



2003 Wilshire Report on State Retirement Systems: Funding Levels and Asset Allocation

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Section 1: Summary of Findings

- State pension assets fell 6%, or \$120 billion, from \$1.9 trillion in 2001 to \$1.8 trillion in 2002, while liabilities grew 10%, or \$172 billion, from \$1.8 trillion to \$2.0 trillion. Falling asset values combined with continued growth in liabilities caused state pension plans to go from a \$112 billion overfunded condition in 2001 to a \$180 billion shortfall in 2002. (Exhibit 1)
- The ratio of pension assets-to-liabilities, or *funding ratio*, for all state pension plans combined declined from 106% in 2001 to 91% in 2002. The median (50th percentile) state pension plan has a funding ratio of 88%. (Exhibit 1)
- Our findings of asset shortfall for state pension plans are similar to corporate pension plans. Wilshire estimates that as of December 31, 2002 defined benefit pension assets for S&P 500 companies totaled \$885 billion, \$140 billion less than pension liabilities of \$1,025, giving an aggregate funding ratio for corporate plans of 86%.
- Of the 123 state retirement systems covered in the study, 79% are now underfunded, up from 51% in 2001 and 31% in 2000. The average underfunded plan has a ratio of assets-to-liabilities equal to 82%. (Exhibit 3)
- The fiscal health of retirement plans among states varies widely. Five states – Illinois, Indiana, Louisiana, Oklahoma, and West Virginia – maintain pension plans whose funding ratios fall below 70%, with West Virginia the lowest at 45%. Only nine states have pension plans that continue to have assets that exceed liabilities: Arizona, California, Florida, Georgia, New York, North Carolina, Pennsylvania, South Dakota, and Wisconsin. In 2001, 23 states had pension assets that exceeded liabilities. (Exhibit 6)

- Illinois has the largest dollar unfunded liability, \$34.9 billion, equal to 144% of its state budget. (Exhibit 5 and Exhibit 7)
- Nine states have unfunded pension liabilities that exceed state budgets, up from four states in our previous study. (Appendix E)
- Because many state pension plans report with a significant time lag, the funding ratios given in this study do not fully reflect the current bear market in stocks and, consequently, it is very likely that unfunded liabilities will increase even further. Wilshire forecasts that state funding ratios will fall from the 91% level reported for 2002 to approximately 85% in 2003.
- State pension portfolios have a 63% average allocation to equities – including real estate and private equity – and a 37% allocation to fixed income. The 63% equity allocation is down slightly from 64% reported in Wilshire’s prior study. Given the sharp decline in stock prices, the relatively unchanged equity allocation suggests that pension funds remain committed to stocks. (Exhibit 8)
- Asset allocation varies widely by state retirement system. Eight of 124 retirement systems have allocations to equity that equal or exceed 75%, and eight systems have equity allocations below 50%. The 25th and 75th percentile range for equity allocation is 57% to 71%.
- Wilshire forecasts a long-term return on state pension assets equal to 7.5% per annum, which is 0.5% below the average actuarial interest rate assumption of 8.0%. If correct, this asset performance shortfall will increase total unfunded liabilities for state pension plans by an additional \$10 billion per year.
- Employer contributions to state pension plans will likely increase by two to three times over the next several years as efforts are made to eliminate unfunded liabilities.

Section 2: Financial Overview

This is our eighth report on the financial condition of all state-sponsored defined benefit retirement systems and is based upon data gathered from the most recent financial and actuarial reports provided by 123 retirement systems sponsored by the 50 states and the District of Columbia. With this report we have increased the number of pension systems covered, up from 93 systems last year. We believe the 123 state pension systems now in our study cover all governmental pension plans that are administered statewide.

The Data

Financial data on public retirement systems lack the timeliness and uniform disclosure governing pension plans sponsored by publicly traded companies, making it impossible to conclude a study with data that is both current and consistent across systems. For this reason, our study methodology involves collecting data during the first quarter of each calendar year with the objective of acquiring as many reports as possible with a June 30 valuation date from the previous year. Even for systems with the desire to report in a timely manner, it often takes six months to a year for actuaries to determine liability values. Forty-five systems reported actuarial values on or after June 30, 2002 and 110 systems reported on or after June 30, 2001.

Assets versus Liabilities

Exhibit 1 shows asset and liability totals for all 123 state retirement systems and compares them with the same totals from the prior two years.

Exhibit 1
Financial Overview of State Retirement Systems
as Disclosed in Annual Reports*
(dollars in billions)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>% Growth</u> <u>2001-02</u>
Total Pension Assets	\$ 1,893	\$ 1,917	\$ 1,797	-6%
Total Pension Liabilities	<u>1,648</u>	<u>1,805</u>	<u>1,977</u>	10%
Difference	\$ 245	\$ 112	\$ (180)	
Assets as % of Liabilities	115%	106%	91%	
Underfunded Plans as % of All Plans	31%	51%	79%	

* Most annual reports use a June 30 fiscal year. Liabilities are the reported actuarial accrued liabilities and assets are the current market value as of the same valuation date as liabilities.

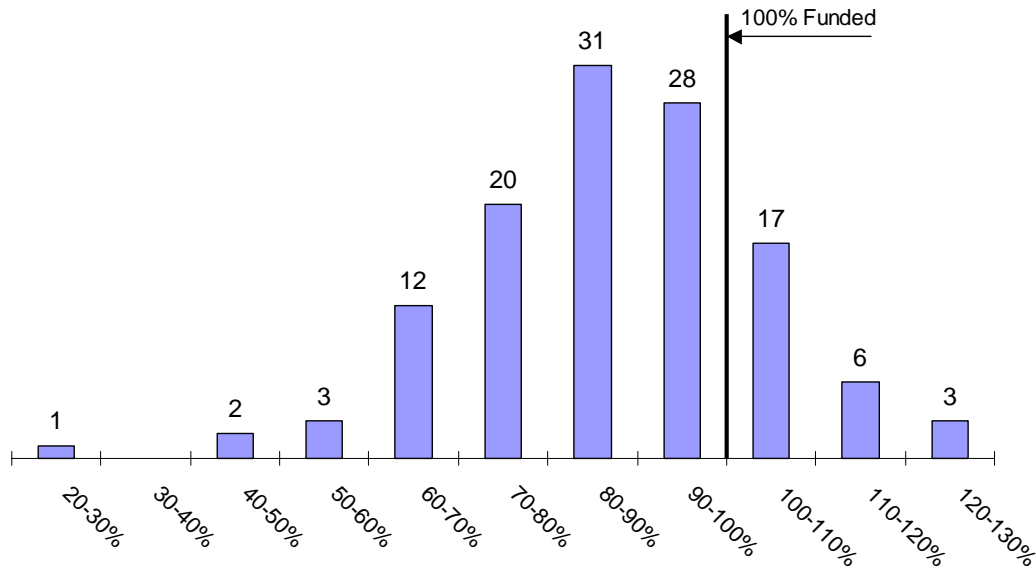
Exhibit 1 tells a story of a rapidly deteriorating financial health for state retirement systems over the last two years. In 2000, at the top of the bull market, state pension assets exceeded liabilities by \$245 billion, and the ratio of assets-to-liabilities, the most common measure of pension fund health, stood at 115%. Two years later, assets have fallen to \$1.8 trillion while liabilities have grown to almost \$2.0 trillion. Over the last year alone, assets have fallen 6% while liabilities have grown 10%. The result has been a decline in the difference between assets and liabilities from a positive \$112 billion to a negative \$180 billion, a \$292 billion swing, and a decline in the ratio of assets-to-liabilities from 106% to 91%.

Aggregate statistics such as these can mask more serious underlying fiscal problems because assets in well-funded state retirement systems are not transferable to underfunded systems. The last row in Exhibit 1 shows that 79% of the 123 state pension systems, or 97 pension systems, have assets less than liabilities. If we look only at these 97 underfunded systems, their combined assets as a percent of liabilities equals just 82%, and their combined unfunded liabilities, in dollars, total \$239 billion.

The histogram in Exhibit 2 gives a more detailed picture of the fiscal condition of the 123 state pension systems.

Exhibit 2

Distribution of 123 State Pension Systems by Funded Ratio

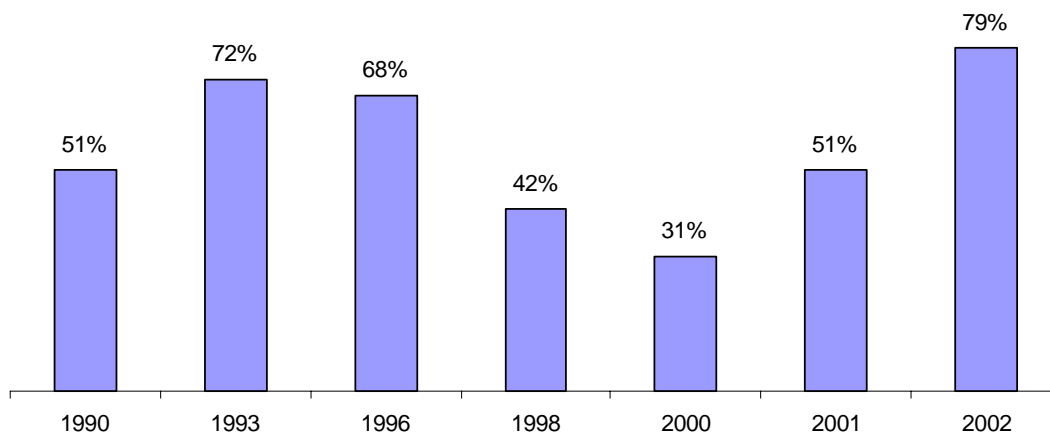


While 97 of the 123 plans, or 79%, have assets below liabilities, Exhibit 2 demonstrates the extent of the shortfall. One plan has assets less than 30% of liabilities; six plans have assets less than 60% of liabilities; and 38 plans have assets less than 80% of liabilities.

Exhibit 3 depicts the funding condition of state pension plans over a longer time period.

