

Quarterly Review as of December 31, 2018

MassMutual Select T. Rowe Price Retirement Funds

I SHARE CLASS

Strategy and Objectives

This investment seeks the highest total return over time consistent with an emphasis on both capital growth and income. MassMutual Select T. Rowe Price Retirement Funds employ a broadly diversified portfolio that reflects the global investment opportunity set. T. Rowe Price engages its broad range of active management capabilities across asset classes, regions, styles, and market capitalizations in order to support strong, long-term performance for our clients.

Portfolio Managers

Adviser: **MML Investment Advisers, LLC**

Subadviser:



Jerome Clark, CFA
26 years of investment
experience



Wyatt Lee, CFA
21 years of investment
experience

Portfolio Highlights

The MassMutual Select T. Rowe Price Target Date Funds posted mixed results versus their respective combined indexes* for the three-month period ended December 31, 2018.

Relative performance drivers:

- Security selection was the top contributor to outperformance. Strong security selection, particularly within U.S. equities across most capitalizations and styles, added significant value. Security selection within certain other portfolios detracted, most notably within the international developed value and core equity portfolios.
- Portfolio positioning positively contributed to relative returns. An underweight allocation to equities relative to fixed income and cash proved favorable, as bonds outpaced stocks amid a downturn in global equity markets.
- The inclusion of out-of-benchmark sectors hurt relative returns. Exposure to high yield bonds, emerging markets bonds, floating rate loans, and dynamic global bonds hindered performance. On the positive side, the inclusion of real assets equities and long-term U.S. Treasuries buoyed relative performance.

Additional highlights:

- We reduced our underweight to equities and are now neutral relative to fixed income. We believe equity valuations now better reflect geopolitical risks and concerns over an aging economic cycle. Several near-term risks remain, including receding global liquidity, moderating growth, and ongoing trade tensions. Despite modestly attractive valuations, we pared back our overweight to equity markets outside the U.S. as expectations for growth in those regions have moderated. We expect equity and bond market volatility to remain elevated as concerns over the path of monetary policy and political risks unfold.
- After 2017's synchronized upswing in global economic activity, growth trajectories worldwide diverged in 2018. Global central banks are in varying stages of winding down accommodative monetary policies, leading to a decrease in liquidity and the potential for upward pressure on yields. We believe that our strategic investing approach and broad diversification adds value over the long term and could help to mitigate downside risk.

Performance Detail

Market Context

Global equities tumble on market fears - Global equities turned sharply lower in the fourth quarter, led by weakness in U.S. stocks, which suffered steeper losses than international developed and emerging markets equities. Despite a partial rebound in late December, U.S. stocks plunged over the period, dragging all the major indexes into negative territory for the year. Several major indexes ended the year in, or close to, bear market territory, down at least 20% from October's highs. The sell-off was spurred by slowing economic growth globally, increased tensions between the U.S. and China, and expectations for slowing corporate earnings growth in the U.S. Following an expected rate hike in December by the Federal Reserve (Fed), concern that the Fed could tighten too much too fast added to market fears. Outside the U.S., developed markets stocks were negative but held up better than U.S. shares. In the eurozone, markets were broadly negative. UK shares dropped in large part because of uncertainty around the terms of the country's withdrawal from the European Union (EU). Italian stocks also posted deep losses, as a budget dispute between Italy's incoming populist government and the EU weighed on investor sentiment. However, a budget agreement was reached late in the period, which eased concerns in the region. Developed Asian markets were negative as well, led by a sharp decline in Japanese shares on expectations for slowing global growth. Emerging markets equities, while still negative, performed better than developed markets shares. Shares in Mexico, China, and Russia suffered the steepest losses. Brazilian stocks bucked the global trend and rose over the period, amid hopes that newly elected President Jair Bolsonaro will foster a business-friendly environment and cut down on crime and corruption. Certain major oil importing markets in Asia benefited from the significant price drop in oil prices.

