



NDTFFR Board Meeting AGENDA

Thursday, September 26, 2019 - 1:00 pm
NDRIO Conference Room
3442 E. Century Avenue, Bismarck, ND

1. **Call to Order and Approval of Agenda** – Pres. Lech (Action)
2. **Approval of Minutes of July 25 and July 26, 2019 Meetings** – Pres. Lech (Action) 5 min.
3. **TFFR Plan Management Policy (1st reading)** – Kim Nicholl and Matt Strom, Segal (Action) 20 min.
4. **BOARD EDUCATION: Fiduciary Duties** – Anders Odegaard, AGO (Information) 30 min
5. **Annual Investment Report** – Dave Hunter (Action) 30 min.
6. **Annual Budget and Expense Report** – Connie Flanagan (Action) 15 min.
7. **Annual Audit Services Report** – Sara Sauter (Action) 15 min.
8. **Annual SIB Customer Satisfaction Survey** – Pres. Lech (Action) 10 min.
9. **Pension Administration System Project Update** – Fay Kopp, Rich Nagel (Information) 15 min.
10. **Governance & Policy Review (GPR) Committee Update** – Cody Mickelson, Com. Chair (Information) 10 min.
11. **Mission Statement Approval** – Pres. Lech (Action) 30 min.
12. **Vision Statement Development** – Pres. Lech (Information) 30 min.
13. **Other Business**
14. **Adjournment**

Next TFFR Board Meeting: October 24, 2019

Any individual requiring an auxiliary aid or service should contact the Retirement and Investment Office (RIO) at 701-328-9885 at least three (3) days prior to the scheduled meeting.

Highlights of the September Board meeting:

- 1st reading of a **TFFR Plan Management Policy** which Segal has worked with the Board and Staff on during the last 9 months. This risk management tool incorporates a risk assessment, stochastic modeling, policy metrics and scoring system to provide a more robust way to evaluate the ongoing financial health and long term sustainability of TFFR. Based on the 2018 valuation, the score assigned to TFFR was 6 (of 14 points possible) which indicates TFFR should continue to be monitored. The policy score will be updated after the 2019 valuation is completed.
- Refresher from TFFR's legal counsel on the **Board's Fiduciary Responsibilities** to administer the plan solely in the best interest of participants and beneficiaries and for the exclusive purpose of providing benefits and paying reasonable plan expenses.
- **Annual Investment Report** shows TFFR net investment returns for FY 2019 were: 1 year 5.5%, 5 years 6.2%, 10 years 9.6%, 20 years 5.7%, and 30 years 7.7%. TFFR's use of active management enhanced net investment returns by approximately \$50 million (0.50% per annum) for the last 5 years while adhering to prescribed risk limits. Over the last 30 years, returns have approximated TFFR's actuarial return assumption of 7.75%. Investment fees and expenses were 0.57%, a slight increase over last year. Market value of TFFR assets also increased slightly to \$2.6 billion.
- **Annual Budget and Expenditures Report** reveals for FY 2019, TFFR expenditures totaled about \$237,650,000 of which 93.1% were annuity and refund payments, 6% were investment expenses, 0.3% were other continuing appropriations, and 0.7% were appropriated expenditures including salaries, benefits, operating expenses, and TFFR's share of SIB expenses. Actuarial, audit, and legal fees increased from last year due to additional consulting and legal work performed. RIO's budget for 2019-21 includes up to \$9 million for the TFFR pension administration system upgrade/replacement project.
- **Annual Audit Services Report** shows for FY 2019, TFFR program audits conducted by Audit Services includes 4 employer reporting reviews, annual cost benefit audit, annual purchase and refund audit, and annual salary verification project. Retirement Services staff reviewed and responded to all audit recommendations. (Note: Due to Internal Audit process changes, Retirement Services also issued separate reports to employers, worked with employers on account corrections, reporting errors, school board review of audit reports, and performed other tasks related to salary reviews.)

- **Annual SIB Customer Satisfaction Survey** responses by TFFR Board members gave a compiled rating of Excellent in all categories, with positive comments and suggestions provided by trustees.
- **TFFR Pension Administration System Upgrade** project meetings have been scheduled with staff from RIO, PERS, ITD, and Governor's Office to discuss large project start up process, project resources, consultant and vendor procurement, project management, and potential collaboration between TFFR and PERS.
- **TFFR Governance and Policy Review Committee** met in September and continues to discuss potential new and revised board governance policies.
- **Mission Statement** discussion will include feedback from trustees and staff on three mission statement options developed at the July meeting, with the possibility of a fourth option for board consideration.
- The Board will participate in an individual and group exercise to develop a **Vision Statement** for TFFR.

**NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
JULY 25, 2019, BOARD MEETING**

BOARD MEMBERS PRESENT: Rob Lech, President
Kirsten Baesler, State Supt. DPI
Mike Burton, Vice President
Toni Gumeringer, Trustee (Tlcf)
Cody Mickelson, Trustee
Mel Olson, Trustee

BOARD MEMBER ABSENT: Kelly Schmidt, State Treasurer

STAFF PRESENT: David Hunter, ED/CIO
Fay Kopp, Deputy ED/CRO
Missy Kopp, Retirement Assistant
Rich Nagel, IT Program Mgr
Shelly Schumacher, Retirement Program Mgr
Dottie Thorsen, Internal Auditor

OTHERS PRESENT: Scott Miller, NDPERS
Kim Nicholl, Segal Consultants
Anders Odegaard, Attorney General's Office
Matt Strom, Segal Consultants

CALL TO ORDER:

Dr. Rob Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:00 p.m. on Thursday, July 25, 2019, at the Retirement and Investment Office (RIO), Bismarck, ND.

THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: SUPT. BAESLER, MR. BURTON, MRS. GUMERINGER, PRES. LECH, MR. MICKELSON, AND MR. OLSON.

ACCEPTANCE OF AGENDA:

The Board considered the agenda for the July 25, 2019, meeting.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. BURTON AND CARRIED BY A VOICE VOTE TO ACCEPT THE AGENDA AS DISTRIBUTED.

AYES: MR. BURTON, MR. MICKELSON, MRS. GUMERINGER, MR. OLSON, AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

MINUTES:

The Board considered the minutes of the April 25, 2019, meeting.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO ACCEPT THE APRIL 25, 2019, MINUTES AS DISTRIBUTED.

AYES: MR. MICKELSON, MR. OLSON, MR. BURTON, MRS. GUMERINGER, AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

TRUSTEE APPOINTMENT:

Ms. Kopp informed the Board that Governor Burgum has reappointed Mrs. Toni Gumeringer to the TFFR Board of Trustees, representing active members for a 5-year term effective July 1, 2019 through June 30, 2024.

ELECTION OF 2019-20 OFFICERS:

Pres. Lech opened the floor for nominations for officers of the TFFR Board.

MR. OLSON NOMINATED DR. LECH FOR PRESIDENT. WITH NO FURTHER NOMINATIONS, MR. OLSON MADE A MOTION FOR A UNANIMOUS BALLOT, MR. BURTON SECONDED. THE MOTION CARRIED BY A VOICE VOTE.

AYES: MRS. GUMERINGER, MR. OLSON, MR. BURTON, AND MR. MICKELSON.

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

MR. MICKELSON NOMINATED MR. BURTON FOR VICE PRESIDENT. WITH NO FURTHER NOMINATIONS, MR. MICKELSON MADE A MOTION FOR A UNANIMOUS BALLOT, MR. OLSON SECONDED. THE MOTION WAS CARRIED BY A VOICE VOTE.

AYES: MRS. GUMERINGER, MR. MICKELSON, MR. OLSON, AND PRESIDENT LECH

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

Pres. Lech opened the floor for nominations for representatives to the SIB Board and Audit Committee.

MR. BURTON NOMINATED PRES. LECH, MR. OLSON, AND MRS. GUMERINGER AS REPRESENTATIVES TO THE SIB BOARD. WITH NO FURTHER NOMINATIONS, MR BURTON MADE A MOTION FOR A UNANIMOUS BALLOT, MR. MICKELSON SECONDED. THE MOTION WAS CARRIED BY A VOICE VOTE.

AYES: MR. OLSON, MR. MICKELSON, MRS. GUMERINGER, MR. BURTON AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

MR. MICKELSON NOMINATED PRES. LECH TO SERVE ON THE SIB AUDIT COMMITTEE. WITH NO FURTHER NOMINATIONS, MR. MICKELSON MADE A MOTION FOR A UNANIMOUS BALLOT, MR. BURTON SECONDED. THE MOTION WAS CARRIED BY A VOICE VOTE.

AYES: MR. BURTON, MRS. GUMERINGER, MR. OLSON, AND MR. MICKELSON

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. MICKELSON AND CARRIED BY A VOICE VOTE TO DESIGNATE MR. BURTON AS THE SIB ALTERNATE.

AYES: MRS. GUMERINGER, MR. OLSON, MR. MICKELSON AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: SUPT. BAESLER AND TREASURER SCHMIDT

Supt. Baesler arrived at 1:13 p.m.

TFFR PLAN MANAGEMENT POLICY:

Ms. Kim Nicholl and Mr. Matt Strom, Segal Consulting, presented Phase 2 of the TFFR Plan Management Policy project. Phase 2 includes identifying policy metrics and establishing both ideal and problematic conditions; constructing a scoring system; and discussing and fine-tuning policy and scoring system.

RIO staff have worked with Segal on potential monitoring parameters and scoring criteria. There are five metrics which have been chosen for the plan management policy scoring system. They are: current funded ratio, downside funded ratio in 10 years, target funded ratio in 20 years, improvement in funded ratio over a 10-year period, and ability to recover from/withstand a market downturn.

The policy score will range from 0-14. A higher score equates to better overall fund health. The score will be recalculated initially on an annual basis and will provide context for the likelihood of future positive or negative events. Based on the 2018 valuation and stochastic modeling results, TFFR's composite score is 6, which means the plan should continue to be closely monitored.

Board discussion followed.

INVESTMENT UPDATE:

Mr. Hunter provided an investment update for the periods ended March 31 and May 31, 2019. TFFR investments have averaged over \$2 billion during the last 5 years and excess return has averaged over 0.50% per annum. Based on these values, TFFR's use of active management has enhanced net investment returns by \$50 million for the 5-years ended March 31, 2019. This excess return has been achieved while adhering to prescribed risk limits. TFFR's actual asset allocations are within 3% of target. For the 11 months ended May 31, 2019, TFFR earned a net return of 0.98%, missing the policy target benchmark return. Board discussion followed.

ANNUAL SIB CUSTOMER SATISFACTION SURVEY:

Pres. Lech outlined the process which will be used to collect TFFR Board input on the SIB customer satisfaction survey. The purpose of the survey is to determine how well the SIB, through the staff at RIO, is meeting the expectations of its clients. Ms. Sauter, Supervisor of Internal Audit, will send an electronic satisfaction survey to President Lech to distribute to the board members. The compiled responses will be reviewed at the September 2019 meeting and sent to the SIB upon approval.

LEGISLATIVE UPDATE:

Ms. Kopp described the duties of the interim Legislative Employee Benefits Programs Committee (LEBPC). The LEBPC receives the annual actuarial valuation report and reviews legislative proposals affecting TFFR and PERS. The LEBPC has tentatively scheduled its first meeting of the interim for October 23, 2019 to receive an overview of the TFFR retirement program from Ms. Kopp and the 2019 TFFR actuarial report from Segal.

The Board recessed at 2:45 p.m. and reconvened at 3:00 p.m.

TECHNOLOGY REPORT:

Mr. Nagel provided the annual technology report. As of July 16, 2019, 3,600 members have successfully logged into TFFR Member Online. Staff are in the process of creating more documents to store/display on the Member Online Portal. There have been many requests for 1099R, Retiree Annual Statements and Benefit Change Notices.

Mr. Nagel explained that all the data is secured and protected. RIO IT staff ensures that the latest security updates are applied, as well as continued communication with staff to stress the importance of security.

Staff are working on replacing the RIO website utilizing the new state website platform. This replacement will provide a more user-friendly experience as well as more security and functionality.

Staff will begin working with ITD to kick off the Pension Administration System upgrade or replacement project. This will be a major project in the next few years which will be very time consuming.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. BURTON AND CARRIED BY A VOICE VOTE TO ACCEPT THE ANNUAL TECHNOLOGY REPORT.

AYES: SUPT. BAESLER, MR. BURTON, MR. OLSON, MR MICKELSON, AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: MRS. GUMERINGER AND TREASURER SCHMIDT

GOVERNANCE & POLICY REVIEW (GPR) COMMITTEE UPDATE:

Mr. Mickelson provided an update on the TFFR Governance and Policy Review Committee. The Committee met on May 30 and July 2, 2019. The Committee reviewed the current TFFR program manual, and discussed board and staff roles and responsibilities. A new board governance manual with the necessary updates, clear expectation and standards, and citations is the desired outcome of this review.

The Committee reviewed manuals and policies from other state pension systems. Ms. Kopp drafted an outline for a new board governance manual, and incorporated current board policies and by-laws into the draft outline for the Committee's review and discussion.

The Committee also reviewed mission, vision, and core value statements from other state pension systems. Pres. Lech will lead the full TFFR Board in developing these statements.

Ms. Kopp and Mr. Mickelson will begin drafting new language and rewriting the governance manual in August. Another Committee meeting is expected to be scheduled prior to the September TFFR Board meeting.

ANNUAL PROGRAM REVIEW:

Ms. Kopp reviewed the following items as part of the Annual TFFR Program Review: board responsibilities, board accomplishments, program monitoring summary, TFFR customer satisfaction reports, and the TFFR Board Code of Conduct. Ms. Kopp also reviewed the very positive responses to surveys and evaluations from TFFR members, employers and interest groups. Overall Customer Satisfaction Score was 3.8 (based on 4-point scale).

Ms. Kopp noted a comprehensive review of all board governance policies will be conducted throughout the 2019-20 year as part of the Board Governance and Policy Review project.

Board discussion followed.

IT WAS MOVED BY MR. BURTON AND SECONDED BY MR. MICKELSON AND CARRIED BY A VOICE VOTE TO ACCEPT THE ANNUAL PROGRAM REVIEW.

AYES: MR. OLSON, MR BURTON, MR. MICKELSON, SUPT. BAESLER, AND PRES. LECH

NAYS: NONE

MOTION CARRIED

ABSENT: MRS. GUMERINGER AND TREASURER SCHMIDT

MISSION STATEMENT DEVELOPMENT:

Pres. Lech led the Board in an exercise to review and develop a new TFFR mission statement. Board members worked individually and in small groups to identify TFFR's cause, action, and impact which were used to draft a possible new mission statement. Pres. Lech will send the draft statements out in a survey to RIO staff and TFFR Board for feedback. Survey results will be brought to the September board meeting for further discussion.

CONSENT AGENDA:

IT WAS MOVED BY MR. BURTON AND SECONDED BY MR. MICKELSON AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE CONSENT AGENDA, QDRO 2019-02.

AYES: MR. BURTON, SUPT. BAESLER, MR. MICKELSON, MR. OLSON, AND PRES. LECH.

NAYS: NONE

MOTION CARRIED

ABSENT: MRS. GUMERINGER AND TREASURER SCHMIDT

ADJOURNMENT:

With no further business to come before the Board, President Lech adjourned the meeting at 4:37 p.m.

Respectfully Submitted:

Dr. Rob Lech, President
Teachers' Fund for Retirement Board

Missy Kopp
Reporting Secretary

**NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
JULY 26, 2019 SPECIAL BOARD MEETING**

BOARD MEMBERS PRESENT: Rob Lech, President
Mike Burton, Vice President
Toni Gumeringer, Trustee
Mel Olson, Trustee

ABSENT: Kirsten Baesler, State Superintendent
Cody Mickelson, Trustee
Kelly Schmidt, State Treasurer

OTHERS: Fay Kopp
See State Investment Board minutes
for attendance list.

A quorum of the Teachers' Fund for Retirement (TFFR) Board of Trustees attended the State Investment Board (SIB) meeting on July 26, 2019 at 8:30 a.m. at the National Energy Center of Excellence, Bismarck State College, in Bismarck, North Dakota. The purpose of attending the SIB meeting was to listen to the following investment educational presentations:

Governance Best Practices - Ms. Amy McDuffee, CEO, Mosaic Governance Advisors

U.S. Sovereign Wealth Funds - Ms. Angela Rodell, CEO, Alaska Permanent Fund

No TFFR Board business was conducted.

Respectfully Submitted:

Dr. Rob Lech, President
Teachers' Fund for Retirement Board

Fay Kopp
Chief Retirement Officer



MEMORANDUM

TO: TFFR Board
FROM: Fay Kopp
DATE: September 19, 2019
SUBJ: TFFR Plan Management Policy
Introduction and 1st Reading

The importance of measuring and understanding pension plan risks has never been more important as ND TFFR, like other state pension systems, grapples with pension funding gaps.

In order to provide a more robust way to evaluate the ongoing financial health and long term sustainability of TFFR, in January 2019 the Board approved Segal's proposal to develop a TFFR Plan Management Policy.

- Phase 1 of the Plan Management Policy project included an initial risk assessment and stochastic modeling which was presented to the Board in April (attached).
- Phase 2 included identifying policy metrics and establishing scoring system which was presented to the Board in July (attached).

Here is a draft TFFR Plan Management Policy which is being introduced for Board consideration at the September 26 meeting (attached). Kim Nicholl and Matt Strom, Segal Consulting, will be at the meeting via video conference to review the draft policy and respond to any questions from the Board.

As required by Board Policy C-23, "Board Policy Introduction/Amendment/Passage," the draft policy was submitted to TFFR's legal counsel, Anders Odegaard, for legal review. No changes to the policy were suggested.

BOARD ACTION

Board Motion to approve Introduction and 1st Reading of TFFR Plan Management Policy.

North Dakota Teachers' Fund for Retirement Plan Management Policy

Revised – September 23, 2019

1st reading 9.26.19

I. Plan Management Policy Overview

The North Dakota Teachers' Fund for Retirement (TFFR) Plan Management Policy is a risk assessment and management tool that monitors the ongoing health of TFFR using the most recent actuarial valuation results and stochastic projections. The objective of the Plan Management Policy is to provide a basis for balancing the Fund's obligations with current assets and expected future contributions in order to maintain its long-term health and viability. The Policy also provides a framework that the Board can follow in establishing metrics for future funding and benefit changes. The Plan Management Policy is based upon metrics and a scoring system that were established at the July 24, 2019 Board meeting. The Plan Management Policy Score will be updated subsequent to each annual actuarial valuation.

II. Background

The Plan Management Policy is different from the Funding Policy. The Funding Policy sets parameters for the determination of the actuarially determined contribution (ADC) as of each actuarial valuation date. The Plan Management Policy establishes the parameters for a forward-looking assessment of TFFR.

An ADC is used as a benchmark to compare to the statutory contribution rate. An ADC reflects an asset valuation method (i.e., smoothing method), actuarial cost method (e.g., entry age normal), and amortization method for paying down unfunded liabilities or recognizing surplus assets. A description of the ADC is contained in a separate document ("Actuarial Funding Policy Statement"). In summary, the current TFFR funding policy relies on an ADC that is equal to the sum of (a) the employer normal cost rate and (b) the level percentage of pay required to amortize the unfunded actuarial accrued liability over the 30-year closed period that began July 1, 2013 (24 years remaining as of July 1, 2019).

III. Risk Assessment and Management

The Plan Management Policy is a risk assessment tool. The risks facing TFFR can be broadly classified into three categories: risks related to economic variables, risks related to demographic events, and risks related to external forces. An overview of the primary risks facing TFFR stakeholders follows.

Risks related to economic variables:

- Investment return – the risk that actual returns will be different than expected and more volatile than desired.
- Inflation (price inflation, wage inflation) – the risk that measures of inflation will be inconsistent with other economic measures.

Risks related to demographic events:

- Mortality/longevity – the risk that participants will live longer than expected
- Payroll and/or population growth – the risk that aggregate payroll will increase at a rate less than expected. This is relevant since contributions to TFFR are collected as a percentage of member payroll.

- Retirement/disability/termination experience – the risk that members leave active service in a manner than generates actuarial gains or losses relative to the assumptions.

There are even risks related to external forces (e.g., governance risk, regulatory risk, litigation risk, political risk), but these risks are difficult – or impossible – to manage.

The Plan Management Policy is a tool that measures investment return risk, since investment return risk has the most significant impact on TFFR’s long term financial health.

IV. Scoring System Metrics

The scoring system metrics that will be monitored on a periodic basis are:

- **The current funded ratio:** This is equal to the ratio of the market value of assets to the actuarial accrued liability as of the latest actuarial valuation date. The purpose of this metric is to assess the current funded status of TFFR.
- **The downside funded ratio as of July 1, 2030:** Based on stochastic projections, determine the probability that the funded ratio will be less than 65%. The purpose of this metric is to assess the likelihood of the funded ratio not improving over the short term. The lower the likelihood that the funded ratio will not increase, the higher the score.
- **The target funded ratio as of July 1, 2040:** Based on stochastic projections, determine whether the funded ratio is projected to increase above certain thresholds over a longer time horizon with 51% or more probability.
- **Improvement in the funded ratio over a 10-year period:** Based on stochastic projections, determine the probability that the funded ratio will improve by 5% over the following 10 years.
- **Ability to recover/withstand from a market downturn:** Based on stochastic projections, determine the probability that the funded ratio improves by 5% over 10 years following a market downturn. A market downturn is defined as a two-year period with a compound average return of -10% or worse.

V. Policy Score

The Policy Score is the sum of the points that have been assigned to each metric and can range from 0 to 14 and correspond to a color ranging from red to green. A higher score indicates better overall health of TFFR. The Policy Score is grouped into the following categories:

Color	Policy Score	Indication
Green	11 to 14	TFFR objectives are being met or likely to be met
Yellow	7 to 10	TFFR objectives may be met over a longer period
Orange	4 to 6	Continue to monitor TFFR
Red	0 to 3	Changes to TFFR should be considered



VI. Policy Scoring System

Each metric is assigned a score based upon the results of the annual actuarial valuation and resulting analysis as follows:

Metric	Criteria	Score
The current funded ratio	<ul style="list-style-type: none"> • Funded ratio of 90% or higher • Funded ratio between 80% and 90% • Funded ratio between 70% and 80% • Funded ratio less than 70% 	<ul style="list-style-type: none"> • +3 • +2 • +1 • +0
The downside funded ratio as of July 1, 2030	<ul style="list-style-type: none"> • Under 65% funded ratio with less than 20% probability • Under 65% funded ratio with less than 30% probability • Under 65% funded ratio with less than 40% probability • Under 65% funded ratio with more than 40% probability 	<ul style="list-style-type: none"> • +3 • +2 • +1 • +0
The target funded ratio as of July 1, 2040	<ul style="list-style-type: none"> • 85% or higher with 51% or more probability • Between 80% and 85% with 51% or more probability • Between 75% and 80% with 51% or more probability • Between 70% and 75% with 51% or more probability • Not more than 70% with 51% or more probability 	<ul style="list-style-type: none"> • +4 • +3 • +2 • +1 • +0
Improvement in the funded ratio over a 10-year period	<ul style="list-style-type: none"> • Funded ratio improves by +5% over 10 years with 66% probability • Funded ratio improves by +5% over 10 years with 50% probability • Funded ratio does not improve by +5% over 10 years with 50% probability 	<ul style="list-style-type: none"> • +2 • +1 • +0
Ability to recover from or withstand a market downturn	<ul style="list-style-type: none"> • Funded ratio after downturn improves by +5% over 10 years with 50% probability • Funded ratio after downturn improves by +5% over 10 years with 33% probability • Funded ratio after downturn does not improve by +5% over 10 years with 33% probability 	<ul style="list-style-type: none"> • +2 • +1 • +0

For purposes of scoring, probabilities and funded ratios will be rounded to the nearest whole percentage. For example, a probability of 49.6% would be rounded up to 50%.

VII. Outside Factors

Other factors outside of TFFR could have an effect on the directional trend of future Policy Scores. These factors include, but are not limited to:

- Projected economic conditions
- Market cycles
- North Dakota economy

TFFR staff and the actuary will discuss the appropriate outside factors and determine whether these factors are expected to potentially improve or worsen the Policy Score and append the Policy Score with a plus (“+”) or minus (“-”) depending on the expected directional trend, if warranted.

VIII. Actuarial Assumptions

The actuarial assumptions used will be the same as those used for the annual actuarial valuation. The actuarial assumptions are described in detail in the actuarial valuation report. The funded ratio used in the plan management policy is based upon the market value of assets.

In order to stochastically model investment returns, Capital Market Assumptions are used. Capital Market Assumptions are developed by investment firms and represent expectations for future risk and returns for different asset classes. The Capital Market Assumptions used for the analysis are those published in the most recently available Horizon’s Annual Survey of Capital Market Assumptions. If Horizon discontinues the publication of this survey, a suitable replacement or alternative will be used.

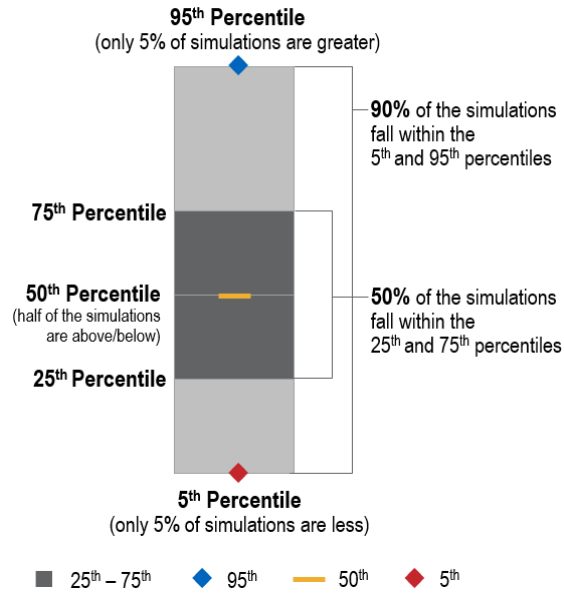
Projected liabilities are based upon an “open group” liability forecast. An open group projection generates projected populations for each future valuation date based on assumptions related to retirement, termination, salary increases, mortality, etc. New entrant records are generated to replace active members that decrement in the model in order to maintain a level active membership in the future. The profile of new entrants is based on recent demographics of new hires, subject to input from TFFR staff and Board.

IX. Stochastic Modeling

The Capital Market Assumptions are used with TFFR’s target asset allocation in order to simulate 5,000 investment portfolio return scenarios, each simulation representing a 20-year period. The simulated investment returns, along with open group liability forecasts, are used to model the projected funded ratio. The results are grouped into percentiles and summarized as a range:

- **Best Case:** Better cases would occur only 5% of the time (above the 95th percentile in the example below)
- **Most Likely:** Better or worse cases (50th percentile) are equally likely
- **Worst Case:** Worse cases would occur only 5% of the time (below the 5th percentile in the example below)

Sample Funded Ratio



TFFR Board Adopted: _____



North Dakota Teachers' Fund for Retirement

Risk Assessment/Plan Management Policy – Phase 1

April 25, 2019

Presented By:

*Kim Nicholl, FSA, MAAA, EA
Senior Vice President and Actuary*

*Matt Strom, FSA, MAAA, EA
Vice President and Actuary*

This document has been prepared by Segal Consulting for the benefit of the Board of Trustees of the North Dakota Teachers' Fund for Retirement and is not complete without the presentation provided at the April 25, 2019 meeting of the Board of Trustees.

Project Phases

➤ Project consists of two phases:

➤ Phase 1 – initial risk assessment and stochastic modeling

- Baseline liabilities, normal costs, and benefit payments projected using an open group forecast
- Combination of stochastic and deterministic projections to evaluate the financial health of TFFR

➤ Phase 2 – develop Plan Management Policy

- Identify Policy metrics and establish “ideal” and “problematic” conditions
- Construct a scoring system with the idea of meeting TFFR’s long-term funding goals
- Discuss and fine-tune Policy and scoring system

Risks Facing TFFR

Risks related to economic variables

- Investment return
- Inflation
 - Price inflation
 - Wage inflation

Risks related to demographic events

- Mortality
- Payroll and/or population growth
- Retirement, disability, termination

Risks related to external forces

- Governance risk
- Regulatory risk
- Litigation risk
- Political risk



These risks are challenging to manage effectively

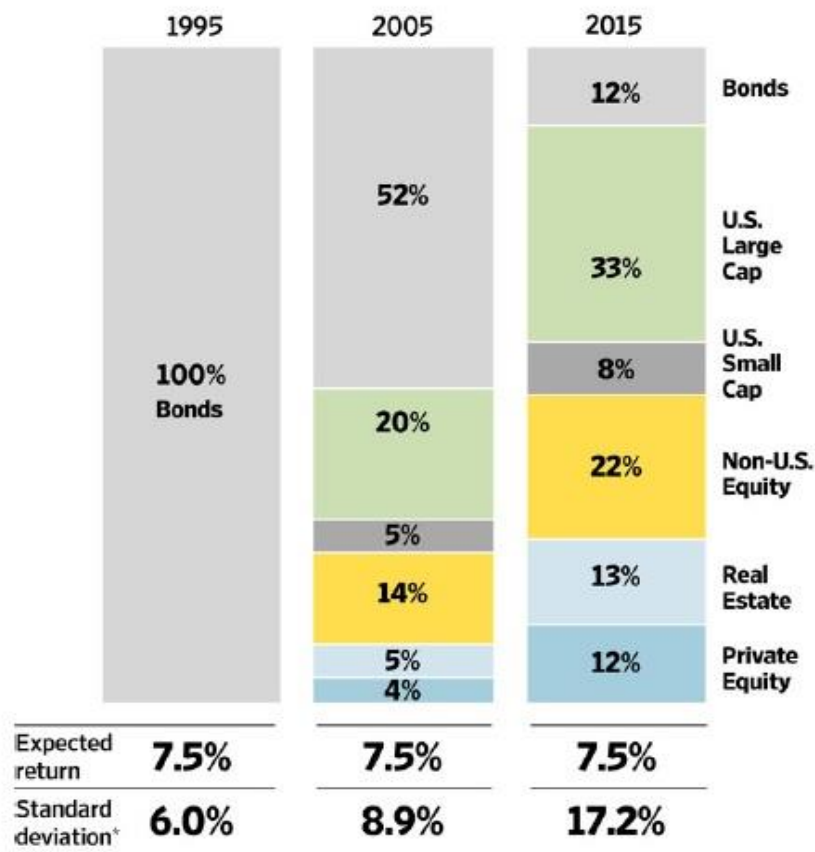
The risks that could potentially impact TFFR the most are investment risk and payroll/population growth risk

Creating a 7.5% Return Portfolio

Portfolio Evolution

Investors grappling with lower interest rates have to take bigger risks if they want to equal returns of two decades ago.

Estimates of what investors needed to earn 7.5%



*Likely amount by which returns could vary

Source: Callan Associates

THE WALL STREET JOURNAL.

- Reduced inflation expectation has reduced investment returns
- More risk is required now to achieve the same expected return obtainable from a 100% fixed income portfolio twenty years ago
 - Standard deviation of 17% now compared to 6% twenty years ago

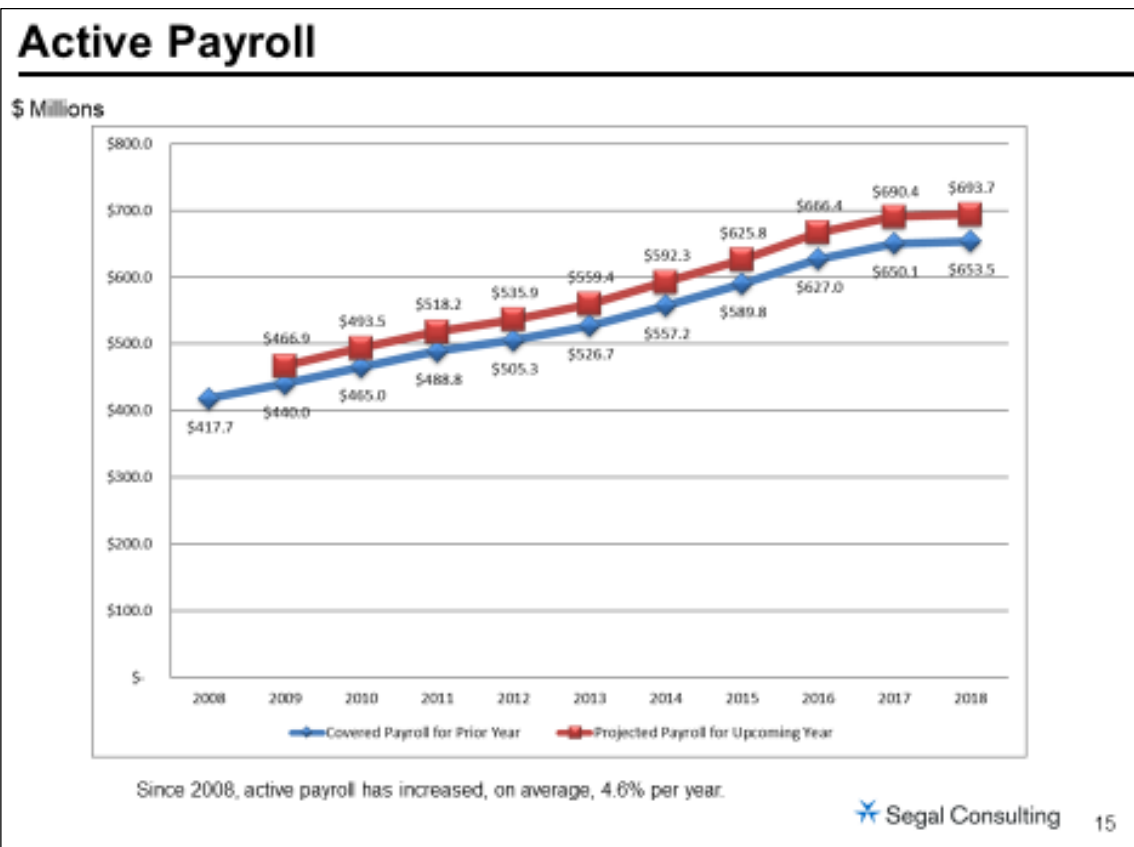
Mortality/Longevity Risk

- Continued improvements in mortality = longer periods of payment and higher costs
- The new Public Plan mortality tables along with the Society of Actuaries' mortality improvement scales represents the best estimate of life expectancy
 - Longevity risk arises if these tables turn out to be insufficient

	Life expectancy of a female retiree at age 65		
Age at July 1, 2019	65	45	25
TFFR assumption used in 2008	87.4	87.4	87.4
TFFR assumption used in 2018	91.7	93.1	94.5
PubT-2010 Teacher Healthy Retiree w/Scale MP-2018	90.3	91.8	93.2

Payroll and/or Population Growth Risk

- Current assumption used in assessing TFFR's financial position is that total covered payroll will increase, on average, 3.25% per year
 - This assumption drives expected future member and employer contributions
 - Used in the determination of actuarially-determined contribution and effective amortization period
- To the extent this assumption is not achieved over time, contribution losses will occur



- Since 2008, actual increases in total payroll have exceeded the assumption
- However, last year, total payroll only increased by 0.5%

Workforce Demographic Risk

- Pension plan populations are getting older
 - Baby boomers aging and retiring
- Older participants are closer to payment and generally more expensive than those that are younger
- Higher ratios of actuarial accrued liability to payroll and market value of assets to payroll exacerbates the impact investment losses on contributions
 - For TFFR, a 1% loss on assets (earning 6.75% as opposed to 7.75%) is ~\$25.3M and equivalent to 3.7% of covered payroll

- Ratio of non-actives to actives
 - Sign of Plan maturity
 - More pressure on investments as benefit payments increase
 - Difficult to restore financial health after losses
 - Less future benefits to reduce
 - Less contributions to increase



Plan Maturity Measures

Valuation Date July 1	Ratio of Retirees to Actives	Net Cash Flow as a Percentage of MVA
2018	80.4%	-1.6%
2017	78.2%	-1.3%
2016	76.3%	-1.2%
2015	76.3%	-1.0%
2014	75.2%	-2.0%
2013	73.9%	-1.9%
2012	71.4%	-3.1%
2011	69.3%	-2.7%
2010	67.3%	-3.5%

Membership is approaching the point where there will be one retiree for each active member.

