About MassMutual®

MassMutual is a leading mutual life insurance company that is run for the benefit of its members and participating policyowners. Founded in 1851, the company has been continually guided by one consistent purpose: We help people secure their future and protect the ones they lovesm. With a focus on delivering long-term value, MassMutual offers a wide range of protection, accumulation, wealth management, and retirement products and services.

For more information, visit us at www.MassMutual.com

Dear Fellow Policyowners and Customers,

I have often started these letters by talking about MassMutual's founders—a group who came together in 1851 to help friends and families secure their future and protect the ones they love.

It's a story that's always meant a lot to me, not only because it still reflects MassMutual's purpose nearly 170 years later, but also because it defines the world I believe we all want to live in —a world where we all do our best to help each other succeed.

As we look back on a tumultuous year, it's clear that our commitment to this notion—which we call Live Mutual—is more important than ever. 2020 was a year when a global pandemic claimed millions of lives, shuttered businesses, and threatened families' finances. It also shed new light on long-standing racial prejudice and exposed vast inequalities and shortcomings in our world.

Yet it also offered flashes of hope, reminding us that society works best when it works for everyone. Neighbors delivered groceries and supplies to the most vulnerable in their communities. Frontline responders risked their lives to save others. People around the country joined the fight for racial justice, demanding change with an urgency not seen since the civil rights movement. And we all found new ways to gather, work together, and be there for each other.

At MassMutual, this same sense of Live Mutual guides all our actions. As a business that operates for the benefit of our participating policyowners and members, we were there for those who relied on us at this difficult moment, without ever taking our eyes off the future. In looking back on the past year, I couldn't be prouder of everything our team has done to help our customers, advance our strategy, and strengthen our communities.



Strong Performance in a Pandemic

COVID-19 presented extraordinary and unprecedented challenges throughout 2020, ending the U.S. economy's longest expansion in history. Unemployment rose dramatically, with millions of families falling on hard times. And as historically low interest rates plunged even further, pressure intensified on both individual savers and institutions.

Yet we also saw meaningful signs of confidence and resiliency as the year progressed. While volatility and uncertainty persisted, the markets rebounded, even notching new records. And December saw the much-anticipated and emotional arrival of the first vaccines, which will save countless lives and be critical to catalyzing a full recovery.



Even in the face of such disruption, MassMutual delivered a year of strong results. Sales from our domestic insurance and retirement operations grew 8 percent to \$31 billion, which along with other factors, helped drive operating earnings to \$2.6 billion. Our sales momentum also enabled us to grow the insurance protection in force we provide to \$830 billion, while we also delivered more than \$6.2 billion in insurance and annuity benefits at the time when our customers needed us most.

CEO LETTER 3

And during a period of great uncertainty, our excellent financial strength and flexibility remained intact, as total adjusted capital grew to a year-end record of \$28.6 billion while we maintained ratings that are among the highest of any company in any industry. This enabled us to approve an estimated \$1.7 billion dividend payout for 2021 to our eligible participating policyowners—the 153rd consecutive year we have paid a dividend.²

These numbers reflect more than a strong year in hard times. They reflect years of strategic decisions to make our foundation stronger, our solutions more accessible, and our customer experience more seamless. It's how we met this challenging moment—while also setting the stage for an even brighter future.

Delivering Today, Evolving for the Future

First, we were ready for this crisis because we've invested in one of our most important drivers of success: our nationwide network of financial professionals. While other companies have moved away from their agency models, we have strengthened and expanded ours. That means our agents were there to provide important guidance and reassurance to our customers in 2020, just as they have during numerous crises throughout our history.

At the same time, 2020 ushered in a new era of rapid digital advancements in our world. We accelerated our own efforts in this area at MassMutual, making significant progress on our journey to build a simpler, seamless experience. We enhanced our digital end-to-end platform that issues life insurance coverage in a fraction of the time, ensuring families could easily apply for and obtain coverage even at the pandemic's height. We expanded our mobile capabilities that allow people to better manage their accounts as well as help our agents connect with more people. And we made progress toward a digital solution that consolidates all financial and account information into one place, which will provide a new level of personalization in our industry.

While the immediate needs of 2020 often took priority, they did not distract us from taking bold steps for the future. We continued to evolve our portfolio of businesses, actively seeking opportunities to position us strongly for the long term and help with our goal to continue paying a competitive dividend. We sold our retirement plan business to Empower Retirement, giving us the focus and financial

flexibility to grow and strengthen our leadership position in the domestic insurance market as well as significantly invest in our digital experience. We increased our ownership stake in Rothesay, the largest specialist annuity provider in the U.K., which is expected to generate additional earnings to fuel increased growth.

And our evolution will continue into 2021, as we expect to close on our acquisition of Great American Life Insurance Company from its parent company, American Financial Group, Inc., in the second quarter of this year, pending customary regulatory approvals. This transaction will broaden our lifetime income offerings and allow us to reach more people while also providing another diversified source of earnings to deliver long-term value to our policyowners.

As all these efforts demonstrate, complacency isn't an option. In a world that changes quickly, we're committed to constantly changing with it—strengthening what has made us successful while investing for the future. It's how we continue to have an immediate impact for our customers today while seeking to maintain the long-term performance they'll count on tomorrow.

"In a world that changes quickly, we're committed to constantly changing with it. ... It's how we continue to have an immediate impact for our customers today while seeking to maintain the long-term performance they'll count on tomorrow."

Strengthening Our Society

Of course, we can only achieve that long-term success if those around us continue to thrive. We do better when our customers are supported, our employees bring their full selves to work, and our communities are healthy, flourishing, and inclusive. "Last year tested us in ways we never imagined, as multiple crises reminded us that we each have a role in building a better, more just future for everyone.

That is, in its essence, what it means to Live Mutual."

Throughout the pandemic, we've offered both compassion and practical solutions to our customers to help them manage through the financial challenges caused by COVID-19—from giving them more time to pay premiums, to helping them access hardship funds from their retirement plans quickly and easily. We also supported our employees by offering 80 extra hours of time off for COVID-19—related needs, as well as online meditation, exercise, and counseling programs. With these new resources and greater flexibility, we helped them focus on their mental and physical well-being and balance their work and home lives, providing a sense of care and empathy at a time when it was sorely needed.

In addition, we helped our communities cope with the virus, contributing to relief funds and donating personal protective equipment to organizations in need. And to give back in our own unique way to those sacrificing so much, we created HealthBridge, a free life insurance program that aims to provide up to a total of \$3 billion in protection to eligible healthcare workers on the front lines of COVID-19.³ Thanks to years of digital investment, we were able to roll this program out in just three weeks, moving with the kind of urgency this moment demanded.

