oppaga

Program Review

May 2000 **Report No. 99-52**

Investment of Florida Retirement System Assets Meets Goals, But Earnings Could Be Increased

at a glance

The State Board of Administration's (SBA) performance in investing Florida Retirement System assets exceeded its overall investment objective of an 8% return in Fiscal Year 1998-99 as well as for longer periods covering the last 20 years. The SBA also has allocated system funds to various asset classes as called for in its long-term investment plan.

SBA could achieve additional earnings, reduce external management fees, and reduce brokerage commissions by increasing the percentage of its domestic equity assets invested by passive style managers.

Many states successfully use passive style managers to invest a much higher percentage of their domestic equity investments than Florida. The SBA would have earned an additional $400.2 million after deduction of management fees in Fiscal Year 1998-99 if it had used passive style managers to invest 80% of its domestic equity funds instead of its actual allocation of 59%. The SBA would have increased earnings by $799.4 million after deduction of management fees if it had invested all of its domestic equities with passive style managers during the year.

The Legislature should require the SBA to report the performance of its active style managers as a group compared to passive style managers.

Purpose

Florida law requires a performance audit be made of the State Board of Administration's management of investments every two years. This review evaluates the SBA's performance in meeting overall and asset class objectives for investing Florida Retirement System assets in Fiscal Year 1998-99. [1]

Background

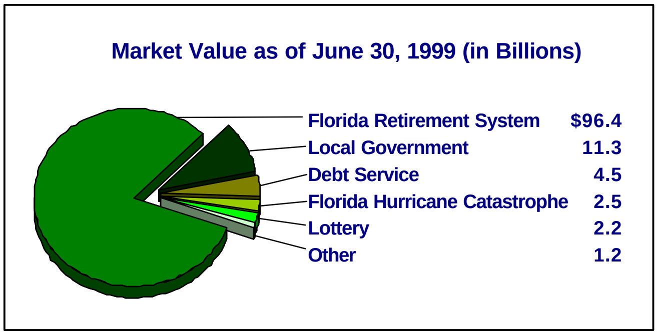
The SBA is a constitutional board charged by law with investing certain assets of both the state and local governments. As shown in Exhibit 1, one of the SBA's major responsibilities is investing Florida Retirement System assets, which had a market value of $96.4 billion as of June 30, 1999.

The SBA does not receive legislative appropriations of general revenue or trust funds to support its activities. Instead, the board funds its operations by charging fees for its investment management services. The SBA's administrative expenses are paid from these revenues. In Fiscal Year 1998-99, the

[1] In accordance with state law, OPPAGA informs the Legislature of actions taken in response to earlier reports on state programs. This report includes our assessment of the extent to which the findings and recommendations included in *Oversight Report on the State Board of Administration's 1996-97 Investment Report,* OPPAGA Report No. 98-10, August 1998, may have been addressed by the State Board of Administration (see page 5).

SBA's administrative expenses totaled $15.9 million. It also paid external investment managers $132.6 million during this year.

Exhibit 1
SBA Invested $118 Billion in State and Local Government Funds as of June 30, 1999



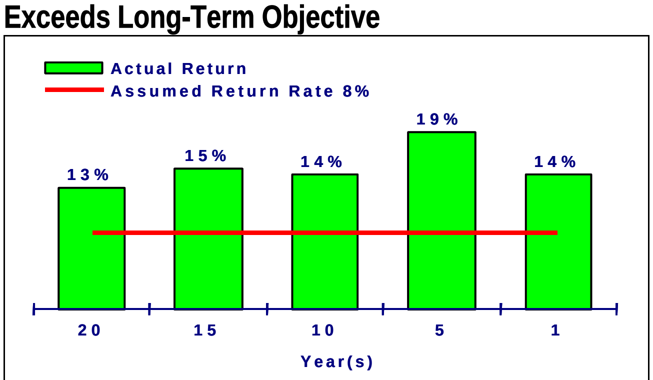
Source: State Board of Administration's 1998-99 investment report.

