

MainStay VP MacKay Growth Portfolio

Message from the President and Semiannual Report

Unaudited | June 30, 2020

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If you already elected to receive shareholder reports electronically, you will not be affected by this change and you need not take any action. At any time, you may elect to receive reports and other communications from the insurance company electronically by following the instructions provided by the insurance company.

You may elect to receive all future shareholder reports in paper form free of charge. You can inform the insurance company that you wish to receive paper copies of reports by following the instructions provided by the insurance company. Your election to receive reports in paper form will apply to all portfolio companies available under your contract.

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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.

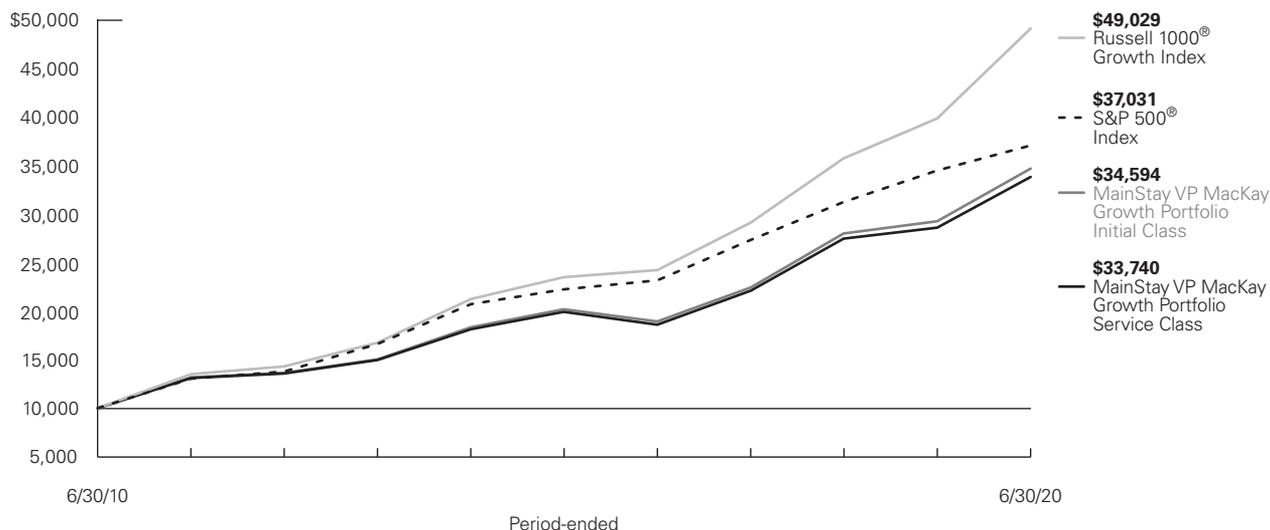
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Investors should refer to the Portfolio's Summary Prospectus and/or Prospectus and consider the Portfolio's investment objectives, strategies, risks, charges and expenses carefully before investing. The Summary Prospectus and/or Prospectus contain 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 ²	Six Months	One Year	Five Years	Ten Years	Gross Expense Ratio ³
Initial Class Shares	1/29/1993	6.75%	18.44%	11.38%	13.21%	0.72%
Service Class Shares	6/5/2003	6.62	18.15	11.10	12.93	0.97

Benchmark Performance	Six Months	One Year	Five Years	Ten Years
Russell 1000 [®] Growth Index ⁴	9.81%	23.28%	15.89%	17.23%
S&P 500 [®] Index ⁵	-3.08	7.51	10.73	13.99
Morningstar Large Growth Category Average ⁶	7.84	17.34	12.84	15.12

