

MainStay VP Fidelity Institutional AM[®] Utilities Portfolio*

Message from the President and Semiannual Report

Unaudited | June 30, 2020

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INVESTMENTS

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Message from the President

High levels of volatility shook financial markets in response to the COVID-19 pandemic and an abrupt decline in global economic activity during the six months ended June 30, 2020.

Markets entered 2020 riding strong fourth quarter performance and an economic expansion of historic longevity. Most broad stock and bond indices began to dip in late February as growing numbers of COVID-19 cases were seen in hotspots around the world. On March 11, 2020, the World Health Organization acknowledged that the disease had reached pandemic proportions, with over 80,000 identified cases in China, thousands in Italy, South Korea and the United States, and more in dozens of additional countries. Governments and central banks pledged trillions of dollars to address the mounting economic and public health crisis; however, “stay-at-home” orders and other restrictions on non-essential activity caused global economic activity to slow. Most stocks and bonds lost significant ground in this challenging environment, with equities declining by roughly a third and the yield on high-yield credit indices shooting higher.

Policymakers responded with extraordinary speed to address the situation. In the United States, the Federal Reserve (“Fed”) cut interest rates to near zero and announced unlimited quantitative easing. With help from Treasury, the Fed later rolled out a series of lending facilities to directly support market functioning. In late March, the Federal government declared a national emergency; Congress passed, and the President signed, a \$2 trillion CARES Act (The Coronavirus Aid, Relief, and Economic Security Act), with the promise of further assistance for consumers and businesses to come. This enormous wave of policy support helped fuel a rapid recovery in market pricing as stocks bounced back and credit spreads narrowed. Some states rushed to ease restrictions on travel and social gatherings, further fueling optimism that the effects of the pandemic might prove short lived. However, the final weeks of the reporting period saw infection rates beginning to rise in some of the first states to reopen, raising concerns that a second round of restrictive government policies might prove necessary, once again stifling economic activity.

Despite all the market volatility, the broadly based S&P 500® Index finished the first half of 2020 only slightly below its starting point and the technology-heavy NASDAQ Composite Index posted gains, closing in near record territory. Small-cap stocks tended to trail their large cap counterparts, as illustrated by the Russell 2000® Index’s loss of approximately 15%, while value-oriented stocks lagged growth-oriented issues. From a global perspective, U.S. stocks generally outperformed international equities, with emerging markets hit particularly hard by the flight from risk.

Fixed-income markets also experienced unusually high levels of volatility. Recognized safe havens, such as U.S. government bonds, attracted increased investment, driving yields lower and prices higher, positioning long-term Treasury bonds to deliver particularly strong gains. Investment-grade corporate bonds lost value in March before recovering in the closing months of the reporting period, while relatively speculative high-yield credit faced the brunt of risk-off sentiment. Emerging market debt underperformed most other bonds types as investors sought to minimize currency and sovereign risks.

Today, as we at New York Life Investments continue to track the ongoing health crisis and its financial ramifications, we are particularly mindful of the people at the heart of our enterprise—our colleagues and valued clients. By taking appropriate steps to minimize community spread of COVID-19 within our organization, we strive to safeguard the health of our investment professionals so they can continue to provide you, as a Main-Stay investor, with world class investment solutions in this rapidly evolving environment.

Sincerely,



Kirk C. Lehneis
President

The opinions expressed are as of the date of this report and are subject to change. There is no guarantee that any forecast made will come to pass. This material does not constitute investment advice and is not intended as an endorsement of any specific investment. Past performance is no guarantee of future results.

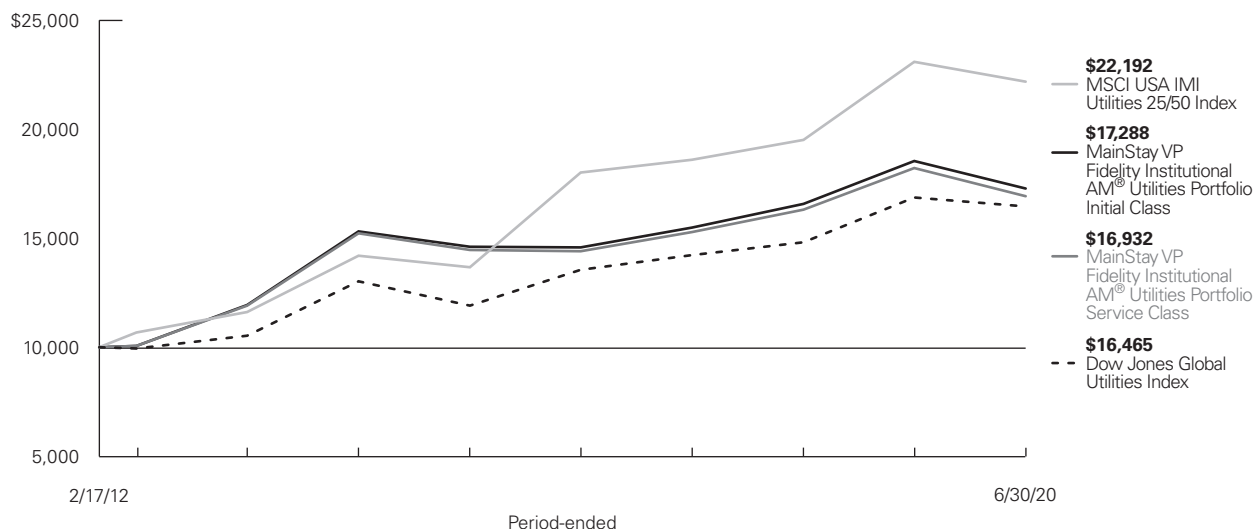
Table of Contents

| | |
|---|----|
| Semiannual Report | |
| Investment and Performance Comparison | 5 |
| Portfolio Management Discussion and Analysis | 8 |
| Portfolio of Investments | 10 |
| Financial Statements | 11 |
| Notes to Financial Statements | 16 |
| Discussion of the Operation and Effectiveness of the Portfolio's Liquidity Risk Management Program | 23 |
| Proxy Voting Policies and Procedures and Proxy Voting Record | 24 |
| Shareholder Reports and Quarterly Portfolio Disclosure | 24 |

Investors should refer to the Portfolio's Summary Prospectus and/or Prospectus and consider the Portfolio's investment objectives, strategies, risks, charges and expenses carefully before investing. The Summary Prospectus and/or Prospectus contain this and other information about the Portfolio. You may obtain copies of the Portfolio's Summary Prospectus and/or the Prospectus and the Statement of Additional Information free of charge, upon request, by calling toll-free 800-598-2019, by writing to New York Life Insurance and Annuity Corporation, 51 Madison Avenue, Room 251, New York, New York 10010 or by sending an email to MainStayShareholdersServices@nylim.com. These documents are also available at nylinvestments.com/vpddocuments. Please read the Summary Prospectus and/or Prospectus carefully before investing. MainStay VP Funds Trust portfolios are separate account options which are purchased through a variable insurance or variable annuity contract.

Investment and Performance Comparison¹ (Unaudited)

Performance data quoted represents past performance. Past performance is no guarantee of future results. Because of market volatility and other factors, current performance may be lower or higher than the figures shown. Investment return and principal value will fluctuate, and as a result, when shares are redeemed, they may be worth more or less than their original cost. The performance table and graph do not reflect any deduction of sales charges, mortality and expense charges, contract charges or administrative charges. Please refer to the Performance Summary appropriate for your policy. For performance information current to the most recent month-end, please call 800-598-2019 or visit www.newyorklife.com.



Average Annual Total Returns for the Period-Ended June 30, 2020

| Class | Inception Date | Six Months | One Year | Five Years | Since Inception ² | Gross Expense Ratio ³ |
|----------------------|----------------|------------|----------|------------|------------------------------|----------------------------------|
| Initial Class Shares | 2/17/2012 | -13.96% | -6.82% | 3.43% | 6.76% | 0.68% |
| Service Class Shares | 2/17/2012 | -14.06 | -7.05 | 3.18 | 6.49 | 0.93 |

| Benchmark Performance | Six Months | One Year | Five Years | Since Inception |
|---|------------|----------|------------|-----------------|
| MSCI USA IMI Utilities 25/50 Index ⁴ | -12.00% | -3.87% | 10.16% | 10.00% |
| Dow Jones Global Utilities Index ⁵ | -9.76 | -2.39 | 6.66 | 6.14 |
| Morningstar Utilities Category Average ⁶ | -11.49 | -4.84 | 7.67 | 8.07 |

- Performance figures may reflect certain fee waivers and/or expense limitations, without which total returns may have been different. For information on current fee waivers and/or expense limitations (if any), please refer to the Notes to Financial Statements.
- The Portfolio replaced its subadvisor and modified its principal investment strategies and changed its classification from a diversified fund to a non-diversified fund as of November 30, 2018. Therefore, the performance information shown in this report prior to November 30, 2018 reflects the Portfolio's prior subadvisor, principal investment strategies and diversification status.
- The gross expense ratios presented reflect the Portfolio's "Total Annual Portfolio Operating Expenses" from the most recent Prospectus, as supplemented, and may differ from other expense ratios disclosed in this report.
- The MSCI USA IMI Utilities 25/50 Index is the Portfolio's primary benchmark. The MSCI USA IMI Utilities 25/50 Index is a modified market capitalization-weighted index of stocks designed to measure the performance of utilities companies in the MSCI U.S. Index. Results assume reinvestment of all dividends and capital gains. An investment cannot be made directly in an index.
- Prior to November 30, 2018, the Dow Jones Global Utilities Index was the Portfolio's primary benchmark. The Dow Jones Global Utilities Index is a free-float market-capitalization-weighted index that measures the performance of utility companies in developed and emerging markets. Results assume reinvestment of all dividends and capital gains. An investment cannot be made directly in an index.
- The Morningstar Utilities Category Average is representative of funds that seek capital appreciation by investing primarily in equity securities of U.S. or non-U.S. public utilities including electric, gas, and telephone-service providers. Results are based on average total returns of similar funds with all dividends and capital gain distributions reinvested.

