

Investment Committee
Friday, December 9, 2022, 9:00 a.m.
Retirement and Investment Conference Room (Virtual)
1600 E Century Ave, Suite 3, Bismarck, ND 58507
[Click here to join the meeting](#)

AGENDA

- I. CALL TO ORDER AND ACCEPTANCE OF AGENDA**
- II. ACCEPTANCE OF MINUTES (NOVEMBER 2022)**
- III. FIXED INCOME PORTFOLIO REVIEW – MR. ANDERSON**
- IV. FUND VALUE ALLOCATION PROCESS – MR. ANDERSON**
- V. ADJOURNMENT**

**STATE INVESTMENT BOARD
INVESTMENT COMMITTEE MEETING
MINUTES OF THE
NOVEMBER 10, 2022, MEETING**

MEMBERS PRESENT: Thomas Beadle, State Treasurer, Chair
Joseph Heringer, Trust Lands Commissioner, Vice Chair
Scott Anderson, CIO
Eric Chin, Deputy CIO
Dr. Prodosh Simlai, External Representative
Dr. Ruilin Tian, External Representative

STAFF PRESENT: Jecca Geffre, Outreach & Communications Dir
Rachel Kmetz, Accounting Mgr
Missy Kopp, Exec Assistant
Jan Murtha, Exec Director
Matt Posch, Sr. Investment Officer
Chad Roberts, DED/CRO
Sara Sauter, Suprv of Internal Audit
Ryan Skor, CFO/COO

GUESTS: Alex Browning, Callan
Craig Chaikin, Callan
John Pirone, Callan
Members of the Public

CALL TO ORDER:

Treasurer Beadle called the State Investment Board (SIB) Investment Committee (IC) meeting to order at 9:03 a.m. on Thursday, November 10, 2022, at the Retirement and Investment Office (virtual host), 1600 E Century Ave., Bismarck, ND.

The following Investment Committee members were present representing a quorum, Mr. Anderson, Mr. Chin, Treasurer Beadle, Commissioner Heringer, Dr. Simlai, and Dr. Tian.

AGENDA:

The agenda was considered for the November 10, 2022, meeting.

IT WAS MOVED BY DR. SIMLAI AND SECONDED BY MR. ANDERSON AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE NOVEMBER 10, 2022, MEETING AS DISTRIBUTED.

AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, MR. CHIN, DR. TIAN, AND TREASURER BEADLE

NAYS: NONE

MOTION CARRIED

MINUTES:

The minutes were considered for the October 7, 2022, meeting.

IT WAS MOVED BY MR. CHIN AND SECONDED BY DR. SIMLAI AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES FOR THE OCTOBER 7, 2022, MEETING AS DISTRIBUTED.

**AYES: DR. SIMLAI, MR. CHIN, COMMISSIONER HERINGER, DR. TIAN, MR. ANDERSON,
AND TREASURER BEADLE**
NAYS: NONE
MOTION CARRIED

INVESTMENT COMMITTEE PROPOSED CALENDAR:

Staff provided a proposed meeting schedule for the IC through the end of the fiscal year. The Committee members agreed that the proposed meeting schedule would work. Staff will move forward with invites and public notice of those meetings.

EQUITY PORTFOLIO REVIEW:

Mr. Anderson, Mr. Chin, and Mr. Posch provided an overview of the equity portfolio. Staff have undertaken a comprehensive portfolio review so the team can become familiar with how the portfolio operates. The investment staff have been working on a harmonization of equity weights and moving to one equity implementation across the portfolio. Staff have broken the review into phases. Staff are working on benchmark harmonization that will correspond to the MSCI ACWI IMI 60% US and 40% non-US. Mr. Chin reviewed the implementation process to get to the new equity allocation. Mr. Anderson discussed the one and five-year contribution to equity active return and the challenge that exists without a daily performance system. Mr. Posch highlighted certain Public Equity Managers who are heavily weighted. Committee discussion followed.

TRANSITION UPDATE:

Mr. Chin provided an update on the equity transition. The SIB approved a new equity portfolio across the three pools at the May 2022 meeting. The new equity portfolio will harmonize the equity portfolios across the three pools and create an optimal equity allocation. Staff will implement one policy benchmark that sets the Russell 3000 and MSCI SCWI EX US IMI as the new policy benchmark. Staff will also add passive index exposure to equity sub-asset classes for exposure management and liquidity. The transition is 99% complete as of November 1, 2022. The transition is a complex and nuanced transaction with approximately \$3.3 billion of adds and \$3.3 billion of redemptions. The total cost of the transition came in lower than pre-trade estimates. The next steps include a formal post-trade review of the transition with Northern Trust then staff will begin the implementation of Equity 2.0. Committee discussion followed.

COMPLIANCE PROCESS:

Mr. Chin reviewed RIO's compliance process. Investment compliance activities and tasks include investment guidelines, ongoing compliance monitoring, and document review. Mr. Chin provided details for each step of the process. Committee discussion followed.

With no further business to come before the Investment Committee, Treasurer Beadle adjourned the meeting at 11:24 a.m.

Prepared by:

Missy Kopp
Assistant to the Board



FIXED INCOME PORTFOLIO CHANGES

INVESTMENT STAFF
DECEMBER 9, 2022

NORTH
Dakota
Be Legendary.

Retirement & Investment

PHASE

ACTIVITIES

1.0

SUB-ASSET STRUCTURE

- INDEXING FOR LIQUIDITY, TRACKING ERROR CONTROL, AND REBALANCING
- CONSISTENT SUB-ASSET ALLOCATIONS AND ASSET ALLOCATION POOLS ACROSS FUNDS BASED ON MARKET REPRESENTATIVE UNIVERSES AND BENCHMARKS
- MANAGER'S MANDATES RISK ALIGNED TO ASSET ALLOCATION AND TO MANAGE RISK

2.0

SUB-ASSET OPTIMIZATION

- FIND OPTIMAL POOL OF MANAGERS FOR SUB-ASSET ACTIVE RETURN AND RISK GOALS
- CONSTRUCT OPTIMAL WEIGHTING OF MANAGER MANDATES

3.0

ADVANCED FUNDS MANAGEMENT

- OFFSET SUB-ASSET EXPOSURES TO OPTIMIZE ACTIVE RETURN/RISK
- MANAGE LIQUIDITY, REBALANCING AND EXPOSURES WITH INDEX FUNDS

FIXED INCOME BENCHMARK HARMONIZATION

	ALLOCATION	BENCHMARK	PERS FI BENCHMARK	WSI FI BENCHMARK	LEGACY FUND FI BENCHMARK ³
	IG FIXED INCOME ¹	BLOOMBERG AGG	69%	100%	100% ²
	HIGH YIELD	BLOOMBERG HIGH YIELD	31%		
SEPARATE CATEGORIES	IG FIXED INCOME	BLOOMBERG AGG	70%	100%	81%
	HIGH YIELD	BLOOMBERG HIGH YIELD	10%		10%
	PRIVATE DEBT	S&P LEVERAGED LOAN	20%		9%
	TOTAL		100%	100%	100%

1. PERS HAS SEPARATE INVESTMENT GRADE AND HIGH YIELD FIXED INCOME ALLOCATIONS, WHILE THE LEGACY FUND AND WSI HAVE ONE GLOBAL FIXED INCOME ALLOCATION
2. LEGACY FUND'S GLOBAL FIXED INCOME ALLOCATION CONTAINS 9% PRIVATE DEBT
3. ASSET ALLOCATION CURRENTLY BEING DEVELOPED

A CONSISTENT INVESTMENT GRADE SUB-ALLOCATION - WEIGHTS

ALLOCATION	BENCHMARK	PERS	WSI	LEGACY FUND ⁶	NEW SUB-ALLOCATION
CORE FIXED INCOME	BLOOMBERG AGG	78%	70%	70%	74%
LONG TREASURIES ¹	BLOOMBERG LONG TREASURY	11%			
SHORT DURATION SECURITIZED ²	3 MO LIBOR	11%	8%	8%	
GOV/CREDIT ³	BLOOMBERG GOV/CREDIT		14%	14%	
GOV (NEW) ⁴	BLOOMBERG AGG				11%
CREDIT (NEW) ⁴	BLOOMBERG AGG				11%
OPPORTUNISTIC (NEW) ⁵	BLOOMBERG AGG				4%
TOTAL		100%	100%	100%	100%

1. CURRENTLY SSGA INDEX PORTFOLIO

2. CURRENTLY MANULIFE

3. CURRENTLY SSGA INDEX PORTFOLIO

4. PROPOSE A SSGA GOVERNMENT AND CREDIT INDEX FOR REBALANCING AND LIQUIDITY MANAGEMENT PLUS AN 8% ALLOCATION TO ALLSPRING MEDIUM QUALITY CREDIT FUND (AN EXISTING MANGER)

5. CREATE AN OPPORTUNISTIC STRATEGY BUCKET WITHIN IG FIXED INCOME. PIMCO DISCO (AN EXISTING MANAGER) WILL BE MOVED TO THIS BUCKET

6. ASSET ALLOCATION CURRENTLY BEING DEVELOPED

A CONSISTENT INVESTMENT GRADE SUB-ALLOCATION - MANAGERS

	PERS CURRENT IG ALLOCATION	WSI CURRENT IG ALLOCATION	LEGACY FUND CURRENT IG ALLOCATION	NEW IG ALLOCATION PERS AND WSI	NEW IG ALLOCATION LEGACY
CORE FIXED INCOME	69.7%	66.7%	57.3%	74.0%	74.0%
1 PRUDENTIAL CORE FIXED INCOME	34.9%			24.7%	24.7%
PRUDENTIAL CORE PLUS FIXED INCOME		26.3%	28.7%		
PIMCO CORE PLUS CONSTRAINED	34.9%	14.0%	0.0%	24.7%	24.7%
WESTERN ASSET U.S. CORE FIXED INCOME		26.3%	28.7%	24.7%	24.7%
2 SHORT DURATION SECURITIZED	12.0%	8.0%	8.8%	0.0%	0.0%
MANULIFE TOTAL RETURN BOND FUND	12.0%	8.0%	8.8%	0.0%	0.0%
2 LONG TREASURIES	10.0%	0.0%	0.0%	0.0%	0.0%
SSGA LONG U.S. TREASURY INDEX NL FUND	10.0%			0.0%	0.0%
IG GOV/CREDIT	0.0%	14.0%	15.4%	0.0%	0.0%
SSGA U.S. GOVT CREDIT BOND INDEX	3 0.0%	14.0%	15.4%	0.0%	0.0%
IG GOV	0.0%	0.0%	7.6%	11.0%	11.0%
SSGA GOV INDEX	3 0.0%			11.0%	2.6%
BANK OF ND MATCH LOAN CDS			7.6%	0.0%	8.4%
IG CREDIT	0.0%	8.0%	8.8%	11.0%	11.0%
ALLSPRING MEDIUM QUALITY CREDIT	3 0.0%	8.0%	8.8%	8.0%	8.0%
SSGA CREDIT INDEX				3.0%	3.0%
OPPORTUNISTIC	8.3%	3.2%	2.1%	4.0%	4.0%
PIMCO DISCO II	8.3%	3.2%	2.1%	4.0%	4.0%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

INVESTMENT GRADE FIXED INCOME

IMPLEMENT A CONSISTENT IG ALLOCATION

- 1 CREATE A CONSISTENT *CORE FIXED INCOME* SUB-ALLOCATION
- 2 TERMINATE MANULIFE AND THE LONG TREASURY FUND
- 3 BREAK UP *IG GOV/CREDIT* INTO *IG GOV* AND *IG CREDIT*. ADD ALLSPRING TO PENSION. BND CDS OFFSETS GOV EXPOSURE
- 4 CREATE *OPPORTUNISTIC* SUB-ALLOCATION

