

# MassMutual Small Cap Growth Equity Fund

Subadvised by:

Wellington Management Company, LLP

Invesco Advisers, Inc.

Presented by:

Sean de Lacy: Head of Strategic Accounts & Consultant Relations

David Selbovitz: Head of Portfolio Strategy & Analytics

November 8, 2022

## Massachusetts Mutual Life Insurance Company

**\$459.5 billion<sup>1</sup>** assets under management

**170 Years**

Protecting financial  
futures

**153<sup>rd</sup>**

Consecutive  
dividend payout

**\$1.85 billion<sup>2</sup>**

Estimated 2022  
dividend payout

Rooted in a commitment to protect and provide, MassMutual's long-term investment philosophy has helped us provide **financial and retirement security to millions of people.**

<sup>1</sup> As of 12/31/21. Assets Under Management (AUM) include assets and certain external investment funds managed by MassMutual subsidiaries, including Barings.

<sup>2</sup> Dividends apply to eligible participating policyowners, are determined annually, subject to change, and are not guaranteed.

## MassMutual Funds<sup>1</sup>

**\$41.9 billion** <sup>2</sup>assets managed

### Protecting Financial Futures

Build offerings based on a long-term investment philosophy that focuses on protecting assets

### Diverse Fund Offerings

Over 100 funds, including multiple target retirement suites

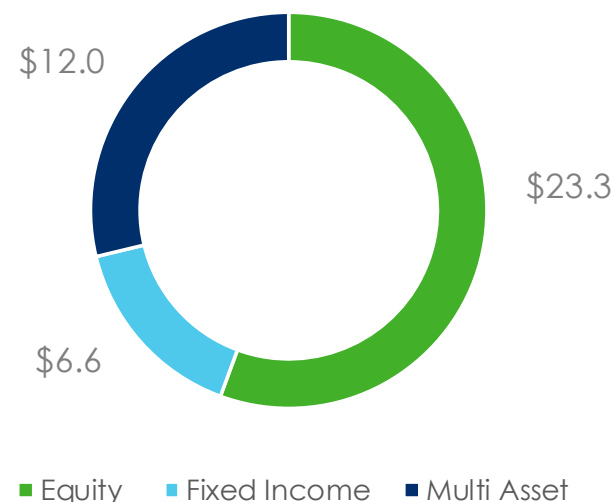
### Partnerships with Top Tier Managers

Strategic relationships with over 20 leaders in various asset classes

### Multi-managed Investment Solutions

Notable firm pairings to manage risk and provide long-term consistent results

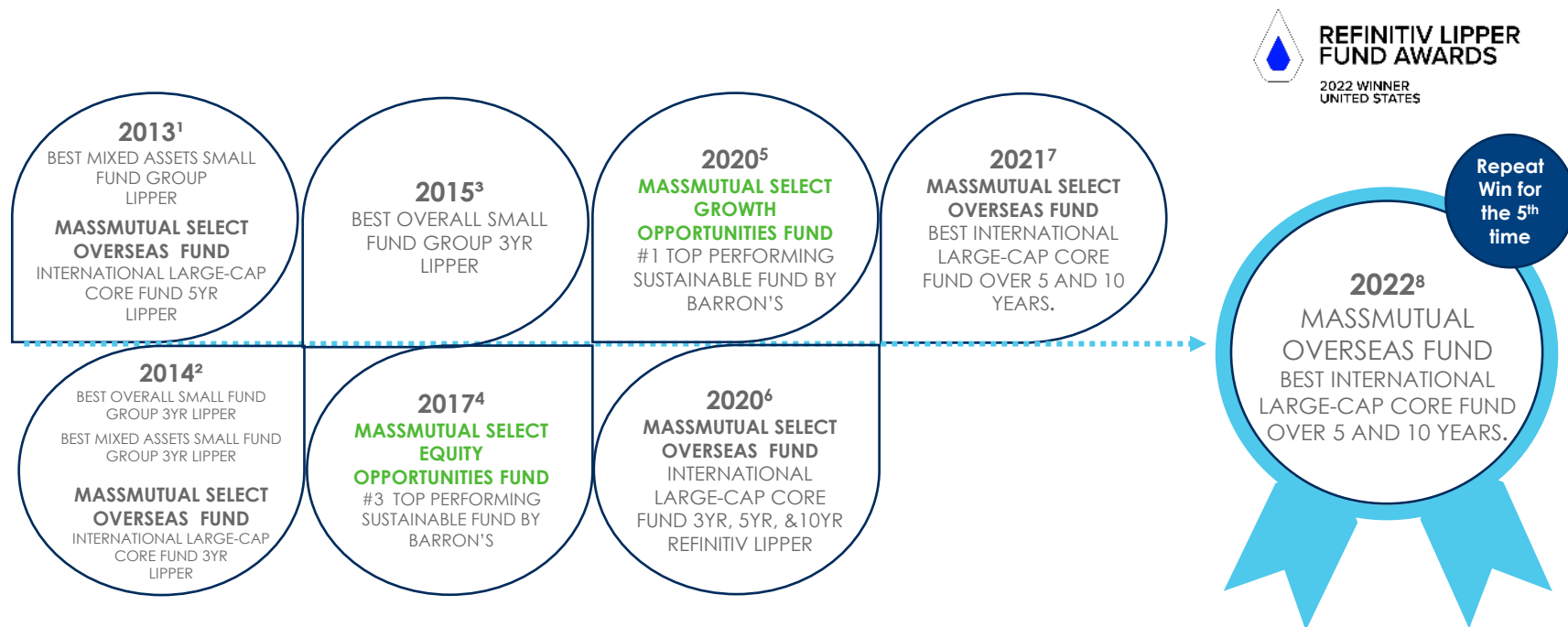
Assets Under Management<sup>2</sup>  
IN BILLIONS



<sup>1</sup> The MassMutual Funds are advised by MML Investment Advisers, LLC and sponsored by Massachusetts Mutual Life Insurance Company. Principal Underwriter: MML Distributors, LLC. (MMLD), 1295 State St., Springfield, MA 01111. Member FINRA and SIPC ([www.FINRA.org](http://www.FINRA.org) and [www.SIPC.org](http://www.SIPC.org)). Investment advisory services provided to the Funds by MML Investment Advisers, LLC (MML Investment Advisers). MMLD and MML Investment Advisers are subsidiaries of Massachusetts Mutual Life Insurance Company (MassMutual), Springfield, MA 01111-0001.

<sup>2</sup> As of 9/30/2022. Numbers have been rounded to one decimal place.

## A History of Award-Winning Results...



MassMutual Funds has one core focus: to deliver consistent returns for our retirement investors. We are honored to be recognized for the **third consecutive year**, and the 11<sup>th</sup> time in the last decade, for industry leading outcomes achieved from our fund complex.

