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Report to the Governor and the General Assembly of Virginia

VRS Oversight Report

DECEMBER 2016

JLARC
JOINT LEGISLATIVE AUDIT
AND REVIEW COMMISSION

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JLARC Report 491

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Overview

The Virginia Retirement System (VRS) administers retirement plans for employees of state and local governments. The two largest plans are the Teachers Plan and the State Employees Plan (Figure 1). Other pension plans include the individual retirement plans for 583 local political subdivisions and plans for state police officers (SPORS), other Virginia state law officers (VaLORS), and judges (JRS). VRS also administers several defined contribution retirement plans. In addition to retirement plans, VRS administers several benefit programs. These include life insurance, sickness, disability, long-term care, and post-employment benefit programs, such as the retiree health insurance credit program.

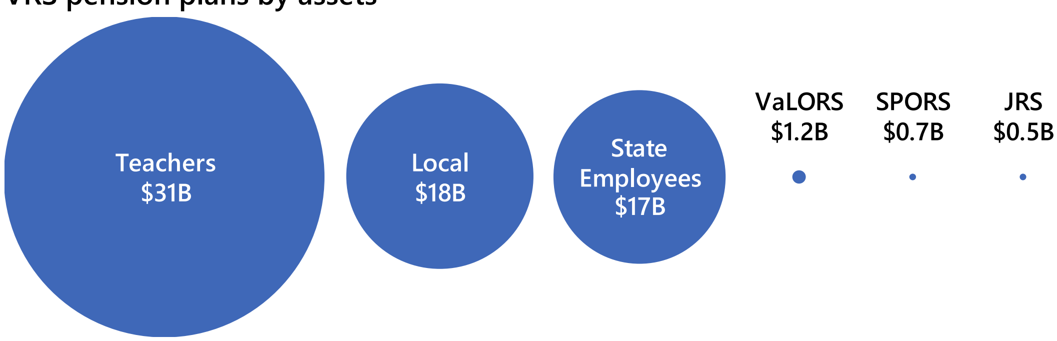
VRS serves approximately 680,000 members, retirees, and beneficiaries. Active members include current state and local employees and teachers in Virginia's public school divisions. Others served by VRS include retirees, their designated beneficiaries, and deferred members who are not actively employed and are not collecting benefits.

The financial assets used to pay VRS benefits are pooled in the VRS trust fund, which held $69.5 billion in assets as of September 30, 2016. Ranked by value of assets, VRS is the nation's 22nd largest public or private pension fund. In FY16, VRS paid $4.4 billion in retirement benefits and $0.4 billion in other post-employment benefits, not including benefits paid throught the defined contribution plans.

VRS receives funds from three main sources: employer contributions, member contributions, and investment income. In FY16, VRS received $0.1 billion in net additions to the trust fund (accounting for expenses).

Investment income is critical to the health of the VRS trust fund, accounting for one-fourth of total additions in FY16. VRS investments generated a return of 8.7 percent for the one-year period ending September 30, 2016. The total annualized return over the 10-year period was 5.5 percent, which is below the seven percent long-term (30+ year) rate of return that has been assumed by VRS for its investments.

FIGURE 1
VRS pension plans by assets



SOURCE: VRS 2016 valuation reports.
NOTE: Figures show total actuarial value of assets attributable to each retirement plan as of June 30, 2016. Trust fund assets attributable to other benefit programs are not shown. The figure for local plans is the aggregate of assets for political subdivisions that participate in VRS. The local plans hold more assets than the State Employees plan because they have typically been fully funded by local employer contributions, whereas the State Employees plan has not been fully funded in the past. The State Employees plan is larger than the local plans as measured by pension obligations.

FIGURE 2
VRS fast facts

MEMBERSHIP as of September 30, 2016

339,995	Actively employed members[a]
196,555	Retired members & beneficiaries
143,201	Inactive members
679,751	Total

NET ADDITIONS for fiscal year ending June 30, 2016[b]

$2.8 billion	Employer contributions[c]
$1.0 billion	Member contributions
$1.2 billion	Net investment income
-$4.9 billion	Benefits paid and other expenses[d]
$0.1 billion	Net additions

ASSETS as of September 30, 2016

$69.5 billion
Total VRS trust fund assets

INVESTMENT PERFORMANCE as of September 30, 2016

	1 year	3 years	5 years	10 years
Total return	8.7%	7.0%	9.4%	5.5%
Benchmark	8.3%	6.4%	8.8%	5.0%
Excess return	+0.4%	+0.6%	+0.6%	+0.5%

SOURCE: VRS 2016 annual report and 2016 membership and investment department data.
[a] Active membership included 145,617 teachers, 105,639 local government employees, and 88,739 state employees, state police, law enforcement officers, and judges. Within the retirement plans are three different benefit groups. The Plan 1 group has 194,545 members, Plan 2 has 92,058, and Hybrid Plan has 53,392. [b] Includes all additions and deductions to the trust fund for VRS retirement plans and other benefits programs. [c] Includes approximately $1.7 billion in state contributions. [d] Includes $4.4 billion in retirement benefit payments, $376 million in other benefits, $105 million in refunds, and $47 million in administrative and other expenses.

1. Trust fund investments

Management of the trust fund investments is one of the core responsibilities of VRS. The VRS Board of Trustees sets investment policies for managing the trust fund, including the desired asset allocation for the fund. The investment department manages investment programs within the guidelines set by the board. The investment department manages some assets internally and contracts with external managers to manage other assets.

Investment performance and asset allocation

The VRS trust fund held $69.5 billion in assets as of September 30, 2016, representing an increase of $4.1 billion from a year ago. Approximately $24.4 billion of the trust fund was managed internally, including all of fixed income and some public equities, real assets, and cash. The remaining $45.1 billion was managed by external managers under VRS supervision.

The trust fund's recent investment returns were above the long-term return assumption, and the fund has outperformed its benchmarks. For the one-year period ending September 30, 2016, the trust fund's investments achieved a return of 8.7 percent. However, the fund's 10-year return of 5.5 percent was below the 7.0 percent long-term (30+ year) rate of return that has been assumed by VRS for its investments. The total fund outperformed its benchmark for all periods, including both the short and long term (Figure 3).

The VRS board adopts a **long-term return assumption** based on the advice of the VRS investment staff, actuary, and investment consultant. This is the rate of return expected over the next 30+ years, based on projections of future market performance.

The long-term return assumption is one of the key assumptions used to determine the plan's funded status and employer contribution rates. The current long-term return assumption is 7%.

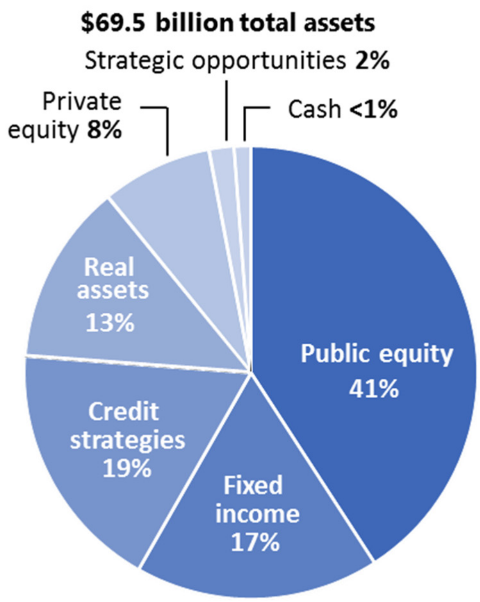
Public equity. The public equity program continues to be the largest VRS asset class, with $28 billion in assets. The program consists of stocks and other equity securities for publicly traded companies in the U.S. and abroad. Public equity investments are typically higher-risk investments relative to bonds and are expected to provide long-term capital growth and inflation protection. Forty-one percent of the program's assets are managed internally. The program outperformed its benchmarks over the longer periods but underperformed in the one-year period.

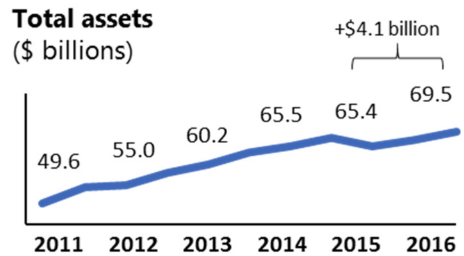
Credit strategies. The credit strategies program is the second-largest VRS asset class, with $13 billion in assets. The program includes investments in emerging market debt, high yield bonds, convertible bonds, bank loans, and direct lending. Credit strategies investments are intended to provide higher income than traditional stock and bond investments and attractive, risk-adjusted returns. All of the program's assets are managed externally. The program outperformed its benchmarks for the longer five- and 10-year periods but underperformed in the shorter one- and three-year periods.

