



An Updated Review of the Challenges Facing Connecticut's Pension Fund Investments

March, 2024

Jeffrey Sonnenfeld





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Purpose





Our Purpose

- **For us, this is non-partisan, non-ideological, non-commercial, non-compensated public service - consistent with my role as Chair of Advance CT, helping lead the state's economic development, and on the board of Connecticut Innovations, and not the official voice of Yale University**
- **Our research into CT's pension investments follows our ongoing research saluting CT's economic turnaround and fiscal responsibility, including organizing highly inclusive, cross-sector economic development conferences in February 2017 and October 2022 at Yale**
- **Despite Connecticut's terrific progress in economic growth; education/workforce training; employment; financial stability; new business creation; venture capital; and innovation – the overhang of pension woes continues to plague us**
- **Despite the considerable asset management and financial expertise of our state, Connecticut has had one of the worst pension investment performances of any state in the nation. Our investment underperformance has cost the state billions; income taxes could have been sliced in half**





OPINION > COMMENTARY

Hartford Courant

Opinion: Connecticut is open for business. This is how and why.

By JEFFREY SONNENFELD, INDRA NOOYI, JAMES C. SMITH and MARGARET KEANE

PUBLISHED: February 7, 2024 at 5:30 a.m. | UPDATED: February 8, 2024 at 5:04 p.m.

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OPINION

Opinion: Discovering CT's business turnaround

A revival of private sector investment and public spirit has been key, Yale experts say

By Jeffrey Sonnenfeld and Steve Tian

Sep 24, 2022

Hartford Courant

Commentary

NEWS

Jeffrey Sonnenfeld and Steven Tian: Connecticut's aviation and defense manufacturing renaissance



GE Whiz What Happened?

Lessons for Connecticut's Economic Growth



February 8, 2017 • Yale School of Management, Edward P. Evans Hall

COLUMNIST

Dan Haar: CT's turnaround is real. Influencers ask, can it last?

By Dan Haar
Updated Sep 12, 2022 8:40 a.m.

CT INSIDER



Key business executives and political, civic, nonprofit and academic leaders from Connecticut gathered Sept. 7 at the Yale School of Management, convened by Jeffrey Sonnenfeld, to discuss the state's economy. Gov. Ned Lamont left, is shown

HBJ HARTFORD BUSINESS

November 7, 2022 ON THE RECORD

Yale's Sonnenfeld makes a CT sales pitch, leads efforts to woo companies to Nutmeg State



Our Process

- We conducted a 50-state comparative pension investment performance comparing Connecticut’s performance against our peers (the first time this has been done, to the best of our knowledge, with disparate reporting systems across all 50 states)
- We painstakingly pored through thousands of pages across all 50 state pension annual reports, carefully matching timeframes and properly calibrating assets to avoid apples vs. oranges confusion in categories/classification of investments

COLUMNIST



Dan Haar: CT's lagging pension returns demand faster, deeper changes

By **Dan Haar**, *Hearst CTInsider Columnist*
Updated May 18, 2023 11:39 a.m.



OPINION

Opinion: CT's investment performance badly lags nation

Jeffrey Sonnenfeld and Steven Tian





Our Team

- 20 volunteer Yale students with expertise in economics, statistics, finance, asset management, public service invested 5,000 hours as unpaid volunteers



ctpost

Jeffrey A. Sonnenfeld is senior associate dean for leadership studies and Lester Crown Professor of Leadership Practice at Yale School of Management. Steven Tian is director of research and chief executive of the Leadership Institute.

Special thanks to some of our talented researchers from our Yale research group – including: Bryson Wiese, Yale College/Goldman Sachs; Yash Bhansali, Yale College/Goldman Sachs; Ryan Vakil, Yale College/Bank of America Merrill Lynch; Tatev Stepanyan, Yale School of Management/Hyde Capital; Yuriy Dekhkanov, Yale College/Barclays; Will Berkley, Yale College/Economics; Aditya Kabra, Yale College/Economics; Adnan Bseisu, Yale College/Economics; Ahaan Bhansali, Yale College/Economics; Atin Narain, Yale College/Economics; Cam Coyle, Yale College/Economics; Christopher Sylvester, Yale College/Economics; Jesse Bross, Yale College/Economics; Lara Yellin, Yale College/History; Maia Cook, Yale College/History; Omar Ali, Yale College/Economics; Paola Flores Sanchez, Yale College/Economics and Political Science; Sahana Kaur, Yale College/Economics; Victoria Liando, Yale College/Economics.



Timeline

- **2017 and 2022: preliminary findings into CT investment underperformance**
- **September 2022 – October 2022: deeper systematic analysis of Connecticut’s underperformance**
- **November 2022 – December 2022: thorough 50 state comparative analysis of pension fund performance**
- **January 2023: reviewed analysis with panel of prominent finance, endowment management experts**
- **February 2023: reviewed preliminary findings with Governor Lamont’s team twice and with Treasurer Russell’s team twice**
- **March – April 2023: update analysis and make suggestions to Treasurer’s office, awaiting response before releasing research publicly**
- **May 2023 – June 2023: release research publicly, spurring dozens of media publications and interviews**
- **July 2023 – August 2023: follow-up research on 50 states, including correlation (or lack thereof) between compensation and investment performance**
- **September – December 2023: updating for FY 2023 data**





OPINION > COMMENTARY

Hartford Courant

Commentary

SUBSCRIBER ONLY

Kevin Rennie: What to do about costly mistakes of CT's pension fund, with among worst returns in nation

By KEVIN RENNIE

PUBLISHED: June 17, 2023 at 6:00 a.m. | UPDATED: June 17, 2023 at 2:18 p.m.

COLUMNIST

Dan Haar: CT's lagging pension returns demand faster, deeper changes

By Dan Haar, Hearst CTInsider Columnist
Updated May 18, 2023 11:39 a.m.

CT INSIDER



May 29, 2023

EDITOR'S TAKE

HBJ HARTFORD BUSINESS

Bordonaro: CT pension fund investments need greater oversight



ABOUT US NEWS & RESOU

Report: Pension Fund Mismanagement Cost State Billions

05.12.2023



Connecticut Pension Funds Underperform, Yale Report Reveals Decade-Long Mismanagement

by Staff Report May 15, 2023, 1:30 pm



NEWS 8 wtnh.com

Report it On-Air Sports Morning Buzz

WTNH.COM | CAPITOL REPORT CT'S INVESTMENT PERFORMANCE 8

Capitol Report: Yale School of Management's Jeff Sonnenfeld: Why Connecticut's Investments are Underperforming

News / May 14, 2023 / 06:18 PM EDT

Capitol Report: Yale School of Management's Jeff Sonnenfeld: Why Connecticut's investments are underperforming

MONEY

CT must reform its pension investments now



by Keith M. Phaneuf

May 23, 2023 @ 4:58 pm



Connecticut's Nonprofit Journalism.





Findings

- While many attribute Connecticut's pension woes to irresponsible fiscal decision-making twenty, thirty years ago (underfunding pensions etc.); even more importantly, but little noticed, Connecticut's pension funds have long delivered underwhelming investment returns.
- We revealed last year that Connecticut's **investment performance was chronically one of the worst of any state in the nation**. As of June 30, 2022, Connecticut has the **2nd worst performance of any state in the nation on a three-year and five-year annualized basis**, and was the 5th worst on a ten-year basis.
- Connecticut's laggard performance was not a one year fluke but rather a long-term historical trend. Through 2021, Connecticut still had the **3rd worst performance of any state in the nation on a three-year, five-year, and ten-year annualized basis**.
- Connecticut's pension funds manage ~\$40 billion, so every additional 1% in annual performance is a cool ~\$400 million of increased pension funding and saved tax dollars. The state's chronic underperformance has cost the state at least several billions in lost revenue by any measure.



Findings – Part 2

- Recent promising changes made under the leadership of the new CT Treasurer Erick Russell, and the Chair of the CT Investment Advisory Committee Ellen Shuman, have already helped improve the investment performance of the Connecticut pension funds. On a one-year basis, through 2023, Connecticut’s performance was in the top half of states, though its 3-year, 5-year, and 10-year performance remain weighed down by historically disappointing returns through no fault of Treasurer Russell.
- We give tremendous credit to Treasurer Russell and Chair Shuman for implementing several key changes. Under their leadership, the pension funds are clearly moving in the right direction. Changes made under Treasurer Russell and Chair Shuman’s leadership, which we celebrate, include:
 - Restoring professionalism to the operation (i.e. publishing performance reports, annual reports, and other public material promptly; updating investment policy statement, etc.)
 - Changing asset allocation towards a more normalized mix of assets (i.e. reversing mistaken decisions such as underweight US equities and overweight emerging markets/mostly Chinese equities)
 - Beginning the process of pruning underperforming external asset managers/focusing on allocating towards high-quality external managers
 - Ramp up the use of passive index funds where possible to minimize redundant/excessive fees
 - Communicate clearly and transparently with the public
- But we believe there is still more which needs to be done, and we have some recommendations for next steps.





Recommendations for Next Steps

- **#1. With independent oversight, regularly provide performance reports, benchmarked against the performance of 50 peer states, using commonly accepted financial benchmarks used by a majority of other states for each asset class** *(to prevent arbitrary selection of obscure financial benchmarks without benchmarking to peer states and best practices)*
- **#2. Independent oversight and review by auditors reporting to the General Assembly** *(involving genuinely independent, outside, non-conflicted auditors reporting directly to the General Assembly and/or possibly the State Comptroller)*
- **#3. Overhaul turgid cumbersome performance reporting to report performance in a clear dashboard w/visuals to provide better public understanding of investment performance** *(rather than turgid 600-page reports/IAC Info Packets or inaccessible data-heavy tables, a visual dashboard with gauges and graphs showing trends and magnitude across key indices)*
- **#4. Establish clear and reasonable criteria/guidelines for replacing/exiting underperforming external investment managers** *(broadly applicable to the entire set of external investment managers employed by Connecticut)*
- **#5. Establish clear and reasonable criteria/guidelines for limiting our exposure to any single external investment manager** *(for example, requiring that Connecticut is not the single largest client in any of our external investment managers)*



Recommendations for Next Steps

- **#6. Statutorily empower the IAC with fiduciary responsibility rather than purely advisory responsibility** (*as CT remains one of only two or three states in the nation with a sole fiduciary model for pension investments, vesting all authority in a single person with no checks with few outside experts willing to engage on IAC*)
- **#7. Prioritize reducing unnecessary/redundant/excessive fees paid to external managers** (*and leveraging CT's scale to drive lower fees*)
- **#8. Continue shifting towards low-fee, passive index funds** (*a generic 60/40 or 70/30 portfolio would have outperformed Connecticut's by billions*)
- **#9. Establish statutory eligibility requirements for future Treasurer candidates** (*similar to how statutorily, candidates for Attorney General must have legal backgrounds*)



Recommendation #1 – Proper Financial Benchmarking Against 50 State Peers

- With independent oversight, regularly provide performance reports, benchmarked against the performance of 50 peer states, using commonly accepted financial benchmarks used by a majority of other states for each asset class
- There is too often arbitrary selection of obscure and/or misleading financial benchmarks without benchmarking to peer states, commonly accepted financial benchmarks, and best practices

