

EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND

LONG DURATION FIXED INCOME

DECEMBER 16, 2016

Representing MacKay Shields

KIRK KASHEVAROFF

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Institutional Business Development

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Global Fixed Income Division

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MacKay Shields: A Leader in Income-Oriented Investing



Overview

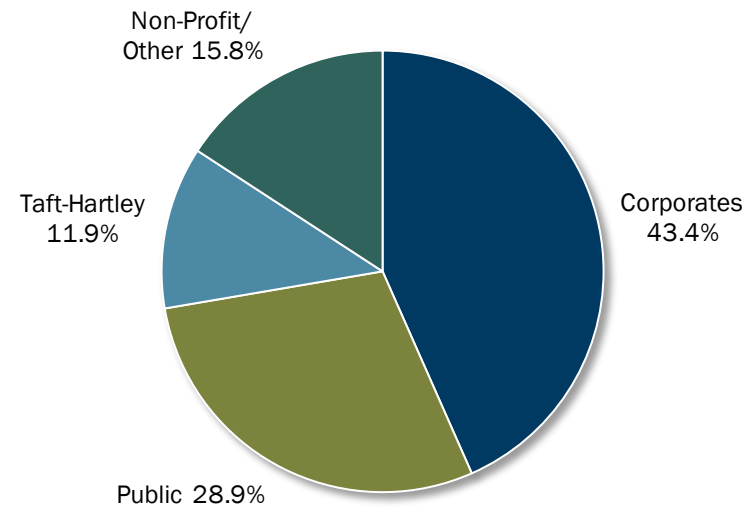
- Founded in 1938
- Strong AAA-rated parent company¹
- Equity alignment for senior professionals
- 51 investment professionals, 164 employees
- Non-bureaucratic, entrepreneurial culture
- Team approach across all products and business units
- Research-centered investment professionals

Group Segmentation (US, blns) \$96.6

Global Fixed Income	52.7
High Yield	21.8
Municipals	20.0
Convertibles	2.0

Institutional Separate Account Assets

By Client Type



1. As of March 29, 2016, New York Life Insurance Company was affirmed a Insurer Financial Strength (IFS) rating of AAA by Fitch Ratings. MacKay Shields LLC is 100% owned by New York Life Investment Management Holdings LLC, which is wholly owned by New York Life Insurance Company, our ultimate parent. Investments are not guaranteed by New York Life or New York Life Investments. All AUM shown on this page is as of October 31, 2016. In respect to AUM by client type and by group segmentation, due to rounding the sum of the items may not equal 100% or any expressed totals as applicable.

Representative Client List

US Public Funds

Arkansas Public Employees' Retirement System
 Bay County (MI) Employees Retirement System
 City of Baltimore Fire & Police E.R.S.
 Chicago Transit Authority
 City of Los Angeles Fire & Police Pension Plan
 Colorado Public Employees Retirement Association
 Illinois Municipal Retirement Fund
 Kansas Public Employees Retirement System
 Lexington-Fayette Urban County (KY) Government
 Memphis (TN) City Retirement System
 Ohio Police & Fire Pension Fund
 Park Employees' Annuity and Benefit Fund of Chicago
 Pennsylvania State Employees Retirement System
 Rhode Island Employees Retirement System
 San Bernardino County (CA) Employees Retirement Association
 Teachers Retirement System of Oklahoma
 Tennessee Valley Authority

International

Hong Kong Hospital Authority Provident Fund Scheme
 Nordea Investment Management
 Stichting Pensioenfonds Metaal en Techniek
 PensionDanmark Invest FMBA
 Volkswagen Pension Trust

Taft-Hartley

Bakery and Confectionery Union and Industry International Pension Fund
 Carpenters, District Council, St. Louis
 Connecticut Laborers Health Fund
 ITPE Pension Fund
 Motion Pictures Industry Pension & Health Plan
 Sheet Metal Workers Local 28
 Stationary Engineers Local 39

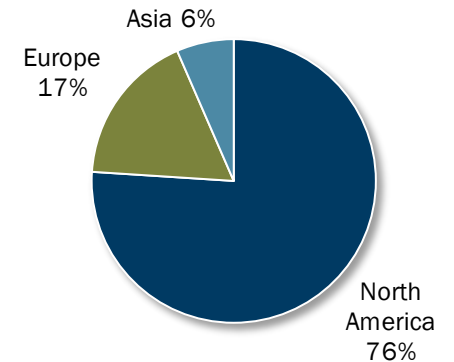
US Corporate

The Dow Chemical Co.
 Oshkosh Truck Corporation
 Salesforce.com, Inc.

