STATE OF WISCONSIN

Legislative Audit Bureau

NONPARTISAN • INDEPENDENT • ACCURATE

Report 22-8
June 2022

State of Wisconsin Investment Board

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State of Wisconsin Investment Board

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Joe Chrisman

Deputy State Auditor for Performance Evaluation
Dean Swenson

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Sam Rebenstorf

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Joe Chrisman
State Auditor

22 East Mifflin Street, Suite 500
Madison, Wisconsin 53703

Main: (608) 266-2818
Hotline: 1-877-FRAUD-17

www.legis.wisconsin.gov/lab
AskLAB@legis.wisconsin.gov

June 29, 2022

Senator Robert Cowles, Co-chairperson
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Cowles:

We have completed an evaluation of the State of Wisconsin Investment Board (SWIB), as required by ss. 13.94 (1) (df) and 25.17 (51m), Wis. Stats. In December 2021, SWIB managed $165.7 billion in assets, including investments of the Wisconsin Retirement System (WRS), the State Investment Fund, and four other funds.

As of December 2021, the WRS Core Fund exceeded its five-year benchmark and had average annual investment returns of 12.5 percent, but the Variable Fund did not exceed its five-year benchmark and had average annual investment returns of 15.5 percent. The Core Fund's 20-year average annual investment return was lower than the long-term expected rate-of-return assumption from 2016 through 2020 but exceeded it in December 2021.

SWIB is authorized to establish its own budget and to create or eliminate staff positions. From 2017 through 2021, SWIB's annual expenses increased by 64.3 percent. These increases were attributable primarily to an increase in management fees paid to external investment managers and a growth in the total amount of assets SWIB managed. In December 2021, SWIB had 290 full-time equivalent (FTE) positions, which was an increase of 55.0 FTE positions since December 2019.

SWIB's compensation to staff through salaries, bonuses, and fringe benefits was $72.5 million in 2021. Overall compensation for SWIB's investment management staff for 2020 performance was 67.1 percent of a comparison group's median compensation.

We recommend SWIB assess its planning and vendor evaluation processes used for a large information technology project, provide the Board of Trustees with additional information about external management fees, develop a multi-year strategic plan that includes goals for the proportion of assets managed internally, and modify its policies for awarding salary increases, signing bonuses, and retention bonuses.

We appreciate the courtesy and cooperation extended to us by SWIB's staff. A response from SWIB's executive director/chief investment officer follows the appendices.

Respectfully submitted,

Joe Chrisman
State Auditor

JC/DS/ss

Introduction

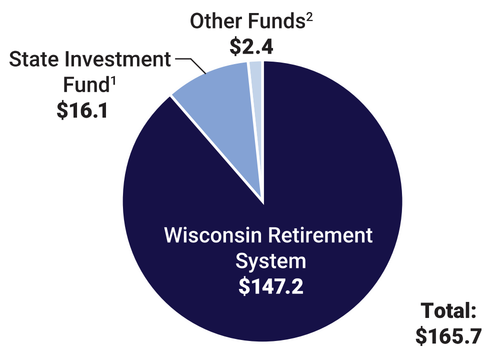
The State of Wisconsin Investment Board (SWIB) invested assets for the Wisconsin Retirement System (WRS), the State Investment Fund (SIF), and four other funds as of December 2021. Statutes require SWIB to provide prudent and cost-effective management of the assets it holds in trust by investing the assets in a manner consistent with their intended purposes. Although SWIB is a state agency, its Board of Trustees establishes the investment, budgeting, and staffing policies with which SWIB is required to comply. SWIB may hire external investment managers to supplement its staff, including when it requires additional investment expertise or when it is cost effective to do so.

On December 31, 2021, SWIB managed $165.7 billion in assets.

As shown in Figure 1, SWIB managed $165.7 billion in assets on December 31, 2021, including $147.2 billion in WRS assets, or 88.8 percent of the total. The WRS funds retirement benefits for more than 652,000 participants, who include current and former employees of state and local governments. Although SWIB invests WRS assets, the Department of Employee Trust Funds (ETF) manages WRS operations that interact with employers and participants, including collecting contributions and paying benefits. Appendix 1 includes information about the funds that SWIB manages.

Figure 1

Assets Managed by SWIB
December 31, 2021
(in billions)



[1] Excludes $4.2 billion in WRS assets held in the SIF.

[2] Includes the Injured Patients and Families Compensation Fund, University of Wisconsin (UW) System Long Term Fund, State Life Insurance Fund, and Historical Society Trust Fund.

Section 25.14 (1), Wis. Stats., requires SWIB to invest the assets of the SIF, which include the excess operating cash balances of state agencies, the WRS, and 1,369 units of local government participating in the Local Government Investment Pool. The Department of Administration (DOA) manages the individual accounts of these local governments.

In addition to the WRS and the SIF, SWIB invested assets for four other funds, and each had the following assets as of December 2021:

- Injured Patients and Families Compensation Fund, which is overseen by the Office of the Commissioner of Insurance (OCI) and had $1.6 billion in assets;

- University of Wisconsin (UW) System Long Term Fund, which is overseen by the Board of Regents and had $610.1 million in assets;

- State Life Insurance Fund, which is overseen by OCI and had $124.5 million in assets; and

- Historical Society Trust Fund, which is overseen by the Wisconsin Historical Society, and had $26.2 million in assets.

Sections 13.94 (1) (df) and 27.17 (51m), Wis. Stats., require the Legislative Audit Bureau to biennially conduct a performance evaluation audit of the policies and management practices of the Board of Trustees. To evaluate SWIB's operations in 2020 and 2021, we:

- analyzed investment returns by comparing them to performance benchmarks established by SWIB, the long-term expected rate-of-return assumption, and the investment returns of other large public pension plans;
- assessed expenses, including management fees SWIB paid to external investment managers and internal operating expenses;
- examined staffing levels and trends in staffing;
- analyzed staff compensation, including salaries and bonuses; and
- examined the participants, transfer of assets, and types of investments associated with the SIF.

■ ■ ■ ■

Board of Trustees

SWIB is governed by a nine-member Board of Trustees.

SWIB is governed by a nine-member Board of Trustees, who have a fiduciary responsibility to administer the assets of each fund solely for the purpose of the fund at a reasonable cost and to manage investments with care, skill, prudence, and diligence. Board members include DOA's Secretary, six individuals appointed by the Governor and confirmed by the Senate to serve six-year terms, and two WRS participants. Four members appointed by the Governor must have at least 10 years of experience making investments, and one must have at least 10 years of financial experience, including in local government. The two WRS participants, who serve six-year terms, include one teacher appointed by the Teacher Retirement Board and one individual who is not a teacher and is appointed by the Wisconsin Retirement Board. Appendix 2 shows the members as of May 2022. We recommend SWIB work with the Board to increase the accessibility of its meetings to the public.

Board Meetings

The Board of Trustees met six times in 2020, seven times in 2021, and is scheduled to meet five times in 2022. A variety of subjects are discussed at these meetings, including asset allocations, budget proposals, comparisons to other investment managers, investment performance, staff compensation, and staffing. Each Board member serves on at least one of four committees. For many decisions the Board makes, the responsible committee reviews proposals and makes recommendations to the full Board.

The Board of Trustees appoints the executive director/chief investment officer and the internal audit director. Although the Board establishes an overall investment plan for SWIB-managed funds, it delegated day-to-day investment management decisions to the executive director/chief investment officer and investment staff. In addition, the Board delegated certain investment decisions to a SWIB staff investment committee that is chaired by the executive director/chief investment officer and meets regularly to make investment decisions, including changes to investment guidelines and strategies. SWIB senior managers work with the executive director/chief investment officer to make organizational decisions to ensure staff operate within the policies, objectives, and guidelines established by the Board.

We compared Board of Trustees practices for providing the public with information about Board meetings with the practices of the governing boards of 20 other organizations.

We compared Board of Trustees practices for providing the public with information about Board meetings with the practices of the governing boards of 20 other organizations, including 13 public pension funds and 7 Wisconsin state agencies. We found that as of April 2022 at least:

- 18 governing boards, including the boards of 13 public pension plans, posted meeting minutes online, as did the Board of Trustees;
- 17 governing boards, including the boards of 12 public pension plans, allowed members of the public to watch or listen to governing board meetings online, as the Board of Trustees did during the public health emergency, but did not do for meetings held after December 2021;
- 15 governing boards, including the boards of 10 public pension plans, posted meeting agendas online before meetings occurred, as did the Board of Trustees; and
- 10 governing boards, including the boards of 6 public pension plans, posted meeting materials online before meetings occurred, as did the Board of Trustees.

We also found that 13 of the 20 governing boards, including the boards of 10 public pension plans, allowed members of the public to provide testimony at governing board meetings. Allowing testimony provides members of the public with opportunities to comment on issues, including a public pension plan's performance, fees, and investments in particular strategies and industries. The Board of Trustees did not allow public testimony at its meetings.

SWIB should work with the Board of Trustees to increase the accessibility of Board meetings to the public.

SWIB should work with the Board of Trustees to increase the accessibility of Board meetings to the public. Doing so is important because SWIB invests a significant amount of public funds, including for a public pension plan with a significant number of participants. SWIB should enable members of the public to watch Board meetings online, as they were able to do during the public health emergency. Currently, individuals must travel to Madison and observe these meetings in person. In addition, the Board should allow members of the public to provide brief comments at meetings. Taking these actions will increase the transparency of Board meetings.

