

SWIB Quarterly Update

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Agenda



Performance



Asset Allocation



Market Update



SWIB News



Questions



Performance



Market Indices Returns

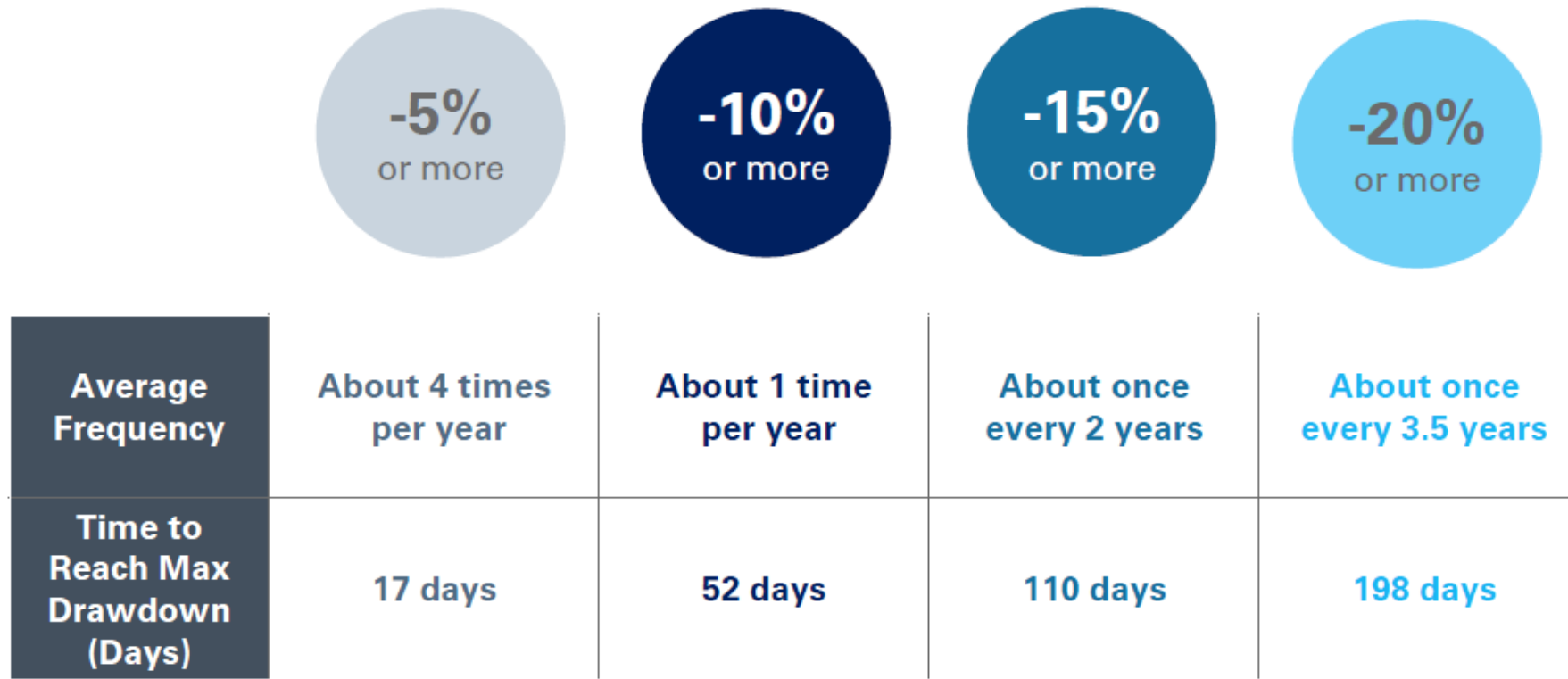
Year-to-Date as of September 30, 2022

Index	YTD Performance
S&P 500	-23.87%
Russell 1000	-24.59%
Russell 2000	-25.10%
Russell 3000	-24.62%
MSCI ACWI Gross	-25.34%
MSCI World ex US Equities	-26.23%
MSCI World ex US Equities (Local Currency)	-14.20%
MSCI Emerging Markets	-27.16%
Bloomberg Treasury Bond	-13.09%
Bloomberg Credit	-18.07%
Bloomberg TIPS	-13.61%



