OVERSIGHT VRS Report

JOINT LEGISLATIVE AUDIT & REVIEW COMMISSION
OF THE VIRGINIA GENERAL ASSEMBLY

Semi-Annual VRS Investment Report: September 1995

***Quick Summary* and Contents**

Profile: Virginia Retirement System Investments

Chief Investment Officer: Erwin H. Will
Total Assets: $18.8 billion
Actuarial Return Assumption: 8%
Number of VRS Investment Staff: 19
Number of External Managers: 69
FY 1995 Investment Expenses: $53.3 Million
Number of Active VRS Members: 262,297
Number of Retired VRS Members: 78,052

Total Return on Investments

(Most Recent Full Fiscal Years)

1992	*1993*	*1994*	*1995*
11.2%	**11.5%**	**1.7%**	**17.1%**

(Time Periods Ending 6/30/95)

10 years	*5 years*	*3 years*	*1 year*
11.6%	**9.4%**	**9.9%**	**17.1%**

Asset Allocation (as of June 30, 1995)

	Asset Allocation (% of Total Assets)		*Where Invested* (% of Asset Class)		*Investment Strategy* (% of Asset Class)	
Asset Class	**Target**	**Actual***	**Domestic**	**International**	**Active**	**Passive**
Equity	**70%**	**70%**	**87%**	**13%**	**50%**	**50%**
Fixed Income	**21%**	**22%**	**92%**	**8%**	**100%**	**0%**
Real Estate	**9%**	**7%**	**100%**	**0%**	**69%**	**31%**

*Of total assets, 1% was cash.

September 1995 Report on the VRS Investment Program

INTRODUCTION

To help provide Virginia Retirement System (VRS) members with reasonable assurance as to the security of their retirement benefits, employer and member contributions to the pension fund are professionally invested in equity, fixed income, and real estate instruments. As the fiduciary of the pension fund, the VRS Board of Trustees (the Board) - aided by its advisory committees and the VRS investment staff - is continuing a detailed review of the pension fund's $18.8 billion investment portfolio. Particular emphasis is currently being placed on the retirement system's real estate investments. The primary purpose of this ongoing evaluation is to ensure that the investment programs and strategies used to implement the asset allocation policy established by the VRS Board are as effective and efficient as possible.

Primarily due to strong increases in the value of the domestic equity market, which reached a record level, VRS investment performance improved substantially in recent months. However, when viewed over the longer term, VRS investment performance has been lower than the Board's own currently established benchmarks for many of its asset classes. This raises some questions, which VRS is working to address, concerning the cost effectiveness of the investment program structure. VRS is also in the process of examining ways to more effectively monitor and control the various risks taken in its investment program, including but not limited to those inherent in the use of derivative products and strategies.

VRS is facing an additional investment issue that is rather unique. VRS has received several unsolicited offers to purchase some or all of the RF&P Corporation (RF&P). A special committee composed of VRS trustees and RF&P directors is in the process of evaluating the offers that have been received, and assessing the options of VRS concerning its investment in RF&P.

Study Mandate

The Virginia Retirement System Oversight Act (Section 30-78 et seq. of the *Code of Virginia*) requires VRS to submit semi-annual reports on its investment program to JLARC. The statute requires that the report be in a format approved by the Commission and that it include information concerning (i) planned or actual material changes in asset allocation, (ii) investment performance of all asset classes and sub-classes, and (iii) investment policies and programs. This report is, in part, a summary of VRS' submission for the six months ending June 30, 1995.

Study Approach

This report was prepared based on information provided by VRS, in response to a written request for data and documentation prepared by JLARC staff. The written request developed by JLARC staff concerned the following investment issues: asset allocation, investment policy, investment performance, long-term assets and liabilities, and short-term investments and liquidity.

JLARC staff developed additional information concerning the status of the investment program during attendance at the monthly meetings of the VRS Board, the Investment Advisory Committee (IAC), and the Real Estate Advisory Committee (REAC). Written materials furnished at these meetings, and discussions concerning those materials, provided an additional factual and contextual basis for this report.

Report Organization

This report provides a summary update of the investment policies, procedures and performance of

OVERSIGHT VRS Report

VRS Oversight Report **is published periodically by the Joint Legislative Audit and Review Commission (JLARC) in fulfillment of Section 30-78 *et seq*. of the *Code of Virginia*. This statute requires JLARC to provide the General Assembly with oversight capability concerning the Virginia Retirement System (VRS), and to regularly update the Legislature on oversight findings.**

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VRS. The first section of the report examines asset allocation. The second section reviews other elements of the VRS investment policy. The third section discusses VRS investment performance. The final section presents a discussion of VRS funding and liquidity.

ASSET ALLOCATION NOT FULLY IMPLEMENTED

Asset allocation is the single most important factor underlying the long-term success or failure of any investment program. According to the VRS asset allocation policy, the pension fund is to be invested in three broad asset classes as follows: 70 percent of fund assets in equities, 21 percent in fixed income, and nine percent in real estate. Since adopting this policy in September 1994, VRS has made progress toward achieving those policy targets. However, the potential sale of some or all of RF&P may have significant implications for the VRS asset allocation policy. This section provides an update on the current VRS asset allocation policy.

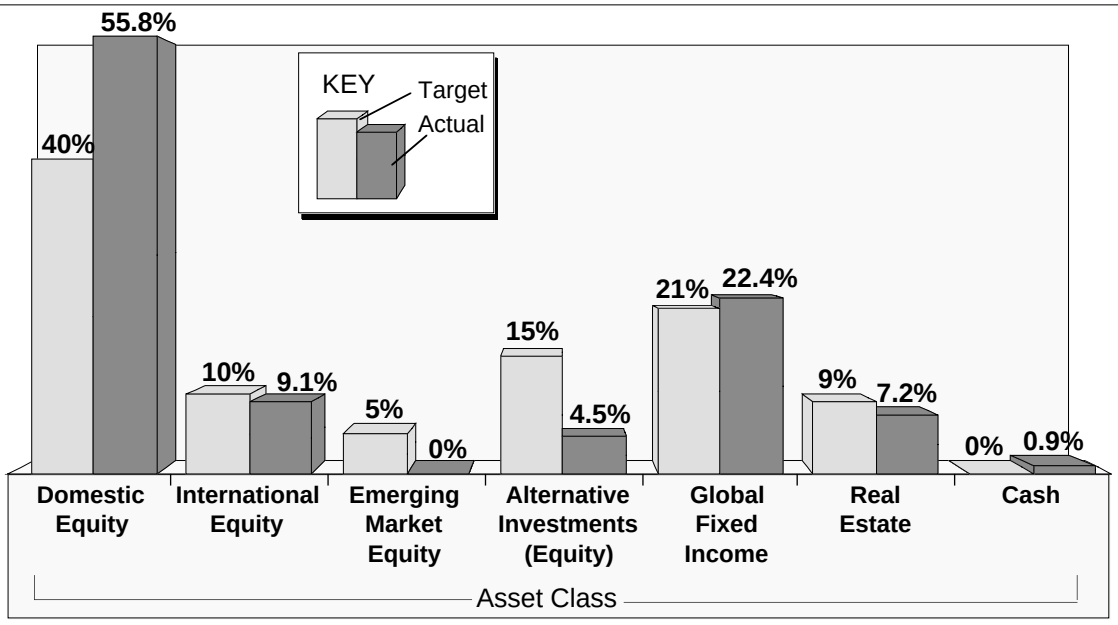
Asset Allocation Differs from Policy Targets