*The combined index portfolio for each Fund is comprised of a varying mix of the Russell 3000 Index, MSCI All Country World Ex-U.S. Index, Bloomberg Barclays U.S. Aggregate Bond Index and the Bloomberg Barclays U.S. 1-5 Year Treasury TIPS Index.

U.S. bonds produced mostly positive returns. An increased demand for the relative safety of Treasuries put significant downward pressure on long-term yields. The 10-year Treasury yield declined to 2.68%, down from a seven-year high of about 3.25% reached in early October. Short-term rates continued to rise, resulting in a flatter yield curve, which has historically been associated with an economic slowdown. High yield bonds fared poorly, as credit spreads widened during the risk-off environment. A steep drop in oil prices weighed heavily on bonds issued by energy companies, which make up a significant proportion of the high yield sector. Non-dollar bonds delivered modestly positive returns. While bond yields declined in many markets as investors fled equity market volatility, a stronger dollar relative to most European currencies reduced returns to U.S. investors. Emerging markets bonds were mixed, as local currency-denominated bonds delivered positive returns and dollar-denominated debt declined.

Security Selection Effects

- Security selection was the top positive contributor to relative returns. Key contributions to performance came from security selection within a number of the U.S. equity portfolios, including the large-cap growth and value, small-cap growth and core, and mid-cap growth portfolios. Security selection within the international developed growth equity portfolio also added value, as the portfolio outpaced its style-specific benchmark.
- Unfavorable security selection within the international developed value and core equity portfolios detracted from relative returns, as these portfolios trailed their respective benchmarks. Selection among U.S. investment-grade and emerging markets bonds also negatively impacted relative performance.

Allocation Effects

- Portfolio positioning benefited returns for the period. An underweight to equities relative to fixed income and cash was a significant driver of relative outperformance, as bonds outpaced stocks, particularly late in the period amid a global equity sell-off. An underweight allocation to high yield bonds, which fared worse than investment-grade debt, benefited relative returns. An overweight allocation to international equities, which held up better than U.S. equities, also added value.
- However, an overweight allocation to U.S. small-cap stocks, which trailed large-cap stocks, negatively impacted performance. An underweight to real assets equities relative to the portfolio's strategic neutral allocation detracted from relative returns, as real assets outpaced global equities.

Structural Effects

- Exposure to out-of-benchmark sectors was the top detractor from relative returns, led by the inclusion of high yield bonds. Out-of-benchmark exposure to emerging markets bonds, dynamic global bonds, and floating rate loans also hurt relative returns.
- On the positive side, the inclusion of real assets equities added value, as the real assets sector outpaced the blended equity benchmark. This positive impact was limited by an underweight tactical allocation to the real assets sector. The inclusion of long-term U.S. Treasuries also lifted relative returns.

Manager Outlook

After 2017's synchronized upswing in global economic activity, growth trajectories worldwide diverged in 2018. Fiscal stimulus and the tax overhaul package of 2017 have benefited the U.S. economy, while growth has begun to flag in a few other markets despite support from long-standing accommodative monetary policies. We expect that the growth differential between the U.S. and the rest of the world will narrow as the tailwind from U.S. fiscal stimulus starts to fade. Growth in Europe has moderated, but we expect it will stabilize and remain above potential. The stronger U.S. dollar and global trade strife have exacerbated economic imbalances in some emerging markets; however, many developing countries rely less on U.S. dollar funding than they have in the past, lessening the potential for systemic risk. Recent energy price declines should be supportive of more consumer-oriented emerging markets, but may prove to be a headwind for commodity-export-dependent countries.

Against the backdrop of an extended economic cycle, our outlook has grown more cautious, but we continue to seek opportunities, particularly in instances where fundamental value may not be fully reflected in market prices. Global central banks are in varying stages of winding down accommodative monetary policies, leading to a decrease in liquidity and the potential for upward pressure on yields. However, fundamentals for corporate earnings remain broadly supportive, and we do not anticipate a recession over the next year. Near-term risks to global markets include repercussions from potential monetary policy missteps and an escalation in trade tensions.