Exhibit 3

Percent of State Pension Plans that are Underfunded



The exhibit shows the percentage of state pension plans that were underfunded (assets less than liabilities) for selected years covering the period 1990 through 2002. The 79% level reached this past year is the highest since Wilshire has been conducting its annual survey. However, over 50% of pension plans were underfunded during the first half of the nineties. That percentage fell in the late nineties and reached a low in 2000 as a result of the bull market in stocks. That trend has quickly reversed itself as stocks have fallen to almost half their value reached in 2000.

Section 3: Funding Ratios for States and Individual State Retirement Systems

Funding Ratio Comparisons by Retirement System

Appendices A, B, G and H provide detailed asset and liability information by state retirement system. Appendix A contains an alphabetical listing of the 123 state retirement systems together with detailed information on assets, liabilities, actuarial assumptions, and reporting dates as provided in their annual reports. Appendix B contains a ranking of the retirement systems from the best to worst funded.

Exhibit 4 reports the five best and five worst funded state-sponsored retirement systems using two criteria: assets as a percent of liabilities, and the total dollar difference between assets and liabilities. For purposes of identifying the different employee status of the systems, PERS denotes state employees' systems, STRS denotes teachers' systems, and RS designation refers to a combined statewide system.

Exhibit 4 Comparison of System Funding Levels (dollar amounts in billions)

	Best		Worst	
Assets to Liabilities	Texas LECOSRF	129%	West Virginia STRS	21%
	Georgia PERS	127	Indiana STRS	43
	Wisconsin RS	126	Oklahoma STRS	44
	North Carolina PERS	118	Illinois STRS	52
	New York STRS	117	Illinois PERS	52
Assets minus Liabilities	Wisconsin RS	\$13.6	Illinois STRS	\$(20.7)
	New York STRS	11.8	Ohio STRS	(18.3)
	California PERS	7.3	Texas STRS	(17.6)
	North Carolina PERS	7.0	Oregon PERS	(10.8)
	California UC System	5.0	Indiana STRS	(7.5)

Some pension systems show comparatively favorable funding ratios only because they are late in reporting actuarial data. That is true for Wisconsin. The last time Wisconsin reported actuarial data was year-end 1999. That is two and one-half years behind many pension systems in this report which have already disclosed values for June 30, 2002. We fully expect, as a result, that

when Wisconsin finalizes and publishes its next actuarial report that its assets will fall below its liabilities. Consequently, the reader should refer to the actuarial date given in Appendix A when examining pension systems that are overfunded.

Funding Comparisons by State

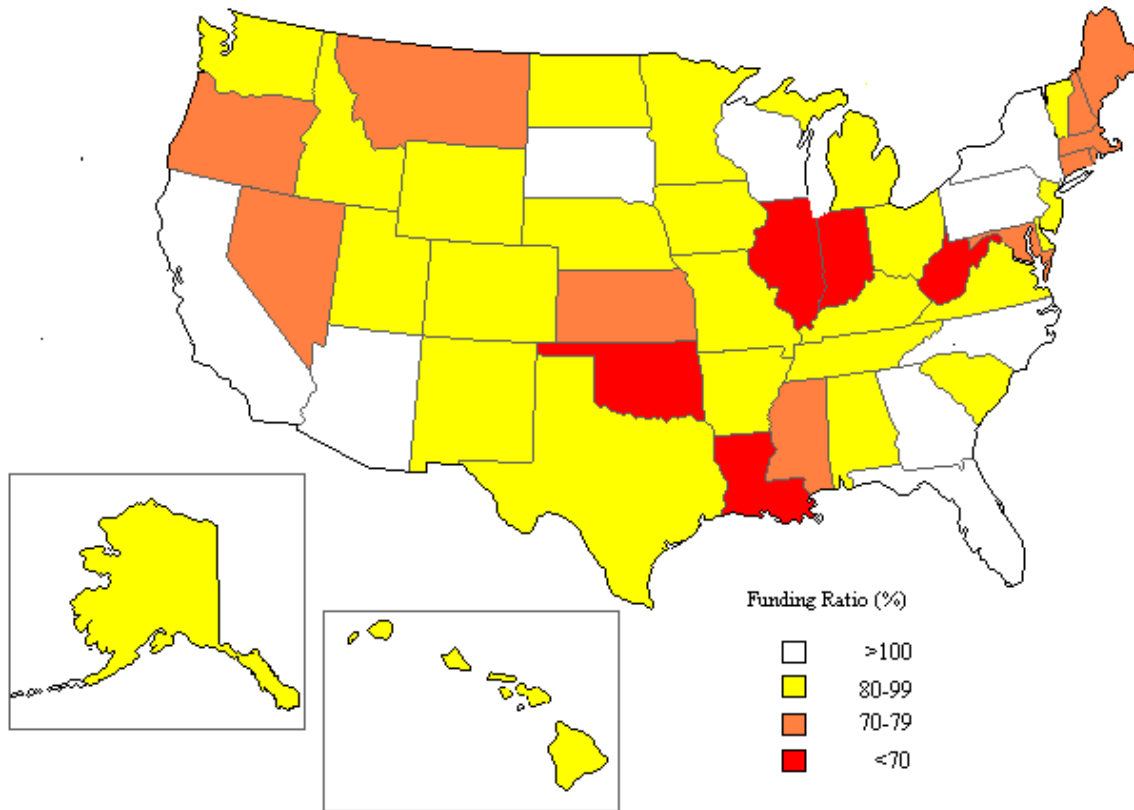
Exhibit 5 shows the five states with the best and worst funding ratios and unfunded liabilities. Individual retirement systems from the same state are combined for the purposes of this presentation. A complete ranking of states is provided in Appendix C, a graphic display of state unfunded liabilities is shown in Appendix D, and funding ratios are found in Appendix F.

Exhibit 5
Comparison of State Funding Levels
(dollar amounts in billions)

	Best		Worst	
Assets to Liabilities	Wisconsin	126%	West Virginia	45%
	North Carolina	116	Illinois	54
	Georgia	111	Oklahoma	56
	Arizona	109	Louisiana	65
	Florida	104	Indiana	67
Assets Minus Liabilities	Wisconsin	\$13.6	Illinois	\$(34.9)
	North Carolina	7.7	Ohio	(22.0)
	California	5.6	Texas	(19.4)
	Georgia	5.5	Oregon	(10.8)
	New York	4.4	Oklahoma	(9.7)

The map in Exhibit 6 colors states according to their retirement systems' combined funding ratio. The states shown in white have retirement system assets that equal or exceed their liabilities, of which there are 9 states. This represents a sizeable drop from the 23 states that were painted white last year. The 5 states colored in red have combined pension assets that are less than 70% of their combined pension liabilities. This is up from only 3 states last year, as Indiana and Louisiana have been added to the red category.

Exhibit 6
State Funding Levels: Assets as a % of Liabilities



In Exhibit 7 we give greater meaning to the state unfunded or overfunded liabilities by dividing by the dollar value of state budgets. A value of 100% would indicate that an unfunded liability equals the entire value of the annual state budget. Appendix E depicts graphically the values for all states.

Exhibit 7
Liabilities minus Assets divided by 2002 State Budget

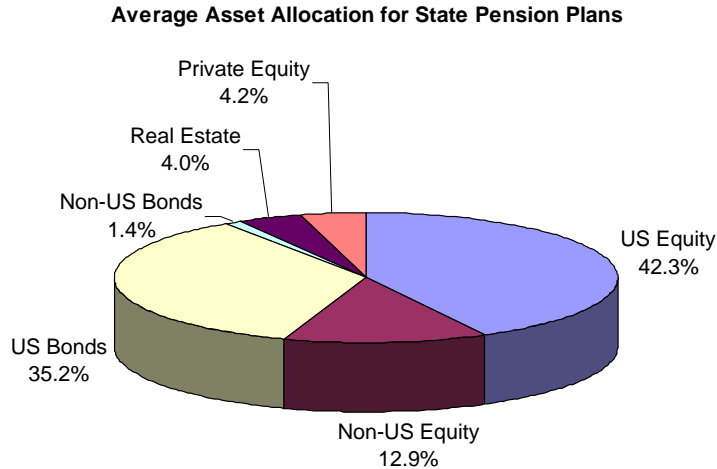
Bottom 5 States		Next 5 States	
Nevada	267%	Illinois	144%
Oregon	230	Louisiana	142
Oklahoma	193	Montana	124
Mississippi	176	Ohio	102
West Virginia	163	Rhode Island	96

Section 4: Asset Allocation

In this section we examine the investment strategies employed by state retirement systems.

Appendix G contains asset allocation information on the state retirement systems collected from the most recent annual reports. Included are allocations to the major asset classes. The average asset allocation across all 123 state retirement systems is shown below in Exhibit 8.

Exhibit 8



Appendix G also provides Wilshire’s expected long-term return and risk for each system’s investment portfolio based upon their asset allocation.

Portfolio expected return and risk is calculated using assumptions for the major asset classes together with each retirement system’s actual asset allocation, as reported in Appendix G. Exhibit 9 gives Wilshire’s long-term return and risk assumptions for each asset class. We view these assumptions as fairly mainstream among investment professionals.

**Exhibit 9
Wilshire Asset Class Assumptions**

	Expected <u>Return</u>	<u>Risk</u>
U.S. Equity	8.00%	17.0%
International Equity	8.00	20.0
Private Equity	11.00	32.0
Real Estate	6.75	14.0
U.S. Bonds	4.75	5.0
International Bonds	4.50	10.0

Exhibit 10 contains summary statistics on asset allocation for state retirement systems. The median allocation is 43.6% to domestic equities and 14.0% to international equities. However, as the lowest and highest columns suggest, there is considerable variability in allocations among individual systems. The median state pension fund has an expected return, by Wilshire's estimate, of 7.5%. This is 0.5% less than the current average actuarial interest rate assumption of 8.0%.

In addition, Exhibit 10 shows the median asset allocation for U.S. corporate pension plans. The median corporate allocation to equity investments is only a couple percentage points higher than that for state retirement systems.