MANAGER TERMINATIONS

MANULIFE TOTAL RETURN BOND FUND

DESIRE NOT TO HAVE A SHORT DURATION SECURITIZED MANDATE

SSGA LONG U.S. TREASURY INDEX NL FUND

DESIRE TO REMOVE DIRECT U.S. LONG TREASURY EXPOSURE

SSGA U.S. GOVT CREDIT BOND INDEX

BREAKING UP INTO COMPONENT PARTS: SSGA GOV INDEX AND SSGA CREDIT INDEX

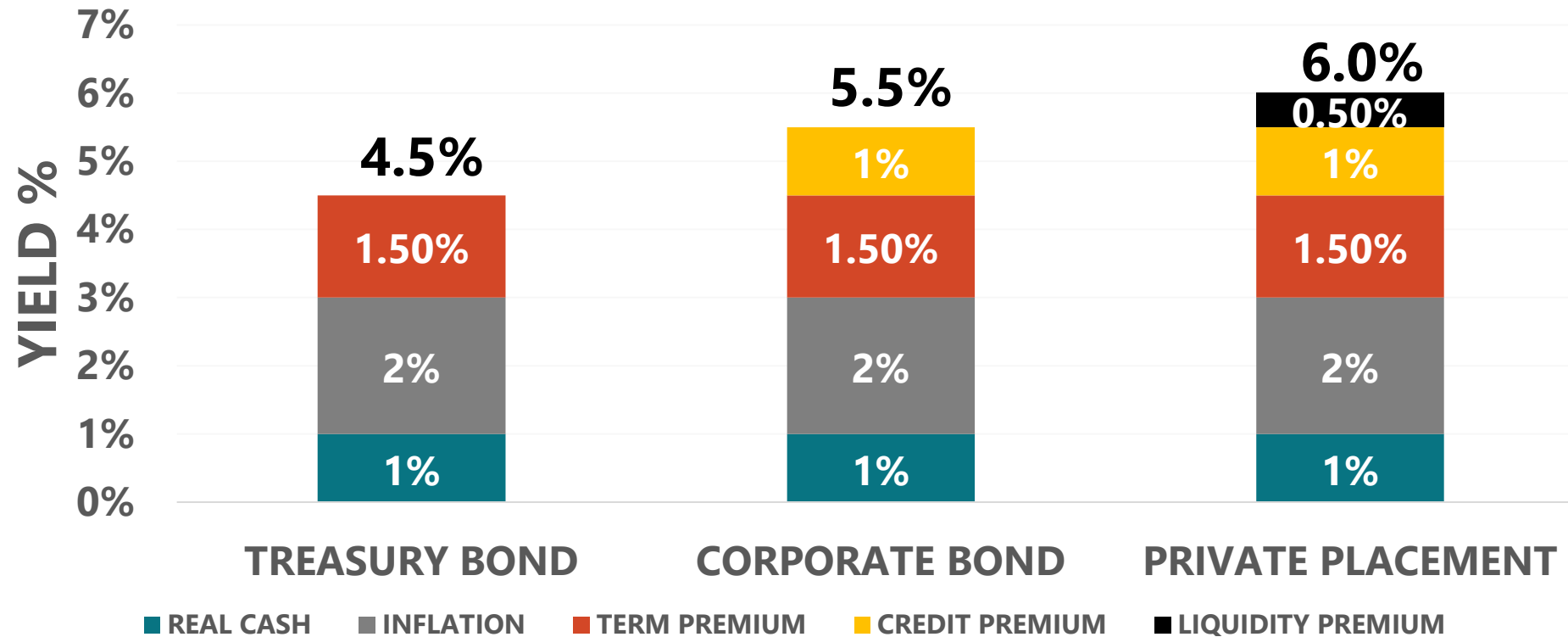
NEXT STEPS

- IDENTIFY TRANSITION MANAGER FOR FIXED INCOME TRANSITION
- COORDINATE WITH FISCAL: COMPLETE TRANSITION IN FIRST QUARTER 2023
- STAFF WILL CONTINUE PORTFOLIO ANALYSIS ACROSS ASSET CLASSES
- THIS IS THE FIRST STEP OF DEVELOPING PORTFOLIO STRUCTURE TO ENABLE A MORE EFFICIENT AND EFFECTIVE DEVELOPMENT OF THE FUNDS' ACTIVE RETURN AND RISK
- STAFF WILL CONTINUE TO SEARCH FOR THE OPTIMAL PORTFOLIO STRUCTURE

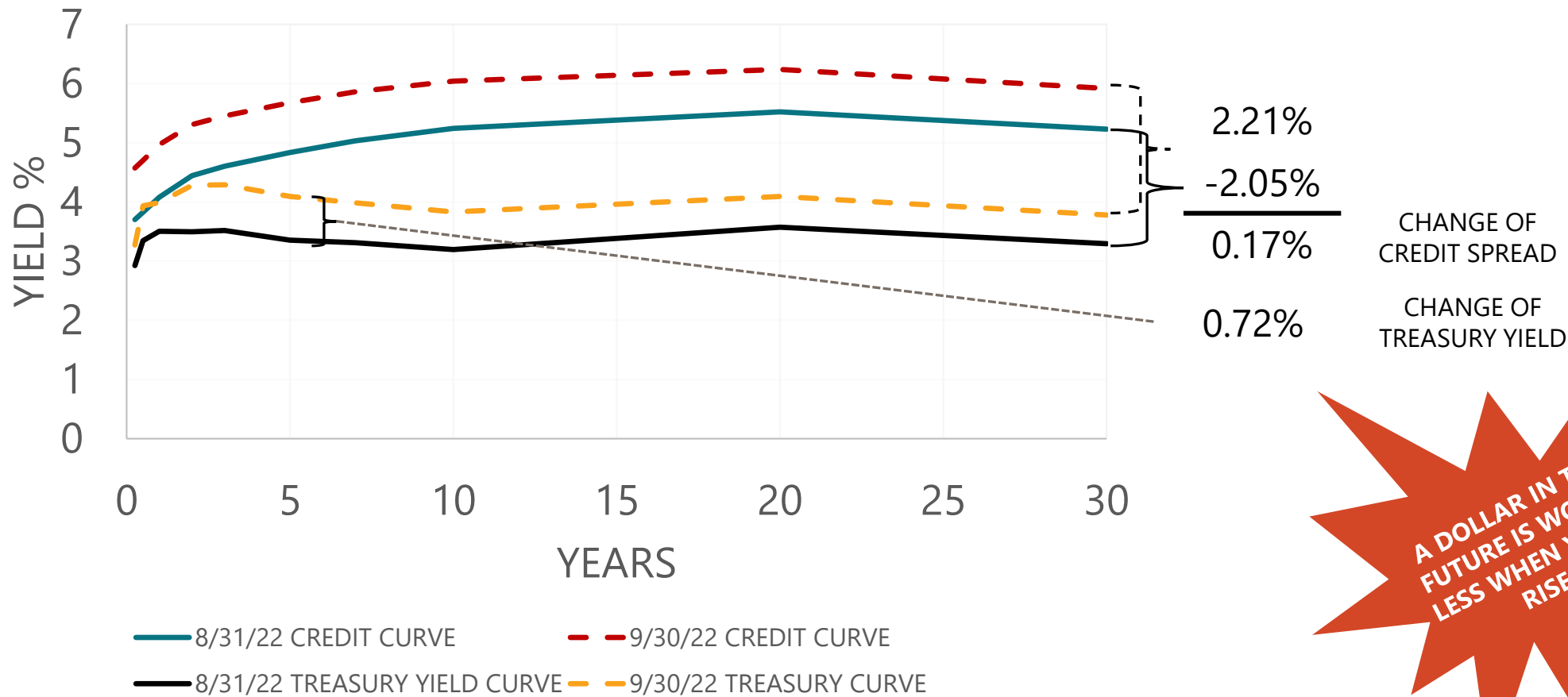
BOND YIELDS COMPENSATE RISKS

COMPONENTS OF BOND YIELDS

Illustration



CHANGE OF CREDIT AND TREASURY YIELDS DRIVE RISK¹



**A DOLLAR IN THE
FUTURE IS WORTH
LESS WHEN YIELDS
RISE!**

FIXED INCOME RISK AND RETURN

SEPTEMBER PUBLIC FIXED INCOME RETURN¹

(IN BASIS POINTS)	EXPOSURE (DURATION)	MARKET CHANGE	RETURN IMPACT
SHORT RATES	0.6	80	-51
MEDIUM RATES	2.2	72	-159
LONG RATES	3.2	53	-167
TOTAL	6.0		-377
SPREAD (OAS)	4.9	20	-98
VOLATILITY	1.2	9	-10
YIELD	0.1	550	46
TOTAL PORTFOLIO RETURN			-440
LESS BENCHMARK RETURN			-427
SEPTEMBER TOTAL RETURN			-13



$$\frac{\text{EXPOSURE} \times \text{MARKET CHANGE}}{\text{CHANGE OF PORTFOLIO VALUE}} = -1.0$$





SEPTEMBER PUBLIC FIXED INCOME RISKS¹

DESCRIPTION	CREDIT	KEY RATE DURATION				SPREAD		RISK	
	RATING	DURATION	SHORT	MEDIUM	LONG	YIELD	OAS		DURATION
BLOOMBERG AGGREGATE BENCHMARK	AA-	6.4	1.0	2.7	2.7	4.5	48	3.9	635
PENSION INVESTMENT GRADE	A+	(0.4)	(0.1)	(0.3)	0.1	0.8	89	0.9	540
MANULIFE TOTAL RETURN	A	(5.1)	(1.7)	(2.1)	(1.3)	4.4	250	(0.4)	196
STATE STREET LONG TREASURY	AA+	8.4	(0.8)	(1.2)	10.4	(0.6)	(47)	(3.9)	1,446
LEGACY INVESTMENT GRADE	A+	0.4	0.3	(0.7)	0.9	1.0	98.	0.7	683
GOVERNMENT CREDIT BENCHMARK	AA-	6.5	1.0	2.5	2.9	4.5	48.2	3.0	624
HIGH YIELD BENCHMARK	B+	4.1	1.2	2.7	0.2	8.6	432	4.1	772
LOOMIS HIGH YIELD	B+	(0.2)	(0.1)	(0.2)	0.1	(0.3)	(5.7)	(0.2)	730

FIXED INCOME RETURN ATTRIBUTION

	POLICY WEIGHT	1 YR PORTFOLIO RETURN	1 YR POLICY RETURN	1 YR ACTIVE RETURN	5 YR PORTFOLIO RETURN	5 YR POLICY RETURN	5 YR ACTIVE RETURN
PERS FIXED INCOME	23.0%	-11.07%	-14.42%	3.34%	1.99%	0.56%	1.43%
INVESTMENT GRADE FIXED INCOME	69.6%	-11.07%	-14.60%	3.53%	1.87%	-0.27%	2.14%
Bloomberg Aggregate							
PRUDENTIAL CORE FIXED INCOME*	24.2%	-15.68%	-14.60%	-1.08%	0.24%	0.08%	0.16%
PIMCO CORE PLUS	24.2%	-15.61%	-14.60%	-1.01%	0.00%	-0.27%	0.27%
PIMCO DISCO II	5.9%	-0.18%	-14.60%	14.42%	4.90%	-0.27%	5.17%
STATE STREET LONG UST INDEX	7.0%	-26.66%	-14.60%	-12.06%	-1.60%	-0.27%	-1.33%
MANULIFE TOTAL RETURN BOND FUND	8.3%	-7.44%	-14.60%	7.16%	2.21%	-0.27%	2.48%
<i>*Prudential 5-year returns are since inception (03/2018)</i>							
BELOW IG FIXED INCOME	30.4%	-1.02%	-14.15%	13.13%	4.99%	1.56%	3.42%
Bloomberg High Yield 2% Issuer Constrained							
ARES ND CREDIT STRATEGIES	10.6%	8.95%	-14.15%	23.10%	7.38%	1.56%	5.82%
CERBERUS ND PRIVATE CREDIT FUND	11.5%	6.91%	-14.15%	21.05%	9.62%	1.56%	8.06%
LOOMIS SAYLES HIGH YIELD	8.0%	-16.09%	-14.15%	-1.94%	0.78%	1.56%	-0.78%
PIMCO BRAVO II	0.4%	-1.13%	-14.15%	13.02%	2.62%	1.56%	1.05%
LEGACY FUND FIXED INCOME	35.0%	-13.37%	-14.60%	1.23%	0.98%	-0.27%	1.25%
INVESTMENT GRADE FIXED INCOME	100.00%	-13.37%	-14.60%	1.23%	0.98%	-0.27%	1.25%
Bloomberg Aggregate							
WESTERN ASSET CORE FIXED INCOME	25.3%	-17.72%	-14.60%	-3.12%	-0.40%	-0.27%	-0.13%
PRUDENTIAL CORE PLUS FIXED INCOME	25.3%	-16.37%	-14.60%	-1.77%	0.21%	-0.27%	0.48%
ALLSPRING US CORPORATE PLUS	8.0%	-19.24%	-14.60%	-4.64%	0.97%	-0.27%	1.24%

FIXED INCOME MANAGER CATALOGUE

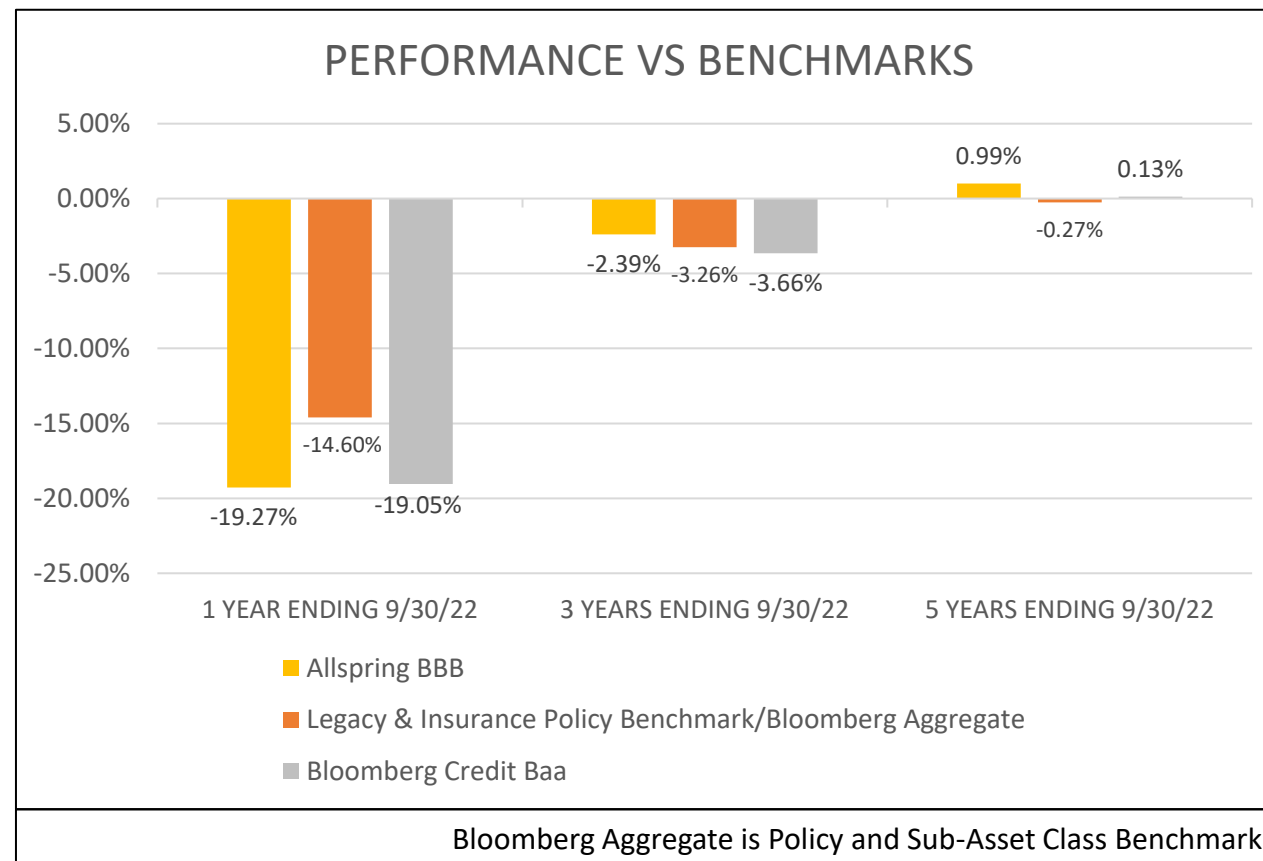
	= MANAGER PERFORMANCE
	= POLICY BENCHMARK
	= SUB-ASSET CLASS POLICY BENCHMARK
	= STYLE BENCHMARK

ALLSPRING (FKA WELLS CAPITAL) – US CORPORATE PLUS STRATEGY

STRATEGY: US CORPORATE PLUS STRATEGY TAKES ADVANTAGE OF ALLSPRING'S EXTENSIVE CREDIT RESEARCH CAPABILITIES TO HARVEST ATTRACTIVE YIELD AND TOTAL RETURN OPPORTUNITIES FOCUSING WITHIN THE BBB AND BB CREDIT SEGMENTS.