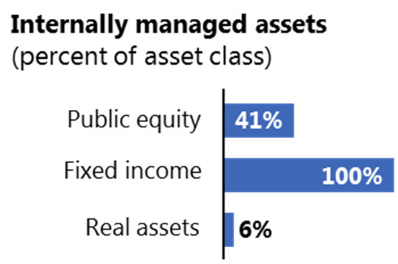
Fixed income. The fixed income program is the third-largest VRS asset class, with $12 billion in assets. The program consists of U.S. dollar-denominated securities, such as bonds and money market instruments, that pay a specific interest rate. Fixed income investments are typically lower risk relative to most other asset classes and are expected to generate steady returns even in down equity markets. All fixed income assets are managed internally. The program outperformed its benchmarks for all periods.

FIGURE 3
Asset allocation and trust fund investment performance

ASSET ALLOCATION
as of September 30, 2016







TRUST FUND INVESTMENT PERFORMANCE
for the period ending September 30, 2016

	FY to date	1 year	3 years	5 years	10 years
Total fund	3.4%	8.7%	7.0%	9.4%	5.5%
VRS custom benchmark	3.4	8.3	6.4	8.8	5.0
Public equity	4.6	9.4	6.7	11.7	5.2
Benchmark	4.9	9.6	6.0	11.1	4.6
Credit strategies	4.1	8.9	5.1	7.5	6.1
Benchmark	3.9	9.8	5.2	6.9	5.2
Fixed income	0.8	6.4	4.5	3.9	5.5
Benchmark	0.5	5.2	4.0	3.3	4.9
Real assets	2.5	11.9	12.3	12.6	7.0
Benchmark	2.0	10.3	10.5	11.3	6.8
Private equity	4.6	7.2	12.8	12.1	11.2
Benchmark	2.5	0.6	10.2	11.5	8.7
Strategic opportunities	1.6	2.4	1.3	n/a	n/a
Benchmark	2.7	7.4	2.3	n/a	n/a

SOURCE: VRS investment department data.

Real assets. The real assets program is the fourth-largest VRS asset class, with $9 billion in assets.* The program includes investments in real estate, infrastructure, and natural resources such as timber. Real assets investments are expected to reduce volatility of the total fund by offering returns that do not have a high statistical correlation to the public equities market. Most VRS real assets are managed externally. The program outperformed its benchmarks for all periods.

Private equity. The private equity program is the smallest of the five major asset classes, with $5 billion in assets.* Private equity is an alternative to traditional public equity and generally consists of ownership in companies that are not listed on public exchanges. Private equity investments are "opportunistic" investments that are intended to outperform public equity markets over the long term and enhance total fund returns. All private equity assets are managed externally. This program outperformed its benchmarks for all periods. The program also achieved its intended purpose—to earn higher returns than the public equity program—in all periods except the one-year period.

Strategic opportunities. The strategic opportunities portfolio is the smallest asset class, with $1.5 billion in assets. The portfolio allows VRS to gain experience with new investment approaches. Individual investments in this portfolio include three multi-asset class public investment funds and two multi-asset class private investment funds. All strategic opportunities assets are managed externally. The portfolio underperformed its benchmarks for all periods. VRS staff indicated that the portfolio's success is also measured by the value of additional knowledge and skills it provides the investment department.

Investment policies and programs

The VRS board sets investment policies, and the professionals in the investment department implement programs to fulfill those policies. VRS investment expenses have increased as the trust fund has grown, but in terms of costs, VRS still compares favorably to its peers. The investment department's operating expenses have grown at a faster rate than other investment expenses, in part because VRS increased its internal management of assets. VRS staff indicated that the overall cost of internal management is lower than the cost of external management.

VRS investment expenses increased, along with the value of the trust fund, but remained lower than peers

VRS investment expenses include external fees, paid mostly to outside investment managers, and the VRS investment department's operating expenses. External fees account for over 90 percent of investment expenses.

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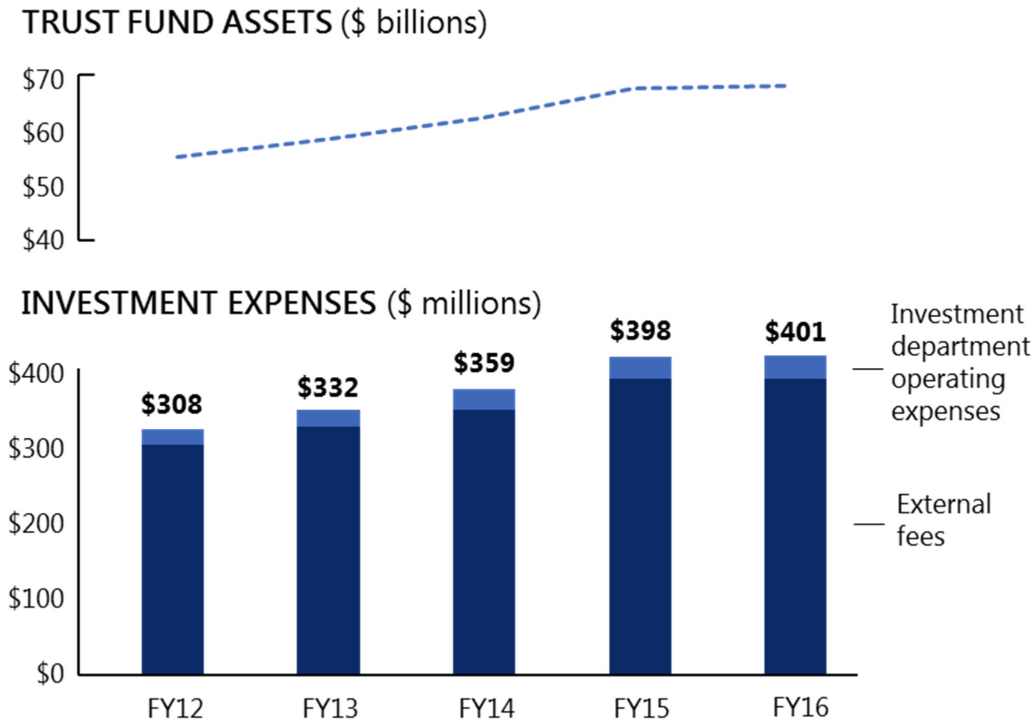
*Performance figures for the real assets and private equity programs do not reflect managers' actual valuations of these investments as of September 30, 2016, because valuations of real assets and private equity lag behind other assets. Instead, performance figures are based on valuations as of June 30, 2016, adjusted for cash flows during the quarter that ended September 30, 2016.

FIGURE 4
Trend in VRS investment expenses compared to trust fund assets

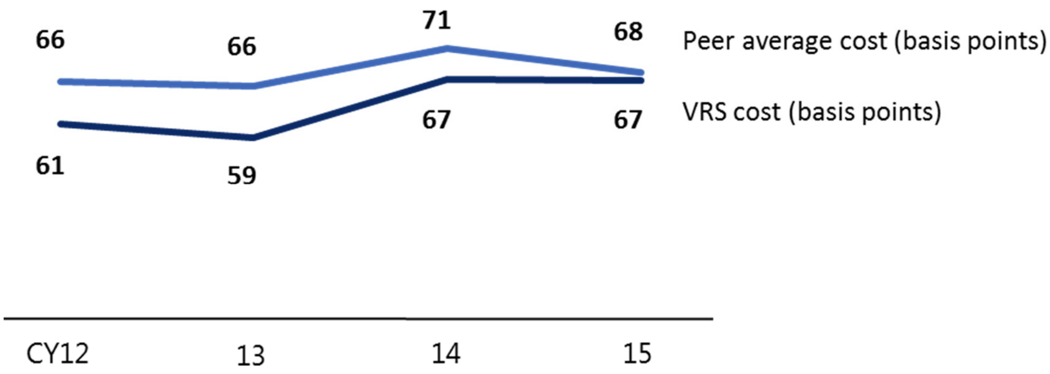


SOURCE: VRS annual reports and investment department data.
NOTE: External fees include management and performance paid to third-parties that invest VRS assets. They also include fees paid to the bank that serves as the trust fund's custodian and legal fees. Investment department operating expenses include all staff, IT, facility, and contract services fees (other than those captured in external fees) related to the investment department's routine operations.