Exhibit 10
Summary Asset Allocation Statistics
For State Retirement Systems and Corporate Plans

	State Retirement Systems			Corporate Plans*
	<u>Lowest %</u>	<u>Median %</u>	<u>Highest %</u>	<u>Median %</u>
Domestic Equity	0.0%	43.6%	64.4%	46.8%
International Equity	0.0	14.0	26.0	14.4
Private Equity	0.0	3.2	15.4	3.9
Real Estate	0.0	2.6	13.7	3.4
Domestic Bonds	10.2	31.8	100.0	29.7**
International Bonds	0.0	0.0	19.0	—
Other	0.0	0.0	5.3	1.8
Expected Returns	4.8%	7.5%	8.3%	7.7%

* Source: Greenwich Associates Market Dynamics Report
 ** Report did not differentiate between Domestic and International bonds

Exhibit 11 plots the expected return and risk for each of the 123 state retirement systems. Points in the upper right are more aggressive retirement systems while points in the lower left represent more conservative retirement systems. The horizontal line is positioned at a return equal to 8.0%, the average actuarial interest rate assumption used by state pension plans.

Using Wilshire's return forecasts, only 17 of the 123 state retirement systems, or 14%, are expected to earn long-term asset returns that equal or exceed their actuarial interest rate assumption.

Exhibit 11

Projected Return & Risk by State Pension System

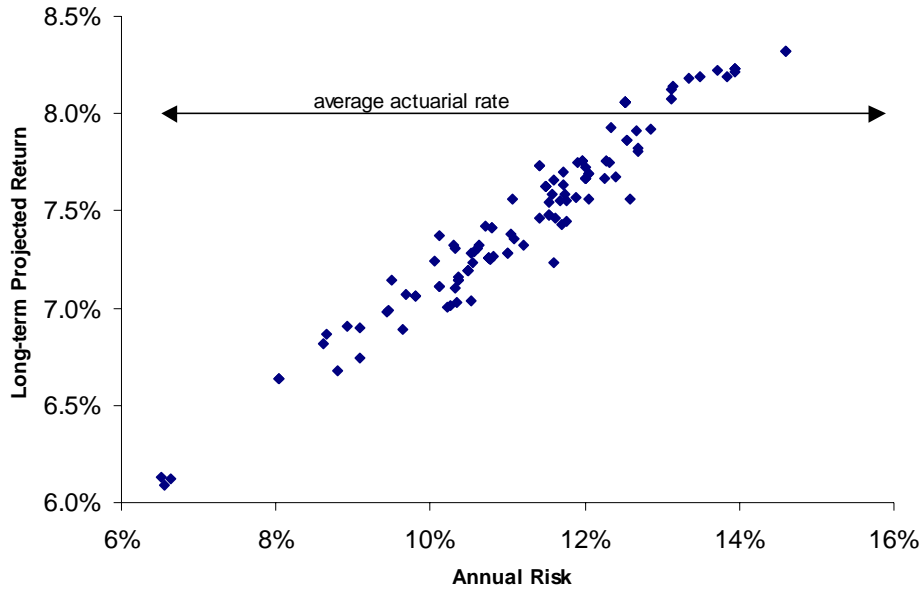


Exhibit 12 shows the five state systems with high return, highest risk asset allocations followed by the five state systems with low return, lowest risk.

Exhibit 12

High and Low Expected Portfolio Returns for State Systems

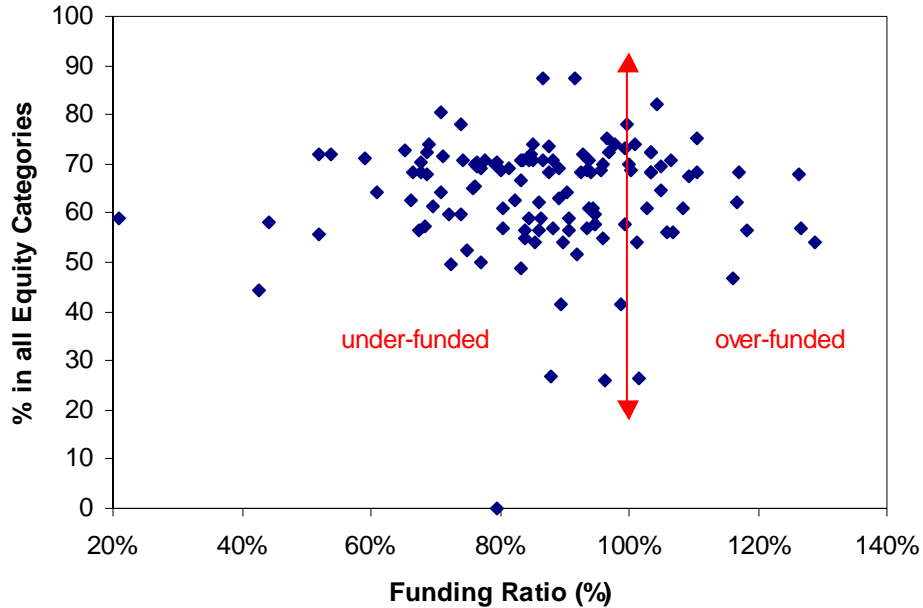
	<u>System</u>	<u>Equities*</u>	<u>Expected Return</u>
High Return	Colorado State & School	76.5%	8.3%
	Minnesota PERA	72.4	8.2
	Pennsylvania PERS	70.8	8.2
	Louisiana Teachers	69.2	8.2
	Michigan SERS	63.4	8.2
Low Return	South Carolina RS	26.8%	6.1%
	Tennessee PSPP	39.9	6.6
	Indiana Teachers	44.4	6.7
	Alabama Teachers	40.2	6.8
	Missouri Teachers	48.6	6.9

*Sum of U.S., non-U.S., private equity, real estate.

Exhibit 13 addresses the relationship between asset allocation and funding. The allocation to equity asset classes, a proxy for the investment aggressiveness, is plotted on the vertical scale. Funding ratio is shown on the horizontal scale. All 123 state systems are plotted in the figure, but there is no relationship between asset allocation and funding.

Exhibit 13

Asset Allocation and Actuarial Funding



The vertical line in Exhibit 13 separates overfunded plans from underfunded plans. Casual observation shows that overfunded plans have approximately the same asset allocation pattern as underfunded plans. Statistically, there is no correlation between the allocation to equity and plan funding ratio. In summary, state retirement systems have a broad spectrum of asset allocations that is unrelated to the size of their unfunded liabilities.

Appendix A : Actuarial Summary
(\$ in millions)

<u>Retirement System</u>	<u>Actuarial</u>	<u>Funding</u>	<u>Interest</u>	<u>Market</u>	<u>Actuarial</u>	<u>Actuarial</u>	<u>Active</u>
	<u>Valuation</u>		<u>Rate (%)</u>	<u>Value of</u>		<u>Liabilities</u>	<u>Value of</u>
	<u>Date</u>	<u>Method</u>	<u>Assumption</u>	<u>Assets</u>	<u>Liabilities</u>	<u>Assets</u>	<u>% of Total</u>
							<u>Liabilities</u>
Alabama ERS	9/30/2001	EAN	8.00	\$7,460	\$8,299	\$8,274	59%
Alabama Teachers	6/30/2002	EAN	8.00	\$14,168	\$18,374	\$17,905	54%
Alaska PERS	6/30/2001	PUC	8.25	\$5,796	\$5,528	\$5,579	51%
Alaska Teachers	6/30/2001	PUC	8.25	\$3,303	\$3,651	\$3,468	30%
Arizona SRS	6/30/2001	PUC	8.00	\$20,798	\$19,012	\$21,888	52%
Arkansas Highways ERS	6/30/2001	EAN	8.00	\$999	\$860	\$972	
Arkansas PERS	6/30/2002	EAN	8.00	\$3,765	\$4,374	\$4,397	66%
Arkansas Teachers	6/30/2001	EAN	8.00	\$7,643	\$8,561	\$8,166	63%
California PERS	6/30/2001	EAN	8.25	\$156,500	\$149,155	\$166,860	43%
California UC System	6/30/2002	EAN	7.70	\$34,442	\$29,491	\$40,753	
California Teachers	6/30/2001	EAN	8.00	\$103,138	\$109,881	\$107,654	62%
Colorado Fire & Police	12/31/2001	EAN	8.00	\$2,501	\$2,264	\$2,230	
Colorado State and School	12/31/2001	EAN	8.75	\$25,646	\$29,621	\$29,113	48%
Colorado Municipal Division	12/31/2001	EAN	8.75	\$1,602	\$1,747	\$1,822	48%
Connecticut PERS	6/30/2000	PUC	8.75	\$8,284	\$11,512	\$7,196	43%
Connecticut Teachers	6/30/2002	EAN	8.50	\$10,126	\$13,680	\$10,387	50%
Delaware PERS	6/30/2002	EAN	8.50	\$4,816	\$5,018	\$5,153	58%
DC PERS	10/1/1999	AGG	7.25	\$984	\$1,139	\$929	
DC Teachers	10/1/1999	AGG	7.25	\$729	\$803	\$691	
Florida RS	7/7/2002	EAN	8.00	\$89,529	\$86,470	\$99,406	
Georgia PERS	6/30/2000	EAN	7.00	\$14,384	\$11,349	\$11,896	
Georgia Teachers	6/30/2001	EAN	7.25	\$39,663	\$37,153	\$38,585	62%
Hawaii ERS	6/30/2001	EAN	8.00	\$8,761	\$10,507	\$9,516	50%
Idaho PERS	7/1/2002	EAN	8.00	\$6,263	\$7,510	\$6,244	61%
Illinois PERS	6/30/2002	PUC	8.50	\$8,072	\$15,496	\$8,072	52%
Illinois SURS	6/30/2002	PUC	8.50	\$9,815	\$16,654	\$9,815	47%
Illinois Teachers	6/30/2002	PUC	8.50	\$22,366	\$43,048	\$22,366	49%
Indiana PERS	7/1/2001	EAN*	7.25	\$8,519	\$8,572	\$8,891	70%
Indiana Police and Fire	7/1/2001	EAN	7.50	\$1,533	\$1,620	\$1,491	76%
Indiana Teachers	6/30/2000	EAN	7.50	\$5,578	\$13,115	\$5,578	70%
Iowa Fire & Police	7/1/2001	AGG	7.50	\$1,155	\$1,274	\$1,262	42%
Iowa PERS	6/30/2002	EAN	7.50	\$14,874	\$16,869	\$15,613	58%
Kansas PERS	12/31/2001	PUC	8.00	\$8,902	\$11,743	\$9,963	58%
Kentucky PERS	6/30/2002	EAN	8.25	\$5,636	\$6,729	\$7,469	46%
Kentucky Counties	6/30/2002	EAN	8.25	\$5,271	\$5,493	\$6,883	54%
Kentucky Teachers	6/30/2002	PUC	7.50	\$11,763	\$15,696	\$13,589	
Louisiana Municipal Police	6/30/2001	EAN	7.00	\$1,196	\$1,261	\$1,275	44%
Louisiana PERS	6/30/2002	PUC	8.25	\$5,620	\$9,207	\$6,461	
Louisiana Teachers	6/30/2002	PUC	8.25	\$10,628	\$16,263	\$12,020	39%
Maine PERS	6/30/2000	EAN	8.00	\$2,191	\$2,661	\$2,205	39%
Maine Teachers	6/30/2000	EAN	8.00	\$3,171	\$4,792	\$3,283	53%
Maryland PERS	6/30/2002	EAN	8.00	\$9,505	\$11,984	\$11,599	49%
Maryland State Police	6/30/2002	EAN	8.00	\$1,030	\$1,031	\$1,300	49%
Maryland Teachers	6/30/2002	EAN	8.00	\$16,052	\$21,117	\$19,424	49%

Appendix A (cont.)