VRS is in the process of implementing its asset allocation policy. Substantial progress has been made toward attaining the broad allocation of 70 percent equity, 21 percent fixed income, and nine percent real estate. However, little progress has yet been made in allocating equity investments among the domestic, international, emerging market, and alternative investment sub-classes, as prescribed by policy. This is reflective of the considerable amount of time that can be required in order to invest hundreds of millions of dollars. Moreover, as the market value of assets increases, the amount of additional funds to be invested in order to satisfy allocation percentages also increases. The Board has approved overweighting the pension fund in domestic equity until the full amount of the planned investment in emerging markets can be made. Figure 1 (below) illustrates the difference between the actual allocation of VRS assets, and the long-term asset allocation policy targets established by the Board.

Potential Sale of RF&P May Affect Asset Allocation Policy

In the Spring of 1995, VRS received four unsolicited offers to purchase some or all of RF&P. As the fiduciary of the pension trust fund, the Board is responsible for determining whether any one of these offers is in the best interests of the members and beneficiaries of the retirement system. In response to the offers, which

Figure 1: VRS Asset Allocation – Actual Compared to Policy Targets, as of June 30, 1995



Note: VRS invested $215 million, or approximately 1 percent of fund assets, in emerging market equity subsequent to June 30, 1995.

Source: JLARC staff analysis of VRS asset allocation data.

vary considerably in terms of dollar amount and conditions, the VRS Board and the RF&P Board established a special committee to evaluate the merits of the various offers and explore options.

The special committee hired the investment banking firm of Lehman Brothers (Lehman) to provide professional assistance during the course of the review. Lehman examined an assortment of potential options for VRS ranging from accepting one of the existing offers, soliciting additional offers, or retaining the RF&P as a long-term investment. Based on the evaluation performed by Lehman, and the recommendation of the special committee, the VRS Board and the RF&P Board jointly authorized Lehman to solicit offers to purchase all or part of VRS' interest in the capital stock of RF&P. Lehman will simultaneously evaluate other options with respect to the sale of less than all of RF&P's assets as well.

Effect of Potential Sale on Asset Allocation. If VRS does sell RF&P in its entirety, it is possible that the VRS asset allocation policy will change. In June, the Chief Investment Officer (CIO) recommended a new allocation policy to the IAC premised on the sale of RF&P for $540 million. Under the proposed policy, fixed income investments would increase from 21 to 25 percent of assets, while real estate would decrease from nine to five percent of assets. According to the CIO's recommendation, the current 70 percent target allocation for global equity would remain. However, the domestic equity allocation would increase from 40 to 45 percent of assets, while the private equity allocation would be reduced from 15 to ten percent.

The IAC postponed taking any action on the CIO's recommendation for two reasons. First, an actual sale of RF&P had not yet occurred. Second, the IAC was reluctant to recommend a significant change to the asset allocation policy so quickly, given that it had gone through an extensive, time consuming process in order to establish the policy.

COMPONENTS OF INVESTMENT POLICY BEING EVALUATED

Within its three broad asset classes of equity, fixed income, and real estate, it is the policy of VRS to invest in a number of sub-asset classes using several different investment styles and strategies. A constant challenge for VRS is to maximize its investment return while ensuring that risk and expenses remain at acceptable levels. In order to accomplish this, VRS investment policy undergoes continuous monitoring and scrutiny. Table 1 summarizes the current structure of the VRS investment program.

VRS is currently examining several important policy issues. One of these involves enhanced monitoring of investment risks, including those inherent in the use of derivative investment products. Another broad issue concerns the VRS real estate program, which is undergoing an internal review designed to evaluate its rationale, advantages, and disadvantages. This section discusses recent actions taken by VRS concerning these two issues.

Monitoring of Derivative Investment Products Is Under Review

Sweeping changes in global financial markets have contributed to a rapid expansion in the development and use of derivative investment products. A derivative is a financial product whose value is derived from another underlying financial asset, interest rate, currency, commodity or index. Derivatives may also be defined as a contractual agreement between two parties who exchange payment streams linked to an underlying asset or financial indicator. Examples of derivatives include futures contracts and options to buy or sell stock. Table 2 identifies some of the more traditional types of derivative products used by VRS investment managers.

Like any type of investment product or strategy, derivatives can result in financial losses if the risks associated with the investment are not fully understood and prudently managed. VRS uses derivative instruments, as do many other public employee retirement systems, in order to reduce the risk of changes in asset value due to fluctuations in market conditions, such as interest rates and foreign currency exchange rates. VRS, like many other institutional investors, also uses derivatives as a means of generating additional earnings.

Amount of VRS Exposure to Derivatives. As of March 31, 1995, the contractual value of VRS' net exposure to derivative products was approximately $1.2 billion or less than ten percent of the entire fund. The contractual value represents the volume of outstanding transactions in derivative products and does not represent the potential for gain or loss associated with the credit and market risks of those instruments. This value is based on definitions and requirements established by the Financial Accounting Standards Board.