Findings

The SBA's performance in investing Florida Retirement System assets exceeded its overall investment objective in Fiscal Year 1998-99, as well as for longer periods covering the last 20 years

The Florida Retirement System (FRS) Total Fund Investment Plan specifies the SBA's overall investment objective is to achieve the actuarial assumed return rate of 8% on a long-term basis. The SBA needs to meet this return rate over the long term in order to generate sufficient funds to pay future pension liabilities when due.

Exhibit 2
SBA Retirement Fund Investment Performance Exceeds Long-Term Objective



Source: SBA's 1997-98 and 1998-99 investment reports, State Street data, and OPPAGA analysis.

As shown in Exhibit 2, the SBA's return rate for investing FRS assets was 14% in Fiscal Year 1998-99, which exceeded the long-term objective. The SBA has consistently exceeded the 8% investment return objective over the last 20 years.

The SBA's allocation of Florida Retirement System funds to various asset classes was within the ranges established in its long-term investment plan

Decisions to allocate investments among various asset classes (i.e., stocks, bonds, real estate, cash equivalents, etc.) are of critical importance in determining whether a fund is likely to achieve a desired long-term rate of return with an acceptable level of risk. Each asset class offers tradeoffs between its expected long-term returns and risk. For example, stocks have historically offered much higher returns than bonds and other asset classes, but are riskier in terms of having more volatility in performance. Studies have determined that the percentage of a fund's assets allocated to various classes is a primary determinant of its rate of return. According to SBA reports, more than 90% of a fund's long-term returns are due to asset allocation decisions.

Given the significance of asset allocation, it is critically important for the SBA to have and follow a long-term asset allocation plan to guide investment decision-making. The SBA initially adopted a long-term plan, the Florida Retirement System Trust Fund Total Fund Investment Plan, in November 1988 and most recently amended it in October 1999, establishing an alternative investment asset class.

As shown in Exhibit 3, the SBA has followed its asset allocation plan. The percentages of SBA's assets that were allocated to domestic and international equities, fixed income, real estate investments, and cash were within the Total Fund Investment Plan's ranges as of July 1, 1997, and June 30, 1999.

Exhibit 3
Asset Allocation Within Investment Plan Ranges

	Policy Range			Asset Allocation	
Asset Class	July 1, 1997, to June 30, 1999			July 1, 1997	June 30, 1999
Domestic Equities	55%	-	67%	60%	63%
International Equities	5%	-	10%	9%	8%
Fixed Income	20%	-	35%	24%	24%
Real Estate	2%	-	6%	3%	4%
Cash	0%	-	10%	4%	1%

Source: SBA's 1997-98 and 1998-99 investment report and SBA records.

The SBA's investment returns for most asset classes exceeded or were close to performance targets over the last five years

The SBA sets target investment return rates for the various classes of assets in which it invests. These targets are to meet or exceed broad market indexes. As shown in Exhibit 4, the SBA generally met these targets. SBA's investment return rates for its various asset classes exceeded or were close to performance targets over one-, three-, and five-year periods.

The SBA would have achieved significantly higher returns and paid considerably lower fees if it had made more use of passive style managers to invest in domestic equities

The SBA uses a combination of passive and active style managers to invest its domestic equities funds. Passive style managers typically buy and hold selected securities with the goal of achieving rather than exceeding the performance of a group or sector of stocks. In contrast, active style managers select stocks based on various strategies with the goal of exceeding the performance of a market index.

Passive style managers engage in minimal trading activity and incur lower transaction costs and charge lower fees than active style investment managers.

Research has concluded that it is difficult for active style managers to achieve higher rates of returns than passive style managers over long periods of time.[2] Particularly in situations when protecting against undue risks is critical (as in the case of investing retirement system assets), it is very difficult for investment managers to "beat the market" over extended periods.

