ND STATE INVESTMENT BOARD MEETING

Friday, March 22, 2019, 8:30 a.m.

Workforce Safety & Insurance
1600 E Century Avenue, Bismarck, ND

AGENDA

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA

II. ACCEPTANCE OF MINUTES (February 22, 2019)

III. INVESTMENTS

A. Prudential Fixed Income Portfolio Review – Mr. Richard Piccirillo and Mr. Steven Ahrens (50 minutes) *Informational*
B. PERS Investment Policy Statement - Mr. Hunter (5 minutes) **Board Action**
C. Legacy and Budget Stabilization Fund Advisory Board Update – Mr. Hunter (10 minutes) *Informational*
D. Review of Legacy Fund Investment Fees and Returns – Mr. Hunter (10 minutes) *Informational*
E. Callan Contract Update – Mr. Hunter (5 minutes) *Informational*

IV. GOVERNANCE / EDUCATION

A. Executive Review Committee Update - Ms. Yvonne Smith (5 minutes) *Informational*
B. Board-Self Assessment Update – Ms. Sara Sauter and Mr. Hunter (10 minutes) **Board Action**
C. Legislative Update – Mr. Hunter (10 minutes) *Informational*
D. Board Education Offsite – Mr. Hunter (5 minutes) *Informational*
E. Asset Class Definitions – Mr. Hunter (5 minutes) *Informational*
F. Vested Interest – Mr. Hunter (5 minutes) *Informational*

V. OTHER

Next Meetings: SIB - April 26, 2019, 8:30 a.m. - Workforce Safety & Insurance
SIB Securities Litigation Committee - May 16, 2019, 3:00 p.m. - RIO Conference Room
SIB Audit Committee - May 23, 2019, 3:00 p.m. - RIO Conference Room

VI. ADJOURNMENT

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

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
FEBRUARY 22, 2019, BOARD MEETING

MEMBERS PRESENT: Rob Lech, TFFR Board, Vice Chair
Troy Seibel, PERS Board, Parliamentarian
Jon Godfread, Insurance Commissioner
Toni Gumeringer, TFFR Board
Adam Miller, PERS Board
Mel Olson, TFFR Board
Kelly Schmidt, State Treasurer
Yvonne Smith, PERS Board
Cindy Ternes, WSI Designee

MEMBERS ABSENT: Brent Sanford, Lt. Governor, Chair
Jodi Smith, Commissioner of Trust Lands

STAFF PRESENT: Eric Chin, Senior Investment Officer
Connie Flanagan, Chief Financial Officer
Bonnie Heit, Admin Svs Suprv
David Hunter, ED/CIO
Sara Sauter, Audit Svs Suprv
Cody Schmidt, Compliance Officer
Darren Schulz, Dep CIO

OTHERS PRESENT: Alex Browning, Callan LLC
Paul Erlendson, Callan LLC
Bryan Klipfel, WSI
Anders Odegaard, Attorney General's Office
Bryan Reinhardt, PERS

CALL TO ORDER:

Dr. Rob Lech, Vice Chair, called the State Investment Board (SIB) regular meeting to order at 8:30 a.m. on Friday, February 22, 2019, at Workforce Safety & Insurance, 1600 East Century Avenue, Bismarck, ND.

AGENDA:

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MS. TERNES AND CARRIED BY A VOICE VOTE TO ACCEPT THE AGENDA FOR THE FEBRUARY 25, 2019, MEETING.

AYES: TREASURER SCHMIDT, MR. GUMERINGER, MS. TERNES, MS. SMITH, DR. LECH, MR. MILLER, MR. SEIBEL, AND MR. OLSON
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER GODFREAD, LT. GOVERNOR SANFORD, COMMISSIONER SMITH

MINUTES:

IT WAS MOVED BY MS. TERNES AND SECONDED BY MS. SMITH AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES OF THE JANUARY 25, 2019, MEETING AS DISTRIBUTED.

AYES: MS. SMITH, MR. MILLER, MR. OLSON, MS. GUMERINGER, DR. LECH, MR. SEIBEL, MS. TERNES, AND TREASURER SCHMIDT

NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER GODFREAD, LT. GOVERNOR SANFORD, COMMISSIONER SMITH

INVESTMENTS AND GOVERNANCE:

Asset/Performance Overview – Mr. Hunter highlighted assets and performance of the SIB portfolios for the period ending December 31, 2018. As of December 31, 2018, The Pension Trust was at approximately $5.4 billion, Insurance Trust was at approximately $2.1 billion, and the Legacy Fund was over $5.6 billion.

The Pension Trust posted a net return of -4.0% in the last year. During the last 5-years, the Pension Trust generated a net annualized return of 5.1%, exceeding the performance benchmark of 4.5%.

The Insurance Trust generated a net return of -1.1% in the last year. During the last 5-years, the Insurance Trust posted a net annualized return of 4.2%, exceeding the performance benchmark of 3.2%.

The Legacy Fund generated a net return of -5.3% last year. During the last 5-years, the Legacy Fund earned a net annualized return of 4.3%, exceeding the performance benchmark of 3.7% noting the assets were not fully invested in its current asset allocation until 2015.

Every Pension Pool client posted positive Excess Returns of at least 0.44% per annum over the last 5-years (including 0.59% for PERS and 0.60% for TFFR), while adhering to approved risk levels and generating positive Risk Adjusted Excess Return.

Every Non-Pension Pool client generated positive excess return of at least 0.43% per annum and positive Risk Adjusted Excess Returns for the 5-years ended December 31, 2018, with two exceptions for PERS Retiree Health Insurance Credit Fund (-0.36%) and PERS Group Insurance (-0.06%).

IT WAS MOVED BY MR. OLSON AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE ASSET/PERFORMANCE UPDATE FOR THE PERIOD ENDING DECEMBER 31, 2018.

AYES: TREASURER SCHMIDT, MR. SEIBEL, MR. OLSON, DR. LECH, MR. MILLER, COMMISSIONER GODFREAD, MS. GUMERINGER, MS. SMITH, AND MS. TERNES
MOTION CARRIED
ABSENT: LT.GOVERNOR SANFORD AND COMMISSIONER SMITH

CALLAN LLC:

Callan LLC representatives reviewed US and Foreign markets and the investment performance of the Pension Trust, Insurance Trust, and Legacy Fund for the quarter ending December 31, 2018.

IT WAS MOVED BY MS. SMITH AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE CALLAN LLC INVESTMENT MEASUREMENT REVIEW FOR THE QUARTER ENDING DECEMBER 31, 2018.

AYES: TREASURER SCHMIDT, MR. MILLER, COMMISSIONER GODFREAD, MR. OLSON, MS. TERNES, MS. GUMERINGER, MR. SEIBEL, DR. LECH, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR SANFORD, COMMISSIONER SMITH

The Board recessed at 10:10 a.m. and reconvened at 10:13 a.m.

BOARD SELF-ASSESSMENT:

The Board discussed conducting a board self-assessment. After discussion, the Board elected to have Mr. Hunter and Ms. Sauter bring back some options for the Board to consider.

AUDIT COMMITTEE:

Ms. Sauter updated the Board on activity of the Audit Committee and the Internal Audit Division of RIO.

SIB Program - The Audit Committee elected to have Dr. Lech serve as liaison to the SIB for the period ending June 30, 2019.

The Executive Limitation Audit was started in December 2018. Ms. Sauter is developing an audit to review the ongoing due diligence of the investment managers that have been hired by the SIB.

Teachers' Fund for Retirement (TFFR) Program - The Cost Benefit Effective Benefit Payment Audit was completed. The Audit Division has been working with the Information Technology Division to develop data analytics to help streamline the TFFR Employer Salary, Service hours, and the Eligibility Review process. The GASB 68 Census Data Audit was completed in October 2018. The Audit Division assisted CliftonLarsonAllen (CLA) in reconciling the tested census data. CLA will review the results of the audit with the Audit Committee at their May 23, 2019, meeting. The TFFR Employer Reporting process was revised to exclude the Audit Division from communicating their final audit report findings to the Employers. The Retirement Services Division of RIO (the administrative unit of the TFFR Board) will communicate directly with the Employers per state statute. As of December 31, 2018, three Employer audits had been completed and three were in progress.

IT WAS MOVED BY MS. SMITH AND SECONDED BY MS. TERNES AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE AUDIT COMMITTEE REPORT.

AYES: MS. GUMERINGER, MS. SMITH, MS. TERNES, TREASURER SCHMIDT, COMMISSIONER GODFREAD, MR. OLSON, MR. SEIBEL, MR. MILLER, AND DR. LECH
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR SANFORD AND COMMISSIONER SMITH

Executive Review Committee **–** The Board discussed membership of the Executive Review Committee to oversee the formal evaluation of the Executive Director of RIO for the 2018 calendar year. After discussion, Ms. Smith will serve as Chair, Dr. Lech and Mr. Olson will also serve.

Legislative/Budget – Mr. Hunter reviewed legislation that RIO is monitoring - HB 1013 Land Agency Budget Investments, HB 1368 SIB Membership, HB 1504 Legacy Earnings Fund, SB 2022 RIO Budget, SB 2276 Infrastructure Revolving Loan Fund, SB 2293 Game and Fish – Special Fund, SB 2017 – Game and Fish Dept. Budget, SCR 4005 Legacy Fund – Principal & Earnings.

Discussion followed on HB 1013.

OTHER:

The next meeting of the SIB for regular business has been scheduled for March 22, 2019, at 8:30 a.m. at Workforce Safety & Insurance, 1600 E Century Ave.

The next meeting of the Securities Litigation Committee is scheduled for May 16, 2019, at 3:00 p.m. at the Retirement and Investment Office.

The next meeting of the SIB Audit Committee is scheduled for May 23, 2019, at 3:00 p.m. at the Retirement and Investment Office.

ADJOURNMENT:

With no further business to come before the SIB, Dr. Lech adjourned the meeting at 10:48 a.m.

____
Dr. Rob Lech, Vice Chair
State Investment Board

____
Bonnie Heit
Recorder

Agenda Item III.A.

Informational

TO: State Investment Board
FROM: Dave Hunter, Darren Schulz and Eric Chin
DATE: March 22, 2019
SUBJECT: PGIM Fixed Income

Overview:

PGIM Fixed Income (PGIM) manages $961 million across core plus and core bond mandates for the SIB. The breakdown is as follows:

	Strategy	NAV (As of 2/28/19)	% of Fund
Insurance Pool	Core Plus	$ 262,406,992	11.2%
Legacy Fund	Core Plus	$ 385,542,604	6.3%
Pension Pool	Core Bond	$ 313,167,591	5.5%
Total		$ 961,117,187	

PGIM employs an actively managed, multi-sector, bottom-up research driven approach to investing across investment grade fixed income. PGIM is one of the SIB's largest manager relationships and has been managing money for the SIB since August of 2006.

As of 1/31/19	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Since Inception (8/06)
Ins.-Pru Core Plus (net)	1.86%	3.76%	3.63%	3.74%	5.81%
Blmbg:Aggregate	2.25%	2.06%	2.52%	2.12%	4.14%
Excess Return	-0.39%	1.70%	1.11%	1.62%	1.67%

As of 1/31/19	Last Year	Last 3 Years	Since Inception (4/15)
Legacy-Pru Core Plus (net)	2.17%	4.01%	3.07%
Blmbg:Aggregate	2.25%	2.06%	1.61%
Excess Return	-0.08%	1.95%	1.46%

As of 1/31/19	Last Year	Since Inception (2/18)
Pen-Pru Core Bond (net)	3.5%	3.5%
Blmbg:Aggregate	2.3%	2.3%
Excess Return	1.2%	1.2%

Note: Core Plus mandates are less constrained and can invest up to 40% in non-benchmark sectors

As shown above, PGIM has been able to consistently generate excess returns NET of fees.

Investment Update:

As the market continues to move closer to the end of the cycle, Staff has been looking to prudently reduce risk across the portfolios. One area of increasing concern has been the changing characteristics of the BBB bond space:

1. Size of the BBB market has grown significantly on a relative and absolute basis
   a. Today BBBs make up approximately 49% of the investment grade space, in 1993 BBBs made up just 27% of the investment grade space
   b. The total value of BBBs is $2.47 trillion (as of Oct. 2018) more than triple the amount at the end of 2008
2. Leverage of BBBs has increased significantly. Net leverage, defined as (total debt – cash – short term investment)/EBITDA (earnings before interest, taxes, depreciation and amortization) of BBB non-financial corporates in 2000 was 1.7x, net leverage for these companies in 2017 was 2.9x.

As a result of these issues, Staff is planning to reduce exposure to Wells Capital Medium Quality Credit (Wells) a BBB mandate with approximately 80% exposure to BBBs. This mandate is in the Legacy Fund and the Insurance Pool (the Pension Pool does not have exposure to Wells) and represents 7.3% of the Legacy Fund and 11.3% of the Insurance Pool. Staff intends to reduce exposure to Wells by at least 50% and will reallocate to other managers. Notably, PGIM is one of the managers that Staff plans to increase exposure as a result of the Wells reduction. With PGIM's average credit quality of A in the Core Plus mandates, its diversified approach to investing in the investment grade space, and its strong track record, Staff believes this is a prudent risk mitigating adjustment to the Insurance Pool and Legacy Fund.

North Dakota State Investment Board

Portfolio Review

MORNINGSTAR Awards 2017™

Named Morningstar's 2017 ***Fixed Income Fund Manager of The Year***

March 2019

PGIM FIXED INCOME

The Global Fixed Income Business of Prudential Financial, Inc.
Prudential Financial, Inc. of the United States is not affiliated with Prudential plc, headquartered in the United Kingdom.

Table of Contents

1 Organization & Team

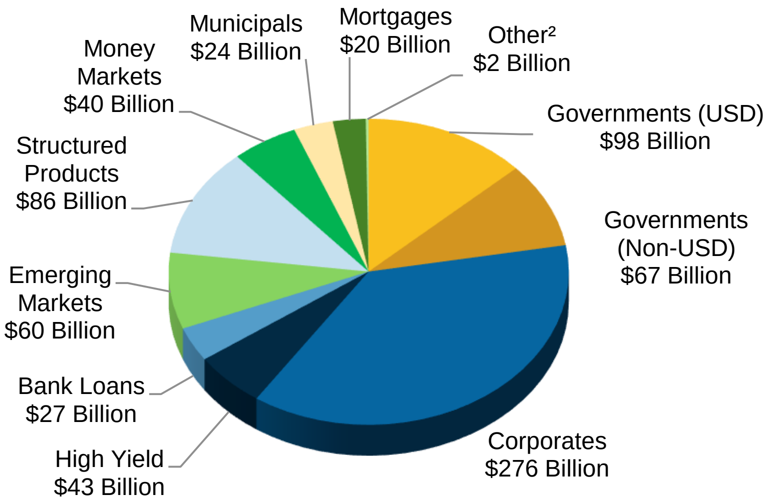
North Dakota State Investment Board - PGIM Fixed Income Relationship

Portfolio Name	Funding Date	Assets (mm) As of 3/14/2019
North Dakota - Insurance Trust	August, 2006	$290
North Dakota - Legacy Trust	April, 2015	$388
North Dakota - Pension Trust	February, 2018	$315
Total		**$993**

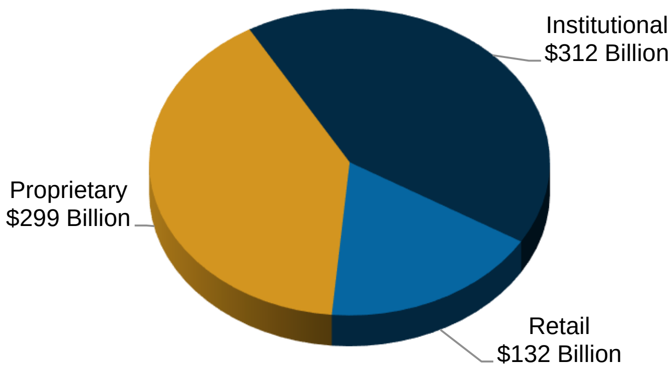
Source: PGIM Fixed Income

$743 Billion in Assets Under Management[1]

AUM By Sector



AUM By Client



One Of The Largest Fixed Income Managers[3]

- Manage a broad range of active, global fixed income mandates for 651 clients worldwide[4]
  - 35 Fortune 100 companies[5]
  - 31 of the 100 largest Global Pension Funds[6]
  - 13 Sovereign Wealth Funds/Central Banks
- Headquartered in U.S. (Newark, NJ) with offices in London, Amsterdam, Tokyo, and Singapore[7]
- 286 investment professionals worldwide[8]

Assets under management (AUM) are based on company estimates and are subject to change. PGIM Fixed Income's AUM includes the following businesses: (i) the public fixed income unit within PGIM Limited, located in London; (ii) locally managed assets of PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; and (iii) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore. [1]Assets for PGIM Fixed Income as of December 31, 2018. Asset class breakdown based on company estimates and is subject to change. [2]Other includes Japanese equities and Japanese real estate equities. [3]Source: Pensions & Investments, May 29, 2018, based on U.S. institutional tax-exempt assets under management as of December 31, 2017. [4]As of December 31, 2018. [5]As of December 31, 2018. Source of Fortune 500 list: Fortune issued June 9, 2018. [6]As of December 31, 2018. Source of Global Pension Fund data: P&I/Willis Towers Watson Top 300 Pension Funds ranking, data as of December 31, 2017, published September 2018. [7]Affiliate offices of PGIM Fixed Income. [8]Staffing as of December 31, 2018

Resourced To Specialize

PGIM Fixed Income
Michael Lillard, Head of Fixed Income and CIO

Quantitative Analysis and Risk Management
Stephen Warren

Client Advisory Group
Bas NieuweWeme

Chief Operating Officer
Steven Saperstein

PGIM Japan
Yasuhisa Nitta

Credit Research
Richard Greenwood

Credit Portfolio Management
Steven Kellner

- *Corporates*
- *Leveraged Finance*
- *Municipals*

Global and Macro
Arvind Rajan

- *Emerging Markets*
- *Global and FX*
- *Economic Research*
- *Investment Strategy*

Multi-Sector and Liquidity
Craig Dewling

- *Multi Sector*
- *Developed Market Rates*
- *Agency MBS*
- *Money Markets*
- *Insurance*

Structured Products
John Vibert

- *CMBS*
- *Non-Agency MBS*
- *ABS*
- *CLOs*

Human Resources
Gill Murphy[1]

Finance
Vasel Vataj[1]

Legal
Daniel Malooly[1]

Compliance
Matthew Fitzgerald[1]

[1]Dedicated functional teams that have a direct, independent reporting relationship to corporate senior management of the company.
As of December 2018.

Dedicated Specialists, Balanced Organization, Integrated Process

- 855 Employees Based Globally
  - 286 Investment Professionals
  - 129 Client Advisory Group Professionals
  - 287 Operations, Technology and Data Professionals
  - 98 Business Management, Finance and Administrative Staff
  - 55 Legal and Compliance Professionals

Fundamental Research 118 Analysts	Portfolio Management[1] 116 Investment Managers/ Traders		Quantitative Analysis & Risk Management 52 Analysts
Global Macroeconomics	Global Rates and Securitized Products	Long/Short	Risk Management
Investment Grade Corporates	Corporates	Money Markets	
High Yield	Emerging Markets	Multi-Sector	Quantitative Modeling and Strategies
Bank Loans	Leveraged Finance	Insurance	
Emerging Market Corporates	Municipals	Liability Driven Investing	Portfolio Analysis
Municipals			
Structured Products			

Staff as of December 31, 2018. [1]Includes senior executives and product managers.

Continuity and Expertise

Team	Average Firm Tenure	Average Investment Experience
Portfolio Management[1]	20 Years	25 Years
Fundamental Research	13 Years	24 Years
Quantitative Analysis & Risk Management	16 Years	23 Years

How This Benefits Our Clients…We Believe Stable Investment Teams Lead to Stable Processes Which Can Lead to Solid Performance

- **Many of our investment professionals have over 20 years with the firm**
- **Long-standing relationships**
- **A collegial but challenging environment**

Staff as of December 31, 2018. Principal and above.
[1]Includes senior executives and product managers.

Gross Investment Performance—As of December 31, 2018

	Strategy / Composite Inception	Index / Objective	YTD	1 Year	3 Year	5 Year		10 Year		SI[2]	
			Excess Return (bps)	Excess Return (bps)	Excess Return (bps)	Excess Return (bps)	Info Ratio[1]	Excess Return (bps)	Info Ratio[1]	Excess Return (bps)	Strategy AUM[3] ($ billions)
Multi Sector	Core Conservative (1989)	Bloomberg Barclays U.S. Aggregate +25	-3	-3	+6	+14	1.26	+27	1.47	+26	25.3
	Core (1991)	Bloomberg Barclays U.S. Aggregate +60	-9	-9	+70	+60	1.79	+174	1.75	+58	39.3
	Japan Core Bond[4] (2003)	Nomura-BPI Overall +45	+12	+12	+47	+52	2.41	+59	2.16	+37	9.0
	Global Core (2008)	Bloomberg Barclays Global Aggregate +100	-15	-15	+125	+133	1.68	+176	1.48	+169	4.4
	Core Plus (1996)	Bloomberg Barclays U.S. Aggregate +150	-21	-21	+204	+152	1.40	+334	1.54	+121	60.6
	Global Aggregate Plus[5] (2002)	Bloomberg Barclays Global Aggregate +200	+16	+16	+267	+272	1.32	+505	1.36	+232	11.7
	Absolute Return (2011)	ICE BofAML 3-Month LIBOR +300	-73	-73	+358	+257	1.22	--	--	+287	3.1
	Multi-Asset Credit (2016)	3-Month U.S. Dollar LIBOR +350	-110	-110	--	--	--	--	--	+256	0.8
	Strategic Bond (2015)**	3-Month U.S. Dollar LIBOR +400	+48	+48	+623	--	--	--	--	+540	0.1
	Global Dynamic Bond Fund (2016)	3-Month U.S. Dollar LIBOR +425	-91	-91	+578	--	--	--	--	+578	<0.1
Short Duration	Short Duration Core Plus (2014)	Bloomberg Barclays U.S. 1-3 Year Govt/Credit +150	-13	-13	+213	--	--	--	--	+170	1.1
	Short Term Corporate (1-5 Year) (1994)	Bloomberg Barclays U.S. 1-5 Year Credit +50	+5	+5	+38	+39	1.74	+46	0.86	+34	16.9
Long Duration	Long Duration Government/Credit (2009)	Bloomberg Barclays U.S. Long Govt/Credit +60	-13	-13	+46	+36	0.80	--	--	+76	9.6
	Long Duration Corporate (2008)	Bloomberg Barclays U.S. Long Corporate +100	+27	+27	+48	+66	1.19	+74	1.06	+116	27.6
	Long Duration LDI (1998)	Client-Directed Liability Based Benchmark	-10	-10	+66	+62	1.19	+136	1.54	+88	21.5
Struct. Prod.	Structured Product (2016)	3-Month U.S. Dollar LIBOR Average +300	+162	+162	+448	--	--	--	--	+448	1.3
Investment Grade Credit	U.S. Investment Grade Corporates (1991)	Bloomberg Barclays U.S. Credit +60	-55	-55	+68	+52	0.86	+127	1.29	+90	43.5
	European Corporate (USD Hedged) (2008)	iBoxx Euro Corporate (USD Hedged) +100	+30	+30	+81	+87	2.94	+117	1.91	+91	0.4
	Global Corporate (Unhedged) (2010)	Bloomberg Barclays Global Corporate (Unhedged) + 100	-39	-39	+57	+59	1.17	--	--	+75	17.5
High Yield/ Bank Loans	U.S. Higher Quality High Yield (1998)	Bloomberg Barclays US HY Ba/B 1% Issuer Capped +125	+84	+84	+5	+80	1.01	-25	-0.22	+135	4.3
	U.S. Broad Market High Yield (2002)	Bloomberg Barclays U.S. High Yield +125	+133	+133	+56	+106	1.31	-18	-0.15	+36	12.4
	U.S. Senior Secured Loans (2007)	CS Leveraged Loan +100	-39	-39	+26	+49	1.10	-67	-0.32	+30	18.6
	European High Yield ∩ (2010)	ICE BofAML Euro HY ex Financials 2% Constrained +150	+24	+24	+17	+76	0.66	--	--	+163	5.0
	European Senior Secured Debt (Constrained)*∩ (2006)	CS Western European Leveraged Loan (EUR Hedged) +150	-45	-45	+85	+130	1.19	+112	0.58	+103	8.8
	Global High Yield (Euro Hedged) ∩ (2002)	Bloomberg Barclays Global High Yield (EUR Hedged) +125	+103	+103	+69	+74	0.90	-29	-0.20	+27	3.5
	Global Sr. Secured Loans (USD Hedged) (2011)	CS Blend U.S. & West Euro Lev Loan (USD Hedged) +100	-17	-17	+31	+65	1.17	--	--	+73	0.8
Emerging Markets	Emerging Markets Debt (1996)	JPM EMBI Global Diversified +200	-131	-131	+168	+121	0.85	+216	1.04	+238	24.6
	Emerging Markets Blend (2007)	Blend: JPM EMBI Global Divers/GBI-EM Global Divers +200	-133	-133	+99	+110	0.87	+184	0.94	+122	11.7
	Emerging Markets Blend Plus (2014)	Blend: JPM EMBI Global Divers/GBI-EM Global Divers +500	-203	-203	+316	--	--	--	--	+277	0.1
	Emerging Markets Local Currency (2011)	JPM GBI-EM Global Divers +150	-162	-162	-37	+74	0.57	--	--	+36	2.8
	Emerging Markets Corporate Debt (2013)	JPM CEMBI Broad Divers +150	-87	-87	+89	+14	0.12	--	--	+27	0.5
Municipals	National Municipal Bond (1994)	Bloomberg Barclays Municipal Bond +50	+10	+10	+39	+67	1.13	+75	0.80	+23	0.6
	High Income Municipal Bond (1994)	Blend: Bloomberg Barclays Muni High Income/Muni +75	-104	-104	-5	+135	1.07	+94	0.67	+47	0.8
Alternatives	U.S. Liquidity Relative Value (2002)	Max Return vs. 3-Month LIBOR	+34	+34	+334	+387	1.67	+738	2.29	+571	0.4
	Global Liquidity Relative Value (2014)	Max Return vs. 3-Month LIBOR	-50	-50	+686	--	--	--	--	+757	2.9
	Emerging Market Long/Short (2007)	Max Return vs. 3-Month LIBOR	-239	-239	+488	+508	1.13	+885	1.75	+824	0.2
	U.S. Liquidity Relative Value (S&P Overlay)(2014)	Max Return vs. S&P 500 Total Return	-54	-54	+239	--	--	--	--	+285	<0.1

Past performance is not a guarantee or a reliable indicator of future results. Please see the Reference section for important disclosures including risk, inception dates, net returns and benchmark descriptions. *The value of investments can go down as well as up. Where overseas investments are held the rate of currency exchange may cause the value of investments to fluctuate. If applicable, investments in emerging markets are by their nature higher risk and potentially more volatile than those inherent in some established markets and non-USD securities are converted to USD using a spot rate conversion. All return periods longer than one year are annualized. Shown in USD unless otherwise noted. ∩Performance shown in EUR. Excess returns are over the stated composite benchmark. Returns are gross of investment management fees which would reduce an investor's net return. All Non-USD securities are converted to USD using a spot rate conversion. PGIM Fixed Income's Composite Performance Returns available upon request. There can be no guarantee that these objectives will be met. Source of benchmark returns: Bloomberg Barclays, JPMorgan, iBoxx, Credit Suisse, ICE Data Indices, LLC, and Bloomberg. Source of custom Long Duration LDI benchmark returns: PGIM Fixed Income. [1]Source of calculations: PGIM Fixed Income. [2]Since Inception. [3]Assets as of December 31, 2018. Strategy assets may include additional assets not included in the primary marketing composite. [4]Japan Core Bond performance shown in JPY. [5]Represents excess returns vs. FTSE World Bond Index, the composite benchmark until March 31, 2011. As of April 1, 2011 composite benchmark was changed to the Bloomberg Barclays Global Aggregate Index. *Information Ratio calculated using quarterly returns since monthly returns were not available until 1/1/2010. *As of December 31, 2018. **Effective March 1, 2019, the Unconstrained Bond Composite was renamed the Strategic Bond Composite. The strategy benchmark also changed from 3-month Libor to the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index.*

Fourth Quarter Update

— Investor Trends —

- Allocations in Q4 2018 largely featured Global Multi-Sector and EMD strategies: Global Aggregate and Hard Currency mandates respectively.
- Despite market volatility, flows remained strong in Q4 with positive net flows on an aggregate basis in PGIM Fixed Income

— Thought Leadership —

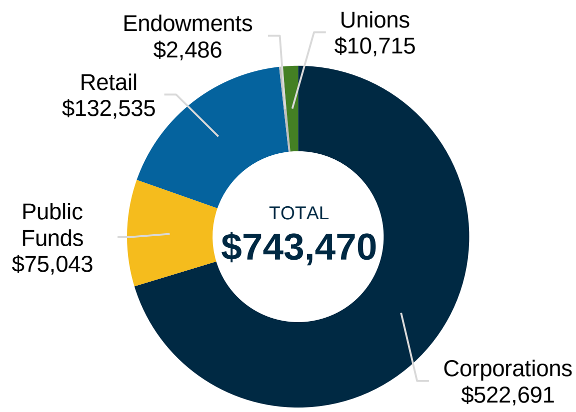
- PGIM Fixed Income's 2019 Outlook and Webinar Replay now available
- Our thoughts on the Federal Reserve's decision to raise short-term interest rates - *Trending: The Fed's Dovish Hike – But is it Enough for Markets?*
- Global Macro Matters discusses implications of the global demographic transition - *The Economics of Global Aging: Gray Skies, Rays of Policy Hope?*
- Follow PGIM Fixed Income on LinkedIn for the latest updates or visit our website www.pgimfixedincome.com to download our white papers

— Upcoming Events —

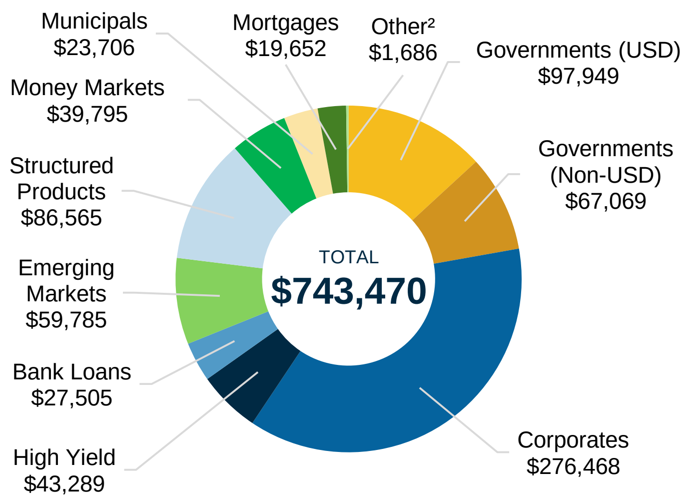
- **Investor Calls Q1 2019:**
  - Emerging Markets Debt: 6th March, 27th March
  - Core Plus: Q4 Review Call – Replay Available
- **PGIM Fixed Income Client Conferences 2019:**
  - EMEA: 25th June 2019, London
  - U.S.: 6th November 2019, New York City
  - Japan: 20th November 2019, Tokyo

4Q18 Assets Under Management[1]

By Client Type ($M)



By Sector ($M)



4Q18 Organization Updates[3]

Strategy	Title/Responsibility
New Hires	
-	-
Departures	
Emerging Markets Debt	Principal/Portfolio Manager
European Lev Finance	Principal/Credit Analyst

— Regulatory Initiatives[4] —

- **China Bond Connect** – China will be added to certain Bloomberg Barclays indexes in April 2019. Eligible PGIM Fixed Income clients must be registered with the PBoC via Bond Connect to access the local China markets
- **Brexit** – Our planning includes the setting up of a new office in Amsterdam, the Netherlands
- **FINRA Rule 4120** – requires Master Securities Forward Transaction Agreements (MSFTA) in place by 25th March 2020 to meet new margin requirements

Please see the Reference Section for important disclosures. *Source: PGIM Fixed Income. Data as of 31 December 2018. Subject to change. PGIM Fixed Income's AUM includes the following businesses: (i) the public fixed income unit within PGIM Limited, located in London; (ii) locally managed assets of PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; and (iii) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore. [1]Assets for PGIM Fixed Income as of 31 December 2018. Asset class breakdown based on company estimates and is subject to change. Totals may not sum due to rounding. [2] Other includes Japanese equities and Japanese real estate equities. [3] Principal and above.*
[4] This list of regulatory initiatives is not exhaustive and PGIM Fixed Income may be subject to other regulatory initiatives, in addition to those described herein.

Experienced and Stable Team

- Team averages 21 years investment experience and 19 years tenure with the firm
- Approach leverages firm's full resources
- $114.9 billion in multi sector strategy assets

Senior Portfolio Managers
Michael Collins, CFA / Gregory Peters / Richard Piccirillo

Portfolio Construction

Sector Allocation
Michael Collins, CFA / Gregory Peters / Richard Piccirillo
Lindsay Rosner, CFA

Duration / Yield Curve
Robert Tipp, CFA

Security Selection

Governments / Agencies
Erik Schiller, CFA
Matthew Angelucci, CFA
Gary Wu, CFA
Scott Donnelly, CFA

Agency Mortgages
Stewart Wong
David Brown
Andrew Harnischfeger, CFA

Investment Grade Corp
Malcolm Dalrymple (U.S.)
David Del Vecchio (U.S.)
Robert White[1] (European)

Structured Product
Peter Freitag, CFA
Thomas Chang, CFA
Edwin Wilches, CFA

Municipals
Susan Courtney
Lee Friedman, CFA

Emerging Markets / FX
David Bessey
Johnny Mak
Mariusz Banasiak, CFA (FX)

Global High Yield / Bank Loans
Brian Barnhurst, CFA[1] (European)
Daniel Thorogood, CFA (U.S.)

Staffing as of December 2018. Assets and years experience as of December 31, 2018. [1]European Team members are employees of an indirect subsidiary of PGIM, Inc. who have been providing services to PGIM Limited, a UK subsidiary that is authorized and regulated by the Financial Conduct Authority.

2 Performance, Attribution, & Positioning

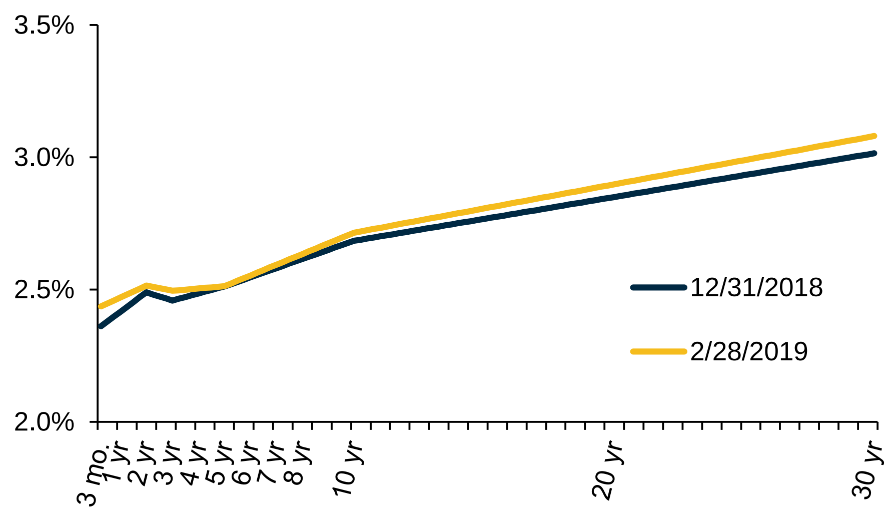
Yield Curve Across Maturities

U.S. Interest Rates

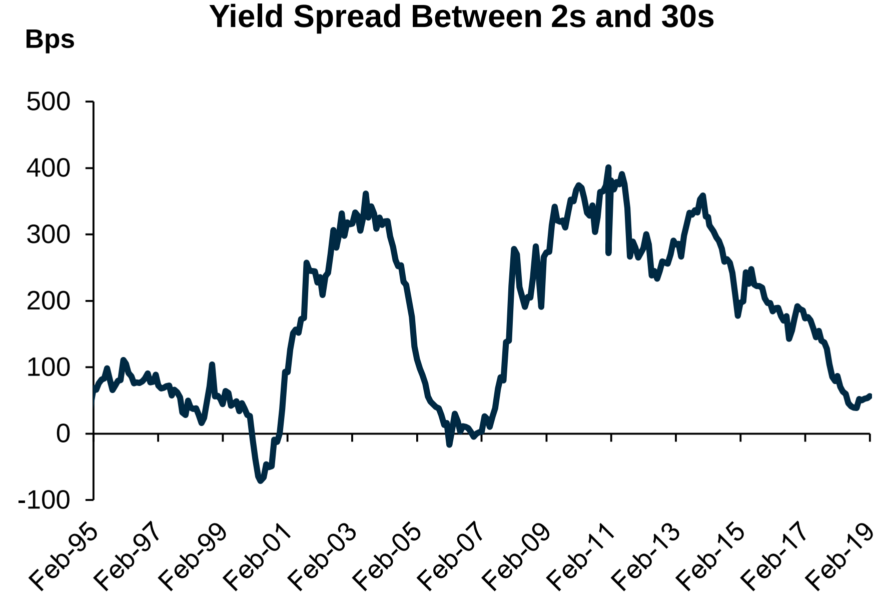
Maturity	12/31/2017	12/31/2018	2/28/2019	YTD 2019 Change
Fed Funds	1.25%-1.50%	2.25%-2.50%	2.25-2.50%	0
2 year	1.89	2.49	2.52	+3
5 year	2.21	2.51	2.51	0
10 year	2.41	2.69	2.72	+3
30 year	2.74	3.02	3.08	+7

- Much of the sharp rise in U.S. interest rates throughout most of 2018 reversed late in the year on weakening global economic data. The yield curve remains flat in early 2019. Rates in other developed markets continue to hit new lows.
- The Fed has moderated its stance on future rate hikes even as the balance sheet reduction continues. The market is not pricing in any additional hikes (and even modest cuts) for the remainder of this cycle.
- The European Central Bank ended its Asset Purchase Program at the end of 2018, but will likely reinvest maturing principal payments for an extended period of time. It will probably not begin hiking rates until at least mid-2019.

U.S. Treasury Yield Curve



Yield Spread Between 2s and 30s



Past performance is not a guarantee or a reliable indicator of future results. Please see Notice for important disclosures. There is no guarantee these expectations will be achieved.
As of February 28, 2019. Source: Bloomberg and PGIM Fixed Income.

Year-to-Date 2019 Excess Returns

Curve-Adjusted Excess Returns

Excess Returns	2016	2017	2018	YTD 2019
Aaa Corporate	258	336	-199	172
Aa Corporate	254	209	-135	149
A Corporate	350	291	-315	218
Baa Corporate	682	419	-347	280
U.S. Corporate IG	493	346	-315	243
U.S. Corporate IG INT (1-10)	285	256	-153	183
U.S. Corporate IG Long (10+)	978	554	-651	373
European Corporate IG	231	347	-249	164
European Corporate IG Long (10+)	341	535	-707	269
Sterling Corporate IG	413	320	-310	192
Build America Bonds	405	552	-188	133
Crossover (including Fitch)	1,114	618	-382	542
Ba U.S. High Yield	1,139	575	-380	556
B U.S. High Yield	1,440	514	-286	592
Ba Euro High Yield	669	786	-378	378
B Euro High Yield	901	646	-449	462
US Bank Loans[1]	922	314	-93	341
Asset-Backed Securities	95	92	13	38
Investment Grade CMBS	248	178	-17	117
U.S. MBS: Agency Fixed Rate	-11	52	-59	39
Emerging Markets (Investment Grade)	533	501	-198	256
Emerging Markets (High Yield)	1,498	788	-587	571

Past performance is not a reliable indicator of future results. Please see the Notice for important disclosures regarding the information contained herein.

As of: February 28, 2019. Source: Bloomberg Barclays. You cannot invest directly in an index.

[1]Excess return represents CSFB Leveraged Loan index total return versus the total return for Merrill Lynch 3-month LIBOR.

North Dakota State Investment Board – Insurance Trust

Investment Performance

As of February 28, 2019

	YTD 12/18	YTD 2/19	Annualized				
			1 Year	3 Year	5 Year	10 Year	Since Inception[1]
Portfolio (%)	-0.22	1.75	3.70	4.07	3.75	6.83	5.91
Benchmark (%)[2]	0.01	1.00	3.17	1.69	2.32	3.71	4.01
Increment (bps)	**-23**	**+75**	**+53**	**+238**	**+143**	**+312**	**+190**

Increment may not sum due to rounding.

= Attribution to Follow

Source of portfolio returns: PGIM Fixed Income. Performance shown gross of fees. Performance reported in USD.
Past performance is not a reliable indicator of future performance. Performance over one-year is annualized.
1. Inception Date: September 01, 2006
2. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays.
Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Insurance Trust

Performance Attribution

Year-to-Date as of December 31, 2018

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher over the year.
- Duration positioning as well as yield curve positioning limited results.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets and Sovereign spreads all widened over the year, while Agency spreads tightened.
- Based on spread duration positioning, overweights in High Yield, CMBS, and Emerging Markets led to underperformance.
- Positioning in Sovereigns detracted from performance.
- An underweight in MBS/CMO benefitted the portfolio.

Industry/Security Selection

- Selection within Interest Rate Swaps, Non-Agency RMBS, Treasury, and Sovereigns added to returns, although security selection in Emerging Markets detracted from returns.
- Security selection in Electric Utilities and Cable & Satellite contributed to results.
- Contributors in Electric Utilities included overweights in Vistra Energy and in Alliant Energy.
- Overweights in Cox Enterprises and Charter Communications, within Cable & Satellite, added to performance.
- Security selection in Foreign Non-Corporate and Telecom detracted from returns.
- Within Foreign Non-Corporate, overweights in Argentina and Petroleos Mexicanos detracted from performance.
- Underperformance in Telecom consisted of an overweight in Digicel Group and an underweight in Verizon Communications.

Performance Impact	Bps
Duration	**-8**
Curve	**-8**
FX	**-1**
Sector Allocation	**-27**
Treasury	+1
Sovereign	-7
Agency	0
Covered	0
MBS/CMO	+18
CMBS	-9
ABS	0
Municipals	-2
Investment Grade Corporate	-7
High Yield	-15
Bank Loans	0
Emerging Market	-7
Security Selection	**+30**
Treasury	+10
Sovereign	+6
Interest Rate Swaps	+15
Agency	0
Covered	0
MBS/CMO	0
CMBS	+5
Non-Agency RMBS	+11
CLO	0
ABS	+3
Municipals	+1
Investment Grade Corporate	-2
High Yield	+1
Bank Loans	+2
Emerging Market	-21
Trading	**-10**
Securities Lending	**0**
Total	**-23 bps**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Insurance Trust

Top Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
ELECTRIC & WATER	3.86	0.37%	-0.02
CABLE & SATELLITE	3.78	1.05%	0.05
NATURAL GAS	1.16	-0.03%	0.00
FINANCE COMPANIES	1.05	-0.18%	-0.01
PROPERTY & CASUALTY	1.03	0.25%	0.03
HEALTH CARE & PHARMA	0.89	1.55%	0.05
RETAILERS & RESTAURANTS	0.88	0.07%	-0.02
AEROSPACE & DEFENSE	0.77	0.11%	-0.01
TOBACCO	0.58	0.00%	-0.01
REV - HEALTHCARE	0.48	0.29%	0.03

Top Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GREECE REPUBLIC OF (GOV)	3.45	1.08%	0.09
GENERAL ELECTRIC CO	2.15	-0.19%	-0.02
ALTICE USA INC	1.99	0.34%	0.01
PORTUGAL (REPUBLIC OF)	1.83	1.12%	0.07
QATAR (STATE OF)	1.71	0.11%	0.02
SEMPRA ENERGY	1.16	-0.04%	0.00
VOLT PARENT LP	1.14	0.21%	0.01
VISTRA ENERGY CORP	1.01	0.18%	0.01
COMMUNITY HEALTH SYSTEMS INC	0.98	0.12%	0.00
SOFTBANK GROUP CORP	0.98	0.26%	0.01

Bottom Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
FOREIGN NON-CORPORATE	-17.20	3.60%	0.18
TELECOM	-3.92	0.09%	-0.04
AUTOMOTIVE	-3.52	1.04%	0.05
BUILDING MATLS & HOME	-3.41	1.03%	0.03
BANKING	-1.84	3.55%	0.19
METALS & MINING	-1.45	0.22%	0.03
GAMING & LODGING & LEISURE	-1.31	0.93%	0.04
MEDIA & ENTERTAINMENT	-1.29	0.39%	0.03
ENERGY - UPSTREAM	-1.16	-0.11%	0.02
OTHER FINANCIAL	-0.59	0.06%	0.00

Bottom Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
ARGENTINA REPUBLIC OF GOV	-7.94	0.39%	0.02
PETROLEOS MEXICANOS	-3.18	0.50%	0.03
BUENOS AIRES PROVINCE OF	-2.83	0.18%	0.00
DIGICEL GROUP LTD	-1.94	0.12%	0.00
ADIENT PLC	-1.85	0.09%	0.01
CK HUTCHISON HOLDINGS LTD	-1.57	0.19%	0.01
GOLDMAN SACHS GROUP INC/THE	-1.51	0.53%	0.05
ROMANIA (REPUBLIC OF)	-1.43	0.16%	0.02
EGYPT (ARAB REPUBLIC OF)	-1.23	0.14%	0.01
AMERICAN INTERNATIONAL GROUP	-0.94	0.28%	0.02

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Insurance Trust

Performance Attribution

Year-to-Date as of February 28, 2019

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher and the curve steepened over the year.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets, Agency and Sovereign spreads all tightened over the year.
- Overweights in High Yield, CMBS, Emerging Markets, and Bank Loan added to returns.
- An underweight in MBS/CMO was negative.