Contribution rate increases were effective in 2012 and 2014, which incrementally improved negative cash flow. However, the negative cash flow continues to increase.

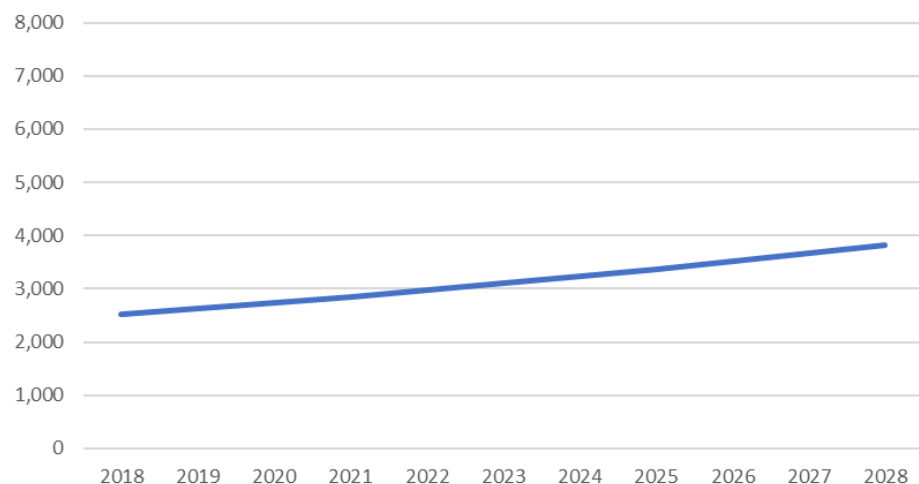
Plan Maturity Measures

Valuation Date July 1	Ratio of Total Liability to Payroll	Ratio of Assets to Payroll	Ratio of Retiree Liability to Total
2018	591%	387%	58%
2017	574%	363%	56%
2016	572%	339%	55%
2015	585%	363%	54%
2014	563%	375%	53%
2013	569%	349%	52%
2012	568%	327%	50%
2011	563%	353%	48%
2010	567%	309%	47%

- The ratio of total liability to payroll helps assess how a change in unfunded liabilities will affect the actuarially determined contribution (ADC). The larger the ratio, the greater the effect.
- The ratio of assets to payroll is a measure of market risk and the effect on the ADC if such risks occur.
- Higher ratios of retiree liability to total liability make it more difficult for benefit or contribution changes to address funding issues.

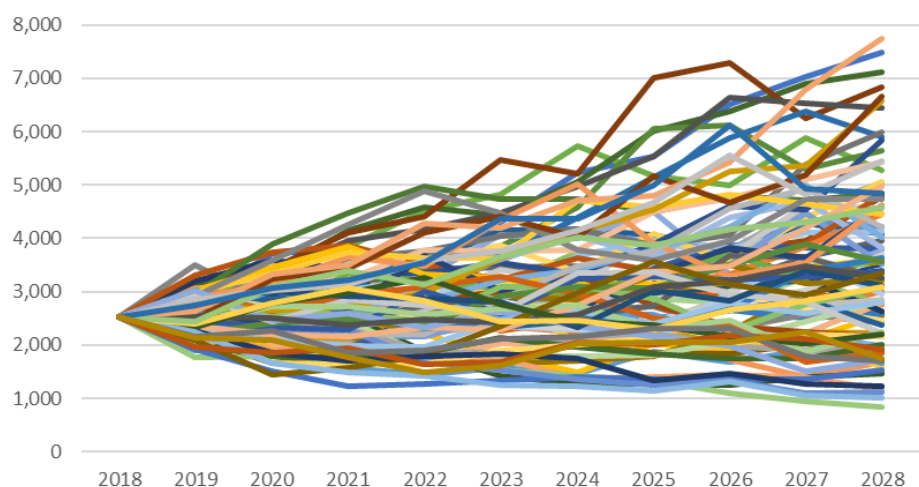
Explanation of Deterministic vs. Stochastic

Deterministic Assets



- Deterministic projections convey **expectation** and directional trend, but give no sense of the possible volatility of results
- They are **simpler and easier** to understand but are difficult to use in assessing alternative and do not measure risk/reward trade-offs

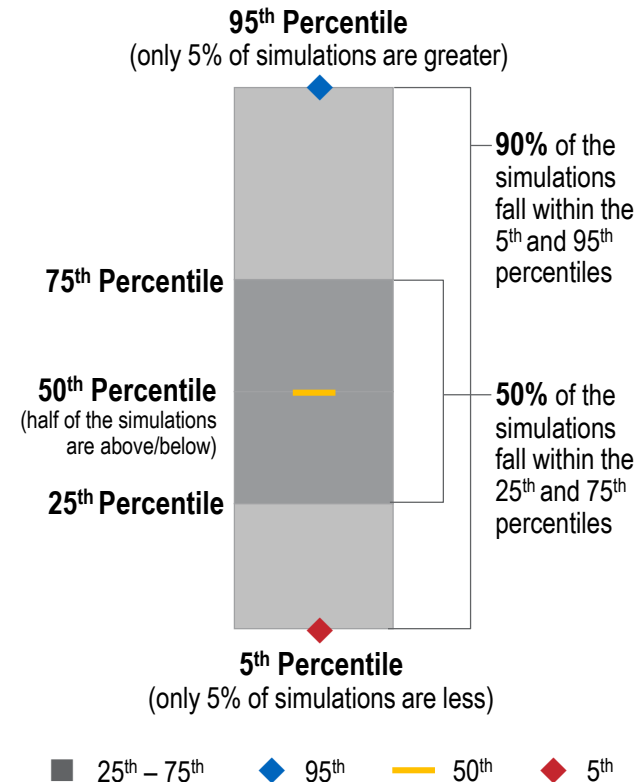
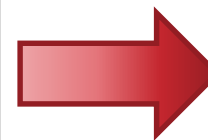
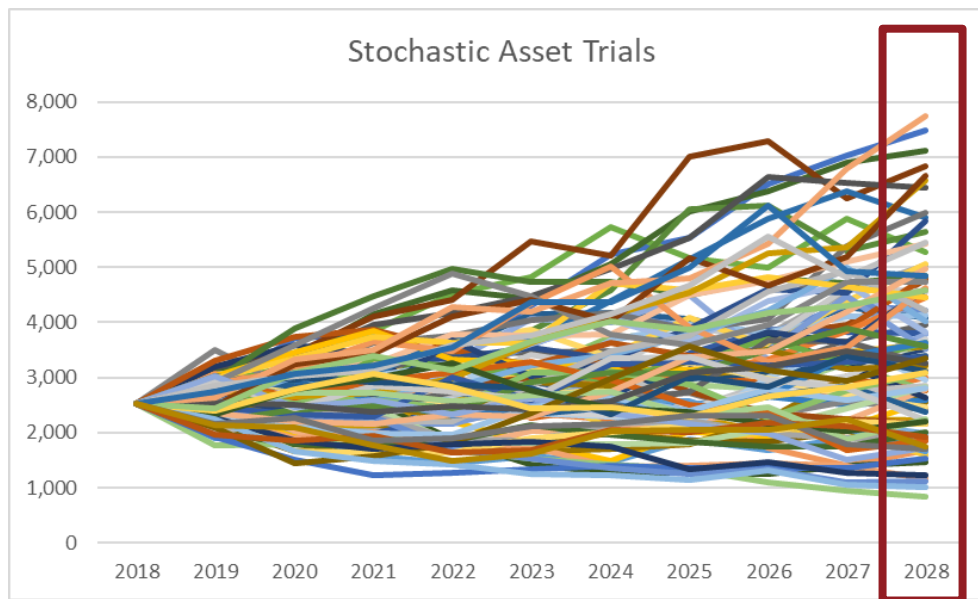
Stochastic Asset Trials



- Stochastic projections produce a distribution of results so expectation and **volatility** around expected results can be calculated
- They are **complex** and require many assumptions but are superior in terms of aiding decisions that require the weighing of **risk/reward** trade-offs
- Typically 2,500 to 5,000 trials are run

Explanation of Deterministic vs. Stochastic

The data is grouped into percentiles and summarized as a range



- The median is represented by the yellow line at the center of the distribution
- The dark gray shaded rectangle represents 50% of all outcomes around the median
- The large, light gray rectangle (inclusive of the dark gray area) represents 90% of all outcomes around the median
- Other percentile results/probabilities are calculated as well

Stochastic Results – Scenarios and Output Modeled

➤ Output

- Portfolio investment return
- Funded percentage
- Effective amortization period
- Unfunded actuarial accrued liability
- Employer contribution rate

➤ Scenarios

- Baseline
 - Assumed rate of return of 7.75% (i.e., liabilities are discounted at 7.75%)
- One year of poor investment performance
 - 0% for fiscal 2019
- Lower assumed rate of return
 - Both 7.50% and 7.25%
- Active population increase
 - 1% growth in active member population for the next 10 years
- Accelerated retirements
 - Retirement rates used in demographic projection are increased by 10%
- Increase life expectancy by 1 year
- Decrease total contribution rate by 2%

Stochastic Modeling of Investment Return

- Modeling of future simulated return trials is based on:
 - The Horizon Survey of Capital Market Assumptions (2018 Edition)
 - This survey compiles and averages the capital market assumptions of 35 investment consultants
 - TFFR's target asset allocation, shown below:

	Asset Class	Target Allocation
Fixed/Alternative	US Core	17%
	Real Estate	10%
	High Yield	7%
	Commodity	2%
	Infrastructure	5%
	Cash	1%
Equity	US Large Cap	25%
	US Small Cap	7%
	International Developed	16%
	Emerging Markets	4%
	Private Equity	6%

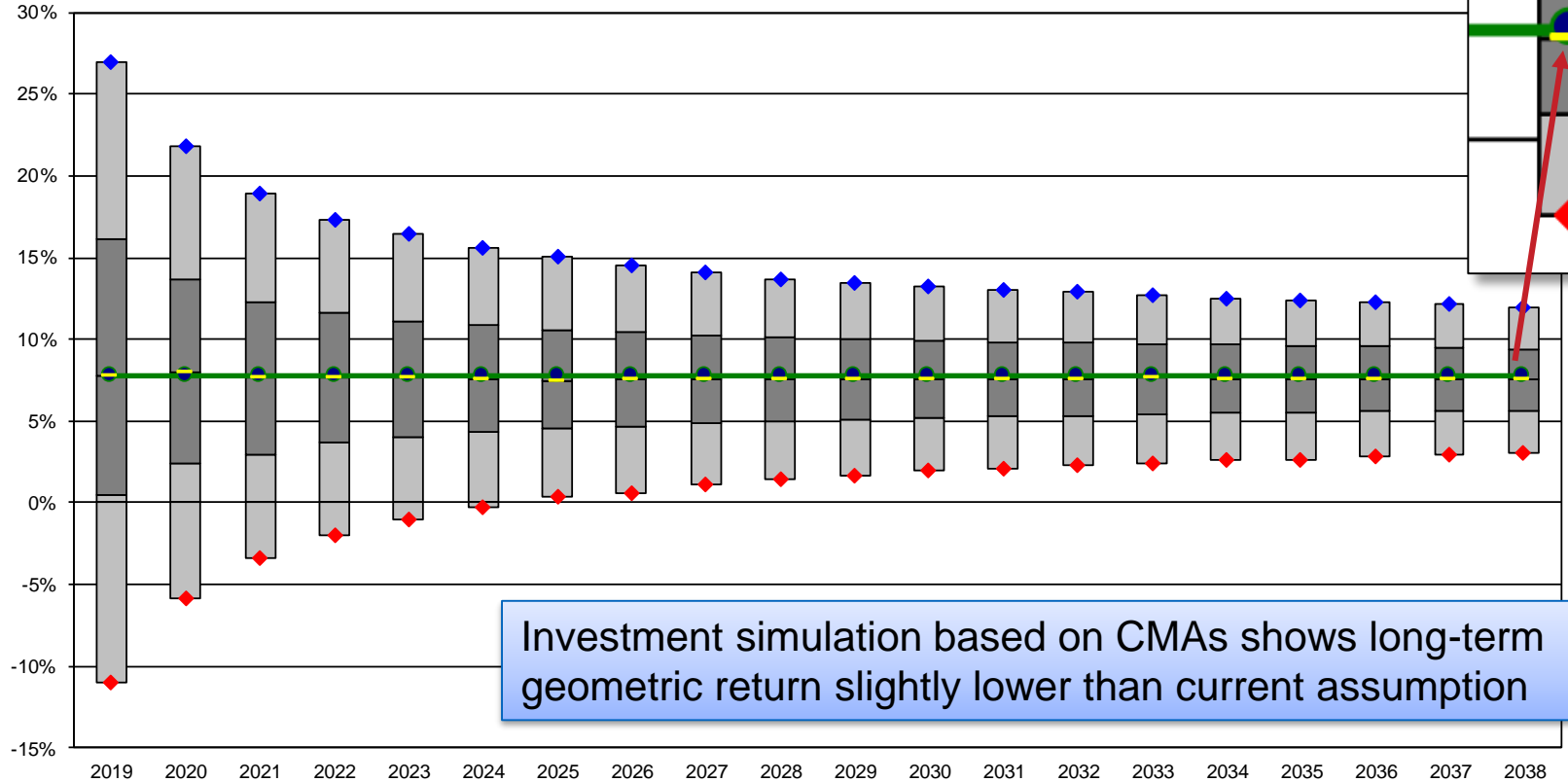
Capital Market Assumptions

	Asset Class	Expected Return*/ Standard Deviation		Target Allocation	Weighted Return
Fixed/Alternative	US Core	4.6%	5.7%	17%	0.79%
	Real Estate	7.7%	13.9%	10%	0.77%
	High Yield	6.4%	10.2%	7%	0.45%
	Commodity	6.5%	17.6%	2%	0.13%
	Infrastructure	8.2%	14.7%	5%	0.41%
	Cash	3.1%	2.7%	1%	0.03%
Equity	US Large Cap	8.7%	16.4%	25%	2.18%
	US Small Cap	10.1%	20.2%	7%	0.71%
	International Developed	9.5%	18.7%	16%	1.51%
	Emerging Markets	11.9%	24.9%	4%	0.48%
	Private Equity	12.2%	22.2%	6%	0.73%
	Total			100%	8.19%
	Adjustment to Geometric				(0.64%)
	Total Long-term Return				7.55%

* Based on 20-year arithmetic assumptions and reflects long-term inflation of 2.48%

Investment Return

Projected Cumulative Investment Return for Plan Years Ending June 30



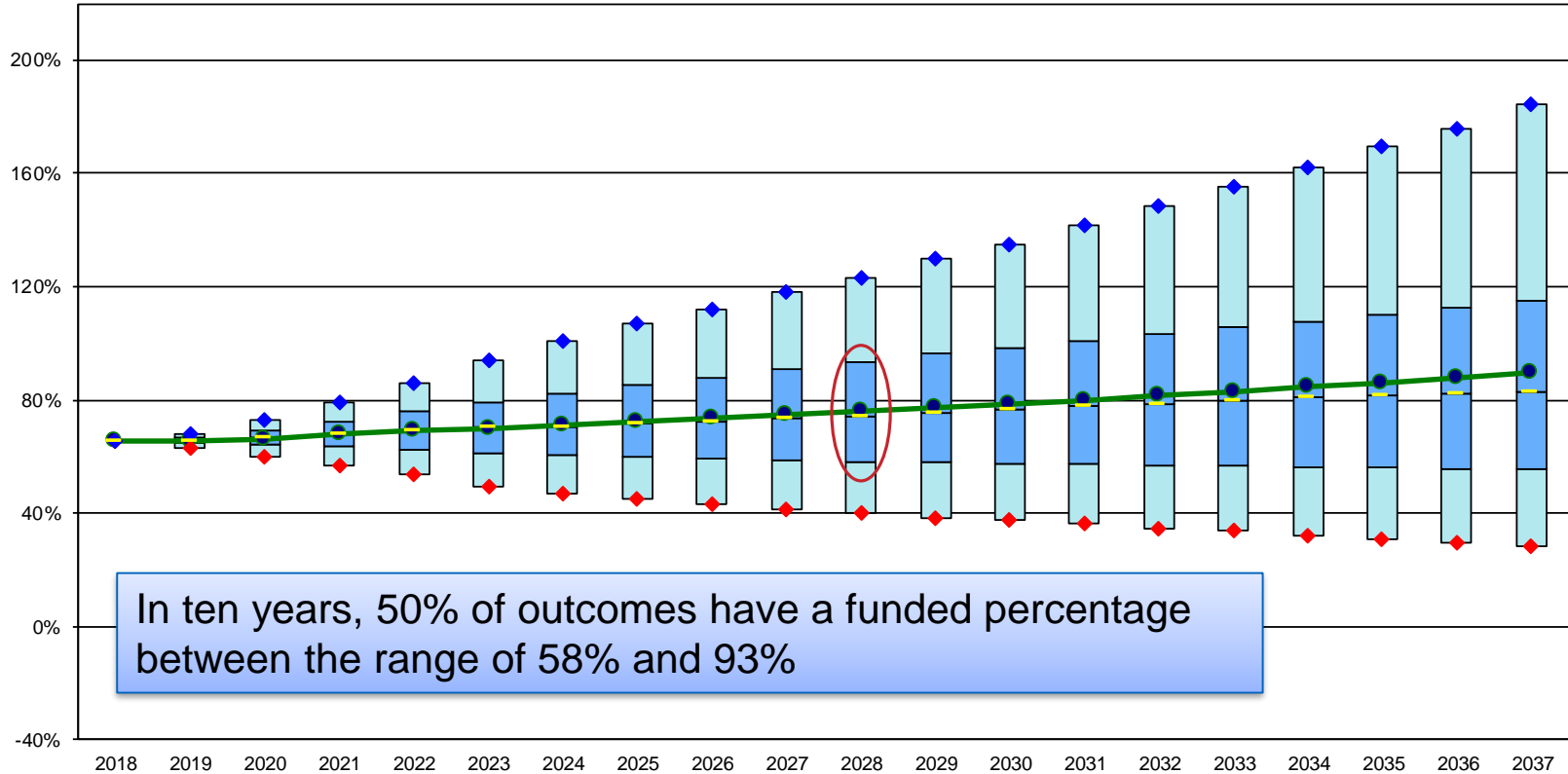
Investment simulation based on CMAs shows long-term geometric return slightly lower than current assumption

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	
◆ 95th	27.0%	21.8%	18.9%	17.3%	16.4%	15.6%	15.0%	14.5%	14.1%	13.7%	13.5%	13.2%	13.0%	12.9%	12.7%	12.5%	12.4%	12.3%	12.1%	12.0%	
■ 75th	16.1%	13.7%	12.3%	11.6%	11.1%	10.9%	10.6%	10.4%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%	9.7%	9.6%	9.5%	9.5%	9.4%	
■ 50th	7.8%	8.0%	7.7%	7.6%	7.6%	7.5%	7.5%	7.5%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%
■ 25th	0.5%	2.4%	3.0%	3.7%	4.0%	4.3%	4.6%	4.7%	4.9%	5.0%	5.1%	5.2%	5.3%	5.4%	5.5%	5.5%	5.5%	5.6%	5.7%	5.7%	
◆ 5th	-11.0%	-5.9%	-3.4%	-2.0%	-1.0%	-0.3%	0.3%	0.6%	1.1%	1.4%	1.7%	1.9%	2.1%	2.3%	2.4%	2.6%	2.7%	2.8%	3.0%	3.0%	
●	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	

● Current investment return assumption

Funded Percentage – Baseline

Projected Funded Percentage as of July 1

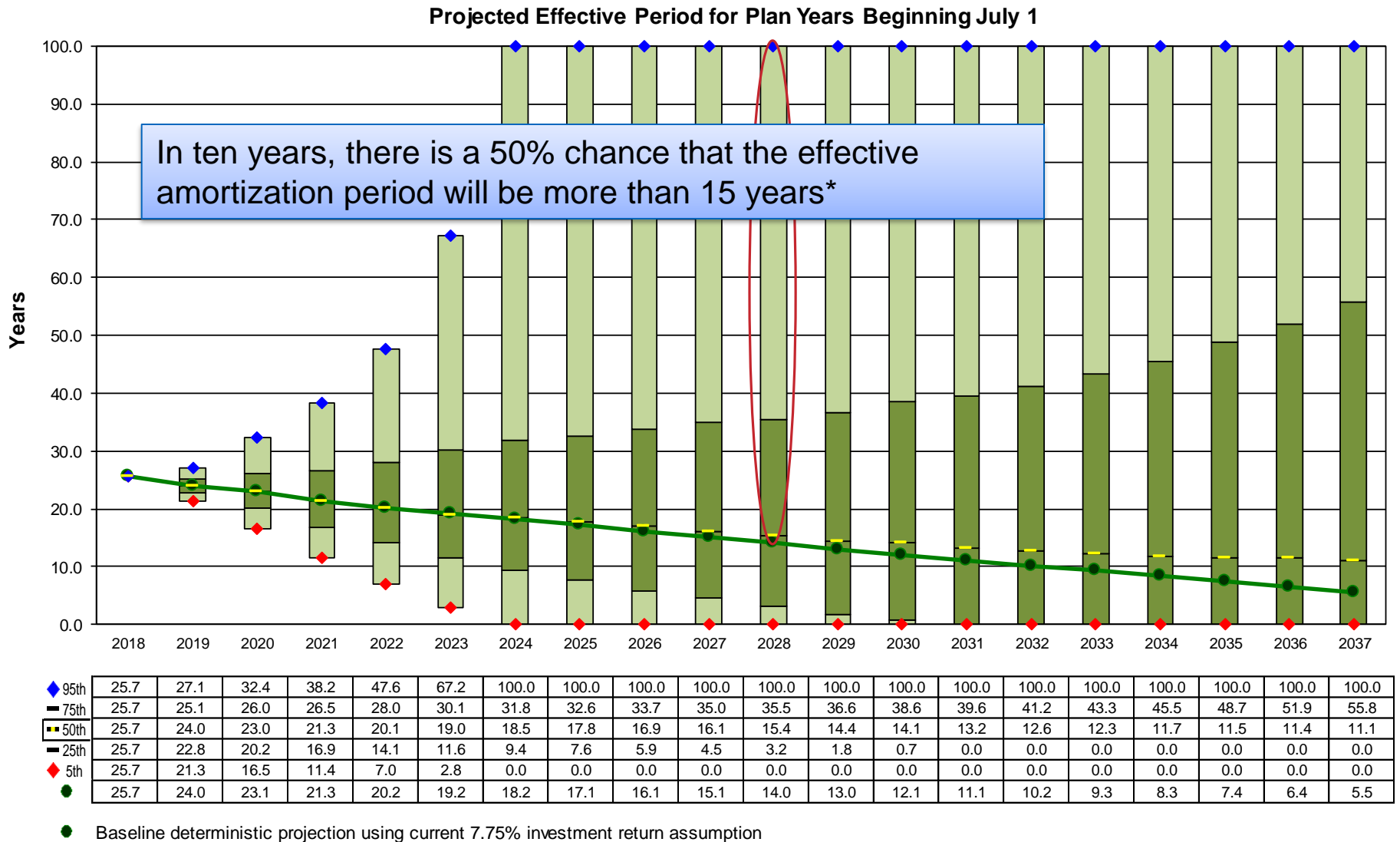


In ten years, 50% of outcomes have a funded percentage between the range of 58% and 93%

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
◆ 95th	65%	68%	73%	79%	86%	94%	101%	107%	112%	118%	123%	130%	135%	142%	148%	155%	162%	169%	176%	185%
■ 75th	65%	67%	69%	73%	76%	79%	82%	85%	88%	91%	93%	96%	99%	101%	103%	106%	108%	110%	113%	115%
■ 50th	65%	66%	67%	68%	69%	70%	71%	72%	72%	73%	74%	76%	76%	78%	79%	80%	81%	82%	82%	83%
■ 25th	65%	65%	64%	64%	63%	61%	60%	60%	59%	58%	58%	58%	57%	57%	57%	57%	56%	56%	56%	55%
◆ 5th	65%	63%	60%	57%	54%	50%	47%	45%	43%	42%	40%	38%	38%	37%	35%	34%	32%	31%	29%	28%
●	65%	66%	66%	68%	69%	70%	71%	72%	73%	75%	76%	77%	79%	80%	81%	83%	85%	86%	88%	89%

● Baseline deterministic projection using current 7.75% investment return assumption

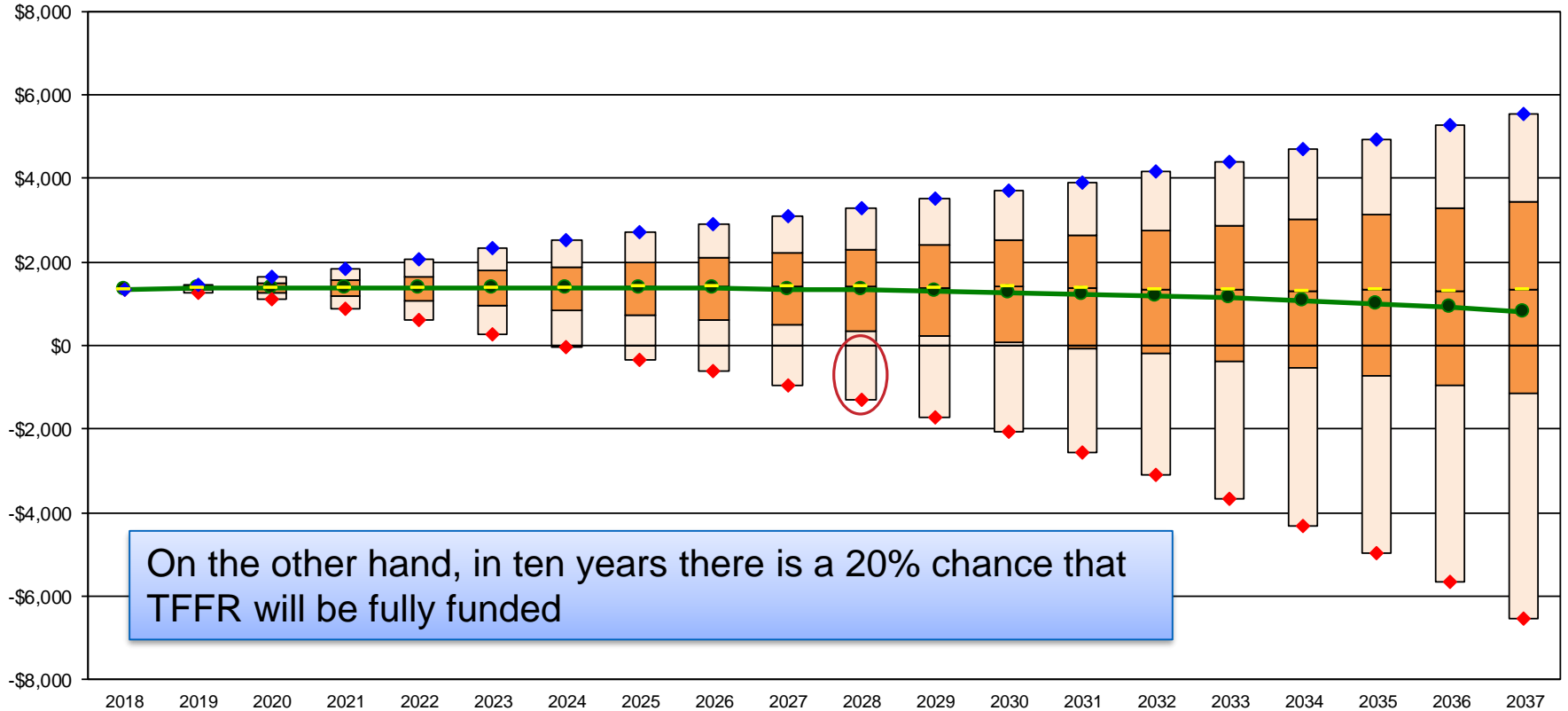
Effective Amortization Period – Baseline



* Compared to the benchmark funding policy amortization, which has 25 years remaining as of 2018

Unfunded Liability – Baseline

Projected Unfunded Actuarial Accrued Liability (AVA basis) for Plan Years Beginning July 1

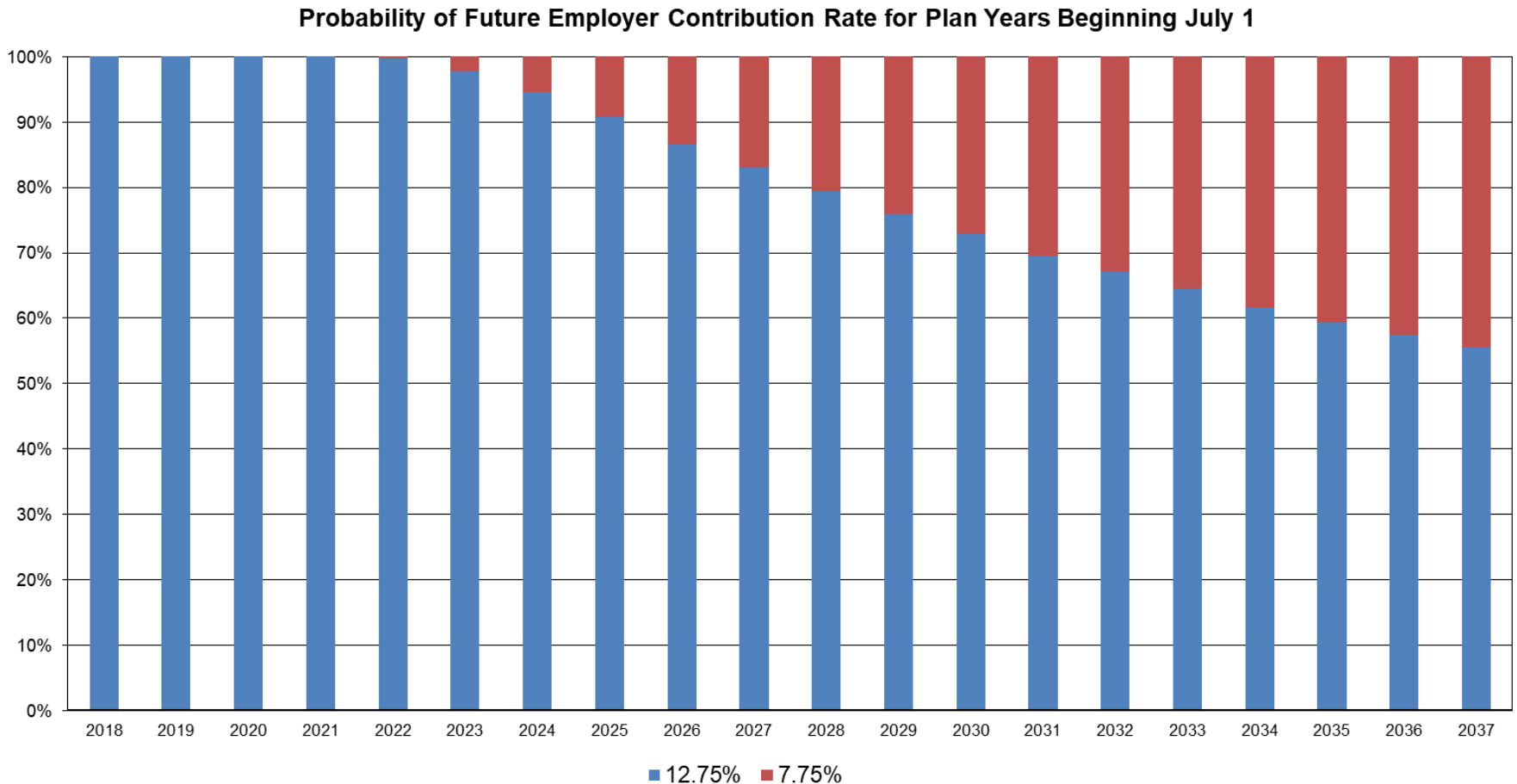


On the other hand, in ten years there is a 20% chance that TFFR will be fully funded

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
◆ 95th	1,337	1,470	1,665	1,850	2,069	2,325	2,523	2,711	2,901	3,102	3,299	3,518	3,708	3,914	4,174	4,404	4,698	4,946	5,262	5,566
■ 75th	1,337	1,413	1,490	1,556	1,660	1,782	1,894	1,986	2,089	2,207	2,298	2,410	2,526	2,627	2,752	2,877	3,007	3,152	3,291	3,459
■ 50th	1,337	1,376	1,389	1,371	1,372	1,370	1,395	1,406	1,411	1,412	1,418	1,393	1,399	1,374	1,354	1,336	1,316	1,328	1,315	1,341
■ 25th	1,337	1,335	1,282	1,180	1,074	960	846	731	608	491	361	213	87	(66)	(193)	(378)	(536)	(712)	(952)	(1,165)
◆ 5th	1,337	1,281	1,124	886	612	279	(32)	(338)	(601)	(953)	(1,285)	(1,727)	(2,082)	(2,566)	(3,093)	(3,689)	(4,314)	(4,985)	(5,655)	(6,556)
●	1,337	1,377	1,392	1,374	1,374	1,377	1,376	1,372	1,363	1,349	1,330	1,304	1,272	1,233	1,187	1,132	1,069	996	912	818

● Baseline deterministic projection using current 7.75% investment return assumption

Employer Contribution Rate – Baseline



When TFFR is fully funded, the employer contribution rate will sunset back to 7.75%

Probability Detail – Baseline

	Probability in 10 Years	Probability in 20 Years
Funded Ratio		
Less than 50%	13.8%	20.5%
Less than 60%	27.7%	29.3%
Less than 70%	43.6%	38.2%
More than 80%	42.0%	53.1%
More than 90%	28.8%	43.9%
More than 100%	18.6%	35.7%
Effective Amortization Period		
Infinite in any year	12.4%	27.5%
More than 30 in any year	38.8%	51.9%
More than 15 years	50.9%	n/a
More than 5 years	n/a	57.6%

Probability Detail – Alternative Assumed Return Assumptions

	Probability in 10 Years		Probability in 20 Years	
	7.50%	7.25%	7.50%	7.25%
Funded Ratio				
Less than 50%	15.9%	17.8%	21.1%	22.2%
Less than 60%	30.8%	33.6%	30.6%	31.7%
Less than 70%	46.3%	50.3%	39.3%	40.6%
More than 80%	38.3%	35.1%	51.6%	50.2%
More than 90%	25.9%	23.0%	42.5%	41.2%
More than 100%	16.5%	14.2%	34.6%	33.6%
Effective Amortization Period				
Infinite in any year	16.3%	21.5%	31.4%	36.0%
More than 30 in any year	58.9%	99.1%*	67.1%	99.3%*
More than 15 years	56.2%	62.0%	n/a	
More than 5 years	n/a		59.5%	61.3%

* Baseline effective period would increase to 36 years in 2019 using a 7.25% return assumption

Probability Detail – Additional Scenarios

Probability in 10 years:

	Less Than 70% Funded	More Than 80% Funded	Funding Period >15
Baseline	43.6%	42.0%	50.9%
1% per year growth in actives	42.0%	43.3%	46.2%
Accelerated retirements	44.3%	41.3%	51.6%
Increase life expectancy 1 year	45.6%	39.1%	54.2%
Contribution rate lower by 2%	49.9%	36.1%	62.3%
Baseline	43.6%	42.0%	50.9%
0% actual return in 2019	54.2%	30.7%	61.8%
7.50% assumed return	46.3%	38.3%	56.2%
7.25% assumed return	50.3%	35.1%	62.0%

Observations and Discussion

➤ Key observations

- The investment return risk has the largest potential impact to TFFR
- The current 7.75% return assumption is below the 50th percentile return
 - A decrease in this assumption to 7.50% or 7.25% materially changes the landscape of the TFFR funded percentage projections
- Based on the TFFR funding policy the following chart shows the ideal funding progress:

Valuation Date	Funding Period	Funded %
July 1, 2019	25 years	65.5%
July 1, 2029	15 years	In the 80s
July 1, 2039	5 years	In the 90s

- The probability that TFFR's funded percentage in 10 years will be less than 70% is approximately 44%
 - Said another way, there is a 40% chance that the funded percentage will not improve over the next 10 years (based on the current assumed return)
- If discussion of contribution rate decreases were to surface, this would present significant risk to TFFR

Plan Funding Policy vs. Plan Management Policy

A funding policy sets actuarially sound contribution rates

- A funding policy serves as a benchmark, which can be compared to the fixed employer contribution rates
- Actuarially determined contribution is equal to Normal Cost plus 25 year amortization of Unfunded Accrued Liability (as of 7/1/2018)
 - Amortization targets 100% funding in 25 years
 - TFFR's amortization method is 30 year closed period that began on July 1, 2013

A plan management policy monitors ongoing plan health

- Identify and establish objective criteria to evaluate health of TFFR
- Illustrates market volatility and contribution inadequacy risks through stochastic modeling
- Allows Board to evaluate future funded ratio based on probabilities
- Serves as advance warning tool

A plan management policy is a more robust way to evaluate the ongoing health and sustainability of TFFR

Using the Plan Management Policy

- Recalculate Policy Score as part of the annual valuation or other frequency
- Policy Score provides context for likelihood of future positive or negative events
 - For example, if funded ratio is projected to be at an unacceptable level with a high likelihood, the Board can explore ways to address this
- Policy Score can be part of the actuarial analysis of proposed legislation
 - Does the Policy Score improve, stay the same, or worsen?
 - Should the Policy Score be a factor when analyzing the effect of a benefit improvement?