As part of an effort to more fully identify and understand the use of derivative products, the Governmental Accounting Standards Board recently issued Technical Bulletin No. 94-1. This requires VRS to disclose, for each of its investment managers, the following information concerning the use of derivatives:

- The total contractual amounts which were used, held, or written;
- The nature of each derivative transaction and the reason for using each derivative transaction; and

Table 1: VRS Investment Program Structure

Asset Class	Structure	Performance Objective
Domestic Equity	Stock holdings in corporations traded on U.S. stock exchanges Recognizes style (growth and value) and capitalization (large, medium, small) differences Active / passive, and internal / external management	*Active Program*: Exceed total return of the Russell 3000 by 100 basis points over rolling three-year periods net of all costs *Passive Program*: Approximate total return of the broad market annually
International Equity	Stock holdings in corporations traded on stock exchanges of foreign countries, primarily those with developed economies and financial markets. Recognizes regional (Europe and Pacific Basin) and capitalization (large, medium, small) differences Active and passive management. Currently uses only external management. Internal management may be used in the future	*Active Program*: Exceed total return of the Morgan Stanley EAFE 50/50 by 200 basis points over rolling three-year periods net of all costs, and Exceed total return of broad domestic index, such as S&P 500, over five to ten year period net of costs. *Passive Program*: Approximate total return of the EAFE 50/50 annually net of costs
Emerging Market Equity	Stock holdings in corporations traded on the stock exchanges of nations with developing economies and financial markets. Takes advantage of long-term above average growth rates, low correlation with the returns of other equity investments, and regional diversification. Currently uses only passive external management. Active management, and internal management, may be used in the future.	*Active Program*: Exceed total return of the International Finance Corporation investable liquidity-tiered index by 200 basis points over rolling three-year periods net of all costs *Passive Program*: Approximate total return of the International Finance Corporation investable liquidity-tiered index annually net of all costs
Alternative Investments (Equity)	*Private Equity*: Direct equity and sub-debt investments, usually as a limited partner, in privately owned companies. Diversified across various niches including venture capital, growth capital, buyouts, distressed companies, and energy Active, external management *Absolute Return Strategies*: Trading strategies, possibly including the use of hedge funds and arbitrage, whose investment returns are not tied to the performance of the overall market. (Not yet implemented)	Exceed the Russell 3000 by 400 basis points, annualized, over rolling ten year periods
Fixed Income	Bond holdings diversified by maturity (short, intermediate, long); sector (government/agency, finance/asset backed, corporate); and region (domestic, international). Majority of bonds are AAA rated Active and passive management. Currently uses only external management. Internal management may be used in the future	Exceed the Lehman Brothers Aggregate Bond index over rolling five-year periods
Real Estate	Investments diversified by property type (industrial, office, retail, apartment) and region (economic). Includes developed and undeveloped real property owned by RF&P Corp. Active and passive external management	*Active Program*: Five percent real rate of return, net of all fees (exclusive of RF&P) *Passive Program*: Four percent real rate of return, net of all fees

Source: JLARC staff analysis of IAC Policy Guidelines, and REAC Policy Guidelines.

Table 2: Derivative Investment Products Used by VRS

Derivative	Definition and Characteristics	Example
Futures Contract	Obligates the holder to buy or sell a specific amount of an underlying asset, reference rate or index at a specified price or yield on a specified future date Standardized contracts traded on organized exchanges Daily publicly quoted market prices Net change in contract value settled in cash with the exchange, usually before contract maturity Subject to market risk	A pension fund desires a broad domestic equity market exposure, such as that represented by the S&P 500, for a six month period. One alternative is to purchase all 500 stocks in their respective market and capitalization weights. This alternative generates high commission and market impact costs. A second alternative is to purchase an equivalent amount of S&P 500 futures contracts. Purchase of the futures contracts is less costly over the short term, while achieving the same equity market exposure and rate of return. Since costs are lower with the purchase of S&P 500 futures contracts, the return net of all costs to the pension fund is greater.
Forward Contract	Obligates the holder to buy or sell a specific amount or value of an underlying asset, reference rate or index at a specified price or yield on a specified future date Customized contract negotiated between two counterparties and traded over-the-counter No funds transferred until contract maturity Subject to market risk and credit risk	A pension fund with stock holdings in a foreign country wants to avoid having its expected stock appreciation voided by anticipated currency depreciation. The fund expects the stock price to increase, and the value of the local currency to decrease relative to the U.S. dollar, within the next 90 days. For protection, the fund purchases a forward contract to sell the foreign currency, in an amount equal to the current stock value, in 90 days at the current U.S. dollar exchange rate.
Foreign Exchange Contract	Involves the exchange of two currencies, at a future date, using a specified currency exchange rate. Can include forward, futures, or options contracts Most trades executed through an international network of banks and brokers, rather than through an exchange Subject to market risk and credit risk (depending on type of contract)	A pension fund desires to protects the value of a portion of its fixed income portfolio from the effect of changing exchange rates in a particular country. The fund receives its investment return in that country's local currency. The U.S. dollar value of that return depends on the currency exchange rate. Expecting the value of the local currency to decrease relative to the dollar, the pension fund purchases a contract to sell the foreign currency, in an amount equal to the current bond value, at a future date at the current exchange rate.
Option	Grants the holder the right, but not the obligation, to purchase or sell a financial instrument, such as stock or a stock index, at a specified price and within a specified period of time. May be traded through an organized exchange or over-the-counter Subject to market risk and credit risk (if not exchange traded)	A pension fund, concerned that stock prices will fall, wants to protect the current market value of one of its largest stock holdings. The fund buys an option to sell shares of stock A at a future date at the current price. This protects the current market value of the pension fund's investment, but its total profit is reduced by the cost of buying the option.

Source: JLARC staff review of Financial Statement Note No. 5 of VRS 1994 Annual Report; *Financial Derivatives: Actions Needed to Protect the Financial System* (General Accounting Office, May 1994), *Investments* (Bodie, Kane and Marcus, 2nd edition), *Barrons Finance and Investment Handbook*, and interviews with VRS investment staff.

- Identification of the credit and market risk associated with each transaction

VRS is the process of surveying its investment managers in order to develop the information needed to comply with this new standard.

Types of Risks Inherent in Derivatives. The VRS portfolio is exposed to two general types of risks through the use of derivatives: credit risk and market risk. Credit risk is the possibility that a loss may occur from the counterparty's failure to perform according to the terms of the contract. This risk is present in all over-the-counter ("OTC") derivative products, but is virtually eliminated in exchange-traded products. According to VRS, a financial loss due to credit risk could occur only on derivatives which have increased in market value since the contract was written. Market risk is the possibility of a loss due to unfavorable fluctuations in market price, interest rates, or foreign exchange rates. The effect of this type of risk can be amplified by trading through the use of leveraged margin accounts.