As of June 30, 1999, the SBA had approximately $23.8 billion (41%) of its domestic equity assets invested by active style managers while $35 billion (59%) was invested by passive style managers.[3]

[2] *Oversight Report on the State Board of Administration's 1996-97 Investment Report*, OPPAGA Report No 98-10, August 1998, *Returns to Active Management: An Assessment of the Effectiveness of Active Investment Strategies*, State Board of Administration, May 14, 1999, and the SBA's 1998-99 investment report.

[3] These amounts do not include private equity investments totaling $2.2 billion. The SBA transferred its investments in private equities from the domestic equity asset class to a new asset class, Alternative Investments, on November 1, 1999.

Exhibit 4
SBA Investment Returns for Most Asset Classes Were Slightly Higher or Close to Target Indexes Over the Last Five Years

	Annualized Rates of Return		
Asset Class Performance	**5 Years (1994-99)**	**3 Years (1996-99)**	**1 Year (1998-99)**
Domestic Equities [1]	***25.6%***	***26.1%***	***19.0%***
Target: Wilshire 2500 (excluding tobacco stocks)	26.0%	26.6%	19.4%
International Equities	***8.2%***	***8.7%***	***10.3%***
Target: 85% EAFE and 15% IFCI [2]	7.7%	7.5%	10.8%
Fixed Income	***8.6%***	***7.8%***	***1.9%***
Target: Florida High Yield Extended Duration Index	8.6%	7.7%	1.5%
Real Estate	***9.3%***	***10.8%***	***11.3%***
Target: Russell-NCRIEF Property Index [3]	11.5%	13.8%	12.9%
Cash and Central Custody	***5.8%***	***5.8%***	***5.8%***
Target: 90-Day Treasury Bill Rate	5.3%	5.2%	4.8%

[1] Domestic equities include private market equities.

[2] EAFE refers to the Europe, Australia and Far East Index, which is an index generally considered representative of the international stock market. IFCI is an index for stock markets in developing countries.

[3] Reduced by 60 basis points for implementation cost.

Source: SBA's 1998-99 investment report, SBA records, and OPPAGA analyses.

The SBA would have achieved significantly higher returns in Fiscal Year 1998-99 if it had made greater use of passive style managers to invest domestic equities. As shown in Exhibit 5, the SBA's passive style domestic equity managers as a group had a total return rate of 20.94% compared to 17% for active style managers (a difference of 394 basis points or 3.94%) in Fiscal Year 1998-99. [4] This is a long-standing trend as the SBA's passive style managers as a group have outperformed its active style managers over the last five fiscal years. The annualized return rate for the SBA's passive style managers over the last five years was 26.47% compared to 24.49% for its active style managers.

Exhibit 5
The SBA's Passive Style Domestic Equity Managers Outperformed Active Style Managers in Fiscal Year 1998-99

Manager Style	Active Style	Passive Style
External	17.14%	21.17%
Internal	14.67%	20.77%
Total	**17.00%**	**20.94%**

Source: State Street Analytics data.

Further, the SBA could have significantly reduced the amount of fees paid to external domestic equity managers by increasing its use of passive style managers. As shown in Exhibit 6, the SBA paid considerably lower fees to external passive style managers than active style managers in Fiscal Year 1998-99. External passive managers accounted for 4% of the fees, but managed assets representing 40% of the market value. External active managers accounted for 96% of the fees while managing assets representing 60% of the market value.

Many other large public retirement systems use passive style managers to invest significantly higher percentages of their domestic equity assets than does SBA (see Exhibit 7). For example, the California Public Employees Retirement System, the nation's largest state-level system, uses passive style investment for 87% of its domestic equities, while the state of Washington's Public Employees' Retirement System uses passive style investment for all of its domestic equities. In contrast, 59% of the SBA's domestic equities are passively invested.

[4] These results do not include the SBA's private equity investments.

Exhibit 6
Passive Style External Domestic Equity Managers Fees Were Significantly Lower Than Active Style External Managers Fees in Fiscal Year 1998-99

External Manager Style	1998-99 Fees	Market Value July 1, 1998	Market Value June 30, 1999
Active Style	$52,150,165	$18,194,660,562	$22,251,931,776
Passive Style	2,375,612	11,734,210,824	14,948,591,390
Total	**$54,525,777**	**$29,928,871,386**	**$37,200,523,166**

Source: SBA's 1998-99 investment report and SBA records.

