

The logo for the SRPS Investment Section is centered on the page. It features the acronym "SRPS" in a large, bold, serif font. Below the acronym, the words "Investment Section" are written in a white, elegant, cursive script. The entire logo is set against a light gray rectangular background that has a subtle, larger-scale version of the "SRPS" acronym and "Investment Section" text overlaid on it.

SRPS
Investment Section

CHIEF INVESTMENT OFFICER'S REPORT

INVESTMENT OVERVIEW

The Maryland State Retirement and Pension System returned 26.69 percent net of fees in fiscal year 2021, relative to the actuarial return target of 7.40 percent, and 24.43 percent for its policy benchmark. After the payment of benefits, the fair value of assets increased by approximately \$13.1 billion, from \$54.8 billion on June 30, 2020 to \$67.9 billion on June 30, 2021.

While the System was able to generate a positive return of 26.69 percent for the fiscal year, the performance was not evenly distributed among the various asset classes. The private equity portfolio, consisting mostly of leveraged buyouts and venture capital, produced the highest return for the fiscal year at 51.9 percent as the global economy recovered from the recession associated with the COVID-19 pandemic. At the other end of the spectrum was the rate sensitive group, which returned -2.53 percent, as long-term interest rates increased by nearly 0.80 percent over the fiscal year.

The Board's asset allocation policy is designed to achieve the actuarial rate of return over long periods of time by assembling a diversified portfolio of asset classes, each of which may have a large or small, positive or negative return in any given year. By assembling assets that exhibit distinct risk and return characteristics in different market environments, the Board expects more stable investment returns over time than a less diversified portfolio. This lower risk portfolio should result in a larger asset pool for the System's beneficiaries than a more volatile portfolio with the same average return. Understanding the Board's principals of asset allocation is important in evaluating the performance in any one-year period. While the realized return of 26.69 percent for fiscal year 2021 far exceeds the Board's long-term expectation for the portfolio, it is within its expected ranges for annual variations.

The System's asset allocation is organized into five broad categories: Growth/Equity, Rate Sensitive, Credit, Real Assets, and Absolute Return. During the fiscal year, the asset allocation remained unchanged from the prior year, as the long-term return expectations and risk profile of the portfolio remained consistent with the Board's objectives.

The Growth/Equity portfolio is comprised of public equity and private equity. Within public equity, there are dedicated allocations to U.S., international developed, and emerging markets. The objective of this asset class is to generate high returns associated with the economic growth underlying global economies.

The Rate Sensitive category consists of exposure to core, or investment-grade, bonds. This asset class is designed to provide protection against downturns in the equity market by offering a reliable income stream through the yield component. This yield also provides some protection against a deflationary environment, characterized by falling interest rates. This asset class includes long-duration U.S. Treasury bonds, Treasury inflation protected securities, corporate bonds and securitized debt.

The purpose of the Credit asset class is to take advantage of the potential higher returns offered by below investment-grade bonds. The return objective is similar to public equity, with a lower risk profile. This category includes high yield bonds, bank loans, emerging markets debt, distressed debt, mezzanine debt, and other credit-focused investments.

Real Assets includes real estate, natural resources and infrastructure investments. A significant portion of the assets in this category provides a regular income stream. Due to the tangible, or real, element of this asset class, it is expected to provide some level of protection against an inflationary environment, as well as additional diversification to the total portfolio.

The objective of the Absolute Return asset class is to achieve a return that falls between the expectations for public equity and bonds, with low correlation to other asset classes. The risk profile of this asset class is expected to be significantly lower than public equity, which should provide protection during periods of stock market decline. Strategies in this asset class include event-driven, global macro, relative value and opportunistic funds

INVESTMENT POLICY AND OBJECTIVES

The Board of Trustees is charged with the responsibility of managing the assets of the System. In doing so, the Board is required to exercise its fiduciary duties solely in the interest of the participants with the care, skill, and diligence that a prudent person would exercise under similar circumstances. This standard of care encourages diversifying investments across various asset classes.

Investment objectives are designed to support the fulfillment of the Board's mission to optimize risk-adjusted returns to ensure that sufficient assets are available to pay benefits to members and beneficiaries when due. As a long-term investor, the Board understands that short-term market returns will fluctuate.

These investment objectives are implemented in accordance with investment policies developed by the Board. The “prudent person standard”, as outlined in both the Maryland Annotated Code and the Board’s investment policies, allows the Board to set investment policies and delegate authority to investment professionals employing active and passive strategies. Firms retained generally have a demonstrated performance record and a clearly defined and consistently applied investment process.

The Board manages the assets for the System with the goal of achieving an annualized investment return that over a long-term time frame: (1) meets or exceeds the investment policy benchmark for the System; (2) in nominal terms, equals or exceeds the actuarial investment return assumption adopted by the Board; and (3) in real terms, exceeds the U.S. inflation rate by at least 3 percent. A more detailed discussion of each of these goals follows below.

1. **Meeting or exceeding the Investment Policy Benchmark for the System.** The Investment Policy Benchmark is calculated by using a weighted average of the Board-established benchmarks for each asset class. This benchmark enables the comparison of the actual performance of the System to a proxy portfolio and provides a measure of the contribution of policy implementation and active management to overall fund returns.
2. **In nominal terms, meeting or exceeding the actuarial investment return assumption of the System.** The Board adopts the actuarial rate of interest, which was set at 7.40 percent for fiscal year 2021. The actuarial investment return assumption functions as an estimate of the long-term rate of growth of the assets for the System. In adopting an actuarial return assumption, the Board anticipates that the investment portfolio will achieve higher or lower returns each year but will trend toward 7.40 percent over time.
3. **In real terms, exceeding the U.S. inflation rate by at least 3 percent.** The inflation related objective compares the investment performance against a rate of inflation measured by the Consumer Price Index (CPI) plus 3 percent. The inflation measure provides a link to the liabilities of the System, which have an embedded sensitivity to changes in the inflation rate.

The Board is also responsible for establishing the asset allocation policy for the System. It does this by weighing three liability-oriented objectives when making asset allocation determinations. These objectives include:

1. achieving and maintaining a fully funded pension plan;
2. minimizing contribution volatility year to year; and
3. realizing surplus assets.

Asset allocation policy targets are determined by recognizing that liabilities (future benefit payments to the participants and beneficiaries of the System) must be paid in full and on time. The mix of asset classes is chosen to provide sufficient growth to meet the long-term return objective of the System, while providing sufficient diversification to moderate the volatility of that return. For example, a portfolio of equities will likely provide the required return over a long time horizon but will subject the fair value of the portfolio to unacceptable levels of volatility such that the goals of minimizing contribution volatility and realizing surplus assets would be difficult to achieve. Combining other asset classes with equities will provide differentiated return sources, reduce the volatility of returns and help realize those liability-oriented objectives.

The Board’s long-term asset class targets and ranges as of June 30, 2021 are shown below.

ASSET CLASS	LONG-TERM	
	POLICY TARGET	RANGE
Growth Equity	50%	+/- 7%
U.S Equity	16%	
International Developed Equity	10%	
Emerging Markets Equity	11%	
Private Equity	13%	
Rate Sensitive	19%	+/- 5%
Long-term Government Bonds	10%	
Securitized/Corporate Bonds	5%	
TIPS	4%	
Credit	9%	+/- 4%
High Yield Bonds/Bank Loans	7%	
Emerging Market Debt	2%	
Real Assets	14%	+/- 4%
Real Estate	10%	
Natural Resources/Infrastructure	4%	
Absolute Return	8%	+/- 4%
Total Assets	100%	

INVESTMENT PERFORMANCE

Investment performance is calculated using time-weighted rates of total return, including the impact of fees and expenses. Total return includes interest and dividends, as well as capital appreciation.

The investment program realized a return of 26.69 percent for fiscal year 2021. Annualized returns for the 3-, 5-, 10-, 20- and 25-year periods ending June 30, 2021 were 11.8 percent, 10.7 percent, 8.2 percent, 6.6 percent and 7.0 percent, respectively.

	FY 2021 SRPS Performance	FY 2020 Benchmark Performance	SRPS Exposure June 30, 2021
Public Equity	44.5%		35.6%
Custom Benchmark		40.5%	
U.S. Equity	43.4%		12.4%
Russell 3000		44.2%	
International Equity	37.2%		7.1%
MSCI World ex U.S.		33.6%	
Emerging Markets Equity	48.4%		9.9%
MSCI Emerging Markets		40.9%	
Global Equity	47.3%		6.2%
MSCI AC World Index		39.3%	
Private Equity	51.9%		17.1%
Custom State Street PE		53.1%	
Rate Sensitive	-2.5%		15.9%
Custom Benchmark		-3.9%	
BBG U.S. Gov't Long Index		-10.4%	
BBG Securitized		-0.2%	
BBG Corporate		3.3%	
BC U.S. TIPS Index		6.5%	
Credit/Debt Strategies	14.4%		9.2%
Custom Benchmark		12.8%	
BBG High Yield		15.4%	
S&P LSTA Leveraged Loan		11.7%	
BBG EM Local Currency		6.1%	
BBG EM Hard Currency Sov		6.7%	
BBG EM USD Corporate		8.0%	
Real Assets	14.8%		11.2%
Custom Benchmark		16.3%	
Absolute Return	15.5%		8.7%
Custom Benchmark		16.2%	
Multi-Asset	24.1%		1.0%
Custom Benchmark		24.4%	
Cash	0.1%		1.3%
Custom Benchmark		0.1%	
TOTAL FUND	26.7%	24.4%	100%

The allocation as of June 30, 2021 reflects the ranges and transitional targets of the System as described in the previous section.

