	-29.46	-8.29	-3.81	0.61	5.22	5.07	1/31/2004
JPM EMBI GLOBAL			-6.07	-4.20	-22.24	-22.23	-6.10	-2.31	0.95			
VALUE ADDED FIXED INCOME CASH	(212)	0.0%										
<b>VALUE-ADDED FIXED INCOME EMERGING-DIVERSE MANAGER PROGRAM</b>												
BIVIUM	56,212	0.1%	-5.10	-3.56						-6.12	-8.58	6/30/2022
BIVIUM PUBLIC VAFI BENCHMARK <sup>29</sup>			-4.90	-2.97								
PUBLIC VALUE-ADDED FIXED INCOME	3,927,104	4.4%	-3.84	-0.73	-12.17	-12.22	-0.73	0.98	2.07	5.85	5.99	7/31/2001
ASSET CLASS BENCHMARK <sup>30</sup>			-3.56	-0.37	-11.10	-10.61	-0.49	1.17	2.10			
PUBLIC VALUE-ADDED FIXED INCOME BENCHMARK												
OTHER CREDIT OPPORTUNITIES	1,054,690	1.2%	0.00	0.16	-1.38	2.31	8.89			7.84	3.65	12/31/2017
OTHER CREDIT OPPORTUNITIES BENCHMARK <sup>31</sup>			-1.12	0.94	-0.36	0.55	3.25					
PRIVATE DEBT	1,200,545	1.4%	-0.04	-1.87	0.13	6.49	12.44	10.73	10.32	12.62	6.22	7/31/2001
PRIVATE DEBT CASH	16,140	0.0%										
TOTAL PRIVATE DEBT	1,216,686	1.4%	-0.04	-1.87	0.12	6.40	12.28	10.65	10.24	12.60	6.22	7/31/2001
PRIVATE DEBT BENCHMARK <sup>33</sup>			-1.93	-1.93	2.67	0.67	-7.06	-2.35	-0.42			
TOTAL VALUE-ADDED FIXED INCOME <sup>34</sup>	6,198,480	7.0%	-2.47	-0.81	-8.15	-6.56	2.97	3.61	4.23	7.27	6.61	7/31/2001
ASSET CLASS BENCHMARK <sup>35</sup>			-2.84	-0.48	-6.79	-5.17	2.62	3.40	3.18			
VALUE-ADDED FIXED INCOME BENCHMARK												



<b>PENSION RESERVES INVESTMENT TRUST</b> <b>SUMMARY OF MANAGER PERFORMANCE</b> <b>RATES OF RETURN (GROSS OF FEES)</b> <b>Periods Ending September 30, 2022</b>												
	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>PRIVATE EQUITY</b>												
PRIVATE EQUITY	198,736	0.2%	0.19	0.44	0.54	0.57	0.27	1.39	2.93	9.89		4/30/1986
TOTAL PE VY 2000	11,542	0.0%	-1.88	-5.95	-9.20	-18.17	-5.18	-6.60	-0.25	5.44		2/29/2000
TOTAL PE VY 2001	15,970	0.0%	-0.80	-2.40	0.50	0.85	8.53	5.68	9.05	13.01		2/28/2001
TOTAL PE VY 2002	2,192	0.0%	-0.19	4.93	45.68	120.94	50.00	26.25	15.81	13.94		7/31/2002
TOTAL PE VY 2003	13,643	0.0%	0.24	-3.01	-2.67	-2.24	-6.61	3.51	6.18	10.60		7/31/2003
TOTAL PE VY 2004	5,535	0.0%	-0.08	-16.95	-4.93	-5.79	13.86	10.87	15.49	13.36		7/31/2004
TOTAL PE VY 2005	15,189	0.0%	-0.08	-8.63	-14.53	-13.80	4.10	5.58	11.05	9.88		3/31/2005
TOTAL PE VY 2006	127,313	0.1%	0.18	-0.11	1.47	8.25	16.95	12.42	13.13	9.11		4/30/2006
TOTAL PE VY 2007	166,487	0.2%	-1.20	-14.82	-16.90	-15.32	9.28	11.44	14.83	8.34		4/30/2007
TOTAL PE VY 2008	408,761	0.5%	-0.12	-4.40	1.81	9.02	15.42	15.71	19.62	12.71		4/30/2008
TOTAL PE VY 2009	148,038	0.2%	-0.75	-18.08	-12.38	0.31	38.80	34.14	28.48	19.55		8/31/2009
TOTAL PE VY 2010	496,034	0.6%	-0.09	-10.75	-37.60	-23.10	24.95	21.46	21.42	14.56		4/30/2010
TOTAL PE VY 2011	583,000	0.7%	1.60	-4.19	-1.16	7.21	33.93	28.03	25.02	14.25		2/28/2011
TOTAL PE VY 2012	458,262	0.5%	-3.44	-19.11	-29.88	-29.77	13.71	14.12	18.51	-5.51		5/31/2012
TOTAL PE VY 2013	886,368	1.0%	-0.55	-6.78	-8.23	0.73	36.53	29.44		20.46		6/30/2013
TOTAL PE VY 2014	1,569,973	1.8%	-0.88	-1.71	1.65	15.04	27.86	27.45		16.05		5/31/2014
TOTAL PE VY 2015	1,906,985	2.2%	-0.45	-7.50	-11.82	-5.69	26.63	28.45		21.30		4/30/2015
TOTAL PE VY 2016	834,034	0.9%	-0.03	-9.63	-2.87	2.38	28.38	20.82		29.07		6/30/2016
TOTAL PE VY 2017	1,753,300	2.0%	-0.75	-4.15	2.70	9.86	27.75	23.85		21.35		4/30/2017
TOTAL PE VY 2018	1,929,982	2.2%	-0.10	-5.73	1.93	13.98	28.86			15.56		5/31/2018
TOTAL PE VY 2019	1,648,479	1.9%	-0.45	-2.71	2.83	28.75	32.45			27.25		3/31/2019
TOTAL PE VY 2020	1,344,283	1.5%	-0.68	-4.14	7.23	15.72				21.53		1/31/2020
TOTAL PE VY 2021	1,246,657	1.4%	0.14	-4.19	0.54	5.66				3.92		3/31/2021
TOTAL PE VY 2022	338,842	0.4%	-1.20	-1.98						-6.92		2/28/2022
<b>TOTAL PRIVATE EQUITY</b>	<b>16,109,605</b>	<b>18.2%</b>	<b>-0.45</b>	<b>-5.70</b>	<b>-4.25</b>	<b>5.30</b>	<b>27.44</b>	<b>24.08</b>	<b>21.52</b>	<b>16.04</b>	<b>18.09</b>	<b>4/30/1986</b>
<b>7 YEAR ANNUALIZED RETURN PE <sup>36</sup></b>			<b>1.67</b>	<b>5.31</b>	<b>17.83</b>	<b>24.57</b>	<b>21.27</b>	<b>20.08</b>	<b>17.02</b>	<b>16.74</b>	<b>11.28</b>	<b>7/31/2007</b>
<i>7 YEAR ANNUALIZED CUSTOM BENCHMARK <sup>37</sup></i>			<i>1.01</i>	<i>3.19</i>	<i>10.29</i>	<i>14.50</i>	<i>14.54</i>	<i>14.83</i>	<i>13.78</i>			
<i>STATE STREET PE INDEX (SSPEI) ALL PE EXCLUDING PRIVATE DEBT</i>			<i>-4.99</i>	<i>-4.99</i>	<i>-0.12</i>	<i>6.34</i>						