Industry/Security Selection

- Selection within Sovereigns, Emerging Markets, Investment Grade Corporates, and High Yield added value; in contrast, selection in Treasury hurt performance.
- Security selection in Foreign Non-Corporate, along with an overweight in Banking contributed to results.
- Within Foreign Non-Corporate, overweights in Greece and Portugal added to performance.
- Within Banking, overweights in Citigroup and Bank of America added value.
- Security selection in Telecom and Natural Gas detracted from returns.
- Overweights in Digicel Group and Softbank Group, within Telecom, were negative.
- Within Natural Gas, an overweight in Sempra Energy was negative.
- An underweight to Foreign Non-Corporate issuer Germany was the largest detractor from performance.

Performance Impact	Bps
Duration	**+1**
Curve	**-8**
FX	**0**
Sector Allocation	**+53**
Treasury	0
Sovereign	0
Agency	0
Covered	0
MBS/CMO	-10
CMBS	+20
ABS	+2
Municipals	+1
Investment Grade Corporate	+2
High Yield	+29
Bank Loans	+3
Emerging Market	+6
Security Selection	**+30**
Treasury	-3
Sovereign	+13
Interest Rate Swaps	-2
Agency	+1
Covered	0
MBS/CMO	0
CMBS	-2
Non-Agency RMBS	+2
CLO	+3
ABS	0
Municipals	-1
Investment Grade Corporate	+8
High Yield	+3
Bank Loans	0
Emerging Market	+9
Trading	**-1**
Securities Lending	**0**
Total	**+75 bps**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Insurance Trust

Top Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
FOREIGN NON-CORPORATE	13.36	6.46%	0.35
BANKING	4.19	3.91%	0.24
ENERGY - MIDSTREAM	1.60	0.96%	0.10
HEALTH CARE & PHARMA	1.49	1.46%	0.05
ENERGY - UPSTREAM	1.30	-0.17%	0.00
BUILDING MATLS & HOME	1.21	0.84%	0.02
CONSUMER NON-CYCLICAL	0.86	-0.52%	-0.08
GAMING & LODGING & LEISURE	0.85	0.74%	0.02
CAPITAL GOODS	0.79	0.00%	-0.02
AEROSPACE & DEFENSE	0.68	0.15%	-0.01

Top Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GREECE REPUBLIC OF (GOV)	7.17	1.28%	0.11
PORTUGAL (REPUBLIC OF)	4.49	1.93%	0.10
ARGENTINA REPUBLIC OF GOV	1.93	0.38%	0.01
CITIGROUP INC	1.37	0.91%	0.06
BANK OF AMERICA CORP	0.98	1.02%	0.06
DEVON ENERGY CORPORATION	0.92	0.08%	0.01
ITALY (REPUBLIC OF)	0.90	0.93%	0.04
BUENOS AIRES PROVINCE OF	0.89	0.19%	0.00
UKRAINE REPUBLIC OF (GOV)	0.88	0.21%	0.01
PETROLEO BRASILEIRO SA	0.88	0.23%	0.01

Bottom Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
TELECOM	-1.85	-0.08%	-0.02
NATURAL GAS	-0.65	0.06%	0.02
CABLE & SATELLITE	-0.57	0.53%	0.04
FINANCE COMPANIES	-0.39	-0.22%	-0.01
PROPERTY & CASUALTY	-0.34	-0.02%	0.01
REV - HEALTHCARE	-0.23	0.14%	0.01
LIFE INSURANCE	-0.19	-0.01%	0.00
AIRLINES	-0.17	0.27%	0.01
CHEMICALS	-0.14	0.37%	0.01
RETAILERS & RESTAURANTS	-0.10	-0.12%	-0.03

Bottom Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GERMANY (FEDERAL REPUBLIC OF)	-0.94	-5.89%	-0.48
GENERAL ELECTRIC CO	-0.78	-0.20%	-0.02
DIGICEL GROUP LTD	-0.76	0.06%	0.00
SEMPRA ENERGY	-0.65	0.07%	0.02
FISERV INC	-0.58	0.19%	0.01
SOFTBANK GROUP CORP	-0.55	0.30%	0.01
ALLIANT ENERGY CORP	-0.55	0.23%	0.02
CIGNA CORP	-0.42	0.48%	0.03
ADIENT PLC	-0.37	0.04%	0.00
BRITISH COLUMBIA (PROVINCE OF)	-0.36	0.27%	0.03

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Insurance Trust

As of February 28, 2019

Current Themes

Corporates

- U.S. Economy continues to grow moderately
- Credit fundamentals have likely peaked
- Emphasize banking and finance sectors

Mortgages & Structured Products

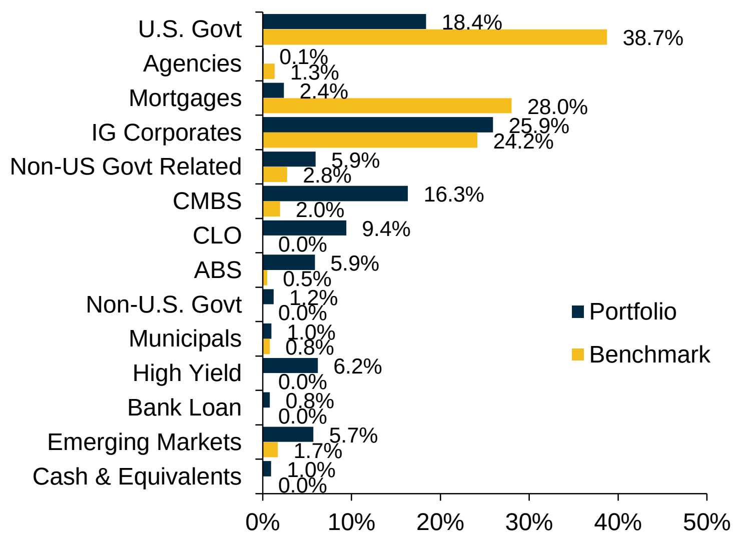
- Underweight agency mortgages
- Favor higher quality CMBS with solid structural support and opportunistically add single-asset/borrower CMBS
- Favor select non-agency mortgage and consumer-related ABS
- Favor senior tranches of CLOs

Emerging Markets

- Opportunistic in EM, favoring select hard currency bonds and select local interest rate markets

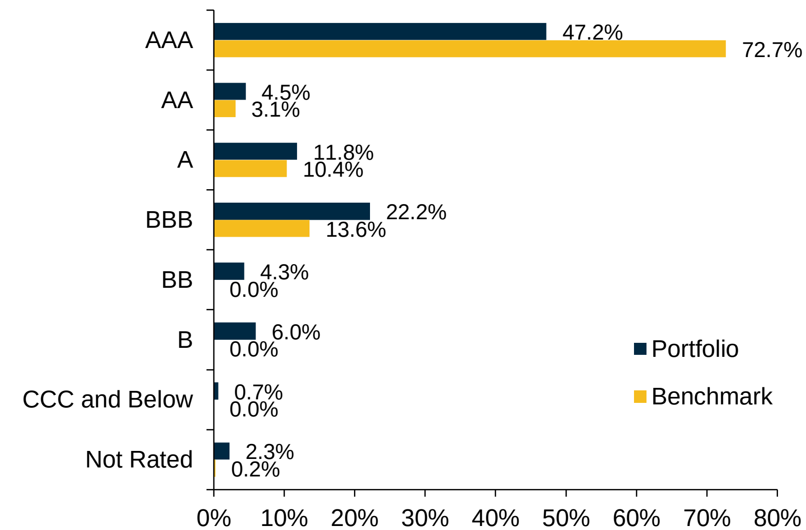
Characteristics	Portfolio	Benchmark
Market Value *($)*	261,978,811	---
Effective Duration *(yrs)*	6.37	5.83
Effective Yield *(%)*[1]	3.86	3.20
Average Quality (Moody's)	A1	Aa2
Option Adjusted Spread *(bps)*	125	44
Number of Issuers	512	1421

Sector Distribution[2]



	Active Exposure *(%)*
Industrials	+5.4
Financials	+3.3
Utilities	+0.6
Non-Corp	+6.8

Quality Distribution[3]



Source of portfolio data: PGIM Fixed Income. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Please see Notice for important disclosures regarding the information contained herein. Benchmark statistics based on PGIM analytics and may differ from published statistics by official benchmark vendors. 1. Effective yield is calculated excluding the yield impact of foreign exchange positions and derivatives (other than interest rate futures, which are included in the calculation). 2. Excludes swaps 3. Quality ratings exclude cash and FX hedges and are reported as the middle of Moody's, S&P, and Fitch–excluding cash and cash equivalents. Current themes provided for discussion purposes only. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis for any investment decision. Does not constitute a representation that the firm has purchased or would purchase any of the investments referenced or that any such investments would be profitable.

North Dakota State Investment Board – Insurance Trust

Allocation Changes by Sector & Maturity

Full Year 2018

	% NMV				
	0-3 Yrs	3-7 Yrs	7-15 Yrs	15+ Yrs	Total
TSY/AGY/MBS	**-5.6**	**3.3**	**-3.7**	**2.0**	**-3.9**
TSY (US Cash Bonds/Futures)	-5.8	-1.7	1.9	2.0	-3.6
AGY	0.3	0.4	0.0	0.0	0.6
MBS	0.0	4.7	-5.6	0.0	-1.0
Structured Products	**-6.7**	**-1.0**	**2.7**	**-0.1**	**-5.1**
CMBS	0.2	-2.2	2.8	0.0	0.8
Non-Agency RMBS	-2.6	-0.3	-0.9	-0.1	-3.9
CARDS	-0.7	-0.1	0.2	0.0	-0.6
CLO	-3.2	1.9	0.0	0.0	-1.3
Other	-0.3	-0.3	0.6	0.0	-0.1
High Yield	**-4.7**	**-0.8**	**0.0**	**0.0**	**-5.4**
BB	-2.2	-1.6	0.2	0.0	-3.6
B	-2.2	0.7	-0.1	0.0	-1.6
CCC	-0.3	0.1	-0.1	0.0	-0.2
Emerging Credit	**0.5**	**-0.3**	**0.1**	**-0.2**	**0.1**
Sovereign	0.5	0.0	-0.1	0.2	0.5
Quasi-Sovereign	0.1	-0.6	0.2	-0.2	-0.4
Corporate	-0.1	0.2	0.0	-0.2	-0.1
Investment Grade	**1.1**	**0.3**	**0.5**	**-2.7**	**-0.9**
Quality					
AA	0.6	0.0	-0.4	0.2	0.5
A	0.4	-0.8	1.6	-1.1	0.1
BBB	0.1	1.1	-0.7	-1.9	-1.4
Industry					
Industrials	0.9	1.1	-1.3	-1.4	-0.7
Utilities	-0.1	0.0	0.0	0.1	0.0
Finance	0.3	-0.8	1.8	-1.4	-0.2
Developed Credit	**0.2**	**3.2**	**1.1**	**0.4**	**4.9**
Bank Loans	**-0.2**	**0.3**	**0.0**	**0.0**	**0.2**
Municipals	**0.0**	**0.0**	**0.1**	**0.2**	**0.3**

Source of portfolio data: PGIM Fixed Income. Please see Notice for important disclosures regarding the information contained herein. Allocations are subject to change. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis for any investment decision. Does not constitute a representation that any such investments would be profitable.

North Dakota State Investment Board – Legacy Trust

Investment Performance
As of February 28, 2019

	YTD 12/18	YTD 2/19	Annualized		
			1 Year	3 Year	Since Inception[1]
Portfolio (%)	-0.16	1.76	3.79	4.17	3.13
Benchmark (%)[2]	0.01	1.00	3.17	1.69	1.56
Increment (bps)	**-17**	**+76**	**+62**	**+248**	**+157**

Increment may not sum due to rounding.

= Attribution to Follow

Source of portfolio returns: PGIM Fixed Income. Performance shown gross of fees. Performance reported in USD.
Past performance is not a reliable indicator of future performance. Performance over one-year is annualized.
1. Inception Date: April 01, 2015
2. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays.
Please see Notice for important disclosures regarding the information contained herein.

Performance Attribution Summary

North Dakota State Investment Board – Legacy Trust

Performance Attribution
Year-to-Date as of December 31, 2018

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher over the year.
- Duration positioning as well as yield curve positioning limited results.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets and Sovereign spreads all widened over the year, while Agency spreads tightened.
- Based on spread duration positioning, overweights in High Yield, CMBS, and Emerging Markets underperformed.
- Positioning in Sovereigns detracted from performance.
- An underweight in MBS/CMO benefitted the portfolio.

Industry/Security Selection

- Selection in Interest Rate Swaps, Treasury, Non-Agency RMBS, and Sovereigns added value; however, security selection in Emerging Markets hurt performance.
- Security selection in Electric Utilities and Cable & Satellite added to performance.
- Contributors in Electric Utilities included overweights in American Electric Power Company and in Vistra Energy.
- Overweights in Charter Communications and Cox Enterprises, within Cable & Satellite, contributed to results.
- Security selection in Foreign Non-Corporate and Banking was negative.
- Within Foreign Non-Corporate, overweights in Argentina and Province of Buenos Aires hurt performance.
- Within Banking, overweights in Goldman Sachs Group and Citigroup limited results.

Performance Impact	Bps
Duration	**-7**
Curve	**-5**
FX	**-1**
Sector Allocation	**-18**
Treasury	+1
Sovereign	-6
Agency	0
Covered	0
MBS/CMO	+18
CMBS	-10
ABS	0
Municipals	-2
Investment Grade Corporate	+2
High Yield	-18
Bank Loans	0
Emerging Market	-4
Security Selection	**+25**
Treasury	+11
Sovereign	+6
Interest Rate Swaps	+14
Agency	0
Covered	0
MBS/CMO	0
CMBS	+2
Non-Agency RMBS	+10
CLO	-1
ABS	+2
Municipals	+1
Investment Grade Corporate	-3
High Yield	0
Bank Loans	+1
Emerging Market	-18
Trading	**-11**
Securities Lending	**0**
Total	**-17 bps**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Legacy Trust

Top Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
ELECTRIC & WATER	4.46	0.45%	0.00
CABLE & SATELLITE	3.19	0.91%	0.04
NATURAL GAS	1.21	-0.05%	0.00
ENERGY - MIDSTREAM	1.17	0.58%	0.07
RETAILERS & RESTAURANTS	1.09	-0.03%	-0.02
FINANCE COMPANIES	1.07	-0.20%	-0.01
PROPERTY & CASUALTY	0.56	0.26%	0.03
REV - HEALTHCARE	0.50	0.29%	0.03
HEALTH CARE & PHARMA	0.48	1.13%	0.03
TOBACCO	0.43	0.02%	-0.01

Top Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GREECE REPUBLIC OF (GOV)	3.55	1.05%	0.08
GENERAL ELECTRIC CO	2.24	-0.21%	-0.02
PORTUGAL (REPUBLIC OF)	1.94	1.09%	0.07
VOLT PARENT LP	1.35	0.20%	0.01
ALTICE USA INC	1.32	0.33%	0.01
SEMPRA ENERGY	1.22	-0.04%	0.00
AMERICAN ELECTRIC POWER CO	1.20	0.30%	0.02
QATAR (STATE OF)	1.16	0.08%	0.01
CHARTER COMMUNICATIONS INC	0.88	0.25%	0.02
ANHEUSER BUSCH INBEV NV	0.80	-0.11%	-0.01

Bottom Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
FOREIGN NON-CORPORATE	-16.36	3.22%	0.16
BANKING	-3.91	3.92%	0.22
BUILDING MATLS & HOME	-3.47	1.03%	0.03
AUTOMOTIVE	-2.62	0.90%	0.04
TELECOM	-2.48	-0.06%	-0.04
GAMING & LODGING & LEISURE	-1.05	0.80%	0.03
TECHNOLOGY	-0.95	-0.08%	-0.05
METALS & MINING	-0.89	0.08%	0.01
MEDIA & ENTERTAINMENT	-0.68	0.24%	0.02
ENERGY - UPSTREAM	-0.68	-0.07%	0.01

Bottom Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
ARGENTINA REPUBLIC OF GOV	-8.35	0.38%	0.02
BUENOS AIRES PROVINCE OF	-2.70	0.17%	0.00
PETROLEOS MEXICANOS	-2.06	0.36%	0.02
GOLDMAN SACHS GROUP INC/THE	-1.43	0.51%	0.04
ROMANIA (REPUBLIC OF)	-1.40	0.17%	0.02
ADIENT PLC	-1.13	0.06%	0.00
DIGICEL GROUP LTD	-1.09	0.07%	0.00
NEWELL BRANDS INC	-1.09	0.07%	0.01
CITIGROUP INC	-1.06	0.77%	0.04
MERITAGE HOMES CORP	-0.97	0.15%	0.01

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Legacy Trust

Performance Attribution

Year-to-Date as of February 28, 2019

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher and the curve steepened over the year.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets, Agency and Sovereign spreads all tightened over the year.
- Overweight positioning in High Yield, CMBS, Emerging Markets, and Bank Loan added to returns.
- Based on spread duration positioning, an underweight in MBS/CMO detracted from performance.

Industry/Security Selection

- Selection in Sovereigns, Investment Grade Corporates, Emerging Markets, and High Yield contributed positively; conversely, selection in Treasury was negative.
- Security selection in Foreign Non-Corporate, in addition to an overweight in Banking added value.
- Within Foreign Non-Corporate, overweights in Greece and Portugal added to performance.
- Within Banking, overweights in Citigroup and Bank of America benefitted the portfolio.
- Security selection in Telecom, along with an overweight in Electric Utilities limited results.
- Overweights in Softbank Group and Digicel Group, within Telecom, detracted from returns.
- Detractors in Electric Utilities included overweights in American Electric Power Company and in Alliant Energy.
- The largest detractor from performance was an underweight to Germany in Foreign Non-Corporate.

Performance Impact	Bps
Duration	**0**
Curve	**-7**
FX	**0**
Sector Allocation	**+53**
Treasury	0
Sovereign	0
Agency	0
Covered	0
MBS/CMO	-10
CMBS	+17
ABS	+2
Municipals	+2
Investment Grade Corporate	+1
High Yield	+32
Bank Loans	+3
Emerging Market	+6
Security Selection	**+31**
Treasury	-4
Sovereign	+12
Interest Rate Swaps	-2
Agency	+1
Covered	0
MBS/CMO	0
CMBS	-1
Non-Agency RMBS	+2
CLO	+3
ABS	0
Municipals	-1
Investment Grade Corporate	+9
High Yield	+3
Bank Loans	0
Emerging Market	+8
Trading	**-1**
Securities Lending	**0**
Total	**+76 bps**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Legacy Trust

Top Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
FOREIGN NON-CORPORATE	11.96	6.54%	0.36
BANKING	5.28	4.90%	0.26
HEALTH CARE & PHARMA	1.89	0.56%	-0.01
ENERGY - UPSTREAM	1.52	0.03%	-0.01
BUILDING MATLS & HOME	1.36	0.91%	0.03
GAMING & LODGING & LEISURE	0.91	0.85%	0.02
ENERGY - MIDSTREAM	0.82	0.76%	0.08
CONSUMER NON-CYCLICAL	0.80	0.06%	-0.06
CAPITAL GOODS	0.77	-0.02%	-0.02
TECHNOLOGY	0.73	-0.42%	-0.06

Top Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GREECE REPUBLIC OF (GOV)	7.03	1.28%	0.10
PORTUGAL (REPUBLIC OF)	4.22	1.81%	0.10
ARGENTINA REPUBLIC OF GOV	2.18	0.41%	0.01
CITIGROUP INC	1.49	1.04%	0.06
BANK OF AMERICA CORP	0.94	1.06%	0.06
MORGAN STANLEY	0.90	0.92%	0.06
ITALY (REPUBLIC OF)	0.90	0.96%	0.04
PETROLEO BRASILEIRO SA	0.89	0.23%	0.01
BUENOS AIRES PROVINCE OF	0.89	0.18%	0.00
DEVON ENERGY CORPORATION	0.87	0.07%	0.01

Bottom Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
TELECOM	-1.91	-0.06%	-0.01
ELECTRIC & WATER	-0.83	0.67%	0.07
NATURAL GAS	-0.73	0.07%	0.02
CABLE & SATELLITE	-0.59	0.64%	0.03
FINANCE COMPANIES	-0.39	-0.22%	-0.01
RETAILERS & RESTAURANTS	-0.33	-0.07%	-0.03
REV - HEALTHCARE	-0.25	0.18%	0.01
CHEMICALS	-0.16	0.37%	0.01
AIRLINES	-0.15	0.31%	0.01
PROPERTY & CASUALTY	-0.15	-0.07%	0.00

Bottom Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GERMANY (FEDERAL REPUBLIC OF)	-0.94	-6.01%	-0.49
SOFTBANK GROUP CORP	-0.90	0.29%	0.02
GENERAL ELECTRIC CO	-0.81	-0.21%	-0.02
SEMPRA ENERGY	-0.74	0.09%	0.02
AMERICAN ELECTRIC POWER CO	-0.73	0.31%	0.04
ALLIANT ENERGY CORP	-0.62	0.26%	0.02
DIGICEL GROUP LTD	-0.52	0.05%	0.00
FISERV INC	-0.47	0.13%	0.01
ROMANIA (REPUBLIC OF)	-0.46	0.19%	0.02
BRITISH COLUMBIA (PROVINCE OF)	-0.41	0.32%	0.04

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board – Legacy Trust

As of February 28, 2019

Current Themes

Corporates

- U.S. Economy continues to grow moderately
- Credit fundamentals have likely peaked
- Emphasize banking and finance sectors

Mortgages & Structured Products

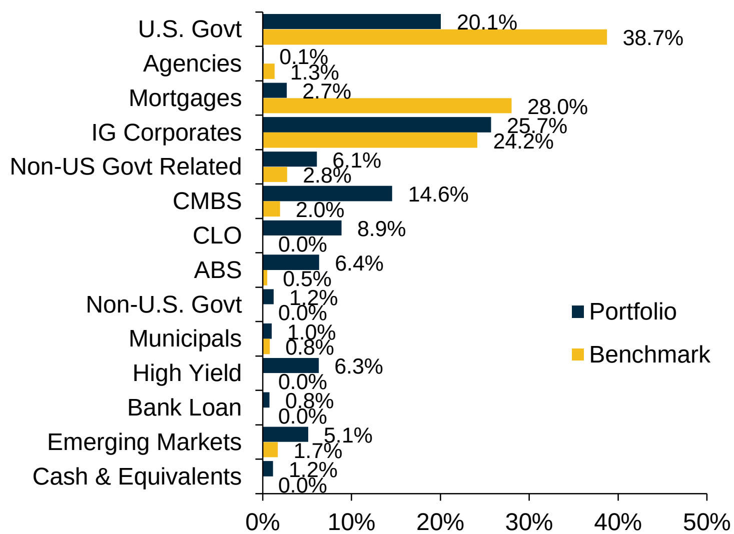
- Underweight agency mortgages
- Favor higher quality CMBS with solid structural support and opportunistically add single-asset/borrower CMBS
- Favor select non-agency mortgage and consumer-related ABS
- Favor senior tranches of CLOs

Emerging Markets

- Opportunistic in EM, favoring select hard currency bonds and select local interest rate markets

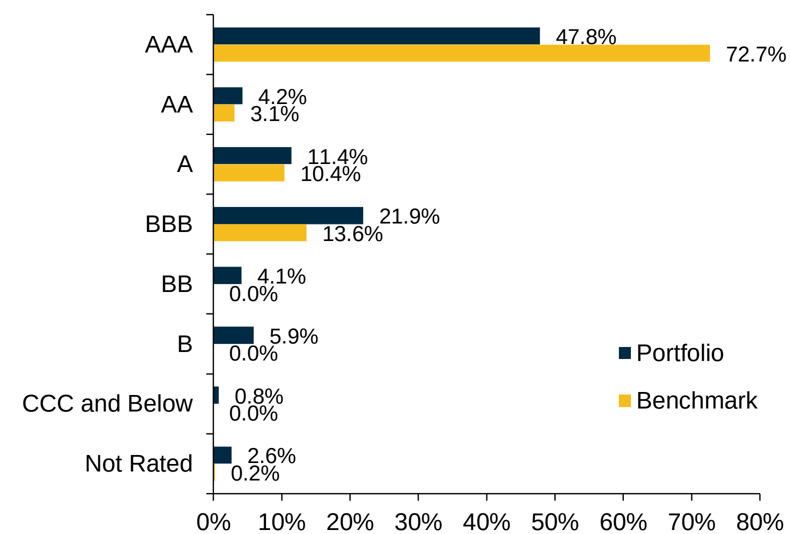
Characteristics	Portfolio	Benchmark
Market Value *($)*	385,082,265	---
Effective Duration *(yrs)*	6.39	5.83
Effective Yield *(%)*[1]	3.81	3.20
Average Quality (Moody's)	A1	Aa2
Option Adjusted Spread *(bps)*	121	44
Number of Issuers	512	1421

Sector Distribution[2]



	Active Exposure *(%)*
Industrials	+4.6
Financials	+3.9
Utilities	+0.6
Non-Corp	+6.4

Quality Distribution[3]



Source of portfolio data: PGIM Fixed Income. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Please see Notice for important disclosures regarding the information contained herein. Benchmark statistics based on PGIM analytics and may differ from published statistics by official benchmark vendors. 1. Effective yield is calculated excluding the yield impact of foreign exchange positions and derivatives (other than interest rate futures, which are included in the calculation). 2. Excludes swaps 3. Quality ratings exclude cash and FX hedges and are reported as the middle of Moody's, S&P, and Fitch–excluding cash and cash equivalents. Current themes provided for discussion purposes only. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis for any investment decision. Does not constitute a representation that the firm has purchased or would purchase any of the investments referenced or that any such investments would be profitable.

North Dakota State Investment Board Core Porfolio

Investment Performance
As of February 28, 2019

	YTD 12/18	YTD 2/19	Since Inception[1]
Portfolio (%)	1.28	1.35	2.64
Benchmark (%)[2]	1.49	1.00	2.51
Increment (bps)	**-22**	**+35**	**+13**

Increment may not sum due to rounding.

= Attribution to Follow

Source of portfolio returns: PGIM Fixed Income. Performance shown gross of fees. Performance reported in USD.
Past performance is not a reliable indicator of future performance. Performance over one-year is annualized.
1. Inception Date: April 01, 2018
2. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays.
Benchmark: Bloomberg Barclays U.S. Investment Grade Corporate Bond Index from 5/4/2010 to 11/30/2016.
Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board Core Porfolio

Performance Attribution

Year-to-Date as of December 31, 2018

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher over the year.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets and Sovereign spreads all widened over the year, while Agency spreads tightened.
- Based on spread duration positioning, overweights in CMBS, High Yield, and Municipals led to underperformance.
- Based on spread duration positioning, underweights in Investment Grade Corporates and MBS/CMO added value.

Industry/Security Selection

- Positioning within Investment Grade Corporates, ABS, and Municipals led to outperformance; however, selection in CLO and Treasury detracted from returns.
- Security selection in Electric Utilities and Revenue Education Municipals added to performance.
- Within Electric Utilities, overweights in Eversource Energy and Entergy added to performance.
- Within Revenue Education Municipals, an overweight in Ohio State University benefitted the portfolio.
- The top contributor to performance was an underweight to General Electric in Capital Goods.
- Security selection in Banking and Health Care & Pharmaceutical was negative.
- Detractors in Banking included overweights in Bank of America and in Goldman Sachs Group.
- Within Health Care & Pharmaceutical, overweights in Mylan and Abbvie were negative.
- An overweight to Foreign Non-Corporate issuer Petroleos Mexicanos was the largest detractor from performance.

Performance Impact	Bps
Duration	**-3**
Curve	**+3**
FX	**0**
Sector Allocation	**-16**
Treasury	0
Sovereign	0
Agency	0
Covered	0
MBS/CMO	+2
CMBS	-18
ABS	0
Municipals	-1
Investment Grade Corporate	+8
High Yield	-7
Bank Loans	0
Emerging Market	+1
Security Selection	**0**
Treasury	-1
Sovereign	0
Interest Rate Swaps	-1
Agency	0
Covered	0
MBS/CMO	0
CMBS	-1
Non-Agency RMBS	0
CLO	-8
ABS	+2
Municipals	+2
Investment Grade Corporate	+7
High Yield	+1
Bank Loans	0
Emerging Market	-1
Trading	**-7**
Securities Lending	**0**
Total	**-22 bps**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board Core Porfolio

Top Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
ELECTRIC & WATER	7.17	0.93%	0.16
REV - EDUCATION	1.30	0.20%	0.05
CONSUMER NON-CYCLICAL	0.98	-1.28%	-0.11
AUTOMOTIVE	0.86	0.19%	-0.01
CABLE & SATELLITE	0.85	0.08%	0.02
FINANCE COMPANIES	0.73	-0.24%	-0.01
TOBACCO	0.57	-0.05%	-0.01
RETAILERS & RESTAURANTS	0.54	-0.40%	-0.03
TRANSPORTATION & ENVIR	0.44	-0.05%	0.01
CAPITAL GOODS	0.39	-0.55%	-0.04

Top Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
GENERAL ELECTRIC CO	1.66	-0.27%	-0.02
QATAR (STATE OF)	1.63	0.17%	0.02
ANHEUSER BUSCH INBEV NV	1.33	-0.22%	-0.02
EVERSOURCE ENERGY	1.29	0.22%	0.04
ENTERGY CORPORATION	1.10	0.32%	0.04
PG&E CORPORATION	1.09	-0.08%	-0.01
OHIO STATE UNIVERSITY	1.03	0.16%	0.04
AMEREN CORPORATION	0.96	0.26%	0.04
CHARTER COMMUNICATIONS INC	0.92	0.16%	0.03
WILLIAMS COMPANIES INC	0.91	0.16%	0.03

Bottom Ten Contributors By Industry

Year-to-Date as of December 31, 2018

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
BANKING	-5.59	3.84%	0.28
HEALTH CARE & PHARMA	-2.36	0.03%	0.05
METALS & MINING	-0.98	0.26%	0.02
FOREIGN NON-CORPORATE	-0.80	-1.27%	-0.03
REV - TRANSPORTATION	-0.75	0.46%	0.06
TECHNOLOGY	-0.45	-1.74%	-0.12
RAILROADS	-0.42	-0.34%	-0.04
LIFE INSURANCE	-0.38	-0.21%	-0.01
MEDIA & ENTERTAINMENT	-0.35	-0.13%	-0.02
HEALTHCARE INSURANCE	-0.23	-0.27%	-0.02

Bottom Ten Contributors By Issuer

Year-to-Date as of December 31, 2018

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
PETROLEOS MEXICANOS	-3.35	0.42%	0.03
BANK OF AMERICA CORP	-1.07	0.63%	0.06
GOLDMAN SACHS GROUP INC/THE	-1.01	0.65%	0.06
MARATHON PETROLEUM CORP	-0.98	0.08%	0.01
MICROSOFT CORPORATION	-0.96	-0.34%	-0.03
BARCLAYS PLC	-0.77	0.16%	0.02
MYLAN NV	-0.71	0.04%	0.01
YAMANA GOLD INC	-0.69	0.25%	0.02
INTESA SANPAOLO SPA	-0.68	0.22%	0.01
ABBVIE INC	-0.66	0.14%	0.01

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board Core Porfolio

Performance Attribution

Year-to-Date as of February 28, 2019

Attribution Commentary

Duration and Yield Curve Contribution

- US Treasury rates were higher and the curve steepened over the year.

Sector Allocation

- MBS/CMO, ABS, CMBS, IG Corporates, High Yield, Municipals, Emerging Markets, Agency and Sovereign spreads all tightened over the year.
- Overweights in CMBS, High Yield, ABS, and Emerging Markets led to outperformance.
- Based on spread duration positioning, an underweight in Investment Grade Corporates detracted from returns.

Industry/Security Selection

- Selection in Treasury, ABS, and CMBS was negative while selection in CLO and Emerging Markets added to returns.
- Security selection in Banking and Foreign Non-Corporate added to performance.
- Contributors in Banking included overweights in Bank of America and in J.P. Morgan Chase.
- Within Foreign Non-Corporate, overweights in Petroleo Brasileiro and Petroleos Mexicanos added value.
- An overweight in Electric Utilities, as well as security selection in Midstream Energy hurt performance.
- Detractors in Electric Utilities included overweights in Entergy and in Eversource Energy.
- Overweights in Oneok and Colonial Pipeline, within Midstream Energy, limited results.

Performance Impact	Bps
Duration	**+2**
Curve	**-3**
FX	**0**
Sector Allocation	**+41**
Treasury	0
Sovereign	0
Agency	0
Covered	0
MBS/CMO	-2
CMBS	+27
ABS	+5
Municipals	+1
Investment Grade Corporate	-3
High Yield	+10
Bank Loans	0
Emerging Market	+3
Security Selection	**-6**
Treasury	-9
Sovereign	0
Interest Rate Swaps	-2
Agency	0
Covered	0
MBS/CMO	-2
CMBS	-3
Non-Agency RMBS	+1
CLO	+4
ABS	-3
Municipals	0
Investment Grade Corporate	+1
High Yield	-1
Bank Loans	0
Emerging Market	+3
Trading	**+1**
Securities Lending	**0**
Total	**+35**

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

Performance Attribution—Industry & Issuer

North Dakota State Investment Board Core Porfolio

Top Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
BANKING	6.31	3.31%	0.26
FOREIGN NON-CORPORATE	1.95	-0.42%	0.02
REV - TRANSPORTATION	0.83	0.62%	0.08
CONSUMER NON-CYCLICAL	0.66	-1.32%	-0.12
TOBACCO	0.65	0.00%	-0.01
TECHNOLOGY	0.60	-1.69%	-0.13
CABLE & SATELLITE	0.52	0.04%	0.01
RAILROADS	0.43	-0.35%	-0.04
BUILDING MATLS & HOME	0.37	0.12%	0.00
AEROSPACE & DEFENSE	0.29	-0.26%	-0.02

Top Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
BANK OF AMERICA CORP	1.58	0.80%	0.06
JPMORGAN CHASE & CO	1.25	0.87%	0.06
GOLDMAN SACHS GROUP INC/THE	0.92	0.37%	0.03
PETROLEO BRASILEIRO SA	0.84	0.20%	0.01
PETROLEOS MEXICANOS	0.81	0.49%	0.04
MORGAN STANLEY	0.79	0.75%	0.06
BARCLAYS PLC	0.68	0.20%	0.02
NORTH TEXAS TOLLWAY AUTHORITY	0.66	0.35%	0.05
CITIGROUP INC	0.59	0.56%	0.07
PG&E CORPORATION	0.58	-0.07%	0.00

Bottom Ten Contributors By Industry

Year-to-Date as of February 28, 2019

Industry	Contribution (bps)	Active Market Val %	Active Duration Contribution
ELECTRIC & WATER	-3.19	1.28%	0.19
ENERGY - MIDSTREAM	-2.82	0.32%	0.06
ENERGY - UPSTREAM	-0.92	-0.19%	-0.03
REV - EDUCATION	-0.85	0.22%	0.05
HEALTH CARE & PHARMA	-0.77	0.27%	0.05
RETAILERS & RESTAURANTS	-0.51	-0.29%	-0.03
PAPER & PACKAGING	-0.45	0.15%	0.01
TRANSPORTATION & ENVIR	-0.39	-0.04%	0.01
FINANCE COMPANIES	-0.39	-0.23%	-0.01
PROPERTY & CASUALTY	-0.39	-0.13%	0.01

Bottom Ten Contributors By Issuer

Year-to-Date as of February 28, 2019

Issuers	Contribution (bps)	Active Market Val %	Active Duration Contribution
ONEOK INC	-0.94	0.29%	0.04
ENTERGY CORPORATION	-0.91	0.35%	0.04
GENERAL ELECTRIC CO	-0.91	-0.24%	-0.02
ALLERGAN PLC	-0.86	0.13%	0.02
EVERSOURCE ENERGY	-0.78	0.24%	0.04
ALIMENTATION COUCHE-TARD INC	-0.73	0.16%	0.02
GLOBAL INFRASTRUCTURE MANAGE	-0.68	0.33%	0.01
OHIO STATE UNIVERSITY	-0.65	0.17%	0.04
QUEST DIAGNOSTICS INCORPORATED	-0.55	0.09%	0.01
CRAWFORD GROUP INC	-0.52	0.16%	0.02

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns Represents attribution vs. the Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Totals may not sum due to rounding. Past performance is not a reliable indicator of future performance. Please see Notice for important disclosures regarding the information contained herein.

North Dakota State Investment Board Core Porfolio

As of February 28, 2019

Current Themes

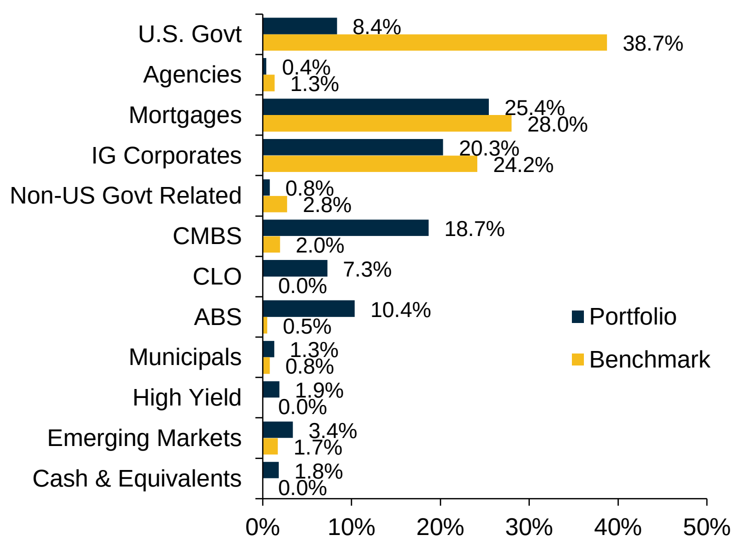
Corporates
- U.S. Economy continues to grow moderately
- Credit fundamentals have likely peaked
- Emphasize banking and finance sectors

Mortgages
- Underweight
- Favor Seasoned pools for better convexity
- 30-year barbell. Prefer the wings of the coupon stack vs the middle.
- 15-year up-in-coupon bias

Structured Products
- Favor new production, AAA, private label CMBS and agency-backed CMBS
- Favor select AAA/AA CLOs and seasoned subprime

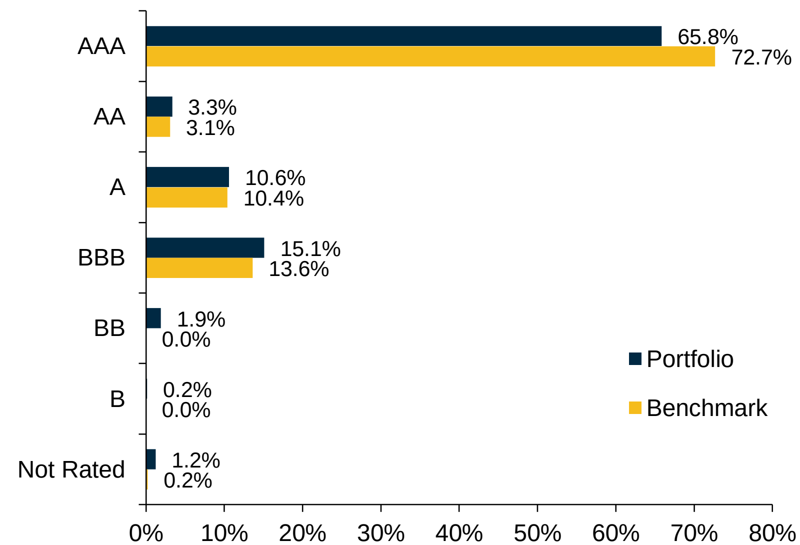
Characteristics	Portfolio	Benchmark
Market Value *($)*	313,036,737	---
Effective Duration *(yrs)*	5.78	5.83
Effective Yield *(%)*[1]	3.59	3.20
Average Quality (Moody's)	Aa2	Aa2
Option Adjusted Spread *(bps)*	84	44
Number of Issuers	198	1421

Sector Distribution²



	Active Exposure *(%)*
Industrials	-4.0
Financials	+1.3
Utilities	+0.9
Non-Corp	-0.5

Quality Distribution³



Source of portfolio data: PGIM Fixed Income. Benchmark: Bloomberg Barclays U.S. Aggregate Bond Index. Source of Benchmark: Bloomberg Barclays. Please see Notice for important disclosures regarding the information contained herein. Benchmark statistics based on PGIM analytics and may differ from published statistics by official benchmark vendors. 1. Effective yield is calculated excluding the yield impact of foreign exchange positions and derivatives (other than interest rate futures, which are included in the calculation). 2. Excludes swaps 3. Quality ratings exclude cash and FX hedges and are reported as the middle of Moody's, S&P, and Fitch–excluding cash and cash equivalents. Current themes provided for discussion purposes only. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis for any investment decision. Does not constitute a representation that the firm has purchased or would purchase any of the investments referenced or that any such investments would be profitable.

3 Market Review & Outlook

The comments, opinions, and estimates contained herein are based on and/or derived from publicly available information from sources that PGIM Fixed Income believes to be reliable. We do not guarantee the accuracy of such sources or information. This outlook, which is for informational purposes only, sets forth our views as of this date. The underlying assumptions and our views are subject to change. Past performance is not a guarantee or a reliable indicator of future results.

Global Growth Solid, but Likely Past Peak Momentum

- U.S.—Solid economic performance in the private sector, but fiscal boost expected to wane; pro-business policies positive for long-term growth
- Euro area—Cyclical recovery slowing but remaining near potential, amidst gradual monetary policy normalization, concerns about Italy and trade wars
- Japan—High profile policy experiment, but measures are getting some traction in the labor market
- U.K.—BoE struggling with higher-than-target inflation as it also seeks to cushion potential downside risks of Brexit
- China—Authorities are pausing de-leveraging campaign and are dialing-up debt-funded stimulus in order to boost growth in the face of trade escalation with the U.S.