☑ Recommendation

We recommend the State of Wisconsin Investment Board work with the Board of Trustees to:

- *allow members of the public to watch Board of Trustees meetings online;*
- *allow members of the public to provide brief comments at Board of Trustees meetings; and*
- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement these recommendations.*

SWIB Operations

SWIB has more flexibility than most state agencies to manage its operations. For example, 2011 Wisconsin Act 32, the 2011-13 Biennial Budget Act, granted SWIB the authority to establish its operating budget and create staff positions outside of the legislative budget process. In addition, the Board is authorized to establish compensation for SWIB staff outside of the state compensation plan. 2021 Wisconsin Act 177, which was enacted in March 2022, granted SWIB additional flexibility to manage its operations. For example, SWIB can employ legal counsel in any matters without obtaining consent from the Attorney General and can manage its procurements independently from DOA.

In October 2018, the Board of Trustees approved combining the executive director and chief investment officer into one position. Although statutes specified separate executive director and chief investment officer positions, statutes did not prohibit one individual from holding both positions. 2021 Wisconsin Act 177 explicitly permits one individual to concurrently serve in the executive director and the chief investment officer positions. The Board oversees the performance of the executive director/chief investment officer. Statutes also establish an internal audit department, headed by the internal audit director, which assists the Board in its oversight responsibilities by performing periodic internal audits of SWIB's activities.

In addition to the executive director/chief investment officer position, the Board of Trustees created three other executive staff positions:

- deputy executive director/chief administrative officer;
- agency business director; and
- head of risk management.

The Board of Trustees established the Management Council to support the executive director/chief investment officer.

To support the executive director/chief investment officer, the Board of Trustees established the Management Council, which includes the executive director/chief investment officer and other senior leaders from investment management and administrative support staff. The membership is set by the executive director/chief investment officer, who must inform the Board any time the membership changes. SWIB indicated that the Management Council collaboratively considers issues such as strategic direction, resource prioritization, organizational structure, and personnel matters. Appendix 3 lists the Management Council members in May 2022.

■ ■ ■ ■

Investment Performance

SWIB invests WRS assets among several asset classes intended to balance investment performance with risk and costs over the long term.

SWIB invests WRS assets among several asset classes intended to balance investment performance with risk and costs over the long term. It seeks investment returns to meet the long-term expected rate-of-return assumption for the WRS, which is recommended by the WRS actuary and approved by the ETF Board. Although SWIB has a goal of managing more assets internally, the proportion of assets managed internally decreased from 64.0 percent in 2017 to 53.3 percent in 2021. As of December 2021, the WRS Core Fund exceeded its five-year benchmark and had average annual investment returns of 12.5 percent, but the Variable Fund did not exceed its five-year benchmark and had average annual investment returns of 15.5 percent. The Core Fund's 20-year average annual investment return was lower than the long-term expected rate-of-return assumption from 2016 through 2020 but exceeded it in December 2021, when it was 7.9 percent.

WRS Structure and Asset Allocation

The WRS is a defined-benefit plan that provides lifelong monthly retirement benefits that are determined by using a formula that considers each participant's number of years of service and highest three years of salary, or a separate money purchase option. A fundamental objective of the WRS is to have sufficient assets to pay projected future benefits to retired participants, who are known as annuitants. SWIB manages WRS investments in two funds:

- The Core Retirement Investment Trust Fund (Core Fund) is a diversified fund that typically is invested for the long term. SWIB reported that Core Fund assets totaled $136.3 billion in December 2021.

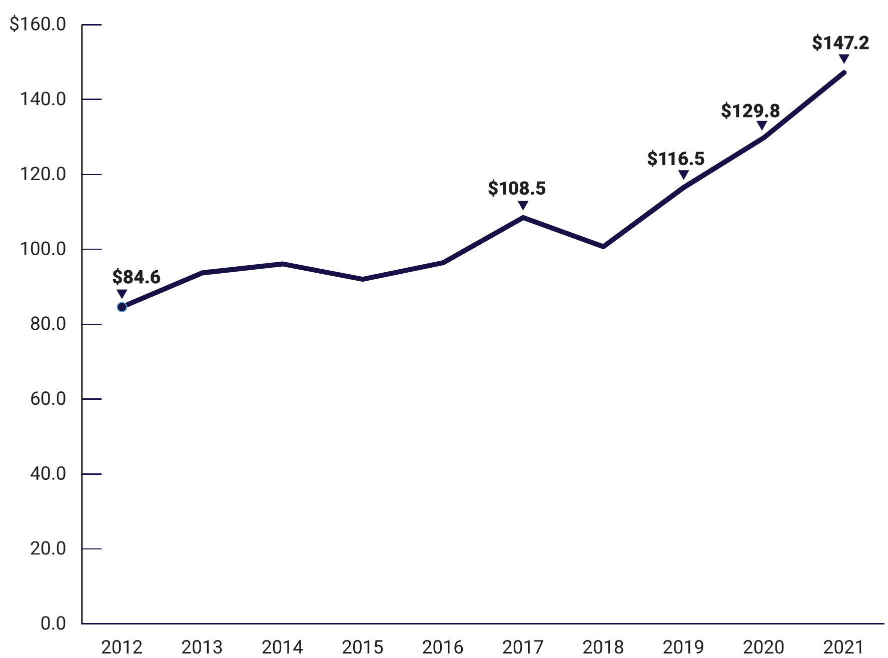
- The Variable Retirement Investment Trust Fund (Variable Fund) is a public equities fund, or stock fund, that provides returns that are typically more volatile than Core Fund returns. WRS participants can invest 50.0 percent of their retirement contributions in the Variable Fund. SWIB reported that Variable Fund assets totaled $10.9 billion in December 2021.

WRS assets totaled $147.2 billion in December 2021.

As shown in Figure 2, WRS assets increased from $84.6 billion in December 2012 to $147.2 billion in December 2021, or by 74.0 percent. Pension contributions, benefit payments to annuitants, and investment returns each affect the amount of assets.

Figure 2

WRS Assets
As of December 31
(in billions)



SWIB works with a consultant to develop an annual asset allocation plan that the Board of Trustees approves.

To manage risk and costs, SWIB works with a consultant to develop an annual asset allocation plan that the Board of Trustees approves. For each asset class, the plan designates an allocation target, which represents the intended proportion of investments allocated to the asset class, and a corresponding range that limits the extent to which the asset class can exceed or fall short of the target. As part of its plan for the Core Fund, the Board also approves a target and corresponding range for leverage, which is an investment strategy by which SWIB borrows against Core Fund assets in order to increase investments in certain asset classes.

Asset classes include:

- Public equities, such as stocks and other publicly traded equities, including domestic, international, and emerging market investments. Public equities are highly susceptible to market trends, and investment returns may fluctuate significantly from year to year.

- Fixed income investments, such as bonds, emerging market debt, government debt, and treasuries. Fixed income investments typically have lower risk than other asset classes, but investment returns may also be lower.

- Inflation protection investments, such as U.S. Department of Treasury inflation-protected investments.

- Private equity and debt investments, which are made in conjunction with other investors through partnerships in which SWIB is a limited partner. SWIB largely invests in private equity as a limited partner in partnerships that buy out or invest in struggling firms or provide capital to emerging private companies. Because these investments often have investment cycles of longer than five years and typically cannot be sold sooner than that without a loss in value, they are considered to be risky but are expected to outperform public equities in the long term.

- Real estate investments, such as commercial, industrial, and multifamily properties. SWIB's real estate investments are largely in partnerships that acquire and manage properties.

- Multi-asset investments, which span multiple asset classes within a collection of investment strategies that are intended to perform independently of the overall market.

The 2021 asset allocation plan for the Core Fund increased the targets for four asset classes and the use of leverage.

As shown in Table 1, the 2021 asset allocation plan for the Core Fund increased the targets for four asset classes, including public equities and private equity and debt. The Board of Trustees approved these increases based, in part, on the consultant's indication that public equities and private equity and debt were expected to have better performance relative to their risk in the medium-term than other asset classes. The Board also increased the leverage target to 15.0 percent. SWIB indicated that this target increased because the expected cost of financing leverage has declined in recent years.

Table 1

Asset Allocation Plan for the Core Fund[1]

	2019		2021	
Asset Class	Target	Target Range	Target	Target Range
Public Equity	49.0%	43.0% to 55.0%	51.0%	45.0% to 57.0%
Fixed Income	24.5	18.5% to 30.5%	25.0	19.0% to 31.0%
Inflation Protection	15.5	10.5% to 20.5%	16.0	11.0% to 21.0%
Private Equity and Debt	9.0	6.0% to 12.0%	11.0	8.0% to 14.0%
Real Estate	8.0	5.0% to 11.0%	8.0	5.0% to 11.0%
Multi-Asset	4.0	1.0% to 7.0%	4.0	1.0% to 7.0%
Total[2]	**110.0%**	108.0% to 112.0%	**115.0%**	110.0% to 120.0%

[1] As approved by the Board of Trustees.

[2] Exceeds 100.0 percent because of leverage.

As shown in Table 2, the proportions of Core Fund assets invested in public equities and fixed income investments decreased slightly from 2017 to 2021. In contrast, the proportions invested in inflation protection, private equity and debt, and multi-asset investments increased.

