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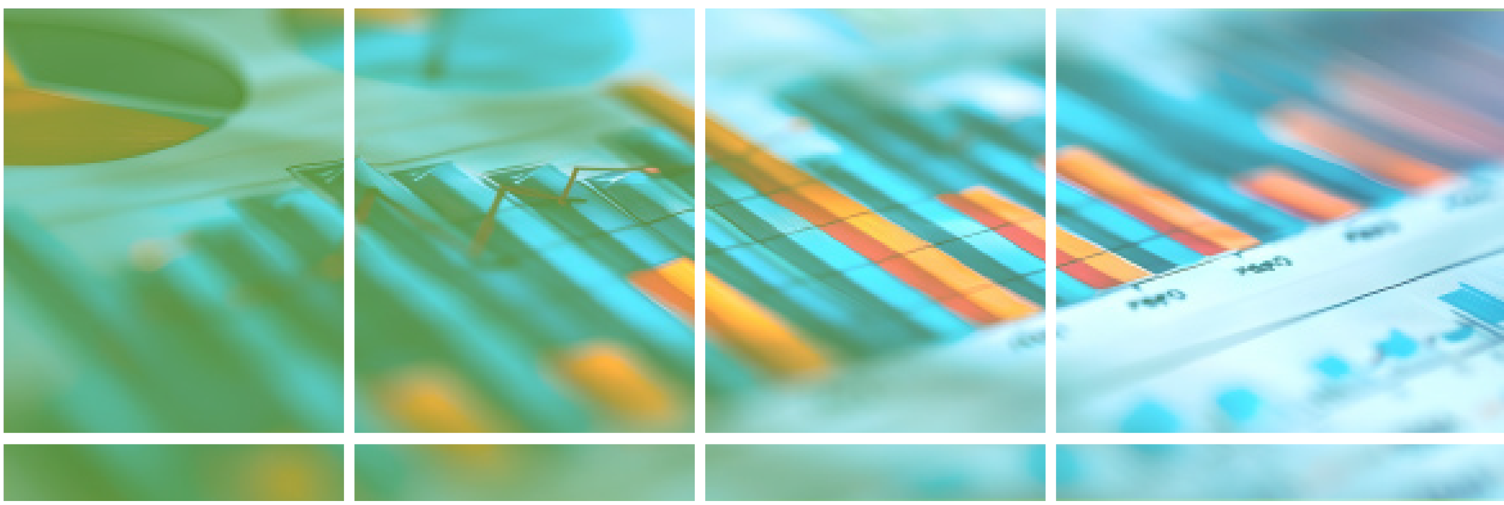
Report to the Governor and the General Assembly of Virginia

# Review of VRS and Virginia529 Investment Benchmarks

## 2024



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# Review of VRS and Virginia529 Investment Benchmarks

The purpose of this memo is to provide background and a review of the investment benchmarks used by the Virginia Retirement System (VRS) and Virginia529. During JLARC staff updates on VRS in recent years, members have asked questions related to VRS's investment benchmarks, including how the benchmarks are determined and how VRS investment performance compares to other public pension plans. In response to these questions, JLARC staff undertook a review of the investment benchmarks used by both VRS and Virginia529. Both agencies were included in the review because JLARC has oversight of both agencies. The review primarily focuses on the funds supporting their defined benefit plans, which are the VRS trust fund and the Defined Benefit 529 (DB529) fund, and provides information on

- the purpose of investment benchmarks and descriptions of the benchmarks used by VRS and Virginia529;
- the processes VRS and Virginia529 use to review and approve benchmarks;
- VRS and Virginia529 investment performance relative to their benchmarks; and
- how VRS and Virginia529 compare to other public pension plans and defined benefit college savings plans, respectively, in their investment performance and the processes they use to review and approve their benchmarks.

This review did not assess whether VRS and Virginia529 are using the most appropriate investment benchmarks. This was outside the scope of this study and would require the assistance of an investment consultant.

JLARC staff undertook this **review of VRS and Virginia529 investment benchmarks** as part of JLARC's ongoing oversight required by the Virginia Retirement System Oversight Act (§30-78 et. seq.) and the Virginia College Savings Plan Oversight Act (§30-330). JLARC's statutory oversight for both agencies includes the review and evaluation of their investment practices, policies, and performance.

## Benchmarks are used to measure assets relative investment performance

The primary purpose of an investment benchmark is to provide information on the relative performance of a fund or asset. Absolute investment returns are a useful performance indicator, but measuring the performance of a fund relative to its benchmark provides meaningful information about whether the fund is earning the level of returns it would earn if it were invested in an identical manner as the securities that comprise the benchmark. Benchmarks thus allow a fund's performance to be compared to its *opportunity set*, or the universe of investment opportunities in which the fund could otherwise be invested. Benchmarks are particularly useful for assessing actively managed funds because they provide information about the extent to which active management—through deliberate strategies, stylistic tilts, and the selection of individual managers—generates additional investment returns. Passively managed funds are expected to have investment returns closer to the returns of the underlying benchmark. In this case, performance relative to the benchmark provides information about whether the fees paid for passive management are competitive.

Investment performance relative to benchmarks provides important information to stakeholders—including investment staff, governing bodies with fiduciary responsibility such as a board, and other stakeholders such as legislators—about whether investment objectives are being achieved and assets are generating the expected level of investment return for a specific risk level. This information is useful to investment staff and governing bodies about whether certain investment strategies are adding value to a fund through higher investment returns.

A strong benchmark should have several key characteristics, according to benchmarking guidelines developed by the Charter Financial Analyst (CFA) Institute. For example, a strong benchmark should

- *be specified in advance.* The benchmark should be adopted prior to the evaluation period.
- *be unambiguous.* The names and weights of the securities that comprise the benchmark should be clearly defined and priced.
- *be relevant.* The benchmark should reflect the investment mandate, objective, or strategy being used to manage the fund.
- *be investible.* The benchmark should contain securities that can be purchased in the market.
- *reflect the investment opportunity set.* The benchmark should comprise holdings that are similar to the portfolio or fund.
- *ensure accountability.* The benchmark should be used to hold investment staff and other fiduciaries accountable for any deviations of performance from the benchmark.

If a benchmark meets these broad criteria, performance relative to the benchmark provides information about the extent to which purposeful deviations from the benchmark's opportunity set through active management are adding value to a fund through higher investment returns.

Benchmarks are used to track the investment performance of a fund at all levels. According to the investment consulting firm Callan, performance relative to benchmarks can provide information at three levels of an investment portfolio:

- **Total fund level.** Total fund performance relative to its benchmark primarily provides information about how differences between the target asset allocation of a fund and its actual asset allocation affect overall fund performance. This is known as the *asset allocation effect.*

- **Asset class level.** The performance of each asset class relative to its benchmark provides information about how the mix of investment managers, investment strategies, and use of active versus passive management affect overall fund performance. This is known as the *asset class structure effect*.
- **Investment manager level.** The performance of each investment manager relative to its benchmark provides information about how decisions individual managers make affect overall fund performance. This is known as the *manager selection effect*.

Investment benchmarks can take numerous forms. One of the most common types of benchmarks is a market index, which comprises securities that represent a subset of the market. Market indexes are widely recognized and frequently used for assets such as public equity and fixed income. For example, the S&P 500 Index, which comprises 500 of the largest publicly traded companies in the U.S., may be used as a benchmark for a public equity portfolio. Custom benchmarks are also commonly used to monitor the performance of an investment fund. Custom benchmarks can be a blend of two or more market indexes or other benchmarks, and these can be weighted to reflect the portfolio's composition. Many benchmarks at the total fund level are custom benchmarks weighted to reflect the target asset allocation of the fund.

## VRS and Virginia529 use similar processes to set their benchmarks

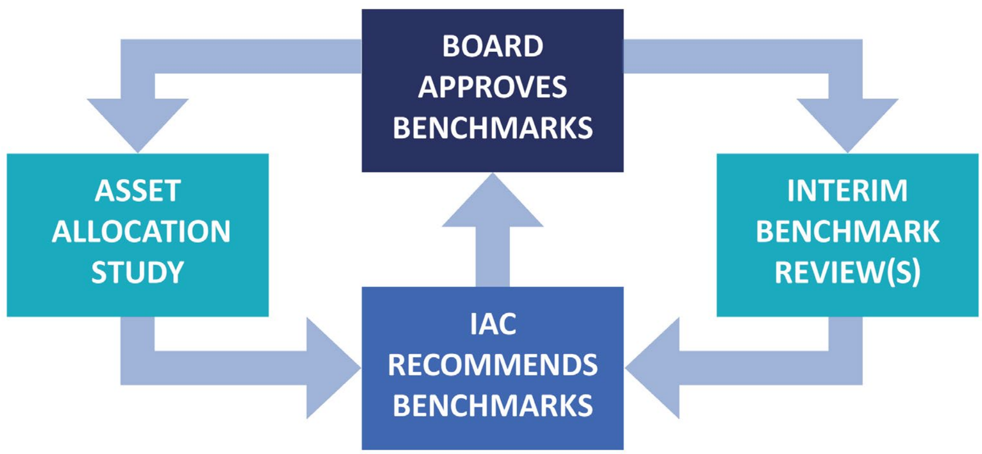
Because of their importance in measuring fund performance, a structured process should be used when choosing or changing investment benchmarks to help ensure appropriate benchmarks are used. Benchmarks are changed for numerous reasons. Benchmarks may need to be changed when a fund's asset allocation or investment strategies change. For example, a revised asset allocation may result in a change to the total fund benchmark, or new investment programs may require their own unique benchmarks. A benchmark may also be changed if it is determined that a different benchmark would better reflect the opportunity set of an asset class or investment strategy. Benchmark changes should be well justified and reflect the characteristics of a strong benchmark and should not be used to improve perceived performance. This is important not only to ensure accurate performance information is provided to stakeholders, but because investment staff's incentive compensation is often based on investment performance relative to benchmarks.

For their defined benefit trust funds, the VRS and Virginia529 boards are responsible for reviewing and approving benchmarks for their total funds and primary asset classes. Investment advisory committees (IAC) at both agencies provide recommendations to their boards for proposed benchmarks, which are generally determined with assistance from investment consultants.

## VRS and Virginia529 determine their benchmarks through asset allocation studies and interim reviews

VRS and Virginia529 determine the appropriate benchmarks for the total funds and primary asset classes through asset allocation studies and interim benchmark reviews (Figure 1). Asset allocation studies use capital market projections and economic modeling to identify the strategic allocation of assets that maximizes investment returns, given a plan's liabilities, time horizon, and liquidity needs. Along with a recommended asset allocation, these studies recommend the appropriate benchmarks for the primary asset classes and the total fund. VRS and Virginia529 conduct asset allocation studies every two- to-four years with the assistance of investment consultants. Both agencies most recently conducted asset allocation studies in 2023.