And finally, to support the growing movement to end systemic racism, we built on our long-standing commitment to create a more equitable world. We've made diversity and inclusion a priority at MassMutual for over a decade, providing unconscious bias training, dramatically growing our Business Resource Groups, and setting annual goals to expand workforce diversity. Given this ongoing journey, we were proud that our people welcomed open and candid conversations about race in 2020, as well as embraced

broader efforts to end ongoing prejudice. Thousands of employees joined learning sessions on how to become better allies, while MassMutual took a leadership role in such efforts as the CEO Action for Racial Equity, a fellowship program in which we are lending our talent and innovation to create real, lasting change.

I don't know what our founders would think if they saw our world today. But I do think they would be proud that the company they started was still able to be there for its people, customers, and communities so many years later. MassMutual's commitment to them is at the heart of who we are—and that will not change, no matter what the future brings.

Live Mutual and Rebuild Together

Last year tested us in ways we never imagined, as multiple crises reminded us that we each have a role in building a better, more just future for everyone. That is, in its essence, what it means to Live Mutual.

In 2021, we're looking ahead to a year of renewal and rebuilding for the global community—and evolution and growth for MassMutual. We've never been more committed to our purpose or more confident in our ability to achieve it.

Thank you for being part of the MassMutual community. We look forward to working with you this year and for many more to come.

Sincerely,

Roger W. Crandall

My W. Mur

Chairman, President & Chief Executive Officer

- 1 Financial strength ratings for MassMutual and its subsidiaries, C.M. Life Insurance Company and MML Bay State Life Insurance Company, are as follows: A.M. Best Company, A++ (Superior); Fitch Ratings, AA+ (Very Strong); Moody's Investors Service, Aa3 (High Quality); and S&P Global Ratings, AA+ (Very Strong). Ratings are current as of March 1, 2021, and are subject to change.
- $2\quad \hbox{Dividends are determined annually, subject to change, are not guaranteed}.$
- 3 MassMutual pays the premiums.

CEO LETTER 5

Why MassMutual?



Policyowners

Policyowners pay insurance premiums that MassMutual uses to:

- · Cover the cost of providing protection.
- Meet current benefit obligations.
- · Invest to pay future benefits and generate ongoing value.



Diversified Investment Strategy

Through a disciplined investment process that supports long-term investment performance and prudent risk diversification, MassMutual invests in:

- A variety of asset classes to help meet policyowner commitments.
- Strategic operating businesses that capitalize on core.
 capabilities while generating complementary returns.



Financial Strength and Dividends

Our earnings help:

- · Pay dividends to eligible participating policyowners.
- · Contribute to capital and surplus.
- · Support business reinvestment.

Dividends are not guaranteed.



The Result

A framework focused on delivering:

- Long-term customer value.
- · Competitive risk-adjusted returns.
- · Diversified product offerings.
- · Industry leadership in financial strength.
- · Quality service.



Our Purpose

Our founders knew that creating shared value is a journey that requires discipline, commitment, and a sense of purpose.

After nearly 170 years, despite changing economic conditions, we remain guided by our purpose: We help people secure their future and protect the ones they love.

In service of our purpose, we operate as a mutual company, promoting strength through interdependence and helping one another.

So even today, there's never a question of where our priorities lie. We thrive when our customers and communities do well.

We grow by helping generations reach financial objectives with targeted solutions, education, and guidance on their own terms.

This approach guides three aspects of our business:



Investing in Our People & Communities



Evolving Our Business



Staying Ahead of Disruption

OUR PURPOSE

Performance Review

MassMutual reported total sales of \$31 billion through its domestic insurance and retirement operations, an 8 percent increase over the prior year, bolstered by strong Institutional & Workplace Solutions sales and year-over-year growth in fixed annuities. This growth, coupled with the recovery in the equity markets during the year, as well as strong business and expense management, drove operating earnings to \$2.6 billion, an increase of 14 percent.

Our performance was underscored by our enduring financial strength. Statutory surplus grew to a record \$24 billion and total adjusted capital was \$28.6 billion. Our ratings remain among the highest of any company in any industry. This enduring strength enabled MassMutual to approve an estimated \$1.7 billion dividend payout to eligible participating policyowners in 2021.¹ Our payout reflects a 6 percent dividend interest rate, the 15th consecutive year we have paid an industry-leading rate among our mutual peer companies.



\$1.2B

Whole life insurance sales²



\$7.1B

Record annuity sales for a third consecutive year



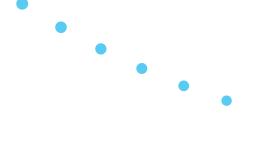
\$25.9B

Sales through MML Investors Services, MassMutual's broker-dealer and registered investment adviser offering investment and wealth management solutions



\$6.2B

Insurance and annuity benefits paid in 2020



- 1 Dividends are determined annually, subject to change, and not guaranteed. For more information, visit MassMutual.com/Financials.
- 2 These are consolidated statutory results of Massachusetts Mutual Life Insurance Company and its wholly-owned U.S. domiciled life insurance subsidiaries: C.M. Life Insurance Company and MML Bay State Life Insurance Company.

U.S. Insurance Sales

(In Millions)



MassMutual insurance sales included record contributions from annuities. Our product offering reflects a focus on creating solutions and long-term value for our policyowners while prudently managing risk.

U.S. Insurance sales include life insurance, disability income insurance, long-term care insurance, and annuities.

U.S. Whole Life Sales

(In Millions)



MassMutual is an industry leader in whole life sales, which exceeded \$1 billion for the fifth consecutive year.

Institutional & Workplace Sales

(In Billions)



Institutional & Workplace businesses generated record sales, up 5 percent from 2019, with solid results across a broad product line.

Workplace sales include defined contribution plans in addition to disability and life insurance products sold at the workplace. Institutional sales include bank-owned life insurance, stable value, mutual funds, pension risk transfer solutions, and funding agreements. Results are not reflective of the recent sale of our retirement plan business, which became effective December 31, 2020.

Annuity Sales



Annuity sales continued to grow, reflecting MassMutual's competitive offering in the fixed annuity market.

Annuity sales include individual fixed-income and variable annuities.

These consolidated results of Massachusetts Mutual Life Insurance Company also include its wholly-owned U.S. domiciled life insurance subsidiaries: C.M. Life Insurance Company and MML Bay State Life Insurance Company. Prior-year results have been restated to include additional products.

PERFORMANCE REVIEW

Summary of Financial Position

(Consolidated statutory basis, in Millions)

As of December 31, 2020	2020	2019	
Short-term investments and cash	6,176	4,317	
Bonds	118,996	106,023	
Other invested assets	96,680	85,059	
Total invested assets	\$221,852	\$195,399	
Other assets	8,488	7,876	
Separate account assets	82,797	76,659	
Total assets	\$313,137	\$279,934	•••
Policyowners' reserves	144,619	150,458	
Policyowners' dividends	1,708	1,684	
Other liabilities	54,371	27,457	
Asset valuation reserve	5,315	4,783	
Separate account liabilities	82,797	76,659	
Total liabilities	\$288,810	\$261,041	
Surplus	24,327	18,893	•••
Total liabilities and surplus	\$313,137	\$279,934	
			••••

Strong Growth

Total life company assets increased 12 percent to more than \$313 billion, reflecting an attractive and diversified product portfolio and investment strategy.