With rising geopolitical and monetary policy risks, and higher volatility, we have a balanced view on risk taking within our portfolios. However, we have selectively added to our positions where we feel that market weakness has created attractive risk/reward opportunities. We believe that our strategic investing approach and broad diversification adds value over the long term and could help to mitigate downside risk.

Fund Performance Data

Fund / Asset Category ¹ / Index	Inception Date	Average Annual Returns (net of expenses)							Expense Ratio ²	
		QTD	YTD	1 Yr	3 Yr	5 Yr	10 Year	Since Fund's Inception	Net	Gross
MassMutual Select TRP Retirement Balanced	2/16/2018	-5.11	-3.72	-	-	-	-	-3.72	0.34	0.78
Morningstar Allocation--30% to 50% Equity		-3.23	-3.14	-3.14	2.96	2.17	5.49	-	1.15	1.63
S&P Target Date Ret Inc		-3.92	-2.54	-2.54	3.57	3.06	5.31	-2.23	-	-
MassMutual Select TRP Retirement 2005	2/16/2018	-4.61	-3.40	-	-	-	-	-3.40	0.38	3.61
Morningstar Target-Date 2000-2010		-4.30	-3.25	-3.25	4.11	3.22	6.96	-	0.71	2.81
S&P Target Date Ret Inc		-3.92	-2.54	-2.54	3.57	3.06	5.31	-2.23	-	-
MassMutual Select TRP Retirement 2010	2/16/2018	-5.25	-3.98	-	-	-	-	-3.98	0.38	0.64
Morningstar Target-Date 2000-2010		-4.30	-3.25	-3.25	4.11	3.22	6.96	-	0.71	2.81
S&P Target Date 2010		-4.80	-3.10	-3.10	4.08	3.40	6.24	-2.88	-	-
MassMutual Select TRP Retirement 2015	2/16/2018	-6.22	-4.90	-	-	-	-	-4.90	0.41	0.97
Morningstar Target-Date 2015		-5.41	-3.86	-3.86	4.39	3.36	7.49	-	0.73	4.64
S&P Target Date 2015		-5.72	-3.67	-3.67	4.57	3.79	7.11	-3.58	-	-
MassMutual Select TRP Retirement 2020	2/16/2018	-7.45	-6.03	-	-	-	-	-6.03	0.45	0.51
Morningstar Target-Date 2020		-6.14	-4.49	-4.49	4.54	3.41	7.73	-	0.79	1.61
S&P Target Date 2020		-6.49	-4.16	-4.16	5.05	4.10	7.86	-4.24	-	-
MassMutual Select TRP Retirement 2025	2/16/2018	-8.46	-7.05	-	-	-	-	-7.05	0.48	0.61
Morningstar Target-Date 2025		-7.47	-5.34	-5.34	5.05	3.71	8.55	-	0.77	1.70
S&P Target Date 2025		-7.81	-5.02	-5.02	5.46	4.31	8.46	-5.37	-	-
MassMutual Select TRP Retirement 2030	2/16/2018	-9.47	-8.09	-	-	-	-	-8.09	0.51	0.56
Morningstar Target-Date 2030		-8.82	-6.25	-6.25	5.45	3.94	8.86	-	0.81	1.50
S&P Target Date 2030		-9.26	-5.99	-5.99	5.77	4.50	8.96	-6.57	-	-
MassMutual Select TRP Retirement 2035	2/16/2018	-10.35	-8.92	-	-	-	-	-8.92	0.54	0.68
Morningstar Target-Date 2035		-10.13	-7.04	-7.04	5.83	4.14	9.44	-	0.78	2.27
S&P Target Date 2035		-10.55	-6.88	-6.88	6.08	4.69	9.38	-7.71	-	-
MassMutual Select TRP Retirement 2040	2/16/2018	-10.93	-9.50	-	-	-	-	-9.50	0.56	0.61
Morningstar Target-Date 2040		-11.01	-7.74	-7.74	5.96	4.23	9.48	-	0.82	1.79
S&P Target Date 2040		-11.33	-7.41	-7.41	6.33	4.82	9.68	-8.38	-	-
MassMutual Select TRP Retirement 2045	2/16/2018	-11.38	-9.90	-	-	-	-	-9.90	0.56	0.74
Morningstar Target-Date 2045		-11.71	-8.14	-8.14	6.13	4.30	9.78	-	0.79	2.42
S&P Target Date 2045		-11.75	-7.74	-7.74	6.51	4.91	9.88	-8.80	-	-
MassMutual Select TRP Retirement 2050	2/16/2018	-11.40	-9.92	-	-	-	-	-9.92	0.56	0.66
Morningstar Target-Date 2050		-11.91	-8.41	-8.41	6.11	4.33	9.60	-	0.83	1.74
S&P Target Date 2050		-12.05	-7.94	-7.94	6.68	5.01	10.02	-9.05	-	-
MassMutual Select TRP Retirement 2055	2/16/2018	-11.38	-9.90	-	-	-	-	-9.90	0.56	0.92
Morningstar Target-Date 2055		-12.12	-8.44	-8.44	6.21	4.42	10.41	-	0.79	3.25
S&P Target Date 2055		-12.10	-7.97	-7.97	6.82	5.07	10.16	-9.13	-	-
MassMutual Select TRP Retirement 2060	2/16/2018	-11.43	-9.96	-	-	-	-	-9.96	0.56	7.45
Morningstar Target-Date 2060+		-12.28	-8.52	-8.52	6.31	4.16	-	-	0.80	7.94
S&P Target Date 2060+		-12.22	-7.95	-7.95	6.95	5.12	-	-9.17	-	-