**FIGURE 1**
**VRS and Virginia529 use asset allocation studies to determine total fund and asset class benchmarks and conduct interim reviews**




SOURCE: JLARC staff analysis of VRS and Virginia529 processes to determine benchmarks.

Following the asset allocation studies, the investment consultants present the proposed benchmarks to the IACs of VRS and Virginia529 as part of their review of the proposed asset allocation. The IACs make recommendations to their respective boards regarding the proposed benchmarks as well as the asset allocation. The boards then review and approve the benchmarks as part of their review and approval of a strategic asset allocation.

Between asset allocation studies, both VRS and Virginia529 conduct interim reviews of their benchmarks. VRS conducts both regularly scheduled benchmark reviews as well as ad hoc reviews. Virginia529 primarily conducts ad hoc interim reviews. These interim reviews can also result in changes to benchmarks.

VRS and Virginia529 give their investment staff discretion to determine appropriate benchmarks for asset categories below the total fund and primary asset classes, such as the investment strategies that comprise an asset class and the individual managers who implement those strategies. These benchmarks are used on a more day-to-day basis to monitor the implementation of investment strategies and the performance of investment managers. For example, within its public equity portfolio, VRS investment staff use a custom benchmark to evaluate the performance of their actively managed investment program in small-cap, non-U.S. equities. Benchmarks for individual managers are commonly included in the contractual agreements between VRS or Virginia529 and a manager.

Although VRS and Virginia529 use a similar process for setting their benchmarks, the agencies have some differences in their use of investment consultants and the involvement of investment staff.

### *VRS uses third-party consultants to conduct asset allocation studies and interim benchmark reviews, and investment staff conduct ad hoc reviews*

VRS contracts with independent third-party consultants to conduct its asset allocation studies, and approximately every three years it contracts with a consultant for an interim review of the continued appropriateness of its total fund and asset class benchmarks. Similar to the asset allocation studies, any benchmark changes the consultant recommends through interim benchmark reviews are presented to the IAC and the board for their review and approval.

In addition to reviewing benchmarks with the assistance of consultants through asset allocation studies and interim reviews, VRS investment staff review benchmarks on an ad hoc basis to ensure they remain accurate indicators of performance.

### *Virginia529 reviews its investment benchmarks in collaboration with its investment consultant as part of asset allocation studies and ad hoc reviews*

Virginia529 primarily reviews its investment benchmarks through asset allocation studies conducted with the consultant that assists the board, IAC, and investment staff who manage the DB529 fund. Virginia529 contracts on an ongoing basis with the investment consultant to assist with

- evaluating investment results;
- identifying, screening, and selecting investment managers; and
- providing recommendations to the IAC and board for achieving overall investment program objectives.

The consultant conducts asset allocation studies for Virginia529, and as part of these studies, provides recommendations on appropriate benchmarks for the DB529 total fund and its primary asset classes. The consultant also assists staff with reviewing benchmarks on an ad hoc basis to ensure they remain accurate indicators of performance.

## VRS and Virginia529 use common approaches for the total fund benchmark and widely recognized benchmarks for asset classes

VRS and Virginia529 use similar types of benchmarks for their total funds and primary asset classes. For their total funds, both agencies use custom policy benchmarks that reflect the target asset allocations adopted by their respective boards. Both agencies also use widely recognized benchmarks for their primary asset classes, such as public equity and fixed income. (Appendix A provides more information about the program-level benchmarks used by VRS and Virginia529 for their defined benefit trust funds. Appendix B provides information about benchmarks for the defined contribution plans available through VRS and Virginia529.)

### *VRS and Virginia529 use custom policy benchmarks for their total funds, which is similar to many other public funds*

The total fund benchmarks for the VRS trust fund and the DB529 fund are custom policy benchmarks that blend the benchmarks for each asset class at their *policy weights*, or the target asset allocation, determined by the VRS and Virginia529 boards. By weighting the total fund benchmark according to the board's target asset allocation, fiduciaries can determine the extent to which over- or underperformance results from deviations from the target asset allocation because of active management or market conditions affecting asset valuations. This is important because asset allocation is the primary determinant of total fund performance.

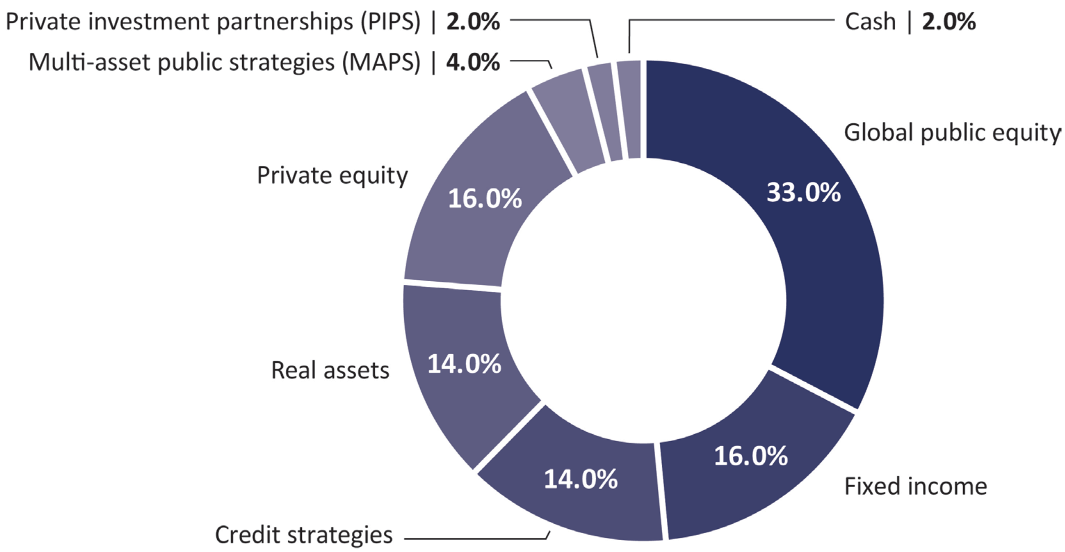
The target asset allocation for the VRS trust fund, which held $109.2 billion in assets as of December 31, 2023, includes eight broad asset classes, the largest of which is the global public equity portfolio (Figure 2). The VRS total fund benchmark weights the asset class benchmarks according to these target asset allocations. The total fund benchmark for the DB529 fund, which held $2.9 billion in assets as of December 31, 2023, is similarly a blend of the five benchmarks for the primary asset and sub-asset classes comprising the fund, weighted according to their target asset allocations (Figure 3).

Custom policy-weighted benchmarks are commonly used at the total fund level for public trust funds. Among large public pension plans, most other state plans evaluate total fund performance relative to a custom benchmark that reflects the policy weights of the primary asset classes. Policy-weighted benchmarks are also used to monitor the investment performance of other states' defined benefit college savings plans, such as the Florida Prepaid College Program and the Guaranteed Education Tuition program in Washington state.

**FIGURE 2**

**VRS board allocates the trust fund across eight broad asset classes, which also make up the total fund benchmark**

Asset allocation policy targets, March 2024



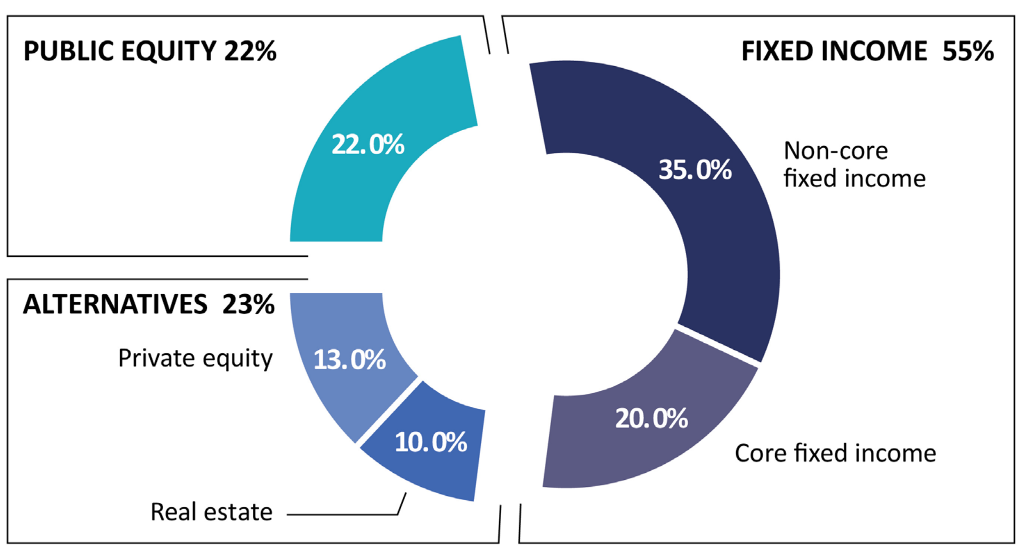

SOURCE: VRS Defined Benefit Plan Investment Policy Statement.

NOTE: Percentages total 101 percent, reflecting the use of 1 percent of the fund as leverage. Actual allocation percentages for trust fund asset classes will differ from the policy targets at any given time, depending on market returns and rebalancing.

**FIGURE 3**

**Virginia529 board allocates DB529 fund assets across five asset and sub-asset classes, which also make up the total fund benchmark**

Asset allocation policy targets, March 2024




SOURCE: Virginia529 Defined Benefit 529 Statement of Investment Policy and Guidelines.

NOTE: Actual allocation percentages for DB529 asset classes will differ from the policy targets at any given time, depending on market returns and rebalancing.

### *VRS and Virginia529 use widely recognized benchmarks for most asset classes*

VRS and Virginia529 generally use widely recognized market indexes as the benchmarks for their primary asset classes. For example, both VRS and Virginia529 use the MSCI All Country World Index (ACWI) Investible Market (IMI) index for their total public equity portfolios. The MSCI ACWI IMI is a widely used index that captures stocks for large-, mid-, and small-capitalization companies in both developed and emerging market countries.

An **illiquidity premium** is the higher investment return associated with longer-term, relatively illiquid investments. Many investments in private assets require 10–15 year commitments, during which the owner would incur substantial financial penalties if it sold the asset. The illiquidity premium compensates investors for tying up their assets in these longer-term, illiquid investments.

For several of the VRS trust fund's asset classes, VRS uses a custom benchmark that combines two or more market indexes to reflect the different types of assets and strategies that comprise the asset class. For example, the custom benchmark for its real assets portfolio is a blend of two benchmarks intended to capture the main components of the portfolio. For the private real estate component, VRS uses the NCREIF Private Real Estate Benchmark Index, which reflects a diversified group of privately owned U.S. core real estate funds. For the infrastructure and resources component of the real assets portfolio, VRS uses the Consumer Price Index for All Urban Consumers (CPI-U) plus a 400-basis point spread (i.e., the benchmark is the CPI-U plus 400 basis points). VRS uses the CPI-U because the value of infrastructure and resource assets is believed to increase with inflation, and the additional spread is used to reflect the asset's illiquidity premium (sidebar). VRS uses similar types of custom benchmarks for its fixed income and credit strategies portfolios.