VRS Derivatives Monitoring Process. The process currently used by the VRS investment department is based on the guidelines contained in each investment manager's contract. The investment staff compares managers' holdings to the contractual guidelines, and to the coding of investment accounts by the VRS custodian bank (Mellon Trust) outlining the specific derivative instruments that may be utilized by each manager. The contract guidelines vary in their level of detail, and are currently being reviewed by the investment staff in an effort to make them more uniform regarding language and specificity. As an additional part of the monitoring process, the investment department reviews monthly manager performance reports, annual manager questionnaires, and visits each manager at least annually.

Monitoring Process Requires Enhancement. In April 1995, VRS investment staff reported to the IAC on a need to enhance existing procedures for monitoring derivative investments. Staff identified several procedural deficiencies involving the use of derivatives. First, the institutional accounting and custody management systems maintained by Mellon Trust do not provide VRS staff with indicators of the levels of risk involved in various investments or the effects of market movements in equity, interest rates or currency valuations on the portfolio values. Second, Mellon Trust is not able to provide VRS with any information concerning the use of derivatives by commingled accounts – typically passively managed stock index funds – in which VRS is invested. These commingled accounts are not custodied at Mellon Trust. Third, neither the Mellon computer system nor the manager investment guidelines distinguish between exchange-traded or OTC derivatives.

In response to these identified weaknesses, VRS is evaluating methods by which it can most effectively and proactively monitor the risks posed by its derivative exposure. The VRS investment department has established a risk management sub-committee to conduct this review. Currently, the sub-committee has identified several alternatives to enhance the current risk monitoring process. One alternative involves a new monitoring system under development by Mellon Trust, which would include daily monitoring and monthly reporting. A second alternative involves identifying and purchasing a software package developed by an external provider which would reside on a VRS computer. A third alternative would be to hire an external third-party risk monitoring service which would have the expertise, systems, and staff in place to review the VRS portfolio.

VRS is Evaluating its Real Estate Investment Program

The VRS real estate program consists of 27 accounts managed by nine external investment managers, exclusive of RF&P. RF&P comprises 40 percent of the total VRS real estate portfolio, but in practice is not considered part of the VRS real estate investment program that is overseen by REAC. The VRS real estate program consists of two primary components: passively managed commingled funds and actively managed direct equity investments.

Unlike the VRS equity and fixed income programs, the real estate investment program did not come under immediate scrutiny, or receive significant policy changes, following the appointment of the new VRS Board. While the real estate investment staff did begin to operate under the guidance of a new REAC, the program continued to function according to essentially the same policies and procedures as it had under the previous Board and REAC.

In the spring of 1995, the CIO focused his attention on the real estate program. The CIO directed VRS real estate staff to examine the rationale for VRS real estate investments, and to evaluate the current methods by which real estate investments are made. The objective of the review was to improve the effectiveness and efficiency of the program by reducing the number of investment managers, consolidating accounts and/or selling assets when and where the opportunity exists. The CIO's action was taken in response to concerns that he expressed to the REAC, including the fact that 25 percent of the VRS investment staff is devoted to managing less than nine percent of the fund's assets.

Types of VRS Real Estate Investments. VRS real estate investments consist of two primary types of investment vehicles: commingled funds and direct equity transactions. As of March 31, 1995, these two types of investments comprised 86 percent of the VRS real estate portfolio, exclusive of RF&P. The remainder of the real estate portfolio is comprised primarily of participating mortgages, and participating equity separate accounts, with large insurance companies. The portfolio also includes the VRS headquarters building, and a parking deck in the City of Richmond.

A real estate commingled fund is analogous to a mutual fund whereby a manager pools individuals' money and invests for the benefit of the fund. VRS first invested in commingled funds in 1981, as a means of obtaining quick exposure to real estate investments. VRS currently invests passively in six commingled funds, which comprise approximately 43 percent of the VRS real estate portfolio, exclusive of RF&P.

Under the direct equity program , VRS invests in specific properties through special purpose corporations designed to legally protect the VRS pension trust fund from liability. Direct equity investments currently make up approximately 43 percent of the VRS real estate portfolio, exclusive of RF&P. While this percentage is currently about the same as for commingled funds, the direct equity component of the program is growing at a much faster rate.

The first direct equity investments were made in August 1992. Due to its continued ownership of the RF&P, VRS has generally avoided making new real estate investments in Virginia in order to promote continued diversification. This is despite the fact that all of the REAC members are from Virginia, and are extensively familiar with the State's real estate markets.

VRS typically makes all-cash investments under the direct equity program. However, VRS is considering the possible use of borrowed funds to leverage a portion of current and future investments. This would make more cash available for other types of VRS investments, and could potentially enhance the return on the direct equity program.

Rationale for Real Estate Investments. According to the VRS real estate staff, the strongest reason for VRS to make real estate investments is the low correlation between rates of return on real estate and those on stocks and bonds. This means that, if returns on stocks or bonds decrease, real estate returns would not ordinarily be expected to decrease simultaneously. This helps to protect the overall pension fund by increasing diversification and reducing risk. Other reasons are also cited by the VRS staff in support of continued real estate investments. These are protection from unexpected inflation – provided the supply and demand characteristics of the market are in balance – and competitive returns over the long term.

The primary disadvantage of real estate investments identified by VRS staff is a lack of liquidity compared to stocks and bonds. In the event VRS becomes dissatisfied with a particular investment, it is difficult to recoup the amount invested in a timely manner. The ability to exit an investment, without realizing a substantial loss, is dependent on successful property sales. This is more of a concern with the commingled funds than with the direct equity investments, since VRS has little control over the investment decisions of commingled funds.

Possible Investment in Real Estate Investment Trusts. In order to help achieve its asset allocation in a more timely but still prudent manner, VRS is considering investments in real estate investment trusts (REITs). A REIT is a corporation or trust that owns real estate assets for investment, issues stock, and passes through income to its shareholders. REITs typically specialize in the investment and management of specific types of real estate, such as shopping malls or apartment complexes. REITs also tend to specialize in particular real estate markets.

If a REIT adheres to certain rules governing the identity and number of its shareholders, and meets certain financial criteria, then it is exempt from federal corporate income tax liability. In order to qualify for tax exemption, REITs are required to invest 75 percent of their total assets in real estate, derive 75 percent of their income from rents on real property, and distribute at least 95 percent of their income to shareholders. The majority of REITs are public, in that their stock is traded on major exchanges. There are also private REITs, such as the RF&P, that do not publicly trade their stock.

The REAC is still considering whether or not to invest in public REITs. Potential advantages of REIT investments include quick exposure to specific types of real estate, greater liquidity, a daily publicly quoted market stock price, and competitive risk-adjusted returns. Potential disadvantages of REIT investments are greater short-term volatility and a higher correlation with the equity market.