VRS investment expenses have increased over time, but this is mostly a function of the growing value of assets held in the VRS trust fund (Figure 4). Investment expenses increased by an average of 6.9 percent per year, for a total increase of $94 million since FY12. This growth was driven by the trust fund, which grew by an average of 6.4 percent per year over the same five-year time period. Most of VRS's investment expenses are fees paid to external managers based on the value of the assets they hold. As the trust fund grew, so did the value of assets held by external managers and, correspondingly, the total fees they were paid.

VRS investment department expenses represent a small but growing part of overall investment expenses. These expenses grew from $19 million in FY12 to $29 million in FY16, an increase of 54 percent. The main drivers of growth were staffing and IT expenses. VRS added or filled several full-time positions in the investment department over this time period and purchased new software systems, data feeds, and licenses. A substantial portion of these expense increases were attributable to the expansion of the internal asset management group. VRS also hired staff to further help oversee its external managers and added new risk management and research capabilities.

FIGURE 5
VRS investment expenses compared to peers as of June 30, 2016



SOURCE: CEM investment benchmarking reports to the VRS board.
NOTE: In conducting its analysis, CEM makes adjustments to VRS expenses and the assets they are measured against so that they are comparable to peers. Benchmark comparisons for 2016 are not yet available.

Although VRS investment expenses have increased overall, they compare favorably to peer retirement systems. VRS has hired an investment benchmarking consultant, CEM Benchmarking, to annually review its investment expenses and compare them to peers. CEM looked at VRS expenses as a percentage of the trust fund, measured in basis points. CEM reported that VRS investment expenses increased from 61 to 67 basis points from CY12 to CY15. However, VRS expenses were one to seven basis points lower than the peer average over the same time period, adjusted for fund size and asset mix (Figure 5). The difference in basis points between VRS and its peer average was the equivalent of $7 million to $41 million in lower total investment expenses in a given year.

Internal asset management reduced fees paid to external investment managers

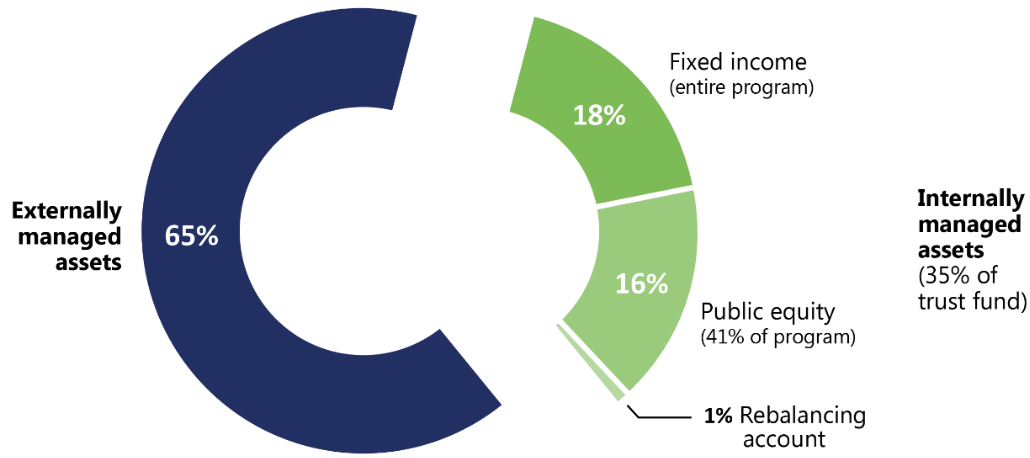
VRS manages a portion of the trust fund's assets internally, with the goal of lowering costs while maintaining a high return on investments. At the end of FY16, 35 percent of the trust fund was managed internally (Figure 6). Internally managed assets included the entire fixed income program and over 40 percent of the public equity program.

VRS staff indicated that internal management of assets has resulted in substantial cost savings while providing a high return relative to benchmarks. According to a VRS consultant, approximately $23 million is saved annually by managing assets internally instead of paying fees to outside managers. These annual savings remain in the fund to be reinvested, which compounds the savings over time.

Internally managed public equity assets underperformed their benchmarks in the one-year period but outperformed for the three-, five-, and 10-year periods ending June 30, 2016. The assets underperformed the benchmark for the one-year period by 80 basis points. However, they outperformed the 10-year benchmark by 110 basis points and generated an annualized return of 7.0 percent over that period.

Fixed income assets outperformed their benchmarks for all periods ending June 30, 2016. The assets outperformed the 10-year benchmark by 40 basis points and generated an annualized return of 6.1 percent over that period.

FIGURE 6
VRS internally and externally managed assets as of June 30, 2016



SOURCE: VRS investment department data, 2016.
NOTE: The rebalancing account may include fixed income, domestic equity, non-U.S. equity, and cash exposure. Internally managed real assets are grouped into the public equity program for reporting purposes.

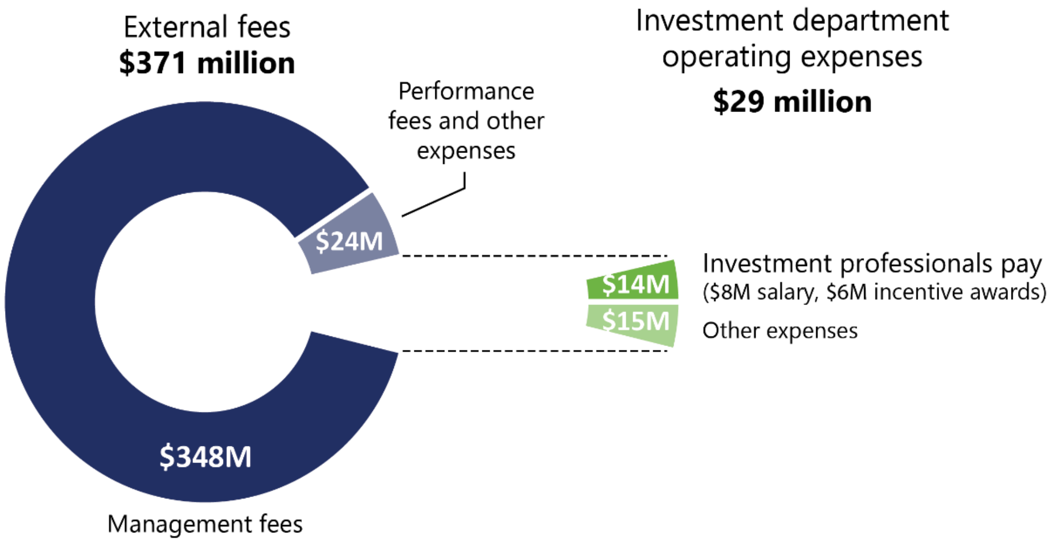
Review of VRS investment professionals pay

In response to interest from members of the Commission, JLARC staff undertook a special review of VRS investment professionals' pay. VRS investment professionals manage and oversee the trust fund. Investment professionals include top executives, such as the Chief Investment Officer who manages the investment department and the directors who oversee the fund's asset classes. Investment professionals also include individual portfolio managers within each asset class and the investment officers and analysts who assist them. In addition, VRS classifies its risk management, defined contribution management, and some research staff as investment professionals. VRS employed 47 investment professionals at the end of FY16.

VRS investment professionals were paid $14 million in FY16, which was 3.5 percent of the fund's $401 million in total investment expenses (Figure 7). The $14 million in pay included $8 million in base salaries and $6 million in incentive awards. Pay amounts were small compared to fees paid to outside parties. External fees accounted for $372 million of $401 million in total investment expenses. Most external fees were management fees paid to outside investment firms.

VRS sets clear goals for paying its investment staff, and has implemented a pay structure that is intended to achieve those goals. The VRS pay structure largely aligns with approaches used by large public funds in other states. VRS pays its staff more than most other funds in order to better compete with the private sector. VRS is achieving its pay goals, and the trust fund's performance relative to benchmarks was better than most other large public funds.