Table 2

Allocation of Core Fund Assets
As of December 31

Asset Class	2017	2018	2019	2020	2021
Public Equity	50.9%	49.1%	49.1%	48.7%	49.4%
Fixed Income	25.9	24.8	25.1	22.1	23.5
Inflation Protection	14.5	15.3	15.4	15.4	15.5
Private Equity and Debt	8.1	9.6	9.3	10.0	13.5
Real Estate	6.4	7.9	7.0	6.7	7.0
Multi-Asset	2.6	2.6	3.4	3.4	3.4
Cash	0.5	0.5	0.6	0.5	(0.1)[1]
Total[2]	**108.9%**	**109.8%**	**109.9%**	**106.8%**	**112.2%**

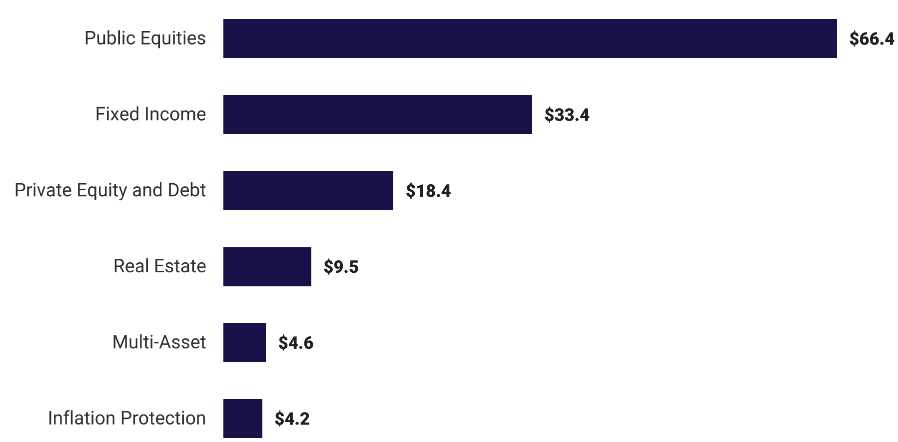
[1] Reflects liabilities incurred as a result of SWIB's use of leverage in hedge fund investments.

[2] Exceeds 100.0 percent because of leverage.

Figure 3 shows the amount of Core Fund assets held in each asset class as of December 31, 2021. Public equities totaled $66.4 billion, which was the largest amount held in any asset class.

Figure 3

Core Fund Assets, by Asset Class[1]
As of December 31, 2021
(in billions)



[1] Excludes leverage and cash.

SWIB indicated it uses leverage to reduce risk, increase investment returns, and help meet the long-term expected rate-of-return assumption for the WRS. Investment strategies that involve leverage can amplify investment gains and losses, depending on market performance. Investment losses can be amplified by liquidity risk, which is the risk that investments cannot be traded quickly enough to prevent or minimize a loss. SWIB monitors liquidity risk for the Core Fund.

Leverage of Core Fund assets increased the five-year average annual investment return for the Core Fund as of December 2021.

In December 2021, SWIB used 12.2 percent leverage, which means that it borrowed $16.6 billion against Core Fund assets in order to increase investments in certain asset classes. SWIB indicated that its increased use of leverage since 2012 has allowed it to diversify its investments and increase its proportion of lower-risk investments. SWIB's performance data indicate that leverage of Core Fund assets provided an additional 1.1 percentage points to the five-year average annual investment return as of December 2021. As a result, SWIB reported that leverage increased the five-year average annual investment return for the Core Fund from 11.4 percent to 12.5 percent.

Active Strategies

SWIB decides whether to adopt a passive strategy or an active strategy when selecting investments. A passive strategy attempts to earn returns consistent with market-based benchmarks. An active strategy attempts to earn returns greater than such benchmarks.

SWIB does not anticipate that it will attain the 6.8 percent long-term expected rate-of-return assumption over the next 10 years.

SWIB uses active management strategies to help attain the 6.8 percent long-term expected rate-of-return assumption for the WRS. SWIB does so, in part, because it expects an annual 5.4 percent return over the next 10 years on the passive management of Core Fund assets. Based on expected market conditions and the most-recent asset allocation plan approved by the Board of Trustees in December 2021, SWIB expects annual investment returns for the Core Fund to be between 5.7 percent and 6.2 percent for the next 10 years using active management strategies. Based on these expectations, SWIB does not anticipate that it will attain the 6.8 percent long-term expected rate-of-return assumption over the next 10 years.

SWIB employs active strategies in public equity, private equity and debt, and real estate investments, along with multi-asset strategies designed to perform independently of the overall market. SWIB indicated it has focused on increasingly complex investment strategies in recent years because of challenges in achieving the long-term expected rate-of-return assumption. In December 2021, 69.3 percent of WRS assets were actively managed.

In 2021, the multi-asset class included investments in public equity and fixed income investments across 15 primary strategies. Multi-asset class investments may underperform public equities when the market is strong and outperform them during market downturns. SWIB allows internal investment management staff to implement new investment strategies within the multi-asset class as pilot strategies. Strategies currently represented in the multi-asset class reflect six new strategies since 2019.

SWIB also invests in an actively managed strategy of pooled investments that, for the most part, contain externally managed hedge funds. This strategy is intended to produce investment returns independent of public equities. In December 2021, SWIB invested $6.3 billion in this pooled investment strategy.

Internal and External Management of Assets

SWIB aims to increase the proportion of assets managed internally because externally managed assets are more expensive.

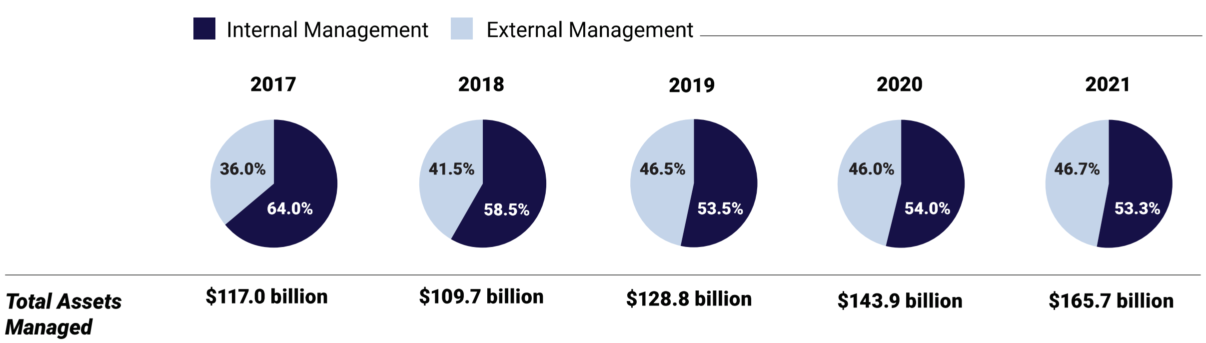
SWIB aims to increase the proportion of assets managed internally because externally managed assets are more expensive. In September 2020, SWIB reported to the Board of Trustees that for every $1.0 billion of assets transferred from external managers to internal management, SWIB could save approximately $3.0 million in investment management costs annually. In February 2021, SWIB reported that external management was between 1.5 and 4.0 times more expensive than internal management for numerous portfolios.

From December 2017 to December 2021, the proportion of assets managed internally decreased from 64.0 percent to 53.3 percent.

As shown in Figure 4, the proportion of assets managed internally decreased from 64.0 percent in December 2017 to 53.3 percent in December 2021. SWIB indicated this trend resulted, in part, from an increased use of external managers who execute more-complex strategies that require investment infrastructure and capabilities that SWIB does not possess. SWIB noted these strategies are an important component of its efforts to meet the 6.8 percent long-term expected rate-of-return assumption for the WRS.

Figure 4

Proportion of Assets Managed Internally and Externally
As of December 31



SWIB indicated that key obstacles preventing it from managing more assets internally include:

- employing a sufficient number of investment management and administrative support staff with the requisite skills;
- offering competitive compensation to attract talented staff; and
- having an IT infrastructure that provides sufficient information and technical capacity to execute effective investment management decisions.

Performance Relative to Benchmarks

WRS pension benefits are funded primarily by employer contributions, employee contributions, and investment earnings. Because investment earnings represented 80.9 percent of total WRS funding from 2011 through 2020, investment returns are important to the financial stability of the WRS.

SWIB uses market-based benchmarks to measure the performance of WRS investments.

SWIB uses market-based benchmarks to measure the performance of WRS investments. The Board of Trustees selects benchmarks based on the guidance of a consultant, which recommends specific benchmarks based on industry-recognized standards, such as the Morgan Stanley Capital International and Russell indices. Each underlying asset class benchmark is used to determine overall market-based benchmarks for the Core Fund and the Variable Fund. Because benchmarks are intended to track underlying market-based investment returns, they differ over time and may be calculated monthly, annually, and over longer time periods. To measure its performance, SWIB focuses primarily on five-year investment returns.

Average annual investment returns for the five-year period ending in December 2021 were 12.5 percent for the Core Fund and 15.5 percent for the Variable Fund.

As shown in Table 3, average annual investment returns for the five-year period ending in December 2021 were 12.5 percent for the Core Fund and 15.5 percent for the Variable Fund. As of December 2020 and December 2021, the Core Fund exceeded its 1-, 3-, 5-, and 10-year benchmarks. The Variable Fund exceeded its 5- and 10-year benchmarks as of December 2020 and only its 10-year benchmark as of December 2021. Five- and 10-year investment returns include management fees but exclude internal operating and other expenses. One-year investment returns for the Core Fund and the Variable Fund since 1982 are shown in Appendix 4.