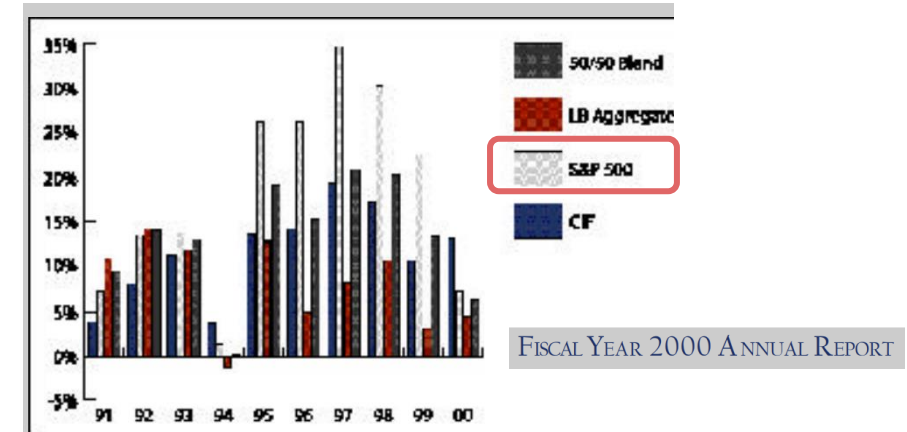




Frequent Switching Of Financial Benchmarks

- The Connecticut pension funds often swaps out the indices they benchmark their own performance against, making it difficult to compare Connecticut’s performance over a long period of time against commonly accepted financial benchmarks used by a majority of other states.
- For example, for many years, Connecticut used to benchmark its domestic public equities portfolio against the **S&P 500** (for example, see annual report from 2000).
- It then switched to benchmarking the domestic public equities portfolio against the **Russell 3000** (for example, see performance report from 2021)
- More recently, it switched to benchmarking the domestic public equities portfolio against the **MSCI USA IMI Index** (for example, see performance report from 2023)
- The performance differences between these three different indices were relatively small, but it is unusual to see financial benchmarks swapped out with such regularity.

From 2000:
S&P 500 As Benchmark



From 2021:
Russell 3000 As Benchmark

TEACHER'S RETIREMENT FUND Net of All Fees and Expenses Periods Ending August 31, 2021						
Funds	Percent Holdings	Policy Weights	Lower Range	Upper Range	Market Value (mil.)	Mo
Benchmark						
Teacher's Retirement Fund					\$22,403.9	1.7
Policy Benchmark						1.1
Dynamic Benchmark						1.3
Domestic Equity	22.9%	20.0	15.0	25.0	\$5,130.2	2.8
Russell 3000						2.8

From 2023:
MSCI USA IMI As Benchmark

TEACHER'S RETIREMENT FUND Net of All Fees and Expenses 1/31/2024						
Funds	Percent Holdings	Policy Weights	Lower Range	Upper Range	Market Value (mil.)	Mo
Benchmark						
Teacher's Retirement Fund					\$24,893.8	—
Policy Benchmark						
Excess Return						
Global Equities	46.8%	37.0	23.0	52.0	\$11,656.9	
MSCI All Country World IMI Index						
Domestic Equity	29.3%				\$7,281.3	
MSCI USA IMI Index						

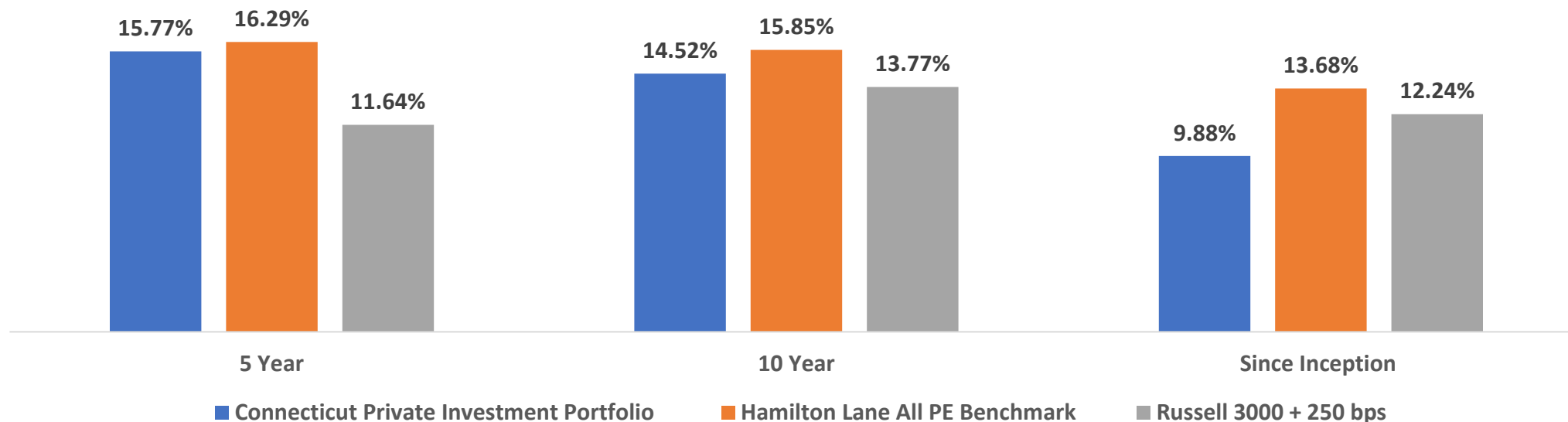




Constant Switching of Private Investments Benchmarks

- Similarly, Connecticut's private investment portfolio performance trails the industry-standard **Hamilton Lane All PE Benchmark** (ironically, Hamilton Lane is one of CT's own external consultants).
- The private investment benchmark which CT used to employ was the **S&P 500 + 5%**; however, in 2020, this benchmark was inexplicably switched without explanation to a lower threshold, the **Russell 3000 + 2.5%**.

Investment Performance of the CT Private Investment Portfolio Against Benchmarks
(As of September 30, 2023)





Recommendation #2 – Independent Oversight and Review By General Assembly

- **Independent oversight and review by auditors reporting to the General Assembly** (*involving genuinely independent, outside, non-conflicted auditors reporting directly to the General Assembly and/or possibly the State Comptroller*)

STATE of
CONNECTICUT

RETIREMENT SERVICES
DIVISION



RETIREMENT SERVICES DIVISION
OFFICE of the STATE COMPTROLLER
165 Capitol Ave.
Hartford, CT 06106

RETIREMENT SERVICES DIVISION MEMORANDUM 2023-01

May 9, 2023

TO ALL HEADS OF STATE AGENCIES

ATTENTION: All Personnel and Payroll Officers
SUBJECT: State Employee Retirement Plan (SERS) Tier IV “Shortfall Contributions”

The following information concerns the retirement contributions made by members of the **Tier IV** retirement plan. Members of Tier IV are those employees who were hired after June 30, 2017, and who participate in the State Employees Retirement System (SERS). As explained below, the retirement contributions of Tier IV members will increase by 2% for the pay period that includes July 1, 2023, and for the remaining pay periods in that fiscal year.

I. Why Tier IV Employee Contributions are Increasing

The performance of the fund’s investments is evaluated at the end of each fiscal year. When the fund’s investments fail to perform as expected, the State must make a larger contribution to cover the anticipated costs. Under SEBAC 2017, members of Tier IV must now “shar[e] ... the risk of [such] adverse plan performance.” That is, when the fund’s investment income fails to meet expectations, Tier IV members must help make up for that shortfall by making a larger contribution to the plan for the next fiscal year.

Thus, the usual contributions made by Tier IV employees may be increased—by a maximum of two percent per fiscal year—if the fund’s investments have underperformed in the prior calendar year.

B. The Fund has Underperformed

The “benchmark” for the performance of plan investments, which was determined through negotiations between the State and SEBAC, is annual growth of 6.9%. For calendar year 2022, the actual performance of the pension fund’s investments was -10.85%. Under the risk-sharing formula in SEBAC 2017, the amount by which the fund’s actual performance fell below the 6.9% performance benchmark triggers employee risk sharing at the maximum amount of two percent.

Therefore, beginning with the pay period that includes July 1, 2023, members of the Tier IV retirement plan will be required to contribute an additional two percent of their gross earnings—a total of seven percent for most employees, and 10 percent for Hazardous Duty employees and Hybrid Plan members. Bi-weekly employees will make the increased contributions for a total of 26 pay periods. Semi-monthly employees will make increased contributions in 24 pay periods, and monthly employees will do so in a total of 12 pay periods.



Recommendation #3 – More Accessible Reporting of Results

- Report performance in a clear dashboard w/visuals to provide better public understanding of investment performance
- Few members of the general public will wade through turgid 600 page reports/dense “IAC Info Packets” or inaccessible, jargon-laden data tables

600 word dense reports -no guide or key points



Aggregate Performance Compared to 50 States by Asset Class



VERSUS



Recommendation #4 - Exit Underperforming External Managers

- Establish clear and reasonable criteria/guidelines for replacing/exiting underperforming external investment managers (applicable to the entire set of external investment managers employed by Connecticut)

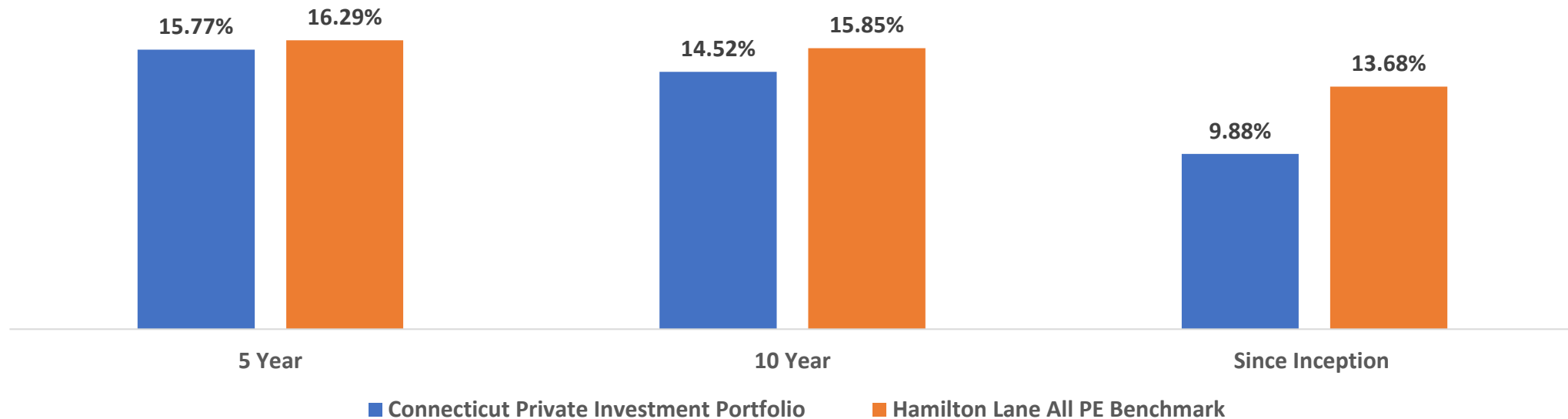




Recommendation #1 – Exit Underperforming External Managers

- Establish clear and reasonable criteria/guidelines for replacing/exiting underperforming external investment managers (applicable to the entire set of external investment managers employed by Connecticut)
- This problem is especially acute within the Connecticut “private investments portfolio” where there were many historically underperforming external managers (through no fault of current leadership).