FIGURE 7
VRS investment expenses totaled $401 million



SOURCE: VRS 2016 financial statements and incentive award calculations.
NOTES: External fees include (a) management fees, which are payments to investment managers based on the value of assets held by those managers, (b) performance fees, which are additional payments to investment managers that are made when investments exceed agreed-upon performance thresholds, (c) custodial fees, which are fees paid to the bank that handles trust fund assets and transactions, (d) legal fees paid in support of investments, and (e) expenses related to defined contribution plans. Investment department operating expenses include investment professionals pay, IT, facility, and contract services expenses.

VRS has clear pay goals and its pay plan generally aligns with other large public funds

The VRS board has fiduciary responsibility for the trust fund and determines how the professionals who manage it are paid. The board has established two main pay goals: (1) attract and retain highly skilled investment professionals and (2) incentivize strong investment performance over the long term. To achieve the first goal, the board has targeted pay at levels believed to be competitive with other public funds and private investment managers, such as endowments and investment management firms. The peer group VRS uses is weighted 75 percent towards public funds and 25 percent toward private managers. To achieve the second goal, VRS compensates its investment professionals through a combination of salary and annual incentive awards. Incentive awards are not guaranteed and are based on investment performance.

VRS's use of incentive awards as a regular component of pay is not unusual. Incentive awards are regularly used in the finance industry. About half of large public funds paid incentive awards this past year. Like VRS, most of these funds offer incentive awards as a way to improve recruitment and retention and encourage strong investment performance.

The approach VRS uses to determine incentive awards is similar to the approach used by other large public funds. VRS bases its awards mostly on how investments performed relative to benchmarks, and awards are only made when investments outperform their benchmarks. The benchmarks used by VRS, and the thresholds that the

Benchmarks are third-party indexes that reflect how a particular market has performed.

For example, VRS fixed income assets are benchmarked to the "Bloomberg Barclays US Aggregate Bond Index."

The VRS total fund benchmark is a weighted blend of the benchmarks used for each asset class.

VRS benchmarks are proposed by a third-party consultant, reviewed by the investment advisory committee, and approved by the board.

For this report, **JLARC staff interviewed each of the VRS board members** individually to gain their perspectives on goals and approaches for paying VRS investment professionals.

benchmarks must be outperformed by, are similar to those used by other public funds. VRS also uses an assessment of individual employee performance to determine a portion of incentive awards. Most other funds also use employee assessments.

One unusual element of VRS's approach for determining incentive awards is its use of an absolute return adjustment, which increases or decreases incentive awards based on the most recent one-year total fund return. For example, a $100,000 year-end award would be adjusted to $107,000 to reflect a 7.0 percent absolute return for the year. Only one other large public fund included this type of adjustment as part of its incentive award calculation.

The purpose of the absolute return adjustment is to reduce award amounts in years when the fund has negative returns. The adjustment was put in place in response to losses experienced by the fund in FY08 and FY09. In practice, the adjustment has generally increased incentive awards because the fund typically has a positive one-year return.

The use of an absolute return adjustment should be reconsidered and, if kept, its purpose should be clearly articulated in the pay plan. If the purpose is solely to recognize losses, the adjustment should only be applied when the fund has negative returns.

VRS investment professionals were paid more than most other large U.S. public fund managers

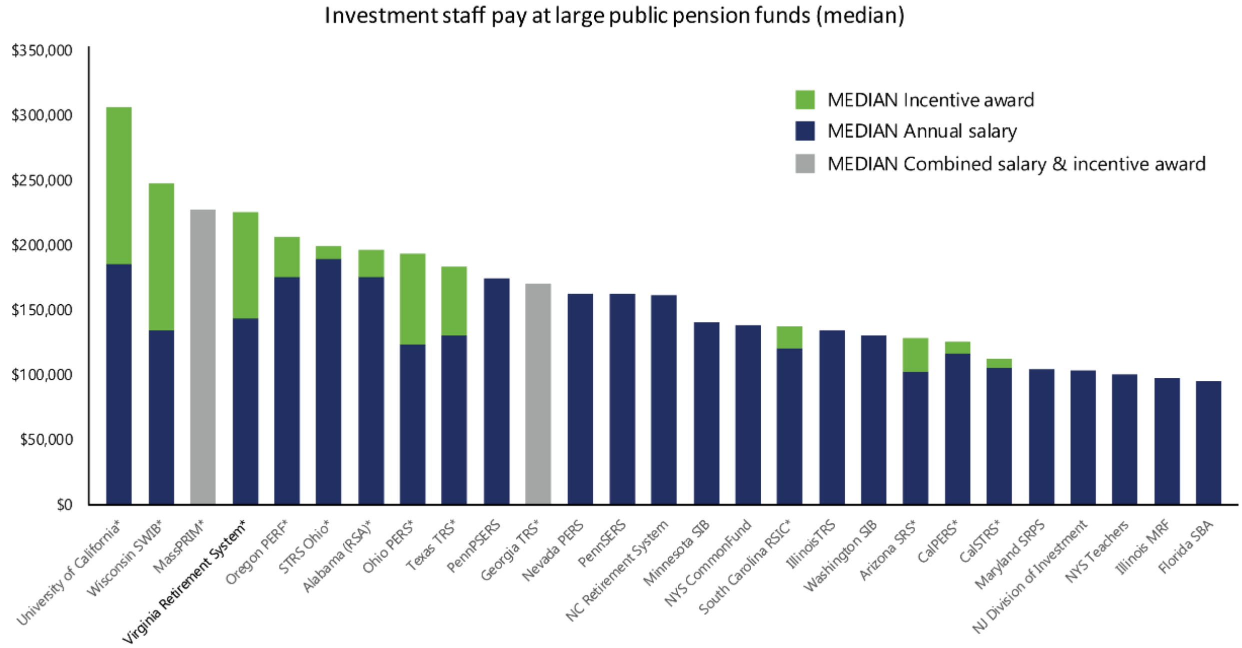
VRS investment professionals were paid more than investment professionals at most other large U.S. public funds. VRS ranked fourth in median pay for investment professional staff as a whole in FY15 (Figure 8). The median VRS employee was paid an annual salary of $143,000 and received an incentive award of $82,000, for a total of $225,000 in pay. VRS ranked in the top three for pay provided to the CIO, high-level management, and mid-level employees (as measured by median and average pay, by position group).

Public funds that had a large staff and internal asset management responsibilities, like VRS, tended to pay their CIOs and high-level managers more. However, those factors did not appear to have any relationship to what other investment staff were paid.

VRS pay was higher than most other funds because it provided relatively large incentive awards. VRS salaries were close to most other funds. However, about half of funds did not pay incentive awards, and their investment professionals were generally paid less than VRS. Of the funds that did pay incentive awards, VRS awards were among the largest. VRS ranked in the top three for the size of its incentive awards, measured as a percent of salary, across the investment staff as a whole and all position groups.[†] The median VRS incentive award was 57 percent of salary compared to the group median of 21 percent.

[†]VRS was compared to 15 funds that paid incentive awards in FY15. However, two of these funds did not report separate salary and incentive award data so it was not possible to determine their relative award size. Three of the funds awarded incentive payments to some but not all staff.

FIGURE 8
VRS staff are paid more than staff of other large public pension funds



SOURCE: VRS and other fund pay data for 2015.
NOTE: Two funds are represented by gray bars, which show the total annual salary plus incentive award paid. The exact salary and award amounts paid by these funds could not be determined.

VRS incentive awards were relatively large because they are set at higher levels than most other funds. For example, the maximum incentive award for the VRS CIO is 140 percent of salary, whereas the average maximum award for CIOs at other funds is 77 percent. VRS awards are further increased by the absolute return adjustment. For example, if the trust fund achieved a 7.0 percent return in a given year, then the maximum incentive award for the CIO would be almost 150 percent of salary. This percentage is close to double the average for other large public funds.

VRS's relatively large incentive awards places a greater portion of overall pay at risk because they are tied to performance. VRS's emphasis on incentive awards is intended to promote strong performance and benefit the trust fund.

VRS sets pay in an effort to compete with the private sector

VRS pay was higher than most other large public funds because it is targeted to compete with investment management organizations in the private sector. Most other funds do not appear to explicitly target pay to compete with the private sector. Private organizations include foundations, endowments, corporate pension plans, investment management firms, and the investment management departments of banks and insurance companies. Investment professionals at these organizations are paid more than their counterparts in public funds. For example, the median pay for CIOs at private organizations was $1.3 million compared to $440,000 for CIOs at large public funds.

