

Important Disclosures

Performance data given represents past performance and does not guarantee future results. Current performance may be lower or higher than return data quoted herein. For more current information, including month-end performance, please call 877-474-5016 or see www.massmutual.com/retire. The investment return and the principal value of an investment will fluctuate; so an investor's shares/units, when redeemed, may be worth more or less than their original cost. Investment portfolio statistics change over time. The investment is not FDIC-insured, may lose value and is not guaranteed by a bank or other financial institution.

Some plan investments may be made available through an unregistered group annuity contract issued to your plan by the Massachusetts Mutual Life Insurance Company ("MassMutual"). If that is the case, those plan investments 1.) may be in a separate investment account of MassMutual that purchases shares/units of one or more underlying investments, or 2.) may be invested directly in the investment via a separate arrangement between your plan and State Street Bank and Trust Company.

Pre-inception Returns

The inception date listed is that of the investment represented by the investment profile. Performance shown subsequent to the inception date is the actual performance of the investment. Other share classes of the investment itself or its underlying investment (depending upon the investment) may have existed longer, which may account for any pre-inception performance shown. If pre-inception performance is shown, it is generally the performance of an older share class of the investment itself or its underlying investment (depending upon the investment) adjusted for fees and expenses of the newer share class. However, if using the expenses of the newer share class rather than the expenses of the older share class (due to lower expenses of the newer share class) would result in better performance, then pre-inception performance represents that of the older share class without any expense adjustment. The fees and expenses are referenced in the report's Operations section.

While the inclusion of pre-inception data may provide valuable insight into the probable long-term behavior of newer share classes of an investment, investors should be aware that an adjusted historical return can only provide an approximation of that behavior. For example, the fee structure between a retail share class will vary from that of an institutional share class, as retail share classes tend to have higher operating expenses and sales charges. These adjusted historical returns are not actual returns. Calculation methodologies utilized by Morningstar may differ from those applied by other entities, including the investment itself.

Performance

Fund Return reflects performance of the investment without adjusting for sales charges or the effects of taxation, but is adjusted to reflect all actual ongoing investment expenses and assumes reinvestment of dividends and capital gains (if applicable). If adjusted, sales charges would reduce the performance quoted. In addition, due to market volatility, the investment's return may vary greatly over short periods of time.

The investment's performance is generally compared with that of an index. The index is an unmanaged portfolio of specified securities and does not reflect any initial or ongoing expenses nor can it be invested in directly. An investment's portfolio may differ significantly from the securities in the index. Morningstar chooses the index, which may not be the same as the comparative index noted in the investment's prospectus (if applicable).

Morningstar Proprietary Statistics

Please note that some Morningstar proprietary calculations, including the Morningstar Rating, Morningstar Return, and

Morningstar Risk may be calculated based on pre-inception returns. Therefore, Morningstar's three-year minimum performance history requirement for Morningstar Rating, Morningstar Return, and Morningstar Risk may be satisfied using pre-inception returns, and the Morningstar Rating, Morningstar Return, and Morningstar Risk may be based, at least in part, on pre-inception returns. Please see the pre-inception returns disclosure (above) for more details.

Morningstar Rating™

For each investment with at least a three-year history, Morningstar calculates a Morningstar Rating™ based on how an investment ranks on a Morningstar Risk-Adjusted Return measure against other investments in the same category. This measure takes into account variations in an investment's monthly performance after adjusting for sales loads (except for load-waived A shares), redemption fees, and the risk-free rate, placing more emphasis on downward variations and rewarding consistent performance. The top 10% of investments in each category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars and the bottom 10% receive 1 star. The Overall Morningstar Rating for an investment is derived from a weighted average of the ratings for the three-, five- and ten-year (if applicable) time periods. Load-waived A share star ratings do not include any front-end sales load and are intended for those investors who have access to such purchase terms, such as participants in MassMutual-serviced retirement plans.

Morningstar Style Box™

The Morningstar Style Box reveals a fund's investment strategy as of the date noted on this report. For equity funds the vertical axis shows the market capitalization of the long stocks owned and the horizontal axis shows investment style (value, blend, or growth). For fixed-income funds, the vertical axis shows the credit quality of the long bonds owned and the horizontal axis shows interest rate sensitivity as measured by a bond's effective duration.

For corporate and municipal bonds, Morningstar surveys credit rating information from fund companies on a periodic basis (e.g., quarterly). In compiling credit rating information, Morningstar instructs fund companies to only use ratings that have been assigned by a Nationally Recognized Statistical Rating Organization (NRSRO). If two NRSROs have rated a security, fund companies are to report the lowest rating to Morningstar. If a rating is unavailable or unpublished, then the security or issuer is categorized as Not Rated/Not Available. US Government Securities issued by the US Treasury or US Government Agencies are included in the US Government category. PLEASE NOTE: Morningstar, Inc. is not itself an NRSRO nor does it issue a credit rating on the fund. An NRSRO rating on a fixed-income security can change from time-to-time.