# Investment Management Solutions

Manager selection and oversight expertise

## Andrea Anastasio

Head of Investment Management Solutions

22 Years experience

### Investments

#### Manager Research

**Wale Adedokun**  
Head of Manager Research  
11 Years experience

**Phil Connor, CFA**  
Investment Director  
31 Years experience

**Laurie Goodreau, CFA**  
Investment Director  
31 Years experience

**Michael Friedman, CFA**  
Investment Director & ESG Lead  
22 Years experience

**Jason Marino, CFA, CAIA**  
Investment Director  
20 Years experience

**Investment Director**  
Open

#### Multi-Asset Class Solutions

**Rick Schultz, CFA, CAIA**  
Head of Multi-Asset Class Solutions  
18 Years experience

**Mike Abata, CFA**  
Asset Allocation Consultant  
31 Years experience

**Brendon Pickering, CFA**  
Asset Allocation Consultant  
7 Years experience

### Investment Product Strategy

#### Portfolio Strategy and Analytics

**David Selbovitz, CFA, CAIA**  
Head of Portfolio Strategy and Analytics  
14 Years experience

**Gary Lowe, CFA**  
Quantitative Analyst  
24 Years experience

**Roxanne Podgurski**  
RFP Consultant  
15 Years experience

**Evan Cianchette**  
Portfolio Specialist  
8 Years experience

#### Product Intelligence and Innovation

**Evan Woods, CFA**  
Head of Product Intelligence and Innovation  
16 Years experience

#### Product Management

**Doug Steele, CFA**  
Head of Product Management  
25 Years experience

**Brian Pelkola**  
Product Management Consultant  
14 Years experience

**Meredith Ulrich**  
Strategic Consultant  
13 Years experience

#### Strategy and Execution

Renee Roeder

#### Fund Administration

Renee Hitchcock

#### Investment Operations

Donna Champagne

#### DCIO Strategic Accounts & Consultant Relations

Sean De Lacy

#### DCIO National Sales

Andy Beck

#### Intermediary Wealth Sales

Tony Grigoris, CFA

### Shared Services

Legal

Compliance

Marketing

Finance

Technology

# The MassMutual Approach

## Philosophy & Process

We believe active management utilizing specialized, autonomous investment managers, supported by disciplined portfolio construction and ongoing monitoring, can lead to consistent performance over the long-term which is a key differentiator in the retirement space.

We deliver investment solutions leveraging independent, institutional asset managers with the goal of consistent outperformance. Our investment philosophy cascades from three main ideas:

1

### Suite of Customized Products

Engineered to help meet long term investment objectives

Recognition of how menu options are selected

Appreciation of how investors behave

2

### Manager Selection

Record of strong performance

Organizational strength

Portfolio diversification

Philosophical alignment

3

### Risk Management and Oversight

Daily performance monitoring

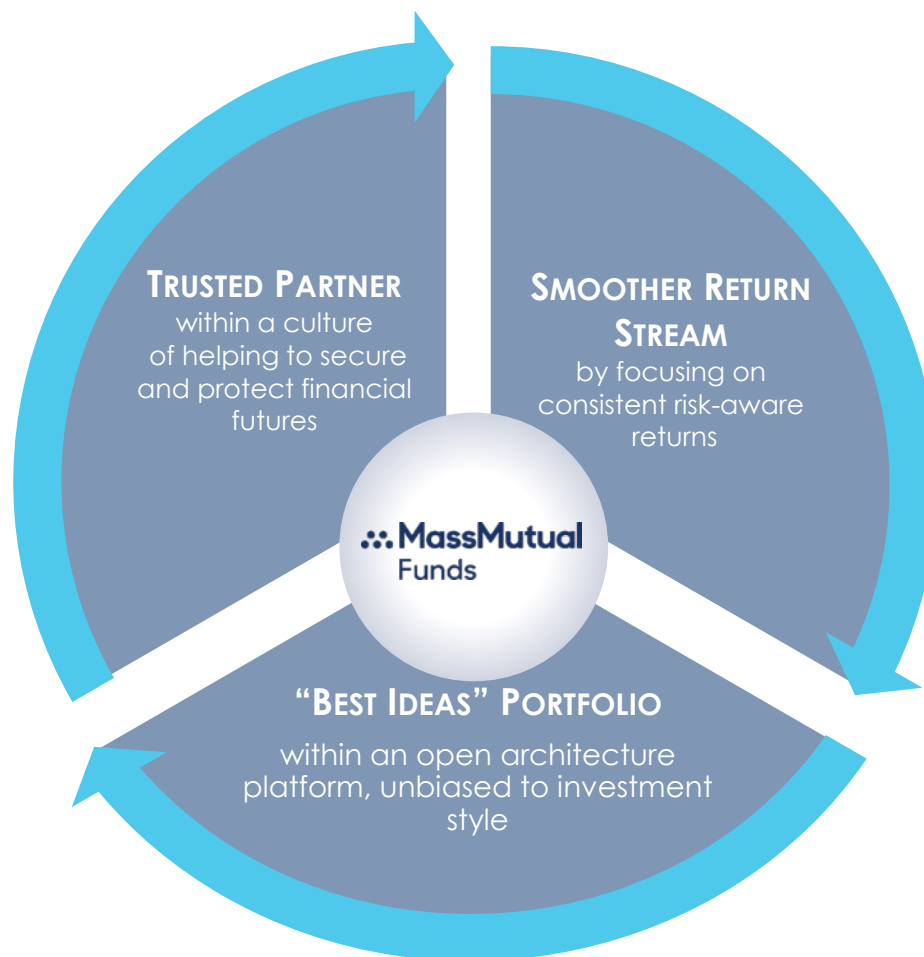
Quarterly portfolio review

Annual onsite visits

Seamless manager adjustments

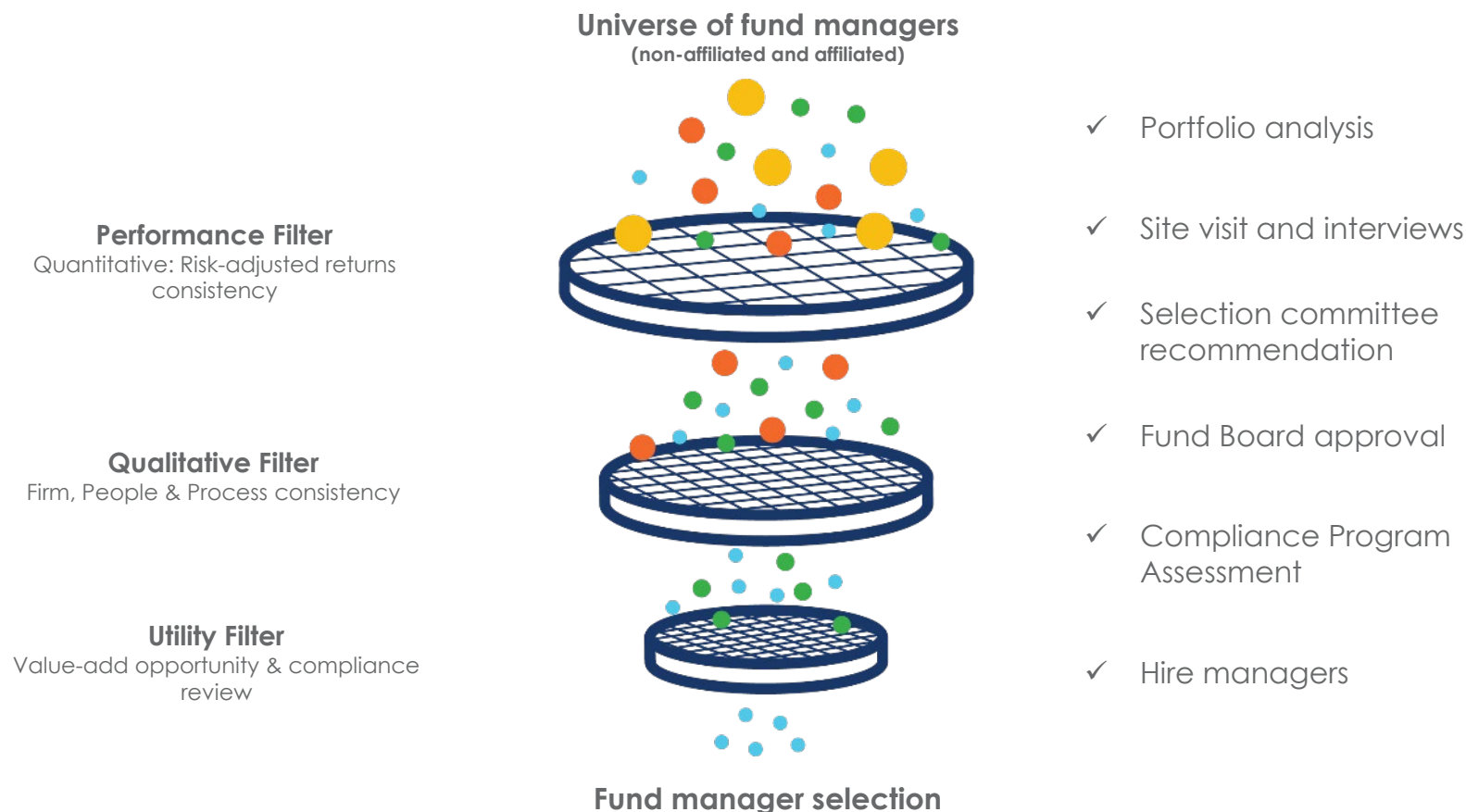
# 1 Suite of Customized Products

MassMutual Funds offer the advantage of investment solutions with focused products that strive to deliver consistent peer outperformance.



## 2 Manager Selection

MassMutual Funds are built on a broad array of **world class and specialized fund managers**. The MassMutual investment research team has **decision power to add or remove managers** with greater objectivity with the goal of less disruption, while additional managers can increase capacity for closed strategies.





## 2 We Partner with Quality Institutional Managers

Multiple manager structure of independent investment firms provides additional **diversification benefits and risk management** to help create consistent, strong returns.



HARRIS ASSOCIATES



T.RowePrice®

BlackRock



J.P.Morgan  
Asset Management



NORTHERN  
TRUST



WELLINGTON  
MANAGEMENT®



ALLIANCEBERNSTEIN®



BostonPartners



WESTFIELD  
CAPITAL MANAGEMENT



# 3 Risk Management and Oversight

## Robust Fund Oversight

### Daily Performance Monitoring

- Dashboards that contain key valuation and portfolio metrics for each subadvisor
- Access to portfolio performance, holdings and buy/sell activity
- Oversight to ensure adherence to the prescribed mandate

### Quarterly Review

- Quarterly individual scoring of managers by the research team
- Review of account management process and performance
- Team evaluation each quarter identify trends and areas for deeper review

### Annual Onsite Meetings

- Discuss any changes at the firm or on the management team
- Review investment process, portfolio positioning and performance
- Meet with new staff and senior management to talk about product development and trends
- Spend time with traders and review their execution process

## Seamless Manager Adjustments

Reasons for a change in subadvisor may include

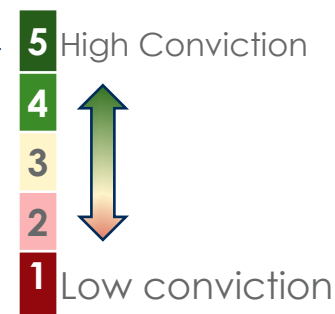
- Concerns over qualitative and/or quantitative issues
- Changes in investment personnel at the subadvisor
- Failure to adhere to the prescribed investment mandate
- Concerns over subadvisor resources

# 3 A look into our quarterly investment review

## QIR Process



## Ratings Scale



# Fund Overview

## MassMutual Small Cap Growth Equity Fund



### Fund Details

**Morningstar Fund Category:** Small Cap Growth

**Fund Inception Date:** 5/3/1999

**# of Stock Holdings:** 230

**Fund Net Assets:** 525.14 Million

**Benchmark:** Russell 2000® Growth Index

**Fund Objective:** This Fund seeks long-term capital appreciation.

### Strategy

### Target Allocation

Invesco Discovery Small Cap Growth Strategy	40%
Wellington Small Cap Growth Strategy	30%
Wellington Small Cap Opportunities Strategy	30%

### Fund Benefits

#### Thoughtfully combined market leading managers

- Complementary approaches to stock selection with low holdings overlap and excess return correlations

#### Striving to reduce risk for plan participants

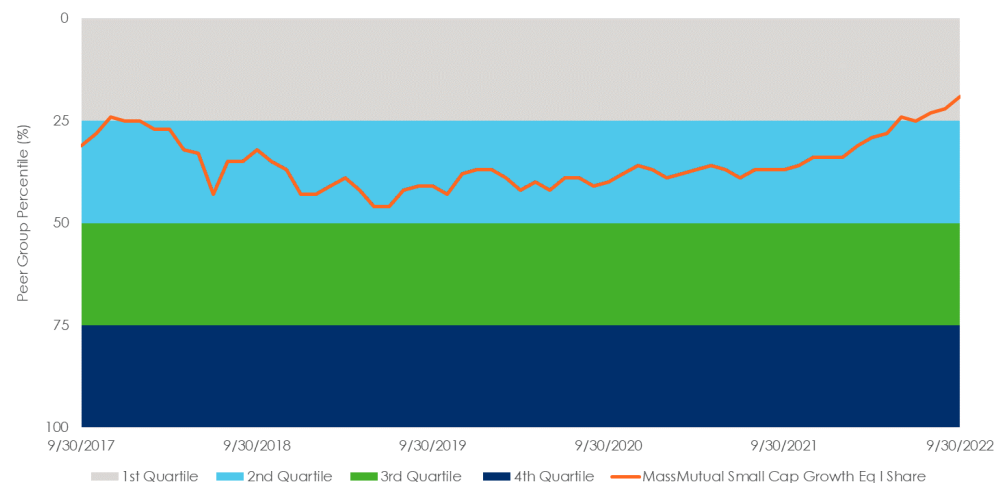
- Multi-manager approach seeks to smooth out the return stream and helps minimize the volatility of any single manager in isolation