Annual Growth (%)

	2015	2016	2017	2018-Estimate		2019-Forecast	
	Actual	Actual	Actual	Bloomberg Survey	PGIM Fixed Income	Bloomberg Survey	PGIM Fixed Income
Global	3.1	3.3	3.9	3.7	3.7	3.5	3.5
U.S.	2.9	1.6	2.2	2.9	2.9	2.5	2.5
Euro Area	2.0	1.9	2.5	1.8	1.8	1.3	1.2
Japan	1.3	0.6	1.9	0.7	0.8	0.8	1.0
United Kingdom	2.3	1.8	1.8	1.4	1.4	1.4	1.5
China	4.8	7.7	7.4	6.6	6.6	6.2	6.3

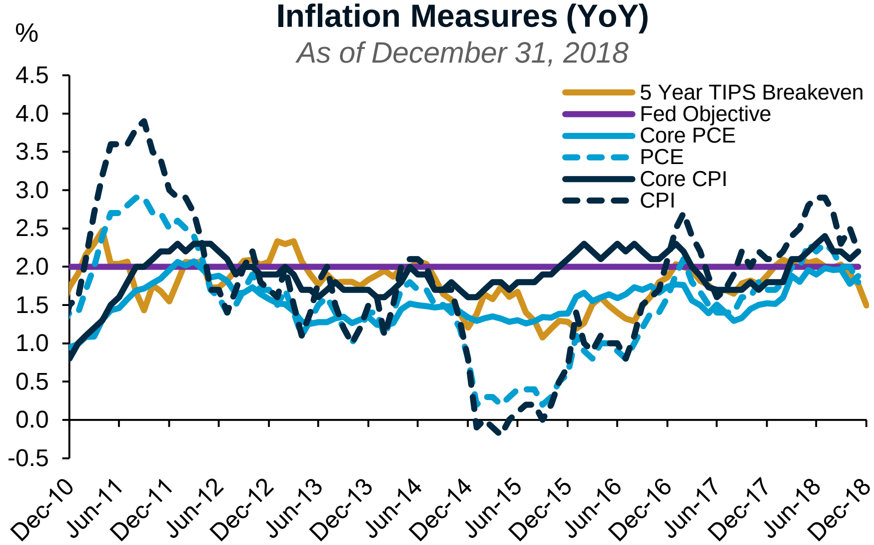
As of March 11, 2019 Source: PGIM Fixed Income and Bloomberg. Survey forecast for global growth based on average forecast from several broker dealers and PGIM Fixed Income calculations. The forecasts presented herein are for informational purposes. There can be no assurance that these forecasts will be achieved. Please see Notice for additional disclosures.

U.S. Inflation has Reached Fed Objective

- Sources of core inflation remain concentrated in housing, materials and transportation
- Elsewhere, inflation pressures are muted, driven by continued global excess capacity, technology, demographics, and constrained household borrowing capacity
- Higher than expected inflation is a potential risk to the bond market

Inflation Measures (YoY)

As of December 31, 2018

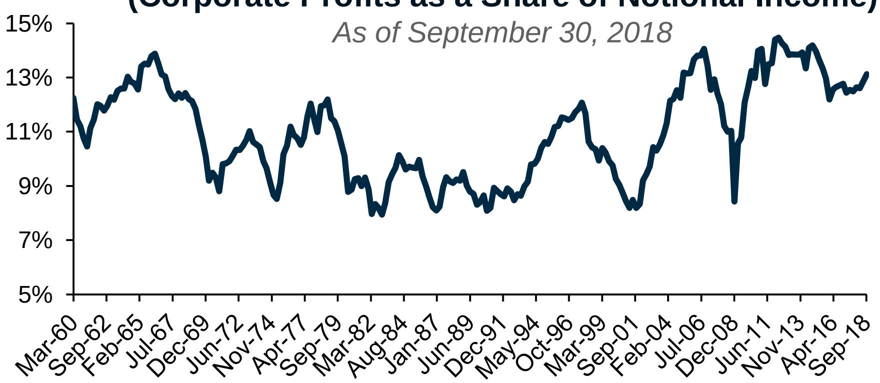


Employment Cost Index (YoY)

As of December 31, 2018

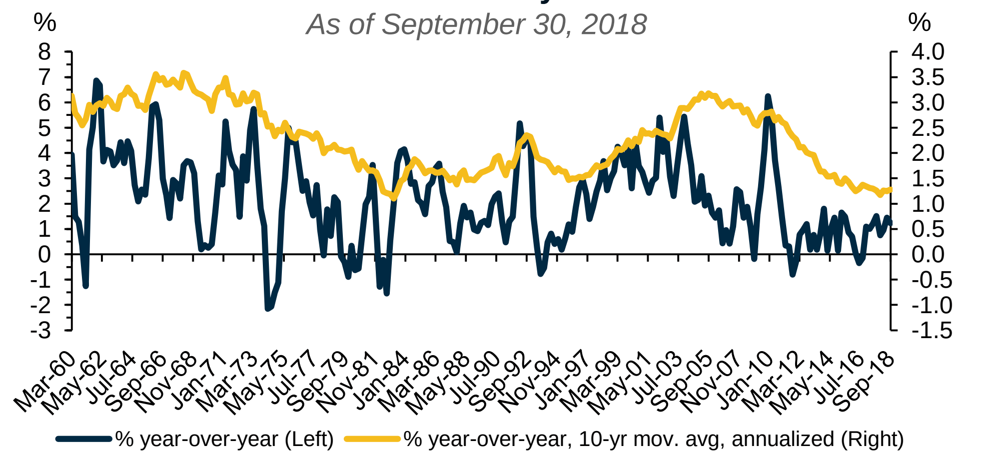
Aggregate Corporate Profit Margins (Corporate Profits as a Share of Notional Income)

As of September 30, 2018



Labor Productivity Growth

As of September 30, 2018

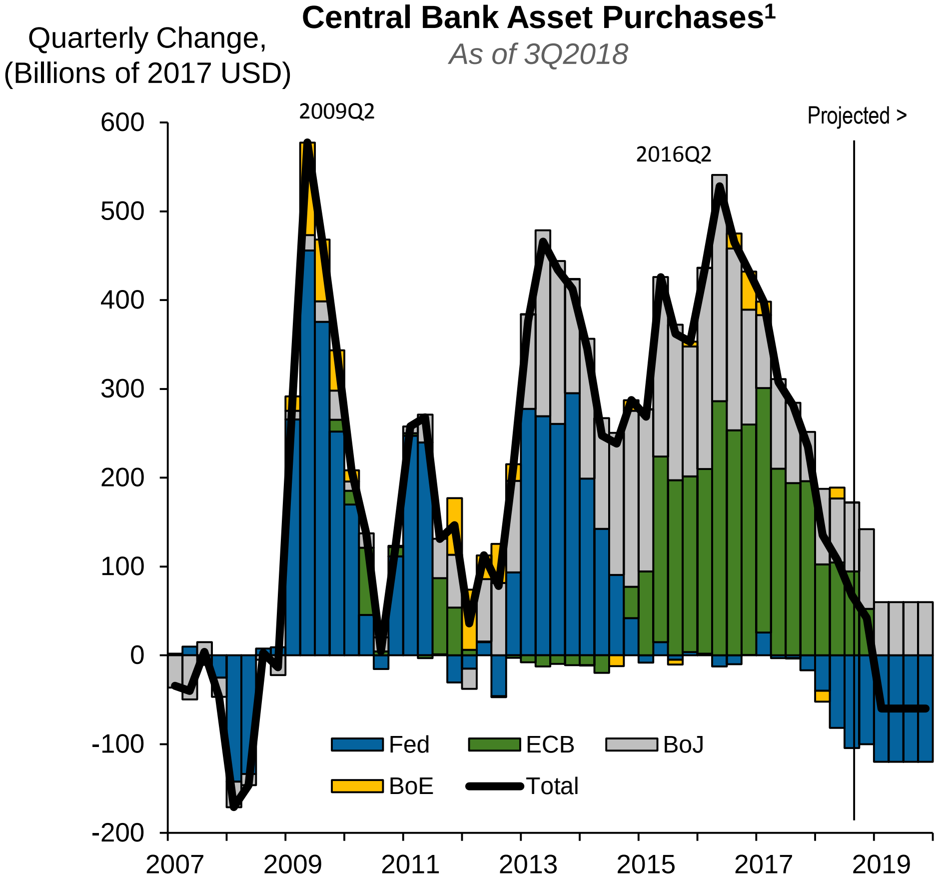


Source: Bloomberg and Haver

Will the Fed be Able to Orchestrate the Elusive Soft Landing?

Central Bank Asset Purchases[1]

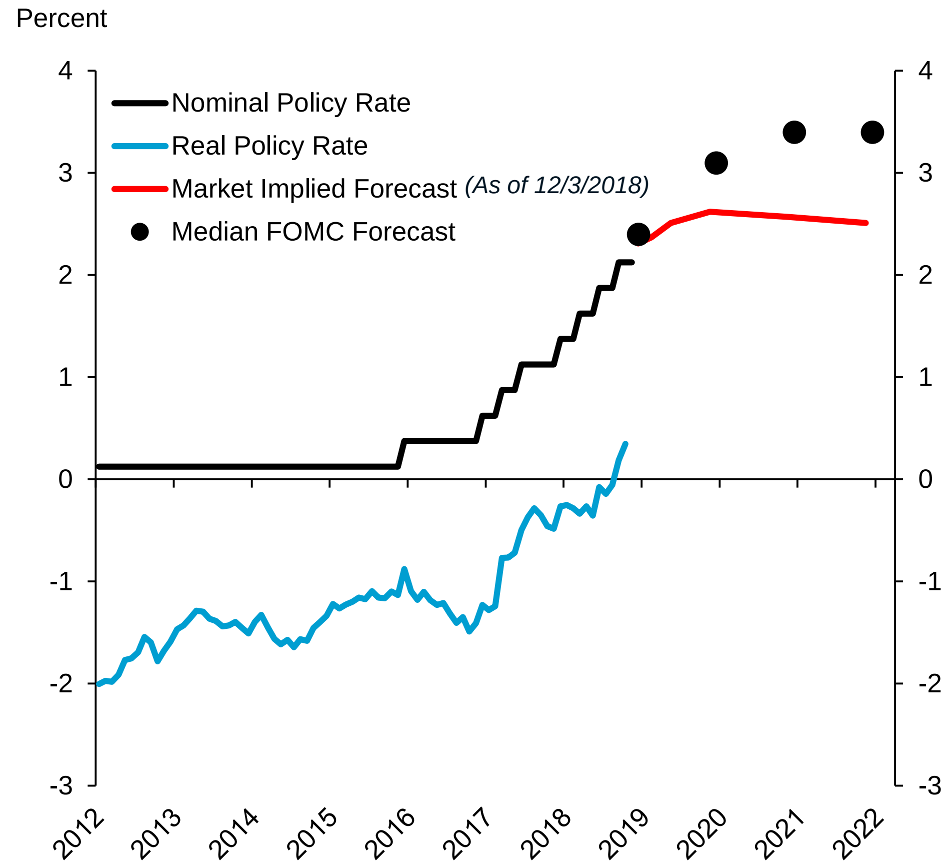
As of 3Q2018



[1]Net Purchases. Source: Federal Reserve Board, European Central Bank, Bank of England, Bank of Japan. Projections are not guaranteed, and actual results may vary.

Federal Reserve Policy Rate

As of December 2018



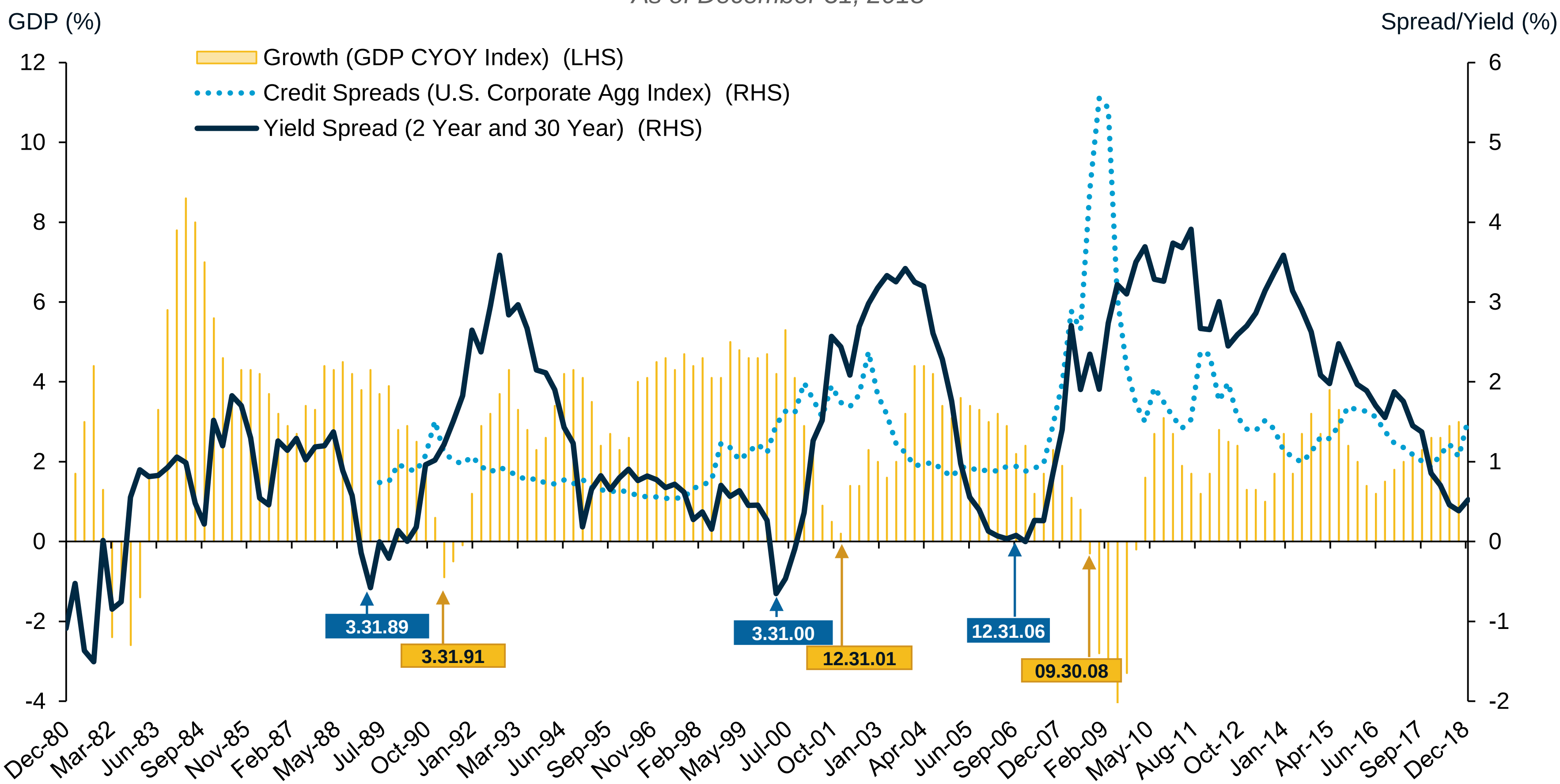
Source: Federal Reserve, Haver Analytics, PGIM Fixed Income. Projections are not guaranteed, and actual results may vary.

Is a Flattening Yield Curve an Ominous Sign?

- Over the past four decades, the yield curve has flattened approximately two years prior to each recession…
- …and during those two years prior to the recession, spreads have widened

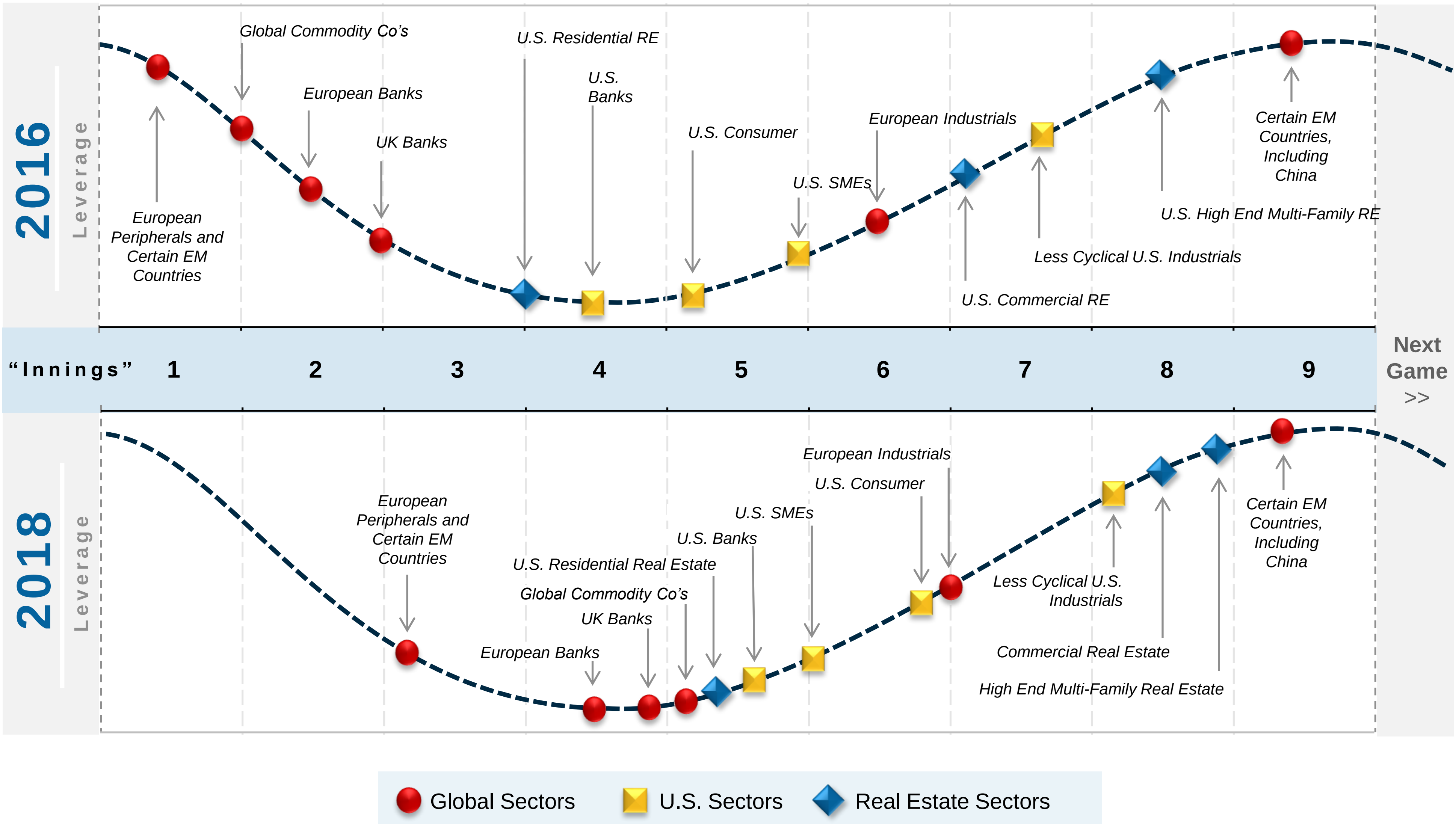
Historical Yield Curve, Credit Spreads and Growth

As of December 31, 2018



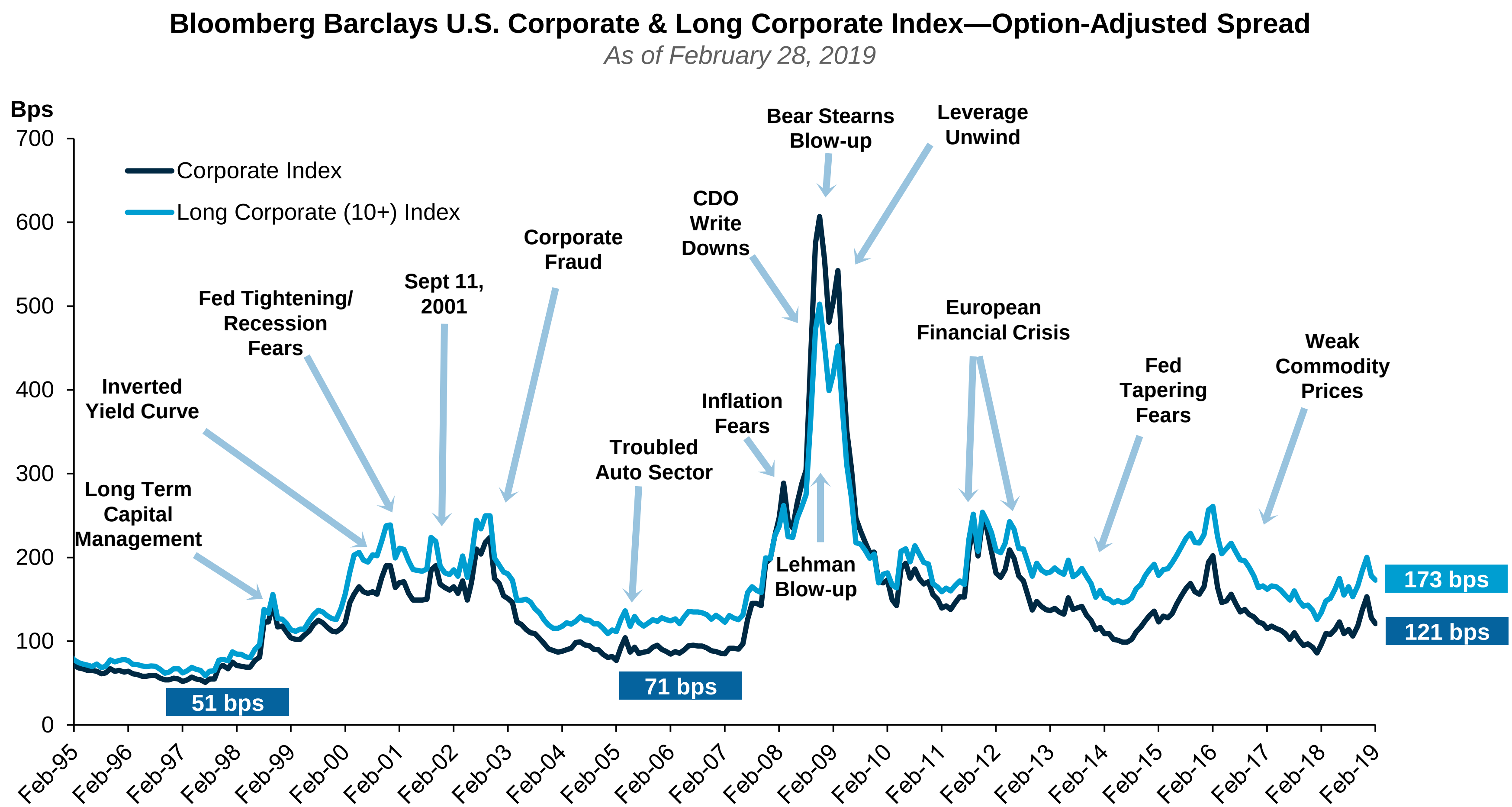
Source: Bloomberg Barclay's and PGIM Fixed Income. Past performance is not a guarantee or a reliable indicator of future results. You cannot invest directly in an index

The Credit Cycle is Accelerating and Becoming More Synchronized



Source: PGIM Fixed Income for illustrative purposes only as of December 2016 (top graph) and December 2018 (bottom graph). Not based on actual data.

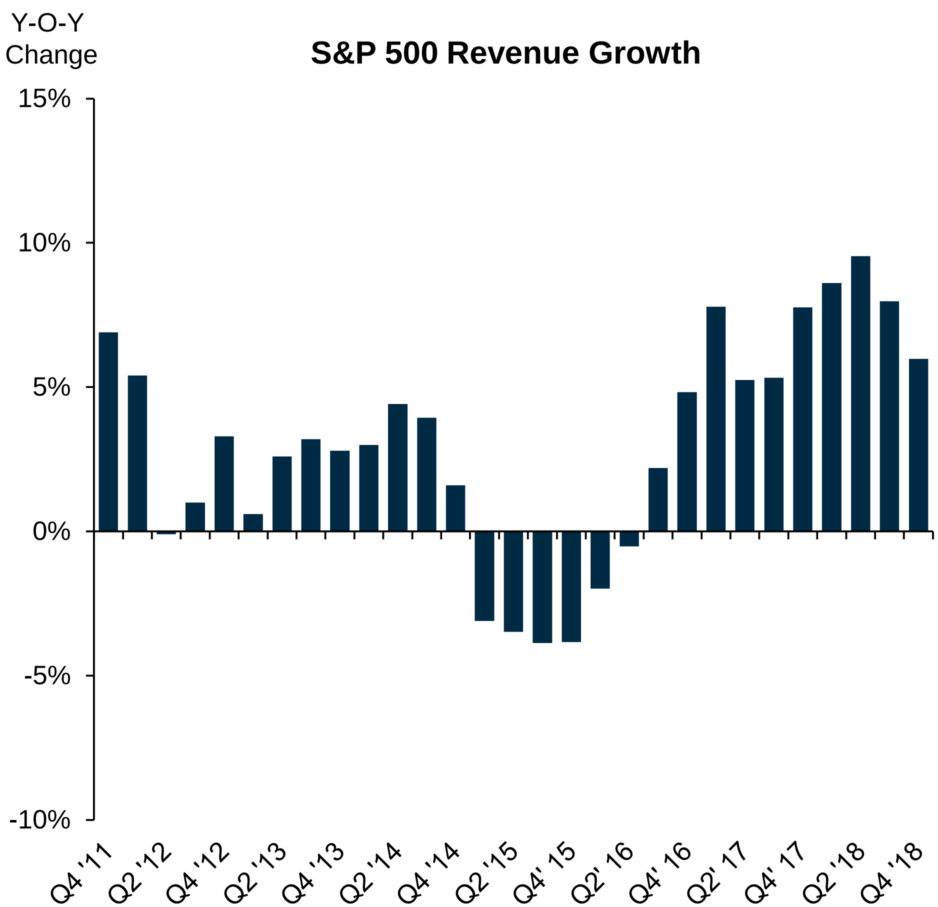
Corporate Spreads Widened in 2018 While Spread Curve Flattened

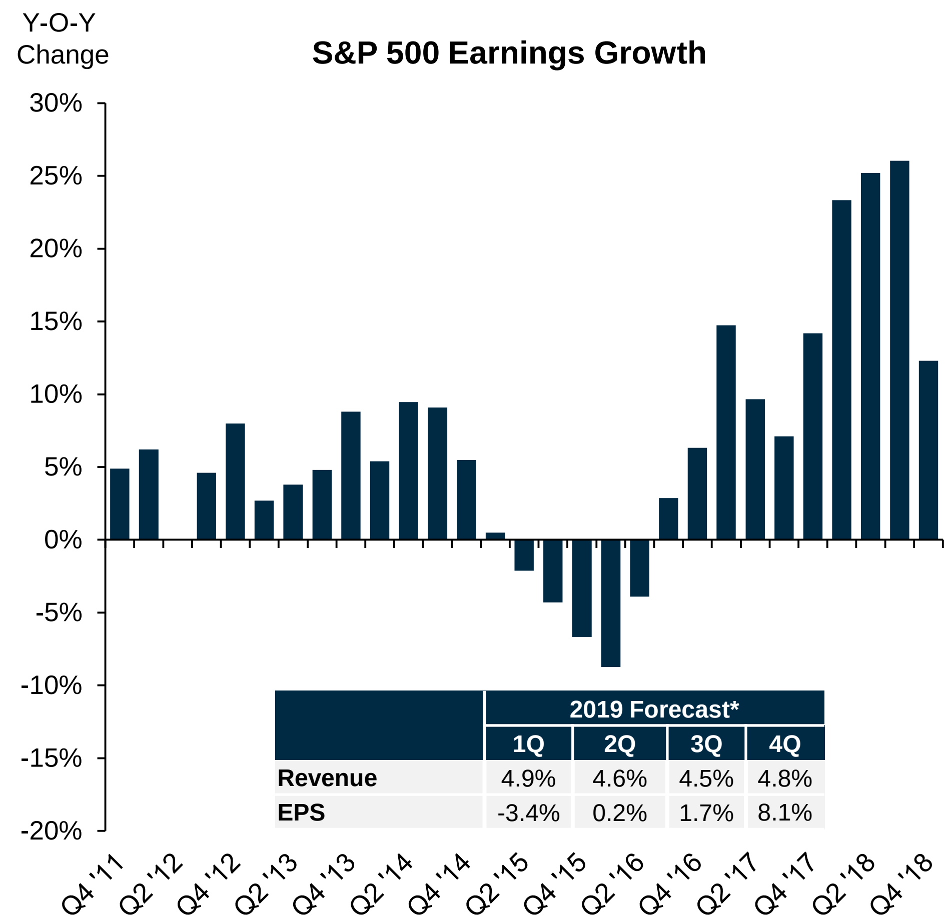


Past performance is not a guarantee or a reliable indicator of future results. Please see Notice for important disclosures. *You cannot invest directly in an index. Source: Bloomberg Barclays.*

U.S. Revenue and Earnings Growth

Revenue and Earnings Growth Positive for Ten Consecutive Quarters, But Will Slow





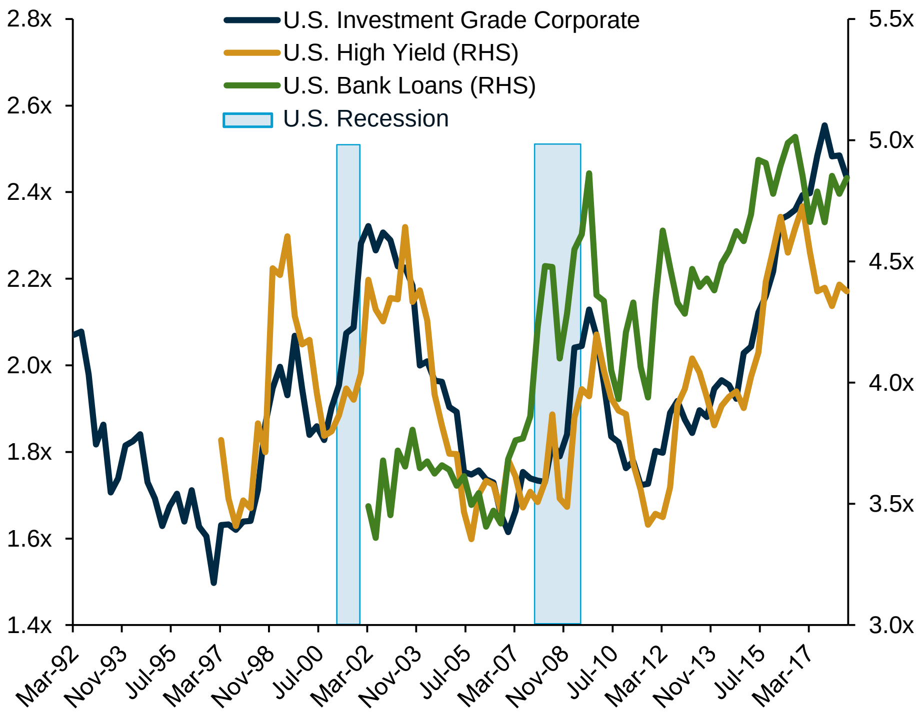
	2019 Forecast*			
	1Q	2Q	3Q	4Q
Revenue	4.9%	4.6%	4.5%	4.8%
EPS	-3.4%	0.2%	1.7%	8.1%

Past performance is not a guarantee or a reliable indicator of future results. Please see Notice for important disclosures. *There is no guarantee that the forecasts shown will be achieved.*
Source of both charts: Bloomberg. As of March 11, 2019 with 99.8% of companies reporting.
**Source: FactSet as of March 11, 2019.*

U.S. Corporate Leverage is at Historically High Levels

Gross Leverage Ratios

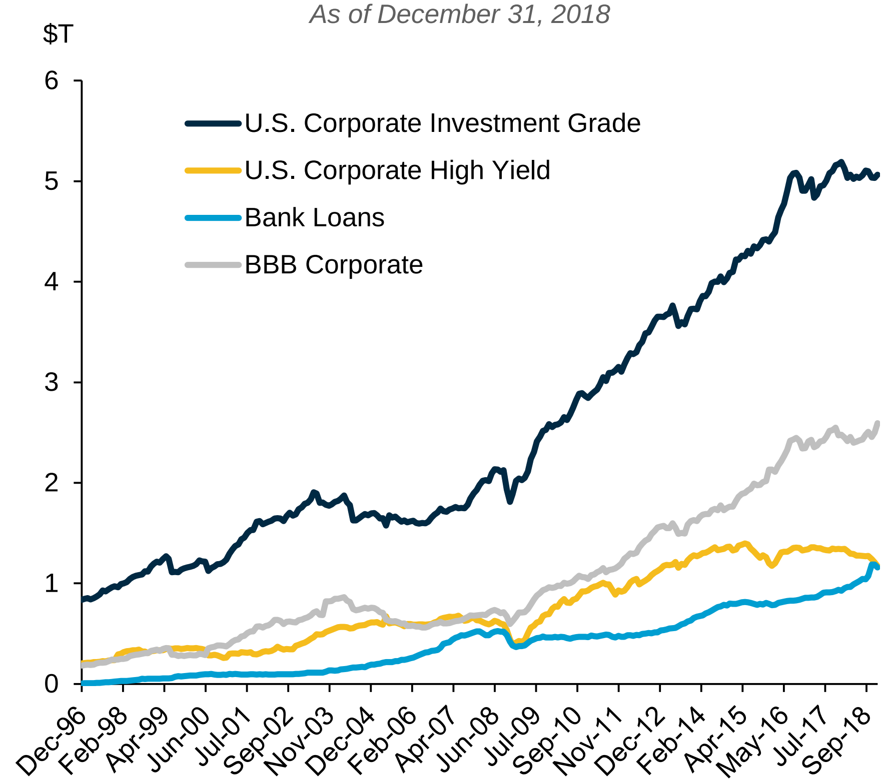
As of June 30, 2018



Source: Morgan Stanley

Size of U.S. Corporate Credit Markets

As of December 31, 2018

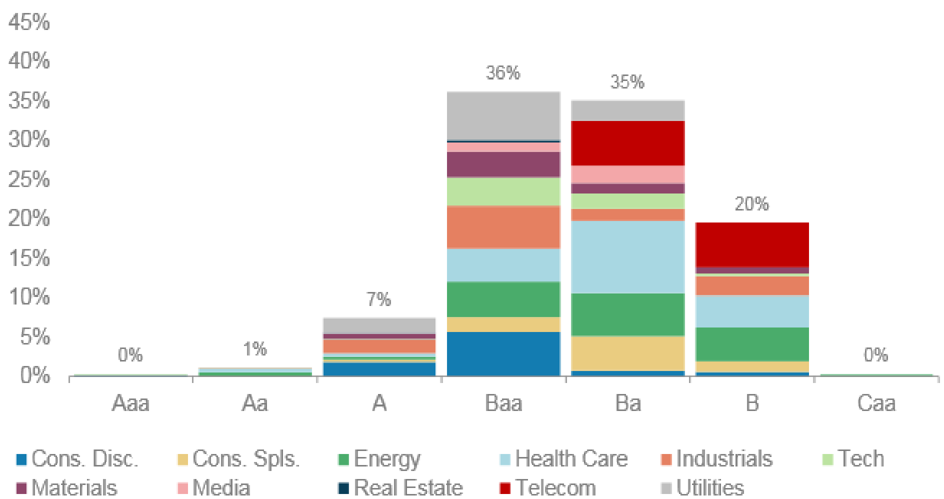


Source: Bloomberg Barclays

BBBs Present Risk and Opportunity

Implied Ratings of BBB Companies by Leverage

As of October 5, 2018



Source: Morgan Stanley Research, Moody's, FTSE Fixed Income LLC

Fallen Angel Risk

As of October 5, 2018

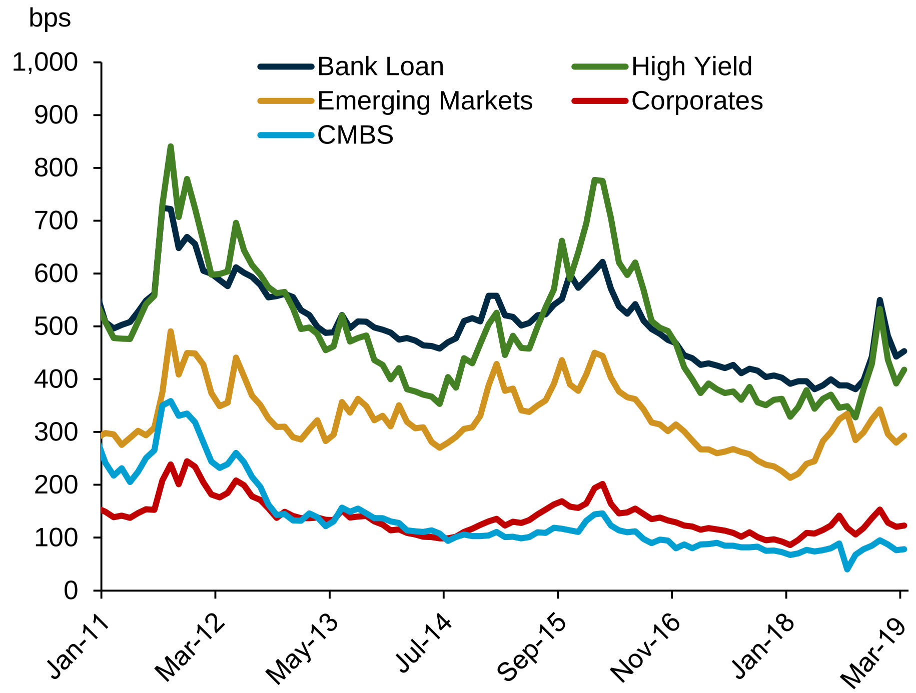
Statistics for Fallen Angels During Previous Credit Cycles					"Implied" Fallen Angels for this Cycle ($Bn)
Start	End	Length (Qtrs)	Net Fallen Angel Volume ($Bn)	% of BBB Index	
1Q '89	1Q '91	13	36	34	850
1Q '00	3Q '03	15	199	45	1,132
3Q '07	4Q '09	10	156	23	587

*Source: Morgan Stanley Research, Bloomberg, FTSE Fixed Income LLC, Moody's; Note: For the 2007 downgrade cycle, we estimate net fallen angels using actual index data. For prior cycles, we use Moody's data for fallen angels with a haircut for index-eligible debt relative to market size. *Implied fallen angels are calculated by multiplying the proportion of fallen angels seen in previous cycles as a percentage of the BBB index, times the current BBB index par.*

Attractive Relative Value Opportunities in Many Sectors

Credit Spreads

As of March 8, 2019



Spreads (bps)[1]			
	2007 Tights	Current Spread	% of 2007 Tights
US IG Corporates	82	123	150
US IG Intermediate Corporates	69	97	140
US IG Long Corporates	119	177	148
European IG Corporates	46	131	285
Municipal Bonds	59	127	216
US High Yield	233	404	174
European High Yield	184	401	218
CMBS	62	78	126
Non-Agency CMBS	61	86	141
Agency CMBS (added 6/2014)	33	45	136
Non-Agency CMBS “A4A” Tranche	23	92	400
Agency MBS	33	36	108
AAA CLO	25	145	580
Emerging Markets	139	293	211
Emerging Market Sovereigns	162	379	234
Emerging Market Corporates	141	333	236

= Negative View

= Positive View

Source: Corporates and CMBS from Barclays. Emerging Markets from JP Morgan. High Yield from BofA Merrill. Bank Loans from CSFB. [1]Source of data: Bloomberg. Loan data on a week lag.

Outlook More Favorable for Fixed Income

- **Global Growth is Solid, But Likely Past Peak Momentum**
  - U.S. growth should moderate over the next couple of years
  - Growth outside the U.S. is decelerating more quickly
- **Central Bank Policies Will Be Supportive**
  - Major central banks are at a crossroads with respect to policy
  - Persistent very low or negative government interest rates in developed markets should limit the yield of U.S. rates
  - Fed may hike one more time in 2019, but can be overly restrictive when coupled with balance sheet reduction
- **Credit Cycle**
  - Credit cycle becoming more aligned across sectors
  - Late cycle indicators emerging
- **We See Better Value in Select Credit Products**
  - Continue to favor select issuer opportunities in high yield and emerging market sectors
  - Generally prefer higher rated ABS, CMBS, and CLOs
  - Overweight U.S. banks, but remain cautious in highly levered industrial investment grade corporates
- **Risks to Watch**
  - U.S. economy
  - Fed moderation
  - China Stimulus
  - Trade Policy
  - Market sentiment and financial conditions

4 Reference

Presenter Biographies

Richard Piccirillo is a Managing Director and senior portfolio manager for PGIM Fixed Income’s Core, Long Government/Credit, Core Plus, Absolute Return, and other multi-sector Fixed Income strategies. Mr. Piccirillo had specialized in mortgage-and asset-backed securities since joining the Firm in 1993. Before joining the Firm, Mr. Piccirillo was a fixed income analyst with Fischer Francis Trees & Watts. Mr. Piccirillo started his career as a financial analyst at Smith Barney. He received a BBA in Finance from George Washington University and an MBA in Finance and International Business from New York University. Named Morningstar’s 2017 Fixed Income Manager of The Year for PGIM Total Return Bond Fund.

Peter Taggart is Principal, Client Advisory for PGIM Fixed Income. Mr. Taggart works with our largest institutional investors in developing fixed income solutions to meet their needs. Mr. Taggart has more than 20 years of experience in the investment management business, structuring and managing portfolios for U.S. and international institutions. Prior to joining PGIM Fixed Income in 2002, Mr. Taggart was Executive Director of Marketing with WestAM. Previously, Mr. Taggart was Managing Director with Forstmann-Leff, where he was responsible for marketing equity, fixed income and private equity investment services to institutions. Prior to Forstmann-Leff, Mr. Taggart was with Salomon Brothers Asset Management for nine years, in both bond portfolio management and client relations positions and at First Boston Asset Management, where he was a bond Portfolio Manager. Mr. Taggart received a BA in Computer Science from Colgate University.

Steven Ahrens, CFA, is Vice President, Client Management for PGIM Fixed Income. Mr. Ahrens is responsible for providing ongoing service to PGIM Fixed Income's institutional clients. This includes development of customized client communication plans, responding to daily inquiries, and coordination of activity with our clients’ other service providers. Mr. Ahrens has been with the Firm since 1991 and has held positions in Finance, General Account Portfolio Management, and most recently Mutual Fund Product Management where he was the product manager for the Dryden family of fixed income mutual funds. Mr. Ahrens received an MBA in Finance from Rutgers University. He holds the Chartered Financial Analyst (CFA) designation.

For purposes of the biographies, the “Firm” is defined as Prudential Financial, Inc. ("PFI"). All PGIM and Prudential named entities are subsidiaries or affiliates of Prudential Financial, Inc. Morningstar Awards 2017. ©2018 Morningstar, Inc. All rights reserved. Robert Tipp, Michael Collins, Richard Piccirillo, and Gregory Peters, PGIM Total Return Bond Fund (PDBZX) awarded Fixed-Income Fund Manager of the Year. The Fund Manager of the Year award winners are chosen based on research and in-depth qualitative evaluation by Morningstar’s Manager Research Group. The Fund is managed by PGIM, Inc., a Prudential Financial, Inc. (PFI) subsidiary. Prudential Financial, Inc. of the United States is not affiliated with Prudential plc, headquartered in the United Kingdom.

Notice Page

PGIM Fixed Income operates primarily through PGIM, Inc., a registered investment adviser under the U.S. Investment Advisers Act of 1940, as amended, and a Prudential Financial, Inc. ("PFI") company. PGIM Fixed Income is headquartered in Newark, New Jersey and also includes the following businesses globally: (i) the public fixed income unit within PGIM Limited, located in London; (ii) PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; and (iii) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore ("PGIM Singapore"). PFI of the United States is not affiliated with Prudential plc, which is headquartered in the United Kingdom. Prudential, PGIM, their respective logos and the Rock symbol are service marks of PFI and its related entities, registered in many jurisdictions worldwide.