AN INVESTMENT GRADE CREDIT RATING AND AMPLE RISK DIVERSIFICATION ARE MAINTAINED THROUGH USE OF US DOLLAR DENOMINATED DEBT OF CORPORATE, SOVEREIGN, FOREIGN AGENCY, MUNICIPAL, AND TREASURY BONDS

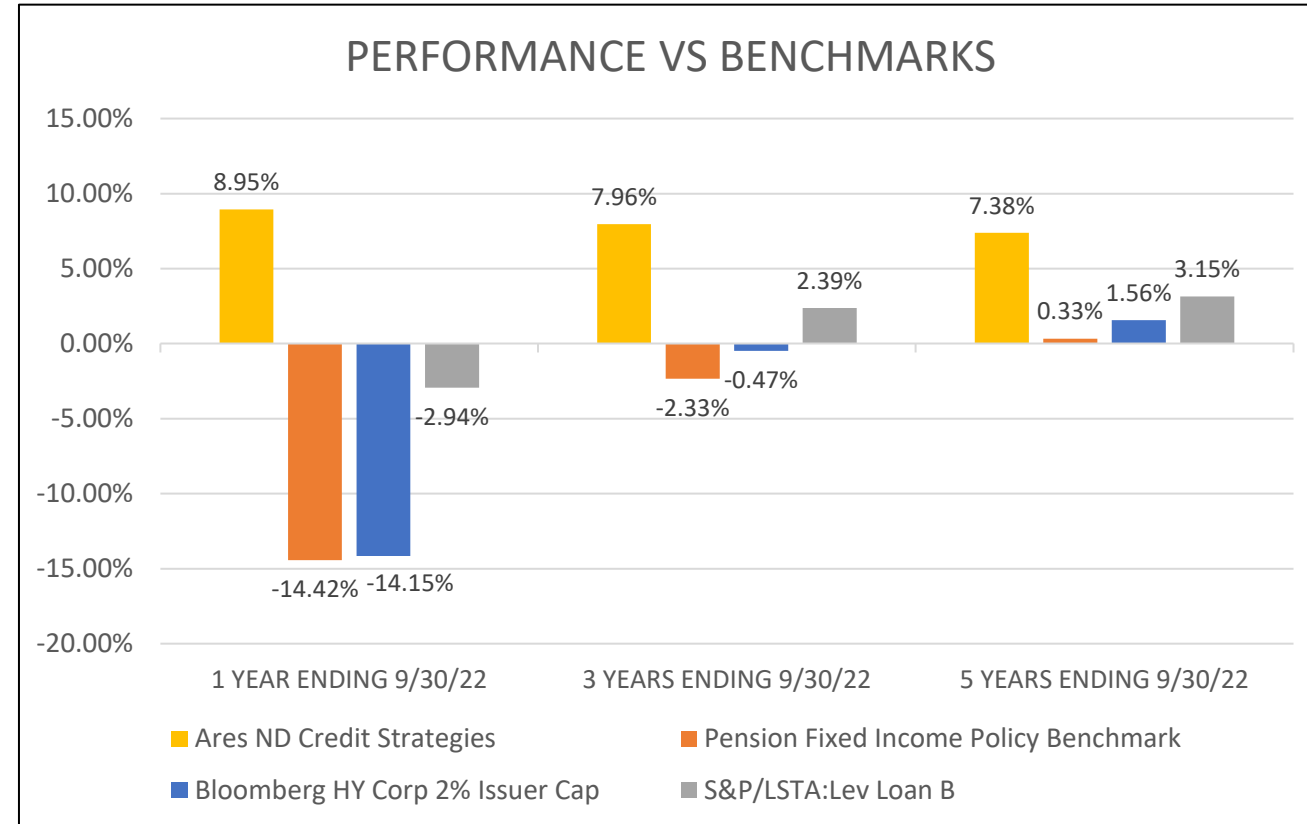
ALPHA GENERATION IS DRIVEN PRIMARILY BY SECURITY SELECTION AND SECONDARILY BY SECTOR SELECTION, WITH MODEST USE OF CURVE AND DURATION POSITIONING



POOL	AUM
INSURANCE	\$100 M
LEGACY	\$199 M

ARES - ND BELOW IG CREDIT STRATEGIES

STRATEGY: THE INVESTMENT OBJECTIVE OF THE ARES ND CREDIT STRATEGIES FUND LLC (THE "FUND") IS TO INVEST IN DIRECTLY ORIGINATED, PRIMARILY SENIOR SECURED LOANS IN HIGH QUALITY MIDDLE MARKET COMPANIES IN NORTH AMERICA. THE FUND SEEKS TO GENERATE CURRENT INCOME WITH SOME LONG-TERM CAPITAL APPRECIATION.

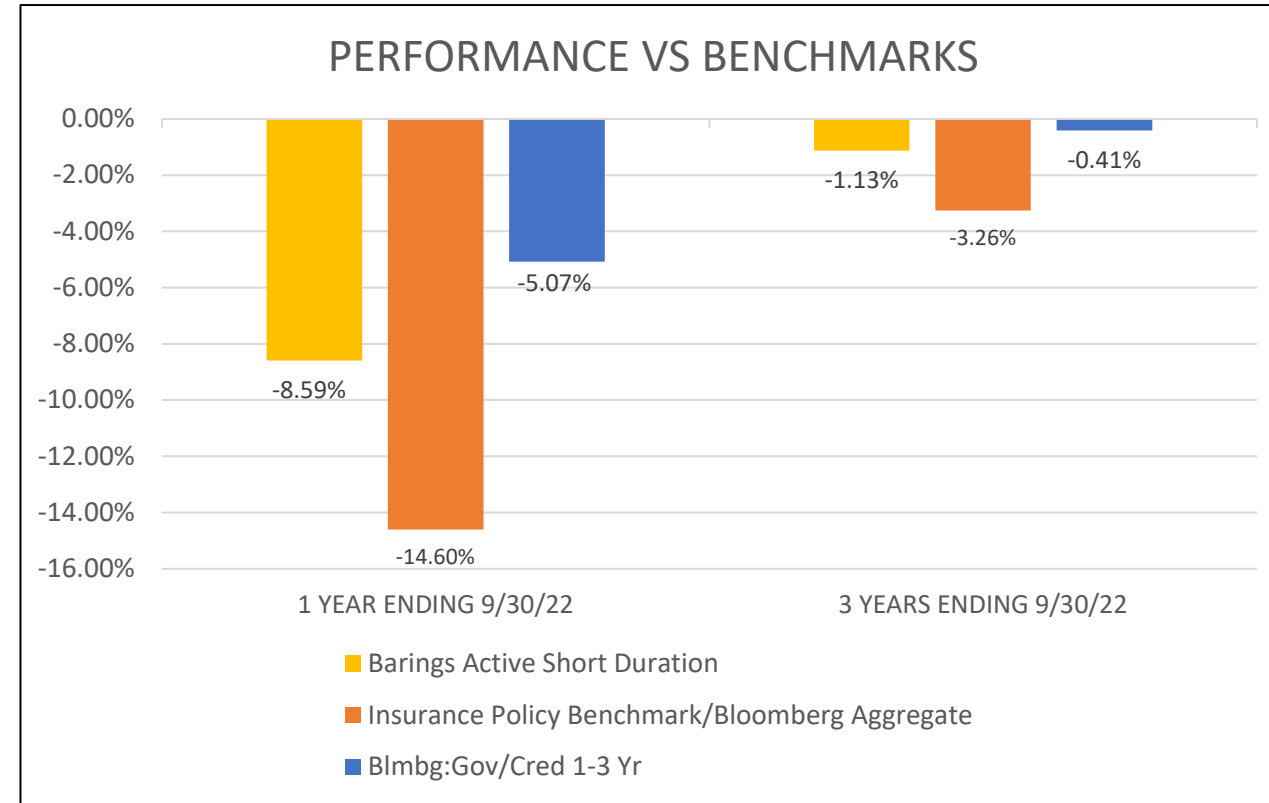


POOL	AUM
PENSION	\$156 M
LEGACY	\$110 M

BARINGS – ACTIVE SHORT DURATION

STRATEGY: THE INVESTMENT OBJECTIVE OF THE BARINGS ACTIVE SHORT DURATION STRATEGY IS TO OUTPERFORM THE TOTAL RETURN OF THE BARCLAYS CAPITAL 1-3 YEAR US GOVERNMENT INDEX WHILE MINIMIZING FLUCTUATIONS IN CAPITAL VALUE AND PROVIDING SUFFICIENT LIQUIDITY TO FUND WITHDRAWALS DRIVEN BY CLIENT ACTIVITY. THE PORTFOLIO SEEKS TO ACHIEVE A HIGH TOTAL RATE OF RETURN PRIMARILY FROM CURRENT INCOME WHILE MINIMIZING FLUCTUATIONS IN CAPITAL VALUES BY INVESTING IN A WELL-DIVERSIFIED PORTFOLIO OF US GOVERNMENT, MORTGAGE-BACKED, ASSET BACKED SECURITIES AND CORPORATE BONDS.

IN MEETING THESE GOALS, RISK IS MEASURED BY PERCEIVED OR ACTUAL CHANGES IN CREDIT WORTHINESS, ADEQUATE DIVERSIFICATION AND EXPOSURE TO POTENTIAL CHANGES IN INTEREST RATES. BARINGS EXPLICITLY MANAGES THE PORTFOLIO TO MINIMIZE THESE RISKS AND ENDEAVORS TO ADD VALUE THROUGH SECURITY SELECTION AND PORTFOLIO DURATION STRUCTURE DESIGNED TO MAXIMIZE THE RISK-RETURN CHARACTERISTICS OF THE YIELD CURVE.



POOL

AUM

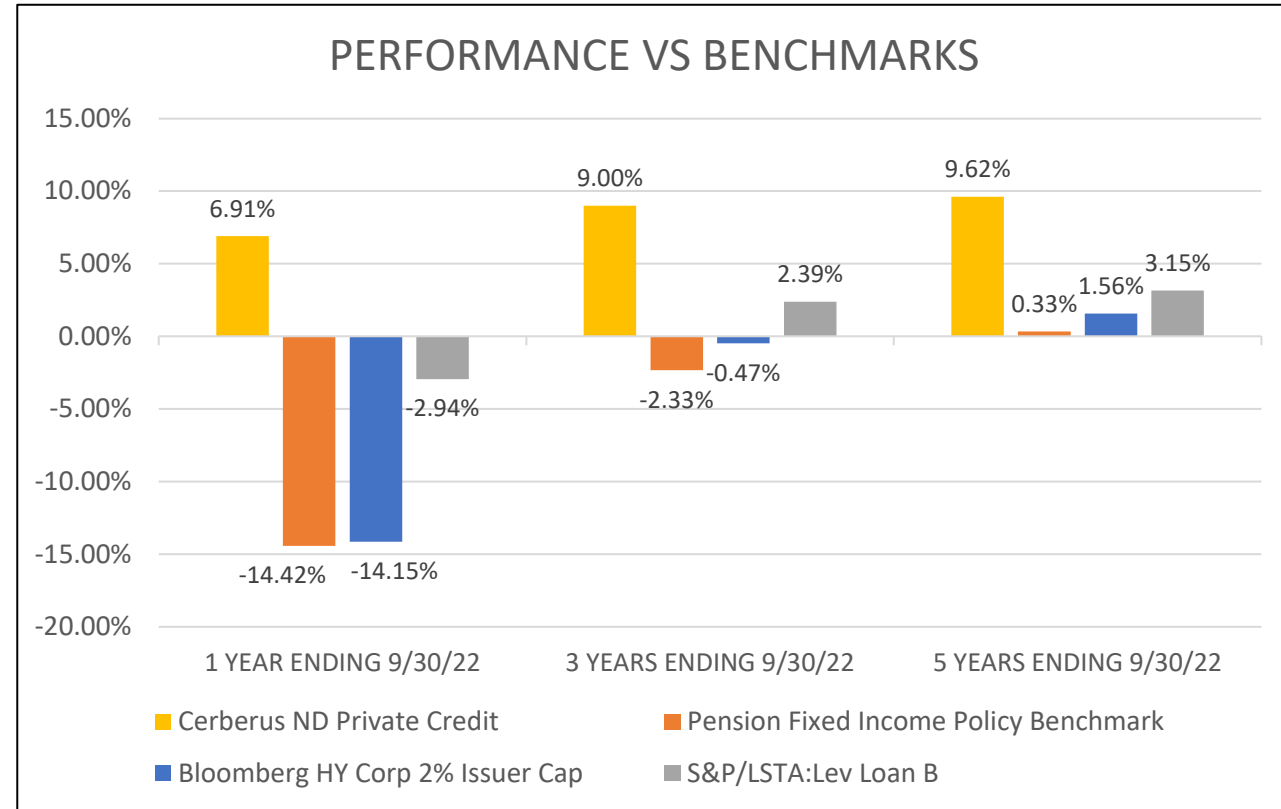
INSURANCE

\$378 M

CERBERUS – ND BELOW IG PRIVATE CREDIT

STRATEGY: THE CERBERUS ND PRIVATE CREDIT FUND'S OBJECTIVE IS TO ACHIEVE SUPERIOR RISK-ADJUSTED RETURNS MAINLY THROUGH ORIGINATION OF, AND INVESTMENT IN, SECURED DEBT ASSETS. THE PARTNERSHIP EXPECTS TO GENERATE BOTH CURRENT INCOME AND CAPITAL APPRECIATION. THE PARTNERSHIP INTENDS TO FUND THE ORIGINATION OF SECURED DEBT OF U.S. MIDDLE-MARKET COMPANIES DIRECTLY OR THROUGH THE USE OF ONE OR MORE SPVS. SUCH DEBT MAY BE SENIOR OR JUNIOR AND MAY BE COLLATERALIZED BY A VARIETY OF ASSETS. THE PARTNERSHIP MAY ALSO ORIGINATE OR INVEST IN REVOLVING CREDIT FACILITIES AND MAY MAKE INVESTMENTS IN OTHER DEBT ASSETS, INCLUDING SECURED OR UNSECURED DEBT ASSETS ORIGINATED BY OTHER PARTIES AND/OR TRADING ON THE SECONDARY MARKET. IN ADDITION, THE PARTNERSHIP MAY MAKE OTHER INVESTMENTS ON AN OPPORTUNISTIC BASIS.