<b>PENSION RESERVES INVESTMENT TRUST</b> <b>SUMMARY OF MANAGER PERFORMANCE</b> <b>RATES OF RETURN (GROSS OF FEES)</b> <b>Periods Ending September 30, 2022</b>												
	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>PRIVATE REAL ESTATE</b>												
<b>CORE</b>												
INVESCO CORE	2,562,718	2.9%	-0.74	-0.09	9.22	15.29	13.81	11.43	12.19	10.36	9.53	5/31/1995
LASALLE	2,357,672	2.7%	0.52	1.06	11.45	15.08	10.94	8.97	10.16	10.06	9.48	1/31/1995
AEW	2,606,784	2.9%	1.74	2.54	19.19	34.05	18.05	14.08	13.25	13.38	10.32	1/31/2011
CBRE	625,486	0.7%	-1.90	-1.54	12.89	20.09	11.02			10.13	9.90	7/31/2019
STOCKBRIDGE	413,091	0.5%	-1.57	-0.99	7.19	14.78	11.85			10.92	9.90	7/31/2019
PRIM - CORE REAL ESTATE	456,569	0.5%	4.73	4.87	12.77	20.84	9.95	10.05		8.99	8.80	12/31/2016
AEW CORE TRANS	75,599	0.1%	1.19	2.48	3.16	-3.28	1.21	3.28		2.47	8.84	10/31/2015
INVESCO TRANS	62,587	0.1%	0.62	1.72	-0.86	2.25	9.83			6.64	9.44	1/31/2019
CLOSED PORTFOLIOS	-	0.0%										
<b>TOTAL CORE ACCOUNTS</b>	<b>9,160,506</b>	<b>10.4%</b>	<b>0.46</b>	<b>1.08</b>	<b>12.74</b>	<b>20.47</b>	<b>13.64</b>	<b>10.96</b>	<b>10.61</b>	<b>9.96</b>	<b>9.51</b>	<b>12/31/1994</b>
<b>PORTFOLIO DEBT</b>												
CLOSED PORTFOLIOS	(1,108,246)	-1.3%										
	-	0.0%										
<b>TOTAL SEPARATE ACCOUNTS - LEVERAGED</b>	<b>8,052,260</b>	<b>9.1%</b>	<b>0.83</b>	<b>1.59</b>	<b>16.29</b>	<b>25.71</b>	<b>16.39</b>	<b>12.96</b>		<b>12.54</b>	<b>9.76</b>	<b>2/28/2013</b>
<b>NON-CORE</b>												
NON-CORE	542,212	0.6%	2.44	2.44	18.14	25.13	15.97	13.62	13.83	14.27	9.79	1/31/2012
CLOSED PORTFOLIOS	-	0.0%										
<b>TOTAL NON-CORE</b>	<b>542,212</b>	<b>0.6%</b>	<b>2.44</b>	<b>2.44</b>	<b>18.14</b>	<b>25.13</b>	<b>15.97</b>	<b>13.62</b>	<b>13.58</b>	<b>4.54</b>	<b>8.77</b>	<b>5/31/2005</b>
<b>TOTAL PRIVATE REAL ESTATE <sup>38</sup></b>	<b>8,594,473</b>	<b>9.7%</b>	<b>0.93</b>	<b>1.65</b>	<b>16.40</b>	<b>25.69</b>	<b>16.37</b>	<b>12.96</b>	<b>12.61</b>	<b>11.24</b>	<b>9.65</b>	<b>11/30/1994</b>
<i>PRIVATE REAL ESTATE BENCHMARK <sup>39</sup></i>												
			4.54	4.54	20.58	26.88	11.84	9.82	10.15			

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>PUBLIC REAL ESTATE (REITS)</b>												
CENTERSQUARE GLOBAL REIT	774,310	0.9%	-12.77	-11.98	-27.91	-20.72	-2.28	2.74	5.40	5.71	3.96	5/31/2012
BROOKFIELD	411,395	0.5%	-11.09	-11.19	-26.81	-21.70	-5.62	-0.45		3.07	2.34	2/29/2016
TOTAL GLOBAL REITS	1,185,705	1.3%	-12.20	-11.71	-27.54	-21.06	-3.50	1.54	4.58	4.86	3.96	5/31/2012
FTSE EPRA NAREIT DEVELOPED NET TOTAL RETURN			-12.31	-11.42	-29.51	-22.22	-5.78	-0.10	3.61			
CLOSED PORTFOLIOS	166	0.0%										
REIT CASH	(732)	0.0%										
<b>TOTAL REITS</b>	<b>1,185,140</b>	<b>1.3%</b>	<b>-12.20</b>	<b>-11.71</b>	<b>-27.53</b>	<b>-21.06</b>	<b>-3.52</b>	<b>1.52</b>	<b>4.58</b>	<b>7.68</b>	<b>6.28</b>	<b>6/30/1998</b>
100% FTSE EPRA NAREIT DEVELOPED NET TOTAL RETURN <sup>40</sup>			-12.31	-11.42	-29.51	-22.22	-5.78	-0.10	3.61			
<b>REAL ESTATE EMERGING-DIVERSE MANAGER PROGRAM</b>												
CAMBRIDGE ASSOCIATES	1,863	0.0%	0.00	0.00						0.00	4.54	7/31/2022
NCREIF NFI ODCE NET 1QTR IN ARREARS <sup>41</sup>			4.54	4.54								
REAL ESTATE LEVERAGE CASH	379	0.0%										
CORE REAL ESTATE CASH	231,707	0.3%										
REAL ESTATE TRANSITION	-	0.0%										
TOTAL CORE ACCOUNT	10,013,562	11.3%	-0.83	-0.13	8.57	17.43	13.01	11.10	11.11	10.62	9.54	12/31/1994
<b>TOTAL REAL ESTATE</b>	<b>10,013,562</b>	<b>11.3%</b>	<b>-0.83</b>	<b>-0.13</b>	<b>8.57</b>	<b>17.43</b>	<b>13.01</b>	<b>11.10</b>	<b>11.11</b>	<b>7.21</b>	<b>8.09</b>	<b>1/31/1986</b>
ASSET CLASS BENCHMARK <sup>42</sup>			2.27	2.42	11.53	18.52	9.49	8.65	9.33			
<b>TIMBERLAND</b>												
FOREST INVESTMENTS	1,277,024	1.4%	0.84	0.84	1.87	6.29	3.05	1.58	4.41	5.79	6.21	1/31/2002
THE CAMPBELL GROUP	1,590,830	1.8%	-0.79	-0.44	6.71	16.33	7.94	8.14	7.72	7.20	5.35	11/30/2011
TIMBERLAND CASH	22,397	0.0%										
<b>TIMBERLAND</b>	<b>2,890,251</b>	<b>3.3%</b>	<b>-0.07</b>	<b>0.12</b>	<b>4.52</b>	<b>11.72</b>	<b>5.71</b>	<b>5.07</b>	<b>6.29</b>	<b>8.10</b>	<b>6.21</b>	<b>1/31/2002</b>
NCREIF TIMBERLAND INDEX ONE QTR LAG <sup>43</sup>			1.87	1.87	9.93	12.01	5.03	4.32	5.73			