Investment Performance of the CT Private Investment Portfolio Against Benchmarks
(As of September 30, 2023)





49.2% of Connecticut's Current Private Investments Return Less Than 15% IRR

Partnership	Vintage Year	Strategy	Committed Capital	IRR*
GCM Grosvenor - CT Cleantech Opportunities Fund LP	2007	Multi-Strategy	25,000,000	-13.40%
Crescendo III, L.P.	1999	Venture Capital	36,825,000	-12.55%
CT Horizon Legacy Fund, L.P.	2008	Buyout	15,000,000	-4.33%
Pegasus Partners IV, L.P.	2007	Distressed/Restructuring	75,000,000	-3.03%
Ethos Private Equity Fund V, L.P.	2005	Buyout	50,000,000	2.23%
Gilbert Global Equity Partners, L.P.	1998	Buyout	135,119,738	3.22%
Boston Ventures VII, L.P.	2006	Buyout	75,000,000	3.33%
Castlelake Fund II, L.P.	2011	Distressed/Restructuring	50,000,000	5.61%
Pegasus Partners V, L.P.	2011	Distressed/Restructuring	50,000,000	6.71%
M2 - Connecticut Emerging Private Equity Fund-of-Funds, L.P.	2007	Buyout	105,000,000	6.86%
Fairview Constitution II, L.P.	2005	Venture Capital	200,000,000	6.95%
PineBridge Global Emerging Markets Partners, L.L.C	1997	Multi-Strategy	85,168,457	7.04%
WLR Recovery Fund IV, L.P.	2007	Distressed/Restructuring	100,000,000	7.32%
Yucaipa American Alliance Fund II, L.P.	2008	Buyout	75,000,000	7.79%
Thomas H. Lee Equity Fund VI, L.P.	2006	Buyout	100,000,000	7.84%
RFE Investment Partners VII, L.P.	2008	Buyout	40,000,000	7.95%
KKR 2006 Fund, L.P.	2006	Buyout	125,000,000	8.52%
Constitution Fund V, LLC - Series B	2017	Venture Capital	20,000,000	9.01%
Landmark Equity Partners XIV, L.P.	2008	Secondaries	100,000,000	9.59%
Apollo Investment Fund VIII, L.P.	2013	Buyout	125,000,000	9.96%
Yucaipa American Alliance Fund III, L.P.	2015	Buyout	39,250,000	10.12%
BC European Capital X, L.P.	2017	Buyout	92,439,910	10.31%
J.F. Lehman Equity Investors III, L.P.	2011	Buyout	49,000,000	11.58%
Welsh, Carson, Anderson & Stowe XI, L.P.	2009	Buyout	100,000,000	11.75%
ICV Partners II, L.P.	2006	Buyout	40,000,000	11.79%
Aldrich Capital Partners Fund, L.P.	2018	Growth Equity	50,000,000	12.13%
Court Square Capital Partners II, L.P.	2006	Buyout	93,793,953	12.32%
WCAS Capital Partners III, L.P.	1997	Mezzanine	100,000,000	13.03%
Landmark Equity Partners XV, L.P.	2013	Secondaries	100,000,000	13.26%
Nutmeg Opportunities Fund L.P. CT - EM	2010	Buyout	35,000,000	13.58%
Vista Equity Partners Fund IV, L.P.	2011	Buyout	75,000,000	14.91%
Nutmeg Opportunities Fund L.P. CT - SMMBF	2010	Buyout	75,000,000	14.92%

\$2.5 billion in underperforming strategies

*As of June 30, 2022

** Excluding vintages 2019 and after, as it is too early to judge investment performance benchmarked to peers amidst partial, incomplete capital drawdowns in newer fund structures





Recommendation #1 - Exit Underperforming External Managers

- We did not ignore “vintage years” in our study – and in fact benchmark funds against funds from the same vintage year as genuine peer funds. Connecticut’s underperformance within private investments is rather consistent across even recent vintage years, with several of our externally managed funds rated by Hamilton Lane, CT’s own external consultant, as 3rd or 4th quartile, as of Sep. 30, 2023.

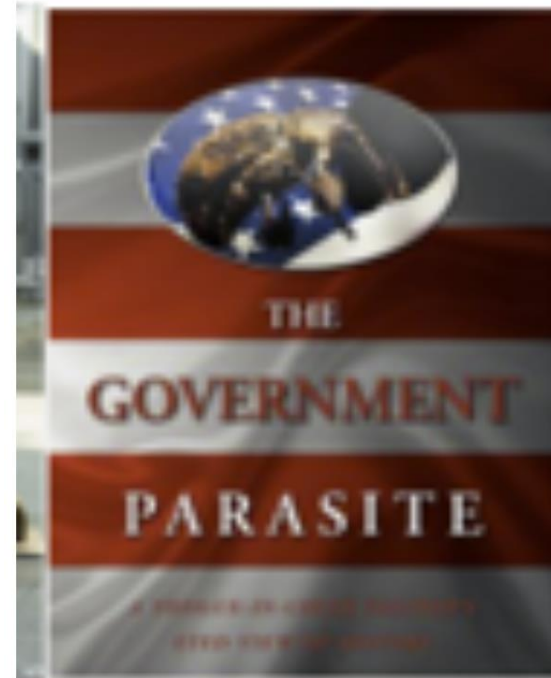
Fund Name	Vintage Year	Strategy	Capital Committed	IRR Quartile
2017 Portfolio				
BC European Capital LP	2017	Buyout	91,785,392	4
Constitution Fund V, LLC - Series B	2017	Venture Capital	20,000,000	4
Landmark Equity Partners LP	2017	Secondaries	100,000,000	3
Nutmeg Opportunities Fund II LLC - EM	2017	Buyout	35,000,000	3
2017 CT Portfolio Total				3
2018 CT Portfolio				
Aldrich Capital Partners Fund	2018	Growth Equity	50,000,000	3
ICG Europe Fund LP	2018	Mezzanine	85,030,215	3
Nutmeg Opportunities Fund II LLC - SMMBF	2018	Buyout	65,000,000	3
Siris Partners LP	2018	Buyout	50,000,000	3
Wellspring Capital Partners LP	2018	Buyout	75,000,000	3
2018 CT Portfolio Total				3





Recommendation #5 – Limit Exposure To Any Single External Manager

- Establish clear and reasonable criteria/guidelines for limiting our exposure to any single external investment manager
- For example, this could be as simple as requiring that CT is not the single largest client in any of our external investment managers or funds





Recommendation #6 – Empower the IAC With Statutory Authority – Checks and Balances



"If we're going to prioritize, we're going to need some priorities."



Recommendation #6 – Empower the IAC With Fiduciary Responsibility

- **Connecticut is one of only two states in the nation (North Carolina is the other) which makes the State Treasurer the sole fiduciary of the state pension funds. In both states, the Investment Advisory Council is purely advisory without any oversight powers**
- **Not coincidentally, Connecticut and North Carolina are consistently two of the worst-performing states in the nation when it comes to investment performance over any time span (3, 5, 10 years)**
- **The other 47 states vest fiduciary duty in a board (either appointed or elected, varies by state)**
- **New York is an exception which does not fall cleanly into either category; the New York Comptroller is legally the sole fiduciary of the state's pension funds but in practice retains separate investment advisory councils which are more empowered than the IAC individually and collectively, with extensive statutory, legislative, regulatory limitations on the Comptroller's investment discretion**
- **In 1999, the Treasurer alone determined investment policy in 20 states. All those states, except CT and North Carolina, have moved away from that outdated sole fiduciary model towards board governance in the 25 years since**
- **Soon Connecticut may likely be the ONLY state in the nation with a Treasurer that has no checks & balances with a board that is purely advisory, no oversight – as some political leaders in North Carolina are currently proposing to implement a board structure**





Connecticut – Sole Fiduciary Authority in State Treasurer

<https://cga.ct.gov/2023/rpt/pdf/2023-R-0074.pdf>

State law makes the State Treasurer the sole fiduciary of the state’s retirement plans and other trust funds but establishes certain oversight requirements and parameters for those investments (CGS §§ 3-11 through 3-76t). The 12-member Investment Advisory Council (IAC), as well as a chief investment officer and other investment professionals approved by the IAC, advise the treasurer on the investments. By law, the treasurer must recommend to the IAC a state investment policy that (1) sets standards for the investments, including investment objectives and risk tolerance, and (2) is subject to certain statutory constraints. The law also allows the governor to direct the treasurer to change any of the treasurer’s investments if, in IAC’s judgment, it is in the state’s best interest to do so.

The state constitution establishes the state treasurer’s position and requires the treasurer to “receive all moneys belonging to the state, and disburse the same only as he may be directed by law” (Conn. Const. art IV, § 22). The treasurer’s investment authority, however, is established in state statutes (CGS §§ 3-11 through 3-76t). The statutes authorize the state treasurer to invest any portion of the state’s trust funds that are not required for current disbursements (CGS § 3-13d).





25 Years Ago.....Vs. Now

<https://www.cga.ct.gov/PS99/rpt%5Colr%5Chtm/99-R-0989.htm>

In 1999, The National Association of State Treasurers (NAST) identified 20 states where the treasurer alone determines investment policy.

The NAST publication *State Treasury Activities & Functions* listed the following states where the treasurer is solely responsible for state investment policies in 1999:

Now, only two states follow this increasingly outdated model – CT and NC.

Connecticut seems poised to be the ONLY state left as NC considers a pivot.

Alabama	Indiana	Ohio
Arizona	Louisiana	Oklahoma
Colorado	Maine	Pennsylvania
Connecticut	Maryland	South Carolina
Florida	Mississippi	Vermont
Hawaii	New Hampshire	Washington
Idaho	North Carolina	



Sole Fiduciary Model Highly Controversial In North Carolina

The sole fiduciary model has long been a controversial topic in North Carolina, with widespread local media coverage of NC's pension mismanagement woes. Some political leaders in NC are now proposing to implement board oversight to replace the sole fiduciary model.