Retirement System	Actuarial Valuation Date	Funding Method	Interest Rate (%) Assumption	Market Value of Assets	Actuarial Liabilities	Actuarial Value of Assets	Active Liabilities as % of Total Liabilities
Massachusetts PERS	1/1/2002	EAN	8.25	\$13,598	\$15,961	\$15,002	59%
Massachusetts Teachers	1/1/2002	EAN	8.25	\$14,219	\$20,620	\$15,712	64%
Michigan Municipal	12/31/2000	EAN	8.00	\$3,789	\$4,397	\$3,787	60%
Michigan SERS	9/30/2001	EAN	8.00	\$9,891	\$10,103	\$10,924	52%
Michigan Police	9/30/2001	EAN	8.00	\$1,038	\$1,074	\$1,149	33%
Michigan Teachers	9/30/2001	EAN	8.00	\$34,810	\$39,774	\$38,399	47%
Minnesota PERA	6/30/2002	EAN	8.50	\$8,932	\$13,000	\$11,058	47%
Minnesota Police & Fire	6/30/2002	EAN	8.50	\$3,770	\$3,886	\$4,707	39%
Minnesota SRS	6/30/2001	EAN	8.50	\$7,458	\$7,216	\$7,964	58%
Minnesota State Patrol	6/30/2001	EAN	8.50	\$541	\$489	\$573	38%
Minnesota Teachers	7/1/2002	EAN	8.50	\$13,998	\$16,503	\$17,379	42%
Mississippi PERS	6/30/2002	EAN	8.00	\$14,245	\$20,477	\$17,096	56%
Missouri Highway ERS	6/30/1999	EAN	8.25	\$1,452	\$2,048	\$1,243	
Missouri PERS	6/30/2002	EAN	8.50	\$5,062	\$6,569	\$6,078	56%
Missouri Teachers	6/30/2002	EAN	8.00	\$19,403	\$23,334	\$22,236	55%
Missouri Non-teacher School	6/30/2002	EAN	8.00	\$1,585	\$1,856	\$1,811	65%
Montana PERS	6/30/2002	EAN	8.00	\$3,069	\$3,816	\$3,680	53%
Montana Teachers	7/1/2002	EAN	8.00	\$2,042	\$2,980	\$2,485	58%
Nebraska RS	7/1/2002	EAN	8.00	\$4,298	\$5,335	\$5,133	
Nevada PERS	6/30/2002	EAN	8.00	\$13,209	\$18,260	\$15,052	59%
New Hampshire PERS	6/30/2002	AGG	9.00	\$1,214	\$1,792	\$1,368	54%
New Hampshire Police	6/30/2002	AGG	9.00	\$588	\$770	\$648	50%
New Hampshire Teachers	6/30/2002	AGG	9.00	\$1,298	\$1,634	\$1,427	60%
New Jersey PERS	6/30/2001	PUC	8.75	\$24,788	\$24,133	\$28,186	58%
New Jersey Police & Fire	6/30/2001	PUC	8.75	\$16,789	\$17,923	\$18,074	48%
New Jersey State Police	6/30/2001	PUC	8.75	\$1,762	\$1,627	\$1,829	47%
New Jersey Teachers	6/30/2001	PUC	8.75	\$30,930	\$32,745	\$35,351	55%
New Mexico PERA	6/30/2002	EAN	8.00	\$7,935	\$8,627	\$8,893	46%
New Mexico Teachers	6/30/2002	EAN	8.00	\$6,011	\$8,748	\$7,595	56%
New York PERS	4/1/2002	AGG	8.00	\$95,420	\$102,064	\$102,064	
New York Police & Fire	4/1/2002	AGG	8.00	\$17,305	\$18,093	\$18,093	
New York Teachers	6/30/2001	AGG	8.00	\$81,664	\$69,817	\$87,295	
North Carolina PERS	12/31/2001	EAN	7.25	\$45,254	\$38,230	\$42,641	
North Carolina Local	12/31/2001	FEA	7.25	\$11,487	\$10,836	\$10,764	
North Dakota PERS	6/30/2002	EAN	8.00	\$1,083	\$1,144	\$1,190	64%
North Dakota Teachers	7/1/2002	EAN	8.00	\$1,165	\$1,576	\$1,444	59%
Ohio PERS	12/31/2000	EAN	7.75	\$46,262	\$46,347	\$46,844	61%
Ohio Police and Fire	1/1/2001	EAN	8.25	\$8,839	\$9,506	\$8,498	48%
Ohio SERS	6/30/2002	EAN	8.25	\$7,092	\$9,986	\$8,879	54%
Ohio STRS	7/1/2002	EAN	7.75	\$44,882	\$63,216	\$48,959	51%
Oklahoma Firefighters	6/30/2001	EAN	7.50	\$1,318	\$1,735	\$1,438	
Oklahoma PERS	7/1/2002	EAN	7.50	\$4,486	\$6,640	\$5,300	53%
Oklahoma Police	6/30/2001	EAN	7.50	\$1,210	\$1,443	\$1,319	
Oklahoma Teachers	6/30/2002	EAN	8.00	\$5,418	\$12,276	\$6,311	
Oregon PERS	12/31/2001	EAN	8.00	\$34,634	\$45,386	\$39,773	62%
Pennsylvania PERS	12/31/2001	EAN	8.50	\$24,706	\$23,659	\$27,505	63%
Pennsylvania Teachers	6/30/2001	EAN	8.50	\$48,097	\$47,917	\$54,830	67%

Appendix A (cont.)

<u>Retirement System</u>	<u>Actuarial Valuation Date</u>	<u>Funding Method</u>	<u>Interest Rate (%) Assumption</u>	<u>Market Value of Assets</u>	<u>Actuarial Liabilities</u>	<u>Actuarial Value of Assets</u>	<u>Active Liabilities as % of Total Liabilities</u>
Rhode Island ERS	6/30/2001	EAN	8.25	\$2,091	\$3,089	\$2,430	
Rhode Island Municipal	6/30/2001	EAN	8.25	\$783	\$758	\$895	
Rhode Island Teachers	6/30/2001	EAN	8.25	\$3,112	\$4,679	\$3,620	
South Carolina RS	7/1/2001	EAN	7.25	\$18,829	\$21,390	\$18,624	51%
South Carolina Police	7/1/2001	EAN	7.25	\$2,234	\$2,324	\$2,198	58%
South Dakota RS	6/30/2002	EAN	8.00	\$4,625	\$4,577	\$4,425	51%
Tennessee SETHEEPP	7/1/2001	FEA	7.50	\$20,578	\$20,842	\$20,761	62%
Tennessee PSPP	7/1/2001	FEA	7.50	\$3,160	\$3,528	\$3,188	69%
Texas CDRS	12/31/2000	EAN	8.00	\$8,208	\$8,089	\$7,315	74%
Texas ERS	8/31/2001	EAN	8.00	\$18,157	\$17,962	\$18,496	56%
Texas LECOSRF	8/31/2001	EAN	8.00	\$634	\$492	\$648	68%
Texas Municipal	12/31/2001	PUC	8.00	\$8,635	\$10,867	\$9,237	71%
Texas Teachers	8/31/2002	EAN	8.00	\$71,696	\$89,322	\$86,035	58%
Utah Non-contributory	12/31/2001	EAN	8.00	\$9,999	\$10,817	\$11,190	63%
Utah Contributory	12/31/2001	EAN	8.00	\$844	\$962	\$946	55%
Utah Public Safety	12/31/2001	EAN	8.00	\$1,230	\$1,306	\$1,376	52%
Utah Fire Fighters	12/31/2001	EAN	8.00	\$509	\$491	\$569	46%
Vermont PERS	6/30/2002	EAN	8.25	\$1,065	\$1,193	\$1,184	
Vermont Teachers	6/30/2002	EAN	8.50	\$1,066	\$1,307	\$1,169	
Virginia RS	6/30/2001	EAN	8.00	\$36,693	\$36,911	\$39,103	60%
Washington PERS 1	9/30/2001	EAN	8.00	\$8,987	\$12,088	\$10,990	40%
Washington PERS 2	9/30/2001	AGG	8.00	\$9,486	\$11,129	\$11,046	88%
Washington LEOFF 1	9/30/2001	EAN	8.00	\$4,420	\$4,153	\$5,369	16%
Washington LEOFF 2	9/30/2001	AGG	8.00	\$2,272	\$2,576	\$2,576	97%
Washington WSPRS	9/30/2001	AGG	8.00	\$596	\$712	\$712	59%
Washington SERS 2-3	9/30/2001	AGG	8.00	\$1,243	\$1,472	\$1,472	97%
Washington Teachers 1	9/30/2001	EAN	8.00	\$7,681	\$9,895	\$9,342	38%
Washington Teachers 2	9/30/2001	AGG	8.00	\$3,079	\$3,547	\$3,547	93%
West Virginia PERS	7/1/2001	EAN	8.00	\$2,681	\$3,178	\$2,681	
West Virginia Teachers	7/1/2001	EAN	8.00	\$1,091	\$5,189	\$1,091	
Wisconsin RS	12/31/1999	FEA	8.00	\$65,136	\$51,550	\$49,404	59%
Wyoming RS	1/1/2002	EAN	8.00	\$4,499	\$4,809	\$4,955	55%
Totals	12/31/2001		8.05	\$1,805,216	\$1,991,647	\$1,935,500	55%
	(Median)		(Avg.)	(Sum)	(Sum)	(Sum)	(Avg.)