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>HEDGE FUNDS (NET OF FEES)</b>												
DIRECT HEDGE FUNDS	6,437,932	7.3%	-1.91	-0.69	-3.61	-2.18	2.73	3.26	4.58	4.57	3.39	11/30/2011
<i>DIRECT HEDGE FUNDS COMPOSITE INDEX</i> <sup>44</sup>			-2.20	-0.74	-4.10	-3.41	3.67	3.24	3.46			
PAAMCO	619,312	0.7%	-0.27	0.03	-0.84	-0.57	5.16	3.18	4.04	4.05	3.98	8/31/2004
<i>TOTAL PAAMCO COMPOSITE INDEX</i> <sup>45</sup>			-1.90	-0.31	-6.53	-6.26	3.28	2.57	3.21			
HEDGE FUND CASH	10	0.0%										
<b>TOTAL HEDGE FUNDS (NET OF FEES)</b>	<b>7,057,254</b>	<b>8.0%</b>	<b>-1.77</b>	<b>-0.63</b>	<b>-3.37</b>	<b>-2.04</b>	<b>3.00</b>	<b>3.22</b>	<b>4.45</b>	<b>4.20</b>	<b>4.11</b>	<b>7/31/2004</b>
<i>TOTAL HEDGE FUNDS BENCHMARK</i> <sup>46</sup>			-2.17	-0.70	-4.32	-3.66	3.65	3.16	3.43			
<b>REAL ASSETS</b>												
REAL ASSETS	802,623	0.9%	0.11	1.32	2.04	2.02	-0.31	-2.07		0.97	4.65	4/30/2016
<i>TOTAL REAL ASSETS COMPOSITE INDEX</i> <sup>47</sup>			0.91	2.06	6.80	8.25	5.10	4.16				
<b>TOTAL PORTFOLIO COMPLETION STRATEGIES</b>	<b>7,859,878</b>	<b>8.9%</b>	<b>-1.58</b>	<b>-0.43</b>	<b>-2.82</b>	<b>-1.62</b>	<b>2.62</b>	<b>2.94</b>	<b>4.27</b>	<b>4.10</b>	<b>4.29</b>	<b>7/31/2004</b>
<i>TOTAL PORTFOLIO COMPLETION STRATEGIES COMPOSITE INDEX</i> <sup>48</sup>			-1.86	-0.42	-3.19	-2.46	3.83	3.69	3.76			
<b>OVERLAY</b>												
PARAMETRIC	142,897	0.2%	-8.49	-8.16	-23.38	-21.22	0.24	0.74		3.54	3.54	10/31/2013
CASH	757,889	0.9%										
<b>TOTAL OVERLAY</b>	<b>900,786</b>	<b>1.0%</b>	<b>-4.94</b>	<b>-4.42</b>	<b>-15.71</b>	<b>-14.17</b>	<b>2.23</b>	<b>1.84</b>		<b>3.50</b>	<b>3.50</b>	<b>10/31/2013</b>
<i>ASSET CLASS BENCHMARK</i> <sup>49</sup>			-4.94	-4.42	-15.71	-14.17	2.23	1.84				
<b>LIQUIDATING PORTFOLIOS</b>												
<b>TOTAL LIQUIDATING PORTFOLIOS</b>	<b>41,113</b>	<b>0.0%</b>	<b>-0.30</b>	<b>-16.63</b>	<b>4.76</b>	<b>3.79</b>	<b>-0.67</b>	<b>-5.88</b>		<b>-3.92</b>	<b>-3.92</b>	<b>1/31/2016</b>
<i>ASSET CLASS BENCHMARK:</i>												
<i>TOTAL LIQUIDATING PORTFOLIOS BENCHMARK</i> <sup>50</sup>			-0.30	-16.63	4.76	3.79	-0.67	-5.88				

**PENSION RESERVES INVESTMENT TRUST**  
**SUMMARY OF MANAGER PERFORMANCE**  
**RATES OF RETURN (GROSS OF FEES)**  
**Periods Ending September 30, 2022**

	NAV \$ (000)	%	Month	QTR/FY '23	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Manager ITD	Manager Benchmark - ITD	Inception Month
<b>TOTAL CORE</b>	<b>88,450,853</b>	<b>99.8%</b>	<b>-5.00</b>	<b>-4.58</b>	<b>-14.38</b>	<b>-9.65</b>	<b>6.72</b>	<b>6.71</b>	<b>8.19</b>	<b>9.13</b>		<b>2/28/1985</b>
<b>CASH FUND</b>												
PARTICIPANTS' CASH (NET OF FEES)	66,430	0.1%	0.20	0.56	0.75	0.77	0.61	1.22	0.79	3.44	3.28	7/31/1985
<i>ICE BOFA US 3 MONTH TREASURY BILL</i>			0.25	0.47	0.61	0.62	0.60	1.15	0.68			
MASS STATE TEACHERS CASH (NET OF FEES)	2,124	0.0%	0.20	0.53	0.73	0.74	0.61	1.20	0.78	2.18	2.16	7/31/1996
MASS STATE EMPLOYEES CASH (NET OF FEES)	71,299	0.1%	0.21	0.53	0.73	0.74	0.61	1.20	0.78	2.18	2.16	7/31/1996
<i>ICE BOFA US 3 MONTH TREASURY BILL</i> <sup>51</sup>			0.25	0.47	0.61	0.62	0.60	1.15	0.68			
TEACHERS' AND EMPLOYEES' CASH	73,422	0.1%	0.20	0.53	0.73	0.74	0.61	1.20	0.78	2.30		7/31/1996
<b>TOTAL FUND</b>	<b>88,590,705</b>	<b>100.0%</b>	<b>-4.98</b>	<b>-4.58</b>	<b>-14.34</b>	<b>-9.62</b>	<b>6.70</b>	<b>6.69</b>	<b>8.17</b>	<b>9.17</b>		<b>1/31/1985</b>
POLICY RETURN <sup>52</sup>			-4.61	-2.67	-11.10	-6.84	6.16	6.33	7.73	9.17		
<i>TOTAL CORE BENCHMARK</i>			-4.43	-2.70	-11.43	-7.87	4.61	5.25	6.65	9.19		