In the United Kingdom and various European Economic Area ("EEA") jurisdictions, information is issued by PGIM Limited with registered office: Grand Buildings, 1-3 Strand, Trafalgar Square, London, WC2N 5HR. PGIM Limited is authorised and regulated by the Financial Conduct Authority of the United Kingdom (Firm Reference Number 193418) and duly passported in various jurisdictions in the EEA. These materials are issued by PGIM Limited to persons who are professional clients as defined in Directive 2014/65/EU (MiFID II). In certain countries in Asia, information is presented by PGIM Singapore, a Singapore investment manager registered with and licensed by the Monetary Authority of Singapore. In Japan, information is presented by PGIM Japan, registered investment adviser with the Japanese Financial Services Agency. In South Korea, information is presented by PGIM, Inc., which is licensed to provide discretionary investment management services directly to South Korean investors. In Hong Kong, information is presented by representatives of PGIM (Hong Kong) Limited, a regulated entity with the Securities and Futures Commission in Hong Kong to professional investors as defined in Part 1 of Schedule 1 of the Securities and Futures Ordinance. It is anticipated that certain investment management services would be delegated to PGIM, Inc. the above-listed entities' U.S. registered investment advisory affiliate. In Australia, this information is presented by PGIM (Australia) Pty Ltd ("PGIM Australia") for the general information of its "wholesale" customers (as defined in the Corporations Act 2001). PGIM Australia is a representative of PGIM Limited, which is exempt from the requirement to hold an Australian Financial Services License under the Australian Corporations Act 2001 in respect of financial services. PGIM Limited is exempt by virtue of its regulation by the Financial Conduct Authority (Reg: 193418) under the laws of the United Kingdom and the application of ASIC Class Order 03/1099. The laws of the United Kingdom differ from Australian laws. In South Africa, PGIM, Inc. is an authorised financial services provider – FSP number 49012.

All investments involve risk, including the possible loss of capital.

These materials are for informational or educational purposes only. The information is not intended as investment advice and is not a recommendation about managing or investing assets. In providing these materials, PGIM is not acting as your fiduciary.

The information herein is provided for informational purposes and is not meant to be legal or tax advice for any particular investor, which can only be provided by qualified tax and legal counsel. This document may contain confidential information and the recipient hereof agrees to maintain the confidentiality of such information. Distribution of this information to any person other than the person to whom it was originally delivered and to such person's advisers is unauthorized, and any reproduction of this document, in whole or in part, or the divulgence of any of its contents, without PGIM Fixed Income's prior written consent, is prohibited. Notwithstanding anything to the contrary herein, the recipient may disclose to any and all persons, without information of any kind, the tax treatment and tax structure of the account and all materials of any kind (including opinions or other tax analyses) that are provided to the recipient relating to such tax treatment and tax structure. No liability whatsoever is accepted for any loss (whether direct, indirect, or consequential) that may arise from any use by the recipient or any third party of the information contained in or derived from this document.

This document contains the current opinions of the manager and such opinions are subject to change. Certain information in this document has been obtained from sources that PGIM Fixed Income believes to be reliable as of the date presented; however, PGIM Fixed Income cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed.

Unless otherwise indicated, the information, including, without limitation, holdings, rating data and opinions, contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. Ratings are based upon current information which may be changed, suspended or withdrawn by the rating agencies due to changes in, or unavailability of, financial information. Management's discussion herein represent the views, opinions and recommendations of the applicable investment management team regarding the economic conditions, asset classes, securities, issuers or financial instruments referenced herein. PGIM Fixed Income has no obligation to update any or all such information; nor do we make any express or implied warranties or representations as to its completeness or accuracy. Any information presented regarding the affiliates of PGIM Fixed Income is presented purely to facilitate an organizational overview and is not a solicitation on behalf of any affiliate. PGIM Fixed Income and its affiliates may make investment decisions, including for their proprietary accounts, and/or provide oral and written commentary that are inconsistent with the recommendations or views expressed herein.

Notice Page

These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security or other financial instrument or any investment management services. These materials do not constitute investment advice and should not be used as the basis for any investment decision.

An investment in your account or any other strategy mentioned herein involves certain risks. Due to, among other things, the nature of the markets and the investment strategies applicable to the account, an investment may only be suitable for certain investors. With the exception of the portfolio review section of this document which provides details of your account, the information regarding any other strategy does not take into account individual client circumstances, objectives or needs, and no determination has been made regarding the suitability of any securities, financial instruments or strategies for particular clients or prospects with regard to such information.

Any discussion of risk management is intended to describe PGIM Fixed Income's efforts to monitor and manage risk but does not imply low risk. No risk management technique can guarantee the mitigation or elimination of risk in any market environment. No assurance can be made that profits will be achieved or that substantial losses will not be incurred. These materials are not intended for distribution to or use by any person in any jurisdiction where such distribution would be contrary to local law or regulation.

Any references to specific securities and their issuers in any strategy other than your account are for illustrative purposes only and are not intended and should not be interpreted as recommendations to purchase or sell such securities. Any securities referenced may or may not be held in portfolios managed by PGIM Fixed Income and, if such securities are held, no representation is being made that such securities will continue to be held. Attributions are calculated on a gross basis and do not take into account fees or expenses. Totals may differ from the sum of components due to rounding. Past performance is not a guarantee or a reliable indicator of future results. The information contained herein has not been audited.

Any financial indices referenced herein as benchmarks are provided for informational purposes only. The use of benchmarks has limitations because portfolio holdings and characteristics will differ from those of the benchmark(s), and such differences may be material. You cannot make a direct investment in an index. Factors affecting portfolio performance that do not affect benchmark performance may include portfolio rebalancing, the timing of cash flows, credit quality, diversification and differences in volatility. In addition, financial indices do not reflect the impact of fees, applicable taxes or trading costs which reduce returns. Unless otherwise noted, financial indices assume reinvestment of dividends.

Any projections or forecasts presented herein are as of the date of this presentation and are subject to change without notice. Actual data will vary and may not be reflected here. Projections and forecasts are subject to high levels of uncertainty. Accordingly, any projections or forecasts should be viewed as merely representative of a broad range of possible outcomes. Projections or forecasts are estimated, based on assumptions, and are subject to significant revision and may change materially as economic and market conditions change. PGIM Fixed Income has no obligation to provide updates or changes to any projections or forecasts.

All performance targets contained herein are subject to revision and are provided solely as a guide to current expectations. There can be no assurance that any product or strategy described herein will achieve any targets or that there will be any return of capital. Past performance is not a guarantee or a reliable indicator of future results and an investment could lose value.

Notes To Performance

Gross returns do not reflect the deduction of investment advisory fees or other expenses it may incur in the management of its investment advisory account, but are after transaction costs. A client's return will be reduced by such advisory fees and other management expenses. For example, a 1.00% management fee deducted quarterly would result in the following cumulative compounded reduction in portfolio time-weighted rate of return: 1 year = 1.004%, 3 year = 3.042%, 5 year = 5.121% and 10 year = 10.5%. The investment advisory fees are described in Part 2A of the Adviser's Form ADV which is publicly available on the SEC's website at www.sec.gov, and available upon request. Fees represent the highest standard advisory fees currently in effect and may have been higher or lower historically. Fees may be higher for commingled accounts, insurance company separate accounts, and trust, corporate, or bank-owned life insurance products. Performance has been calculated in US dollars, unless otherwise noted in composite descriptions, and reflects the deduction of transaction costs and withholding taxes, if any, and the reinvestment of income.

Core Conservative Composite Net Disclosure (Inception Date: January 1, 1989) —An investment management fee of 0.12% would have reduced the since inception annualized return ending December 31, 2018 from 6.36% to 6.24%.

Core Composite Net Disclosure (Inception Date: January 1, 1991)—An investment management fee of 0.28% would have reduced the since inception annualized return ending December 31, 2018 from 6.29% to 5.96%.

Japan Total Core Bond Net Disclosure (Inception Date: January 1, 2003)—An investment management fee of 0.25% would have reduced the since inception annualized return ending December 31, 2018 from 2.02% to 1.67%.

Global Core Composite Net Disclosure (Inception Date: September 1, 2008)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 4.37% to 4.01%.

Core Plus Composite Net Disclosure (Inception Date: January 1, 1996)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 6.11% to 5.76%.

Global Aggregate Plus Composite Net Disclosure (Inception Date: November 1, 2002)—An investment management fee of 0.35% would have reduced the since inception annualized return ending December 31, 2018 from 6.60% to 6.13%.

Absolute Return Composite Net Disclosure (Inception Date: May 1, 2011)—An investment management fee of 0.40% would have reduced the since inception annualized return ending December 31, 2018 from 3.56% to 3.10%.

Multi-Asset Credit Composite Net Disclosure (Inception Date: November 1, 2016)—An investment management fee of 0.40% would have reduced the since inception annualized return ending December 31, 2018 from 4.25% to 3.84%.

Strategic Bond Composite Net Disclosure (Inception Date: September 1, 2015)—An investment management fee of 0.45% would have reduced the since inception annualized return ending December 31, 2018 from 6.68% to 6.20%. Effective March 1, 2019, the Unconstrained Bond Composite was renamed the Strategic Bond Composite. The strategy benchmark also changed from 3-month Libor to the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index.

Global Dynamic Bond Composite Net Disclosure (Inception Date: January 1, 2016)—An investment management fee of 0.50% would have reduced the since inception annualized return ending December 31, 2018 from 7.16% to 6.62%.

Short Duration Core Plus Composite Net Disclosure (Inception Date: February 1, 2014)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 2.71% to 2.41%.

Short Term Corporate Composite Net Disclosure (Inception Date: January 1, 1994)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 5.08% to 4.78%.

Long Duration (Government/Credit) Composite Net Disclosure (Inception Date: December 1, 2009)—An investment management fee of 0.28% would have reduced the since inception return ending December 31, 2018 from 6.64% to 6.34%.

Corporate Fixed Income (Long Duration) Composite Net Disclosure (Inception Date: July 1, 2008)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 8.14% to 7.82%.

Long Duration Custom LDI Composite Net Disclosure (Inception Date: July 1, 1998)—An investment management fee of 0.30% would have reduced the since inception return ending December 31, 2018 from 6.86% to 6.55%.

Structured Product (Unconstrained) Composite Net Disclosure (Inception Date: January 1, 2016)—An investment management fee of 0.40% would have reduced the since inception return ending December 31, 2018 from 5.86% to 5.44%.

Corporate Fixed Income Composite Net Disclosure (Inception Date: July 1, 1991)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 7.24% to 6.90%.

European Corporate (USD Hedged) Composite Net Disclosure (Inception Date: February 1, 2008)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 5.57% to 5.26%.

Global Corporate (Unhedged) Composite Net Disclosure (Inception Date: May 1, 2010)—An investment management fee of 0.30% would have reduced the since inception annualized return ending December 31, 2018 from 4.10% to 3.79%.

Notes To Performance

Gross returns do not reflect the deduction of investment advisory fees or other expenses it may incur in the management of its investment advisory account, but are after transaction costs. A client's return will be reduced by such advisory fees and other management expenses. For example, a 1.00% management fee deducted quarterly would result in the following cumulative compounded reduction in portfolio time-weighted rate of return: 1 year = 1.004%, 3 year = 3.042%, 5 year = 5.121% and 10 year = 10.5%. The investment advisory fees are described in Part 2A of the Adviser's Form ADV which is publicly available on the SEC's website at www.sec.gov, and available upon request. Fees represent the highest standard advisory fees currently in effect and may have been higher or lower historically. Fees may be higher for commingled accounts, insurance company separate accounts, and trust, corporate, or bank-owned life insurance products. Performance has been calculated in US dollars, unless otherwise noted in composite descriptions, and reflects the deduction of transaction costs and withholding taxes, if any, and the reinvestment of income.

Higher Quality High Yield Composite Net Disclosure (Inception Date: July 1, 1998)—An investment management fee of 0.50% would have reduced the since inception annualized return ending December 31, 2018 from 7.43% to 6.90%.

Broad Market High Yield Composite Net Disclosure (Inception Date: March 1, 2002)—An investment management fee of 0.50% would have reduced the since inception annualized return ending December 31, 2018 from 8.14% to 7.58%.

U.S. Senior Secured Loans (Unconstrained) Composite Net Disclosure (Inception Date: May 1, 2007)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 4.67% to 4.10%.

European High Yield Composite Net Disclosure (Inception Date: November 1, 2010)—An investment management fee of 0.50% would have reduced the since inception annualized return ending December 31, 2018 from 7.64 to 7.10%. Performance shown in EUR.

European Senior Secured Debt (Constrained) Composite Net Disclosure (Inception Date: July 1, 2006)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 4.90% to 4.32%. Performance shown in EUR.

Global High Yield (Euro Hedged) Composite Net Disclosure (Inception Date: May 1, 2002)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 7.75% to 7.19%. Performance shown in EUR.

Global Senior Secured Loans Composite Net Disclosure (Inception Date: December 1, 2011)—An investment management fee of 0.60% would have reduced the since inception annualized return ending December 31, 2018 from 5.59% to 4.96%.

Emerging Markets Debt Composite Net Disclosure (Inception Date: July 1, 1996)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 11.44% to 10.72%.

Emerging Markets Blend Composite Net Disclosure (Inception Date: December 1, 2007)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 5.70% to 5.04%.

Emerging Markets Blend Plus Composite Net Disclosure (Inception Date: August 1, 2014)—An investment management fee of 0.75% plus the actual incentive and certain other applicable fees and expenses would have reduced the since inception return ending December 31, 2018 from 3.43% to 1.94%.

Emerging Markets Local Currency Composite Net Disclosure (Inception Date: January 1, 2011)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 0.30% to -0.28%.

Emerging Markets Corporate Debt Composite Net Disclosure (Inception Date: March 1, 2013)—An investment management fee of 0.55% would have reduced the since inception annualized return ending December 31, 2018 from 3.73% to 3.17%.

National Municipal Bond Composite Net Disclosure (Inception Date: January 1, 1994)—An investment management fee of 0.28% would have reduced the since inception annualized return ending December 31, 2018 from 5.12% to 4.83%.

High Income Municipal Bond Composite Net Disclosure (Inception Date: January 1, 1994)—An investment management fee of 0.32% would have reduced the since inception annualized return ending December 31, 2018 from 5.74% to 5.41%.

U.S. Liquidity Relative Value Composite Net Disclosure (Inception Date: July 1, 2002)—An investment management fee of 0.75% plus the actual incentive and certain other applicable fees and expenses would have reduced the since inception return ending December 31, 2018 from 7.41% to 4.74%.

Global Liquidity Relative Value Composite Net Disclosure (Inception Date: July 1, 2014)—An investment management fee of 0.75% plus the actual incentive and certain other applicable fees and expenses would have reduced the since inception return ending December 31, 2018 from 8.60% to 6.28%.

Emerging Markets Debt Long/Short Composite Net Disclosure (Inception Date: November 1, 2007)—An investment management fee of 0.75% plus the actual incentive and certain other applicable fees and expenses would have reduced the since inception return ending December 31, 2018 from 9.21% to 5.98%.

U.S. Liquidity Relative Value (S&P 500 Overlay) Composite Net Disclosure (Inception Date: April 1, 2014)—An investment management fee of 0.75% plus the actual incentive and certain other applicable fees and expenses would have reduced the since inception return ending December 31, 2018 from 11.39% to 9.82%.

Benchmark Descriptions

Bloomberg Barclays US Aggregate Bond Index (Bloomberg Barclays US Aggregate Index)
(Core Fixed Income, Core Plus, Core Conservative)
The Bloomberg Barclays US Aggregate Index covers the USD-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities and includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS, and CMBS sectors. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg Barclays Global Aggregate Bond Index USD Unhedged (Bloomberg Barclays Global Aggregate Index)
(Global Core, Global Aggregate Plus)
The Bloomberg Barclays Global Aggregate Index provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB) or better using the middle rating of Moody's, S&P, and Fitch.

FTSE World Government Bond Index
(Former benchmark for Global Aggregate Plus)
FTSE World Government Bond Index is a market-capitalization-weighted benchmark that tracks the performance of the government bond markets. The composition of the index consists of sovereign debt denominated in the domestic currency. Securities must be rated BBB-/Baa3 by S& P or Moody's.

ICE BofAML US Dollar 3-Month LIBOR Constant Maturity Index (ML 3-Month LIBOR Index)
(Absolute Return)
The ICE BofAML US Dollar 3-Month LIBOR Constant Maturity Index tracks the performance of a synthetic asset paying LIBOR to a stated maturity. The index is based on the assumed purchase at par of a synthetic instrument having exactly its stated maturity and with a coupon equal to that day's fixing rate. That issue is assumed to be sold the following business day (priced at a yield equal to the current day fixing rate) and rolled into a new instrument. Source: ICE Data Indices, LLC, used with permission. ICE Data Indices, LLC is licensing the ICE Data Indices and related data "as is," makes no warranties regarding same, does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of the ICE Data Indices or any data included in, related to, or derived therefrom, assumes no liability in connection with their use, and does not sponsor, endorse, or recommend PGIM Fixed Income, or any of its products or services

Bloomberg Barclays U.S. 1-3 Year Government/Credit Bond Index (Bloomberg Barclays U.S. 1-3 Year Government/Credit Index)
(Short Duration Core Plus)
Bloomberg Barclays U.S. 1-3 Year Government/Credit Bond Index covers USD-denominated and nonconvertible, publicly issued US Government or investment-grade securities that are fixed-rate or step ups. Bonds must have a maturity from 1 up to (but not including) 3 years and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg Barclays U.S. 1-5 Year Credit Bond Index (Bloomberg Barclays U.S. 1-5 Year Credit Index)
(Short Term Corporate)
Bloomberg Barclays US 1-5 Year Credit Bond Index is a subset of the Bloomberg Barclays Credit Index with maturities of 1-5 years. The U.S. Credit Index is comprised of the U.S. Corporate Index and the non-native currency subcomponent of the U.S. Government-Related Index. The U.S. Credit Index includes publicly issued U.S. corporates, specified foreign debentures and secured notes denominated in USD. Securities must be rated investment-grade (Baa3/BBB-/BBB- or above) using the middle rating of Moody's, S&P, and Fitch, respectively.

Bloomberg Barclays US Long Duration Government/Credit Index (Bloomberg Barclays US Long Govt/Credit Index)
(*Long Duration Government/Credit, Long Duration Asset Liability Composite)*
The Bloomberg Barclays US Government/Credit Index covers USD-denominated and non-convertible, publicly issued US Government or investment-grade securities that are fixed rate or step ups. Securities must have a maturity of 10 years or greater and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg Barclays Intermediate U.S. Aggregate Bond Index (Bloomberg Barclays Intermediate U.S. Aggregate Bond Index)
(*Strategic Bond Composite)*
The Bloomberg Barclays Intermediate U.S. Aggregate Bond Index covers the USD-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities with maturities of 1-10 years. The index includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS and CMBS sectors. Securities must be rated investment-grade (Baa3/BBB-/BBB- or above) using the middle rating of Moody's, S&: and Fitch and have at least 1 year until final maturity.

Benchmark Descriptions (cont'd)

Bloomberg Barclays US Long Corporate Bond Index (Bloomberg Barclays US Long Corporate Index)
(Long Duration Corporate)
The Bloomberg Barclays US Long Corporate Bond Index covers USD-denominated and non-convertible, publicly issued securities that are fixed-rate or step ups. Securities must have a maturity of 10 years and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Client-Directed Liability Based Benchmark
(Long Duration LDI)
The customized benchmark for the Long Duration Custom Composite is the weighted average of each composite member's benchmark return rebalanced monthly. The benchmarks are market based indices/sub-indices constructed to reflect the liabilities of the portfolios. The benchmarks consists of various weights of the sub indices of the Bloomberg Barclays Intermediate (maturities from 1 up to but not including10 years), and Long (maturities of 10+ years) Government/Credit and US Corporate Indices. All securities must be rated investment-grade (Baa3/ BBB-/BBB-) or above using the middle rating of Moody's, S&P, and Fitch.

3 Month U.S. Dollar LIBOR Average
(Structured Product Unconstrained)
3 Month LIBOR (London Interbank Offered Rate) is the stated rate of interest at which banks in the London wholesale money markets may borrow funds from one another for three months. The 90-day average of the daily rates set by the Intercontinental Exchange Benchmark Administration Ltd ("IBA") is used to derive the return for the month.

Bloomberg Barclays US Credit Bond Index (Bloomberg Barclays US Credit Index)
(Investment Grade Corporates)
The Bloomberg Barclays US Credit Index is comprised of the U.S. Corporate Index and the non-native currency subcomponent of the U.S. Government-Related Index. The U.S. Credit Index includes publicly issued U.S. corporate, specified foreign debentures and secured notes denominated in USD. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

iBoxx Euro Corporate Index 100% USD Hedged (iBoxx Euro Corporate Index (USD Hedged))
(European Corporate Fixed Income (USD Hedged))
The iBoxx EUR benchmark is made up of only fixed-rate bonds or step ups whose cash flow can be determined in advance. The indices are comprised solely of bonds. Treasury Bills and other money market instruments are not eligible. The iBoxx EUR indices include only Euro and legacy currency denominated bonds. Securities must be rated investment-grade (Baa3/ BBB-/BBB-) or above by at least one of the following rating agencies: Standard & Poor's, Moody's or Fitch and have at least 1 year until final maturity at the rebalancing date.

Bloomberg Barclays Global Aggregate Corporate Bond Index (USD Hedged) (Bloomberg Barclays Global Corporate Index (USD Hedged))
(Global Corporate (USD Hedged)
The Bloomberg Barclays Global Aggregate Corporate Bond Index (USD Hedged) is a component of the Global Aggregate Index that includes the global investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. The three major components of this index are the U.S. Aggregate Corporate, the Pan-European Aggregate Corporate, and the Asian-Pacific Aggregate Corporate indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch. The index is hedged to USD.

Bloomberg Barclays Global Aggregate Corporate Index Unhedged (Bloomberg Barclays Global Corporate Index (Unhedged))
(Global Corporate (Unhedged)
The Bloomberg Barclays Global Corporate Aggregate Index is a component of the Global Aggregate Index that includes the global investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. The three major components of this index are the U.S. Aggregate Corporate, the Pan-European Aggregate Corporate, and the Asian-Pacific Aggregate Corporate indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Benchmark Descriptions (cont'd)

Bloomberg Barclays U.S. Corporate High Yield Ba/B 1% Issuer Capped Bond Index (Bloomberg Barclays US High Yield Ba/B 1% Issuer Capped Index)
(Higher Quality High Yield)
The Bloomberg Barclays U.S. High Yield Ba/B 1% Issuer Capped Index is an issuer-constrained version of the Bloomberg Barclays U.S. High Yield Index that covers the USD-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. The Bloomberg Barclays U.S. High Yield 1% Ba/B Issuer Capped Index limits issuer exposures to a maximum 1% and redistributes the excess market value index-wide on a pro-rata basis. Securities must be rated below investment-grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P, and Fitch, and have at least a one year until final maturity

Bloomberg Barclays U.S. Corporate High Yield Bond Index (Bloomberg Barclays U.S. High Yield Index)
(Broad Market High Yield)
Bloomberg Barclays U.S. Corporate High Yield Bond Index covers the USD-denominated, non-investment grade, fixed-rate or step ups, taxable corporate bond market. The index excludes Emerging Markets debt. Securities must be rated below investment-grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P, and Fitch, respectively and have at least 1 year until final maturity.

Credit Suisse Leveraged Loan Index (CS Leveraged Loan Index)
(US Senior Secured Loans)
The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, US dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the US dollar denominated leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

ICE BofAML European Currency High Yield ex Finance 2% Constrained Index (ML Euro HY ex Finance 2% Constrained Index)
(European High Yield (Euro Hedged))
The ICE BofAML European High Yield ex Finance 2% Constrained Index tracks the performance of EUR and GBP denominated below investment grade corporate debt publicly issued in the eurobond, sterling domestic or euro domestic markets. Qualifying securities must have a below investment grade rating and an investment grade country of risk. The index contains all non-Financial securities but caps issuer exposure at 2%. Source: ICE Data Indices, LLC, used with permission. ICE Data Indices, LLC is licensing the ICE Data Indices and related data "as is," makes no warranties regarding same, does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of the ICE Data Indices or any data included in, related to, or derived therefrom, assumes no liability in connection with their use, and does not sponsor, endorse, or recommend PGIM Fixed Income, or any of its products or services.

Credit Suisse Western European Leveraged Loan Index (EUR Hedged) (CS Western European Leveraged Loan Index (EUR Hedged))
(European Senior Secured Debt)
Credit Suisse Western European Leveraged Loan Index: All Denominations Euro Hedged. The Index is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The index is hedged to EUR. The Index return does not reflect the impact of principal repayments in the current month.

Bloomberg Barclays Global High Yield Index (Euro Hedged)
(Global High Yield (Euro Hedged))
The Bloomberg Barclays Global High Yield Index provides a broad-based measure of the global high yield fixed income markets. It includes U.S. high yield, Pan-European high yield, U.S. emerging markets high yield, and Pan-European emerging markets high yield indices. Securities included in the index must be fully taxable, have at least on year until final maturity, and be rated high yield (Ba//BB+/BB+ or below) using the middle rating of Moody's S&P and Fitch.

CS Blend Lev. Loan & West European Lev. Loan: Euro Denominated (USD Hedged)
(Global Senior Secured Loans)
The custom benchmark for this composite is comprised of the Credit Suisse Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index Euro Denominated (hedged to USD) and is rebalanced monthly. As of December 31, 2017, the weights are 86% and 14%, respectively. The Credit Suisse indices are representative unmanaged indices of tradeable, floating rate senior secured loans designed to mirror the investable universe of the US and European Leveraged Loan markets.

JP Morgan Emerging Markets Bond Index Global Diversified (JPM EMBI Global Diversified Index)
(Emerging Markets Debt)
The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for USD-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. To be deemed an emerging market by the EMBI Global Diversified Index, a country must be rated Baa1/BBB+ or below by Moody's/S&P rating agencies. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Benchmark Descriptions (cont'd)

Blend of JPM EMBI Global Diversified & GBI-EM Global Diversified

(Emerging Markets Blend, Emerging Markets Blend Plus)

The customized benchmark for this composite is an even blend of the JPMorgan Government Bond Index-Emerging Markets Global Diversified Index and the JPMorgan Emerging Markets Bond Index Global Diversified Index. The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments while the Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for USD-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

JPMorgan Government Bond Index-Emerging Markets Global Diversified Index (JPM GBI-EM Global Diversified Index)

(Emerging Markets Debt (Local Currency))

The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

JPMorgan Corporate Emerging Markets Bond Index Broad Diversified (JPM CEMBI Broad Diversified)

(Emerging Markets Corporate Debt)

The CEMBI tracks total returns of US dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries. The CEMBI Broad is the most comprehensive corporate benchmark followed by the CEMBI, which consists of an investable universe of corporate bonds. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Bloomberg Barclays Municipal Bond Index

(National Municipal Bond)

The index covers the USD-denominated long term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment grade (Baa3/BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch.

Blend: Bloomberg Barclays Muni High Income/Muni Index

(High Income Municipal Bond)

The customized benchmark for this composite is an even blend of the Bloomberg Barclays Municipal High Yield Bond Index and Bloomberg Barclays Municipal Bond Index. The Bloomberg Barclays Municipal Bond Index covers the USD-denominated long term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment-grade (Baa3/ BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch. The Bloomberg Barclays Municipal High Yield Bond Index is the high yield component of the Bloomberg Barclays Municipal Bond Index.

Nomura-BPI Overall

The Nomura-BPI Overall index tracks total returns of all fixed income securities in the Japanese bond market that meet certain criteria. The intellectual property rights and any other rights in Nomura-BPI Overall Index belong to Nomura Securities Co., Ltd. Nomura Securities Co., Ltd. does not guarantee accuracy, completeness, reliability, usefulness, marketability, merchantability and fitness of the Index, and does not account for performance of the fund with the use of the Index. This disclaimer is applicable to Nomura-BPI Overall Index referenced herein.

3 Month LIBOR

(Multi Asset Credit, Strategic Bond, Global Dynamic Bond, U.S. Liquidity Relative Value, Emerging Markets Long/Short)

3 Month LIBOR (London Interbank Offered Rate) rate is the stated rate of interest at which banks in the London wholesale money markets may borrow funds from one another for three months. The daily rate set by the Intercontinental Exchange Benchmark Administration Ltd ("IBA") set on the last day of each calendar month is used to derive the return for the upcoming month. Reset monthly for Emerging Markets Long/Short Composite and reset quarterly for US Government/Agency Long Short Composite. Effective March 1, 2019, the Unconstrained Bond Composite was renamed the Strategic Bond Composite. The strategy benchmark also changed from 3-month Libor to the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index.

S&P 500 Total Return Index (S&P 500 Index)

(U.S. Liquidity Relative Value (S&P 500 Overlay)

S&P 500 Total Return Index is a commonly recognized, market capitalization weighted index of 500 widely held equity securities, designed to measure broad U.S. equity performance.

Agenda Item III.B.

BOARD ACCEPTANCE REQUESTED

TO: State Investment Board

FROM: Dave Hunter

DATE: March 22, 2019

SUBJECT: **PERS Pension (Main Plan) – Investment Policy Statement**

RIO requests the SIB approve the PERS Investment Policy Statement recently approved by the PERS Board to eliminate an investment restriction relating to the use of publicly traded REITs (Real Estate Investment Trusts) **in the target asset allocation for real estate.**

RIO recommended this change to allow our private real estate managers (including Invesco and JPMorgan) to use public REITs to efficiently gain access to smaller desired target sector allocations and do not generally expect these exposures to exceed 5% of our overall investment.

The PERS Investment Sub-Committee reviewed and affirmed the attached investment policy statement for PERS Main (Pension) Plan on February 15, 2019. **The PERS Board subsequently approved the attached investment policy statement, which eliminates the investment restriction on the use of publicly traded REITs, on March 12, 2019.**

RIO notes this investment restriction was previously eliminated from all of our other Pension Pool clients in recent years including TFFR and multiple pension plans for the cities of Bismarck and Grand Forks.

STATEMENT OF INVESTMENT GOALS, OBJECTIVES AND POLICIES FOR THE NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS

The North Dakota Public Employees Retirement System (NDPERS) and the Highway Patrol Retirement System (HPRS) are pension benefit plans established to provide retirement income to state employees and employees of participating political subdivisions. The plans are administered by a nine member Board of Trustees (the Board). The Chair is appointed by the governor, three members are elected by the active members of the plans, one member is elected by the retired members, one is appointed by the Attorney General, one member is the State Health Officer or their designee and two are legislative appointees.

The NDPERS plan is a multi-employer hybrid benefit public pension plan that provides retirement benefits, disability retirement benefits, and survivor benefits, in accordance with Chapter 54-52 of the North Dakota Century Code (NDCC). Monthly retirement benefits for the Main and Public Safety Plans are based on the formula: number of Years of Service times 2.0% times the final average salary. For the NDPERS Judges Plan the retirement formula is: for the first ten years of service of the formula is final average salary times 3.5%, for the second ten years of service the formula is final average salary times 2.80% and for all remaining years of service the formula is final average salary times 1.25%.

The Highway Patrol plan is a single employer plan that provides retirement benefits, disability benefits, and survivor benefits in accordance with Chapter 39-03.1 of the North Dakota Century Code. Monthly retirement benefits are based upon on the formula: first 25 years of credit service times 3.25% and all remaining years of service times 1.75%.

Funding for the NDPERS plan is provided by monthly employee contributions and employer contributions with the amount varying based upon which NDPERS plan the member participates in. For the Main NDPERS plan the employee contribution is 7% and the employer contribution is 7.12%, for the Judges Plan the employee contribution is 8% and employer contribution is 17.52%, for the State Law Enforcement (BCI) employee contribution is 6.0% and employer contribution is 9.81%, for the Public Safety Plan with prior service the employee contribution is 5.5% and the employer contribution is 9.81% and for the Public Safety Plan without prior service the employee contribution rate is 5.5% and the employer rate is 7.93%.

Funding for the Highway Patrol plan is provided by a monthly employee contribution of 13.3% and an employer contribution of 19.7%

Each year the Board has an actuarial valuation performed. The current actuarial assumed rate of return on assets for all plans is 7.75%.

2. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD (SIB)

Aggregate plan contributions plus earnings, minus allowable expenses constitute the Fund. The Board is charged by NDCC chapters 54-52, 21-10-01, and 39-03.1 to establish policies for the investment goals and asset allocation of the Fund. The State Investment Board (SIB) is charged with implementing the asset allocation as promptly and prudently as possible in accordance with the Board's policies by investing the assets of the Fund in the manner provided in the prudent investor rule, which provides:

Fund fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income. The retirement funds belonging to the teachers' fund for retirement and the public employees retirement system must be invested exclusively for the benefit of their members and in accordance with the respective funds' investment goals and objectives. (NDCC 21-10-07)

The SIB may delegate investment responsibility of the Fund or any portion of the Fund to professional money managers. Where a money manager has been retained, the SIB's role in determining investment strategy is supervisory not advisory.

The SIB may at its discretion, pool the assets of the Fund with another fund or funds having similar investment objectives and time horizons in order to maximize returns and minimize costs. In pooling fund assets the SIB will establish asset class pools it deems necessary to achieve the specific quality, diversification, restrictions, and performance objectives subject to the prudent investor rule and the objectives of the funds participating in the pools.

The SIB is responsible for establishing the selection criteria, determining the performance measures, and retaining all fund money managers. SIB is also responsible for the selection and retention of any investment consultants that may be employed in the investment of the Fund assets.

3. DELEGATION OF AUTHORITY

Management responsibility for NDPERS funds not assigned to the North Dakota State Investment Board (SIB) in Chapter 21-10 of the North Dakota Century Code (NDCC) is hereby delegated to the SIB, which must establish written policies and procedures for the operation of the NDPERS funds, consistent with this investment policy.

Such procedures must provide for:

1. The definition and assignment of duties and responsibilities to advisory services and persons employed by the SIB pursuant to NDCC 21-10-02.1(1) (a).

2. Investment diversification, investment quality, qualification of money managers, and amounts to be invested by money managers pursuant to NDCC 21-10-02.1(1)(e). In developing these policies it is understood:

   a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
   b. The use of derivatives will be monitored to ensure that undue risks are not taken by the money managers.
   c. All assets must be held in custody by the SIB's master custodian or such other custodians as are selected by the SIB.

3. Guidelines for selection and redemption of investments will be in accordance with NDCC 21-10-02.1(1) (d).

4. The criteria for making decisions with respect to hiring, retention, and termination of money managers will be clearly defined. This also includes selecting performance measurement standards, consultants, report formats, and frequency of meetings with money managers.

All participants in the investment process must seek to act responsibly as custodians of the public trust.

4. INVESTMENT GOALS

The investment goals of the Fund have been established by the NDPERS Board based upon consideration of the Board's strategic objectives and a comprehensive review of the current and projected financial requirements. These goals are to be viewed over the long term.

Goal # 1 Accumulate sufficient wealth through a diversified portfolio of investments which will enable the State of North Dakota to pay all current and future retirement benefits and expense obligations of the Fund.

Goal # 2 To obtain an investment return in excess of that needed to allow for increases in a retiree's annuity to maintain the purchasing power of their retirement benefit.

The Board acknowledges the material impact that funding the pension plan has on the State's financial performance. To enable the State to continue offering secure pension benefits to plan participants, the Board believes that the Fund should pursue the following **secondary goals:**

1. Stabilize the employee and employer contributions needed to fund the Plan over the long term.
2. Avoid both substantial volatility in contributions and sizable fluctuations in the funding status of the Plan.

These two secondary goals affect the Fund's investment strategies and often represent conflicting goals. That is, minimizing the long-term funding costs implies a less conservative investment program, whereas dampening the volatility of contributions and avoiding large swings in the funding status implies a more conservative investment program. The Board places greater emphasis on the strategy of stabilizing the employee and employer contribution needed to fund the plan over the long term as it assists our participating employers by having a predictable contribution for budgeting.

5. INVESTMENT PERFORMANCE OBJECTIVE

The Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The Fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB.

1. The fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
2. The fund's risk, measured by the standard deviation of net returns, should not exceed **115%** of the policy benchmark over a minimum evaluation period of five years.
3. The risk-adjusted performance of the fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

6. ASSET ALLOCATION

In recognition of the plan's performance objectives, benefit projections, and capital market expectations, the NDPERS Board has established the following asset allocation:

Asset Class	Policy Target (%)	Rebalancing Range (%)
Global Equity	57	46-66
Public Equity	51	42-57
Private Equity	7	4-9
Global Fixed Income	23	16-30
Investment Grade	16	11-21
Non-Investment Grade	7	5-9
Global Real Assets	19	10-25
Global Real Estate	11	5-15
Other (Infrastructure/Timber)	8	0-10
Global Alternatives		0-10
Cash	0	0-2

The Board does not endorse tactical asset allocation, therefore, it is anticipated the portfolio be managed as close to the policy target as is prudent and practicable while minimizing re-balancing costs. Any allocation to Global Alternatives shall not increase the expected volatility of the portfolio as measured in Section #5, and all other targets will be adjusted pro-rata.

PERS requires that in implementing this asset allocation that the State Investment Board seek to maximize return within the scope of these policies while limiting investment costs.

7. RESTRICTIONS

A. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.

B. Use of derivatives will be monitored to ensure that undue risks are not taken by the money managers

C. No transaction may be made which threatens the tax exempt status of the Fund.

D. No unhedged short sales or speculative margin purchases may be made.

Social Investing is defined as *"The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries."*

E. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

Economically targeted investing is defined as an investment designed to produce a competitive rate of return commensurate with risk involved, as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy.

F. Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule.

The Exclusive Benefit Rule is met if the following four conditions are satisfied:

(1) The cost does not exceed the fair market value at the time of investment.
(2) The investment provides the Fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
(3) Sufficient liquidity is maintained in the Fund to permit distributions in accordance with the terms of the plan.
(4) The safeguards and diversity that a prudent investor would adhere to are present.

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Board's policy favors investments which will have a positive impact on the economy of North Dakota.

~~G. Publicly Traded REITs may not be used in the Real Estate asset allocation.~~

Formatted: Strikethrough

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Board's policy favors investments which will have a positive impact on the economy of North Dakota.

8. INTERNAL CONTROLS

The SIB must have a system of internal controls to prevent losses of public funds arising from fraud or employee error. The controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for broker relationships. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions and compliance with the investment policy.

9. EVALUATION

Investment management of the Fund will be evaluated against the Fund's investment objectives and investment performance standards.

An annual performance report must be provided to the Board by the State Investment Officer at a regularly scheduled NDPERS Board meeting. The annual performance report must include asset returns and allocation data as well as information regarding all significant or material matters and changes pertaining to the investment of the Fund, including:

- Changes in asset class portfolio structures, tactical approaches and market values;
- All pertinent legal or legislative proceedings affecting the SIB.
- Compliance with these investment goals, objectives and policies.
- A general market overview and market expectations.
- A review of fund progress and its asset allocation strategy.
- A report on investment fees and the SIB's effort relating to Section 6. To measure investment cost PERS requires as part of the annual review information from Callan, CEM or other acceptable source showing the value added versus the cost.
- Changes/additions to benchmarks utilized to monitor the funds.

In addition, the State Investment Officer shall review with the Board the procedures and policies established by the SIB relating to this statement of investment goals, objectives, and policies.

Scott Miller~~Sharon Schiermeister~~	David Hunter
~~Interim~~ Executive Director	Executive Director
North Dakota Public Employees Retirement System	North Dakota Retirement and Investment Office
Date: ______________________	Date: ______________________

Approved by the NDSIB
Approved by the NDPERS Board ~~12-12-2017~~03-12-2019

Agenda Item III.C.

INFORMATIONAL

TO: State Investment Board

FROM: Dave Hunter

DATE: March 17, 2019

SUBJECT: **Legacy & Budget Stabilization Fund Advisory Board Update**

At the request of Representative Keith Kempenich, North Dakota Legislative Council requested RIO to provide the Legacy and Budget Stabilization Fund Advisory Board with a status update on the asset allocation, basis points charged, and the balance and returns of the budget stabilization fund and legacy fund. RIO intends to use the attached presentation to provide the requested status update to the Advisory Board on March 20th.

Legacy and Budget Stabilization Fund Advisory Board Update

March 20, 2019

Dave Hunter, Executive Director/CIO
Darren Schulz, Deputy Chief Investment Officer
Connie Flanagan, Chief Financial Officer
Eric Chin, Senior Investment Analyst
ND Retirement & Investment Office (RIO)
State Investment Board (SIB)

21.5008.02000

Revised
3/14/2019

NORTH DAKOTA LEGISLATIVE MANAGEMENT

Tentative Agenda

LEGACY AND BUDGET STABILIZATION FUND ADVISORY BOARD

Wednesday, March 20, 2019
Medora Room, State Capitol
Bismarck, North Dakota

4:00 p.m.	Call to order Roll call Consideration of the minutes of the December 3, 2018, meeting
4:05 p.m.	Presentation by representatives of the Retirement and Investment Office and advisory board member discussion regarding the status, asset allocation, basis points charged by investment advisors, and the balance and returns of the budget stabilization fund and the legacy fund
4:40 p.m.	Comments by interested persons
4:45 p.m.	Advisory board member discussion and staff directives
5:00 p.m.	Adjourn

Committee Members

Representatives: Keith Kempenich (Chairman), Gary Kreidt
Senators: Jim Dotzenrod, Jerry Klein
Citizen Members: Eric Hardmeyer, Joe Morrissette, Ryan Rauschenberger

Staff Contact: Chris Kadrmas, Fiscal Analyst

Budget Stabilization Fund

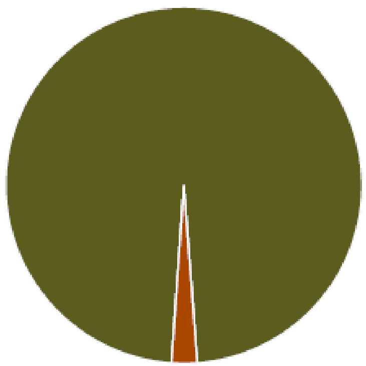
RIO Update

Budget Stabilization Fund Allocation

As of December 31, 2018

Actual Asset Allocation

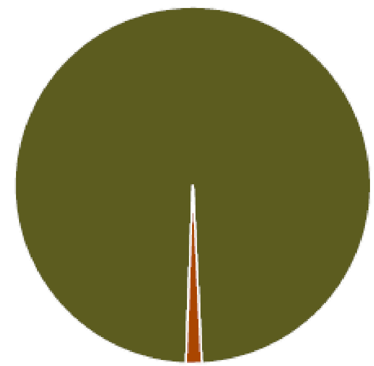
Short Term Fixed Income
98%



Cash & Equivalents
2%

Target Asset Allocation

Short Term Fixed Income
99%



Cash & Equivalents
1%

Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Short Term Fixed Income	112,695	97.7%	98.6%	(0.9%)	(993)
Cash & Equivalents	2,595	2.3%	1.4%	0.9%	993
Total	115,290	100.0%	100.0%		

- The Budget Stabilization Fund's asset allocation reflects a very risk-averse, highly liquid investment objective.

Callan | Knowledge. Experience. Integrity.

Note: Amounts are preliminary, unaudited and subject to change.