ECONOMIC AND CAPITAL MARKET OVERVIEW

The System was able to achieve one of the highest investment returns on record in fiscal year 2021 as the global economy re-opened and recovered from the recession brought on by the Covid-19 pandemic in the first half of 2020. Fueled by an accommodative monetary policy featuring zero interest rates and large asset purchases, and stimulative fiscal programs including direct payments to individuals and support for business in response to the pandemic, risk assets globally were able to generate strong returns. For the fiscal year, global equities returned roughly forty percent, while high yield bonds generated over fifteen percent, supported by growth in real U.S. gross domestic product of over twelve percent.

During the fiscal year, economic conditions gradually improved with the recovery in business activity and consumer mobility. During the depths of the recession in the second quarter of calendar year 2020, the unemployment rate in the U.S. reached nearly fifteen percent. By June 30, 2021, this measure had improved to six percent. Price levels also demonstrated marked improvement during the fiscal year. As a result of the economic shutdown, there was real risk that the global economy would fall into a deflationary environment, characterized by falling prices and potentially a more extended and pronounced recession that could lead to a depression. At the low point of the recession, the growth rate in prices, as measured by the Consumer Price Index, fell to nearly zero. However, as the stimulus packages became available and the economy re-opened, the price level gradually strengthened. For the fiscal year ending June 30, 2021, the Consumer Price Index grew 5.4 percent.

Due to the strengthening economy and higher consumer prices, long term interest rates also increased over fiscal year 2021. After bottoming at nearly 50 basis points (0.50%) in August of 2021, the ten-year Treasury yield rallied to finish the fiscal year at roughly 150 basis points (1.50%). This rise in rates had a negative impact on the System's bond portfolio, the prices of which move inversely to the direction of interest rates. The rate sensitive asset class produced a return of -2.5 percent for the fiscal year and was the only category that did not achieve strong positive performance.

PUBLIC EQUITIES

As of June 30, 2021, approximately \$24.3 billion was invested in public equities, representing 35.6 percent of total assets. The public equity program consists of four components: U.S. equities, international developed equities, emerging markets equities and global equities.

The Terra Maria program, which seeks to identify promising smaller or developing management firms, is an integral part of the public equities' asset class. As of June 30, 2021, 74 percent of the public market Terra Maria program was invested in equities, with 56 percent in international stocks. Each of the managers in the Terra Maria program has an active management mandate. A more detailed discussion of the Terra Maria program follows below.

A. U.S. Equities

As of June 30, 2021, approximately \$8.4 billion, or 12.4 percent of total assets, was invested in U.S. public equities. Passively managed U.S. equities totaled \$3.6 billion, while Terra Maria program assets were \$494 million, representing 5.2 percent, and 0.7 percent of total assets, respectively.

U.S. Equity	\$ Millions	% of Total Plan
Passively/Enhanced Managed	\$3,552	5.2%
Actively Managed	\$4,365	6.5%
Terra Maria Program	\$494	0.7%
Total U.S. Equity	\$8,412	12.4%

For fiscal year 2021, U.S. equities returned 43.4 percent, compared to 44.2 percent for its benchmark, the Russell 3000 Index.

B. International Equities

As of June 30, 2021, approximately \$4.8 billion, or 7.1% of total assets, was invested in international equities, nearly all of which was managed actively. Terra Maria assets were \$1.5 billion, representing 2.2% of total assets. As more fully described below, in 2009 the System instituted a currency overlay program which is designed to protect the value of some foreign equities in a rising dollar environment.

International Equity	\$ Millions	% of Total Plan
Actively Managed	\$3,309	4.9%
Terra Maria Program	\$1,519	2.2%
Currency Overlay	\$3	0.0%
Total International Equity	\$4,831	7.1%

For fiscal year 2021, international equities, including the impact of the currency overlay program, returned 37.2%, compared to 33.6% for its benchmark, the MSCI World ex-U.S. Index.

C. Emerging Market Equities

As of June 30, 2021, approximately \$6.7 billion, or 9.9% of total assets, was invested in emerging market equities. The portfolio is comprised of actively managed assets, except for a small allocation to a passive mandate representing 0.1% of plan assets.

Emerging Equity	\$ Millions	% of Total Plan
Passively Managed	\$41	0.1%
Actively Managed	\$6,646	9.8%
Total Emerging Markets Equity	6,687	9.9%

For the fiscal year, the portfolio returned 48.4% compared to 40.9% for the MSCI Emerging Market Index.

D. Global Equities

As of June 30, 2021, approximately \$4.2 billion, or 6.2% of total assets was invested in global equities, which includes both U.S. and foreign stocks. This portfolio is comprised of 100% active mandates.

Global Equity	\$ Millions	% of Total Plan
Actively Managed	\$4,225	6.2%
Total Emerging Markets Equity	\$4,225	6.2%

For the fiscal year, the portfolio returned 47.3% compared to 39.3% for the MSCI AC World Index.

CURRENCY OVERLAY PROGRAM

The currency overlay program was implemented in May of 2009. An objective of the program is to provide insurance against a strengthening dollar, which could negatively impact returns from foreign currency denominated equities. The manager in this program uses a systematic currency overlay strategy and generally, does not make fundamental currency valuation assessments. The strategy is

also dynamic in that the degree to which currency hedging is applied changes depending on currency market conditions. The manager in this program tends to use low hedge ratios when the dollar is weak, and high hedge ratios when the dollar is strong.

During fiscal year 2021, the currency program acted as a slight drag to returns in the System's foreign equity holdings, as the U.S. dollar weakened relative to other currencies. The cost of the currency hedging program during the fiscal year was \$8.5 million. While the program produced moderate losses during fiscal year 2021, it has served to reduce volatility and improve the risk/return profile of non-U.S. stocks since its inception.

PRIVATE EQUITY

As of June 30, 2021, private equity totaled \$11.6 billion, or 17.1% of total assets. This asset class includes buyouts, growth equity, venture capital, secondaries and funds-of-funds.

In fiscal year 2021, commitments were made to 13 private equity funds and co-investments, totaling \$1.1 billion. Since the inception of the private equity program in fiscal year 2005, \$18.7 billion in commitments have been made to 257 different funds and co-investments. Unfunded commitments totaled \$5.6 billion as of June 30, 2021. Future commitments will follow a pacing model designed to maintain the target allocation. In fiscal year 2021, the private equity program returned 51.9%, compared to 53.1% for its benchmark, the State Street Private Equity Index. This return is net of all fees, expenses and carried interest.

RATE SENSITIVE

As of June 30, 2021, the rate sensitive portfolio represented \$10.8 billion, or 15.9% of total assets. The rate sensitive portfolio returned -2.5% for the year, compared to -3.9% for its blended benchmark: 53% BBG Barclays US Government Long Bond Index, 13% BBG Barclays US Investment Grade Corporate Index, 13% BBG Barclays US Securitized Index, and 21% BBG Barclays US TIPS Index.

CREDIT/DEBT STRATEGIES

The credit/debt strategies portfolio totaled approximately \$6.2 billion, representing 9.2% of total plan assets as of June 30, 2021. Investments in this asset class are held in both liquid and illiquid structures. Typical asset types in the portfolio include: high yield bonds, bank loans, emerging market debt, and private debt. The portfolio has a blended benchmark of 78 percent U.S. (80% BBG Barclays U.S. Corporate High Yield Index, 20% S&P LSTA Leveraged Loan Index), and 22 percent Non-U.S. (50% BBG Barclays EM Local Currency Liquid Government Index -30 bps, 25% BBG Barclays EM Hard Currency Sovereign Index, 25% BBG Barclays EM USD Corporate Index). The portfolio returned 14.4% for the fiscal year, versus 12.8% for its benchmark.

REAL ASSETS

The real assets portfolio totaled approximately \$7.6 billion, representing 11.2% of total assets as of June 30, 2021. The objectives of this asset class are to provide a level of protection against inflation, and to enhance diversification for the total fund. As of June 30, 2021, the largest component of the asset class was real estate, totaling \$5.0 billion, or 7.4% of total assets. The remaining assets consisted of investments associated with natural resources and infrastructure totaling \$2.6 billion or 3.8% of total assets.

The real assets portfolio returned 14.8% for the fiscal year, compared to 16.3% for its blended benchmark, which consists of approximately 70% real estate with the remainder in natural resources and infrastructure. Real estate achieved an 8.8% return, versus the real estate benchmark return of 7.5%. The natural resources and infrastructure portion of the portfolio underperformed its benchmark by 9.7%, as the private natural resources portfolio underperformed the public benchmark.