Morningstar Return

This statistic is a measurement of an investment's excess return over a risk-free rate (the return of the 90-day Treasury bill), after adjusting for all applicable loads and sales charges. In each Morningstar Category, the top 10% of investments earn a High Morningstar Return, the next 22.5% Above Average, the middle 35% Average, the next 22.5% Below Average, and the bottom 10% Low. Morningstar Return is measured for up to three time periods (three-, five-, and 10-years). These separate measures are then weighted and averaged to produce an overall measure for the investment. Investments with less than three years of performance history are not rated. For more information, please see Morningstar Proprietary Statistics (above).

Morningstar Risk

This statistic evaluates the variations in an investment's monthly returns, with an emphasis on downside variations.

In each Morningstar Category, the 10% of investments with the lowest measured risk are described as Low Risk, the next 22.5% Below Average, the middle 35% Average, the next 22.5% Above Average, and the top 10% High. Morningstar Risk is measured for up to three time periods (three-, five-, and 10-years). These separate measures are then weighted and averaged to produce an overall measure for the investment. Investments with less than three years of performance history are not rated. For more information, please see Morningstar Proprietary Statistics (above).

Investment Risk

Money market investments are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although these investments seek to preserve the value of your investment at \$1.00 per share, it is possible to lose money by investing in a money market option.

Risks of investing in inflation-protected bond investments include credit risk and interest rate risk. Neither the bond investment nor its yield is guaranteed by the U.S. Government.

High yield bond investments are generally subject to greater market fluctuations and risk of loss of income and principal than lower yielding debt securities investments. Investment option(s) that track a benchmark index are professionally managed investments. However, the benchmark index itself is unmanaged and does not incur fees or expenses and cannot be purchased directly for investment.

Investments in companies with small or mid market capitalization ("small caps" or "mid caps") may be subject to special risks given their characteristic narrow markets, limited financial resources, and less liquid stocks, all of which may cause price volatility.

International/global investing can involve special risks, such as, political changes and currency fluctuations. These risks are heightened in emerging markets. You cannot transfer into international/global investment options if you have already made a purchase followed by a sale (redemption) involving the same investment within the last sixty days. In addition, you may not request a transfer into international/global investment options between 2:30 and 4 p.m. ET. Other trading restrictions may apply. Please see the investment's prospectus for more details.

A significant percentage of the underlying investments in aggressive asset allocation portfolio options have a higher than average risk exposure. Investors should consider their risk tolerance carefully before choosing such a strategy.

An investment option with underlying investments (multi-investment options, which may include any offered proprietary or non-proprietary asset-allocation, lifestyle, lifecycle or custom blended options) may be subject to the expenses of those underlying investments in addition to those of the investment option itself.

Investments may reside in the specialty category due to 1) allowable investment flexibility that precludes classification in standard asset categories and/or 2) investment concentration in a limited group of securities or industry sectors). Investments in this category may be more volatile than less-flexible and/or less-concentrated investments and may be appropriate as only a minor component in an investor's overall portfolio. **Investors should consider an investment's objectives, risks, charges and expenses carefully before investing. For this and other information, see a fact sheet (investment profile) or the prospectus, if applicable. You may obtain a prospectus or fact sheet by calling 1-800-840-1161 or at www.massmutual.com/retire. Read it carefully before investing.**

Securities offered through registered representatives of MML Investors Services, Inc. 1295 State Street Springfield, MA 01111. RS-04746-06

PIMCO High-Yield Fund PH1YX

Class Inst

Benchmark
BofAML US HY Master II TR USD

Overall Morningstar Rating™
★★★

Morningstar Return
Average

Morningstar Risk
Average

Out of 505 High Yield Bond funds. An investment's overall Morningstar Rating, based on its risk-adjusted return, is a weighted average of its applicable 3-, 5-, and 10-year Ratings. See disclosure for details.

Investment Strategy

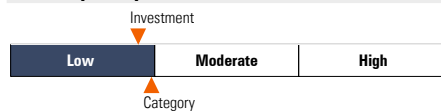
The investment seeks maximum total return, consistent with preservation of capital and prudent investment management.

The fund invests at least 80% of assets in a diversified portfolio of high-yield securities ("junk bonds"). It may invest the remainder of the assets in investment-grade fixed-income instruments. The average portfolio duration of this fund normally varies within two years (plus or minus) of the duration of the BofA Merrill Lynch U.S. High Yield BB-B Rated Constrained Index.