<https://www.asppa.org/news-resources/browse-topics/nc-pension-system-may-move-sole-trustee-amid-allegations>

<https://www.wsj.com/articles/this-man-started-a-tussle-over-north-carolinas-96-billion-pension-fund-1515765600>

<https://www.bizjournals.com/triangle/news/2019/12/20/columna-big-no-no-at-the-north-carolina-public.html>

<https://www.newsobserver.com/news/politics-government/article273181700.html>

<https://ncnewsline.com/2022/08/05/pw-special-report-nc-treasurers-love-for-cash-in-the-pension-fund-hobbled-returns-during-the-stock-market-boom/>

<https://ncnewsline.com/2022/08/09/state-treasurer-dale-folwell-should-be-doing-a-better-job-of-investing-nc-pension-funds/>





Recommendation #7 – Reduce Unnecessary Fees

- **Prioritize reducing unnecessary/redundant/excessive fees paid to external managers**
- **With \$40 billion assets under management, CT has the scale to drive lower fees**





Recommendation #8 – Continue Shifting Towards Index Funds

- **Continue shifting towards low-fee, passive index funds where possible**
- **A generic 60/40 portfolio or 70/30 portfolio – the kind of portfolio most Americans have and manage on their own – would have outperformed CT’s professionally managed portfolio by billions**



Comparisons To No-Overhead, Generic 80/20, 70/30, and 60/40 Portfolios

Ending Date	June-22	June-22	June-22	June-22	June-22
Starting Date	July-21	July-19	July-17	July-15	July-12
Cumulative Return	-10.63%	35.23%	70.75%	109.29%	237.75%

S&P 500 Total Shareholder Return	1-Year	3-Year	5-Year	7-Year	10-Year
Annualized Return	-10.6%	10.6%	11.3%	11.1%	12.9%
Annualized Volatility	17.9%	18.6%	16.9%	15.4%	13.7%
Gross Sharpe Ratio	-0.60	0.57	0.67	0.72	0.94

Ending Date	June-22	June-22	June-22	June-22	June-22
Starting Date	July-21	July-19	July-17	July-15	July-12
Cumulative Return	-10.29%	-2.78%	4.46%	10.38%	16.54%

Barclays US Aggregate Bond Index	1-Year	3-Year	5-Year	7-Year	10-Year
Annualized Return	-10.3%	-0.9%	0.9%	1.4%	1.5%
Annualized Volatility	5.1%	4.6%	4.0%	3.7%	3.5%
Gross Sharpe Ratio	-2.03	-0.21	0.22	0.38	0.44

(%)	3-Yr	5-Yr	7-Yr	10-Yr
80/20	8.3	9.22	9.16	10.62
70/30	7.15	8.18	8.19	9.48
60/40	6	7.14	7.22	8.34
CT Actual	5.35	5.79	6.15	7.28

*As of June 30, 2022; all % returns are annualized

If Connecticut had no-overhead, generic 80/20, 70/30, or 60/40 portfolios, we would have had stronger returns over the last decade – on top of millions in saved fees

Based on the 80/20 portfolio returns, Connecticut could have made an extra:

- \$3 billion over three years
- \$6.75 billion over five years
- \$8.5 billion over seven years
- \$14 billion over ten years



Recommendation #9 – Establish Statutory Eligibility Requirements For Future Treasurer Candidates

- **Establish statutory eligibility requirements for future Treasurer candidates**
- **Similar to how, statutorily, candidates for Attorney General must have legal backgrounds**
- **Sec. 3-124. Election; qualifications; salary; bond. Office of Attorney General full time.** There shall be an Attorney General to be elected in the same manner as other state officers in accordance with the provisions of section [9-181](#). The Attorney General shall be an elector of this state and an attorney at law of at least ten years' active practice at the bar of this state. “Attorney at law of at least ten years' active practice at the bar of the state” means that the attorney must have regularly engaged in the practice of law as a primary means of earning a livelihood for at least ten years, have some experience litigating cases in court, and that he or she represented clients; in carrying out Secretary of the State's duties under Sec. 9-4, Secretary was executing public policies of the state but was not engaged in the active practice of law; although section sets stricter qualifications for Attorney General than those listed in the Connecticut Constitution, section is not unconstitutional. 298 C. 748.



Next Steps

- **Unlike many “experts”, we have no agenda and no personal or professional motive. We have no commercial conflicts, no economic interests, no career ambitions, and no further research agenda in this space.**
- **All we have wanted to accomplish is to point out some of the problems we found facing CT’s investment performance and to help encourage the necessary action to get our state’s pension funds back on track.**
- **The ball is now in your court for next steps.**



Appendix A – 50 State Comparative Investment Performance





50 State Comparison of Connecticut's Investment Performance

- **The following slides show Connecticut's investment performance compared to the other 49 states on a 1 year, 3 year, 5 year, and 10 year basis.**
- **We measure Connecticut investment's performance through each of the following time periods, benchmarked against the performance of 49 other state public pension funds:**
 - **Through June 30, 2023**
 - **Through June 30, 2022**
 - **Through June 30, 2021**



Through June 30, 2023: 1-Year Investment Performance (Annualized)

State	Pension Fund Name	Return, %	State	Pension Fund Name	Return, %
Louisiana	Louisiana State Employees' Retirement System	11.70%	Kansas	Kansas Public Employees Retirement System	7.40%
Georgia	Employees' Retirement System of Georgia	11.29%	Vermont	Vermont Pension Investment Commission	7.40%
Alabama	Teachers' Retirement System of Alabama	11.13% ¹	Wyoming	Wyoming Retirement System	7.18%
Alabama	Employees' Retirement System	10.83% ¹	Kentucky	Kentucky Public Pensions Authority	6.96%
Nebraska	Nebraska Investment Council	9.90%	South Carolina	South Carolina Retirement System Investment Comm.	6.83%
Colorado	Colorado Public Employees Retirement Association	9.90%	Tennessee	Tennessee Consolidated Retirement System	6.60%
Utah	Utah Retirement System	9.65%	Wisconsin	Wisconsin Retirement System	6.50%
Idaho	Idaho Public Employee Retirement System	9.60%	Illinois	Illinois State Board of Investment	6.20%
Arkansas	Arkansas Teacher Retirement System	9.20%	Virginia	Virginia Retirement System	6.10%
Nevada	Nevada Public Employees Retirement System	9.07%	Massachusetts	Massachusetts Pension Reserves Investment Trust)	6.00%
New Jersey	New Jersey Division of Investment	9.06%	California	CalPERS	5.80%
Rhode Island	Rhode Island State Investment Commission	8.91%	South Dakota	South Dakota Retirement System	5.50%
Minnesota	Minnesota State Board of Investment	8.90%	Iowa	Iowa Public Employees' Retirement System	5.41%
Montana	Montana Board of Investments	8.50%	North Carolina	North Carolina Retirement Systems	5.30%
West Virginia	West Virginia Investment Management Board	8.40%	Washington	Washington State Investment Board Commingled Fund	5.24%
Connecticut	Connecticut Teachers Retirement Fund	8.35%	Michigan	Michigan Investment Board	5.20%
Arizona	Arizona State Retirement System	8.20%	Alaska	Alaska Permanent Fund Corporation	5.18%
Oklahoma	Oklahoma Teachers' Retirement System	8.00%	New Mexico	New Mexico Public Employees Retirement Association	4.23%
North Dakota	North Dakota Public Employees Retirement System	8.00%	Maine	Maine Public Employees' Retirement System	4.70%
New Hampshire	New Hampshire Retirement System	7.98%	Oregon	Oregon Public Employees Retirement Fund	3.17%
Mississippi	Mississippi Public Employees' Retirement System	7.76%	Maryland	Maryland State Retirement & Pension System	3.14%
Ohio	State Teachers Retirement System of Ohio	7.60%	Hawaii	Hawaii Employees' Retirement System	2.57%
Texas	Texas Employees Retirement System	7.50%	Missouri	Missouri State Employees Retirement System	2.50%
Pennsylvania	Pennsylvania SERS	7.48%	Indiana	Indiana Public Retirement System	2.20%
Florida	Florida Retirement System Pension Plan	7.50%			

1. Real estate and private placements are pending updated valuations





Through June 30, 2023: 3-Year Investment Performance (Annualized)

State	Pension Fund Name	Return, %	State	Pension Fund Name	Return, %
Washington	Washington State Investment Board Commingled Fund	12.59%	Oklahoma	Oklahoma Teachers' Retirement System	9.10%
Michigan	Michigan Investment Board	12.50%	Kansas	Kansas Public Employees Retirement System	9.00%
Louisiana	Louisiana State Employees' Retirement System	12.00%	New Jersey	New Jersey Division of Investment	8.92%
Texas	Texas Employees Retirement System	11.70%	Tennessee	Tennessee Consolidated Retirement System	8.89%
Arkansas	Arkansas Teacher Retirement System	11.40%	Pennsylvania	Pennsylvania SERS	8.83%
Oregon	Oregon Public Employees Retirement Fund	11.26%	Colorado	Colorado Public Employees Retirement Association	8.80%
Arizona	Arizona State Retirement System	11.00%	Wyoming	Wyoming Retirement System	8.71%
Maine	Maine Public Employees' Retirement System	11.00%	Alabama	Teachers' Retirement System of Alabama	8.61% ¹
Virginia	Virginia Retirement System	10.80%	North Dakota	North Dakota Public Employees Retirement System	8.60%
South Carolina	South Carolina Retirement System Investment Comm.	10.79%	New Mexico	New Mexico Public Employees Retirement Association	8.33%
Hawaii	Hawaii Employees' Retirement System	10.54%	Alabama	Employees' Retirement System	8.46% ¹
Alaska	Alaska Permanent Fund Corporation	10.49%	Georgia	Employees' Retirement System of Georgia	8.32%
Rhode Island	Rhode Island State Investment Commission	10.47%	Idaho	Idaho Public Employee Retirement System	8.30%
West Virginia	West Virginia Investment Management Board	10.30%	Maryland	Maryland State Retirement & Pension System	8.23%
Ohio	State Teachers Retirement System of Ohio	10.20%	Utah	Utah Retirement System	8.00%
Massachusetts	Massachusetts Pension Reserves Investment Trust (PRIT)	10.20%	Illinois	Illinois State Board of Investment	7.80%
Montana	Montana Board of Investments	10.00%	Connecticut	Connecticut Teachers Retirement Fund	7.54%
Minnesota	Minnesota State Board of Investment	9.90%	Kentucky	Kentucky Public Pensions Authority	7.52%
Nevada	Nevada Public Employees Retirement System	9.59%	Vermont	Vermont Pension Investment Commission	7.30%
Iowa	Iowa Public Employees' Retirement System	9.51%	California	CalPERS	6.40% ²
New Hampshire	New Hampshire Retirement System	9.49%	South Dakota	South Dakota Retirement System	6.40%
Mississippi	Mississippi Public Employees' Retirement System	9.36%	Indiana	Indiana Public Retirement System	6.20%
Nebraska	Nebraska Investment Council	9.30%	Missouri	Missouri State Employees Retirement System	5.60%
Florida	Florida Retirement System Pension Plan	9.26%	North Carolina	North Carolina Retirement Systems	5.20%

1. Real estate and private placements are pending updated valuations | 2. 3-year return not provided by CalPERS – estimated from available data





Through June 30, 2023: 5-Year Investment Performance (Annualized)