- 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.
- Effective January 11, 2013 and July 29, 2016, the Portfolio modified its principal investment strategies in connection with changes in the Portfolio's Subadvisor. The past performance in the bar chart and table reflect the Subadvisors and strategies in place during their respective time periods.
- 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 Russell 1000[®] Growth Index is the Portfolio's primary broad-based securities market index for comparison purposes. The Russell 1000[®] Growth Index measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000[®] Index companies with higher price-to-book ratios and higher forecasted growth values. Results assume reinvestment of all dividends and capital gains. An investment cannot be made directly in an index.
- The S&P 500[®] Index is the Portfolio's secondary benchmark. "S&P 500[®]" is a trademark of The McGraw-Hill Companies, Inc. The S&P 500[®] Index is widely regarded as the standard index for measuring large-cap U.S. stock market performance. Results assume reinvestment of all dividends and capital gains. An investment cannot be made directly in an index.
- The Morningstar Large Growth Category Average is representative of funds that invest primarily in big U.S. companies that are projected to grow faster than other large-cap stocks. Stocks in the top 70% of the capitalization of the U.S. equity market are defined as large cap. Growth is defined based on fast growth and high valuations. Most of these funds focus on companies in rapidly expanding industries. 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 MacKay Growth 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	\$1,067.50	\$3.70	\$1,021.28	\$3.62	0.72%
Service Class Shares	\$1,000.00	\$1,066.20	\$4.98	\$1,020.04	\$4.87	0.97%

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)

Software	21.4%	Food & Staples Retailing	0.9
Internet & Direct Marketing Retail	10.4	Multiline Retail	0.9
Technology Hardware, Storage & Peripherals	8.9	Capital Markets	0.7
Interactive Media & Services	8.7	Professional Services	0.7
IT Services	8.4	Exchange-Traded Fund	0.6
Biotechnology	7.1	Hotels, Restaurants & Leisure	0.6
Semiconductors & Semiconductor Equipment	6.9	Beverages	0.5
Health Care Providers & Services	5.5	Health Care Equipment & Supplies	0.5
Specialty Retail	2.9	Health Care Technology	0.3
Equity Real Estate Investment Trusts	2.1	Household Products	0.3
Entertainment	1.8	Personal Products	0.3
Life Sciences Tools & Services	1.7	Textiles, Apparel & Luxury Goods	0.3
Automobiles	1.5	Oil, Gas & Consumable Fuels	0.2
Aerospace & Defense	1.4	Air Freight & Logistics	0.1
Media	1.4	Short-Term Investment	0.1
Road & Rail	1.1	Other Assets, Less Liabilities	-0.1
Pharmaceuticals	1.0		<u>100.0%</u>
Electronic Equipment, Instruments & Components	0.9		

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. Microsoft Corp.	6. Visa, Inc., Class A
2. Apple, Inc.	7. UnitedHealth Group, Inc.
3. Amazon.com, Inc.	8. NVIDIA Corp.
4. Alphabet, Inc.	9. Mastercard, Inc., Class A
5. Facebook, Inc., Class A	10. Adobe, Inc.

Portfolio Management Discussion and Analysis (Unaudited)

Answers to the questions reflect the views of portfolio managers Migene Kim, CFA, and Mona Patni of MacKay Shields LLC, the Portfolio's Subadvisor.

How did MainStay VP MacKay Growth Portfolio 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 MacKay Growth Portfolio returned 6.75% for Initial Class shares and 6.62% for Service Class shares. Over the same period, both share classes underperformed the 9.81% return of the Russell 1000® Growth Index, which is the Portfolio's primary benchmark, and outperformed the -3.08% return of the S&P 500® Index, which is a secondary benchmark of the Portfolio. For the six months ended June 30, 2020, both share classes underperformed the 7.84% return of the Morningstar Large Growth Category Average.¹

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

With the 11-year equity bull market abruptly ending due to the social and economic impact of the COVID-19 pandemic, global equity markets were subject to extreme volatility and correlation during the reporting period. While the CBOE Volatility Index came down after peaking on March 16th, volatility still remained elevated as uncertainties around reopening plans and vaccine/treatment progress persisted. This general market environment, with high volatility and frequent oscillation between positive and negative sentiments, did present occasional liquidity challenges, requiring us to be particularly prudent in terms of trade implementation and risk management. However, during the reporting period, we did not see liquidity events meaningfully impact the Portfolio's performance.