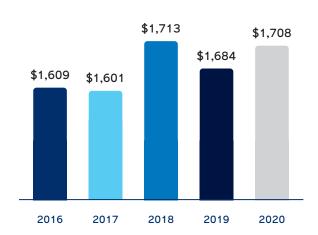
Record Surplus & Capital

Surplus and capital grew to record levels in 2020 with increases of 29 and 17 percent, respectively, over the prior year.

Consolidated Statutory Results¹

Policyowners' Dividends²

(In Millions)



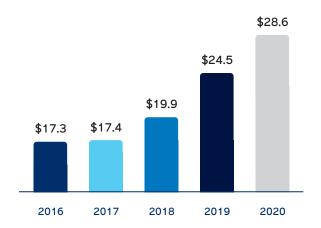
Our 2020 policyowners' dividends exceeded \$1.6 billion for the sixth year in a row, affirming our commitment to operate for the benefit of our eligible participating policyowners.

Life Company Assets (In Billions)



Life company assets grew 12 percent in 2020 and reached an all-time high of \$313 billion.

Total Adjusted Capital³ (In Billions)



Total adjusted capital grew to a record \$28.6 billion, an increase of 17 percent from 2019, which underscores our enduring financial strength.

"MassMutual's financial strength and performance continued in 2020, despite substantial macroeconomic headwinds. We remain steadfast in serving our customers through increased life and annuity benefits and policyholder dividends, even in times of global uncertainty."

Betsy Ward, Chief Financial Officer

PERFORMANCE REVIEW 11

¹ These are consolidated statutory results of Massachusetts Mutual Life Insurance Company and its U.S. domiciled life insurance subsidiaries: C.M. Life Insurance Company and MML Bay State Life Insurance Company.

² Dividends are determined annually, subject to change, and not guaranteed. For more information, visit MassMutual.com/Financials.

³ Total Adjusted Capital would be \$30.5 billion including \$1.9 billion from Rothesay. With the additional investment in Rothesay in December 2020, the U.K. life company is classified as an affiliated alien insurer and excluded from Total Adjusted Capital, resulting in \$28.6 billion.

Summary of Operations

(Consolidated statutory basis, in Millions)

As of December 31, 2020	2020	2019	
Premium income	10,598	23,099	
Net investment income	\$8,845	\$8,008	•
Fees and other income	3,816	1,496	
Total revenue	\$23,259	\$32,603	
Policyowners' benefits	25,406	25,258	
Change in policyowners' reserves	(10,214)	897	
Commissions, other expenses and deductions	5,505	4,201	
Total benefits and expenses	20,697	30,356	
Net gain from operations before dividends and taxes	2,562	2,247	
Dividends to policyowners	\$1,697	\$1,671	
Net gain from operations before taxes	865	576	
Federal income tax expense	144	8	
Net gain from operations	721	568	
Net realized capital losses	(593)	(44)	
Net income	128	524	

Income Increase

Net investment income increased from the prior year, benefiting from a prudent investment strategy and market recovery in the second half of 2020.

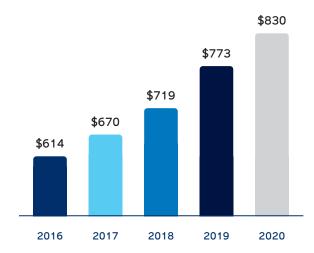
Dividends & Policyowners

MassMutual has paid more than \$15 billion in dividends in the last 10 years.

Enterprise Measures

Life Insurance in Force

(In Billions)



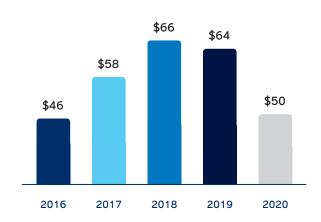
Life insurance in force represents the amount of protection the company has issued and remains outstanding. This measure continues to grow, an increase of 7 percent over the prior year, due to strong sales and retention rates.

Assets Under Management¹ (In Billions)



The financial assets managed by MassMutual and

Premium & Other Deposits² (In Billions)



Results in 2020 reflect the sale of the retirement plan business; excluding retirement, P&D is relatively flat from 2019.

- our subsidiaries ended 2020 at \$616 billion, reflecting higher assets under management at Barings as well as strong cash flows across MassMutual's protection and institutional businesses.
- 1 Assets Under Management (AUM) include assets and certain external investment funds managed by MassMutual subsidiaries, including Barings. Previous years exclude AUM from OppenheimerFunds, Inc. Results do not reflect the recent sale of retirement plan business, which closed December 31, 2020.
- Premium & Other Deposits include net premiums and deposits as defined in the consolidated statutory results of Massachusetts Mutual Life Insurance Company and its wholly-owned U.S. domiciled life insurance subsidiaries, C.M. Life Insurance Company and MML Bay State Life Insurance Company, as well as premium and deposits from MassMutual's international and asset management subsidiaries.

PERFORMANCE REVIEW 13

Investment Philosophy & Strategy

We believe that the best way to help ensure that we'll be there for policyowners and their loved ones is through the consistent application of a long-standing investment philosophy. Our goal is to generate long-term stable investment performance to support MassMutual's financial strength and ability to meet its financial commitment to policyowners. We extend this approach to the management of our General Investment Account (GIA), which comprises the assets used to meet our obligations to our policyowners.

The following are the keys to our approach:



Diversification

We diversify the composition of the GIA by investing in a variety of asset classes. This approach increases the opportunity to capture positive returns across issuers and sectors while minimizing the impact of underperformance. MassMutual further diversifies by investing in strategic partnerships in international insurance and asset management businesses.



Prudent Security Selection

Our investment professionals conduct regular, thorough reviews of both current and potential holdings to ensure that they meet our criteria for inclusion in the GIA.

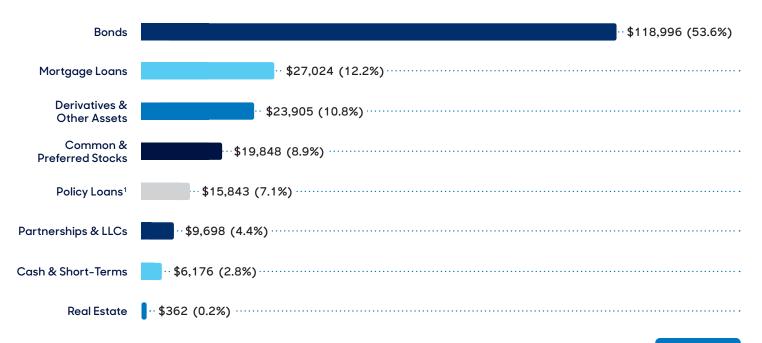


Relative Value

A relative value assessment of risk versus return informs our decision-making process as we consider various opportunities and their prospective impacts on GIA performance.