State	Pension Fund Name	Return, %	State	Pension Fund Name	Return, %
Washington	Washington State Investment Board Commingled Fund	9.91%	Idaho	Idaho Public Employee Retirement System	7.20%
Michigan	Michigan Investment Board	9.00%	South Carolina	South Carolina Retirement System Investment Comm.	7.19%
Nevada	Nevada Public Employees Retirement System	8.88%	Louisiana	Louisiana State Employees' Retirement System	7.10%
Maine	Maine Public Employees' Retirement System	8.40%	Kansas	Kansas Public Employees Retirement System	7.10%
Rhode Island	Rhode Island State Investment Commission	8.30%	New Hampshire	New Hampshire Retirement System	7.02%
Minnesota	Minnesota State Board of Investment	8.20%	Illinois	Illinois State Board of Investment	7.00%
Ohio	State Teachers Retirement System of Ohio	8.10%	Maryland	Maryland State Retirement & Pension System	6.93%
Oregon	Oregon Public Employees Retirement Fund	8.08%	North Dakota	North Dakota Public Employees Retirement System	6.90%
Iowa	Iowa Public Employees' Retirement System	8.03%	New Jersey	New Jersey Division of Investment	6.82%
Texas	Texas Employees Retirement System	8.00%	Alabama	Teachers' Retirement System of Alabama	6.67% ¹
Arizona	Arizona State Retirement System	8.00%	Pennsylvania	Pennsylvania SERS	6.62%
Virginia	Virginia Retirement System	8.00%	Alabama	Employees' Retirement System	6.62% ¹
West Virginia	West Virginia Investment Management Board	8.00%	Oklahoma	Oklahoma Teachers' Retirement System	6.60%
Colorado	Colorado Public Employees Retirement Association	8.00%	Wyoming	Wyoming Retirement System	6.50%
Alaska	Alaska Permanent Fund Corporation	7.93%	Vermont	Vermont Pension Investment Commission	6.40%
Tennessee	Tennessee Consolidated Retirement System	7.82%	South Dakota	South Dakota Retirement System	6.40%
Massachusetts	Massachusetts Pension Reserves Investment Trust	7.80%	Utah	Utah Retirement System	6.36%
Hawaii	Hawaii Employees' Retirement System	7.71%	Kentucky	Kentucky Public Pensions Authority	6.11%
Montana	Montana Board of Investments	7.70%	California	CalPERS	6.10%
Mississippi	Mississippi Public Employees' Retirement System	7.63%	Connecticut	Connecticut Teachers Retirement Fund	6.10%
Arkansas	Arkansas Teacher Retirement System	7.50%	New Mexico	New Mexico Public Employees Retirement Association	5.90%
Georgia	Employees' Retirement System of Georgia	7.46%	Indiana	Indiana Public Retirement System	5.70%
Wisconsin	Wisconsin Retirement System	7.43%	Missouri	Missouri State Employees Retirement System	5.30%
Florida	Florida Retirement System Pension Plan	7.40%	North Carolina	North Carolina Retirement Systems	5.30%
Nebraska	Nebraska Investment Council	7.30%			

1. Real estate and private placements are pending updated valuations





Through June 30, 2023: 10-Year Investment Performance (Annualized)

State	Pension Fund Name	Return, %	State	Pension Fund Name	Return, %
Washington	Washington State Investment Board Commingled Fund	9.72%	Rhode Island	Rhode Island State Investment Commission	7.75%
Michigan	Michigan Investment Board	9.60%	Louisiana	Louisiana State Employees' Retirement System	7.70%
Nevada	Nevada Public Employees Retirement System	8.81%	Illinois	Illinois State Board of Investment	7.60%
Minnesota	Minnesota State Board of Investment	8.80%	South Dakota	South Dakota Retirement System	7.60%
Arkansas	Arkansas Teacher Retirement System	8.80%	Wisconsin	Wisconsin Retirement System	7.58%
Ohio	State Teachers Retirement System of Ohio	8.60%	New Jersey	New Jersey Division of Investment	7.51%
West Virginia	West Virginia Investment Management Board	8.60%	South Carolina	South Carolina Retirement System Investment Comm.	7.12%
Arizona	Arizona State Retirement System	8.50%	Pennsylvania	Pennsylvania SERS	7.11%
Colorado	Colorado Public Employees Retirement Association	8.50%	California	CalPERS	7.10%
Massachusetts	Massachusetts Pension Reserves Investment Trust	8.50%	Maryland	Maryland State Retirement & Pension System	7.04%
Mississippi	Mississippi Public Employees' Retirement System	8.47%	Connecticut	Connecticut Teachers Retirement Fund	6.94%
Oregon	Oregon Public Employees Retirement Fund	8.33%	Kentucky	Kentucky Public Pensions Authority	6.65%
Virginia	Virginia Retirement System	8.20%	Utah	Utah Retirement System	6.62%
Iowa	Iowa Public Employees' Retirement System	8.12%	New Mexico	New Mexico Public Employees Retirement Association	6.60%
Texas	Texas Employees Retirement System	8.10%	Vermont	Vermont Pension Investment Commission	6.40%
Nebraska	Nebraska Investment Council	8.10%	North Carolina	North Carolina Retirement Systems	6.30%
Tennessee	Tennessee Consolidated Retirement System	8.08%	Indiana	Indiana Public Retirement System	6.00%
Alabama	Employees' Retirement System	8.07% ¹	Missouri	Missouri State Employees Retirement System	5.30%
Georgia	Employees' Retirement System of Georgia	8.06%			
Florida	Florida Retirement System Pension Plan	8.04%			
Alabama	Teachers' Retirement System of Alabama	8.04% ¹			
Idaho	Idaho Public Employee Retirement System	7.90%			
Kansas	Kansas Public Employees Retirement System	7.90%			
New Hampshire	New Hampshire Retirement System	7.85%			
Oklahoma	Oklahoma Teachers' Retirement System	7.80%			

1. Real estate and private placements are pending updated valuations





Through June 30, 2022: 1-Year Investment Performance (Annualized)

State	Pension Fund Name	% Return	State	Pension Fund Name	% Return
Oregon	Oregon Public Employees Retirement Fund	6.32	Pennsylvania	Pennsylvania SERS	-5.94
Washington	Washington State Investment Board	5.39	California	CalPERS	-6.1
Hawaii	Hawaii Employees' Retirement System	3.66	New Hampshire	New Hampshire Retirement System	-6.1
Maine	Maine Public Employees' Retirement System	3.3	Florida	Florida Retirement System	-6.27
Michigan	Michigan Investment Board	1.3	Illinois	Illinois State Board of Investment	-6.3
Arizona	Arizona State Retirement System	1.1	Indiana	Indiana Public Retirement System	-6.4
Virginia	Virginia Retirement System	0.6	Minnesota	Minnesota State Board of Investment	-6.4
Texas	Texas Employees Retirement System	0.4	West Virginia	West Virginia Investment Management Board	-6.4
South Dakota	South Dakota Retirement System	-0.7	North Dakota	North Dakota Public Employees Retirement System	-6.66
South Carolina	South Carolina Retirement System Investment Commission	-0.89	Louisiana	Louisiana State Employees' Retirement System	-7.2
Alaska	Alaska Permanent Fund Corporation	-1.32	North Carolina	North Carolina Retirement Systems	-7.3
Rhode Island	Rhode Island State Investment Commission	-1.44	Wisconsin	Wisconsin Retirement System	-7.3
New Mexico	New Mexico Educational Retirement Board	-1.67	Connecticut	Connecticut Teacher's Retirement Fund	-7.63
Maryland	Maryland State Retirement & Pension System	-2.97	Vermont	Vermont Pension Investment Commission	-7.72
Massachusetts	Massachusetts Pension Reserves Investment Trust (PRIT)	-3	New Jersey	New Jersey Division of Investment	-7.9
Tennessee	Tennessee Consolidated Retirement System	-3.63	Mississippi	Mississippi Public Employees' Retirement System	-8.54
Ohio	State Teachers Retirement System of Ohio	-3.73	Nebraska	Nebraska Investment Council	-8.6
Arkansas	Arkansas Teacher Retirement System	-3.9	Missouri	Missouri State Employees Retirement System (MOSERS)	-9.02
Iowa	Iowa Public Employees' Retirement System	-3.9	Colorado	Colorado Public Employees Retirement	-9.3
Montana	Montana Board of Investments	-4.32	Idaho	Idaho Public Employee Retirement System	-9.5
Kansas	Kansas Public Employees Retirement System	-4.7	Oklahoma	Oklahoma Teachers' Retirement System	-9.5
Nevada	Nevada Public Employees Retirement System	-5.1	Georgia	Employees' Retirement System of Georgia	-11.71
Kentucky	Kentucky Public Pensions Authority	-5.9	Delaware	Delaware Public Employees' Retirement System	-13.4



*the states of Alabama, New York, Utah, and Wyoming have not yet released 1, 3, 5, and 10 year investment performance through June 30, 2022. This table will be updated when results are available.





Through June 30, 2022: 3-Year Investment Performance (Annualized)

top 12.04% return is 6.7% higher than CT, represents \$8 billion in lost investment revenue for CT

State	Pension Fund Name	% Return	State	Pension Fund Name	% Return
Washington	Washington State Investment Board	12.04	Florida	Florida Retirement System	7.74
Michigan	Michigan Investment Board	10.6	Arkansas	Arkansas Teacher Retirement System	7.7
Oregon	Oregon Public Employees Retirement Fund	10.3	Colorado	Colorado Public Employees Retirement	7.6
Maine	Maine Public Employees' Retirement System	10	Wisconsin	Wisconsin Retirement System	7.5
Hawaii	Hawaii Employees' Retirement System	9.96	Illinois	Illinois State Board of Investment	7.2
Delaware	Delaware Public Employees' Retirement System	9.6	South Dakota	South Dakota Retirement System	7.2
Alaska	Alaska Permanent Fund Corporation	9.33	Kansas	Kansas Public Employees Retirement System	7.1
Virginia	Virginia Retirement System	9.2	New Hampshire	New Hampshire Retirement System	7.1
Texas	Texas Employees Retirement System	9.1	North Dakota	North Dakota Public Employees Retirement System	7.07
Nevada	Nevada Public Employees Retirement System	9	Nebraska	Nebraska Investment Council	6.7
Massachusetts	Massachusetts Pension Reserves Investment Trust (PRIT)	8.9	Louisiana	Louisiana State Employees' Retirement System	6.6
Pennsylvania	Pennsylvania SERS	8.82	Oklahoma	Oklahoma Teachers' Retirement System	6.6
Iowa	Iowa Public Employees' Retirement System	8.8	Missouri	Missouri State Employees Retirement System (MOSERS)	6.55
Rhode Island	Rhode Island State Investment Commission	8.69	Georgia	Employees' Retirement System of Georgia	6.4
Ohio	State Teachers Retirement System of Ohio	8.6	Indiana	Indiana Public Retirement System	6.4
West Virginia	West Virginia Investment Management Board	8.5	New Mexico	New Mexico Educational Retirement Board	6.3
Arizona	Arizona State Retirement System	8.4	New Jersey	New Jersey Division of Investment	6.24
Maryland	Maryland State Retirement & Pension System	8.4	Vermont	Vermont Pension Investment Commission	6.14
Minnesota	Minnesota State Board of Investment	8.3	Idaho	Idaho Public Employee Retirement System	6.1
Tennessee	Tennessee Consolidated Retirement System	8.3	Kentucky	Kentucky Public Pensions Authority	6.06
Montana	Montana Board of Investments	7.87	California	CalPERS	6
Mississippi	Mississippi Public Employees' Retirement System	7.85	Connecticut	Connecticut Teacher's Retirement Fund	5.35
South Carolina	South Carolina Retirement System Investment Commission	7.84	North Carolina	North Carolina Retirement Systems	4.9

50-state median 7.84% return is 2.5% higher than CT, represents \$2.9 billion in lost investment revenue for CT

50-state median 7.79% return represents \$2.85 billion in lost investment revenue for CT



*the states of Alabama, New York, Utah, and Wyoming have not yet released 1, 3, 5, and 10 year investment performance through June 30, 2022. This table will be updated when results are available.