#### Targeting consistent performance in an inefficient asset class

- Notable performance advantage over both its benchmark and its peer group over key annualized periods

### QUALITY PERFORMANCE ACROSS TIMEFRAMES

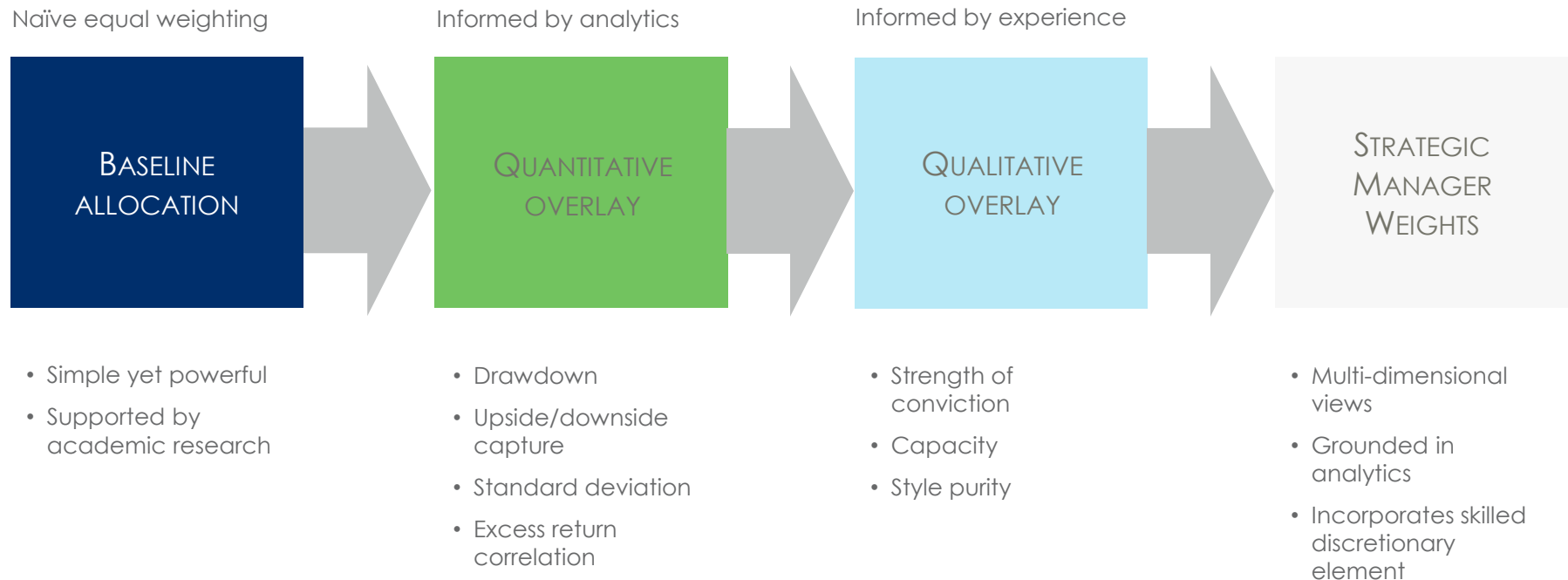
Rolling 5-year return rankings\* vs. Morningstar Small Growth peer group



Source: Morningstar Direct as of 9/30/2022

\*Rolling return rankings are 5-year annualized performance rankings for the Fund vs. the peer group through each month-end over the specified periods. Rolling returns are useful for examining the behavior of returns for holdings periods, similar to those actually experienced by investors.

We believe that a successful portfolio construction process should be academically intuitive, empirically valid, and repeatedly applied. Our multi-manager structure of independent investment firms provides additional **diversification benefits and risk management** to help create consistent, strong returns.



# Subadviser Overview



## OFI Small Cap Growth Strategy

**Benchmark:** Russell 2000® Growth  
**Style:** Fundamental

### Investment Philosophy

- Solid long-term, risk-adjusted returns come from investing in high-quality, high-growth companies that are likely to outperform over a full market cycle
- A multi-faceted sell discipline is critical to compounding growth

### Investment Approach

- Focuses on company management and their ability to drive long-term growth, provide differentiated products and services and drive new product cycles
- Utilizes deep experience to identify buying opportunities when negative news is amplified or selling opportunities when positive news drives share prices far beyond their fundamentals
- Differentiated sell discipline is based on proactively managing risk and identifying rising risk of disappointment in an effort to provide downside protection

### Portfolio Construction

- 90-110 companies
- Sector and stock position limits
- Well diversified portfolio

## Portfolio Management



### Ronald Zibelli, Jr., CFA

- Team Leader, Senior Portfolio Manager
- Managed strategy since 2015
- Joined firm in 2006
- Joined industry in 1981
- B.A., Finance, Lehigh University



### Ash Shah, CFA

- Senior Portfolio Manager, Senior Research Analyst
- Managed strategy since 2015
- Joined firm in 2006
- Joined industry in 1995
- B.S., Syracuse University
- M.B.A., New York University, Stern School of Business



## Investment Process: Small Cap Growth Strategy



# Subadviser Overview

WELLINGTON  
MANAGEMENT®



## Small Cap Growth Strategy

**Benchmark:** Russell 2000® Growth  
**Style:** Fundamental

### Investment Philosophy

- Small cap stocks are often inefficiently priced and driven by changing investor expectations
- Emerging growth companies are frequently not yet well understood by market participants, while reemerging growth companies are often out of favor with investors during periods of stagnant or declining growth

### Investment Approach

- Identifies emerging and re-emerging small-cap growth companies, by focusing in broad terms on the Industrial Life Cycle.
- Companies during these stages should experience characteristics such as relatively high, sustainable revenue growth, market share, and accelerating profitability
- Valuation awareness informs buy and sell decisions

### Portfolio Construction

- Typically contain 80 – 120 securities
- Maximum position at purchase typically 0.8% – 2.5%, 5% at market
- Benchmark-agnostic sector and industry weights

## Portfolio Management



### Steven C. Angeli, CFA

- Senior Managing Director, Equity Portfolio Manager
- Managed strategy since 2004
- Joined Wellington in 1994
- Joined industry in 1990
- M.B.A., University of Virginia, Darden School of Business

Mr. Angeli is expected to step down as a portfolio manager of the Fund on or about January 31, 2023. Mr. Ramachandran will take over as Lead Portfolio Manager.



