

Performance Update

As of April 30, 2019

Variable Universal Life III

(VUL III)

variable life insurance

- Not a bank or credit union deposit or obligation
- Not insured by any federal government agency
- Not FDIC or NCUA-insured
- Not guaranteed by any bank or credit union
- May go down in value

Variable Universal Life III (VUL III)

VUL III is a permanent life insurance policy that combines death benefit protection with the opportunity to accumulate policy value through investments in a separate account with underlying investment funds, and a guaranteed principal account. This report gives information only about the performance of the investment options available through the policy. It does not give, and should not be understood to give, information about the overall performance of any VUL III policy. **Before purchasing a VUL III policy, you should request a personalized illustration from your financial representative to see examples of how policy charges can impact the performance of your policy.** The illustration will reflect the deduction of asset charges, premium expense charges, surrender charges, and the monthly administrative, face amount, and insurance charges, as well as any applicable rider charges specific to the policy. If you currently own a policy, you can obtain current illustrations of policy values by contacting your personal financial representative, or by clicking on “contact us” on our web site, or by calling the MassMutual Customer Service Center at (800) 272-2216, Monday – Friday, 8 a.m. to 8 p.m. Eastern Time.

The investment performance figures in this report are based on actual historical performance of the investment options for the periods shown, including for those time periods that begin prior to this policy's availability date. In most states, the policy first became available on November 3, 2008. For periods of one year or less, the total return is not annualized. For periods greater than one year, the average annual total return for the time periods is shown.

Past performance is no indication of future results. This update contains the most recent month-end performance. Since performance changes daily, the current performance may be lower or higher than the performance reflected in this update. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. For the most recent month-end performance information, visit our website at www.massmutual.com or call the MassMutual Customer Service Center at (800) 272-2216, Monday – Friday, 8 a.m. to 8 p.m. Eastern Time.

Investing involves risk, including the loss of principal. Each investment choice underlying the policy has broad risks that apply to all investment choices, such as market risk, as well as specific risks inherent in particular types of investment choices that may subject your policy to greater risk and volatility than the general market.

This material must be preceded or accompanied by the [current prospectuses for the VUL III insurance policy and the prospectuses \(or summary prospectuses, if available\) for its underlying investment choices](#). Before purchasing a policy, investors should carefully consider the investment objectives, risks, charges and expenses of the policy and its underlying investment choices. Please read the prospectuses carefully before investing or sending money.

Interest Rates — Guaranteed Principal Account

The following are effective annual rates used to credit interest on amounts in the Guaranteed Principal Account. These rates do not apply to any policy loan amounts.

Current Interest Rate as of: 6/1/18 3.00%; 7/1/18 3.00%; 8/1/18 3.00%; 9/1/18 3.00%; 10/1/18 3.00%; 11/1/18 3.00%; 12/1/18 3.00%; 1/1/19 3.00%; 2/1/19 3.00%; 3/1/19 3.00%; 4/1/19 3.00%; 5/1/19 3.00%.

Market Indices as of April 30, 2019

	YTD	1 Year	3 Years	5 Years	10 Years
S&P 500 Index	18.25%	13.49%	14.87%	11.63%	15.32%
Morgan Stanley Capital International World Index	16.47%	6.48%	11.39%	7.31%	11.58%
Russell 2000 Total Return Index	18.48%	4.61%	13.60%	8.63%	14.10%
Bloomberg Barclays U.S. Aggregate Bond Index	2.97%	5.29%	1.90%	2.57%	3.72%

Market indices have been provided for informational purposes only; they are unmanaged and reflect no fees or expenses. Individuals cannot invest directly in an index.

The Standard & Poor's 500 Index is an unmanaged measure of common stock total return performance in the U.S.

The Morgan Stanley Capital International World Index is an unmanaged measure of total return performance in the global securities market.

The Russell 2000 Total Return Index is a broad based, unmanaged index comprised of 2000 of the smallest U.S. domiciled company common stocks (on the basis of capitalization) that are traded in the United States on the New York Stock Exchange, the American Stock Exchange, and NASDAQ.