Through June 30, 2022: 5-Year Investment Performance (Annualized)

top 10.93% return is 5.1% higher than CT, represents \$10.7 billion in lost investment revenue for CT

State	Pension Fund Name	% Return	State	Pension Fund Name	% Return
Washington	Washington State Investment Board	10.93	Wisconsin	Wisconsin Retirement System	7.9
Michigan	Michigan Investment Board	10.3	Florida	Florida Retirement System	7.69
Maine	Maine Public Employees' Retirement System	9.5	Montana	Montana Board of Investments	7.63
Oregon	Oregon Public Employees Retirement Fund	9.36	South Carolina	South Carolina Retirement System Investment Commission	7.43
Alaska	Alaska Permanent Fund Corporation	9.03	Kansas	Kansas Public Employees Retirement System	7.4
Delaware	Delaware Public Employees' Retirement System	8.8	Illinois	Illinois State Board of Investment	7.3
Nevada	Nevada Public Employees Retirement System	8.8	Indiana	Indiana Public Retirement System	7.2
Hawaii	Hawaii Employees' Retirement System	8.73	New Hampshire	New Hampshire Retirement System	7.2
Iowa	Iowa Public Employees' Retirement System	8.55	North Dakota	North Dakota Public Employees Retirement System	7.18
Massachusetts	Massachusetts Pension Reserves Investment Trust (PRIT)	8.5	Idaho	Idaho Public Employee Retirement System	7.1
Minnesota	Minnesota State Board of Investment	8.5	Georgia	Employees' Retirement System of Georgia	7.05
Texas	Texas Employees Retirement System	8.5	Nebraska	Nebraska Investment Council	7
Pennsylvania	Pennsylvania SERS	8.47	Oklahoma	Oklahoma Teachers' Retirement System	6.9
Ohio	State Teachers Retirement System of Ohio	8.44	South Dakota	South Dakota Retirement System	6.9
Arizona	Arizona State Retirement System	8.3	New Jersey	New Jersey Division of Investment	6.8
Virginia	Virginia Retirement System	8.3	California	CalPERS	6.7
West Virginia	West Virginia Investment Management Board	8.2	Louisiana	Louisiana State Employees' Retirement System	6.7
Rhode Island	Rhode Island State Investment Commission	8.13	Kentucky	Kentucky Public Pensions Authority	6.53
Tennessee	Tennessee Consolidated Retirement System	8.12	New Mexico	New Mexico Educational Retirement Board	6.44
Arkansas	Arkansas Teacher Retirement System	8	Vermont	Vermont Pension Investment Commission	6.44
Colorado	Colorado Public Employees Retirement	8	Missouri	Missouri State Employees Retirement System (MOSERS)	6.27
Mississippi	Mississippi Public Employees' Retirement System	7.97	Connecticut	Connecticut Teacher's Retirement Fund	5.79
Maryland	Maryland State Retirement & Pension System	7.9	North Carolina	North Carolina Retirement System	5.7

50-state median 7.9% return is 2.1% higher than CT, represents \$4.2 billion in lost investment revenue for CT

North Carolina merger of 8% Carolina Retirement System represents \$4 billion in lost investment revenue for CT



*the states of Alabama, New York, Utah, and Wyoming have not yet released 1, 3, 5, and 10 year investment performance through June 30, 2022. This table will be updated when results are available.





Through June 30, 2022: 10-Year Investment Performance (Annualized)

top 10.44% return represents \$13.5 billion in lost investment revenue for CT

State	Pension Fund Name	% Return	State	Pension Fund Name	% Return
Washington	Washington State Investment Board	10.44	Tennessee	Tennessee Consolidated Retirement System	8.41
Michigan	Michigan Investment Board	10.3	Idaho	Idaho Public Employee Retirement System	8.4
Minnesota	Minnesota State Board of Investment	9.4	Nebraska	Nebraska Investment Council	8.4
Arkansas	Arkansas Teacher Retirement System	9.3	Texas	Texas Employees Retirement System	8.4
Oregon	Oregon Public Employees Retirement Fund	9.29	Illinois	Illinois State Board of Investment	8.3
Massachusetts	Massachusetts Pension Reserves Investment Trust (PRIT)	9.2	Georgia	Employees' Retirement System of Georgia	8.26
Nevada	Nevada Public Employees Retirement System	9.2	North Dakota	North Dakota Public Employees Retirement System	8.16
Ohio	State Teachers Retirement System of Ohio	9.19	Hawaii	Hawaii Employees' Retirement System	8
West Virginia	West Virginia Investment Management Board	9.1	Wisconsin	Wisconsin Retirement System	8
Mississippi	Mississippi Public Employees' Retirement System	9.02	Rhode Island	Rhode Island State Investment Commission	7.96
Alaska	Alaska Permanent Fund Corporation	8.94	Pennsylvania	Pennsylvania SERS	7.92
Arizona	Arizona State Retirement System	8.9	Louisiana	Louisiana State Employees' Retirement System	7.8
Maine	Maine Public Employees' Retirement System	8.9	Maryland	Maryland State Retirement & Pension System	7.8
South Dakota	South Dakota Retirement System	8.9	New Jersey	New Jersey Division of Investment	7.77
Oklahoma	Oklahoma Teachers' Retirement System	8.7	California	CalPERS	7.7
Virginia	Virginia Retirement System	8.7	New Mexico	New Mexico Educational Retirement Board	7.49
Montana	Montana Board of Investments	8.62	South Carolina	South Carolina Retirement System Investment Commission	7.47
Colorado	Colorado Public Employees Retirement	8.6	Kentucky	Kentucky Public Pensions Authority	7.32
Delaware	Delaware Public Employees' Retirement System	8.6	Connecticut	Connecticut Teacher's Retirement Fund	7.28
Iowa	Iowa Public Employees' Retirement System	8.6	North Carolina	North Carolina Retirement Systems	6.7
Florida	Florida Retirement System	8.59	Vermont	Vermont Pension Investment Commission	6.51
Kansas	Kansas Public Employees Retirement System	8.5	Indiana	Indiana Public Retirement System	6.4
New Hampshire	New Hampshire Retirement System	8.5	Missouri	Missouri State Employees Retirement System	6.06

50-state median 8.455% return is 1.175% higher than CT, represents \$4.6 billion in lost investment revenue for CT

Missouri average (MGSERS) return represents \$4.2 billion in lost investment revenue for CT



*the states of Alabama, New York, Utah, and Wyoming have not yet released 1, 3, 5, and 10 year investment performance through June 30, 2022. This table will be updated when results are available.





Through June 30, 2021 – 1 Year Investment Performance (Annualized/Compounded)

State	Pension Fund Name	% Return
Delaware	Delaware Public Employees' Retirement System	38.1
Mississippi	Mississippi Public Employees' Retirement System	32.71
Florida	Florida Retirement System	29.46
New Hampshire	New Hampshire Retirement System	29.4
Georgia	Employees' Retirement System of Georgia	29.36
Texas	Texas Employees Retirement System	29.17
New York	New York State Teachers' Retirement System	29
Oklahoma	Oklahoma Public Employees Retirement System	28
Montana	Montana Board of Investments	27.72
Virginia	Virginia Retirement System	27.5
Nevada	Nevada Public Employees Retirement System	27.3
North Dakota	North Dakota Public Employees Retirement System	27.15
Maryland	Maryland State Retirement & Pension System	26.9
Maine	Maine Public Employees' Retirement System	26.5
Missouri	Missouri State Employees Retirement System (MOSERS)	26.4
Kansas	Kansas Public Employees Retirement System	26.3
Hawaii	Hawaii Employees' Retirement System	26.2
Illinois	Illinois State Board of Investment	25.8
Kentucky	Kentucky Public Pensions Authority	25.7
Tennessee	Tennessee Consolidated Retirement System	25.6
Indiana	Indiana Public Retirement System	25.5
Arizona	Arizona State Retirement System	25.1
	Connecticut Municipal Employees Retirement Fund	24.39
	Connecticut State Employees' Retirement Fund	24.36
Connecticut	Connecticut Teachers's Retirement	24.28
South Dakota	South Dakota Retirement System	22





Through June 30, 2021 – 3 Year Investment Performance (Annualized/Compounded)

State	Pension Fund Name	% Return
Delaware	Delaware Public Employees' Retirement System	17.6
Nevada	Nevada Public Employees Retirement System	14
Mississippi	Mississippi Public Employees' Retirement System	13.59
Georgia	Employees' Retirement System of Georgia	13.41
New York	New York State Teachers' Retirement System	12.6
Oklahoma	Oklahoma Public Employees Retirement System	12.5
Florida	Florida Retirement System	12.34
Tennessee	Tennessee Consolidated Retirement System	12.34
Illinois	Illinois State Board of Investment	12.1
Maryland	Maryland State Retirement & Pension System	12
North Dakota	North Dakota Public Employees Retirement System	11.53
Montana	Montana Board of Investments	11.51
Missouri	Missouri State Employees Retirement System (MOSERS)	11.5
Indiana	Indiana Public Retirement System	11.4
Maine	Maine Public Employees' Retirement System	11.4
New Hampshire	New Hampshire Retirement System	11.4
Kansas	Kansas Public Employees Retirement System	11.3
Virginia	Virginia Retirement System	11.3
Texas	Texas Employees Retirement System	10.91
Hawaii	Hawaii Employees' Retirement System	10.6
	Connecticut Municipal Employees Retirement Fund	10.47
Arizona	Arizona State Retirement System	10.3
Kentucky	Kentucky Public Pensions Authority	10.3
	Connecticut State Employees' Retirement Fund	10.28
Connecticut	Connecticut Teachers's Retirement	10.24
South Dakota	South Dakota Retirement System	9.1

**top performance
rate of 17.6%
would have added
\$12 billion to CT's
pension funds**

**Median 11.505% return
representing \$2 billion
in lost revenue for CT**

**Average
11.89% return
representing
\$2.5 billion in
lost revenue
for CT**





Through June 30, 2021 – 5 Year Investment Performance (Annualized/Compounded)