ABSOLUTE RETURN

The absolute return portfolio totaled approximately \$5.9 billion, representing 8.7% of total assets as of June 30, 2021. The portfolio consists of event-driven, global macro, relative value, equity long/short and opportunistic funds. Its goal is to provide diversification for the total plan through its low correlation to the broad financial markets. The absolute return portfolio returned 15.5%, compared to the 16.2% return for its benchmark, Hedge Funds Research, Inc. (HFRF) Fund of Funds Index: Conservative +1%.

TERRA MARIA PROGRAM

As previously mentioned, the Terra Maria program seeks to identify promising smaller or developing managers. The three public market program managers serve as an extension of staff to source investment managers, perform manager due diligence, monitor managers and prepare manager "hire/fire" and funding recommendations. The managers include Attucks Asset Management, Xponance, Inc., and Leading Edge Investment Advisors.

Terra Maria publicly-traded assets totaled approximately \$2.7 billion, or 4 percent of total assets at June 30, 2021. The program returned 32.1% for the fiscal year, outperforming its custom benchmark return of 30.3%. The relative performance results have remained positive since the April 2007 inception of the program. The System also invests in emerging managers in other asset classes. In private equity, the System has committed \$1.24 billion to developing managers that are minority and women-owned firms.

At the end of fiscal year 2021, \$10.4 billion, or 15.3 percent of the System's total assets, were managed by minority and women-owned firms.

INVESTMENT MANAGEMENT FEES

The asset allocation of the System is the primary determinant of return. The asset allocation is also the primary determinant in the cost of investing the assets. Thirty-one percent of the policy allocation does not have public market benchmarks and therefore does not have a passive option for implementation. These alternative assets such as closed-end limited partnerships used for private equity, infrastructure and some real estate, in addition to open-end partnerships used for real estate and hedge fund strategies are included in the asset allocation with the objective of earning higher returns over time, reducing risk by providing returns that are differentiated from stock and bond returns, or for both reasons.

These alternative assets are typically structured as limited partnerships with embedded profit sharing provisions to motivate the manager to make profitable investments, and to ensure alignment of interests. Carried interest represents the portion of the investment profits that is earned by managers, and is only paid if performance thresholds are achieved. The percentage of profits that is allocated to the manager is substantially lower than the amount received by the System. Because of this disproportionate sharing of profits, the amounts realized by the System far exceed any

incentive earned by investment managers. Large amounts of carried interest should be considered a positive result, as this would imply much greater gains to the System. In calendar year 2020, the System realized an estimated \$1,061.9 million in profits from these private alternative investments, while the investment managers, or general partners, earned roughly \$203.6 million in carried interest incentives.

The Board is mindful of the negative effects fees have on net investment performance and is committed to aggressively negotiating fair and reasonable terms to mitigate the drag on performance, while maintaining exposure to investments that exhibit positive risk and return characteristics in a total portfolio context.

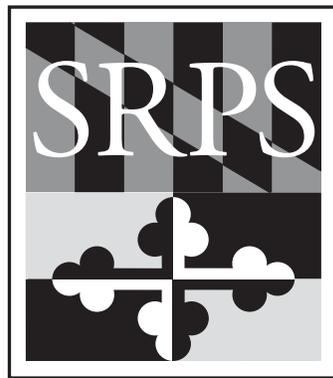
CONCLUSION

The System was able to take advantage of very favorable and accommodative conditions in fiscal year 2021 as the global economy emerged from the recession caused by COVID-19. These conditions allowed most equity-related assets to generate very strong investment performance and led to the System's 26.7 percent return for the fiscal year. The System's asset allocation is designed such that various parts of the fund are expected to perform differently during various economic regimes. Fiscal year 2021 was marked by strong economic growth, low interest rates, improving employment and favorable fiscal and monetary policies. In this scenario, the asset class that is expected to perform best is equities. The System has significant exposure to this category of assets, representing more than fifty percent of the total fund. Included in this allocation is the System's private equity asset class, which generated the highest return of nearly 52 percent for the fiscal year. The Board of Trustees has adopted a diversified asset allocation that is structured to capture a significant portion of strong equity markets, while providing some protection against the downside. Over the long-term, this balanced approach is expected to achieve the System's return objectives at an acceptable level of risk.

Respectfully submitted,



Andrew C. Palmer CFA
Chief Investment Officer



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MARYLAND STATE RETIREMENT AND PENSION SYSTEM

INVESTMENT PORTFOLIO SUMMARY
as of June 30, 2021 and 2020
(Expressed in Thousands)

	2021		2020	
	Fair Value	% of Fair Value	Fair Value	% of Fair Value
Rate Sensitive				
Fixed Income	\$ 8,548,084	12.5 %	\$ 8,144,500	14.8 %
Inflation linked bonds	2,668,760	3.9	2,443,622	4.5
(1) Cash (non-manager)	943,009	1.4	269,703	0.5
(2) Net cash & cash equivalents (manager)	-391,671	-0.6	-401,787	-0.7
Total Rate Sensitive	<u>11,768,184</u>	<u>17.2</u>	<u>10,456,038</u>	<u>19.1</u>
Credit				
Hight Yield Bond/Bank Loans	4,847,074	7.1	3,929,373	7.2
Emerging markets debt	1,283,865	1.9	1,047,458	1.9
(2) Net cash & cash equivalents (manager)	103,716	0.2	139,911	0.3
Total Credit	<u>6,234,655</u>	<u>9.2</u>	<u>5,116,742</u>	<u>9.4</u>
Equity				
Domestic stocks	8,086,572	11.9	6,270,704	11.4
Emerging markets stocks	6,571,094	9.7	5,356,659	9.8
Global stocks	4,090,622	6.0	4,151,508	7.6
International stocks	4,634,062	6.8	3,481,978	6.4
(2) Net cash & cash equivalents (manager)	772,365	1.1	526,726	1.0
Total Public Equity	<u>24,154,715</u>	<u>35.5</u>	<u>19,787,575</u>	<u>36.2</u>
Private Equity	<u>11,576,672</u>	<u>17.1</u>	<u>7,802,533</u>	<u>14.2</u>
Total Equity	<u>35,731,387</u>	<u>52.6</u>	<u>27,590,108</u>	<u>50.4</u>
Absolute Return	5,776,537	8.6	4,265,309	7.8
Real Estate (includes private)	5,023,113	7.4	4,607,054	8.4
Multi Asset	623,282	0.9	768,693	1.4
Natural Resources & Infrastructure	2,552,874	3.8	1,827,326	3.3
(2) Net cash & cash equivalents (manager)	172,533	0.3	135,822	0.2
Total Portfolio	<u>\$ 67,882,565</u>	<u>100.0 %</u>	<u>\$ 54,767,092</u>	<u>100.0 %</u>

(1) Securities lending collateral payable has been netted against the actual collateral. The amounts net to zero.

(2) Includes investment receivables and payables.

Note: This schedule includes assets invested on behalf of the Maryland Transit Administration.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

INVESTMENT PORTFOLIOS BY MANAGER

as of June 30, 2021

(Expressed in Thousands)

	Fair Value	Investment Advisory Fees		Fair Value	Investment Advisory Fees
Public Equity			Fixed Income Manager		
RhumbLine Advisors	\$ 1,220,100	\$ 982	State Street Global Advisors	\$ 983,606	\$ 710
D E Shaw & Co., LP	2,367,791	5,745	Pacific Investment Management Company	1,445,319	5,760
AQR Capital Management, LLC	1,037,769	3,297	Western Asset Management	2,571,829	3,871
Baillie Gifford & Company	2,443,840	10,491	Pine Bridge Investments LLC	833,747	1,147
Dimensional Fund Advisors, Inc.	787,401	2,427	Capital Prospects, LLC (1)	695,271	1,623
Durable Capital Partners	853,655	24,258	MetLife Investment Management	673,222	1,531
T. Rowe Price Associates, Inc.	1,687,984	4,335	Credit Suisse Asset Management	868,990	1,152
Marshall Wace	1,306,734	27,870	Double Line US Securitized	514,825	737
Axiom International Investors	1,213,664	8,309	Dodge & Cox	385,651	669
Longview Partners Ltd.	600,732	3,344	Cash & Cash Equitization	943,009	N/A
FIS Group, Inc. (1)	371,925	2,166	Other (2)	19	80
Artisan Partners Limited Partnership	687,236	3,056	Internally Managed Assets (6)	4,514,798	0
RWC Partners Emerging Markets	460,938	2,465	Total Fixed Income	\$ 14,430,286	\$ 17,280
TT International	766,214	5,216			
Westwood Global Investment	863,639	5,082	Alternative Investment		
Brown Capital Management	789,350	3,688	Private Equity Funds (1)	\$ 11,576,672	\$ 125,338
Attucks Asset Management, LLC (1)	580,368	2,872	Credit/Debt Related (1)	3,572,556	45,811
Leading Edge Invest. Advisors, LLC (1)	566,683	2,707	Multi-Asset (3)	667,965	1,076
Polunin Capital Management	578,016	3,925	Absolute Return (1)	5,881,706	144,217
Capital Prospects, LLC (1)	494,476	2,514	Real Assets		
Equity Long Short (1)	725,231	22,533	Natural Resources & Infrastructure (1)	2,565,295	14,773
State Street Global Advisors	40,995	54	Private Real Estate (1)	5,023,230	38,472
Record Currency Management	1,730	3,950	Other (2)	103	4,053
Other (2)	11,038	1,717	Internally Managed Assets (6)	10,037	0
Internally Managed Assets (6)	3,697,205	0			
Total Public Equity	\$ 24,154,714	\$ 153,003	Total Alternative Investments	\$ 29,297,565	\$ 373,740
			Total	\$ 67,882,565 (4)	\$ 544,023 (5)

(1) Sub-managers separately listed on the following pages

(2) Consulting fees and/or investment managers no longer under contract as of 6/30/21

(3) Assets that represent the overall allocation.