Cost in Dollars of a \$1,000 Investment in MainStay VP Fidelity Institutional AM® Utilities Portfolio (Unaudited)

The example below is intended to describe the fees and expenses borne by shareholders during the six-month period from January 1, 2020, to June 30, 2020, and the impact of those costs on your investment.

Example

As a shareholder of the Portfolio you incur two types of costs: (1) transaction costs, including exchange fees and sales charges (loads) on purchases (as applicable), and (2) ongoing costs, including management fees, distribution and/or service (12b-1) fees, and other Portfolio expenses (as applicable). This example is intended to help you understand your ongoing costs (in dollars) of investing in the Portfolio and to compare these costs with the ongoing costs of investing in other mutual funds. The example is based on an investment of \$1,000 made at the beginning of the six-month period and held for the entire period from January 1, 2020, to June 30, 2020. Shares are only sold in connection with variable life and annuity contracts and the example does not reflect any contract level or transactional fees or expenses. If these costs had been included, your costs would have been higher.

This example illustrates your Portfolio's ongoing costs in two ways:

Actual Expenses

The second and third data columns in the table below provide information about actual account values and actual expenses. You may use the information in these columns, together with the amount you invested, to estimate the expenses that you paid during the six months

ended June 30, 2020. Simply divide your account value by \$1,000 (for example, an \$8,600 account value divided by \$1,000 = 8.6), then multiply the result by the number under the heading entitled "Expenses Paid During Period" to estimate the expenses you paid on your account during this period.

Hypothetical Example for Comparison Purposes

The fourth and fifth data columns in the table below provide information about hypothetical account values and hypothetical expenses based on the Portfolio's actual expense ratio and an assumed rate of return of 5% per year before expenses, which is not the Portfolio's actual return. The hypothetical account values and expenses may not be used to estimate the actual ending account balances or expenses you paid for the six-month period shown. You may use this information to compare the ongoing costs of investing in the Portfolio with the ongoing costs of investing in other mutual funds. To do so, compare this 5% hypothetical example with the 5% hypothetical examples that appear in the shareholder reports of the other mutual funds.

Please note that the expenses shown in the table are meant to highlight your ongoing costs only and do not reflect any transactional costs, such as exchange fees or sales charges (loads). Therefore, the fourth and fifth data columns of the table are useful in comparing ongoing costs only and will not help you determine the relative total costs of owning different funds. In addition, if these transactional costs were included, your costs would have been higher.

| Share Class | Beginning Account Value 1/1/20 | Ending Account Value (Based on Actual Returns and Expenses) 6/30/20 | Expenses Paid During Period ¹ | Ending Account Value (Based on Hypothetical 5% Annualized Return and Actual Expenses) 6/30/20 | Expenses Paid During Period ¹ | Net Expense Ratio During Period ² |
|----------------------|--------------------------------|---|--|---|--|--|
| Initial Class Shares | \$1,000.00 | \$860.40 | \$3.10 | \$1,021.53 | \$3.37 | 0.67% |
| Service Class Shares | \$1,000.00 | \$859.40 | \$4.25 | \$1,020.29 | \$4.62 | 0.92% |

¹ Expenses are equal to the Portfolio's annualized expense ratio of each class multiplied by the average account value over the period, divided by 366 and multiplied by 182 (to reflect the six-month period). The table above represents the actual expenses incurred during the six-month period. In addition to the fees and expenses which the Portfolio bears directly, it also indirectly bears a pro rata share of the fees and expenses of the underlying funds in which it invests. Such indirect expenses are not included in the above-reported expense figures.

² Expenses are equal to the Portfolio's annualized expense ratio to reflect the six-month period.

Industry Composition as of June 30, 2020 (Unaudited)

| | | | |
|---|-------|--------------------------------|---------------|
| Electric Utilities | 58.0% | Short-Term Investment | 3.3 |
| Multi-Utilities | 29.1 | Other Assets, Less Liabilities | <u>-2.5</u> |
| Independent Power & Renewable Electricity Producers | 10.7 | | <u>100.0%</u> |
| Gas Utilities | 1.4 | | |

See Portfolio of Investments beginning on page 10 for specific holdings within these categories. The Portfolio's holdings are subject to change.

Top Ten Holdings as of June 30, 2020 (excluding short-term investment) (Unaudited)

| | |
|--------------------------|-----------------------------|
| 1. Dominion Energy, Inc. | 6. FirstEnergy Corp. |
| 2. NextEra Energy, Inc. | 7. Southern Co. |
| 3. Exelon Corp. | 8. Entergy Corp. |
| 4. Edison International | 9. CenterPoint Energy, Inc. |
| 5. Evergy, Inc. | 10. Sempra Energy |

Portfolio Management Discussion and Analysis (Unaudited)

Answers to the questions reflect the views of portfolio manager Douglas Simmons of FIAM LLC ("FIAM") the Portfolio's Subadvisor.

How did MainStay VP Fidelity Institutional AM® Utilities Portfolio¹ perform relative to its benchmarks and peers during the six months ended June 30, 2020?

For the six months ended June 30, 2020, MainStay VP Fidelity Institutional AM® Utilities Portfolio returned -13.96% for Initial Class shares and -14.06% for Service Class shares. Over the same period, both share classes underperformed the -12.00% return of the MSCI USA IMI Utilities 25/50 Index, which is the Portfolio's primary benchmark, and the -9.76% return of the Dow Jones Global Utilities Index. For the six months ended June 30, 2020, both share classes underperformed the -11.49% return of the Morningstar Utilities Category Average.²

During the reporting period, were there any market events that materially impacted the Portfolio's performance or liquidity?

There were no market events that materially impacted the Portfolio's performance or liquidity relative to the MSCI USA IMI Utilities 25/50 Index. However, the dramatic sell-off and corresponding market volatility related to the spreading COVID-19 pandemic was a major factor that impacted returns for the Portfolio, the utilities sector and the broader market.

What factors affected the Portfolio's relative performance during the reporting period?

The Portfolio underperformed its benchmark primarily due to security selection among electric utilities holdings and lack of exposure to water utilities.

Which sectors were the strongest positive contributors to the Portfolio's relative performance, and which sectors were particularly weak?

The strongest positive contributions to the Portfolio's relative performance from a subsector standpoint came from multi-utilities holdings, which represented a significant minority percentage of both the Portfolio and the MSCI USA IMI Utilities 25/50 Index as of June 30, 2020. (Contributions take weightings and total returns into account.) The next two strongest contributors were gas utilities and independent power producers & energy traders ("IPPs"). Conversely, the most significant detractor from relative performance was electric utilities, which is the largest subsector in the benchmark as of June 30, 2020. Water utilities was the second largest detractor, and oil & gas storage & transportation, an out-of-Index weight, was third. All the subsectors mentioned above recorded negative absolute performance during the reporting period.

During the reporting period, which individual stocks made the strongest positive contributions to the Portfolio's absolute performance and which stocks detracted the most?

On an absolute return basis, the three largest positive contributors to the Portfolio's overall performance were renewable energy company Clearway Energy, diversified utility Public Service Enterprise Group and diversified utility Dominion Energy. During a volatile period in the markets, Clearway Energy was a relative outperformer, largely due to its stable cash flows. In the difficult market environment that prevailed, many companies viewed as stable cash flow generators were rewarded. Clearway was regarded as such due to its long-term contracts on generation assets. Public Service Enterprise Group was able to keep its regulated earnings steady during the market sell-off, which was viewed favorably by investors. Dominion Energy's customer mix is skewed toward relatively high-margin residential customers, which resulted in less of a burden during the pandemic shutdown than other utility companies whose customer bases skew more towards commercial and industrial customers. Another notably positive contributor to absolute performance was NextEra Energy Partners, a subsidiary of regulated electric utility NextEra Energy, which we view as a best-in-class utility that also boasts a premium renewables business.

The three most significant detractors from absolute performance during the reporting period were regulated electric utility Edison International, diversified utility Exelon and diversified utility Sempra Energy. Edison International shares sold off to the point of it becoming one of the cheapest regulated utilities in the sector. The discount was largely attributable to fears regarding future liabilities from wildfires in California. The pandemic arguably had a more meaningful impact on Exelon than some other names in the sector by delaying what was expected to be a favorable ruling on legislation in Illinois that directly affected Exelon. Lastly, Sempra Energy lagged and traded at a discount during the reporting period largely because investors were concerned about the company's meaningful exposure to liquid natural gas, although Sempra Energy's exposure was fully contracted.

Did the Portfolio make any significant purchases or sales during the reporting period?