State	Pension Fund Name		% Return
Delaware	Delaware Public Employees' Retirement System	top performance rate of 14.4% would have added \$13.5 billion to CT's pension funds	14.4
Mississippi	Mississippi Public Employees' Retirement System		13.03
Nevada	Nevada Public Employees Retirement System		12.5
Georgia	Employees' Retirement System of Georgia		12.36
Florida	Florida Retirement System		11.95
New York	New York State Teachers' Retirement System		11.9
Oklahoma	Oklahoma Public Employees Retirement System		11.7
Maine	Maine Public Employees' Retirement System		11.4
North Dakota	North Dakota Public Employees Retirement System		11.36
New Hampshire	New Hampshire Retirement System		11.3
Tennessee	Tennessee Consolidated Retirement System	11.3	
Illinois	Illinois State Board of Investment	11.2	
Montana	Montana Board of Investments	11.06	
Texas	Texas Employees Retirement System	Median 11.135% return representing \$3 billion in lost revenue for CT	11.02
Kansas	Kansas Public Employees Retirement System		11
Arizona	Arizona State Retirement System		10.9
Maryland	Maryland State Retirement & Pension System		10.9
Hawaii	Hawaii Employees' Retirement System		10.7
Kentucky	Kentucky Public Pensions Authority		10.7
Virginia	Virginia Retirement System		10.7
	Connecticut State Employees' Retirement Fund		10.47
Connecticut	Connecticut Teachers's Retirement		10.4
Indiana	Indiana Public Retirement System		10.3
	Connecticut Municipal Employees Retirement Fund	10.1	
South Dakota	South Dakota Retirement System	9.8	
Missouri	Missouri State Employees Retirement System (MOSERS)	9.1	

Average 11.30% return representing \$3.5 billion in lost revenue for CT





Through June 30, 2021 – 10 Year Investment Performance (Annualized/Compounded)

State	Pension Fund Name	% Return
Delaware	Delaware Public Employees' Retirement System	10.4
Nevada	Nevada Public Employees Retirement System	10.1
New York	New York State Teachers' Retirement System	10.1
Mississippi	Mississippi Public Employees' Retirement System	10.07
Georgia	Employees' Retirement System of Georgia	9.85
Tennessee	Tennessee Consolidated Retirement System	9.41
Montana	Montana Board of Investments	9.36
Florida	Florida Retirement System	9.33
New Hampshire	New Hampshire Retirement System	9.3
Kansas	Kansas Public Employees Retirement System	9.2
South Dakota	South Dakota Retirement System	9.2
Illinois	Illinois State Board of Investment	9.1
Arizona	Arizona State Retirement System	8.9
Virginia	Virginia Retirement System	8.8
Maine	Maine Public Employees' Retirement System	8.7
Texas	Texas Employees Retirement System	8.59
Maryland	Maryland State Retirement & Pension System	8.4
Hawaii	Hawaii Employees' Retirement System	8.1
	Connecticut State Employees' Retirement Fund	8.08
Connecticut	Connecticut Teachers's Retirement	8.03
Kentucky	Kentucky Public Pensions Authority	8
	Connecticut Municipal Employees Retirement Fund	7.7
Missouri	Missouri State Employees Retirement System (MOSERS)	7.3
Indiana	Indiana Public Retirement System	7.2

top performance rate of 10.4% would have added \$21.5 billion to CT's pension funds

Median 9.15% return representing \$10 billion in lost revenue for CT

Average 8.97% return representing \$8 billion in lost revenue for CT





Appendix B – No Correlation Between Salaries And Investment Performance





Through June 30, 2023: Correlation of CIO Salaries and Investment Returns

The correlation between CIO salaries and their investment performance is very low and in some instances negative...

Investment Performance	Correlation, Returns and CIO Salary ¹	Average Rate of Return, 2023
3-year	-10.26%	9.20%
5-year	2.40%	7.23%
10-year	5.21%	7.71%

CIO Salary Overview

Average: \$425,537

Median: \$381,923

High: \$901,966 (Georgia)

Low: \$70,154 (New Hampshire)

1. CIO salaries are as of 2023 where available - 2022 or 2021 salaries are used unavailable





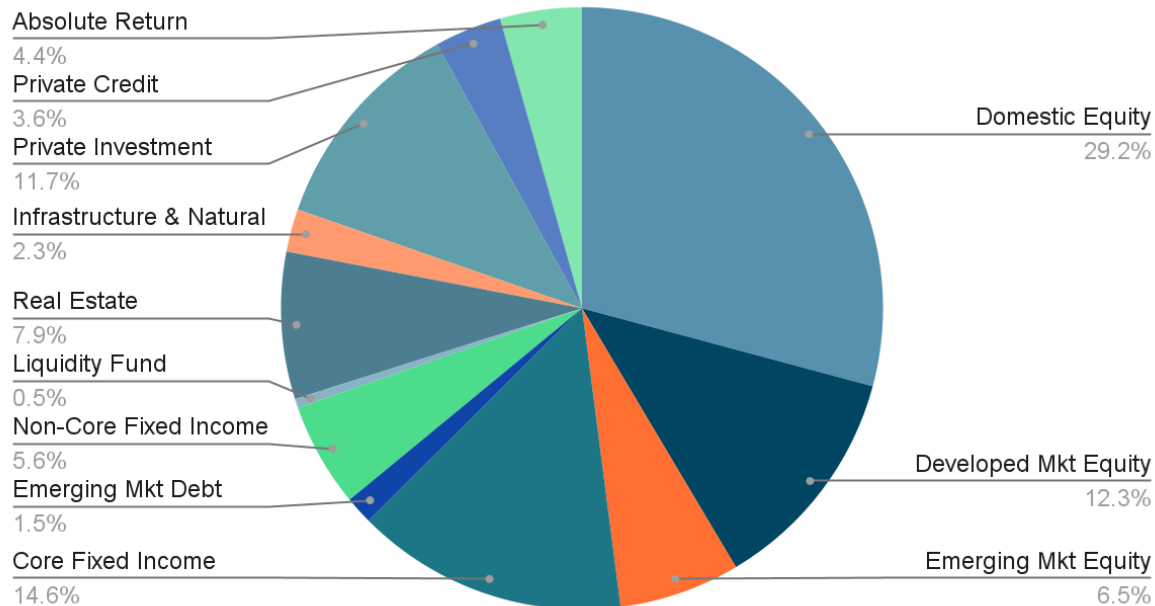
**Appendix C –
Strategic Asset Allocation Samples
(For Fuller 50 State Strategic Asset
Allocation Charts, Refer To Original
Slide Deck)**





Strategic Asset Allocation Comparison, Connecticut (2023 vs. 2013)

Connecticut Teachers Retirement Fund, 2023



Alternative & Private Investment¹

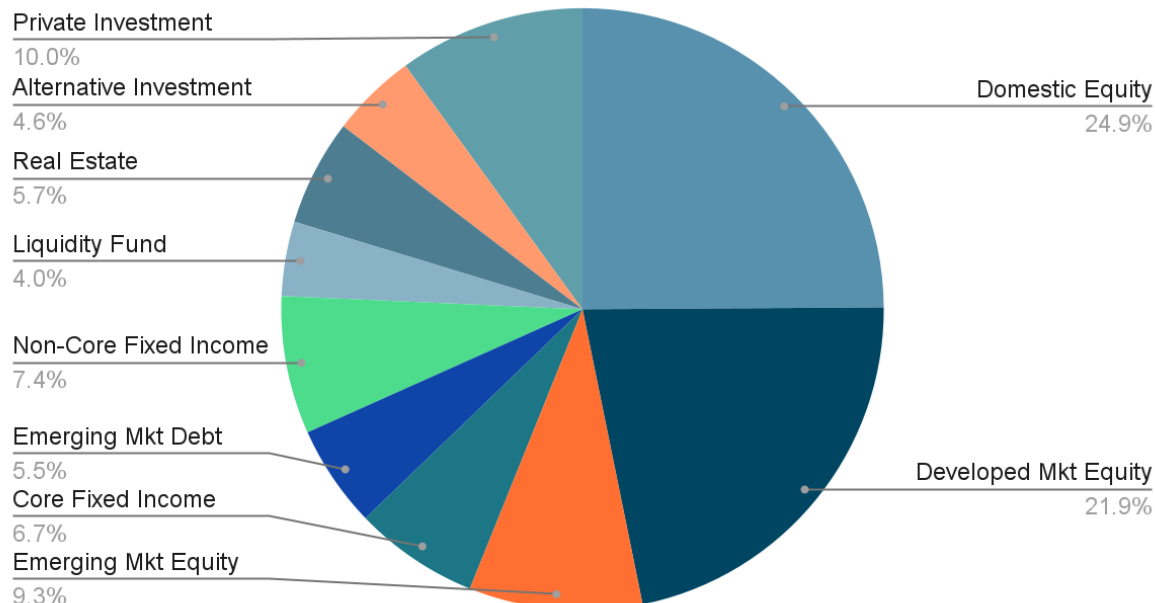
- Total allocation to alternative and private investments has **increased by 9.6%** from 2023 (29.9%) to 2013 (20.3%)
- Growth in alternative and private investments mostly comes from **private credit (+3.5%), real estate (+2.2%), and infrastructure & nature markets (+2.1%)**

1. "Alternative & Private Investment" includes Absolute Return, Private Credit, Private Investment, Infrastructure & Natural, Real Estate, Alternative Investment

Equity

- Total allocation to equities has **decreased by 8.1%** between 2023 (48.0%) and 2013 (56.1%)
- Equity market **allocation has also notably shifted** among domestic (+3.3%), developed (-9.6%) and emerging markets (-2.8%) between 2023 and 2013

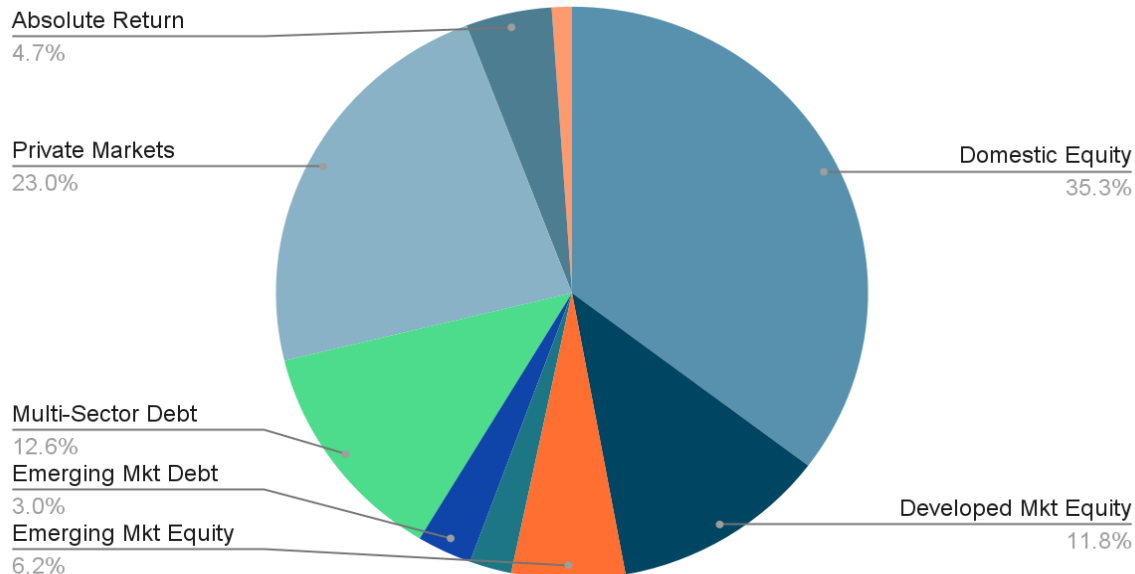
Connecticut Teachers Retirement Fund, 2013