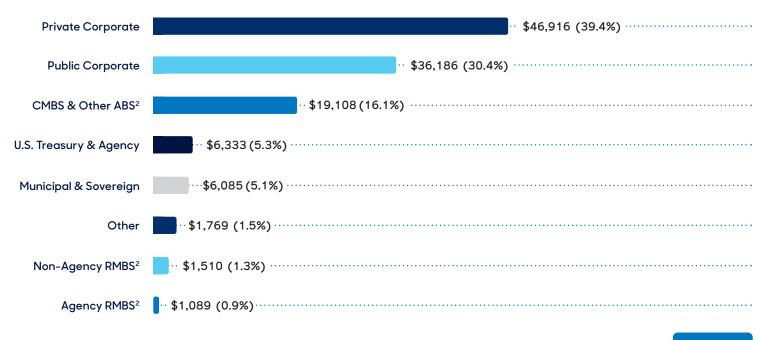
Invested Assets

As of December 31, 2020 (In Millions)



Bonds

As of December 31, 2020 (In Millions)



Total Bonds:

Total Invested Assets:

\$119B

¹ Policy loans are loans taken by policyowners against the cash surrender value of their policies and, as such, are secured by the cash surrender value of those policies.

² Residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), and asset-backed securities (ABS).

Investing in Our People & Communities

For nearly 170 years, we've learned that the people who thrive are the ones who feel supported to be their best selves. MassMutual continues to invest in people because they're the greatest asset for improving the world around us—at home, at work, and in our communities.

2020 brought significant change and uncertainty, between a global pandemic and movements for racial justice. Yet, through disruption and transition, we were driven by the importance of protecting our employees and our communities.

Our commitment to help people secure their future and protect the ones they love remained our guiding principle, as we maintained our focus on long-term interests.

Together, we helped our employees navigate the transition to working from home. Together, we continued to invest in underserved communities, knowing they needed our support now more than ever. And together, we renewed our promise to Live Mutual® for our customers, employees, environment, and the communities where we live and work.

While the challenges of the last year required us to go further in supporting the people who make our work possible, it was a testament to the strength and durability of our company's long-term strategy to be in a strong position to help so many families adapt to those challenges.

Highlights include:



\$1,713,800

Earned through our "Live Healthy, Live Well" wellness incentive program



2,195

Business Resource Group members participated



73,000

Minutes of mindfulness practiced



6,752

Online mindfulness classes taken



Looking Beyond Benefits

At a time when daily routines were upended, we went the extra mile to support the personal and professional lives of our employees—not only so they would be better equipped to answer the needs of our policyowners and customers, but also because it was the right thing to do for the families of the thousands of people we employ.

We're still learning how recent changes around the world will impact businesses, communities, and economies, and looking back, we're proud of how we supported our employees through the challenges of 2020. At the onset of the pandemic, we transitioned to a largely remote workforce to protect their safety, providing them with the tools and resources to help them be successful—but more importantly, to cope with the unexpected demands of the pandemic.

We emphasized the importance of unplugging and encouraged everyone to take extra days when needed, introducing a COVID-19 time-off program that gave an additional 80 hours of paid time off to care for loved ones, help children through distance learning, or just take a few hours for a mental break. From well-being assistance that included extra free counseling sessions, our free mindfulness guided meditations, and virtual fitness classes, we made sure everyone had help to face 2020's challenges. We're proud to say our employee well-being initiatives were honored by the American Heart Association and the CEO Roundtable on Cancer.

The best accolade in 2020 came from our own employees. In our annual survey on employee engagement, this year reached a new high: 92% of employees responded, "I am proud to work for MassMutual."

There's no greater affirmation than the approval of our own employees that our hard work is well worth the effort.

Adapting Services to Ease the Burden of COVID-19

Now more than ever, whether you're taking care of loved ones, growing a family business, or leading an organization, having a trusted partner makes all the difference. The pandemic placed a renewed focus on our individual health and well-being. We took these concerns to heart in 2020 as we prepared solutions to ease the minds of families by

reducing requirements to obtain coverage, relaxing payment grace periods, and improving offerings to refinance college debt. And MassMutual's network of over 7,600 financial professionals focused on their clients' needs and helped simplify financial decisions during an uncertain time.

For nearly 170 years, our financial professionals have managed through pandemics and world wars and once again in 2020 rose to the challenge to continue to support their clients. In a business where face-to-face interactions are so important to a successful relationship, our financial professionals found themselves quickly adjusting their businesses to help their clients navigate personal and financial uncertainty with ease.

By aligning their practices with a company that is run for the benefit of its members and participating policyowners, our financial professionals put clients' interests first. Their ability to provide comprehensive advice throughout life's journey empowers our clients to be confident in their financial decisions. Since our founding, personal attention and long-term relationships have been at our core and will continue to be as we navigate through a post-COVID-19 world.

Our Commitment to Massachusetts

While many cities saw an exodus of workers seeking new places to work remotely, 2020 only strengthened MassMutual's commitment to our home state as a driving factor in the success of our business.



Supporting the Black Community

MassMutual believes that companies—and particularly financial services institutions—can play a material role in eliminating systemic structures that exacerbate inequalities. We are committed to address systemic racial disparities in the following four areas:

01 Equity & Opportunity

We aim to increase Black-employee representation, engagement, and retention at all levels within MassMutual.

02 Education

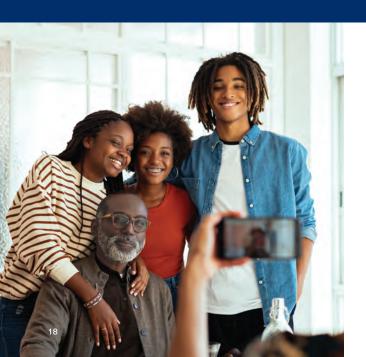
Our initiatives address the racial inequalities and the achievement gap through various school and college partnerships.

03 Equitable Justice

We are fostering relationships with external organizations that advocate racial equality and justice.

04 Economic Empowerment

We are addressing the racial wealth gap and income disparities by providing access to capital and resources to Black-owned businesses and by supporting our agencies with increased recruitment, marketing, and business development opportunities for our Black and African American agents.





Making Sure the Spirit of Live Mutual Lives On

Throughout life's journey, we depend on each other. We support each other. We Live Mutual. And in 2020, at a time when the social climate was as divisive as ever, we reintroduced the marketing campaign "Unsung" to remind Americans that we are stronger together.

We supplemented this brand campaign with an additional message that spoke directly to the financial strength and stability of our company. This two-pronged approach leveraged the emotional aspects of our brand while positioning MassMutual as a partner during the uncertain times. Our approach worked, leading to an increase in our brand metrics, with +4.3 percent in Awareness and +10.5 percent in Affinity.

Driving Inclusion

For more than a decade, MassMutual has focused on diversity, equity, and inclusion to attract the best talent; create a fair, innovative, and inclusive culture; and better reach and serve our customers.