Budget Stabilization Fund
Comparison of Actual vs Expected Results

Net Returns Exceed Policy Benchmark – December 31, 2018

	Current FYTD 12/31/2018	1 Yr Ended 12/31/2018	3 Yrs Ended 12/31/2018	5 Yrs Ended 12/31/2018	Risk 5 Yrs Ended 12/31/2018	Risk Adj Excess Return 5 Yrs Ended 12/31/2018
Total Fund Return - Net	1.49%	1.56%	1.50%	1.46%	0.79%	0.42%
Policy Benchmark Return	1.51%	1.63%	1.17%	0.94%	0.70%	
Excess Return	-0.02%	-0.06%	0.33%	0.52%	OK	

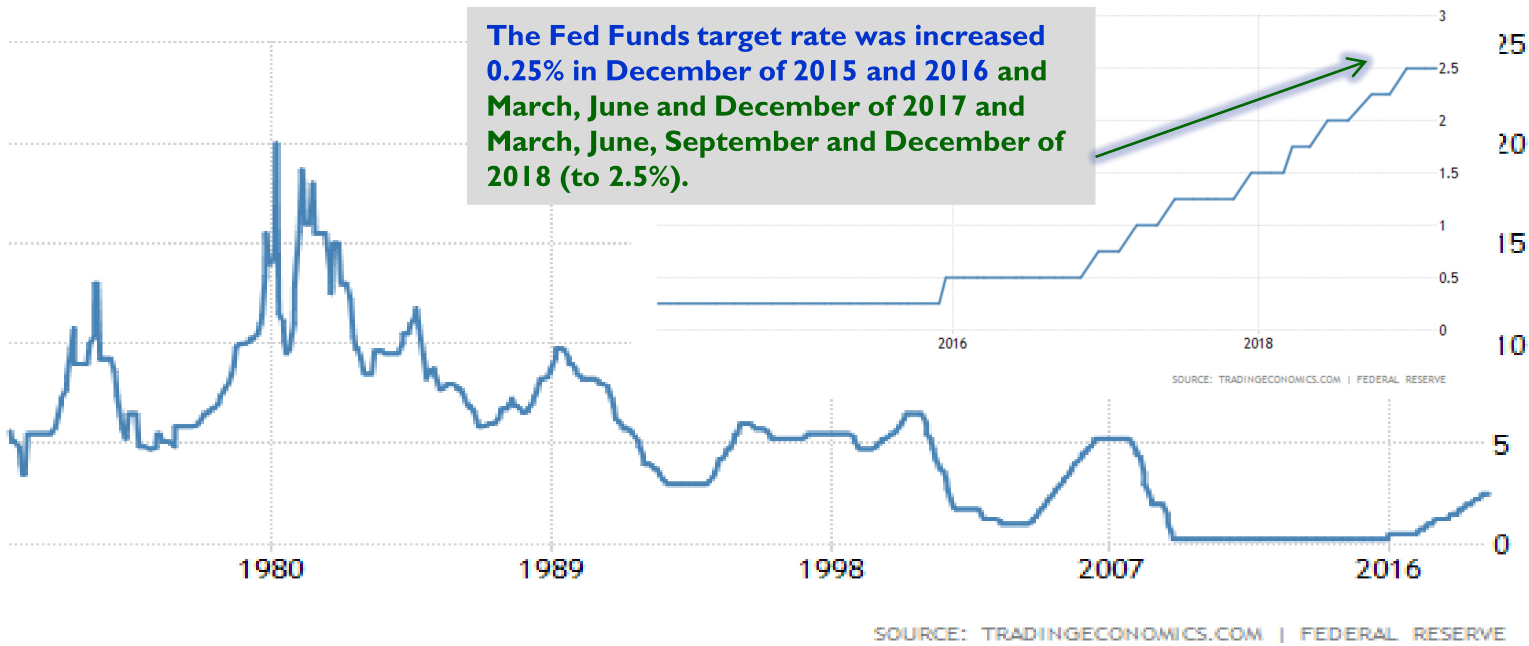
1. As of 12/31/2018, there was approximately $115 million in the Budget Stabilization Fund. The asset allocation for the Budget Stabilization Fund is 100% short-term fixed income.
2. For the 1-Year Ended 12/31/2018, the Budget Stabilization Fund generated a Net Return of 1.56%, slightly trailing the Policy Benchmark of 1.63%.
3. For the 5-Years Ended 12/31/2018, the Budget Stabilization Fund earned a Net Return of 1.46% exceeding the Policy Benchmark (of 0.94%) and earning Excess Return of 0.52%.

Policy Benchmark = 98% Bloomberg Government/Credit Index (1-3-years) and 2% U.S. T-Bills (3 months).

Note: All returns as of December 31, 2018, are unaudited and subject to change.

U.S. Fed Funds Rate (1971 to 2018)

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.

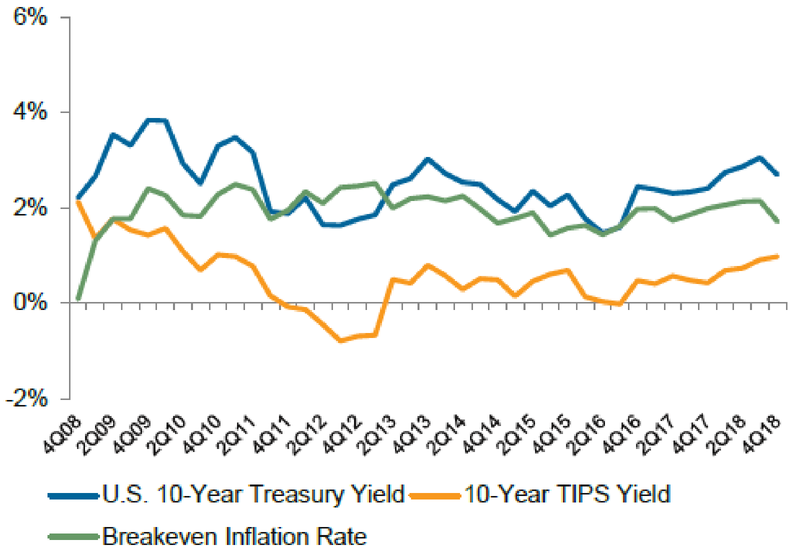


The Federal Reserve has raised the target range for federal funds four (4) times in 2018, three (3) times in 2017 and once each in December of 2016 and 2015. Interest Rates in the United States averaged 5.8% from 1971 until 2017, reaching an all time high of 20% percent in March of 1980 and a record low of 0.25% in December of 2008.

Yield Curve Changes

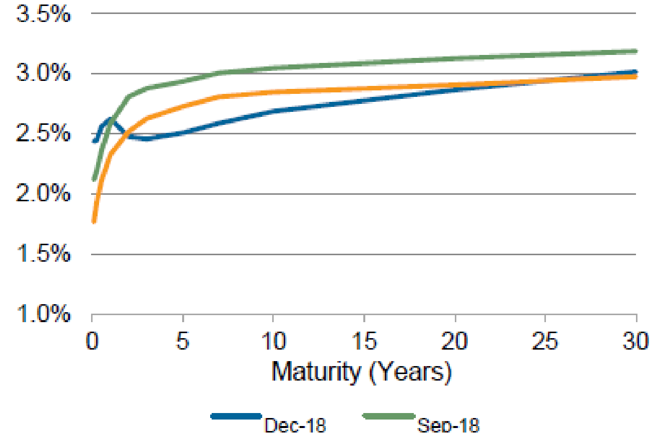
December 31, 2018

Historical 10-Year Yields

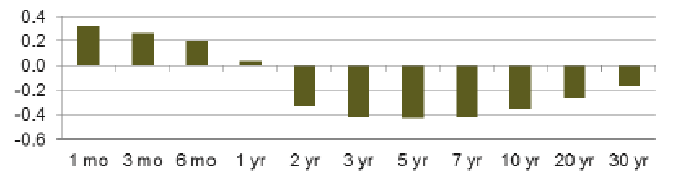


Source: Bloomberg

Treasury Yield Curve



Changes September to December 2018



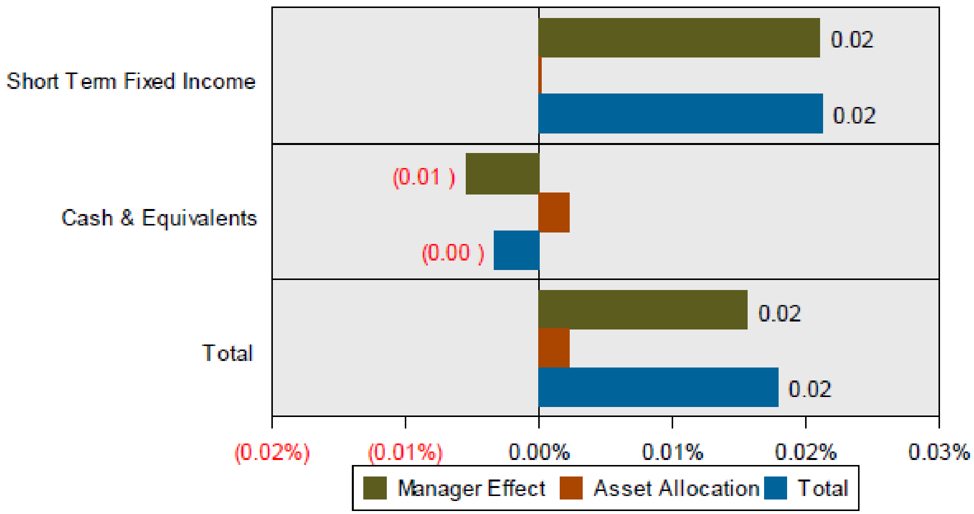
Source: U.S. Department of the Treasury

- Fears of slowing global growth pushed investors into the relative safety of fixed income investments
- The Federal Reserve raised the federal funds target rate by 25bps leading to higher yields on short-dated Treasuries
- The result of these two pressures led to a flatter overall Treasury curve and a partial inversion where rates on 1-year notes exceeded those with maturities of 2-, 3-, 5-, and 7-years

Budget Performance and Attribution

As of December 31, 2018

One Year Relative Attribution Effects



Returns for 1 Year Ended 12/31/2018

Return Type	Return (%)
Gross	1.64%
Net of fees	1.56%
Target	1.62%
Net added	-0.06%

One Year Relative Attribution Effects

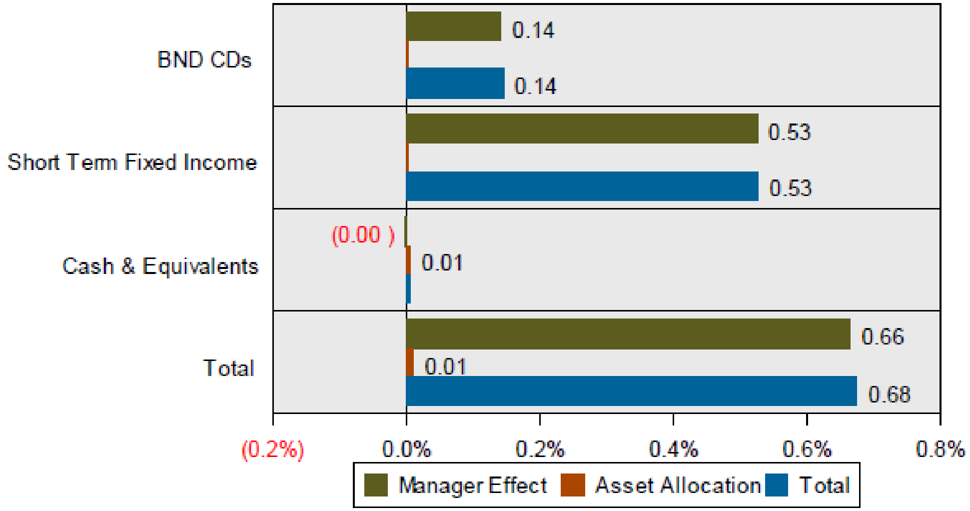
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return		Target Return		Manager Effect		Asset Allocation	Total Relative Return
Short Term Fixed Income	97%	97%	1.62%		1.60%		0.02%		0.00%	0.02%
Cash & Equivalents	3%	3%	1.73%		1.87%		(0.01%)		0.00%	(0.00%)
Total			**1.64%**	**=**	**1.62%**	**+**	**0.02%**	**+**	**0.00%**	**0.02%**

Note: Current Fiscal Year To Date returns are unaudited and subject to change.

Budget Performance and Attribution

As of December 31, 2018

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 12/31/2018

Return Type	Return (%)
Gross	1.61%
Net of fees	1.46%
Target	0.94%
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
BND CDs	11%	11%	-	-	0.14%	0.00%	0.14%
Short Term Fixed Income	86%	86%	1.52%	0.88%	0.53%	0.00%	0.53%
Cash & Equivalents	3%	3%	0.56%	0.63%	(0.00%)	0.01%	0.00%
Total			**1.61% =**	**0.94% +**	**0.66% +**	**0.01%**	**0.68%**

Budget Stabilization Fund
Schedule of Investment Expenses

	FY 2018			FY 2017		
	Average Market Value	Fees in $	Fees in %	Average Market Value	Fees in $	Fees in %
Investment managers' fees:						
Short-term fixed income managers	54,932,137	79,173	0.14%	141,529,627	230,661	0.16%
Cash & equivalents managers	2,262,299	3,999	0.18%	4,504,165	4,252	0.09%
Total investment managers' fees	**57,194,436**	**83,172**	**0.15%**	**173,522,549**	**234,913**	**0.14%**
Custodian fees		2,864	0.01%		21,627	0.01%
Investment consultant fees		2,106	0.00%		6,105	0.00%
Total investment expenses		**$ 88,142**	**0.15%**		**$ 262,644**	**0.15%**

Investment management fees and expenses declined from approximately $263,000 in fiscal 2017 to $88,142 in fiscal 2017 primarily due to a significant decline in the "Average Market Value" of investments. On a percentage, investment management fees remained constant between years at approximately 0.15% and were deemed reasonable overall in a fee study completed by Callan in November of 2018.

BUDGET STABILIZATION FUND INVESTMENT POLICY STATEMENT

The Advisory Board approved the Investment Policy Statement for the Budget Stabilization Fund in conjunction with bi-annual reviews on Nov. 28, 2017 and May 24, 2018.

1. FUND CHARACTERISTICS AND CONSTRAINTS.

The Budget Stabilization Fund (Fund) is a special fund created in 1987 under Chapter 54-27.2 of the North Dakota Century Code used to deposit general fund moneys in excess of appropriations. Notwithstanding the provisions of sections 54-27.2-01 and 54-27.2-02, **$604,688,209 was required to be transferred by the state treasurer to the budget stabilization fund since initial funding in September of 2005. In fiscal 2017, the legislatively approved principal distribution of $572,485,484 was transferred to the general fund. The statutory cap for the 2017-19 biennium is $646,539,396.** The state investment board shall supervise investment of the budget stabilization fund in accordance with chapter 21-10.

Any interest or other budget stabilization fund earnings must be deposited in the fund. Any amounts provided by law for deposit in the fund and any interest or earnings of the fund which would bring the balance in the fund to an amount greater than five percent of the current biennial state general fund budget, as finally approved by the most recently adjourned special or regular session of the legislative assembly, may not be deposited or retained in the fund but must be deposited instead in the state general fund.

If the director of the office of management and budget projects that general fund revenues for the biennium will be at least two and one-half percent less than estimated by the most recently
adjourned special or regular session of the legislative assembly, and if the governor orders a transfer, the state treasurer shall transfer the appropriate funds from the budget stabilization fund to the state general fund to offset the decrease in general fund revenues. The amount transferred from the budget stabilization fund upon order of the governor may not exceed the difference between an amount two and one-half percent below the general fund revenue projections for the biennium and the general fund revenue projections for the biennium by the director of the office of management and budget.

2. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD (SIB).

The Fund is charged by law under NDCC 21-10-02.1 with the responsibility of establishing policies on investment goals and asset allocation of the Fund. The SIB is charged with implementing these policies and asset allocation and investing the assets of the Fund in a manner consistent with the prudent investor rule as provided in NDCC 21-10-07.

At the discretion of the SIB, the Fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and objectives of the funds participating in the pools.

The SIB may delegate investment responsibility to professional money managers. When a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory, not advisory. In accordance with this Investment Policy Statement, the Fund's assets may be invested directly or through collective investment vehicles.

The SIB is responsible for establishing criteria and procedures and making decisions with respect to hiring, maintaining, and terminating money managers. This responsibility includes selecting performance measurement services, consultants, and report formats and determining the frequency of meetings with managers.

The SIB will implement changes to this policy as promptly as is prudent.

3. INVESTMENT OBJECTIVES.

The investment objectives of the Fund reflect the relatively unknown life-span and the moderate risk tolerance of the Fund. Operating and statutory considerations shape the Fund's policies and priorities as outlined below:

Objective: Sufficient liquidity is to be maintained to meet known or anticipated financial obligations and preserve the value of the surplus. Cash equivalent investments will be used to achieve this objective.

4. STANDARDS OF INVESTMENT PERFORMANCE.

The Fund's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The Fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB:

a. The Fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
b. The risk-adjusted performance of the Fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

5. POLICY AND GUIDELINES.

The asset allocation of the Budget Stabilization Fund is established by the SIB, with input from the Legacy and Budget Stabilization Advisory Board ("Advisory Board"). Asset allocation is based upon the appraisal of projected liquidity and income requirements, and estimates of the investment returns likely to be achieved by the various asset classes over the next five years.

In recognition of these factors, the following allocation is deemed appropriate for the fund:

Short-term Fixed Income	Minimum of 90%
Bank Loans w/floating yield	Maximum of 5%
Absolute Return Strategies	Maximum of 5%

On June 17, 2017, the Advisory Board acknowledged the Bank of North Dakota Match Loan Certificates of Deposit Program (BND CD) was transferred to the Legacy Fund in early-2017.

Rebalancing of the Fund to this target will be done in accordance with the SIB's rebalancing policy.

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the Fund's assets will be invested, it is understood that:

a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation
b. Derivative use will be monitored to ensure that undue risks are not taken by the money managers.
c. All assets will be held in custody by the State Investment Board's master custodian or such other custodians as are acceptable to the State Investment Board.
d. No funds shall be borrowed excluding a SIB approved securities lending program.
e. No unhedged short sales or speculative margin purchases shall be made.
f. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

For the purpose of this document, Social Investing is defined as "*The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries.*"

g. Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule. For the purpose of this document economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved, as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy.

Also, for the purpose of this document, the Exclusive Benefit Rule is met if the following four conditions are satisfied:

(1) The cost does not exceed the fair market value at the time of investment.
(2) The investment provides the Fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
(3) Sufficient liquidity is maintained in the Fund to permit distributions in accordance with the terms of the plan.
(4) The safeguards and diversity that a prudent investor would adhere to are present.

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Fund's policy favors investments which will have a positive impact on the economy of North Dakota.

6. EVALUATION AND REVIEW.

Investment management of the Fund will be evaluated against the Fund's investment objectives and investment performance standards. Evaluation will be conducted quarterly by the SIB through its review of funds participating in the Insurance Trust.

Money managers will be evaluated by the SIB quarterly. Meetings will be held with the money managers at least annually.

Approved by:

LEGACY AND BUDGET STABILIZATION FUND ADVISORY BOARD

____

Representative Keith Kempenich
Chairman

Date: ______________

NORTH DAKOTA STATE INVESTMENT BOARD

____

David Hunter
Executive Director/CIO, RIO

Date: ________________

RIO does not request any changes to the Budget Stabilization Fund Investment Policy Statement at this time.

Legacy Fund

RIO Update

Legacy Fund balances and returns are posted on RIO's website at each month-end.

LEGACY FUND

Statement of Net Position

As of 1/31/2019

	As of 1-31-19	As of 6-30-18
ASSETS:		
INVESTMENTS (AT FAIR VALUE)		
GLOBAL EQUITIES	$ 3,003,194,699	$ 2,766,036,036
GLOBAL FIXED INCOME	2,022,549,916	1,929,981,907
GLOBAL REAL ASSETS	867,620,304	805,149,765
INVESTED CASH (NOTE 1)	51,766,760	54,793,877
TOTAL INVESTMENTS	5,945,131,679	5,555,961,585
RECEIVABLES		
DIVIDEND/INTEREST RECEIVABLE	18,782,391	21,357,528
MISCELLANEOUS RECEIVABLE	11,124	14,495
TOTAL RECEIVABLES	18,793,515	21,372,023
OTHER ASSETS		
INVESTED SECURITIES LENDING COLLATERAL (NOTE 2)	19,610,979	24,284,177
OPERATING CASH	211,520	208,349
TOTAL ASSETS	5,983,747,693	5,601,826,134
DEFERRED OUTFLOWS OF RESOURCES		
DEFERRED OUTFLOWS RELATED TO PENSIONS	244,618	271,634
LIABILITIES:		
SECURITIES LENDING COLLATERAL (NOTE 2)	19,610,979	24,284,177
ACCOUNTS PAYABLE	-	71,703
ACCRUED EXPENSES	472,016	497,792
INVESTMENT EXPENSE PAYABLE	1,150,895	1,150,895
TOTAL LIABILITIES	21,233,890	26,004,567
DEFERRED INFLOWS OF RESOURCES		
DEFERRED INFLOWS RELATED TO PENSIONS	9,183	9,183
NET POSITION:		
HELD IN TRUST	5,962,749,238	5,576,084,018
TOTAL NET POSITION	$ 5,962,749,238	$ 5,576,084,018

These financial statements are preliminary, unaudited and subject to change. 2/28/2019

LEGACY FUND

Statement of Changes in Net Position

For the Month Ended 1/31/2019

	Month Ended 1-31-19	Year-to-Date
ADDITIONS:		
INVESTMENT INCOME		
GAIN ON SALE OF INVESTMENTS	$ 91,066,719	$ 578,919,569
LOSS ON SALE OF INVESTMENTS	56,430,134	508,269,121
NET GAINS (LOSSES) INVESTMENTS	34,636,585	70,650,448
NET APPREC (DEPREC) MARKET VALUE	233,610,562	(190,364,428)
NET CHANGE IN FAIR VALUE OF INVESTMENTS	268,247,147	(119,713,980)
INTEREST, DIVIDEND & OTHER INVESTMENT INCOME	11,283,656	74,222,774
	279,530,803	(45,491,206)
LESS INVESTMENT EXPENSES	1,387,450	6,427,349
NET INCOME FROM INVESTING ACTIVITIES	278,143,353	(51,918,555)
SECURITIES LENDING INCOME	67,244	421,581
SECURITIES LENDING EXPENSES	13,439	84,247
NET SECURITIES LENDING INCOME	53,805	337,334
NET INVESTMENT INCOME	278,197,158	(51,581,221)

EARNINGS AVAILABLE

Section 26 of Article X of the Constitution of North Dakota dictates that earnings of the Legacy Fund accruing after June 30, 2017, shall be transferred to the general fund at the end of each biennium. Earnings accrued prior to June 30, 2017, become part of the principal of the fund.

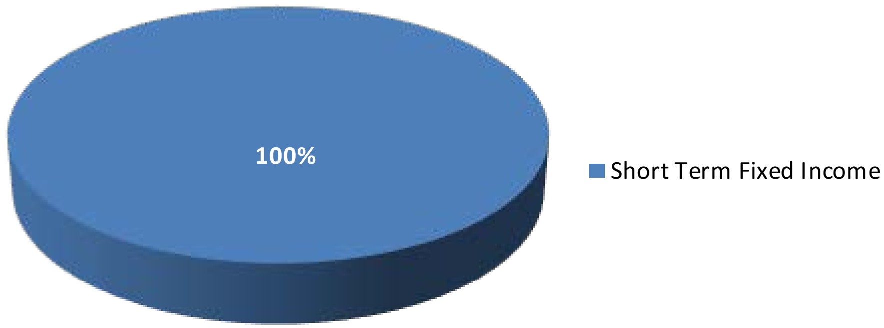
NDCC 21-10-12 defines "earnings" for the purposes of Section 26, Article X as "net income in accordance with generally accepted accounting principles, excluding any unrealized gains or losses."

As of the date of these financial statements, the principal balance of the Legacy Fund is $ 5,345,978,869

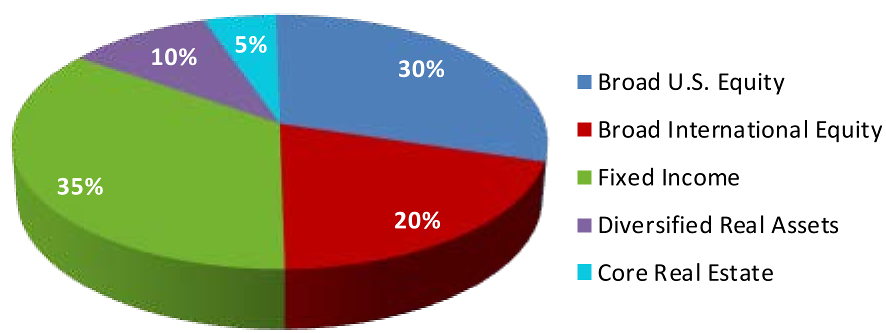
As of the date of these financial statements, earnings of the Legacy Fund eligible for transfer to General Fund at the end of the biennium is $ 381,246,278

Legacy Fund Strategic Asset Allocation

Actual Allocation
8/1/2013



Policy Allocation
January 31, 2015 to Current



Note: Amounts are preliminary, unaudited and subject to change.

NOTE: All data included in this "Preview of Investment Returns" after June 30, 2018, is unaudited and subject to change.

Legacy Fund – Actual Performance vs Policy Benchmark

Net Returns Exceed Policy Benchmark – Periods Ended 12/31/18

	Current FYTD 12/31/2018	1 Yr Ended 12/31/2018	3 Yrs Ended 12/31/2018	5 Yrs Ended 12/31/2018	Risk 5 Yrs Ended 12/31/2018	Risk Adj Excess Return 5 Yrs Ended 12/31/2018
Total Fund Return - Net	-5.60%	-5.29%	5.49%	4.31%	5.80%	0.31%
Policy Benchmark Return	-4.66%	-4.42%	4.68%	3.61%	5.19%	
Excess Return	-0.93%	-0.87%	0.81%	0.70%	OK	

1. **For the 1-Year Ended 12/31/2018**, the Legacy Fund posted a **Net Return of -5.29%** trailing the **Policy Benchmark of -4.42%** and creating negative **Excess Return of 0.87%.**

2. **For the 5-Years Ended 12/31/2018,** the Fund earned a **Net Return of 4.31%** exceeding the Policy Benchmark (of 3.61%) and creating **Excess Return of 0.70%.** Actual returns exceed Policy by over **$100 million** **for the 5 years ended 12/31/2018** (e.g. $3 billion x 0.70% = $21 million x 5 years = $105 million).

3. **The above benchmark returns were achieved while adhering to approved risk levels.**

The Policy Benchmark is 50% Equity, 35% Bonds and 15% Real Assets (including Real Estate and Infrastructure).

Note: All amounts are preliminary, unaudited and subject to change including estimates of excess returns.

Policy Benchmark Return Drivers
One-Year Period Ended 12/31/18

LEGACY FUND

1-Year Return Dec. 31, 2018	*Benchmark*	Asset Allocation	Benchmark Return	Allocation x Return
Asset Class		*a*	*b*	*a x b*
Equity	***MSCI World Index***	**50%**	**-8.71%**	**-4.4%**
Fixed Income	***Bloomberg Aggregate***	**35%**	**0.01%**	**0.0%**
Diversified Real	***US-Global TIPS / NCREIF***	**15%**	**-0.46%**	**-0.1%**
	Policy Benchmark Return (1-year)			**-4.42%**

1. The MSCI World Index returned -8.71% for 1-year ended 12/31/18.

2. The Bloomberg Aggregate Index was up 0.01% for the 1-year ended 12/31/18.

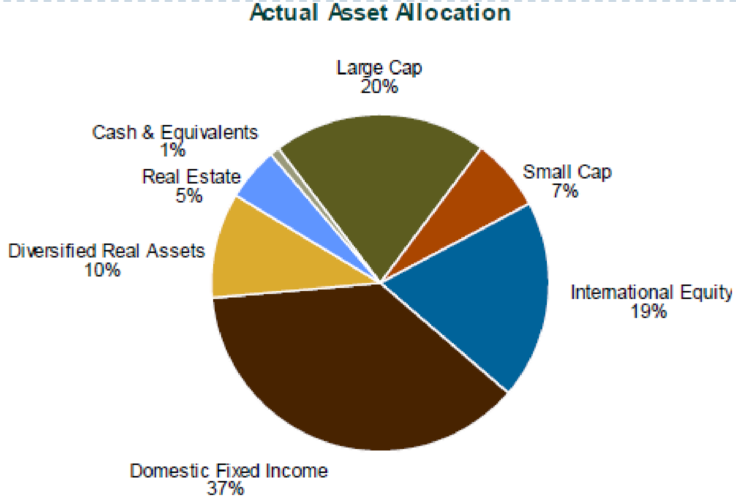
3. US-Global TIPS were down 3.37% for the 1-year ended 12/31/18.

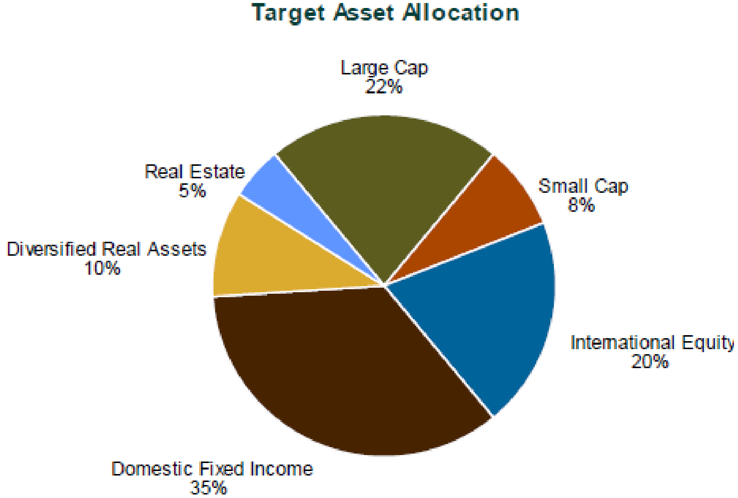
4. NCREIF Total Index was up 6.72% for the 1-year ended 9/30/18.

NCREIF = National Council of Real Estate Investment Fiduciaries

Legacy Fund

Actual Allocations are within 1.5% of Target as of Dec. 31, 2018





Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	1,153,938	20.5%	22.0%	(1.5%)	(86,124)
Small Cap	393,291	7.0%	8.0%	(1.0%)	(57,641)
International Equity	1,077,446	19.1%	20.0%	(0.9%)	(49,884)
Domestic Fixed Income	2,101,154	37.3%	35.0%	2.3%	128,327
Diversified Real Assets	569,028	10.1%	10.0%	0.1%	5,364
Real Estate	289,458	5.1%	5.0%	0.1%	7,626
Cash & Equivalents	52,333	0.9%	0.0%	0.9%	52,333
Total	5,636,649	100.0%	100.0%		

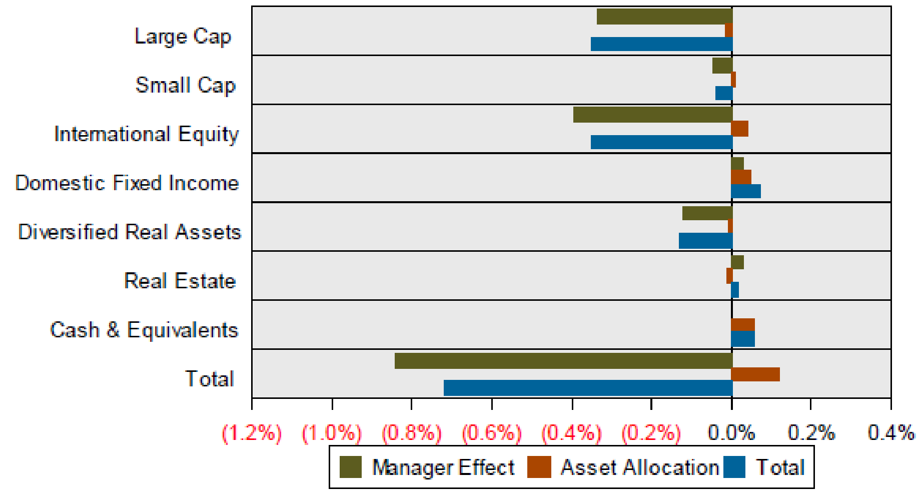
Callan notes that "Allocations are well within target ranges. The Legacy Fund's rebalancing benefits from significant monthly cash inflows which allow RIO to tightly control exposures to liquid asset classes."

Policy Benchmark = 22% Russell 1000, 8% Russell 2000, 20% MSCI World ex US, 35% Bloomberg Aggregate, 10% SIB DRA, 5% NCREIF.

Legacy Performance and Attribution

As of December 31, 2018

One Year Relative Attribution Effects



Returns for 1 Year Ended 12/31/2018

Return Type	Return (%)
Gross	-5.10%
Net of fees	-5.29%
Target	-4.38%
Net added	-0.91%

One Year Relative Attribution Effects

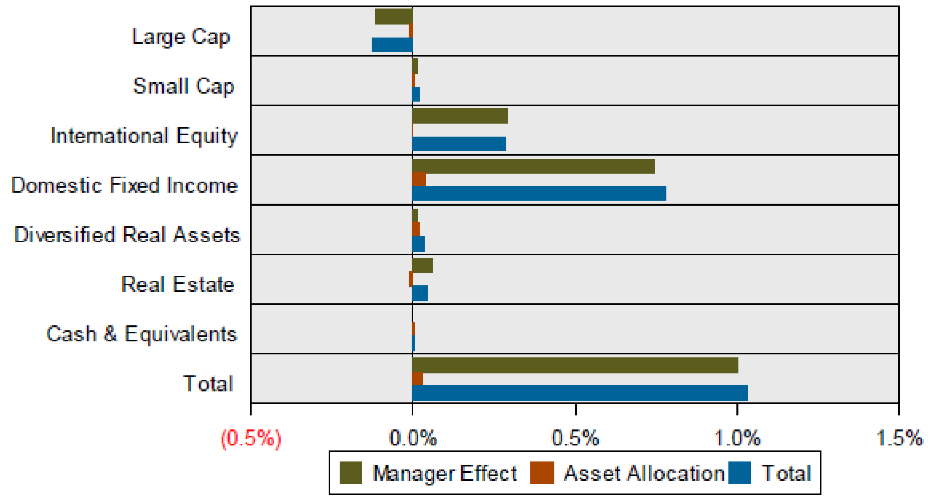
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	(6.30%)	(4.78%)	(0.33%)	(0.02%)	(0.35%)
Small Cap	8%	8%	(11.53%)	(11.01%)	(0.05%)	0.01%	(0.04%)
International Equity	20%	20%	(16.03%)	(14.09%)	(0.39%)	0.04%	(0.35%)
Domestic Fixed Income	35%	35%	0.18%	0.01%	0.03%	0.05%	0.07%
Diversified Real Assets	10%	10%	(2.39%)	(1.12%)	(0.12%)	(0.01%)	(0.13%)
Real Estate	5%	5%	7.26%	6.72%	0.03%	(0.01%)	0.02%
Cash & Equivalents	1%	0%	1.73%	1.73%	0.00%	0.06%	0.06%
Total			**(5.10%) =**	**(4.38%) +**	**(0.84%) +**	**0.12%**	**(0.72%)**

Callan Knowledge. Experience. Integrity.

Legacy Performance and Attribution

As of December 31, 2018

Three Year Annualized Relative Attribution Effects



Returns for 3 Year Ended 12/31/2018

Return Type	Return (%)
Gross	5.72%
Net of fees	5.49%
Target	4.69%
Net added	0.80%

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	8.57%	9.09%	(0.11%)	(0.01%)	(0.13%)
Small Cap	8%	8%	7.60%	7.36%	0.01%	0.00%	0.02%
International Equity	20%	20%	3.95%	2.60%	0.29%	(0.00%)	0.29%
Domestic Fixed Income	35%	35%	4.23%	2.06%	0.74%	0.04%	0.78%
Diversified Real Assets	10%	10%	3.13%	2.96%	0.01%	0.02%	0.03%
Real Estate	6%	5%	8.28%	7.21%	0.06%	(0.01%)	0.04%
Cash & Equivalents	1%	0%	0.92%	0.92%	0.00%	0.00%	0.00%
Total			**5.72% =**	**4.69% +**	**1.00% +**	**0.03%**	**1.03%**

Legacy Fund
Schedule of Investment Expenses

		FY 2018			FY 2017		
		Average Market Value	Fees in $	Fees in %	Average Market Value	Fees in $	Fees in %
Investment managers' fees:							
Domestic large cap equity managers		1,157,153,749	817,082	0.07%	965,570,487	1,922,415	0.20%
Domestic small cap equity managers		424,498,126	709,704	0.17%	364,557,307	630,814	0.17%
International equity managers		1,051,633,065	4,308,926	0.41%	859,092,053	3,553,654	0.41%
Domestic fixed income managers		1,829,238,525	5,809,170	0.32%	1,481,415,976	4,987,591	0.34%
Diversified real assets managers		513,215,642	2,704,986	0.53%	406,004,165	1,368,397	0.34%
Real estate managers		273,421,343	1,490,324	0.55%	255,143,146	1,514,247	0.59%
Cash & equivalents managers		42,188,081	69,690	0.17%	12,637,988	9,758	0.08%
Total investment managers' fees	2	**5,291,348,530**	**15,909,882**	**0.30%**	**4,344,421,122**	**13,986,877**	**0.32%**
Custodian fees			430,805	0.01%		355,376	0.01%
Investment consultant fees			294,600	0.01%		222,477	0.01%
Total investment expenses		1	**16,635,287**	**0.31%**		**14,564,731**	**0.34%**
Total Performance Fees Paid (included in total above)			**190,922**	**0.00%**		**2,167,158**	**0.05%**
Actual Investment Performance (Net of Fees)				**7.57%**			**12.03%**
Policy Benchmark				**6.51%**			**9.91%**
			Outperformance 3	**1.06%**		**Outperformance**	**2.12%**

- **Investment fees and expenses declined to 0.31% in fiscal 2018 from 0.34% in fiscal 2017 largely due to a sharp decline in performance fees (as Outperformance declined to 1.06% in FY 2018 versus 2.12% in FY 2018).**

- **The use of active management paid significant returns for the Legacy Fund in Fiscal 2018 as we paid 1 $16.6 million in fees to outperform our stated benchmarks by 3 1% or $50 million (2 $5 billion x 3 1% = $50 million).**

The above amounts are based on unaudited data that is deemed to be materially accurate but subject to change.

ND Legacy Fund
Summary of Deposits, Earnings and Net Position
As of January 31, 2019

	Deposits	Total Net Earnings	Net Increase/ (Decrease)	Ending Net Position	Earnings as defined in NDCC 21-10-12
FY2012	**396,585,658**	2,300,225	398,885,883	398,885,883	**2,571,475**
FY2013	**791,126,479**	4,216,026	795,342,505	1,194,228,388	**15,949,089**
FY2014	**907,214,971**	113,153,662	1,020,368,633	2,214,597,021	**50,033,655**
FY2015	**1,011,343,040**	99,895,650	1,111,238,690	3,325,835,711	**95,143,905**
FY2016	**434,853,950**	45,851,680	480,705,630	3,806,541,341	**65,326,673**
FY2017	**399,501,134**	479,595,256	879,096,390	4,685,637,731	**207,814,875**
Totals	**3,940,625,232**	745,012,499	4,685,637,731	4,685,637,731	**436,839,672**
					Transferrable Earnings
FY2018	**529,870,755**	**360,575,532**	**890,446,287**	**5,576,084,018**	**242,859,840**
FY2019 *	***438,643,210***	***(51,977,990)***	***386,665,220***	***5,962,749,238***	***138,386,438***
		308,597,542			***381,246,278***
Life-to-date Totals	**4,909,139,197**	**1,053,610,041**	**5,962,749,238**	**5,962,749,238**	**818,085,950**

** FY2019 amounts are preliminary and unaudited.*

All earnings prior through 6/30/17 became part of principal.

The Legacy Fund exceeded $5.9 billion at Dec. 31, 2018. Net Investment Income exceeds $1.0 billion since inception including $309 million in Fiscal 2018-19. Earnings as defined by NDCC 21-10-12, which exclude net unrealized gains and losses, exceed $381 million for the 19 months ended January 31, 2019.

NDCC 21-10-12 defines "earnings" as net income in accordance with generally accepted accounting principles <u>excluding any unrealized gains or losses</u>.

The Legacy Fund investment policy statement was reviewed and approved by the Advisory Board and SIB on May 24-25, 2018 for accuracy and completeness.

NORTH DAKOTA LEGACY FUND
INVESTMENT POLICY STATEMENT

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS

The North Dakota legacy fund was created in 2010 when the voters of North Dakota approved a constitutional amendment--now Article X, Section 26, of the Constitution of North Dakota--to provide that 30 percent of oil and gas gross production and oil extraction taxes on oil and gas produced after June 30, 2011, be transferred to the legacy fund. The principal and earnings of the legacy fund may not be spent until after June 30, 2017, and any expenditure of principal after that date requires a vote of at least two-thirds of the members elected to each house of the Legislative Assembly. Not more than 15 percent of the principal of the legacy fund may be spent during a biennium. The Legislative Assembly may transfer funds from any source to the legacy fund, and such transfers become part of the principal of the fund. The State Investment Board (SIB) is responsible for investment of the principal of the legacy fund. Interest earnings accruing after June 30, 2017, are transferred to the general fund at the end of each biennium. North Dakota Century Code Section 21-10-11 provides that the goal of investment for the legacy fund is principal preservation while maximizing total return.

2. FUND MISSION

The legacy fund was created, in part, due to the recognition that state revenue from the oil and gas industry will be derived over a finite timeframe. The legacy fund defers the recognition of 30 percent of this revenue for the benefit of future generations. The primary mission of the legacy fund is to preserve the real inflation-adjusted purchasing power of the money deposited into the fund while maximizing total return.

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD

The Legacy and Budget Stabilization Fund Advisory Board (the "Advisory Board") is charged by law under Section 21-10-11 with the responsibility of recommending policies on investment goals and asset allocation of the legacy fund. The SIB is charged with implementing policies and asset allocation and investing the assets of the legacy fund in the manner provided in Section 21-10-07--the prudent institutional investor rule. The fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 is hereby delegated to the SIB, which must establish written policies for the operation of the investment program consistent with this investment policy.

The SIB may delegate investment responsibility to professional money managers, which are also required to employ investment strategies consistent with the investment policy. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory not advisory.

At the discretion of the SIB, the fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and the objectives of the funds participating in the pool.

The SIB is responsible for establishing criteria, procedures, and making decisions with respect to hiring, retaining, and terminating money managers. The SIB investment responsibility also includes selecting performance measurement services, consultants, report formats, and frequency of meetings with managers.

The SIB shall notify the Advisory Board within 30 days of any substantial or notable changes in money managers; performance measurement services; and consultants, including hiring or terminating a money manager, performance measurement service, or a consultant.

The SIB, after consultation with the board, will implement necessary changes to this policy in an efficient and prudent manner.

4. RISK TOLERANCE

The Advisory Board's risk tolerance with respect to the primary aspect of the legacy fund's mission is low. The Advisory Board is unwilling to undertake investment strategies that might jeopardize the ability of the legacy fund to maintain principal value over time. The Advisory Board recognizes that the plan will evolve as the legacy fund matures and economic conditions and opportunities change.

5. INVESTMENT OBJECTIVES

The Advisory Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The legacy fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB:

a. The legacy fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
b. The legacy fund's risk, measured by the standard deviation of net returns, should not exceed 115 percent of the policy benchmark over a minimum evaluation period of five years.
c. The risk-adjusted performance of the legacy fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

6. POLICY ASSET MIX

After consideration of all the inputs and a discussion of its own collective risk tolerance, the Advisory Board approved the following policy asset mix for the legacy fund as of April 2, 2013:

Asset Class	Policy Target Percentage
Broad US Equity	**30%**
Broad International Equity	**20%**
Fixed Income and BND CD	**35%**
Core Real Estate	**5%**
Diversified Real Assets	**10%**

Rebalancing of the fund to this target will be done in accordance with the SIB's rebalancing policy, but not less than annually. The SIB approved an 18-month implementation strategy which completed in January of 2015. On June 17, 2017, the Advisory Board acknowledged the transfer of the Bank of North Dakota Match Loan Certificates of Deposit Program ("BND CD") to the Legacy Fund in early-2017. The BND CD investment will be limited to the lesser of $200 million or 5% of the Legacy Fund (and represent a sector allocation within fixed income). The Advisory Board approved this future change in the Legacy Fund's asset allocation without exception. BND will be requested to guarantee a minimum 1.75% investment return. The minimum return requirement will be periodically reviewed in connection with the Legacy Fund's overall asset allocation framework. BND CD's are rated AA by S&P.

7. RESTRICTIONS

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the legacy fund's assets will be invested, it is understood that:

a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
b. Derivatives use will be monitored to ensure that undue risks are not taken by the money managers.
c. No transaction may be made that would threaten the tax-exempt status of the legacy fund.
d. All assets will be held in custody by the SIB's master custodian or such other custodians as are acceptable to the SIB.
e. No unhedged short sales or speculative margin purchases may be made.
f. Social investing is prohibited unless it meets the exclusive benefit rule, and it can be substantiated that the investment provides an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk. For the purpose of this document, social investing is defined as the consideration of socially responsible criteria in the investment or commitment of public fund money for the purpose of obtaining an effect other than a maximized return to the Fund.
g. Economically targeted investing is prohibited unless the investment meets the exclusive benefit rule.