(4) Includes assets invested on behalf of the Maryland Transit Administration.

(5) Includes management fees allocated to the Maryland Transit Administration.

(6) Funds separately listed on the following pages

Note: Investment Advisory Fees represents management fees invoiced or reported on capital statements.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

ALTERNATIVE INVESTMENTS RELATIONSHIP LISTING

as of June 30, 2021

Private Equity

1315 Capital,LP	FP Co Invest Audax	Madison Dearborn Capital Partners VI,LP
1315 Capital II,LP	Frazier Healthcare V,LP	Madison Dearborn Capital Partners VII,LP
Adams Street Partners,LLC	Frazier Healthcare VI,LP	Madison Dearborn Capital Partners VIII,LP
Advent Central & Eastern Europe IV,LP	Frazier Healthcare VII,LP	Maryland Innovation Opportunity Fund I
Advent International GPE V-D,LP	Frazier Healthcare Growth Buyout Fund VIII,LP	MBK PartnersFund III,LP
Advent International GPE VI-A,LP	Frazier Healthcare Growth Buyout Fund IX,LP	MBK Partners Fund IV,LP
Advent International GPE VIII,LP	Frazier Healthcare Growth Buyout Fund X,LP	MBK Partners Fund V,LP
Advent International GPE IX,LP	Frazier LifeSciences VIII,LP	MD Asia Investors,LP
Apax Europe VI-A,LP	Frazier LifeSciences IX,LP	MDAsia Investors II,LP
Apax Europe VII-A,LP	Frazier LifeSciences X,LP	MD Asia Investors III,LP
Apax IX	Frazier GB IX Proj Thrm Coinvestment	MD Asia Investors IV,LP
Apollo Investment Fund VII (AIF),LP	Frontier Fund III,LP	Navis Asia Fund VI,LP
Apollo Investment Fund VIII (AIF),LP	Frontier Fund IV,LP	New Mainstream Capital Fund II,LP
Apollo Investment Fund IX, LP	Frontier Fund V,LP	New Mainstream Capital Fund III,LP
Arcadia II Beteiligungen BTGmbH&Co	GGV Capital VII,LP	New Mountain Partners III,LP
Astorg VI	GGV Capital VII Plus,LP	New Mountain Partners IV,LP
Astorg VII	GGV Capital VIII,LP	New Mountain Partners V,LP
Audax Private Equity Fund II,LP	GGV Capital VIII Plus,LP	New Mountain Partners VI,LP
Audax Private Equity Fund III,LP	GGV Discovery II,LP	North Sky CleanTech Fund IV,LP
Audax Private Equity Fund IV,LP	GGV Discovery III,LP	Orchid Asia V,LP
Audax Private Equity Fund V,LP	Goldman Sachs Vintage Fund V,LP	Orchid Asia VI,LP
Audax Private Equity Fund VI,LP	Great Hill Equity Partners IV,LP	Orchid Asia VII,LP
Bain Capital Asia Fund III	Great Hill Equity Partners V,LP	PAG Asia Capital II,LP
Bain Capital Asia Fund IV	Great Hill Equity Partners VI,LP	PAG Asia Capital III,LP
Bain Capital Europe Fund IV,LP	Great Hill Equity Partners VII,LP	Pacific Equity Partners V,LP
Bain Capital Europe Fund V,LP	Green Equity Investors VII	Pacific Equity Partners VI,LP
Bain Capital Life Sciences Fund, LP	Harbour Vest Partners VI-Partnership Fund,LP	Partners Group Secondary 2008 ,LP
Bain Capital LifeSciences Fund II,LP	Hellman&Friedman Capital Partners VI,LLC	Partners Group Secondary 2011,LP
Bain Capital Fund IX,LP	Hellman&Friedman Capital Partners VII,LLC	Partners Group Emerging 2011,LP
Bain Capital IX Coinvestment Fund,LP	Hellman&Friedman Capital Partners VIII,LLC	Partners Group Secondary 2015,L.P
Bain Capital Fund X,LP	Hellman&Friedman Capital Partners IX,LLC	Point 406 Ventures II,LP
Bain Capital X Coinvestment Fund,LP	HgCapital 5,LP	Point 406 Ventures III,LP
Bain Capital Fund XI,LP	HgCapital 6A,LP	Point 406 Ventures 2016 Opportunities Fund
Bain Capital Fund XII,LP	HgCapital 7C,LP	Point 406 Ventures Opportunities Fund II
Baring Asia Private Equity Fund VI,LP	HgCapital 8A,LP	Point 406 Ventures IV,LP
Baring Asia Private Equity Fund VII,LP	HgCapital Mercury A,LP	Roark Capital Partners IV,LP
Black River Capital Partners Fund (Agr.A)LP	Hg Genesis 9	Roark Capital Partners V,LP
Blackstone Capital Partners VI,LP	Indigo Coinvestment MBK	Silver Lake Partners V,LP
Blackstone Capital Partners VII,LP	Institutional Venture Partners XV	Silver Lake Partners VI,LP
Blue Wolf Capital Fund III,LP	Institutional Venture Partners XVI	TA Associates XI,LP
Blue Wolf Capital Fund IV,LP	Institutional Venture Partners XVII	TA Associates XII,LP
Bridgepoint Europe Fund V,LP	Jade Equity Investors	TA Associates XIII,LP
Bridgepoint Europe Fund VI,LP	Landmark Equity Partners XIV,LP	TDR Capital III,LP
CDH Fund V,LP	Landmark Equity Partners XV,LP	TDR Capital IV,LP
ChrysCapital VIII, LLC	Landmark Equity Partners XVI,LP	Thoma Bravo Fund XII,LP
Clayton, Dubilier&Rice Fund VIII,LP	Landmark Equity Partners Co-Investment Fund XVI,LP	Thoma Bravo Fund XIII,LP
Clayton, Dubilier&Rice Fund IX,LP	Lexington Capital Partners,VII	Thoma Bravo Fund XIV,LP
Clayton, Dubilier&Rice Fund X,LP	Lexington Middle Market Investors III,LP	Tiger Iron Old Line Fund,LP
Clayton, Dubilier&Rice Fund XI,LP	Lexington Middle Market Investors IV,LP	Tiger Iron Old Line Fund II,LP
Clearlake Capital Partners III,LP	Lexington Co-Investment Partners IV	TPG Partners VI,LP
Clearlake Capital Partners IV,LP	Lexington Co-Investment Partners V	TPG Partners VII,LP
Clearlake Capital Partners V,LP	Lexington Co-Investment Partners V- Overage	Vista Equity Partners Fund IV,LP
Clearlake Capital Partners VI, LP	Lightspeed Opportunity Fund,LP	Vista Equity Partners Fund V,LP
Coller Capital Partners VI,LP	Littlejohn Fund III,LP	Vista Equity Partners Fund VI,LP
Coller Capital Partners VII,LP	Littlejohn Fund IV,LP	Vista Equity Partners Fund VII,LP
Coller Capital Partners VIII, LP	Littlejohn Fund V,LP	Vista Foundation Fund II,LP
Crescent Capital Partners IV,LP	Littlejohn Fund VI,LP	Vista Foundation Fund III,LP
Crescent Capital Partners V,LP	LLR Equity Partners IV,LP	Vista Foundation Fund IV,LP
CVC European Equity Partners V-B,LP	LLR Equity Partners V,LP	Vistria Fund I,LP
CVC Capital Partners VII,LP	LLR Equity Partners VI,LP	Vistria Fund II,LP
Dover Street VII,LP	Longitude Venture Partners II LP	Vistria Fund III,LP
Equistone Partners Europe Fund IV,LP	Longitude Venture Partners III LP	Wind Point Partners VII,LP
Equistone Partners Europe Fund V,LP	Longitude Venture Partners IV, LP	Wind Point Partners VIII,LP
Equistone Partners Europe Fund VI,LP	Madison Dearborn Capital Partners V,LP	Wind Point Partners IX
Everstone Capital Partners II,LLC		
Everstone Capital Partners III,LLC		