Table 3

Investment Performance Relative to Benchmarks[1]
As of December 31

Period	Core Fund Investment Benchmark	Core Fund Average Annual Investment Return[2]	Variable Fund Investment Benchmark	Variable Fund Average Annual Investment Return[2]
One-Year				
2020	14.2%	15.2%	17.9%	17.5%
2021	16.3	16.9	20.2	20.0
Three-Year				
2020	9.4	9.8	11.7	11.6
2021	16.4	17.1	22.1	21.9
Five-Year				
2020	10.3	10.7	13.6	13.7
2021	11.9	12.5	15.6	15.5
Ten-Year				
2020	8.1	8.5	11.2	11.4
2021	9.7	10.1	13.7	13.8

[1] Returns that did not meet benchmarks are in shaded cells.

[2] One-year and three-year returns are net of all costs. Five-year and ten-year returns are net of management fees but exclude internal operating and other expenses.

The investment returns of most WRS asset classes exceeded their five-year benchmarks as of December 2021.

The investment returns of most WRS asset classes exceeded their five-year benchmarks as of December 2021. Appendix 5 shows the investment returns of each asset class compared to its benchmark for 1-, 3-, 5-, and 10-year periods as of December 2020 and December 2021. As shown in Appendix 5:

- The public equities asset class did not meet its 1-, 3-, 5-, or 10-year benchmarks as of December 2021. SWIB attributed these results, in part, to the underperformance of its investments in firms valued at $10.0 billion or more. As a result of historic underperformance, SWIB decided to restructure the asset class in the first quarter of 2022 away from an industry specialization approach to a more integrated approach.

- The multi-asset class exceeded its 1-, 3-, and 5-year benchmarks but did not meet its 10-year benchmark as of December 2021. In comparison, and as we noted in report 20-23, this asset class did not meet any of its benchmarks as of December 2019. SWIB attributed the higher performance in the last two years to increased market volatility, which is a market condition that may allow for increased returns for this asset class, and increased diversification resulting from new multi-asset strategies.

SWIB's hedge fund investment strategy had a one-year investment return of 6.0 percent and a five-year return of 3.3 percent as of December 2021. SWIB attributed these returns to overall higher market volatility, which may allow for increased returns for this asset class. SWIB's strategy is intended to produce relatively stable returns that are not tied to the fluctuations of the market, and it uses leveraged assets in an attempt to generate additional returns.

SWIB works with a consultant to independently evaluate its external hedge fund managers and regularly assess their performance, investment philosophy, and structure. From 2020 through 2021, SWIB discontinued working with five hedge fund managers, in part, because of their poor performance and because SWIB changed its investment strategy and began working with other managers.

Reporting on Investment Performance

Reporting on investment performance allows key stakeholders to assess performance. To meet the needs of key stakeholders, consideration needs to be given to how investment performance is reported, including whether investment returns are presented net of expenses and the appropriate time period to report.

For pension plans, investment returns are generally reported in three ways:

- gross-of-fees, which does not account for any investment or management expenses;
- net-of-fees, which accounts for the fees of external investment managers; and
- net-of-all-costs, which accounts for all investment expenses, including the fees of external investment managers and internal costs such as salaries.

SWIB implemented our recommendation to report net-of-all-costs investment returns in public forums.

Net-of-all-costs investment returns directly affect key stakeholders, such as employers and employees participating in the WRS, and reflect the effects of SWIB's expenses on returns. In report 20-23, we found that SWIB historically reported WRS investment returns as gross-of-fees. We recommended SWIB include net-of-all-costs investment returns on its website, in its press releases, and in its annual report to the Legislature required by s. 25.17 (14m), Wis. Stats. In our current audit, we found that SWIB implemented our recommendation.

Performance Relative to the Long-Term Expected Rate-of-Return Assumption

In December 2021, the ETF Board decreased the long-term expected rate-of-return assumption for the WRS to 6.8 percent.

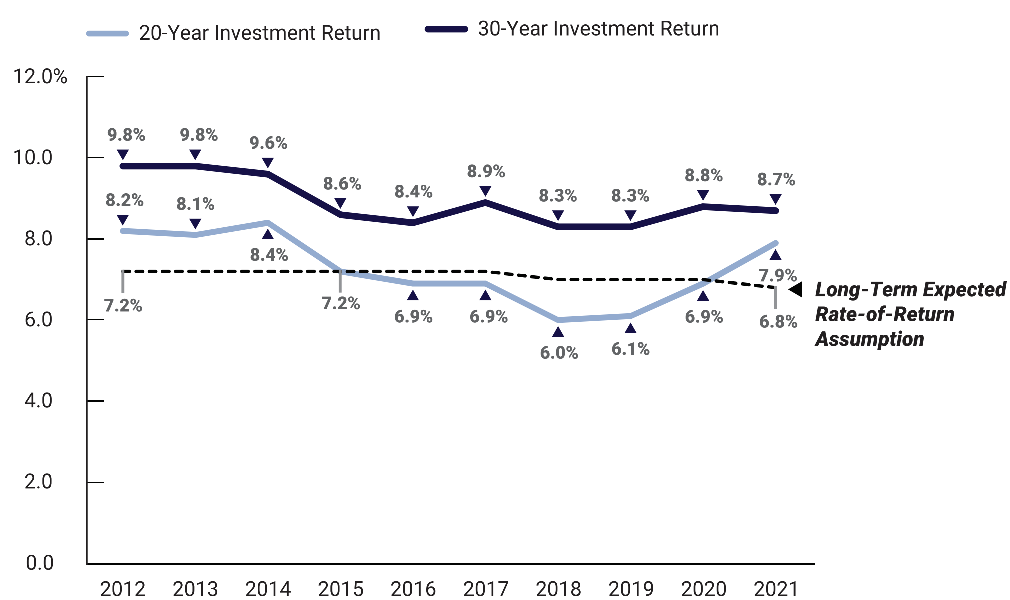
In December 2021, the ETF Board decreased the long-term expected rate-of-return assumption for the WRS to 6.8 percent. This assumption was 7.2 percent from 2011 through 2017, and it was 7.0 percent from 2018 through 2020. Because of the long-term nature of a pension plan and annual fluctuations in market performance, investment returns will likely not meet this assumption every year. To reduce volatility in contributions and annuity payments because of fluctuations in investment returns, Core Fund returns are smoothed over a five-year period.

As of December 2021, the 20-year average annual investment return of the Core Fund exceeded the long-term expected rate-of-return assumption.

As shown in Figure 5, the 20-year average annual investment return of the Core Fund exceeded the long-term expected rate-of-return assumption as of December 2021, when it was 7.9 percent. The 20-year average annual investment return had been lower than the long-term expected rate of return assumption from 2016 through 2020. The 30-year average annual investment return declined since 2012, but it remained above the long-term expected rate-of-return assumption and was 8.7 percent as of December 2021.

Figure 5

Core Fund 20-Year and 30-Year Investment Returns, Compared to the Long-Term Expected Rate-of-Return Assumption[1]
As of December 31



[1] Returns are shown net-of-fees.

SWIB implemented our recommendation to include 20-year investment returns for the WRS in its quarterly reports to the Board of Trustees and its annual report to the Legislature.

In a 2016 report on investment transparency, Pew Charitable Trusts recommended that public pension plans report 20-year returns to provide stakeholders with information aligned with the long-term nature of pension plans. In report 20-23, we found that SWIB did not include 20-year return information for the WRS in its quarterly investment performance reports to the Board of Trustees or in its annual report to the Legislature, and we recommended it include this information. In our current audit, we found that SWIB implemented our recommendation.

SWIB indicated it has become more difficult and expensive to generate investment returns to meet the long-term expected rate-of-return assumption. Since 2017, 101 of 130 public pension plans have reduced their long-term expected rate-of-return assumptions, according to the National Association of State Retirement Administrators.

Investment returns affect the annuity payments made to retired participants. Appendix 6 shows the annual annuity adjustments for the Core Fund and the Variable Fund for the past 15 years. In the past five years, annuity adjustments ranged from:

- 0.0 percent to positive 7.4 percent for the Core Fund; and

- negative 10.0 percent to positive 21.0 percent for the Variable Fund.

Investment returns also affect contribution rates paid by employers and employees. ETF calculates these rates by considering various factors, including investment performance smoothed over five years for the Core Fund. As shown in Table 4, the total contribution rate for general employees participating in the WRS was 13.0 percent of wages in 2022.

Table 4

Total Contribution Rates for General Employees Participating in the WRS
Rates as a Proportion of Wages

Calendar Year	Total Contribution Rate
2013	13.3%
2014	14.0
2015	13.6
2016	13.2
2017	13.6
2018	13.4
2019	13.1
2020	13.5
2021	13.5
2022	13.0

Performance Relative to Other Public Pension Plans

We compared the investment performance of the Core Fund to the performance of nine other large public pension plans.

To assess SWIB's investment strategies and asset allocation decisions, we compared the investment performance of the Core Fund to the performance of nine other large public pension plans. Such comparisons are affected by differences in plan structure, such as asset allocation, cash flow needs, investment styles, funding levels, return assumptions, risk tolerance levels, and statutory or other restrictions on allowable investments. In addition, SWIB's investment strategies and asset allocation are affected by the financial position of the WRS, which is stronger than that of the nine other large public pension plans in the peer group. However, all nine plans face the same market conditions.