For the purpose of this document, economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy. Also, for the purpose of this document, the exclusive benefit rule is met if the following four conditions are satisfied:

- The cost does not exceed the fair market value at the time of investment.
- The investment provides the legacy fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
- Sufficient liquidity is maintained in the legacy fund to permit distributions in accordance with the terms of the plan.
- The safeguards and diversity that a prudent investor would adhere to are present.
- Where investment characteristics, including yield, risk, and liquidity, are equivalent, the Advisory Board's policy favors investments which will have a positive impact on the economy of North Dakota.

8. INTERNAL CONTROLS

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for investment manager selection and monitoring. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions, and compliance with the investment policy.

9. EVALUATION AND REVIEW

Investment management of the legacy fund will be evaluated against the fund's investment objectives and investment performance standards. Emphasis will be placed on 5-year and 10-year results. Evaluation should include an assessment of the continued feasibility of achieving the investment objectives and the appropriateness of the investment policy statement for achieving those objectives.

Performance reports will be provided to the Advisory Board periodically, but not less than quarterly. Such reports will include asset returns and allocation data. Additionally, not less than annually, reports will include information regarding all significant and/or material matters and changes pertaining to the investment of the legacy fund, including:

- Changes in asset class portfolio structures, tactical approaches, and market values.
- Loss of principal, if any.
- Management costs associated with various types of investments.
- All material legal or legislative proceedings affecting the SIB.
- Compliance with this investment policy statement.
- An evaluation of the national economic climate.
- A forecast of the expected economic opportunities and dangers.
- Management of risk by the SIB.

In addition to the quarterly and annual evaluation and review process, the SIB shall notify the Advisory Board within 30 days of any substantial or notable deviation from the normal management of the legacy fund, including any anomalies, notable losses, gains, or liquidation of assets affecting the fund.

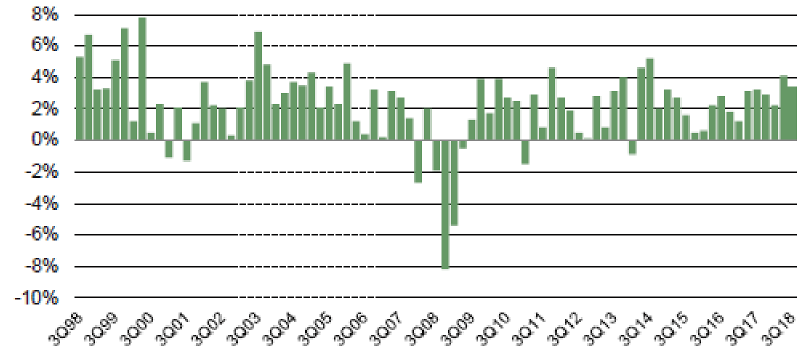
RIO is available to assist the Advisory Board establish separate formal governance policies, if so directed.

U.S. Economy

December 31, 2018

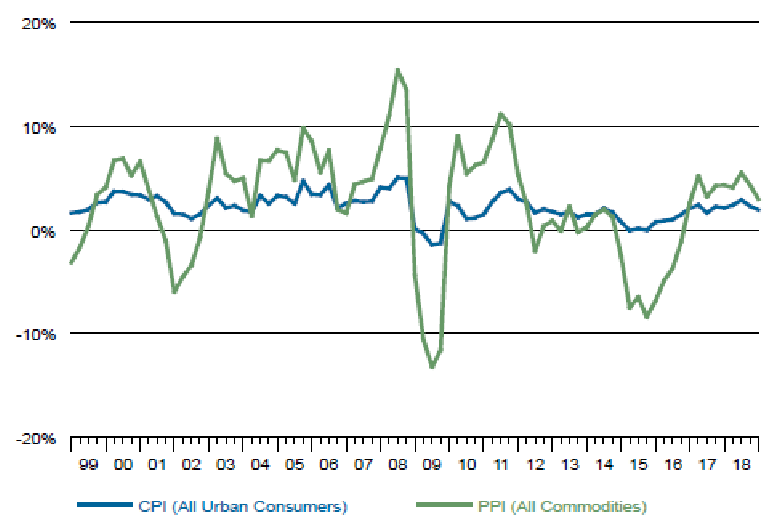
- The final revision of third quarter GDP growth came in at 3.4% (annualized)
  - Down from 4.2% in the second quarter, and revised 10 basis points lower from the first two estimates
  - Consumer spending up 3.5% (annualized); down slightly from a strong 3.8% in Q2
  - As of February 6, Federal Reserve Officials are projecting fourth quarter GDP will come in at 2.7% (annualized)
- Labor market remains strong
  - Unemployment climbed to 3.9% in December; although this was largely due to a rise in the participation rate
  - Approximately 239,000 nonfarm payrolls were added per month during the fourth quarter
- Modest inflation
  - Headline CPI climbed 1.9% in 2018, while Core CPI was up 2.2% during the year
  - Core PCE in line with Fed's 2% target
- The Fed raised rates, but strikes a more dovish tone looking ahead into 2019
  - A 25 bp hike in December brought the target range to 2.25% to 2.50%
  - The Fed's outlook for 2019 has signaled market participants to expect two rate hikes instead of the previously anticipated three

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year

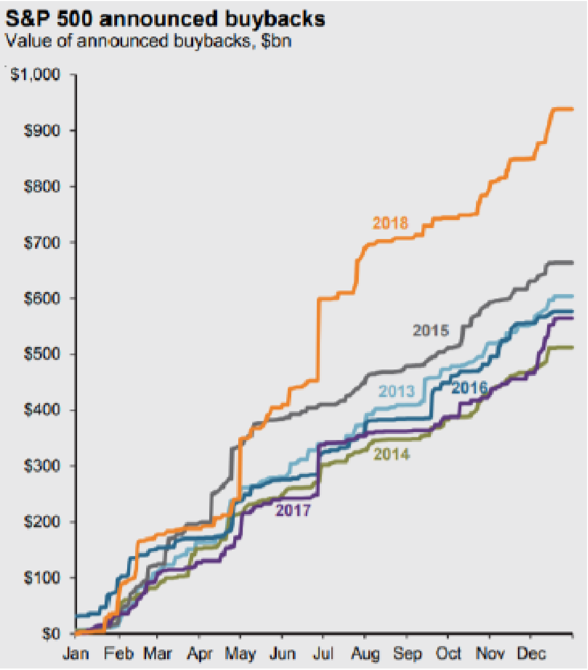


Source: Bureau of Labor Statistics

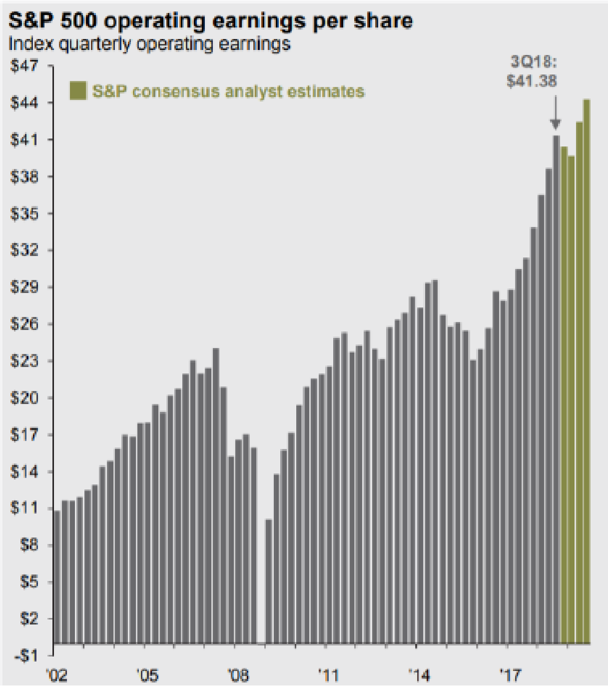
Callan Knowledge. Experience. Integrity.

S&P 500 Earnings

December 31, 2018



Source: JP Morgan Guide to the Markets. As of December 31, 2018



Source: JP Morgan Guide to the Markets. As of December 31, 2018

- For Q4 2018 (with 66% of the companies in the S&P 500 reporting actual results for the quarter), 71% of S&P 500 companies have reported a positive EPS surprise and 62% have reported a positive sales surprise
- For Q4 2018, the blended earnings growth rate for the S&P 500 is 13.3%; if 13.3% is the actual growth rate for the quarter, it will mark the fifth straight quarter of double-digit earnings growth for the index
  - Five sectors are reporting double-digit earnings growth, led by Energy, Communication Services, and Industrials

Source: FACTSET; Earnings Insight as of February 8, 2019

Asset Class Performance

Periodic Table of Investment Returns for Periods Ended December 31, 2018

Best → Worst

Last Quarter	Last 2 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
Blmbg:Aggregate 1.6%	NCREIF:NFI-ODCE Val Wt Nt 3.4%	NCREIF:NFI-ODCE Val Wt Nt 7.4%	MSCI:EM Gross 9.7%	NCREIF:NFI-ODCE Val Wt Nt 9.4%	S&P:500 13.1%	MSCI:EM Gross 8.8%
NCREIF:NFI-ODCE Val Wt Nt 1.5%	Blmbg:Aggregate 1.7%	3 Month T-Bill 1.9%	S&P:500 9.3%	S&P:500 8.5%	Russell:2000 Index 12.0%	NCREIF:NFI-ODCE Val Wt Nt 7.5%
3 Month T-Bill 0.6%	3 Month T-Bill 1.1%	Blmbg:Aggregate 0.0%	Russell:2000 Index 7.4%	Russell:2000 Index 4.4%	MSCI:EM Gross 8.4%	Russell:2000 Index 7.4%
MSCI:EM Gross (7.4%)	S&P:500 (6.9%)	S&P:500 (4.4%)	NCREIF:NFI-ODCE Val Wt Nt 7.3%	Blmbg:Aggregate 2.5%	MSCI:EAFE 6.3%	S&P:500 5.6%
Blmbg:Commodity Price Idx **(10.0%)**	MSCI:EM Gross (8.3%)	Russell:2000 Index (11.0%)	MSCI:EAFE 2.9%	MSCI:EM Gross 2.0%	NCREIF:NFI-ODCE Val Wt Nt 6.0%	Blmbg:Aggregate 4.5%
MSCI:EAFE (12.5%)	MSCI:EAFE (11.4%)	Blmbg:Commodity Price Idx **(13.0%)**	Blmbg:Aggregate 2.1%	3 Month T-Bill 0.6%	Blmbg:Aggregate 3.5%	MSCI:EAFE 3.5%
S&P:500 (13.5%)	Blmbg:Commodity Price Idx **(12.2%)**	MSCI:EAFE (13.8%)	3 Month T-Bill 1.0%	MSCI:EAFE 0.5%	3 Month T-Bill 0.4%	3 Month T-Bill 1.9%
Russell:2000 Index (20.2%)	Russell:2000 Index (17.3%)	MSCI:EM Gross (14.2%)	Blmbg:Commodity Price Idx **(0.8%)**	Blmbg:Commodity Price Idx **(9.4%)**	Blmbg:Commodity Price Idx **(4.2%)**	Blmbg:Commodity Price Idx **(0.1%)**

SIB Member & RIO Website Update - March 17, 2019

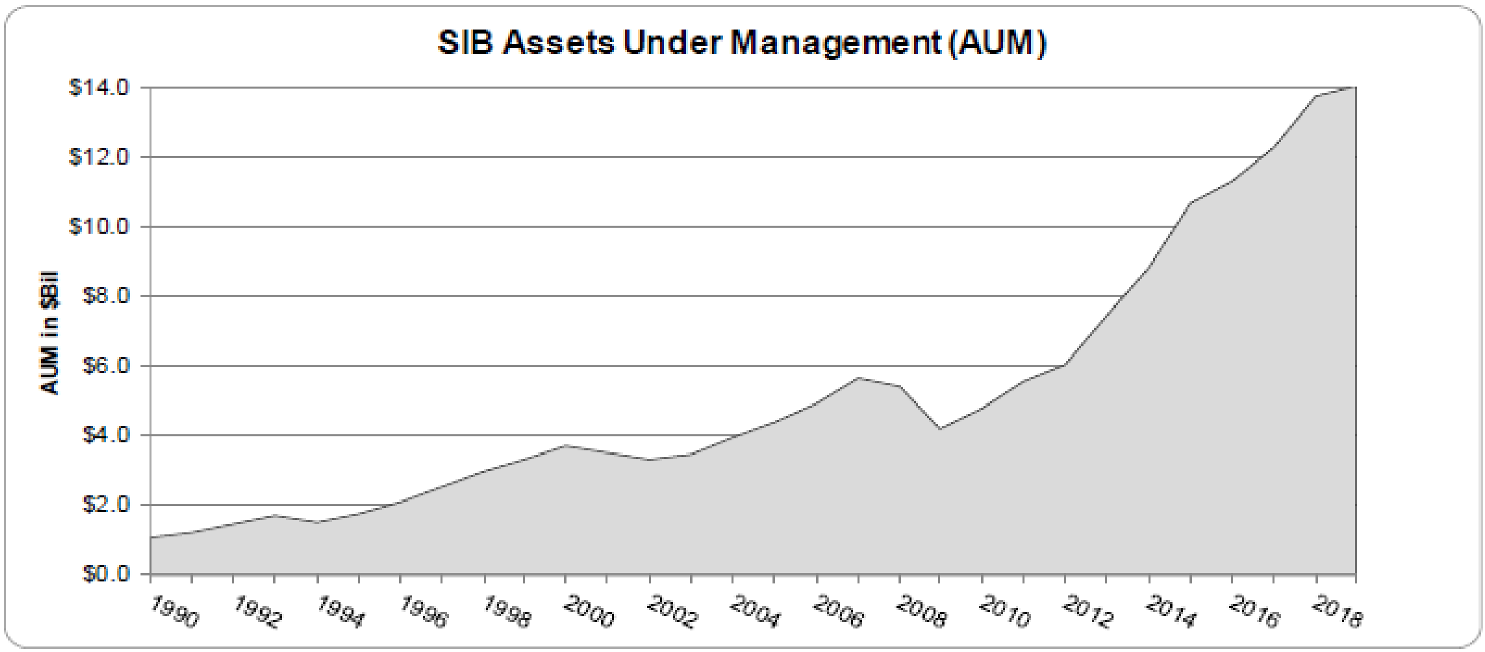
The State Investment Board includes 11 members including Lt. Governor Brent Sanford as Chairman, Rob Lech (TFFR) as Vice Chairman, Chief Deputy Attorney General Troy Seibel (PERS) as Parliamentarian, Treasurer Kelly Schmidt (who is the longest serving board member), Insurance Commissioner Jon Godfread, Cindy Ternes (as WSI designee), Land Commissioner Jodi Smith, Toni Gummeringer (TFFR), Mel Olson (TFFR), Yvonne Smith (PERS) and Adam Miller (PERS). **On May 1, 2019, Bryan Klipfel – WSI Director, will replace Cindy Ternes, after Ms. Ternes retires on April 30.**

RIO Website - Investment performance for all SIB clients, including manager level returns and balances, are generally posted to RIO's website within 30 days of month-end. In addition, the following website links provide additional information relating to SIB governance, meeting materials and our audit committee.

SIB Governance Manual - accessed by clicking on "SIB Governance Manual" under the "SIB / Board" section
http://www.nd.gov/rio/SIB/Board/GovernanceManual/default.htm

SIB Meeting Materials - accessed by clicking on "Meeting Materials" under the "SIB / Board" section
http://www.nd.gov/rio/SIB/Board/SIB%20Meeting%20Materials/default.htm

SIB client investments have grown from $6 billion in 2012 to over $14 billion as of 1/31/2019.



State Investment Board – Client Assets Under Management

	Fair Value as of 1/31/19 (unaudited)
PENSION POOL PARTICIPANTS	
Teachers' Fund for Retirement	$2,433,650,826
Public Employees Retirement System	2,983,919,412
Bismarck City Employee Pension Fund	98,735,535
Bismarck City Police Pension Fund	39,508,018
City of Grand Forks Pension Fund	63,062,924
City of Grand Forks Park District Pension Fund	6,798,834
Subtotal Pension Pool Participants	5,625,675,549
INSURANCE POOL PARTICIPANTS	
Workforce Safety & Insurance Fund	1,961,612,988
State Fire and Tornado Fund	22,472,951
State Bonding Fund	3,482,292
Petroleum Tank Release Fund	6,290,800
Insurance Regulatory Trust Fund	1,645,192
State Risk Management Fund	4,624,706
State Risk Management Workers Comp	3,643,787
Cultural Endowment Fund	447,355
Budget Stabilization Fund	115,793,892
ND Association of Counties (NDACo) Fund	5,955,606
City of Bismarck Deferred Sick Leave	735,487
PERS Group Insurance	33,199,873
State Board of Medicine	2,273,511
City of Fargo FargoDome Permanent Fund	43,072,872
Lewis & Clark Interpretive Center Endowment	706,993
Subtotal Insurance Pool Participants	2,205,958,305
INDIVIDUAL INVESTMENT ACCOUNTS	
Legacy Fund	5,963,914,071
Retiree Health Insurance Credit Fund	126,231,136
Job Service of North Dakota Pension Fund	95,637,136
Tobacco Prevention and Control Trust Fund	28,518,317
TOTAL	$14,045,934,514

Return on Investment Fees and Expenses

<u>Investment Goals for SIB Client Fees and Expenses</u>:

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 ≥ 0.50% of excess return over our stated performance benchmarks (after deducting all investment fees and expenses).
3. If we are successful in attaining both of the above goals, we are effectively earning a minimum 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).

<u>Key Point</u>: For the 5-years ended Dec. 31, 2018, the vast majority of SIB clients earned ≥ 0.50% of excess return, while fees & expenses averaged ≤ 0.50% since 2014 (see below).

All State Investment Board Clients	Investment Fees and Expenses	Average "Assets Under Management"	% of AUM
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%

<u>Key Take-Away</u>: Based on $10 billion of AUM, a 0.23% decline in fees between fiscal 2013 and 2018 translates into $23 million of <u>annual</u> 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%.

Note: All amounts are deemed to be materially accurate, but are unaudited and subject to change.

RIO Due Diligence Travel Expense Update

Fiscal Year Ended 6/30	Total Expenses	Average AUM during year	Cost as % of AUM
2012	**19,161**	**6,071,721,996**	**0.00032%**
2013	8,148	6,905,312,561	**0.00012%**
2014	20,034	8,632,237,726	**0.00023%**
2015	19,134	7,011,550,394	**0.00027%**
2016	24,997	10,896,823,143	**0.00023%**
2017	20,589	11,782,432,860	**0.00017%**
2018	**26,661**	**13,388,707,450**	**0.00020%**

RIO attempts to be fiscally prudent when traveling to conduct onsite due diligence noting that our Supervisor of Administrative Services consistently obtains reasonable fares for air travel and lodging. Our Investment Accountant, who previously worked in the State's Auditor Office, also reviews all submitted expenses for strict adherence to published State guidelines. RIO's investment staff frequently attempt to combine due diligence trips whenever possible in a prudent and cost effective manner. As example, RIO conducted onsite due diligence for the current Invesco Real Estate opportunity under consideration when completing onsite due diligence with another existing investment manager earlier this year.

RIO's due diligence travel expenses have generally ranged from $19,000 to $27,000 per year since 2012 (with one exception in fiscal 2013 due to the former CIO resigning in May of 2012). Costs as a % of average assets under management (AUM) have not exceeded 0.00032% per year noting the SIB and RIO must conduct a prudent and reasonable level of due diligence when exercising their fiduciary oversight responsibility (noting average SIB client AUM increased from $6.1 billion in 2012 to $13.4 billion in 2018).

The above amounts are based on unaudited data that is deemed to be materially accurate but subject to change.

NDCC Chapter 21-10 State Investment Board

21-10-01. State investment board - Membership - Term - Compensation – Advisory council.

The North Dakota state investment board consists of the governor, the state treasurer, the commissioner of university and school lands, the director of workforce safety and insurance, the insurance commissioner, three members of the teachers' fund for retirement board or the board's designees who need not be members of the fund as selected by that board, two of the elected members of the public employees retirement system board as selected by that board, and one member of the public employees retirement system board as selected by that board. The director of workforce safety and insurance may appoint a designee, subject to approval by the workforce safety and insurance board of directors, to attend the meetings, participate, and vote when the director is unable to attend. The teachers' fund for retirement board may appoint an alternate designee with full voting privileges to attend meetings of the state investment board when a selected member is unable to attend. The public employees retirement system board may appoint an alternate designee with full voting privileges from the public employees retirement system board to attend meetings of the state investment board when a selected member is unable to attend. The members of the state investment board, except elected and appointed officials and the director of workforce safety and insurance or the director's designee, are entitled to receive as compensation one hundred forty-eight dollars per day and necessary mileage and travel expenses as provided in sections 44-08-04 and 54-06-09 for attending meetings of the state investment board.

The state investment board may establish an advisory council composed of individuals who are experienced and knowledgeable in the field of investments. The state investment board shall determine the responsibilities of the advisory council. Members of the advisory council are entitled to receive the same compensation as provided the members of the advisory board of the Bank of North Dakota and necessary mileage and travel expenses as provided in sections 44-08-04 and 54-06-09.

21-10-02. Board - Powers and duties.

The board is charged with the investment of the funds enumerated in section 21-10-06. It shall approve general types of securities for investment by these funds and set policies and procedures regulating securities transactions on behalf of the various funds. Representatives of the funds enumerated in section 21-10-06 may make recommendations to the board in regard to investments. The board or its designated agents must be custodian of securities purchased on behalf of funds under the management of the board. The board may appoint an investment director or advisory service, or both, who must be experienced in, and hold considerable knowledge of, the field of investments. The investment director or advisory service shall serve at the pleasure of the board. The investment director or advisory service may be an individual, corporation, limited liability company, partnership, or any legal entity which meets the qualifications established herein. The board may authorize the investment director to lend securities held by the funds. These securities must be collateralized as directed by the board. The board may create investment fund pools in which the funds identified in section 21-10-06 may invest.

NDCC Chapter 21-10 State Investment Board

21-10-02.1. Board - Policies on investment goals and objectives and asset allocation.

1. The governing body of each fund enumerated in section 21-10-06 shall establish policies on investment goals and objectives and asset allocation for each respective fund. The policies must provide for:
   a. The definition and assignment of duties and responsibilities to advisory services and persons employed by the board.
   b. Rate of return objectives, including liquidity requirements and acceptable levels of risk.
   c. Long-range asset allocation goals.
   d. Guidelines for the selection and redemption of investments.
   e. Investment diversification, investment quality, qualification of advisory services, and amounts to be invested by advisory services.
   f. The type of reports and procedures to be used in evaluating performance.
2. The asset allocation and any subsequent allocation changes for each fund must be approved by the governing body of that fund and the state investment board. The governing body of each fund shall use the staff and consultants of the retirement and investment office in developing asset allocation and investment policies.

21-10-11. Legacy and budget stabilization fund advisory board.

The legacy and budget stabilization fund advisory board is created to develop recommendations for the investment of funds in the legacy fund and the budget stabilization fund to present to the state investment board. The goal of investment for the legacy fund is principal preservation while maximizing total return. The board consists of two members of the senate appointed by the senate majority leader, two members of the house of representatives appointed by the house majority leader, the director of the office of management and budget or designee, the president of the Bank of North Dakota or designee, and the tax commissioner or designee. The board shall select a chairman and must meet at the call of the chairman. The board shall report at least semiannually to the budget section. Legislative members are entitled to receive compensation and expense reimbursement as provided under section 54-03-20 and reimbursement for mileage as provided by law for state officers. The legislative council shall pay the compensation and expense reimbursement for the legislative members. The legislative council shall provide staff services to the legacy and budget stabilization fund advisory board. The staff and consultants of the state retirement and investment office shall advise the board in developing asset allocation and investment policies.

21-10-12. Legacy fund - Earnings defined.

For the purposes of section 26 of article X of the Constitution of North Dakota, the term "earnings" means net income in accordance with generally accepted accounting principles, excluding any unrealized gains or losses.

NDCC Sections 21-10-03 to 21-10-10 are not shown in this presentation.

Legacy Fund Earnings Update
November 8, 2018

<u>Overview</u>:

RIO was requested to provide a revised Legacy Fund earnings estimate for the remaining 2017-19 and upcoming 2019-21 biennia. RIO relied on oil and gas tax estimates provided by OMB and expected investment earnings over the next three years. Estimates are based on the anticipated average balance of the Legacy Fund during the forecast period acknowledging that commodity prices are volatile in addition to the impact of this price volatility on oil and gas production and related tax collections.

<u>Background</u>:

The North Dakota State Investment Board (SIB) and Legacy Fund Advisory Board completed an asset liability study in May of 2018 which confirmed the current target asset allocation of 50% equity, 35% fixed income and 15% diversified real assets. <u>Given that our current investment policy includes a 50% target allocation to public equities which are inherently subject to significant return volatility including the potential for negative investment returns over any defined time period, RIO notes it is reasonable to expect the Legacy Fund to lose money during certain periods when the equity markets are experiencing losses, credit markets are experiencing elevated defaults and/or when liquidity in the private markets is challenged</u>. Despite these investment concerns (which are present in most any return seeking portfolio), RIO is confident the Legacy Fund will meet or exceed its targeted investment return of 6% over the long term. In order to be prudent and diligent and in light of our significant fiduciary responsibility, the SIB and RIO work with expert consultants and professional investment management firms to confirm the reasonableness of our future capital market assumptions which serve as the foundation for long-term return expectations.

RIO notes the original earnings estimate of $200 million for the 2017-19 biennium was based on a 2% average "earnings" rate and anticipated Legacy Fund average balance of approximately $5 billion ($5 billion x 2% = $100 million per year or $200 million per biennium). *The* ***2%*** *average "earnings" rate was originally based on the midpoint of the RV Kuhn consultant forecast including a 6% Base Case and -2% Worst Case, noting the Worst Case was raised by 1% (from -3%) based on the expected strength of the capital markets during the prescribed time period.* **RIO notes that NDCC 21-10-12 defines "earnings" as "net income in accordance with generally accepted accounting principles, <u>excluding any unrealized gains or losses</u>." This definition of "earnings" is materially different than net investment return <u>which includes both unrealized and realized gains and losses</u>.** For comparison, the Legacy Fund generated over $1.2 billion of net investment earnings since inception (as of September 30, 2018) whereas "earnings" as defined in accordance with NDCC 21-10-12 exceeded $700 million during this same time period.

Legacy Fund "Transferrable Earnings" Estimate:

While the Legacy Fund's NDCC 21-10-12 FY 2017-19 earnings exceeded $381 million through January 31, 2019, RIO continues to maintain a conservative point estimate of "transferrable earnings" of $300 million for the 2017-19 biennium given the potential for downward earnings revisions from capital markets volatility prior to July 1, 2019. Additionally, RIO maintains a transferrable earnings" estimate of $300 million for the 2019-21 biennium.

The $300 million "transferrable earnings" estimate for the 2019-21 biennia is based on OMB's latest forecasted oil and gas tax deposits causing average Legacy investments to approximate $7.5 billion in 2019-21 while continuing to use our 2% average "earnings" rate ($7.5 billion x 2% "earnings" rate = $150 million x 2 yrs = $300 million).

	Fiscal Year Ended June 30, 2018		Fiscal Year To Date Jan 31, 2019		July 1, 2017 to Jan 31, 2019	
Interest, Divident & Other Income	$	117,456,240	$	74,222,774	$	191,679,014
Investment Expenses	$	(10,018,870)	$	(6,427,349)	$	(16,446,219)
Administrative Expenses	$	(834,828)	$	(396,769)	$	(1,231,597)
Net Interest, Divident & Other Income	**$**	**106,602,542**	**$**	**67,398,656**	**$**	**174,001,198**
Net Realized Gains and Losses on Investments	$	135,608,963	$	70,650,448	$	206,259,411
Net Securities Lending Income	$	648,335	$	337,334	$	985,669
NDCC 21-10-12 Earnings	**$**	**242,859,840**	**$**	**138,386,438**	**$**	**381,246,278**
Net Unrealized Gains and Losses	$	117,715,692	$	(190,364,428)	$	(72,648,736)
Net Investment Income after Administrative Expenses	$	360,575,532	$	(51,977,990)	$	308,597,542
Net Investment Income before Administrative Expenses	$	361,410,360	$	(51,581,221)	$	309,829,139

On March 5th, RIO affirmed that $300 million is a good conservative point estimate of Legacy Fund "transferrable earnings" for the current 2017-19 biennium and upcoming 2019-21 biennium, while noting actual NDCC 21-10-12 earnings exceeded $381 million for the 19 months ended January 31, 2019 (after increasing by $44 million in January). Although RIO believes favorable market conditions will continue in the near term, market conditions may deteriorate prior to July 1, 2019, which could easily lead to a 20% reversal in current biennium earnings. The latter scenario is what leads us to hold steady at $300 million for 2017-19, although we are optimistic we might reach the $400 million threshold if current favorable market conditions persist through June 30, 2019.

Appendix

Review of Legacy Fund "Transferrable Earnings" definition:

Although there is a reasonable belief that the long-term "transferrable earnings" rate will trend upwards towards 3% to 4% in the next decade, it is important to acknowledge that "realized earnings" will likely be negative in some future 2-year time frame.

Given the risk of a moderate market correction in the foreseeable future, RIO notes the definition of "transferrable earnings" could be revised to exclude both realized and unrealized gains and losses to minimize volatility and the potential adverse impact on our State's budgeting process. **If "transferrable earnings" were revised to only include "net investment income without any realized or unrealized gains or losses", the impact of a market correction would be significantly reduced.**

Example:

RIO notes that "net investment income without realized and unrealized gains or losses" approximated $174 million for the 19 months ended January 31, 2019 (see table on prior page). Based on this current earnings rate, net investment income without realized and unrealized gains or losses is forecasted to exceed $200 million for 2017-19. In contrast, "transferrable earnings as currently defined under NDCC 21-10-12 approximated $381 million for the 19 months ended January 31, 2019.

Sovereign Wealth Fund Institute – Linaburg-Maduell Transparency Index

The Linaburg-Maduell Transparency Index was developed at the Sovereign Wealth Fund Institute ("SWFI") by Carl Linaburg and Michael Maduell. This index is a method of rating transparency in respect to sovereign wealth funds. Pertaining to government-owned investment vehicles, where there have been concerns of unethical agendas, calls have been made to the larger "opaque" or non-transparent funds to show their intentions.

The Linaburg-Maduell Index was developed in 2008 and has since been used worldwide, by sovereign wealth funds in their official annual reports and statements, as the global standard benchmark.

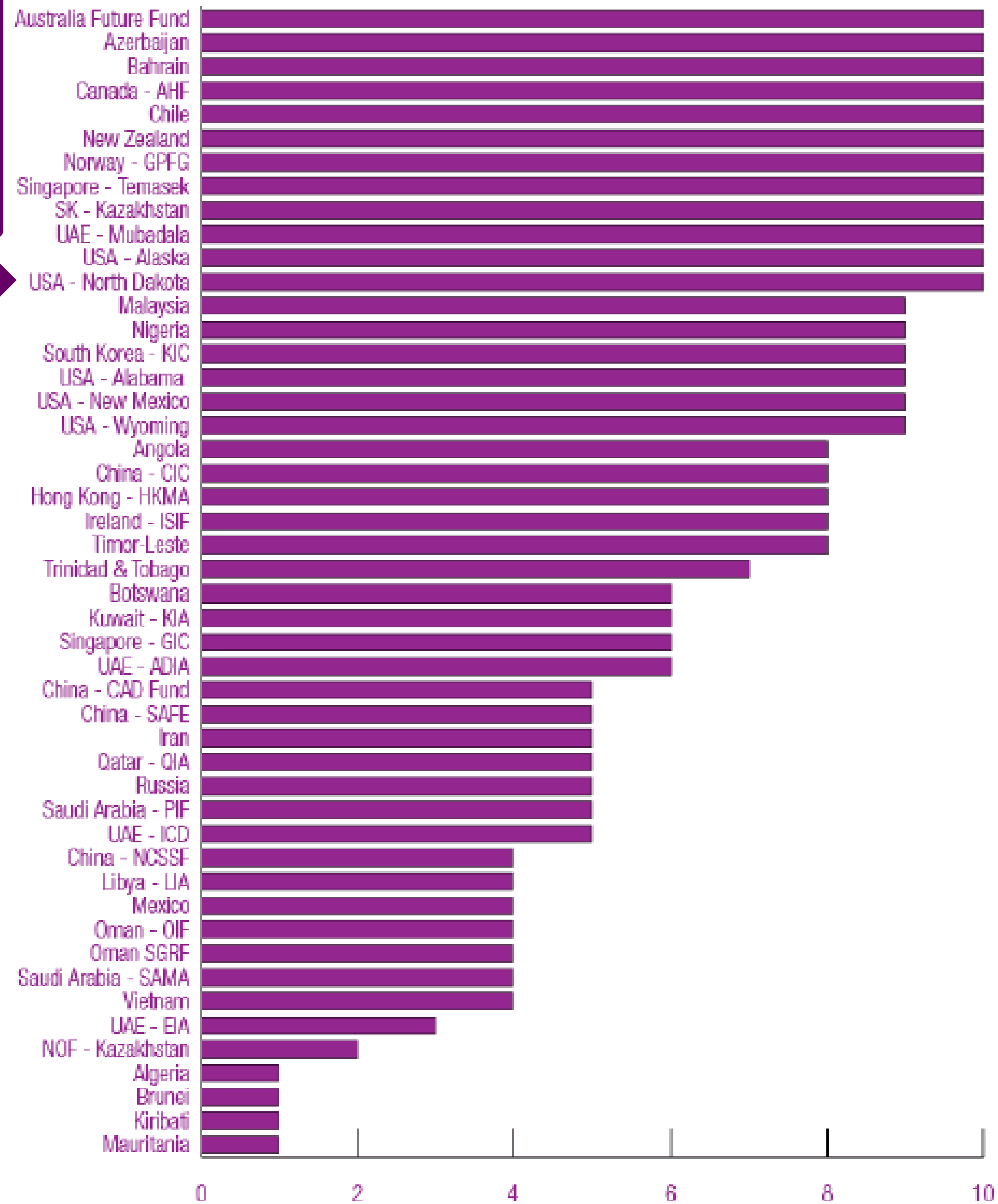
The Linaburg-Maduell index is based off ten essential principles that depict sovereign wealth fund transparency to the public. The following principles each add one point of transparency to the index rating. This index is an ongoing project of the SWFI which recommends a minimum rating of 8 in order to claim adequate transparency. Transparency ratings may change as funds release additional information. There are different levels of depth in regards to each principle, judgment of these principles is left to the discretion of the SWFI.

Point	Principles of the Linaburg-Maduell Transparency Index
+1	Fund provides history including reason for creation, origins of wealth, and government ownership structure
+1	Fund provides up-to-date independently audited annual reports
+1	Fund provides ownership percentage of company holdings, and geographic locations of holdings
+1	Fund provides total portfolio market value, returns, and management compensation
+1	Fund provides guidelines in reference to ethical standards, investment policies, and enforcer of guidelines
+1	Fund provides clear strategies and objectives
+1	If applicable, the fund clearly identifies subsidiaries and contact information
+1	If applicable, the fund identifies external managers
+1	Fund manages its own web site
+1	Fund provides main office location address and contact information such as telephone and fax

Developed by Carl Linaburg and Michael Maduell

The North Dakota Legacy Fund was upgraded to a 10 (from an 8) after the first quarter of 2018.

1st Quarter 2018 LMTI ratings



Agenda Item III.D.

INFORMATIONAL

TO: State Investment Board

FROM: Dave Hunter

DATE: March 18, 2019

SUBJECT: **Review of Legacy Fund Investment Fees and Returns**

RIO has received several legislative requests relating to SIB client investment fees and returns in comparison to the Permanent Trust Funds (PTF) of the Department of Trust Lands (DTL). The attached information represents our latest attempt to provide a comparison which is difficult given the significantly different asset allocation policies used by PTF and Legacy Fund noting the SIB has not historically invested in absolute return strategies such as global tactical asset allocation and/or commodity linked strategies. Despite these inherent challenges, the investment staff and leadership of the DTL and RIO have attempted to work towards providing a comparison of various SIB client and DTL investment portfolios. Based on review of 25 SIB client investment portfolios, RIO has selected the Legacy Fund as the most similar portfolio to the PTF of DTL given that they share comparable expected return and risk metrics of approximately 6% and 10%, respectively, as derived by Callan, and similar liquidity profiles (of 80% for PTF and 87% for Legacy) as derived by RVK's Liquidity Metric. It is important to note that these portfolios will likely perform differently over any economic cycle given their different asset allocations as referenced on the following pages. RIO invites further discussion with all involved parties in the future and sincerely appreciates the great teamwork already displayed by the investment professionals of DTL, RVK, Callan and RIO.

Review of SIB Client Investment Fees, Returns & Excess Returns for the 5 Fiscal Years Ended June 30, 2018

SIB Overview:

- For the fiscal year ended June 30, 2018, the SIB paid $56 million in investment related expenses (including investment manager fees, custodial expenses and consultant expenses), which represents a 3% increase over $54.5 million paid in fiscal 2017. The 3% increase in fees is deemed to be reasonable when noting average assets under management increased by 13.5% between years from $11.8 billion in fiscal 2017 to $13.4 billion in fiscal 2018.
- Investment fees and expenses as a percentage of average assets under management declined from 0.46% in fiscal 2017 to 0.42% in fiscal 2018 due to a decline in performance fees between years and the SIB's continuing ability to obtain lower fees with its managers largely as a result of significant asset growth the last five years (primarily attributable to the Legacy Fund).
- If internal salaries, benefits and operating expenses of RIO personnel and resources allocated to support the SIB are included, investment fees and expenses as a percentage of average assets under management were 0.43% in fiscal 2018 (versus 0.42% when excluding internal RIO investment management expenses).
- Although the SIB and RIO are keenly focused on reducing investment fees, we are most concerned with obtaining a reasonable rate of return on our investment expenses. In broad terms, RIO attempts to keep investment fees at or below 0.50% per annum, while striving to generate 0.50% of more of excess return over a five-year period. RIO is pleased and fortunate to be able to report that this goal has been achieved for the vast majority (98%) of our SIB clients for the 5 years ended June 30, 2018.
- The following table summarizes the SIB's ability to attain this goal for the Legacy Fund in four of the last 5 years (with fiscal 2016 being an exception). In fiscal 2018, the Legacy Fund paid $16.7 million of investment fees to outperform the agreed upon policy benchmark return by **$56 million**. In fiscal 2017, the Legacy Fund paid $14.6 million of investment fees to outperform the policy benchmark return by **$92 million**. In 2016, however, the Legacy Fund paid $12.8 million of investment fees to outperform the policy benchmark return by less than **$1.8 million**.

Legacy Fund Overview:

Legacy Fund - Table 1		2014	2015	2016	2017	2018
Manager Fees		$ 4,575,468	$ 9,581,934	$ 12,282,031	$ 13,986,877	$ 15,909,882
Custodial Fees		216,970	313,311	355,571	355,376	430,805
Consultant Fees		68,830	152,627	198,884	222,477	294,600
Total Fees ($)	**a**	**$ 4,861,268**	**$ 10,047,872**	**$ 12,836,486**	**$ 14,564,731**	**$ 16,635,287**
Average AUM ($ in billions)	**b**	**$1.82**	**$3.04**	**$3.58**	**$4.34**	**$5.29**
Total Fees (%)	**a/b**	**0.267%**	**0.330%**	**0.358%**	**0.335%**	**0.314%**
Total Fee (in basis points)		26.7	33.0	35.8	33.5	31.4
Actual Net Return		**6.64%**	**3.31%**	**1.06%**	**12.03%**	**7.57%**
Policy Benchmark Return		**5.54%**	**2.37%**	**1.01%**	**9.91%**	**6.51%**
Net Excess Return (%)	**c**	**1.10%**	**0.94%**	**0.05%**	**2.12%**	**1.06%**
Net Excess Return ($)	**b x c**	**$ 20,027,599**	**$ 28,584,144**	**$ 1,791,789**	**$ 92,101,728**	**$ 56,088,294**
Supplementary Data (included above):						
Incentive / Performance Fees		$558,086	$1,754,510	$1,988,561	$2,167,158	$190,922
Incentive Fees (in basis points)		**3.1**	**5.8**	**5.5**	**5.0**	**0.4**
Non-Incentive Fees		$4,303,182	$8,293,362	$10,847,925	$12,397,572	$16,444,365
Non-Incentive Fees (in basis points)		23.6	27.3	30.3	28.5	31.1
Average AUM ($ in billions)		$1.82	$3.04	$3.58	$4.34	$5.29

AUM = Assets Under Management

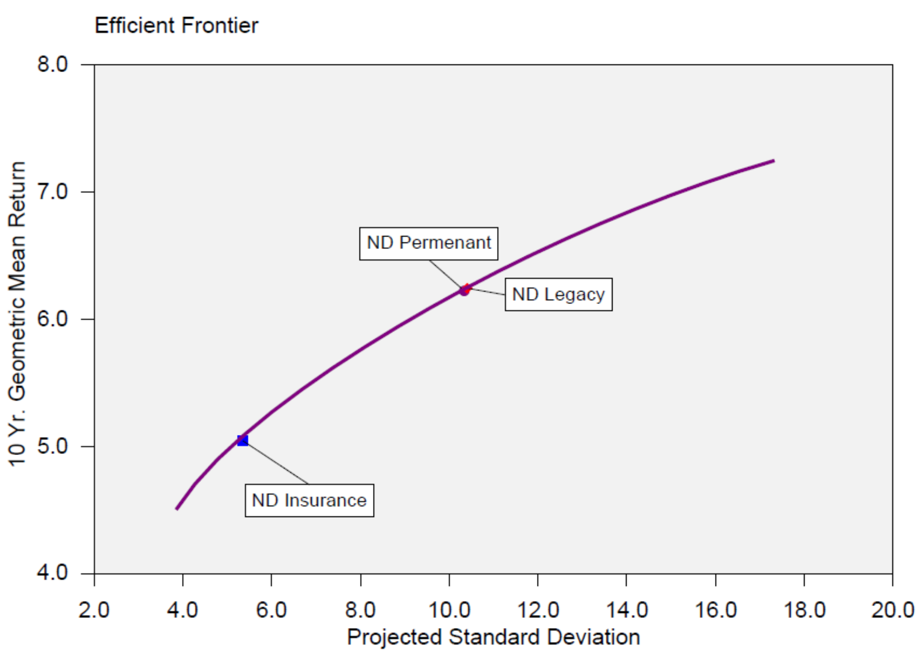
Legacy Fund – Asset Class Detail (for the fiscal years ended June 30, 2017 versus June 30, 2018):

Legacy Fund - Table 2	------- Fiscal Year Ended June 30, 2017 -------			------- Fiscal Year Ended June 30, 2018 -------		
	Fees ($)	Avg. Market Value	Fees (%)	Fees ($)	Avg. Market Value	Fees (%)
Equities	6,106,883	2,189,219,847	0.279%	5,835,712	2,633,284,940	0.222%
Fixed Income	4,997,350	1,494,053,964	0.334%	5,878,860	1,871,426,606	0.314%
Diversified Real Assets	1,368,397	406,004,165	0.337%	2,704,986	513,215,642	0.527%
Real Estate	1,514,247	255,143,146	0.593%	1,490,324	273,421,343	0.545%
Total External Management Fees	13,986,877	4,344,421,122	0.322%	15,909,882	5,291,348,530	0.301%
Custody Fees	355,376	4,344,421,122	0.008%	430,805	5,291,348,530	0.008%
Consultant Fees	222,477	4,344,421,122	0.005%	294,600	5,291,348,530	0.006%
Total External Investment Fees	**14,564,731**	**4,344,421,122**	**0.335%**	**16,635,287**	**5,291,348,530**	**0.314%**

RIO intends to share this information and performance reporting format with the investment staff of the Department of Trust Lands in an attempt to provide a more meaningful comparison of relative investment performance while noting the "Land Board" has a significantly different asset allocation than any SIB client.