For this report, **JLARC staff collected information about 27 large U.S. public funds.**

Each of the funds, including VRS, held at least $30 billion in assets as of December 2014. Retirement funds made up the bulk of money held in these funds. VRS was the 16th largest fund, which was close to the group median.

Many of the funds are managed by (a) a stand-alone retirement agency, like VRS, (b) a treasury department, or (c) an investment management board dedicated to managing state and local pools of capital.

VRS targets pay at mix of private and public sectors. Total pay (salary plus incentive awards) is set at levels that "approximate the median (50th percentile) of a blended peer group weighted 75% to leading public funds and 25% to a broad range of private sector firms." (VRS Investment Professionals' Pay Plan, 2016)

Private sector firms that are selected by the VRS consultant include national and international foundations, endowments, corporate pension plans, investment management firms, and the investment departments of banks and insurance companies.

VRS sets incentive awards at a higher level than most other public funds so that total pay is closer to what is offered in the private sector. VRS board members indicated this is necessary to compete for top investment talent and promote the best possible investment performance. However, some board members indicated that there are material differences in the job responsibilities and quality of life available to investment professionals at VRS versus the private sector, which can make VRS positions more attractive despite the lower pay.

Although the VRS pay plan clearly states its objective to pay employees at a level that is competitive with the public and private sectors, the plan does not specify who should be included in the fund's peer group. This is a critical question because the peer group largely determines what VRS staff are paid. If the peer group includes organizations with higher paid staff, then VRS staff will be eligible for larger incentive awards and higher overall pay. VRS currently leaves peer group selection to its outside consultant, although information on the peer group is made available to the board.

Given the importance of the peer group in determining pay, the board should regularly review and discuss the types of organizations that should be considered VRS's peers. The board's guidance will help ensure that the peer group adequately represents the types of public and private organization that the board believes VRS should be competing with. The composition of the peer group should be clearly documented in the pay plan that is approved by the board.

VRS pay has met retention and investment performance goals

VRS appears to be meeting the goal of attracting and retaining investment professionals. The VRS human resources director indicated the agency has been able to hire new investment professionals as needed. On the retention side, the voluntary turnover rate among VRS investment professionals has been very low, averaging 2 percent annually over the past four years. By comparison, voluntary turnover in the U.S. finance and insurance industry averaged 13 percent annually over the past four years. Although VRS is meeting its retention goal, a few board members indicated that exceptionally low turnover can indicate pay is out of line with the market. One board member indicated that some level of turnover is necessary to refresh thinking and approaches to investing.

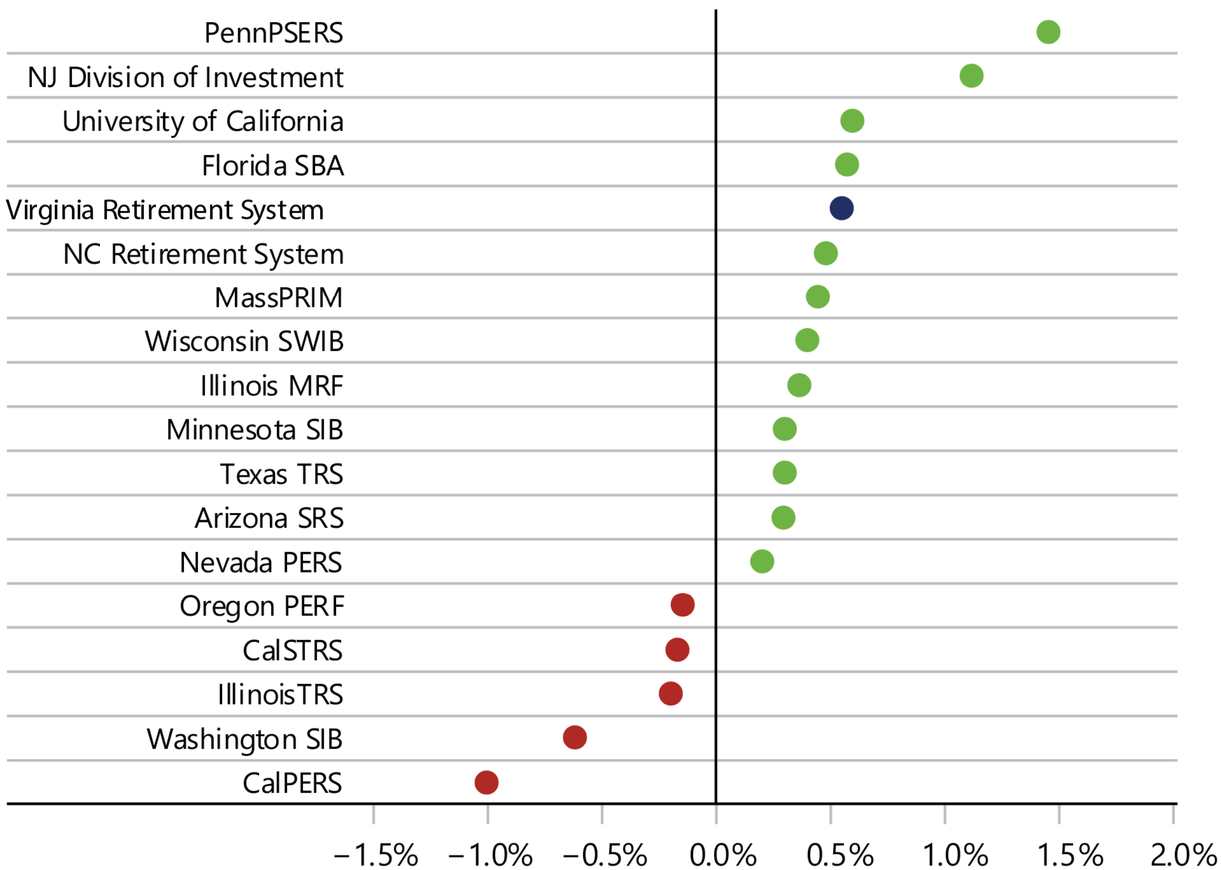
The goal of having strong investment performance is also being met. Investment performance can be measured either by absolute return or by returns relative to benchmarks. Absolute returns are what investments actually achieved over a given period and largely depend on how markets have performed. Returns relative to benchmarks measure the extent to which investments have "beat the markets." The performance of VRS investments, and its investment professionals, can best be measured using this metric because it captures the value that has been added through VRS management.

The VRS trust fund outperformed its performance benchmark by an average of 54 basis points per year over the 10-year period ending September 30, 2016. (A basis point is equal to 0.01 percent.) Applied to the $69.5 billion in fund assets as of that date, this equates to about $375 million in value added from outperformance in a given year. These excess returns remain in the fund and are compounded over time.

VRS has performed better relative to its benchmarks than most other large public funds. For the period ending June 30, 2015, the VRS total fund outperformed its benchmark by 55 basis points. This was fifth best among large public funds reporting data for that period (Figure 9). The average excess return for other large funds was only 26 basis points, or less than half of what the VRS trust fund achieved. The relative performance difference suggests that VRS investment professionals are adding more value than the investment staff at most other large public funds. Applied to the $68 billion in VRS fund assets as of June 30 2015, this difference is equal to about $199 million in additional value-added performance by VRS investment professionals.

FIGURE 9

VRS exceeded 10-year total fund benchmark by larger margin than most other large public funds (for period ending June 30, 2015)



SOURCE: VRS and other fund investment and annual reports for period ending June 30, 2015.
NOTE: Data was not available for seven of the 27 funds included in the pay analysis. However, three of those seven funds reported 10-year relative performance for periods other than June 30, 2015. VRS outperformed those three funds in those periods.

2. Defined contribution plans

VRS manages several defined contribution plans for its members. All state employees and most local VRS members may be eligible to participate in one or more of the plans (Table 1). Participants in these plans have their own accounts, and individual participants determine how their money is invested. Accounts accrue funds that the account holders can use in retirement. The defined contribution plans are similar in structure to private sector 401(k) plans or personally owned individual retirement accounts (IRAs).

Some of the VRS defined contribution plans are intended to provide primary retirement benefits, whereas others are intended to supplement pension benefits. The aggregate value of participant accounts held in the VRS-managed defined contribution plans was $3.8 billion as of September 30, 2016.