**Non-core fixed income** comprises high-yield bonds, bank loans, emerging market debt, private debt, and multi-asset credit.

**Core fixed income** comprises government bonds, corporate bonds, and U.S. treasury bills.

Virginia529 uses a similar type of custom benchmark for its fixed income program, which is a custom blend of the benchmarks for its non-core and core fixed income portfolios (sidebar) weighted at the target asset allocation for these portfolios. For example, the benchmark for the non-core fixed income portfolio is an equally weighted blend of three market indexes representing the main components of the portfolio, including multi-asset credit strategies and emerging markets debt. The benchmark for the core fixed income portfolio is the Bloomberg U.S. Aggregate Bond Index.

Similar to VRS and Virginia529, public trust funds in other states also use widely recognized benchmarks for their primary asset classes. For example, several large public pension plans in other states use market indexes such as the MSCI AWCI or an S&P index for their public equity portfolios. In some cases, these plans use custom benchmarks as well that blend multiple market indexes.

### *Benchmark approaches differ for private market assets, which can affect the relative performance of investments*

The appropriate benchmark for private market assets, such as private equity, can be difficult to determine. Public equity investment benchmarks are easier to determine, because public companies' stock prices are based on earnings and valuations, both of which are publicly disclosed regularly. By contrast, valuations of privately owned companies and other private assets occur less often and typically closer to when the company or asset is sold, so benchmarks constructed with these assets often don't exist.

The benchmarks used for private equity vary widely across public trust funds, which can affect the relative performance of investments. Private equity benchmarks are often based on a public equity benchmark because, according to VRS staff, public equity is likely where these funds would be invested if they were not in private equity. However, the use of spreads added to the benchmark, which are intended to reflect the illiquidity premium and higher risk of private investments, varies. Adding spreads to the private equity benchmarks makes it more difficult to meet or outperform them.

Virginia529 and VRS differ in their use of spreads with the private equity benchmark. Virginia529's benchmark for private equity is the MSCI ACWI IMI public equity index plus 300 basis points. The additional 300-point spread reflects the higher returns associated with longer-term and less liquid private equity investments, according to Virginia529 staff. VRS also uses the MSCI ACWI IMI public equity index for private equity (with an adjustment to the regional weightings to reflect the geographic location of private equity opportunities), but no additional spread is added to the index. VRS staff indicate it is difficult to determine the appropriate additional spread because the higher returns associated with private equity compared to public equity change over time. VRS staff indicate that illiquidity premiums have declined in recent years because more institutional investors have invested in private equity, driving up its price. VRS's large size and lack of exposure to venture capital also makes it difficult to invest in higher-return opportunities with funds that have relatively small amounts of assets under management.

Public trust funds in other states take a variety of approaches to constructing their private equity benchmark. For example, the private equity benchmark for the Michigan Public School Employees Retirement System is the S&P 500 index plus a spread of 300 basis points. Other public funds use a different public equity index with a smaller spread, such as 150 basis points. The State of Wisconsin Investment Board, which manages the retirement trust funds for public employees and several smaller state funds, uses a private equity benchmark based on multiple peer group indexes.

## VRS and Virginia529 have made changes to benchmarks in recent years

The VRS board has made several significant changes to benchmarks in recent years. As discussed above, the 2020 interim benchmark review recommended changing the private equity benchmark by removing a 250-basis point spread that was added to the global public equity index. The rationale for removing the additional spread was that *any* outperformance compared to public equity was beneficial to the VRS trust fund. The recommended change was subsequently approved by the IAC and the board.

The IAC and board approved changes to seven benchmarks in 2023 because of the asset allocation study and staff recommendations. (VRS staff indicate the staff-recommended changes were also reviewed by the consultant that conducted the 2023 asset allocation study.) For example, the public equity benchmark had previously consisted solely of the MSCI ACWI IMI index, which was intended to reflect the broad opportunity set of public equity available throughout the world. Based on the asset allocation study, the public equity benchmark was changed to weight the MSCI ACWI IMI index at 85 percent and the MSCI World Minimum Volatility Index was added, weighted at 15 percent, to reflect VRS investment staff's strategy of investing in lower volatility stocks that exhibit lower price fluctuations.

No changes were made from VRS's 2024 interim benchmark review. The review found that the total fund and program-level benchmarks were appropriate and did not recommend any changes.

The Virginia529 IAC and board also made changes to the DB529 fund's benchmarks in recent years. JLARC hired an investment consultant in 2018 to conduct an independent review of the appropriateness of Virginia529's benchmarks. Following the independent review, the board adopted the consultant's recommendations. In 2021, the board made changes to simplify the benchmarks. The benchmarks are still based on the approach the independent review recommended, which was that policy-level benchmarks should be based on the model portfolio adopted by the IAC and board. However, some benchmarks have been dropped. For example, the board changed its core fixed income benchmark to the Bloomberg U.S. Aggregate Bond Index (dropping a benchmark for intermediate credit) and simplified its non-core fixed income benchmark to match its custom benchmark for multi-asset credit investments.

Other changes adopted by the board coincided with investment strategy changes. For example, as part of a broader restructuring of the DB529 portfolio in 2021, the board changed the investment strategy for the domestic equity portfolio from active management to a passively managed index fund. At the same time, the board changed the benchmark for the domestic equity portfolio from the Russell 3000 index to the MSCI U.S. Net Dividend index.

No changes were made to Virginia529's benchmarks following its 2023 asset allocation study.

## VRS and Virginia529 investment performance compared to benchmarks

There are several ways to assess a fund's investment performance. First, a fund's investment returns can be compared to the fund's long-term assumed rate of return. Sustained over- or underperformance relative to the assumed rate of return can affect the actuarial funded status. For the VRS trust fund, for example, sustained overperformance can reduce the amount of unfunded liabilities in the plan, which can lead to relatively lower employer contribution rates and a higher funded status in the long term. For Virginia529's DB529 fund, because defined benefit college savings plan contracts are priced according to expected tuition growth, a higher funded status means greater certainty that obligations to contract holders will be met and a larger actuarial surplus.

Second, a fund's investment returns can be compared to its benchmarks. Consistently over- or underperforming benchmarks can help assess the extent to which active management adds value to a fund, or in the case of passively managed assets, whether asset management and administrative fees are competitive.

Finally, investment returns can be compared to other state plans, either in absolute terms or relative to their respective benchmarks. A plan's absolute return will largely reflect its asset allocation and the risk level plan fiduciaries determine is acceptable, which will be based on considerations such as the plan's funded status, amount and timing of liabilities, member demographics, and liquidity needs. Comparing plans in their investment performance relative to benchmarks is another way to compare performance. Although this approach controls for the differing asset class allocations across plans, it also assumes plans are choosing appropriate benchmarks (i.e., not too easy or too difficult to achieve).

Assessing investment performance over a longer time horizon, such as five or 10 years, generally provides the most relevant information about the performance of a pension or college savings fund because of the long-term nature of their liabilities. A longer time horizon provides more meaningful information about the sustained performance of investments. Many investment strategies also require a full market cycle of 5–10 years to yield positive results for a fund. However, shorter term horizons still provide useful information on how investment strategies are performing in current market environments.

## VRS has generally outperformed its benchmarks and compares favorably to other large public pension plans

The VRS board assumes a long-term rate of return of 6.75 percent for the trust fund, and the trust fund has exceeded that return rate for all periods ending December 31, 2023. The trust fund has also overperformed its total fund benchmark for most periods. Additionally, the trust fund's investment performance exceeds the performance of the majority of large public pension plans in other states based on different measures of performance.

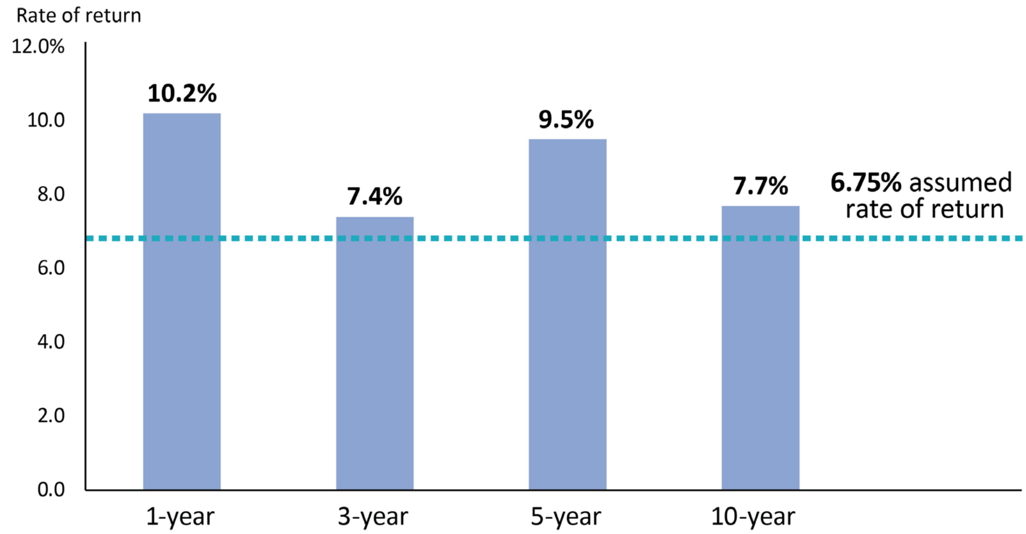
### *VRS trust fund returns are above the long-term assumed rate of return*

Returns for the VRS trust fund have been consistently above the 6.75 percent long-term rate of return assumed by the VRS board (Figure 4). The trust fund generated a return of 7.7 percent over the 10-year period ending December 31, 2023, nearly 100 basis points above the return assumption. Returns for one- and five-year periods were well above the return assumption, while returns for the three-year period exceeded the return assumption by a smaller margin.

### *VRS trust fund overperformed its benchmark for the five- and 10-year periods*

The VRS trust fund overperformed its total fund custom benchmark for the five- and 10-year periods ending December 31, 2023, by 170 basis points and 100 basis points, respectively (Table 1). VRS's largest asset class, public equity, slightly underperformed for these periods, but substantial overperformance in several other asset classes offset public equity's underperformance.

**FIGURE 4**
**VRS trust fund returns have been consistently above the long-term assumed rate of return**
for the period ending December 31, 2023




SOURCE: JLARC staff analysis of VRS investment department data.
NOTE: All returns are net of fees.

Most of the overperformance for the five- and 10-year periods was due to the substantial overperformance of the private equity portfolio, which is the second largest asset class. Private equity overperformed the benchmark by 770 basis points for the five-year period and by nearly 500 basis points for the 10-year period. The private equity portfolio's overperformance over these periods reflects the substantial performance of the private equity market compared with the public equity market, which is the basis for the private equity benchmark. (The 2020 removal of the 250-basis point spread from the private equity benchmark does not affect these periods because it was applied prospectively.)