North Dakota Teachers' Fund for Retirement

Risk Assessment/Plan Management Policy – Phase 2

July 25, 2019

Presented By:

*Kim Nicholl, FSA, MAAA, EA
Senior Vice President and Actuary*

*Matt Strom, FSA, MAAA, EA
Senior Vice President and Actuary*

This document has been prepared by Segal Consulting for the benefit of the Board of Trustees of the North Dakota Teachers' Fund for Retirement and is not complete without the presentation provided at the July 25, 2019 meeting of the Board of Trustees.

Project Phases

- Project consists of two phases:
- Phase 1 – initial risk assessment and stochastic modeling
 - Baseline liabilities, normal costs, and benefit payments projected using an open group forecast
 - Combination of stochastic and deterministic projections to evaluate the financial health of TFFR

- **Phase 2 – develop Plan Management Policy**
 - **Identify Policy metrics and establish “ideal” and “problematic” conditions**
 - **Construct a scoring system with the idea of meeting TFFR’s long-term funding goals**
 - **Discuss and fine-tune Policy and scoring system**

Plan Funding Policy vs. Plan Management Policy

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 - Does the Policy Score improve, stay the same, or worsen?
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Stochastic Results – Output Modeled

➤ Output

- **Portfolio investment return**
- **Funded percentage**
- Effective amortization period
- Unfunded actuarial accrued liability
- Employer contribution rate

➤ Liabilities

- **Assumed rate of return of 7.75%**
 - Liabilities are discounted at 7.75%

Stochastic Modeling of Investment Return

- Modeling of future simulated return trials is based on:
 - The Horizon Survey of Capital Market Assumptions (2018 Edition)
 - This survey compiles and averages the capital market assumptions of 35 investment consultants
 - TFFR's target asset allocation, shown below:

	Asset Class	Target Allocation
Fixed/Alternative	US Core	17%
	Real Estate	10%
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	Infrastructure	5%
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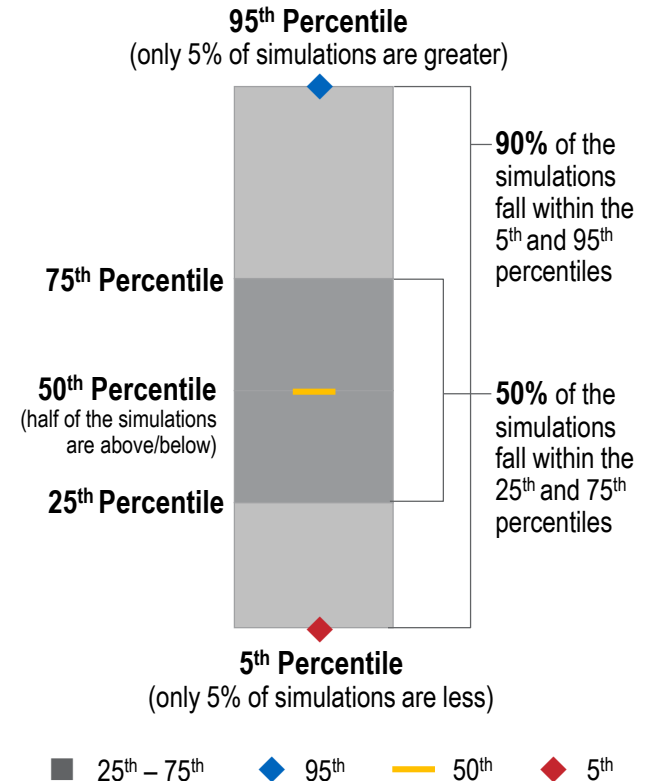
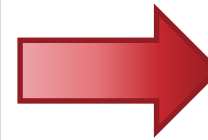
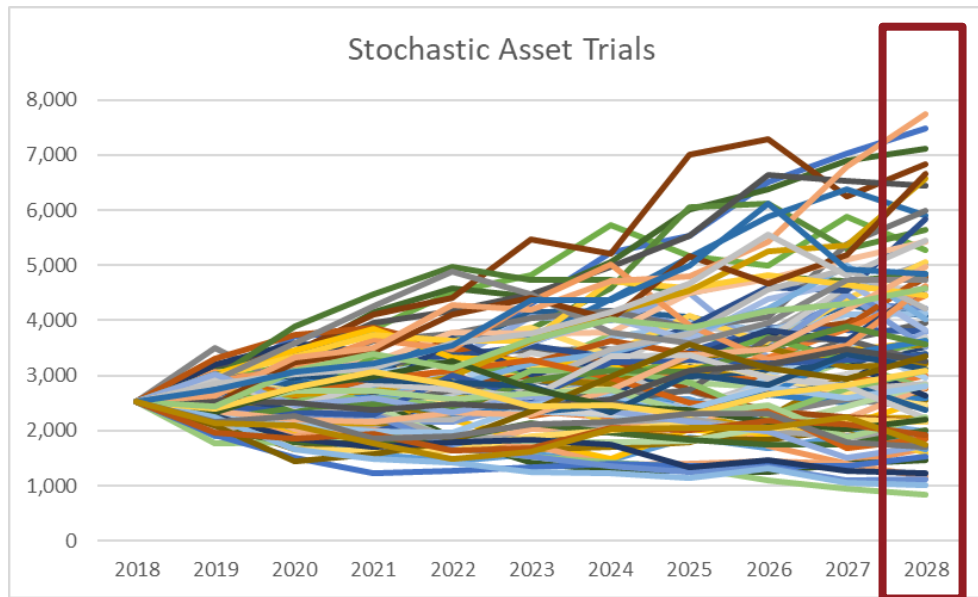
Capital Market Assumptions

	Asset Class	Expected Return*/ Standard Deviation		Target Allocation	Weighted Return
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	Real Estate	7.7%	13.9%	10%	0.77%
	High Yield	6.4%	10.2%	7%	0.45%
	Commodities/Timber	6.5%	17.6%	2%	0.13%
	Infrastructure	8.2%	14.7%	5%	0.41%
	Cash	3.1%	2.7%	1%	0.03%
Equity	US Large Cap	8.7%	16.4%	25%	2.18%
	US Small Cap	10.1%	20.2%	7%	0.71%
	International Developed	9.5%	18.7%	16%	1.51%
	Emerging Markets	11.9%	24.9%	4%	0.48%
	Private Equity	12.2%	22.2%	6%	0.73%
	Total			100%	8.19%
	Adjustment to Geometric				(0.64%)
	Total Long-term Return				7.55%

* Based on 20-year arithmetic assumptions and reflects long-term inflation of 2.48%

Summarizing Stochastic Results

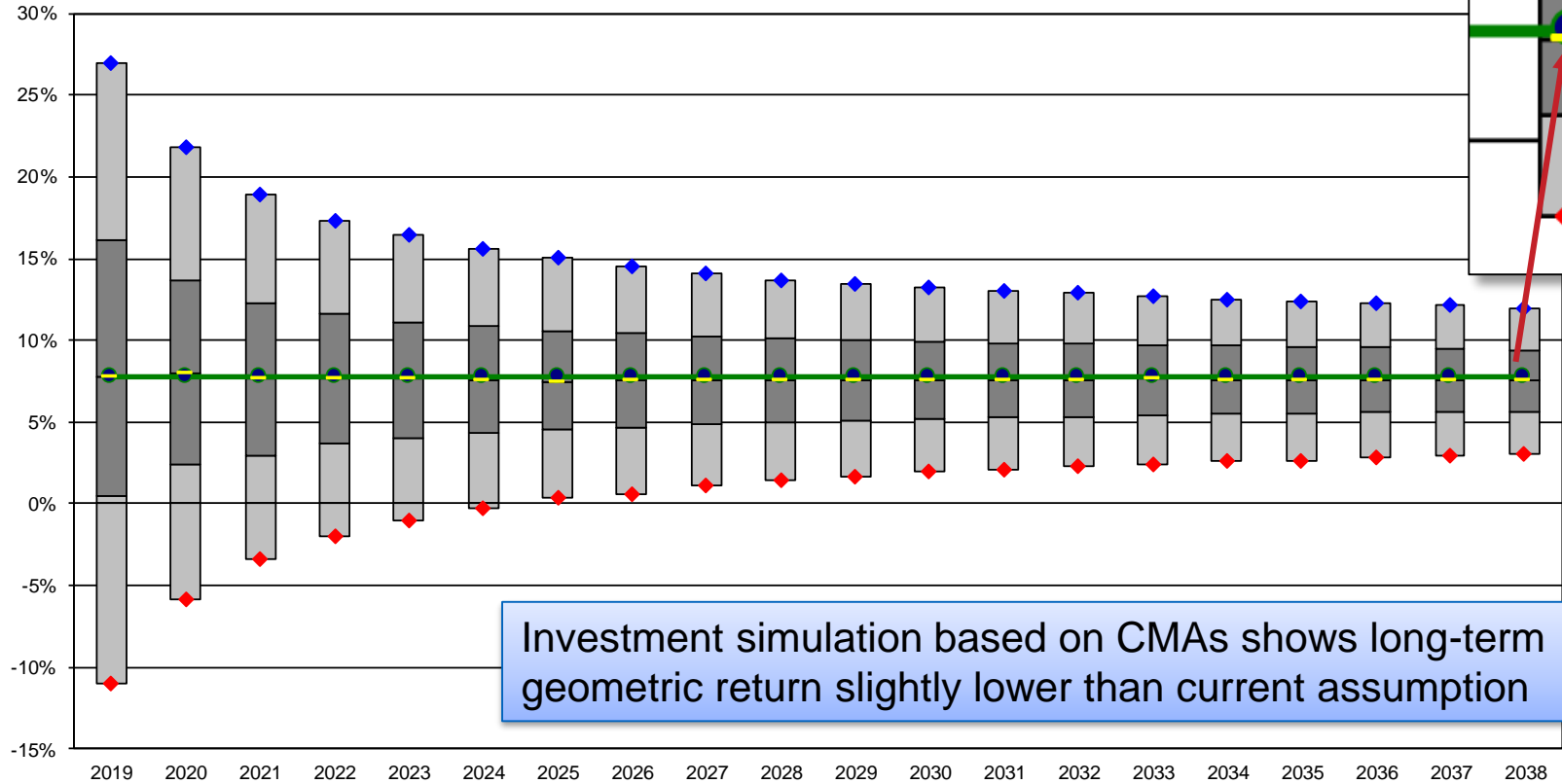
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Investment Return

Projected Cumulative Investment Return for Plan Years Ending June 30



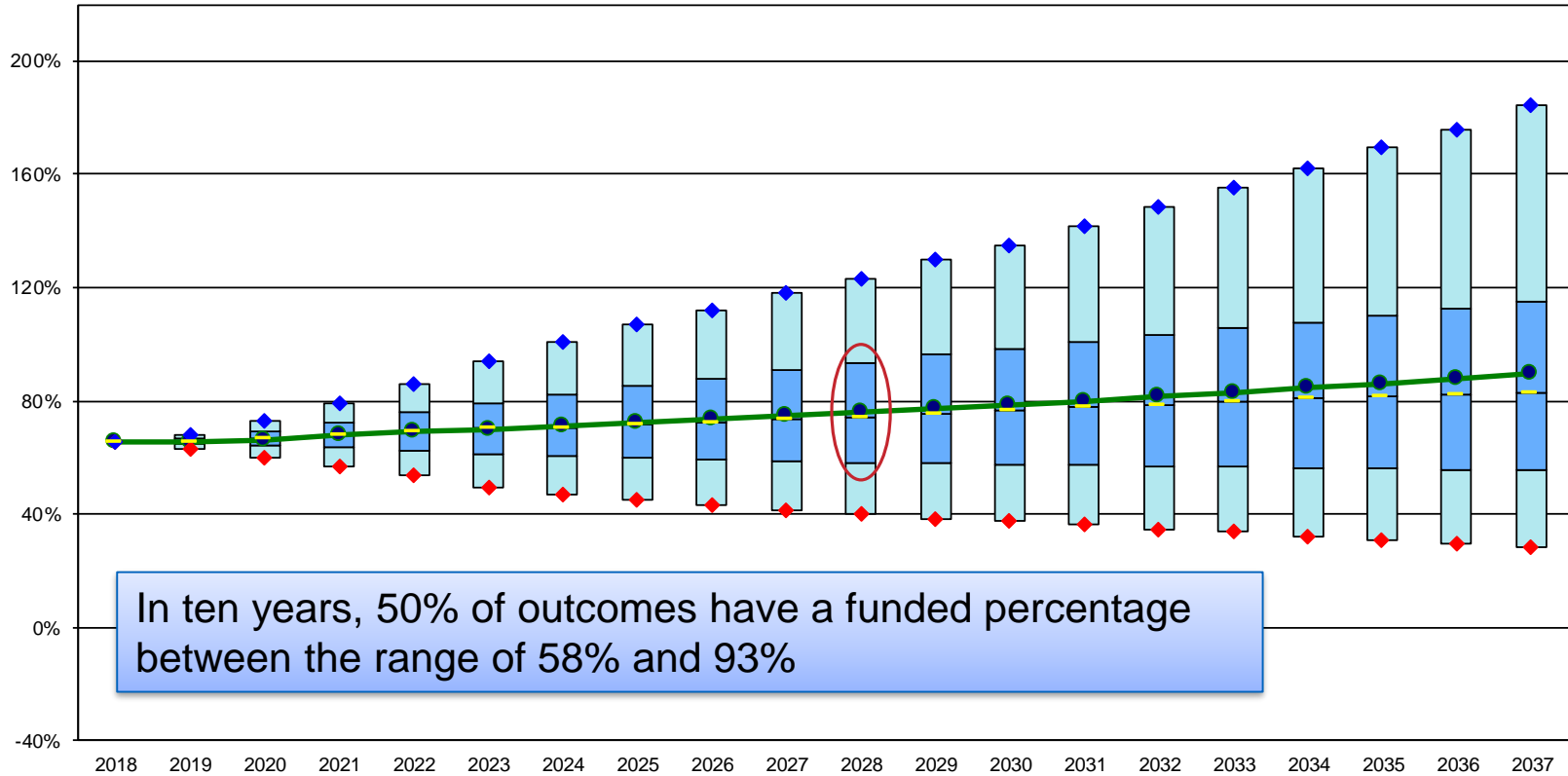
Investment simulation based on CMAs shows long-term geometric return slightly lower than current assumption

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	
◆ 95th	27.0%	21.8%	18.9%	17.3%	16.4%	15.6%	15.0%	14.5%	14.1%	13.7%	13.5%	13.2%	13.0%	12.9%	12.7%	12.5%	12.4%	12.3%	12.1%	12.0%	
■ 75th	16.1%	13.7%	12.3%	11.6%	11.1%	10.9%	10.6%	10.4%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%	9.7%	9.6%	9.5%	9.5%	9.4%	
■ 50th	7.8%	8.0%	7.7%	7.6%	7.6%	7.5%	7.5%	7.5%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%
■ 25th	0.5%	2.4%	3.0%	3.7%	4.0%	4.3%	4.6%	4.7%	4.9%	5.0%	5.1%	5.2%	5.3%	5.4%	5.5%	5.5%	5.5%	5.6%	5.7%	5.7%	
◆ 5th	-11.0%	-5.9%	-3.4%	-2.0%	-1.0%	-0.3%	0.3%	0.6%	1.1%	1.4%	1.7%	1.9%	2.1%	2.3%	2.4%	2.6%	2.7%	2.8%	3.0%	3.0%	
●	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	

● Current investment return assumption

AVA Funded Percentage – Baseline

Projected AVA Funded Percentage as of July 1



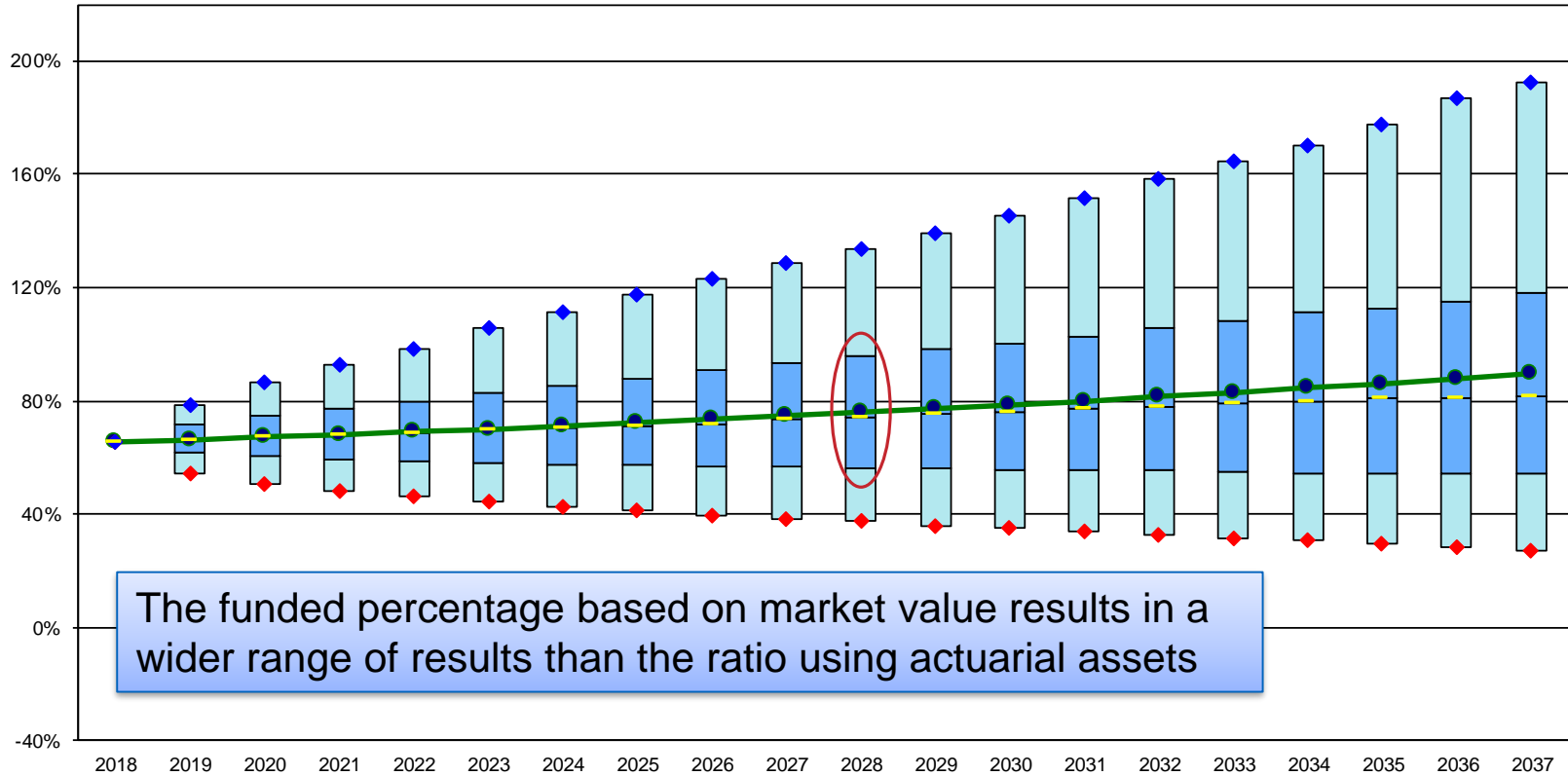
In ten years, 50% of outcomes have a funded percentage between the range of 58% and 93%

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
◆ 95th	65%	68%	73%	79%	86%	94%	101%	107%	112%	118%	123%	130%	135%	142%	148%	155%	162%	169%	176%	185%
— 75th	65%	67%	69%	73%	76%	79%	82%	85%	88%	91%	93%	96%	99%	101%	103%	106%	108%	110%	113%	115%
■ 50th	65%	66%	67%	68%	69%	70%	71%	72%	72%	73%	74%	76%	76%	78%	79%	80%	81%	82%	82%	83%
— 25th	65%	65%	64%	64%	63%	61%	60%	60%	59%	58%	58%	58%	57%	57%	57%	57%	56%	56%	56%	55%
◆ 5th	65%	63%	60%	57%	54%	50%	47%	45%	43%	42%	40%	38%	38%	37%	35%	34%	32%	31%	29%	28%
●	65%	66%	66%	68%	69%	70%	71%	72%	73%	75%	76%	77%	79%	80%	81%	83%	85%	86%	88%	89%

● Baseline deterministic projection using current 7.75% investment return assumption

MVA Funded Percentage – Baseline

Projected MVA Funded Percentage as of July 1



The funded percentage based on market value results in a wider range of results than the ratio using actuarial assets

◆ 95th	66%	78%	86%	93%	99%	106%	111%	117%	123%	129%	133%	139%	146%	152%	159%	165%	170%	178%	187%	193%
■ 75th	66%	72%	75%	77%	80%	83%	86%	88%	91%	93%	96%	98%	100%	103%	106%	108%	111%	113%	115%	118%
■ 50th	66%	66%	68%	68%	69%	70%	70%	71%	72%	73%	74%	75%	76%	77%	78%	79%	80%	81%	81%	82%
■ 25th	66%	62%	60%	59%	59%	58%	58%	57%	57%	57%	56%	56%	56%	56%	56%	55%	54%	54%	55%	54%
◆ 5th	66%	55%	51%	48%	46%	44%	43%	41%	39%	38%	37%	36%	35%	34%	33%	31%	31%	30%	28%	27%
●	66%	66%	67%	68%	69%	70%	71%	72%	73%	75%	76%	77%	79%	80%	81%	83%	85%	86%	88%	89%

● Baseline deterministic projection using current 7.75% investment return assumption

Metrics for Management Policy Scoring System

➤ **Current funded ratio**

- The Fund's current funded ratio is one of the most visible metrics
- A high current funded ratio should be recognized in the scoring

➤ **Downside funded ratio in 10 years (2030)**

- In the short-term, the Fund should avoid an “undesirable” funded ratio with relatively high probability

➤ **Target funded ratio in 20 years (2040)**

- Over a longer term, the Fund should be on the path to achieving its goals with reasonable probability

➤ **Improvement in funded ratio over a 10-year period**

- Regardless of where the Fund sits “today”, it should seek an increasing funded ratio over time

➤ **Ability to recover from/withstand a market downturn**

- In situations where the financial markets experience a downturn, the scoring should recognize when the funded ratio improves relative to the impact after the downturn

For purposes of the Policy scoring, we believe the funded ratio using the market value of assets is the appropriate measure.

Using the Plan Management Policy

- As currently constructed, the Policy Score will range from 0-14
 - A higher score equates to better overall Fund health
- Recalculate Policy Score as part of the annual valuation or other frequency
- Policy Score provides context for likelihood of future positive or negative events
 - For example, if funded ratio is projected to be at an unacceptable level with a high likelihood, the Board can explore ways to address this
- Policy Score can be part of the actuarial analysis of proposed legislation
 - Does the Policy Score improve, stay the same, or worsen?
 - Allow a benefit improvement as long as Policy Score does not decrease?

Policy Scoring System – Draft

Criteria 1

Based on current year funded ratio

- If current ratio is 90% or higher: **+3**
- If current ratio is between 80% to 90%: **+2**
- If current ratio is between 70% to 80%: **+1**
- If current ratio is less than 70%: **+0**

Criteria 2

Downside funded ratio in 2030 (about 10 years from now)

- Under 65% funded ratio with less than 20% probability: **+3**
- Under 65% funded ratio with less than 30% probability: **+2**
- Under 65% funded ratio with less than 40% probability: **+1**
- Under 65% funded ratio with more than 40% probability: **+0**

Criteria 3

Target funded ratio in 2040 (about 20 years from now)

- 85% or higher with more than 50% probability: **+4**
- Between 80% and 85% with more than 50% probability: **+3**
- Between 75% and 80% with more than 50% probability: **+2**
- Between 70% and 75% with more than 50% probability: **+1**
- Not more than 70% with more than 50% probability: **+0**

Criteria 4

Improvement over 10 years

- Funded ratio improves by +5% over 10 years with 66% probability: **+2**
- Funded ratio improves by +5% over 10 years with 50% probability: **+1**
- Ratio does not improve by +5% over 10 years with 50% probability: **+0**

Criteria 5

Ability to recover from market downturn*

- Funded ratio after downturn improves by +5% over 10 years with 50% probability: **+2**
- Funded ratio after downturn improves by +5% over 10 years with 33% probability: **+1**
- Ratio after downturn does not improve by +5% over 10 years with 33% probability: **+0**

* “Market downturn” defined as a two-year compound average return of -10% or worse

Policy Scoring System – Draft *(continued)*

- Total summary score can range from 0 to 14
 - Metrics focus on funded ratio measures
 - Effective amortization period considered, but likely redundant
 - Outside metrics such as economic cycle considered, but held out
- Summary “health” can be summed up as follows:
 - **Green** (score of 11 to 14) to indicate *“objectives being met or likely to be met”*
 - **Yellow** (score of 7 to 10) to indicate *“objectives may be met over longer period”*
 - **Orange** (score of 4 to 6) to indicate *“closely monitor”*
 - **Red** (score of 0 to 3) to indicate *“changes should be considered”*



Policy Scoring System – Draft (continued)

Criteria 1	<p>Current year funded ratio is 66%</p> <ul style="list-style-type: none">• If current ratio is 90% or higher: +3• If current ratio is between 80% to 90%: +2• If current ratio is between 70% to 80%: +1• If current ratio is less than 70%: +0	+0
Criteria 2	<p>37% probability of funded ratio <65% in 2030</p> <ul style="list-style-type: none">• Under 65% funded ratio with less than 20% probability: +3• Under 65% funded ratio with less than 30% probability: +2• Under 65% funded ratio with less than 40% probability: +1• Under 65% funded ratio with more than 40% probability: +0	+1
Criteria 3	<p>53% probability of funded ratio >80% in 2040</p> <ul style="list-style-type: none">• 85% or higher with more than 50% probability: +4 (49% probability)• Between 80% and 85% with more than 50% probability: +3 (53% probability)• Between 75% and 80% with more than 50% probability: +2 (57% probability)• Between 70% and 75% with more than 50% probability: +1 (61% probability)• Not more than 70% with more than 50% probability: +0	+3
Criteria 4	<p>55% probability of improvement over 10 years</p> <ul style="list-style-type: none">• Funded ratio improves by +5% over 10 years with 66% probability: +2• Funded ratio improves by +5% over 10 years with 50% probability: +1• Ratio does not improve by +5% over 10 years with 50% probability: +0	+1
Criteria 5	<p>40% probability of recovering from market downturn*</p> <ul style="list-style-type: none">• Funded ratio after downturn improves by +5% over 10 years with 50% probability: +2• Funded ratio after downturn improves by +5% over 10 years with 33% probability: +1• Ratio after downturn does not improve by +5% over 10 years with 33% probability: +0	+1
		<hr/> +6

* 845 scenarios contain -10% average over 2 years (in the first 10 years), 339 of which “recover”

Policy Scoring System – Draft (*continued*)

- To address the “all or nothing” aspect of scoring, the point system could be set up such that partial points are awarded
 - Half points for partially meeting criteria
 - For example, Criteria 1 would change from this:
 - If current ratio is 90% or higher: **+3**
 - If current ratio is between 80% and 90%: **+2**
 - If current ratio is between 70% and 80%: **+1**
 - If current ratio is less than 70%: **+0**
 - To, effectively, this:
 - If current ratio is 90% or higher: **+3**
 - *If current ratio is between 85% and 90%: **+2.5*** ←
 - If current ratio is between 80% and 85%: **+2**
 - *If current ratio is between 75% and 80%: **+1.5*** ←
 - If current ratio is between 70% and 75%: **+1**
 - *If current ratio is between 65% and 70%: **+0.5*** ←
 - If current ratio is less than 65%: **+0**

Calculating the Summary Score

Criteria 1	<p>Current year funded ratio is 66%</p> <ul style="list-style-type: none">• If current ratio is 90% or higher: +3• If current ratio is between 80% to 90%: +2• If current ratio is between 70% to 80%: +1• If current ratio is less than 70%: +0	+0.5
Criteria 2	<p>37% probability of funded ratio <65% in 2030</p> <ul style="list-style-type: none">• Under 65% funded ratio with less than 20% probability: +3• Under 65% funded ratio with less than 30% probability: +2• Under 65% funded ratio with less than 40% probability: +1• Under 65% funded ratio with more than 40% probability: +0	+1
Criteria 3	<p>53% probability of funded ratio >80% in 2040</p> <ul style="list-style-type: none">• 85% or higher with more than 50% probability: +4 (49% probability)• Between 80% and 85% with more than 50% probability: +3 (53% probability)• Between 75% and 80% with more than 50% probability: +2 (57% probability)• Between 70% and 75% with more than 50% probability: +1 (61% probability)• Not more than 70% with more than 50% probability: +0	+3
Criteria 4	<p>55% probability of improvement over 10 years</p> <ul style="list-style-type: none">• Funded ratio improves by +5% over 10 years with 66% probability: +2• Funded ratio improves by +5% over 10 years with 50% probability: +1• Ratio does not improve by +5% over 10 years with 50% probability: +0	+1
Criteria 5	<p>40% probability of recovering from market downturn*</p> <ul style="list-style-type: none">• Funded ratio after downturn improves by +5% over 10 years with 50% probability: +2• Funded ratio after downturn improves by +5% over 10 years with 33% probability: +1• Ratio after downturn does not improve by +5% over 10 years with 33% probability: +0	+1
		<hr/> +6.5

* 845 scenarios contain -10% average over 2 years (in the first 10 years), 339 of which “recover”

Calculating the Summary Score *(continued)*

- Composite summary score equal to **6** (or 6.5 with partial points)

Assessment:

Summary score of 11 to 14:

Objectives being met or likely to be met

Summary score of 7 or 10:

Objectives may be met over longer period

Summary score of 4 to 6:

Closely monitor

Summary score of 0 to 3:

Changes should be considered

Based on a summary score of 6 (or 6.5): Orange (or Orange/Yellow)



or

Summary Score at Alternative Discount Rates

Criteria 1	<p>Current year funded ratio is <u>64%/62%</u></p> <ul style="list-style-type: none"> If current ratio is 90% or higher: +3 If current ratio is between 80% to 90%: +2 If current ratio is between 70% to 80%: +1 If current ratio is less than 70%: +0 	+0/+0
Criteria 2	<p><u>39%/41%</u> probability of funded ratio <65% in 2030</p> <ul style="list-style-type: none"> Under 65% funded ratio with less than 20% probability: +3 Under 65% funded ratio with less than 30% probability: +2 Under 65% funded ratio with less than 40% probability: +1 Under 65% funded ratio with more than 40% probability: +0 	+1/+0.5
Criteria 3	<p><u>52%/51%</u> probability of funded ratio >80% in 2040</p> <ul style="list-style-type: none"> 85% or higher with more than 50% probability: +4 (48%/47% probability) Between 80% and 85% with more than 50% probability: +3 (52%/51% probability) Between 75% and 80% with more than 50% probability: +2 (56%/55% probability) Between 70% and 75% with more than 50% probability: +1 (60%/59% probability) Not more than 70% with more than 50% probability: +0 	+3/+3
Criteria 4	<p><u>52%/50%</u> probability of improvement over 10 years</p> <ul style="list-style-type: none"> Funded ratio improves by +5% over 10 years with 66% probability: +2 Funded ratio improves by +5% over 10 years with 50% probability: +1 Ratio does not improve by +5% over 10 years with 50% probability: +0 	+1/+1
Criteria 5	<p><u>42%/41%</u> probability of recovering from market downturn*</p> <ul style="list-style-type: none"> Funded ratio after downturn improves by +5% over 10 years with 50% probability: +2 Funded ratio after downturn improves by +5% over 10 years with 33% probability: +1 Ratio after downturn does not improve by +5% over 10 years with 33% probability: +0 	+1/+1
<hr/>		
		+6/+5.5

* 845 scenarios contain -10% average over 2 years (in the first 10 years), 354 (348) of which “recover”



MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp

DATE: September 19, 2019

SUBJ: Board Education: Fiduciary Duties

TFFR trustees are fiduciaries, and as such, have the highest standard of law placed upon them. Trustees are expected to discharge their duties with the utmost honesty and integrity and to act solely in the interest of the members, retirees, and beneficiaries for the exclusive purpose of providing benefits and paying reasonable expenses of administering the TFFR program.

TFFR's legal counsel, Anders Odegaard, Assistant Attorney General, will provide a refresher on the Board's fiduciary responsibilities.

BOARD INFORMATION AND DISCUSSION

North Dakota Teachers' Fund For Retirement Board Member Responsibilities

Presented by Assistant Attorney General Anders Odegaard,
September 2019.

What is Your Role?

(NDCC § 15-39.1-05.1)

- ▶ “The authority to set policy for the fund rests in a board of trustees composed..” of you.

What is a Trustee?

- Trustee: “One who, having legal title to property, holds it in trust for the benefit of another and owes a fiduciary duty to that beneficiary.”
- Fiduciary Duty: A duty of utmost good faith, trust, confidence, and candor owed by a fiduciary to the beneficiary.

Black’s Law Dictionary 7th ed. 1999.

What guides your actions as a trustee?

- Statute: North Dakota Century Code
 - Note: Ch. 15-39.1 & .2; Sec. 59-09-02(2); Ch. 21-10;
- Rule: Administrative Rules (Title 82)
- Policy: Informal and Program Manual
- Internal Revenue Code 401(a) - Applicable to governmental plans.
- ERISA - Not applicable to governmental plans, but an excellent resource due to robust regulatory framework and extensive developed case law.
- Uniform Management of Public Retirement Systems Act (UMPERSA) - compilation of common law.
- Case-law/ Legal Treatises
 - (Ex: Restatement 3rd of Trusts)

Board's Role as Fiduciary

- ▶ Settlor establishes the terms of the trust and the plan.
 - ▶ The Settlor = Legislature/State
- ▶ Settlor determines the scope of authority of the fiduciaries.
- ▶ Each fiduciary must administer the trust and the plan for the benefit of the participants and their beneficiaries in accordance with the role assigned.