TABLE 1
VRS defined contribution plans

Plan	Description	Assets ($M)
Deferred Compensation and cash match	State employees, and some local VRS members, can choose to make voluntary contributions to their Commonwealth 457 deferred compensation plan to supplement their retirement income. Most state employees receive a modest cash match from employers in their Virginia 401(a) cash match plan.	$2,650
Optional plan for higher education	Faculty at public colleges and universities may make an irrevocable one-time decision to participate in this defined contribution plan instead of the State Employees Plan. Employers are required to make contributions to participant accounts, and employees hired after July 1, 2010, are also required to contribute.	$1,020
Hybrid	State and local members of the hybrid plan are required to contribute to their Hybrid 401(a) plan and can choose to make voluntary contributions to their Hybrid 457 plan. Employers are required to make mandatory contributions to participant accounts and match a portion of voluntary contributions made by members. Members are also enrolled in the hybrid plan's defined benefit component.	$91
Other	Optional retirement plans for political appointees and school superintendents can be offered as alternatives to enrollment in the VRS State Employees or Teachers plans. School divisions may choose to offer the Virginia Supplemental Retirement Plan to certain employees who are already enrolled in the Teachers plan.	$14

SOURCE: VRS administration and investment department data.
NOTE: The amounts held in the other plans are as follows: Optional Retirement Plan for Political Appointees, $13 million; Optional Retirement Plan for School Superintendents, $0.3 million; and Virginia Supplemental Retirement Plan for certain educators, $0.1 million.

Plan performance

Participants in the VRS defined contribution plans may choose from a menu of 20 different investment options. These options include (1) diversified target date portfolios, (2) individual investment options, and (3) self-directed brokerage accounts. Participants pay a flat administrative fee every year and additional investment fees according to the options they select. Participants in the Optional Retirement Plan for Higher Education may begin investing in these options starting January 2017. These participants may also choose to invest in options available under two other providers, TIAA and Fidelity. Participants who use one of these two providers pay investment, administrative, and other fees based on the provider they choose and the investment options they select.

The Optional Retirement Plan for Higher Education (ORPHE) has been restructured to allow participants to use the investment options that are available under the deferred contribution, hybrid, and other defined contribution plans. ORPHE members will be able to select from these options starting January 2017.

Prior to this change, participants could only use the options available under TIAA and Fidelity.

Target-date portfolios. Participants may select a diversified investment portfolio in accordance with their target retirement date. These portfolios include a broad spectrum of investments, such as different types of stock, bond, and real estate funds. The mix of investments is automatically adjusted over time to become more conservative as the participant approaches retirement age. The target-date portfolios, which hold $740 million in assets, met or exceeded all of their performance benchmarks (Table 2).

Individual options. Participants may select from one or more individual options to build a customized investment portfolio based on their personal preferences. The options include different types of stock, bond, money market, and real estate funds, and a fund that reflects the investments held by the VRS trust fund. The individual options, which hold $2.0 billion in assets, met or exceeded all of their performance benchmarks (Table 2).

Self-directed brokerage accounts. The brokerage accounts allow participants to select from thousands of publicly traded mutual funds, exchange-traded funds, and individual securities. Participants who use brokerage accounts have full control over their investments, down to the individual securities held in their portfolio. The brokerage accounts hold $32 million in assets. Because all investment decisions are made by the account holders, no performance benchmarks for the brokerage accounts are presented.

Additional options under the higher education plan. Participants in the optional plan for higher education can choose to invest with TIAA or Fidelity. Under TIAA, participants may select a diversified portfolio option or build a custom portfolio from different types of stock, bond, money market, and real estate funds. Under Fidelity, participants may select a target-date portfolio or build a custom portfolio from a menu of investment options. The TIAA and Fidelity programs hold $974 million in assets. The investment options under TIAA and Fidelity underperformed most of their performance benchmarks (Table 2). Investment performance for these options is reported net of fees for investment, administrative, and other services, whereas the performance of the investment options offered under the other defined contribution plans are reported net of investment fees only because of differences in how plan fees are structured. However, it appears that the TIAA and Fidelity options underperformed most benchmarks even if returns are reported net of investment fees only.

An additional $46 million is held with private providers that VRS no longer partners with under the higher education plan. VRS does not track investment performance for these deselected providers because participants can no longer contribute to them through the plan.

TABLE 2
Investment performance of VRS defined contribution plans

for the period ending September 30, 2016

	1 year	3 years	5 years	10 years
Options available for all plans				
Target date portfolios				
Met or exceeded benchmark	10	9	9	7
Total number of options	10	9	9	7
Individual options				
Met or exceeded benchmark	10	10	10	9
Total number of options	10	10	10	9
Additional options under the higher education plan				
TIAA				
Met or exceeded benchmark	5	3	5	3
Total number of options	10	10	10	10
Fidelity				
Met or exceeded benchmark	11	8	18	8
Total number of options	24	23	23	22

SOURCE: VRS investment department data.
NOTES: (1) Options at top are currently available to all plan participants except those in the optional plan for higher education, but will be available to those participants starting January 2017 (2) Total number of investment options reported for a given period can change because longer-term performance data is not available for newer options. (3) 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 are reported net of all fees due to their bundled plan structure. (4) 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. Returns for these options were adjusted to remove the estimated effect of these fees. Actively managed options are expected to outperform the market and were measured against the benchmark without any adjustment for manager 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.

3. Trust Fund Rates and Funding

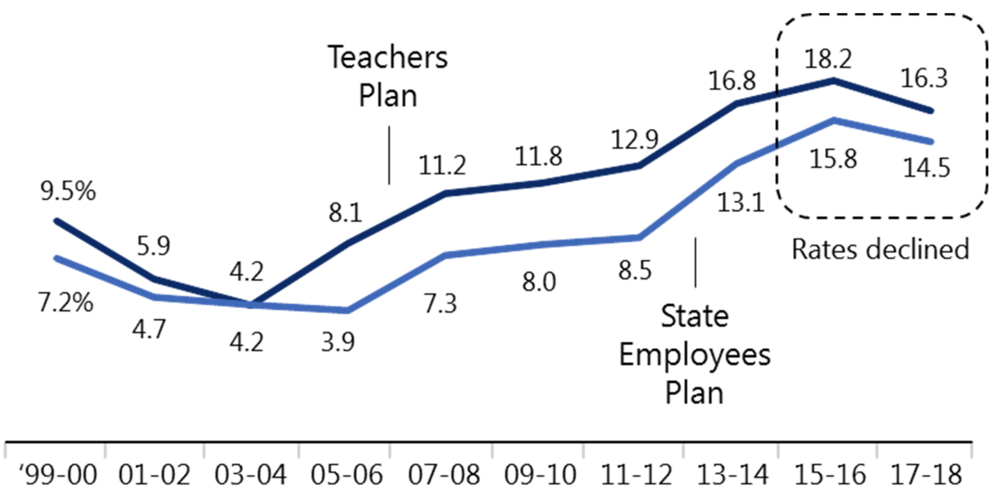
Employer contributions, paid by the state and local political subdivisions through contribution rates, are one of the main sources of funding for VRS retirement plans. Every two years, the VRS board certifies the employer contribution rates that are needed to fully fund the plans, as determined by its actuary. Employer contribution rates for the Teachers Plan, State Employees Plan, and other state-supported plans must be enacted every year in the Appropriation Act. The act requires employers in the 583 local plans to pay the rates certified by the VRS board, with some exceptions.

The VRS actuary annually reports on the funded status of the retirement plans. The funded status of the plans are key indicators of their financial health.

Employer contribution rates have decreased and are scheduled to be fully funded by the state

Employer contribution rates for FY17–FY18 were certified by the board last year. The board-certified rates decreased from the preceding biennium for both the Teachers and State Employees plans for the first time in over a decade (Figure 10). Rates decreased because of strong performance by VRS investments, the state's renewed commitment to funding the plans, including large one-time payments, and the initial impact of 2010 and 2012 legislative reforms of the retirement system. Lower rates make the plans more affordable for the state and local political subdivisions.

FIGURE 10
Board-certified employer contribution rates for Teachers and State Employees plans



SOURCE: VRS annual reports and historic actuarial data.
NOTE: Board-certified rates reflect the percentage of payroll that each VRS-participating employer would need to contribute to VRS to pay off each plan or program's liabilities, as calculated by the VRS actuary. Rates must be enacted by the governor and General Assembly in the annual Appropriation Act.