**PENSION RESERVES INVESTMENT TRUST**  
**FOOTNOTES**  
**RATES OF RETURN**  
**Periods Ending September 30, 2022**

**Direct Real Estate**

(1) Direct core and value real estate performance is time series weighted and based on property distributed income and capital appreciation/depreciation resulting from external appraisals and dispositions. PRIM's real estate appraisal policy requires that approximately one quarter of the directly owned properties be appraised by a real estate appraiser with an MAI designation every quarter. The goal is to obtain updated market values for each property annually.

(2) The NCREIF Property Index (NPI) is an unleveraged, time series composite measurement of the investment performance of a large group of commercial real estate properties. The NPI is released 25 days after the end of each quarter. Because Mellon's performance report is released earlier, the NPI used as benchmark is lagged one quarter.

(3) Direct Real Estate Manager NAV's are net of property level debt.

**Timberland**

(4) PRIM's Timberland/Natural resources appraisal policy states that all timber/natural resources properties be externally appraised every three years using a full narrative report format. These reports (and property values) are then updated annually by a Timberland/Natural Resources Appraiser to reflect changes in timber markets, inventories and land values. The goal is to obtain market values for each timberland annually.

(5) PRIM's timberland portfolio currently does not utilize leverage.

(6) The NCREIF Timberland Index (NTI) is an unleveraged, time series composite measurement of the investment performance of individual timber properties. The NTI is released 25 days after the end of each quarter. Because Mellon's performance report is released earlier, the NTI used as benchmark is lagged one quarter.

**REITs**

(7) The FTSE NAREIT ALL EQUITY REITS Index is an unmanaged index of publicly traded U.S., tax-qualified REITs that have 75% or more of their gross assets invested in the equity ownership of real estate. This index does not include Real Estate Operating Companies (REOCs) although these are acceptable investments as part of the manager's guidelines and included in PRIM's REIT holdings.

(8) The FTSE NAREIT ALL EQUITY REITS index can be considered a "leveraged" index given that the majority of the REITs included in the index use leverage as part of their investment strategy.

**ETI**

(9) Real estate ETI Funds are primarily invested in development projects with a three to five year lifecycle. These investments require substantial capital investment with very little income during the initial stage of the cycle, resulting in a J curve return profile. The returns are expected later in the cycle, upon project completion and lease up. For lack of a better benchmark, the NPI which is a core property benchmark used to track stabilized, institutional grade properties is used by PRIM. However, Staff is focused more on deal flow quality and on returns generated relative to the risk adjusted returns projected by Managers in their offering memoranda.

**Private Equity**

(10) Private Equity performance represents time weighted returns reflecting the most recent partnership financial statement valuations (typically lagging one calendar quarter) adjusted for actual cash flows through the reporting date. The Private Equity portfolio consists primarily of assets that are illiquid in nature, and valuations are determined by the General Partner based on current industry fair market value practices. Limited Partnership valuations are reviewed through a formal audit process annually, and valuations are also commonly reviewed by partnership advisory boards on a quarterly basis.

**Hedge Fund of Funds**

(11) The Hedge Fund of Fund valuations are net of underlying manager fees and net of all Hedge Fund manager administrative, base and performance fees.

**Liquidating Portfolios**

(12) Total Liquidating Portfolios was created to include both Portable Alpha and Global Natural Resources effective 1/1/2016 going forward. Prior to 1/1/2016 the Global Natural Resources return and benchmark was comprised of Timberland, Natural Resources Public and Natural Resources Private. The Natural Resources-Private and Public history remains in the PRIT Fund return and benchmark prior to 1/1/2016.

**PENSION RESERVES INVESTMENT TRUST**  
**BENCHMARK/COMPOSITE FOOTNOTES**  
**RATES OF RETURN**  
Periods Ending September 30, 2022

**Implementation Benchmark**

(1) Implementation benchmark is calculated by applying the investment performance of the asset class benchmarks to the Fund's asset allocation targets through 3/31/2020. Currently the Implementation benchmark is calculated by applying the investment performance of the asset class benchmarks to the asset class weights within the Fund's portfolio. The PE component of this uses the S&P 500 + 5% through 6/30/2000; Actual PE Performance through 6/30/2021; currently State Street PE Index (SSPEI) ALL PE excluding Private Debt. The Private Debt component of this uses the Altman NYU Salomon Center Combined Defaulted Public Bond & Bank Loan Index through 6/30/2017; actual Private Debt Performance through 12/31/2021; currently Burgiss Distressed Debt Universe Lagged, if the Burgiss return is not available, the actual portfolio net return will be used as a placeholder until the Burgiss Private Debt BM is published. (Formerly labelled Interim Policy Benchmark.)

**Total Core Benchmark**

(2) The Total Core benchmark is calculated by applying the investment performance of the asset class benchmarks to the Fund's asset allocation targets through 3/31/2020. Currently the Total Core benchmark is calculated by applying the investment performance of the asset class benchmarks to the asset class weights within the Fund's portfolio. The Private Equity benchmark used for the Total Core benchmark calculation is the 7-year annualized return of the Russell 3000 +3%, through 6/30/2017; currently the calculation is the 7-year annualized return of a blend of the Russell 3000 +3% and MSCI Europe IMI + 3%. The Private Debt component of this uses the Altman NYU Salomon Center Combined Defaulted Public Bond & Bank Loan Index through 6/30/2017; using the 3-year annualized return of the Altman NYU Salomon Center Combined Defaulted Public Bond & Bank Loan Index through 12/31/2021; currently Burgiss Distressed Debt Universe Lagged, if the Burgiss return is not available, the actual portfolio net return will be used as a placeholder until the Burgiss Private Debt BM is published. (Formerly labeled Policy Benchmark.)