Board's Role as Fiduciary (cont'd)

- ▶ In general, role with regard to benefits
 - ▶ Board is responsible for the general administration and proper operation of the plans
 - ▶ Administer benefits in accordance with plan
 - ▶ Engage actuarial and other experts
 - ▶ Establish premiums and contribution rates
 - ▶ Establish rules and regulations

Board's Role as Fiduciary (cont'd)

- ▶ In general, role with regard to investments:
 - ▶ To whom did the Settlor give investment responsibility for retirement systems funds?
 - ▶ Is there a co-trustee of the trust assets?
 - ▶ Who has the responsibility to act in the best interests of the trust, including with respect to investments?

General Fiduciary Duties

- The primary responsibility of fiduciaries is to run the plan solely in the interest of participants and beneficiaries and for the exclusive purpose of providing benefits and paying plan expenses.
- Fiduciaries must act prudently and must diversify the plan's investments in order to minimize the risk of large losses.
- In addition, they must follow the terms of plan documents.
- They also must avoid conflicts of interest. In other words, they may not engage in transactions on behalf of the plan that benefit parties related to the plan, such as other fiduciaries, services providers or the plan sponsor.
- Fiduciaries who do not follow these principles of conduct may be **personally liable** to restore any losses to the plan, or to restore any profits made through improper use of plan assets. Courts may take whatever action is appropriate against fiduciaries who breach their duties including their removal.

Duty of Loyalty

- A Trustee must administer a trust solely in the interests of the beneficiaries.
 - Exclusive Benefit Rule
 - Avoid conflicts
 - Practice Fair dealing and candor with beneficiary.
 - Balancing the interests of retirees and active participants.
 - Balancing interests of different groups of participants.

NDCC § 21-10-07, 54-52-14.3, 59-16-02;

Restatement 3rd of Trusts § 78

Exclusive Benefit Rule

- ▶ "Under the trust instrument it [must be] impossible, at any time prior to the satisfaction of all liabilities with respect to employees and their beneficiaries under the trust, for any part of the corpus or income to be (within the taxable year or thereafter) used for, or diverted to, purposes other than for the exclusive benefit of his employees or their beneficiaries." - Internal Revenue Code, § 401(a)(2)

Exclusive Benefit Rule

- ▶ "A fiduciary shall discharge his duties with respect to a plan
 - ▶ Solely in the interest of the participants and beneficiaries and
 - ▶ For the exclusive purpose of:
 - ▶ Providing benefits to participants and their beneficiaries
 - ▶ Defraying reasonable expenses of administering the plan"
 - ▶ These expenses must be plan expenses, not settlor expenses.
- ▶ ERISA

Duty of Impartiality

- If a trust has two or more beneficiaries, the trustee shall act impartially in investing, managing, and distributing the trust property, giving due regard to the beneficiaries' respective interests.
- Includes responsibility for Income Productivity. The trustee's duty of impartiality includes a duty to so invest and administer the trust, or to so account for principal and income, that the trust estate will produce income that is reasonably appropriate to the purposes of the trust and to the diverse present and future interests of its beneficiaries.

NDCC § 59-16-03; Restatement 3rd of Trusts § 79

Duty of Impartiality

- ▶ UMPERSA Commentary: "Differing interests are inevitable in the retirement system setting. Differences can arise between retirees and working members, young members and old, long and short-term employees, and other groupings of those with interests in the retirement system. The duty of impartiality does not mean that fiduciaries must accommodate such interests according to some notion of absolute equality. The duty of impartiality ... requires that such decisions be made carefully and after weighing the differing interests."
- ▶ Trustees must identify impact of actions on each group of participants and beneficiaries.

Maintaining Independence

- ▶ A trustee must set aside the interests of the appointing authority or the group the trustee represents.
 - ▶ "It is as improper for a fiduciary to take actions for the purpose of benefiting a third person as it is for a fiduciary to act in its own interest. **In the retirement system setting, it is important to note that this duty includes the obligation to set aside the interests of the party that appoints a trustee or fiduciary. A trustee, for example, must act solely in the interests of participants and beneficiaries and set aside any interest of a party responsible for the trustee's appointment, such as an employer or union.**"
- UMPERSA Comments on § 7 (Emphasis added)

Maintaining Independence (Duty of Loyalty)

- ▶ UMPERSA "is intended to ensure that retirement system trustees have a level of independence sufficient to permit them to perform their duties and to do so effectively and efficiently. Trustees are different from other state actors because they are subject to an extensive and stringent set of fiduciary obligations to retirement system participants and beneficiaries. These obligations both require and justify some level of trustee independence."
- UMPERSA Comments on § 5.

Independence - Practical Impact on Trustee (Duty of Loyalty)

- ▶ **Independence comes from following procedural prudence - have established procedures and follow them.**
- ▶ Applying lessons from "outside world" is not prohibited, but the overriding principle is to follow the exclusive benefit rule.
 - ▶ A trustee must make a decision given the facts and circumstances that are relevant.

Prohibited Transactions

- ▶ A qualified plan is prohibited from participating in any transaction in which it -
 - ▶ 1) "Lends any part of its income or corpus, without receipt of adequate security and a reasonable rate of interest, to;
 - ▶ 2) Pays any compensation, in excess of a reasonable allowance for salaries or other compensation for personal services actually rendered, to;
 - ▶ 3) Makes any part of its services available on a preferential basis to;

Prohibited Transactions (cont'd)

- ▶ 4) makes any substantial purchase of securities or any other property, for more than adequate consideration in money or money's worth, from;
- ▶ 5) sells any substantial part of its securities or other property, for less than an adequate consideration in money or money's worth, to; or
- ▶ 6) engages in any other transaction which results in a substantial diversion of its income or corpus to;

the creator [of or] a person who has made a substantial contribution to [the trust]...."

- Internal Revenue Code, § 503(b)

Prohibited Transactions - Practical Impact on Trustee

- ▶ A fiduciary may not:
 - ▶ Deal with plan assets in his own interest.
 - ▶ Act in a transaction with a "party in interest" if adverse to the interests of plan participants.
 - ▶ **Any "deals" with the employer (or "funder") must be commercially reasonable, at arms' length.**
 - ▶ Receive any consideration for his personal account from any party in connection with a transaction involving the plan.

Fiduciary Principles - Adherence to the Trust (Duty of Loyalty)

- ▶ Administer the trust in accordance with its terms and applicable laws - "Doing things by the book"
 - ▶ Set aside pre-conceived notions and work from the facts and from statutes, rules, Board policies and procedures.
 - ▶ The plan must be administered as written.
 - ▶ Make sure to keep up-to-date with law changes.
- ▶ The fiduciary must be aware of the entire legal context, of issues that come before them, including other state and federal laws.

Fiduciary Principles - Co-Trustees

- ▶ Duty with respect to co-Trustees from ERISA and from the Restatement
 - ▶ Settlor determines areas of responsibility
 - ▶ **Each trustee must take reasonable care to prevent a co-trustee from committing a breach of trust and to obtain redress if there is a breach.**
 - ▶ Consideration by trustees of integrity of process used for decision-making

Duty of Prudence

- A trustee shall administer the trust as a prudent person would by considering the purposes, terms, distributional requirements, and other circumstances of the trust. In satisfying this standard, the trustee shall exercise reasonable care, skill, and caution.
- Duty of Prudence (Duty of Care) related to process

NDCC § 59-16-04; Restatement 3rd of Trusts § 77

Prudent Process is Critical

- ▶ The focus is on process, not best possible result.
- ▶ The test of prudence -
 - ▶ "is one of conduct, and not a test of the result of performance of the investment. The focus of the inquiry is how the fiduciary acted in his selection of the investment, and not whether his investments succeeded or failed."

Document, document, document

Restatement 3rd of Trusts § 77

Duty of Administration

- In administering a trust, the trustee may incur only costs that are reasonable in relation to the trust property, the purposes of the trust, and the skills of the trustee.

NDCC § 59-16-05; See also § 21-10-06.2;

Restatement 3rd of Trusts § 76 & 88

Duty of Skill

- A trustee who has special skills or expertise, or is named trustee in reliance upon the trustee's representation that the trustee has special skills or expertise, shall use those special skills or expertise.

NDCC § 59-16-06; Restatement 3rd of Trusts § 77

Duty of Delegation

- Ok to delegate if appropriate under the circumstances.
 - Responsibilities that are outside of the Trustee's skill set.
- Be prudent in selecting agent.
 - Prudent Expert Standard
- Must establish scope of delegation.
- Ongoing review to monitor.
- A trustee compliant with the duty of delegation “is not liable to the beneficiaries or trust for an action of the agent to whom the function was delegated.”
NDCC § 59-16-07(3)

NDCC § 59-16-07; See also § 21-10-02

Restatement 3rd of Trusts § 80

Prudent Investor Rule

- Exercise all Fiduciary Duties in relation to making investment decisions.
 - Exclusive Benefit Rule
 - Ex: Social Investing (Not for economic development)
 - Prudent Process
 - RFP
 - Investment evaluation
 - Prudent Expert
 - Monitor
 - Vendor consideration
 - Communication to participants
 - It may not only be prudent to initiate litigation, but also a breach of a fiduciary's duty to not pursue a valid claim.

NDCC § 59-17-01 & 02; See also § 21-10-07

Restatement 3rd of Trusts § 90

Specific Application of Fiduciary Duties

- Administration of the Plan

NDCC § 15-39.1-05.2

- Maintaining the Confidentiality of Records

NDCC § 15-39.1-30

See NDCC § 12.1-13-01:

Class C Felony for a public servant to knowingly release confidential information.

- Monitoring and Suggesting Improvements to the Plan.

NDCC § 15-39.1-35

Conflicts of Interest

- Obvious: Direct, Substantial, Personal, Pecuniary.
- Less Obvious: Favors, Gifts, Special Treatment.
- The appearance of impropriety.
- Refer to Code of Conduct for Questions
- Ethics Commission

Disclosure vs. Abstaining

- ▶ Common Question: Should I abstain from voting if I think there could be a conflict?
- ▶ No, but disclosing is not a bad idea.
- ▶ *Northwestern Bell Telephone Company v. Board of Commissioners of the City of Fargo (1973)*
 - ▶ A member of a governmental body who is present has a **DUTY** to vote, unless abstention is addressed in the law. AND
 - ▶ A failure to vote (abstaining) will result in that vote being cast with the majority.

Breach

- ▶ Potential ramifications for a breach of fiduciary duties and code of conduct.
 - ▶ Board reprimand
 - ▶ Loss of Position
 - ▶ Civil Liability
 - ▶ Criminal Liability

See NDCC § 12.1-11-06:

Class A misdemeanor for public servant to refuse to perform any duty imposed by law.

Board Member Liability

- ▶ Common Question: Am I personally liable for decisions I make as a board member?

Definitions: N.D.C.C. Ch. 32-12.2

- "State employee" means every present or former officer or employee of the state or any person acting on behalf of the state in an official capacity, temporarily or permanently, with or without compensation. The term does not include an independent contractor.
- "State" includes an agency, authority, board, body, branch, bureau, commission, committee, council, department, division, industry, institution, instrumentality, and office of the state.
- "Scope of employment" means the state employee was acting on behalf of the state in the performance of duties or tasks of the employee's office or employment lawfully assigned to the employee by competent authority or law.

Operate within scope of your employment

- NDCC § 32-12.2-03(1-3)

“Actions against state employees operating within the scope of the employee’s employment must be brought against the state.”

“A state employee may not be held liable in the employee’s personal capacity for acts or omissions of the employee occurring within the scope of employee’s employment.”

- NDCC § 32-12.2-03(5)

“A judgment in a claim against the state is a complete bar to any claim by the claimant, resulting from the same injury, against the employee whose act or omission gave rise to the claim.

Who represents me?

- NDCC § 32-12.2-03(6)

“The state shall defend any state employee in connection with any civil claim or demand, whether groundless or otherwise, arising out of an alleged act or omission occurring within the scope of the employee's employment if the employee provides complete disclosure and cooperation in the defense of the claim or demand and if the employee requests such defense in writing within ten days after being served with a summons, complaint, or other legal pleading asserting a cause of action against the state employee arising out of a civil claim or demand. The request for defense must be in writing and provided to the head of the state entity that employs the state employee and the attorney general.”

Can I choose Who represents me?

- NDCC § 32-12.2-03(7)

“For any claim brought under this chapter, a state employee may choose to hire the employee's own separate defense counsel to represent the state employee in the litigation. If the state employee chooses to hire separate defense counsel, subsections 4 and 6 do not apply to the state employee in that litigation and the state will not indemnify, save harmless, or defend the state employee nor pay for the state employee's defense or any judgment against the state employee.”

Who pays if they win?

- NDCC § 32-12.2-03(4)

“Except for claims or judgments for punitive damages, the state shall indemnify and save harmless a state employee for any claim, whether groundless or not, and final judgment for any act or omission occurring within the scope of employment of the employee if the employee provides complete disclosure and cooperation in the defense of the claim or demand and if the employee has given written notice of the claim or demand to the head of the state entity that employs the state employee and to the attorney general within ten days after being served with a summons, complaint, or other legal pleading asserting that claim or demand against the state employee.”

QUESTIONS

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the slide, creating a modern, layered effect. The rest of the slide is a plain white background.

TFFR Annual Investment Report

For the Periods Ended June 30, 2019

September 26, 2019

Note: This document contains unaudited data which is deemed to be materially accurate, but is unaudited and subject to change.

Dave Hunter, Executive Director/CIO

Fay Kopp, Deputy Executive Director / TFFR Chief Retirement Officer

Darren Schulz, Deputy Chief Investment Officer

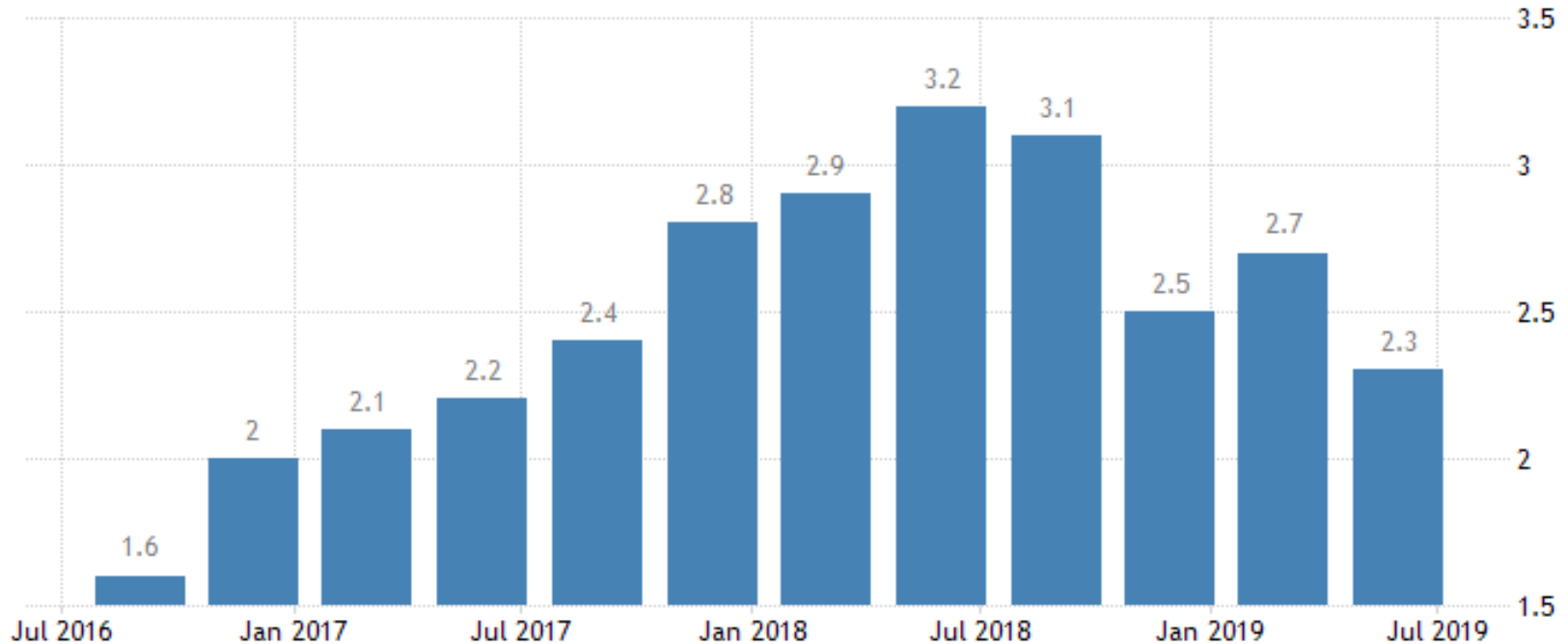
Connie Flanagan, Chief Financial Officer

Eric Chin, Chief Risk Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

U.S. Economy – Annual GDP Growth Rates



SOURCE: TRADINGECONOMICS.COM | U.S. BUREAU OF ECONOMIC ANALYSIS

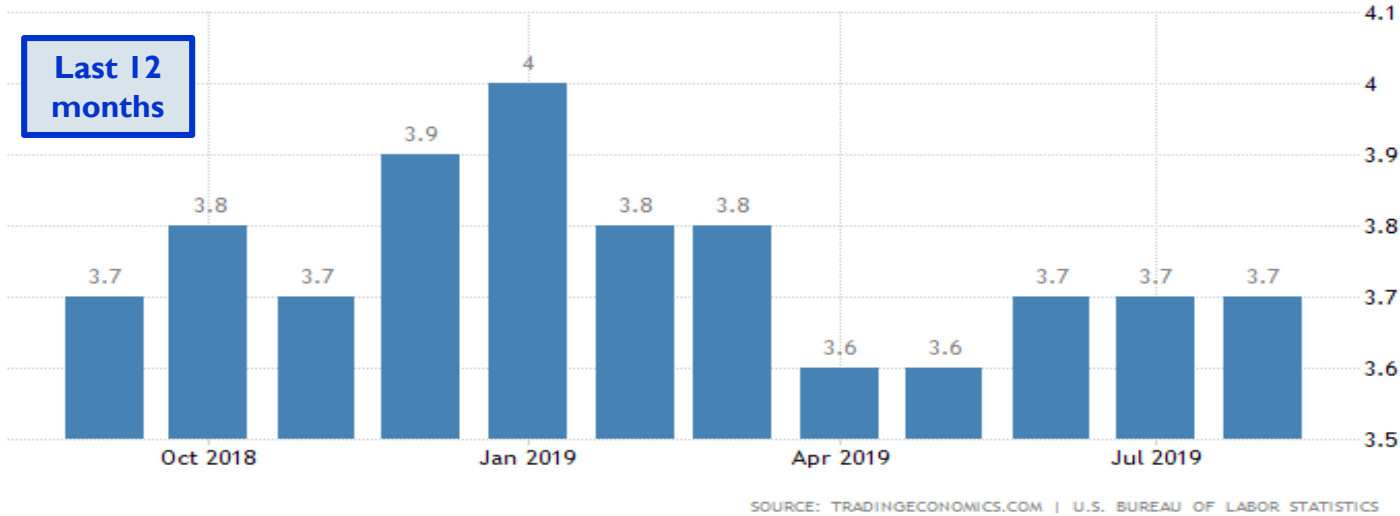
US GDP Growth Rates:

The US economy expanded at an annual growth rate of 2.3% in the 2nd quarter of 2019 following two consecutive 3% annual growth rates in the middle half of 2018.

The United States is the world's largest economy. Yet, like in the case of many other developed nations, U.S. growth rates have generally been declining in the last two decades. GDP annual growth rates in the U.S. averaged 3.2% from 1948 until 2018, reaching an all-time high of 13.4% in the 4th quarter of 1950 and a record low of **-3.9%** in the 2nd quarter of 2009.

Updated Sep. 19, 2019

U.S. Unemployment Rates



The U.S. unemployment rate remained at 3.7% in August of 2019 after hitting a 49-year low of 3.6% in May in line with expectations. The number of employed increased by 590,000 to 157.9 million.



Unemployment Rates in the United States averaged 5.74% from 1948 until 2019, reaching an all time high of 10.8% in November of 1982 and a record low of 2.5% in May of 1953.

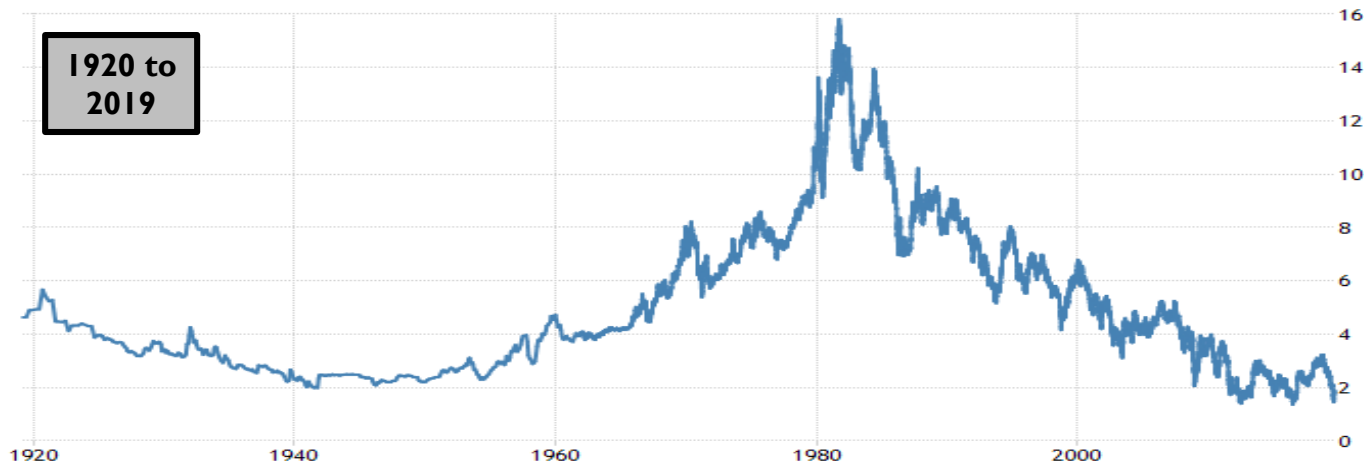
10-Year U.S. Government Bond Rates



U.S. Gov't. 10-Yr. Yields fell from 3.2% in October of 2018 to 2.09% on July 15, 2019 and dipped below 2% late in June.

Fed Target - 9/19
1.75% to 2.00%

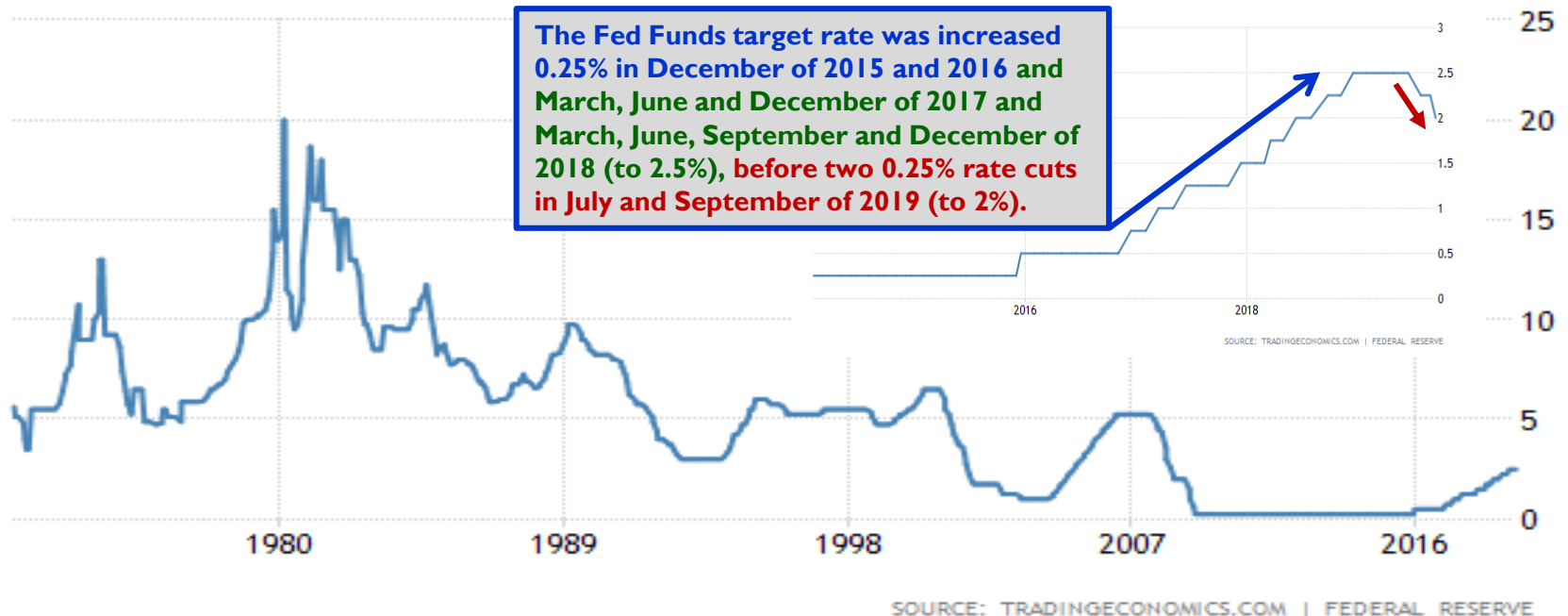
1.72% 2-yr
1.63% 5-yr
1.75% 10-yrs
2.19% 30-yrs



U.S. Gov't. 10-Yr. Yields reached an all time high of 15.82% in September of 1981 and a record low of 1.36% in July of 2016.

U.S. Fed Funds Rate (1971 to 2019)

Background: The **federal funds rate** is the interest rate at which banks lend reserve balances to other banks overnight (on an uncollateralized basis). Banks with surplus balances lend to those in need of larger balances. Reserve balances are held at the Federal Reserve to maintain the banks' reserve requirements. **Changes in the federal funds rate trigger a chain of events that affect other short-term interest rates**, foreign exchange rates, long-term interest rates, the amount of money and credit, and, ultimately, a range of economic variables, including employment, output, and prices of goods and services. The Federal Reserve uses "monetary policy" to influence the availability and cost of money and credit to help promote national economic goals.

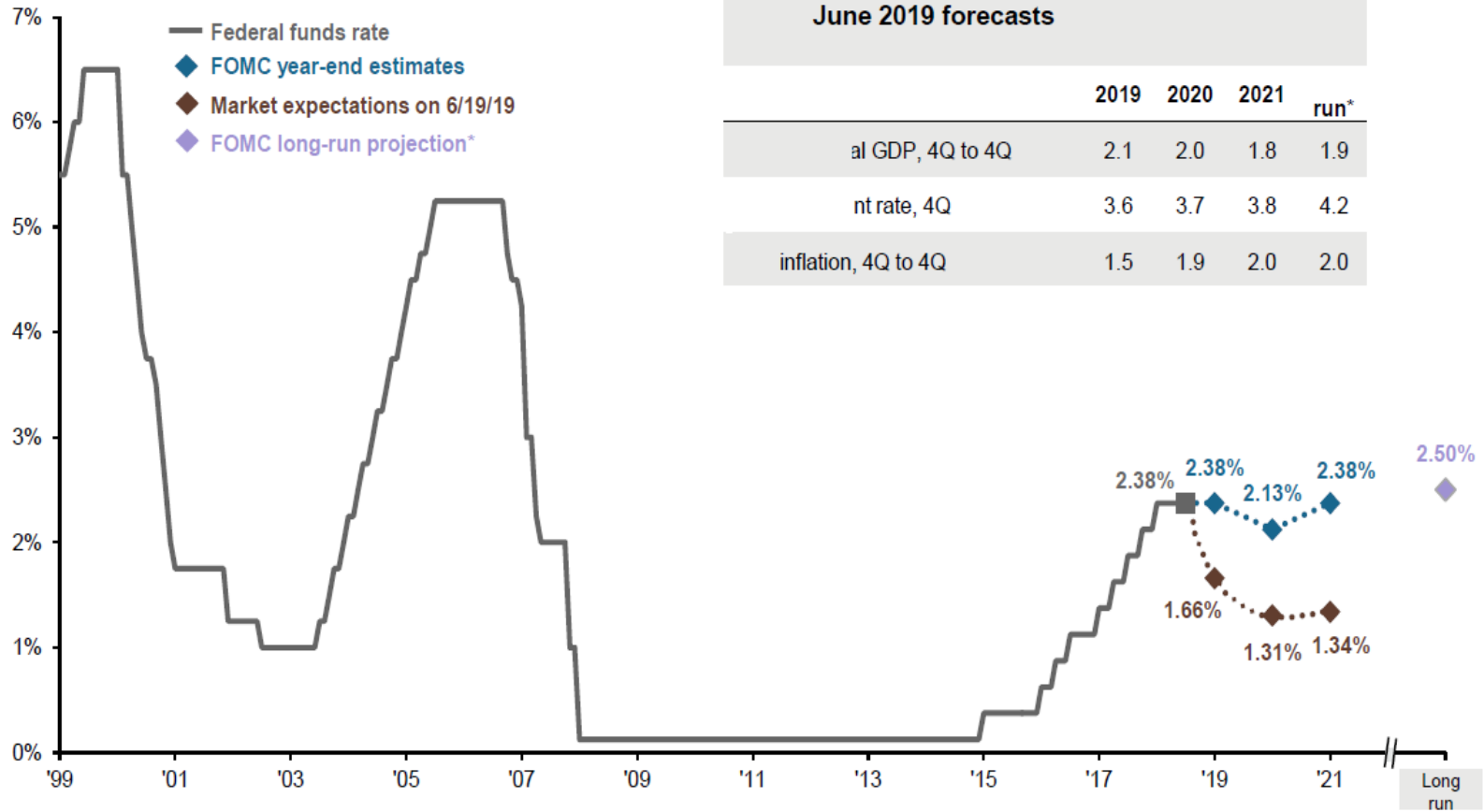


The Federal Reserve raised the target range for fed funds four (4) times in 2018, three (3) times in 2017 and once each in December of 2016 and 2015. Interest Rates in the U.S. averaged 5.8% from 1971 until 2017, reaching an all time high of 20% percent in March of 1980 and a record low of 0.25% in December 2008. The Fed lowered the Fed Funds Target Rate by 0.25% on July 31 and September 18.

The Fed and Interest Rates

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



- At its July 31, 2019 meeting, the Federal Reserve Open Market Committee (FOMC) voted to lower the target by 25 basis points to a new range of 2 to 2-1/4 percent. In a press release, the FOMC said its decision was based on “implications of global developments for the economic outlook as well as muted inflation pressures.”

Source: JP Morgan Guide to the Markets as of June 30, 2019

Asset Class Performance

Periodic Table of Investment Returns for Periods Ended June 30, 2019

Best



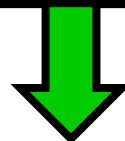
Worst

Last Quarter	Last 2 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
S&P:500 4.3%	S&P:500 18.5%	S&P:500 10.4%	S&P:500 14.2%	S&P:500 10.7%	S&P:500 14.7%	Russell:2000 Index 7.8%
MSCI:EAFE 3.7%	Russell:2000 Index 17.0%	Blmbg:Aggregate 7.9%	Russell:2000 Index 12.3%	NCREIF:NFI-ODCE Val Wt Nt 8.9%	Russell:2000 Index 13.4%	MSCI:EM Gross 7.6%
Blmbg:Aggregate 3.1%	MSCI:EAFE 14.0%	NCREIF:NFI-ODCE Val Wt Nt 5.9%	MSCI:EM Gross 11.1%	Russell:2000 Index 7.1%	NCREIF:NFI-ODCE Val Wt Nt 8.9%	NCREIF:NFI-ODCE Val Wt Nt 7.4%
Russell:2000 Index 2.1%	MSCI:EM Gross 10.8%	3 Month T-Bill 2.3%	MSCI:EAFE 9.1%	Blmbg:Aggregate 2.9%	MSCI:EAFE 6.9%	S&P:500 5.9%
NCREIF:NFI-ODCE Val Wt Nt 1.2%	Blmbg:Aggregate 6.1%	MSCI:EM Gross 1.6%	NCREIF:NFI-ODCE Val Wt Nt 6.8%	MSCI:EM Gross 2.9%	MSCI:EM Gross 6.2%	Blmbg:Aggregate 4.9%
MSCI:EM Gross 0.7%	Blmbg:Commodity Price Idx 3.8%	MSCI:EAFE 1.1%	Blmbg:Aggregate 2.3%	MSCI:EAFE 2.2%	Blmbg:Aggregate 3.9%	MSCI:EAFE 4.0%
3 Month T-Bill 0.6%	NCREIF:NFI-ODCE Val Wt Nt 2.4%	Russell:2000 Index (3.3%) 3.3%	3 Month T-Bill 1.4%	3 Month T-Bill 0.9%	3 Month T-Bill 0.5%	3 Month T-Bill 1.9%
Blmbg:Commodity Price Idx (1.8%) 1.8%	3 Month T-Bill 1.2%	Blmbg:Commodity Price Idx (8.9%) 8.9%	Blmbg:Commodity Price Idx (3.6%) 3.6%	Blmbg:Commodity Price Idx (10.0%) 10.0%	Blmbg:Commodity Price Idx (4.2%) 4.2%	Blmbg:Commodity Price Idx (0.2%) 0.2%

U.S. Equity Market

Growth has outperformed Value in the Last Year:

- Russell 1000 Growth > Value by over 3%
- Russell Midcap Growth > Value by over 10%
- Russell 2000 Growth > Value by over 5%

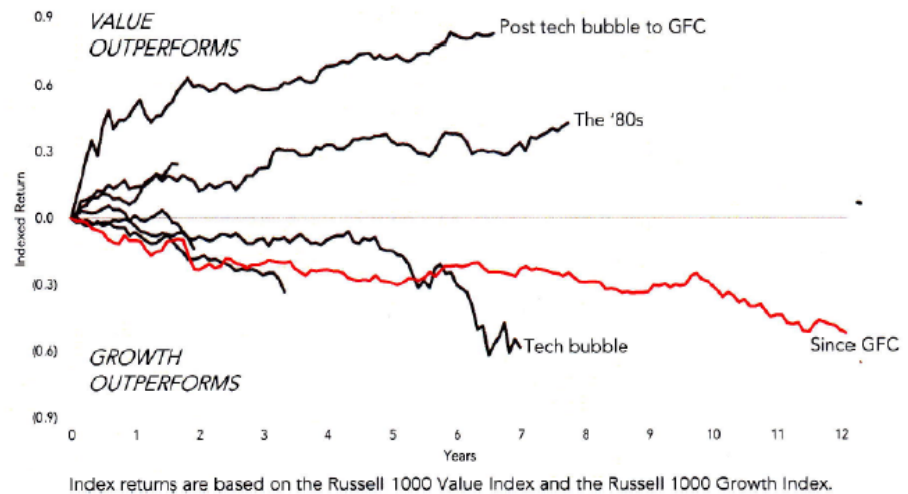


	Last Quarter	Last 2 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Large Cap Equity						
Russell 1000 Index	4.25	18.84	10.02	14.15	10.45	14.77
Russell 1000 Growth	4.64	21.49	11.56	18.07	13.39	16.28
Russell 1000 Value	3.84	16.24	8.46	10.19	7.46	13.19
Mid Cap Equity						
Russell Midcap Index	4.13	21.35	7.83	12.16	8.63	15.16
Russell Midcap Growth	5.40	26.08	13.94	16.49	11.10	16.02
Russell Midcap Value	3.19	18.02	3.68	8.95	6.72	14.56
Small Cap Equity						
Russell 2000 Index	2.10	16.98	-3.31	12.30	7.06	13.45
Russell 2000 Growth	2.75	20.36	-0.49	14.69	8.63	14.41
Russell 2000 Value	1.38	13.47	-6.24	9.81	5.39	12.40

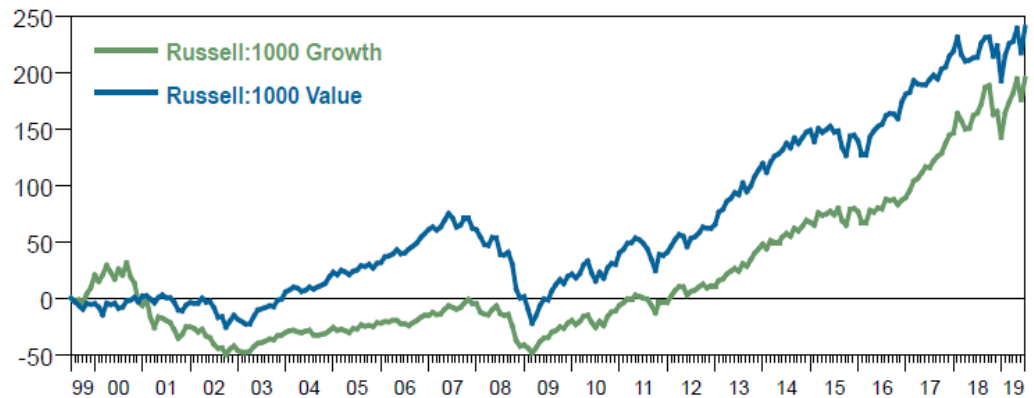
Growth Outpaced Value for Quarter, Continues to Widen Return Gap

- Growth outperformed value across all market caps, extending duration of growth outperformance since the GFC.
- While growth has outperformed value in recent time periods, value beats growth over the trailing 20-year period.
- Why the divergence? Speculation that low interest rates (and by proxy, discount rates) make growth stocks more attractive at higher valuations compared to similar value stocks, which typically are trading at discount.
- Investors are more inclined to invest in the perceived certainty of growth over the potential of value being unlocked (with the downside of holding a value-trap).