POOL	AUM
PENSION	\$170 M
LEGACY	\$136 M



GOLDMAN SACHS – 2006 MEZZ FUND, MEZZ FUND V

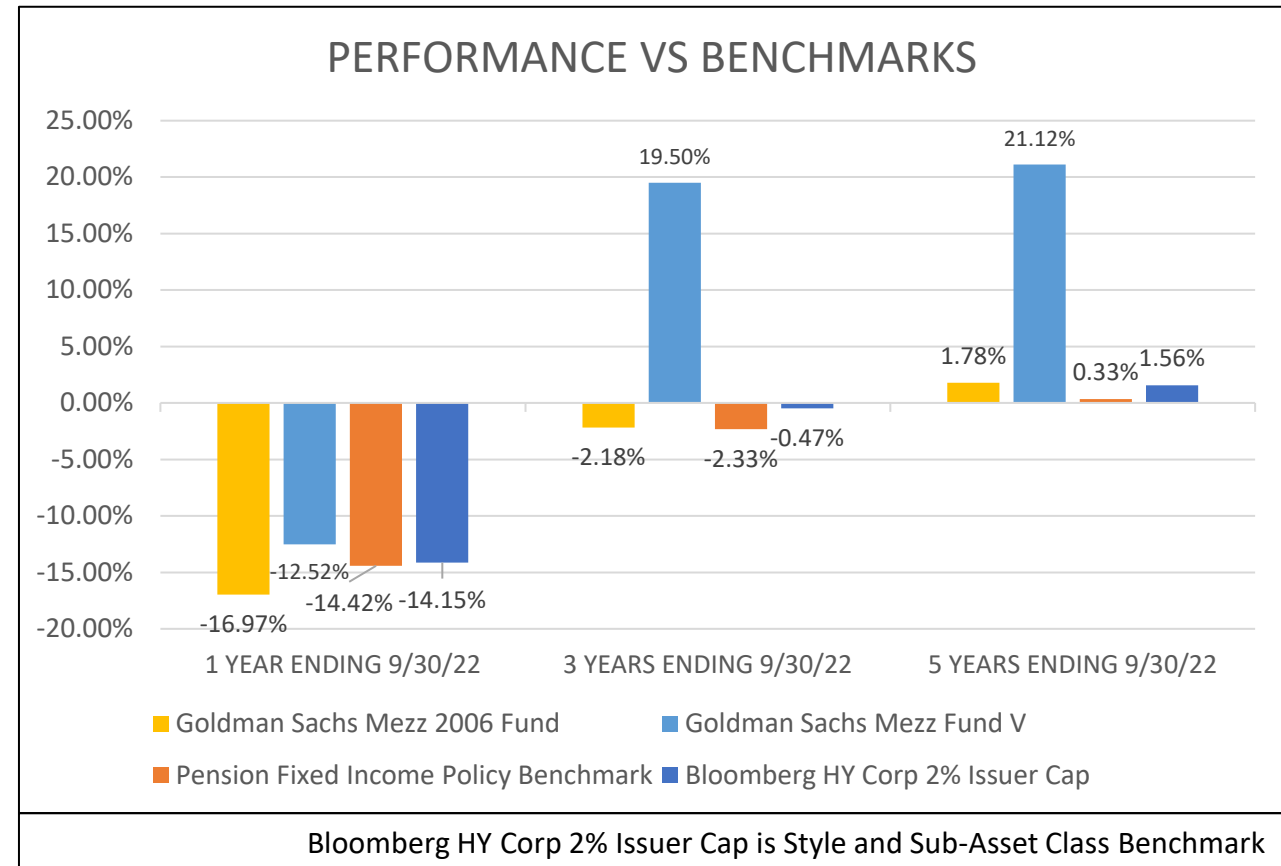
STRATEGY: THE GS MEZZANINE PARTNERS FAMILY OF FUNDS IS THE LARGEST MEZZANINE FUND FAMILY IN THE WORLD, WITH OVER \$20 BILLION INVESTED IN 100+ COMPANIES SINCE 1996. IN 2007, GOLDMAN SACHS ESTABLISHED ITS FIFTH MEZZANINE FUND, GS MEZZANINE PARTNERS V, WITH \$13 BILLION OF LEVERAGED CAPITAL. GS MEZZANINE PARTNERS SEEKS LARGE-SIZED MEZZANINE INVESTMENTS COMPRISED GENERALLY OF FIXED INCOME SECURITIES AND AN ASSOCIATED EQUITY COMPONENT. OUR FOCUS IS ON PROVIDING "PRIVATE HIGH YIELD" CAPITAL FOR MID-TO LARGE-SIZED LEVERAGED AND MANAGEMENT BUYOUT TRANSACTIONS, RECAPITALIZATIONS, FINANCINGS, RE-FINANCINGS, ACQUISITIONS AND RESTRUCTURINGS FOR PRIVATE EQUITY FIRMS, PRIVATE FAMILY COMPANIES AND CORPORATE ISSUERS. TARGETS HIGH-QUALITY COMPANIES WITH \$500 MILLION TO \$10+ BILLION OF ENTERPRISE VALUE; LEADING MARKET POSITIONS; HIGH BARRIERS TO ENTRY; WELL-REGARDED MANAGEMENT TEAMS; AND STABLE, CASH GENERATIVE BUSINESSES."

POOL

AUM

PENSION

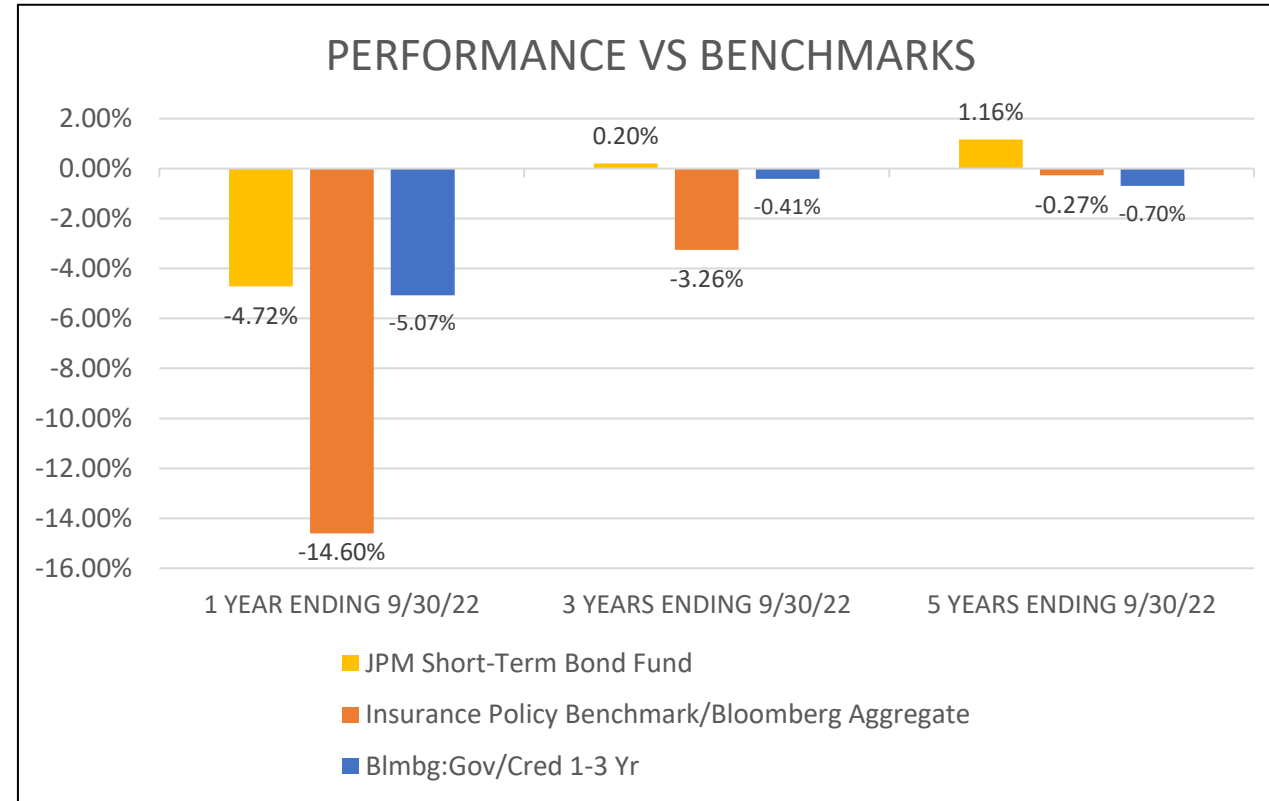
\$0.1 M



JP MORGAN – SHORT-TERM BOND FUND

STRATEGY: THE INVESTMENT OBJECTIVE OF THE SHORT-TERM BOND FUND IS TO OUTPERFORM (BASED ON THE PORTFOLIO'S TOTAL RETURN, GROSS OF FEES) THE BARCLAYS CAPITAL 1-3 YEAR GOVERNMENT/CREDIT INDEX (THE BENCHMARK) WHILE MAINTAINING TOTAL RETURN RISK SIMILAR TO THAT OF THE BENCHMARK AS MEASURED OVER A MARKET CYCLE.

POOL	AUM
INSURANCE	\$387 M



LOOMIS SAYLES – HIGH YIELD DISCRETION STRATEGY

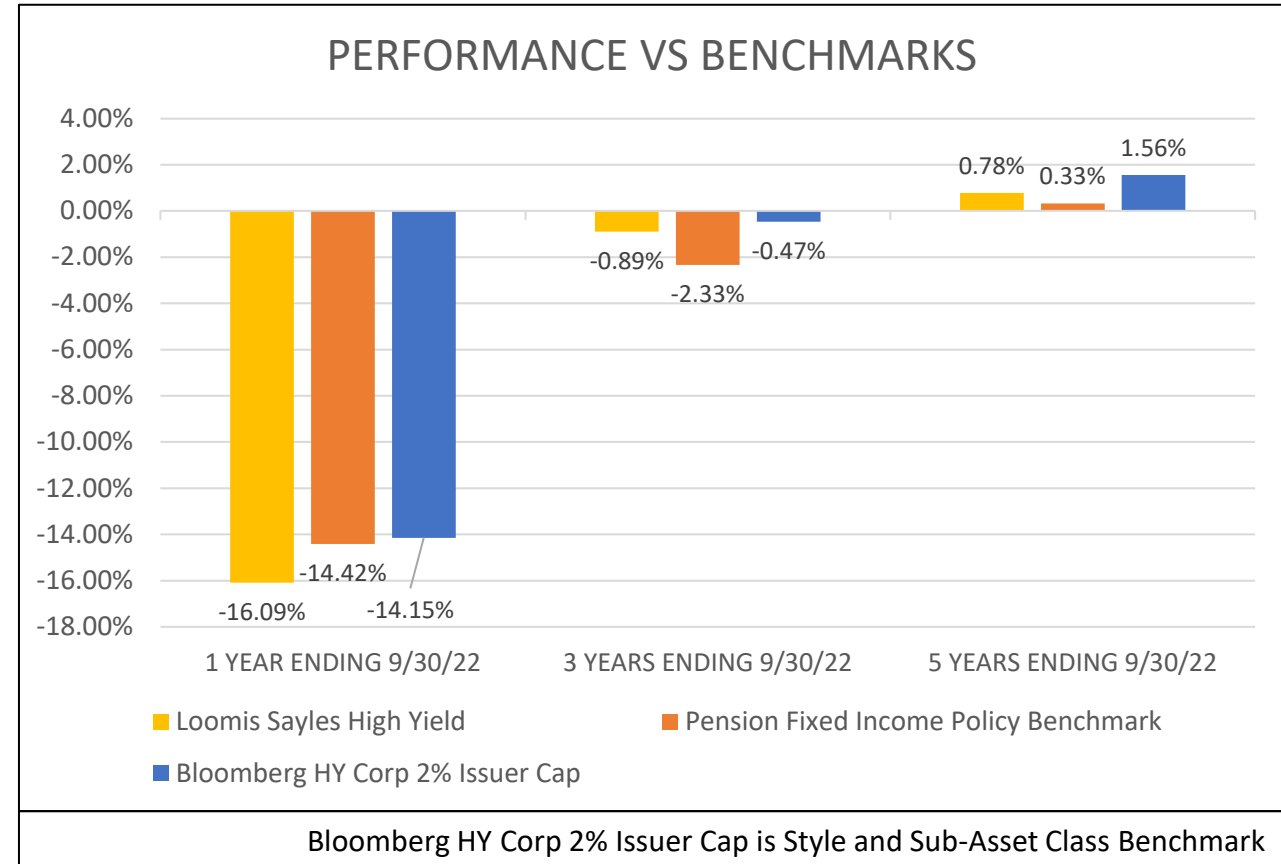
STRATEGY: THE HIGH YIELD FULL DISCRETION STRATEGY SEEKS TO EXPLOIT THE COLLABORATIVE EFFORTS OF THE FIRM'S ECONOMICS GROUP AND SECTOR TEAMS. ASSET CLASS AND SECTOR ALLOCATIONS REFLECT THE MACROECONOMIC VIEW. SECURITY SELECTION IS BASED ON FUNDAMENTAL AND RELATIVE VALUE ANALYSIS WITHIN SECTORS. THIS PROVIDES THE PRIMARY SOURCE OF EXCESS RETURN. PORTFOLIO GUIDELINES ARE BROAD AND OFFER THE PORTFOLIO MANAGEMENT TEAM SIGNIFICANT INVESTMENT FLEXIBILITY. PORTFOLIO MANAGERS INCORPORATE A LONG-TERM MACROECONOMIC VIEW ALONG WITH A STRINGENT BOTTOM-UP INVESTMENT EVALUATION PROCESS THAT DRIVES SECURITY SELECTION AND RESULTING SECTOR ALLOCATIONS. OPPORTUNISTIC INVESTMENTS IN NON-BENCHMARK SECTORS INCLUDING INVESTMENT GRADE CORPORATE, EMERGING MARKET, AND NON-US DOLLAR DEBT AND CONVERTIBLE BONDS HELP TO MANAGE OVERALL PORTFOLIO RISK AND ENHANCE TOTAL RETURN POTENTIAL.