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

Both during and after the steep market decline that occurred in March 2020, growth-oriented stocks outperformed their value-oriented counterparts, accentuating a multi-year trend. Investors regarded familiar large-cap growth stocks as "safe," while shunning cheaper stocks in areas such as energy, financials and industrials. Consequently, the spread² between the Russell 1000® Growth Index and the Russell 1000® Value Index widened to historic levels. Value-oriented investment vehicles experienced major drawdowns during the first quarter of 2020. The Portfolio's momentum-based stock selection signals, which capture historical price trends, performed well during the first quarter, mitigating some of the headwinds from value, but momentum-driven investments were subject to a sharp, volatile sell-off during the second quarter amid market inflection. Quality and profitability signals mitigated downside risk, particularly

during the March market downturn. However, hedge fund sentiment proved an ineffective indicator as the hedge fund community had a challenging time coping with market turmoil. In short, the reporting period did not present a conducive environment for stock selection. Nevertheless, the Portfolio fared better than the underlying model as diversification and risk management with respect to style mitigated some downside risk.

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

During the reporting period, the strongest positive contributors to the Portfolio's benchmark-relative performance were the materials and consumer staples sectors. (Contributions take weightings and total returns into account.) During the same period, the most significant detractors from benchmark-relative performance were the technology, consumer discretionary, and health care sectors.

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

The stocks providing the strongest positive contributions to the Portfolio's absolute performance during the reporting period included Internet & direct marketing retailer Amazon.com, systems software developer Microsoft and consumer electronics maker Apple. During the same period, the most significant detractors from absolute performance were cruise line operator Norwegian Cruise Line Holdings, life & health insurer Athene Holding and aerospace & defense contractor Boeing.

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

During the reporting period, the Portfolio's largest initial purchase was in shares of electric car maker Tesla, while its largest increased position size was in software developer Microsoft Corporation. During the same period, the Portfolio's largest full sale was its position in semiconductor maker Texas Instruments, while its largest decreased position size was in enterprise software and services provider Oracle.

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

Relative to the Russell 1000® Growth Index, the Portfolio's most substantial exposure increases during the reporting period were in the industrials and communication services sectors.

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

2. The terms "spread" and "yield spread" may refer to the difference in yield between a security or type of security and comparable U.S. Treasury issues. The terms may also refer to the difference in yield between two specific securities or types of securities at a given time.

Conversely, the Portfolio's largest decreases in benchmark-relative sector exposures were in the consumer staples and financials sectors.

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

As of June 30, 2020, the Portfolio's most substantially overweight positions relative to the Russell 1000® Growth Index

were in the information technology and consumer discretionary sectors. As of the same date, the Portfolio held its most substantially underweight positions relative to the Index in the consumer staples and industrials sectors.

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 99.4%†		
Aerospace & Defense 1.4%		
Lockheed Martin Corp.	20,204	\$ 7,372,844
Northrop Grumman Corp.	5,255	1,615,597
		<u>8,988,441</u>
Air Freight & Logistics 0.1%		
XPO Logistics, Inc. (a)	11,110	858,247
Automobiles 1.5%		
Tesla, Inc. (a)	9,259	9,997,961
Beverages 0.5%		
Coca-Cola Co.	23,197	1,036,442
PepsiCo., Inc.	18,492	2,445,752
		<u>3,482,194</u>
Biotechnology 7.1%		
AbbVie, Inc.	110,924	10,890,518
Alexion Pharmaceuticals, Inc. (a)	16,050	1,801,452
Alkermes PLC (a)	94,753	1,838,682
Amgen, Inc.	36,390	8,582,946
Biogen, Inc. (a)	15,564	4,164,148
Exelixis, Inc. (a)	153,412	3,642,001
Gilead Sciences, Inc.	37,528	2,887,404
Incyte Corp. (a)	41,835	4,349,585
Moderna, Inc. (a)	12,006	770,905
Regeneron Pharmaceuticals, Inc. (a)	9,964	6,214,049
United Therapeutics Corp. (a)	14,621	1,769,141
Vertex Pharmaceuticals, Inc. (a)	498	144,574
		<u>47,055,405</u>
Capital Markets 0.7%		
LPL Financial Holdings, Inc.	45,290	3,550,736
Moody's Corp.	3,397	933,258
S&P Global, Inc.	884	291,260
		<u>4,775,254</u>
Electronic Equipment, Instruments & Components 0.9%		
Jabil, Inc.	110,641	3,549,363
Tech Data Corp. (a)(b)	16,680	2,418,600
		<u>5,967,963</u>
Entertainment 1.8%		
Activision Blizzard, Inc.	22,512	1,708,661
Electronic Arts, Inc. (a)	24,671	3,257,806
Lions Gate Entertainment Corp., Class B (a)	131,687	899,422