### Ranjit Ramachandran, CFA

- Managing Director, Equity Portfolio Manager
- Managed strategy since 2022
- Joined Wellington in 2014
- Joined industry in 2010
- M.B.A., Wharton School of the University of Pennsylvania



### John V. Schneider, CFA

- Managing Director, Equity Research Analyst
- Managed strategy since 2018
- Joined Wellington in 2016
- Joined industry in 1998
- A.B., Dartmouth College

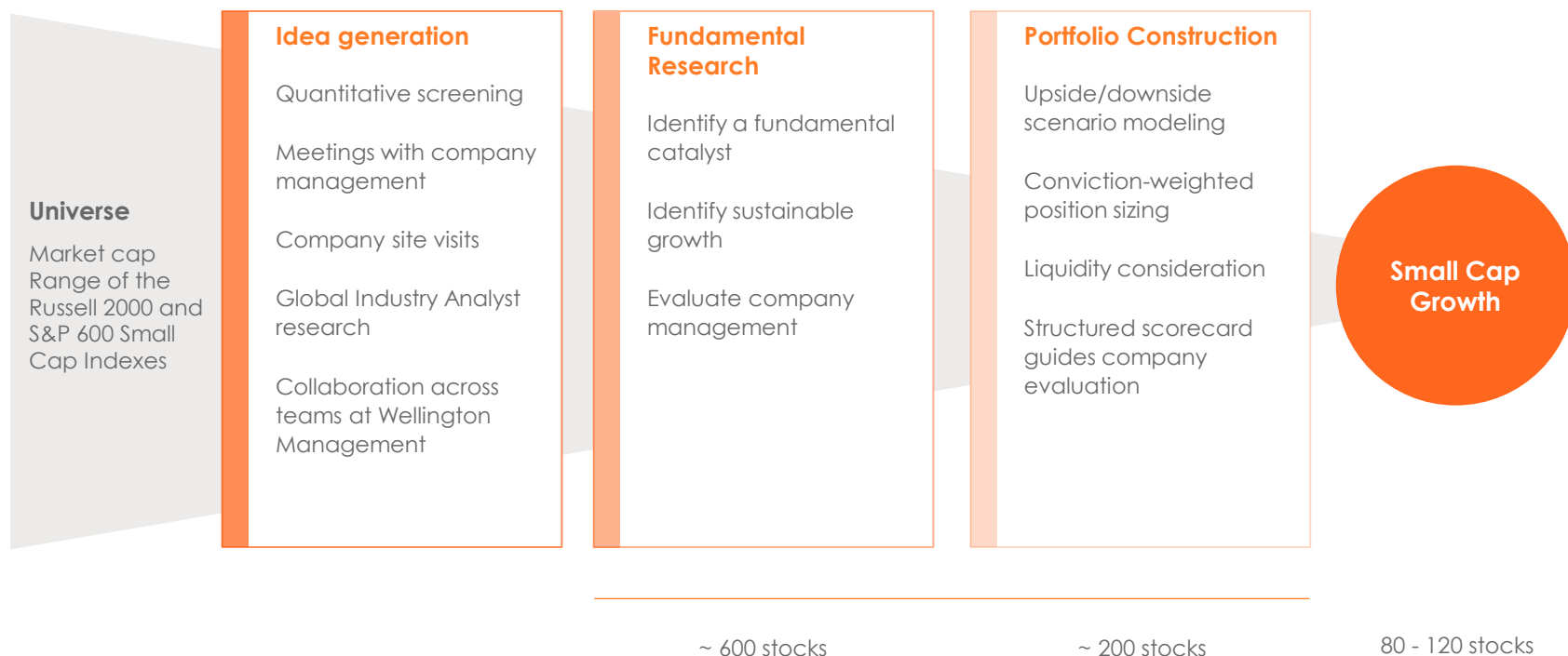


# Subadviser Overview

WELLINGTON  
MANAGEMENT®

MassMutual  
Funds

## Investment Process: Small Cap Growth Strategy



# Subadviser Overview

WELLINGTON  
MANAGEMENT®

MassMutual  
Funds

## Small Cap Opportunities Strategy

**Benchmark:** Russell 2000®

**Style:** Fundamental

### Investment Philosophy

- An opportunistic approach can result in differentiated sources of alpha regardless of market environment
- As markets, industries, and companies run in cycles, anticipating fundamental improvements, cyclical rebounds, or short-term mispricing can create opportunities

### Investment Approach

- Seeks to buy companies with superior management and quality of earnings during periods of uncertainty, apathy, or when earnings power is underappreciated
- Identifies companies meeting specified financial hurdles with key success factors such as the right market position and management team to generate shareholder value.
- Portfolio companies tend to have characteristics including strong balance sheets near the trough of their earnings cycle, and stable companies with attractive ROIC (Return on Investment Capital) that are ignored or overlooked

### Portfolio Construction

- Typically contain 90 – 120 securities
- Typically within  $\pm 5\%$  of the benchmark weight, and no more than 2x benchmark weight
- Typical position size of 0.8%-2%

## Portfolio Management



### Daniel J. Fitzpatrick, CFA

- Senior Managing Director, Equity Portfolio Manager
- Managed strategy since 2014
- Joined Wellington in 1998
- Joined industry in 1997
  