Value/Growth Cycle Duration 1978 – 2019



Cumulative Returns for Russell 1000 Style Indices: 20 Years

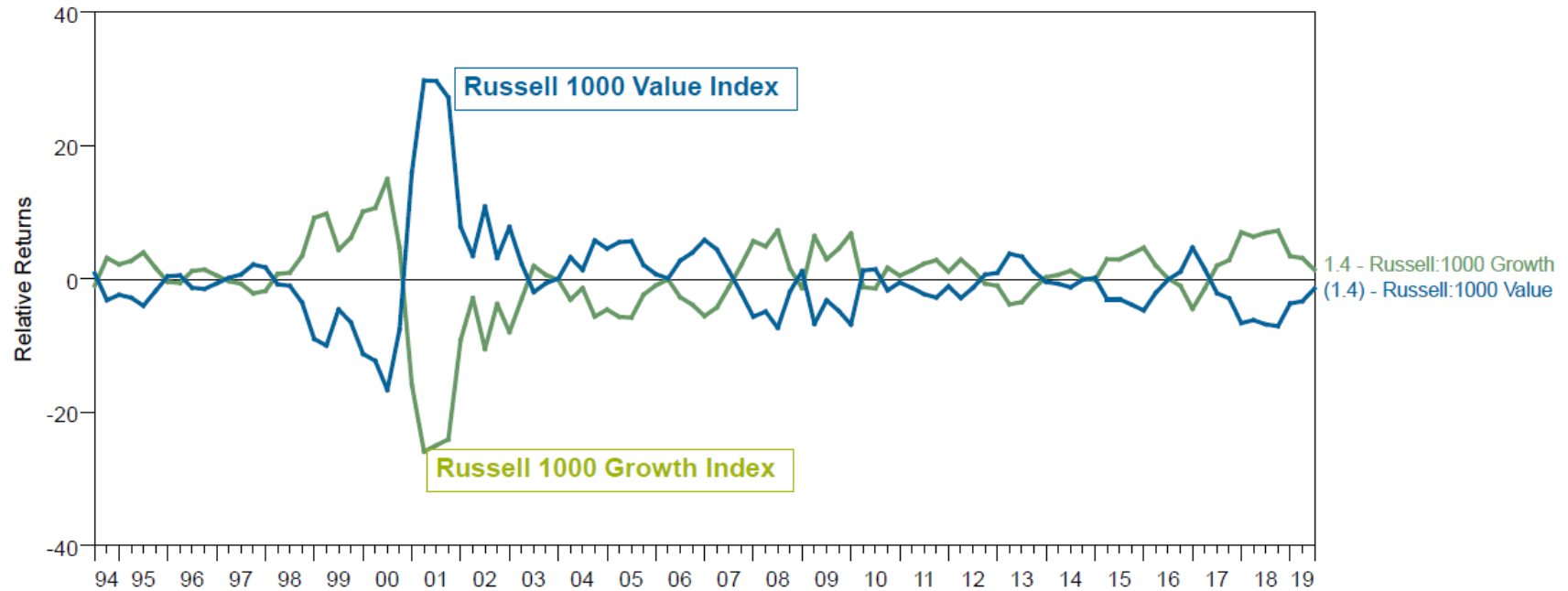


Source: Callan, AJO Partners

Growth and Value Through Time: I

Rolling one-year differences between Growth and Value

Relative Returns relative to Russell:1000 Index for 25 Years ended June 30, 2019

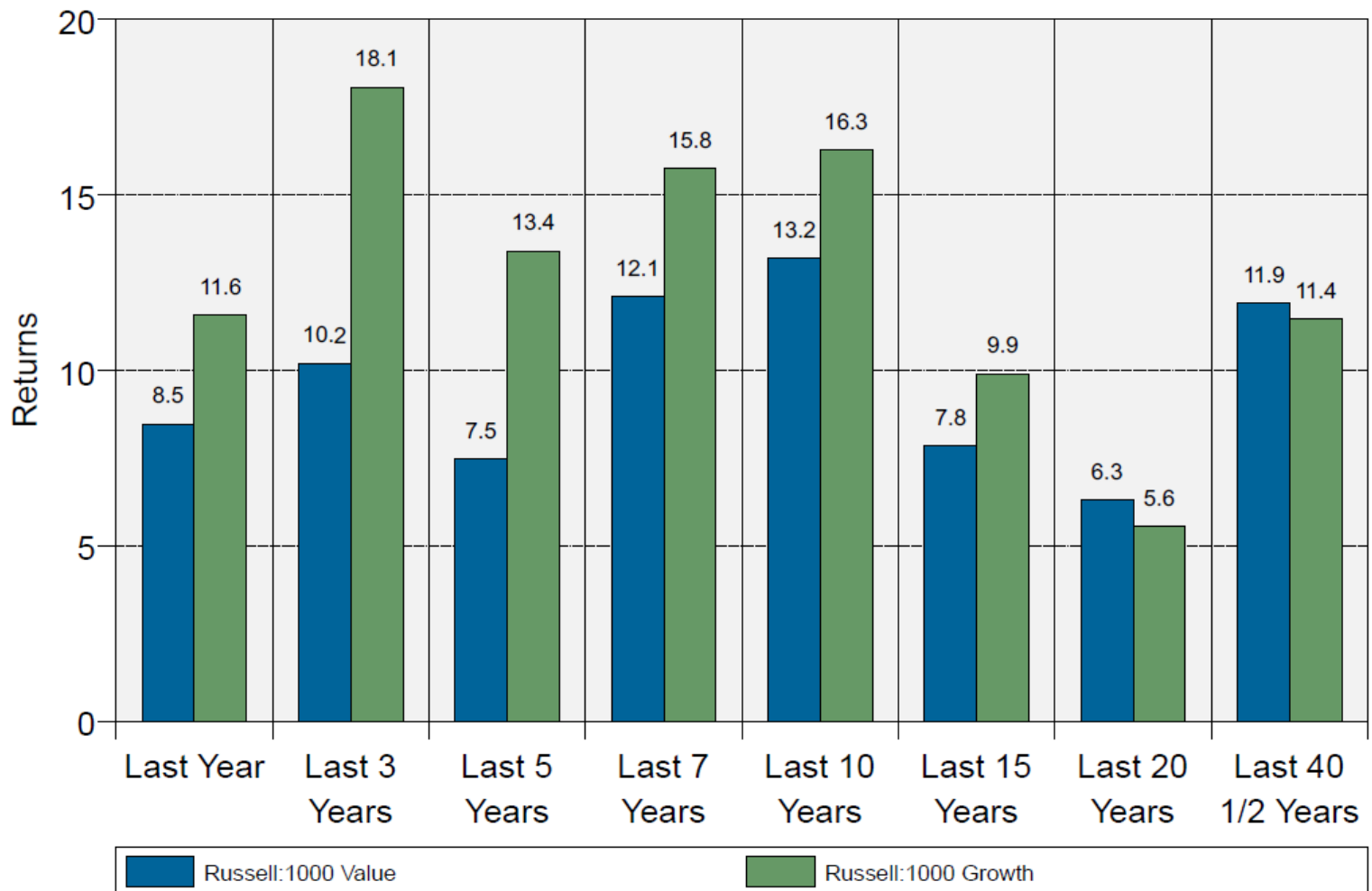


- Over the last 25 years, Growth stocks have tended to outperform value stocks
- Value returns exceeded growth returns from 2000 through 2007
- A risk-embracing environment has fueled growth stocks

Growth and Value Through Time: II

Growth outperformed Value for last 15 years, but Value won over longer periods

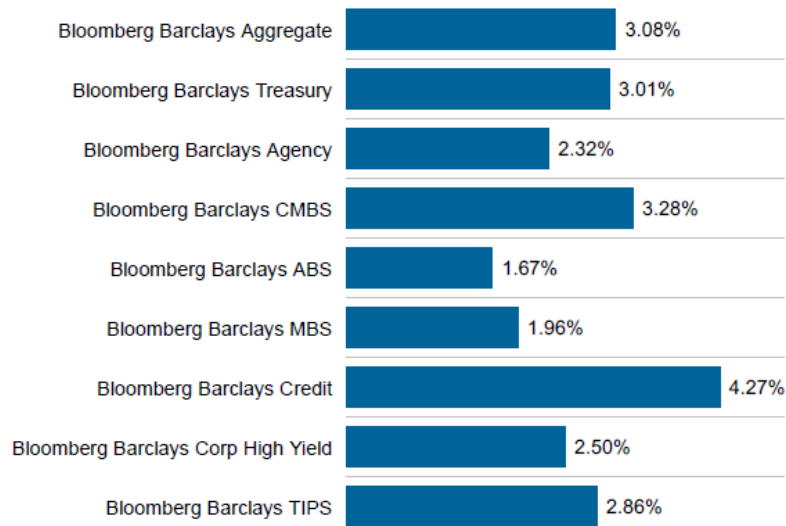
Returns for Various Periods Ending June 30, 2019



Fixed Income

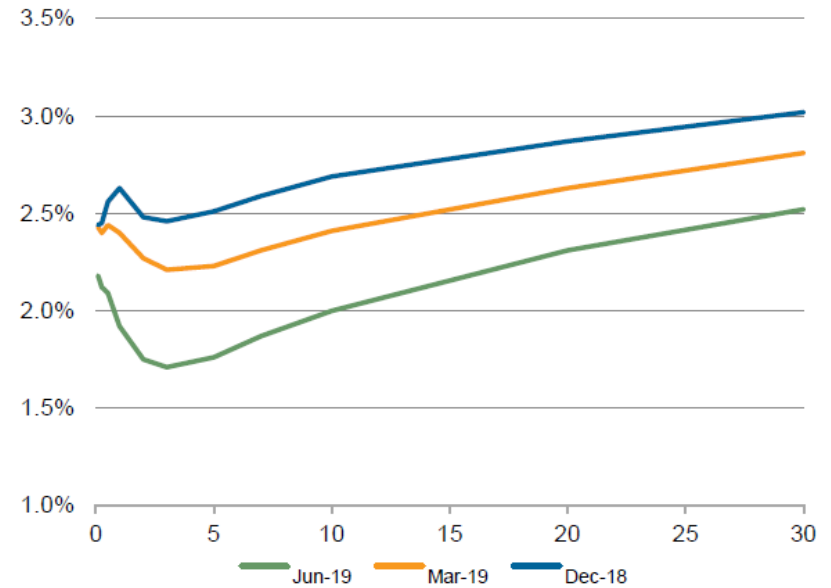
June 30, 2019

Total Returns



Source: Bloomberg

Treasury Yield Curve

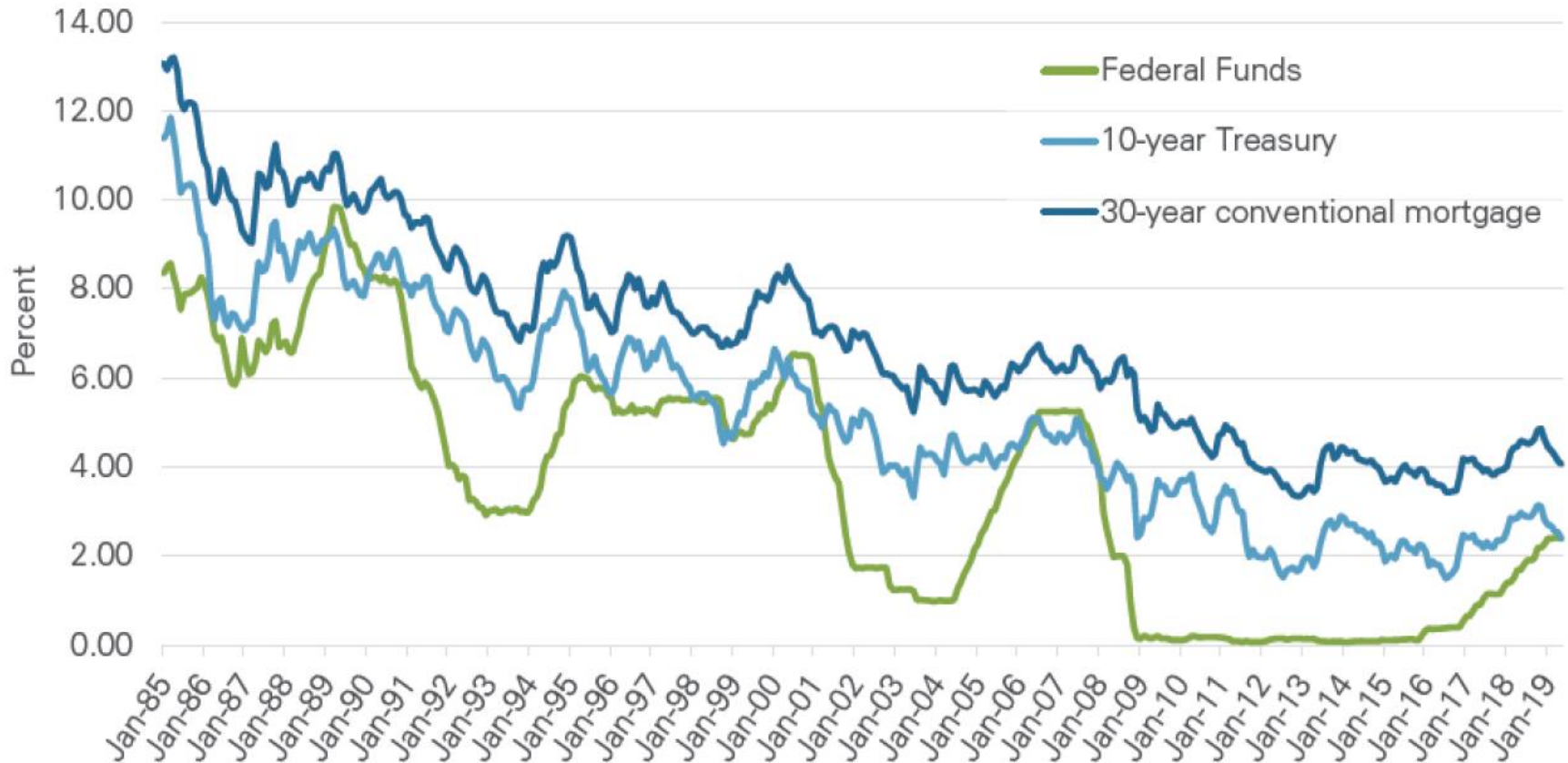


Source: U.S. Department of the Treasury

- As the Federal Reserve struck a more dovish tone, government bond yields fell across the maturity spectrum.
- The widely followed spread between the 2- and 10-year ended the month at 25 bps, up from 14 bps at the end of the first quarter.
- In this falling rate environment, the Bloomberg Aggregate Index gained 3.1%.
- Credit spreads tightened during the second quarter, and outperformed all other sectors returning 4.3% (Bloomberg Credit Index).

With some variation, decades of declining interest rates

US Interest Rates

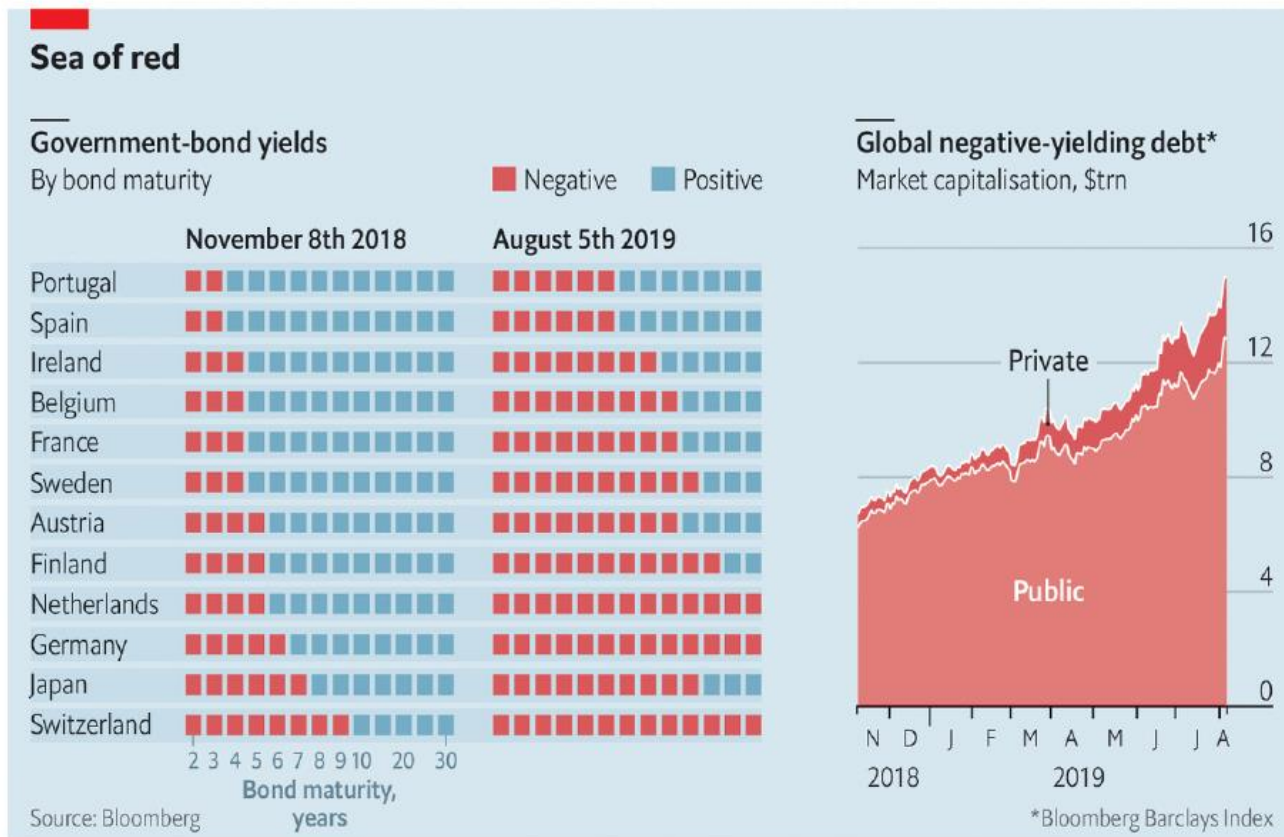


As of June 28, 2019 (last business day in June):

- Effective Fed Funds rate was 2.40%
- 10-Year Treasury Yield was 2.00%
- 30-Year Treasury Yield was 2.52%

Sources: Campbell Timber Group; Federal Reserve Bank; FreddieMac; US Treasury Department

\$15 Trillion in bonds with negative yields if held to maturity



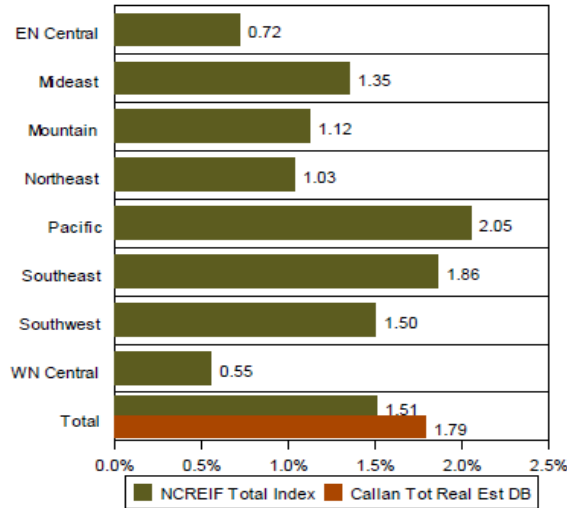
- Bloomberg and *The Economist* report that 25% of global sovereign and credit bonds trade at negative yields
 - Negative rates will theoretically encourage spending and investment as depositors are incentivized to spend cash rather than store it at the bank and incur a guaranteed loss.
- Trade disputes cause investors to favor the safety of government bonds, pushing yields lower.
- Expectations of low inflation are another source of downward pressure on bond yields globally

Source: *The Economist*, August 10, 2019, "Bond Yields: Under Water"

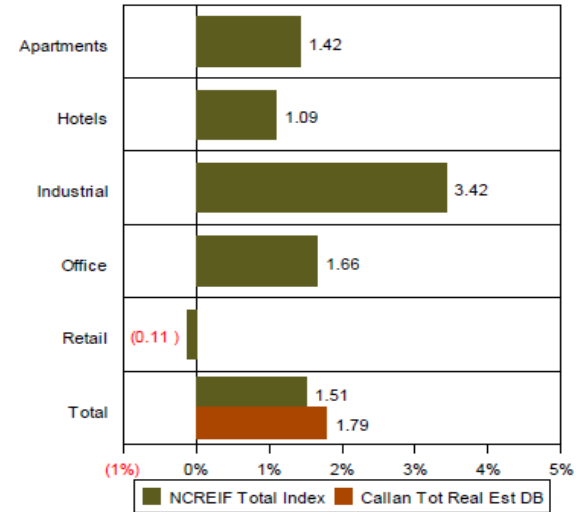
Real Estate Overview

June 30, 2019

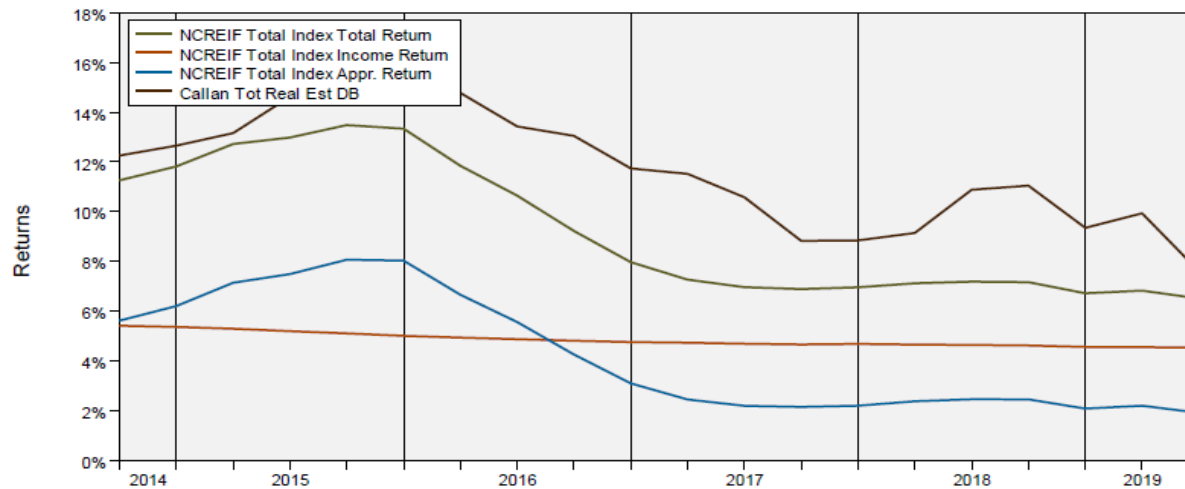
**NCREIF Total Index Returns by Geographic Area
Quarter Ended June 30, 2019**



**NCREIF Total Index Returns by Property Type
Quarter Ended June 30, 2019**



Rolling 1 Year Returns



Global Equity, Fixed Income and Real Asset Valuations

	June 30, 2019			Inv. Return	March 31, 2019	
	Market Value	Weight	Net New Inv.		Market Value	Weight
Global Equities	\$1,836,479,886	58.25%	\$(16,997,690)	\$72,264,882	\$1,781,212,694	58.30%
Public Equities	\$1,721,411,251	54.60%	\$(22,693,774)	\$64,169,496	\$1,679,935,530	54.99%
World Equities	\$521,177,858	16.53%	\$(7,905,892)	\$18,353,115	\$510,730,635	16.72%
Domestic Equities	\$693,540,590	22.00%	\$(18,529,357)	\$28,287,724	\$683,782,223	22.38%
Large Cap	526,533,725	16.70%	(10,508,679)	21,560,491	515,481,912	16.87%
Small Cap	167,006,865	5.30%	(8,020,678)	6,727,233	168,300,310	5.51%
International Equities	\$506,692,803	16.07%	\$3,741,475	\$17,528,656	\$485,422,672	15.89%
Developed	378,386,730	12.00%	4,418,688	14,912,945	359,055,097	11.75%
Emerging Markets	128,306,073	4.07%	(677,213)	2,615,711	126,367,575	4.14%
Private Equities	\$115,068,635	3.65%	\$5,696,084	\$8,095,386	\$101,277,165	3.31%
Global Fixed Income	\$710,758,174	22.54%	\$(1,191,096)	\$22,346,051	\$689,603,219	22.57%
Domestic Fixed Income	\$710,758,174	22.54%	\$(1,191,096)	\$22,346,051	\$689,603,219	22.57%
Investment Grade	493,108,442	15.64%	(8,661,169)	15,954,597	485,815,014	15.90%
Below Investment Grade	217,649,732	6.90%	7,470,073	6,391,454	203,788,205	6.67%
Global Real Assets	\$587,057,251	18.62%	\$2,440,003	\$14,354,455	\$570,262,793	18.67%
Real Estate	\$368,351,098	11.68%	\$3,408,574	\$6,863,132	\$358,079,391	11.72%
Other Real Assets	\$218,706,153	6.94%	\$(968,571)	\$7,491,323	\$212,183,402	6.95%
Infrastructure	155,104,798	4.92%	1,721,702	6,320,971	147,062,125	4.81%
Timber	63,601,355	2.02%	(2,690,274)	1,170,351	65,121,277	2.13%
Cash	\$18,634,776	0.59%	\$4,477,283	\$67,177	\$14,090,317	0.46%
Securities Lending Income	\$0	0.00%	\$(73,175)	\$73,175	-	-
Total Fund	\$3,152,930,087	100.0%	\$(11,344,676)	\$109,105,740	\$3,055,169,023	100.0%

Net Investment Income increased TFFR pension assets by \$135 million in fiscal 2019 and \$109 million in the 4th fiscal quarter.

TFFR Investment Ends – June 30, 2019

SIB clients should receive investment returns consistent with their written investment policies and market variables. This “End” is evaluated based on comparison of each client’s (a) actual net investment return, (b) standard deviation and (c) risk adjusted excess return, to the client’s policy benchmark over 5 years.

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
Total Fund Return - Net	5.54%	9.15%	6.19%	6.6%	0.28%
Policy Benchmark Return	6.36%	8.61%	5.66%	6.3%	
Excess Return	-0.82%	0.54%	0.53%	105%	



Key Point: TFFR investments have averaged over **\$2 billion** during the last 5-years and Excess Return has averaged over **0.50%** per annum. Based on these values, **TFFR’s use of active management has enhanced Net Investment Returns by \$50 million for the 5-years ended June 30, 2019** (or $\$2 \text{ billion} \times 0.50\% = \$10 \text{ million} \times 5 \text{ years} = \50 million). This Excess Return has been achieved while adhering to prescribed **Risk** limits (e.g. **105%** versus a policy limit of 115%).

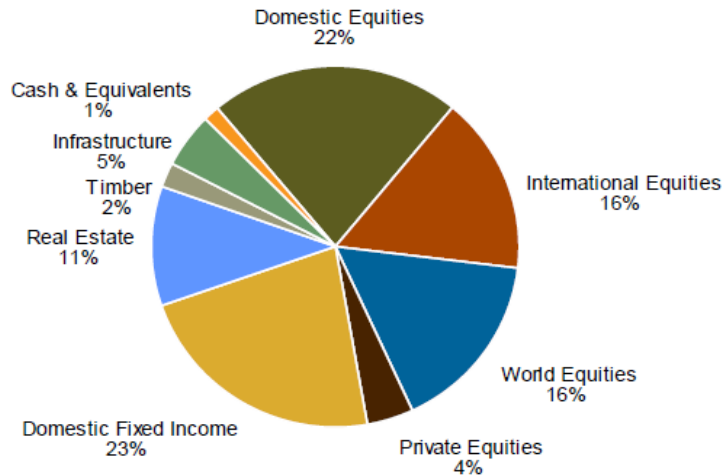
Current Policy Benchmark: 58% Equity (31% U.S., 21% Non-U.S., 6% Private); **23% Fixed Income** (16% U.S., 7% High Yield); **18% Real Assets** (10% Real Estate; 5.7% Infrastructure; 2.3% Timber); and **1% Cash**.

TFFR Allocation

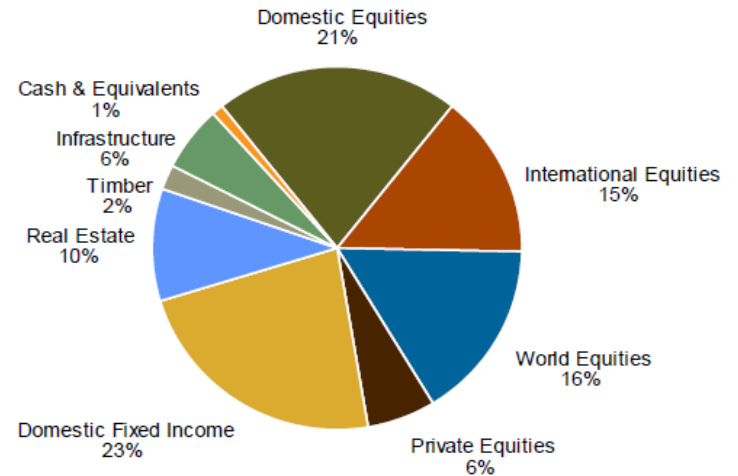
As of June 30, 2019

TFFR's Actual Asset Allocations are within 2% of Target noting the **Private Equity Underweight of 1.9% is offset by an **Overweight allocation to Domestic Equities of 0.7%**, and **International Equities of 1.3%**.**

Actual Asset Allocation



Target Asset Allocation

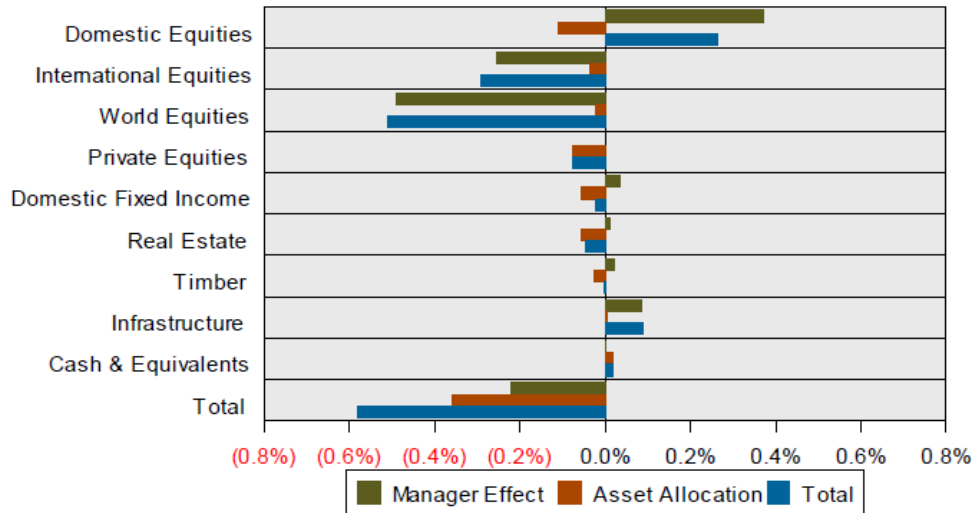


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	568,790	22.1%	21.4%	0.7%	18,035
International Equities	408,085	15.9%	14.6%	1.3%	32,336
World Equities	416,090	16.2%	16.0%	0.2%	4,310
Private Equities	105,620	4.1%	6.0%	(1.9%)	(48,797)
Domestic Fixed Income	580,286	22.5%	23.0%	(0.5%)	(11,647)
Real Estate	275,747	10.7%	10.0%	0.7%	18,385
Timber	56,772	2.2%	2.2%	0.0%	0
Infrastructure	127,195	4.9%	5.8%	(0.9%)	(21,923)
Cash & Equivalents	35,037	1.4%	1.0%	0.4%	9,301
Total	2,573,623	100.0%	100.0%		

TFFR Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	5.78%
Net of fees	5.54%
Target	6.36%
Net added	-0.82%



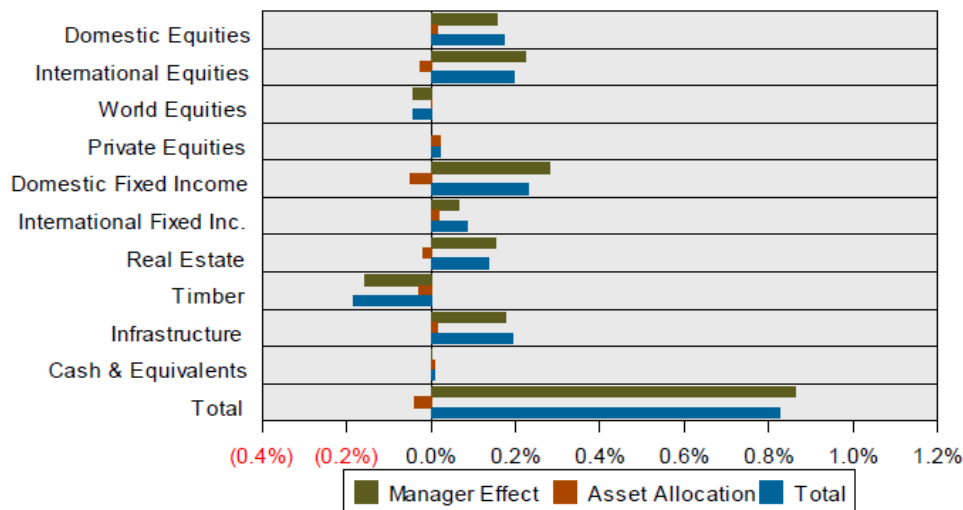
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.57%	6.94%	0.37%	(0.11%)	0.26%
International Equities	15%	15%	(0.40%)	1.31%	(0.26%)	(0.04%)	(0.29%)
World Equities	16%	16%	3.38%	6.33%	(0.49%)	(0.02%)	(0.51%)
Private Equities	4%	6%	8.62%	8.62%	0.00%	(0.08%)	(0.08%)
Domestic Fixed Income	23%	23%	7.91%	7.80%	0.04%	(0.06%)	(0.02%)
Real Estate	11%	10%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	(0.00%)
Infrastructure	5%	6%	5.58%	3.91%	0.08%	0.00%	0.09%
Cash & Equivalents	1%	1%	2.32%	2.31%	0.00%	0.02%	0.02%
Total			5.78%	6.36%	(0.22%)	(0.36%)	(0.58%)

TFFR Performance and Attribution

As of June 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 06/30/2019

Return Type	Return (%)
Gross	6.48%
Net of fees	6.18%
Target	5.66%
Net added	0.52%



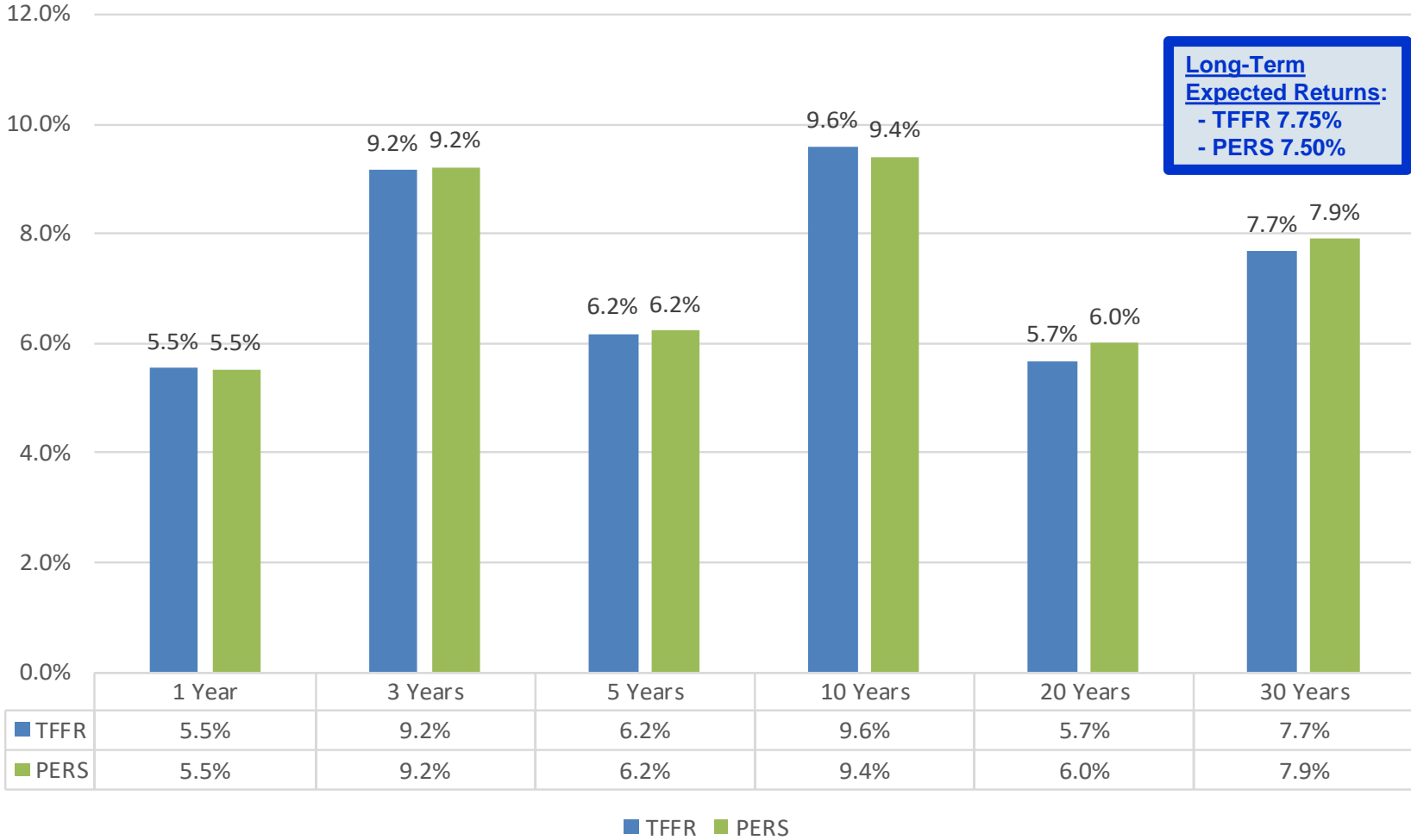
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.49%	9.75%	0.16%	0.02%	0.17%
International Equities	15%	15%	3.69%	2.32%	0.22%	(0.02%)	0.20%
World Equities	16%	16%	6.31%	6.60%	(0.04%)	0.00%	(0.04%)
Private Equities	4%	6%	2.22%	2.22%	0.00%	0.02%	0.02%
Domestic Fixed Income	19%	19%	4.82%	3.32%	0.28%	(0.05%)	0.23%
International Fixed Inc.	4%	4%	-	-	0.07%	0.02%	0.09%
Real Estate	10%	10%	10.39%	8.83%	0.15%	(0.02%)	0.14%
Timber	3%	4%	(0.07%)	4.67%	(0.16%)	(0.03%)	(0.18%)
Infrastructure	5%	5%	5.57%	1.74%	0.18%	0.02%	0.19%
Cash & Equivalents	1%	1%	0.97%	0.87%	0.00%	0.01%	0.01%

Total **6.48% = 5.66% + 0.86% + (0.04%)** **0.82%**

TFFR and PERS Returns have approximated their actuarial return assumptions the last 30 years.