U.S. Market Corrections in Context

S&P 500 Index (1948-Present)



Source: S&P, FactSet, NEPC

WRS Investment Performance

Year-to-Date as of September 30, 2022

Core Fund	YTD	5-Year	10-Year
Performance	-17.64%	5.85%	6.90%
Benchmark	-17.78%	5.35%	6.48%
	0.14%	0.50%	0.42%

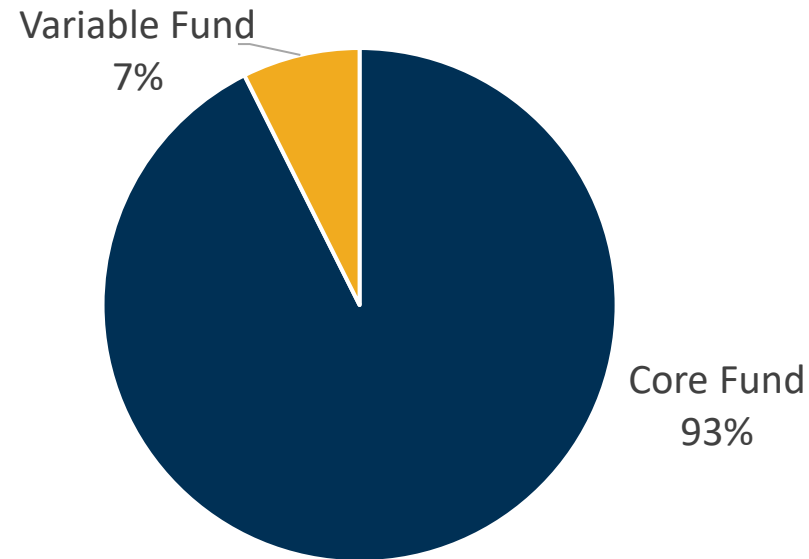
Variable Fund	YTD	5-Year	10-Year
Performance	-25.00%	5.84%	9.04%
Benchmark	-25.10%	5.87%	8.97%
	0.10%	-0.03%	0.07%

Year-to-date (YTD) returns are net of all fees. Five-, 10-year returns are net of external manager fees. YTD returns and benchmarks are subject to final valuation and adjustments that may occur during the calendar year. Excess returns may contain rounding differences.