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

ALTERNATIVE INVESTMENTS RELATIONSHIP LISTING

as of June 30, 2021

(continued)

Private Real Estate

Abacus Multi Family Partners V	Heitman America Real Estate Trust	Realty Associates Fund X
AEW Partners Fund IX	JER Europe Fund III	Rockwood Capital RE Partners Fund IX,LP
AEW Senior Housing Fund II,LP	JP Morgan Strategic Property	Scout Fund II,LP
AEW Senior Housing Fund IV,LP	Lasalle Property Fund	Starwood Hospitality Fund II,LP
ARES Industrial Real Estate Fund	Lion Industrial Trust	Tristan Capital-European Special Opps3
Carmel Partners Investment Fund VII	Lone Star Real Estate Fund II,LP	Tristan Capital-European Special Opps4
CBRE US Core Partners	Lone Star Real Estate Fund III,LP	Tristan Capital-European Special Opps5
CBRE Strategic Partners EURO Fund III	Lone Star Real Estate Fund IV,LP	UBS Trumbull Property Fund
CBRE Strategic Partners US Value7,LP	Lone Star Real Estate Fund V,LP	Waterton Residential Property Venture XIII
Federal Capital Partners Fund II	Lone Star Real Estate Fund VI,LP	Waterton Residential Property Venture XIV
Federal Capita lPartners Fund III	Lubert Adler Real Estate Fund VI	
Frogmore Real Estate Partners II,LP	Lubert Adler Real Estate Fund VI-A	
GI Partners Fund IV,LP	Morgan Stanley Prime Property Fund,LLC	

Real Return

Alinda Infrastructure Fund II, LP	Hancock Timberland X, LP	Quantum Energy Partners V, LP
Domain Timber Investments	Harvest Fund Advisors, LLC	Quantum Energy Partners VI, LP
EIF US Power Fund IV, LP	Natural Gas Partners IX, LP	Quantum Energy Partners VII, LP
Energy and Minerals Group V, LP	Natural Gas Partners X, LP	RMS Forest Growth III,LP
Energy and Minerals Group V-Accordion, LP	Natural Gas Partners XI, LP	Tortoise Capital Advisors, LLC
First Reserve Fund XII, LP	NGP Natural Resources XII	White Deer Energy, LP
First Reserve Fund XIII, LP	NGP Midstream & Resources, LP	
Global Timber Investors 9	Quantum Energy Partners IV, LP	

Absolute Return

1977 Merger Arbitrage Fund	Empyrean Capital Fund	Nimbus Weather Fund Ltd
Aristeia Partners	Exodus Point	Petershill Private Equity
Aristeia Select Opportunities I	Fort Global Contrarian	Petershill Private Equity IV
Avidity Capital Fund	HSCB Bermuda Fund LTD	Pharo Gaia Fund, Ltd
BFAM Asian Opportunities Fund	Hudson Bay Fund	PHM IV Coinvestment
BlackRock Absolute Return Structural	ILS Property &Casualty Fund	SGM Co Investment Fund
Brevan Howard FG Macro Fund	King Street Capital, LP	Standard General Fund
Bridgewater All Weather	King Street Drawdown	Tudor Maniyar Macro Fund
Bridgewater Pure Alpha	King Street Overflow	Voloridge Fund
Clover Parallel LLC	Kirkoswald Global Macro fund	Yiheng Capital Partners
Contrarian Emma 2	Lone Star Fund XI	
DGAM Diversified Strategies Fund	Nephila Palmetto Fund	

FIXED INCOME RELATIONSHIP LISTING

as of June 30, 2021

Credit/Debt Related

Alchemy Special Opps. Fund II,LP	EIG Energy Fund XV,LP	Partners Group European Mezzanine 2008,LP
Alchemy Special Opps. Fund III,LP	EIG Energy Fund XVI,LP	Peninsula Fund V,LP
Apollo Credit Opps Fund III,LP	Falcon Strategic Partners III,LP	Perella Weinberg Partners
CarVal Credit Value Fund A,LP	Falcon Strategic Partners IV,LP	Prudential Capital Partners III,LP
CarVal Credit Value Fund A III,LP	Garda Firvo	Prudential Capital Partners IV,LP
CarVal Credit Value Fund A IV,LP	GSO Credit Alpha Fund II	Shamrock Capital Content Fund II, LP
CarVal Credit Value Fund A V,LP	HCR Potomac Fund	Shamrock CCF II Coinvestment I
CVI Chesapeake Credit Opps A Fund, LP	Healthcare Royalty Partners IV	Shoreline China Value Fund III,LP
CVI Chesapeake Credit Opps B Fund, LP	Highbridge Convertible Dislocation Fund	TA Subordinated Debt Fund III,LP
Castle Lake III,LP	KKR Mezzanine Partners I,LP	Taurus Mining Finance II
Castle Lake IV,LP	LCM Partners COPS 4	Varde Fund X,LP
Castle Lake V,LP	Merit Mezzanine Fund V,LP	Wayzata Opportunities Fund III,LP
Castlake Aviation IV Stable Yield Opps. LP	Oaktree European Principal Fund III,LP	WHLP Loch Raven Fund
Castlake Aviation IV Stable Yield , LP	Oaktree Opportunity Fund VIII,LP	Whitehorse Liquidity Partners III, LP
Charlesbank Credit Dislocation Overage Fund	Oaktree Opportunity Fund VIII B,LP	Whitehorse Liquidity Partners IV, LP
Crescent Capital Mezzanine Partners VI, LP	Park Square Capital Partners II,LP	

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

TERRA MARIA PROGRAM
as of June 30, 2021

Terra Maria Program

Attucks Asset Management

Arga Investment Management,LP
Gloflex Capital,LP
Metis Global Partners
Paradigm Asset Management Company,LLC
Redwood Investments,LLC

Xponance

Algert Global, LLC
Arga Investment Management, LP
Denali International Small Value
EAM Investors
Lizard Partners, LLC

Capital Prospects LLC

Birch Run Investments
Bridge City Capital, LLC
Garcia Hamilton and Associates
Inview Investment Management, LLC
Lebenthal Lisanti Capital Management, LLC
Longfellow Investment Management
LM Capital Group
New Century Advisors
Pacific Ridge Capital Partners
Profit Investment Management
Pugh Capital Management
Ramirez Asset Management
Semper Capital Management
Sky Harbor Capital Management

Leading Edge Investment Advisors

Ativo Capital Management
Blackcrane Capital LLC
Henry James International
Redwood Investments, LLC
Strategic Global Advisors

Bold denotes Program Manager for the Terra Maria Program

EQUITY RELATIONSHIP LISTING
as of June 30, 2021

Public Equity

Axiom International Investors	Marshall Wace TOPS China (Long/Short)	RWC Partners Emerging Markets
Baillie Gifford	Marshall Wace TOPS Emerging Markets	T. Rowe US Structured (Long/Short)
DFA Emerging Mkts	(Long/Short)	
Durable Capital Partners	Polunin Capital Management	

Equity Hedge

Marshall Wace Eureka Fund

INTERNALLY MANAGED ACCOUNTS
as of June 30, 2021

Public Equity

Commodity Structural/ Tactical	International Equity Structural/ Tactical	Nominal Fixed Income Structural/ Tactical
Emerging Markets Structural/ Tactical	MD TIPS	Non-US Credit Structural / Tactical
Global Equity Tactical	MD Long Government Bonds	US Equity Structural/ Tactical
High Yield Structural/ Tactical	MD US Large Cap Equity	
Inflation Sensitive FI Structural/ Tactical	MD IG Corporate Bonds	

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

EQUITY COMMISSIONS TO BROKERS

for the Fiscal Year Ended June 30, 2021

(Expressed in Thousands)

Brokers (1)	Total Shares	Total Commission
J P Morgan Securities	108,395	\$ 767
CLSA	29,229	590
Morgan Stanley	92,618	460
Credit Suisse Securities	165,980	438
UBS Securities	91,893	420
Cowen Execution Services	30,269	390
Merrill Lynch	97,451	369
Goldman Sachs	94,653	358
Instinet	116,698	356
BOFA Securities	30,126	350
Citigroup Global Markets	21,830	275
Jefferies & Company	25,255	222
Loop Capital Markets	11,409	211
BNP Paribas	17,644	199
Macquarie	129,322	187
HSBC Securities	57,332	168
Williams	16,899	143
Pershing	14,995	102
Other Broker Fees	476,505	2,116
Total broker commissions	<u>1,628,503</u>	<u>\$ 8,121</u>

(1) Proceeds from the sale and disbursements for the purchase of securities are reported net of brokers' commissions. As such, brokers' commissions are not included as investment expenses on the Statement of Changes in Plan Net Assets. Other broker fees include 137 brokers each receiving less than \$100,000 in total commissions.