	Shares	Value
Entertainment (continued)		
Netflix, Inc. (a)	11,290	\$ 5,137,402
Roku, Inc. (a)	4,546	529,745
		<u>11,533,036</u>
Equity Real Estate Investment Trusts 2.1%		
American Tower Corp.	18,357	4,746,019
Equinix, Inc.	7,240	5,084,652
SBA Communications Corp.	12,742	3,796,096
		<u>13,626,767</u>
Food & Staples Retailing 0.9%		
Costco Wholesale Corp.	5,565	1,687,364
Kroger Co.	23,136	783,153
Sprouts Farmers Market, Inc. (a)	132,129	3,381,181
		<u>5,851,698</u>
Health Care Equipment & Supplies 0.5%		
West Pharmaceutical Services, Inc.	14,521	3,298,736
Health Care Providers & Services 5.5%		
AmerisourceBergen Corp.	38,184	3,847,802
Anthem, Inc.	16,408	4,314,976
Cardinal Health, Inc.	80,503	4,201,452
DaVita, Inc. (a)	17,119	1,354,798
Humana, Inc.	11,664	4,522,716
McKesson Corp.	28,525	4,376,305
UnitedHealth Group, Inc.	47,293	13,949,070
		<u>36,567,119</u>
Health Care Technology 0.3%		
Cerner Corp.	11,334	776,946
Veeva Systems, Inc., Class A (a)	5,967	1,398,784
		<u>2,175,730</u>
Hotels, Restaurants & Leisure 0.6%		
Domino's Pizza, Inc.	11,213	4,142,531
Household Products 0.3%		
Procter & Gamble Co.	18,679	2,233,448
Interactive Media & Services 8.7%		
Alphabet, Inc. (a)		
Class A	9,538	13,525,361
Class C	11,369	16,071,332
Facebook, Inc., Class A (a)	122,525	27,821,752
		<u>57,418,445</u>

	Shares	Value
Common Stocks (continued)		
Internet & Direct Marketing Retail 10.4%		
Amazon.com, Inc. (a)	18,605	\$ 51,327,846
Booking Holdings, Inc. (a)	3,795	6,042,930
eBay, Inc.	100,199	5,255,438
Etsy, Inc. (a)	25,483	2,707,059
Qurate Retail, Inc., Series A (a)	392,183	3,725,739
		<u>69,059,012</u>
IT Services 8.4%		
Accenture PLC, Class A	11,501	2,469,495
Akamai Technologies, Inc. (a)	40,935	4,383,729
Booz Allen Hamilton Holding Corp.	13,148	1,022,783
CACI International, Inc., Class A (a)	475	103,018
DXC Technology Co.	113,701	1,876,066
GoDaddy, Inc., Class A (a)	53,148	3,897,343
Leidos Holdings, Inc.	38,214	3,579,505
Mastercard, Inc., Class A	45,036	13,317,145
PayPal Holdings, Inc. (a)	54,098	9,425,495
Twilio, Inc., Class A (a)	4,779	1,048,608
Visa, Inc., Class A	75,599	14,603,459
		<u>55,726,646</u>
Life Sciences Tools & Services 1.7%		
Bruker Corp.	7,208	293,222
Charles River Laboratories International, Inc. (a)	18,555	3,235,064
IQVIA Holdings, Inc. (a)	29,232	4,147,436
PRA Health Sciences, Inc. (a)	37,000	3,599,730
Thermo Fisher Scientific, Inc.	265	96,020
		<u>11,371,472</u>
Media 1.4%		
Altice U.S.A., Inc., Class A (a)	120,167	2,708,564
Charter Communications, Inc., Class A (a)	12,605	6,429,055
Interpublic Group of Cos., Inc.	7,626	130,862
		<u>9,268,481</u>
Multiline Retail 0.9%		
Dollar General Corp.	30,045	5,723,873
Oil, Gas & Consumable Fuels 0.2%		
HollyFrontier Corp.	42,497	1,240,912
Personal Products 0.3%		
Herbalife Nutrition, Ltd. (a)	41,597	1,871,033
Nu Skin Enterprises, Inc., Class A	9,531	364,370
		<u>2,235,403</u>