Other

Carleton University

Total Assets by Geography¹



The clients listed above were selected because they represent certain "client types" and such selection was not based on performance or investment style. The list is provided for illustrative purposes only. It is not known whether the listed clients approve or disapprove of the advisor or the advisory services provided.

1. AUM as of October 31, 2016.

Professionals, Philosophy & Process



Differentiators: People, Philosophy & Process

.....
Investment Team
.....

Differentiators

People

Senior team has worked together over twenty years

Philosophy

Seek to achieve attractive risk-adjusted returns by seeking to eliminate uncompensated risk

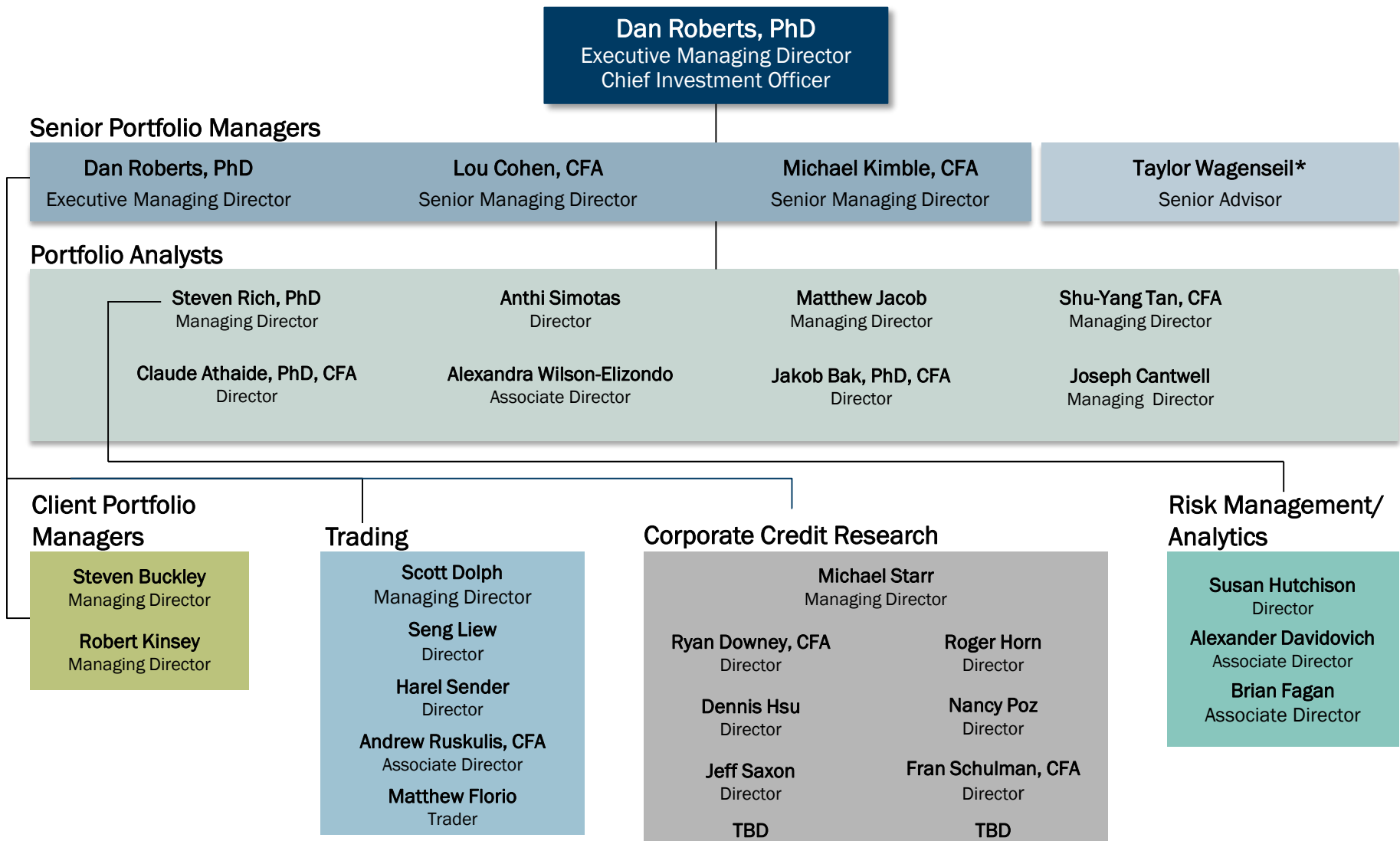
Process

We are risk managers using both a top-down and bottom-up process

Results

Consistent outperformance over numerous market cycles

The Global Fixed Income Team



*Taylor Wagenseil has announced his retirement but will remain a member of the Global Fixed Income team until August 2017.