The Portfolio significantly added to its stake in NextEra Energy, during the reporting period. The Portfolio also purchased shares in DTE Energy, a multi-utility that operates as a gas and electric utility in Michigan, a state with what we view to be a favorable regulatory environment at present.

1. Fidelity Institutional AM is a registered trademark of FMR LLC. Used with permission.

2. See page 5 for more information on benchmark and peer group returns.

We reduced the Portfolio's stake in American Electric Power during the reporting period. We believe this electric utility is likely to face notable equity needs in the next 3-to-5 years relative to many peers. We exited the Portfolio's stake in Consolidated Edison, a multi-utility serving the greater New York City area. The stock has built in a defensive premium, given the company's lack of direct commodity exposure and more diversified business units. We felt there were better valuation opportunities in the prevailing market.

How did the Portfolio's sector weightings change during the reporting period?

The Portfolio ended the reporting period with near-neutral positioning in electric utilities relative to the MSCI USA IMI Utilities 25/50 Index. This represented a meaningful change, as the

Portfolio held largely underweight exposure to electric utilities for most of the reporting period. The Portfolio also notably narrowed its underweight exposure to multi-utilities.

How was the Portfolio positioned at the end of the reporting period?

As of June 30, 2020, IPPs remained the Portfolio's largest subsector with overweight exposure relative to the MSCI USA IMI Utilities 25/50 Index, a position that did not change throughout the reporting period. Similarly, the Portfolio's most significantly underweight exposure as of the same date was to water utilities, a subsector that the Portfolio had no exposure to throughout the same period. The Portfolio's allocation to electric utilities, the largest segment of the benchmark, ended the reporting period in line with the benchmark.

The opinions expressed are those of the portfolio managers as of the date of this report and are subject to change. There is no guarantee that any forecasts will come to pass. This material does not constitute investment advice and is not intended as an endorsement of any specific investment.

Not all MainStay VP Portfolios and/or share classes are available under all policies.

Portfolio of Investments June 30, 2020 (Unaudited)

| | Shares | Value |
|--|-----------|--------------------|
| Common Stocks 99.2% † | | |
| Electric Utilities 58.0% | | |
| Alliant Energy Corp. | 147,900 | \$ 7,075,536 |
| American Electric Power Co., Inc. | 241,700 | 19,248,988 |
| Duke Energy Corp. | 535,045 | 42,744,745 |
| Edison International | 1,256,487 | 68,239,809 |
| Entergy Corp. | 477,998 | 44,840,992 |
| Evergy, Inc. | 1,093,804 | 64,851,639 |
| Exelon Corp. | 2,051,786 | 74,459,314 |
| FirstEnergy Corp. | 1,167,818 | 45,287,982 |
| NextEra Energy, Inc. | 386,833 | 92,905,682 |
| NRG Energy, Inc. | 754,145 | 24,554,961 |
| PG&E Corp. (a) | 3,453,465 | 32,322,959 |
| Pinnacle West Capital Corp. | 53,800 | 3,943,002 |
| PNM Resources, Inc. | 152,995 | 5,881,128 |
| Southern Co. | 871,382 | 45,181,157 |
| | | <u>571,537,894</u> |
| Gas Utilities 1.4% | | |
| Atmos Energy Corp. | 136,000 | <u>13,542,880</u> |
| Independent Power & Renewable Electricity Producers 10.7% | | |
| AES Corp. | 2,400,502 | 34,783,274 |
| Clearway Energy, Inc., Class C | 1,355,379 | 31,255,039 |
| NextEra Energy Partners, L.P. | 387,717 | 19,882,128 |
| Vistra Energy Corp. | 1,041,174 | \$ 19,386,660 |
| | | <u>105,307,101</u> |

| | Shares | Value |
|---|---------------|-----------------------|
| Multi-Utilities 29.1% | | |
| Ameren Corp. | 291,329 | \$ 20,497,908 |
| CenterPoint Energy, Inc. | 2,397,659 | 44,764,294 |
| Dominion Energy, Inc. | 1,499,275 | 121,711,144 |
| DTE Energy Co. | 162,539 | 17,472,942 |
| Public Service Enterprise Group, Inc. | 788,331 | 38,754,352 |
| Sempra Energy | 371,143 | 43,509,094 |
| | | <u>286,709,734</u> |
| Total Common Stocks | | <u>977,097,609</u> |
| (Cost \$960,110,931) | | |
| Short-Term Investments 3.3% | | |
| Affiliated Investment Company 3.3% | | |
| MainStay U.S. Government Liquidity Fund, 0.05% (b) | 32,287,542 | <u>32,287,542</u> |
| Total Short-Term Investment | | <u>32,287,542</u> |
| (Cost \$32,287,542) | | |
| Total Investments | | |
| (Cost \$992,398,473) | 102.5% | 1,009,385,151 |
| Other Assets, Less Liabilities | (2.5) | <u>(24,952,791)</u> |
| Net Assets | <u>100.0%</u> | <u>\$ 984,432,360</u> |

† Percentages indicated are based on Portfolio net assets.

(a) Non-income producing security.

(b) Current yield as of June 30, 2020.

The following is a summary of the fair valuations according to the inputs used as of June 30, 2020, for valuing the Portfolio's assets:

| Description | Quoted Prices in Active Markets for Identical Assets (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) | Total |
|---------------------------------|--|---|--|------------------------|
| Asset Valuation Inputs | | | | |
| Investments in Securities (a) | | | | |
| Common Stocks | \$ 977,097,609 | \$— | \$— | \$ 977,097,609 |
| Short-Term Investment | | | | |
| Affiliated Investment Company | <u>32,287,542</u> | — | — | <u>32,287,542</u> |
| Total Investments in Securities | <u>\$1,009,385,151</u> | <u>\$—</u> | <u>\$—</u> | <u>\$1,009,385,151</u> |

(a) For a complete listing of investments and their industries, see the Portfolio of Investments.

Statement of Assets and Liabilities as of June 30, 2020 (Unaudited)

Assets

| | |
|---|----------------------|
| Investment in unaffiliated securities, at value (identified cost \$960,110,931) | \$ 977,097,609 |
| Investment in affiliated investment company, at value (identified cost \$32,287,542) | 32,287,542 |
| Cash denominated in foreign currencies (identified cost \$365,225) | 363,352 |
| Receivables: | |
| Dividends | 1,160,883 |
| Portfolio shares sold | 478,255 |
| Other assets | 5,328 |
| Total assets | <u>1,011,392,969</u> |

Liabilities

| | |
|----------------------------------|-----------------------|
| Payables: | |
| Investment securities purchased | 25,495,046 |
| Portfolio shares redeemed | 633,292 |
| Manager (See Note 3) | 534,203 |
| NYLIFE Distributors (See Note 3) | 190,509 |
| Shareholder communication | 64,816 |
| Professional fees | 23,964 |
| Trustees | 4,173 |
| Custodian | 785 |
| Accrued expenses | 13,821 |
| Total liabilities | <u>26,960,609</u> |
| Net assets | <u>\$ 984,432,360</u> |

Composition of Net Assets

| | |
|--|-----------------------|
| Shares of beneficial interest outstanding (par value of \$.001 per share) unlimited number of shares authorized | \$ 85,253 |
| Additional paid-in capital | <u>882,579,667</u> |
| | 882,664,920 |
| Total distributable earnings (loss) | <u>101,767,440</u> |
| Net assets | <u>\$ 984,432,360</u> |

Initial Class

| | |
|---|----------------------|
| Net assets applicable to outstanding shares | <u>\$ 88,923,686</u> |
| Shares of beneficial interest outstanding | <u>7,659,559</u> |
| Net asset value per share outstanding | <u>\$ 11.61</u> |

Service Class

| | |
|---|----------------------|
| Net assets applicable to outstanding shares | <u>\$895,508,674</u> |
| Shares of beneficial interest outstanding | <u>77,593,373</u> |
| Net asset value per share outstanding | <u>\$ 11.54</u> |

Statement of Operations for the six months ended June 30, 2020 (Unaudited)

Investment Income (Loss)

Income

| | |
|------------------------|-------------------|
| Dividends-unaffiliated | \$ 18,096,742 |
| Dividends-affiliated | <u>74,684</u> |
| Total income | <u>18,171,426</u> |

Expenses

| | |
|---|---------------|
| Manager (See Note 3) | 3,426,012 |
| Distribution/Service—Service Class (See Note 3) | 1,232,428 |
| Professional fees | 63,420 |
| Shareholder communication | 60,584 |
| Custodian | 18,813 |
| Trustees | 13,085 |
| Miscellaneous | <u>26,321</u> |

| | |
|----------------|------------------|
| Total expenses | <u>4,840,663</u> |
|----------------|------------------|

| | |
|------------------------------|-------------------|
| Net investment income (loss) | <u>13,330,763</u> |
|------------------------------|-------------------|

Realized and Unrealized Gain (Loss) on Investments and Foreign Currency Transactions

Net realized gain (loss) on:

| | |
|--------------------------------------|-------------|
| Unaffiliated investment transactions | (7,665,733) |
| Foreign currency transactions | <u>(31)</u> |

Net realized gain (loss) on investments and foreign

| | |
|-----------------------|--------------------|
| currency transactions | <u>(7,665,764)</u> |
|-----------------------|--------------------|