	Shares	Value
Pharmaceuticals 1.0%		
Eli Lilly and Co.	15,650	\$ 2,569,417
Merck & Co., Inc.	52,701	4,075,368
		<u>6,644,785</u>
Professional Services 0.7%		
CoreLogic, Inc.	14,208	955,062
ManpowerGroup, Inc.	51,959	3,572,181
		<u>4,527,243</u>
Road & Rail 1.1%		
Old Dominion Freight Line, Inc.	21,879	3,710,460
Schneider National, Inc., Class B	68,954	1,701,095
Union Pacific Corp.	9,325	1,576,578
		<u>6,988,133</u>
Semiconductors & Semiconductor Equipment 6.9%		
Advanced Micro Devices, Inc. (a)	14,925	785,204
Applied Materials, Inc.	88,121	5,326,914
Broadcom, Inc.	28,215	8,904,936
Inphi Corp. (a)	6,761	794,418
KLA Corp.	25,425	4,944,654
Lam Research Corp.	9,400	3,040,524
NVIDIA Corp.	35,928	13,649,407
QUALCOMM, Inc.	90,381	8,243,651
SolarEdge Technologies, Inc. (a)	1,886	261,739
		<u>45,951,447</u>
Software 21.4%		
Adobe, Inc. (a)	25,601	11,144,371
Alteryx, Inc., Class A (a)	2,350	386,058
Anaplan, Inc. (a)	5,806	263,070
Atlassian Corp. PLC, Class A (a)	25,790	4,649,163
Autodesk, Inc. (a)	21,615	5,170,092
CDK Global, Inc.	75,948	3,145,766
Coupa Software, Inc. (a)	2,964	821,147
Dropbox, Inc., Class A (a)	167,813	3,653,289
Fair Isaac Corp. (a)	9,750	4,075,890
Fortinet, Inc. (a)	32,085	4,404,308
Intuit, Inc.	15,214	4,506,235
Microsoft Corp.	329,028	66,960,488
Oracle Corp.	13,521	747,306
Palo Alto Networks, Inc. (a)	19,929	4,577,093
Proofpoint, Inc. (a)	35,337	3,926,647
RingCentral, Inc., Class A (a)	3,414	973,024
salesforce.com, Inc. (a)	35,935	6,731,704
ServiceNow, Inc. (a)	17,399	7,047,639
SS&C Technologies Holdings, Inc.	27,988	1,580,762
Synopsys, Inc. (a)	6,436	1,255,020
Workday, Inc., Class A (a)	9,196	1,722,963
Zendesk, Inc. (a)	5,072	449,024

The notes to the financial statements are an integral part of, and should be read in conjunction with, the financial statements.

Portfolio of Investments June 30, 2020 (Unaudited) (continued)

	Shares	Value
Common Stocks (continued)		
Software (continued)		
Zoom Video Communications, Inc., Class A (a)	13,598	\$ 3,447,637
		<u>141,638,696</u>
Specialty Retail 2.9%		
AutoZone, Inc. (a)	2,530	2,854,144
Best Buy Co., Inc.	44,799	3,909,609
Home Depot, Inc.	9,609	2,407,150
Lowe's Cos., Inc.	6,995	945,164
O'Reilly Automotive, Inc. (a)	11,741	4,950,827
Tractor Supply Co.	32,730	4,313,487
		<u>19,380,381</u>
Technology Hardware, Storage & Peripherals 8.9%		
Apple, Inc.	162,323	<u>59,215,430</u>
Textiles, Apparel & Luxury Goods 0.3%		
NIKE, Inc., Class B	18,079	<u>1,772,646</u>
Total Common Stocks (Cost \$499,131,998)		<u>658,717,535</u>
Exchange-Traded Fund 0.6%		
iShares Russell 1000 Growth ETF	21,045	<u>4,039,588</u>
Total Exchange-Traded Fund (Cost \$3,711,462)		<u>4,039,588</u>