Among the peer group, long-term expected rate-of-return assumptions ranged from 6.75 percent to 7.5 percent in 2020, which was the most-recent year for which such information was available at the time of our audit. The Core Fund had the third-lowest assumption. In 2020, the WRS was the only pension plan in the peer group that was fully funded, which means that its assets equaled or exceeded the estimated amount needed to meet future pension obligations. Other peer group plans had assets ranging from 58.0 percent to 95.0 percent of the amount estimated to meet future pension obligations. Appendix 7 contains information about the peer group.

The five-year investment return for the Core Fund ranked third among the peer group.

Table 5 shows average annual investment returns for the Core Fund and the peer group plans for the 1-, 3-, 5-, and 10-year periods as of December 2020. The five-year investment return for the Core Fund, which SWIB considers its primary performance measure, ranked third among the peer group.

Table 5

Comparison of Average Annual Investment Returns among Selected Public Pension Plans
As of December 31, 2020

	One-Year		Three-Year		Five-Year		Ten-Year	
Public Pension Plan	Return	Rank	Return	Rank	Return	Rank	Return	Rank
Minnesota State Board[1]	14.7%	2	10.2%	1	11.2%	1	9.9%	1
Washington State Investment Board[2]	12.4	4	9.7	3	10.9	2	9.5	2
Wisconsin Retirement System Core Fund[1]	**15.3**	**1**	**9.9**	**2**	**10.7**	**3**	**8.5**	**5**
Florida State Board[1]	12.9	3	8.9	4	10.1	4	8.8	3
Ohio Public Employees Retirement System[1]	12.0	6	8.4	5	10.0	5	8.6	4
Teachers Retirement System of Texas[2]	11.6	7	8.1	7	9.8	6	8.5	5
California Public Employees Retirement System[2]	12.4	4	8.4	5	9.7	7	8.4	7
New Jersey Division of Investments[2]	10.8	8	8.1	7	9.2	8	8.3	8
Virginia Retirement System[2]	10.3	9	7.9	9	9.1	9	8.2	9
Pennsylvania Public School Employees' Retirement System[1]	8.8	10	7.3	10	9.0	10	7.6	10

[1] Returns are net-of-fees.

[2] Returns are net-of-all-costs.

Because the WRS is fully funded, SWIB does not experience the same pressure to achieve high returns as other plans in the peer group. Six peer group plans, including those with the highest returns, attempted to achieve higher returns. Investment returns also reflect differences in asset allocation decisions. In 2020, the Minnesota State Board allocated more assets to public equities than did the Core Fund, and the Washington State Investment Board allocated more assets to private equity and real estate investments than did the Core Fund.

SWIB also regularly assessed its performance compared to other investors. For example, it contracted with a consultant to compare Core Fund investment performance to the performance of other large public pension plans. The consultant found that the Core Fund's 1-, 3-, 5-, and 10-year investment returns as of December 2021 ranked at or above the comparison group median. The consultant also found that SWIB allocated a larger proportion of Core Fund assets to more conservative fixed income investments and a smaller proportion to alternative investments such as private equities.

Non-WRS Fund Investment and Performance

In December 2021, the assets for the SIF, Historical Society Trust Fund, Injured Patients and Families Compensation Fund, State Life Insurance Fund, and UW System Long Term Fund totaled $18.5 billion, which was 11.2 percent of all assets that SWIB managed.

One-year investment returns for the Historical Society Trust Fund, Injured Patients and Families Compensation Fund, and UW System Long Term Fund ranged from 2.7 percent to 19.6 percent, and all exceeded their benchmarks. The SIF had a one-year return of 0.06 percent, which exceeded its benchmark of 0.04 percent, and the State Life Insurance Fund had a one-year return of negative 1.3 percent. Appendix 1 provides additional information about these five funds.

■ ■ ■ ■

Investment and Operating Expenses

The Board of Trustees is responsible for investing assets in a prudent and cost-effective manner.

As part of its fiduciary role, the Board of Trustees is responsible for investing assets in a prudent and cost-effective manner. SWIB is authorized to establish its own budget and to create or eliminate staff positions. From 2017 through 2021, SWIB's annual expenses increased by 64.3 percent, primarily because of an increase in management fees paid to external investment managers and a growth in the total amount of assets SWIB managed. In December 2021, SWIB had 290 full-time equivalent (FTE) positions, which was an increase of 55.0 FTE positions since December 2019. We recommend SWIB assess its planning and vendor evaluation processes for a large information technology (IT) project, continue to reduce its reliance on contract staff positions, annually provide the Board with all available information on calendar year total amounts spent on external management fees, and continue to assess and report to the Board at least annually on its progress in improving its data management. We also recommend SWIB work with the Board to develop a multi-year strategic plan that includes goals for the proportion of assets that it manages internally, as well as the IT systems and staff it will need to achieve this proportion.

Expenses

As authorized by s. 25.187 (2), Wis. Stats., SWIB bills an allocated amount for its internal operating costs, including staff salaries and bonuses, to the agencies that administer the funds for which it invests available assets. Statutes authorize SWIB to spend the amounts it receives from these agencies. Since 2011, SWIB has had the authority to establish its own internal operating budget. Certain expenses for SWIB investment activities, such as fees for external investment managers and support services, are charged directly to investment earnings. Whether SWIB receives payments from agencies or charges its expenses directly to investment earnings, all SWIB expenses are incurred by the funds for which SWIB invests available assets. SWIB prepares an annual total budget, which SWIB refers to as the total cost of management plan, and presents it to the Board of Trustees for consideration and approval. SWIB receives no general purpose revenue.

From 2017 through 2021, SWIB's expenses increased from $427.4 million to $702.1 million, or by 64.3 percent.

As shown in Table 6, SWIB's expenses increased from $427.4 million in 2017 to $702.1 million in 2021, or by 64.3 percent. Management fees, which are paid to external investment managers, increased by $233.7 million over this five-year period and accounted for 81.6 percent of SWIB's expenses in 2021. Appendix 8 shows the external investment managers that received the highest amounts of management fees from SWIB in 2021. SWIB expenses also included payments to vendors for external support services, such as asset custody and consulting, as well as internal operating costs, such as staff salaries and bonuses.

Table 6

SWIB's Expenses
(in millions)

	2017	2018	2019	2020	2021
Management Fees					
Public Markets and Hedge Funds[1]	$156.8	$174.5	$178.8	$247.3	$286.0
Private Equity[2]	133.1	141.3	157.2	130.8	218.6
Real Estate[2]	49.0	50.3	50.8	55.6	67.9
Subtotal	338.9	366.1	386.8	433.7	572.6
External Support Services[3]	40.0	37.7	43.2	43.3	51.0
Internal Operating Expenses					
Salaries and Fringe Benefits	29.4	30.3	34.3	43.8	51.0
Bonuses[4]	13.8	11.5	9.8	13.9	21.5
Supplies and Permanent Property[5]	5.3	5.2	6.2	5.7	6.0
Subtotal	48.5	47.0	50.3	63.4	78.5
Total	**$427.4**	**$450.8**	**$480.3**	**$540.4**	**$702.1**

[1] Includes fees for external management of publicly traded investments and base and performance fees for externally managed active strategies.

[2] Excludes management fees known as "carried interest." Carried interest fees, which are charged directly to investment returns and are not reported with other SWIB expenses, are shown in Table 7.

[3] Includes fees for asset custody, consulting, external investment research, external IT services, and legal services. Appendix 9 lists the vendors that were paid the most by SWIB in 2021.

[4] Bonuses are for performance in the prior year and are shown before any withholding on these amounts.

[5] Includes office space, research, supplies, travel, and IT infrastructure.

Management fees are paid to external investment managers who invest in assets such as private equity investments, real estate investments, and hedge funds. Management fees typically include two components: contractually determined base fees and conditional performance fees. Base fees are calculated as a proportion of assets invested and are incurred automatically, and performance fees vary based on circumstances and are typically calculated based on investment returns.

Carried Interest

In 2021, carried interest costs totaled $1.3 billion.

Carried interest is a type of performance fee related to some private equity and real estate investments. Carried interest is paid when a fund manager liquidates an investment and the rate-of-return exceeds an agreed-upon minimum rate. SWIB does not receive a bill for carried interest, which is reported separately from its other expenses. As shown in Table 7, carried interest costs totaled $1.3 billion in 2021.

Table 7

Carried Interest Costs, by Asset Class[1]
(in millions)

Asset Class	2017	2018	2019	2020	2021
Private Equity[2]	$193.2	$142.0	$197.5	$385.9	$1,127.0
Real Estate	65.9	37.7	19.9	(5.5)[3]	133.0
Total	**$259.1**	**$179.7**	**$217.4**	**$380.4**	**$1,260.0**

[1] Carried interest is an external management fee incurred for some private equity and real estate investments.

[2] Includes venture capital investments.

[3] Carried interest for real estate investments was negative because investment performance declined from 2019 to 2020.

In report 20-23, we found that SWIB initially underreported carried interest costs for 2018 and 2019 to the Board of Trustees in September 2020, and we recommended that SWIB obtain carried interest costs in a timely manner and annually report this information to the Board. In our current audit, we found that SWIB implemented our recommendation.

We analyzed the total investment expenses per $100 of assets that SWIB managed. In December 2021, SWIB managed 41.6 percent more assets than it did in December 2017. If the investment expenses increase only because of an increase in the amount of assets managed, expenses per $100 of assets managed remains consistent.

SWIB's total investment expenses for each $100 of assets managed increased from $0.61 in 2017 to $1.25 in 2021.