WRS Assets Under Management

Year-to-Date as of September 30, 2022

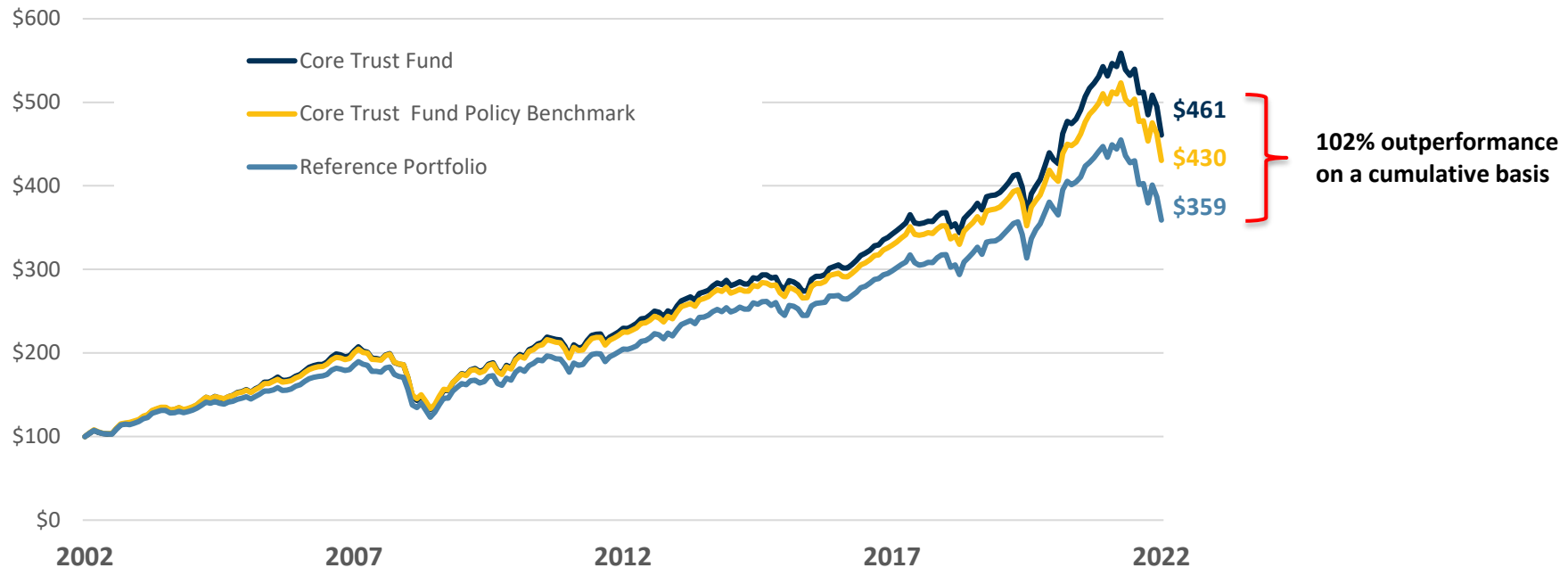


Fund	9/30/2022 AUM (in millions)
Core Fund	\$109.4
Variable Fund	\$7.8
Total WRS	\$117.2

CTF Performance vs. 60/40 Reference Portfolio*

20-year cumulative return¹: August 1, 2002, to September 30, 2022

Indexed Benefit of CTF's Asset Allocation & Active Management Over Time



\$32.6bn total

Reference Portfolio Ending Value	Additional Policy Portfolio Return Above Reference ¹	Additional Active Portfolio Return	CTF Ending Value ²
\$85.9bn	+\$23.4bn	+\$9.2bn	\$109.4bn

¹ Reference Portfolio is composed of 60% MSCI World and 40% Bloomberg US Gov't / Credit (rebalanced monthly)