	Shares	Value
Short-Term Investment 0.1%		
Affiliated Investment Company 0.1%		
MainStay U.S. Government Liquidity Fund, 0.05% (c)	802,691	\$ 802,691
Total Short-Term Investment (Cost \$802,691)		<u>802,691</u>
Total Investments (Cost \$503,646,151)	100.1%	663,559,814
Other Assets, Less Liabilities	(0.1)	(403,689)
Net Assets	<u>100.0%</u>	<u>\$663,156,125</u>

† Percentages indicated are based on Portfolio net assets.

(a) Non-income producing security.

(b) Fair valued security—Represents fair value as measured in good faith under procedures approved by the Board of Trustees. As of June 30, 2020, the total market value of fair valued securities was \$2,418,600, which represented less than one tenth percent of the Portfolio's net assets.

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

The following abbreviation is used in the preceding pages:

ETF—Exchange-Traded Fund

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	\$656,298,935	\$2,418,600	\$ —	\$658,717,535
Exchange-Traded Fund	4,039,588	—	—	4,039,588
Short-Term Investment				
Affiliated Investment Company	802,691	—	—	802,691
Total Investments in Securities	<u>\$661,141,214</u>	<u>\$2,418,600</u>	<u>\$ —</u>	<u>\$663,559,814</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 \$502,843,460)	\$662,757,123
Investment in affiliated investment company, at value (identified cost \$802,691)	802,691
Receivables:	
Dividends	210,761
Portfolio shares sold	4,900
Securities lending	6
Other assets	3,342
Total assets	<u>663,778,823</u>

Liabilities

Payables:	
Manager (See Note 3)	371,567
Portfolio shares redeemed	174,462
Shareholder communication	32,020
Professional fees	21,394
NYLIFE Distributors (See Note 3)	10,693
Custodian	8,416
Trustees	833
Accrued expenses	3,313
Total liabilities	<u>622,698</u>
Net assets	<u>\$663,156,125</u>

Composition of Net Assets

Shares of beneficial interest outstanding (par value of \$.001 per share) unlimited number of shares authorized	\$ 19,058
Additional paid-in capital	<u>427,648,702</u>
	427,667,760
Total distributable earnings (loss)	<u>235,488,365</u>
Net assets	<u>\$663,156,125</u>

Initial Class

Net assets applicable to outstanding shares	<u>\$610,798,442</u>
Shares of beneficial interest outstanding	<u>17,532,170</u>
Net asset value per share outstanding	<u>\$ 34.84</u>

Service Class

Net assets applicable to outstanding shares	<u>\$ 52,357,683</u>
Shares of beneficial interest outstanding	<u>1,525,407</u>
Net asset value per share outstanding	<u>\$ 34.32</u>

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

Investment Income (Loss)

Income

Dividends-unaffiliated	\$ 3,479,414
Dividends-affiliated	635
Securities lending	<u>49</u>
Total income	<u>3,480,098</u>

Expenses

Manager (See Note 3)	2,222,224
Distribution/Service—Service Class (See Note 3)	63,294
Professional fees	45,391
Shareholder communication	32,850
Custodian	16,435
Trustees	7,955
Miscellaneous	<u>11,990</u>
Total expenses	<u>2,400,139</u>

Net investment income (loss)	<u>1,079,959</u>
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Realized and Unrealized Gain (Loss) on Investments