As shown in Table 8, SWIB's total investment expenses, including carried interest costs, for each $100 of assets managed increased from $0.61 in 2017 to $1.25 in 2021. This increase occurred primarily because of higher fees paid to external investment managers.

Table 8

Investment Expenses Per $100 of Assets Managed, by Calendar Year

Calendar Year	Investment Expenses	Total Investment Expenses[1]	Change in Total Investment Expenses[1]
2017	$0.38	$0.61	n/a
2018	0.39	0.55	$(0.06)
2019	0.39	0.57	0.02
2020	0.42	0.71	0.14
2021	0.45	1.25	0.54

[1] Includes carried interest costs.

Management Fees

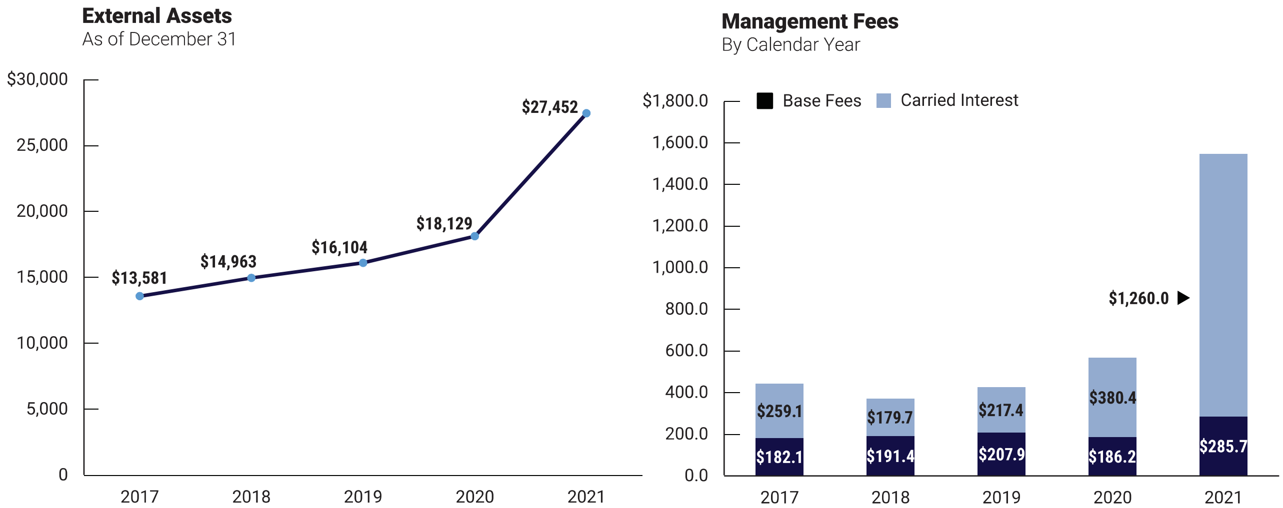
The allocation of Core Fund assets to more-complex investment strategies for which SWIB relied on external investment managers has increased. Because the proportion of assets managed externally increased, the amount of management fees paid to external investment managers also increased.

SWIB's investments in private equity and real estate and fees paid to external investment managers increased.

As shown in Figure 6, external management of private equity and real estate investments increased from $13.6 billion in December 2017 to $27.5 billion in December 2021, or by 102.2 percent. Management fees paid to external investment managers increased from $441.2 million in 2017 to $1.5 billion in 2021, or by 240.0 percent.

Figure 6

External Management of Private Equity and Real Estate Investments[1, 2]
(in millions)



[1] Excludes private debt.

[2] Fees for private equity and real estate are comingled, so we report these two asset categories together.

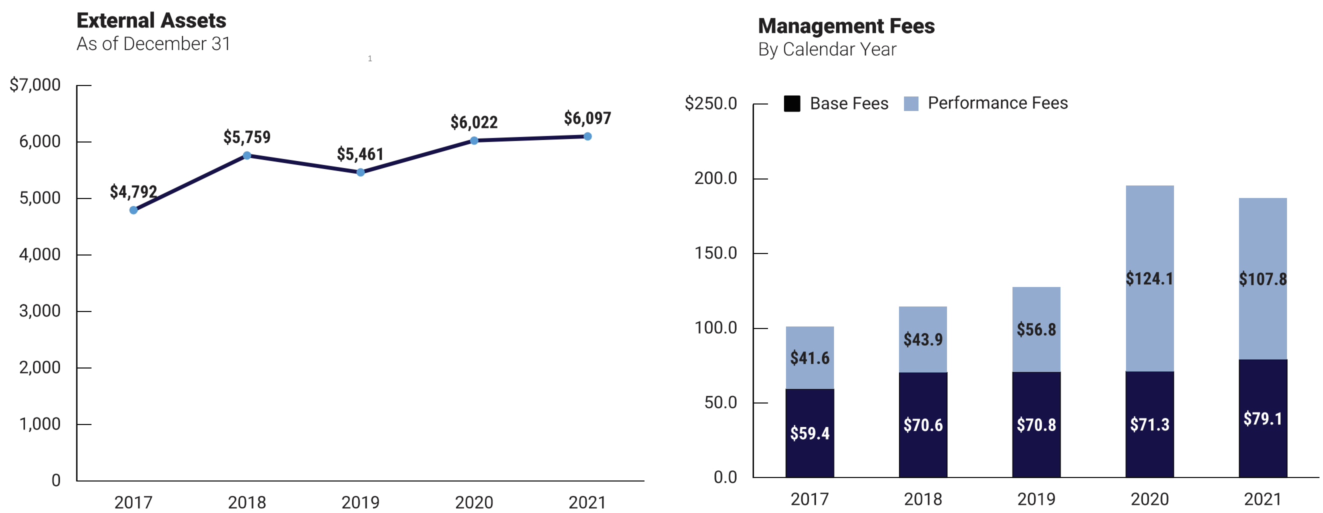
Total management fees per $100 in private equity and real estate investments increased from $3.25 in 2017 to $5.63 in 2021, including carried interest. Changes in management fees per $100 are determined primarily by investment performance. Performance for private equity and real estate investments was significantly higher in 2021 than in prior years.

SWIB's investment in hedge funds and fees paid to external investment managers increased.

As shown in Figure 7, external management of hedge funds investments increased from $4.8 billion in 2017 to $6.1 billion in 2021, or by 27.1 percent. Management fees increased from $101.0 million in 2017 to $186.9 million in 2021, or by 85.0 percent.

Figure 7

External Management of Hedge Fund Investments
(in millions)



As hedge fund investment increased, the management fees that SWIB paid for each $100 in such investments increased from $2.11 in 2017 to $3.07 in 2021, or by 45.5 percent. However, hedge fund management fees are lower than the fees of some other public pension plans because SWIB selected the investments with help from a consultant, rather than paying an external manager to select them.

SWIB evaluated hedge fund performance by assessing investment returns that include management fees. For hedge fund investments, performance fees are typically calculated as a proportion of investment returns or investment performance in excess of a benchmark. Hedge fund managers performed better in 2020 and 2021 than in 2017, which resulted in higher performance-based fees in 2020 and 2021 than in prior years.

Information Technology Projects

In recent years, SWIB initiated IT projects to update and expand its capabilities.

In recent years, SWIB initiated IT projects to update and expand its data management, investment management, and operational capabilities. SWIB did so, in part, in order to be able to manage a greater proportion of investments internally and support increasingly complex investment strategies. SWIB spent $14.1 million of the $24.6 million it had budgeted for IT projects in 2020 and 2021.

In 2017, SWIB completed the $45.1 million Agile Reliable Investment Enterprise System (ARIES) project, which was intended to update and improve its capabilities and allow it to manage a greater proportion of investments internally. SWIB subsequently determined that it needed additional support for its investment strategies. In June 2018, SWIB reported to the Board of Trustees that it lacked sufficient staff capacity and expertise in centralized data reporting, integrated information systems, and operations. As a result, SWIB began the SWIB Foundations project. In March 2021, SWIB completed this $3.3 million project, which is intended to help improve data quality and consistency.

In 2019, SWIB began Project Centum, which is intended, in part, to allow it to increase the proportion of assets it manages internally.

In 2019, SWIB began Project Centum, which is intended, in part, to allow it to increase the proportion of assets it manages internally. SWIB anticipates completing the project in several phases. Although it established a budget for each project phase, it did not establish an overall project budget. SWIB anticipates that the project will make existing internal management more successful by improving data quality and permitting it to process investment trades and transactions internally. For example, SWIB anticipates the project will provide real-time data on its holdings, improve support for internal reporting, and improve fund-level performance calculations.

In report 20-23, we noted it is important for the Board of Trustees to monitor the progress and expenditures of Project Centum and for the project to stay on schedule. In our current audit, we found that SWIB provided the Board with regular updates on the project's progress and quarterly updates on project expenditures.

SWIB executed a contract with a vendor to construct the software platform for Project Centum in September 2020 and reported to the Board of Trustees that it planned to migrate its first investment strategy to this new platform in the second quarter of 2021. However, SWIB reported to the Board in June 2021 that the project's progress was delayed because of unanticipated software customizations that were needed. In March 2022, SWIB reported to the Board that it anticipated migrating its first investment strategy with limited functionality in June 2022 and with complete functionality in 2023.

In December 2021, SWIB reported to the Board of Trustees that the cost of Project Centum will increase by $6.9 million.