The Bloomberg Barclays U.S. Aggregate Bond Index is an unmanaged index of U.S. corporate bond issues, U.S. Government Securities and mortgage-backed securities.

Total Returns

For the Period Ending: April 30, 2019

Total Returns for each fund are the actual historical rates and are net of all fund management fees and other operating expenses. **These returns do not reflect the Separate Account asset charges or policy charges.** Policy charges include: premium expense charges, surrender charges, and the monthly administrative, face amount, and insurance charges. If these charges were deducted, the returns would be significantly lower.

Asset Category	Investment Fund	Fund Inception Date	Endnotes	Cumulative YTD	Average Annual				
					1 Year	3 Years	5 Years	10 Years	Since Inception
Asset Allocation	MML Conservative Allocation (Initial Class)	8/31/2007	1	8.23%	2.77%	4.96%	4.01%	7.62%	5.03%
	MML Balanced Allocation (Initial Class)	8/31/2007	1	9.54%	2.96%	5.90%	4.59%	8.49%	5.14%
	MML Moderate Allocation (Initial Class)	8/31/2007	1	10.92%	3.19%	6.93%	5.20%	9.33%	5.46%
	MML Growth Allocation (Initial Class)	8/31/2007	1	12.93%	3.62%	8.37%	6.08%	10.62%	5.75%
	MML Aggressive Allocation (Initial Class)	8/31/2007	1	14.89%	4.14%	9.89%	6.98%	11.88%	6.09%
Money Market	MML U.S. Government Money Market (Initial Class) <i>7-day yield: 1.96%</i>	12/16/1981	2	0.64%	1.66%	0.78%	0.49%	0.24%	3.89%
Fixed Income	MML Inflation-Protected and Income (Initial Class)	8/30/2002		3.50%	0.40%	0.96%	1.25%	3.44%	3.55%
	MML Managed Bond (Initial Class)	12/16/1981		2.80%	1.55%	1.41%	1.88%	3.89%	7.08%
	Oppenheimer Global Strategic Income (Non-Service)	5/3/1993		5.79%	-2.76%	1.75%	1.32%	5.50%	5.40%
Large Cap Value	MML Equity (Initial Class)	12/31/1973	3	15.61%	3.43%	9.84%	6.97%	12.29%	10.00%
	MML Equity Income (Initial Class)	5/1/2006		15.94%	4.82%	10.61%	6.85%	12.48%	6.54%
	MML Income & Growth (Initial Class)	5/1/2006		15.55%	3.56%	10.10%	7.93%	12.07%	5.87%
Large Cap Blend	Fidelity® VIP Contrafund® (Initial Class)	1/3/1995		19.26%	9.91%	13.49%	10.18%	14.31%	11.08%
	Invesco V.I. Diversified Dividend (Series I)	3/1/1990	4	13.67%	5.37%	6.23%	7.07%	12.66%	7.92%
	MML Equity Index (Class II)	5/1/1997	5	18.11%	11.34%	13.93%	10.96%	14.83%	7.73%
	MML Growth & Income (Initial Class)	5/1/2006		19.88%	12.64%	14.72%	10.90%	14.20%	6.74%
	Oppenheimer Main Street (Non-Service)	7/5/1995		20.59%	13.69%	12.07%	10.12%	13.98%	8.89%
Large Cap Growth	MML Blue Chip Growth (Initial Class)	5/1/2006		20.75%	14.35%	21.49%	16.17%	18.08%	11.14%
	Oppenheimer Capital Appreciation (Non-Service)	4/3/1985		22.52%	15.61%	15.80%	11.51%	13.67%	10.18%
Small / Mid Cap Value	MML Mid Cap Value (Initial Class)	5/1/2006		18.82%	3.84%	9.31%	9.17%	14.48%	9.17%
	MML Small/Mid Cap Value (Initial Class)	5/1/2006		15.91%	-1.13%	9.78%	7.17%	14.22%	5.88%
Small / Mid Cap Blend	MML Small Cap Equity (Initial Class)	6/1/1998		17.02%	4.52%	11.87%	8.28%	14.37%	6.45%
Small / Mid Cap Growth	MML Mid Cap Growth (Initial Class)	5/1/2006		20.52%	14.64%	16.10%	13.33%	17.23%	10.81%
	MML Small Cap Growth Equity (Initial Class)	5/3/1999		24.80%	14.74%	18.40%	11.37%	15.71%	9.07%
	Oppenheimer Discovery Mid Cap Growth (Non-Service)	8/15/1986		24.28%	14.02%	16.46%	13.09%	16.34%	9.64%
International / Global	MML Foreign (Initial Class)	5/1/2006		10.16%	-9.26%	4.06%	-0.60%	6.18%	2.05%
	MML Global (Class II)	5/1/2006		18.51%	7.47%	10.73%	7.50%	13.04%	5.72%
	Oppenheimer Global (Non-Service)	11/12/1990		21.63%	3.85%	14.58%	8.71%	13.14%	10.01%
	Oppenheimer International Growth (Non-Service)	5/13/1992		17.24%	-6.32%	4.54%	1.82%	9.62%	6.92%
Specialty	Invesco V.I. Health Care (Series I)	5/21/1997	**	8.54%	11.42%	7.45%	6.22%	12.80%	8.39%
	Invesco V.I. Technology (Series I)	5/20/1997		23.04%	15.16%	22.46%	14.69%	15.53%	6.70%
	MML Managed Volatility (Initial Class)	5/1/2000	6	6.89%	2.58%	4.73%	3.86%	8.78%	3.56%
	PIMCO CommodityRealReturn® Strategy (Advisor Class)	6/30/2004	7	8.37%	-9.96%	-1.00%	-10.10%	-0.73%	3.25%
	VY® Clarion Global Real Estate (Class S)	1/3/2006		14.31%	2.16%	2.06%	3.03%	9.86%	4.34%