Exhibit 7
Many Large Public Retirement Systems Invest Significantly Higher Percentages of Domestic Equity Assets With Passive Style Managers Than the SBA

Fund	Value of Total Assets (in billions)	Percentage of Domestic Equities Passively Invested
California Public Employees Retirement System	$127.6	87%
New York State and Local Employees' Retirement System	95.8	76%
California State Teachers Retirement System	78.9	83%
New York State Teachers Retirement Systems	68.7	88%
New York City Employees' Retirement System	54.7	86%
Pennsylvania Public School Employees' Retirement System	39.1	65%
Washington Public Employees' Retirement System	33.9	100%
Maryland State Retirement and Pension System	26.0	89%
Colorado Public Employees' Retirement Association	23.3	69%
Florida SBA	**$96.4**	**59%[1]**

[1] Does not include private equity investments.

Source: *SBA's Returns to Active Management: An Assessment of the Effectiveness of Active Investment Strategies*, State Board of Administration, May 14, 1999, and the SBA's 1998-99 investment report.

Exhibit 8 shows that as a result of the SBA's active style managers under-performing its passive style managers, the SBA lost the opportunity to earn significantly higher returns. For example, if the SBA had invested at least 80% of its domestic equity assets instead of its actual allocation of 59% with passive style managers at the beginning of Fiscal Year 1998-99, it would have earned an additional $400.2 million after deduction of management fees. [5] If the SBA had invested all of its domestic equities with passive style managers in Fiscal Year 1998-99, it would have earned an additional $799.4 million after deduction of management fees. These additional earnings when averaged for actuarial purposes could be used for various purposes, such as reducing state and local agency contributions for funding FRS benefits.

These results are similar to those described in our report on the SBA's investment performance in Fiscal Year 1996-97. [6] This report concluded that if the SBA used passive style managers to invest all of its externally managed domestic equity assets, it could have earned an additional $612 million after deduction of management fees during Fiscal Year 1996-97 alone.

Exhibit 8
The SBA Could Earn Significantly Higher Investment Earnings by Increasing Its Use of Passive Style Domestic Equity Managers [1]

	(Investment Earnings in Millions)		
Percentage Passively Managed	**Amount Passively Managed**	**Additional Amount Passively Invested**	**Additional Earnings From Increased Passive Investment**
59% [2]	$30,366.1	$ 0	$ 0
70%	35,458.1	5,092.0	200.6
80%	**40,523.6**	**10,157.5**	**400.2**
90%	45,589.0	15,222.9	599.8
100%	**$50,654.5**	**$20.288.4**	**$799.4**

[1] Estimates are based on July 1, 1998, beginning balances and does not include $1,245.3 million in private equity investments.

[2] Percentage invested with passive style domestic equity managers as of July 1, 1998.

Source: OPPAGA analysis of SBA data.

We believe that the SBA should move towards using passive style managers for a much higher percentage of its domestic equity investments. In making this move, SBA should begin with converting investments that have historically under-performed their benchmarks. Several potential candidates for conversion from active management to passive management are noted below.

- **Seven external active style managers and two internal active style managers have not met their respective performance benchmarks on an annualized basis over the past five fiscal years.** As of June 30, 1999, these nine managers were responsible for investing assets with a June 30, 1999, market value of $9.667 billion, or 40.6% of the SBA's domestic equity assets under active management.
- **Three additional external active style managers have not met their performance benchmarks on an annualized basis over the last three fiscal years.** These managers were investing assets with a June 30, 1999, market value of $3.651 billion, or 15.3%, of the domestic equity assets under active management.
- **A multiple manager portfolio did not meet its benchmark over the four-year period it has been used by the SBA.** This portfolio is composed of 10 individual active managers, with each being responsible for a portion of the total investment. SBA uses this approach to provide opportunities for emerging managers, such as those with a short performance history or a small amount of assets under management. During Fiscal Year 1998-99, return rates for the 10 individual managers ranged from -15% to +19.4%, with a combined overall rate of return of 12.9%, which is 650 basis points (6.50%) below the portfolio's overall benchmark (19.4%). Further, this portfolio has not met its overall benchmark on an annualized basis over the four-year period it has been used by the SBA. The 10 active style managers were responsible for investing assets with a June 30, 1999, market value of $567.6 million or 2.4% of the domestic equity assets under active management.