In December 2021, SWIB reported to the Board of Trustees that the cost of Project Centum will increase by $6.9 million because software modifications are needed to complete the project. In March 2022, SWIB indicated to the Board that it will cost an estimated $15.3 million to maintain SWIB's current IT systems through 2024 while transitioning to the new software.

Because Project Centum is behind schedule and over budget, SWIB should assess in writing the planning and vendor evaluation processes it used for the project and identify improvements that could help avoid delays and unexpected expenditures on future IT projects.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *assess in writing the planning and vendor evaluation processes it used for Project Centum and identify improvements that could help avoid delays and unexpected expenditures on future information technology projects; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement this recommendation.*

Staffing

SWIB staff are in the unclassified civil service and include:

- administrative support staff who provide accounting and operations, IT, finance and strategic planning, legal, and other services;

- investment management staff who research, select, and trade investments; and

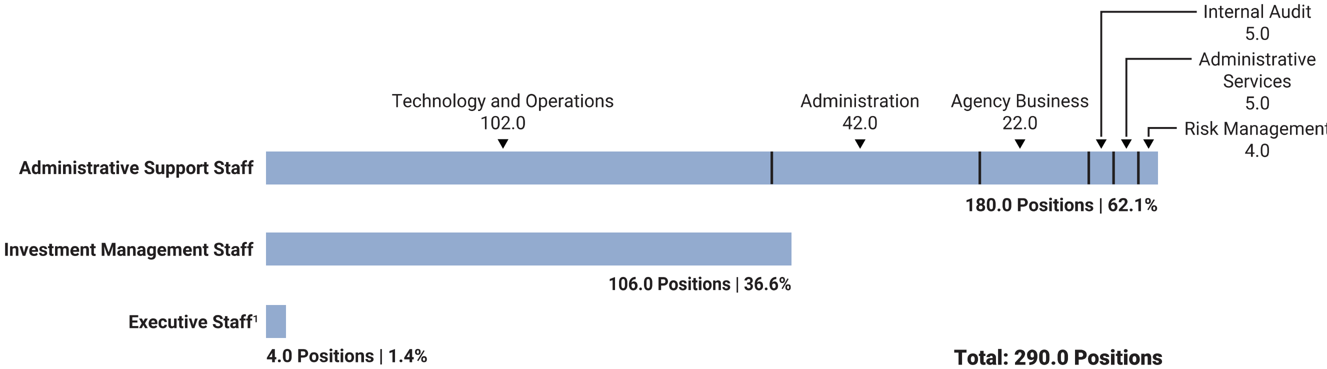
- executive staff.

In December 2021, SWIB had 290 FTE positions.

As shown in Figure 8, SWIB had 290 FTE positions in December 2021, including 180.0 FTE administrative support positions (62.1 percent of the total), 106.0 FTE investment management positions (36.6 percent), and 4.0 FTE executive positions (1.4 percent). The 290 FTE positions included 26.0 FTE positions that the Board of Trustees approved in 2020 and 29.0 FTE positions that it approved in 2021.

Figure 8

Authorized FTE Positions
December 31, 2021



[1] Includes the executive director/chief investment officer, deputy executive director/chief administrative officer, agency business director, and head of risk management.

From December 2019 to December 2021, the number of FTE positions increased by 23.4 percent because of efforts to manage more assets internally, staff needed for Project Centum, and the conversion of contract staff positions to FTE positions. SWIB indicated it anticipates staffing levels will increase to 300.0 FTE positions by 2023 and to 320 FTE positions by 2026, in part, because it expects to increase the amount of assets managed internally.

In December 2021, SWIB had 58.0 vacant FTE positions, in part, because the Board of Trustees authorized 29.0 new FTE positions that month. SWIB had 57 new hires and 21 staff departures in 2020, and 41 new hires and 32 staff departures in 2021.

Contract Staff

SWIB uses contract staff to perform typical business operations and help to complete projects. SWIB's policies do not require Board of Trustees approval to hire contract staff, who are generally more expensive than other types of staff. SWIB updates the Board quarterly on the number and cost of its contract staff.

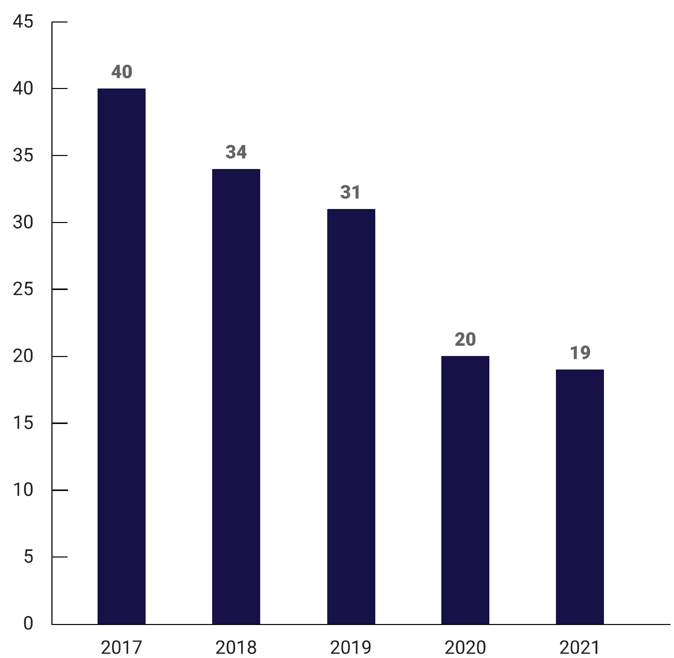
In report 20-23, we noted that SWIB estimated it could save $1.2 million by converting contract staff positions associated with typical business operations into FTE positions, and we recommended SWIB do so. In our current audit, we found that SWIB continued to decrease its reliance on contract staff.

From December 2017 to December 2021, the number of contract staff declined from 40 to 19.

As shown in Figure 9, the number of contract staff declined from 40 in December 2017 to 19 in December 2021. This decline occurred because SWIB converted the positions in which these individuals worked into FTE positions. Although SWIB decreased the number of contract staff by only one from December 2020 to December 2021, it reported to the Board of Trustees that it had reduced the annual costs of contract staff by approximately $1.1 million. SWIB indicated these cost savings were achieved as a result of lower-cost projects and shifting from higher-paid contract staff to those paid less.

Figure 9

Contract Staff
As of December 31



In 2021, SWIB spent $5.1 million on contract staff. In December 2021, 6 of 19 contract staff helped to complete specific projects. The remaining 13 contract staff performed typical operational tasks, including 12 in positions that SWIB expects to convert to FTE positions. In December 2021, SWIB reported to the Board of Trustees that the number of contract staff will likely increase in 2022 in order to support Project Centum and perform business operations while SWIB works to fill vacant FTE positions. In March 2022, SWIB reported that 2 additional contract staff performed project work, resulting in a total of 21 contract staff. In June 2022, SWIB reported a total of 23.4 contract staff.

SWIB should continue to assess its need for contract staff and convert the positions filled by contract staff who perform typical operational tasks into FTE positions. Doing so will help to reduce SWIB’s expenses.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *continue to assess its need for contract staff and convert the positions filled by contract staff who perform typical operational tasks into full-time equivalent positions; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement this recommendation.*

Budget Oversight by the Board of Trustees

Since 2011, statutes have authorized SWIB to establish and monitor its internal operating budget, which includes expenses such as staff compensation. Policies require SWIB to develop a budget, which is subject to Board of Trustees approval. Excluding management fees, Board policy requires SWIB's executive director/chief investment officer or chief financial officer to request and receive Board approval before exceeding the budget.

SWIB's expenses were $33.6 million more than budgeted in FY 2020-21.

As shown in Table 9, SWIB's expenses were $33.6 million more than budgeted in fiscal year (FY) 2020-21. Expenses exceeded the budgeted amount primarily because higher management fees, particularly for hedge funds, resulted from increased investment performance.

Table 9

Budget and Actual Expenses, by Fiscal Year
(in millions)

Fiscal Year	Budget	Actual Expenses	Under Budget/ (Over Budget)
2017-18	$439.7[1]	$446.5	$ (6.8)
2018-19	490.0	466.8	23.2
2019-20	549.6	504.1	45.5
2020-21	585.3[2]	618.9	(33.6)

[1] Includes a $4.0 million increase approved by the Board of Trustees in December 2017.

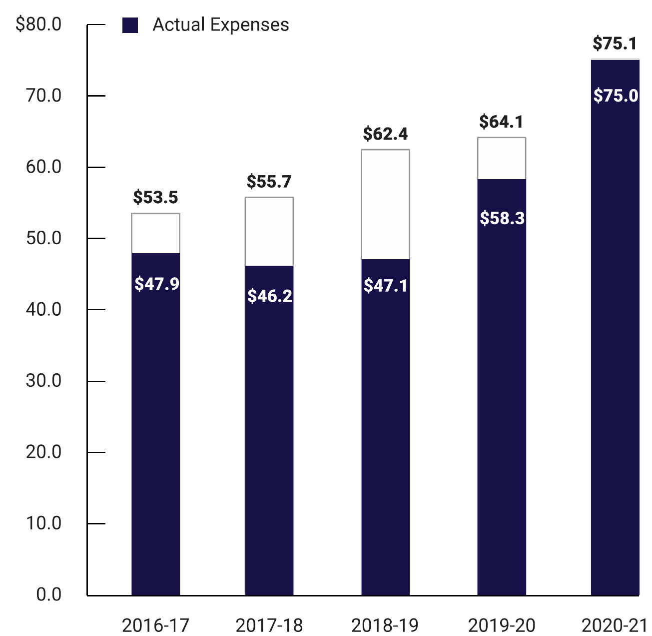
[2] Includes adjustments based on a budget for calendar year 2021 that the Board of Trustees adopted in December 2020.