INVESTMENT PERFORMANCE IMPROVES IN FISCAL YEAR 1995

The rate of return earned by VRS on its investments has improved significantly over the past year. This is due, in large part, to tremendous increases in the value of the U.S. equity market, as measured by an index such as the Standard & Poors index of 500 stocks (S&P 500). However, VRS returns are lower than many of the benchmark measures that it has established to evaluate investment performance of the total fund

and individual asset classes. These benchmark measures include a broad index consisting of 70 percent of the return of the S&P 500 and 30 percent of the return of the Lehman Brothers Aggregate Bond Index (the 70/30 index). Still, VRS has outperformed some of its other benchmarks.

The relative under performance of VRS investments, compared to the benchmarks, have caused VRS to consider whether its returns justify the amount of active management fees currently being paid to the pension fund's external investment managers. This is a question that is being asked with increasing frequency by institutional investors across the country. The CIO is concerned that the investment results do not justify the management fees. Primarily for that reason, VRS significantly reduced the number of external managers, and the amount of its investment expenses, over the past year. In addition, the percentage of equity investments that are passively managed has increased substantially, from 36 percent to 50 percent. This section presents a summary of VRS investment performance and expenses.

Recent Performance Has Improved But Still Lags Many Benchmarks

Any evaluation of pension fund investment performance is highly dependent on the period of time for which the return is calculated, the chosen benchmark, and the asset allocation. For example, the total net return over the past year was 17.1 percent but over the past ten years it is 11.6 percent on an annual basis. Due to the long-term nature of liabilities, it is most useful to assess pension fund investment performance over as long a period of time as possible. The ten year return of 11.6 percent is consistent with the long-term investment return assumption that VRS used as part of its 1994 asset allocation study. Figure 2 (page 10) summarizes VRS investment performance over the past one, three- and five-year periods.

Measurement of Overall VRS Investment Performance. The investment performance of the total pension fund is evaluated using benchmark measures defined in the VRS investment policy statement and approved by the VRS Board. The policy statement specifies two benchmarks for assessing total fund performance. The primary performance objective for the fund is to produce a return greater than the long-term policy return, referred to as the static benchmark, over a ten year period. The static benchmark is defined as the long- term allocation target for each asset class multiplied by the benchmark return for the asset class. Additionally, the total fund return is expected to exceed the return of a broader benchmark, the 70/30 index, over a ten-year period.

During the twelve months ending June 30, 1995, the VRS total fund return of 17.1 percent was greater than the static benchmark return of 16 percent. However, the total fund return was far lower than the 70/30 index return of 21.9 percent. The existence of two performance benchmarks, with one designated as primary, makes it difficult to definitively assess the investment performance of the total fund. The IAC is working to address the issue of how best to measure the overall investment performance of the total fund.

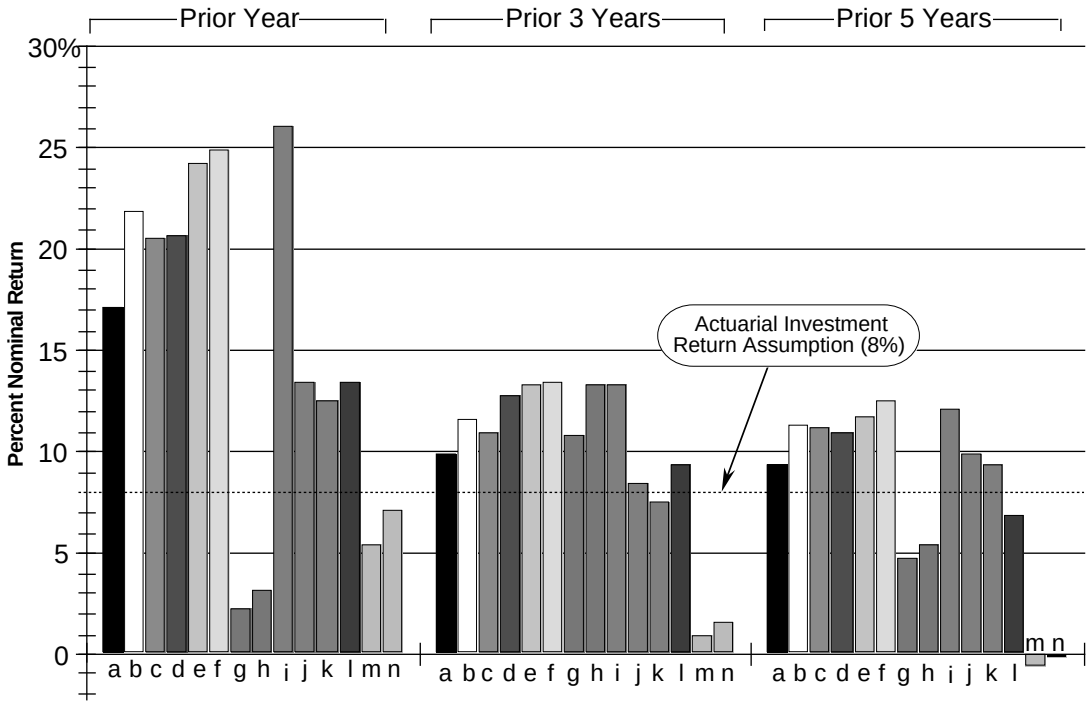
Another factor which precludes definitive assessment of overall VRS performance is the ten year investment measurement period for the total fund. It will, in all likelihood, require several years for VRS to fully implement its asset allocation policy and then additional time for the implemented policy to prove its value. Until such time, perhaps as long as ten years from now, expected investment returns under this allocation strategy may not be fully realized. Consequently, until the asset allocation policy is fully implemented, use of the 70/30 benchmark will have its limitations in measuring performance during future time periods.

Due to the recent significant change in asset allocation policy, use of the 70/30 index to assess historical investment performance, over the past three, five and ten year time periods, is also problematic. Prior to July 1, 1994 , VRS was legally prohibited from allocating more than 60 percent of its assets to stock. In order to take this situation into account when assessing long-term performance, the CIO has evaluated total fund performance relative to a benchmark consisting of 60 percent of the return of the S&P 500 and 40 percent of the return of the Lehman Brothers Aggregate Bond Index (the 60/40 index) over a ten year period. This benchmark, which is not provided for in the investment policy statement, has had a greater investment return than the total fund over the past one, three, five, and ten year time periods.