Long Duration: Proposed Portfolio



Guidelines for Proposed ERSRI Long Duration U.S. Treasury Portfolio

Benchmark: Bloomberg Barclays Capital U.S. Treasury Long Index

- Tracking Error: 2% maximum
- Expected Information Ratio: 0.35 — 0.50
- Targeted Annualized Alpha: 10 — 15 bps, before fees
- Agency MBS: Maximum 50%
- U.S. Treasuries: Maximum 100%
- Non-U.S. Dollar Treasury Denominated: No
- Only Treasuries and Agencies permitted
- Non-benchmark: Maximum 50%
- Duration: +/- 10% of benchmark

Long Duration: Proposed Portfolio

Sample Holdings for Proposed ERSRI Long Duration U.S. Treasury Portfolio

As of November 30, 2016

Security	CUSIP	% Portfolio	Par (\$)	Portfolio	Index ¹	Difference	
T 6 ¾ 08/15/27	912810FA1	6.12%	4,200,000	Effective Maturity (yrs):	25.25	25.20	+0.05
T 4 ½ 02/15/36	912810FT0	5.29%	3,800,000	Yield to Maturity (%):	2.91	2.94	-0.03
T 5 05/15/37	912810PU6	4.99%	3,350,000	Option Adjusted Duration (yrs):	17.42	17.55	-0.13
T 4 ¾ 02/15/37	912810PT9	7.22%	5,050,000	# of Issues	14	46	-32
T 3 ¾ 11/15/43	912810RD2	9.90%	7,700,000				
T 3 ⅝ 08/15/43	912810RC4	10.68%	8,550,000				
T 3 ⅝ 02/15/44	912810RE0	6.64%	5,300,000				
T 3 ¾ 05/15/44	912810RG5	24.38%	20,250,000				
T 3 05/15/45	912810RM2	5.93%	5,300,000				
T 3 11/15/45	912810RP5	6.10%	5,450,000				
T 2 ½ 02/15/45	912810RK6	3.33%	3,300,000				
T 2 ½ 02/15/46	912810RQ3	3.24%	3,200,000				
T 2 ½ 05/15/46	912810RS9	3.24%	3,200,000				
T 2 ¼ 08/15/46	912810RT7	2.68%	2,800,000				

¹Bloomberg Barclays Capital U.S. Treasury Long Index

Please note there are only 46 holdings in the Bloomberg Barclays US Long Treasury Index.

The above holdings representing a model portfolio are being provided in response to a request by Pension Consulting Alliance and/or its underlying client. The sample holdings are for a non-existent long duration fixed income portfolio as of November 30, 2016 and are based on the following criteria: high quality US Treasuries and Government-backed securities, including US Agencies and mortgage-backed securities with maturities greater than 10 years. Alternative modeling techniques, adjustments, or assumptions may produce significantly different results. The information is based, in part, on hypothetical assumptions made for modeling purposes that may not be realized in the management of an actual account utilizing the aforementioned strategy. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used have been stated. Assumption changes may have a material impact on the model characteristics presented. This information is for illustrative purposes only, is being provided pursuant to your request, and may not be redistributed under any circumstances.

Long Duration: Proposed Portfolio Rationale

- Mortgages
 - Mortgage durations create a mismatch in the portfolio (~4.5 years relative to 17.5 years for a Long US Treasury Index)
 - Negative convexity of mortgages results in lower price gains when rates fall, and greater price declines when rates rise
 - We currently believe mortgage valuations are fairly priced

- Agencies
 - No new issuance of longer maturity (10+ years) Agency debentures from Fannie Mae (FNMA), Freddie Mac (FHLC) and the Federal Home Loan Bank (FHLB)
 - Tennessee Valley Authority (TVA) bonds are relatively illiquid and only trade by appointment

- Duration & Curve
 - Targeting a neutral (small deviation around the benchmark) in order to minimize portfolio tracking error