POOL

AUM

PENSION

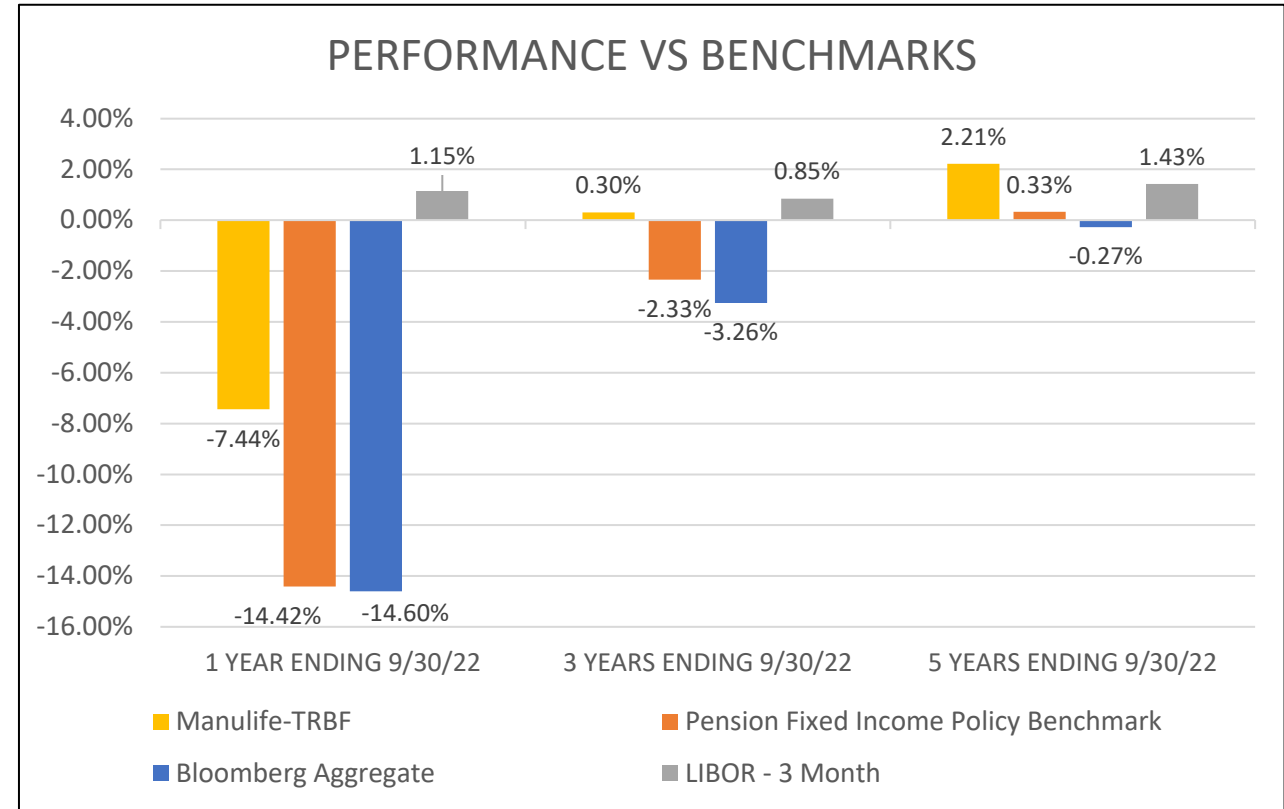
\$153 M



MANULIFE TOTAL RETURN BOND FUND

STRATEGY: THE MANULIFE TOTAL RETURN BOND FUND'S INVESTMENT OBJECTIVE IS TO ACHIEVE NET RETURNS IN THE RANGE OF 6% TO 10% ANNUALIZED OVER ROLLING 3-YEAR PERIODS. THE FUND'S HOLDINGS CONSIST PRIMARILY OF RMBS ISSUED BY PRIVATE SECTOR COMPANIES (NON-AGENCY RMBS) AND GOVERNMENT AGENCIES (AGENCY MBS) AND CMBS ISSUED BY PRIVATE SECTOR COMPANIES. AGENCY MBS INCLUDES SECURITIES ISSUED BY THE FEDERAL NATIONAL MORTGAGE ASSOCIATION (FANNIE MAE), THE FEDERAL HOME LOAN MORTGAGE CORPORATION (FREDDIE MAC) AND THE GOVERNMENT NATIONAL MORTGAGE ASSOCIATION (GINNIE MAE). PORTFOLIO HOLDINGS MAY RANGE FROM SHORT TENURE SENIOR CLASSES TO STRESSED ISSUES OR SUBORDINATED SECURITIES WITH SUBSTANTIAL RISK OF NON-PAYMENT AND CORRESPONDINGLY HIGHER YIELDS. SMALLER PORTFOLIO ALLOCATIONS MAY INCLUDE CONSUMER ASSET-BACKED SECURITIES (ABS), OR OTHER STRUCTURED CREDIT SECURITIES AND CORPORATE BONDS. AS A DIVERSIFICATION STRATEGY AND A POTENTIAL HEDGE TO CREDIT RISK, THE FUND MAY INVEST IN SECURITIES WHICH TEND TO BENEFIT FROM SLOW MORTGAGE PREPAYMENTS AND ECONOMIC GROWTH, SUCH AS INTEREST ONLY (IO) MBS.

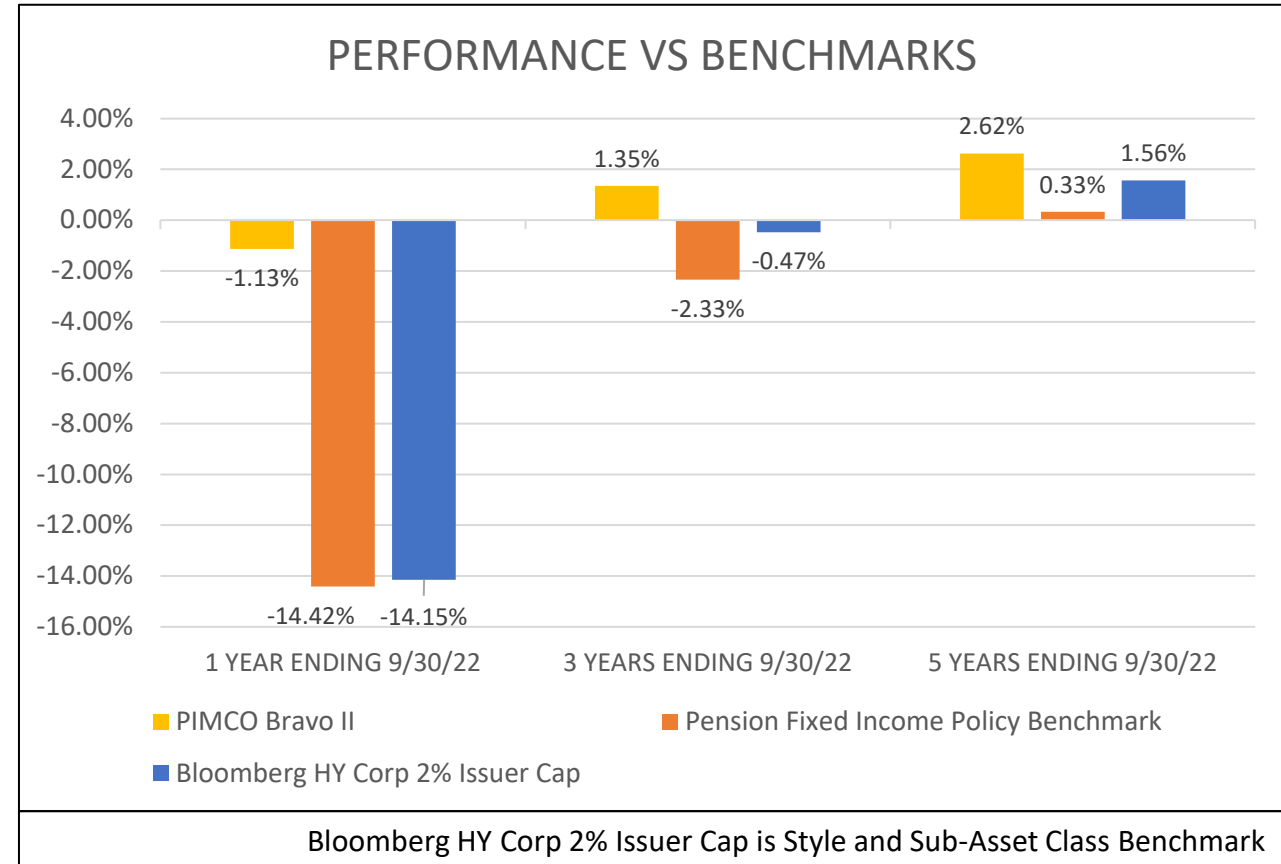
POOL	AUM
PENSION	\$146 M
LEGACY	\$213 M
INSURANCE	\$108 M



PIMCO – BRAVO II

STRATEGY: THE BRAVO II FUND IS A PRIVATE EQUITY STYLE FUND TARGETING AN ANNUALIZED IRR OF 15-20% AND MULTIPLE OF 1.8-2X, NET OF FEES AND CARRIED INTEREST WITH AN INITIAL 5-YEAR TERM. THE FUND WILL SEEK TO CAPITALIZE ON NON-ECONOMIC ASSET SALE DECISIONS BY GLOBAL FINANCIAL INSTITUTIONS. THE FUND WILL HAVE THE FLEXIBILITY TO ACQUIRE ATTRACTIVELY DISCOUNTED, LESS LIQUID LOANS, AGENCY AND NON-AGENCY STRUCTURED CREDIT (RMBS, CMBS, ABS) AND OTHER ASSETS TIED TO RESIDENTIAL OR COMMERCIAL REAL ESTATE MARKETS IN THE U.S. AND EUROPE.

POOL	AUM
PENSION	\$7 M
INSURANCE	\$4 M



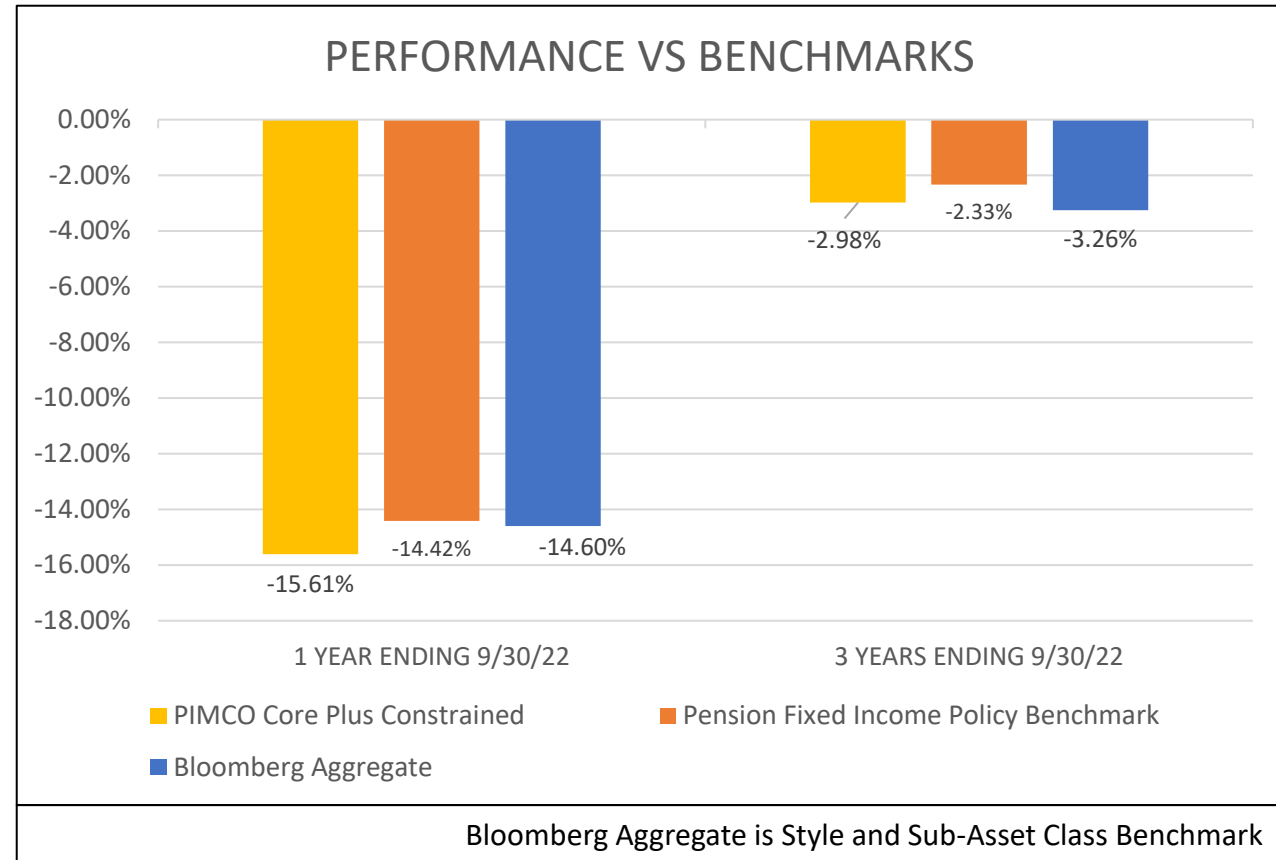
PIMCO - CORE PLUS CONSTRAINED

STRATEGY: THE CORE PLUS CONSTRAINED INVESTMENT IS A DIVERSIFIED PORTFOLIO OF HIGH-QUALITY BONDS THAT IS ACTIVELY MANAGED TO MAXIMIZE RETURNS IN A RISK-CONTROLLED FRAMEWORK.