The VUL III policy contains five MML Asset Allocation Funds ("funds of funds") that are designed to help investors meet their financial goals. These funds consist of certain, but not all, underlying funds available within the VUL III policy. The percentages below represent the approximation of assets as of the report date. The percentages may vary from the target allocation, which can be found in the corresponding fund prospectus. The percentages below are rounded so they may not total 100%.

Asset Class Underlying Funds	MML Conservative Allocation Fund	MML Balanced Allocation Fund	MML Moderate Allocation Fund	MML Growth Allocation Fund	MML Aggressive Allocation Fund
Fixed Income					
MML Dynamic Bond Fund (DoubleLine)	15%	12%	10%	5%	2%
MML High Yield Fund (Barings)	3%	2%	2%	1%	1%
MML Inflation-Protected and Income Fund (Barings)	4%	4%	3%	4%	2%
MML Managed Bond Fund (Barings)	22%	19%	15%	9%	4%
MML Total Return Bond Fund (MetWest)	13%	10%	8%	5%	2%
MML Short-Duration Bond Fund (Barings)	4%	4%	4%	3%	2%
Total Fixed Income	63%	53%	43%	28%	14%
Large Cap Equity					
MML Blue Chip Growth Fund (T. Rowe Price)	2%	3%	4%	4%	5%
MML Equity Income Fund (T. Rowe Price)	2%	3%	4%	5%	6%
MML Equity Index (Northern Trust)	1%	1%	1%	1%	1%
MML Focused Equity Fund (Wellington)	4%	3%	5%	8%	8%
MML Fundamental Growth Fund (Wellington)	2%	2%	2%	2%	3%
MML Fundamental Value Fund (Wellington)	2%	3%	3%	4%	5%
MML Income & Growth Fund (Barrow Hanley)	3%	3%	4%	5%	5%
MML Large Cap Growth Fund (Loomis Sayles)	1%	1%	1%	1%	2%
Oppenheimer Main Street Fund/VA	1%	2%	1%	2%	3%
	18%	21%	25%	32%	38%
Mid Cap Equity					
MML Mid Cap Growth Fund (T. Rowe Price)	2%	3%	4%	5%	7%
MML Mid Cap Value Fund (American Century)	2%	3%	4%	5%	5%
Oppenheimer Discovery Mid Cap Growth Fund/VA	1%	1%	1%	1%	1%
	5%	7%	9%	11%	13%
Small Cap Equity					
MML Small Cap Growth Equity Fund (Wellington)	1%	1%	1%	1%	1%
MML Small Company Value Fund (T. Rowe Price)	1%	1%	1%	2%	2%
MML Small/Mid Cap Value Fund (AllianceBernstein)	1%	1%	1%	2%	2%
	3%	3%	3%	5%	5%
International/Global					
MML Foreign Fund (Templeton)	2%	2%	3%	4%	5%
MML Global Fund (MFS®)	4%	7%	7%	9%	11%
MML International Equity Fund (Harris)	2%	3%	4%	4%	6%
MML Strategic Emerging Markets Fund (Oppenheimer)	1%	1%	3%	4%	5%
Oppenheimer Global Fund/VA	1%	2%	2%	2%	2%
Oppenheimer International Growth Fund/VA	1%	1%	1%	1%	1%
	11%	16%	20%	24%	30%
Total Equity	37%	47%	57%	72%	86%
Total Allocation	100%	100%	100%	100%	100%