**Domestic Equity**

(3) S&P 500 through 6/30/2016; currently Custom S&P 500, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.  
(4) Russell 2000 Growth index through 6/30/2016; currently Custom FTSE Russell 2000 Growth index, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities. Formerly labeled Custom Russell 2000 Growth index.  
(5) Russell 2000 Value index through 6/30/2016; currently Custom FTSE Russell 2000 Value index, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities. Formerly labeled Custom Russell 2000 Value index.  
(6) Russell 2500 Growth index through 6/30/2016; currently Custom FTSE Russell 2500 Growth index, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities. Formerly labeled Custom Russell 2500 Growth index.  
(7) Russell 2500 through 6/30/2016; currently Custom FTSE Russell 2500, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities. Formerly labeled Custom Russell 2500.  
(8) The Blended Total US Micro Cap benchmark is calculated by applying the underlying benchmark return for each manager to the manager's weight within the Total Micro Cap Composite. These weights are based on the beginning adjusted monthly market value of each portfolio.  
(9) Russell 2500 through 6/30/14; 70.5% Russell 2500/5.5% Russell 2500 Growth/6.5% Russell 2000 Growth/17.5% Russell 2000 Value through 11/30/2015; 67.40% Russell 2500/5.5% Russell 2500 Growth/6.5% Russell 2000 Growth/20.60% Russell 2000 Value through 1/31/2016; currently the Total Small/SMID/Micro Cap Equity benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the Small/SMID/Micro Cap Equity portfolio.  
(10) Dow Jones Wilshire 5000 through 04/30/08; Russell 3000 through 06/30/2009; 78% Russell 3000/22% 3 Month Libor + 3% through 12/31/2009; Russell 3000 through 10/31/2011; 80% S&P 500/20% Russell 2500 through 6/30/2014; 78.9% S&P 500/14.88% Russell 2500/1.16% Russell 2500 Growth/1.37% Russell 2000 Growth/3.69% Russell 2000 Value through 11/30/2015; 78.9% S&P 500/21.10% Total Small/SMID Cap Equity BM through 6/30/2016; 78.9% Custom S&P 500/21.10% Total Small/SMID Cap Equity BM through 2/28/2019; 74.3% Custom S&P500 / 25.7% Total Small/SMID/Micro Cap Equity BM through 6/30/2020; 80% Custom S&P500 / 20% Total Small/SMID/Micro Cap Equity BM through 2/28/2021; 82% Custom S&P500 / 18% Total Small/SMID/Micro Cap Equity BM through 3/31/2021; 83% Custom S&P500 / 17% Total Small/SMID/Micro Cap Equity BM through 4/30/2021; 84% Custom S&P500 / 16% Total Small/SMID/Micro Cap Equity BM through 5/31/2021; 84.5% Custom S&P500 / 15.5% Total Small/SMID/Micro Cap Equity BM through 6/30/2021; currently 85% Custom S&P500 / 15% Total Small/SMID/Micro Cap Equity BM.

(11) 80% S&P500 + 20% LIBOR through 6/30/2020; during the liquidation of this strategy, the benchmark return was to itself through 8/17/2020; 80% S&P500 + 20% LIBOR through 7/31/2022; currently benchmarked to itself during liquidation.  
(12) Dow Jones Wilshire 5000 through 04/30/08; Russell 3000 through 06/30/2009; 78% Russell 3000/22% 3 Month Libor + 3% through 12/31/2009; Russell 3000 through 10/31/2011; 80% S&P 500/20% Russell 2500 through 6/30/2014; 78.9% S&P 500/14.88% Russell 2500/1.16% Russell 2500 Growth/1.37% Russell 2000 Growth/3.69% Russell 2000 Value through 11/30/2015; 78.9% S&P 500/21.10% Total Small/SMID Cap Equity BM through 6/30/2016; 78.9% Custom S&P 500/21.10% Total Small/SMID Cap Equity BM through 2/28/2019; currently the Total Domestic Equity benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the total domestic equity portfolio.

**International**

(13) MSCI EAFE Net Dividends through 9/30/2007; MSCI EAFE Net Dividends Provisional Standard Index through 5/31/2008; MSCI EAFE Net Dividends Standard Index through 12/31/2009; MSCI World ex-US IMI Net Dividends through 12/31/2010; Custom World ex-US IMI Net Dividends, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 6/30/2021; currently Custom MSCI World Ex-US Standard Net Divs, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

(14) MSCI EAFE Net Dividends through 9/30/2007; MSCI EAFE Net Dividends Provisional Standard Index through 5/31/2008; MSCI EAFE Net Dividends Standard Index through 12/31/2010; Custom MSCI EAFE Net Dividends Standard Index, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 6/30/2021; currently Custom MSCI World Ex-US Standard Net Divs, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

(15) Custom MSCI EAFE Small Cap, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 6/30/2021; currently Custom World Ex-US Small Net Divs customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

(16) MSCI EAFE Net Dividends through 9/30/2007; MSCI EAFE Net Dividends Provisional Standard Index through 5/31/2008; MSCI EAFE Net Dividends Standard Index through 12/31/2009; MSCI World ex-US IMI Net Dividends through 12/31/2010; Custom World ex-US IMI Net Dividends through 8/31/2014; 50% custom MSCI World Ex-US IMI Net Dividends, 50% Custom MSCI EAFE Standard Index Net Dividends, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 3/31/2017 (blend is maintained by MSCI); 45.5% custom MSCI World Ex-US IMI Net Dividends, 50% Custom MSCI EAFE Standard Index Net Dividends, 4.5% Custom MSCI EAFE Small Cap Index Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 5/31/2017 (blend is maintained by MSCI); 41% custom MSCI World Ex-US IMI Net Dividends, 50% Custom MSCI EAFE Standard Index Net Dividends, 9% Custom MSCI EAFE Small Cap Index Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities (blend is maintained by MSCI) through 3/31/2020; 42.3% custom MSCI World Ex-US IMI Net Dividends, 46.2% Custom MSCI EAFE Standard Index Net Dividends, 11.5% Custom MSCI EAFE Small Cap Index Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities (blend is maintained by MSCI) through 6/30/2020; 40% custom MSCI World Ex-US IMI Net Dividends, 55% Custom MSCI EAFE Standard Index Net Dividends, 5% Custom MSCI EAFE Small Cap Index Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities (blend is maintained by MSCI) through 6/30/2021; currently Custom MSCI World Ex-US IMI Net Divs, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities (blend is maintained by MSCI).