Based on Fiscal Year 1998-99 and prior performance, the SBA could achieve additional earnings, reduce external management fees, and reduce brokerage commissions by increasing the percentage of its domestic equity assets invested by passive style managers.

[5] Earnings are calculated excluding private equity investments of $1,245.3 million at the beginning of Fiscal Year 1998-99.

[6] *Oversight Report on the State Board of Administration's 1996-97 Investment Report,* OPPAGA Report No. 98-10, August 1998.

Recommendations

The SBA has generally performed well in investing Florida Retirement System assets. However, the SBA's passive style domestic equity managers outperformed its active investment style managers during Fiscal Year 1998-99, as well as over longer periods of time. Accordingly, the SBA could have earned significantly higher returns and paid considerably lower fees by increasing the percentage of assets invested by passive style managers. If the SBA had invested 80% of its domestic equity assets with passive style managers at the beginning of Fiscal Year 1998-99, it would have earned an additional $400.2 million after deduction of management fees. Further, if it had invested all of its domestic equity assets with passive style managers at the beginning of the fiscal year, it would have earned an additional $799.4 million after deduction of management fees.

In our opinion, increasing the use of passive style managers would be consistent with established SBA investment tenets that (1) risk is a long-term notion related to how confident the SBA is in its asset return expectations over the life of the plan and (2) 90% of the expected return/volatility of any balanced portfolio is determined by the mix of the asset classes in which a portfolio is invested, with the remainder coming from security selection within individual portfolios. By increasing the use of passive style managers, we believe the SBA would reduce its long-term risk of failing to meet return expectations for the domestic equity asset class.

We therefore recommend that the SBA place its domestic equity investments with multiple passive style managers. If this recommendation is not accepted by the SBA, we recommend that it at least convert to passive management the funds presently invested by active style managers that have not met their performance benchmarks for at least the last three fiscal years.

In making these recommendations, we are not proposing that the SBA place its domestic equity investments with a single passively managed index fund. Instead, we recommend that the SBA continue its current practice of contracting with several passive style managers to invest in large capitalization companies, small capitalization companies, and companies that have growth or value characteristics (see Appendix A). By using multiple passive managers with different portfolio characteristics, the SBA could protect itself from the risk associated with over- or under-exposure to investments in various segments. The SBA already contracts with several firms to passively manage certain funds. These firms offer other passively managed funds that could provide additional exposure to other parts of the domestic equity market and thereby help manage risk and investment diversification.

If the SBA wants to continue to use active style managers, it should justify their use based on the managers' ability to add value to its domestic equity investments as a whole. Therefore it is particularly important that the SBA clearly inform board members and the Legislature on how well active style managers as a group are performing relative to passive style managers. The SBA is not currently providing the Legislature with information on the aggregate performance of active style managers compared to passive style managers. This information is needed for the Legislature to adequately oversee the SBA and evaluate the extent to which the SBA's decisions to actively or passively invest assets add value to investment performance.

Consequently, we recommend that the Legislature enhance its oversight of the SBA's investment performance. The Legislature should require the SBA to report information that clearly indicates the extent to which SBA decisions to allocate funds to active and passive style managers as a group adds value to its investment performance.

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Project supervised by Tom Roth (850/488-1024) Project conducted by A.B. Verhine (850/487-9276)

Appendix A

The State Board of Administration Contracts With Several Passively Managed Funds Investing in Different Segments of the Domestic Equity Market

The SBA contracts with several passive style managers to invest in various segments of the domestic equities market, such as the stocks of large and small capitalization companies or to invest in the stocks of companies having certain attributes, such as growth or value.