Net realized gain (loss) on unaffiliated investments	11,754,141
Net change in unrealized appreciation (depreciation) on unaffiliated investments	<u>28,262,130</u>
Net realized and unrealized gain (loss) on investments	<u>40,016,271</u>
Net increase (decrease) in net assets resulting from operations	<u>\$41,096,230</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)	\$ 1,079,959	\$ 3,500,855
Net realized gain (loss) on investments	11,754,141	63,339,088
Net change in unrealized appreciation (depreciation) on investments	<u>28,262,130</u>	<u>95,862,626</u>
Net increase (decrease) in net assets resulting from operations	<u>41,096,230</u>	<u>162,702,569</u>
Distributions to shareholders:		
Initial Class	—	(56,327,914)
Service Class	<u>—</u>	<u>(4,862,710)</u>
Total distributions to shareholders	<u>—</u>	<u>(61,190,624)</u>
Capital share transactions:		
Net proceeds from sale of shares	6,624,651	116,738,533
Net asset value of shares issued to shareholders in reinvestment of distributions	<u>—</u>	<u>61,190,624</u>
Cost of shares redeemed	<u>(92,767,413)</u>	<u>(84,449,310)</u>
Increase (decrease) in net assets derived from capital share transactions	<u>(86,142,762)</u>	<u>93,479,847</u>
Net increase (decrease) in net assets	<u>(45,046,532)</u>	<u>194,991,792</u>
Net Assets		
Beginning of period	<u>708,202,657</u>	<u>513,210,865</u>
End of period	<u>\$663,156,125</u>	<u>\$708,202,657</u>

Financial Highlights selected per share data and ratios

Initial Class	Six months ended	Year ended December 31,				
	June 30, 2020*	2019	2018	2017	2016	2015
Net asset value at beginning of period	\$ 32.64	\$ 27.74	\$ 30.87	\$ 23.90	\$ 26.09	\$ 29.42
Net investment income (loss) (a)	0.06	0.18	0.19	0.19	0.09	0.04
Net realized and unrealized gain (loss) on investments	2.14	7.77	(1.10)	7.05	(0.02)	0.58
Total from investment operations	2.20	7.95	(0.91)	7.24	0.07	0.62
Less distributions:						
From net investment income	—	(0.19)	(0.21)	(0.07)	(0.04)	—
From net realized gain on investments	—	(2.86)	(2.01)	(0.20)	(2.22)	(3.95)
Total distributions	—	(3.05)	(2.22)	(0.27)	(2.26)	(3.95)
Net asset value at end of period	\$ 34.84	\$ 32.64	\$ 27.74	\$ 30.87	\$ 23.90	\$ 26.09
Total investment return (b)	6.74%(c)	30.01%	(4.24%)	30.41%	0.40%	2.58%
Ratios (to average net assets)/Supplemental Data:						
Net investment income (loss)	0.35%††	0.56%	0.60%	0.71%	0.35%(d)	0.15%
Net expenses (e)	0.72%††	0.72%	0.73%	0.74%	0.76%(f)	0.73%
Portfolio turnover rate	97%	156%	127%	141%	177%	112%
Net assets at end of period (in 000's)	\$ 610,798	\$ 652,081	\$ 461,537	\$ 525,483	\$ 337,401	\$ 370,679

* Unaudited.

†† 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 0.34%.

(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	\$ 32.19	\$ 27.38	\$ 30.50	\$ 23.62	\$ 25.83	\$ 29.24
Net investment income (loss) (a)	0.02	0.10	0.11	0.12	0.02	(0.03)
Net realized and unrealized gain (loss) on investments	2.11	7.66	(1.10)	6.97	(0.01)	0.57
Total from investment operations	2.13	7.76	(0.99)	7.09	0.01	0.54
Less distributions:						
From net investment income	—	(0.09)	(0.12)	(0.01)	—	—
From net realized gain on investments	—	(2.86)	(2.01)	(0.20)	(2.22)	(3.95)
Total distributions	—	(2.95)	(2.13)	(0.21)	(2.22)	(3.95)
Net asset value at end of period	\$ 34.32	\$ 32.19	\$ 27.38	\$ 30.50	\$ 23.62	\$ 25.83
Total investment return (b)	6.62%	29.69%	(4.48%)	30.09%	0.15%	2.33%
Ratios (to average net assets)/Supplemental Data:						
Net investment income (loss)	0.11%††	0.32%	0.35%	0.46%	0.10%(c)	(0.09%)
Net expenses (d)	0.97%††	0.97%	0.98%	0.99%	1.01%(e)	0.98%
Portfolio turnover rate	97%	156%	127%	141%	177%	112%
Net assets at end of period (in 000's)	\$ 52,358	\$ 56,122	\$ 51,674	\$ 66,735	\$ 58,448	\$ 63,846

* Unaudited.