Net change in unrealized appreciation (depreciation) on:

| | |
|--|---------------|
| Unaffiliated investments | (173,183,253) |
| Translation of other assets and liabilities in foreign currencies | <u>1,371</u> |

Net change in unrealized appreciation (depreciation) on

| | |
|------------------------------------|----------------------|
| investments and foreign currencies | <u>(173,181,882)</u> |
|------------------------------------|----------------------|

Net realized and unrealized gain (loss) on investments and

| | |
|-------------------------------|----------------------|
| foreign currency transactions | <u>(180,847,646)</u> |
|-------------------------------|----------------------|

Net increase (decrease) in net assets resulting

| | |
|-----------------|-------------------------------|
| from operations | <u><u>\$(167,516,883)</u></u> |
|-----------------|-------------------------------|

Statements of Changes in Net Assets

for the six months ended June 30, 2020 (Unaudited) and the year ended December 31, 2019

| | 2020 | 2019 |
|--|----------------|-----------------|
| Increase (Decrease) in Net Assets | | |
| Operations: | | |
| Net investment income (loss) | \$ 13,330,763 | \$ 26,146,249 |
| Net realized gain (loss) on investments and foreign currency transactions | (7,665,764) | 58,177,918 |
| Net change in unrealized appreciation (depreciation) on investments and foreign currencies | (173,181,882) | 163,521,831 |
| Net increase (decrease) in net assets resulting from operations | (167,516,883) | 247,845,998 |
| Distributions to shareholders: | | |
| Initial Class | — | (6,045,255) |
| Service Class | — | (68,833,295) |
| Total distributions to shareholders | — | (74,878,550) |
| Capital share transactions: | | |
| Net proceeds from sale of shares | 36,531,901 | 38,010,038 |
| Net asset value of shares issued to shareholders in reinvestment of distributions | — | 74,878,550 |
| Cost of shares redeemed | (103,742,955) | (215,374,278) |
| Increase (decrease) in net assets derived from capital share transactions | (67,211,054) | (102,485,690) |
| Net increase (decrease) in net assets | (234,727,937) | 70,481,758 |
| Net Assets | | |
| Beginning of period | 1,219,160,297 | 1,148,678,539 |
| End of period | \$ 984,432,360 | \$1,219,160,297 |

Financial Highlights selected per share data and ratios

| Initial Class | Six months ended June 30, 2020* | Year ended December 31, | | | | |
|--|---------------------------------|-------------------------|-----------|-----------|-----------|-----------|
| | | 2019 | 2018 | 2017 | 2016 | 2015 |
| Net asset value at beginning of period | \$ 13.49 | \$ 11.68 | \$ 11.75 | \$ 10.66 | \$ 10.15 | \$ 13.42 |
| Net investment income (loss) (a) | 0.17 | 0.31 | 0.28 | 0.25 | 0.19 | 0.28 |
| Net realized and unrealized gain (loss) on investments | (2.05) | 2.39 | (0.32) | 1.49 | 0.88 | (2.25) |
| Net realized and unrealized gain (loss) on foreign currency transactions | 0.00 ‡ | (0.00)‡ | 0.14 | (0.16) | 0.08 | 0.13 |
| Total from investment operations | (1.88) | 2.70 | 0.10 | 1.58 | 1.15 | (1.84) |
| Less distributions: | | | | | | |
| From net investment income | — | (0.34) | (0.15) | (0.49) | (0.34) | (0.51) |
| From net realized gain on investments | — | (0.55) | (0.02) | — | (0.30) | (0.92) |
| Total distributions | — | (0.89) | (0.17) | (0.49) | (0.64) | (1.43) |
| Net asset value at end of period | \$ 11.61 | \$ 13.49 | \$ 11.68 | \$ 11.75 | \$ 10.66 | \$ 10.15 |
| Total investment return (b) | (13.94%)(c) | 23.26% | 0.80% | 14.72% | 11.43% | (14.35%) |
| Ratios (to average net assets)/Supplemental Data: | | | | | | |
| Net investment income (loss) | 2.71% †† | 2.41% | 2.31% | 2.11% | 1.76%(d) | 2.23% |
| Net expenses (e) | 0.67% †† | 0.68% | 0.76% | 0.76% | 0.75%(f) | 0.77% |
| Portfolio turnover rate | 34% | 47% | 84% | 30% | 35% | 43% |
| Net assets at end of period (in 000's) | \$ 88,924 | \$ 97,503 | \$ 81,716 | \$ 83,261 | \$ 75,772 | \$ 70,368 |

* Unaudited.

‡ Less than one cent per share.

†† Annualized.

(a) Per share data based on average shares outstanding during the period.

(b) Total return does not reflect any deduction of sales charges, mortality and expense charges, contract charges or administrative charges. For periods of less than one year, total return is not annualized.

(c) Total investment return may reflect adjustments to conform to generally accepted accounting principles.

(d) Without the custody fee reimbursement, net investment income (loss) would have been 1.74%.

(e) In addition to the fees and expenses which the Portfolio bears directly, it also indirectly bears a pro-rata share of the fees and expenses of the underlying funds in which it invests. Such indirect expenses are not included in the above expense ratios.

(f) Without the custody fee reimbursement, net expenses would have been 0.77%.

Financial Highlights selected per share data and ratios

| Service Class | Six months ended June 30, 2020* | Year ended December 31, | | | | |
|--|---------------------------------|-------------------------|--------------|--------------|--------------|--------------|
| | | 2019 | 2018 | 2017 | 2016 | 2015 |
| Net asset value at beginning of period | \$ 13.43 | \$ 11.63 | \$ 11.69 | \$ 10.62 | \$ 10.10 | \$ 13.36 |
| Net investment income (loss) (a) | 0.15 | 0.28 | 0.25 | 0.22 | 0.16 | 0.25 |
| Net realized and unrealized gain (loss) on investments | (2.04) | 2.37 | (0.32) | 1.47 | 0.89 | (2.24) |
| Net realized and unrealized gain (loss) on foreign currency transactions | 0.00 ‡ | (0.00)‡ | 0.14 | (0.16) | 0.08 | 0.13 |
| Total from investment operations | (1.89) | 2.65 | 0.07 | 1.53 | 1.13 | (1.86) |
| Less distributions: | | | | | | |
| From net investment income | — | (0.30) | (0.11) | (0.46) | (0.31) | (0.48) |
| From net realized gain on investments | — | (0.55) | (0.02) | — | (0.30) | (0.92) |
| Total distributions | — | (0.85) | (0.13) | (0.46) | (0.61) | (1.40) |
| Net asset value at end of period | \$ 11.54 | \$ 13.43 | \$ 11.63 | \$ 11.69 | \$ 10.62 | \$ 10.10 |
| Total investment return (b) | (14.07%)(c) | 22.95% | 0.55% | 14.44% | 11.15% | (14.57%) |
| Ratios (to average net assets)/Supplemental Data: | | | | | | |
| Net investment income (loss) | 2.46% †† | 2.15% | 2.08% | 1.87% | 1.52%(d) | 1.98% |
| Net expenses (e) | 0.92% †† | 0.93% | 1.01% | 1.01% | 1.00%(f) | 1.02% |
| Portfolio turnover rate | 34% | 47% | 84% | 30% | 35% | 43% |
| Net assets at end of period (in 000's) | \$ 895,509 | \$ 1,121,657 | \$ 1,066,963 | \$ 1,240,213 | \$ 1,160,397 | \$ 1,131,252 |

* Unaudited.

‡ Less than one cent per share.

†† Annualized.

(a) Per share data based on average shares outstanding during the period.

(b) Total return does not reflect any deduction of sales charges, mortality and expense charges, contract charges or administrative charges. For periods of less than one year, total return is not annualized.

(c) Total investment return may reflect adjustments to conform to generally accepted accounting principles.

(d) Without the custody fee reimbursement, net investment income (loss) would have been 1.50%.

(e) In addition to the fees and expenses which the Portfolio bears directly, it also indirectly bears a pro-rata share of the fees and expenses of the underlying funds in which it invests. Such indirect expenses are not included in the above expense ratios.

(f) Without the custody fee reimbursement, net expenses would have been 1.02%.

Notes to Financial Statements (Unaudited)

Note 1—Organization and Business

MainStay VP Funds Trust (the “Fund”) was organized as a Delaware statutory trust on February 1, 2011. The Fund is registered under the Investment Company Act of 1940, as amended (the “1940 Act”), as an open-end management investment company. The Fund is comprised of thirty-one separate series (collectively referred to as the “Portfolios”). These financial statements and notes relate to the MainStay VP Fidelity Institutional AM® Utilities Portfolio (the “Portfolio”), a “non-diversified” portfolio, as that term is defined in the 1940 Act, as interpreted or modified by regulatory authorities having jurisdiction, from time to time. Prior to November 30, 2018, MainStay VP Fidelity Institutional AM® Utilities Portfolio operated as a “diversified” portfolio.

Shares of the Portfolio are currently offered to certain separate accounts to fund variable annuity policies and variable universal life insurance policies issued by New York Life Insurance and Annuity Corporation (“NYLIAC”), a wholly-owned subsidiary of New York Life Insurance Company (“New York Life”) and may also be offered to fund variable annuity policies and variable universal life insurance policies issued by other insurance companies. NYLIAC allocates shares of the Portfolios to, among others, certain NYLIAC separate accounts. Shares of the Portfolio are also offered to the MainStay VP Conservative Allocation Portfolio, MainStay VP Moderate Allocation Portfolio, MainStay VP Moderate Growth Allocation Portfolio and MainStay VP Growth Allocation Portfolio, which operate as “funds-of-funds” and other variable insurance funds.