Note : EAN = Entry Age Normal
 AGG = Aggregate Cost
 FEA = Frozen Entry Age
 PUC = Projected Unit Credit

Appendix B : Funding Ratio Ranking by System
(\$ in millions)

<u>Retirement System</u>	<u>Ratio of Assets (at market value) to Liabilities</u>	<u>Rank out of 123 Pension Systems</u>	<u>Assets minus Liabilities (in \$millions)</u>	<u>Rank out of 123 Pension Systems</u>
Texas LECOSRF	1.29	1	\$142	19
Georgia PERS	1.27	2	\$3,035	7
Wisconsin RS	1.26	3	\$13,586	1
North Carolina PERS	1.18	4	\$7,024	4
New York Teachers	1.17	5	\$11,847	2
California UC System	1.17	6	\$4,951	5
Arkansas Highways ERS	1.16	7	\$138	20
Colorado Fire & Police	1.10	8	\$236	16
Minnesota State Patrol	1.10	9	\$51	23
Arizona SRS	1.09	10	\$1,786	9
New Jersey State Police	1.08	11	\$135	21
Georgia Teachers	1.07	12	\$2,509	8
Washington LEOFF 1	1.06	13	\$267	14
North Carolina Local	1.06	14	\$651	12
California PERS	1.05	15	\$7,345	3
Alaska PERS	1.05	16	\$268	13
Pennsylvania PERS	1.04	17	\$1,047	10
Florida RS	1.04	18	\$3,059	6
Utah Fire Fighters	1.04	19	\$17	26
Minnesota SRS	1.03	20	\$242	15
Rhode Island Municipal	1.03	21	\$25	25
New Jersey PERS	1.03	22	\$655	11
Texas CDRS	1.01	23	\$119	22
Texas ERS	1.01	24	\$196	17
South Dakota RS	1.01	25	\$48	24
Pennsylvania Teachers	1.00	26	\$180	18
Maryland State Police	1.00	27	-\$1	27
Ohio PERS	1.00	28	-\$85	34
Virginia RS	0.99	29	-\$218	47
Indiana PERS	0.99	30	-\$53	29
Tennessee SETHEPP	0.99	31	-\$264	52
Michigan SERS	0.98	32	-\$211	46
Minnesota Police & Fire	0.97	33	-\$116	38
Michigan Police	0.97	34	-\$35	28
South Carolina Police	0.96	35	-\$90	36
Delaware PERS	0.96	36	-\$202	45
Kentucky Counties	0.96	37	-\$222	48
New York Police & Fire	0.96	38	-\$788	71
Lousiana Municipal Police	0.95	39	-\$65	31
North Dakota PERS	0.95	40	-\$61	30
Indiana Police and Fire	0.95	41	-\$87	35
New Jersey Teachers	0.94	42	-\$1,815	86
Utah Public Safety	0.94	43	-\$76	33
California Teachers	0.94	44	-\$6,743	115
New Jersey Police & Fire	0.94	45	-\$1,133	79

Appendix B (cont.)

<u>Retirement System</u>	Ratio of Assets (at market value) to Liabilities	Rank out of 123 Pension Systems	Assets minus Liabilities (in \$millions)	Rank out of 123 Pension Systems
Wyoming RS	0.94	46	-\$310	55
New York PERS	0.93	47	-\$6,644	115
Ohio Police and Fire	0.93	48	-\$667	68
Utah Non-contributory	0.92	49	-\$818	72
New Mexico PERA	0.92	50	-\$692	69
Colorado Municipal Division	0.92	51	-\$145	42
DC Teachers	0.91	52	-\$74	32
Iowa Fire & Police	0.91	53	-\$119	40
Alaska Teachers	0.90	54	-\$349	57
Alabama ERS	0.90	55	-\$839	73
Tennessee PSP	0.90	56	-\$368	58
Arkansas Teachers	0.89	57	-\$918	74
Vermont PERS	0.89	58	-\$128	41
Washington LEOFF 2	0.88	59	-\$304	54
Iowa PERS	0.88	60	-\$1,994	87
South Carolina RS	0.88	61	-\$2,561	94
Utah Contributory	0.88	62	-\$118	39
Michigan Teachers	0.88	63	-\$4,964	108
Washington Teachers 2	0.87	64	-\$468	61
Colorado State and School	0.87	65	-\$3,974	104
DC PERS	0.86	66	-\$155	43
Michigan Municipal	0.86	67	-\$608	66
Arkansas PERS	0.86	68	-\$609	67
Missouri Non-teacher School	0.85	69	-\$271	53
Washington PERS 2	0.85	70	-\$1,643	84
Massachusetts PERS	0.85	71	-\$2,364	91
Minnesota Teachers	0.85	72	-\$2,505	93
Washington SERS 2-3	0.84	73	-\$229	49
West Virginia PERS	0.84	74	-\$497	63
Oklahoma Police	0.84	75	-\$233	50
Kentucky PERS	0.84	76	-\$1,093	78
Washington WSPRS	0.84	77	-\$116	37
Idaho PERS	0.83	78	-\$1,247	80
Hawaii ERS	0.83	79	-\$1,746	85
Missouri Teachers	0.83	80	-\$3,930	102
Maine PERS	0.82	81	-\$470	62
Vermont Teachers	0.82	82	-\$241	51
Nebraska RS	0.81	83	-\$1,037	77
Montana PERS	0.80	84	-\$747	70
Texas Teachers	0.80	85	-\$17,627	122
Texas Municipal	0.79	86	-\$2,232	90
New Hampshire Teachers	0.79	87	-\$336	56
Maryland PERS	0.79	88	-\$2,479	92
Washington Teachers 1	0.78	89	-\$2,214	89
Alabama Teachers	0.77	90	-\$4,206	107

Appendix B (cont.)

<u>Retirement System</u>	Ratio of Assets (at market value) to Liabilities	Rank out of 123 Pension Systems	Assets minus Liabilities (in \$millions)	Rank out of 123 Pension Systems
Missouri PERS	0.77	91	-\$1,506	81
New Hampshire Police	0.76	92	-\$182	44
Oregon PERS	0.76	93	-\$10,753	120
Maryland Teachers	0.76	94	-\$5,065	110
Oklahoma Firefighters	0.76	95	-\$417	60
Kansas PERS	0.76	96	-\$2,841	96
Kentucky Teachers	0.75	97	-\$3,933	103
Washington PERS 1	0.74	98	-\$3,101	98
Connecticut Teachers	0.74	99	-\$3,554	100
North Dakota Teachers	0.74	100	-\$410	59
Nevada PERS	0.72	101	-\$5,050	109
Connecticut PERS	0.72	102	-\$3,228	99
Ohio SERS	0.71	103	-\$2,894	97
Ohio STRS	0.71	104	-\$18,334	122
Missouri Highway ERS	0.71	105	-\$597	65
Mississippi PERS	0.70	106	-\$6,232	112
Massachusetts Teachers	0.69	107	-\$6,401	113
New Mexico Teachers	0.69	108	-\$2,737	95
Minnesota PERA	0.69	109	-\$4,068	105
Montana Teachers	0.69	110	-\$938	75
New Hampshire PERS	0.68	111	-\$578	64
Rhode Island ERS	0.68	112	-\$998	76
Oklahoma PERS	0.68	113	-\$2,154	88
Rhode Island Teachers	0.66	114	-\$1,568	82
Maine Teachers	0.66	115	-\$1,621	83
Louisiana Teachers	0.65	116	-\$5,635	111
Louisiana PERS	0.61	117	-\$3,587	101
Illinois SURS	0.59	118	-\$6,839	116
Illinois PERS	0.52	119	-\$7,425	118
Illinois Teachers	0.52	120	-\$20,681	123
Oklahoma Teachers	0.44	121	-\$6,858	117
Indiana Teachers	0.43	122	-\$7,537	119
West Virginia Teachers	0.21	123	-\$4,098	106