Based on Callan's latest capital market assumptions, the Legacy Fund (as overseen by the SIB) has an expected return of 6% and expected risk (or standard deviation) of 10.4%, whereas the Permanent Trust Funds (PTF) also have an expected return of 6% and expected risk of 10.3%, while noting the Legacy Fund has a higher liquidity profile of 87% versus 80% for PTF (as derived by RVK's Liquidity Metric). Given the comparable risk, return and liquidity profiles of the Legacy Fund and PTF, RIO considers the Legacy Fund to be the most similar investment profile with PTF, although any comparisons are still difficult given the significantly different asset allocations as summarized below:

	Legacy Fund	Permanent Trust Funds
Equities	**50%**	**34%**
Fixed Income	**35%**	**21%**
Absolute Return	**0%**	**20%**
Real Estate	**5%**	**15%**
Div. Real Assets	**10%**	**10%**



ND Land Board Investment Fees & Expenses

Investment Management Fees and Expenses for the Fiscal Year Ended June 30, 2018

Summary

- During fiscal year 2018 the Permanent Trust Funds paid $25,081,670 in investment related expenses (includes investment manager fees, custodial expenses, and general consultant expenses); this is an increase of 19.5% over the $20,993,639 of fees paid in fiscal year 2017. Average assets increased by 11.8% during the same period, from $3.91 billion in fiscal year 2017 to $4.37 billion in fiscal year 2018. The primary driver of the increase in trust fees is a result in the growth of the Permanent Trust Funds; however, increased incentive fees also played a role.

- Incentive fees totaling $5,819,245 were paid during fiscal year 2018 due to the strong performance of the PTF's real estate portfolio; this equals 13.3 basis points on the average value of total trust assets during fiscal year 2018, or 23.1% of the total cost to management the PTF's investment program. Incentive fees totaled $3,513,737 during fiscal year 2017, the equivalent of 9.0 basis points and 16.8% of the total cost to manage the program. Managers who received incentive fees added $21.4 million of net excess return over the NCREIF ODCE Index during fiscal year 2018.

- The pooled investments of the Strategic Investment and Improvements Fund, Coal Development Trust Fund, and Capitol Building Trust Fund paid $146,372 of investment management expenses during fiscal year 2018, down from $214,894 of management fees paid in FY 2017. In both cases this represents 6 basis points on average trust assets. This decline in fees is due to the decrease in the average assets under management from fiscal year 2017 to fiscal year 2018.

Permanent Trust Fund Pool

TABLE 1	2014	2015	2016	2017	2018
Manager Fees	$8,295,916	$11,755,957	$16,026,712	$20,679,283	$24,750,026
Custodial Fees	164,440	283,925	190,257	169,356	183,019
Consultant Fees	227,000	114,000	147,917	145,000	148,625
Total Fees	**$8,687,356**	**$12,153,882**	**$16,364,886**	**$20,993,639**	**$25,081,670**
Total Fee (in bps)	30.2	35.5	46.3	53.7	57.4
Incentive Fees			**$ 1,375,889**	**$ 3,513,737**	**$ 5,819,245**
Incentive Fees (in bps)			3.9	9.0	13.3
Total Fees Ex Incentives	**$8,687,356**	**$12,153,882**	**$14,988,997**	**$17,479,902**	**$19,262,425**
Total Fee Ex Incentives (in bps)	30.2	35.5	42.4	44.7	44.1
Avg. Assets ($ billion)	**$ 2.90**	**$ 3.42**	**$ 3.53**	**$ 3.91**	**$ 4.37**

Table 1 summarizes the amount and effective rate of investment related expenses paid to manage the Permanent Trust Funds (PTFs) for each of the past five fiscal years (FY).

The increase in fees over the past five years is a result of several factors. During FY 2015 and 2016 the Board implemented a new strategic asset allocation for the PTFs. Three of these strategic asset allocation strategies (real estate, absolute return and diversified inflation) required active investment which resulted in higher overall fees than the historically more passive, low cost strategy. Approximately 4 basis points (bps) from FY 2015 to 2016 was related to incentive fees on real estate.

From FY 2016 to FY 2018, expenses increased by $8.7 million, of which $4.4 million is a result of an increase in incentive fees paid to real estate portfolio managers. The remaining balance of $4.3 million is due to trust growth, with a small portion of the increase due to minor changes made to the PTF's asset allocation and investment structure over the past two years.

Table 1 also breaks out incentive fees paid for the past three years from the base cost (excluding incentive fees) of managing the investment program; it demonstrates that the base cost of managing the program has remained stable since the PTF's current asset allocation was fully implemented in 2016. The minor increase in base costs during FY 2017 is a due to the real estate portfolio not being fully funded until June 30, 2016. The slight decrease in base costs during FY 2018 was driven by the addition of a low-cost mid-cap index fund to the PTF's equity mix and other minor structural changes to the portfolio. Fees charged for some of the commingled funds in which the PTF's invest have also declined slightly.

The major factor in increased cost structure for the PTF's over the past three years has been the incentive fees. In many cases, performance fees are based on a fund's performance over a period of time, not just one year. This results in incentive fees being paid even when the fiscal year performance has not been strong. For example, in FY 2018 UBS earned a small incentive fee even though performance for the fiscal year was slightly below the benchmark NCREIF ODCE Index.

Table 2 compares the total fees paid by the PTFs during FY 2017 to total fees paid during FY 2018, by broad asset classes.

TABLE 2	FY 2017 Fees Paid	FY 2017 Avg. Market Value *($ Million)*	FY 2017 Avg. Fee *(in bps)*	FY 2018 Fees Paid	FY 2018 Avg. Market Value *($ Million)*	FY 2018 Avg. Fee *(in bps)*
Equity	$ 2,089,294	$ 1,250.8	16.7	$ 2,369,404	$ 1,446.7	16.4
Fixed Income	2,171,591	899.4	24.4	2,374,481	954.3	25.1
Absolute Return	6,055,217	779.0	77.7	6,755,896	870.9	77.6
Inflation Strategies	2,141,332	389.0	55.0	2,405,113	440.6	54.6
Real Estate	8,221,849	594.0	138.4	10,845,132	654.7	165.6
Total Management Fees	**$ 20,679,283**	**$ 3,912.2**	**52.9**	**$ 24,750,026**	**$ 4,367.2**	**56.7**
Custody Fees	169,356	3,912.2	0.43	183,019	4,367.2	0.42
Consultant Fees	145,000	3,912.2	0.37	148,625	4,367.2	0.34
Total Fees	**$ 20,993,639**	**$ 3,912.2**	**53.7**	**$ 25,081,670**	**$ 4,367.2**	**57.4**

Comparison of Investment Risk, Returns, Fees and Performance

February 27, 2019

Dave Hunter, Executive Director / CIO
Darren Schulz, Deputy Chief Investment Officer
Connie Flanagan, Chief Financial Officer
Eric Chin, Senior Investment Analyst
ND Retirement & Investment Office (RIO)
State Investment Board (SIB)

Comparison of Expected Risk & Returns
based on Callan's 2019 Capital Market Assumptions

Comparison of Investment Fees and Expected Risk and Returns	ND Permanent Funds Fiscal 2018		ND Legacy Fund Fiscal 2018		ND Insurance Trust Fiscal 2018	
	$	%	$	%	$	%
Investment Fees and Expenses *	See DTL	See DTL	$16,635,287	0.32%	$7,020,549	0.34%

** NDSIB investment fees and expenses include performance fees (with percentages increased by 0.01% for RIO administrative expenses,*

	ND Permanent Funds	ND Legacy Fund	ND Insurance Trust
Actual Net Investment Return - Fiscal 2018	See DTL	7.57%	5.21%
Policy Benchmark - Fiscal 2018	See DTL	6.51%	3.51%
Outperformance - Fiscal 2018	See DTL	1.06%	1.70%
---------------------- Callan Provided Information based on 2019 Capital Market Assumptions ----------------------			
10-Yr. Geometric Mean Return	6.23%	6.25%	5.05%
Projected Standard Deviation	10.34%	10.41%	5.36%
Public Equity	34%	50%	20%
Private Equity	0%	0%	0%
U.S. Fixed Income	21%	35%	59%
Hedge Funds / GTAA / RVK Alpha	20%	0%	0%
Real Estate	15%	5%	5%
Diversified Inflation - TIPS, Commodities, MLP	10%	0%	0%
Diversified Real Assets - TIPS, Infra., Timber	0%	10%	12%
Cash	0%	0%	4%
	100%	100%	100%

The above information is unaudited and subject to change, but deemed to be materially accurate.

Legacy Fund (NDSIB) - Consolidated Performance History

Excess Return Attribution for the 3 or 5 Years Ended December 31, 2014 to 2018

North Dakota State Investment Board Legacy Fund Calendar Year End	1 5 Yrs Ended 12/31/2018 Excess Return	2 5 Yrs Ended 12/31/2017 Excess Return	3 5 Yrs Ended 12/31/2016 Excess Return	4 3 Yrs Ended 12/31/2015 Excess Return	5 3 Yrs Ended 12/31/2014 Excess Return
U.S. Large Cap Equity	-0.04%	0.03%	0.05%	0.04%	-0.01%
U.S. Small Cap Equity	0.00%	0.00%	0.03%	-0.02%	-0.02%
International Equity	0.15%	0.24%	0.09%	0.04%	-0.01%
U.S. Fixed Income	0.38%	0.45%	0.25%	0.11%	0.16%
Diversified Real Asset	0.07%	0.09%	0.05%	0.09%	0.00%
Global Real Estate	0.03%	0.03%	0.03%	0.02%	-0.01%
Short-Term Debt	0.04%	0.15%	0.42%	0.20%	0.77%
Cash & Cash Equiv.	-0.01%	-0.03%	-0.02%	-0.02%	-0.04%
Excess Return	**0.61%**	**0.96%**	**0.91%**	**0.46%**	**0.85%**

Note: The Legacy Fund started in 2012 with a target asset allocation of 100% short-term fixed income. Following an RVK Asset Liability Study in 2013, the target asset allocation transitioned to 50% Equity, 35% Fixed Income and 15% Real Assets by January 31, 2015.

Performance attribution history as reported by Callan Investment Measurement Service Reports at each calendar year end.

The above information is unaudited and subject to change, but deemed to be materially accurate.

Agenda Item III.E.

INFORMATIONAL

TO: State Investment Board

FROM: Dave Hunter

DATE: March 22, 2019

SUBJECT: **Callan Contract Update**

RIO intends to complete a comprehensive review of the investment consultant industry including the most well regarded firms with a strong presence with U.S. public pension plans and U.S. sovereign wealth funds in 2019. Although we expect to complete this review during the second half of 2019, RIO will continue to work towards renewing the SIB's existing two-year retainer contract with Callan in the upcoming months, with a target renewal date on or before July 1, 2019.

RIO notes that Callan has served as the SIB's primary general investment consultant since the SIB's inception in 1989, although the SIB has formally engaged with other leading investment consulting firms on a project specific basis in recent years including Aon Hewitt, Financial Recovery Technologies, KPA Advisory Services, Mercer, Northern Trust, Novarca, RVK, Adams Street and BlackRock, in order to acquire specific and/or different market intelligence in certain designated sectors. RIO has also informally worked with many other leading institutional grade consulting firms over the past five years in order to further broaden our overall investment knowledge base for the benefit of our clients.

Agenda Item IV.A.

INFORMATIONAL

TO: State Investment Board

FROM: Dave Hunter (on behalf of SIB Executive Review Committee)

DATE: March 18, 2019

SUBJECT: **Executive Review Committee Update**

In accordance with SIB Governance Manual section C-4 on **Monitoring Executive Performance**, the SIB Chairman will appoint a three-member executive review committee for the annual performance review of the Executive Director. The action was completed in February with the appointments of Yvonne Smith, Rob Lech and Mel Olsen. Ms. Yvonne Smith agreed to be Chair of the Committee.

In March and April, the Committee will conduct a formal evaluation of the Executive Director, which will likely include a 20 (or more) question survey completed by participating SIB members.

The Executive Review Committee may provide the SIB with a brief update of the annual review process at our March 22nd board meeting. The annual evaluation of the Executive Director will likely continue in April and likely be completed in May and finalized at our SIB meeting on May 24, 2019.

MEMORANDUM

TO: State Investment Board

FROM: Dave Hunter and Sara Sauter

DATE: March 22, 2019

SUBJECT: Board Self-Assessment for 2019

As requested from the State Investment Board (SIB) at the February 22, 2019 meeting, the following timeline has been proposed for the 2019 board self-assessment.

- It is recommended to have the Executive Review Committee also be the committee to oversee the process of the board self-assessment. The Committee would have the final determination on the questions answered and would review the information before it is presented to the SIB. However, if other Board members wanted to participate, a new committee could be formed. It is recommended to keep Committee participation to three members.
- Once the committee is selected, the committee will meet the week of April 1st to review the questions for the board self-assessment. A template of questions has already been created and can be modified. The template will be sent to the members of the committee beforehand to review.
- Audit Services will send out the survey either the week of April 8th or April 15th, depending on when the time of the meeting. The survey will be open for approximately two weeks. The data will then be collected and put into a report.
- The committee will meet to review the report the end of April or beginning of May. The meeting will be scheduled after the survey is completed.
- At the May 24th meeting, the SIB will receive the survey results and will be presented by Audit Services.

SIB Legislative Update
March 18, 2019

Bill No.	Description	Sponsor/Introducer
HB 1013	**Land Agency Budget & Investments**	**House Appropriations Committee/Rep. Kempenich**

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi1013.html

HB 1013 (which is the Department of Trust Lands Budget bill) includes a proposal to change NDCC so as to require the SIB to supervise investment implementation oversight of the "Common schools trust fund and other investments under the control of the board of university and school lands". Legacy Fund Advisory Board Chair Keith Kempenich indicated legislators are seeking to gain efficiencies and reduce fees by consolidating management of state funds. Sections 6 and 7 of this Act, relating to the transfer of investment oversight authority to the SIB, becomes effective on July 1, 2021, or earlier if the Land Board approves transferring these investments to the SIB. The Land Board voted unanimously to oppose this legislative action on February 13. **The House passed HB 1013 by a vote of 67-26 on February 19.** RIO attended a Senate Appropriations Committee hearing for HB 1013 on February 28.

HB 1368	**SIB Membership**	**Rep. Kempenich, Brandenburg, Kreidt and Pollert** **Senators Dotzenrod, Klein and Wardner**

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi1368.html

HB 1368 makes changes to SIB membership. HB 1368 adds one member from the Legacy and Budget Stabilization Fund Advisory Committee to serve as a non-voting member on the SIB. The House Government and Veterans Affairs Committee gave the bill a 14-0 do pass recommendation. **HB 1368 passed in the House on January 31 (91-0-3).** HB 1368 was introduced to the Senate Government and Veterans Affairs Committee on February 18. **RIO plans to attend the Senate GVA Committee hearing on HB 1368 on Friday, March 22nd.**

SB 2022	**RIO Budget**	**Appropriations Committee**

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi2022.html

SB 2022 contains the 2019-21 budget authority and continuing appropriations for RIO to administer the TFFR retirement program and SIB investment program which are special funds. RIO's budget request includes maintaining current staffing levels (19 FTE), adding one new investment professional, and seeks approval to spend up to $9.13 million to upgrade or replace TFFR's outdated pension administration system.

SB 2022 was assigned to the Senate Appropriations Committee. A sub-committee was appointed to review our budget details, with a particular focus on the TFFR pension software project. The sub-committee, consisting of Senators Poolman (Chair), Wanzek and Robinson, met with RIO. Discussion focused on: 1) why the TFFR pension system upgrade project wasn't included in the Governor's Recommendation; 2) PERS system comparisons; 3) state procurement process; and 4) whether the project could be done for less than

$9 million. After a positive discussion, the sub-committee unanimously voted to substantially approve RIO's proposed budget, including up to $9 million for the TFFR Pension Administration System project.

On February 15, the Senate Appropriations Committee gave a do pass recommendation to amended SB 2022 by a vote of 14-0. RIO's amended budget includes a 2% pay raise on July 1, 2019, and 3% pay raise on July 1, 2020, along with increased ongoing funding for health insurance, operating expenses, contingencies and one investment FTE and up to $9 million of "one-time" funding for the TFFR Pension Administration System project. **On February 18, the Senate approved SB 2022, as amended, by a vote of 46-1.** On March 6, Staff delivered prepared testimony to the House Appropriations Committee. The Committee has formed a working group to further review SB 2022.

SB 2276 Infrastructure Revolving Loan Fund Senators Heckaman, Grabinger, Mathern, Robinson
Representatives Boschee, Mock

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi2276.html

SB 2276 was originally assigned to the Education Committee, but re-referred to the Finance and Taxation Committee. RIO attended the first SB 2276 committee hearing and offered informational testimony.

The Senate Finance and Taxation Committee amended SB 2276 *"to provide a statement of legislative intent relating to legacy fund investments … that:*

1. *The Bank of North Dakota and SIB collaborate to allow for the expansion of the investment of legacy fund assets in BND programs;*
2. *The ~~**minimum**~~ **targeted** investment be 5% of the principal amount in the Legacy Fund;*
3. *The investment shall earn at least the respective U.S. Treasury Rate for the investment term, not to exceed 10 years; and*
4. *The investment be used to support community infrastructure priorities or existing economic development programs, including the BND Match (Loan CD) Program."*

On February 6, amended SB 2276 received a 5-1 do pass recommendation from the Committee. RIO's ED and Assistant AG Anders Odegaard offered meaningful background information and support to Senators Wardner and Klein in their review of the proposed legislation, which appeared to be well-received, although not entirely consistent with the amended bill. **On February 7, amended SB 2276 passed in the Senate (31-16). RIO attended the House Government and Veterans Affairs Committee meeting on SB 2276 on March 14 to offer informational testimony. RIO noted the SIB is required to adhere to the "prudent investor rule" when making all investment decisions and asset allocation guidelines are generally set using target percentages. SB 2276 received a "Do Pass" vote (9 Yeas and 5 Nays) from the GVA Committee on Friday, March 15th.**

SB 2293 Game and Fish - Special Fund Senators Oehlke, Kruen and J.Roers
Representatives Jones, Mock and Porter

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi2293.html

SB 2293 creates "a special fund known as the aquatic species nuisance program fund." "All moneys in the fund are appropriated to the game and fish department for use in aquatic nuisance species education, inspection, and monitoring programs under chapter 20.1-17." "Investment of the $15 million balance in this section **may** be made under the supervision of the state investment board."

SB 2293 was referred to the Energy and Natural Resources Committee. RIO attended the first committee hearing on January 25, for informational purposes, but offered no testimony. The Committee recommended do pass (6-0) to amended SB 2293. **SB 2293, as amended, was passed by the Senate (45-2) on February 18.** The House Energy and Natural Resources Committee held a committee hearing on March 8.

SB 2017 Game and Fish Department Budget Senators Oehlke, Kruen and J.Roers Representatives Jones, Mock and Porter

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi2293.html

On February 13, the Senate Appropriations Committee, recommended do pass (14-0) to amended SB 2017, which allows for the "Investment of up to $15 million of the game and fish fund **may** be made under the supervision of the SIB." **SB 2017, as amended, was approved by the Senate (44-1) on February 14.** The House Appropriations Committee held a hearing on SB 2017 on March 13.

HCR 3055 Legacy Fund "Earnings" Transfer Rep. Mock, Boe, Boschee, Delzer, Kempenich, Kreidt, Nathe, J. Nelson and Senator Heckaman, Klein, Unruh and Warner

https://www.legis.nd.gov/assembly/66-2019/bill-index/bi3055.html

HCR 3055 seeks to amend the State Constitution relating to the transfer of earnings from the Legacy Fund. This measure will require a vote of at least two-thirds of the members of each house of the legislative assembly to expend the principal and earnings of the Legacy Fund. On March 6, the House and Finance Taxation Committee voted (9 Yeas and 5 Nays) to recommend DO NOT PASS on HCR 3055. On March 7, the House voted (69 Yeas, 23 Nays and 2 Absent and Not Voting) to approve HCR 3055. On March 8, HCR 3055 was passed to the Senate. On March 18, the Senate Finance and Taxation Committee held its first hearing on HCR 3055.

Legislative Links:

https://www.legis.nd.gov/assembly/66-2019/regular

Agenda Item IV.D.

INFORMATIONAL

TO: State Investment Board

FROM: Dave Hunter

DATE: March 22, 2019

SUBJECT: **Board Education Offsite – July 26, 2019**

As consistent with prior years, RIO intends to schedule a board education offsite in connection with our regularly scheduled SIB meeting in July. Potential topics for consideration include best practices and current trends in board governance (with an outside speaker), establishing appropriate performance benchmarks (based on long-term capital market expectations which serve as the framework for our asset allocation policies) and evaluating overall investment performance (based on comparing actual net investment returns versus agreed upon policy benchmarks over an appropriate time horizon).

RIO invites and encourages attendees to share their thoughts on additional topics for consideration and/or advise if the previously referenced topics would be well received by our SIB members, SIB client board members and staff, and legislative leaders.

Overview of Asset Class Definitions

There are three major asset classes:

1. **Equity**
2. **Debt**
3. **Real Assets** (or Other)

Alternative Investments are often cited as the fourth major asset class, but can frequently be re-classified into one of the other three categories with some exceptions (i.e. total return strategies using debt and equity).

Equity investments represent an ownership claim on the residual assets of a company after paying off debt.

Equities should be segregated into two major sectors, Public and Private, given major differences in liquidity:

1. Public equities are generally highly liquid and *valued on a daily basis* in the financial markets. Examples include common stock (Apple, Coca-Cola or McDonalds), options and futures.
2. Private equities are generally less liquid and often *valued on a less frequent basis* (quarterly). Major PE firms include Apollo, Ares, Bain, Blackstone, Carlyle, Clayton Dubilier & Rice, CVC Capital, EQT, Fortress, KKR, Silver Lake, TPG and Warburg Pincus in addition to Adams Street, BlackRock, Neuberger Berman, Pantheon and Pathway.

Public equity markets are often sub-classified by geographic region (U.S., International or Global), market capitalization (Large, Medium or Small), investment style (core, growth or value) and level of economic development (developed or emerging markets). The top U.S. and global equity benchmarks are discussed below.

Five major U.S. equity benchmarks include the **S&P 500, Russell 1000, 2000 and 3000,** and **Dow Jones Industrial Average ("Dow")**. The **S&P 500** is based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ. The **Russell 1000** represents the highest-ranking 1,000 stocks in the Russell 3000 Index, and represents about 90% of the total market capitalization of that index. The Russell 1000 has a weighted average market capitalization of over $100 billion with a median of approximately $8 billion. The **Russell 2000 Index** is a small-cap index and represents the bottom 2,000 stocks in the Russell 3000 Index. The Russell 2000 has a weighted average market capitalization of less than $2 billion with a median of less than $1 billion. The Russell 2000 is the most common benchmark for funds that identify themselves as "small-cap", while the **S&P 500** index is used primarily for large capitalization stocks. The **Dow** is a price-weighted measure of 30 U.S. blue-chip companies. **The Dow** covers all industries with the exception of transportation and utilities, which are covered by the Dow Jones Transportation Average and Dow Jones Utility Average. While stock selection is not governed by quantitative rules, a stock typically is added to The Dow only if the company has an excellent reputation, demonstrates sustained growth and is of interest to a large number of investors. Maintaining adequate sector representation within the indices is also a consideration in the selection process.

The **MSCI All Country World Index** (or "ACWI") measures the equity market performance of developed and emerging markets and consists of 47 country indexes comprising 23 developed and 24 emerging market country indexes. The ACWI includes approximately 2,500 large and mid-cap equity securities and covers 85% of the global investable market. The **MSCI ACWI Investible Market Index** (or "ACWI IMI") captures large, mid and small cap securities across 23 developed and 24 emerging market countries with over 8,700 constituents and covering approximately 99% of the global investment opportunity set. The developed market countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, UK and US. The emerging market countries are listed below. The **MSCI EAFE Index (Europe, Australasia, Far East)** measures the equity market performance of the developed market countries, excluding the US & Canada. The **MSCI Emerging Markets Index** measures equity market performance of emerging markets and consists of the following 24 countries: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates.

Public equity has historically provided **high investment returns with high volatility and high liquidity when compared to Bonds or Real Assets**. Most investment consultants believe that Private Equity will provide an even higher investment return than Public Equity, albeit with significant less liquidity and potentially higher volatility.

Debt represents a legal obligation between a borrower and a lender for a stated period of time and rate.

Debt or "Bonds" are classified as fixed or floating depending upon whether the interest rate is derived using a fixed rate (i.e. 5%) or a floating rate (i.e. Prime + 1.00%). Duration risk within fixed income is a major driver of investment risk and return particularly for longer term securities, including U.S. Treasury bonds.

Debt is often sub-classified into investment grade (rated BBB- or better) or non-investment grade (rated less than BBB- or non-rated) or by geographic region (U.S., International, Developed Markets or Emerging Markets). Debt can be issued by governments, agencies or companies and represent general obligations of the issuer or be backed by a specified pool of assets (i.e. mortgage backed securities). Bonds serve to diversify a portfolio by offering **lower volatility** than equities along with a **lower expected return and generally high liquidity**.

Real Assets represent an ownership interest in physical assets such as real estate, infrastructure (airports, electrical grids, energy pipelines, information technology data centers and systems, shipping ports, toll roads, and water supply and treatment facilities), timberland and certain commodities (gold, oil, wheat). Real assets are expected to provide inflation hedging characteristics in periods of unanticipated inflation and diversify a portfolio consisting of debt and equity.

Alternative Investments can include precious metals, art, antiques, and financial assets such as derivatives, commodities, private equity, distressed debt and hedge funds. Real estate, infrastructure and forestry/timber are also often termed alternative. Alternatives are sometimes used as a tool to reduce overall investment risk through diversification and may offer lower correlation with traditional financial investments such as stocks and bonds, although it may be difficult to determine the current market value of the asset, may be illiquid, purchase and sales costs may be high, and there may be limited historical risk and return data, all of which makes analysis complex.

Callan's 2018 Capital Markets Expectations for Return and Risk by major asset class and sector are summarized below and helpful when comparing the projected benefits and risks of each investment class.

2018 Capital Market Projections – Return and Risk

Summary of Callan's Long-Term Capital Market Projections (2018 – 2027)

		PROJECTED RETURN			PROJECTED RISK		
Asset Class	Index	1-Year Arithmetic	10-Year Geometric*	Real	Standard Deviation	Sharpe Ratio	Projected Yield
Equities							
Broad Domestic Equity	Russell 3000	8.30%	6.85%	4.60%	18.25%	0.332	2.00%
Large Cap	S&P 500	8.05%	6.75%	4.50%	17.40%	0.333	2.10%
Small/Mid Cap	Russell 2500	9.30%	7.00%	4.75%	22.60%	0.312	1.55%
Global ex-U.S. Equity	MSCI ACWI ex USA	8.95%	7.00%	4.75%	21.00%	0.319	3.10%
International Equity	MSCI World ex USA	8.45%	6.75%	4.50%	19.70%	0.315	3.25%
Emerging Markets Equity	MSCI Emerging Markets	10.50%	7.00%	4.75%	27.45%	0.301	2.65%
Fixed Income							
Short Duration	Barclays G/C 1-3	2.60%	2.60%	0.35%	2.10%	0.167	2.85%
Domestic Fixed	Barclays Aggregate	3.05%	3.00%	0.75%	3.75%	0.213	3.50%
Long Duration	Barclays Long G/C	3.50%	3.00%	0.95%	10.95%	0.116	4.45%
TIPS	Barclays TIPS	3.10%	3.00%	0.75%	5.25%	0.162	3.35%
High Yield	Barclays High Yield	5.20%	4.75%	2.50%	10.35%	0.285	7.75%
Non-U.S. Fixed	Barclays Global Aggregate ex US	1.80%	1.40%	-0.85%	9.20%	-0.049	2.50%
Emerging Market Debt	EMBI Global Diversified	4.85%	4.50%	2.25%	9.60%	0.271	5.75%
Other							
Real Estate	Callan Real Estate	6.90%	5.75%	3.50%	16.35%	0.284	4.75%
Private Equity	TR Post Venture Cap	12.45%	7.35%	5.10%	32.90%	0.310	0.00%
Hedge Funds	Callan Hedge FOF Database	5.35%	5.05%	2.80%	9.15%	0.339	2.25%
Commodities	Bloomberg Commodity	4.25%	2.65%	0.40%	18.30%	0.109	2.25%
Cash Equivalents	90-Day T-Bill	2.25%	2.25%	0.00%	0.90%	0.000	2.25%
Inflation	CPI-U		2.25%		1.50%		

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).

Source: Callan LLC

The Callan Periodic Table of Investment Returns

Annual Returns for Key Indices Ranked in Order of Performance (1999–2018)

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-U.S. Equity 27.92%	Real Estate 13.84%	U.S. Fixed Income 8.43%	Non-U.S. Fixed Income 22.37%	Emerging Market Equity 55.82%	Real Estate 37.96%	Emerging Market Equity 34.00%	Real Estate 42.12%	Emerging Market Equity 39.38%	U.S. Fixed Income 5.24%	Emerging Market Equity 78.51%	Small Cap Equity 26.85%	U.S. Fixed Income 7.84%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 15.02%	Large Cap Equity 1.38%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	Cash Equivalent 1.87%
Small Cap Equity 21.26%	U.S. Fixed Income 11.63%	High Yield 5.28%	U.S. Fixed Income 10.26%	Small Cap Equity 47.25%	Emerging Market Equity 25.55%	Real Estate 15.35%	Emerging Market Equity 32.17%	Non-U.S. Equity 12.44%	Non-U.S. Fixed Income 4.39%	High Yield 58.21%	Real Estate 19.63%	High Yield 4.98%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	U.S. Fixed Income 0.55%	High Yield 17.13%	Non-U.S. Equity 24.21%	U.S. Fixed Income 0.01%
Large Cap Equity 21.04%	Cash Equivalent 6.18%	Cash Equivalent 4.42%	Real Estate 2.82%	Real Estate 40.69%	Non-U.S. Equity 20.38%	Non-U.S. Equity 14.47%	Non-U.S. Equity 25.71%	Non-U.S. Fixed Income 11.03%	Cash Equivalent 2.06%	Real Estate 37.13%	Emerging Market Equity 18.88%	Non-U.S. Fixed Income 4.36%	Non-U.S. Equity 16.41%	Non-U.S. Equity 21.02%	U.S. Fixed Income 5.97%	Cash Equivalent 0.05%	Large Cap Equity 11.96%	Large Cap Equity 21.83%	High Yield -2.08%
Real Estate 8.87%	Small Cap Equity -3.02%	Small Cap Equity 2.49%	Cash Equivalent 1.78%	Non-U.S. Equity 39.42%	Small Cap Equity 18.33%	Large Cap Equity 4.91%	Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -26.16%	Non-U.S. Equity 33.67%	High Yield 15.12%	Large Cap Equity 2.11%	Small Cap Equity 16.35%	High Yield 7.44%	Small Cap Equity 4.89%	Real Estate -0.79%	Emerging Market Equity 11.19%	Small Cap Equity 14.65%	Non-U.S. Fixed Income -2.15%
Cash Equivalent 4.85%	Non-U.S. Fixed Income -3.91%	Emerging Market Equity -2.61%	High Yield -1.37%	High Yield 28.97%	Non-U.S. Fixed Income 12.54%	Small Cap Equity 4.55%	Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Small Cap Equity 27.17%	Large Cap Equity 15.06%	Cash Equivalent 0.10%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield 2.45%	Non-U.S. Equity -3.04%	Real Estate 4.06%	Non-U.S. Fixed Income 10.51%	Large Cap Equity -4.38%
High Yield 2.39%	High Yield -5.86%	Non-U.S. Fixed Income -3.75%	Emerging Market Equity -6.16%	Large Cap Equity 28.68%	High Yield 11.13%	Cash Equivalent 3.07%	High Yield 11.85%	Cash Equivalent 5.00%	Large Cap Equity -37.00%	Large Cap Equity 26.47%	Non-U.S. Equity 8.95%	Small Cap Equity -4.18%	High Yield 15.81%	Cash Equivalent 0.07%	Cash Equivalent 0.03%	Small Cap Equity -4.41%	Non-U.S. Equity 2.75%	Real Estate 10.36%	Real Estate -5.63%
U.S. Fixed Income -0.83%	Large Cap Equity -9.11%	Real Estate -3.81%	Non-U.S. Equity -15.80%	Non-U.S. Fixed Income 19.36%	Large Cap Equity 10.88%	High Yield 2.74%	Non-U.S. Fixed Income 8.16%	High Yield 1.87%	Non-U.S. Equity -43.56%	Non-U.S. Fixed Income 7.53%	U.S. Fixed Income 6.54%	Real Estate -6.46%	U.S. Fixed Income 4.21%	U.S. Fixed Income -2.02%	Emerging Market Equity -2.19%	High Yield -4.47%	U.S. Fixed Income 2.65%	High Yield 7.50%	Small Cap Equity -11.01%
Non-U.S. Fixed Income -8.83%	Non-U.S. Equity -13.37%	Large Cap Equity -11.89%	Small Cap Equity -20.48%	U.S. Fixed Income 4.10%	U.S. Fixed Income 4.34%	U.S. Fixed Income 2.43%	Cash Equivalent 4.85%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Non-U.S. Fixed Income 4.95%	Non-U.S. Equity -12.21%	Non-U.S. Fixed Income 4.09%	Emerging Market Equity -2.60%	Non-U.S. Fixed Income -3.09%	Non-U.S. Fixed Income -6.02%	Non-U.S. Fixed Income 1.49%	U.S. Fixed Income 3.54%	Non-U.S. Equity -14.09%
		Non-U.S. Equity -21.40%	Large Cap Equity -22.10%	Cash Equivalent 1.15%	Cash Equivalent 1.33%	Non-U.S. Fixed Income -8.65%	U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	Cash Equivalent 0.21%	Cash Equivalent 0.13%	Emerging Market Equity -18.42%	Cash Equivalent 0.11%	Non-U.S. Fixed Income -3.08%	Non-U.S. Equity -4.32%	Emerging Market Equity -14.92%	Cash Equivalent 0.33%	Cash Equivalent 0.86%	Emerging Market Equity -14.58%

The Callan Periodic Table of Investment Returns conveys the strong ***case for diversification*** across asset classes (stocks vs. bonds), capitalizations (large vs. small), and equity markets (U.S. vs. non-U.S.). The Table highlights the uncertainty inherent in all capital markets. Rankings change every year. Also noteworthy is the difference between absolute and relative performance, as returns for the top-performing asset class span a wide range over the past 20 years.

20th Anniversary Edition

Callan | **Knowledge. Experience. Integrity.**

The Callan Periodic Table of Investment Returns 1999–2018

Callan's Periodic Table of Investment Returns depicts annual returns for 8 asset classes, ranked from best to worst performance for each calendar year. The asset classes are color-coded to enable easy tracking over time. We describe the well-known, industry-standard market indices that we use as proxies for each asset class in the text below.

- **Large Cap Equity (S&P 500)** measures the performance of large capitalization U.S. stocks. The S&P 500 is a market-value-weighted index of 500 stocks. The weightings make each company's influence on the Index performance directly proportional to that company's market value.
- **Small Cap Equity (Russell 2000)** measures the performance of small capitalization U.S. stocks. The Russell 2000 is a market-value-weighted index of the 2,000 smallest stocks in the broad-market Russell 3000 Index.
- **Non-U.S. Equity (MSCI World ex USA)** is an international index that is designed to measure the performance of large and mid cap equities in developed markets in Europe, the Middle East, the Pacific region, and Canada.
- **Emerging Market Equity (MSCI Emerging Markets)** is an international index that is designed to measure the performance of equity markets in 24 emerging countries around the world.
- **U.S. Fixed Income (Bloomberg Barclays US Aggregate Bond Index)** includes U.S. government, corporate, and mortgage-backed securities with maturities of at least one year.
- **High Yield (Bloomberg Barclays High Yield Bond Index)** measures the market of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below, excluding emerging market debt.
- **Non-U.S. Fixed Income (Bloomberg Barclays Global Aggregate ex US Bond Index)** is an unmanaged index that is comprised of several other Bloomberg Barclays indices that measure the fixed income performance of regions around the world, excluding the U.S.
- **Real Estate (FTSE EPRA/NAREIT Developed REIT Index)** is designed to measure the stock performance of companies engaged in specific real estate activities in the North American, European, and Asian real estate markets.
- **Cash Equivalent (3-month Treasury Bill)** is a short-term debt obligation backed by the Treasury Department of the U.S. government with a maturity of less than one year.

Callan's Periodic Table Marks a Milestone in Its History

For the first time in the history of Callan's Periodic Table of Investment Returns, stretching back to 1979, the best-performing asset class in 2018 returned essentially zero! It is an unusual year when virtually all broad asset classes post negative returns. Rising interest rates hit fixed income, while a sell-off in the fourth quarter dinged equity returns around the globe. Cash—the risk-free alternative—was positive, up 1.87%. A selection of bond market segments (government bonds, mortgages, asset-backed securities, and municipal bonds) generated positive returns, but the broad fixed income market returned 0.01%. Volatility returned to the global equity markets in 2018, following several years of below-average readings during which the return to U.S. equity trended up strongly. This recent volatility, which is not remarkable from a historical standpoint, could well be a harbinger of 2019 market performance given a wide array of economic, political, and market-related uncertainties that are currently vexing investors. Callan has long advised clients that adherence to an appropriate and well-defined asset allocation (including periodic rebalancing!) remains the best course of action to manage the path to successful attainment of long-term investment goals.

Callan

Callan was founded as an employee-owned investment consulting firm in 1973. Ever since, we have empowered institutional clients with creative, customized investment solutions backed by proprietary research, exclusive data, and ongoing education. Today, Callan advises on more than $2 trillion in total fund sponsor assets, which makes it among the largest independently owned investment consulting firms in the U.S. We use a client-focused consulting model to serve pension and defined contribution plan sponsors, endowments, foundations, independent investment advisers, investment managers, and other asset owners. Callan has six offices throughout the U.S. Learn more at www.callan.com.

Corporate Headquarters
San Francisco 800.227.3288

Regional Consulting Offices
Atlanta 800.522.9782
Chicago 800.999.3536
Denver 855.864.3377
Portland, OR 800.227.3288
Summit, NJ 800.274.5878

www.callan.com

Asset Class Definitions

Global Equity

Definition
Investment represents an ownership claim on the residual assets of a company after the discharge of all senior claims such as secured and unsecured debt.

Public Equity
Public equity is traded on a national exchange. Includes common stock, preferred stock, convertible to stock, options, warrants, futures and other derivatives on equities or composites of equities, exchange-traded funds and equity-linked notes, units and partnership shares representing ownership interests in an underlying equity investment.

Private Equity
Private equity represents equity or equity linked securities in operating companies that are not publicly traded on a stock exchange.

Types of investment strategies
- *Leveraged buyout (LBO*) – Acquisition of a company with the use of financial leverage
- *Growth capital* – Investment in mature companies looking for capital to expand, restructure, enter new markets
- *Venture capital* – Investment in typically less mature companies, for launch, early development, or expansion
- *Mezzanine* – Subordinated debt/preferred equity used to reduce amount of equity capital required to finance LBOs
- *Distressed* – Equity securities of financially stressed companies
- *Secondary* – Investment in existing private equity assets

Types of structures
- *Direct investment* – Direct purchase of equity securities of a private company
- *Co-investments* – Investments in equity securities of a private company alongside
- the manager of a direct fund
- *Direct fund* – Pool of capital formed to make direct investments
- *Fund-of-funds* – Pool of capital formed to make investments in direct funds

Strategic Role
- High long-term real returns
- Hedge against active (pre-retirement) liabilities
- Private equity enhances total portfolio return as a tradeoff for illiquidity

Characteristics

Public Developed Markets

- Relatively high returns (long-term) as compared to fixed income and real assets
- Relatively high volatility (standard deviation of returns) as compared to fixed income and real assets
- Relatively high liquidity
- Diversification
- Historically, public developed equities exhibit high correlation with private equity and high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- Currency adds to volatility but can be hedged, which mutes the diversification benefits

Public Emerging Markets

- Higher expected returns due to economic growth potential
- Liquidity risk is significant, particularly in frontier markets
- High volatility, particularly in frontier markets
- Historically, public emerging equities exhibit high correlation with high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- FX markets not sufficiently developed to hedge currency risk
- Limited access to markets
- Market information less abundant than for developed markets
- Counterparty risk and settlement delays pronounced in frontier markets

Private Equity

- Illiquid, long-term time horizon (7-12 year closed-end partnerships)
- Quality of the managers selected is the key determinant of success
- High volatility of returns compensated by higher expected returns
- Historically, public emerging equities exhibit high correlation with high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- Encompasses three stages: fundraising, portfolio construction and investment, exit and return realization

Risks

Public Equity

- *Absolute risk* – Possible magnitude of price decline
- *Liability hedging risk* – Risk that assets will not increase when liabilities increase
- *Regulatory risk* – Changes may adversely affect markets

- *Tax risk* – Changes may adversely affect markets
- *Liquidity risk* – Difficulty trading securities under adverse market conditions
- *Firm specific risk* – Unique risks associated with a specific firm
- *Tracking risk* – Magnitude of performance deterioration from a benchmark
- *Time horizon* – Horizon too short to weather cycles
- *Benchmark risk* – Benchmark not appropriate proxy
- *Market risks* – Price decline
- *Currency risk* – Unanticipated changes in exchange rate between two currencies
- *Counterparty risk* – Counterparty does not live up to its contractual obligations

Private Equity

- *Liquidity risk* – Absence of liquidity and appropriate exits could significantly increase time horizon
- *Firm specific risk* – Unique risks associated with a specific firm
- *Leverage risk* – Historical excess use of leverage and current inability to secure financing may adversely affect LBOs
- *Manager selection risk* – Selecting managers that fail to deliver top performance results
- *Diversification risk* – Inability to properly diversify the portfolio by vintage year, industry groups, geography
- *Tax risk* – Changes may adversely affect markets
- *Regulatory risk* – Changes may adversely affect markets
- *Strategy risk* – Continuing applicability of investment strategy in context of capital flows
- *Market risks* – Price decline

Global Fixed Income

Definition

Investment represents a legal obligation between a borrower and the lender with a maturity in excess of one year. Evidence of indebtedness and securities that evidence an ownership interest in debt obligations that are issued, insured, guaranteed by, or based on the credit of the following: companies, governmental entities or agencies, banks and insurance companies. Includes agency and non-agency mortgage-backed securities, collateralized mortgage obligations, commercial mortgage-backed securities, asset-backed securities, private placements, and options, futures or other derivatives on fixed income securities or components of fixed income.

Strategic Role

- Diversification within a multi-asset class, total return portfolio
- Hedge against a long duration accrued liability
- Current income
- Non-U.S. provides hedge against unanticipated domestic inflation and diversification to U.S. assets

Characteristics

- Medium volatility asset class
- Relatively high liquidity
- Broadly diversified by market sector, quality, and maturity
- Historically, developed sovereign debt exhibits low to negative correlation with real assets and negative correlation with equities; investment grade corporate bonds exhibit moderate correlation with equities and low correlation with real assets; high yield exhibits high correlation with equities and moderate correlation with real assets.
- A large currency component exists within international fixed income returns
- Developed markets are extremely liquid. Many issues of less developed markets are also relatively liquid.

Risks

- *Duration risk* – Price volatility from a change in overall interest rates
- *Convexity risk* – Negative convexity is the risk of price declines being greater than the price increase due to interest rates moving equally up versus down
- *Default or credit risk* – The uncertainty surrounding the borrower's ability to repay its obligations
- *Structure risk* – Risk that arises from the options implicit in bonds (like call ability and sinking funds) or the rules that govern cash flow differ from expectations
- *Sector risk* – Risk of holding sectors that are in different proportions than the benchmark
- *Liquidity risk* – Cost of trading in a security which is reflected in the bid-ask spread or the cost of selling due to cash flow needs
- *Reinvestment risk* – The uncertainty surrounding future yield opportunities to invest funds which come available due to call, maturities, or coupon payments
- *Benchmark risk* – Risk of the benchmark being inappropriate
- *Yield curve risk* – Price changes induced by changes in the slope of the yield curve
- *Currency risk* – The risk of currency movements vs. the dollar for each market. Currency may contribute greatly to return and lower correlation.

Global Real Assets

Definition

Investment represents an ownership interest in real return assets that provide inflation hedging characteristics in periods of unanticipated inflation. Includes inflation-linked securities, private or public real estate equity or equity-linked investments, private or public real estate debt, infrastructure, timber, real asset mezzanine debt or equity, non-fixed assets and other opportunistic investments in real assets.