The real assets, credit strategies, and fixed income asset classes, which are similarly sized, also overperformed their benchmarks for the five- and 10-year periods. For example, the real assets portfolio overperformed its benchmarks by the most for these periods—approximately 220 basis points for each period. The overperformance of real assets primarily reflects VRS's strategies to deviate from the benchmark exposures, according to VRS staff. The real estate portion of the real assets portfolio has more investments in multi-family housing and less in office space compared with the benchmark.

The VRS trust fund underperformed its benchmark by 320 basis points for the one-year period ending December 31, 2023. Most of this underperformance was because the private equity portfolio generated a one-year return of 6.4 percent, which was well below the benchmark return of 20.7 percent. If the private equity benchmark still had the 250-basis point spread, the underperformance of the total fund would be more. The total fund's underperformance for the one-year period was also driven by the underperformance of public equity, which was attributable to VRS's strategy of favoring lower volatility value stocks over growth stocks compared with the benchmark, according to VRS staff.

## TABLE 1
## VRS trust fund performance relative to benchmarks
for the period ending December 31, 2023

| | Assets (millions) | 1 year | 3 year | 5 year | 10 year |
|---|---|---|---|---|---|
| **Total fund** | $109,239 | 10.2% | 7.4% | 9.5% | 7.7% |
| Benchmark | | 13.4 | 4.6 | 7.8 | 6.7 |
| Excess return | | **-3.2** | **2.8** | **1.7** | **1.0** |
| **Public equity** | $36,270 | 20.1 | 6.7 | 11.1 | 8.0 |
| Benchmark | | 22.1 | 5.9 | 11.5 | 8.1 |
| Excess return | | **-2.0** | **0.8** | **-0.4** | **-0.1** |
| **Private equity** | $18,968 | 6.4 | 16.8 | 16.0 | 15.2 |
| Benchmark | | 20.7 | 7.4 | 8.3 | 10.4 |
| Excess return | | **-14.3** | **9.4** | **7.7** | **4.8** |
| **Credit strategies** | $15,663 | 11.6 | 6.9 | 7.9 | 6.2 |
| Benchmark | | 13.1 | 3.9 | 6.2 | 5.1 |
| Excess return | | **-1.5** | **3.0** | **1.7** | **1.1** |
| **Fixed income** | $15,023 | 6.5 | -2.5 | 2.3 | 2.7 |
| Benchmark | | 6.1 | -3.1 | 1.3 | 1.9 |
| Excess return | | **0.4** | **0.6** | **1.0** | **0.8** |
| **Real assets** | $14,078 | -2.4 | 9.5 | 7.6 | 9.3 |
| Benchmark | | -6.4 | 6.3 | 5.4 | 7.1 |
| Excess return | | **4.0** | **3.2** | **2.2** | **2.2** |
| **Multi-asset public strategies** | $4,072 | 9.3 | 4.3 | 5.7 | n.a. |
| Benchmark | | 11.6 | 3.0 | 6.7 | n.a. |
| Excess return | | **-2.3** | **1.3** | **-1.0** | n.a. |
| **Private investment partnerships** | $2,372 | 7.0 | 12.8 | 8.9 | n.a. |
| Benchmark | | 8.2 | 6.9 | 6.6 | n.a. |
| Excess return | | **-1.2** | **5.9** | **2.3** | n.a. |

SOURCE: JLARC analysis of VRS investment department data.
NOTE: All returns are net of fees. The multi-asset public strategies and private investment partnerships programs are too recent to have 10-year performance data.

VRS investment performance relative to benchmarks is important because it can have a meaningful impact on the trust fund's value. For example, the total fund's overperformance of 100 basis points over the 10-year period resulted in an approximately $9.3 billion increase in the fund. Conversely, the public equity portfolio's underperformance of 10 basis points over the 10-year period resulted in a loss of $528 million compared to what the portfolio would have earned if it had been invested in the program's benchmark. The gains and losses resulting from over- or underperformance are not fully realized because the fund is never completely liquidated. However, long-term over- or underperformance affects the asset levels in the fund, and thus the funded status (the ratio of assets to future liabilities) and can therefore affect the contribution rates that employers need to pay to ensure assets are sufficient.

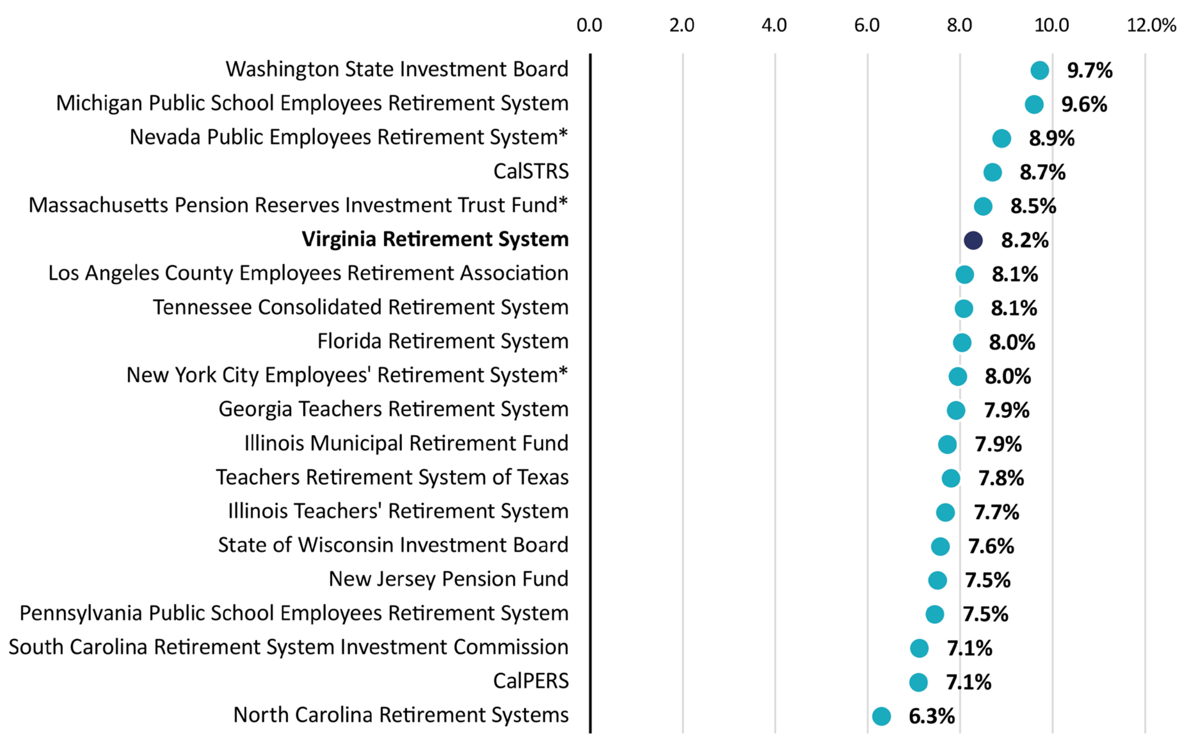
### *VRS's absolute return is higher than the majority of other large public pension plans, and it exceeded its benchmarks by a larger margin than most other plans*

The performance of the VRS trust fund was higher than other public pension plans when assessed on several measures. Absolute investment returns for the VRS trust fund were slightly above the median for other similarly sized public pension plans (Figure 5). For the 10-year period ending on June 30, 2023, the VRS trust fund generated a return of 8.2 percent compared with the median return of 7.9 percent for 19 other large public pension plans over the same period. As mentioned previously, absolute returns largely reflect plans' asset allocations, which are driven by their investment goals and risk profiles.

**FIGURE 5**

**VRS total fund investment return for the 10-year period was above the median for large public pension plans**

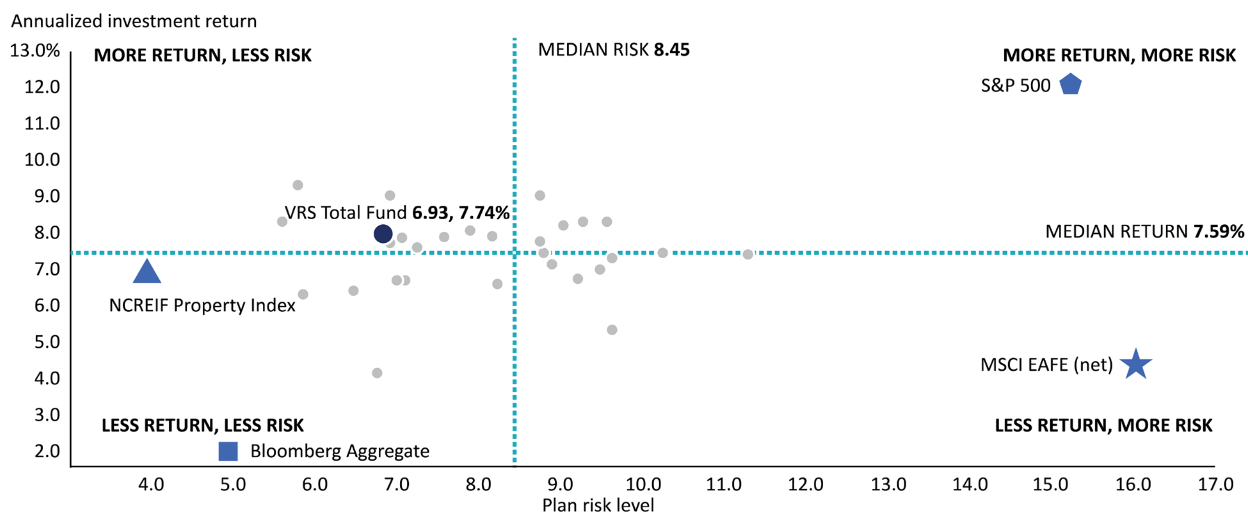
for the period ending June 30, 2023




SOURCE: JLARC staff analysis of VRS investment department data and data from other public pension plans.
* Investment returns for the Massachusetts Pension Reserves Trust Fund, Nevada Public Employees Retirement System, and New York City Employees' Retirement System are gross of fees. Returns for all other plans are net of fees.

Based on plan risk and 10-year returns ending December 31, 2023, the Wilshire Trust Universe Comparison Service (TUCS) rates VRS as a higher-return, lower-risk plan when compared with a peer group of public plans with $20 billion or more in assets under management (Figure 6). This is considered better than being a lower-return, lower-risk plan or a higher-return, higher-risk plan, for example. Wilshire TUCS assesses performance data and asset positions submitted by participating plans. It is widely used as a performance benchmark for U.S. institutional assets that considers the effects of risk, allocation, and style.