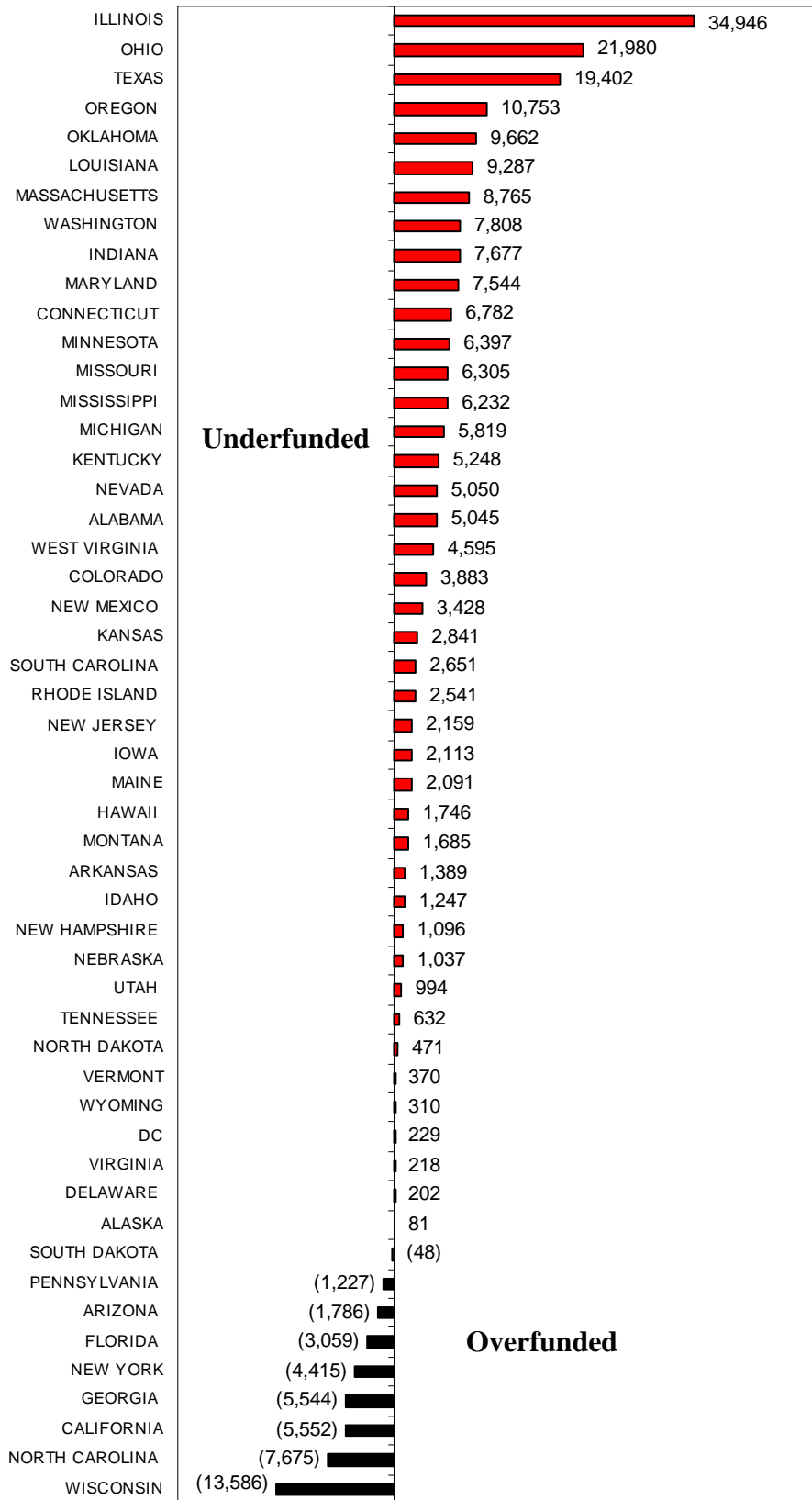
**Appendix C : States Ranked by Funding Ratio (Assets/Liabilities)
(\$ in millions)**

<u>State</u>	Ratio of Assets (at market value) to		Assets minus	
	<u>Liabilities</u>	<u>Rank</u>	<u>Liabilities</u>	<u>Rank</u>
WISCONSIN	1.26	1	\$13,586	1
NORTH CAROLINA	1.16	2	\$7,675	2
GEORGIA	1.11	3	\$5,544	4
ARIZONA	1.09	4	\$1,786	7
FLORIDA	1.04	5	\$3,059	6
NEW YORK	1.02	6	\$4,415	5
CALIFORNIA	1.02	7	\$5,552	3
PENNSYLVANIA	1.02	8	\$1,227	8
SOUTH DAKOTA	1.01	9	\$48	9
VIRGINIA	0.99	10	-\$218	12
ALASKA	0.99	11	-\$81	10
TENNESSEE	0.97	12	-\$632	16
NEW JERSEY	0.97	13	-\$2,159	26
DELAWARE	0.96	14	-\$202	11
WYOMING	0.94	15	-\$310	13
UTAH	0.93	16	-\$994	17
ARKANSAS	0.90	17	-\$1,389	21
MICHIGAN	0.89	18	-\$5,819	36
SOUTH CAROLINA	0.89	19	-\$2,651	28
COLORADO	0.88	20	-\$3,883	31
IOWA	0.88	21	-\$2,113	25
VERMONT	0.85	22	-\$370	14
TEXAS	0.85	23	-\$19,402	48
MINNESOTA	0.84	24	-\$6,397	39
IDAHO	0.83	25	-\$1,247	20
HAWAII	0.83	26	-\$1,746	23
OHIO	0.83	27	-\$21,980	49
WASHINGTON	0.83	28	-\$7,808	43
NORTH DAKOTA	0.83	29	-\$471	15
MISSOURI	0.81	30	-\$6,305	38
KENTUCKY	0.81	31	-\$5,248	35
ALABAMA	0.81	32	-\$5,045	33
NEBRASKA	0.81	33	-\$1,037	18
NEW MEXICO	0.80	34	-\$3,428	30
MARYLAND	0.78	35	-\$7,544	41
OREGON	0.76	36	-\$10,753	47
MASSACHUSETTS	0.76	37	-\$8,765	44
KANSAS	0.76	38	-\$2,841	29
MONTANA	0.75	39	-\$1,685	22
NEW HAMPSHIRE	0.74	40	-\$1,096	19
CONNECTICUT	0.73	41	-\$6,782	40

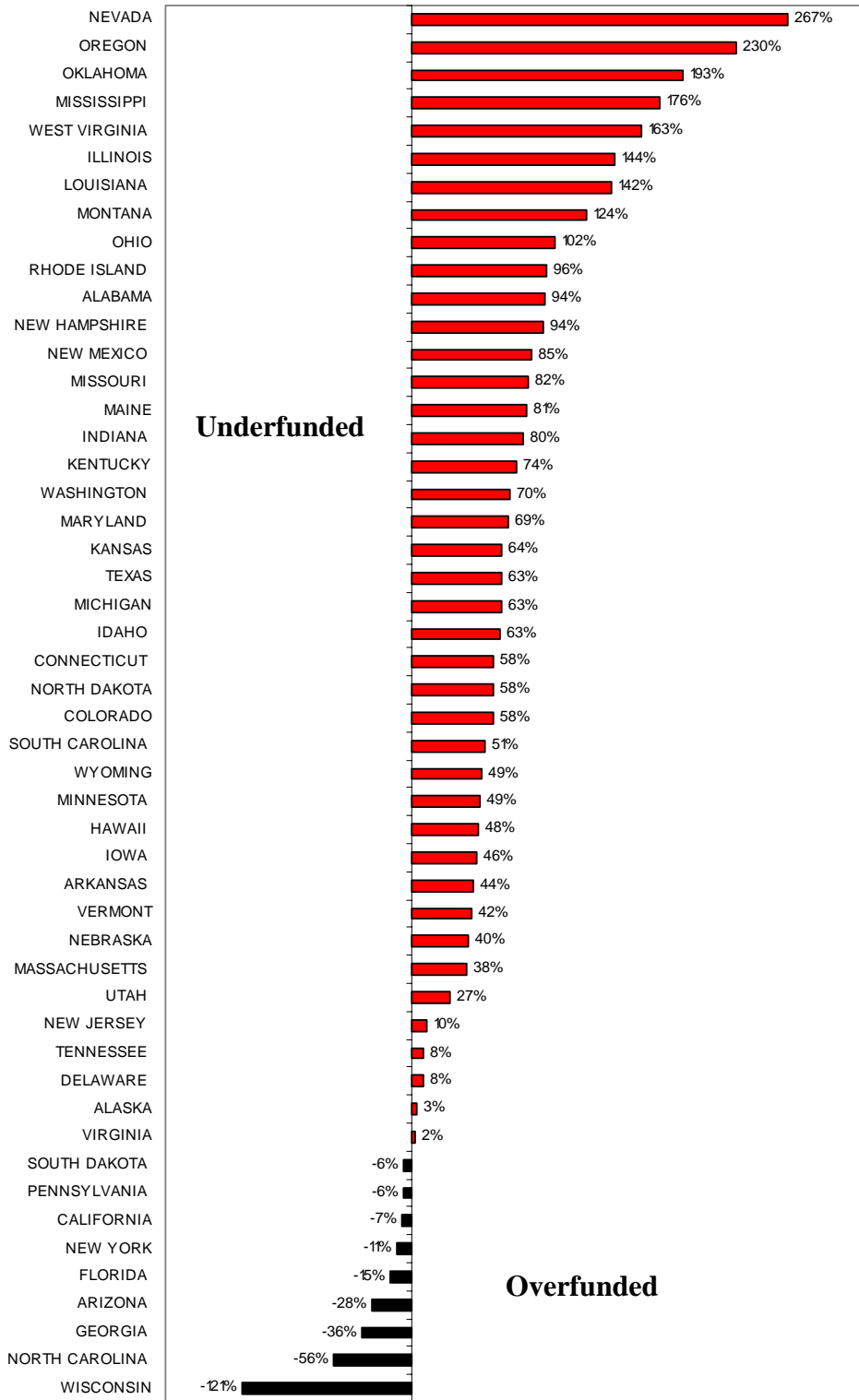
Appendix C (cont.)