**Emerging Markets**

(17) MSCI EMF through 6/30/2004; MSCI Emerging Markets Net Dividends through 9/30/2007; MSCI Emerging Markets Net Dividends Provisional Standard Index through 5/31/2008; MSCI Emerging Markets Net Dividends Standard Index through 12/31/2010; currently Custom MSCI Emerging Markets Net Dividends Standard Index, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

(18) MSCI Emerging Markets Small Cap Net Dividends Index through 8/31/2014; currently Custom MSCI Emerging Market Small Cap Net Dividends, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

**PENSION RESERVES INVESTMENT TRUST**  
**BENCHMARK/COMPOSITE FOOTNOTES**  
**RATES OF RETURN**  
**Periods Ending September 30, 2022**

(19) MSCI EMF through 6/30/2004; MSCI Emerging Markets Net Dividends through 9/30/2007; MSCI Emerging Markets Net Dividends Provisional Standard Index through 5/31/2008; MSCI Emerging Markets Net Dividends Standard Index through 4/30/2010; MSCI Emerging Markets IMI Net Dividends through 12/31/2010; Custom MSCI Emerging Markets IMI Net Dividends through 8/31/2014; 50% Custom MSCI EM IMI Net Dividends, 43% Custom MSCI EM Standard Net Dividends, 7% Custom MSCI EM Small Cap Net Dividends through 1/31/2015; 25% Custom MSCI EM IMI Net Dividends, 67.37% Custom MSCI EM Standard Net Dividends, 7% Custom MSCI EM Small Cap Net Dividends, .63% Custom MSCI Frontier Markets Country Capped Net Dividends through 2/28/2015. Weights were based on the beginning adjusted monthly market value of each index group, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 8/31/2015; 25% Custom MSCI EM IMI Net Divs, 64% MSCI EM Standard Net Divs, 7% Custom MSCI EM Small Cap Net Divs, 4% CUSTOM MSCI FM 15% Country Capped Index net divs. (blend is maintained by MSCI) through 3/31/2020; 86% MSCI EM Standard Net Divs, 8% Custom MSCI EM Small Cap Net Divs, 6% CUSTOM MSCI FM 15% Country Capped Index net divs (blend is maintained by MSCI) through 8/31/2020; 88% MSCI EM Standard Net Divs, 10% Custom MSCI EM Small Cap Net Divs, 2% CUSTOM MSCI FM 15% Country Capped Index net divs (blend is maintained by MSCI) through 9/30/2020; 89% MSCI EM Standard Net Divs, 10% Custom MSCI EM Small Cap Net Divs, 1% CUSTOM MSCI FM 15% Country Capped Index net divs (blend is maintained by MSCI) through 10/31/2020; 90% MSCI EM Standard Net Divs, 10% Custom MSCI EM Small Cap Net Divs (blend is maintained by MSCI) through 6/30/2021; currently Custom MSCI Emerging Markets IMI Net Divs, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities (blend is maintained by MSCI).

**Global Equity**

(20) Global Equity Emerging-Diverse Manager Program Index was established on May 1, 2022. The Composite Index is calculated by applying the underlying benchmark return for each manager to the manager's weight within the Global Equity Emerging-Diverse Manager Program Composite. These weights are based on the beginning adjusted monthly market value of each portfolio.

(21) The Total Global Equity composite inception date coincides with the establishment of the MSCI All Country World Index on January 1, 2001.

(22) MSCI All Country World Net Index through 4/30/2010; MSCI All Country World IMI Net Dividends through 12/31/2010; Custom MSCI All Country World IMI Net Dividends, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities through 10/31/2011; 35% S&P 500/8% Russell 2500/42% Custom MSCI World Ex-US IMI Net Dividends/15% Custom MSCI EM IMI Net Dividends through 4/30/2012; 35% S&P 500/9% Russell 2500/40% Custom MSCI World Ex-US IMI Net Dividends/16% Custom MSCI EM IMI Net Dividends through 6/30/2014; 44% Domestic Equity BM/40% International Equity BM/16% Emerging Markets BM through 2/28/2019; 48.7% Domestic Equity BM/38.5% International Equity BM/12.8% Emerging Markets BM through 3/31/2020; 53.85% Domestic Equity BM/33.33% International Equity BM/12.82% Emerging Markets BM through 2/28/2021; 54.9% Domestic Equity BM/32.3% International Equity BM/12.8% Emerging Markets BM through 3/31/2021; 55.4% Domestic Equity BM/31.8% International Equity BM/12.8% Emerging Markets BM through 4/30/2021; 55.9% Domestic Equity BM/31.3% International Equity BM/12.8% Emerging Markets BM through 5/31/2021; 56.4% Domestic Equity BM/30.8% International Equity BM/12.8% Emerging Markets BM through 6/30/2021; currently 56.9% Domestic Equity BM/43.1% Custom ACWI Ex-US IMI Net Divs Index, customized to exclude legislatively prohibited tobacco, Sudan, Iran and Russian securities.

**Core Fixed Income**

(23) Effective 2/28/2015, the Total Domestic Investment Grade Fixed Income performance was changed to include the complete performance histories of Economically Targeted Investment managers: Access Capital, Community Capital Management, and AFL-CIO Housing Investment. As a result, prior period Total Domestic Investment Grade Fixed Income performance was revised from 4/30/2004-1/31/2015.

(24) BC Aggregate through 6/01; 67% BC Aggregate / 20% BC US TIPS/13% Custom Commodities BM ; Custom Commodities BM through 06/30/2009; currently Bloomberg World Gov Inflation-Linked USD Hdg. Formerly labeled BC ILB US\$ Hedged.

(25) 33% BC US TIPS/67% BC ILB US\$ Hedged through 2/28/2017; 42.9% BC US TIPS/57.1% BC ILB US\$ Hedged through 3/31/2017; 50% BC US TIPS/50% BC ILB US\$ Hedged through 4/30/2017; 55.6% BC US TIPS/44.4% BC ILB US\$ HEDGED through 5/31/2017; 60% BC US TIPS/40% BC ILB US\$ HEDGED through 7/31/2019; currently 75% Bloomberg Global IL U.S. Tips/25% Bloomberg World Gov IL USD Hdg. Formerly labeled 75% BC US TIPS/25% BC ILB US\$ HEDGED.

(26) The Core FI Emerging DMP benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the Core FI Emerging DMP portfolio.