For the fiscal year ended June 30, 2021, total broker commissions averaged .50 cents per share.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

LARGEST STOCK & BOND HOLDINGS AT MARKET as of June 30, 2021

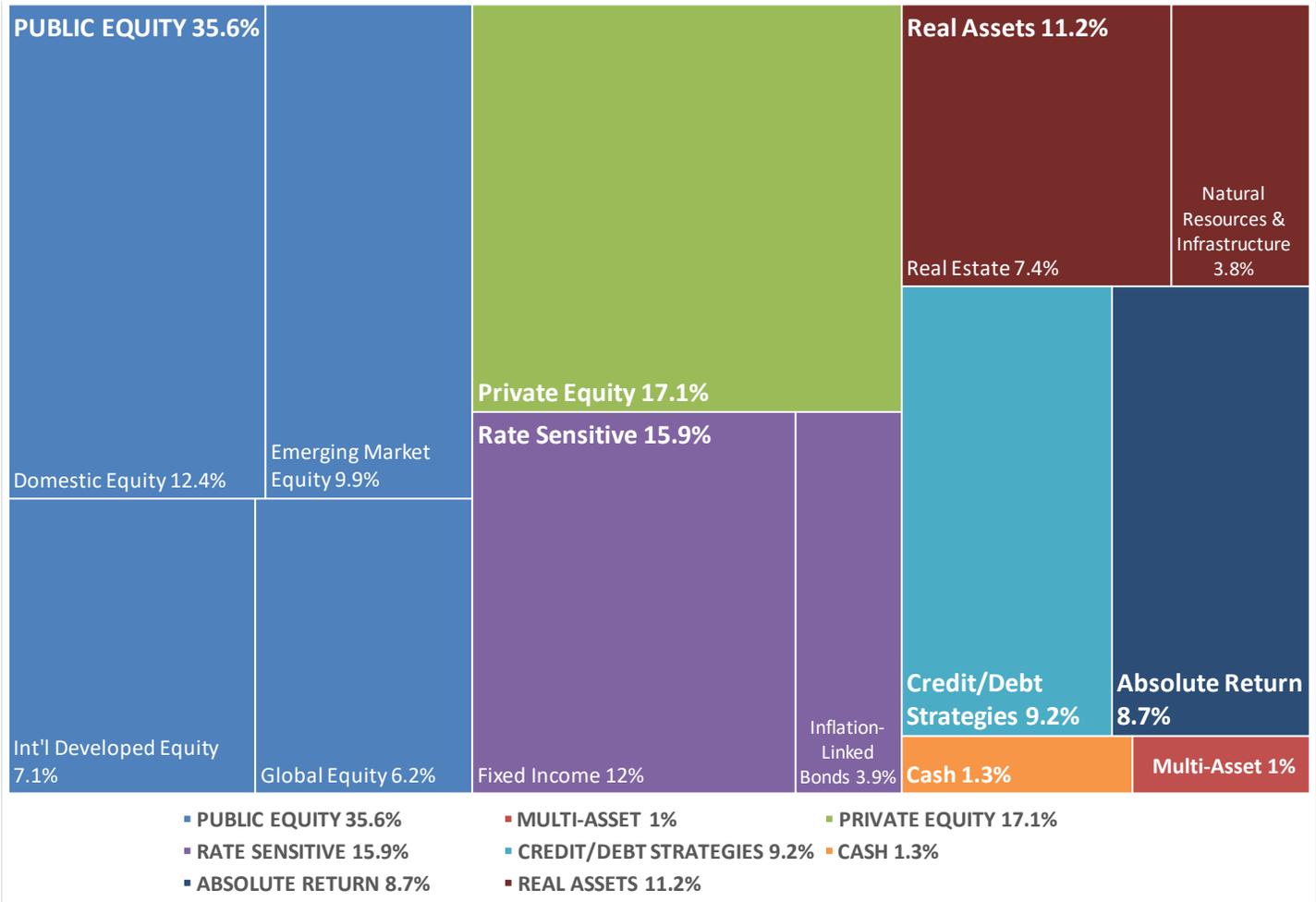
EQUITY INCOME SECURITIES:	Shares	Market Value
Apple Inc.	2,308,000	\$316,103,680
Microsoft Corporation	1,032,314	279,653,863
Amazon.com Inc.	77,578	266,880,732
Facebook Inc. Class A	397,312	138,149,356
Tesla Inc.	200,771	136,464,049
Alphabet Inc. Class A	52,688	128,653,032
Tencent Holdings Ltd.	1,542,800	116,020,165
Nvidia Corp.	143,342	114,687,934
Samsung Electronics Co. Ltd.	1,594,300	114,247,667
Alphabet Inc. Class C	41,686	104,478,456
American Tower Corp.	360,142	97,288,760
Asml Holdings NV	116,029	79,724,779
Netflix Inc.	145,075	76,630,066
Enterprise Products Partners	2,978,085	71,861,191
Hyundai Motor Co.	336,488	71,561,405

FIXED INCOME SECURITIES:	Par Value	Market Value
United States Treasury Inflation Linked, 0.5% Jan 15, 2028	\$309,627,478	\$347,110,981
United States Treasury Bonds, 2.875% May 15, 2043	286,000,000	328,922,880
United States Treasury Inflation Linked, 0.125% Apr 15, 2025	273,648,248	295,337,608
United States Treasury Inflation Linked, 0.625% Jan 15, 2024	239,528,726	257,960,462
United States Treasury Inflation Linked, 0.625% Jan 15, 2026	221,883,761	246,388,604
United States Treasury Bonds, 4.375% Nov 15, 2039	168,800,000	234,822,744
United States Treasury Inflation Linked, 0.75% Feb 15, 2045	172,729,860	212,917,189
United States Treasury Inflation Linked, 0.125% Jan 15, 2023	193,320,168	201,978,978
United States Treasury Bonds, 3% May 15, 2047	158,324,000	188,263,068
United States Treasury Bonds, 3% Nov 15, 2044	154,500,000	181,888,215
United States Treasury Bonds, 1.25% May 15, 2050	200,230,000	163,491,800
United States Treasury Inflation Linked, 3.875% Apr 15, 2029	107,623,507	151,330,489
United States Treasury Bonds, 1.625% Nov 15, 2050	160,300,000	143,970,239
United States Treasury Bonds, 3.375% Nov 15, 2048	111,830,000	142,784,544
United States Treasury Bonds, 3% Feb 15, 2048	108,300,000	129,096,849

A complete list of portfolio holdings is available upon request.

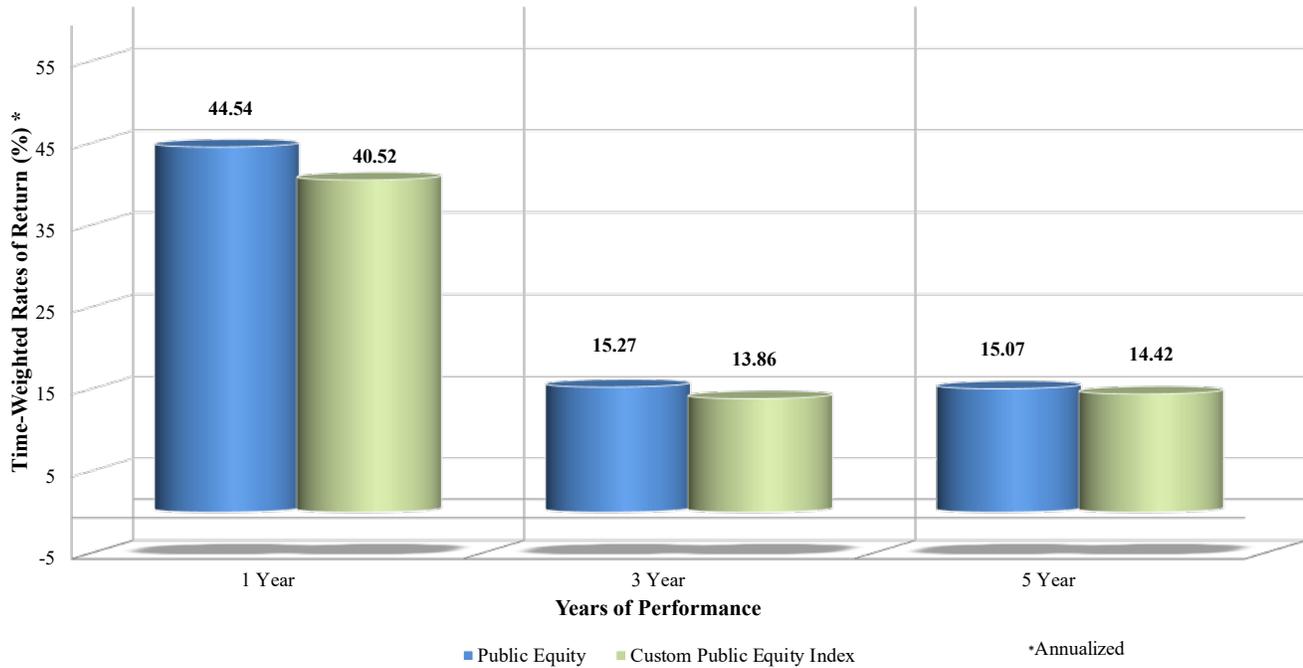
MARYLAND STATE RETIREMENT AND PENSION SYSTEM