Portfolio	Market Value 6-30-99	Rate of Return Fiscal Year 1998-99	Benchmark	Fees as a Percentage of Market Value	Description
External					
Barclay's Global Investors	$11,683,041,474	23.0%	22.09%	.0125%	This fund seeks to replicate the performance of the Standard & Poor's 500 index excluding tobacco stocks.
Barclay's Global Investor Low Cap	1,433,417,445	3.1%	2.92%	.0202%	This fund invests in approximately 4,500 stocks from the universe of US equities with market capitalizations below the largest 1,000 US stocks, minus all Standard & Poor's 500 stocks.
Wilshire Large Growth Fund	1,361,788,403	29.7%	30.13%	.0342%	This fund invests in large companies that have above average earnings and sales growth histories and fit a classic high quality growth profile.
Wilshire Large Value Fund	470,344,068	9.5%	8.95%	.0351%	This fund invests in the large value sector of the market.
Internal					
Active Core Portfolio	$4,811,486,066	23.9%	22.09%	In house	This fund seeks to replicate the performance of the Standard & Poor's 500 Index excluding tobacco stocks.
PIVOT Portfolio	15,002,807,571	20.8%	19.38%	In house	This fund seeks to replicate the performance of the Wilshire 2500 Index. The Wilshire 2500 is composed of the 2,500 largest common stocks by market capitalization in the Wilshire 5000 Index.
Yieldtilt Portfolio	216,410,141	9.0%	9.20%	In house	This fund invests in customized mid-capitalization stocks with a consistent, predictable dividend payout, excluding tobacco stocks.

Source: SBA's 1998-99 investment report and other SBA data.

Companies already contracted by the SBA offer other passively managed funds that could provide additional exposure to other parts of the domestic equity market and thereby help manage risk and investment diversification. Examples of the funds offered by one such company are listed below.

Fund	Fund Description
Barclay's U.S. Equity Market Fund	Barclay's US Equity Market Fund tracks the Wilshire 5000 Index and is composed of nearly 5,500 stocks.
Barclay's Equity Value Fund	Barclay's Equity Value Fund provides investors with participation in the value sector of the Standard & Poor's 500 Index. The fund is designed to replicate the Standard & Poor's/BARRA Value Index and holds issues with above-average book value/price and earnings/price ratios.
Barclay's Small Capitalization Growth Fund	Barclay's Small Capitalization Growth Fund is composed of 600 issues with lower book/price growth stocks with market capitalization's ranging from $104 million to $898 million.
Barclay's Small Capitalization Value Fund	Barclay's Small Capitalization Value Fund is composed of 600 issues with higher book/price value stocks with market capitalization's ranging from $98 million to $815 million.
Barclay's Russell 1000 Index Fund	This fund holds virtually all of the top 1,000 market-capitalization companies in the US. The fund offers broad equity exposure, covering over 77% of the US equity market.

Source: Barclay's Global Investors.

Appendix B
Agency Response

STATE BOARD OF ADMINISTRATION OF FLORIDA
1801 HERMITAGE BOULEVARD
TALLAHASSEE, FLORIDA
32308
(850) 488-4406

May 8, 2000

Mr. John Turcotte, Director
OPPAGA
Room 312 Claude Pepper Building,
111 West Madison Street
Tallahassee, FL 32301

Dear Mr. Turcotte:

In accordance with Section 11.45(7)(d), Florida Statutes, the State Board of Administration (SBA) submits the following written response to the preliminary findings and recommendations contained in the OPPAGA Program Review (Review) of the 1998-99 Investment of Florida Retirement System assets:

Recommendation #1: The SBA place its Domestic equity investments with multiple passive style managers (page 6).

Response:

As we indicated in our response to the OPPAGA Report 98-10, we do not believe that placing all of our Domestic equity assets in passive investment products is appropriate. To quote our previous reply "In my judgement, a completely passively managed domestic equities program would be contrary to the interests of the FRS beneficiaries and Florida taxpayers."

