



Virginia
Retirement
System

Investments Report

FOR THE QUARTER ENDING

DECEMBER 31, 2021





Ronald D. Schmitz
Chief Investment
Officer

Although the one-year return moderated slightly at December 31 from September 30, VRS saw a robust 18.6% return, 5% above the 13.6% benchmark. VRS' 10-year annualized return is 10%, well above the long-term 6.75% assumed rate of return. All asset classes performed well relative to their respective benchmarks.

Private market assets continued to provide a return advantage and portfolio diversification benefits for VRS compared to public markets. The 10-year return advantage reported last quarter was between 1.6% and 4.8% annualized for each private market asset class compared to the applicable public market alternative.

Private Equity is theoretically riskier than stocks as the asset class is less liquid and carries more debt on the balance sheet. Also, portfolios tend to be more concentrated than portfolios of stocks. All these factors increase economic risk.

However, risk, or volatility of the return pattern, is actually lower in Private Equity than in the stock market. Stocks are priced daily in a public auction market. Buyer sentiment and/or short-term news can cause extreme reactions. Private assets are priced differently – using more of an appraisal-based process and mechanics.

Stock market metrics are only part of the process in establishing a point-in-time value for a private asset. Other factors include comparable private market transactions, valuations derived from bank lending activity, and discounted forward earnings projections. In addition, private assets are priced monthly or quarterly, not daily. Last, private assets are priced with a lag to public markets, as it takes time to calculate and gather all the relevant information inherent in pricing private assets. These factors smooth the reported returns for private asset classes.

(Continued)



*(Continued
from page 2)*

As an example, at the beginning of the COVID-19 Pandemic, the stock market saw a dramatic price decline of about 35% for the S&P 500, a U.S. market barometer. Other global market indexes moved similarly. Within a quarter or two as investors began to forecast a resurgence in economic activity, the stock market rose back to, and beyond, previous highs.

Private Equity experienced a different pattern. Values did not fall precipitously in March of 2020 and did not rise dramatically three to six months later. Valuation levels, and thus returns, remained steady. This return pattern provides a diversification benefit that helps the VRS portfolio.

Calendar year 2020 was not an anomaly. Looking at the VRS portfolio since 1990, statistics illustrate the diversification benefits of private assets versus stocks:

- Private Equity volatility is about 20% less than stocks.
- Private Equity price movements have low correlation to stocks.
- On average, historical Private Equity returns are slightly positive in time periods when stocks decline.
- The worst quarterly drawdown for stocks since 1990 was just over 47%, while it was 36% for Private Equity.

Use of private market assets offers a substantial return advantage and a meaningful reduction in overall volatility for the VRS portfolio. The return advantage helps mitigate costs to employers, while the diversification advantage smooths contribution rate variability year-over-year.

TOTAL FUND PERFORMANCE

(Expressed in Percentages, Net of Fees)

	10 Yr.	5 Yr.	3 Yr.	1 Yr.	Qtr.	Month	Fiscal YTD	Cal YTD
Total Public Equity Strategies	11.9	12.9	18.5	19.3	5.0	4.4	4.4	19.3
<i>Benchmark ¹</i>	12.0	14.0	19.9	18.6	6.2	4.0	5.1	18.6
Total Fixed Income	3.8	4.7	6.4	-0.3	0.0	0.1	0.2	-0.3
<i>Benchmark ²</i>	3.0	3.6	4.9	-1.3	0.0	-0.1	0.1	-1.3
Total Credit Strategies	7.5	7.9	10.2	11.7	1.9	1.5	4.2	11.7
<i>Benchmark ³</i>	6.1	6.0	7.8	4.5	0.7	0.9	1.7	4.5
Total Real Assets	10.6	9.3	9.0	17.8	6.5	6.0	10.1	17.8
<i>Benchmark ⁴</i>	8.9	7.2	7.2	13.7	5.4	2.1	8.7	13.7
Total Private Equity	18.0	22.6	25.4	49.7	7.7	7.9	21.1	49.7
<i>Benchmark ⁵</i>	16.5	16.7	16.0	29.8	-1.0	-4.0	6.2	29.8
Total Private Investment Partnerships	n/a	10.9	11.5	29.6	4.6	4.6	11.6	29.6
<i>Benchmark ⁶</i>	n/a	9.8	9.6	16.8	1.7	-0.3	5.7	16.8
Total Multi-Asset Public Strategies	n/a	n/a	8.3	9.3	2.5	3.1	2.8	9.3
<i>Benchmark ⁷</i>	n/a	n/a	11.3	8.5	2.8	1.9	2.9	8.5
Total Fund	10.0	11.2	14.7	18.6	4.3	4.1	7.0	18.6
<i>VRS Custom Benchmark ⁸</i>	9.4	10.2	13.1	13.6	3.1	1.4	4.5	13.6