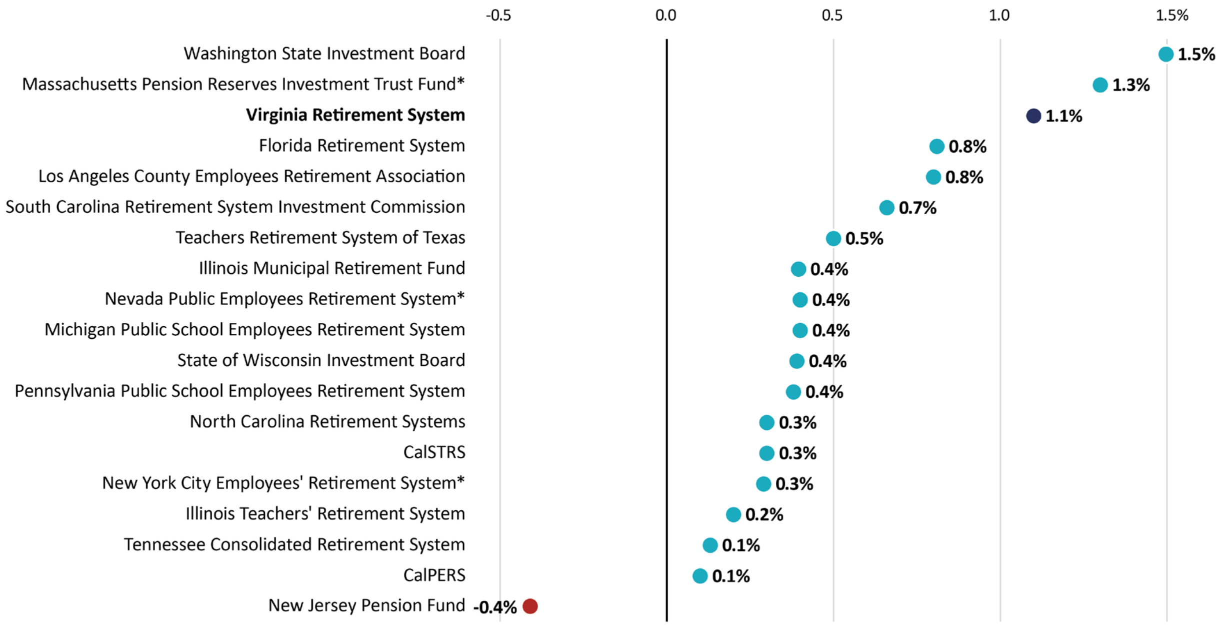
## FIGURE 6
## VRS is a higher-return, lower-risk plan compared with other large public pension plans
for the period ending December 31, 2023




SOURCE: Wilshire Trust Universe Comparison Service.
NOTE: Peer group consists of public pension plans with $20 billion or more in assets under management as of December 31, 2023. The S&P 500 index captures stocks for 500 of the largest publicly traded companies in the U.S. The MSCI EAFE captures large- and mid-cap public stocks across 21 developed market countries. The Bloomberg Aggregate is a bond index that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The NCREIF Property Index represents returns for private commercial real estate properties held for investment purposes only.

Relative to its benchmark, VRS investment performance over the 10-year period ending on June 30, 2023 was higher than most other large public pension plans (Figure 7). (The plans in Figure 7 ranged from $466 billion to $41 billion in assets under management.) The VRS trust fund return of 8.2 percent over this period was 110 basis points above the total fund benchmark of 7.1 percent—substantially higher than the median excess return of 40 basis points. Two other public pension plans exceeded their total fund benchmarks by larger amounts over this 10-year period. This analysis assumes plans are using appropriate benchmarks.

**FIGURE 7**
**VRS exceeded its 10-year total fund benchmark by a larger margin than most other large public pension plans**
for the period ending June 30, 2023




SOURCE: JLARC staff analysis of VRS investment department data and data from other public pension plans.
* Investment returns for the Massachusetts Pension Reserves Trust Fund, Nevada Public Employees Retirement System, and New York City Employees' Retirement System are gross of fees. Returns for all other plans are net of fees.

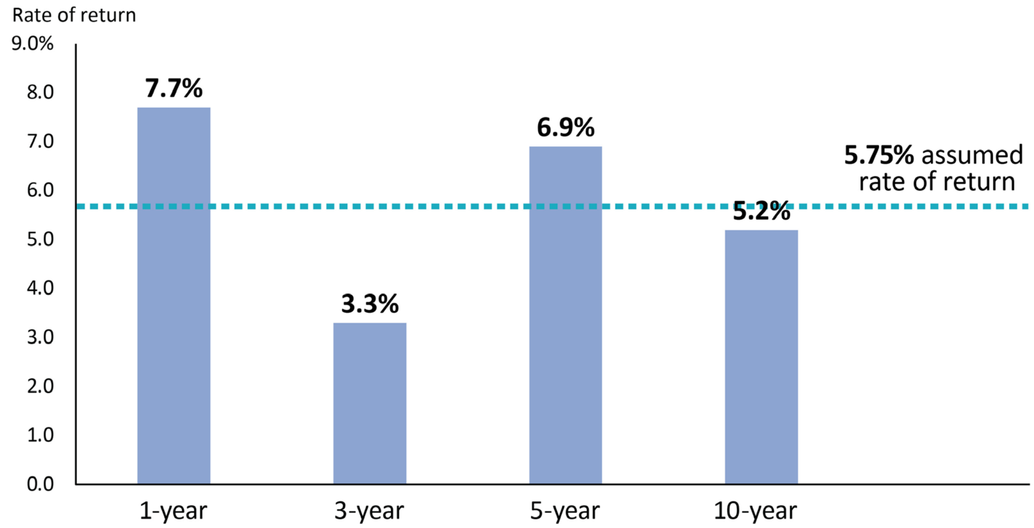
## Virgina529 DB529 fund performance has been mixed

The DB529 fund's investment performance has been mixed when assessed across several approaches. The fund's returns exceeded the long-term rate of return of 5.75 percent assumed by the Virginia529 board for the one- and five-year periods ending December 31, 2023, but the return was below the return assumption for the 10-year period. The DB529 fund has longer-term liabilities, so long-term performance periods are more relevant. The DB529 fund has consistently missed its total fund benchmark, including for the five- and 10-year periods. The fund's absolute returns and returns relative to benchmarks have also been lower than most defined benefit college savings programs still open in other states.

### *DB529 fund returns are mixed compared to the long-term assumed rate of return*

Compared to the long-term assumed rate of return set by the Virginia529 board, returns for the DB529 fund are mixed (Figure 8). The total fund return of 5.2 percent for the 10-year period ending December 31, 2023, was below the current long-term return assumption of 5.75 percent. The returns over the one- and five-year periods were well above the return assumption but were well below the assumption for the three-year period. (The since-inception return for the fund is above the 5.75 percent return assumption.)

**FIGURE 8**
**DB529 fund exceeded its long-term assumed rate of return in some periods but not others**
for the period ending December 31, 2023




SOURCE: JLARC staff analysis of Virginia529 investment department data.
NOTE: All returns are net of fees.

### *DB529 fund underperformed the benchmark for the five- and 10-year periods*

The total DB529 fund underperformed its total fund custom benchmark for the five- and 10-year periods ending December 31, 2023 (Table 2). The total fund generated a return of 5.2 percent over the 10-year period, 70 basis points below the benchmark. Over the five-year period, the return of 6.9 percent was 80 basis points below the benchmark of 7.7 percent. The DB529 fund's underperformance over the five- and 10-year periods primarily reflects underperformance in the fixed income portfolio, which is the fund's largest portfolio, and the public equity portfolio, during these periods. Historically, Virginia529 was less focused on benchmarks and used some investment strategies that were more defensive than the benchmark. While these strategies generated expected absolute returns, according to Virginia529 staff, the returns could not keep up with the benchmarks under the strong market conditions at the time. Virginia529 has made significant changes in the investment management approach for both portfolios, which has resulted in overperformance in the near term for both portfolios as of March 31, 2024. (Performance periods earlier than March 31, 2024, were used for this report because that was the most recent data during the research phase of the report.)

**TABLE 2**
**Virginia529 trust fund performance relative to benchmarks**
for the period ending December 31, 2023

| | Assets (millions) | 1 year | 3 year | 5 year | 10 year |
|---|---|---|---|---|---|
| **Total fund** | $2,938 | 7.7% | 3.3% | 6.9% | 5.2% |
| Benchmark | | 11.5 | 3.9 | 7.7 | 5.9 |
| Excess return | | **-3.8** | **-0.6** | **-0.8** | **-0.7** |
| **Fixed income** | $1,591 | 9.2 | 0.2 | 3.4 | 3.1 |
| Benchmark | | 10.0 | 0.3 | 4.2 | 3.6 |
| Excess return | | **-0.8** | **-0.1** | **-0.8** | **-0.5** |
| **Alternatives** | $731 | -4.3 | 13.1 | 11.2 | 9.2 |
| Benchmark | | 4.2 | 10.3 | 9.2 | 8.3 |
| Excess return | | **-8.4** | **2.8** | **2.0** | **0.8** |
| **Total public equity** | $616 | 21.7 | 3.9 | 11.3 | 7.0 |
| Benchmark | | 22.8 | 5.3 | 11.5 | 8.0 |
| Excess return | | **-1.1** | **-1.4** | **-0.2** | **-1.0** |

SOURCE: JLARC analysis of Virginia529 investment department data.
NOTE: All returns are net of fees.

A **convertible bond** is a type of corporate bond that can be converted into the issuing company's stock.

The fixed income portfolio of the DB529 fund underperformed its benchmark by 80 basis points over the five-year period and by 50 basis points over the 10-year period. This underperformance primarily reflected the underperformance of the convertible bond (sidebar) program within the non-core portion of the fixed income portfolio, according to Virginia529 staff. The managers within the convertible bond program adopted a defensive strategy, which was not reflected in the program's benchmark. While the strategy generated expected absolute returns and exceeded the strategy-specific benchmark, according to Virginia529 staff, it did not perform well compared to the policy-level benchmark amid substantial increases in the public equity market over these periods. Virginia529 eliminated the convertible bond program from the portfolio in 2021. While this locks in historical losses relative to the benchmark, Virginia529 staff believe this change should lead to less deviation from the benchmark in the future. The portfolio slightly overperformed its benchmark for the period as of March 31, 2024.

The total public equity portfolio underperformed its benchmark by 20 basis points over the five-year period and by 100 basis points over the 10-year period. The primary factor contributing to this underperformance was the underperformance of the domestic equity portion of the portfolio, which favored small-cap and value stocks. This strategy was not fully reflected in the domestic equity benchmark, and small-cap and value stocks did not perform well during these periods. The IAC and board accepted this underperformance for several years because it was expected given the market environment, according to Virginia529 staff. However, in 2021 the IAC and board decided to change the domestic equity portfolio from active management to a passive index fund and to adopt a different benchmark. These changes were made to reduce the stylistic tilts in the domestic equity portfolio compared to its benchmark, according to Virginia529 staff. The domestic equity portfolio's performance has improved since these changes, and the portfolio underperformed for the three-year period by a smaller margin (30 basis points) and overperformed by more than 50 basis points for the one-year period. These changes have helped lead to slight overperformance for the total public equity portfolio for the one-year period as of March 31, 2024.