Category Description: High Yield Bond

High-yield bond funds concentrate on lower-quality bonds. Because such bonds are riskier than those of higher-quality companies, they offer higher coupons to attract investors. Therefore, these funds generally offer higher yields than other types of funds—but they are also more vulnerable to economic and credit risk. While defaults have been rare lately, these funds can suffer losses from recessions and bankruptcies.

Volatility Analysis



In the past, this investment has shown a relatively small range of price fluctuations relative to other investments. Based on this measure, currently more than two thirds of all investments have shown higher levels of risk. Consequently, this investment may appeal to investors looking for a conservative investment strategy.

Operations as of 08-19-11

| | |
|--------------------------------|----------------------|
| Prospectus Gross Expense Ratio | 0.55% of fund assets |
| Prospectus Net Expense Ratio | 0.55% of fund assets |
| Fund Inception Date | 12-16-92 |

| Waiver Data | Type | Exp. Date | % |
|-------------|------|-----------|---|
| — | — | — | — |

Portfolio Manager(s)

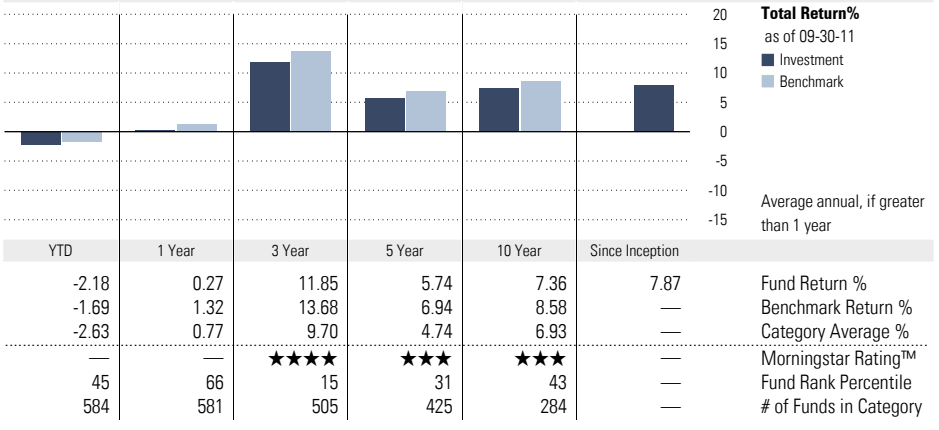
Andrew Jessop.

| | |
|--------------------|--------------------------------------|
| Management Company | Pacific Investment Management Co LLC |
| Distributor | PIMCO Investments LLC |

Notes

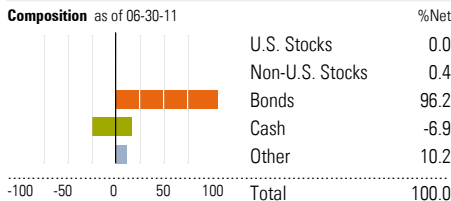
See disclosure page for more details.

Performance



Performance Disclosure: The performance data given represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; so an investor's shares/units, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than return data quoted herein.

Portfolio Analysis as of 06-30-11



Morningstar Style Box™ as of 06-30-11

| | | |
|---------------|--------------------|------|
| Not Available | Avg Eff Duration | 4.35 |
| | Avg Eff Maturity | 6.22 |
| | Avg Credit Quality | — |
| | Avg Wtd Coupon | 7.71 |
| | Avg Wtd Price | — |

Top 10 Holdings as of 06-30-11

| | % Assets |
|---|----------|
| Cdx Hy16 5y Sp Brc 06-20-16 | 2.24 |
| Pimco Fds Private Account Portfolio Se 11-01-11 | 2.23 |
| Hca 9.25% 11-15-16 | 1.30 |
| Cdx Hy15 5y Sp Brc 12-20-15 | 1.07 |
| BRAZIL NTN-F 01-01-17 | 0.98 |
| Ford Motor Credit Co 7% 10-01-13 | 0.98 |
| Biomet 11.625% 10-15-17 | 0.82 |
| Sprint Cap 6.9% 05-01-19 | 0.78 |
| Echostar Dbs 7.125% 02-01-16 | 0.75 |
| Georgia Pac 8% 01-15-24 | 0.75 |

Credit Analysis

Not Available

| | |
|--------------------------------|----------|
| Total Number of Stock Holdings | 2 |
| Total Number of Bond Holdings | 859 |
| Annual Turnover Ratio % | 36 |
| Total Fund Assets (\$mil) | 11,974.3 |

Morningstar Disclosure Some of the returns and Morningstar proprietary calculations, may be based on pre-inception returns and are hypothetical. Morningstar may use the performance of the underlying investment vehicle for the prior periods, making adjustments to those returns for any difference in fee structure. The evaluation of this investment does not affect the retail mutual fund data published by Morningstar. This investment's metrics are compared against the retail mutual fund universe breakpoints to determine its hypothetical rating and category related statistics.