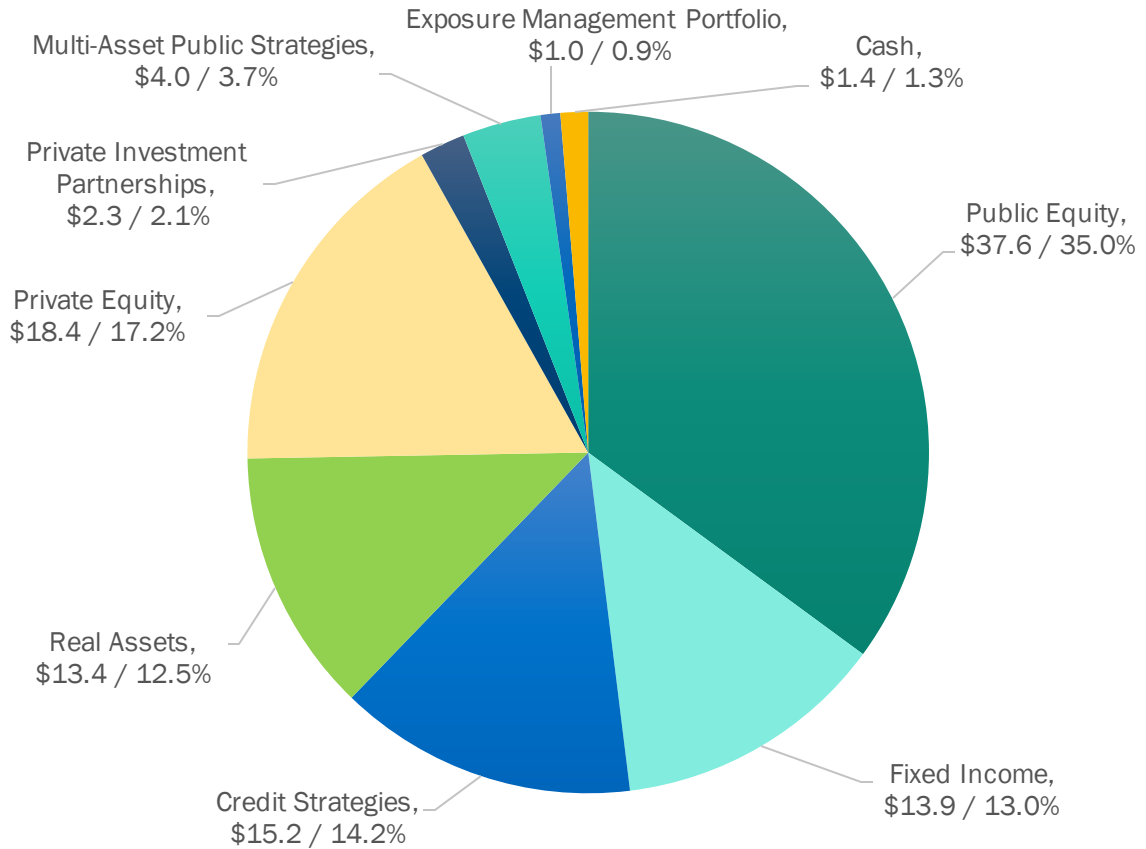
Notes:

- Effective February 2020, the Public Equity Custom Benchmark is the MSCI ACWI IMI (net VRS tax rates) Index.
- Effective July 2020, the Fixed Income Custom Benchmark is a blend of the Bloomberg Barclays Aggregate Bond Index (90%), Bloomberg Barclays US High Yield Ba/B 2% Issuer Cap Index (5%), and J.P. Morgan EMBI Global Core Index (5%).
- Effective January 2020, the Credit Strategies Custom Benchmark is a blend of the S&P Performing Loan Index (60%), Bloomberg Barclays US High Yield Ba/B 2% Issuer Cap Index (30%), and Bloomberg Barclays US Aggregate Bond Index (10%).
- Effective July 2014, the Real Assets Custom Benchmark is the market value weighted blend of the Total Real Estate Benchmark, of which 85% is the NCREIF Private Real Estate Benchmark (ODCE Index (net) lagged by three months) and 15% is the Total REIT Benchmark (FTSE/EPRA/NAREIT Developed REIT Index) and the Other Real Assets Custom Benchmark (the CPI-U Index plus 400 basis points per annum lagged by three months).
- Effective July 2020, the Private Equity Custom Benchmark is the MSCI ACWI IMI Index (net VRS tax rates) lagged by three months.
- Effective July 2021, the Private Investment Partnerships Custom Benchmark is the weighted average of the custom Private Equity Benchmark (MSCI ACWI IMI Index (net VRS tax rates) lagged by three months) (33%), the NCREIF Private Real Estate Benchmark (ODCE Index (net) lagged by three months) (25%), the Other Real Assets Custom benchmark (the CPI-U Index plus 400 basis points per annum lagged by three months) (8%), the Bloomberg Barclays US HY Ba/B 2% Issuer Cap Index (17%), and the S&P Performing Loan Index (17%).
- Effective July 2018, the Multi-Asset Public Strategies Custom Benchmark is the market value weighted average of the benchmarks of the mandates (Dynamic Strategies and Risk-Based Investments) within the program.
- The VRS Custom Benchmark is a blend of the Asset Class Benchmarks at policy weights.

Source: Bank of New York Mellon



Total Fund Market Value = \$107.2 billion



Dollar Amounts in Billions / Percent of Total Fund

Difference in totals are due to rounding

Source: Bank of New York Mellon



	VRS Return (as of December 31, 2021)
1-year	18.6%
3-year	14.7%
5-year	11.2%
10-year	10.0%
15-year	7.0%
20-year	7.8%
25-year	8.0%

Source: Bank of New York Mellon