The alternatives portfolio of the DB529 fund overperformed the benchmark for the three-, five-, and 10-year periods ending December 31, 2023, offsetting some of the underperformance in fixed income and public equity. It underperformed for the one-year period. This longer-term overperformance and near-term underperformance were almost entirely due to the private equity portion of the portfolio, according to Virginia529 investment staff.

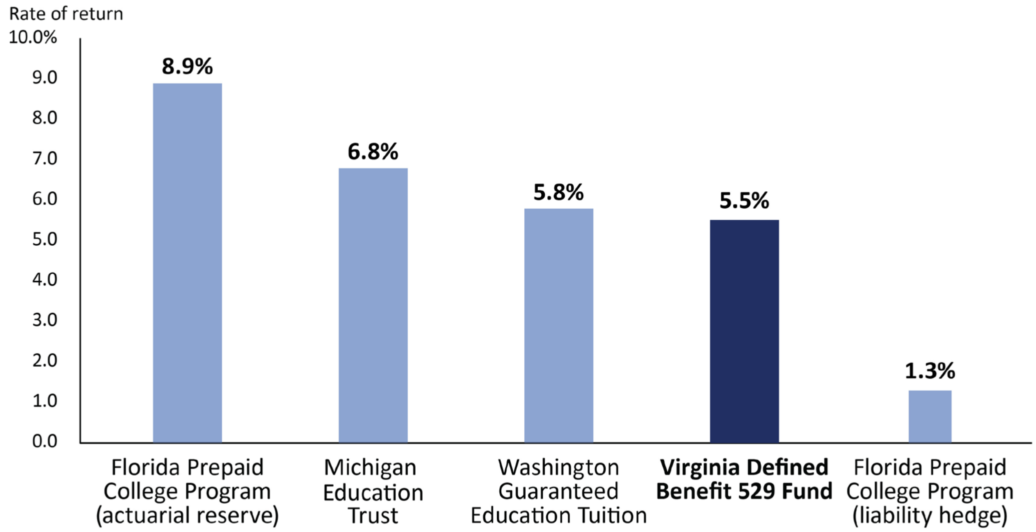
The investment performance of the DB529 fund can have a substantial impact on the fund's value. For example, the total fund's underperformance of the benchmark over the 10-year period of 70 basis points resulted in a loss of more than $100 million compared to what the fund would have earned if it had been invested consistent with the total fund benchmark. Similar to the VRS trust fund, the gains and losses associated with over- and underperformance are not fully realized because the fund is never completely liquidated. However, consistent over- or underperformance can affect the amount of actuarial surplus funds in the plan.

### *Virginia's DB529 returns are lower than defined benefit college savings programs in other states*

Investment returns for Virginia529's DB529 fund have been lower than defined benefit college savings programs in some other states (Figure 9). Among programs of comparable size that are still open to new participants, the DB529 fund's 10-year return of 5.2 percent for the period ending December 31, 2023, was higher than just one program—the liability portion of the Florida Prepaid College program, which uses a low-risk asset allocation solely designed to meet future liabilities. (On a combined basis, the liability portion and the actuarial reserve portion of the Florida program had a 10-year return of 3.7 percent, which is still below the 10-year return for the DB529 fund.) As mentioned previously, absolute returns largely reflect plans' asset allocations, which are driven by their investment goals and risk profiles.

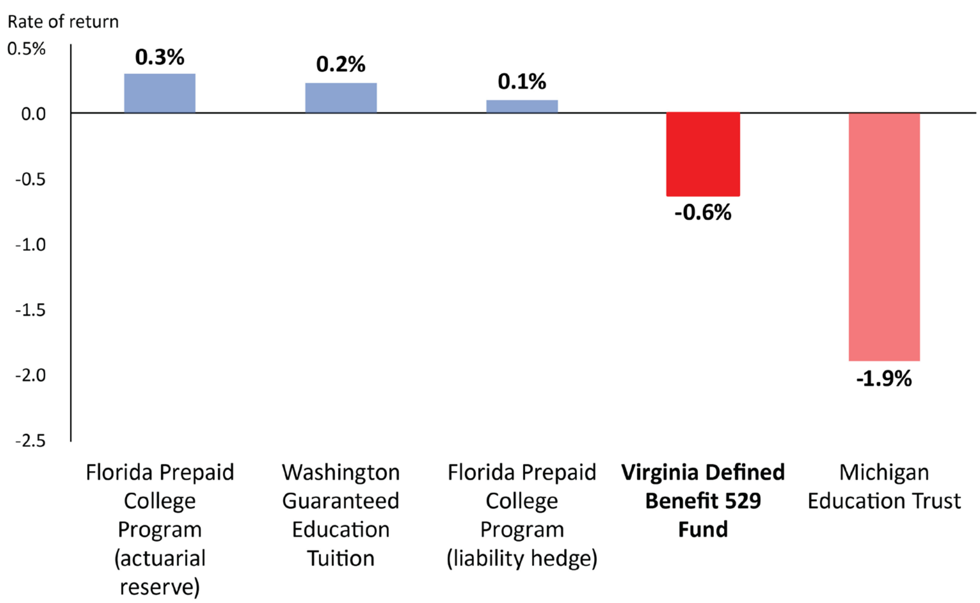
Relative to its benchmark, the DB529 fund's return for the 10-year period was also lower than other state programs for the period ending June 30, 2023 (Figure 10). (June 30, 2023, was the most recent data available for other states.) The DB529 fund was one of two states to underperform its benchmark over this period. Two other states (including both components of Florida's program) slightly exceeded their 10-year benchmark by between 10 and 30 basis points.

**FIGURE 9**
**DB529 fund's 10-year return is lower than defined benefit college savings programs in other states**
for the period ending June 30, 2023




SOURCE: JLARC staff analysis of Virginia529 investment department data and data from other state defined benefit college savings programs.
NOTE: All returns are net of fees.

**FIGURE 10**
**Virginia's DB529 fund was one of two open defined benefit college savings programs to underperform its benchmark for the 10-year period**
for the period ending June 30, 2023




SOURCE: JLARC staff analysis of Virginia529 investment department data and data from other state defined benefit college savings programs.
NOTE: All returns are net of fees.

## Legislative investment studies could be considered

VRS and Virginia529 have reasonable processes for reviewing their benchmarks and asset allocations. They also use common approaches for their total fund benchmark and use widely recognized benchmarks for their asset classes. However, the General Assembly could consider directing reviews of both VRS and Virginia529. JLARC staff could undertake these reviews, with the assistance of investment consultants, through its ongoing oversight of VRS and Virginia529.

VRS has made several changes to its benchmarks in recent years, including eliminating the spread for the private equity benchmark, which makes the benchmark easier to achieve. A legislative benchmark review could broadly assess the appropriateness of VRS's recent benchmark changes, or it could focus solely on the change to the private equity benchmark. JLARC has conducted an independent review of Virginia529's benchmarks, but an independent legislative review of VRS's benchmarks has never been conducted.

Virginia529's investment performance for the DB529 fund has continued to underperform the benchmarks for most periods, and performance relative to other defined benefit college savings programs has not been strong. A legislative asset allocation review could provide insight into whether the fund could be managed to better improve performance, but such a review should not occur now. Recent changes to Virginia529's management of public equity and fixed income have started showing early performance improvements and may continue. In addition, legislation has been proposed in recent General Assembly sessions, and may be proposed in the 2025 session, that would make significant changes to the DB529 fund and likely necessitate changes in the fund's investment management. A legislative asset allocation review, if still needed, would be better timed after any changes are made to the DB529 fund.

Given the long-time performance challenges of the DB529 fund, Virginia529 should consider recompeting the contract for its investment consultant as soon as is practicable. Virginia529 has also made significant changes to its internal investment staff, including hiring an investment director, which is another reason the contract should be recompeted to determine if a more effective arrangement is available. Virginia529 has contracted with the same investment consultant for more than 10 years and signed a new contract with the consultant in 2023. The initial term of the current contract expires in 2028.

# Appendix A: VRS and Virginia529 defined benefit benchmarks

The Virginia Retirement System (VRS) and Virginia529 use similar types of investment benchmarks for their defined benefit trust funds (Tables A-1 and A-2). For their primary asset classes, both agencies generally use widely recognized benchmarks, such as market indexes. In some cases, multiple market indexes are combined to create a custom benchmark that reflects the underlying composition of the asset class. For their total funds, both agencies use custom policy benchmarks that weight benchmarks for the primary asset classes at their target asset allocation.

## TABLE A-1
## VRS asset class benchmarks for defined benefit fund (March 2024)

| Asset class | Benchmark | Description |
|---|---|---|
| Public equity | 85% MSCI All Country World Index (ACWI) Investible Market (IMI) Index | Replicates the global public equity investible universe, including developed and emerging markets, through large-, mid-, and small-sized stocks |
| | 15% MSCI World Minimum Volatility Index | Reflects global public equity in developed markets and comprises large- and mid-sized stocks that have lower pricing fluctuations than stocks in broader indexes |
| Private equity | Regional benchmarks of MCSI ACWI IMI Index (75% North America, 20% Europe, 5% Asia & Emerging Markets) [1] | Reflects the investible public equity market in regions where the private equity is sufficiently developed and investible for plan of VRS's size |
| Credit strategies | 50% Morningstar Loan Syndications and Trading Association (LSTA) Performing Loan Index | Tracks the market-weighted performance of the most liquid leveraged loans as determined by the LSTA |
| | 50% Bloomberg U.S. High Yield Ba/B 2% Issuer Cap Index | Reflects a diversified blend of bonds that are higher quality but still below investment grade |
| Fixed income | 90% Bloomberg U.S. Aggregate Bond Index | Consists of U.S. government bonds, investment grade corporate securities, and securitized bonds |
| | 5% Bloomberg U.S. High Yield Ba/B 2% Issuer Cap Index | Reflects a diversified blend of bonds that are higher quality but still below investment grade |
| | 5% JPMorgan EMBI Global Core Index | Tracks the sovereign bonds issued in U.S. dollars of a core group of emerging market countries |
| Real assets | NCREIF Private Real Estate Benchmark (Open End Diversified Core Equity, or ODCE) Index [1] | Reflects a diversified cohort of U.S.-based, privately owned core real estate funds to replicate investments held directly in a diversified real estate portfolio |
| | Other Real Assets Custom Benchmark (Consumer Price Index for All Urban Consumers (CPI-U) + 400 bps per annum [1] | Tracks inflation because real asset investments should move with prices; additional spread reflects the illiquidity premium earned by investing capital for longer periods |
| Multi-asset public strategies | ICE Bank of America U.S. 3-month Treasury Bill + 250 bps per annum | Cash benchmark and an additional spread to mirror the expected return of the program over a full market cycle |
| Private investment partnership | 33% Private equity custom benchmark, 33% real assets custom benchmark, 34% credit strategies custom benchmark | Weighted blend of the program level benchmarks for the three private programs (private equity, real assets, credit strategies) |
| Leverage | Secured Overnight Financing Rate (SOFR) + 50 bps per annum | Reflects the cost of borrowing funds overnight in the U.S.; additional spread reflects average financing costs |

SOURCE: VRS investment staff.