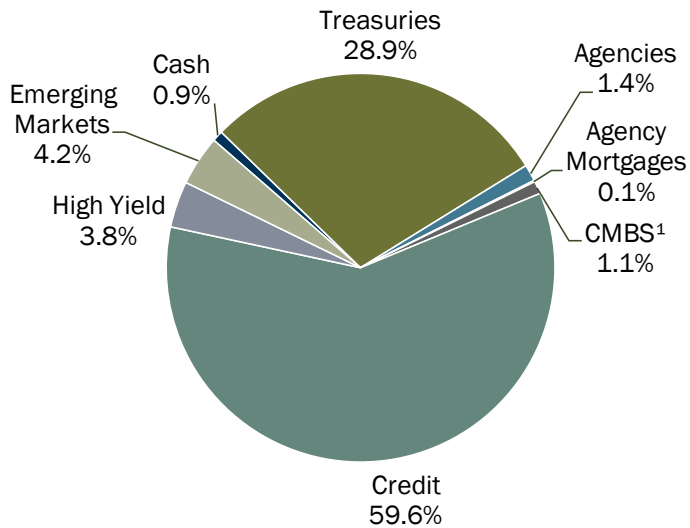
Appendix



Long Duration: Characteristics

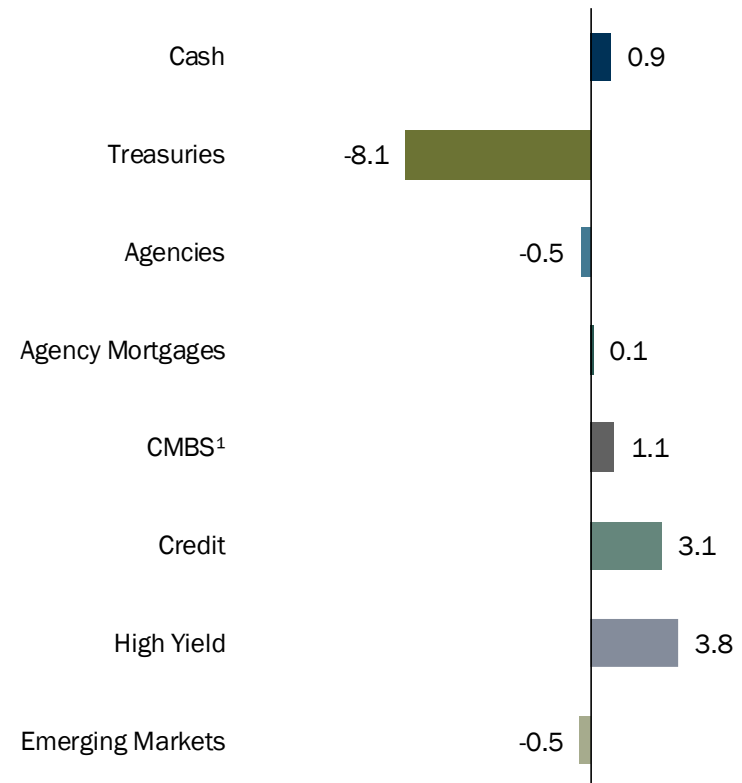
Portfolio Sector Breakdown

(% Market Value)
November 30, 2016 (Preliminary)



Portfolio Sector Breakdown

vs. Bloomberg Barclays U.S. Long Gov't/Credit Index (% Market Value)
November 30, 2016 (Preliminary)



¹CMBS = Commercial Mortgage-Backed Securities

The representative account utilized for this analysis was selected because it is the largest account in the composite and not for performance reasons. Each client account is individually managed, actual holdings will vary for each client and there is no guarantee that a particular client's account will have the same characteristics. It may not precisely represent every portfolio in the composite. Portfolio holdings are subject to change without notice. Quality breakdown is based on the guidelines of the representative portfolio. This document is for informational purposes only. See appendix for disclosures related to comparisons to an index.

Provided as supplemental information to the GIPS-compliant presentation in the appendix.