(27) 77% BC Aggregate/8% BC US TIPS/15% BC ILB US\$ Hedged through 2/28/2014; weights were based on the beginning adjusted monthly market value of each index group 3/31/2014 – 9/30/2015; 38.5% BC Aggregate/7.6% BC US TIPS/15.4% BC ILP US\$ Hedged/38.5% BC STRIPS 20+ through 2/28/2017; 39.2% BC Aggregate/11.8% BC US TIPS/15.7% BC ILB US\$ Hedged/33.3% BC STRIPS 20+ through 3/31/2017; 40% BC Aggregate/16% BC US TIPS/16% BC ILB US\$ Hedged/28% BC STRIPS 20+ through 4/30/2017; 40.8% BC Aggregate/20.4% BC US TIPS/16.3% BC ILB US\$ Hedged/22.5% BC STRIPS 20+ through 5/31/2017; 41.6% BC Aggregate/25% BC US TIPS/16.7% BC ILB US\$ Hedged/16.7% BC STRIPS 20+ through 3/31/2019; 41.6% BC Aggregate/25% BC US TIPS/14.1% BC ILB US\$ Hedged/19.3% BC STRIPS 20+ through 4/30/2019; 41.6% BC Aggregate/25% BC US TIPS/11.6% BC ILB US\$ Hedged/21.8% BC STRIPS 20+ through 5/31/2019; 41.6% BC Aggregate/25% BC US TIPS/9% BC ILB US\$ Hedged/24.4% BC STRIPS 20+ through 11/30/2019; 42.9% BC Aggregate/21.4% BC US TIPS/7.1% BC ILB US\$ Hedged/21.5% BC STRIPS 20+/7.1% Bloomberg Barclays US Treasury 1-3 Year Index through 12/31/2019; 40% BC Aggregate/20% BC US TIPS/6.7% BC ILB US\$ Hedged/20% BC STRIPS 20+/13.3% Bloomberg Barclays US Treasury 1-3 Year Index through 2/28/2021; 41.6666% BC Aggregate/20% BC US TIPS/6.6667% BC ILB US\$ Hedged/20% BC STRIPS 20+/11.6667% Bloomberg Barclays US Treasury 1-3 Year Index through 3/31/2021; 43.33333% BC Aggregate/20% BC US TIPS/6.6667% BC ILB US\$ Hedged/20% BC STRIPS 20+/10% Bloomberg Barclays US Treasury 1-3 Year Index through 4/30/2021; 45% BC Aggregate/20% BC US TIPS/6.6667% BC ILB US\$ Hedged/20% BC STRIPS 20+/8.33333% Bloomberg Barclays US Treasury 1-3 Year Index through 5/31/2021; currently 46.6666% Bloomberg U.S. Aggregate Bond/20% Bloomberg Global IL U.S. Tips/6.6667% Bloomberg World Gov Inflation-Linked USD Hdg/20% Bloomberg US STRIPS 20+ Years/6.6667% Bloomberg U.S. Treasury: 1-3 Year. Formerly labeled 46.6666% BC Aggregate/20% BC US TIPS/6.6667% BC ILB US\$ Hedged/20% BC STRIPS 20+/6.6667% Bloomberg Barclays US Treasury 1-3 Year Index.

**Value-Added Fixed Income**

(28) CSFB Thru 07/2002; ML Master II HY Thru 02/2007; currently ICE BOFA US HY Master II Constrained Index. Formerly labeled ML Master II HY Constrained Index.

(29) The VAFI Emerging DMP benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the VAFI Emerging DMP portfolio.

(30) Public Value Added benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the public value added fixed income portfolio. The weightings were automatically adjusted at the end of every quarter for usage in the upcoming quarter through 2/28/2017; currently the weightings will be automatically adjusted on a monthly basis.

(31) OCO Composite Index is calculated by applying the underlying benchmark return for each manager to the manager's weight within the OCO Composite. These weights are based on the beginning adjusted monthly market value of each portfolio.

(32) 3 year Annualized performance through 12/31/2021; currently actual Private Debt performance. This is used in the Policy Return Benchmark.

(33) Actual Performance through 2/07; ML Master II FI Constrained Index through 12/31/2009; Altman NYU Salomon Center Combined Defaulted Public Bond & Bank Loan Index through 6/30/2017; 3-year annualized return of the Altman NYU Salomon Center Combined Defaulted Public Bond & Bank Loan Index through 12/31/2021; currently Burgiss Distressed Debt Universe Lagged, if the Burgiss return is not available, the actual portfolio net return will be used as a placeholder until the Burgiss Private Debt BM is published.

(34) The Total Value-Added Fixed Income composite inception date coincides with PRIM's initiative to separate High Yield from Core Fixed Income. Underlying manager market values and cash flows are unavailable prior to July 1, 2001.



**PENSION RESERVES INVESTMENT TRUST  
BENCHMARK/COMPOSITE FOOTNOTES  
RATES OF RETURN  
Periods Ending September 30, 2022**

(35) CSFB through 7/02 / 43% ML Master II HY Index/43% JPM EMBI Global/14% Actual Private Debt through 02/07/ through 06/08 60% ML Master II HY Constrained Index and 40% JPM EMBI Global/ 50% ML Master II HY Constrained Index/ 33% JPM EMBI Global/17% S&P LSTA Leveraged Index through 06/30/2009; 58% ML Master II HY Constrained Index/ 25% JPM EMBI Global/17% S&P LSTA Leveraged Index through 12/31/2009; 24% ML Master II HY Constrained Index/17% S&P LSTA Leveraged Index/20% JPM EMBI Global/39% Altman Index through 03/31/2010; 24.20% ML Master II HY Constrained Index/16.56% S&P LSTA Leveraged Index/19.43% JPM EMBI Global/39.81% Altman Index through 06/30/2010; 22.10% ML Master II HY Constrained Index/14.60% S&P LSTA Leveraged Loan Index/20.65% JPM EMBI Global/42.65% Altman Index through 09/30/2010; 22.46% ML Master II HY Constrained Index/12.92% S&P LSTA Leveraged Loan Index/21.56% JPM EMBI Global/43.06% Altman Index through 12/31/2010; 22.14% ML Master II HY Constrained Index/11.13% S&P LSTA Leveraged Loan Index/21.60% JPM EMBI Global/45.13% Altman Index through 3/31/2011; 23.15% ML Master II HY Constrained Index/9.45% S&P LSTA Leveraged Loan Index/22.74% JPM EMBI Global/44.66% Altman Index through 6/30/2011; 23.95% ML Master II HY Constrained Index/9.21% S&P LSTA Leveraged Loan Index/22.96% JPM EMBI Global/43.88% Altman Index through 9/30/2011; 21.58% ML Master II HY Constrained Index/11.08% S&P LSTA Leveraged Loan Index/22.24% JPM EMBI Global/45.10% Altman Index through 12/31/2011; 27.90% ML Master II HY Constrained Index/13.58% S&P LSTA Leveraged Loan Index/20.65% JPM EMBI Global/37.87% Altman Index through 3/31/2012; 28.24% ML Master II HY Constrained Index/13.30% S&P LSTA Leveraged Loan Index/20.71% JPM EMBI Global/37.75% Altman Index through 4/30/2012; 23.55% ML Master II HY Constrained Index/10.63% S&P LSTA Leveraged Loan Index/16.61% JPM EMBI Global/20.36% JPM GBI-EM Global Diversified/28.85% Altman Index through 6/30/2012; 18.21% ML Master II HY Constrained Index/11.24% S&P LSTA Leveraged Loan Index/17.63% JPM EMBI Global/20.80% JPM GBI-EM Global Diversified/32.12% Altman Index through 9/30/2012; 18.29% ML Master II HY Constrained Index/11.98% S&P LSTA Leveraged Loan Index/18% JPM EMBI Global/21.03% JPM GBI-EM Global Diversified/30.70% Altman Index through 12/31/2012; 19.40% ML Master II HY Constrained Index/11.90% S&P LSTA Leveraged Loan Index/18.28% JPM EMBI Global/21.32% JPM GBI-EM Global Diversified/29.10% Altman Index through 2/28/2013; Value Added benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the value added fixed income portfolio. These weightings will be automatically adjusted at the end of every quarter for usage in the upcoming quarter through 2/28/2017; the weightings were automatically adjusted on a monthly basis through 6/30/2017. Currently the Value Added benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the value added fixed income portfolio. Private Debt component is using actual Private Debt Returns through 12/31/2021; currently Burgess Distressed Debt Universe Lagged, if the Burgess return is not available, the actual portfolio net return will be used as a placeholder until the Burgess Private Debt BM is published. These weightings will be automatically adjusted on a monthly basis.