THE PORTFOLIO EMPHASIZES HIGHER-QUALITY, INTERMEDIATE-TERM BONDS AND AIMS TO AVOID CONCENTRATION RISK BY BEING MORE GLOBALLY DIVERSIFIED THAN MANY CORE BOND FUNDS. IT ALSO HAS CONSIDERABLE FLEXIBILITY TO RESPOND TO CHANGING ECONOMIC CONDITIONS, HELPING TO MANAGE RISK AND INCREASE TOTAL RETURN POTENTIAL.

THE PORTFOLIO AIMS TO PROVIDE INVESTORS WITH A COMBINATION OF INCOME AND CAPITAL APPRECIATION POTENTIAL. IT IS GUIDED BY A FORWARD-LOOKING, RISK FOCUSED PHILOSOPHY THAT AIMS TO IDENTIFY RISK EARLY WHILE ALSO BEING POSITIONED TO CAPTURE ATTRACTIVE RETURNS.

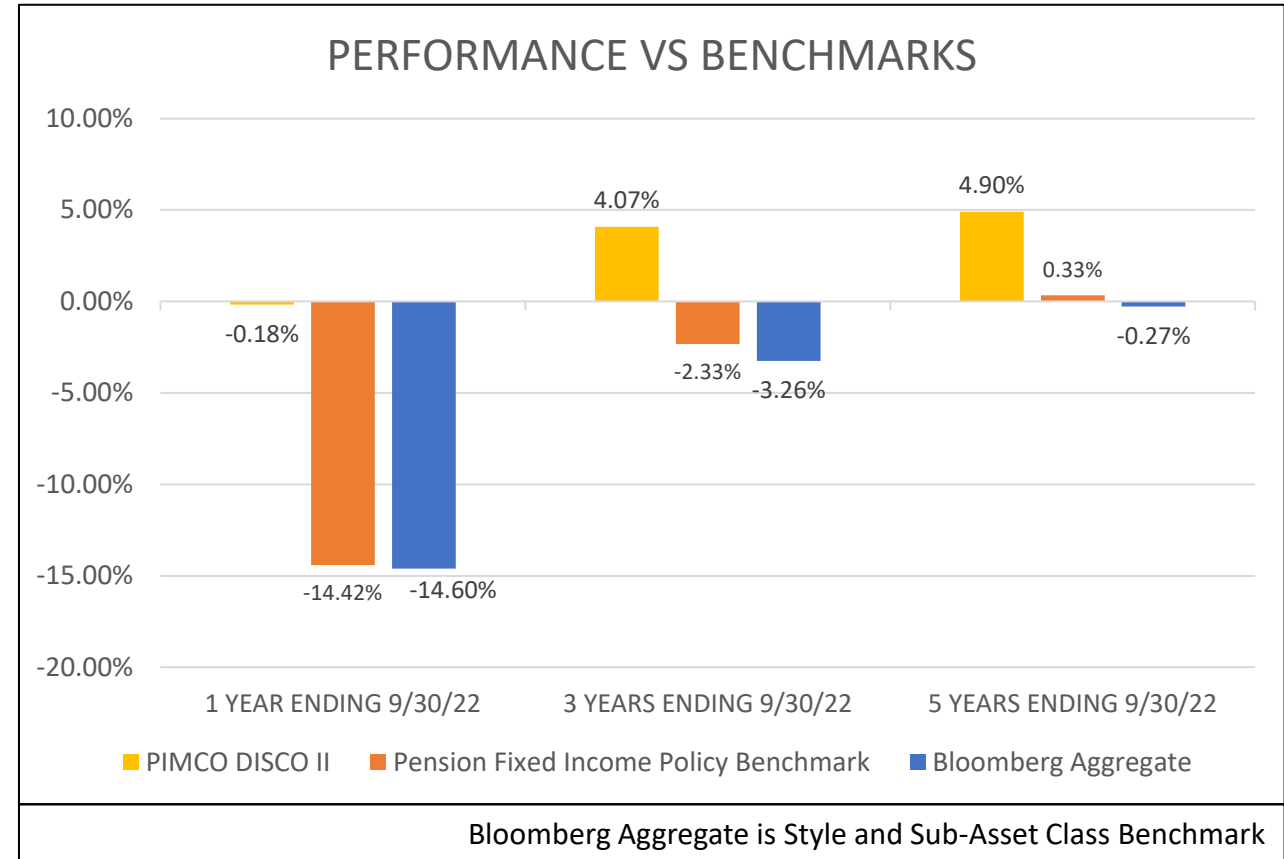
POOL	AUM
PENSION	\$391 M
INSURANCE	\$178 M



PIMCO - DISTRESSED SENIOR CREDIT OPPORTUNITIES (DISCO II)

STRATEGY: THE PIMCO DISTRESSED SENIOR CREDIT OPPORTUNITIES FUND IS AN OPPORTUNISTIC FUND WHICH SEEKS TO PROVIDE INVESTORS ENHANCED RETURNS PRINCIPALLY THROUGH LONG-BIASED INVESTMENTS IN UNDERVALUED SENIOR AND SUPER SENIOR STRUCTURED CREDIT SECURITIES THAT ARE EXPECTED TO PRODUCE ATTRACTIVE LEVELS OF CURRENT INCOME THAT MAY ALSO APPRECIATE IN VALUE OVER THE LONG TERM. THE FUND WILL LOOK TO CAPITALIZE ON FORCED SALES BY LIQUIDITY CONSTRAINED INVESTORS.

POOL	AUM
PENSION	\$100 M
LEGACY	\$54 M
INSURANCE	\$42 M



PRUDENTIAL CORE

STRATEGY: PGIM FIXED INCOME'S CORE FIXED INCOME STRATEGY IS AN ACTIVELY MANAGED, MULTI-SECTOR, INVESTMENT GRADE FIXED INCOME STRATEGY THAT TYPICALLY SEEKS +60 BPS ANNUALIZED GROSS EXCESS RETURN OVER THE BLOOMBERG BARCLAYS U.S. AGGREGATE BOND INDEX OR SIMILAR BROAD MARKET BENCHMARK OVER A FULL MARKET CYCLE (THREE TO FIVE YEARS). THE STRATEGY EMPHASIZES RELATIVE-VALUE BASED SECTOR ALLOCATION, RESEARCH-BASED SECURITY SELECTION, AND MODEST DURATION AND YIELD CURVE POSITIONING.

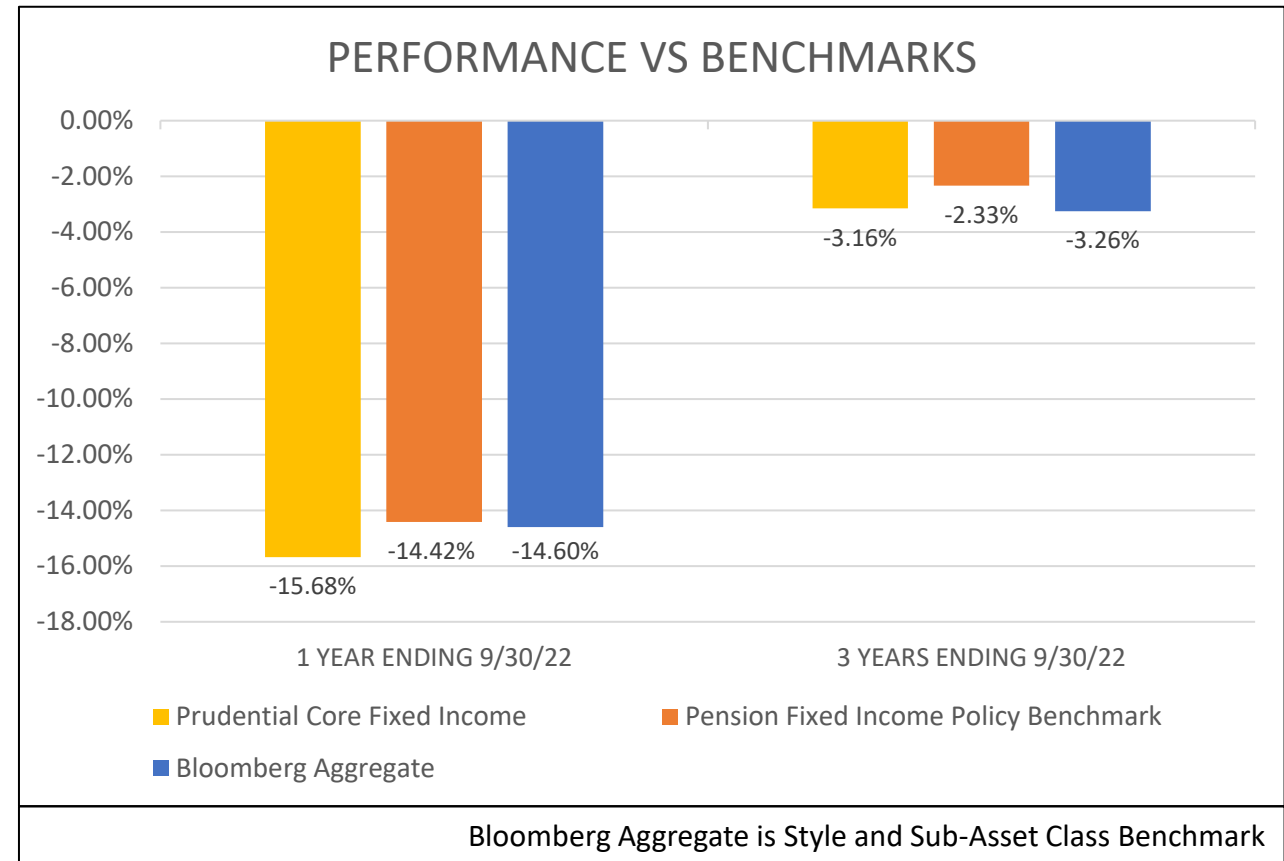
THE STRATEGY TENDS TO GENERATE ITS EXCESS RETURN FROM FAIRLY EQUAL INCREMENTS OF BOTH SECTOR ALLOCATION AND SUBSECTOR/SECURITY ALLOCATION. THE PRIMARY WAY THEY ADD VALUE IS THROUGH INTENSIVE RESEARCH-BASED SECTOR, INDUSTRY, AND SECURITY SELECTION. THE STRATEGY IS PREDOMINATELY INVESTMENT-GRADE, BUT MAY ALSO INVEST NOMINALLY IN CROSSOVER/HIGH YIELD BONDS AND EMERGING MARKETS DEBT, WHEN GUIDELINES PERMIT.