Virginia's statutory schedule for fully funding rates requires the state to pay 100% of the board-certified employer contribution rates by FY19. The schedule, which was enacted in 2012, gradually increased the portion of funding required for each plan in each biennium.

For FY17–FY18, the state must pay at least 89.84% of the board-certified rate for the Teachers Plan and 89.01% for the State Employees Plan.

The 2016 General Assembly chose to fully fund the employer contribution rates that were certified by the VRS board ahead of the statutory funding schedule (Table 3). Rates for the State Employees Plan and plans for state police officers (SPORS), other Virginia state law officers (VaLORS), and judges (JRS) will be funded at 100 percent of the board-certified rates in FY17 and FY18. Rates for the Teacher's plan will be funded at the statutorily required minimum of 89.84 percent of the board-certified rate in FY17, and then 100 percent in FY18. These rate actions represent an additional $283 million contribution to the retirement system over the biennium. The decision to fully fund the employer contribution rates in these years puts the state ahead of its statutory schedule, which required that rates be fully funded by FY19.

The 2016 General Assembly also approved a special one-time payment of $189 million to pay off the remaining balance of deferred contributions for the State Employees, VaLORS, SPORS and JRS plans. This payment reduced the contribution rates that are required for these plans below what the VRS board had originally certified (for example, from 14.5 percent to 13.5 percent for State Employees). A similar one-time payment of $193 million was made to the Teachers plan in 2015.

Even though this is not a rate-setting year, the VRS actuary calculated FY18 rates for informational purposes only. The informational rates calculated for the Teachers (15.86 percent), State Employees (13.17 percent), and other plans were all slightly lower than those that were enacted in the 2016 Appropriation Act. Rates are expected to stay close to their current levels for the foreseeable future, assuming investments meet the assumed 7.0 percent rate of return. Rates are not forecast to drop significantly until after 2042, when the state finishes paying off its legacy unfunded liabilities.

TABLE 3
Employer contribution rates enacted by the General Assembly

	Rate set in Appropriation Act			
	FY15	FY16 [a]	FY17 [b]	FY18 [b]
Teachers	14.50%	14.06%	14.66%	16.32%
State Employees	12.33	14.22	13.49	13.49
VaLORS	17.67	19.00	21.05	21.05
SPORS	25.82	27.83	28.54	28.54
JRS	51.66	50.02	41.97	41.97

SOURCE: Appropriation Acts, 2014-2016.
[a] 2015 Appropriation Act increased FY16 employer contribution rates for State Employees, VaLORS, SPORS, and JRS plans to 90% of actuarially recommended rate, after taking into account past one-time payments to the VaLORS and SPORS funds and changes made to the JRS plan in the 2015 session. Act reduced rate for Teachers Plan in FY16 because a one-time $193 million payment was made to the plan, which reduced unfunded liability. [b] 2016 Appropriation Act increased FY17 and FY18 employer contribution rates for State Employees, VaLORS, SPORS, and JRS plans to 100% of actuarially recommended rate, after taking into account repayment of deferred contributions from the 2010-2012 biennium. Rate for the Teachers Plan set at statutory minimum 89.84% of actuarially recommended rate in FY17 and 100% in FY18.

Employer contributions are also paid by local governments and political subdivisions in support of the 583 local plans. The VRS actuary calculates a unique rate for each local plan, and rates are certified by the VRS board. Local employers have historically been required to pay the full board-certified rate for their individual plans, with a few exceptions in recent years. The average of the board-certified employer contribution rates for local plans was 8.15 percent for FY17-FY18. The average rate is much lower than the rates for the state plans because local plans generally have smaller unfunded liabilities. The average rate for local plans has steadily decreased over the past five years. However, rates and trends for individual local plans vary depending on the employer.

Funded status of VRS plans continued to improve

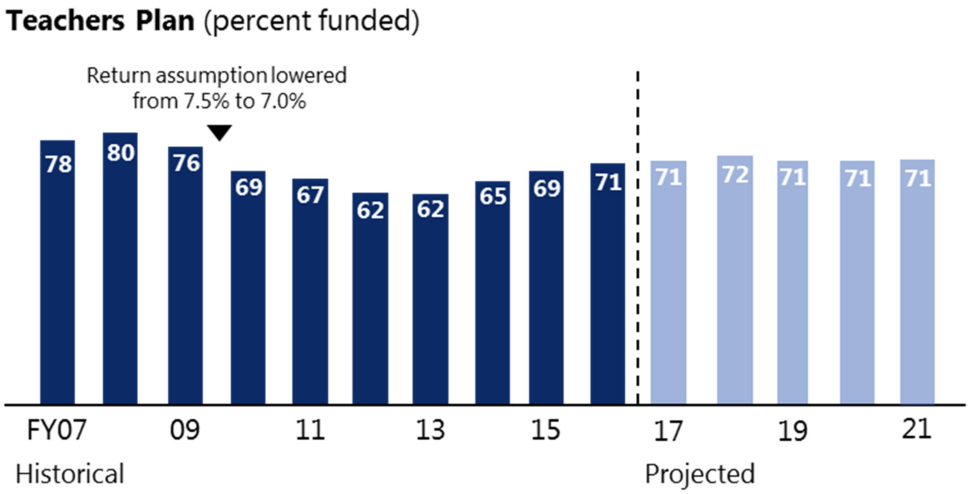
The health of a pension plan is commonly measured by its funded status, which is the ratio of plan assets to liabilities. The funded status of the State Employees and Teachers plans improved in FY16 for the third year in a row (Figure 11). This upward trend reverses the steady decline in funded status that the plans experienced following the 2008-2009 economic recession. The plans are expected to maintain approximately the same funded status over the next five years, assuming investments meet the assumed 7.0 percent rate of return. The other state-supported plans, SPORS, VaLORS, and JRS, experienced an increase in funded status for the fourth year in a row.

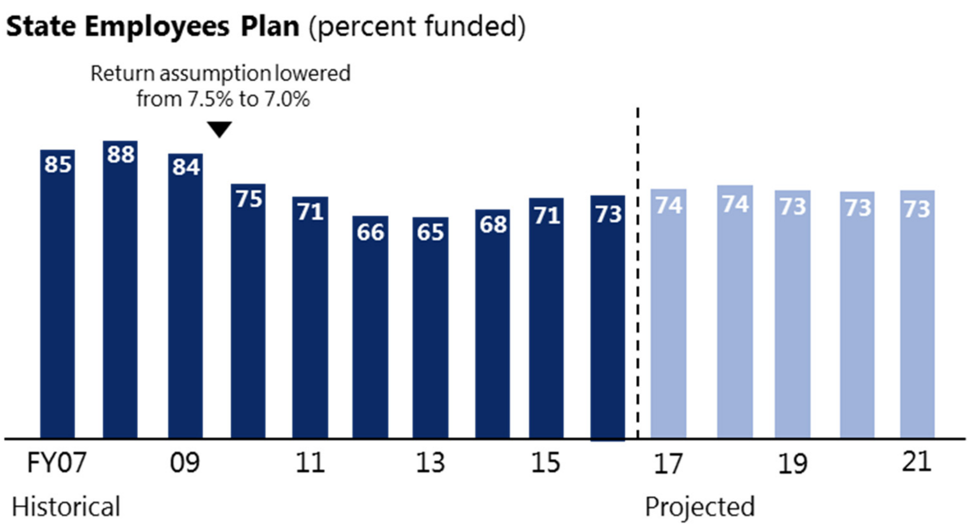
The average funded status of the local plans, adjusted to account for size differences, increased for the fourth year in a row, from 88 percent in FY15 to 90 percent in FY16. Local plans have maintained a higher average funded status than the Teachers plan or the state-supported plans because local employers have generally been required to fully fund their plan contribution rates. However, the funded status of any individual local plan may be higher or lower than the group average.

The funded status of the VRS plans has improved in recent years, in part because of strong investment performance. VRS uses the investment gains and losses it has experienced over the past five years when determining the actuarial value of its assets. This actuarial smoothing minimizes the effects of market volatility and provides greater stability in the contribution rates for employers. The trust fund earned a 7.0 percent return for the five-year period ending June 30 2016, which matched the assumed 7.0 percent annual rate of return. The funded status of the plans will continue to improve if returns stay at or above the assumed rate. The funded status will level off or decline if returns are lower.