**Private Equity**

(36) The 7 Year Annualized performance is used in the Policy Return and Policy Benchmark.

(37) Wilshire 5000 + 3% through 4/30/2008; 7 Year Annualized Russell 3000 + 3% through 6/30/2017; 7-year annualized return of a blend of the Russell 3000 +3% and MSCI Europe IMI + 3% through 6/30/2018; 7-year annualized return of a blend of the 82% Russell 3000 + 3% / 18% MSCI Europe IMI + 3% through 6/30/2019; 7-year annualized return of a blend of the 85% Russell 3000 + 3% / 15% MSCI Europe IMI + 3% through 3/31/2020; 7-year annualized return of a blend of the 85.9% Russell 3000 + 3% / 14.1% MSCI Europe IMI + 3% through 3/31/2022; currently 7-year annualized return of a blend of the 87.5% Russell 3000 + 3% / 12.5% MSCI Europe IMI + 3%.

**Real Estate - Private/Public**

(38) On 06/30/02 PRIM instituted portfolio leverage of up to 40%; increased to 50% leverage on 02/03/04. Portfolio leverage was paid down in September 2005 (\$450 million), October 2005 (\$200 million), and July 2007 (\$450 million). Composite includes Value Added Separate Account opened 4/30/2007 and closed 12/31/2010.

(39) 100% NCREIF PROPERTY ONE QTR LAG through 12/31/2021; currently 100% NCREIF NFI ODCE Net 1Qtr in Arrears Index.

(40) FTSE NAREIT ALL EQUITY REITS through 3/31/2008; 63% FTSE NAREIT ALL EQUITY REITS/27% NAREIT Global REIT/10% NAREIT International REIT through 06/30/09; 50% FTSE NAREIT ALL EQUITY REITS/50% FTSE EPRA NAREIT Developed Ex US REIT through 4/30/2012; currently 100% FTSE EPRA NAREIT Developed Net Total Return.

(41) The RE Emerging-Diverse MP benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the RE Emerging-Diverse MP portfolio.

(42) NCREIF through 6/30/03; 67% NCREIF/33% FTSE NAREIT ALL EQUITY REITS through 12/31/06; NCREIF + Ratio of 2% FTSE NAREIT ALL EQUITY REITS to PRIT Fund through 03/31/08; 73% NCREIF Property One Qtr Lag/17% FTSE NAREIT ALL EQUITY REITS/7.25% NAREIT Global REIT/2.75% NAREIT Intl REIT through 06/30/09; 82% NCREIF Property One Qtr Lag/9% FTSE NAREIT ALL EQUITY REITS/9% FTSE EPRA NAREIT Developed Ex US REIT through 7/31/09; 80% NCREIF Property One Qtr Lag/10% FTSE NAREIT ALL EQUITY REITS/10% FTSE EPRA NAREIT Developed Ex US REIT through 4/30/2012; 80% NCREIF PROPERTY ONE QTR LAG/20% FTSE EPRA NAREIT Developed Net Total Return through 12/31/2021; currently Total Real Estate benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the Total RE portfolio. These weights are based on the beginning adjusted monthly market value of each sub asset.

**Timberland**

(43) NCREIF Timberland Index through 6/30/03; NCREIF Timberland Index Ex-PRIM through 2/28/2010; currently NCREIF Timberland Index.

**Total Portfolio Completion Strategies**

(44) HFRI Fund of Funds Composite Index through 6/30/2017; currently using a composite of several HFRI sub-indices. (HFRI indices - Flash returns are used through 12/31/11. Current returns reflect most up to date performance and are subject to change.)

(45) ML 90 Day T-Bill + 4% through 12/31/2009; HFRI Fund of Funds Composite Index through 3/31/2019; currently the PAAMCO Composite Index is calculated by applying the underlying benchmark return for each manager to the manager's weight within the Total PAAMCO Composite. These weights are based on the beginning adjusted monthly market value of each portfolio. (HFRI indices - Flash returns are used through 12/31/11. Current returns reflect most up to date performance and are subject to change.)

(46) ML 90 Day T-Bill + 4% through 12/31/2009; HFRI Fund of Funds Composite Index through 6/30/2017; currently using a composite of several HFRI sub-indices. (HFRI indices - Flash returns are used through 12/31/11. Current returns reflect most up to date performance and are subject to change.)

(47) Total Real Assets Composite Index was established on April 1, 2017. Real Assets Composite Index is calculated by applying the underlying benchmark return for each manager to the manager's weight within the Real Assets Composite. These weights are based on the beginning adjusted monthly market value of each portfolio.

(48) Total Portfolio Completions Composite Index was formed on April 1, 2017 by combining the prior Portfolio Completion Strategies with Total Hedge Funds. Total Portfolio Completion Strategies Composite Index is calculated by applying the underlying benchmark return for each sub asset class to the asset class's weight within the Total Portfolio Completion Strategies Composite. These weights are based on the beginning adjusted monthly market value of each sub asset.

**Overlay**

(49) Actual Performance.

**Natural Resources- Private/Total Liquidating Portfolios**

(50) Currently Total Liquidating Portfolios Actual Performance.

**Total Fund**

(51) ML 90 Day T-Bill through 6/30/03; ML 3-Month Libor through 03/31/08; currently ICE BofA US 3 Month Treasury Bill. Formerly labeled ML 90 Day T-Bill.

**Policy Return**

(52) The Policy Return is calculated by applying the investment performance of each asset class times its actual allocation. The Private Equity portion of the Policy Return is the 7-year annualized return of the Private Equity asset class monthlized. The Private Debt portion of the Policy Return is the 3-year annualized return of the Private Debt asset class monthlized through 12/31/2021; currently actual Private Debt performance.