¹ Morningstar Category: identifies funds based on investment styles as measured by their underlying portfolio holdings/ statistics over 3 years. Investment options can move into other categories, or Morningstar may change their classification methodology. Morningstar calculates adjusted historical returns.

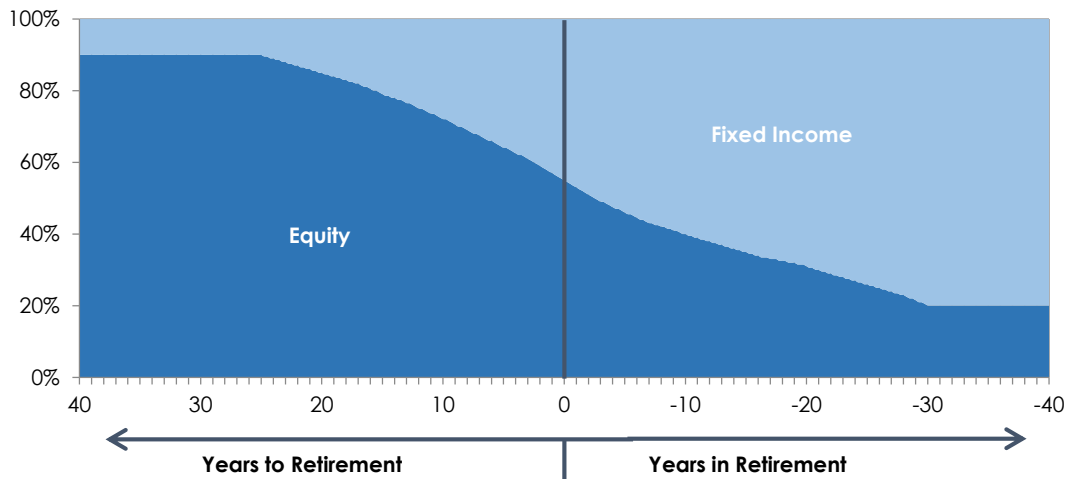
² The expenses for MassMutual Select T. Rowe Price Retirement Funds listed in this table reflect a contractual agreement by MML Advisers to cap the fees and expenses of the Fund through January 31, 2020. Please refer to the Funds prospectus for more information.