During the last five years, we've focused on transformative education and increasing accountability for our results. In 2020, we once again increased the diversity of our workforce, which is a measure of company performance. Through the years, our programs have helped leaders understand the impact of bias and systemic privilege, laid the foundation for conversations around polarizing topics, and motivated leaders to hire, engage, and develop people who are different from them.

In a divisive and polarized time, we made progress in our goal of fostering a diverse and inclusive workplace by living our values, standing up against racism and inequality, and supporting our employees in response to the killings of unarmed Black and African Americans and the national movement for racial justice.

Our employee-led Business Resource Groups (BRG) promoted understanding of differences and the impact of racism and

the pandemic on the Asian, Black and African American, and Latino communities, providing employees with forums to share their experiences.

In support of building a culturally competent workforce, we developed a resource to learn about systemic racism and introduced a speaker series featuring renowned experts and historians addressing topics such as microaggression, antiracism, and white fragility.

Working with a cross-functional team including representatives from Passages, our Black and African American BRG, we've identified ways to engage as an organization to advance how we address complex issues, including calls for corporate action on racial justice. In addition, we are lending our talent to promote racial equity at a national level by taking a lead role in governing the CEO Action for Racial Equity (CEOAFRE), with Pia Flanagan serving as Chief Operating Officer and five MassMutual associates signing on as fellows.

Our work to create an environment where every employee is heard and valued has earned us outside recognition from organizations that measure best practices for our support of LGBTQ communities, women, veterans, and individuals with disabilities.

An Agenda Lifting Underserved Communities

The pandemic has fallen on the shoulders of every individual differently. Unfortunately, those who were on less certain footing before the crisis, especially communities of color, found their families and businesses at increased risks.

MassMutual joined more than 100 corporations and partner organizations in supporting the COVID-19 Action Agenda, a collaborative effort to address the social and economic impact on these vulnerable communities. As part of the plan, we called on our partners to promote inclusion, raise awareness, denounce bias against Pan-Asians, and donate to groups most affected by the pandemic.

In addition, our network of 7,600 financial professionals continued to show up, support, and give back to their local communities across the nation. Over 12,500 volunteer hours were reported from just under 100 financial professionals as they helped organizations work out strategies for new operations, policies, and procedures to maintain services during the crisis.

It's imperative that we look out for the most vulnerable among us, especially as other supports falter during downturns.

Leading the Way to Support Businesses Through Downturn

MassMutual has its roots in the Greater Springfield community, and when the pandemic began, we moved quickly to support our home in Massachusetts.

We first focused on the most immediate needs, donating personal protective equipment to local hospitals and first responders. MassMutual then provided \$1.5 million to support COVID-19 response funds across the state of Massachusetts, including a lead gift of \$1 million in funding for the Community Foundation of Western Massachusetts' COVID-19 Response Fund, as well as support for the Boston Resiliency Fund.

We are grateful for the support of the Commonwealth in making Massachusetts a vibrant place to live and do business, and it is our responsibility to give back, especially during such clear times of need.

Topping Off in the Boston Seaport

Workers celebrated the placement of an iron beam 17 stories above ground in a "topping off" ceremony that marks the final phase of construction on our new office location in the Boston Seaport. While crews were sidelined for weeks to reduce the spread of COVID-19, they later returned to resume work with the goal of opening the building this fall.

Since breaking ground in 2019, work has steadily progressed on our Boston Seaport hub, where we'll have access to the city's financial markets, a thriving startup community, an incredible talent pool, and a world-class network of higher education institutions.



HealthBridge: Caring for Those Who Care for Us

Healthcare workers have shown incredible resilience and bravery since the start of the pandemic, putting their lives at risk for the benefit of us all. In acknowledgment of their sacrifice, MassMutual announced \$3 billion of free term life insurance coverage for healthcare workers and volunteers on the front lines of the COVID-19 pandemic.

By leveraging the framework of our LifeBridgeSM program—which provides free life insurance¹ to eligible parents and guardians for child education expenses—we launched the HealthBridge program, where healthcare workers received access to three year term life insurance policies for up to \$25,000 in coverage. We built the product requirements from our existing digital platform and rolled out HealthBridge in just three weeks in our home states of Massachusetts and Connecticut.

Within the first three months of launch, the program expanded nationwide and was made available to a wider range of eligible frontline workers and volunteers such as lab technicians, custodial staff, and cafeteria and security workers.

As healthcare workers and their families continue to do the impossible, we'll continue to support them with the financial assistance they deserve. And we'll keep working to find ways MassMutual can serve members of every community affected by the crisis.

Our Partnership with WNE

MassMutual and Western New England University (WNE) School of Law's Center for Social Justice joined the COVID Relief Coalition of law firms, nonprofits, and government agencies to provide small-business owners and nonprofit organizations with pro bono legal support.

Through the coalition, MassMutual's corporate attorneys, assisted by WNE School of Law Small Business Clinic alumni and students, provided legal guidance to help small businesses and nonprofits understand the requirements they receive and, if eligible, access loans through the federal government's Paycheck Protection Programs as wellas to help identify other potential sources of relief available in the western part of the Commonwealth.

Economic Empowerment Beyond Our Doors

2020 saw new commitments toward sustainable change, starting in our hometown of Springfield, Massachusetts.

With a \$500,000 gift from MassMutual, the Urban League of Springfield's Black Small Business Initiative will provide mentoring and coaching to selected Black and African American business owners in our very own neighborhoods. Additional funding has provided young people and their families with academic scholarships and improvements to Camp Atwater—the oldest African American summer youth camp in the country.

We're proud of the work of our nonprofit partners to build a better world, and we will continue to support them in the years ahead.

The MassMutual Foundation: 2020 Highlights

The MassMutual Foundation is dedicated to activating connections and untapped opportunities within communities so that all families can build their financial capability and thrive.

Through our community-led initiative, the Live Mutual Project, we are committed to helping create vibrant, healthy neighborhoods and financially healthy futures for all Americans by fostering community connections and developing financial capabilities for community members.

We deliver on this commitment through targeted investments in our Live Mutual Project Communities, strategic alliances, and collaboration among local, regional, and national partners who share our vision and goals. Additionally, we offer proprietary national programs that reflect the vibrant spirit of the Live Mutual Project and contribute to its success: FutureSmartSM and LifeBridge.

\$1.3M Investment in Frayser Connect

We were first introduced to the Memphis neighborhood of Frayser through a MassMutual financial professional who recognized both the potential and the need of this

1 MassMutual pays the premiums.

community, where the median household income is just over \$30,000 and 80 percent identify as African American.

Frayser Connect, a collaborative economic and community development initiative, aims to build local residents' financial and social capital by designing a small business and entrepreneurship program offering training, employment opportunities, financial savings tools, and counseling. The effort is led by Frayser Community Development Corporation, in partnership with Epicenter and RISE Foundation, as well as community stakeholders and residents, all to ensure inclusion and access as well as alignment of resources.