INVESTMENT PORTFOLIO ALLOCATION
as of June 30, 2021

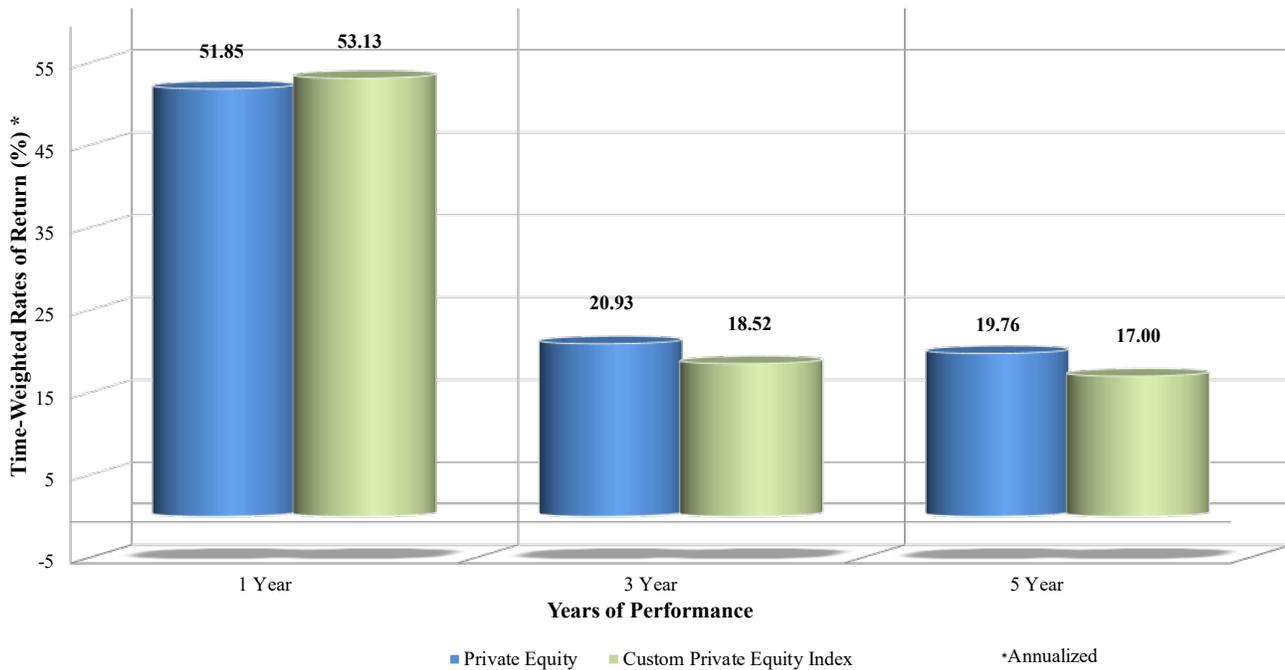


MARYLAND STATE RETIREMENT AND PENSION SYSTEM
COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2021

PUBLIC EQUITY

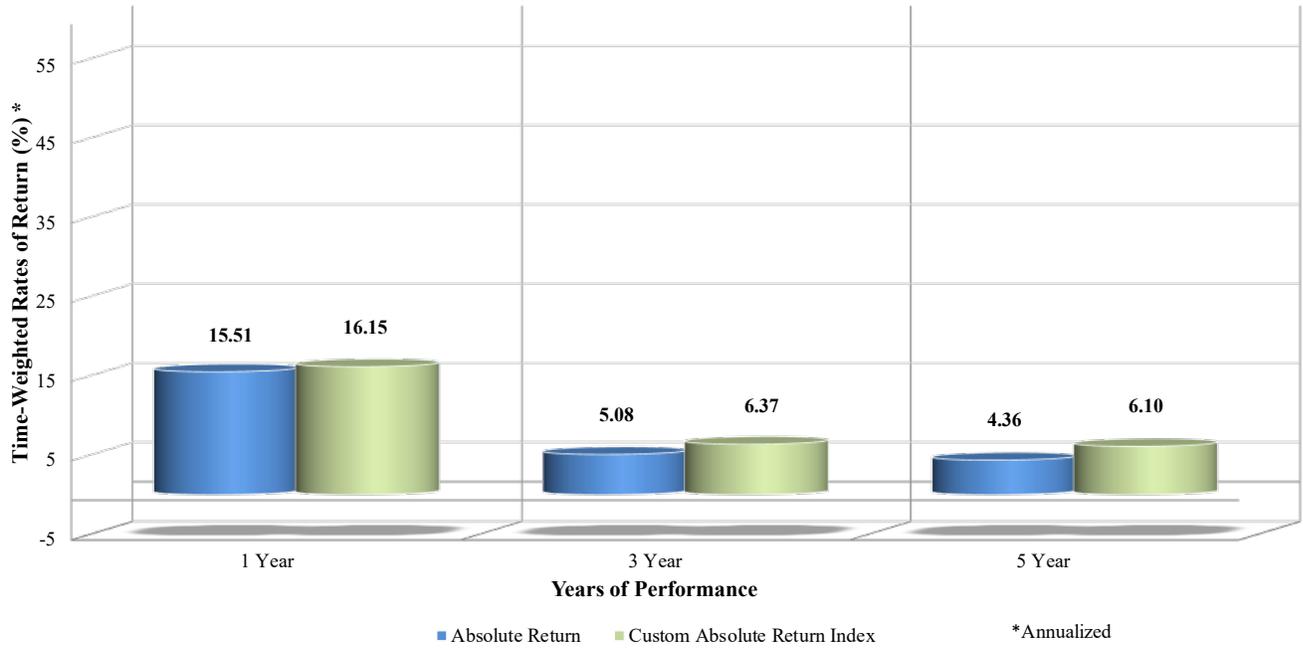


PRIVATE EQUITY

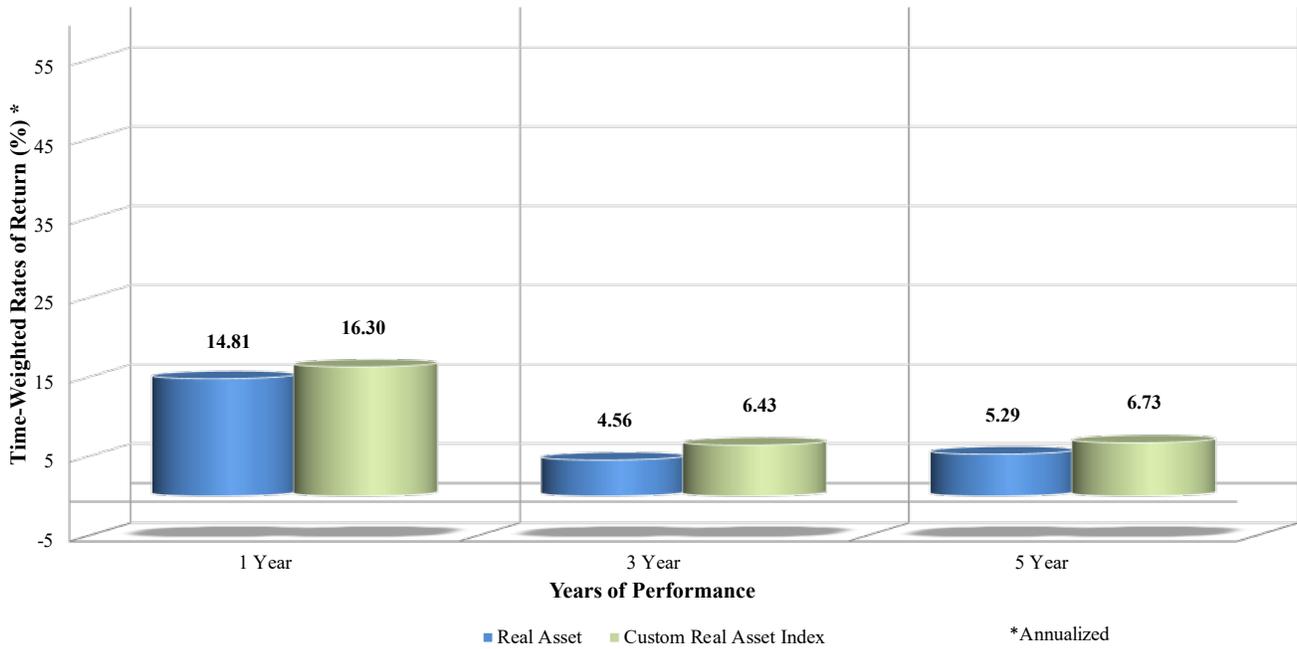


MARYLAND STATE RETIREMENT AND PENSION SYSTEM
 COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2021

ABSOLUTE RETURN