Strategic Role

- Reduces risk of composite multi-asset portfolios through diversification
- Relatively low correlations to traditional asset classes
- Can serve as a possible inflation hedge during periods of high inflation
- Provides an attractive return relative to fixed income asset class in periods of low to moderate inflation
- Infrastructure provides inflation protection as he revenues of the underlying assets are typically linked to CPI
- Potential for high returns in niche opportunities

Characteristics

Real Estate

- *Risk* – Volatility of private real estate falls between publicly-traded debt and publicly-traded equities
- *Returns* – Nominal returns are expected to fall between equities and fixed income
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities.
- *Illiquidity* – Transactions require a significantly longer period to execute than other asset classes
- *Inefficient Market* – Information affecting real estate asset valuation and market trading is not rapidly, accurately, or efficiently reflected or interpreted in its pricing

Infrastructure

- *Long life assets* – Capital intensive assets with 25 to 99 year concessions, match for liability duration
- *Inflation protection* – Revenues typically linked to CPI
- *Monopoly or quasi monopoly* – High barriers to entry due to scale and capital cost
- *Steady and predictable cash flow* – Produce strong and predictable yields
- *Low correlation* – Provides portfolio diversification, low beta; expected to exhibit low to no correlation with fixed income and equities
- *Inelastic demand* – Predictable demand with little volatility, less susceptibility to economic downturns
- *Limited commodity risk* – Not subject to commodity pricing
- *Insensitive to changes in technology* – Low risk of redundancy or technology obsolescence
- Investments are usually illiquid and involve a long (10 to 20 year) holding period

Timberland

- *Return* – Low correlation with other asset classes, returns stem from four distinct sources: biological growth, timber prices, land values and management strategy
- *Income* – Driven almost entirely by the sale of harvested mature trees
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities.
- *Appreciation* – Driven by increased volume and value on timber and appreciation of underlying land
- Categorized by type of land (e.g. plantation, natural forest), type of tree (e.g., hardwood, softwood), country and region

Commodities

- *Real assets* – Raw materials that are the physical inputs of production, relatively homogenous in nature, lending itself to be traded via contracts with standardized terms
- *Inflation protection* – Storable commodities (such as energy) directly related to the intensity of economic activity exhibit positive correlation with unexpected inflation
- *Insurance risk premium* – Commodity futures prices tend to be priced at a discount to spot prices in order to induce speculators to bear volatile commodity price risk that inventory holders and producers wish to lay off

- *Positive event risk* – Surprises that occur in the commodities markets tend to be those that unexpectedly reduce the supply of the commodity to the market, resulting in price spikes
- *Negatively correlated with financial assets* – Unlike stocks and bonds, commodities are not as directly impacted by changes in discount rates as they are by the current supply and demand of the underlying commodity, thus they should be expected to have little or even negative correlation with capital assets.

Risks

Real Estate

- *Property type risks* – Negative changes in demand/supply conditions by property type (e.g., office, industrial, retail, lodging, mixed-use, multi-family)
- *Location risks* – Local market condition relative to the adverse changes surrounding a property, or in discovery of hazardous underlying conditions, such as toxic waste
- *Tenant credit risks* – Failure by a tenant to pay what is contractually owed
- *Physical/functional obsolescence* – Negative influences on buildings due to technological changes, outdated layout and design features, and physical depreciation
- *Interest rate risk* – Higher rates can negatively impact both sales strategies and leveraged properties at refinancing
- *Reinvestment risk* – In a declining rental rate market, cash flow received may not be reinvested at the same level
- *Business cycle risk* – As economies slow down, there may be less demand for space
- *Inflationary risk* – Rent levels may not always keep up with rising operating expense levels
- *Illiquidity* – Inability to effectively liquidate a property into cash
- *Natural disaster risk* – Weather, floods, earthquake
- Regulatory concerns are critical, especially in emerging markets
- Capital and managerial intensive

Infrastructure

- *Leverage* – Deals with leverage between 40% and 80% can transform low risk assets into risky investments. Changes in the credit environment alter refinancing risk.
- *Market inefficiencies* – Competitive auctions lead to overpaying. There is a limited history and track record in the U.S. infrastructure space.
- *Political and headline risk* – Public acceptance and understanding of infrastructure needs to expand. In addition, the political landscape in every state and municipality differs.
- *Regulatory risk* – Regulated assets are subject to government changes
- *Construction and development* – Project overruns and delays should be shared with construction partners. Volume/demand risk for new developments can vary.
- *Labor issues* – Greenfield projects could generate new jobs while the privatization of brownfield assets could eliminate skilled labor members
- *Asset control* – Stipulations via concession agreements limit some management control (pricing, growth, decision approvals, etc.). Asset control needs to be appropriately priced.
- *Firm specific risk* – Unique risks are associated with specific firm

Timberland

- *Liquidity risk* – Liquidity is thin, marketplace characterized by few buyers and sellers, transactions are complicated and can take many months to execute
- *Valuation risk* – Annual appraisal process can lead to disparities between carrying value and realized sales prices during downturns
- *Physical risk* – Subject to losses from natural and human-caused events such as fire, insect and vermin infestations, disease, inclement weather, and theft
- *Political and regulatory risk* – Environmental regulations can restrain or prohibit timberland management activities
- *Leverage* – Can amplify volatility and potentially lead to an inability to refinance properties or lead to a distressed sale, requires a minimum level of generated income
- *Location risks* – Real estate dispositions may also be impacted by weakness in local residential real estate markets

Commodities

- *Price risk – C*ommodities with difficult or non-existent storage situations (heating oil, live cattle, live hogs, copper) coupled with a long-lead time between the production decision and the actual production of the commodity can lead to very volatile spot prices
- *Negative futures roll* – When the future contract's price is at a premium to the spot price, the cost to roll contracts forward is negative: an investor continuously locks in losses from the futures contracts converging to a lower spot price
- *Regulatory risk* – Concerns about the role played by investors in commodity markets could lead to new regulations impacting available investment opportunities, ultimately affecting investors' "license to invest".
- *Leverage* – A commodity futures program that is not fully collateralized (for every desired $1 in commodity futures exposure, an investor sets aside $1 in cash) can amplify volatility and potentially lead to greater losses
- *Implementation* – Because futures contracts are levered, cash management for the collateral is an important consideration due to the value

Global Alternatives

Definition

Investment has a distinct return/risk factor profile as compared to other specified broad asset class groupings. Examples: Low market exposure/absolute return strategies such as market neutral, and other niche strategies with low asset class beta such as insurance-linked investments, volatility, intellectual property, healthcare royalty, shipping, litigation finance and fine art.

Strategic Role

- More robust diversification achieved through the introduction of non-traditional return driver/risk factors
- Low or negative correlations to other asset classes
- Return profile less dependent on economic growth and interest rates
- Potential for attractive risk-adjusted returns

Characteristics

- *Returns* – Exhibits lower correlations to broader equity and credit markets in periods of market distress
- *Illiquidity* – Transactions may require a longer period to execute than other asset classes
- *Inefficient Market* – Information affecting asset valuation and market trading may not be accurately or efficiently reflected or interpreted in its pricing

Risks

- *Market risk* – Cost of carry on being long volatility
- *Natural disaster risk* – Weather, floods, earthquake affect natural catastrophe-based insurance-linked products
- *Due diligence* – Complicated to evaluate and monitor
- *Illiquidity* – Transactions may require a longer period to execute than other asset classes
- *Implementation* – Complexity of implementation may be an impediment

North Dakota State Investment Board

VESTED interest

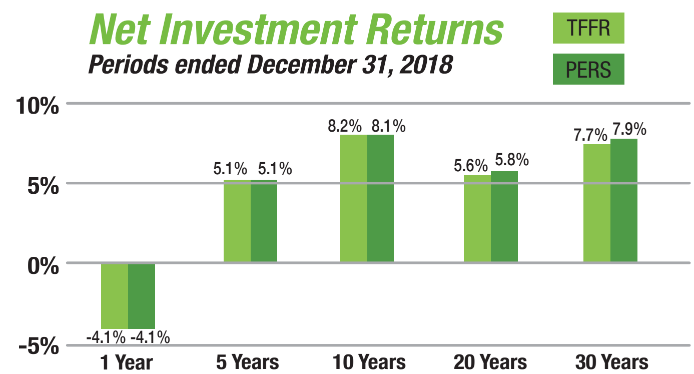
From the Director's Chair

David Hunter
Executive Director/CIO

PERS and TFFR Returns Ranked in Top 27% of U.S. Public Plans Over the Last 5 Years

The 4th quarter of 2018 was a difficult time in the equity markets with growing concern over a U.S. trade war with China, continuing uncertainty over Great Britain's exit from the European Union, and the threat and ultimate commencement of the longest federal government shutdown in U.S. history. These factors drove a 13% decline in the global equity markets during the 4th quarter and are largely responsible for a 4% decline in PERS and TFFR's investment returns in 2018. Despite this disappointing performance, RIO notes that PERS and TFFR's returns were ranked in the top 27% of U.S. public pension plans for the 5-years ended December 31, 2018 (based on Callan's U.S. Public Fund Database). During the last ten years, PERS and TFFR have also been successful in generating a net investment return of over 8% per annum surpassing their expected long-term rate of return assumption of 7.75%, while 30-year returns ranged from 7.7% for TFFR to 7.9% for PERS as of December 31, 2018. Returns are reported after management fees and are annualized for periods over one year.

The equity markets have started out 2019 strong, with the S&P 500 index up over 10% since year-end and U.S. Federal Reserve Chairman Jerome Powell stating "the U.S. economic outlook is favorable and the economy doesn't require higher or lower interest rates now." This upturn in recent performance and market sentiment have allowed PERS and TFFR investment results to quickly recover in early 2019.



Successful active management occurs when the State Investment Board (SIB) selects a team of investment managers which outperform an underlying benchmark index. For the 5-years ended December 31, 2018, RIO is pleased to report the SIB's use of active management has generated returns which have surpassed underlying benchmarks by over 0.60% per annum. Based on total SIB investments averaging over $10 billion since 2013, this translates into $300 million of incremental income for our SIB clients over the last five years.

Annual Audit Completed

The 2018 financial statements of the North Dakota Retirement and Investment Office received an unqualified audit opinion from the independent audit firm of CliftonLarsonAllen, LLP. There were no exceptions, recommendations, or findings in the report. The final 2018 Audit Report can be viewed from our website.

ND Retirement & Investment Office

3442 East Century Ave, P.O. Box 7100
Bismarck, ND 58507-7100
701-328-9885
Toll free: 1-800-952-2970
www.nd.gov/rio/SIB

MARCH 2019

North Dakota
Retirement & Investment Office
Teachers' Fund for Retirement
State Investment Board

P.O. BOX 7100
BISMARCK, ND 58507-7100

PRESORTED
STANDARD
U.S. POSTAGE
PAID
PERMIT NO. 325
BISMARCK, ND
58501

2018 Annual Financial Report Available

The North Dakota Retirement and Investment Office [Comprehensive Annual Financial Report (CAFR)] has been published and may be viewed from our [website]. This report is a complete review of the financial, investment and actuarial conditions of the Teachers' Fund for Retirement and State Investment Board.

State Investment Board Member Update

WSI Designee Cindy Ternes will be retiring in April after serving on the SIB for ten years. We sincerely thank Ms.Ternes for her outstanding service to the SIB and the SIB Audit Committee. WSI Director Bryan Klipfel will replace Ms. Ternes on the Board. Continuing board members include Lt. Governor Brent Sanford as Chair, Rob Lech (TFFR) as Vice Chair, Deputy Attorney General Troy Seibel (representing PERS) as Parliamentarian, State Treasurer Kelly Schmidt, Insurance Commissioner Jon Godfread, Land Commissioner Jodi Smith, Adam Miller (PERS), Yvonne Smith (PERS), Toni Gumeringer (TFFR), and Mel Olson (TFFR).

Cindy Ternes

Bryan Klipfel

Legacy Fund Awarded the Highest Transparency Rating

The Sovereign Wealth Fund Institute rated North Dakota's Legacy Fund a 10 (out of 10) for investment and governance transparency in 2018. The only other U.S. sovereign wealth fund to receive the highest rating was the Alaska Permanent Fund.

BOARD LEADERSHIP
INNOVATIVE APPROACHES TO GOVERNANCE

NUMBER 161, JAN.–FEB. 2019

www.wileyonlinelibrary.com/journal/bl

The Essential Eight: A Concise Summary of 21st-Century Governance Guidelines for Nonprofit Boards

By Sharon C. Lincoln, Partner, Casner & Edwards, LLP

As partner at Boston legal firm Casner & Edwards LLP, Sharon C. Lincoln advises nonprofit organizations on an array of critical issues, ranging from organizational formation and structuring to lobbying and regulatory compliance. Here, she offers an updated analysis of the core elements of nonprofit board governance that ensure boards fulfill their fiduciary duties while advancing their organizations' missions.

Serving on the board of a nonprofit organization can be a fun, invigorating, and dynamic experience. With a group of engaged and committed individuals, the nonprofit board can be an incubator of strategic thinking and practical guidance that sets the direction and tone for the rest of the organization.

Nearly every nonprofit statute requires the directors of a nonprofit corporation to perform their duties as directors in good faith, in a manner reasonably believed to be in the best interests of the corporation, and with such care as would be exercised by a person in a like position. Essentially, this articulates the duty of care and the duty of loyalty that form the basis of nonprofit board service.

In practice, this may mean somewhat different things for different organizations. However, the 21st century is the most rapidly changing and dynamic period in human history. For this reason, it's worth taking a fresh look at these baseline fiduciary duties and considering what they mean in an era of constant technological change and instant communication.

This article provides a concise overview of the "Essential Eight" elements of what it means to fulfill these fiduciary duties with special considerations regarding navigating the opportunities and challenges of the 21st century.

1. Be passionate about the mission

Board members are the leaders of a nonprofit organization. If you, as a board member, don't feel a sense of urgency and passion regarding the mission of the organization, why should anyone else? Board leaders are the stewards of the organization's

(continued on page 2)

ALSO IN THIS ISSUE

NEWS

New board appointments at St. Baldrick's, Lilly Endowment, and more

Several leading philanthropic organizations have made changes to their boards of directors in recent weeks, bringing in new talent with fresh perspectives to help guide decision-making going forward. Here are some examples:

- **The New York City–based Ford Foundation** has appointed Chuck Robbins, chair and chief executive officer at Cisco Systems, to its board of directors. In addition to leading Cisco, Robbins is a member of the board of the Business Roundtable, where he chairs its immigration committee, and serves on the board of directors at BlackRock, the world's largest asset manager. He is also a member of the International Business Council for the World Economic Forum and serves as chairman of the U.S.-Japan Business Council. He previously served on the board of Business Executives for National Security, an organization of executive leaders who volunteer their expertise to help enhance the nation's security.
- **The Indianapolis-based Lilly Endowment** has elected John Lechleiter to serve on its board. Lechleiter is the former chairman, president, and chief executive officer of

(continued on page 6)

Guidelines

(continued from front page)

mission. As such, they should be very familiar with that mission and should be able to articulate it in a concise and compelling manner to anyone who asks. In addition, they should find opportunities to mention the organization to those who might be interested in its activities, both programmatically and as potential donors.

If you currently serve on a nonprofit board, ask yourself, "Could I give a compelling elevator pitch regarding the mission of the organization?" If the answer to that is not a resounding "Yes!", you might consider developing one.

Loving the mission and being a leader of the organization also means giving of what you have. If you are able to be generous financially, donate. If you have a particular expertise, contribute that. If you have time, volunteer generously for committee work. Not every board member necessarily can write a large check to the organization, but if you serve on the board, you have made a commitment to give.

2. Be engaged

Being engaged essentially includes the following five elements: prepare, show up, speak, listen, and follow up. And then repeat.

Preparation is essential. Merely showing up with some personal opinions and half-baked ideas does not satisfy the duty of care. Boards are generally provided with financial and other materials (including an agenda with proposed votes) in advance of each meeting. As a board member, you need to take the time to read these materials. Give them time to simmer in thought. There is research that shows that taking the time to mull over a decision, including sleeping on it, results in better decision-making.[1]

Showing up at meetings is a rather obvious baseline requirement, but many boards struggle with meeting quorum. When that is a recurring issue, board members should reconsider the timing of their regular meetings and to seek a better time for everyone to meet. For example, if evening meetings pose too many obstacles (because of traffic, family obligations, etc.), the board could consider scheduling its meetings for midday or on a weekend. Alternatively, some boards utilize conference lines and/or online conference rooms (with and without video) to conduct board meetings. This can be particularly useful for boards with directors in different locations. If such remote meetings are held, it is good practice to hold at least one meeting in person on an annual basis, however.

When recruiting new board members, the timing and schedule of board meetings should be shared in advance, so the potential board member can assess whether he or she would be able to attend the meetings. (It should go without saying that if it would not be possible to attend board meetings, service on that particular board would not be a good fit.)

Showing up also includes bringing your full attention to bear on the discussion at the meeting. If you show up but constantly check your email, tweet, or browse the web with your smartphone, then your body may be present, but your mind is not.

Contributing ideas to the discussion at meetings is essential to board service, but listening is equally, if not more, important. A board of directors operates as a collective and in order to function collaboratively, the members of the board must listen to one another with an open mind. Working collaboratively and in an engaged and respectful manner regarding routine decision-making helps to establish a foundation for cooperative action when tougher issues are under consideration.

Following up after a board meeting regarding action items that need to be addressed before the board next convenes is important. Thus, board members should be prepared to contribute some of their free time between meetings for committee work, networking on behalf of the organization, and attending fundraising and other events hosted by the organization.

Lastly, engagement means being consistent in following these steps over and over again, in the run-up to and following each board meeting.

3. Think strategically

As stewards of the nonprofit's mission, board members need to ensure the organization is going in the right direction. This requires asking the right questions and executing on the answers.

Questions that board members would be advised periodically to consider include:

- What are the top three threats to this organization over the next year?
- What are the top three opportunities?
- What is needed to protect from the former and take advantage of the latter?
- Is there a better way to address the problems the organization is trying to solve?
- Would a strategic affiliation or merger with another organization help to mitigate the risks or take advantage of the opportunities facing the organization?

Other areas for strategic thinking include board composition, mission relevance, information technology, and what may be best considered "future proofing." In connection with future proofing, the following questions merit periodic consideration:

- How will technology change this organization, as well as the social and economic marketplace in which it operates?
- What impact will technology such as artificial intelligence (AI) and robotics have on the sector in which the organization operates, and the organization in particular? Will AI and robotics make some of the services provided by the organization obsolete (e.g., in health care in connection with AI being used to diagnose disease and even, in some cases, perform surgery)?[2] Will it increase or reduce demand for the organization's services? How can the organization stay ahead of that curve?
- Will the Internet of Things (IoT)

have an impact on the organization and the sector in which it operates?

- Will climate change (i.e., the occurrence of more extreme weather events) impact the organization?
  - For example, if the nonprofit is an organization located in a hurricane-prone zone, the board may want to consider the following questions: What are the statistics regarding increasing frequency of storms? How will more frequent and extreme weather events impact the organization's programs and resources, including personnel? Would it be prudent to relocate the organization's offices to a less impacted area?
- How does the introduction of cryptocurrencies impact the organization's fundraising? Would it enhance the organization's ability to solicit donations and/or memberships if it were able to accept cryptocurrency payments?
- To what degree does new technology such as blockchain present opportunities (or risks) to the organization and its programs?

Management generally is focused on and preoccupied with the day-to-day running of the organization. One of the added values of an engaged board of directors is its outside perspective regarding big-picture issues relevant to the organization's operations, activities, and strategic direction. AI, robotics, IoT, cryptocurrencies, and blockchain were not at the forefront even 10 years ago. However, as a savvy board member, you should keep track of these emerging technologies and support the nonprofit's management in navigating the risks and opportunities these technologies present.

4. Act practically

Part of the nuts and bolts of good governance is to make sure the right infrastructure is in place. In terms of governance, this includes making sure each committee has a clear charter, the bylaws are up-to-date (and have been reviewed by all board members), and written minutes are kept for board and committee meetings.

In terms of operations, this includes ensuring that the organization has the relevant insurance policies and that the right personnel policies are in place, including benefits and compensation commensurate with the organization's resources, and to the extent possible, on par with the marketplace.

Lastly, this includes seeking professional advice when appropriate. Engaging legal, accounting, investments, and even social media third-party experts can be a practical necessity and a prudent use of the organization's resources.

5. Respect the Regulators

All nonprofit corporations are organized under state law. As such, they are answerable to the secretary of state of their home jurisdiction, as well as the secretary of state of any jurisdiction in which they are registered to conduct activities.

Depending on the industry in which the organization operates, it may be subject to additional regulation (for example, nonprofit hospitals are subject to the oversight of state health care regulators).

In addition, most nonprofit organizations are recognized as tax-exempt by the IRS, which considers it an element of good governance for board members to receive and review the organization's annual information return prior to its submission to the IRS.

The accompanying chart sets out some baseline tax and regulatory filing requirements relevant to tax-exempt nonprofit organizations.

Some of these filings (e.g., the IRS Forms 990) are publicly available documents. Certain websites, such as *GuideStar.org*, make it very easy to access these filings. Thus, these forms—while ostensibly tax filings—afford each organization the opportunity to put its best foot forward and present information about its programs and activities in an engaging and compelling manner. As a board member, you should be familiar with how the organization is presenting itself via these filings and provide relevant input and feedback to management.

Even though it is the job of management to keep track of these tax and regulatory filings, a nonprofit organization's board of directors ignores these filing requirements at its peril. For example, the IRS can assign personal liability for an organization's failure to pay certain taxes to the officers and directors who knew *or should have known* those taxes needed to be paid.

6. Faithfully steward the organization's resources

A nonprofit organization includes many types of resources. These resources include the financial assets of the organization. Board members should carefully consider the financial statements provided at each meet-

(continued on page 4)

IRS	Form 990, 990-EZ, 990-PF, or 990-N (as well as Form 990-T if the nonprofit has any taxable income). Also, if the nonprofit has employees, Form 941 (withholding for taxes and FICA); Form 940 (FUTA, if applicable).
Secretary of state	Annual report (in home jurisdiction as well as most states in which the nonprofit is registered to operate).
Department of Revenue	Payroll tax filings in jurisdictions in which the nonprofit has employees. Several states also tax unrelated income.
For charitable nonprofits, the attorney general/charities bureau	Annual filing regarding fundraising and other operations (in home jurisdiction as well as most states in which the nonprofit is registered to operate).
State regulators overseeing industry-specific activities (e.g., education, health care, etc.)	Varies from state to state.

ing and give due care and attention to each year's budget. A generally accepted rule of thumb is for an organization to set aside the equivalent of three to six months' worth of operating expenses to serve as a cushion in the event of any unexpected and sudden financial setbacks.

A nonprofit's personnel is also a very valuable resource. Turnover is financially costly, as well as costly to the culture within the organization itself. Institutional knowledge, robust relationships among employees, and sustained engagement with stakeholders are the fruits of retaining talent. This is particularly important in connection with an organization's management. For that reason, the board should be deliberate regarding taking steps to cultivate executive talent.

Lastly, an organization's reputation is an important resource as well. While everyone involved in the organization should be mindful of protecting and promoting the reputation of the nonprofit, board members should take the lead to ensure that their conduct—both representing the organization and in their professional and personal lives—reflects well on the organization.

7. Be accountable

Accountability involves acting with transparency and deliberation toward the organization as well as to external and internal stakeholders.

For example, the ethics of board service involves managing conflicts of interest responsibly. Board members should be familiar with the organization's conflict-of-interest policy. This policy should provide that all potential conflicts of interest must be disclosed to the board and that decisions regarding whether to engage in the transaction that gives rise to the conflict of interest should be made by independent members of the board.

Although many state statutes governing for-profit business corporations permit an interested director to participate in the vote regarding the decision to engage in the conflict-of interest transaction, good governance for a nonprofit organization—particularly a charitable nonprofit—mandates the interested board member's recusal from this vote. This approach aligns with the IRS's expectations regarding the decision-making process of a tax-exempt organization.

In addition, the board of directors should periodically review and update its whistleblower, document retention, and data security policies. This latter policy is increasingly important in a day and age when so many nonprofit organizations conduct at least a portion of their activities using the internet and gather personal data and financial information online (e.g., via soliciting donations or memberships).

Another element of accountability involves being forthcoming when mistakes are made and working with the nonprofit's management to take firm, decisive steps to institute corrective action.

Lastly, many boards of directors find it helpful to conduct self-evaluations periodically (e.g., via an annual "board scorecard" that asks questions regarding how board members individually and collectively have supported the organization).

8. Think in the 21st Century

Board members these days are, in many ways, charting a new path when it comes to corporate governance. As noted at the outset of this article, we live in a day and age of unprecedented technological change, which includes ever more instant forms of communication. Charitable boards need to be respectful and mindful of the instant spotlight of social media and empower management to engage the support that the organization needs in order to harness the power of social media to the organization's best advantage.

Cultivating a nonprofit's brand via social media and other forms of digital communication can be a tremendous asset and is also one of the most direct means by which to engage millennials in connection with the organization's programs, as well as its fundraising. While many millennials may not respond to email or direct mail appeals, reaching out via other means (e.g., creating an online community via Reddit) can help to expand the nonprofit's base of supporters. In some cases, recruiting younger members to an organization's board can potentially bring an informed perspective regarding trending developments in technology.

In many ways, thinking in the 21st century relates directly to the discussion regarding thinking strategically, since being mindful of the risks and opportunities inherent in our ever-evolving society is a prerequisite to being strategic regarding how best to navigate those risks and opportunities. It also is meant as a prompt to remind board members to think outside the box regarding how best to support an organization as it navigates the risks and challenges of the dynamic times in which we live.

Conclusion

To conclude, as a member of a nonprofit's governing board, you are tasked with bringing both a practical and a "big-picture" perspective to all aspects of the organization. The Essential Eight elements of board service detailed above provide an accessible and comprehensive framework for approaching this work. ❑

Sharon C. Lincoln advises nonprofit entities on the wide range of issues related to their tax-exempt status, including formation, funding, governance, executive compensation (including deferred compensation), regulatory compliance, restructuring, international grant-making, lobbying, unrelated business income, and mergers and acquisitions. In addition, she assists clients in matters directly involving the Internal Revenue Service, the Massachusetts Attorney General's Office, and the Massachusetts Department of Revenue, including audits, appeals, and ruling requests. She also assists clients with planning and structuring new social ventures.

1. See, for example, https://www.psychologytoday.com/us/blog/persuasion-bias-and-choice/201806/5-tips-better-decision-making.

2. See, for example, https://www.roboticsbusinessreview.com/health-medical/ai-assisted-surgery-improves-patient-outcomes/.

News

(continued from page 1)

Eli Lilly and Company. He joined Lilly in 1979 as a senior organic chemist in process research and development. He later served in leadership roles in project management, regulatory affairs, product development, and pharma operations. He retired as Lilly's president and chief executive officer in December 2016 and as its chairman in May 2017. Lechleiter has been active in serving many charitable organizations. He presently serves on the boards of the Hoosier Art Salon, the Indiana Economic Development Corporation, and the Indiana Biosciences Research Institute.

- **The Los Angeles–based St. Baldrick's Foundation** has elected Jyoti Rai, senior vice president of global talent, leadership and learning at American Express, and Thomas Selquist, managing director at J.P. Morgan Private Bank, to its board. Rai brings more than two decades of expertise in human capital strategy and management to the foundation. Currently, she manages a team of 135 HR professionals around the world and is an integral member of the Global Human Resources leadership team. Meanwhile, Selquist brings more than 20 years of experience working in capital markets and investments, advising families on financial planning and wealth management solutions. He started his career in finance at Goldman Sachs as an institutional sales trader in 1996. While there, he also served in the Markets Coverage Group, helping ultra high-net-worth clients and family offices implement their investment strategies.
- **The New York City–based Andy Warhol Foundation for the Visual Arts** has elected a new board chair, Julián Zugazagoitia, and three new board members: Naomi Beckwith, Cary J. Davis, and Deborah Willis. Zugazagoitia has been the director and CEO of the Nelson-Atkins Museum of Art in Kansas City since 2010. He previously served as director and CEO of El Museo del Barrio in New York, where he oversaw a $44 million renovation project. He has also held positions at the Solomon R. Guggenheim Museum, UNESCO, and the Getty Conservation Institute, and has curated exhibitions internationally. Beckwith is the Manilow Senior Curator at the Museum of Contemporary Art Chicago. Prior to that, she held positions at the Institute of Contemporary Art in Philadelphia and the Studio Museum in Harlem. Davis is a senior partner at Warburg Pincus and is responsible for the firm's investments in the software and financial technology sectors. In addition to serving as a director on seven corporate boards, he is chairman-elect of the American Academy in Rome, and has been chairman of the Jewish Community House of Bensonhurst. Willis is a professor and chair of the Department of Photography & Imaging at the Tisch School of the Arts at New York University. ❑

CALENDAR OF EVENTS

January 29–31, 2019

The Society for Corporate Governance Essentials Conference

The Westin Fort Lauderdale Beach Resort, 321 North Fort Lauderdale Beach Blvd., Fort Lauderdale, FL 33304 USA

Through a variety of plenary sessions, the SCG Essentials Conference will cover the basic fundamentals of corporate governance, including internal sources of and limits on governance authority, board responsibilities and structure, board and committee meetings, corporate entity management, records management and cybersecurity, risk management, minutes, and more.

For public companies, the topics include regulation and disclosure, shareholders, annual meetings, and drafting the proxy.

The private company series of breakout sessions will cover board oversight, governance and compliance, managing conflicts of interest, and succession planning.

Senior SCG members and other experts will offer practical solutions and advice on how to handle the varied responsibilities of the corporate secretary, assistant secretary, or other governance professional.

For more information, visit https://www.societycorpgov.org.

March 10–12, 2019

Governance Institute March System Forum

The Ritz-Carlton, 160 E. Pearson St., Chicago, IL 60611 USA

This event offers attendees an effective means to stay abreast of current topics in health care and board governance. Sessions and workshops provide engaging and relevant content to foster learning opportunities and team building for boards, health care executives, and medical staff leadership. Attendees also have ample opportunity to network with like organizations facing similar challenges.

For more information, visit https://bit.ly/2Nu04Kc. ❑

To Submit or Not to Submit Annual Director Compensation for Stockholder Vote?

Yelena M. Barychev

Yelena M. Barychev, partner at the Philadelphia-based law firm Blank Rome LLP, writes and speaks frequently on corporate governance and securities compliance matters. Here, she examines the often-thorny subject of director compensation and the legal issues involved when the issue is put to stockholders.

Recent Delaware cases have made director compensation a "hot" corporate governance topic and presented directors with an interesting question of whether their annual compensation should be submitted for a binding stockholder vote.

Under the Delaware General Corporation Law, stockholder approval of director compensation is not required, and, unless otherwise restricted by the certificate of incorporation or bylaws, the board of directors of a Delaware corporation is authorized to fix the compensation of directors. However, when the board of directors, or a committee of the board, fixes directors' compensation, it is inherently self-interested in making that decision because the directors are deciding how much they should pay themselves for board service. If such a decision is challenged in court, it is generally not covered by the business judgment rule's presumptive protection, and the receipt of self-determined compensation is subject to an affirmative showing that the compensation arrangements are fair to the corporation (i.e., the court will apply a more onerous entire fairness standard of review). If a fully informed, uncoerced, and disinterested majority of stockholders approves the board's compensation, it gives directors a stockholder ratification defense.

Prior to the Delaware Supreme Court's decision in *In Re Investors Bancorp, Inc. Stockholder Litigation* in December 2017, the courts generally recognized the ratification defense when stockholders approved: (1) specific director awards; (2) a self-executing plan, under which directors had no discretion when making the awards; or (3) a discretionary plan with "meaningful limits" on the awards directors can make to themselves, but directors could exercise discretion and determine the amounts and terms of the awards after the stockholder approval.

In *In Re Investors Bancorp, Inc. Stockholder Litigation*, the Delaware Supreme Court took a close look at the "meaningful limits" concept because plaintiffs alleged that the directors had breached their fiduciary duties in making unfair and excessive discretionary awards to themselves after stockholder approval of the equity incentive plan. The Delaware Supreme Court's view was that because the stockholders did not ratify the specific awards under the equity incentive plan, the affirmative defense of ratification could not be used to dismiss the complaint, and the Delaware Supreme Court remanded this case back to the Delaware Court of Chancery for further proceedings.

The Delaware Supreme Court's decision in *In Re Investors Bancorp, Inc. Stockholder Litigation* makes it clear that when directors submit their specific compensation decisions for stockholder approval or stockholders approve self-executing plans with specific amounts and terms, "ratification is properly asserted as a defense in support of a motion to dismiss" the plaintiff's lawsuit. But if stockholders "approved an equity incentive plan that gives the directors discretion to grant themselves awards within general parameters, and a stockholder properly alleges that the directors inequitably exercised that discretion, then the ratification defense is unavailable to dismiss the suit, and directors will be required to prove the fairness of the awards to the corporation."

Two derivative lawsuits involving director compensation, *Solak v. Barrett* and *Fulton v. Dipp*, were recently settled in Delaware, and these settlements were clearly influenced by the Delaware Supreme Court's decision in *In Re Investors Bancorp, Inc. Stockholder Litigation*.

On May 30, 2018, the Delaware Court of Chancery settled *Solak v. Barrett*, filed by a stockholder of Clovis Oncology Inc. ("Clovis"), and on Aug. 30, 2018, the U.S. District Court for the District of Delaware approved the settlement of *Fulton v. Dipp* filed by a stockholder of OvaScience Inc. ("OvaScience"). Plaintiffs in both cases claimed that directors had awarded themselves excessive compensation and breached fiduciary duties of loyalty and good faith, that the board's actions related to board compensation constituted a waste of corporate assets, and that the board's compensation levels amounted to unjust enrichment for the nonemployee directors. For example, for the year ended Dec. 31, 2015, Clovis' nonemployee director compensation exceeded $600,000, and OvaScience's nonemployee director compensation was above $300,000. In each case, the majority of such compensation was attributed to the grant-date fair value of option awards to the directors.

The terms of the settlement agreements in both cases were also very similar. The boards of directors of each of Clovis and OvaScience agreed that at the company's annual stockholder meeting, the company will present a binding proposal to the company's stockholders to approve a new director compensation plan, which will establish specified amounts of annual cash and equity compensation payable to incumbent and newly appointed nonemployee directors. The settlement agreements also included a specific number that served as the ceiling for the aggregate director compensation that will be submitted for stockholders' approval, composed of all cash (including fees awarded for board and committee service) and equity awards (based on grant-date fair value).

In addition, settlement agreements of both Clovis and OvaScience stipulated the following disclosures that these companies would have to include in their proxy statements in connection with the stockholders' approval of the director compensation: (1) a full description of the annual director compensation plan, (2) disclosures explaining the process of formulating the director compensation plan, and (3) a list of the company's currently identified peer group.

OvaScience's settlement agreement also included a mandatory holding period for directors' equity awards, and directors will have to hold shares received upon the exercise of an initial or annual equity grant granted after the board and stockholders approve the new director compensation policy until the earlier of such director's termination of service as a director and the seven-year anniversary of the date of the grant of the option. However, such a holding period will not apply to any shares retained by the company as a result of any net exercise of the options to cover the option exercise price or any shares sold by the director to cover any taxes associated with the exercise of the option.

If the proposal related to the director compensation is approved by the stockholders, the board of OvaScience agreed that the limits on total annual director compensation, as well as the new equity grant holding requirements, will remain in effect for no less than three years unless amended and approved by the company's stockholders. Clovis' directors agreed that, if approved by stockholders, the amount of total annual nonemployee director compensation will remain in effect for a period of time between two and five years, unless amended and approved by Clovis' stockholders.

Clovis' settlement agreement also included an agreement to adopt, and maintain for a period of no less than five years, mandatory stock ownership guidelines, which will require all nonemployee directors to hold a minimum number of shares of the company stock having value equal to three times the directors' annual base cash retainer at all times during which they are serving as nonemployee directors, exclusive of fees for their service on committees.

In addition, the settlement provided that in the course of carrying out the new director compensation plan and upon considering changes to such a plan, including annual retainers for board and committee service and equity grants, both Clovis and OvaScience will abide by the following practices:

- The board will be guided by compensation paid and awards granted to nonemployee directors of peer group companies and then-current best practices.
- The board, or a committee of the board, will review its director compensation peer group on an annual basis.

In addition to stockholder litigation, ISS voting policies have also focused on director compensation. The ISS Proxy Voting Guidelines effective for annual stockholder meetings to be held on or after Feb. 1, 2019, include the same recommendation as for 2018 stockholder meetings to "[g]enerally vote against members of the board committee responsible for approving/setting non-employee director compensation if there is a pattern (i.e., two or more years) of awarding excessive non-employee director compensation without disclosing a compelling rationale or other mitigating factors." ISS has recently updated its methodology for identifying excessive levels of nonemployee director compensation, and, in light of the methodology change, ISS will postpone issuing adverse recommendations under its policy until stockholder meetings occurring on or after Feb. 1, 2020.

"ISS Frequently Asked Questions on U.S. Compensation Policies," dated Dec. 20, 2018, explained that, under the updated methodology, ISS will

(continued on next page)

WHEN WE SAY...

Board Leadership's mission is "to discover, explain and discuss innovative approaches to board governance with the goal of helping organizations achieve effective, meaningful and successful leadership to fulfill their missions."

Board Leadership aims to fulfill this mission by engaging its readers in a lively and illuminating inquiry into how board governance can be made more effective. This inquiry is based on three key assumptions:

- Boards exist to lead organizations, not merely monitor them.
- Effective board governance is not about either systems, structures, processes, theories, practices, culture, or behaviors—it is about all of them.
- Significant improvements are likely to come only through challenging the status quo and trying out new ideas in theory and in practice.

Uniquely among regular publications on board governance, *Board Leadership* primarily focuses on the job of board leadership as a whole, rather than on individual elements of practice within the overall job.

Over time, *Board Leadership* will provide a repository of different approaches to governance created through its regular "One Way to Govern" feature.

Here's what a few of the key terms we use mean to us:

- **Innovative:** Creating significant positive change
- **Approaches:** Principles, theories, ideas, methodologies and practices.
- **Board governance:** The job of governing whole organizations. ❑

Compensation

(continued from previous page)

perform a quantitative identification of nonemployee director pay outliers and will conduct a qualitative evaluation of the company's disclosures related to director compensation to determine if concerns about excessive compensation are adequately mitigated.

The ISS updated methodology for identifying excessive nonemployee director compensation considers individual nonemployee director pay figures above the top 2–3% of all comparable directors (down from 5% in prior ISS recommendations) as pay outliers. ISS will compare individual nonemployee pay totals to other directors within the same two-digit GICS group and within the same index grouping (for example, S&P500, combined S&P400 and S&P600, remainder of the Russell 3000 Index, and the Russell 3000-Extended). Board-level leadership positions of nonexecutive chairs and lead independent directors often get a pay premium compared to other directors, and ISS has clarified that it will identify outliers for directors who serve in these positions by comparing them to others within the same category of board leadership (considering both index and sector). ISS will also take into account that there may be sector/index groups where "there is not a pronounced difference in pay magnitude between the top 2–3% of directors and the median director," and ISS will consider such narrow differences in nonemployee director compensation as a mitigating factor.

ISS clarified that the following circumstances, "if within reason and adequately explained, would typically mitigate concern around high nonemployee director pay:

- Onboarding grants for new directors that are clearly identified to be one-time in nature;
- Special payments related to corporate transactions or special circumstances (such as special committee service or requirements related to extraordinary need); or
- Payments made in consideration of specialized scientific expertise (as may be necessary in certain industries such as biotech/pharma)."

ISS has specifically pointed out that "[p]ayments to reward general performance/service will generally not be viewed as compelling rationale," and that payments in connection with separate consulting agreements will be viewed on a case-by-case basis with particular focus on the company's rationale.

It is unclear whether the Delaware Supreme Court's decision in *In Re Investors Bancorp, Inc. Stockholder Litigation*, recent settlements in *Solak v. Barrett* and *Fulton v. Dipp*, and the ISS policy providing for potential adverse vote recommendations for the board committee responsible for approving or setting excessive nonemployee director compensation would prompt public companies to submit their director compensation for a binding stockholders' approval in the coming 2019 proxy season.

Although the board may believe its director compensation is not excessive and is unlikely to be challenged in court, and thus it should not be submitting director compensation as a stand-alone proposal for stockholders' approval, the board should still consider implementing the following best practices:

- Enhance proxy statement disclosures related to the rationale for the levels of director compensation (including both cash and equity components).
- Review and evaluate director compensation of companies included in the peer group on an annual basis.
- Establish specific limits for cash and equity elements of director compensation (the best practice with respect to equity awards is to establish limits based on the grant-date value of the award, as opposed to determining such limits based on the number of shares or options awarded to directors). ❑

BOARD LEADERSHIP

INNOVATIVE APPROACHES TO GOVERNANCE

BOARD LEADERSHIP: INNOVATIVE APPROACHES TO GOVERNANCE (Print ISSN: 1061-4249; Online ISSN: 1542-7862) is published bimonthly by Wiley Subscription Services, Inc., a Wiley Company, 111 River St., Hoboken, NJ 07030-5774 USA.

Postmaster: Send all address changes to *BOARD LEADERSHIP*, John Wiley & Sons Inc., C/O The Sheridan Press, PO Box 465, Hanover, PA 17331 USA.

Delivery Terms and Legal Title: Where the subscription price includes print issues and delivery is to the recipient's address, delivery terms are **Delivered at Place (DAP)**; the recipient is responsible for paying any import duty or taxes. Title to all issues transfers Free of Board (FOB) our shipping point, freight prepaid. We will endeavour to fulfil claims for missing or damaged copies within six months of publication, within our reasonable discretion and subject to availability.

Information for subscribers: *Board Leadership* is published in 6 issues per year. Subscription prices for 2019 are: **Institutional Online Only:** \$942 (The Americas), £484 (UK), €611 (Europe), \$942 (rest of the world). **Institutional Print + Online:** \$1177 (The Americas), £695 (UK), €879 (Europe), \$1352 (rest of the world). **Institutional Print Only:** \$942 (The Americas), £556 (UK), €703 (Europe), \$1082 (rest of the world). **Personal Online Only:** \$139 (The Americas), £107 (UK), €127 (Europe), \$139 (rest of the world). **Personal Print + Online:** \$204 (The Americas), £125 (UK), €158 (Europe), \$244 (rest of the world). **Personal Print Only:** \$187 (The Americas), £116 (UK), €146 (Europe), \$226 (rest of the world). Prices are exclusive of tax. Asia-Pacific GST, Canadian GST/HST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to https://onlinelibrary.wiley.com/library-info/products/price-lists/payment. The price includes online access to the current and all online backfiles to January 1, 2015, where available. For other pricing options, including access information and terms and conditions, please visit https://onlinelibrary.wiley.com/library-info/products/price-lists. Terms of use can be found here: https://onlinelibrary.wiley.com/terms-and-conditions.

Journal Customer Services: For ordering information, claims and any enquiry concerning your journal subscription please go to https://hub.wiley.com/community/support/onlinelibrary or contact your nearest office. **Americas:** Email: cs-journals@wiley.com; Tel: +1 781 388 8598 or +1 800 835 6770 (toll free in the USA & Canada). **Europe, Middle East and Africa:** Email: cs-journals@wiley.com; Tel: +44 (0) 1865 778315. **Asia Pacific:** Email: cs-journals@wiley.com; Tel: +65 6511 8000. **Japan:** For Japanese speaking support, Email: cs-japan@wiley.com. **Visit our Online Customer Help** available in 7 languages at https://hub.wiley.com/community/support/onlinelibrary

Publishing Editor: Samara Kuehne. **Editor:** Nicholas King. **Production Editor:** Mary Jean Jones. **Editorial Correspondence:** Samara Kuehne, Email: skuehne@wiley.com.

Policy Governance is a registered service mark of John Carver.

For submission instructions, subscription and all other information visit: wileyonlinelibrary.com/journal/bl

View this journal online at wileyonlinelibrary.com/journal/bl

Printed in the USA by The Allied Group.

JOSSEY-BASS™

A Wiley Brand