[1] Benchmark lagged by 3 months to reflect 3-month lag in valuations of private market assets.

**TABLE A-2**
**Virginia529 asset class benchmarks for defined benefit 529 fund (March 2024)**

| Asset class | Benchmark | Description |
|---|---|---|
| Total public equity | MSCI All Country World Index IMI | Replicates the global public equity investible universe, including developed and emerging markets, through large-, mid-, and small-sized stocks |
| Domestic equity | MSCI US Net Dividend Index | Measures the performance of the large- and mid-cap segments of the U.S. equity market |
| Developed markets equity | MSCI EAFE Index | Replicates the public equity investible universe across 21 developed market countries capturing large- and mid-cap stocks |
| Emerging markets equity | MSCI Emerging Markets Index | Replicates large- and mid-cap stocks across 24 emerging market countries |
| Total fixed income | 63.6% Non-Core Fixed Income Benchmark, 36.4% Core Fixed Income Benchmark | Weighted blend of the program-level benchmarks for the two fixed income programs (non-core and core) |
| Non-core fixed income | 33.4% JPMorgan EMBI Global Diversified | Tracks the universe of liquid, U.S.-dollar denominated debt instruments issued by emerging sovereign and quasi-sovereign markets |
| | 33.3% Bloomberg Corporate High Yield | Measures the U.S. dollar-denominated, high-yield, fixed-rate corporate bond market |
| | 33.3% Credit Suisse Leveraged Loan | Mirrors the investable market of the U.S. dollar denominated leveraged loan market |
| Core fixed income | Bloomberg U.S. Aggregate Bond Index | Measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market |
| Alternatives | 43.5% NCREIF ODCE, 56.5% Private Equity Benchmark [1] | Weighted blend of the program-level benchmarks for the two alternatives programs (private and real estate) |
| Private equity | MSCI ACWI IMI + 300 bps [1] | Reflects the global investible public equity market; additional spread reflects the illiquidity premium earned by investing capital for longer periods |
| Real estate | NCREIF NFI Open End Diversified Core Equity (ODCE) Index [1] | Reflects a diversified cohort of U.S.-based, privately owned core real estate funds to replicate investments held directly in a diversified real estate portfolio |

SOURCE: Virginia529 investment staff.
[1] Benchmark lagged by 3 months to reflect 3-month lag in valuations of private market assets.

# Appendix B: VRS and Virginia529 benchmarks and performance for defined contribution plans

## Benchmarks for defined contribution plans are generally determined by the investment manager providing the plan

VRS and Virginia529 provide defined contribution plans for retirement and college savings. A key difference between defined *contribution* plans and defined *benefit* plans is that the investment risk is borne solely by the investor with a defined contribution plan. There is no risk to the VRS or DB529 trust funds.

The defined contribution plans available through VRS and Virginia529 are generally approved by their respective boards. Individuals can choose the appropriate investment option within the plan or program based on their income needs, investment preferences, and risk tolerance. There are 38 investment options across VRS's defined contribution retirement plans (not including the TIAA Traditional Annuity option, which provides a fixed annuity for participants), 23 investment options available within Virginia529's Invest529 program, and 44 investment options available within the CollegeAmerica program. Many of the defined contribution options are target-date and target-enrollment options in which the asset composition adjusts as the beneficiary approaches retirement or enrollment in a higher education institution.

Compared to the benchmarks for the defined benefit funds, the benchmarks for the investment options within VRS and Virginia529's defined contribution plans are selected through different processes. The VRS and Virginia529 boards do not approve the benchmarks for defined contribution options. For Virginia529's defined contribution plans, the benchmarks are typically determined by the investment manager providing each option, and the benchmark usually reflects the weightings of the asset classes comprising the option. For static defined contribution options (in which the asset composition does not change), such as an option focused on international public equity, the benchmark is typically an index or a custom benchmark selected by the investment managers based on how they will manage the funds. For VRS defined contribution plans, the board has delegated authority for selecting benchmarks to the chief information officer (CIO). Similar to Virginia529, benchmarks for VRS's passively managed target-date options are chosen by the investment manager and reflect the underlying asset composition of each option. The CIO indirectly chooses the benchmarks by choosing the investment manager for each option. For VRS individual options, including static options, the CIO determines the appropriate benchmark for each option, and then VRS staff select an investment manager that can fulfill the benchmark mandate.

## TABLE B-1
## Nearly all VRS defined contribution plans met or exceeded their benchmarks

for the period ending December 31, 2023

| | 1 year | 3 years | 5 years | 10 years |
|---|---|---|---|---|
| **Options available for all plans** | | | | |
| **Target-date portfolios** | | | | |
| Met or exceeded benchmark | 10 | 10 | 9 | 8 |
| Total number of options | 10 | 10 | 9 | 8 |
| **Individual options** | | | | |
| Met or exceeded benchmark | 9 | 10 | 10 | 10 |
| Total number of options | 10 | 10 | 10 | 10 |
| **Additional option under the higher education plan** | | | | |
| **TIAA**[a] | | | | |
| Met or exceeded benchmark | 16 | 18 | 17 | 16 |
| Total number of options | 18 | 18 | 17 | 16 |

SOURCE: VRS investment department data.
NOTE: (1) Total number of investment options reported for a given period can change because longer-term performance data is not available for newer options. (2) Performance of target-date and individual options is reported net of investment fees but not administrative fees. Performance of the additional options under the higher education plan is reported net of investment and embedded record-keeping and plan administration fees, where applicable. (3) Some funds are passively managed. Passively managed investment options are expected to trail their benchmarks by the expense ratio (fees) charged by the investment managers. Actively managed options are expected to outperform the market and were measured against the benchmark net of investment fund fees. Capital preservation investment options, such as stable value and money market funds, are expected to generate returns at or above zero and were assessed relative to that benchmark. [a] Performance information does not reflect assets held through legacy TIAA contracts, which were in effect before 2017.

## TABLE B-2
## Most Invest529 options met or exceeded their benchmarks

for the period ending December 31, 2023

| | 1 year | 3 years | 5 years | 10 years |
|---|---|---|---|---|
| **Actively managed options** | | | | |
| Met or exceeded benchmark | 8 | 9 | 9 | 5 |
| Total number of options | 14 | 13 | 11 | 7 |
| **Passively managed options** | | | | |
| Met or exceeded adjusted benchmark | 8 | 8 | 8 | 7 |
| Total number of options | 9 | 9 | 9 | 8 |

SOURCE: Virginia529 program data.
NOTE: The total number of investment options in each period can differ because longer-term performance data may not be available for newer options. Performance is reported net of investment and administrative fees. Passively managed options are expected to provide returns equal to their benchmark index, less any fees charged to participants. Benchmarks were adjusted to account for the estimated impact of fees. Some passively managed options still trailed the benchmark after this adjustment was made.

**TABLE B-3**
**Majority of CollegeAmerica investment options underperformed their benchmarks**

for the period ending December 31, 2023

| | 1-year | 3-year | 5-year | 10-year |
|---|---|---|---|---|
| **Individual options** | | | | |
| Met or exceeded benchmark / Total number of options | 10/31 | 15/31 | 17/30 | 15/27 |
| **College Target-Date options** | | | | |
| Met or exceeded benchmark / Total number of options | 2/6 | 0/5 | 0/5 | 0/3 |
| **Portfolio Series options** | | | | |
| Met or exceeded benchmark / Total number of options | 2/6 | 4/6 | 2/6 | 2/6 |

SOURCE: Virginia529 program data.
NOTE: The total number of investment options in each period can differ because longer-term performance data may not be available for newer options. Performance is reported net of investment fees. The number of investment options can change because longer-term performance data is not available for newer options. Investment performance comparisons are for the "A" share class; 84 percent of CollegeAmerica assets are invested in A shares. Individual options and portfolio series options are benchmarked against the Lipper Funds Index. College target-date options are benchmarked against the Lipper Funds Average.

**TABLE B-4**
**ABLEnow options showed mixed performance over the three- and five-year periods**

for the period ending December 31, 2023

| | 1-year | 3-year | 5-year | 10-year |
|---|---|---|---|---|
| **Portfolio options** | | | | |
| Met or exceeded adjusted benchmark / Total number of options | 4/4 | 2/4 | 2/4 | n.a. |

SOURCE: Virginia529 program data.
NOTE: Passively managed options are expected to provide returns equal to their benchmark index, less any fees charged to participants. Benchmarks were adjusted to account for the estimated impact of fees. Inception of all investment options was 2016. As a result, returns for the 10-year period are not yet available.

**TABLE B-5**
**ABLEAmerica options showed mixed investment performance over all periods**

for the period ending December 31, 2023

| | 1-year | 3-year | 5-year | 10-year |
|---|---|---|---|---|
| **Portfolio options** | | | | |
| Met or exceeded adjusted benchmark / Total number of options | 3/7 | 4/7 | 3/7 | n.a. |

SOURCE: Virginia529 program data.
NOTE: Performance is reported net of fees. Portfolio options are benchmarked against the Lipper Funds Index for the 3- and 5-year periods. Options are benchmarked against the average of the Lipper category for the 1-year period because Index data was not available. Inception of all investment options was 2018. As a result, returns for the 10-year period are not yet available.

# Appendix C: Agency responses

As part of an extensive validation process, the state agencies and other entities that are subject to a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff sent an exposure draft of this report to the Virginia Retirement System (VRS) and the Virginia College Savings Plan (Virginia529).

Appropriate corrections resulting from technical and substantive comments are incorporated in this version of the report. This appendix includes response letters from VRS and Virginia529.

Virginia Retirement System

P.O. Box 2500, Richmond, VA 23218-2500
Toll-free: 888-827-3847
Website: varetire.org
Email: vrs@varetire.org

Patricia S. Bishop
*Director*

June 24, 2024

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission
919 E. Main St., Ste. 2101
Richmond, VA 23219

Dear Mr. Greer:

The Virginia Retirement System appreciates the time and effort JLARC staff devoted to the **Review of VRS and Virginia529 Investment Benchmarks Report - 2024**. Further, VRS would like to express our thanks for the professionalism of the JLARC staff and their collaborative approach to the review. VRS is committed to serving the Commonwealth's more than 800,00 members, retirees, and beneficiaries. As the fiduciaries administering the Trust Fund, VRS welcomes the opportunity to review feedback and suggestions that serve to support the program objectives.