This view still holds, and research conducted by SBA staff clearly indicates that there are niches where active management has paid over time when returns are compared against appropriate passive benchmarks. Furthermore, the SBA has active managers in these niches that have outperformed over long periods of time.

Our general consultant, Ennis, Knupp & Associates (EK&A), supports the view that the placement of our domestic equity assets with multiple or a single passive style manager would be a mistake.

As a final thought on this point, I would observe that while many public retirement systems have higher passive allocations than that currently employed by the SBA, there are also numerous major funds with passive equity allocations that are much lower than our current 65% weight. The SBA is well within common practice of other large funds with respect to indexed weights. (See Attachment 1).

Recommendation #2: We recommend that the Board at least convert to passive management the funds presently invested by active style managers that have not met their performance benchmarks for at least the last three fiscal years.

Response: During the period from June 30, 1999 (Page 6) to the present, after the period covered by the Review, the SBA domestic equity asset class moved substantially in the general direction suggested by this year's Review. (See Attachment 2.) Our passive component has increased to 65%. We have implemented multiple terminations, defundings and restructurings across a broad range of underperforming active strategies. A limited number of underperforming strategies referenced in the Review have been retained and have generally performed well during this fiscal year. We have negotiated significantly lower fees as a result of these actions and the restructuring has helped the aggregate of domestic equity managers to more closely line up to our asset class index.

Finally, while these positive steps have been accomplished, the domestic equities partitioning project, market volatility and uncertainty over the form and impact of Defined Contribution legislation have delayed any further restructuring. Nevertheless, we now know that a Defined Contribution program is in our future and we expect additional domestic equity class restructuring consistent with the future implications of that Legislation.

Recommendation #3: The Legislature enhance its oversight of the SBA's investment performance. The Legislature should require the SBA to report information that clearly indicates the extent to which SBA decisions to allocate funds to active and passive style managers as a group adds value to its investment performance.

Response:

We believe there is a role for active management in the FRS and, while periods of underperformance are certainly regrettable, they are not unexpected. As the implications of the Defined Contribution program becomes more clear, we will restructure our remaining assets to best meet the needs of the Defined Benefit beneficiaries.

In the meantime, we would be happy to add active vs. passive performance data to all of our reports for all asset classes and the total fund. We will make the appropriate adjustment to the Annual Investment Report, Quarterly Investment Advisory Council (IAC) Program Evaluation by EK&A and the Monthly Performance Report.

Please feel free to contact Gwenn Thomas, Chief Financial Officer, at 488-4406 if you have any questions or require further information. As always, we appreciate your diligence and assistance.

Sincerely,

/s/
Tom Herndon

TH:sh

Attachments - 2

LARGEST PUBLIC FUNDS - 9/30/99

RANKED BY TOTAL ASSETS

		Total Assets $b	% INDEXED	Cited
1	**CalPERS**	**155.8**	**83%**	*
2	**NY State Common**	**111.4**	**74%**	*
3	**CalSTERS**	**98.4**	**71%**	*
4	FloridaSBA*	93.1	60%	
5	**NY State Teachers**	**81.5**	**89%**	*
6	Texas Teachers	79.3	52%	
7	New Jersey	74.9	0%	
8	New York City Ret.	63.1	85%	
9	Wisconsin	57.7	57%	
10	Ohio Pub Emp	52.8	32%	
11	North Carolina	52.6	34%	
12	Ohio Teachers	51.4	63%	
13	Michigan	51.1	27%	
14	**Pa School Emp**	**47.3**	**65%**	*
15	**NY City Teachers**	**44.3**	**100%**	*
16	Univ of California	41.9	0%	
17	**Washington S.B.**	**41.1**	**100%**	*
18	Minnesota S.B.	41.0	34%	
19	Georgia Teachers	38.5	40%	
20	Virginia Teachers	35.2	56%	
21	Oregon Teachers	34.5	53%	
22	**Maryland Ret.**	**29.3**	**77%**	*
23	**Colorado Emp.**	**28.1**	**82%**	*
24	LA County Emp.	27.0	81%	
25	Mass. PRIM	26.8	77%	
26	Pennsylvania Emp.	26.0	53%	
27	Alabama Ret.	24.3	65%	
28	Tenn Consol.	23.0	0%	
29	Illinois Teachers	21.7	19%	
30	Arizona Ret.	21.6	26%	
	AVERAGE % INDEXED		55%	