The Portfolio currently offers two classes of shares. Initial Class and Service Class shares commenced operations on February 17, 2012. Shares of the Portfolio are offered and are redeemed at a price equal to their respective net asset value (“NAV”) per share. No sales or redemption charge is applicable to the purchase or redemption of the Portfolio’s shares. Under the terms of the Fund’s multiple class plan adopted pursuant to Rule 18f-3 under the 1940 Act, the classes differ in that, among other things, Service Class shares of the Portfolio pay a combined distribution and service fee of 0.25% of average daily net assets attributable to Service Class shares of the Portfolio to the Distributor (as defined in Note 3(B)) pursuant to a plan adopted in accordance with Rule 12b-1 under the 1940 Act. Contract owners of variable annuity contracts are permitted to invest only in the Service Class shares.

The Portfolio’s investment objective is to seek total return.

Note 2—Significant Accounting Policies

The Portfolio is an investment company and accordingly follows the investment company accounting and reporting guidance of the Financial Accounting Standards Board (“FASB”) Accounting Standard Codification *Topic 946 Financial Services—Investment Companies*. The Portfolio prepares its financial statements in accordance with generally accepted accounting principles (“GAAP”) in the United States of America and follows the significant accounting policies described below.

(A) Securities Valuation. Investments are usually valued as of the close of regular trading on the New York Stock Exchange (the “Exchange”) (usually 4:00 p.m. Eastern time) on each day the Portfolio is open for business (“valuation date”).

The Board of Trustees of the Fund (the “Board”) adopted procedures establishing methodologies for the valuation of the Portfolio’s securities and other assets and delegated the responsibility for valuation determinations under those procedures to the Valuation Committee of the Fund (the “Valuation Committee”). The procedures state that, subject to the oversight of the Board and unless otherwise noted, the responsibility for the day-to-day valuation of portfolio assets (including fair value measurements for the Portfolio’s assets and liabilities) rests with New York Life Investment Management LLC (“New York Life Investments” or the “Manager”), aided to whatever extent necessary by the Subadvisor (as defined in Note 3(A)). To assess the appropriateness of security valuations, the Manager, the Subadvisor or the Portfolio’s third-party service provider, who is subject to oversight by the Manager, regularly compares prior day prices, prices on comparable securities and the sale prices to the prior and current day prices and challenges prices with changes exceeding certain tolerance levels with third-party pricing services or broker sources.

The Board authorized the Valuation Committee to appoint a Valuation Subcommittee (the “Subcommittee”) to establish the prices of securities for which market quotations are not readily available or the prices of which are not otherwise readily determinable under the procedures. The Subcommittee meets (in person, via electronic mail or via teleconference) on an as-needed basis. The Valuation Committee meets to ensure that actions taken by the Subcommittee were appropriate.

For those securities valued through either a standardized fair valuation methodology or a fair valuation measurement, the Subcommittee deals with such valuation and the Valuation Committee reviews and affirms, if appropriate, the reasonableness of the valuation based on such methodologies and measurements on a regular basis after considering information that is reasonably available and deemed relevant by the Valuation Committee. Any action taken by the Subcommittee with respect to the valuation of a portfolio security or other asset is submitted for review and ratification (if appropriate) to the Valuation Committee and the Board at the next regularly scheduled meeting.

“Fair value” is defined as the price the Portfolio would reasonably expect to receive upon selling an asset or liability in an orderly transaction to an independent buyer in the principal or most advantageous market for the asset or liability. Fair value measurements are determined within a framework that establishes a three-tier hierarchy that maximizes the use of observable market data and minimizes the use of unobservable inputs to establish a classification of fair value measurements for disclosure purposes. “Inputs” refer broadly to the assumptions that market participants would use in pricing the asset or liability, including assumptions about risk, such as the risk inherent in a particular valuation technique used to measure fair value using a pricing model and/or the risk inherent in the inputs for the valuation technique. Inputs may be observable or unobservable. Observable inputs reflect the assumptions market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Portfolio. Unobservable inputs reflect the Portfolio’s own assumptions about the assumptions market participants would use in pricing the asset or liability based on the information available. The inputs or methodology used for valuing assets or liabilities may not be an indication of the risks associated with investing in those assets or liabilities. The three-tier hierarchy of inputs is summarized below.

- Level 1—quoted prices in active markets for an identical asset or liability
- Level 2—other significant observable inputs (including quoted prices for a similar asset or liability in active markets, interest rates and yield curves, prepayment speeds, credit risk, etc.)
- Level 3—significant unobservable inputs (including the Portfolio's own assumptions about the assumptions that market participants would use in measuring fair value of an asset or liability)

The level of an asset or liability within the fair value hierarchy is based on the lowest level of an input, both individually and in the aggregate, that is significant to the fair value measurement. The aggregate value by input level of the Portfolio's assets and liabilities as of June 30, 2020 is included at the end of the Portfolio of Investments.

The Portfolio may use third-party vendor evaluations, whose prices may be derived from one or more of the following standard inputs, among others:

| | |
|--------------------------------|--|
| • Benchmark yields | • Reported trades |
| • Broker/dealer quotes | • Issuer spreads |
| • Two-sided markets | • Benchmark securities |
| • Bids/offers | • Reference data (corporate actions or material event notices) |
| • Industry and economic events | • Monthly payment information |

An asset or liability for which market values cannot be measured using the methodologies described above is valued by methods deemed reasonable in good faith by the Valuation Committee, following the procedures established by the Board, to represent fair value. Under these procedures, the Portfolio generally uses a market-based approach which may use related or comparable assets or liabilities, recent transactions, market multiples, book values and other relevant information. The Portfolio may also use an income-based valuation approach in which the anticipated future cash flows of the asset or liability are discounted to calculate fair value. Discounts may also be applied due to the nature and/or duration of any restrictions on the disposition of the asset or liability. Fair value represents a good faith approximation of the value of a security. Fair value determinations involve the consideration of a number of subjective factors, an analysis of applicable facts and circumstances and the exercise of judgment. As a result, it is possible that the fair value for a security determined in good faith in accordance with the Portfolio's valuation procedures may differ from valuations for the same security determined by other funds using their own valuation procedures. Although the Portfolio's valuation procedures are designed to value a security at the price the Portfolio may reasonably expect to receive upon the security's sale in an orderly transaction, there can be no assurance that any fair value determination thereunder would, in fact, approximate the amount that the Portfolio would actually realize upon the sale of the security or the price at which the security would trade if a reliable market price were readily available. During the six-month period ended June 30, 2020, there were no material changes to the fair value methodologies.

Securities which may be valued in this manner include, but are not limited to: (i) a security for which trading has been halted or suspended;

(ii) a debt security that has recently gone into default and for which there is not a current market quotation; (iii) a security of an issuer that has entered into a restructuring; (iv) a security that has been delisted from a national exchange; (v) a security for which the market price is not readily available from a third-party pricing source or, if so provided, does not, in the opinion of the Manager or the Subadvisor, reflect the security's market value; (vi) a security subject to trading collars for which no or limited trading takes place; and (vii) a security whose principal market has been temporarily closed at a time when, under normal conditions, it would be open. Securities valued in this manner are generally categorized as Level 3 in the hierarchy. As of June 30, 2020, no securities held by the Portfolio were fair valued in such a manner.

Certain securities held by the Portfolio may principally trade in foreign markets. Events may occur between the time the foreign markets close and the time at which the Portfolio's NAVs are calculated. These events may include, but are not limited to, situations relating to a single issuer in a market sector, significant fluctuations in U.S. or foreign markets, natural disasters, armed conflicts, governmental actions or other developments not tied directly to the securities markets. Should the Manager or the Subadvisor conclude that such events may have affected the accuracy of the last price of such securities reported on the local foreign market, the Subcommittee may, pursuant to procedures adopted by the Board, adjust the value of the local price to reflect the estimated impact on the price of such securities as a result of such events. In this instance, securities are generally categorized as Level 3 in the hierarchy. Additionally, certain foreign equity securities are also fair valued whenever the movement of a particular index exceeds certain thresholds. In such cases, the securities are fair valued by applying factors provided by a third-party vendor in accordance with valuation procedures adopted by the Board and are generally categorized as Level 2 in the hierarchy. As of June 30, 2020, no securities held by the Portfolio were fair valued in such a manner.

Equity securities are valued at the last quoted sales prices as of the close of regular trading on the relevant exchange on each valuation date. Securities that are not traded on the valuation date are valued at the mean of the last quoted bid and ask prices. Prices are normally taken from the principal market in which each security trades. These securities are generally categorized as Level 1 in the hierarchy.

Investments in mutual funds, including money market funds, are valued at their respective NAVs as of the close of the Exchange on the valuation date. These securities are generally categorized as Level 1 in the hierarchy.