†† 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) Without the custody fee reimbursement, net investment income (loss) would have been 0.09%.

(d) 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.

(e) 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 MacKay Growth Portfolio (the “Portfolio”), a “diversified” portfolio, as that term is defined in the 1940 Act, as interpreted or modified by regulatory authorities having jurisdiction, from time to time.

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 shares commenced operations on January 29, 1993. Service Class shares commenced operations on June 5, 2003. 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 purchased after June 2, 2003, are permitted to invest only in the Service Class shares.

The Portfolio’s investment objective is to seek long-term growth of capital.

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:

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

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.

Equity securities, including exchange-traded funds ("ETFs"), 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 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

Notes to Financial Statements (Unaudited) (continued)

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) 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.

(D) 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.

(E) 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 ETFs and mutual funds, which are subject to management fees and other fees that may cause the costs of investing in ETFs and mutual funds to be greater than the costs of owning the underlying securities directly. These indirect expenses of ETFs and 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.

(F) 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.

(G) 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.

(H) 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. MacKay Shields LLC (“MacKay Shields” or the “Subadvisor”), a registered investment adviser and an indirect, wholly-owned subsidiary of New York Life, serves as Subadvisor to the Portfolio and is responsible for the day-to-day portfolio management of the Portfolio. Pursuant to the terms of an Amended and Restated Subadvisory Agreement (“Subadvisory Agreement”) between New York Life Investments and MacKay Shields, 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 rate of the Portfolio’s average daily net assets as follows: 0.70% up to \$500 million; 0.65% from \$500 million to \$1 billion; 0.625% from \$1 billion to \$2 billion; and 0.60% in excess of \$2 billion. During the six-month period ended June 30, 2020, the effective management fee rate was 0.69%.

During the six-month period ended June 30, 2020, New York Life Investments earned fees from the Portfolio in the amount of \$2,222,224 and paid the Subadvisor in the amount of \$1,111,112.

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,

(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	\$ —	\$13,526	\$(12,723)	\$ —	\$ —	\$803	\$1	\$ —	803

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:

Investments in	Federal Tax Cost	Gross Unrealized Appreciation	Gross Unrealized Depreciation	Net Unrealized Appreciation/Depreciation
Securities	\$505,786,803	\$162,975,088	\$(5,202,077)	\$157,773,011

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
\$11,411,163	\$49,779,461

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.

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

Notes to Financial Statements (Unaudited) (continued)

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. As of June 30, 2020, there were no borrowings 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 \$631,100 and \$716,820, respectively.

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	241,001	\$ 6,303,305
Shares redeemed	(2,689,316)	(85,674,293)
Net increase (decrease)	(2,448,315)	\$ (79,370,988)
Year ended December 31, 2019:		
Shares sold	3,740,349	\$115,915,029
Shares issued to shareholders in reinvestment of distributions	1,922,384	56,327,914
Shares redeemed	(2,322,580)	(73,800,486)
Net increase (decrease)	3,340,153	\$ 98,442,457

Service Class	Shares	Amount
Six-month period ended June 30, 2020:		
Shares sold	10,952	\$ 321,346
Shares redeemed	(228,804)	(7,093,120)
Net increase (decrease)	(217,852)	\$ (6,771,774)
Year ended December 31, 2019:		
Shares sold	27,093	\$ 823,504
Shares issued to shareholders in reinvestment of distributions	168,134	4,862,710
Shares redeemed	(339,306)	(10,648,824)
Net increase (decrease)	(144,079)	\$ (4,962,610)

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.

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

Some Portfolios may not be available in all products.

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2020 Semiannual Report

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New York Life Insurance Company

New York Life Insurance and Annuity Corporation (NYLIAC) (A Delaware Corporation)

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

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