Real Estate Investment Performance. The return earned by VRS real estate investments continues to improve, as measured over the past year. This is due primarily to the direct equity component of the investment program. However, real estate is the poorest performing asset class in the VRS portfolio over the past five years. A major factor underlying that relatively poor performance was the virtual depression in the U.S. real estate market during the early 1990s. Figure 3 (page 11) illustrates VRS investment performance over the past one, three and five-year time periods.

One of the difficulties that the VRS Board faces in evaluating the performance of the pension fund's real estate investments is the fact that there are two different sets of return data. The first set is maintained by Mellon Trust, the VRS custodian bank, and serves as the basis for the monthly investment performance report pre-

Figure 2: VRS Investment Performance for Periods Ending June 30, 1995



KEY:

- a = Total Fund
- b = 70% S&P 500 / 30% Lehman Agg. Bond (total fund benchmark)
- c = 60% S&P 500 / 40% Lehman Agg. Bond (total fund benchmark)
- d = Total Equity
- e = Domestic Equity
- f = Russell 3000 (domestic equity benchmark)
- g = International Equity
- h = EAFE 50/50 (international equity benchmark)
- i = S&P 500
- j = Total Fixed Income
- k = Lehman Aggregate Bond Index (fixed income benchmark)
- l = Alternative Investments
- m = Real Estate
- n = NCREIF Index

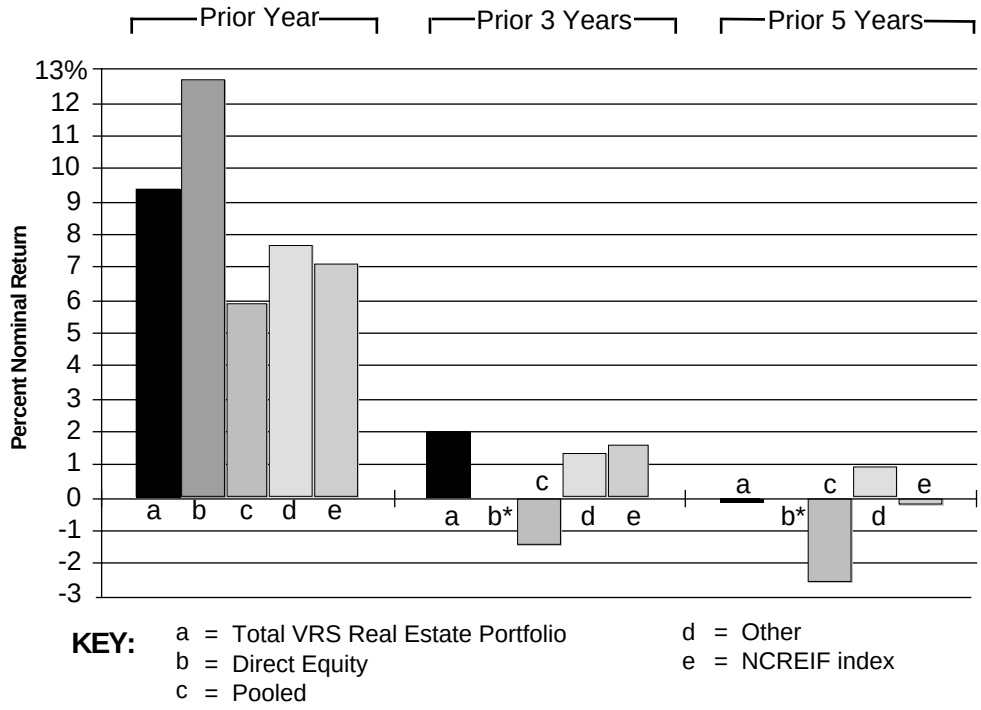
Source: JLARC staff analysis of VRS investment return data.

pared by VRS staff for the Board. The second set is prepared by Callan Associates, the VRS real estate investment consultant, and is presented to REAC each quarter.

VRS real estate performance as reported by Mellon Trust differs from that reported by Callan for the same time period, as shown in Table 3 (opposite). The most important reason for the difference is that, while the investment performance data furnished by Mellon Trust includes the RF&P, the Callan report does not. The RF&P is excluded from the Callan report at the direction of REAC, in recognition of the fact that REAC has no control over the investment performance of RF&P. The second, less significant, reason for the difference involves the reporting cutoff dates used by Mellon Trust and Callan. Mellon Trust has a reporting cutoff date of five days after the end of a quarter. Callan, on the other hand, has the flexibility to extend its reporting cutoff date to as much as 60 days after the end of a quarter. Consequently, unlike Mellon Trust, Callan is able to capture accounting transactions during the quarter in which they occur.

In order to assure the accuracy of VRS real estate performance data, Callan produces a semi-annual investment performance reconciliation in conjunction with Mellon Trust and the VRS real estate investment managers. VRS real estate investment staff acknowledge that there is a need for further improvement in reconciling performance data from Mellon Trust and Callan, particularly for the three- and five-year time periods. The CIO, and the real estate staff, hopes to make the necessary improvements over the next six months.

Figure 3: VRS Real Estate Performance for Periods Ending March 31, 1995



Note: Excludes RF&P Corporation, VRS headquarters building, and a parking deck located in the City of Richmond.

*Direct equity not applicable for prior 3 and 5 years because direct equity investments were first made in 1992.

Source: JLARC staff analysis of VRS real estate performance report prepared by Callan Associates.

Table 3: VRS Real Estate Investment Performance as Reported by Mellon Trust and Callan Associates

	Time Periods Ending March 31, 1995		
Data Source	1 Year	3 Years	5 Years
Mellon Trust (including RF&P)	**5.40%**	**0.90%**	**-0.60%**
Mellon Trust (excluding RF&P)	**9.65%**	**0.64%**	**-0.89%**
Callan Associates (excluding RF&P)	**9.21%**	**1.87%**	**0.01%**

Note: Performance data includes VRS headquarters building, and a parking deck located in the City of Richmond.

Source: JLARC staff analysis of VRS Performance Summary prepared by VRS staff; and Real Estate Performance Report prepared by Callan Associates, Inc., and interviews with VRS real estate investment staff.

Expenses and Number of Investment Managers Have Been Reduced

The amount of money that VRS pays to its external investment managers represents a sum that would otherwise go directly into the pension trust fund. The 1993 JLARC report recommended that VRS significantly reduce the number of managers, an action that could lead to significant efficiencies and economies. For these reasons, it is important for VRS to continually assess the number of managers that its uses, and the fees that those managers are paid. VRS has been conducting this type of assessment, and has reduced both the number of external managers and total investment expenses.