The performance data given represents past performance and should not be considered indicative of future results. Current performance may be lower or higher than return data quoted herein. For more current information, including month-end performance, please visit www.massmutualfunds.com. Principal value and investment return will fluctuate, so an investor's shares/units when redeemed may be worth more or less than the original investment. Investment portfolio statistics change over time and there are no assurances investment objectives will be achieved. The investment is not FDIC-insured, may lose value and is not guaranteed by a bank or other financial institution.

Performance shown is adjusted to reflect all actual ongoing expenses and assumes reinvestment of dividends and capital gains (if applicable). Performance shown is net of expenses, but before any applicable contract or plan charges. Any additional charges may lower the performance of the investment. Your plan may offer another share class of this option, in which case it may have higher expenses and your investment's performance may be lower than the performance of the share class shown in this report.

Investors should consider an investment option's objectives, risks, fees, and expenses carefully before investing. This and other information can be found in the applicable prospectuses or summary prospectuses, which are available from MassMutual by visiting MassMutualFunds.com or by calling 1-866-444-2601. Please read them carefully before investing.

Glide Path



Asset Allocation

Fund Name	Equity	Fixed Income
MassMutual Select T. Rowe Price Retirement Balanced Fund	40.0%	60.0%
MassMutual Select T. Rowe Price Retirement 2005	36.5%	63.5%
MassMutual Select T. Rowe Price Retirement 2010	42.0%	58.0%
MassMutual Select T. Rowe Price Retirement 2015	49.0%	51.0%
MassMutual Select T. Rowe Price Retirement 2020	58.5%	41.5%
MassMutual Select T. Rowe Price Retirement 2025	67.0%	33.0%
MassMutual Select T. Rowe Price Retirement 2030	75.0%	25.0%
MassMutual Select T. Rowe Price Retirement 2035	81.5%	18.5%
MassMutual Select T. Rowe Price Retirement 2040	86.5%	13.5%
MassMutual Select T. Rowe Price Retirement 2045	90.0%	10.0%
MassMutual Select T. Rowe Price Retirement 2050	90.0%	10.0%
MassMutual Select T. Rowe Price Retirement 2055	90.0%	10.0%
MassMutual Select T. Rowe Price Retirement 2060	90.0%	10.0%

Generally target retirement date (lifecycle) investment options are designed to be held beyond the presumed retirement date to offer a continuing investment option for the investor in retirement. The year in the investment option name refers to the approximate year an investor in the option would plan to retire and likely would stop making new contributions to the investment option. However, investors may choose a date other than their presumed retirement date to be more conservative or aggressive depending on their own risk tolerance. Target retirement date (lifecycle) investment options are designed for participants who plan to withdraw the value of their accounts gradually after retirement. Each of these options follows its own asset allocation path ("glide path") to progressively reduce its equity exposure and become more conservative over time. Options may not reach their most conservative allocation until after their target date. Others may reach their most conservative allocation in their target date year. Investors should consider their own personal risk tolerance, circumstances and financial situation. These options should not be selected solely on a single factor such as age or retirement date. Please consult the prospectus (if applicable) pertaining to the options to determine if their glide path is consistent with your long-term financial plan. Target retirement date investment options' stated asset allocation may be subject to change. **Investments in these options are not guaranteed and you may experience losses, including losses near, at, or after the target date. Additionally, there is no guarantee that the options will provide adequate income at and through retirement.**

These materials and the platform of investments made available by MassMutual are offered without regard to the individualized needs of any plan, its participants, or beneficiaries. These materials are not intended as impartial investment advice or to give advice in a fiduciary capacity to any plan.

The Fund's **Principal Risks** include- Cash Position Risk, Convertible Securities Risk, Foreign Investment Risk; Emerging Markets Risk; Currency Risk, Growth Company Risk, Liquidity Risk, Management Risk, Non-Diversification Risk, Market Risk, Preferred Stock Risk, Smaller and Mid-Cap Company Risk, Valuation Risk. For a complete list, please refer to the Fund's summary prospectus (a copy can be obtained by visiting MassMutualFunds.com or by sending an email to fundinfo@massmutual.com) for more information on the specific risks.

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