Long Duration: Characteristics

Statistics and Quality Ratings

As of November 30, 2016 (Preliminary)

Statistics	MacKay Shields Representative Account	Bloomberg Barclays U.S. Long Gov't/Credit Index
Yield to Worst	4.2%	4.0%
Effective Duration	14.7 Years	15.0 Years
Average Quality	A/A2	AA-/A+
Number of Holdings	159	2,320
Quality Ratings (%)		
Treasuries	28.9	37.0
Agencies	1.4	1.8
Aaa (including cash)	3.1	2.1
Aa	8.4	8.0
A	22.4	22.7
Baa	30.8	28.4
Ba	4.9	0.0
B	0.1	0.0

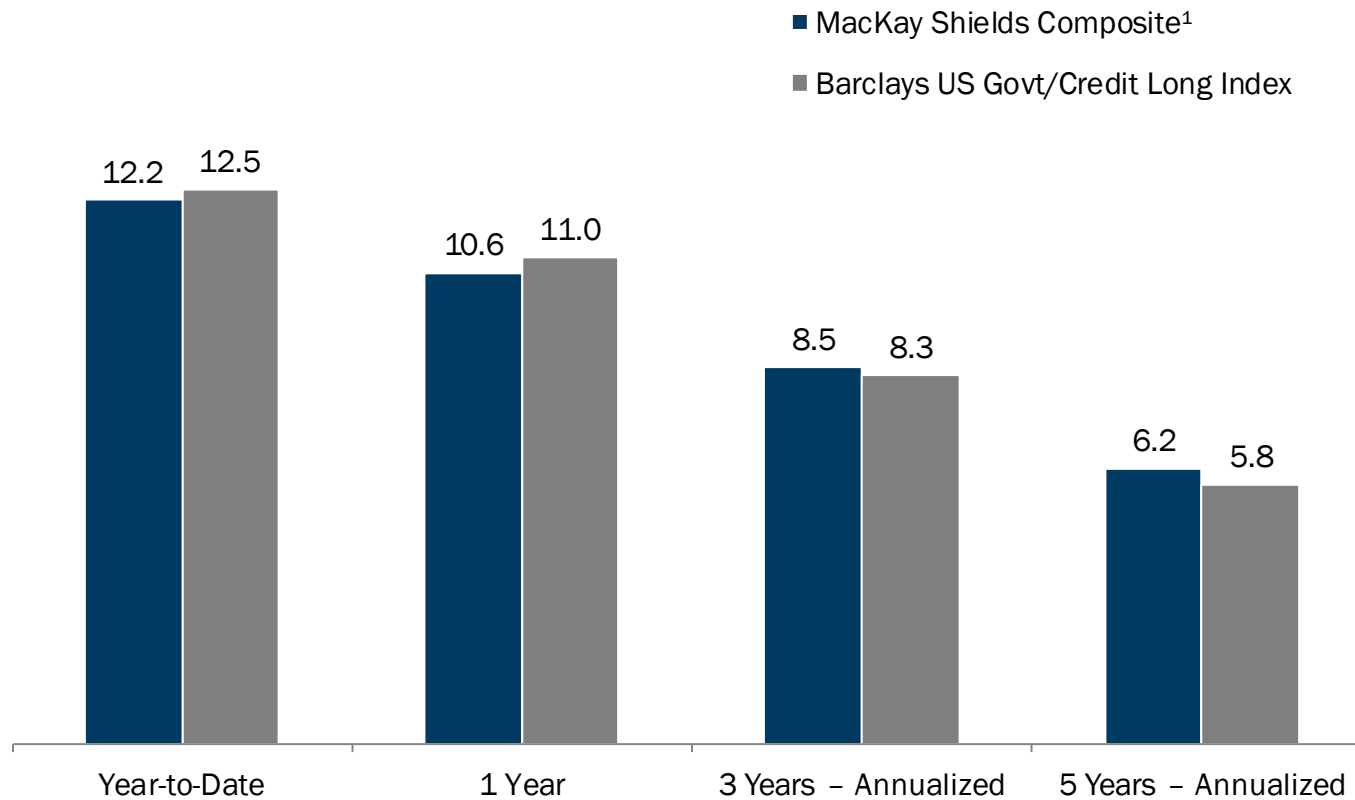
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Long Duration: Performance

Preliminary Composite Returns (%)

Periods Ending October 31, 2016



¹Gross of fees, Long Duration Composite

The above returns are not final, and as such, are subject to change. See appendix for most recent final GIPS compliant disclosures, including disclosures related to comparisons to an index. Past performance is not indicative of future results.

Kirk Kashevaroff
Managing Director
Institutional Business Development

Joining MacKay Shields in 1996, Kirk was previously a Vice President with IDS Advisory Group in Minneapolis responsible for marketing and client service to institutional funds. He was formerly with Alliance Capital Management and Equitable Capital Management in San Francisco where he was responsible for marketing and client service. Kirk has been in the financial services industry since 1990.