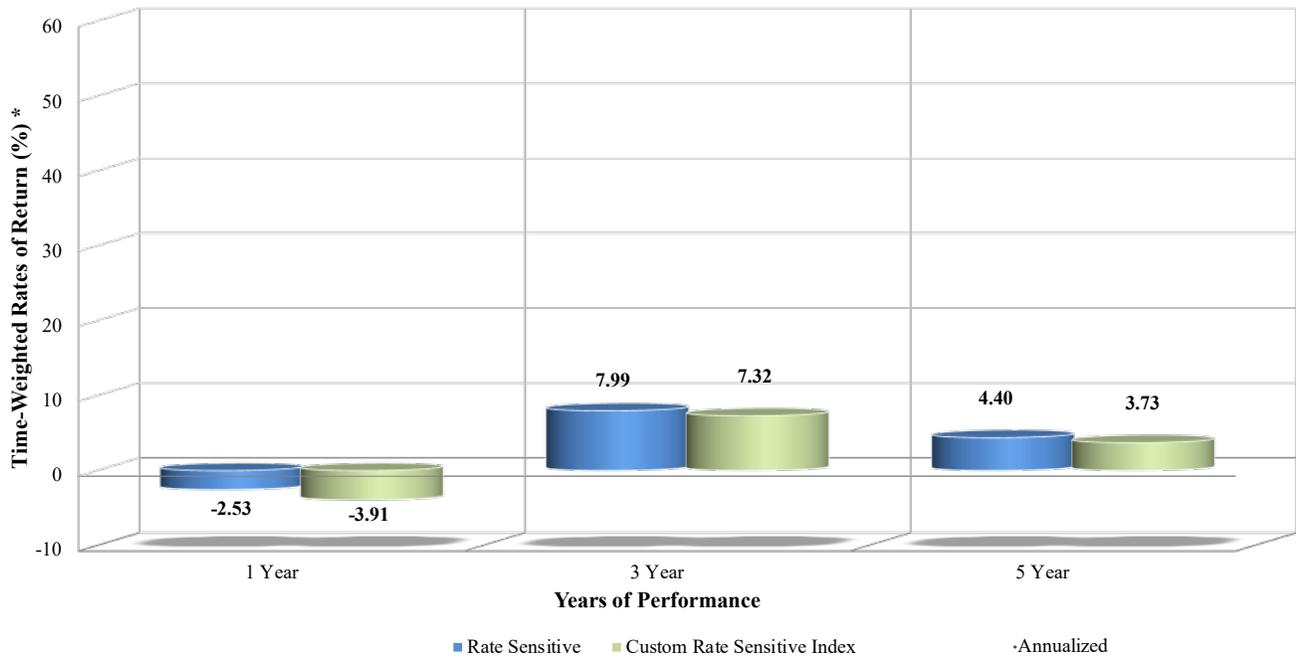


REAL ASSET

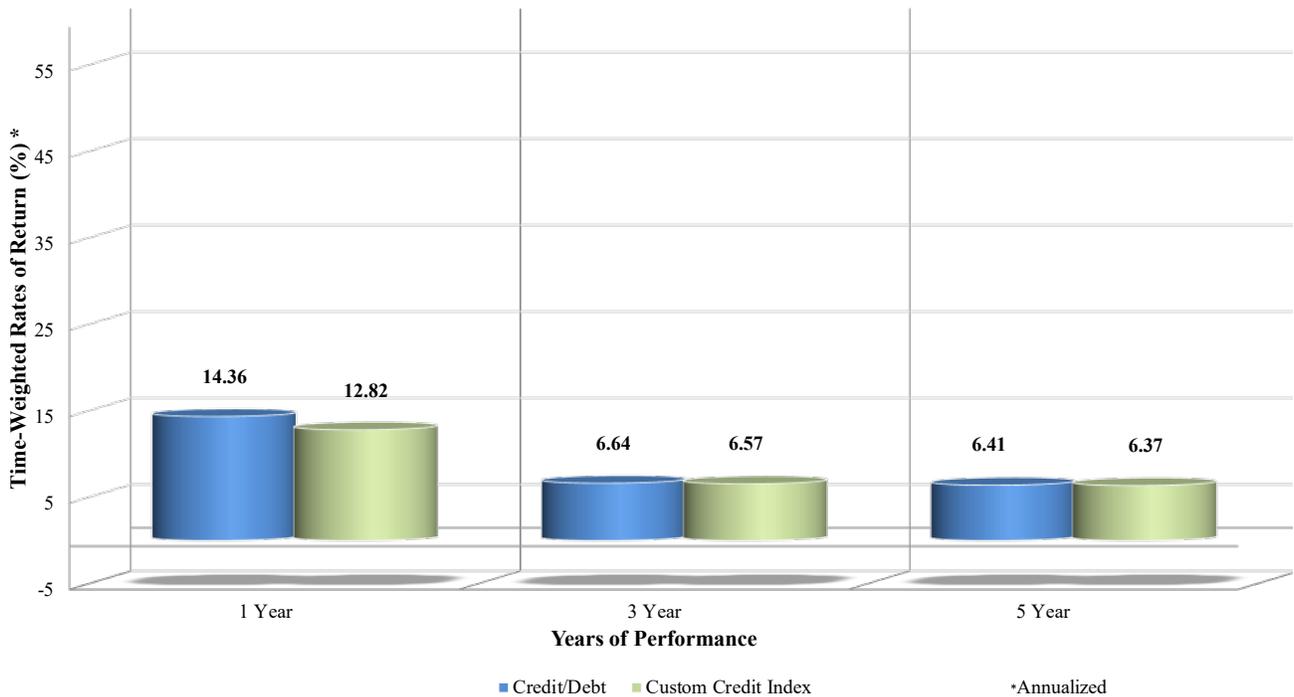


MARYLAND STATE RETIREMENT AND PENSION SYSTEM
 COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2021

RATE SENSITIVE

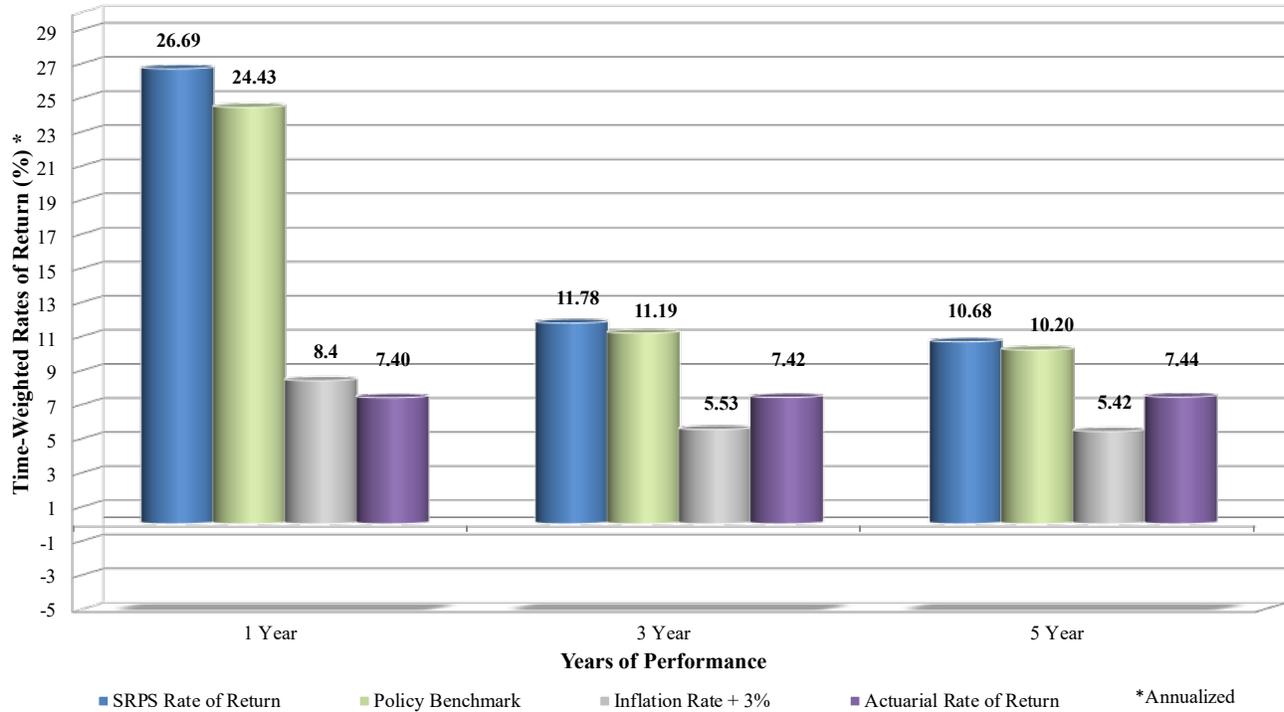


CREDIT / DEBT



MARYLAND STATE RETIREMENT AND PENSION SYSTEM

TOTAL PLAN



TEN-YEAR HISTORY OF TIME-WEIGHTED ANNUAL RETURNS & GROWTH OF INVESTMENT PORTFOLIO





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