- B.S., Boston College

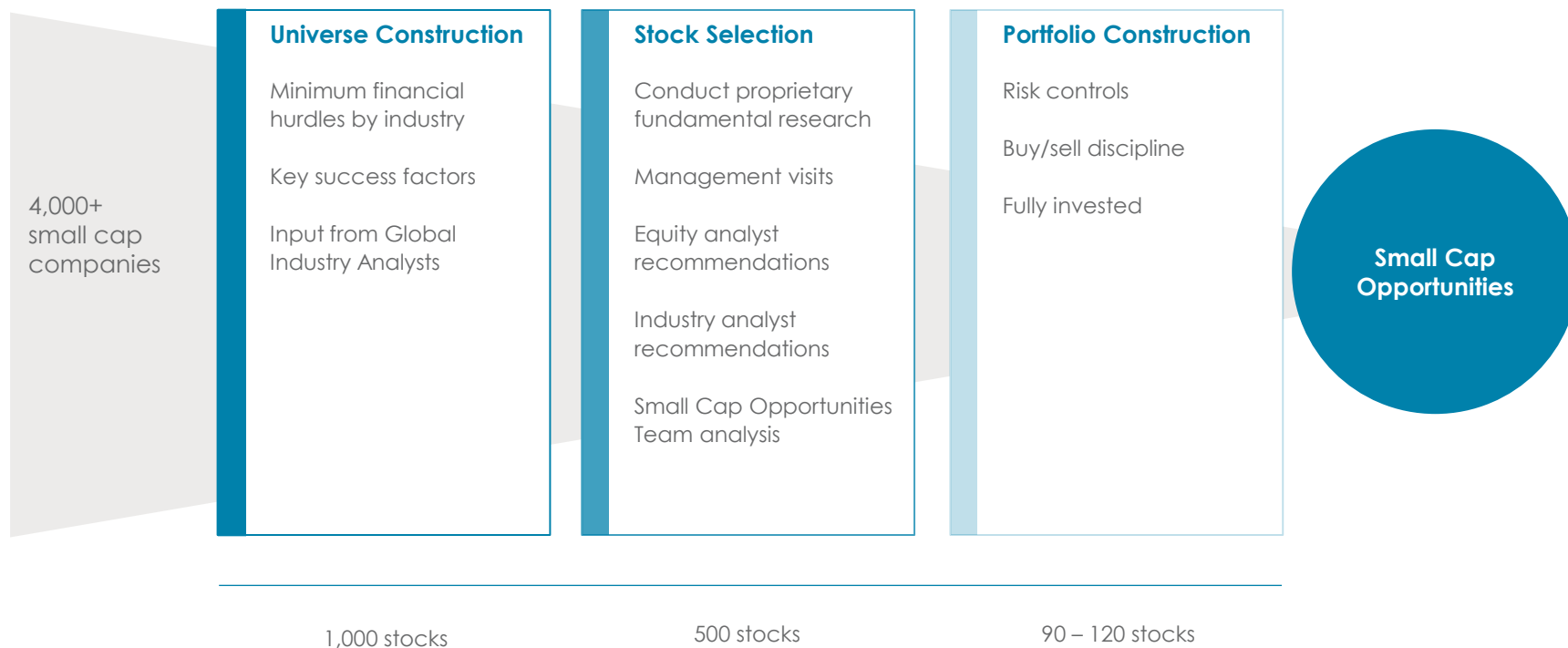
Along with Wellington's extensive research resources, DJ works with two Research Analysts and a Research Associate..

# Subadviser Overview

WELLINGTON  
MANAGEMENT®

MassMutual  
Funds

## Investment Process: Small Cap Opportunities Strategy



## Why do these managers work?

Multi-manager structure of complementary investment strategies provides additional diversification benefits and risk management to help create a consistent, durable, and repeatable result for investors.

### Invesco Small Cap Growth

- Research focus on premier growth companies with strong management teams
- Stock selection is critical to excess returns
- Incorporates an ongoing risk awareness at company and portfolio level



### Wellington Small Cap Growth

- Research process incorporates awareness of industry life cycle and focuses on emerging and re-emerging growth companies
- Utilizes a consistent sell discipline to limit downside risks
- Contributes a risk and growth profile consistent with benchmark

### Wellington Small Cap Opportunities

- Research focus on strong management teams with significant inside ownership
- Opportunistic approach minimizes reliance on market cycle
- Core risk profile with growth bias; downside risk management is key

# Performance

As of September 30, 2022

**TICKER: MSGZX | Share Class Inception: 11/15/2010**

**Morningstar Category: Small Cap Growth**

**Overall Morningstar Rating: ★★★★★**

	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>MassMutual Small Cap Growth Equity Fund I</b>	<b>0.25</b>	<b>-29.19</b>	<b>-26.67</b>	<b>6.51</b>	<b>8.60</b>	<b>11.22</b>
Russell 2000® Growth Index	0.24	-29.28	-29.27	2.94	3.60	8.81
Morningstar Category Average Return	-	-	-29.71	5.26	6.34	9.55
Morningstar Category Rank	-	-	37	32	19	16
# Funds in Category	-	-	617	582	535	401
Morningstar Rating				★★★★★	★★★★★	★★★★★

<b>Calendar Year Returns</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>MassMutual Small Cap Growth Equity Fund I</b>	<b>13.53</b>	<b>47.86</b>	<b>6.16</b>	<b>-3.61</b>	<b>8.01</b>	<b>24.86</b>	<b>-4.09</b>	<b>34.99</b>	<b>40.66</b>	<b>10.60</b>
Russell 2000® Growth Index	14.59	43.30	5.60	-1.38	11.32	22.17	-9.31	28.48	34.63	2.83
Category Average Return	13.15	40.91	2.44	-2.41	11.20	21.50	-5.76	27.68	38.62	11.89

**Overall 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 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 **Morningstar Category Rank** is based on the fund's total-return percentile rank relative to all funds that have the same category for the same time period. The highest (or most favorable) percentile rank is 1%, and the lowest (or least favorable) percentile rank is 100%. Morningstar total return includes both income and capital gains or losses and is not adjusted for sales charges. The top-performing fund in a category will always receive a rank of 1. The percentile rank by category figures allow for a direct comparison of a fund's performance within its Morningstar Category. Rankings in the top 50% of the peer group are highlighted in green. Rankings in the 3rd quartile of the peer group are in yellow. Rankings in the 4th quartile of the peer group are in red. **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. ©2022 Morningstar, Inc. All Rights Reserved. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information.

**Performance shown is past performance. Past performance does not guarantee future results. The investment return and the principal value of an investment will fluctuate; so an investor's shares, when redeemed, may be worth more or less than their original cost. For more current information, including a list of the fund's holdings and month-end performance, please call 1-866-444-2601. You cannot invest directly in an index.**

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

# Portfolio Overview

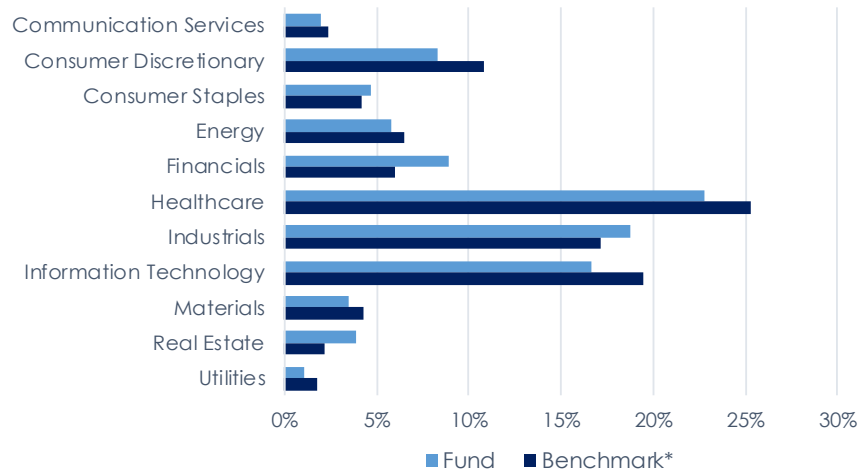
## Top Ten Holdings

Holding	Sector	Percentage
Chart Industries Inc	Industrials	1.74%
WillScot Mobile Mini Holdings Corp	Industrials	1.40%
Casella Waste Systems Inc Class A	Industrials	1.36%
Manhattan Associates Inc	Information Technology	1.27%
Inspire Medical Systems Inc	Health Care	1.21%
Calix Inc	Information Technology	1.10%
Acadia Healthcare Co Inc	Health Care	1.10%
Globus Medical Inc Class A	Health Care	1.07%
SM Energy Co	Energy	1.01%
Livent Corp	Materials	1.01%