Claude Athaide, PhD, CFA
Director

Claude is a Director and Portfolio Analyst in the Fixed Income Division. Prior to joining MacKay Shields in 1996, Claude taught graduate and undergraduate level statistics and computer programming courses at George Washington University and The Wharton School of the University of Pennsylvania. He received a PhD in Statistics from the Wharton School of the University of Pennsylvania and a B.S.c. in statistics from St. Xavier's College, University of Bombay. Claude has been in the investment management industry since 1996 and became a CFA Charterholder in 2000.

Long Duration: Performance Composite Disclosures



Period	MacKay Shields Composite ¹ (%)	Bloomberg Barclays US Long Govt/Credit Index (%)	Composite 3-Yr St Dev (%)	Benchmark 3-Yr St Dev (%)	Firm Assets (\$Mil)
2016 (Thru 9/30)	15.5	15.7	7.7	7.6	97,080
2015	-3.1	-3.3	8.6	8.6	89,196
2014	19.7	19.3	8.0	8.1	91,626
2013	-8.1	-8.8	9.1	9.0	80,331
2012	9.8	8.8	N/A	N/A	78,371
2011	23.1	22.5	N/A	N/A	58,115
2010 (Since 4/1)	7.8	8.5	N/A	N/A	54,319

¹Gross of fees

The Long Duration Composite includes all discretionary long duration accounts managed with similar objectives for a full month, including those accounts no longer with the firm. This strategy typically follows the Core Plus strategy, but the effective maturity of this portion of the strategy's investments will generally be in the longer range (10+ years), although it may vary depending on client guidelines or market conditions, as we may determine. The Core Plus strategy follows the Core Investment Grade strategy but also invests a portion of assets in high yield bonds and foreign bonds of developed countries and emerging countries. The Core Investment Grade strategy invests a substantial portion of its assets in all types of debt securities, such as: debt or debt-related securities issued or guaranteed by the U.S. or foreign governments, their agencies or instrumentalities; obligations of international or supranational entities; debt securities issued by U.S. or foreign corporate entities; zero coupon bonds; municipal bonds; and mortgage-related and other asset-backed securities. The strategy may also include derivatives, such as futures, to try to manage interest rate risk or reduce the risk of loss of (that is, hedge) certain of its holdings. Composite performance reflects reinvestment of income and dividends and is a market-weighted average of the time-weighted return, before advisory fees and related expenses, of each account for the period since inception. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request. Performance is expressed in US Dollars. The composite creation and inception date is 4/1/10. Advisory fees, which are described in the firm's ADV, Part 2A, and related expenses will reduce returns. For example, in flat markets a .30% annual investment advisory fee, our highest fee, applied quarterly, would have the effect of reducing the annual compound return by .30% in the first year and by a cumulative 1.51% in the fifth year. All portfolios in the composite are fee-paying portfolios. There can be no assurance that the rate of return for any account within a composite will be the same as that of the composite presented. **Past performance is not indicative of future results.**

MacKay Shields LLC, an SEC-registered investment adviser, claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. The firm has been independently verified from January 1, 1988 through June 30, 2016. The verification report is available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation. A complete list of composite descriptions is available upon request. Indices do not incur management fees, transaction costs or other operating expenses. Investments cannot be made directly into an index. The Bloomberg Barclays US Long Govt/Credit Index is referred to for comparative purposes only and is not intended to parallel the risk or investment style of the portfolios in the MacKay Shields Composite. The three-year annualized standard deviation measures the variability of the composite and the index returns over the preceding 36-month period. The three-year annualized standard deviation is not presented for periods prior to 2013 because the composite did not have a three-year track record.

For the quarter ending September 30, 2016 and years ending 2015–2010, the number of accounts was five or fewer; therefore, the internal dispersion of portfolio returns is not applicable. For the quarter ending September 30, 2016, composite assets (mil) were \$254. Year-end composite assets (mil) were: 2015, \$222; 2014, \$241; 2013, \$202; 2012, \$187; 2011, \$176; 2010, \$150.

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Comparisons to an Index

Comparisons to a financial index are provided for illustrative purposes only. Comparisons to the index are subject to limitations because portfolio holdings, volatility and other portfolio characteristics may differ materially from the index. Unlike the index, portfolios within the composite are actively managed and may also include derivatives. There is no guarantee that any of the securities in the index are contained in the portfolio. The performance of the index assumes reinvestment of dividends but does not reflect the impact of fees, applicable taxes or trading costs which, unlike the index, may reduce the returns of the portfolio. Investors cannot invest in an index. Because of these differences, the performance of the index should not be relied upon as an accurate measure of comparison.