FutureSmart is a MassMutual Foundation nationwide initiative that brings critical financial education to middle and high school students across the U.S. Through the use of storytelling and simulation, FutureSmart combines intangible skills with real-world context. Our belief is that financial education is fundamental to achieving economic empowerment.

An independent study conducted by the Donahue Institute at the University of Massachusetts recently revealed financial knowledge gains were significant, substantial, and consistent across all student subgroups regardless of their socioeconomic background. Students exposed to the FutureSmart curriculum were seen as more knowledgeable in financial matters than their peers who were not exposed to the course.

This proprietary financial literacy program enabled by our strategic partner EVERFI—a leading provider of technology-based education platforms—saw us dedicate \$30 million of new funding to carry the program forward to 2025, expanding access for teachers and families. The financial education program is available in both English and Spanish and is accessible online to provide students with open access during the pandemic.

FutureSmart has provided financial education to more than two million students during its first five years; in 2020, we set an ambitious goal of reaching an additional 3.75 million students by 2025.



"As a mom, a business owner, and CPA, I appreciate you introducing these topics and early. While many kids may not have grasped all that was offered, starting the conversation is the key. ... It was the topic of conversation all weekend! I see many adults and business owners in my profession, and unfortunately, many of them don't understand these financial concepts."

FutureSmart Parent

Our Giving

Since 1996, we have donated more than \$2.5 million to nonprofits through Community Service Awards, which are given in honor of MassMutual financial professionals who demonstrate outstanding commitment to nonprofit organizations in their local communities.



The Positive Impact of LifeBridge

Through this unique offering, MassMutual helps eligible parents and legal guardians fund their children's education by issuing \$50,000 10-year life insurance policies at no cost to them.¹ Since 2002, LifeBridge has provided over 14,000 policies and more than \$708 million in coverage. We're proud of the positive impact LifeBridge has on the lives of participating families.

1 MassMutual pays the premiums.



Bringing the Live Mutual Project to Life in Boston

A \$1 million grant will allow Boston Medical Center (BMC) to expand its health equity programming within underserved communities and communities of color. Through this effort, BMC will leverage its full organization to analyze patient data and evidence-based approaches to develop and centralize a comprehensive portfolio of health-advancing social services that go beyond traditional healthcare and expand health equity programming to deeply transform patient care. This comprehensive approach will help mitigate systemic barriers to successful healthcare access, delivery, and outcomes, ensuring that all families and communities can thrive, regardless of ZIP code.

"It gives me peace of mind knowing that I have LifeBridge. One of my major goals in life for my son is to ensure he doesn't have to stress or worry about anything when I'm gone."

Raven, a parent insured by LifeBridge



Evolving Our Business

For many businesses around the world, the impact of COVID-19 meant rethinking how they spend time, money, and resources. While we may start to see a steady return to normal, leading disruptors continue to make our world more digital and sustainable.

We continued to evolve our portfolio of strategic businesses and investments, a key competitive differentiator that enables us to deliver ongoing value to our policyowners and helps with our goal to continue paying a competitive dividend.

All of our decisions in the past year were made to build strategic differentiators for our business, allowing us the ability to both broaden our offerings and generate earnings benefiting policyowners.

Together with our new partners, we are building a stronger, more diversified company to serve our customers and policyowners.

EVOLVING OUR BUSINESS

Increased Stake in Largest

U.K. Specialist Annuity Provider

In 2020, we reached an agreement with Singapore's sovereign wealth fund, Government of Singapore Investment Corporation (GIC), to acquire Blackstone's shareholding of Rothesay, continuing our long-standing relationship with Rothesay. The transaction valued Rothesay at \$7.9 billion, and the terms of the deal saw MassMutual and GIC become equal shareholders with a 49 percent stake in the company.

"We are pleased to build on the strong long-term relationship we have established with Rothesay, which has experienced tremendous growth, has a proven business model and strategy, and is well-positioned in the market. We are looking forward to this next chapter of our partnership."

Tim Corbett, MassMutual Chief Investment Officer



In 2020, we announced the formation of MassMutual Strategic Distributors (MMSD), a dedicated distribution channel that partners with financial firms and professionals to reach more customers. MMSD offers one of the most diverse product portfolios in the industry, providing life insurance, annuity, disability, and hybrid life and long-term care solutions. Backed by the financial strength of MassMutual, MMSD has built a team of highly experienced professionals to work with our distribution partners and will leverage advanced technology platforms to enable quicker decisions, faster policy issuance, and competitive pricing.



Empower Acquires MassMutual's Retirement Plan Business

At the end of 2020, MassMutual finalized a deal for Empower Retirement to acquire our retirement plan business. The acquisition capitalizes on both firms' expertise, provides technological excellence and deep product capabilities, and creates scale for the benefit of retirement plan participants and their employers.

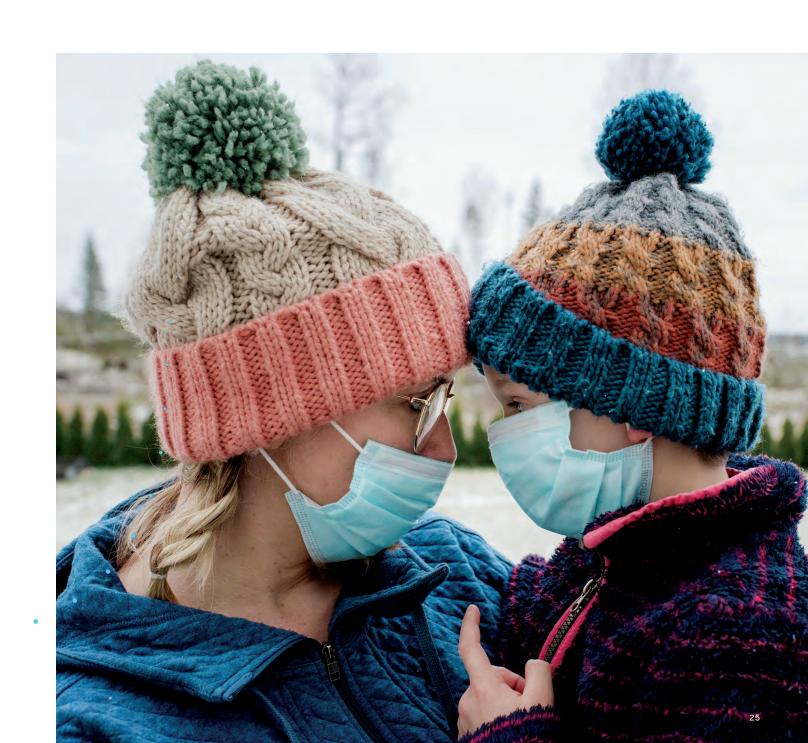
A Leading FinTech Supports Registered Investment Advisers

MassMutual and Stone Ridge Asset Management announced in 2020 that they have entered into a definitive agreement for MassMutual to acquire Flourish, a FinTech platform for registered investment advisers (RIAs).