² Core Trust Fund beginning market value, as of October 1, 2002, was \$44.4B



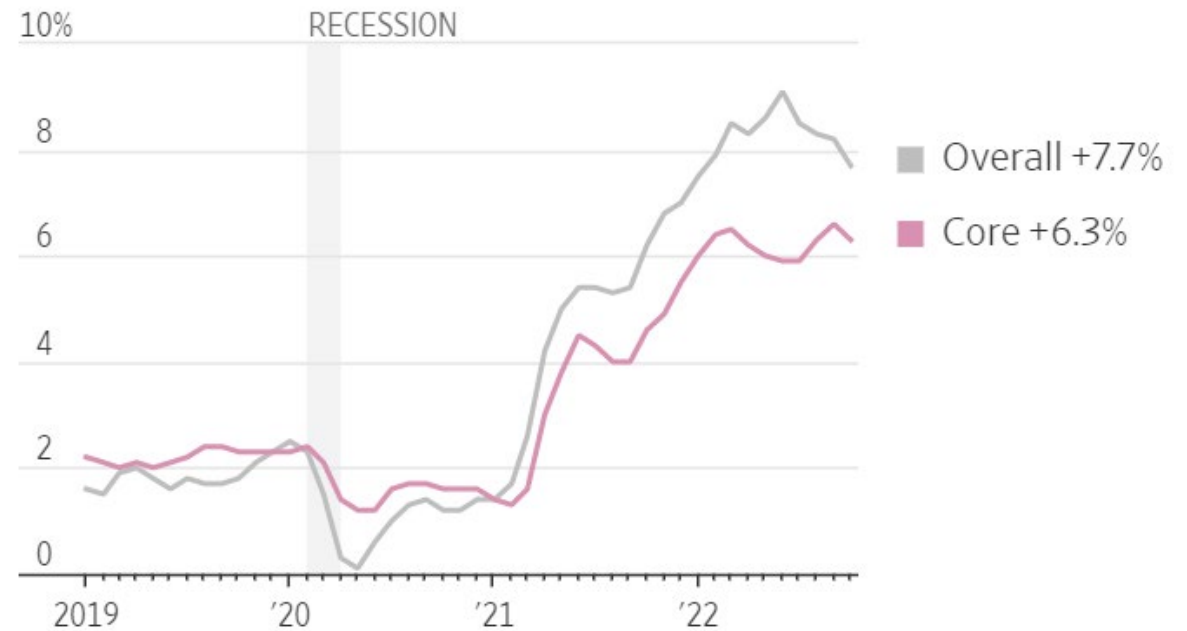
Market Update



Inflation Outlook

Consumer Price Index, 12-month Change

Source: Labor Department



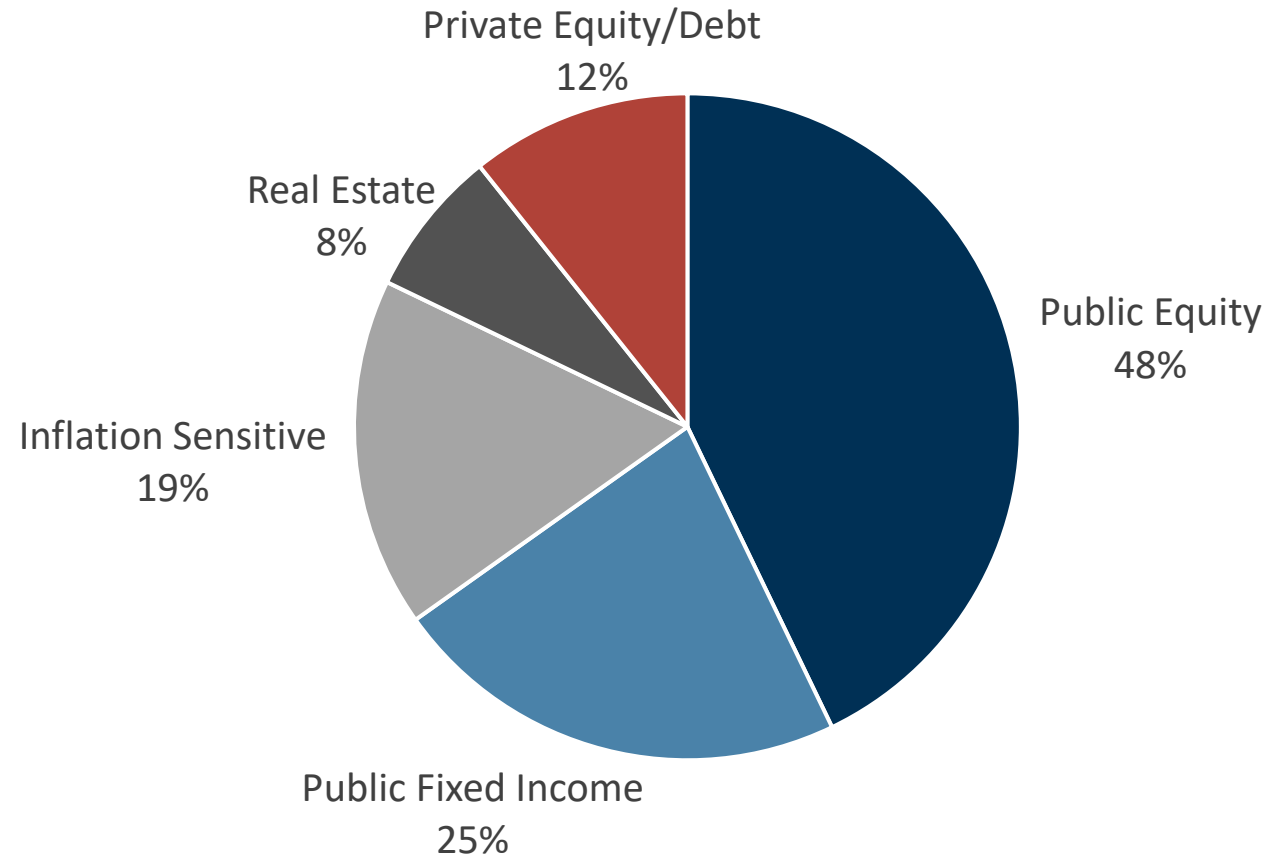
- Supply chain pressures and goods price inflation have eased but remain high relative to the 2010s
- Goods inflation is seeing lower peaks and troughs, but services inflation is still high, especially housing
- Rent inflation is high and likely to stay high in the next two years