State	Ratio of Assets (at market value) to	Rank	Assets minus	Rank
	<u>Liabilities</u>		<u>Liabilities</u>	
NEVADA	0.72	42	-\$5,050	34
MAINE	0.72	43	-\$2,091	24
RHODE ISLAND	0.70	44	-\$2,541	27
MISSISSIPPI	0.70	45	-\$6,232	37
INDIANA	0.67	46	-\$7,677	42
LOUISIANA	0.65	47	-\$9,287	45
OKLAHOMA	0.56	48	-\$9,662	46
ILLINOIS	0.54	49	-\$34,946	50
WEST VIRGINIA	0.45	50	-\$4,595	32

Appendix D : State Unfunded Liabilities (in \$millions)

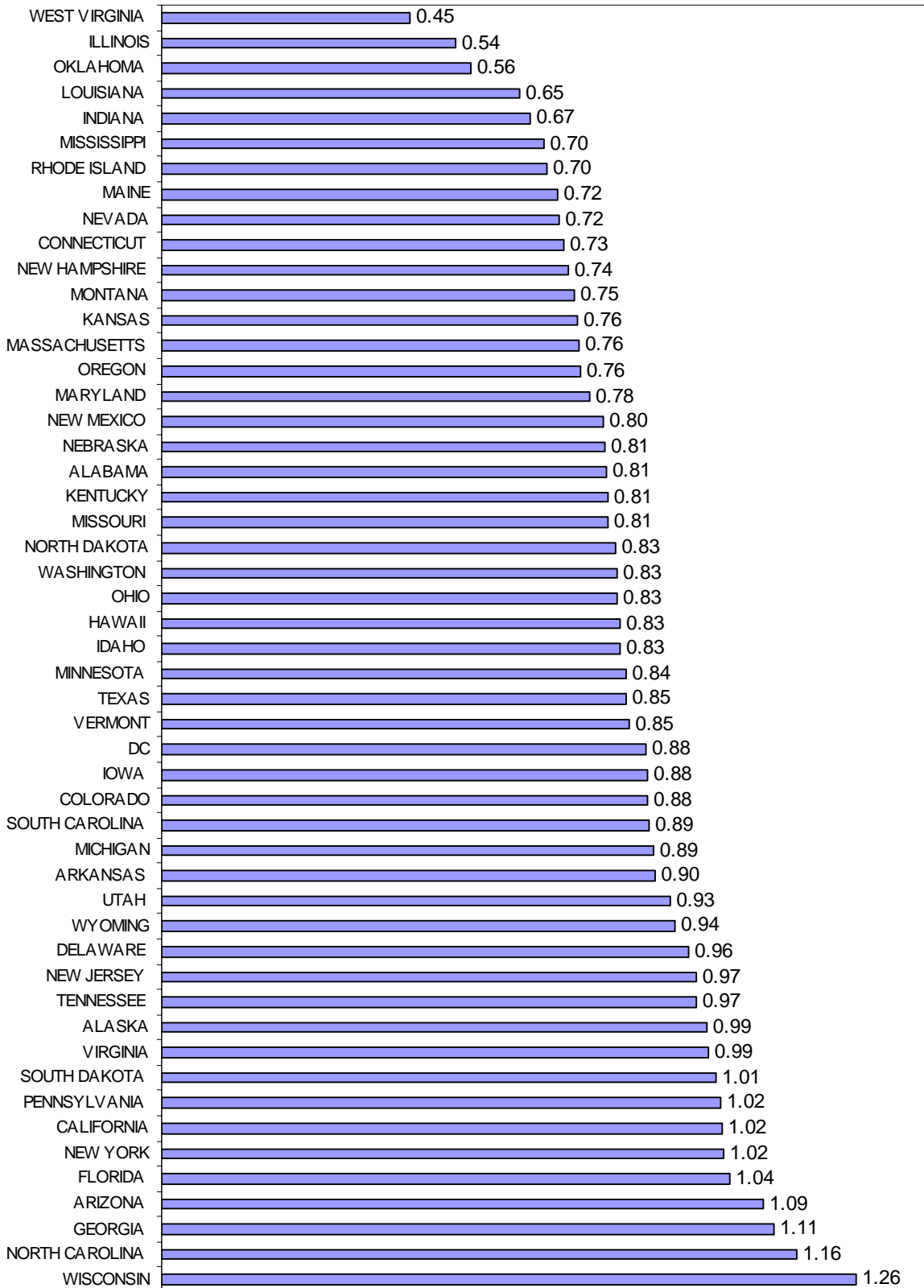


Appendix E : Unfunded Liabilities as % of State Budget Expenditures



Note : State Budget Expenditures per “The Fiscal Survey of the States,” (November 2002) ; National Governors Association, National Association of State Budget Officers.

Appendix F : State Funding Ratios



**Appendix G : Asset Allocation
(% of Total Assets)**

Retirement System	Report Date	Non-US		Non-US		Real Estate	Private Equity	Other	Expected	
		US Equity	US Equity	US Bond	US Bonds				Return	Risk
Alabama ERS	9/30/2002	32.8	7.5	45.2	0.8	13.7	0.0	0.0	6.91%	8.92%
Alabama Teachers	9/30/2002	32.8	7.4	49.6	0.6	9.6	0.0	0.0	6.82%	8.60%
Alaska PERS	6/30/2002	38.3	18.3	32.2	3.4	7.8	0.0	0.0	7.31%	10.62%
Alaska Teachers	6/30/2002	37.8	18.2	32.3	3.4	7.8	0.4	0.0	7.32%	10.62%
Arizona SRS	6/30/2002	51.4	16.2	32.4	0.0	0.0	0.0	0.0	7.43%	11.70%
Arkansas Highways ERS	6/30/2001	46.6	0.0	53.4	0.0	0.0	0.0	0.0	6.75%	9.09%
Arkansas PERS	6/30/2002	40.1	9.4	43.4	0.0	0.0	6.8	0.3	7.42%	10.71%
Arkansas Teachers	6/30/2001	41.4	12.1	36.9	0.0	0.7	8.9	0.0	7.70%	11.72%
California PERS	6/30/2002	37.8	18.6	26.6	3.9	8.6	4.6	0.0	7.66%	11.61%
California UC System	6/30/2002	53.3	7.0	37.7	0.0	0.0	1.9	0.0	7.33%	11.20%
California Teachers	6/30/2002	39.2	21.9	29.3	0.0	5.2	4.4	0.0	7.72%	12.02%
Colorado Fire & Police	12/31/2001	56.9	0.0	31.7	0.0	6.0	5.4	0.0	7.56%	12.04%
Colorado State and School	12/31/2001	52.7	13.1	10.2	2.5	9.9	10.7	0.9	8.32%	14.59%
Colorado Municipal Division	12/31/2001	52.7	13.1	10.2	2.5	9.9	10.7	0.9	8.32%	14.59%
Connecticut PERS	6/30/2002	34.2	11.6	40.1	0.0	2.4	11.6	0.0	7.73%	11.40%
Connecticut Teachers	6/30/2002	34.2	11.6	40.1	0.0	2.4	11.6	0.0	7.73%	11.40%
Delaware PERS	6/30/2002	48.2	11.9	27.3	2.7	0.0	9.9	0.0	7.92%	12.84%
DC PERS	9/30/2001	38.9	15.5	41.1	0.0	0.0	4.5	0.0	7.41%	10.79%
DC Teachers	9/30/2001	38.9	15.5	41.1	0.0	0.0	4.5	0.0	7.41%	10.79%
Florida RS	6/30/2002	51.5	13.0	27.8	0.0	4.3	3.4	0.0	7.67%	12.26%
Georgia PERS	6/30/2001	57.0	0.0	43.0	0.0	0.0	0.0	0.0	7.04%	10.54%
Georgia Teachers	6/30/2002	53.9	0.0	44.0	0.0	2.1	0.0	0.0	7.00%	10.21%
Hawaii ERS	6/30/2001	46.5	14.2	22.5	6.7	7.3	2.9	0.0	7.59%	11.73%
Idaho PERS	6/30/2002	37.8	26.0	33.2	0.3	0.5	2.2	0.0	7.55%	11.69%
Illinois PERS	6/30/2002	46.0	16.0	28.0	0.0	5.0	5.0	0.0	7.75%	12.27%
Illinois SURS	6/30/2002	43.0	19.0	29.0	0.0	2.0	12.0	0.0	8.08%	13.12%
Illinois Teachers	6/30/2002	29.3	14.4	35.5	8.7	9.5	2.6	0.0	7.14%	9.51%
Indiana PERS	6/30/2002	47.0	10.9	42.2	0.0	0.0	0.0	0.0	7.14%	10.37%
Indiana Police and Fire	6/30/2002	47.0	10.9	42.2	0.0	0.0	0.0	0.0	7.14%	10.37%
Indiana Teachers	6/30/2000	44.4	0.0	55.6	0.0	0.0	0.0	0.0	6.68%	8.79%
Iowa Fire & Police	6/30/2001	28.0	21.4	31.9	11.6	7.1	0.0	0.0	7.07%	9.68%
Iowa PERS	6/30/2002	29.1	15.6	43.2	0.0	6.4	5.7	0.0	7.37%	10.12%
Kansas PERS	6/30/2002	34.0	18.0	35.0	0.0	8.0	5.0	0.0	7.56%	11.06%
Kentucky PERS	6/30/2002	38.0	12.0	45.0	0.0	0.0	5.0	0.0	7.31%	10.32%
Kentucky Counties	6/30/2002	36.0	14.0	45.0	0.0	0.0	5.0	0.0	7.32%	10.30%
Kentucky Teachers	6/30/2002	49.5	0.0	47.7	0.0	2.9	0.0	0.0	6.89%	9.63%
Louisiana Municipal Police	6/30/2001	45.3	12.8	40.4	0.0	0.9	0.0	0.6	7.19%	10.48%
Louisiana PERS	6/30/2002	43.6	14.7	28.7	7.0	0.5	5.6	0.0	7.59%	11.58%
Louisiana Teachers	6/30/2002	43.6	10.2	22.7	4.5	3.6	15.4	0.0	8.19%	13.50%
Maine PERS	6/30/2001	49.6	12.9	37.5	0.0	0.0	0.0	0.0	7.28%	11.00%
Maine Teachers	6/30/2001	49.6	12.9	37.5	0.0	0.0	0.0	0.0	7.28%	11.00%
Maryland PERS	6/30/2002	45.9	17.8	29.7	0.3	6.1	0.2	0.0	7.48%	11.54%
Maryland State Police	6/30/2002	45.9	17.8	29.7	0.3	6.1	0.2	0.0	7.48%	11.54%
Maryland Teachers	6/30/2002	45.9	17.8	29.7	0.3	6.1	0.2	0.0	7.48%	11.54%
Massachusetts PERS	1/1/2002	42.0	20.0	26.0	0.0	6.0	6.0	0.0	7.86%	12.54%
Massachusetts Teachers	1/1/2002	42.0	20.0	26.0	0.0	6.0	6.0	0.0	7.86%	12.54%

Appendix G (cont.)