Temporary cash investments acquired in excess of 60 days to maturity at the time of purchase are valued using the latest bid prices or using valuations based on a matrix system (which considers such factors as security prices, yields, maturities and ratings), both as furnished by independent pricing services. Temporary cash investments that mature in 60 days or less at the time of purchase ("Short-Term Investments") are valued using the amortized cost method of valuation, unless the use of such method would be inappropriate. The amortized cost method involves valuing a security at its cost on the date of purchase and thereafter assuming a constant amortization to maturity of the difference between such cost and the value on maturity date. Amortized cost approximates the current fair value of a security. Securities valued using

Notes to Financial Statements (continued)

the amortized cost method are not valued using quoted prices in an active market and are generally categorized as Level 2 in the hierarchy.

The information above is not intended to reflect an exhaustive list of the methodologies that may be used to value portfolio investments. The valuation procedures permit the use of a variety of valuation methodologies in connection with valuing portfolio investments. The methodology used for a specific type of investment may vary based on the market data available or other considerations. The methodologies summarized above may not represent the specific means by which portfolio investments are valued on any particular business day.

(B) Income Taxes. The Portfolio's policy is to comply with the requirements of the Internal Revenue Code of 1986, as amended (the "Internal Revenue Code"), applicable to regulated investment companies and to distribute all of its taxable income to the shareholders of the Portfolio within the allowable time limits.

The Manager evaluates the Portfolio's tax positions to determine if the tax positions taken meet the minimum recognition threshold in connection with accounting for uncertainties in income tax positions taken or expected to be taken for the purposes of measuring and recognizing tax liabilities in the financial statements. Recognition of tax benefits of an uncertain tax position is permitted only to the extent the position is "more likely than not" to be sustained assuming examination by taxing authorities. The Manager analyzed the Portfolio's tax positions taken on federal, state and local income tax returns for all open tax years (for up to three tax years) and has concluded that no provisions for federal, state and local income tax are required in the Portfolio's financial statements. The Portfolio's federal, state and local income tax and federal excise tax returns for tax years for which the applicable statutes of limitations have not expired are subject to examination by the Internal Revenue Service and state and local departments of revenue.

(C) Foreign Taxes. The Portfolio may be subject to foreign taxes on income and other transaction-based taxes imposed by certain countries in which it invests. A portion of the taxes on gains on investments or currency purchases/repatriation may be reclaimable. The Portfolio will accrue such taxes and reclaims as applicable, based upon its current interpretation of tax rules and regulations that exist in the markets in which it invests.

The Portfolio may be subject to taxation on realized capital gains, repatriation proceeds and other transaction-based taxes imposed by certain countries in which it invests. The Portfolio will accrue such taxes as applicable based upon its current interpretation of tax rules and regulations that exist in the market in which it invests. Capital gains taxes relating to positions still held are reflected as a liability on the Statement of Assets and Liabilities, as well as an adjustment to the Portfolio's net unrealized appreciation (depreciation). Taxes related to capital gains realized, if any, are reflected as part of net realized gain (loss) in the Statement of Operations. Changes in tax liabilities related to capital gains taxes on unrealized investment gains, if any, are reflected as part of the change in net unrealized appreciation (depreciation) on investments in the Statement of Operations. Transaction-based charges are generally assessed as a percentage of the transaction amount.

(D) Dividends and Distributions to Shareholders. Dividends and distributions are recorded on the ex-dividend date. The Portfolio intends to declare and pay dividends from net investment income and

distributions from net realized capital and currency gains, if any, at least annually. Unless a shareholder elects otherwise, all dividends and distributions are reinvested at NAV in the same class of shares of the Portfolio. Dividends and distributions to shareholders are determined in accordance with federal income tax regulations and may differ from determinations using GAAP.

(E) Security Transactions and Investment Income. The Portfolio records security transactions on the trade date. Realized gains and losses on security transactions are determined using the identified cost method. Dividend income is recognized on the ex-dividend date, net of any foreign tax withheld at the source, and interest income is accrued as earned using the effective interest rate method. Distributions received from real estate investment trusts may be classified as dividends, capital gains and/or return of capital.

Investment income and realized and unrealized gains and losses on investments of the Portfolio are allocated pro rata to the separate classes of shares based upon their relative net assets on the date the income is earned or realized and unrealized gains and losses are incurred.

The Portfolio may place a debt security on non-accrual status and reduce related interest income by ceasing current accruals and writing off all or a portion of any interest receivables when the collection of all or a portion of such interest has become doubtful. A debt security is removed from non-accrual status when the issuer resumes interest payments or when collectability of interest is reasonably assured.

(F) Expenses. Expenses of the Fund are allocated to the individual Portfolios in proportion to the net assets of the respective Portfolios when the expenses are incurred, except where direct allocations of expenses can be made. Expenses (other than fees incurred under the distribution and service plans, further discussed in Note 3(B), which are charged directly to the Service Class shares) are allocated to separate classes of shares pro rata based upon their relative net assets on the date the expenses are incurred. The expenses borne by the Portfolio, including those of related parties to the Portfolio, are shown in the Statement of Operations.

Additionally, the Portfolio may invest in mutual funds, which are subject to management fees and other fees that may cause the costs of investing in mutual funds to be greater than the costs of owning the underlying securities directly. These indirect expenses of mutual funds are not included in the amounts shown as expenses in the Portfolio's Statement of Operations or in the expense ratios included in the Financial Highlights.

(G) Use of Estimates. In preparing financial statements in conformity with GAAP, the Manager makes estimates and assumptions that affect the reported amounts and disclosures in the financial statements. Actual results could differ from those estimates.

(H) Repurchase Agreements. The Portfolio may enter into repurchase agreements (i.e., buy a security from another party with the agreement that it will be sold back in the future) to earn income. The Portfolio may enter into repurchase agreements only with counterparties, usually financial institutions, that are deemed by the Manager or the Subadvisor to be creditworthy, pursuant to guidelines established by the Board. During the term of any repurchase agreement, the Manager

or the Subadvisor will continue to monitor the creditworthiness of the counterparty. Under the 1940 Act, repurchase agreements are considered to be collateralized loans by the Portfolio to the counterparty secured by the securities transferred to the Portfolio.

Repurchase agreements are subject to counterparty risk, meaning the Portfolio could lose money by the counterparty's failure to perform under the terms of the agreement. The Portfolio mitigates this risk by ensuring the repurchase agreement is collateralized by cash, U.S. government securities, fixed income securities and/or other securities. The collateral is held by the Portfolio's custodian and valued daily on a mark to market basis to determine if the value, including accrued interest, exceeds the repurchase price. In the event of the counterparty's default on the obligation to repurchase, the Portfolio has the right to liquidate the collateral and apply the proceeds in satisfaction of the obligation. Under certain circumstances, such as in the event of default or bankruptcy by the counterparty, realization and/or retention of the collateral may be limited or subject to delay, to legal proceedings and possible realized loss to the Portfolio. As of June 30, 2020, the Portfolio did not hold any repurchase agreements.

(I) Foreign Currency Transactions. The Portfolio's books and records are maintained in U.S. dollars. Prices of securities denominated in foreign currency amounts are translated into U.S. dollars at the mean between the buying and selling rates last quoted by any major U.S. bank at the following dates:

- (i) market value of investment securities, other assets and liabilities—at the valuation date; and
- (ii) purchases and sales of investment securities, income and expenses—at the date of such transactions.

The assets and liabilities that are denominated in foreign currency amounts are presented at the exchange rates and market values at the close of the period. The realized and unrealized changes in net assets arising from fluctuations in exchange rates and market prices of securities are not separately presented.

Net realized gain (loss) on foreign currency transactions represents net currency gains or losses realized as a result of differences between the amounts of securities sale proceeds or purchase cost, dividends, interest and withholding taxes as recorded on the Portfolio's books, and the U.S. dollar equivalent amount actually received or paid. Net currency gains or losses from valuing such foreign currency denominated assets and liabilities, other than investments at valuation date exchange rates, are reflected in unrealized foreign exchange gains or losses.

(J) Securities Lending. In order to realize additional income, the Portfolio may engage in securities lending, subject to the limitations set forth in the 1940 Act and relevant guidance by the staff of the Securities and Exchange Commission ("SEC"). If the Portfolio engages in securities lending, the Portfolio will lend through its custodian, currently State Street Bank and Trust Company ("State Street"), acting as securities lending agent on behalf of the Portfolio. Under the current arrangement, State Street will manage the Portfolio's collateral in accordance with the securities lending agency agreement between the Portfolio and State Street, and indemnify the Portfolio against counterparty risk. The loans will be collateralized by cash (which may be invested in a money market fund) and/or non-cash collateral (which may include U.S. Treasury

securities and/or U.S. government agency securities issued or guaranteed by the United States government or its agencies or instrumentalities) at least equal at all times to the market value of the securities loaned. The Portfolio bears the risk of delay in recovery of, or loss of rights in, the securities loaned. The Portfolio may also record a realized gain or loss on securities deemed sold due to a borrower's inability to return securities on loan. The Portfolio bears the risk of any loss on investment of cash collateral. The Portfolio will receive compensation for lending its securities in the form of fees or it will retain a portion of interest earned on the investment of any cash collateral. The Portfolio will also continue to receive interest and dividends on the securities loaned and any gain or loss in the market price of the securities loaned that may occur during the term of the loan will be for the account of the Portfolio. Income earned from securities lending activities, if any, is reflected in the Statement of Operations. As of June 30, 2020, the Portfolio did not have any portfolio securities on loan.