Asset Allocation



2023 Proposed CTF Asset Allocation Targets



Asset allocation target totals exceed 100% due to SWIB's overall leverage of Core Fund assets.



CTF Long-Term Target Returns and Risk

	Current Policy Portfolio	Proposed Policy Portfolio	Proposed Rebalance Ranges
Public Equity	52%	48%	42% - 54%
Public Fixed Income	25%	25%	19% - 31%
Inflation Sensitive Assets	19%	19%	14% - 24%
Private Equity/Debt	12%	15%	8% - 22%
Real Estate	7%	8%	4% - 12%
Total	115%	115%	110%* - 120%
<i>10 Yr Expected Return</i>	6.7%	6.7%	
<i>30 Yr Expected Return</i>	7.3%	7.4%	*SWIB Staff allowed to eliminate leverage, i.e., down to 100%
<i>Standard Deviation</i>	12.8%	12.7%	
<i>Sharpe Ratio 10 Yr</i>	0.298	0.302	
<i>Target Active Risk</i>	1.2%	1.2%	

Current policy portfolio as of Dec. 31, 2021, 10-year expected return was 5.4% and 30-year expected return was 6.6% with Standard Deviation of 13.1% and Sharpe Ratio 10-year of 0.317.



Asset Allocation and Active Risk Process

Background

- **Asset Allocation**
 - Fixed allocation targets and rebalancing ranges for each asset class
 - Corridor treatment approved as part of the asset allocation process
- **Policy Benchmark**
 - Board-approved policy benchmark incorporates asset allocation targets
 - Corridor treatment adjusts asset class weights used in the policy benchmark
- **Active Risk**
 - Risk that SWIB takes through active management
 - Holdings relative to benchmark weights determine the level of active risk
 - Active risk can be generated by
 - Intentional asset allocation deviations from policy portfolio targets
 - Security selection
 - Target active risk approved each year (currently 120 bps +/- 60 bps for CTF)



Asset Allocation Corridor Treatment

What is the Corridor Treatment?

- Dynamic Adjustments
 - Target allocations for private asset classes are dynamically adjusted monthly in response to actual Private Equity/Debt and Real Estate asset class exposures
 - Adjustments to Private Equity/Debt trigger corresponding adjustments to Public Equity target and rebalancing range on a 1 for 1 basis.
 - Adjustments to Real Estate trigger corresponding adjustments to both Public Equity and Public Fixed Income targets and rebalancing ranges (50/50 split)
- What if there were no Corridor Treatment:
 - SWIB may be forced to sell high-conviction positions at inopportune times or reach for opportunities to raise exposure
 - Active risk no longer reflects intention investment decisions



Peers Facing Similar Situation

Florida State Board of Administration Exceeds Alternatives Limit, Halts New Sector Investments

<https://www.marketsgroup.org/news/Florida-SBA-Private-Equity>

Calpers' Staff Seeking More Discretion for Private Equity Commitments

https://www.fundfire.com/c/3746864/483444?referrer_module=searchSubFromFF&highlight=calpers

Oregon's Private Equity Allocation Soars with Denominator Effect

<https://www.buyoutsinsider.com/oregons-private-equity-allocation-soars-with-denominator-effect/>

Taking Stock: Dealing with the Denominator Effect

<https://www.nepc.com/institutional/taking-stock-dealing-with-the-denominator-effect/>