Flourish will expand our existing product suite and strengthen the company's ability to deliver digitally enabled and holistic financial planning solutions. It will also complement our efforts to provide the best technology to RIAs and their clients while delivering a seamless digital experience.

"MassMutual is focused on providing a simplified, customer-centric user digital experience, and Flourish will help accelerate that strategy, ultimately supporting our vision of providing financial well-being for all Americans."

Gareth Ross, MassMutual Head of Enterprise Technology and Experience



The Promise of Growth-Stage Companies

We continue to build on our investments in early- and growth-stage companies, helping them navigate the pitfalls that early growth can present while helping them achieve significant enterprise value through customer access, capital, and operational expertise.

Today, MassMutual Ventures continues to build a truly global platform—giving entrepreneurs access to significant networks and expertise while providing MassMutual with valuable insights into new trends, technologies, and solutions that are being developed around the world.

In support of this global ambition, we launched a second fund (\$100 million) for Southeast Asia. In addition to enabling us to invest in companies throughout Southeast Asia, it allowed us to widen our investment reach by seeking opportunities in Australia, Hong Kong, India, and New Zealand. A third \$100 million venture capital fund was also launched to specifically focus on investments across North America, Europe, and Israel.

The launch of these additional funds, combined with our ongoing support of MassChallenge here at home, has reinforced our commitment to remain at the forefront of these rapidly changing markets and industries.

Enabling Innovation and Solving Real Industry Challenges

Since 2018, MassMutual has partnered with MassChallenge's HealthTech and FinTech programs, with the goal of identifying new technologies, fostering creative talent, and providing mentorship opportunities to emerging entrepreneurs.

MassMutual has engaged with dozens of startups that are actively leveraging innovative solutions such as artificial intelligence, financial literacy through gamification, and electronic health data to help address our customers' needs while solving real business challenges.

"When we started the engagement with MassChallenge, our focus was to build a hub of innovation and solve real business challenges. We are now seeing the positive results of this partnership as our organizations leverage the products and services these innovative startups offer."

Mike Fanning, Head of MassMutual U.S.



MassMutual Ventures invests globally through our offices in Boston, MA, and Singapore.

\$450M+ Committed Capital

40 Portfolio Companies

Offices



As Massachusetts emerges as a leading FinTech hub, we continue to put our support behind the local and global FinTech community. MassMutual has provided \$100,000 annually to sponsor the FinTech Sandbox and the local nonprofit's signature event: Boston FinTech Week.

Mike Fanning, Head of MassMutual U.S., joined FinTech Sandbox's advisory board, a move demonstrating our belief that advances in financial technology will be crucial to our long-term success.

Mike Fanning was also appointed to the MassChallenge Global Board, given MassMutual's lead role in convening senior leaders across the financial industry to form the MassChallenge FinTech Founding Partners group and its strong advocacy for promoting innovation and collaborating across the FinTech ecosystem.

Delivering to Institutional Clients During a Time of Market Uncertainty

Institutions rely on MassMutual's expertise and financial strength to help them better meet the needs of their owners, employees, customers, and communities. Meeting today's business challenges requires a genuine partner that empowers institutional customers to succeed and makes companies stronger for the long term by enabling them to focus on what they do best. Using an innovative approach to solution design and a clear focus

on client outcomes, MassMutual has earned a reputation as a premier provider of comprehensive protection and investment solutions for institutional customers. Our deep experience in institutional markets spans Bank-Owned Life Insurance (BOLI), Corporate Owned Life Insurance (COLI), Funding Agreements, Pension Risk Transfer (PRT) solutions, Stable Value offerings, Investment Funds, and related financial solutions.

By expanding the base of institutional customers served through financial and risk management solutions, our institutional businesses succeeded in 2020 on delivering on the company's core mission of improving the financial well-being of all Americans. With our broad array of solutions, we helped both advisors and customers navigate the volatile market and economic environment throughout the year. Notably, our BOLI and PRT solutions addressed the balance-sheet and financial-risk needs of our customers while our Funding Agreements and investment offerings provided opportunities for customers seeking both stability and return.

With our expertise and financial strength, we remain focused on helping our customers by delivering financial solutions when they need them most: in uncertain economic times and across market cycles.

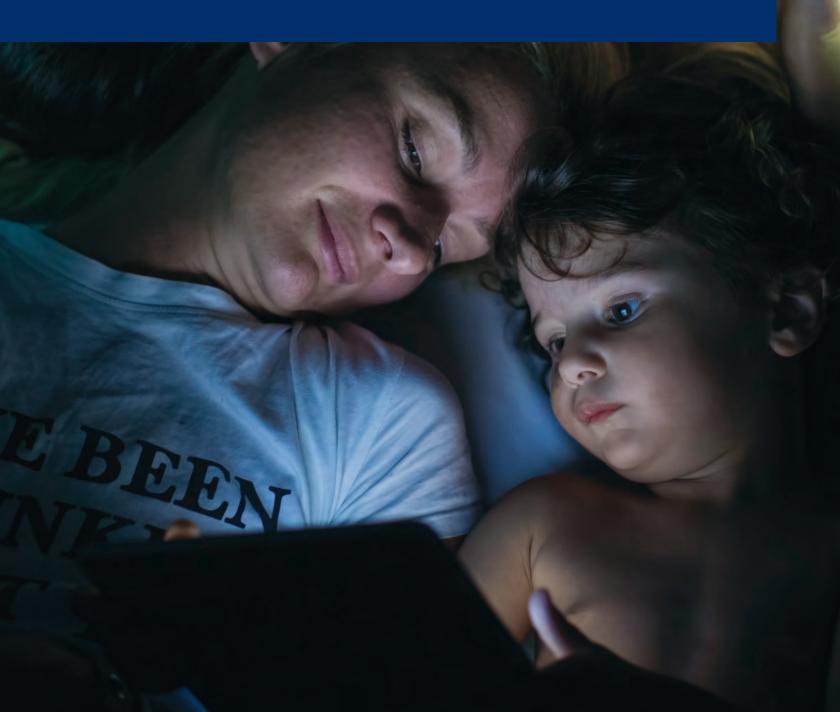
EVOLVING OUR BUSINESS 27

Staying Ahead of Digital & COVID-19 Disruption

2020 saw investments in digital technologies put to the test, as people relied on them more than ever to go to work and manage their lives.

Our expansion of digital experiences made it possible to take care of our customers on their terms, even during a global pandemic. It was proof that we must continue to create digital technology products that stay ahead of how people interact.

And yet, with economic inequality continuing to grow, people across the United States remain vastly underprepared and underinsured. Digital technology promises an opportunity to greatly increase access for millions of new customers. That's why MassMutual remains more committed than ever to developing digital solutions that empower Americans to secure their financial future for themselves and their loved ones by adapting services during difficult times and enhancing experiences to fit customer needs.