(K) Foreign Securities Risk. The Portfolio may invest in foreign securities, which carry certain risks that are in addition to the usual risks inherent in domestic securities. These risks include those resulting from currency fluctuations, future adverse political or economic developments and possible imposition of currency exchange blockages or other foreign governmental laws or restrictions. These risks are likely to be greater in emerging markets than in developed markets. The ability of issuers of securities held by the Portfolio to meet their obligations may be affected by, among other things, economic or political developments in a specific country, industry or region.

(L) Indemnifications. Under the Fund's organizational documents, its officers and trustees are indemnified against certain liabilities that may arise out of performance of their duties to the Fund. Additionally, in the normal course of business, the Portfolio enters into contracts with third-party service providers that contain a variety of representations and warranties and that may provide general indemnifications. The Portfolio's maximum exposure under these arrangements is unknown, as this would involve future claims that may be made against the Portfolio that have not yet occurred. The Manager believes that the risk of loss in connection with these potential indemnification obligations is remote. However, there can be no assurance that material liabilities related to such obligations will not arise in the future, which could adversely impact the Portfolio.

Note 3—Fees and Related Party Transactions

(A) Manager and Subadvisor. New York Life Investments, a registered investment adviser and an indirect, wholly-owned subsidiary of New York Life, serves as the Portfolio's Manager pursuant to an Amended and Restated Management Agreement ("Management Agreement"). The Manager provides offices, conducts clerical, record-keeping and bookkeeping services, and keeps most of the financial and accounting records required to be maintained by the Portfolio. Except for the portion of salaries and expenses that are the responsibility of the Portfolio, the Manager pays the salaries and expenses of all personnel affiliated with the Portfolio and certain operational expenses of the Portfolio. The Portfolio reimburses New York Life Investments in an amount equal to the portion of the compensation of the Chief Compliance Officer attributable to the Portfolio. FIAM LLC ("FIAM or the "Subadvisor") a registered investment adviser, serves as Subadvisor to

Notes to Financial Statements (continued)

the Portfolio and is responsible for the day-to-day portfolio management of the Portfolio. Pursuant to the terms of a Subadvisory Agreement ("Subadvisory Agreement") between New York Life Investments and FIAM, New York Life Investments pays for the services of the Subadvisor.

The Fund, on behalf of the Portfolio, pays New York Life Investments in its capacity as the Portfolio's investment manager and administrator, pursuant to the Management Agreement, a monthly fee for the services performed and the facilities furnished at an annual percentage of the Portfolio's average daily net assets as follows: 0.64% up to \$1 billion; 0.61% from \$1 billion to \$3 billion; and 0.60% in excess of \$3 billion. During the six-month period ended June 30, 2020, the effective management fee rate was 0.64%.

During the six-month period ended June 30, 2020, New York Life Investments earned fees from the Portfolio in the amount of \$3,426,012 and paid the Subadvisor in the amount of \$1,350,067.

State Street provides sub-administration and sub-accounting services to the Portfolio pursuant to an agreement with New York Life Investments. These services include calculating the daily NAVs of the Portfolio, maintaining the general ledger and sub-ledger accounts for the calculation of the Portfolio's NAVs and assisting New York Life Investments in

conducting various aspects of the Portfolio's administrative operations. For providing these services to the Portfolio, State Street is compensated by New York Life Investments.

Pursuant to an agreement between the Fund and New York Life Investments, New York Life Investments is responsible for providing or procuring certain regulatory reporting services for the Portfolio. The Portfolio will reimburse New York Life Investments for the actual costs incurred by New York Life Investments in connection with providing or procuring these services for the Portfolio.

(B) Distribution and Service Fees. The Fund, on behalf of the Portfolio, has entered into a distribution agreement with NYLIFE Distributors LLC (the "Distributor"), an indirect, wholly-owned subsidiary of New York Life. The Portfolio has adopted a distribution plan (the "Plan") in accordance with the provisions of Rule 12b-1 under the 1940 Act. Under the Plan, the Distributor has agreed to provide, through its affiliates or independent third parties, various distribution-related, shareholder and administrative support services to the Service Class shareholders. For its services, the Distributor is entitled to a combined distribution and service fee accrued daily and paid monthly at an annual rate of 0.25% of the average daily net assets attributable to the Service Class shares of the Portfolio.

(C) Investments in Affiliates (in 000's). During the six-month period ended June 30, 2020, purchases and sales transactions, income earned from investments and shares held of investment companies managed by New York Life Investments or its affiliates were as follows:

| Affiliated Investment Company | Value, Beginning of Period | Purchases at Cost | Proceeds from Sales | Net Realized Gain/(Loss) on Sales | Change in Unrealized Appreciation/(Depreciation) | Value, End of Period | Dividend Income | Other Distributions | Shares End of Period |
|---|----------------------------|-------------------|---------------------|-----------------------------------|--|----------------------|-----------------|---------------------|----------------------|
| MainStay U.S. Government Liquidity Fund | \$51,568 | \$169,584 | \$(188,864) | \$— | \$— | \$32,288 | \$75 | \$— | 32,288 |

Note 4—Federal Income Tax

As of June 30, 2020, the cost and unrealized appreciation (depreciation) of the Portfolio's investment portfolio, including applicable derivative contracts and other financial instruments, as determined on a federal income tax basis, was as follows:

| | Gross Federal Tax Cost | Gross Unrealized Appreciation | Net Unrealized Appreciation/Depreciation |
|---------------------------|------------------------|-------------------------------|--|
| Investments in Securities | \$1,000,870,875 | \$61,670,867 | \$(53,156,591) |
| | | | \$8,514,276 |

During the year ended December 31, 2019, the tax character of distributions paid as reflected in the Statements of Changes in Net Assets was as follows:

| 2019 | |
|--|--|
| Tax-Based Distributions from Ordinary Income | Tax-Based Distributions from Long-Term Gains |
| \$26,816,286 | \$48,062,264 |

Note 5—Custodian

State Street is the custodian of cash and securities held by the Portfolio. Custodial fees are charged to the Portfolio based on the Portfolio's net assets and/or the market value of securities held by the Portfolio and the number of certain transactions incurred by the Portfolio.

Note 6—Line of Credit

The Portfolio and certain other funds managed by New York Life Investments maintain a line of credit with a syndicate of banks in order to secure a source of funds for temporary purposes to meet unanticipated or excessive redemption requests.

Effective July 28, 2020, under the credit agreement (the "Credit Agreement"), the aggregate commitment amount is \$600,000,000 with an additional uncommitted amount of \$100,000,000. The commitment fee is an annual rate of 0.15% of the average commitment amount payable quarterly, regardless of usage, to JP Morgan Chase Bank NA, who serves as the agent to the syndicate. The commitment fee is allocated among the Portfolio and certain other funds managed by New York Life Investments based upon their respective net assets and other factors. Interest on any revolving credit loan is charged based upon the Federal Funds Rate or the one-month London Interbank Offered Rate ("LIBOR"), whichever is higher. The Credit Agreement expires on

July 27, 2021, although the Portfolio, certain other funds managed by New York Life Investments and the syndicate of banks may renew the Credit Agreement for an additional year on the same or different terms or enter into a credit agreement with a different syndicate of banks. Prior to July 28, 2020, the aggregate commitment amount and the commitment fee were the same as those under the current Credit Agreement, but State Street served as agent to the syndicate. During the six-month period ended June 30, 2020, there were no borrowings made or outstanding with respect to the Portfolio under the Credit Agreement or the credit agreement for which State Street served as agent.

Note 7—Interfund Lending Program

Pursuant to an exemptive order issued by the SEC, the Portfolio, along with certain other funds managed by New York Life Investments, may participate in an interfund lending program. The interfund lending program provides an alternative credit facility that permits the Portfolio and certain other funds managed by New York Life Investments to lend or borrow money for temporary purposes directly to or from one another subject to the conditions of the exemptive order. During the six-month period ended June 30, 2020, there were no interfund loans made or outstanding with respect to the Portfolio.

Note 8—Purchases and Sales of Securities (in 000's)

During the six-month period ended June 30, 2020, purchases and sales of securities, other than short-term securities, were \$355,650 and \$365,907, respectively.