<u>Retirement System</u>	<u>Report Date</u>	US	Non-US	US	Non-US	Real Estate	Private Equity	Other	<u>Expected</u>	
		<u>Equity</u>	<u>Equity</u>	<u>Bond</u>	<u>Bonds</u>	<u>Estate</u>	<u>Equity</u>	<u>Other</u>	<u>Return</u>	<u>Risk</u>
Michigan Municipal	12/31/2001	46.5	10.2	37.8	0.0	5.5	0.1	0.0	7.23%	10.55%
Michigan SERS	9/30/2002	41.2	7.5	26.1	0.0	10.5	14.7	0.0	8.14%	13.15%
Michigan Police	9/30/2002	42.2	7.7	24.9	0.0	10.3	14.9	0.0	8.18%	13.35%
Michigan Teachers	9/30/2002	42.0	7.5	26.4	0.0	9.8	14.3	0.0	8.12%	13.11%
Minnesota PERA	6/30/2002	47.8	15.9	27.7	0.0	0.0	8.7	0.0	8.23%	13.93%
Minnesota Police & Fire	6/30/2002	47.8	15.9	27.7	0.0	0.0	8.7	0.0	8.23%	13.93%
Minnesota SRS	6/30/2001	50.3	14.1	27.5	0.0	0.0	8.3	0.0	8.19%	13.84%
Minnesota State Patrol	6/30/2001	47.9	13.9	24.7	0.0	0.0	13.1	0.5	8.21%	13.95%
Minnesota Teachers	6/30/2002	48.0	15.9	28.0	0.0	0.0	8.2	0.0	8.23%	13.93%
Mississippi PERS	6/30/2002	45.3	16.0	38.7	0.0	0.0	0.0	0.0	7.27%	10.80%
Missouri Highway ERS	6/30/1999	64.4	0.0	35.6	0.0	0.0	0.0	0.0	7.23%	11.61%
Missouri PERS	6/30/2002	36.9	24.7	31.0	0.0	5.0	0.0	2.4	7.46%	11.41%
Missouri Teachers	6/30/2002	34.6	14.0	51.4	0.0	0.0	0.0	0.0	6.90%	9.08%
Missouri Non-teacher School	6/30/2002	34.6	14.0	46.1	0.0	0.0	0.0	5.3	6.98%	9.44%
Montana PERS	6/30/2002	44.5	8.4	43.1	0.0	0.3	3.8	0.0	7.28%	10.52%
Montana Teachers	6/30/2002	44.9	8.5	42.6	0.0	0.3	3.7	0.0	7.29%	10.58%
Nebraska RS	7/1/2002	46.0	15.0	39.0	0.0	0.0	0.0	0.0	7.25%	10.77%
Nevada PERS	6/30/2002	30.3	9.9	39.1	11.2	8.6	1.0	0.0	6.86%	8.65%
New Hampshire PERS	6/30/2002	44.7	8.2	25.0	4.5	9.9	7.7	0.0	7.75%	11.98%
New Hampshire Police	6/30/2002	44.7	8.2	25.0	4.5	9.9	7.7	0.0	7.75%	11.98%
New Hampshire Teachers	6/30/2002	44.7	8.2	25.0	4.5	9.9	7.7	0.0	7.75%	11.98%
New Jersey PERS	6/30/2002	45.4	15.6	38.0	1.0	0.0	0.0	0.0	7.25%	10.76%
New Jersey Police & Fire	6/30/2002	45.4	15.6	38.0	1.0	0.0	0.0	0.0	7.25%	10.76%
New Jersey State Police	6/30/2002	45.4	15.6	38.0	1.0	0.0	0.0	0.0	7.25%	10.76%
New Jersey Teachers	6/30/2002	45.4	15.6	38.0	1.0	0.0	0.0	0.0	7.25%	10.76%
New Mexico PERA	6/30/2002	36.2	15.2	48.4	0.0	0.2	0.0	0.0	6.99%	9.46%
New Mexico Teachers	6/30/2002	51.5	16.5	32.0	0.0	0.0	0.0	0.0	7.44%	11.75%
New York PERS	3/31/2002	47.9	11.7	31.3	0.0	3.3	5.8	0.0	7.69%	12.04%
New York Police & Fire	3/31/2002	47.9	11.7	31.3	0.0	3.3	5.8	0.0	7.69%	12.04%
New York Teachers	6/30/2002	53.6	8.1	31.7	0.0	4.8	1.8	0.0	7.46%	11.63%
North Carolina PERS	6/30/2002	54.7	0.0	43.4	0.0	1.7	0.2	0.0	7.03%	10.34%
North Carolina Local	6/30/2002	54.0	0.0	43.9	0.0	1.8	0.2	0.1	7.01%	10.26%
North Dakota PERS	6/30/2002	36.4	13.1	36.7	5.7	5.2	2.9	0.0	7.24%	10.06%
North Dakota Teachers	6/30/2002	40.0	26.0	16.0	6.0	9.0	3.0	0.0	7.82%	12.69%
Ohio PERS	12/31/2001	47.9	20.2	22.0	0.0	9.8	0.1	0.0	7.67%	12.40%
Ohio Police and Fire	12/31/2001	47.0	18.0	28.0	0.0	6.0	1.0	0.0	7.57%	11.89%
Ohio SERS	6/30/2002	43.4	16.7	28.3	0.0	10.4	1.2	0.0	7.54%	11.54%
Ohio STRS	6/30/2002	44.9	21.4	19.4	0.2	12.2	1.9	0.0	7.80%	12.70%
Oklahoma Firefighters	6/30/2002	49.9	11.5	34.4	0.0	0.0	4.2	0.0	7.55%	11.76%
Oklahoma PERS	6/30/2002	42.9	13.0	43.5	0.0	0.0	0.0	0.6	7.11%	10.12%
Oklahoma Police	6/30/2002	42.9	13.0	43.5	0.0	0.0	0.0	0.6	7.11%	10.12%
Oklahoma Teachers	6/30/2002	45.3	12.8	41.1	0.8	0.0	0.0	0.0	7.16%	10.37%
Oregon PERS	6/30/2002	36.6	17.4	26.7	3.9	5.1	10.3	0.0	7.93%	12.34%
Pennsylvania PERS	12/31/2001	40.3	20.5	17.8	0.0	10.3	10.0	1.1	8.22%	13.71%
Pennsylvania Teachers	6/30/2002	39.7	17.2	28.7	2.5	5.3	6.6	0.0	7.75%	11.90%

Appendix G (cont.)

<u>Retirement System</u>	<u>Report Date</u>	<u>Non-US</u>		<u>Non-US</u>		<u>Real Estate</u>	<u>Private Equity</u>	<u>Other</u>	<u>Expected</u>	
		<u>US Equity</u>	<u>US Equity</u>	<u>US Bond</u>	<u>US Bonds</u>				<u>Return</u>	<u>Risk</u>
Rhode Island ERS	6/30/2001	44.2	18.9	31.7	0.0	0.9	4.3	0.0	7.66%	12.01%
Rhode Island Municipal	6/30/2001	44.2	18.9	31.7	0.0	0.9	4.3	0.0	7.66%	12.01%
Rhode Island Teachers	6/30/2001	44.2	18.9	31.7	0.0	0.9	4.3	0.0	7.66%	12.01%
South Carolina RS	6/30/2002	26.8	0.0	73.2	0.0	0.0	0.0	0.0	6.12%	6.65%
South Carolina Police	6/30/2002	25.9	0.0	74.1	0.0	0.0	0.0	0.0	6.09%	6.55%
South Dakota RS	6/30/2002	45.7	18.1	26.1	0.0	6.4	3.7	0.0	7.74%	12.32%
Tennessee SETHEEPP	6/30/2002	30.2	9.7	55.9	2.7	1.5	0.0	0.0	6.64%	8.03%
Tennessee PSPP	6/30/2002	30.2	9.7	55.9	2.7	1.5	0.0	0.0	6.64%	8.03%
Texas CDRS	12/31/2000	23.0	3.4	73.6	0.0	0.0	0.0	0.0	6.13%	6.51%
Texas ERS	8/31/2002	39.5	14.1	46.1	0.0	0.0	0.3	0.0	7.06%	9.80%
Texas LECOSRF	8/31/2002	39.5	14.1	46.1	0.0	0.0	0.3	0.0	7.06%	9.80%
Texas Municipal	12/31/2001	0.0	0.0	100.0	0.0	0.0	0.0	0.0	4.75%	5.00%
Texas Teachers	8/31/2002	64.4	0.0	31.1	0.0	0.0	4.5	0.0	7.56%	12.58%
Utah Non-contributory	12/31/2001	40.9	13.9	25.7	5.9	8.4	5.2	0.0	7.63%	11.50%
Utah Contributory	12/31/2001	40.9	13.9	25.7	5.9	8.4	5.2	0.0	7.63%	11.50%
Utah Public Safety	12/31/2001	40.9	13.9	25.7	5.9	8.4	5.2	0.0	7.63%	11.50%
Utah Fire Fighters	12/31/2001	40.9	13.9	25.7	5.9	8.4	5.2	0.0	7.63%	11.50%
Vermont PERS	6/30/2002	41.0	17.0	21.0	10.0	9.0	0.0	2.0	7.38%	11.05%
Vermont Teachers	6/30/2002	41.0	17.0	12.0	19.0	10.0	0.0	1.0	7.36%	11.07%
Virginia RS	6/30/2002	44.0	16.0	27.0	0.0	5.0	8.0	0.0	7.91%	12.66%
Washington PERS 1	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington PERS 2	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington LEOFF 1	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington LEOFF 2	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington WSPRS	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington SERS 2-3	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington Teachers 1	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
Washington Teachers 2	6/30/2002	33.3	15.0	29.3	0.0	9.2	13.2	0.0	8.06%	12.53%
West Virginia PERS	6/30/2001	45.0	14.0	41.0	0.0	0.0	0.0	0.0	7.19%	10.49%
West Virginia Teachers	6/30/2001	45.0	14.0	41.0	0.0	0.0	0.0	0.0	7.19%	10.49%
Wisconsin RS	12/31/1999	42.5	16.7	25.6	6.4	4.0	4.7	0.0	7.63%	11.72%
Wyoming RS	12/31/2001	49.2	7.9	42.9	0.0	0.0	0.0	0.0	7.10%	10.31%
Average		42.19	12.89	35.26	1.40	3.98	4.20	0.13	7.46%	11.22%
High		64.40	26.00	100.00	19.00	13.70	15.40	5.30	8.32%	14.59%
Low		0.00	0.00	10.20	0.00	0.00	0.00	0.00	4.75%	5.00%
Median		43.58	14.00	31.86	0.00	2.41	3.00	0.00	7.48%	11.50%