Preparing for Longevity

Today, people are living longer than ever before. And with the potential of living a much longer-than-average life, individuals need to self-insure for their long-term financial well-being. To complement our other long-term care solutions, MassMutual added another option to our CareChoice policies: CareChoice Select. These policies are designed to help protect retirement savings and other assets from being depleted by long-term care expenses. CareChoice policies are primarily for individuals who need long-term care coverage with cash value life insurance as a secondary benefit. These policies help customers and their families better prepare for the future.

With student loan debt at new records, these financial burdens prevent many from securing other life goals. That's why we've offered individuals with student loans a way to refinance their debt through the workplace and ultimately help them achieve financial freedom and independence.

Provided through MassMutual's partnership with student loan refinance firm CommonBond, these packages feature flexible terms at competitive interest rates aimed at helping the more than 44 million people who hold more than \$1.5 trillion in student debt. To date, over \$76 million of student debt has been refinanced through this program.

Sources: EducationData.org, 4/12/2020; CNBC.com, 12/22/2020

Enhancing Digital Experiences

Throughout 2020, we added exciting new tools and features to our suite of experiences, empowering customers to manage their MassMutual products when, where, and how they want.

Haven Life, our digital online insurance agency subsidiary, expanded its distribution of AgeUp, an annuity that provides an online solution to help protect families from financial risks faced by loved ones later in life. With one-third of 65-year-olds likely to live past 90, many are underfunded for that life span. AgeUp provides guaranteed monthly income for life with payout dates starting from age 91 to 100.

Digital enablement is also fundamental to advisors, helping them to do their work more efficiently and offer advice to their clients. To digitize and enhance the experience customers have with financial professionals, we made progress on implementing Advisor360°, a WealthTech spin-off from Commonwealth Financial Network that offers an unparalleled advisor-customer experience in our industry. This partnership will bring a suite of award-winning software tools into MassMutual for providing comprehensive solutions to our financial professionals. In addition, Leads App and Spark have been designed as tools to help them better serve their clients, create deeper relationships, and help strategize for their new and existing clients' financial priorities.

Whether it's self-servicing online, using our chatbot, reaching out to a financial professional, or utilizing the interactive voice response (IVR) functionality in the call center, these tools are giving customers the ability to engage with us on their terms. Our commitment to digital transformation allows us to support new products and services for our business that can meet the needs of our customers now and in the future.

Enabling Enterprise-Wide Data-Driven Decisions

For more than six years, we have been in pursuit of staying ahead of the rapid acceleration in the field of data science, and 2020 was no exception as our data teams pivoted dramatically to develop new solutions in response to COVID-19.

MassMutual continued to perform underwriting responsibly during the pandemic, even when traditional laboratory tests and medical exams were deemed unsafe. Our team also continued to spearhead new ideas relating to issues on consumer privacy. By providing these improved insights, we have helped ensure that data and artificial intelligencedriven models are accurate, trusted, transparent, ethical, secure, and accessible.

For the fifth year in a row, we hosted Data Days for Good, a multiday event where our data scientists and technical professional teams step away from their day-to-day work to partner with nonprofits or local organizations and apply data science principles to address social, environmental, and health issues.

As a company, we are excited at the prospect of pursuing other opportunities to engage our skill set with partners and within our communities. It's part of our Live Mutual commitment, and we're happy to live up to it.



Board of Directors

Board Committees:

- 1. Audit
- 2. Executive
- 3. Human Resources
- 4. Investment
- 5. Technology & Governance
- * Chair

Roger W. Crandall

(2*, 4, 5)

Chairman, President & Chief Executive Officer Massachusetts Mutual Life Insurance Company Springfield, Massachusetts

Karen H. Bechtel

(1, 4)

Managing Director, Retired The Carlyle Group New York, New York

Mark T. Bertolini

(2.3*.5)

Chairman & Chief Executive Officer, Retired Aetna Inc. Hartford, Connecticut

Kathleen A. Corbet

(4, 5)

Founder & Principal Cross Ridge Capital, LLC New Canaan, Connecticut

Former President Standard & Poor's New York, New York

James H. DeGraffenreidt, Jr.

(1, 3)

Chairman & Chief Executive Officer, Retired WGL Holdings, Inc. Washington, D.C.

Isabella D. Goren

 $(1^*, 2, 4)$

Former Chief Financial Officer American Airlines, Inc. & AMR Corporation Fort Worth, Texas

Shelley B. Leibowitz

(4, 5)

President & Founder
SL Advisory, LLC,
Stamford, Connecticut
Former Chief Information Officer
The World Bank, Washington, D.C.

Jeffrey M. Leiden, M.D., Ph.D.

(2, 3, 5*)

Chairman, President & Chief Executive Officer Vertex Pharmaceuticals Inc. Boston, Massachusetts

Laura J. Sen

3,5)

Former Non-Executive Chairman & Former Chief Executive Officer BJ's Wholesale Club, Inc. Westborough, Massachusetts

William T. Spitz

(1, 2, 4*)

Principal, Co-Founder & Director Diversified Trust Company Nashville, Tennessee

Vice Chancellor for Investments Emeritus Vanderbilt University Nashville, Tennessee

H. Todd Stitzer

(1, 2, 4)

Lead Director, Massachusetts Mutual Life Insurance Company Springfield, Massachusetts

Former Chief Executive Officer Cadbury PLC London, United Kingdom

AWARDS AND LEADERSHIP 31





Executive Leadership

Roger W. Crandall

Chairman, President & Chief Executive Officer

Susan Cicco

Head of Human Resources & Employee Experience

Tim Corbett

Chief Investment Officer

Geoffrey Craddock

Chief Risk Officer

Michael Fanning

Head of MassMutual U.S.

Pia Flanagan

Chief Operating Officer CEO Action for Racial Equity

Michael O'Connor

General Counsel

Gareth Ross

Head of Enterprise Technology & Experience

Elizabeth Ward

Chief Financial Officer

Subsidiary Leadership

Eddie Ahmed

Chairman, CEO & President MassMutual International

Mike Freno

Chairman, CEO & President Barings LLC

Awards & Accolades

50 Companies with the Best Benefits in Boston 2020

Built in Boston

America's Best Employers of Diversity

Forbes

Best Places to Work 2020

Built in Boston

Best Places to Work for Disability Inclusion with a Disability Equality Index Score of 100%

Disability Equality Index® (DEI)

Best Places to Work for LGBTQ Equality with a Corporate Equality Index Score of 100%

Human Rights Campaign

Innovative Initiatives Award

Boston Women's Workforce Council

Military Friendly Employer

Victory Media

Top Places To Work in Massachusetts

The Boston Globe

World's Most Admired Companies

FORTUNE®

World's Most Ethical Companies

Ethisphere Institute

For more information, visit us at www.MassMutual.com



Massachusetts Mutual Life Insurance Company and affiliates, 1295 State Street, Springfield, MA 01111-0001