VRS currently has 69 investment managers and one investment consultant, as compared to 105 mangers and consultants on July 1, 1993. This enabled VRS to reduce its investment expenses by $15 million in FY 1995, as shown in Figure 4 (below). This substantial reduction followed an extended period of time, going back at least until FY 1986, during which investment expenses increased at a much higher average annual rate (97 percent) than did pension fund assets (25 percent.)

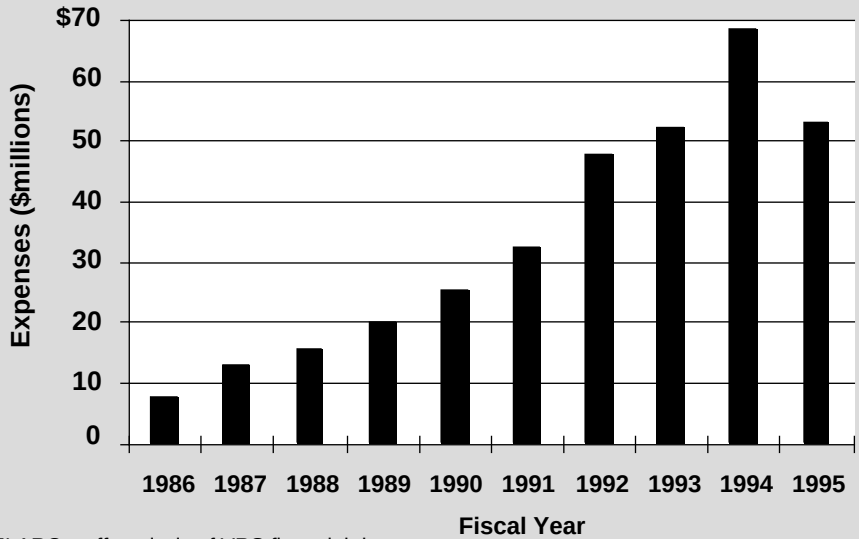
Number of Private Equity Managers. The total number of managers reported by VRS, for 1993 through 1995, does not include private equity managers hired by Brinson Partners (Brinson) on behalf of VRS. Brinson serves VRS as both a private equity manager and consultant. As a manager and a fiduciary, Brinson has the authority to hire managers of private equity funds which raise less than $200 million in capital. There are currently 27 such managers. However, VRS counts Brinson, and all of the managers that Brinson hires, as a single manager. According VRS investment staff, that is done because VRS does not directly manage the firms hired by Brinson. However, these firms are paid directly by VRS.

Investment Fee Structure. The vast majority of VRS investment managers are paid a fee which is based on the amount of assets under management. This is typically either a flat percentage of the assets, or a declining percentage as the amount of assets increases. The major exception to this fee structure is the real estate direct equity program, whose managers are paid an asset management fee calculated on a formula based on net investment cost and net cash flow. In addition, a 20 percent incentive fee is paid every three years on the real rate of return in excess of five percent. The first incentive fees under the program are due in September 1995. In response to a concern that the incentive fees, agreed to in 1991 and 1992, are now higher than market-rate fees, VRS will attempt to renegotiate these fees with its direct equity real estate managers.

BENEFIT EXPENSES EXCEED CONTRIBUTIONS

The flow of contributions into the retirement system affects the ability of the investment program to help fund increases in pension liability. Additional contributions provide new funds for investment, which in turn can produce a greater amount of investment income. VRS expects that its expenses will continue to exceed its contributions for the foreseeable future,

Figure 4: VRS Investment Expenses, FY 1986 – FY 1995



Source: JLARC staff analysis of VRS financial data.

resulting in a negative net contribution. In this type of financial environment, revenue generated by the investment program must be used to cover a portion of VRS pension expenses. Moreover, in the absence of any net new cash being contributed to the pension fund, VRS must rely on reallocations from overweighted asset classes - primarily domestic equity - in order to provide the cash necessary to fund prescribed allocations in alternative investments and emerging markets. This section provides a brief update on projected VRS cash flow, and on the recent results of its short-term investment program.

Contribution Rates Affect Probability of Reaching Desired Asset Level

One of the key characteristics of retirement system finance is that cash contributions are invested in order to increase the total amount of funding for the system. The greater the amount of cash contributed into the system, the greater the potential investment income that may be earned. Since the Summer of 1994, VRS has been working closely with its actuary to evaluate the funding requirements of the system.

Initially, the VRS actuary calculated the contribution rates necessary to achieve specific funding ratios, given certain probabilities of success, under various types of asset allocations. This was done as part of the Board's effort to establish a new asset allocation policy. Subsequently, the actuary calculated the contribution rates necessary to fully prefund the cost of living allowance (COLA) in accordance with generally-accepted actuarial principles. This was done as part of the Board's review of alternatives, presented to the Governor and the chairmen of the legislative money committees, for funding the COLA.

Both actuarial studies resulted in the calculation of contribution rates deemed necessary by the actuary to accomplish specific objectives. The rates calculated in each study are not identical. This is due largely to methodological differences in the two studies. However, the results of both studies are consistent in that larger contribution rates are recommended in order to increase overall funding levels. Table 4 (below) summarizes the recommended contribution rates which the actuary calculated in both studies.

Five-Year Investment Plan Assumes Zero Net Contribution

The five-year investment plan envisions the pension trust fund reaching a market value of more than $28 billion by the end of fiscal year 2000. Cash flow is one of the implicit concerns of the five-year plan. The plan assumes that the net contribution, representing total pension fund contributions minus pension fund expenses, will be zero during the entire five-year period. In order to address this concern, VRS plans to make annual reallocations from its domestic equity portfolio – which is currently over weighted – in order to provide the necessary funding for other asset classes, particularly emerging markets and alternative investments.

Projected Expenses Exceed Contributions. VRS estimates that during FY 1996 its benefit, refund, and administrative expenses will exceed total employee and employer contributions by $88 million. This represents a negative net contribution. Table 5 (page 14) presents the components of the estimate.