## Risk/Return Statistics

	Fund	Benchmark*
Standard Deviation	22.81	23.45
Information Ratio	1.08	-
Alpha	4.83	-
Beta	0.95	1.00
R2	0.96	1.00
Tracking Error	4.65	-
Sharpe Ratio	0.43	0.22
Upside Capture	106.69	100.00
Downside Capture	91.04	100.00
Batting Average	71.67	-
Top 10 Holdings %	15.23	5.77

## Sector Allocation



## Portfolio Characteristics

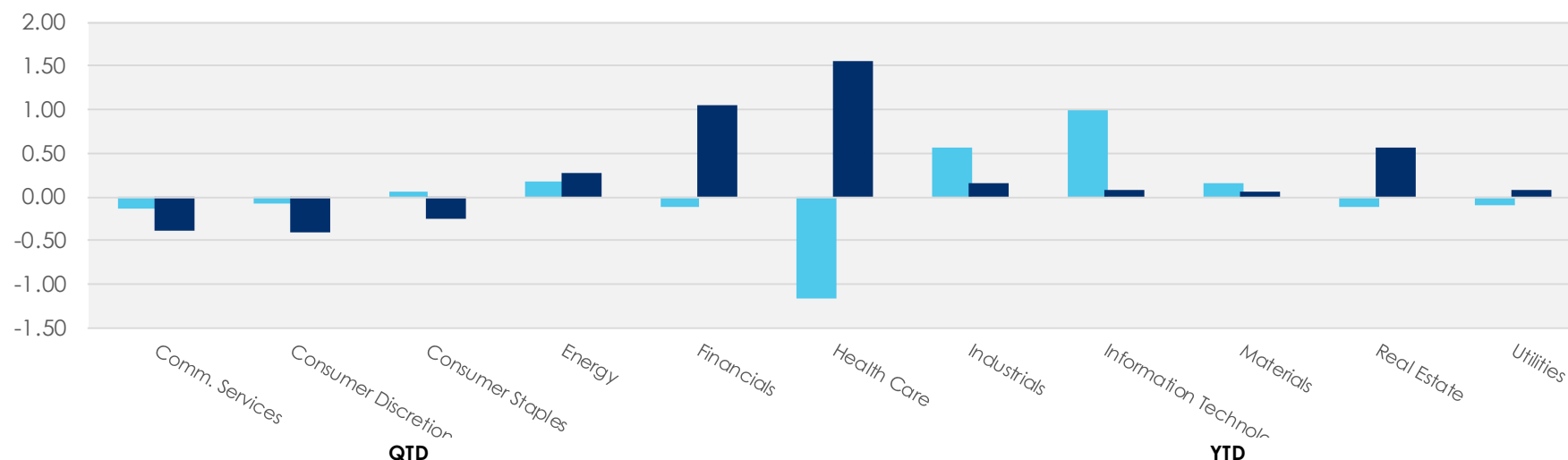
	Fund	Benchmark*
Market Cap (\$ MM)	4,675	2,917
Price-to-earnings	16.31	13.67
Price-to-book	10.58	9.76
Hist 3 Yr EPS Growth (%)	26.55	20.26
Dividend Yield (%)	0.87	0.67
Turnover (%)	110	-

\*Russell 2000® Growth Index

# Portfolio Analysis

**Portfolio Attribution:** Describes how fund manager stock and sector weighting decisions affected returns.

■ QTD ■ YTD



## Top 5 Contributors

	Fund Weight (%)	Portfolio Contribution
Calix Inc	1.05	0.66
Wingstop Inc	0.72	0.40
ShockWave Medical Inc	0.77	0.29
WillScot Mobile Mini Holdings Corp	1.24	0.27
First Solar Inc	0.37	0.25

## Top 5 Detractors

	Fund Weight (%)	Portfolio Contribution
Rapid7 Inc	0.67	-0.28
Perficient Inc	0.72	-0.25
CarGurus Inc Class A	0.53	-0.20
Owens & Minor Inc	0.70	-0.18
Mercury Systems Inc	0.33	-0.16

## Top 5 Contributors

	Fund Weight (%)	Portfolio Contribution
R1 RCM Inc	0.00	2.43
ShockWave Medical Inc	0.51	0.24
Chesapeake Energy Corp Ordinary Shares - Ne	0.46	0.23
LPL Financial Holdings Inc	0.72	0.20
Chart Industries Inc	1.29	0.20

## Top 5 Detractors

	Fund Weight (%)	Portfolio Contribution
Kornit Digital Ltd	0.50	-1.06
Tandem Diabetes Care Inc	0.82	-0.86
Ambarella Inc	0.34	-0.59
Rapid7 Inc	0.78	-0.57
Synaptics Inc	0.57	-0.55

Fund Weightings are shown as an average for the time period. For a complete listing of fund holdings, visit [massmutualfunds.com](https://massmutualfunds.com) or please call 1-866-444-2601. The mention of individual stocks and other securities in this document does not constitute investment advice.

## Tickers and Expenses



Share Class	Ticker	Gross Exp. Ratio	Net Exp. Ratio*	Inception Date
I	MSGZX	0.86%	0.86%	11/15/2010
R5	MSGSX	0.96%	0.96%	5/3/1999
SVC	MSCYX	1.06%	1.06%	5/3/1999
ADM	MSGLX	1.16%	1.16%	5/3/1999
A	MMGEX	1.41%	1.41%	5/3/1999
R4	MSERX	1.31%	1.31%	4/1/2014
R3	MSGNX	1.56%	1.56%	12/30/2002



# Disclosure

The awarded performance represents past performance and should not be considered indicative of future results.. For more current information, including month-end performance, please call 1-866-444-2601.

Investors should consider funds' objectives, risks, fees, and expenses carefully before investing. This and other information can be found in the funds' prospectuses or summary prospectuses, which are available from MassMutual by calling 1-866-444-2601. Please read them carefully before investing. The Refinitiv Lipper Fund Awards, granted annually, highlight funds and fund companies that have excelled in delivering consistently strong risk-adjusted performance relative to their peers. Prior to 2018 Lipper Fund Awards were awarded by Thomas Financial and Reuters Group.

The Refinitiv Lipper Fund Awards are based on the Lipper Leader for Consistent Return rating, which is a risk-adjusted performance measure calculated over 36, 60 and 120 months. The fund with the highest Lipper Leader for Consistent Return (Effective Return) value in each eligible classification wins the Refinitiv Lipper Fund Award. For more information, see [lipperfundawards.com](http://lipperfundawards.com) Although Refinitiv Lipper makes reasonable efforts to ensure the accuracy and reliability of the data contained herein, the accuracy is not guaranteed by Refinitiv Lipper.