As documented by JLARC staff in the report, we are pleased by the VRS investment team's long-term performance, particularly with respect to its success in generating returns while managing risk. In reviewing the report, we believe that several considerations are important to share regarding the investment objective of the VRS Trust Fund and the development and construction of the asset allocation policy and associated benchmarks.

VRS manages the Trust Fund in the best interest of members, retirees and beneficiaries. As a long-term investor with an investment horizon of 30 or more years, the Trust Fund's investment objective is to maximize investment returns while managing risk, such as volatility and the risk of large losses. The VRS Board of Trustees, along with staff and the VRS Investment Advisory Committee, employs a robust, comprehensive process to review benchmarks on a consistent basis using the skills and objectivity of an external consultant experienced in performing this exercise with public pension fund peers and other global, state and local funds.

**Background**

To achieve the investment objective, the VRS Board of Trustees (Board) (four of the nine members are investment experts) considers the advice and recommendations provided by the VRS Investment Advisory Committee (IAC) (nine external investment professionals who demonstrate extensive experience in one or more investment specialties) and also engages nationally recognized independent external investment consultants to establish the Trust Fund's strategic asset allocation mix and appropriate total fund and program level benchmarks.

Using this information, the investment staff implement the asset allocation policy established by the Board and work to add value relative to the benchmarks set by the Board. Performance relative to the total fund and program level benchmarks, along with various other reports containing asset allocation and tracking error information, serve an important role in the Board's oversight of staff's implementation of the Board's decisions.

A summary of the Board's robust strategic asset allocation and benchmark setting process follows.

**Asset Allocation Study and Benchmark Selection Process**

Approximately every three years, the Board performs a strategic asset allocation study which incorporates the analysis of the long-term liabilities of the VRS Trust Fund. The Board engages a nationally recognized, independent external investment consultant to construct a strategic asset allocation strategy across asset classes which will maximize the expected return of the Trust Fund and appropriately manage various risk measures. Using the consultant's information, the Board first considers the advice and IAC recommendations and then in consultation with staff establishes the Trust Fund's strategic asset allocation mix and appropriate total fund and program level benchmarks. This rigorous process takes several months to complete.

**Benchmark Approval Process**

Once the total fund and program level benchmarks are determined by the process described above, the benchmarks are formally presented during a Board meeting through a Request for Board Action (RBA). The RBA details the components and effective date of the benchmark, provides a description/background of the request, and the rationale and authority for the requested action. The Board then votes on the action and the Board Chair signs the RBA to certify the Board's approval.

Of note, approved benchmark changes are applied going forward, meaning no changes are made to historical performance information; therefore, there are no changes to previously reported results and the new benchmarks are prospectively linked.

**Periodic Benchmark Review Process**

About every three years, the Board undertakes a specific review of total fund and program level benchmarks with another independent, nationally recognized external investment consultant. The IAC and Board review the findings of the benchmark study directly with the consultant. As with the asset allocation study and benchmark selection process, this entire process is a rigorous, comprehensive exercise that takes several months to complete.

**Recent Results**

Nationally recognized, independent external consultants were engaged to complete the Asset Allocation Study and Benchmark Selection Process in 2023, as well as the Periodic Review of the Benchmarks in 2024.

The consultant for the recently completed Periodic Benchmark Review Process "found all the benchmarks used by VRS to be appropriate and reflective of the current investment environment and do not recommend any changes."

**Summary**

VRS appreciates the dedication of JLARC staff and the collaborative approach to its oversight efforts and the development of the benchmark report. In the last month, VRS has completed a comprehensive, robust process to review the benchmarks led by an independent, external consultant. The consultant found all benchmarks appropriate for the VRS portfolio. VRS will conduct another comprehensive review as part of its due diligence efforts in about three years. The VRS Board and staff are ever mindful of their role in managing the Trust Fund in the best interest of our members, retirees and beneficiaries. VRS deploys best practices when comprehensively and regularly reviewing the Trust Fund's asset allocation and benchmarks; including consistently engaging skilled external independent investment consultants, utilizing the advice and guidance of the investment experts on the IAC, and benefiting from the extensive experience of VRS' highly credentialed investment staff.

Again, please accept our thanks for the work of the JLARC staff and for the opportunity to comment on the report and provide additional context related to the robust processes VRS deploys in managing the investment program.

Sincerely,

Patricia S. Bishop

Patricia S. Bishop
Director

cc: Andrew Junkin, VRS
Jamie Bitz, JLARC
Kimberly Sarte, JLARC

June 24, 2024

Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street, Suite 2101 VIA EMAIL
SunTrust Building
Richmond, Virginia 23219

Re: Review of VRS and Virginia529 Investment Benchmarks

Dear Mr. Greer:

The Virginia College Savings Plan (Virginia529) thanks you for the opportunity to review and comment on the exposure draft of the *Review of VRS and Virginia529 Investment Benchmarks* (the Report). Virginia529 appreciates the professionalism of the review and the coordination between JLARC staff and the Virginia529 staff. Virginia529 agrees generally with the discussion in the Report of investment benchmarks and their use to measure relative performance of an investment portfolio and to provide valuable information to investment professionals responsible for managing the fund as well as participants and other stakeholders.

An independent non-general fund agency, Virginia529 has multiple statutory mandates and missions centered on the financial health and wellness of Virginia citizens. The longest standing mandate centers on programs providing tax-advantaged opportunities to cover the cost of future higher education goals, beginning with a defined benefit prepaid tuition program (DB529) authorized in 1994 (Prepaid529 and, more recently, Tuition Track Portfolio) and expanding in 1999 with the opening of what is now called Invest529, a program managed internally by Virginia529, and further expanded in 2002 with the opening of CollegeAmerica, featuring investment portfolios offered by the American Funds, a division of Capital Group, one of the largest asset management firms in the U.S., with $2.2 trillion in assets under management. The Report reviews the investment management of the 529 education savings programs administered by Virginia529 with three different approaches to administration and management.[1]

We generally agree with the focus of the Report on longer-term results over the short term. A ten-year return was used in the Report to allow comparisons across the multiple entities discussed in the Report. We suggest that performance from inception of the DB529 program (1996) is perhaps most relevant in assessing the health of the portfolio and its ability to meet investment objectives and the DB529 portfolio both outperforms the policy benchmark and exceeds the current long term return assumption for the portfolio of 5.75%.

[1] In addition to its education savings programs Virginia529 also has statutory mandates to implement and administer disability savings programs (ABLEnow and ABLEAmerica) and a state-facilitated retirement program (RetirePath VA) for certain Virginia workers without access to workplace retirement savings. These programs were not part of the Report.

We appreciate that the Report recognizes that Virginia529 has reasonable processes for reviewing benchmarks and asset allocations, uses a structured process to determine benchmarks through asset allocation studies and interim reviews with decision-making appropriately done through a collaborative process involving internal investment staff, an investment consultant and an Investment Advisory Committee which makes recommendations to the Board. The Report accurately describes Virginia529's process with regard to establishment of investment benchmarks and appreciates that the Report recognizes the process is in alignment with the Commission's 2018 independent benchmark review and recommendations. Similarly, the Report recognizes that Virginia529 uses an approach to benchmarking similar to other public funds and uses widely recognized benchmarks for most asset classes.

We agree with the statement that there are different ways to assess an investment fund's performance including (i) comparison to a long-term return assumption, (ii) comparison to its benchmarks and (iii) in comparison to other similar plans. Virginia529 is cognizant of the importance of relative performance to benchmarks but notes that even with respect to benchmark comparisons, that is not the only factor used to evaluate overall performance and success of an investment program. Absolute return metrics such as the ability to outperform expected tuition inflation and meet long term objectives (as set forth in the investment policy) with an appropriate level of risk and liquidity are relevant in evaluating any investment program and its performance.

With respect to the DB529 program, the long-term return assumption of 5.75% was exceeded in the 1-, 5- and from inception periods and trailed in the 3- and 10-year periods, largely based on dynamics of the markets and asset allocation at the time. Recently, changes were made to reduce active risk (expected deviation from benchmark) for the DB529 portfolio. The changes were implemented for a variety of reasons, including performance vs benchmarks. In part, the changes were a direct response to JLARC's increased focus on relative performance as opposed to the historical more benchmark agnostic approach. Such an approach might involve an investment committee adopting a defensive strategy for certain managers or asset classes, which could mean accepting deviations from policy benchmarks depending on actual experience. Both approaches, benchmark agnostic and benchmark aware, have merit and either can lead to successfully achieving long term objectives. We do note that the shift to a more benchmark aware strategy resulted in locking in some benchmark relative losses. This does not impact historical absolute returns, but is important context for future interpretation of longer term benchmark relative results.

We agree with the Report that peer universes generally may provide relevant information; however, finding true peer comparisons for prepaid tuition programs is difficult because there are so few prepaid tuition programs in the country and those which do exist with sizeable assets have different approaches to asset allocation, investment strategy (return seeking vs liability hedging), benchmarking and risk characteristics. For example, Florida is referenced in the Report and is treated almost as two unique programs, one with a low volatility, liability driven investing (LDI) strategy, and another with a higher volatility portfolio more focused on return. In the Study, for presentation purposes as shown in Exhibit 8, the Florida program was bifurcated with one portion of that portfolio outperforming the DB529 portfolio and the other, larger, portion significantly underperforming the DB529 portfolio, all as would be expected for the asset allocation and risk profile of each portfolio; the blended 10-year return for Florida's total portfolio was 3.7%, well below that of Virginia529's DB529 portfolio and also as would be expected for the asset allocation and risk profile of the entire portfolio. The other two states referenced in the Study (Michigan and Washington) similarly have different return profiles and performance relative to their benchmarks, with much of the difference among the programs likely largely due to the risk profiles of the portfolios; without more information on that aspect of those portfolios, the significance of performance comparisons is questionable.

After recognizing in the Report the reasonable processes, widely regarded benchmarks and improving recent performance of the DB529 portfolio, the Report suggests a potential future asset allocation study for JLARC staff to conduct with respect to the DB529 portfolio. Given that it is not recommended now, we simply urge caution in adopting third party asset allocation studies to be completed for the purpose of then substituting the results of such a study for the judgment and work of the trust fiduciaries who are tasked by statute with the investment management of the trust fund according to the standards and fiduciary obligations established in the enabling legislation.

As always, Virginia529 appreciates the thought and effort put into the Report and will consider carefully the discussion and comments included in the Report.

Sincerely,

Mary G. Morris
Chief Executive Officer

c: Members, Virginia529 Board
Michael Swink, CFA, CPA, Virginia529 Investment Director
Kimberly Sarte, JLARC
Jamie Bitz, JLARC

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