Endnotes

- 1 Funds offered in a fund-of-funds structure may have higher expenses than a direct investment in the underlying funds because a fund-of-funds bears its own expenses and indirectly bears its proportionate share of expenses of the underlying funds in which it invests.
 - 2 **An investment in the Fund is neither insured nor guaranteed by the Federal Deposit Insurance Corporation or by any other government agency. Although the Fund seeks to maintain a stable net asset value per share, it is possible to lose money by investing in the Fund.**
The yield quotation more closely reflects the current earnings of the Fund than the total return quotation. It is an annualized rate based on results over the last seven days of the period.
 - 3 Although the MML Equity Fund commenced operations on 9/15/1971, the information necessary to calculate returns is available only for 1974 and later years.
 - 4 Effective April 29, 2011, Invesco V.I. Financial Services Fund merged into Invesco V.I. Dividend Growth Fund. Performance prior to that day reflects performance of the Invesco V.I. Financial Services Fund and performance on and after that date reflects performance of the Invesco V.I. Dividend Growth Fund.
 - 5 The fund established a new class of shares, which is available with this policy, after it began its initial investment operations. The performance for the period prior to May 1, 2000 shows the historical returns for Class I shares. Performance for periods after May 1, 2000 shows the historical returns for the share class available with this policy and reflects the fees and expenses of that share class.
 - 6 Formerly known as MML Large Cap Value Fund. The Fund's name, investment objective, and investment strategy changed on April 29, 2013. The performance results prior to April 29, 2013 would not necessarily have been achieved had the Fund's current strategy been in effect during that period.
 - 7 The fund established a new class of shares, which is available with this policy, after it began its initial investment operations. The performance for the period prior to offering the new class shows the historical returns for the original class of shares, which were not subject to a 12b-1 fee. The performance shown from the inception date of the class available with this policy includes the fees and expenses of that share class, including a 12b-1 fee. A 12b-1 fee reduces a fund's performance.
- ** Formerly known as as Invesco V.I. Global Health Care.

Variable Universal Life III (VUL III) (Policy Form P2-2008, ICC08P2 and ICC08P2X in North Carolina) is individual, participating flexible premium, adjustable, variable life insurance. Dividends are not expected to be paid. The VUL III policy is issued by Massachusetts Mutual Life Insurance Company, Springfield, MA 01111-0001.

Principal Underwriters:

MML Investors Services, LLC
MML Strategic Distributors, LLC

Subsidiaries of Massachusetts Mutual Life Insurance Company, 1295 State Street, Springfield, MA 01111-0001

© 2018 Massachusetts Mutual Life Insurance Company. All rights reserved.