POOL

PENSION

AUM

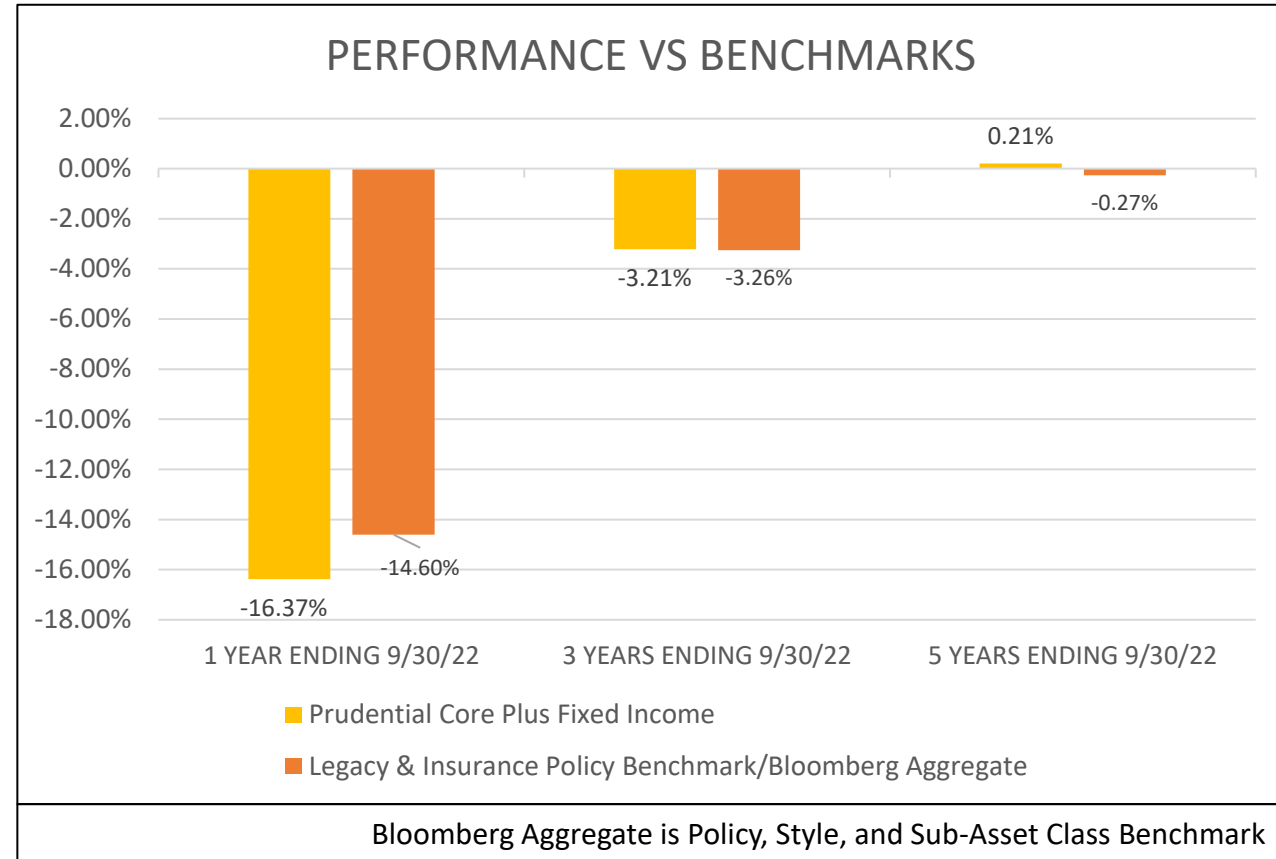
\$390 M



PRUDENTIAL CORE PLUS

STRATEGY: THE CORE PLUS FIXED INCOME ACCOUNT IS A MULTI-SECTOR STRATEGY WITH AN ALPHA OBJECTIVE OF +150 BASIS POINTS VERSUS THE BARCLAYS AGGREGATE INDEX OVER A FULL MARKET CYCLE. THE STRATEGY IS DIVERSIFIED ACROSS A BROAD RANGE OF FIXED INCOME SECTORS, INCLUDING TREASURIES, AGENCIES, MORTGAGE-BACKED SECURITIES, STRUCTURED PRODUCT (ASSET-BACKED SECURITIES, COMMERCIAL MORTGAGE-BACKED SECURITIES), INVESTMENT GRADE CORPORATE BONDS, HIGH YIELD BONDS, BANK LOANS AND INTERNATIONAL DEBT. THE PRIMARY SOURCES OF EXCESS RETURN ARE SECTOR ALLOCATION AND SECURITY SELECTION, WITH DURATION AND YIELD CURVE LESS OF A FOCUS.

POOL	AUM
INSURANCE	\$329 M
LEGACY	\$721 M

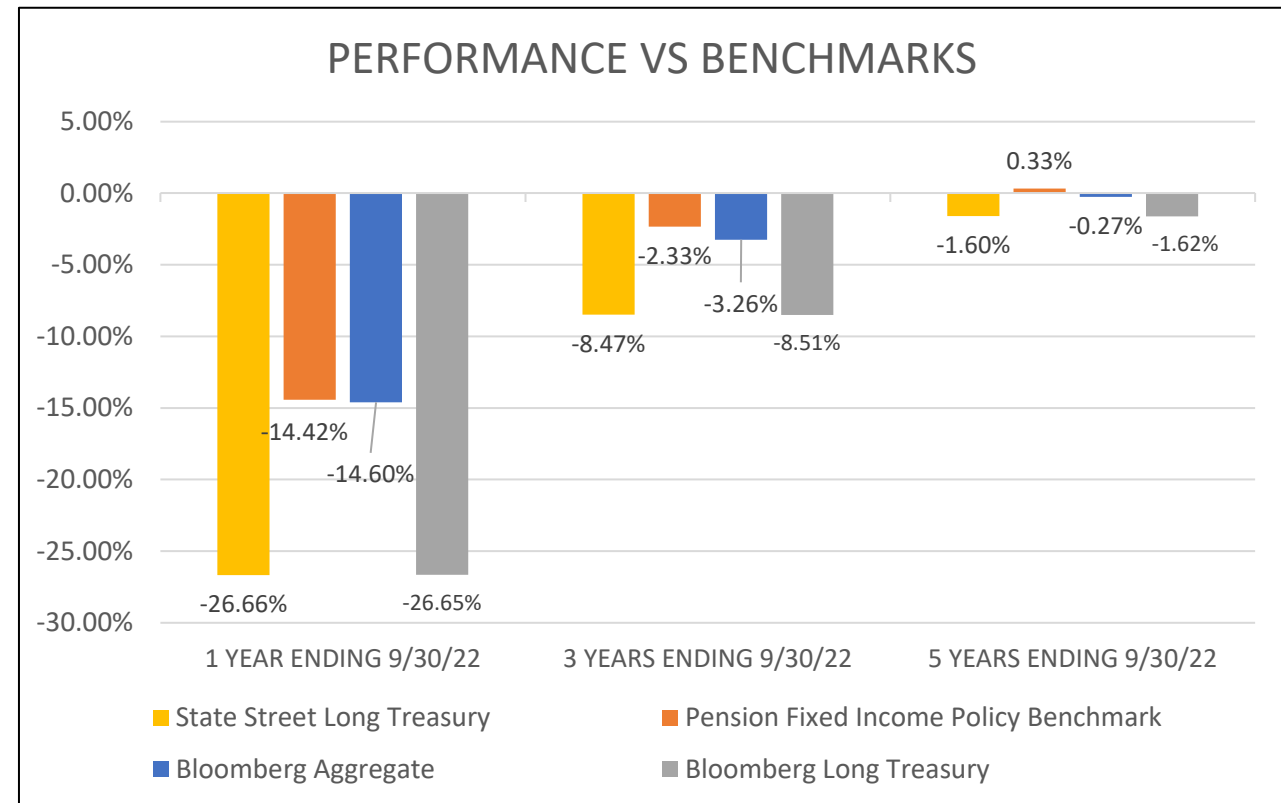


STATE STREET GLOBAL ADVISORS – LONG U.S. TREASURY INDEX NL FUND



STRATEGY: THIS IS A COMMINGLED INDEX FUND THAT SEEKS TO REPLICATE THE RISK AND RETURN CHARACTERISTICS OF THE BARCLAYS LONG TREASURY BOND INDEX.

POOL	AUM
PENSION	\$100 M

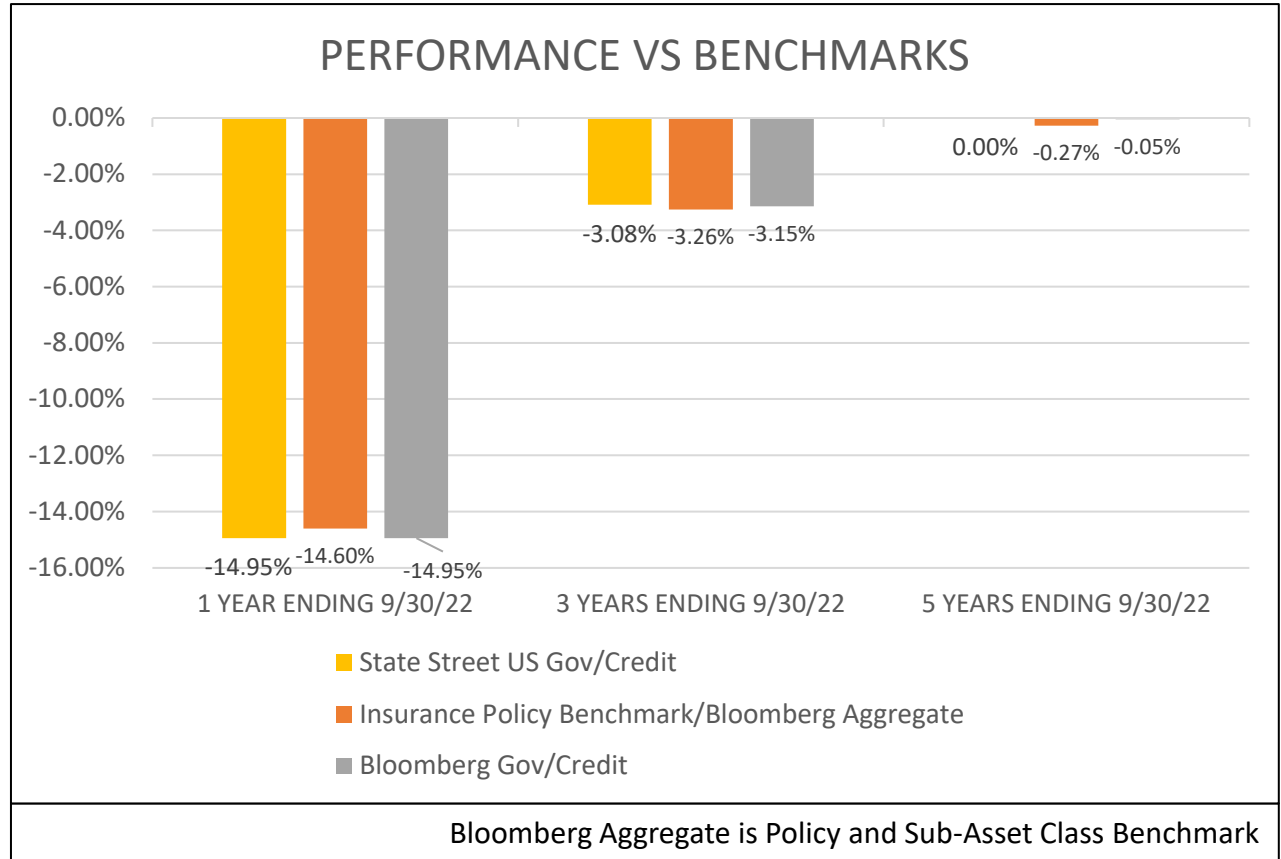


STATE STREET GLOBAL ADVISORS – U.S. GOVT CREDIT BOND INDEX



STRATEGY: THIS IS A COMMINGLED INDEX FUND THAT SEEKS TO REPLICATE THE RISK AND RETURN CHARACTERISTICS OF THE BARCLAYS GOVERNMENT/CREDIT BOND INDEX.

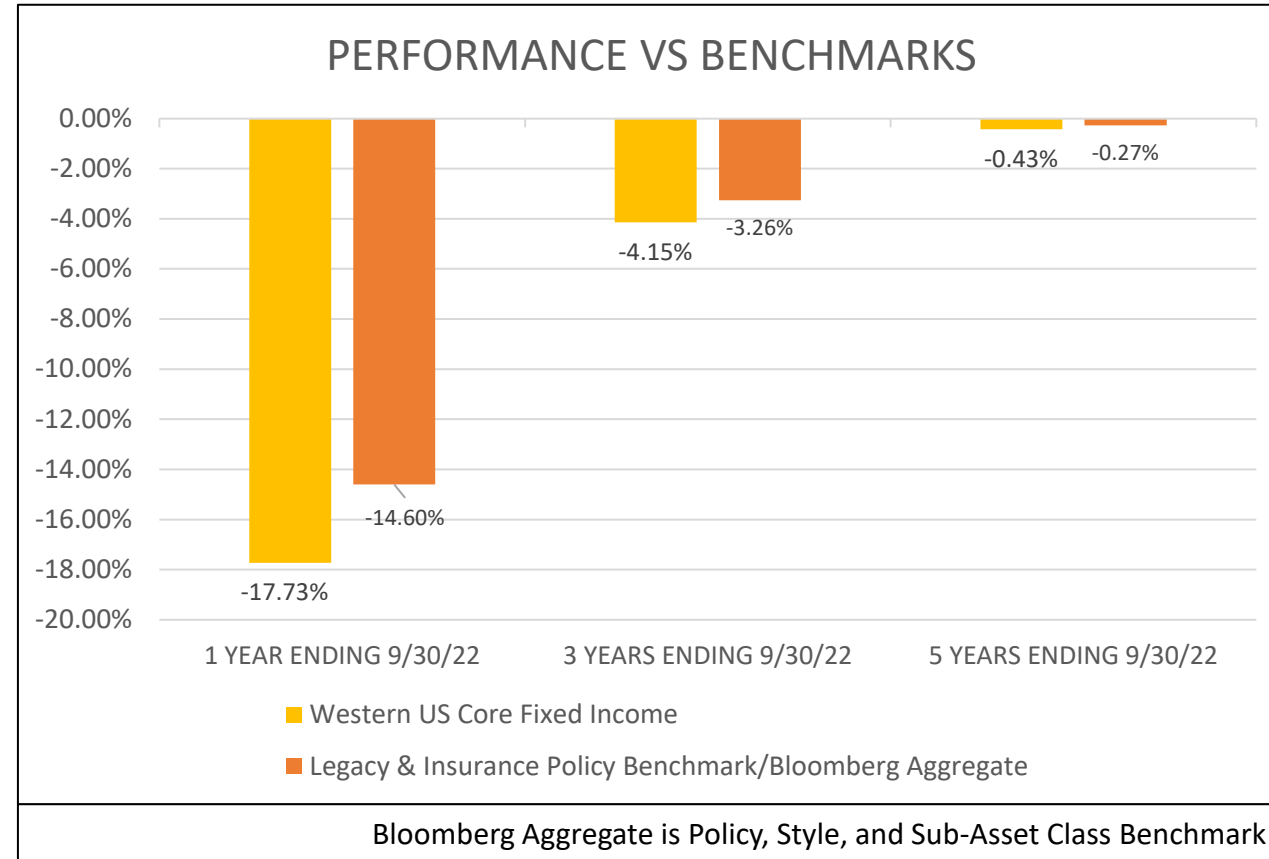
POOL	AUM
INSURANCE	\$180 M
LEGACY	\$366 M



WESTERN ASSET - US CORE FIXED INCOME

STRATEGY: A PORTFOLIO USING ALL MAJOR FIXED-INCOME SECTORS WITH A BIAS TOWARDS NON-TREASURIES, ESPECIALLY CORPORATE, MORTGAGE-BACKED AND ASSET-BACKED SECURITIES. VALUE CAN BE ADDED THROUGH SECTOR ROTATION, ISSUE SELECTION, DURATION AND TERM STRUCTURE WEIGHTING.