RANKED BY % INDEXED

		Total Assets $b	% INDEXED	Cited
1	**NY City Teachers**	**44.3**	**100%**	*
2	**Washington S.B.**	**41.1**	**100%**	*
3	**NY State Teachers**	**81.5**	**89%**	*
4	New York City Ret.	63.1	85%	
5	**CalPERS**	**155.8**	**83%**	*
6	**Colorado Emp.**	**28.1**	**82%**	*
7	LA County Emp.	27.0	81%	
8	**Maryland Ret.**	**29.3**	**77%**	*
9	Mass. PRIM	26.8	77%	
10	**NY State Common**	**111.4**	**74%**	*
11	**CalSTERS**	**98.4**	**71%**	*
12	**Pa School Emp**	**47.3**	**65%**	*
13	Alabama Ret.	24.3	65%	
14	Ohio Teachers	51.4	63%	
15	FloridaSBA*	93.1	60%	
16	Wisconsin	57.7	57%	
17	Virginia Teachers	35.2	56%	
18	Oregon Teachers	34.5	53%	
19	Pennsylvania Emp.	26.0	53%	
20	Texas Teachers	79.3	52%	
21	Georgia Teachers	38.5	40%	
22	North Carolina	52.6	34%	
23	Minnesota S.B.	41.0	34%	
24	Ohio Pub Emp	52.8	32%	
25	Michigan	51.1	27%	
26	Arizona Ret.	21.6	26%	
27	Illinois Teachers	21.7	19%	
28	New Jersey	74.9	0%	
29	Univ of California	41.9	0%	
30	Tenn Consol.	23.0	0%	
	MEDIAN % INDEXED		58.5%	

THOSE WITH % INDEXED AT 65% OR LESS ARE IN BLUE
*FSBA CURRENTLY AT 65%
THOSE INCLUDED IN OPPAGA STUDY BOLDED AND NOTED WITH AN *

Sources: Pensions & Investments
National Association of State Investment Officers (NASIO)
Personal Contacts

ATTACHMENT 1

INFORMATION ON SELECTED ACTIVE ACCOUNTS IDENTIFIED IN DRAFT OPPAGA PROGRAM REVIEW
ACTIONS TAKEN SUBSEQUENT TO JUNE 30, 1999

*****PLEASE NOTE THAT THIS INFORMATION IS PROVIDED IN GOOD FAITH AND IS GENERALLY ACCURATE TO THE BEST OF OUR KNOWLEDGE**

			TERMINATION	DEFUNDING		APPROXIMATE % OF MANAGER
5-YR EXTERNAL			DATE	DATE	AMOUNT	ACCOUNT AT TIME OF DEFUNDING
	1	BARROW HANLEY	Nov-99			
	2	DENVER	Oct-99			
	3	ENHANCED INVESTMENT TECH				
	4	FIRST QUADRANT		Nov-99	$626M	39%
	5	HAVEN	Jul-99			
	6	INDEPENDENCE	Oct-99			
	7	LAZARD	Sep-99			
INTERNAL	1	CAPFORM	Oct-99			
	2	SPECIAL SITUATIONS		Jul-99	$77M	15%
				Oct-99	$211M	53%
3-YR						
EXTERNAL	1	AMERICAN EXPRESS				
	2	DOMINO				
	3	PRUDENTIAL		Nov-99	$979M	50%
OTHER		PROGRESS TRUST, RESTRUCTURED AND DEFUNDED		Mar-00	$196M	31%

ATTACHMENT 2