Projections of the net VRS contribution for FY

Table 4: Combined Employee and Employer Contribution Rates Calculated by VRS Actuary (Percent of Payroll)

Study / Date	Funding Alternatives		
Investment Policy Study / 1994	*120% Funding Status / 50% Confidence Level*	*100% Funding Status / 90% Confidence Level*	*120% Funding Status / 90% Confidence Level*
State Employees	**7.26%**	**13.93%**	**15.79%**
Teachers	**8.74%**	**17.29%**	**19.75%**
COLA Funding Study / 1994-95	*Alternative 1 Pay-as-You-Go*	*Alternative 2 Partial Prefunding*	*Alternative 3 Full Prefunding*
State Employees	**9.85%**	**11.38%**	**13.00%**
Teachers	**11.41%**	**13.10%**	**15.79%**

Source: *Virginia Retirement System, 1994 Investment Policy Study*, prepared by Buck Consultants; and Presentation by Buck Consultants to VRS Board of Trustees on June 15, 1995.

Table 5: Projected VRS Contributions and Expenditures, FY 1996

	Amount
Contributions	
Teachers	$384,750,000
State Employees	307,500,000
Political Subdivision Employees	166,940,000
Judges	10,700,000
State Police	7,870,000
Retiree Health Care Credit	20,260,000
Group Life Insurance	27,230,000
Total Contributions	$925,250,000
Expenditures	
Annuities	$839,910,000
Refunds	76,900,000
Insurance Premiums and Claims	67,680,000
Administrative	13,200,000
Retiree Health Care Credits	15,900,000
Total Expenditures	$1,013,590,000
NET CONTRIBUTION	**$(88,340,000)**

Source: Virginia Retirement System.

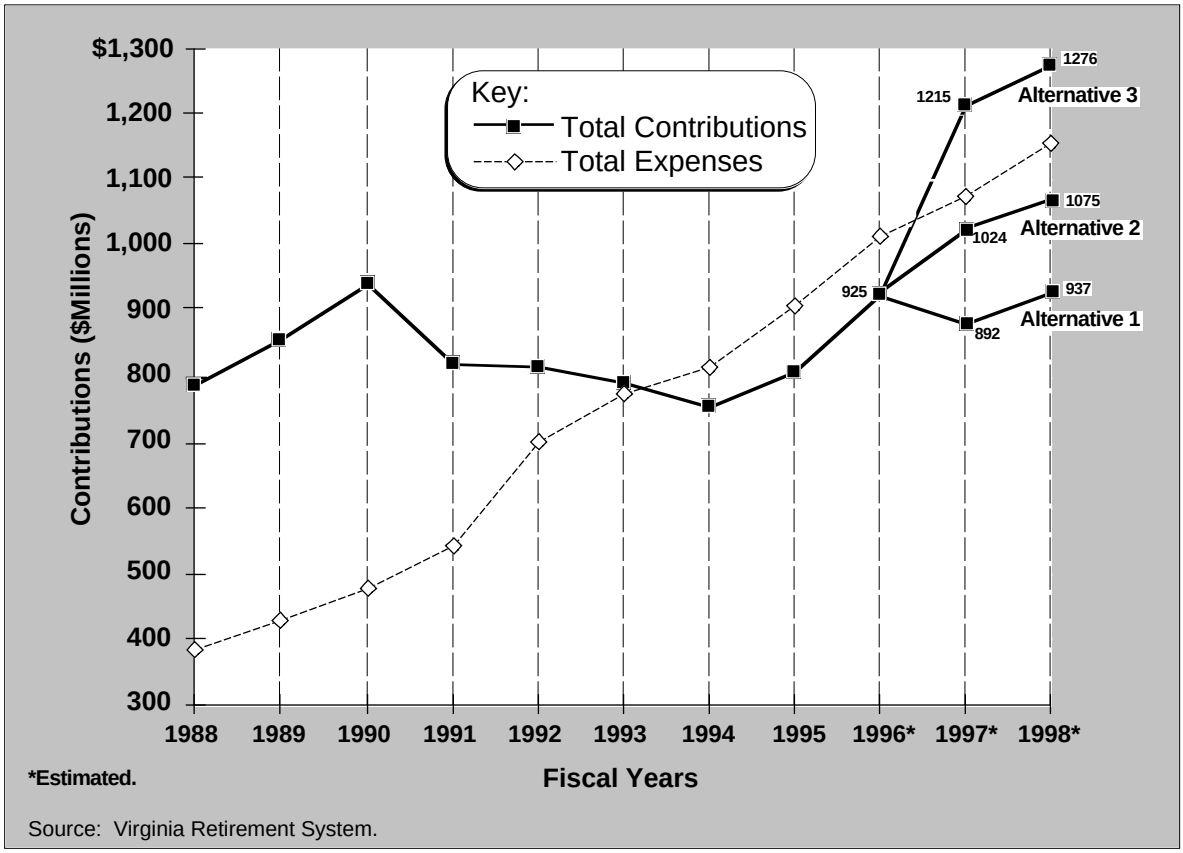
1997 and FY 1998 are dependent upon the employer contribution rates to be included in the Appropriations Act for the 1996-98 biennium. As previously mentioned, VRS recently presented three alternatives to the Governor and the chairmen of the two legislative budget committees for consideration. The amount of the net contribution for FY 97 ranges from a positive $137 million with option 3 to a negative $141 million with option 1. Figure 5 (page 15) illustrates the projected net contribution under each alternative.

Short-Term Investment Performance

Sufficient cash is maintained with the Treasurer of Virginia (Treasurer) to cover the VRS retiree payroll, refunds to members, administrative expenses, insurance premiums, and claims. The Treasurer monitors VRS cash needs on a daily basis. A portion of the cash is maintained, for immediate daily access, in an account with First Union Bank. The remainder is invested by the Treasurer in short-term instruments, such as repurchase agreements, commercial paper, and bankers acceptances. Cash necessary to meet short-term obligations, such as investment capital previously committed to investment managers, is maintained with Mellon Trust. Similar types of short-term instruments are used by Mellon Trust in order to invest this cash.

The benchmark for the short-term investment program is the 91-day U.S. Treasury Bill. However, the Treasurer and Mellon Trust each present their investment performance, relative to the 91-day U.S. Treasury Bill, differently to VRS. The Treasurer's investment performance is presented in terms of annualized yield to maturity. For the twelve months ending June 30, 1995, the annualized yield to maturity on VRS cash managed by the Treasurer was 5.62 percent. This was higher than the 5.55 percent annualized yield to maturity for the 91-day U.S. Treasury Bill during the same period. Mellon Trust's investment performance is presented in terms of realized total return. For the twelve months ending June 30, 1995, the realized total return on VRS cash managed by Mellon Trust was 5.4 percent. This was lower than the 5.6 percent realized total return for the 91-day U.S. Treasury Bill during the same period.

Figure 5: VRS Total Contributions *vs.* Total Expenses



*Estimated.

Source: Virginia Retirement System.

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