POOL	AUM
INSURANCE	\$330 M
LEGACY	\$710 M





ALLOCATION OF VALUE AND PERFORMANCE TO CLIENT FUNDS

INVESTMENT STAFF
DECEMBER 9, 2022

NORTH
Dakota
Be Legendary.

Retirement & Investment

CRITICAL PATH FOR INVESTMENT COST AND PERFORMANCE

27 DIFFERENT POLICY ALLOCATIONS AND SUB-ASSET CLASS IMPLEMENTATIONS

VARIATION BY MANAGERS, SUB-ASSET CLASS BENCHMARKS AND WEIGHTS

Fixed Income	Equity
FUND 1	FUND 1
FUND 2	FUND 2
FUND 3	FUND 3
FUND 4	FUND 4
FUND 5	FUND 5
FUND 6	FUND 6
FUND 7	FUND 7
FUND 8	FUND 8
FUND 9	FUND 9
FUND 10	FUND 10
FUND 11	FUND 11
FUND 12	FUND 12
FUND 13	FUND 13
FUND 14	FUND 14
FUND 15	FUND 15
FUND 16	FUND 16
FUND 17	FUND 17
FUND 18	FUND 18
FUND 19	FUND 19
FUND 20	FUND 20
FUND 21	
FUND 22	
FUND 23	
FUND 24	
FUND 25	
FUND 26	
FUND 27	



- COMPLEXITY
- LOW FREQUENCY STATUS OF FUND VALUES, PERFORMANCE AND RISK
- LONG TIMELINE FOR REBALANCING AND FUND LEVEL CHANGES (>2 MONTHS)
- INABILITY TO IMPLEMENT MORE SOPHISTICATED HIGHER RETURN/LOWER RISK /LOWER COST STRATEGIES



OPERATIONS OPPORTUNITIES

27 DIFFERENT POLICY ALLOCATIONS AND SUB-ASSET CLASS IMPLEMENTATIONS

VARIATION BY MANAGERS, SUB-ASSET
CLASS BENCHMARKS AND WEIGHTS

Fixed Income	Equity
FUND 1	FUND 1
FUND 2	FUND 2
FUND 3	FUND 3
FUND 4	FUND 4
FUND 5	FUND 5
FUND 6	FUND 6
FUND 7	FUND 7
FUND 8	FUND 8
FUND 9	FUND 9
FUND 10	FUND 10
FUND 11	FUND 11
FUND 12	FUND 12
FUND 13	FUND 13
FUND 14	FUND 14
FUND 15	FUND 15
FUND 16	FUND 16
FUND 17	FUND 17
FUND 18	FUND 18
FUND 19	FUND 19
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FUND 27	



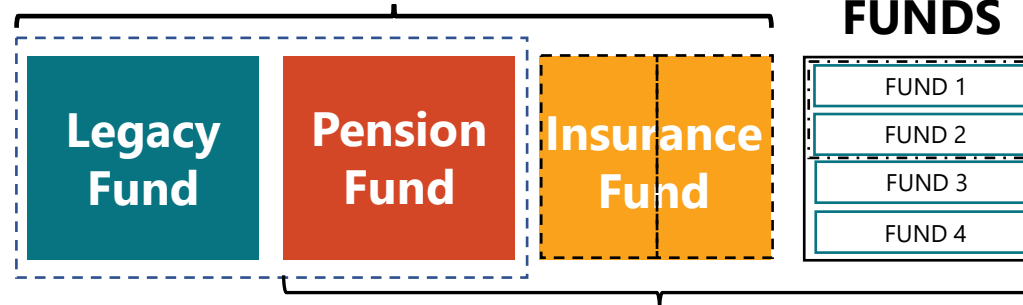
- FEWER EQUITY, FIXED INCOME AND PRIVATE MARKETS SUB-ASSET ALLOCATIONS
- POOLING OF ASSET ALLOCATIONS
- AUTOMATED DAILY ALLOCATION OF CLIENT FUND VALUE AND PERFORMANCE
- UNITIZATION OF POOLED ALLOCATIONS TO CLIENT FUNDS

FUND LEVEL OPPORTUNITY

27 DIFFERENT ASSET ALLOCATIONS

FUND 1
FUND 2
FUND 3
FUND 4
FUND 5
FUND 6
FUND 7
FUND 8
FUND 9
FUND 10
FUND 11
FUND 12
FUND 13
FUND 14
FUND 15
FUND 16
FUND 17
FUND 18
FUND 19
FUND 20
FUND 21
FUND 22
FUND 23
FUND 24
FUND 25
FUND 26
FUND 27

POTENTIAL FOR POOLING



OTHER FUNDS

- REDUCED OPERATIONAL COMPLEXITY
- SCALE
- IMPLEMENTATION TIME SAVINGS
- FEWER ALLOCATIONS

TWO OR THREE FUND SEPARATION ENABLES POTENTIAL FOR LIABILITY AWARE PORTFOLIOS

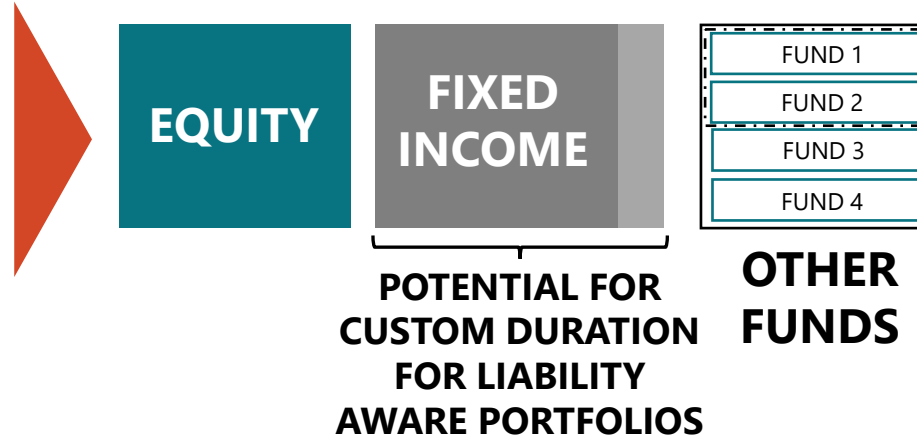
IMPLEMENTATION OPPORTUNITY

27 DIFFERENT SUB-ASSET CLASS IMPLEMENTATIONS

VARIATION BY MANAGERS, SUB-ASSET CLASS BENCHMARKS AND WEIGHTS

Fixed Income	Equity
FUND 1	FUND 1
FUND 2	FUND 2
FUND 3	FUND 3
FUND 4	FUND 4
FUND 5	FUND 5
FUND 6	FUND 6
FUND 7	FUND 7
FUND 8	FUND 8
FUND 9	FUND 9
FUND 10	FUND 10
FUND 11	FUND 11
FUND 12	FUND 12
FUND 13	FUND 13
FUND 14	FUND 14
FUND 15	FUND 15
FUND 16	FUND 16
FUND 17	FUND 17
FUND 18	FUND 18
FUND 19	FUND 19
FUND 20	FUND 20
FUND 21	
FUND 22	
FUND 23	
FUND 24	
FUND 25	
FUND 26	
FUND 27	

POTENTIAL FOR FEWER SUB-ASSET IMPLEMENTATIONS



- REDUCED OPERATIONAL COMPLEXITY
- BETTER SCALE ADVANTAGES
- FEWER MANAGER SEARCHES
- OPTIMAL ACTIVE RISK/RETURN
- ADDITIONAL IMPLEMENTATION TIME SAVINGS
- EASIER TO MONITOR & MANAGE
- MANAGED CONCENTRATION RISK

1.0

- IMPLEMENT SUB-ASSET ALLOCATION POOLS
- AUTOMATE DAILY CALCULATION OF CLIENT FUND VALUE AND PERFORMANCE
- MEET WITH CLIENT FUNDS REGARDING CHANGES TO POLICY AT THE SUB-ASSET CLASS LEVEL
- IMPLEMENT DAILY PERFORMANCE AND RISK AT THE CLIENT FUND LEVEL

2.0

- DEVELOP FUND POOLS
- DEVELOP FUND POOL ALLOCATIONS
- MEET WITH CLIENT FUNDS REGARDING CHANGES TO POLICY AT THE FUND LEVEL

3.0

- DEVELOP UNITIZATION APPROACH
- AUTOMATE UNITIZATION WITH ALLOCATION PROCESS
- UNITIZE CLIENT VALUE AND PERFORMANCE

UPDATE AND STANDARDIZE CLIENT IPS

CLIENT	CURRENT EQUITY INVESTMENT POLICY	NEW EQUITY POLICY
WSI FUND	U.S. LARGE CAP: 10% U.S. SMALL CAP: 2% INTERNATIONAL: 8%	PUBLIC EQUITY: 20%
CULTURAL ENDOWMENT FUND	U.S. LARGE CAP: 33.75% U.S. SMALL CAP: 11.25% INTERNATIONAL: 10%	PUBLIC EQUITY: 55%
CITY OF BISMARCK DEFERRED SICK LEAVE FUND	U.S. LARGE CAP: 15% U.S. SMALL CAP: 5% INTERNATIONAL: 10%	PUBLIC EQUITY: 30%
ND ASSOCIATION OF COUNTIES	U.S. LARGE CAP: 20% U.S. SMALL CAP: 5% INTERNATIONAL: 10%	PUBLIC EQUITY: 35%
RISK MANAGEMENT FUND	U.S. LARGE CAP: 22.5% U.S. SMALL CAP: 7.5%	PUBLIC EQUITY: 30%
RISK MANAGEMENT WORKERS COMPENSATION FUND	U.S. LARGE CAP: 27.75% U.S. SMALL CAP: 9.25%	PUBLIC EQUITY: 37%
LEGACY FUND	U.S. EQUITY: 28% INTERNATIONAL: 19%	PUBLIC EQUITY: 47%
ND STATE BOARD OF MEDICINE FUND	U.S. EQUITY: 16% INTERNATIONAL EQUITY: 11%	PUBLIC EQUITY: 27%
PARK DISTRICT OF THE CITY OF GRAND FORKS PENSION PLAN	U.S. LARGE CAP: 22% U.S. SMALL CAP: 5% DEVELOPED INTERNATIONAL: 10% EMERGING: 10%	PUBLIC EQUITY: 47%
FARGODOME PERMANENT FUND	U.S. LARGE CAP: 23% U.S. SMALL CAP: 12% INTERNATIONAL: 15%	PUBLIC EQUITY: 40%
FIRE & TORNADO FUND	U.S. LARGE CAP: 18.75% U.S. SMALL CAP: 6.25% INTERNATIONAL: 10%	PUBLIC EQUITY: 35%
INSURANCE REGULATORY TRUST FUND	U.S. LARGE CAP: 15% U.S. SMALL CAP: 5% INTERNATIONAL: 10%	PUBLIC EQUITY: 30%

STANDARDIZE CLIENT IPS

- EQUITY POLICY PARAMETERS ARE INCONSISTENT AND OVERLY PRESCRIPTIVE
- FIXED INCOME POLICY PARAMETERS REQUIRE ADJUSTMENTS BUT WON'T IMPEDE THE IMPLEMENTATION OF THE NEW STRUCTURE
- STAFF DEVELOPING STANDARDIZED IPS AND WORKING WITH CLIENTS TO IMPLEMENT UPDATED IPS

CURRENT PLAN ALLOCATION PROCESS

COLLECT VALUATION DATA

BUSINESS DAY 1-9

COLLECT AND RECORD VALUATION DATA ACROSS:

- 39 SEPARATE ACCOUNTS
- 51 COMMINGLED ACCOUNTS
- 61 LIMITED PARTNERSHIPS

RECONCILIATION

BUSINESS DAY 9-11

1. RECONCILE VALUES FROM CUSTODIAN VS MANAGER
2. INVESTIGATE DIFFERENCES
3. FINALIZE MANAGER MONTHLY MARKET VALUES

PLAN ALLOCATIONS

BUSINESS DAY 12-19

1. ADJUST AND FINALIZE MONTH END CLIENT ALLOCATIONS
2. GENERATE MONTHLY FINANCIAL STATEMENTS & CLIENT LEVEL MARKET VALUES

INEFFICIENCIES OF THE EXISTING PROCESS

- MANUAL PROCESS THAT TAKES SIGNIFICANT TIME AND RESOURCES TO OPERATE
- SPREADSHEET BASED SYSTEM REQUIRES CONSIDERABLE SUPERVISION TO ENSURE ACCURACY
- ONLY MONTH END PERFORMANCE AND MARKET VALUES ARE CALCULATED

FISCAL TEAM IS DEVELOPING A NEW ALLOCATION PROCESS

1. NORTHERN TRUST TO MANAGE PLAN ALLOCATIONS AND IMPLEMENT AN INTEGRATED PERFORMANCE ENGINE
2. NORTHERN TRUST WILL SERVE AS THE CENTRAL HUB FOR POOL AND PLAN LEVEL VALUES
 - NORTHERN'S TECHNOLOGY PLATFORM IS MORE EFFICIENT AND REDUCES RISK OF ERRORS
 - PRODUCES DAILY VALUATIONS AND DAILY PERFORMANCE AT BOTH THE POOL AND CLIENT LEVEL
3. EXPECT TO GO LIVE IN THE SECOND QUARTER OF 2023

ALLOCATION PROCESS 1.0 LEADS TO MORE EFFICIENT REBALANCING AND ENHANCED RISK MANAGEMENT