Net Investment Returns for Periods Ended June 30, 2019

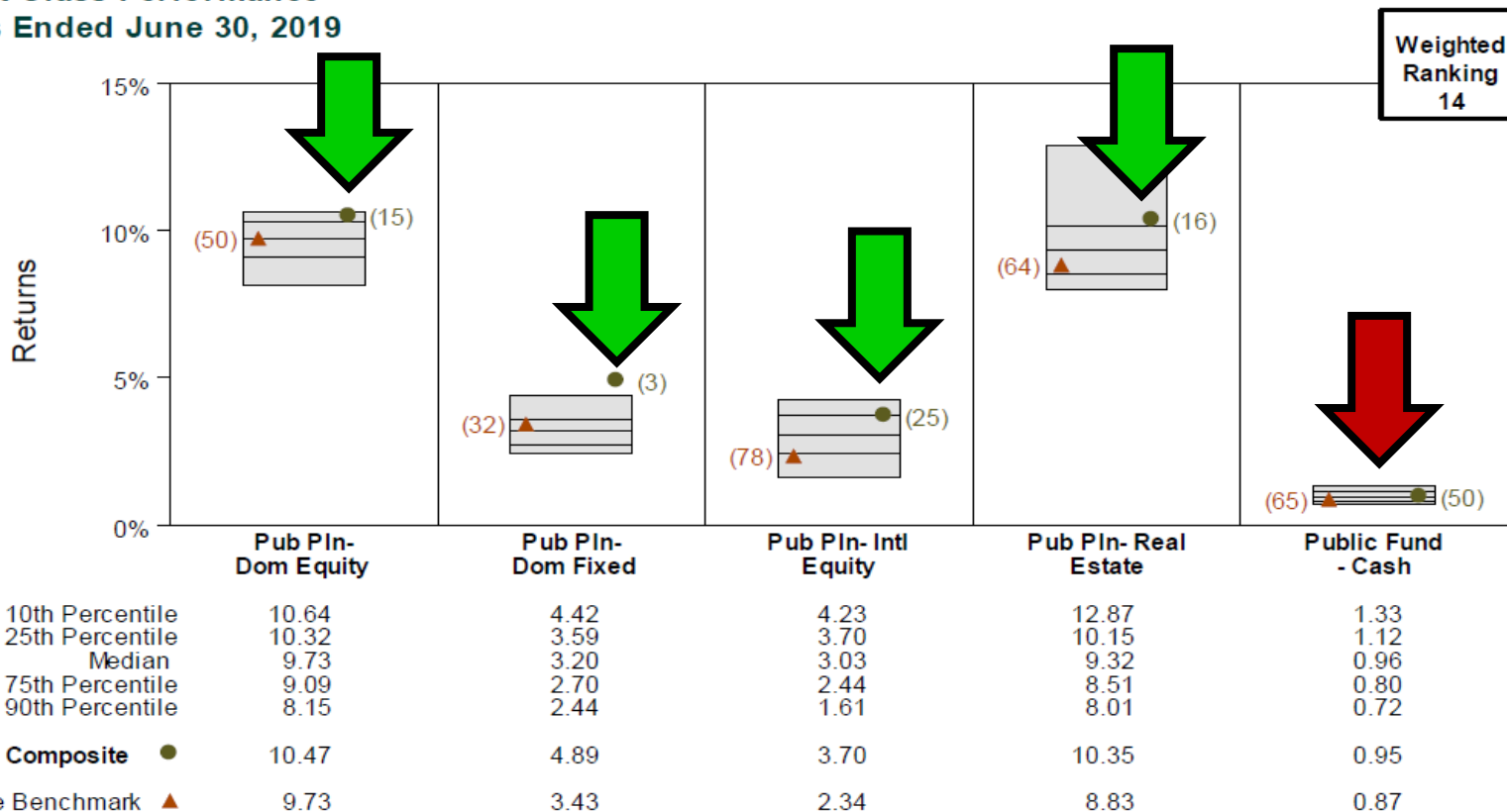


Note: Investment returns are deemed to be materially accurate, but are unaudited and subject to change.

Asset Class Composite Results

Consolidated Pension Trust Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance
Five Years Ended June 30, 2019



- All asset classes outperformed their respective benchmarks over the trailing five years.
- All asset classes, with the exception of cash, ranked in the top quartile over the trailing five years.

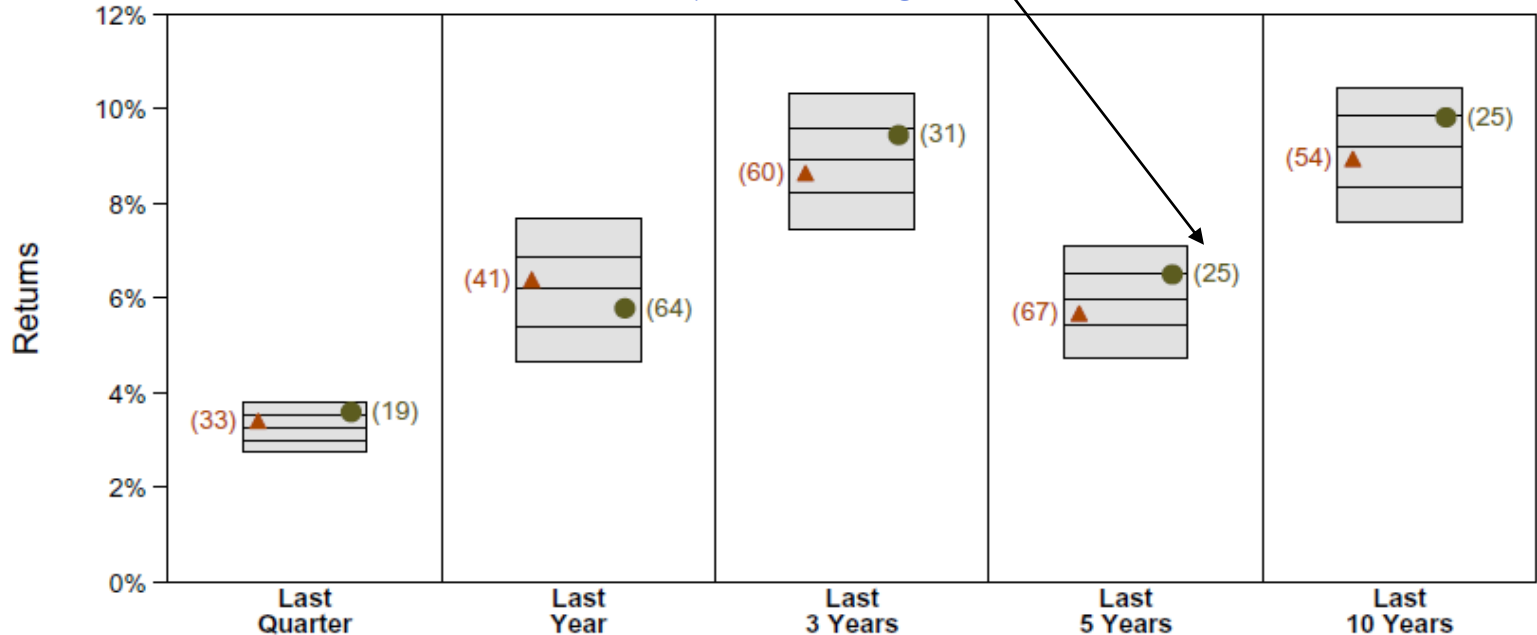
NOTE: SIB utilizes the private markets to invest in real estate, infrastructure and timber (in addition to private equity and private debt).

Pension Trust “gross” returns were in the 25th percentile for the 5-years ended June 30, 2019, based on Callan’s Public Fund Sponsor Database”.

Callan Public Fund Sponsor Database

Unadjusted Ranking

The Pension Trust was ranked in the top decile on an Asset Allocation Adjusted Basis for the 5 and 10 years ended June 30, 2018.



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	3.79	7.67	10.33	7.09	10.42
25th Percentile	3.51	6.85	9.57	6.50	9.85
Median	3.27	6.19	8.91	5.96	9.20
75th Percentile	2.98	5.41	8.21	5.44	8.34
90th Percentile	2.74	4.66	7.44	4.72	7.60
Total Fund ●	3.59	5.78	9.44	6.50	9.81
Policy Target ▲	3.40	6.39	8.64	5.68	8.94

* Current Quarter Target = 16.2% Bimbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

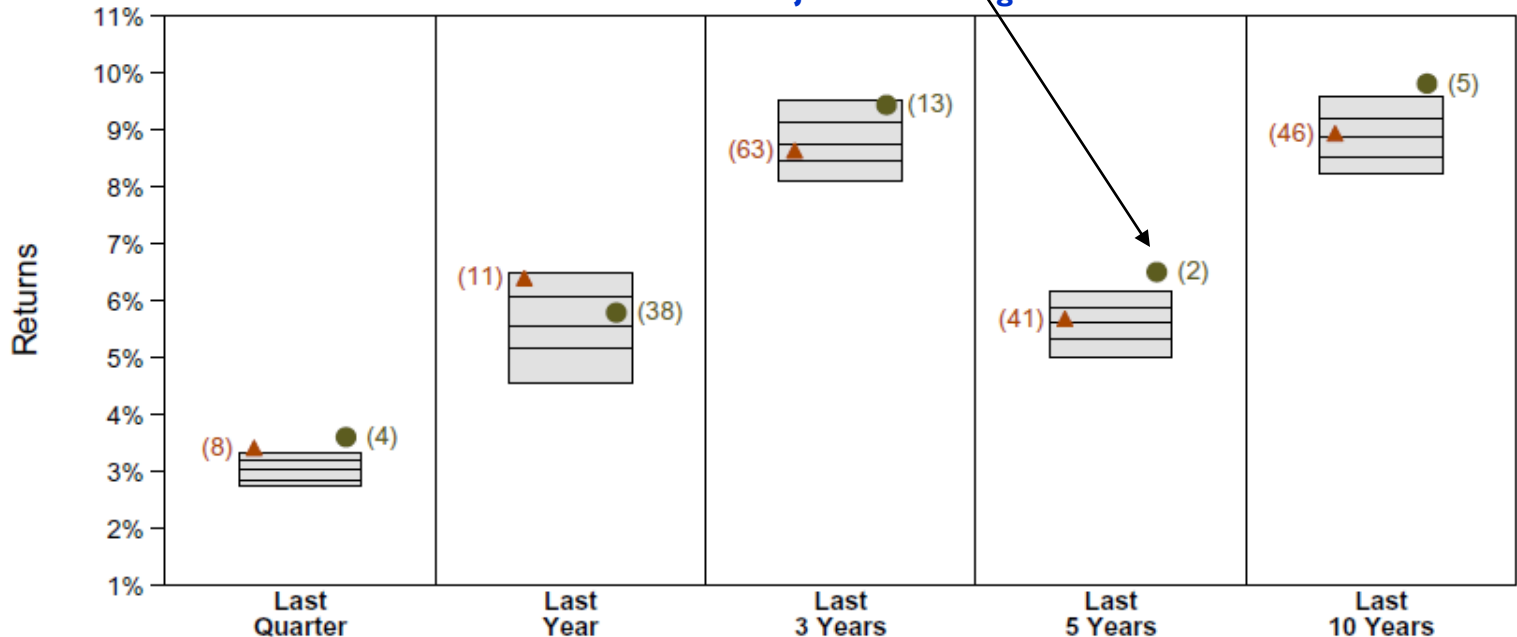


Pension Trust “gross” returns were in the 2nd percentile for the 5-years ended June 30, 2019, based on Callan’s Public Fund Sponsor Database”.

Asset Allocation Adjusted Ranking

Asset Allocation Adjusted Ranking: The Callan Public Fund Sponsor Database is adjusted to have the same historical asset allocation as that of the Total Fund (NDSIB Pension Trust).

Asset Allocation Adjusted Ranking



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	3.31	6.48	9.53	6.16	9.58
25th Percentile	3.18	6.06	9.12	5.86	9.19
Median	3.02	5.54	8.76	5.61	8.87
75th Percentile	2.84	5.15	8.44	5.33	8.50
90th Percentile	2.72	4.55	8.10	5.00	8.22
Total Fund ●	3.59	5.78	9.44	6.50	9.81
Policy Target ▲	3.40	6.39	8.64	5.68	8.94

* Current Quarter Target = 16.2% Bimbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.



Stock Market Returns by Calendar Year

2018 Performance in Perspective: History of the U.S. Stock Market (230 Years of Returns)

S&P 500 +18.5%
First Half of 2019

2015 return: +1.4%

2016 return: +12.0%

2018 return: -4.4%

2017 return: +21.8%

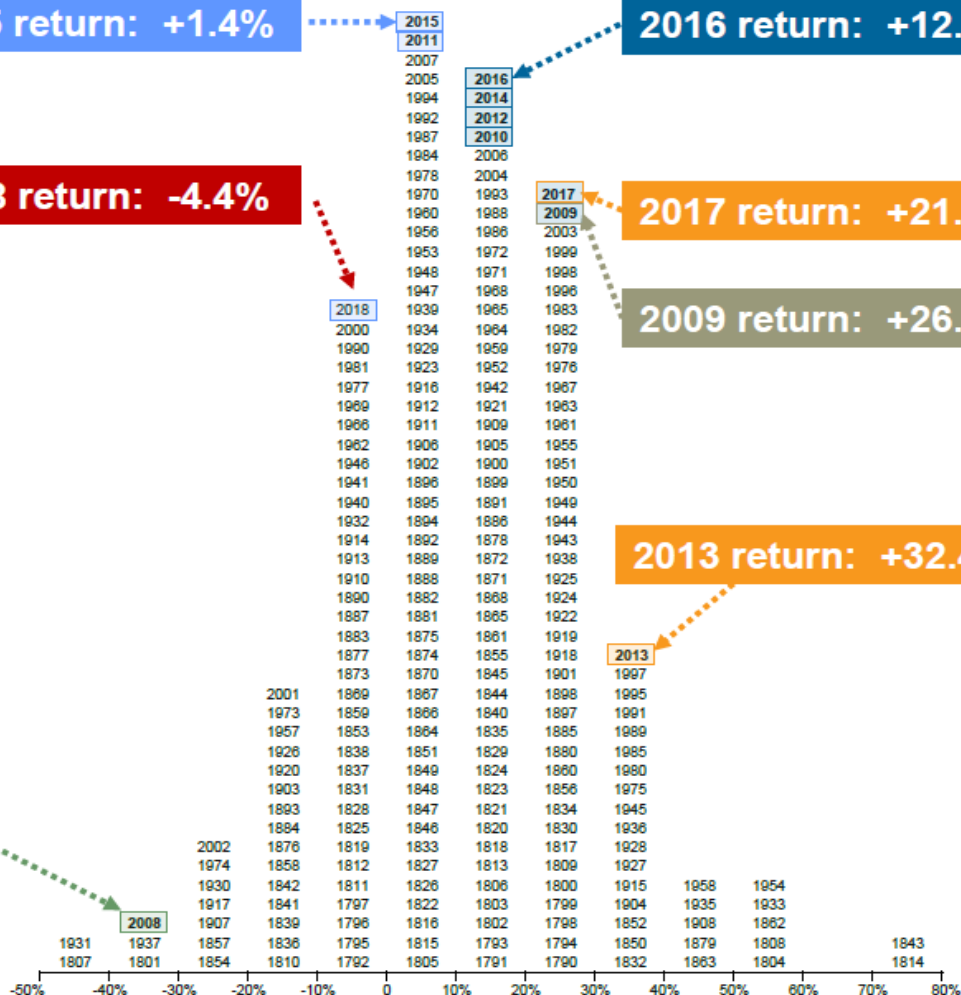
2009 return: +26.5%

2013 return: +32.4%

Five-year return for S&P 500: +8.5%

Ten-year return for S&P 500: +13.1% (!)

2008 return: -37.0%



Source: Ibbotson, Callan LLC

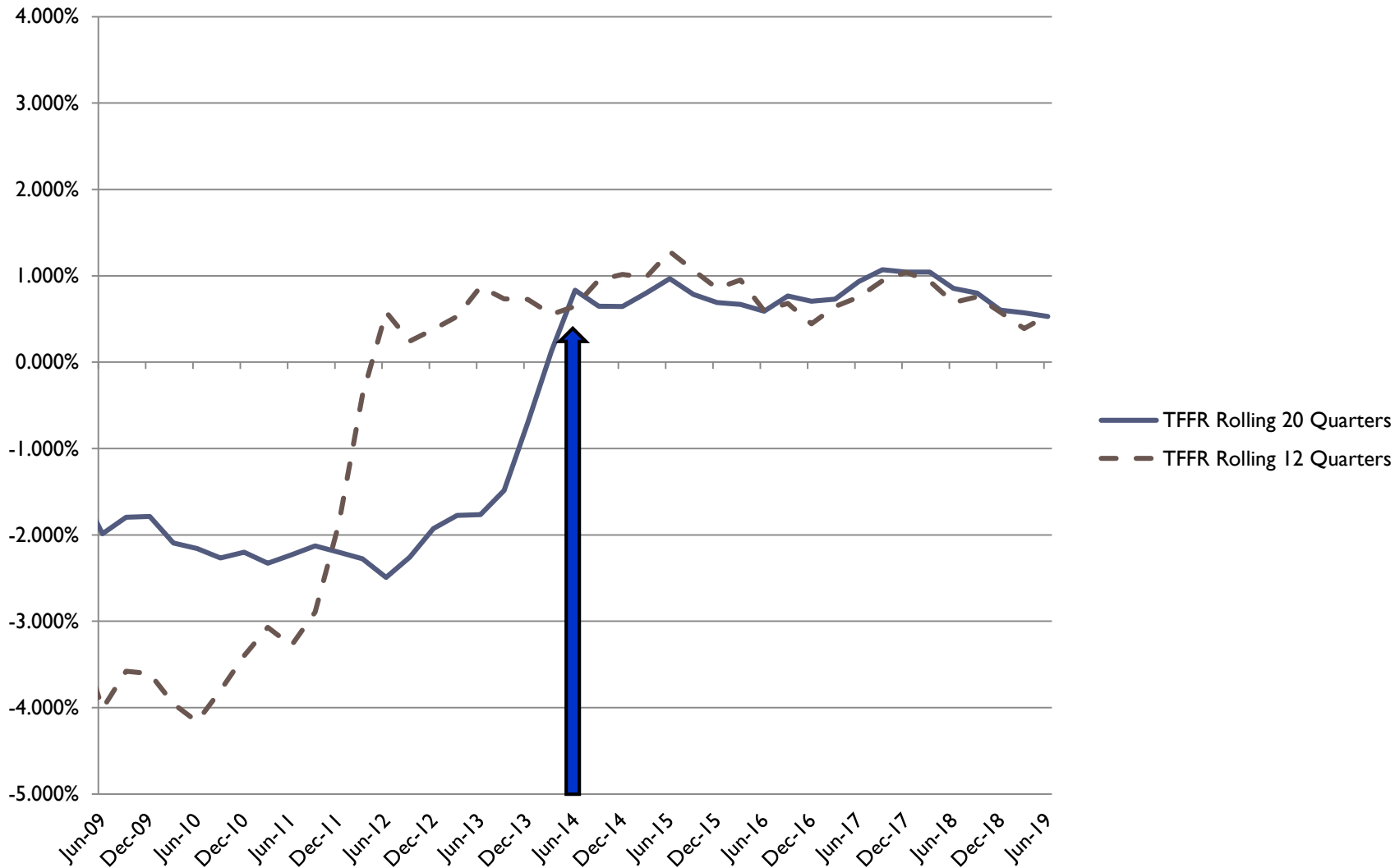
ND Teachers' Fund for Retirement Schedule of Investment Expenses

	FY 2019			FY 2018		
	Average Market Value	Fees in \$	Fees as % of Average MV	Average Market Value	Fees in \$	Fees as % of Average MV
Investment managers' fees:						
Global equity managers	400,722,725	1,367,498	0.34%	408,901,458	1,380,401	0.34%
Domestic large cap equity managers	432,047,867	730,141	0.17%	427,574,723	(368,098)	-0.09%
Domestic small cap equity managers	129,039,675	429,127	0.33%	129,193,929	586,340	0.45%
Developed international equity managers	304,063,790	888,364	0.29%	306,343,352	954,958	0.31%
Emerging markets equity managers	79,636,183	607,541	0.76%	84,989,807	697,607	0.82%
Investment grade domestic fixed income managers	398,684,392	1,137,802	0.29%	364,622,117	1,593,550	0.44%
Below investment grade fixed income managers	170,711,008	2,446,530	1.43%	148,364,649	1,953,550	1.32%
Developed international fixed income managers	-	-	0.00%	58,553,192	270,428	0.46%
Real estate managers	267,011,840	2,258,800	0.85%	238,450,646	2,660,865	1.12%
Timber managers	57,726,174	380,628	0.66%	59,876,758	395,760	0.66%
Infrastructure managers	118,635,657	1,920,619	1.62%	114,181,019	1,316,541	1.15%
Private equity managers *	94,737,256	1,606,895	1.70%	82,765,742	1,513,944	1.83%
Cash & equivalents managers	25,879,892	30,119	0.12%	29,499,369	36,561	0.12%
Total investment management fees	2,478,896,460	13,804,064	0.56%	2,453,316,763	12,992,407	0.53%
Custodian fees		235,778	0.01%		233,938	0.01%
Investment consultant fees		129,878	0.01%		150,251	0.01%
Total investment expenses		14,169,720	0.57%		13,376,596	0.55%
Actual Investment Performance (Net of Fees)			5.54%			9.11%
Policy Benchmark			6.36%			7.89%
Outperformance/(Underperformance)			-0.82%			1.22%

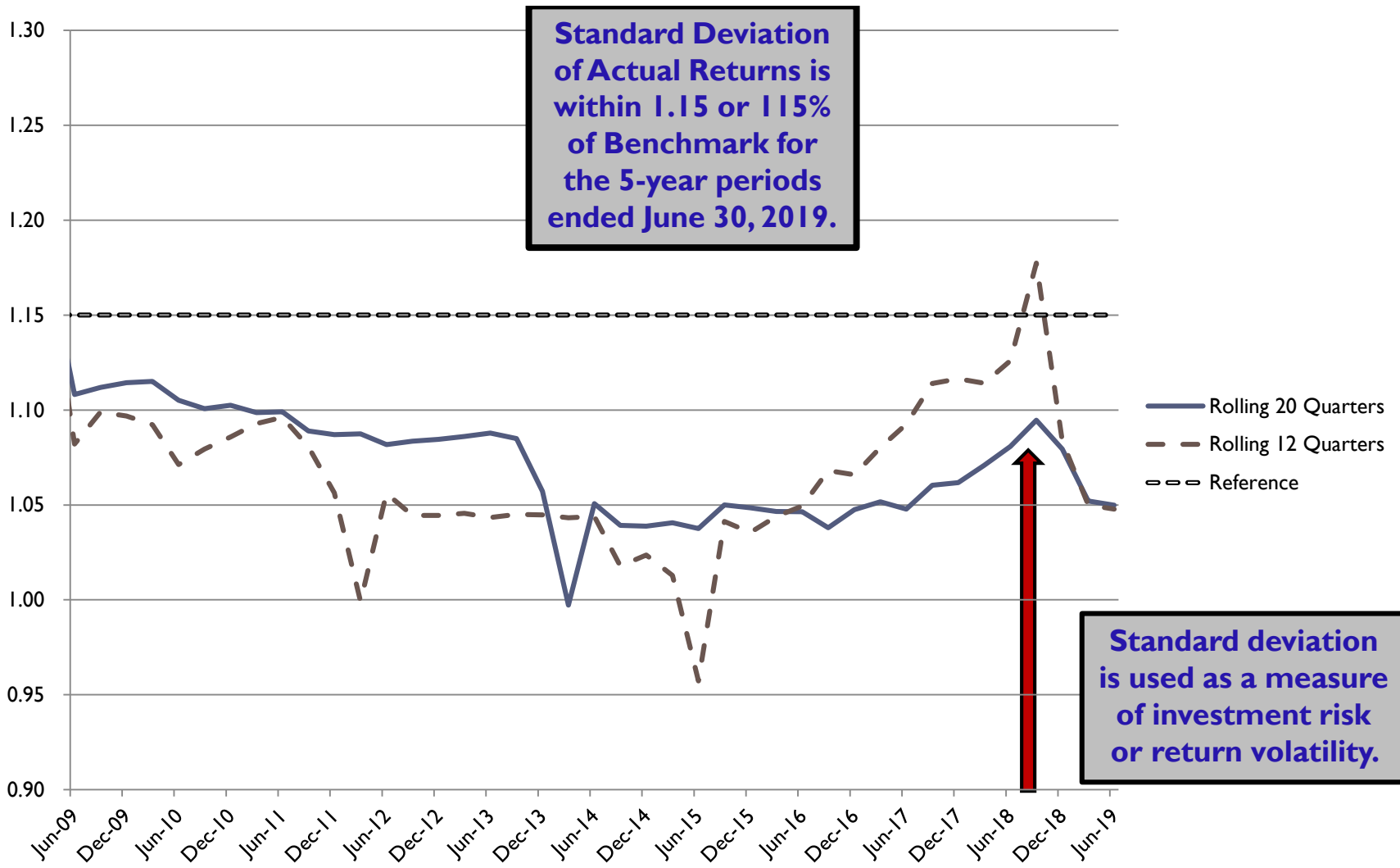
* Includes some estimates for June quarter carried interest/incentive fees not yet reported.

Investment fees and expenses increased to 0.57% in Fiscal 2019 from 0.55% in Fiscal 2018 due to improved returns by Parametric Clifton which resulted in a positive fee in FY 2019 versus a negative fee in FY 2018.