The merit of the winners is based on objective, quantitative criteria. The influential and prestigious Refinitiv Lipper Fund Awards are based on our Lipper Leaders Rating for Consistent Return. Individual classifications of three, five, and 10-year periods, as well as fund families with high average scores for the three-year period, are also recognized. The awards are based on Refinitiv Lipper's proven proprietary methodology, which can be viewed here.

<sup>1</sup> The Award for Best Mixed Assets Small Fund Group, awarded to MassMutual RetireSMART target date fund series, ranking #1 out of 37 eligible contenders, includes companies with under \$43 billion or less under management as of 11/30/12. MassMutual Select Overseas Fund (Class S: MOSSX) ranked #1 Lipper's International Large-Cap Core Funds category for the 5-year period. All awards are based on performance as of November 30, 2012.

<sup>2</sup> Lipper Mixed Assets Small Fund Group award, in which fund groups must have at least three mixed-asset funds, MassMutual Funds ranked #1 out of 37 eligible companies. To qualify for the Overall Small Fund Group award, fund groups must have at least three mixed-asset funds, three equity funds and three fixed-income funds. MassMutual Funds ranked #1 out of 26 eligible companies. Small Fund Groups are defined as having less than \$50.7 billion in assets under management. MassMutual Select Overseas Fund (Class Z: MOSZX) ranked #1 out of 42 qualified funds, which comprised 135 share classes in Lipper's International Large-Cap Core Funds category. All awards are based on performance as of November 30, 2013.

<sup>3</sup> To qualify for the Overall Small Fund Group award, fund groups must have at least three mixed-asset funds, three equity funds and three fixed-income funds. MassMutual ranked #1 out of 26 other eligible fund companies for small fund groups, which include companies with \$52.6 billion or less under management.. All Premier, Select, and MassMutual RetireSMART<sup>SM</sup> Funds with at least three years of performance history as of 11/30/14 are considered.

<sup>4</sup> 2017 Barron's: <https://www.barrons.com/articles/the-top-performing-sustainable-funds-1507350787>

<sup>5</sup> 2020 Barron's: <https://www.barrons.com/articles/barrons-100-top-sustainable-funds-51611309600>

<sup>6</sup> Refinitiv Lipper has recognized MassMutual Select Overseas Fund as a top-performing fund out of 20 funds over three-years (Class I: MOSZX), 18 funds over five-years (Class I: MOSZX), and 15 funds over 10-years (Class R5: MOSSX) for the period ended 11/30/2019.

<sup>7</sup> Refinitiv Lipper has recognized MassMutual Select Overseas Fund as a top-performing fund out of 23 funds over five-years (Class I: MOSZX), and 20 funds over 10-years (Class I: MOSZX) for the period ended 11/30/2020.

<sup>8</sup> Refinitiv Lipper has recognized MassMutual Overseas Fund as the Best International Large-Cap Core Fund of 26 funds over 5-years (Class I: MOSZX), and 23 funds over 10-years (Class I: MOSZX) for the period ended 11/30/2021.

Principal Underwriter: MML Distributors, LLC. (MMLD), 1295 State St., Springfield, MA 01111. Member FINRA and SIPC ([www.FINRA.org](http://www.FINRA.org) and [www.SIPC.org](http://www.SIPC.org)). Investment advisory services provided to the Funds by MML Investment Advisers, LLC (MML Investment Advisers). MMLD and MML Investment Advisers are subsidiaries of Massachusetts Mutual Life Insurance Company (MassMutual), Springfield, MA 01111-0001.

# Disclosures

The investments included in the exhibits shown in this presentation have been chosen in response to information provided to the MassMutual representative by the requesting financial intermediary. The exhibits pertain to either a specific client case or are of particular relevance to the business of the financial intermediary. MassMutual has not considered any financial and investment objectives, risk tolerance, or the suitability of an investment option when screening available funds for any client. The information contained herein should not be construed as a recommendation, nor should it be relied upon as investment, legal, or tax advice.

**Risk/Return Statistics: Standard Deviation** is a statistical measurement, which for a mutual fund depicts how widely the returns varied over a certain period of time. When a fund has a high standard deviation, performance is wide, implying greater volatility. **Information Ratio** measures the performance of an investment compared to a benchmark index, after adjusting for its additional risk. **Alpha** is a measure of the difference between a fund's actual returns and its expected performance, given its level of risk as measured by beta. A positive alpha figure indicates the fund has performed better than its beta would predict. In contrast, a negative alpha indicates the fund's underperformance, given the expectations established by the fund's beta. **Beta** is a measure of sensitivity to market movements. The beta of the market is 1.00. A beta of 1.10 shows that the fund's excess return is expected to be 10% better than the market's excess return in an up market or 10% worse in a down market. A beta of .85 indicates that the fund's excess return is expected to perform 15% less than the market's excess return during up markets and 15% greater during down markets. **R-squared (R2)** measures the degree of relationship between the performance of the fund and that of the index. The higher the R2, the more related the fund's performance is to its index. **Tracking Error** is also known as active risk and is the degree to which the strategy differed from its index or benchmark. The higher the Tracking Error, the more the fund deviated from its index. **Sharpe Ratio** measures risk adjusted performance; it is calculated as the real total return of the fund (total return-risk free rate) divided by the risk of the fund (standard deviation). **Upside/downside capture** shows whether a given fund has outperformed--gained more or lost less than--a broad market benchmark during periods of market strength and weakness, and if so, by how much. An upside capture ratio over 100 indicates a fund has generally outperformed the benchmark during periods of positive returns for the benchmark. A downside capture ratio of less than 100 indicates that a fund has lost less than its benchmark in periods when the benchmark has been in the red. **Batting Average** is a measure of a manager's ability to consistently beat its benchmark over the trailing five-year period.

**Portfolio Characteristics: Market Cap** is the value of a company, calculated by multiplying the total number of shares by the present share price. In addition to the size of a company (Large, Mid, and Small), there are 3 general styles of an investment (Value, Core, and Growth). **Price-to-earnings** is the measure of the share price relative to the annual net income earned by the firm per share. **Price-to-book** compares a firm's market capitalization to its book value. **Historical 3-Year EPS Growth** is a measure of the fund's holdings weighted average earnings per share (EPS) rate over the last three years. **Turnover** is a measure of how quickly securities in a fund are either bought or sold by the fund's managers, over a given period of time. The selection and monitoring of investments for a plan remains the responsibility of the plan fiduciary, which shall in no instance be MassMutual. Exhibits may include different share classes for comparison purposes. Performance will vary among different share classes of the same fund.

**Russell 2000 Growth Index** measures the performance of the small-cap growth segment of the U.S. equity universe. It includes Russell 2000 Index companies with higher price-to-book ratios and higher forecasted growth values. It is market-capitalization weighted. The Index does not reflect any deduction for fees, expenses, or taxes and cannot be purchased directly by investors.