The Portfolio may purchase securities from or sell securities to other portfolios managed by the Subadvisor. These interportfolio transactions are primarily used for cash management purposes and are made pursuant to Rule 17a-7 under the 1940 Act. The Rule 17a-7 transactions during the six-month period ended June 30, 2020, were as follows:

| Purchases (000's) | Sales (000's) | Realized Gain / (Loss) (000's) |
|----------------------|------------------|--------------------------------------|
| \$89 | \$43,277 | \$2,655 |

Note 9—Capital Share Transactions

Transactions in capital shares for the six-month period ended June 30, 2020 and the year ended December 31, 2019, were as follows:

| Initial Class | Shares | Amount |
|---|-----------|--------------|
| Six-month period ended June 30, 2020: | | |
| Shares sold | 797,676 | \$ 9,468,660 |
| Shares redeemed | (364,482) | (4,365,461) |
| Net increase (decrease) | 433,194 | \$ 5,103,199 |
| Year ended December 31, 2019: | | |
| Shares sold | 250,314 | \$ 3,268,910 |
| Shares issued to shareholders in reinvestment of distributions | 455,955 | 6,045,255 |
| Shares redeemed | (475,971) | (6,266,090) |
| Net increase (decrease) | 230,298 | \$ 3,048,075 |

| Service Class | Shares | Amount |
|---|--------------|-----------------|
| Six-month period ended June 30, 2020: | | |
| Shares sold | 2,248,261 | \$ 27,063,241 |
| Shares redeemed | (8,174,847) | (99,377,494) |
| Net increase (decrease) | (5,926,586) | \$ (72,314,253) |
| Year ended December 31, 2019: | | |
| Shares sold | 2,653,770 | \$ 34,741,128 |
| Shares issued to shareholders in reinvestment of distributions | 5,212,768 | 68,833,295 |
| Shares redeemed | (16,107,348) | (209,108,188) |
| Net increase (decrease) | (8,240,810) | \$(105,533,765) |

Note 10—Recent Accounting Pronouncement

In March 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2020-04 ("ASU 2020-04"), which provides optional guidance to ease the potential accounting burden associated with transitioning away from LIBOR and other reference rates that are expected to be discontinued. ASU 2020-04 is effective immediately upon release of the update on March 12, 2020 through December 31, 2022. At this time, the Manager is evaluating the implications of certain other provisions of ASU 2020-04 related to new disclosure requirements and any impact on the financial statement disclosures has not yet been determined.

Notes to Financial Statements (continued)

Note 11—Subsequent Events

In connection with the preparation of the financial statements of the Portfolio as of and for the six-month period ended June 30, 2020, events and transactions subsequent to June 30, 2020, through the date the financial statements were issued have been evaluated by the Manager for possible adjustment and/or disclosure. No subsequent events requiring financial statement adjustment or disclosure have been identified.

Note 12—Other Matters

An outbreak of COVID-19, first detected in December 2019, has developed into a global pandemic and has resulted in travel restrictions, closure of international borders, certain businesses and securities markets, restrictions on securities trading activities, prolonged quarantines, supply chain disruptions, and lower consumer demand, as well as general concern and uncertainty. The continued impact of COVID-19 is uncertain and could further adversely affect the global economy, national economies, individual issuers and capital markets in unforeseeable ways and result in a substantial and extended economic downturn. Developments that disrupt global economies and financial markets, such as COVID-19, may magnify factors that affect the Portfolio's performance.

Discussion of the Operation and Effectiveness of the Portfolio's Liquidity Risk Management Program (Unaudited)

In compliance with Rule 22e-4 under the Investment Company Act of 1940, as amended (the "Liquidity Rule"), the Portfolio has adopted and implemented a liquidity risk management program (the "Program"), which New York Life Investment Management LLC believes is reasonably designed to assess and manage the Portfolio's liquidity risk. The Board designated New York Life Investment Management LLC as administrator of the Program (the "Administrator"). The Administrator has established a Liquidity Risk Management Committee to assist the Administrator in the implementation and day-to-day administration of the Program and to otherwise support the Administrator in fulfilling its responsibilities under the Program.

At a meeting of the Board held on March 11, 2020, the Administrator provided the Board with a written report addressing the Program's operation, adequacy and effectiveness of implementation for the period from December 1, 2018 through December 31, 2019, as required under the Liquidity Rule. The report noted that the Administrator concluded that (i) the Program operated effectively to assess and manage the Portfolio's liquidity risk, (ii) the Program has been adequately and effectively implemented to monitor and, as applicable, respond to the Portfolio's liquidity developments and (iii) the Portfolio's investment strategy continues to be appropriate for an open-end portfolio.

In accordance with the Program, the Portfolio's liquidity risk is assessed no less frequently than annually taking into consideration certain factors, as applicable, such as (i) investment strategy and liquidity of portfolio investments, (ii) short-term and long-term cash flow projections and (iii) holdings of cash and cash equivalents and borrowing arrangements and other funding sources. Certain factors are considered under both normal and reasonably foreseeable stressed conditions.

Each Portfolio portfolio investment is classified into one of four liquidity categories. The classification is based on a determination of the number of days it is reasonably expected to take to convert the investment into cash, or sell or dispose of the investment, in current market conditions without significantly changing the market value of the investment. The Administrator has delegated liquidity classification determinations to the Portfolio's subadvisor, subject to appropriate oversight by the Administrator, and classification determinations are made by taking into account the Portfolio's reasonably anticipated trade size, various market, trading and investment-specific considerations, as well as market depth, and, in certain cases, third-party vendor data.

The Liquidity Rule requires portfolios that do not primarily hold assets that are highly liquid investments to adopt a minimum amount of net assets that must be invested in highly liquid investments that are assets (an "HLIM"). In addition, the Liquidity Rule limits a portfolio's investments in illiquid investments. Specifically, the Liquidity Rule prohibits acquisition of illiquid investments if doing so would result in a portfolio holding more than 15% of its net assets in illiquid investments that are assets. The Program includes provisions reasonably designed to determine, periodically review and comply with the HLIM requirement, as applicable, and to comply with the 15% limit on illiquid investments.

Proxy Voting Policies and Procedures and Proxy Voting Record

A description of the policies and procedures that New York Life Investments uses to vote proxies related to the Portfolio's securities is available free of charge upon request (i) by calling 800-598-2019; (ii) by visiting New York Life Investments' website at <https://www.nylinvestments.com/mainstay/products-and-performance/mainstay-vp-funds-trust>; or (iii) by visiting the SEC's website at www.sec.gov.

The Portfolio is required to file with the SEC its proxy voting record for the 12-month period ending June 30 on Form N-PX. The Portfolio's most recent Form N-PX or proxy voting record is available free of charge upon request (i) by calling 800-598-2019; (ii) by visiting New York Life Investments' website at <https://www.nylinvestments.com/mainstay/products-and-performance/mainstay-vp-funds-trust>; or (iii) by visiting the SEC's website at www.sec.gov.

Shareholder Reports and Quarterly Portfolio Disclosure

The Portfolio is required to file its complete schedule of portfolio holdings with the SEC 60 days after its first and third fiscal quarter on Form N-PORT. The Portfolio's holdings report is available free of charge upon request by calling 800-598-2019 or by visiting the SEC's website at www.sec.gov.

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MainStay VP Portfolios

MainStay VP offers a wide range of Portfolios. The full array of MainStay VP offerings is listed here, with information about the manager, subadvisors, legal counsel, and independent registered public accounting firm.

Equity Portfolios

MainStay VP Emerging Markets Equity Portfolio
MainStay VP Epoch U.S. Equity Yield Portfolio
MainStay VP Fidelity Institutional AM[®] Utilities Portfolio†
MainStay VP MacKay Common Stock Portfolio
MainStay VP MacKay Growth Portfolio
MainStay VP MacKay International Equity Portfolio
MainStay VP MacKay Mid Cap Core Portfolio
MainStay VP MacKay S&P 500 Index Portfolio
MainStay VP MacKay Small Cap Core Portfolio
MainStay VP Mellon Natural Resources Portfolio
MainStay VP Small Cap Growth Portfolio
MainStay VP T. Rowe Price Equity Income Portfolio
MainStay VP Winslow Large Cap Growth Portfolio

Mixed Asset Portfolios

MainStay VP Balanced Portfolio
MainStay VP Income Builder Portfolio
MainStay VP Janus Henderson Balanced Portfolio
MainStay VP MacKay Convertible Portfolio

Income Portfolios

MainStay VP Bond Portfolio
MainStay VP Floating Rate Portfolio
MainStay VP Indexed Bond Portfolio
MainStay VP MacKay Government Portfolio
MainStay VP MacKay High Yield Corporate Bond Portfolio
MainStay VP MacKay Unconstrained Bond Portfolio
MainStay VP PIMCO Real Return Portfolio

Money Market

MainStay VP U.S. Government Money Market Portfolio

Alternative

MainStay VP CBRE Global Infrastructure Portfolio
MainStay VP IQ Hedge Multi-Strategy Portfolio

Asset Allocation Portfolios

MainStay VP Conservative Allocation Portfolio
MainStay VP Growth Allocation Portfolio
MainStay VP Moderate Allocation Portfolio
MainStay VP Moderate Growth Allocation Portfolio

Manager

New York Life Investment Management LLC

New York, New York

Subadvisors

Brown Advisory LLC

Baltimore, Maryland

Candriam Belgium S.A.*

Brussels, Belgium

CBRE Clarion Securities LLC

Radnor, Pennsylvania

Epoch Investment Partners, Inc.

New York, New York

FIAM LLC

Smithfield, Rhode Island

IndexIQ Advisors LLC*

New York, New York

Janus Capital Management LLC

Denver, Colorado

MacKay Shields LLC*

New York, New York

Mellon Investments Corporation

Boston, Massachusetts

NYL Investors LLC*

New York, New York

Pacific Investment Management Company LLC

Newport Beach, California

Segall Bryant & Hamill, LLC

Chicago, Illinois

T. Rowe Price Associates, Inc.

Baltimore, Maryland

Winslow Capital Management, LLC

Minneapolis, Minnesota

Distributor

NYLIFE Distributors LLC*

Jersey City, New Jersey

Custodian

State Street Bank and Trust Company

Boston, Massachusetts

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP

New York, New York

Legal Counsel

Dechert LLP

Washington, District of Columbia

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2020 Semiannual Report

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New York Life Insurance Company

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New York Life Investment Management LLC is the investment manager to the MainStay VP Funds Trust

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