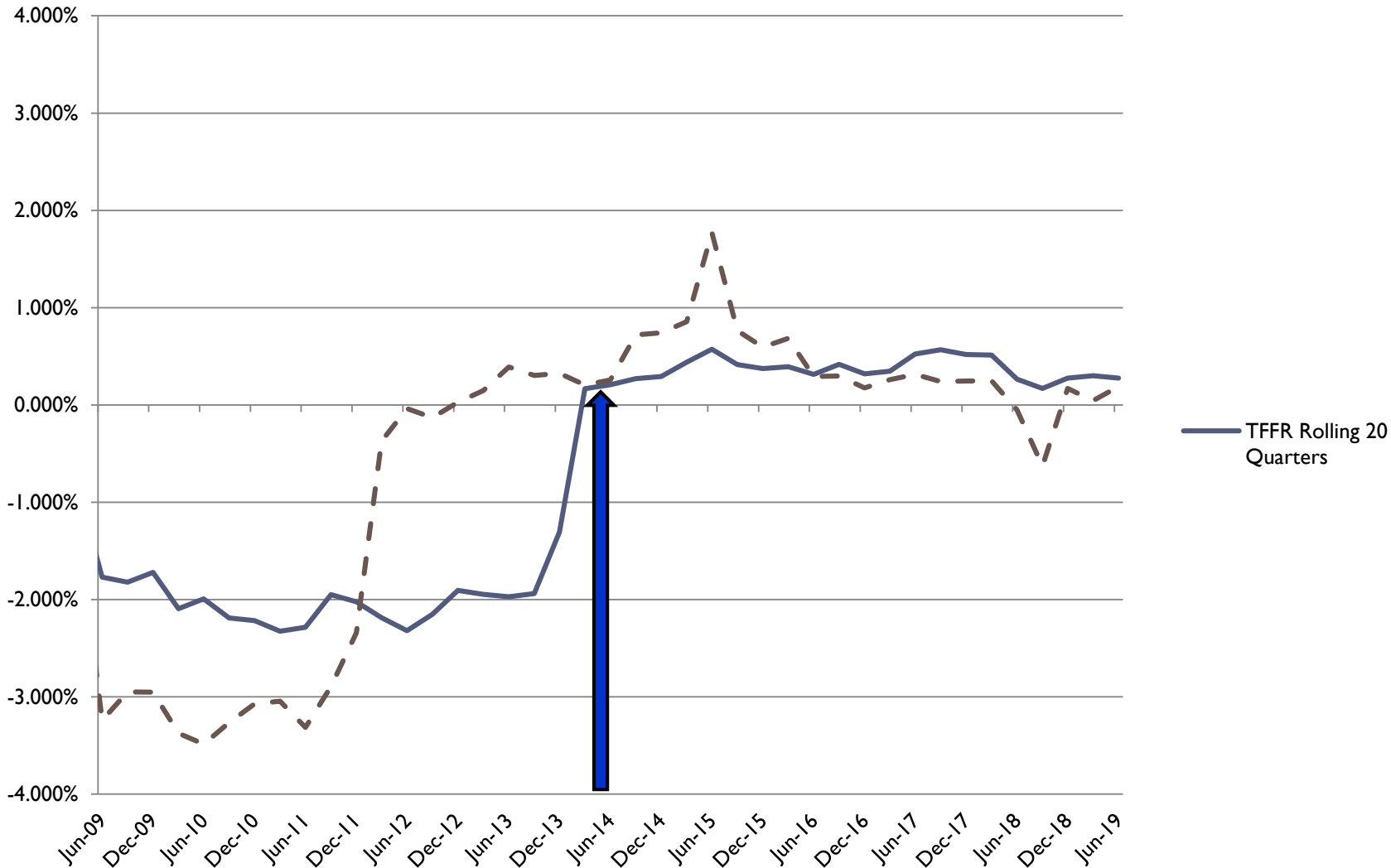
TFFR Excess Returns have consistently exceeded 0.50% per annum for Rolling 5 year periods (or Rolling 20 Quarters) since 2014



TFFR - Standard Deviation Relative to Benchmark 10-Years Ended June 30, 2019



TFFR has generated positive Risk Adjusted Excess Return for Rolling 5-Year Periods since 2014



ND State Investment Board
Investment Performance Summary
As of June 30, 2019

Fund Name	Market Values as of 6/30/19	FYTD 2019	Investment Performance (net of fees)									
			Fiscal Years ended June 30					Periods ended 6/30/19 (annualized)				
			2018	2017	2016	2015	2014	3 Years	5 Years	10 Years	20 Years	30 Years
Pension Pool												
Teachers' Fund for Retirement (TFFR)	\$ 2,573,622,554	5.54%	9.11%	12.93%	0.28%	3.52%	16.53%	9.15%	6.18%	9.57%	5.68%	7.68%
Public Employees Retirement System (PERS)	3,152,930,087	5.52%	9.19%	13.05%	0.28%	3.53%	16.38%	9.21%	6.22%	9.41%	6.00%	7.90%
City of Bismarck Employees Pension	104,517,247	5.94%	7.86%	11.56%	0.82%	3.69%	14.56%	8.43%	5.91%	8.99%	5.93%	*
City of Bismarck Police Pension	41,862,976	5.76%	8.36%	12.24%	0.32%	3.56%	15.27%	8.76%	5.97%	9.24%	5.86%	*
City of Grand Forks Employees Pension	68,419,301	6.17%	9.46%	12.84%	0.11%	3.53%	16.33%	9.46%	6.33%	9.71%	*	*
Park District of the City of Grand Forks Pension	7,176,427	6.02%	9.33%	12.74%	0.36%	4.22%	16.44%	9.33%	6.45%	*	*	*
Subtotal Pension Pool	5,948,528,592											
Insurance Pool												
Workforce Safety & Insurance (WSI)	2,065,400,398	6.87%	5.34%	8.29%	3.58%	3.26%	11.71%	6.83%	5.45%	7.82%	5.87%	7.39%
State Fire and Tornado Fund	22,761,457	6.41%	5.32%	9.30%	2.67%	3.16%	12.78%	7.00%	5.34%	8.34%	5.87%	6.82%
State Bonding Fund	3,609,422	5.83%	1.07%	2.40%	3.48%	1.25%	4.06%	3.08%	2.79%	3.98%	3.48%	5.24%
Petroleum Tank Release Compensation Fund	5,994,235	5.47%	1.13%	2.23%	3.17%	1.13%	3.68%	2.93%	2.61%	3.67%	3.25%	*
Insurance Regulatory Trust Fund	6,218,781	5.03%	4.53%	7.40%	1.46%	2.04%	9.88%	5.65%	4.07%	6.29%	5.01%	5.89%
State Risk Management Fund	4,909,623	7.67%	5.14%	8.27%	4.46%	4.08%	12.29%	7.02%	5.91%	8.94%	5.58%	*
State Risk Management Workers Comp Fund	5,187,879	7.56%	6.03%	9.41%	4.21%	4.57%	13.68%	7.66%	6.34%	9.62%	*	*
Cultural Endowment Fund	475,311	6.02%	8.27%	12.71%	2.18%	5.22%	16.94%	8.96%	6.82%	10.62%	*	*
Budget Stabilization Fund	118,707,130	4.51%	0.32%	0.80%	1.82%	1.86%	1.94%	1.86%	1.85%	2.61%	*	*
ND Association of Counties (NDACo) Fund	6,333,052	7.12%	4.48%	8.30%	2.76%	2.77%	11.61%	6.62%	5.06%	8.00%	5.21%	*
Bismarck Deferred Sick Leave Account	779,596	6.90%	4.66%	8.85%	3.26%	2.95%	12.32%	6.79%	5.30%	8.28%	*	*
City of Fargo FargoDome Permanent Fund	44,840,633	5.13%	7.64%	12.25%	1.19%	3.38%	16.34%	8.30%	5.85%	9.67%	*	*
State Board of Medicine Fund	2,362,384	4.98%	3.12%	5.29%	1.63%	2.70%	*	4.46%	3.54%	*	*	*
PERS Group Insurance Account	31,067,120	4.20%	0.41%	0.08%	1.49%	0.01%	0.06%	1.55%	1.23%	0.74%	*	*
Lewis & Clark Interpretive Center Endowment	751,763	6.99%	*	*	*	*	*	*	*	*	*	*
Subtotal Insurance Pool	2,319,398,785											
Legacy Fund	6,580,759,920	4.98%	7.57%	12.03%	1.06%	3.31%	6.64%	8.15%	5.72%	*	*	*
Job Service of North Dakota Pension	97,285,279	6.86%	3.15%	5.63%	5.45%	3.30%	13.54%	5.20%	4.87%	8.17%	5.53%	*
Tobacco Control and Prevention Fund	9,300,127	4.47%	1.63%	1.66%	*	*	*	2.58%	*	*	*	*
PERS Retiree Health Insurance Credit Fund	135,962,521	6.51%	7.15%	11.81%	0.72%	3.06%	16.53%	8.47%	5.79%	9.76%	5.22%	*
Total Assets Under SIB Management	\$ 15,091,235,224											

Note: Asset allocation largely drives investment performance. Each fund has a unique allocation that takes into consideration return objectives, risk tolerance, liquidity constraints, and unique circumstances. Such considerations must be taken into account when comparing investment returns. **All figures are preliminary and subject to revision.**

State Investment Board – Client Assets Under Management

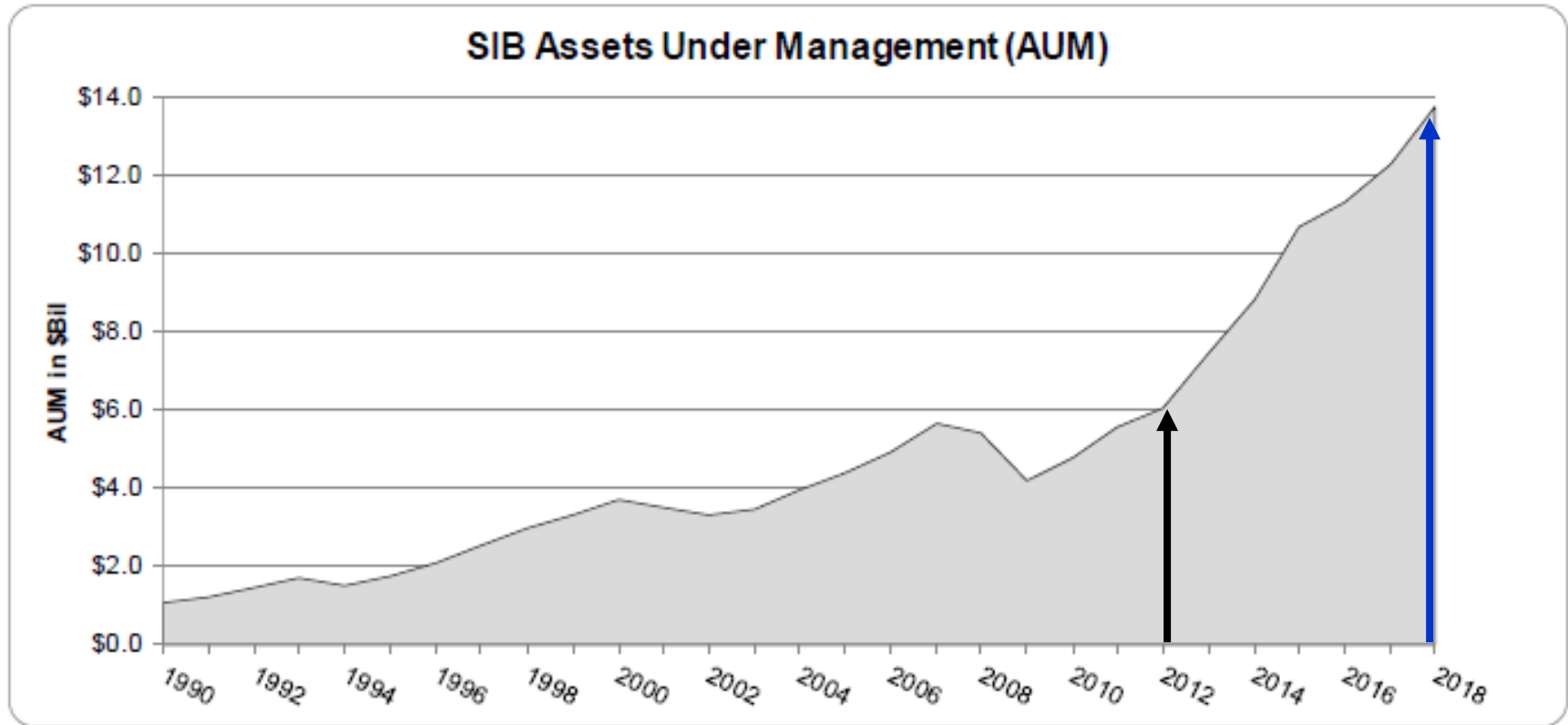
Fund Name	Market Values as of 6/30/19 ⁽¹⁾	Market Values as of 6/30/18 ⁽²⁾
Pension Trust Fund		
Public Employees Retirement System (PERS)	3,152,930,087	3,024,222,995
Teachers' Fund for Retirement (TFFR)	2,573,622,554	2,485,835,306
City of Bismarck Employees Pension	104,517,247	99,177,507
City of Grand Forks Employees Pension	68,419,301	63,633,206
City of Bismarck Police Pension	41,862,976	40,106,249
Grand Forks Park District	7,176,427	6,772,657
Subtotal Pension Trust Fund	5,948,528,592	5,719,747,919
Insurance Trust Fund		
Workforce Safety & Insurance (WSI)	2,065,400,398	1,923,117,660
Budget Stabilization Fund	118,707,130	113,603,777
City of Fargo FargoDome Permanent Fund	44,840,633	44,629,288
PERS Group Insurance Account	31,067,120	31,610,707
State Fire and Tornado Fund	22,761,457	23,066,784
ND Association of Counties (NDACo) Fund	6,333,052	5,910,661
Insurance Regulatory Trust Fund	6,218,781	5,637,791
Petroleum Tank Release Compensation Fund	5,994,235	6,167,272
State Risk Management Workers Comp Fund	5,187,879	5,356,549
State Risk Management Fund	4,909,623	4,956,217
State Bonding Fund	3,609,422	3,411,215
ND Board of Medicine	2,362,384	2,251,119
Bismarck Deferred Sick Leave Account	779,596	730,026
Lewis & Clark Interpretive Center Endowment Fund	751,763	703,284
Cultural Endowment Fund	475,311	448,825
Subtotal Insurance Trust Fund	2,319,398,784	2,171,601,175
Legacy Trust Fund		
Legacy Fund	6,580,759,920	5,577,319,109
PERS Retiree Insurance Credit Fund	135,962,521	126,605,207
Job Service of North Dakota Pension	97,285,279	95,690,469
ND Tobacco Prevention and Control Trust Fund	9,300,127	54,365,162
Total Assets Under SIB Management	15,091,235,223	13,745,329,041

- ▶ **SIB client investments totaled approximately \$15.1 billion as of June 30, 2019**, with the Pension Trust at \$5.95 billion, Insurance Trust approaching \$2.3 billion and Legacy Fund exceeding \$6.5 billion.
- ▶ **Equity markets continued to advance in the second quarter, aided by expectations of easing by the Fed, healthy consumer spending, and low unemployment.** Bonds posted gains as rates rallied across maturities and credit spreads fell. As a result, global public equities returned 3.8% in the 2nd quarter of 2019, while fixed income returned 3.2%.
- ▶ **The Pension Trust posted a net return of 5.5% in the last year.** During the last 5-years, the Pension Trust generated a net annualized return of 6.2%, exceeding the performance benchmark of 5.7%.
- ▶ **The Insurance Trust generated a net return of 6.4% in the last year.** During the last 5-years, the Insurance Trust posted a net annualized return of 5.0%, exceeding the performance benchmark of 4.0%.
- ▶ **Legacy Fund generated a net return of 5.0% last year.** During the last 5-years, Legacy Fund earned a net annualized return of 5.7%, exceeding the performance benchmark of 5.2% noting the Fund was not fully invested in its current asset allocation until 2015.

⁽¹⁾ Market values are unaudited and subject to change.

⁽²⁾ 6/30/18 market values as stated in the Comprehensive Annual Financial Report.

SIB Client Investments Have Doubled since 2012

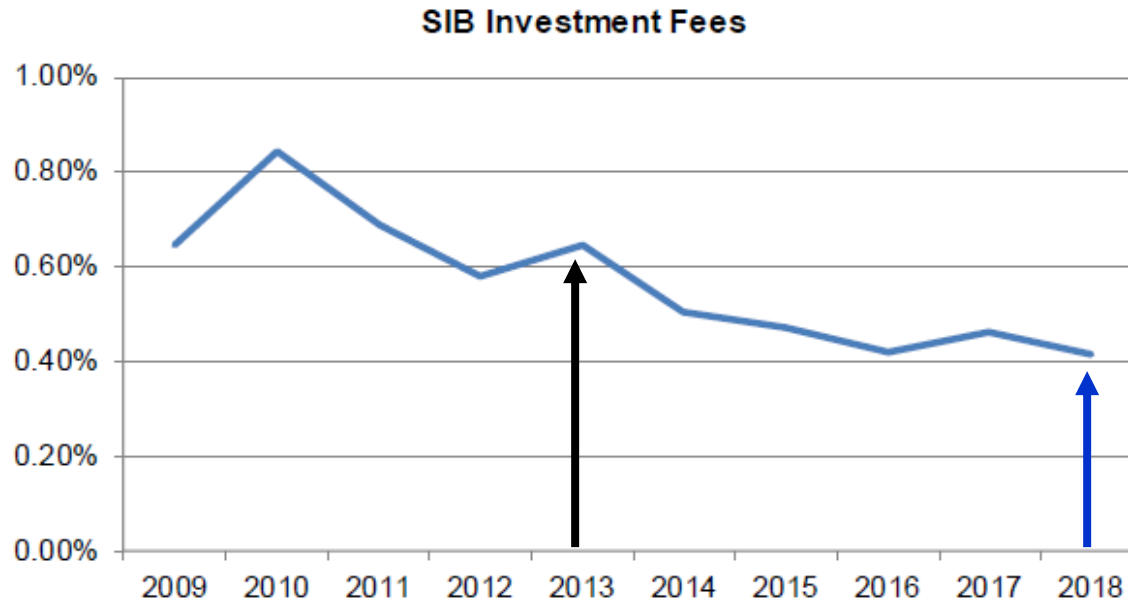


SIB clients Assets Under Management (AUM) have grown from \$6 billion in 2012 to over \$15 billion in 2019 largely as a result of deposits into the Legacy Fund in addition to reasonable investment earnings growth.

Despite significant growth in client services offered by both the SIB and TFFR programs, SIB and TFFR client satisfaction ratings remain solid at 3.7 for the SIB and 3.8 for TFFR (on a 4.0 grading scale).

SIB Client Investment Fees and Expenses

Investment fees have declined from 0.65% in fiscal 2013 to 0.45% in fiscal 2019 (as a % of AUM).



The SIB and RIO work to keep investment fees at or below 0.50% per year, while seeking to identify investment firms which beat their performance benchmarks by 0.50% or more (after all expenses) over the long-term.

If the SIB and RIO are successful in attaining both of the above goals, our SIB clients are effectively earning an approximate 2-for-1 return on their investment fee dollars (in the form of better returns over stated benchmarks).

The SIB and RIO were successful in attaining the above goals for the vast majority of our clients for the 5-years ended June 30, 2019, such that the use of active management generated an estimated \$300 million of incremental income for our clients from July 1, 2014 to June 30, 2019 (e.g. \$12 billion x 0.50% = \$60 million/year x 5 years).

Return on Investment Fees and Expenses

Investment Goals for SIB Client Fees and Expenses:

1. The SIB and RIO attempt to keep total fees and expenses at or below 50 bps (0.50%) per annum.
2. We also attempt to generate $\geq 0.50\%$ of excess return over our stated performance benchmarks (after deducting all investment fees and expenses) over a rolling 5-year period.
3. If we are successful in attaining both of the above goals, we are effectively earning a 2-for-1 return on our investment fee and expense dollars (which is consistent with our fundamental investment belief that the prudent use of active management is beneficial to our clients).

Key Point: Over the last 5-years, the vast majority of SIB clients earned 0.50% of excess return, while fees & expenses averaged $\leq 0.50\%$ per annum since 2014 (see below).

<u>All State Investment Board Clients</u>	<u>Investment Fees and Expenses</u>	<u>Average "Assets Under Management"</u>	<u>% of AUM</u>
Fiscal Year Ended June 30, 2013	\$45 million	\$6.9 billion	0.65%
Fiscal Year Ended June 30, 2014	\$44 million	\$8.6 billion	0.51%
Fiscal Year Ended June 30, 2015	\$48 million	\$10.1 billion	0.48%
Fiscal Year Ended June 30, 2016	\$46 million	\$10.9 billion	0.42%
Fiscal Year Ended June 30, 2017	\$54.5 million	\$11.8 billion	0.46%
Fiscal Year Ended June 30, 2018	\$56 million	\$13.4 billion	0.42%
Fiscal Year Ended June 30, 2019	\$63.2 million	\$14.2 billion	0.44%

Key Take-Away: Based on \$10 billion of AUM, a 0.20% decline in fees between fiscal 2013 and 2019 translates into \$20 million of annual fee savings.

A basis point (or "bp") is equal to one one-hundredth of one percent (or 0.01%) such that 100 basis points ("bps") is equivalent to 1%.

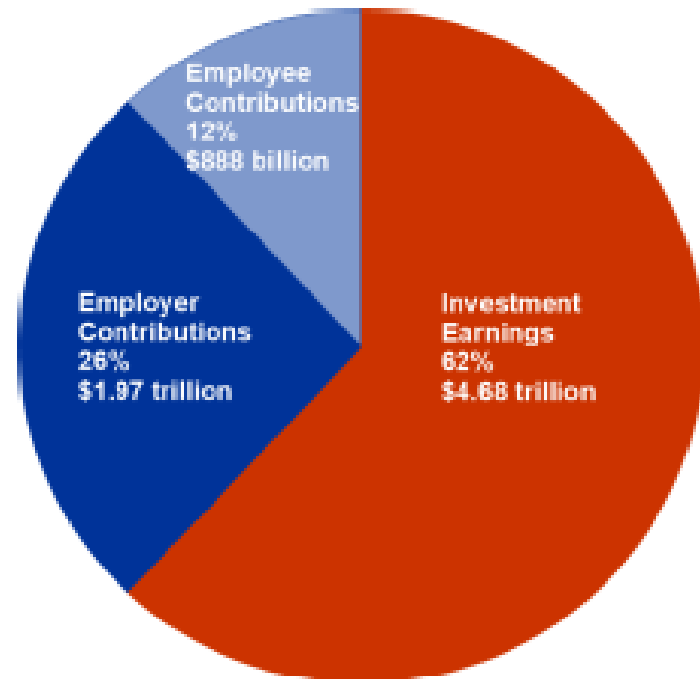
NASRA Issue Brief Excerpts: Public Pension Plan Investment Return Assumptions (Updated February 2019)

Overview: As of September 30, 2018, state and local government retirement systems held assets of \$4.4 trillion. These assets are held in trust and invested to pre-fund the cost of pension benefits. **The investment return on these assets matters, as investment earnings account for the majority (62%) of public pension plan financing.** A shortfall in long-term expected investment earnings must be made up by higher contributions or reduced benefits.

Funding a pension benefit requires the use of projections, known as actuarial assumptions, about future events. Actuarial assumption fall into one of two broad categories: **demographic** and **economic**.

Demographic assumptions are those pertaining to a pension plan's membership, such as changes in the *number of working and retired plan participants; when participants will retire, and how long they will live after they retire.* **Economic assumptions** pertain to such factors as the *rate of wage growth* and the *future expected investment return on fund assets.*

Figure 1: Public Pension Sources of Revenue, 1988-2017

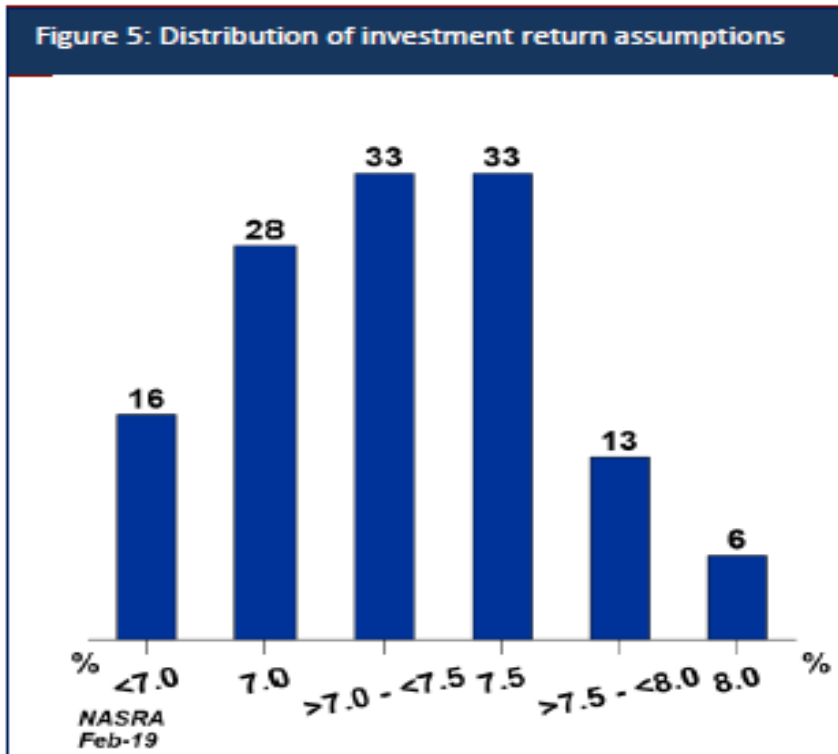


Compiled by NASRA based on U.S. Census Bureau data

Because investment earnings account for a majority of revenue for a typical public pension fund, the accuracy of the return assumption has a major effect on a plan's finances and funding level. An investment return assumption that is set too low will overstate liabilities and costs, causing current taxpayers to be overcharged. A rate set too high will understate liabilities, undercharging current taxpayers, at the expense of future taxpayers. An assumption that is significantly wrong in either direction will cause a misallocation of resources and unfairly distribute costs among generations of taxpayers.

NASRA Issue Brief Excerpts: Public Pension Plan Investment Return Assumptions (Updated February 2019)

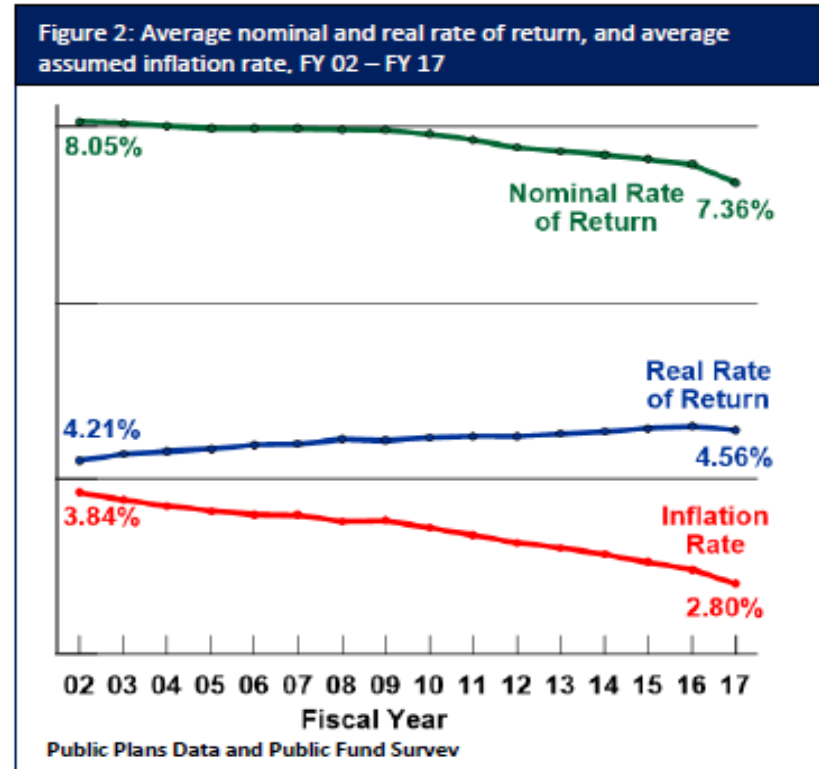
Distribution of Investment Return Assumptions



The National Association of State Retirement Administrators conducted a Public Fund Survey in February of 2019 which revealed use of the following investment return assumptions.

Key Points: The 7.5% return expectation ranked 1st with the > 7.0% to < 7.5%. Over 80% were in the 7.0% to < 8.0% range.

Decline in Nominal Rate of Return



Key Point: Nominal Rate of Return declined from 8.05% in 2002 to 7.36% in 2017.

**ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF JUNE 30, 2019**

	June-19			Current Fiscal YTD		Prior Year FY18		3 Years Ended 6/30/2019		5 Years Ended 6/30/2019	
	Allocation			Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net
Market Value	Actual	Policy									
TOTAL FUND	2,573,622,554	100.0%	100.0%	5.78%	5.54%	9.37%	9.11%	9.42%	9.15%	6.48%	6.18%
<i>POLICY TARGET BENCHMARK</i>				6.36%	6.36%	7.89%	7.89%	8.61%	8.61%	5.66%	5.66%
ATTRIBUTION ANALYSIS											
Asset Allocation				-0.35%	-0.35%	0.02%	0.02%	-0.03%	-0.03%	-0.04%	-0.04%
Manager Selection				-0.23%	-0.47%	1.46%	1.19%	0.84%	0.57%	0.86%	0.57%
TOTAL RELATIVE RETURN				-0.57%	-0.82%	1.48%	1.21%	0.81%	0.54%	0.82%	0.53%
GLOBAL EQUITIES	1,498,584,710	58.2%	58.0%	4.71%	4.50%	12.62%	12.37%	11.99%	11.74%	6.98%	6.70%
<i>Benchmark</i>				5.71%	5.71%	11.13%	11.13%	11.69%	11.69%	6.36%	6.36%
PUBLIC EQUITIES	1,392,964,838	54.1%	52.0%	4.49%	4.26%						
<i>Benchmark</i>				5.08%	5.08%						
Epoch Global Choice (1)	190,966,479	7.4%	7.0%	7.56%	6.90%	14.73%	14.02%	13.25%	12.55%	8.21%	7.52%
LSV Global Value Equity	225,123,258	8.7%	9.0%	0.16%	0.07%	7.98%	7.78%	10.13%	9.96%	4.82%	4.36%
Total Global Equities	416,089,737	16.2%	16.0%	3.38%	3.04%	10.93%	10.53%	11.55%	11.15%	6.31%	5.75%
<i>MSCI World</i>				6.33%	6.33%	11.09%	11.09%	11.77%	11.77%	6.60%	6.60%
Domestic - broad	568,790,240	22.1%	21.5%	8.57%	8.40%	16.60%	16.41%	14.11%	13.89%	10.49%	10.30%
<i>Benchmark</i>				6.94%	6.94%	15.27%	15.27%	13.80%	13.80%	9.75%	9.75%
Large Cap Domestic											
LA Capital Large Cap Growth	173,209,828	6.7%	6.6%	11.79%	11.56%	20.11%	19.87%	15.88%	15.65%	13.04%	12.80%
<i>Russell 1000 Growth</i>				11.56%	11.56%	22.51%	22.51%	18.07%	18.07%	13.39%	13.39%
LA Capital 60% Large Cap/40% Large Cap Active Extension	93,275,258	3.6%	3.3%	10.87%	10.75%	12.61%	12.49%	12.99%	12.87%	10.62%	10.49%
<i>Russell 1000</i>				10.02%	10.02%	14.54%	14.54%	14.15%	14.15%	10.45%	10.45%
NTAM - Quant Enhanced S&P 500	88,095,631	3.4%	3.3%	6.28%	6.28%	14.66%	14.66%	12.39%	12.39%	8.95%	8.88%
Clifton Group Enhanced S&P 500	86,785,834	3.4%	3.3%	10.62%	10.62%	13.26%	13.24%	13.91%	13.82%	10.68%	10.63%
<i>S&P 500</i>				10.42%	10.42%	14.38%	14.38%	14.19%	14.19%	10.71%	10.71%
Total Large Cap Domestic	441,366,551	17.1%	16.6%	10.24%	10.12%	16.11%	15.98%	14.20%	14.07%	11.28%	11.14%
<i>Russell 1000 (2)</i>				10.02%	10.02%	14.54%	14.54%	14.15%	14.15%	10.45%	10.45%
Small Cap Domestic											
Atlanta Capital Small Cap Equity Fund	64,336,025	2.5%	2.4%	10.30%	9.54%	18.84%	18.02%	14.93%	14.13%	N/A	N/A
Clifton Group Enhanced Russell 2000	63,087,664	2.5%	2.4%	-3.36%	-3.36%	17.15%	17.03%	12.27%	12.07%	7.55%	7.27%
Total Small Cap Domestic	127,423,689	5.0%	4.8%	3.36%	3.00%	18.16%	17.69%	13.82%	13.33%	7.75%	7.39%
<i>Russell 2000</i>				-3.31%	-3.31%	17.57%	17.57%	12.30%	12.30%	7.06%	7.06%

	June-19			Current Fiscal YTD		Prior Year FY18		3 Years Ended 6/30/2019		5 Years Ended 6/30/2019	
	Market Value	Allocation		Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net
		Actual	Policy								
International - broad Benchmark	408,084,860	15.9%	14.5%	-0.40%	-0.57%	10.32%	10.12%	10.07%	9.88%	3.69%	3.50%
				1.31%	1.31%	7.30%	7.30%	9.37%	9.37%	2.32%	2.32%
Developed International											
NTAM - MSCI World ex-US Index	160,044,588	6.2%	5.9%	1.54%	1.51%	7.50%	7.46%	9.40%	9.36%	2.40%	2.37%
MSCI World Ex US				1.29%	1.29%	7.04%	7.04%	9.01%	9.01%	2.04%	2.04%
William Blair International Leaders	99,494,097	3.9%	3.5%	5.57%	5.20%	15.84%	15.43%	13.68%	13.30%	N/A	N/A
MSCI ACWI ex-US IMI (Net)				0.26%	0.26%	7.75%	7.75%	9.17%	9.17%		
DFA Intl. Small Cap Value Portfolio (5)	34,084,334	1.3%	1.2%	-11.54%	-11.54%	5.40%	5.40%	6.29%	6.29%	1.05%	1.05%
Wellington International Small Cap Opportunities	33,204,146	1.3%	1.2%	-12.61%	-13.37%	16.53%	15.57%	7.10%	6.20%	4.70%	3.83%
S&P/Citigroup BMI EPAC < \$2BN				-9.91%	-9.91%	10.47%	10.47%	6.36%	6.36%	3.29%	3.29%
Total Developed International	326,827,165	12.7%	11.8%	-0.66%	-0.87%	10.55%	10.30%	10.03%	9.79%	3.57%	3.33%
MSCI World Ex US (3)				1.29%	1.29%	7.04%	7.04%	9.01%	9.01%	2.19%	2.19%
Emerging Markets											
Axiom Emerging Markets Equity Fund (5)	59,055,355	2.3%	2.1%	0.91%	0.91%	10.83%	10.83%	11.00%	11.00%	N/A	N/A
DFA Emerging Markets Small Cap Portfolio (5)	22,202,341	0.9%	0.7%	-1.31%	-1.31%	5.47%	5.47%	7.55%	7.55%	2.90%	2.90%
Total Emerging Markets	81,257,696	3.2%	2.8%	0.41%	0.41%	9.46%	9.46%	10.14%	10.14%	3.75%	3.75%
MSCI Emerging Markets				1.22%	1.22%	8.20%	8.20%	10.66%	10.66%	2.49%	2.49%
Private Equity											
Adams Street-Brinson 2000 Partnership Fund	162,272	0.0%		15.03%	15.03%	7.82%	7.82%	8.51%	8.51%	2.30%	2.30%
Adams Street-Brinson 2001 Partnership Fund	258,012	0.0%		2.62%	2.62%	6.04%	6.04%	5.40%	5.40%	0.98%	0.98%
Total Adams Street-Brinson Partnership Funds	620,392	0.0%		5.47%	5.47%	30.43%	30.43%	13.93%	13.93%	6.13%	6.13%
Adams Street-Brinson 2000 Non-US Partnership Fund	164,722	0.0%		7.78%	7.78%	10.79%	10.80%	10.53%	10.53%	3.46%	3.46%
Adams Street-Brinson 2004 Non-US Partnership Fund	102,154	0.0%		5.46%	5.46%	10.08%	10.08%	8.30%	8.30%	1.78%	1.78%
Total Adams Street-Brinson Non-US Partnership Fund	466,520	0.0%		10.59%	10.59%	44.28%	44.28%	18.85%	18.85%	12.15%	12.16%
Adams Street 2008 Non-US Partnership Fd	3,185,621	0.1%		17.39%	17.39%	16.98%	16.98%	16.68%	16.68%	13.83%	13.83%
Adams Street-Brinson BVCF IV	1,557,848	0.1%		-0.40%	-0.40%	-1.85%	-1.85%	1.80%	1.80%	8.07%	8.07%
Adams Street Direct Co-investment Fund	332,603	0.0%		-34.59%	-34.59%	-11.80%	-12.18%	-17.91%	-18.03%	-6.00%	-6.17%
Adams Street 2010 - Direct Fund	388,834	0.0%		16.01%	16.01%	18.57%	18.57%	15.51%	15.51%	11.62%	11.62%
Adams Street 2010 - Non-US Emerging Mkts	847,834	0.0%		10.72%	10.72%	21.66%	21.66%	14.05%	14.05%	14.83%	14.83%
Adams Street 2010 - Non-US Developed Mkts	1,353,348	0.1%		20.14%	20.14%	18.95%	18.95%	20.23%	20.23%	13.20%	13.20%
Adams Street 2010 - Partnership Fund	3,146,336	0.1%		18.13%	18.13%	17.71%	17.71%	16.98%	16.98%	15.01%	15.01%
Total Adams Street 2010 Funds	5,736,352	0.2%		76.63%	76.63%	93.27%	93.27%	58.12%	58.12%	36.36%	36.36%
Adams Street 2015 Global Fund	10,416,990	0.4%		17.54%	17.54%	17.58%	17.58%	28.01%	28.01%	N/A	N/A
Adams Street 2016 Global Fund	7,677,523	0.3%		10.66%	10.66%	13.58%	13.58%	N/A	N/A	N/A	N/A
Adams Street 2017 Global Fund	11,727,933	0.5%		7.43%	7.43%	N/A	N/A	N/A	N/A	N/A	N/A
Adams Street 2018 Global Fund	3,798,669	0.1%		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blackrock PEP	28,479,098	1.1%		10.83%	10.83%	1.53%	1.53%	N/A	N/A	N/A	N/A
Matlin Patterson - Global Opportunities II	547,762	0.0%		-2.63%	-2.63%	5.59%	5.59%	-9.89%	-9.89%	-1.26%	-1.26%
Matlin Patterson - Global Opportunities III	5,261,680	0.2%		1.27%	1.27%	8.51%	8.51%	5.50%	5.50%	1.56%	1.56%
InvestAmerica - Lewis and Clark Fund	524,184	0.0%		-26.40%	-26.40%	51.46%	51.46%	10.80%	10.80%	-14.73%	-14.73%
InvestAmerica - L&C II	2,058,336	0.1%		12.12%	12.12%	0.90%	0.90%	7.83%	N/A	1.81%	1.81%
Corsair III	6,321,597	0.2%		82.11%	82.11%	-34.35%	-34.35%	8.50%	8.50%	9.34%	9.34%
Capital International - Fund V	377,838	0.0%		-37.07%	-37.07%	-48.22%	-48.22%	-45.20%	-45.20%	-36.13%	-36.13%
Capital International - Fund VI	13,749,756	0.5%		7.95%	7.95%	5.98%	5.98%	7.82%	7.82%	-0.17%	-0.17%
EIG (formerly TCW)	2,089,794	0.1%		-23.43%	-23.43%	18.70%	18.70%	0.63%	0.63%	-24.08%	-24.08%
Quantum - Energy Partners	639,041	0.0%		-51.42%	-51.42%	-50.52%	-50.52%	-26.03%	-26.03%	-24.05%	-24.05%
Total Private Equity (5)	105,619,872	4.1%	6.0%	8.62%	8.62%	5.27%	5.27%	8.31%	8.31%	2.22%	2.21%

**ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF JUNE 30, 2019**

	June-19			Current Fiscal YTD		Prior Year FY18		3 Years Ended 6/30/2019		5 Years Ended 6/30/2019	
	Market Value	Allocation		Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net
		Actual	Policy								
GLOBAL FIXED INCOME Benchmark	580,286,226	22.5%	23.0%	7.91%	7.75%	3.78%	3.58%	5.53%	5.32%	4.36%	4.13%
				7.80%	7.80%	2.00%	2.00%	3.54%	3.54%	2.91%	2.91%
Domestic Fixed Income Benchmark	580,286,226	22.5%	23.0%	7.91%	7.75%	2.80%	2.64%	5.63%	5.45%	4.82%	4.62%
				7.80%	7.80%	0.32%	0.32%	3.53%	3.53%	3.32%	3.32%
Investment Grade Fixed Income											
PIMCO Distressed Senior Credit Opportunities II (5)	40,024,591	1.6%	1.6%	5.90%	5.90%	10.02%	10.02%	10.90%	10.90%	8.24%	8.24%
Prudential Core Fixed Income	135,321,057	5.3%	5.5%	8.36%	8.17%	N/A	N/A	N/A	N/A	N/A	N/A
Bloomberg Aggregate				7.87%	7.87%	-0.40%	-0.40%	2.31%	2.31%	2.95%	2.95%
State Street Long U.S. Treasury Index NL Fund	43,151,685	1.7%	1.6%	12.30%	12.29%	-0.12%	-0.15%	1.33%	1.30%	5.70%	5.67%
Bloomberg Long Treasuries				12.30%	12.30%	-0.12%	-0.12%	1.34%	1.34%	5.71%	5.71%
PIMCO Core Plus Constrained (formerly Unconstrained)	135,312,467	5.3%	5.5%	8.33%	8.20%	1.68%	1.48%	6.52%	6.25%	4.00%	3.70%
Bloomberg Aggregate (4)				7.87%	7.87%	1.75%	1.75%	3.49%	3.49%		
Declaration Total Return Bond Fund (5)	48,278,631	1.9%	1.9%	6.47%	6.47%	3.33%	3.33%	4.92%	4.92%	4.20%	4.20%
3m LIBOR				2.61%	2.61%	1.75%	1.75%	1.78%	1.78%	1.21%	1.21%
Total Investment Grade Fixed Income Bloomberg Aggregate	402,088,431	15.6%	16.0%	8.23%	8.12%	1.71%	1.60%	4.54%	4.42%	4.48%	4.36%
				7.87%	7.87%	-0.40%	-0.40%	2.31%	2.31%	2.95%	2.95%
Below Investment Grade Fixed Income											
Ares ND Credit Strategies	33,760,144	1.3%	1.3%	8.03%	8.03%	N/A	N/A	N/A	N/A	N/A	N/A
Cerberus ND Private Credit Fund	37,305,225	1.4%	1.4%	8.89%	8.89%	N/A	N/A	N/A	N/A	N/A	N/A
S&P LSTA Leveraged Loan B Index				4.22%	4.22%						
Loomis Sayles High Yield	93,958,420	3.7%	3.7%	7.16%	6.63%	3.18%	2.66%	7.86%	7.32%	4.87%	4.35%
PIMCO BRAVO II (5)	12,949,721	0.5%	0.5%	3.10%	3.10%	6.00%	6.00%	7.41%	7.41%	7.91%	7.91%
GS Mezzanine Partners 2006 Offshore, L.P. (5)	41,785	0.0%	0.0%	6.62%	6.62%	13.17%	13.17%	24.47%	24.47%	20.07%	20.07%
GS Mezzanine Partners V Offshore, L.P. (5)	182,500	0.0%	0.0%	36.09%	36.09%	16.70%	16.70%	11.26%	11.26%	8.38%	8.38%
Bloomberg High Yield 2% Issuer Constrained Index				7.48%	7.48%	2.62%	2.62%	3.32%	3.32%	1.98%	1.98%
Total Below Investment Grade Fixed Income Bloomberg High Yield 2% Issuer Constrained Index	178,197,795	6.9%	7.0%	7.22%	6.93%	5.55%	5.24%	8.64%	8.30%	5.77%	5.39%
				7.48%	7.48%	2.62%	2.62%	7.52%	7.52%	4.71%	4.71%

	June-19			Current Fiscal YTD		Prior Year FY18		3 Years Ended 6/30/2019		5 Years Ended 6/30/2019	
	Allocation			Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net	Gross ⁽⁴⁾	Net
	Market Value	Actual	Policy								
GLOBAL REAL ASSETS	459,714,120	17.9%	18.0%	6.01%	5.56%	6.49%	6.07%	6.23%	5.80%	7.31%	6.86%
Benchmark				5.26%	5.26%	5.42%	5.42%	5.16%	5.16%	6.10%	6.10%
Invesco Core Real Estate - U.S.A., L.P.	133,787,212			7.06%	6.69%	8.27%	7.91%	7.95%	7.58%	10.19%	9.81%
INVESCO Real Estate Fund II (5)	73,148			-4.85%	-4.85%	-1.24%	-1.24%	4.87%	4.87%	5.49%	5.49%
Invesco Real Estate Fund III, LP (5)	4,939,198			-17.71%	-17.71%	0.30%	0.30%	-2.70%	-2.70%	4.55%	4.55%
Invesco U.S. Value-Add Fund IV, L.P. (5)	18,423,439			12.51%	12.51%	11.65%	11.65%	10.72%	10.72%	N/A	N/A
Invesco U.S. Value-Add Fund V, L.P. (6)	7,138,311			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Invesco Asia Real Estate Fund I, L.P. (5)	85,767			-14.36%	-14.36%	-13.25%	-13.25%	100.34%	100.34%	83.29%	83.29%
Invesco Asia Real Estate Fund III, L.P. (5)	4,351,987			16.08%	16.08%	83.23%	83.23%	37.14%	37.14%	N/A	N/A
JP Morgan Strategic & Special Situation Property Blend	104,542,850			6.14%	5.19%	8.76%	7.81%	7.65%	6.69%	9.94%	8.89%
JP Morgan Alternative Property Fund	-			N/A	N/A	8.18%	8.18%	N/A	N/A	N/A	N/A
JP Morgan European Opportunistic Property Fund III (5)	2,404,909			9.79%	9.79%	-46.30%	-46.30%	-16.29%	-16.29%	-3.12%	-3.12%
JP Morgan Greater China Property Fund (5)	-			N/A	N/A	134.93%	134.93%	N/A	N/A	N/A	N/A
Total Global Real Estate	275,746,821	10.7%	10.0%	6.56%	6.02%	8.22%	7.70%	8.14%	7.61%	10.39%	9.84%
NCREIF TOTAL INDEX				6.51%	6.51%	7.19%	7.19%	6.89%	6.89%	8.83%	8.83%
OTHER REAL ASSETS	183,967,299	7.1%	8.0%	5.16%	4.85%						
Benchmark				3.69%	3.69%						
TIR Teredo Timber, LLC	14,658,586	0.6%		7.55%	7.55%	-3.98%	-3.98%	-1.35%	-1.35%	3.92%	3.92%
TIR Springbank, LLC	42,113,805	1.6%		2.99%	2.99%	-2.07%	-2.07%	-3.22%	-3.22%	-1.77%	-1.77%
Total Timber (5)	56,772,391	2.2%	2.2%	4.10%	4.10%	-2.52%	-2.52%	-2.78%	-2.78%	-0.07%	-0.07%
NCREIF Timberland Index				3.18%	3.18%	3.56%	3.56%	3.37%	3.37%	4.67%	4.67%
Rohatyn Group Asian Infrastructure & Related Resources (5)	7,873,552	0.3%		-15.64%	-15.64%	-8.86%	-8.86%	1.37%	1.37%	-1.72%	-1.72%
JP Morgan Infrastructure Investments Fund (IIF)	81,487,653	3.2%		7.58%	6.88%	10.60%	9.89%	8.40%	7.69%	6.24%	5.40%
ISQ Global Infrastructure Fund II	7,723,596	0.3%		2.41%	2.41%	N/A	N/A	N/A	N/A	N/A	N/A
Macquarie Infrastructure Partners IV	10,975,675	0.4%		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grosvenor Customized Infrastructure Strategies, LP (5)	11,304,949	0.4%		3.58%	3.58%	7.10%	7.10%	6.44%	6.44%	6.62%	6.62%
Grosvenor Customized Infrastructure Strategies II (5)	7,829,483	0.3%		16.38%	16.38%	7.98%	7.98%	9.08%	9.08%	N/A	N/A
Total Infrastructure	127,194,908	4.9%	5.8%	5.58%	5.12%	7.87%	7.37%	7.72%	7.22%	5.57%	5.02%
50% NCREIF ODCE/50% CPI-U (lagged one quarter)				3.91%	3.91%	3.09%	3.09%	2.83%	2.83%	1.74%	1.74%
Northern Trust Collective STIF	28,363,584			2.23%	2.23%	1.44%	1.44%	1.47%	1.47%	0.95%	0.95%
Bank of ND	6,673,915			2.27%	2.27%	1.42%	1.42%	N/A	N/A	N/A	N/A
Total Cash Equivalents	35,037,499	1.4%	1.0%	2.32%	2.32%	1.47%	1.47%	1.51%	1.51%	0.97%	0.97%
90 Day T-Bill				2.31%	2.31%	1.36%	1.36%	1.38%	1.38%	0.87%	0.87%

NOTE: Monthly returns and market values are preliminary and subject to change.

New asset class structure began October 1, 2011. Composite returns for new composites not available prior to that date.

Portfolios moved between asset classes will show historical returns in new position.

(1) Epoch w as included in the Large Cap Domestic Equity composite through 12/31/11.

(2) Prior to January 1, 2012, the benchmark w as S&P 500.

(3) This benchmark w as changed to the MSCI EAFE (unhedged) as of April 1, 2011.

(4) Prior to July 1, 2018, the benchmark w as 3m LIBOR.

(5) All limited partnership-type (and mutual funds as of 7/1/14) investment returns w ill only be reported net of fees, w hich is standard practice by the investment consultant.

ANNUAL TFFR EXPENSE REPORT
SEPTEMBER 26, 2019

Connie Flanagan
Chief Financial Officer

**RETIREMENT AND INVESTMENT OFFICE
EXPENDITURE SUMMARY REPORT
FISCAL YEAR ENDED JUNE 30, 2019**

	TFFR		SIB		Total RIO	
	Actual Expenses	% of Total	Actual Expenses	% of Total	Actual Expenses	% of Total
<u>CONTINUING APPROPRIATIONS</u>						
INVESTMENT EXPENDITURES	\$ 14,169,720	6.0%	\$ 48,991,088	96.5%	\$ 63,160,808	21.9%
MEMBER CLAIMS						
ANNUITY PAYMENTS	215,328,174		-		215,328,174	
REFUND PAYMENTS	5,900,392		-		5,900,392	
TOTAL MEMBER CLAIMS	221,228,566	93.1%	-	0.0%	221,228,566	76.7%
OTHER CONTINUING APPROPRIATIONS	594,328	0.3%	799,703	1.6%	1,394,031	0.5%
TOTAL CONTINUING APPROPRIATIONS	235,992,614	99.3%	49,790,791	98.1%	285,783,405	99.1%
<u>APPROPRIATED EXPENDITURES</u>						
SALARIES AND BENEFITS	1,144,527	0.5%	1,098,807	2.2%	2,243,334	0.8%
OPERATING EXPENSES	292,831	0.1%	100,724	0.2%	393,555	0.1%
SIB EXPENSES ALLOCATED TO TFFR	219,399		(219,399)		-	
TOTAL APPROPRIATED EXPENDITURES	1,656,757	0.7%	980,132	1.9%	2,636,889	0.9%
TOTAL EXPENDITURES	\$ 237,649,371		\$ 50,770,923		\$ 288,420,294	

**RETIREMENT AND INVESTMENT OFFICE
2017-2019 BIENNIUM APPROPRIATION STATUS REPORT
AS OF JUNE 30, 2019**

	2017-2019 BUDGET	ADJUSTED APPROPRIATION	BIENNIUM TO DATE ACTUAL	EXPENDITURES		
				BUDGET AVAILABLE	% BUDGET AVAILABLE	% OF BIENNIUM REMAINING
SALARIES AND BENEFITS	\$ 4,425,570	\$ 4,425,570	\$ 4,391,689	\$ 33,881	0.77%	0.00%
OPERATING EXPENDITURES	862,484	862,484	702,920	159,564	18.50%	0.00%
CONTINGENCY	52,000	52,000	0	52,000	100.00%	0.00%
TOTAL	\$ 5,340,054	\$ 5,340,054	\$ 5,094,609	245,445	4.60%	0.00%

**RETIREMENT AND INVESTMENT OFFICE
SCHEDULE OF CONSULTING EXPENSES
FOR THE YEARS ENDED JUNE 30, 2019 and 2018**

	Pension Trust		Investment Trust	
	2019	2018	2019	2018
Actuary fees:				
Segal Company	108,000	71,499	-	-
Total Actuary Fees	<u>108,000</u>	<u>71,499</u>	<u>-</u>	<u>-</u>
Auditing/Accounting fees:				
CliftonLarsonAllen LLP	97,514	82,527	30,587	29,073
Total Auditing Fees	<u>97,514</u>	<u>82,527</u>	<u>30,587</u>	<u>29,073</u>
Disability consulting fees:				
Sanford Health	350	425	-	-
Legal fees:				
Office of Administrative Hearings	3,383	-	-	-
K&L Gates LLP	12,880	16,541	17,066	21,646
Kasowitz, Benson, Torres & Friedma	239	197	313	309
Jackson Walker LLP	3,105	3,105	54,804	9,316
ND Attorney General	37,798	23,805	50,746	20,681
Total legal fees:	<u>57,405</u>	<u>43,648</u>	<u>122,929</u>	<u>51,952</u>
Total consultant expenses	<u><u>\$263,269</u></u>	<u><u>\$198,099</u></u>	<u><u>\$153,516</u></u>	<u><u>\$ 81,025</u></u>

RETIREMENT AND INVESTMENT OFFICE FINAL BUDGET STATUS FOR 2017-2019 BIENNIUM

	2017-2019 Biennium Approved Budget			2017-2019 Biennium Actual			2017-2019 (Over)/Under Budget			2019-21 Approved Budget	Increase/(Decrease) from 2017-19 Approved	
	TFFR	SIB	RIO Total	TFFR	SIB	RIO Total	TFFR	SIB	RIO Total	RIO Total		
SALARIES & WAGES	\$ 1,637,129	\$ 1,591,806	\$ 3,228,935	\$ 1,625,207	\$ 1,628,926	\$ 3,254,133	\$ 11,922	\$ (37,120)	\$ (25,198)	\$ 3,548,909	\$ 319,974	9.9%
TEMPORARY SALARIES	-	-	-	-	-	-	-	-	-	50,000	50,000	100.0%
BENEFITS	688,683	507,952	1,196,635	624,584	512,972	1,137,556	64,099	(5,020)	59,079	1,379,321	182,686	15.3%
TOTAL SALARIES & BENEFITS	2,325,812	2,099,758	4,425,570	2,249,791	2,141,898	4,391,689	76,021	(42,140)	33,881	4,978,230	552,660	12.5%
IT - DATA PROCESSING	151,852	30,456	182,308	133,540	28,122	161,662	18,312	2,334	20,646	949,941	767,633	421.1%
IT - COMMUNICATIONS	12,600	6,480	19,080	11,678	7,260	18,938	922	(780)	142	18,960	(120)	-0.6%
TRAVEL	47,232	26,718	73,949	29,283	20,703	49,986	17,949	6,015	23,963	103,070	29,121	39.4%
SUPPLIES - IT SOFTWARE	699	401	1,100	673	419	1,092	26	(18)	8	900	(200)	-18.2%
POSTAGE	77,147	5,240	82,387	61,488	5,384	66,872	15,659	(144)	15,515	63,192	(19,195)	-23.3%
IT CONTRACT SERVICES	156,468	2,826	159,294	44,099	4,204	48,303	112,369	(1,378)	110,991	161,270	1,976	1.2%
LEASE/RENT - BLDG./LAND	110,237	62,905	173,142	110,792	64,740	175,532	(555)	(1,835)	(2,390)	179,230	6,088	3.5%
PROFESSIONAL DEVELOPMENT	22,769	8,632	31,400	27,732	10,731	38,463	(4,964)	(2,100)	(7,063)	46,315	14,915	47.5%
OPERATING FEES & SERVICES	29,646	18,143	47,789	25,574	16,317	41,891	4,072	1,826	5,898	47,779	(10)	0.0%
REPAIRS	476	274	750	1,072	611	1,683	(596)	(337)	(933)	1,000	250	33.3%
PROFESSIONAL SERVICES	24,520	9,070	33,590	21,757	10,418	32,175	2,763	(1,348)	1,415	1,906,610	1,873,020	5576.1%
INSURANCE	853	491	1,344	785	451	1,236	68	40	108	2,047	703	52.3%
OFFICE SUPPLIES	3,943	2,267	6,210	2,381	555	2,936	1,562	1,712	3,274	5,470	(740)	-11.9%
PRINTING	35,315	4,759	40,074	24,952	2,397	27,349	10,363	2,362	12,725	37,350	(2,724)	-6.8%
PROFESSIONAL SUPPLIES	875	875	1,750	1,134	803	1,937	(259)	72	(187)	1,700	(50)	-2.9%
MISCELLANEOUS SUPPLIES	2,585	1,485	4,070	1,245	718	1,963	1,340	767	2,107	4,100	30	0.7%
IT EQUIPMENT < \$5000	363	368	731	5,584	3,725	9,309	(5,221)	(3,357)	(8,578)	7,500	6,769	926.0%
OTHER EQUIPMENT < \$5000	1,474	847	2,321	2,165	1,538	3,703	(691)	(691)	(1,382)	-	(2,321)	-100.0%
OFFICE EQUIP & FURNITURE < \$5000	1,071	124	1,195	10,070	7,820	17,890	(8,999)	(7,696)	(16,695)	2,500	1,305	109.2%
TOTAL OPERATING	680,124	182,360	862,484	516,004	186,916	702,920	164,120	(4,556)	159,564	3,538,934	2,676,450	310.3%
SOFTWARE > \$5,000	-	-	-	-	-	-	-	-	-	6,300,000	6,300,000	100.0%
TOTAL CAPITAL ASSETS	-	-	-	-	-	-	-	-	-	6,300,000	6,300,000	100.0%
TOTAL BEFORE CONTINGENCY	3,005,936	2,282,118	5,288,054	2,765,795	2,328,814	5,094,609	240,141	(46,696)	193,445	14,817,164	9,529,110	180.2%
CONTINGENCY	26,000	26,000	52,000	-	-	-	26,000	26,000	52,000	52,000	-	0.0%
TOTAL APPROPRIATED BUDGET	\$ 3,031,936	\$ 2,308,118	\$ 5,340,054	\$ 2,765,795	\$ 2,328,814	\$ 5,094,609	\$ 266,141	\$ (20,696)	\$ 245,445	14,869,164	9,529,110	178.4%

Items highlighted in green reflect increases due to Pension Administration System replacement/upgrade project.

RETIREMENT AND INVESTMENT OFFICE

Analysis of Budget Changes

	2017-19 Approved Budget	Additional FTE	PAS Budget	Other Changes	2019-21 Approved Budget
Salaries and Benefits	4,425,570	294,996	50,000	207,664	4,978,230
Operating	862,484	14,450	2,650,000	12,000	3,538,934
Capital Assets	-	-	6,300,000	-	6,300,000
Contingency	52,000	-	-	-	52,000
	<u>5,340,054</u>	<u>309,446</u>	<u>9,000,000</u>	<u>219,664</u>	<u>14,869,164</u>

MEMORANDUM

TO: TFFR Board

FROM: Sara Sauter, Supervisor of Internal Audit

DATE: September 26, 2019

SUBJECT: 2018-2019 Year End Audit Activities Report

Audit coverage was based on the July 1, 2018 through June 30, 2019 work plan approved by the SIB Audit Committee. The audit activities undertaken were consistent with the Audit Services charter and goals, and the goals of the RIO. To the extent possible, our audits were carried out in accordance with the International Standards for the Professional Practice of Internal Auditing. Audit effort was directed towards the needs of RIO and the concerns of management and the SIB Audit Committee. Audit Services has been making the transition from a compliance unit to an internal audit division.

RETIREMENT PROGRAM AUDITS:

- **Teachers' Fund for Retirement (TFFR) Employer Reporting Reviews**
 - **AUDIT PLAN REQUIREMENTS:** Complete 10 TFFR Employer Audits. Notify employers of an upcoming audit as needed. Number of employers to be notified is dependent on pending audit inventory. Complete audit planning for the upcoming fiscal year in the fourth quarter.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - Four (4) TFFR Employer Audits were completed during fiscal year 2018-19.

NOTE: Procedures for the TFFR Employer Audit Program were changed in November 2018. This resulted in less reviews being completed, as the new procedures needed to be developed and put into practice.

- **Cost Benefit Audit**
 - **AUDIT PLAN REQUIREMENTS:** One of the missions of the RIO is to ensure that TFFR benefit recipients receive their retirement benefits in a cost effective and timely manner. Audit Services will verify that this mission is being achieved. As a part of this overall process, Internal Audit will also verify the accuracy of benefit payments via the recalculation of benefit payments for a sampling of member accounts.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - The Cost Benefit Audit was completed on February 21, 2019.
- **TFFR File Maintenance Audit**
 - **AUDIT PLAN REQUIREMENTS:** On an annual basis, Internal Audit of the Retirement and Investment Office (RIO) will review system generated (CPAS) audit tables to ensure transactions initiated by staff are expected and appropriate given an individual's role within the organization. Member account information from six Member Action Forms will be reviewed to verify that contact and demographic information has been updated correctly per Member Action Forms on file.

- **2018-2019 ACTUAL ACTIVITIES:**
 - The File Maintenance Audit was not completed in 2018-2019, but is in progress and is expected to be completed in the first quarter of 2019-2020.
- **TFFR Purchase and Refund Audit**
 - **AUDIT PLAN REQUIREMENTS:** On an annual basis, Internal Audit will review a sample of the system generated audit tables for eight randomly selected refunds and four randomly selected purchases of service credit (two installments and two lump sum). The accuracy of month end reporting of lump sum payments and installment purchases of service credit is also verified.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - The Purchase and Refund Audit was completed as of April 19, 2019.
- **Annual Salary Verification Project**
 - **AUDIT PLAN REQUIREMENTS:** On an annual basis Internal Audit verifies retirement salaries and contributions reported to TFFR for the prior fiscal year for 50 randomly selected member accounts. TFFR eligibility and service hours are also verified.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - The Annual Salary Verification Project was completed on July 17, 2019. The scope was also expanded to include 64 randomly selected member accounts.

AGENCY ADMINISTRATIVE AND INVESTMENT AUDITS:

- **Executive Limitation Audit**
 - **AUDIT PLAN REQUIREMENTS:** On an annual basis the Executive Director/CIO's compliance with the State Investment Board (SIB) Governance Manual Executive Limitation Policies A-1 through A-11 is reviewed. Each year the Executive Director/CIO is evaluated via a survey administered to all staff members. Internal Audit also facilitates and compiles the results of the annual SIB Executive Review Committee survey administered to members of the SIB at the request of the SIB Executive Review Committee.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - The Executive Limitation Audit was completed on February 21, 2019.
 - The Executive Director/CIO Effectiveness Survey was completed on March 28, 2019.
 - The SIB Executive Review Committee Survey was completed on April 12, 2019.
- **SIB Self-Assessment Survey**
 - **PLAN REQUIREMENTS:** At the request of the State Investment Board, Internal Audit was asked to work with the Executive Review Committee on developing and administering a Board Self-Assessment Survey.
 - **2018-2019 ACTUAL ACTIVITIES:**
 - Internal Audit worked with the Executive Review Committee on developing and administering the Board Self-Assessment Survey and reported the results to the State Investment Board on May 24, 2019.

- **Investment Due Diligence Audit**

- **AUDIT PLAN REQUIREMENTS:** To review the ongoing investment due diligence process. A sample of investment manager's due diligence was selected and reviewed. Policies and procedures were also reviewed as part of the audit.
- **2018-2019 ACTUAL ACTIVITIES:**
 - The Investment Due Diligence Audit was completed July 31, 2019.

- **Agency Risk Assessment**

AUDIT PLAN REQUIREMENTS: Document risk involved in activities and/or systems in order to provide assurance that risk is being addressed by RIO management. The risk assessment will also be used in developing a risk-based audit plan.

- **2018-2019 ACTUAL ACTIVITIES:**
 - The Agency Risk Assessment was completed in September 2018.

- **RIO External Auditor Assistance**

- **AUDIT PLAN REQUIREMENTS:** Internal Audit assists our external auditor, CliftonLarsonAllen, with a variety of tasks related to the annual financial audit of RIO and the GASB 68 census data audits.
- **2018-2019 ACTUAL ACTIVITIES:**
 - Internal Audit provided assistance to our external audit partners CliftonLarsonAllen during the financial audit of the RIO as well as the GASB 68 census data audits.

- **Professional Development/CE/General Education**

- **AUDIT PLAN REQUIREMENTS:** Internal Audit is a member of the Institute of Internal Auditors (IIA) and attends monthly meetings along with bi-annual seminars.
- **2018-2019 ACTUAL ACTIVITIES:**
 - Internal Audit continued to pursue networking and professional development opportunities via the IIA's local chapter, Central NoDak. Staff attended monthly IIA meetings throughout the year which covered a variety of topics.
 - Audit Staff attended the IIA's fall seminar which focused on Fraud Detection and Incident Response for Auditors and Identifying the Real Causes and Getting Managers to Act. Audit Staff also attended the IIA's spring seminar which focused on Auditing Ethics in the Workplace and Project Management for Auditors.
 - The Supervisor of Internal Audit started pursuing her Master's in Business Administration in September 2018 and has completed six classes.

Administrative activities (non-audit related) including time reports, meeting attendance, general reporting, email, etc. were carried out in accordance with the approved audit plan in fiscal year 2018-2019.

TFFR BOARD MEMO
Thursday, September 26, 2019

RE: State Investment Board Customer Satisfaction Survey

FROM: Rob Lech, TFFR Board President

BOARD FOCUS: Action

At the September 26, 2019 meeting of the Teacher's Fund for Retirement Board, the board will formally take action on the annual customer satisfaction survey from the State Investment Board. This survey was provided to all TFFR board members with 6 board members completing the survey. These results were compiled and a weighted average was used to determine the ratings provided to the State Investment Board. All comments in the individual surveys were included in the compiled survey.

Responses and Weighted Averages

The following are the average scores. As was done last year, I rounded up or down based on the numeric average. In this case all rounded up to a rating of Excellent.

Availability/Responsiveness to Requests (via calls and/or emails)

Responses included 5 ratings of Excellent and 1 rating of Above Average for a weighted average of 3.83 and a compiled rating of Excellent

Clarity and Effectiveness of Communications, Reports, and Presentations

Responses included 4 ratings of Excellent, 1 rating of Above Average, and 1 rating of Average for a weighted average of 3.5 and a compiled rating of Excellent

Frequency of Communications/Reporting

Responses included 5 ratings of Excellent and 1 rating of Average for a weighted average of 3.67 and a compiled rating of Excellent

Knowledge of Investments

Responses included 5 ratings of Excellent and 1 rating of Average for a weighted average of 3.67 and a compiled rating of Excellent

Overall Value of Services Provided

Responses included 5 ratings of Excellent and 1 rating of Average for a weighted average of 3.67 and a compiled rating of Excellent

Comments

Following are each comment that accompanied an individual submission:

“Board members have varied degrees for experience/backgrounds and tenure. It's important communications reflect our changing Board”.

“I feel the staff is very knowledgeable and openly communicates and shares their insights. Sometimes in meeting we skip over portions of information which, even though I have read it previously, makes me a little uneasy”.

“Every time I have had any communications (phone, email, or in person) I have always had prompt and well thought out responses. I trust the answers I have gotten to questions and trust is very important in this field”.

“The SIB and RIO staff do excellent work being responsive to requests (most notably via email). In terms of improvements, I believe the upcoming online portal system update will be beneficial from the standpoint of accessing information and sending documentation to RIO/TFFR. I also think that email updates from TFFR are helpful and could be slightly more frequent”.

“The RIO staff does an excellent job providing timely and easy to read reports on investments and other pertinent issues. It may be valuable to consider how that information could be packaged to highlight the most valuable information. It currently gets to be a lot of information that can be timely and difficult to review. An executive summary or a restructuring of the most valuable information would be helpful. RIO staff is consistently responsive to requests for additional information”.

Recommended Action:

Approval of the Annual State Investment Board Customer Satisfaction Survey



MEMORANDUM

TO: TFFR Board
FROM: Fay Kopp and Rich Nagel
DATE: September 19, 2019
SUBJ: Pension Administration System Project Update

As you know, as part of RIO's agency budget, RIO/TFFR received legislative approval to spend up to \$9 million of TFFR funds to upgrade or replace the TFFR Pension Administration System (PAS). We are excited to begin this project which will allow RIO to reinvent the way it conducts pension administration through re-engineered business processes, updated technology and security practices, and enhanced member and employer online services.

To initiate this project, we contacted ND IT staff this summer to request project resources, project procurement, and project management assistance which is required for any large information technology (IT) project.

We also understand that the Governor's Office would like to explore whether RIO/TFFR and PERS can collaborate on a single PAS for the two agencies. On August 21, a meeting was held with RIO, PERS, and ND IT to begin discussing the major IT project process, documentation repository, project charter, collaboration with PERS, etc.

Another meeting is scheduled for September 20 with RIO, PERS, ND IT, and the Governor's Office to continue discussion of potential implications of this PAS project on TFFR and PERS.

In all of our discussions we explain the Board's fiduciary responsibility to TFFR members and beneficiaries, and the importance of making the best decision for TFFR without regard to other state interests. As fiduciaries, the Board will closely monitor this project to ensure trust fund assets are being appropriately spent. The state required RFP process is intended to ensure a fair and competitive bidding process. We believe contracting with an outside IT consultant with experience in pension system implementations and project management services will also help us reengineer business processes and determine the best PAS at the best price considering licensing, implementation, and support/maintenance costs over the long term.

We will update trustees at the September 26 Board meeting on the PAS project discussions that are taking place.

BOARD INFORMATION AND DISCUSSION.



MEMORANDUM

TO: TFFR Board

FROM: Cody Mickelson and Fay Kopp

DATE: September 19, 2019

SUBJ: TFFR Governance and Policy Review Committee Update

The TFFR Governance and Policy Review Committee met via video conference on September 17, 2019. Committee members include Cody Mickelson, Rob Lech, and Mike Burton. At this third meeting of the Committee, members reviewed the first draft of a revised TFFR Board Governance Policy Manual. Committee members are very engaged, and discussion has been very thoughtful and positive.

The Committee had initial discussion on the following sections:

- A) Introduction and Purpose
- B) TFFR Program Overview
- C) Mission, Vision, and Values (full Board - in process)
- D) Board Authority, Composition, Appointment, Terms
- E) TFFR Board - Duties and Responsibilities
- F) State Investment Board
- G) Retirement and Investment Office
- H) Delegation to Staff and Organizational Structure
- I) Trustees and Officers – Duties and Responsibilities
- J) Staff – Duties and Responsibilities

Fay and Cody will prepare another draft which will include Committee member feedback and suggestions. The Committee plans to meet again in late October or November and will continue reviewing the following sections:

- K) Service Providers – Duties and Responsibilities
- L) Election of TFFR Board Officers and SIB trustee positions
- M) Board and Committee Meetings
- N) Committees
- O) Board Appeals
- P) Board Communications

- Q) Trustee Orientation and Education Program
- R) Code of Conduct and Ethics
- S) Strategic Planning
- T) Board Policy Approval Process
- U) Board Self-Assessment

Fay also plans to meet with TFFR's legal counsel, Anders Odegaard, to discuss governance related questions, and ensure proper legal review of potential changes and additions to Board governance policies and by-laws.

BOARD INFORMATION AND DISCUSSION.

TFFR BOARD MEMO
Thursday, September 26, 2019

RE: TFFR Mission Development

FROM: Rob Lech, TFFR Board President

BOARD FOCUS: Action

At the July 25, 2019 meeting of the Teachers' Fund for Retirement (TFFR) Board, a mission development activity was conducted by board members and executive staff to create a new mission statement for TFFR. 3 groups created mission statements and a survey was created to rank and provide feedback.

Mission Statements

Mission Statement #1: TFFR is a comprehensive retirement program that serves the interests of active, inactive, retired, and future ND PK-12 public educators and their families.

Mission Statement #2: We serve the educators of ND's children, who earn and deserve retirement security.

Mission Statement #3: The mission of TFFR is to lead a comprehensive retirement program that will provide ND educators with retirement security and attract and retain high-quality educators to ND schools.

Feedback and Recommendations

Based on feedback from the survey, Mission Statement #3 was the preferred mission statement from the majority of respondents. Based on the specific feedback, I am proposing the consideration of two options: 1) Approval of Mission Statement #3, the highest as written above, or 2) the amalgamated version of Mission Statements #1 and #3 below.

Mission Statement #4: TFFR administers a comprehensive retirement program for North Dakota schools that provides public educators with retirement security.

There was a lot of feedback, both for and opposed to the statement "attract and retain high-quality educators". I am proposing that this may be best included as a value statement as it is not directly related to the purpose of TFFR.

<p><u>Recommended Action:</u> Approval or Revision of Mission Statement #3 or Mission Statement #4</p>

North Dakota Teachers Fund for Retirement
Board Exercise
Vision Statement Review and Development

A vision statement is “a public declaration that organizations use to describe their high-level goals for the future”.

Vision statements have three elements: CAUSE, ACTIONS, and OUTCOMES

OUR CAUSE: Who? What? Where?

OUR ACTIONS: What we do

OUR OUTCOMES: Changes for the Better of the Organization

Current TFFR Vision:

TFFR has not currently adopted a vision statement for the Teachers’ Fund for Retirement

Vision Statement Exemplars:

1. Jamestown Public Schools supports a safe, educationally rigorous, and collaborative environment. Our vision is to prepare students for tomorrow’s challenges by practicing skills such as collaboration, communication, creativity, and critical thinking. We believe all students should have personalized, authentic experiences that integrate with the community for meaningful learning. As an essential contributor to the growth of our student's intellectual, social, and personal well-being, we will positively impact our community and society.
2. The vision of STRS Ohio is to be a leading retirement system by providing comprehensive retirement benefits and quality service to our members through exceptional financial performance, ethical business practices and responsible resource management.
3. The Montana Teachers' Retirement System (TRS) is the trusted partner for retirement services and security. TRS strives to earn the respect of our members, the public education community and citizens of Montana. We accomplish this by communicating effectively to our constituents, being responsive to their needs, and employing an effective and empowered professional staff.
4. To be the premier public retirement system, respected by customers, peers, and the community, and known for professional service, technological advancement, and fund stability.

Vision Development Exercise:

The vision development exercise will be conducted in three stages: 1) Individual, 2) Small Group, and 3) Full Board. Initially, board members will work individually to identify our cause, our actions, and our impact and use those to draft a vision statement. Next, board members will share their draft vision statement with other board members in groups of 2-3 and develop one statement to bring to the full group. Finally, the groups will present their draft vision statement to the full board. Through a selection process, the board will approve a vision statement at the next regular meeting.

OUR CAUSE

WHO? WHAT? WHERE?

OUR ACTIONS

WHAT WE DO

OUR IMPACT

CHANGES FOR THE BETTER

DRAFT VISION STATEMENT

NDTFFR Board Reading September 2019

- [Enduring Challenges: Examining the Experiences of States that Closed Pension Plans.](#) National Institute on Retirement Security, August 2019.
- [Does Public Pension Board Composition Impact Returns?](#) Center for Retirement Research at Boston College, August 2019.
- [Employee Contributions to Public Pension Plans.](#) National Association of State Retirement Administrators, September 2019.
- [Analysis of Disability Benefits in Public Retirement Plans.](#) National Association of State Retirement Administrators, July 2019.
- [Better Measurements: Risk Reporting for Public Pension Plans.](#) Harvard Kennedy School Mossavar-Rahmani Center for Business and Government, July 2019.