The state's renewed commitment to fully funding the VRS plans has also helped improve their funded status. The 2012 General Assembly enacted legislation requiring the state to fund 100 percent of the board-certified employer contribution rates by FY19. Fully funding the rates will help reduce the current unfunded liabilities and prevent the accrual of new unfunded liabilities. As previously noted, the 2016 General Assembly accelerated the funding schedule for the state-supported plans by providing VRS with additional funds beyond what was statutorily required.

FIGURE 11
Funded status of Teachers and State Employees plans





SOURCE: VRS actuarial valuation report, 2016, and historical actuarial data.
NOTE: Funded status is reported based on actuarial value of assets, using a five-year smoothing period. Projections assume 7.0% rate of return on investment and 2.5% inflation. The funded status of the plans can also be reported using the market value of assets, which is how they are reported in VRS financial statements.

4. Benefits administration and agency management

Administration of member benefits is one of the core responsibilities of VRS. In order to carry out this and other duties, the agency must be effectively managed. Notable issues relating to benefits administration and agency management include growth in agency spending, the continued implementation of the Hybrid Plan, and potential changes to VRS operations and benefits that are being considered by the legislative Commission on Employee Retirement Security and Pension Reform.

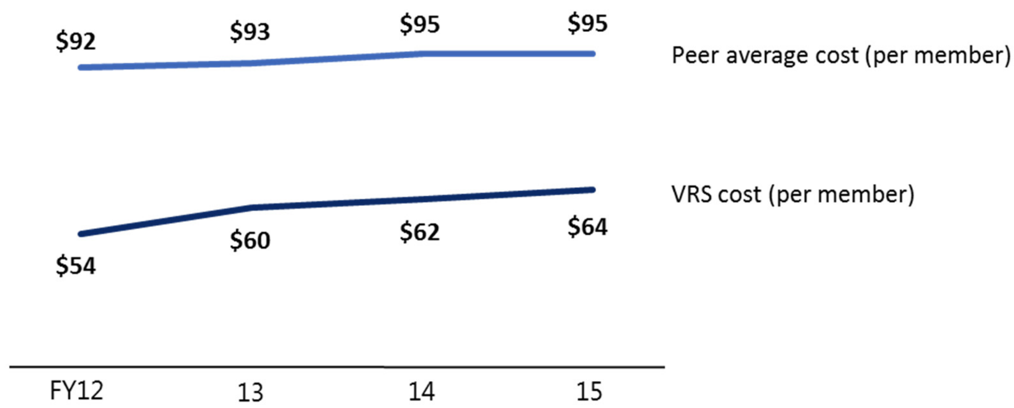
VRS operating expenses increased but remained lower than peers

VRS operating expenses include spending related to benefits administration, agency management, and investment department operations (not including external fees). Agency expenses in FY16 were $79 million. Expenses increased by $27 million in the four-year period from FY12 to FY16, with an average growth rate of 11 percent per year.

VRS expense increases were attributable to four main cost drivers. The first driver was implementation of the new Hybrid Plan. VRS added several new staff positions to administer the new plan, and educational and other materials had to be developed, printed, and distributed. The second driver was the expansion of the investment department, including addition of new staff positions and development of new IT capabilities. The third driver was growth in member counseling services. New staff were added to address increased call volumes and the need for one-on-one consultations. The fourth driver was higher IT costs. VRS increased IT salaries to retain senior staff, and its systems were modified so it could administer the hybrid plan. VRS continues to modernize its IT systems to add new capabilities, such as improving online member services.

Although VRS expenses increased, its administrative costs compare favorably to peer retirement systems. VRS hires a consultant, CEM Benchmarking, to annually review the administration expenses related to its retirement plans and benchmark them to peers. (This comparison excludes investment expenses and costs associated with administering other benefit programs, such as retiree health credit programs.) CEM reported that VRS retirement plan administration costs were $31 to $38 lower per member than its peer average from FY12 to FY15, the last year that comparative data was available (Figure 12). This difference was estimated to be $16 million to $19 million in lower administrative expenses in a given year. VRS expenses grew at a faster rate than the peer average, likely because of costs associated with implementing the Hybrid Plan and IT projects.

FIGURE 12
VRS retirement plan administration costs compared to peers



SOURCE: CEM retirement plan administration benchmarking reports to the VRS board.
NOTE: Benchmark comparisons for 2016 are not yet available.

Proportion of Hybrid Plan members that make voluntary contributions is small but growing

Hybrid Plan members contribute between 5% and 9% of salary toward their retirement benefits.

Members are required to contribute 4% of salary toward their defined benefit component and 1% of salary to their defined contribution component. Members may voluntarily contribute up to an additional 4% to the defined contribution component.

Employers are required to match member contributions to their defined contribution component. Employers match the mandatory 1% of salary and provide up to an additional 2.5% in contributions, based on members' voluntary contributions.

The Hybrid Plan combines elements of a traditional defined benefit retirement plan with a 401(k)-style defined contribution plan. Hybrid Plan members include most state employees, teachers, and local employees hired on or after January 1, 2014, and now comprise 16 percent of the total active VRS membership. (State employees in the SPORS and VaLORS plans, and local employees with enhanced hazardous duty benefits, are not part of the Hybrid Plan.) The Hybrid Plan has lower costs and liabilities than the defined benefit plans it replaced, and is expected to gradually reduce state and local retirement costs as it grows to cover an increasing proportion of the workforce.

The portion of members making voluntary contributions to the defined contribution component of the Hybrid Plan remains low. As of October 1, 2016, 15 percent of members have chosen to make voluntary contributions. The low participation rate raises the concern that many Hybrid Plan members may not have adequate savings to retire. Although participation is low, it has increased over time in part because of an outreach campaign by VRS to educate members about the importance of contributing to the plan.

Voluntary contribution rates should increase in the near future due to the automatic rate escalation that will occur in January 2017. Under this automatic escalation, the voluntary contributions made by each member will increase by 0.5 percent unless the member actively decides to not allow the increase. The increase applies to all members, regardless of hire date, unless they already contribute the maximum four percent in voluntary contributions. VRS has developed a communications campaign to make members aware of the approaching automatic escalation. The escalation provisions were set forth in the statute that created the Hybrid Plan.

In 2015, VRS examined ways that voluntary contributions could be increased by changing aspects of the Hybrid Plan's design. These changes have been taken into consideration by the Commission on Employee Retirement Security and Pension Reform.

Commission considers changes to retirement benefits, human resource practices, and employee compensation

The 2016 General Assembly created the Commission on Employee Retirement Security and Pension Reform to study and make recommendations related to the VRS retirement plans and workforce issues. The commission was tasked with examining the soundness of the VRS retirement plans, state employee compensation, and the transition to a new state workforce. The commission formed three work groups around these core issues: retirement, compensation, and workforce. These work groups have adopted recommendations that will be considered by the full commission in December.

The **Commission on Employee Retirement Security and Pension Reform** was established in 2016 by the General Assembly (HB 665). The commission comprises 21 members, including legislators, citizen appointees, and the directors of VRS and the Department of Human Resources, who serve ex officio.

The retirement work group adopted recommendations designed to increase retirement savings and potentially provide an additional retirement option for state employees. Recommended changes to the Hybrid Plan would allow members to direct a greater share of their mandatory contributions to the defined contribution (DC) portion of their plan and increase voluntary contributions to the plan. The work group recommended that the General Assembly consider creating an optional defined contribution plan for employees, after determining the fiscal impact of such a plan.

The retirement work group also recommended several administrative actions to assist with future planning for the trust fund and to increase the transparency of investment information. Actions include formalizing policies to stress test the trust fund and make information on investment policies and performance further available.

The compensation work group adopted recommendations to increase compensation in the near term and gain a better understanding of the competitiveness of state employee compensation overall. The work group recommended that the General Assembly prioritize funding in FY18 for the previously scheduled three percent pay raise for state employees. The work group also recommended that JLARC undertake a study of state employee compensation and that funding be provided for the Department of Human Resource Management (DHRM) to subscribe to a service that provides information on total compensation by peer employers.

The workforce work group adopted recommendations to improve the recruitment and retention of state employees, and to assist in planning for changes in the state workforce. Specifically, the work group recommended that DHRM create a comprehensive marketing and recruitment plan for state employees, and that satisfaction surveys and exit surveys be administered to state employees. The work group recommended that agencies develop succession plans for key personnel and that agency heads be required to participate in human resource training. The work group also recommended commissioning a study of state employee positions in each region of the state and the skills of employees in that region.

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