Strategic Asset Allocation Comparison, Louisiana (2023 vs. 2013)

Louisiana State Employees' Retirement System, 2023



Fixed Income / Debt

- Multi-sector debt has been the primary source of an **increased allocation to fixed income** between 2023 and 2013 (+10.5%)

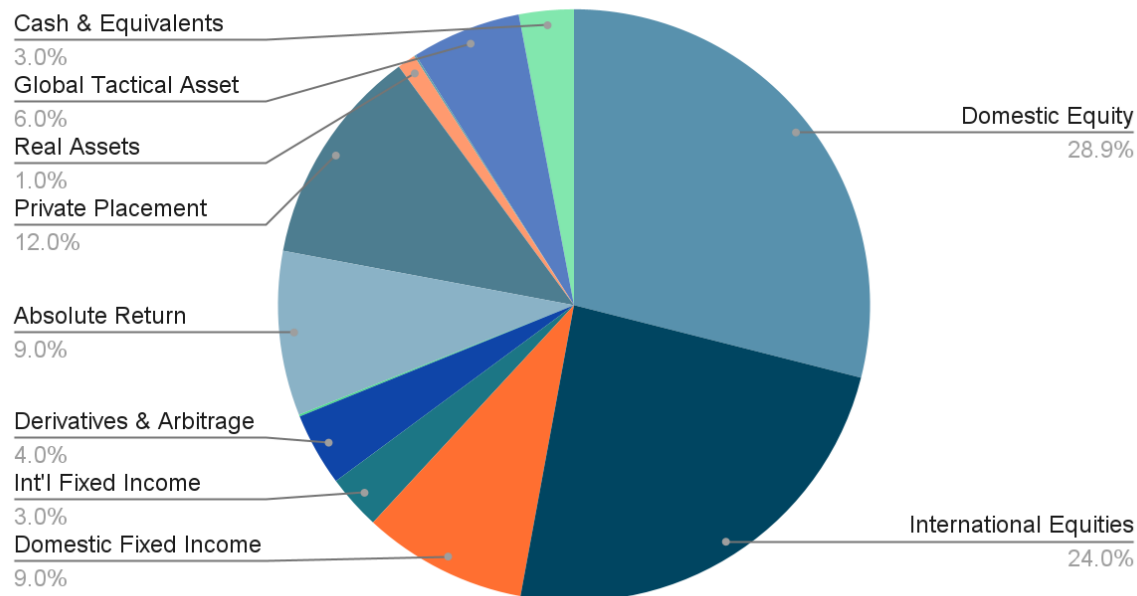
Alternative & Private Investments

- Allocation to alternative and private markets has **decreased by 4.3%** from 2023 (27.7%) to 2013 (32.0%)

Equity

- Asset allocation to equity has **remained stable** between 2023 and 2013 at 53.0%
- However, **domestic equity exposure has increased** (+6.4%) at the expense of international equity

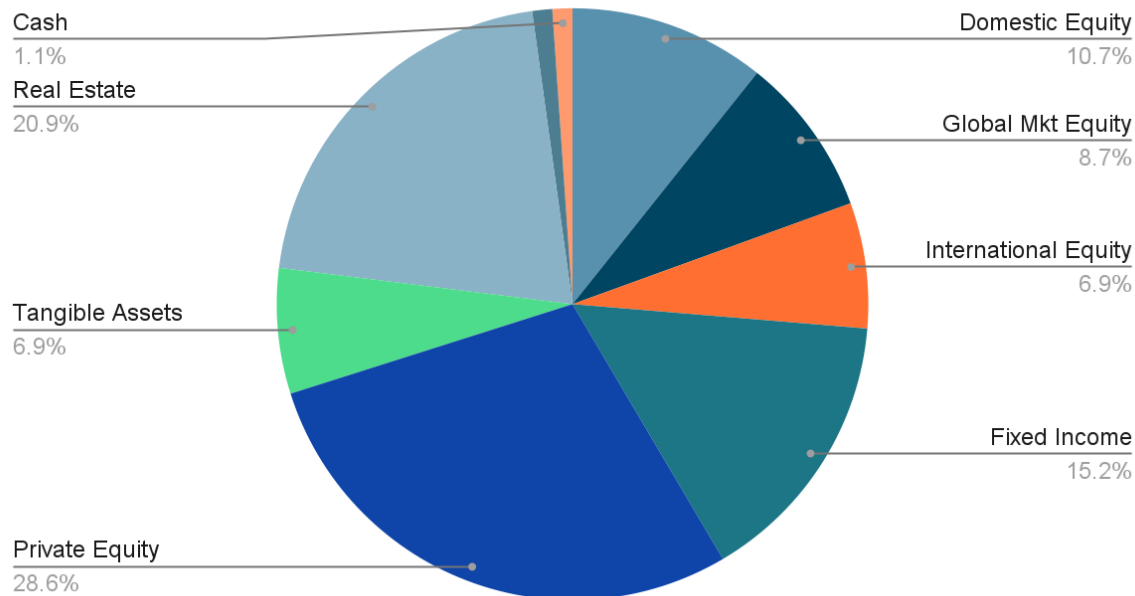
Louisiana State Employees' Retirement System, 2013





Strategic Asset Allocation Comparison, Washington (2023 vs. 2013)

Washington State Investment Board, 2023



Fixed Income / Debt

- Asset allocation to fixed income has **decreased by 5.7%** between 2023 and 2013

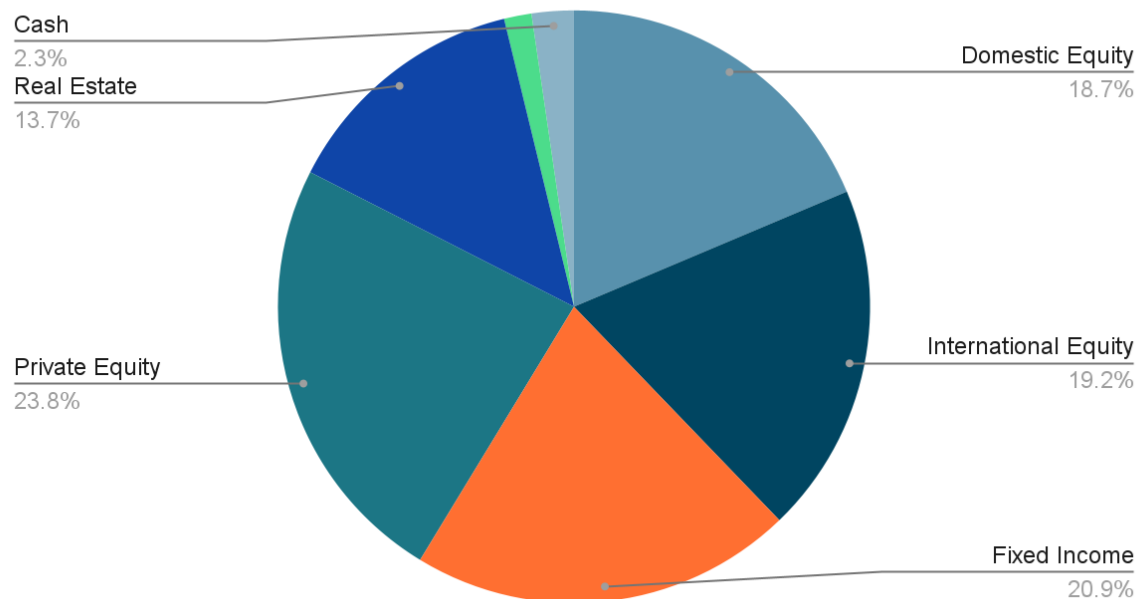
Alternative & Private Investments

- Alternative and private investments have **increased by 17.4%**, due to growth in real estate (+7.2%), private equity (+4.8%), and tangible assets (+5.4%)

Equity

- Equity allocation has **remained relatively stable** between 2023 (26.3%) and 2013 (27.9%)
- Notable **shifts have occurred within equity** between domestic and international from a 50-50 split to 40-60

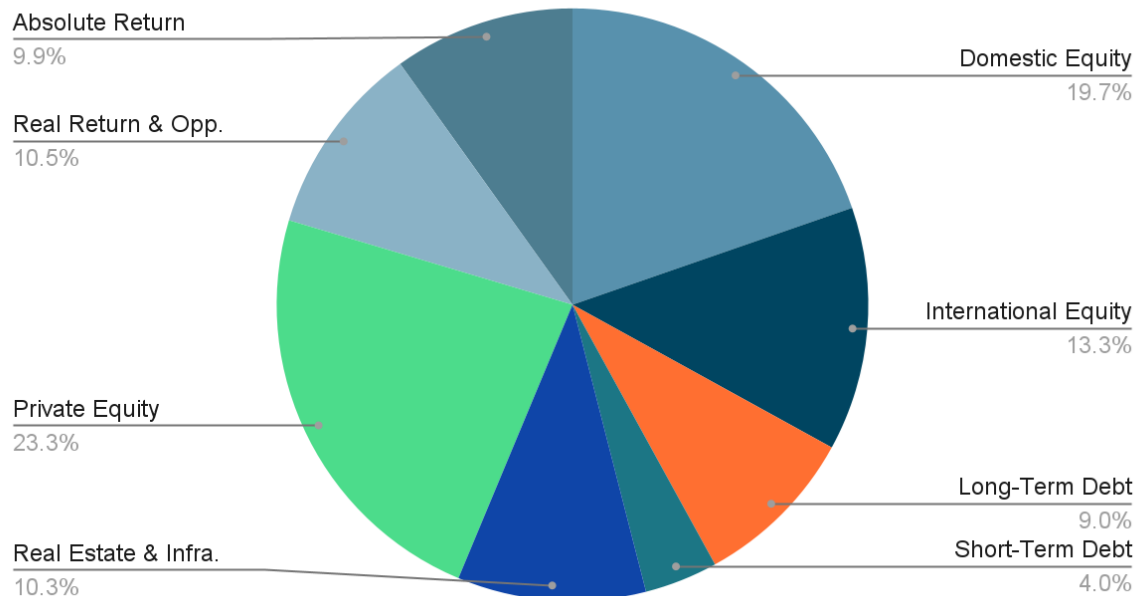
Washington State Investment Board, 2013





Strategic Asset Allocation Comparison, Michigan (2023 vs. 2013)

Michigan Investment Board, 2023



Alternative & Private Investments

- Alternative and private investments have **increased by 14.1%**, mostly due to growth in absolute return (+5.5%), real return / opportunistic (+4.9%) and private equity (+3.8%)

Equity

- Equity allocation has **decreased by 8.9%** between 2023 (33.0%) and 2013 (41.9%)
- Reductions in equity asset allocation has **mostly occurred within domestic equities (-8.0%)**

Michigan Investment Board, 2013