Why IPERS Embraced Its Rising Private Equity Allocation

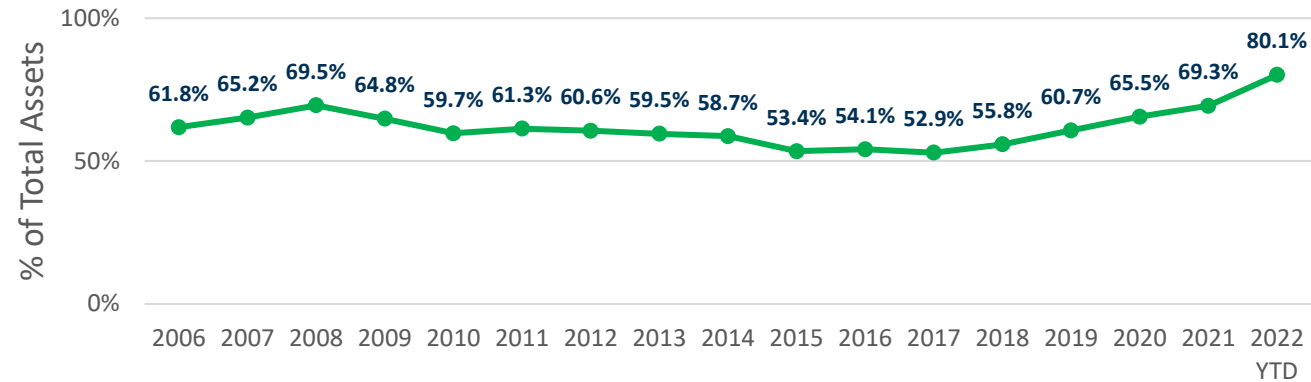
<https://www.institutionalinvestor.com/article/b202j63swvwxh0/Why-IPERS-Embraced-Its-Rising-Private-Equity-Allocation>



WRS Assets as of Sept. 30, 2022

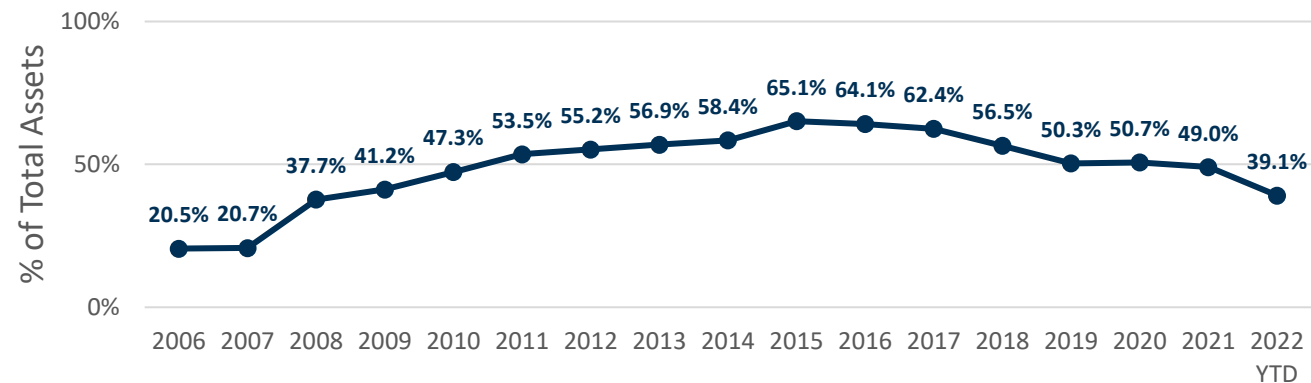
Breakdown of Active vs. Passive and Internal vs. External

Actively Managed Assets



Actively managed assets are a larger share of WRS AUM

Internally Managed Assets



46% of Total SWIB Assets (including SIF) are internally managed



SWIB News



New SWIB Podcast Episodes



www.swib.state.wi.us/podcasts

Episode 19

An Inside Look at SWIB's Corporate Governance Program

Sara Chandler, Chief Legal Counsel

Tom Robinson, Head of Corporate Governance



? Questions



Need More Information?



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www.linkedin.com/company/the-state-of-wisconsin-investment-board



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