SWIB's internal operating budget and actual expenses increased from FY 2016-17 through FY 2020-21.

SWIB's internal operating budget includes expenses for staff compensation, as well as internal expenses for services, supplies, and IT projects. As shown in Figure 10, SWIB's internal operating budget and actual expenses increased from FY 2016-17 through FY 2020-21. SWIB spent $75.0 million for internal operations in FY 2020-21, which was $27.1 million more than in FY 2016-17.

Figure 10

Internal Operating Budget and Actual Expenses, by Fiscal Year
(in millions)



In September 2020, the Board of Trustees approved shifting SWIB's internal operating budget from a fiscal year basis to a calendar year basis, beginning with the calendar year 2021 budget presented to the Board in December 2020. The FY 2020-21 budget presented to the Board in June 2020 was the last budget on a fiscal year basis. SWIB indicated that this change was made in order to align its budgets with its investment performance reviews, which occur on a calendar-year basis. SWIB's policies continue to require the Board each June to approve an internal operating budget for the fiscal year, based on approved calendar year budgets, in order to meet state accounting and reporting requirements.

In September 2021, the Board removed external management fees from the budget, beginning in calendar year 2022. SWIB indicated this change was made in order to focus on the most-controllable costs, such as internal operating expenses and expenses for services provided by other external vendors. External management fees vary from year to year, based on changes in the amount of assets managed and investment returns. However, policies require SWIB to report external management fees to the Board each quarter.

In 2020 and 2021, SWIB provided the Board of Trustees with quarterly updates on expenses, including external management fees. In March 2022, SWIB provided it with information on base management fees for the entire years of 2020 and 2021, but this information excluded performance fees. In June 2022, SWIB provided it with information on external management fees, including performance fees, for the entire year of 2021.

SWIB should continue to provide the Board of Trustees with information about external management fees.

SWIB should continue to provide the Board of Trustees with information on external management fees, including both management and performance fees. SWIB should work with the Board to modify policies to require it to report the total amount of external management fees paid each calendar year. SWIB also should provide the Board in the final quarterly update for a given calendar year all available information about the total amount of external management fees paid during that calendar year. Although carried interest expenses for private equity and real estate investments typically become available after these final quarterly updates are completed, SWIB could include performance fees for hedge funds. Taking these steps will help the Board to effectively oversee SWIB's expenses and will help the Board to determine the extent to which additional assets will be managed internally.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *work with the Board of Trustees to modify policies to require it to report the total amount of external management fees paid each calendar year;*

- *comply with the modified policies by providing the Board of Trustees in the final quarterly update for a given calendar year all available information about the total amount of external management fees paid during that calendar year; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement these recommendations.*

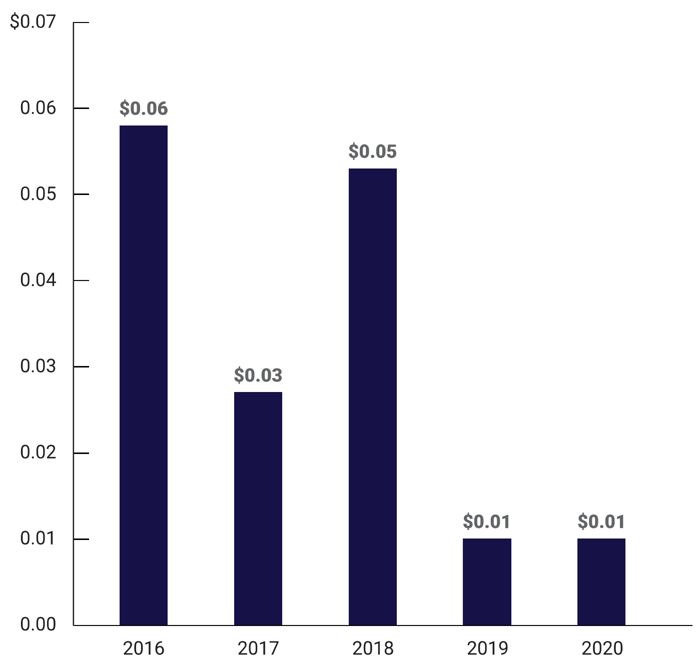
Expenses Relative to Other Public Pension Plans

In 2020, Core Fund expenses were less than those of the comparison group by approximately $0.01 per $100 of assets managed.

To assess the general cost effectiveness of investment management, SWIB hires a consultant to annually compare the Core Fund expenses to the expenses of 14 other large public pension plans, including 5 pension plans in the peer group shown in Table 5. This comparison accounts for differences in the sizes and asset allocations of the plans. As shown in Figure 11, Core Fund expenses were less than those of the comparison group by approximately $0.01 per $100 of assets managed in 2020, which was the most-recent year such information was available at the time of our audit. The consultant reported that SWIB had lower expenses because it had a lower proportion of assets under external management and paid lower fees to external managers. The consultant reported that cost savings relative to the comparison group declined from 2016 through 2020 primarily because the Core Fund had an increasing proportion of higher-cost assets, such as hedge funds and private equity investments.

Figure 11

Cost Savings per $100 Relative to the Comparison Group, by Calendar Year[1]



[1] Information for 2021 was not yet available at the time of our audit.

Data Management

Data management involves collecting, maintaining, and using data securely, efficiently and cost-effectively. Sufficient data management ensures the collection and use of comprehensive and accurate data. Insufficient data management can result in inaccurate data and delays in gathering accurate data for analysis. As an agency that must move swiftly to take advantage of investment opportunities, SWIB needs comprehensive and accurate data.

In report 20-23, we found that SWIB received an internal audit report and a consultant report that identified deficiencies in its management of data. As a result, we recommended that SWIB review and assess its data management, develop a plan and timeline to improve its data governance, and report to the Board of Trustees on its progress.

In our current audit, we found that SWIB updated the Board of Trustees in March 2021 on its assessment of data management. The update included a list of priorities for SWIB to improve its data management and a timeline. In April 2022, SWIB indicated to us that it had improved its data management capabilities by creating written data management procedures, adding data validations, and consolidating multiple sources of data into one location. However, SWIB indicated that these capabilities had not improved as much as expected, in part, because of delays in implementing Project Centum. Therefore, SWIB should continue to assess and report to the Board at least annually on its progress in improving its data management.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *continue to assess and report to the Board of Trustees at least annually on its progress in improving its data management; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement this recommendation.*

Strategic Plan

SWIB did not establish either a target or target ranges for the proportion of its assets to manage internally.

SWIB did not establish either a target or target ranges for the proportion of its assets to manage internally, and it did not establish a written plan for moving certain investment strategies to internal management. SWIB indicated a target or target ranges may change over time because of changes in asset allocations, investment performance, and the amount of assets managed, and that investing circumstances can change quickly. SWIB indicated that the executive director/chief investment officer and senior investment management staff decide whether to move assets to internal management based on specific investment strategies and whether SWIB is able to manage these strategies internally. SWIB indicated it is unlikely to manage internally those strategies that require specialized skills or a physical presence outside of Madison.

Increasing the proportion of assets managed internally affects the amount that SWIB needs to spend on IT projects and staffing. As noted, SWIB spent $45.1 million on the ARIES project and $3.3 million on the SWIB Foundations project, and it is implementing Project Centum but has not established an overall project budget. Similarly, SWIB increased the number of FTE staff positions by 23.4 percent from December 2019 to December 2021, in part, because of its efforts to increase the proportion of assets managed internally and its need for additional staff to work on Project Centum.

SWIB has conducted some planning for future IT project and staffing needs. For example, SWIB established a budget and timeline for the first two phases of Project Centum, it tracks its progress at meeting this budget and timeline, and it regularly reports its progress to the Board of Trustees. In addition, SWIB anticipated it will need 320 FTE staff positions by 2026, in part, to allow it to manage more assets internally. However, SWIB's lack of goals for the proportion of assets and the types of investment strategies to manage internally makes it challenging to know the specific parameters of the IT projects that are needed to support the internal management of assets and the skills and expertise it should require of the staff it hires in the future.

SWIB should develop a multi-year strategic plan that includes goals for the proportion of assets managed internally.

SWIB should develop a multi-year strategic plan that includes goals for the proportion of assets managed internally. This plan should discuss the specific investment strategies that SWIB expects to manage internally, the parameters of the IT systems that will be needed to support these strategies, and the skills, expertise, and number of staff that SWIB will need to hire to successfully manage these investment strategies internally. This plan can coordinate the development of the necessary IT systems, as well as efforts to recruit and compensate staff, in the most-efficient manner possible. In addition, this plan should provide SWIB with the flexibility to modify the plan in order to respond to changing market conditions and other circumstances. Such a plan could include:

- an assessment of the risks and costs of managing certain assets internally versus externally;
- targets or target ranges for the proportions of assets that could be internally managed, as well as annual timelines and key milestones for attaining these targets or target ranges;

- specific investment strategies that could be internally managed and the circumstances that may allow for these strategies to be managed internally;

- the IT system functions and the specific numbers and types of staff that will be needed each year to support these strategies;

- specific obstacles that may prevent SWIB from attaining its goals, as well as strategies for addressing these obstacles; and

- provisions for modifying the strategic plan at least annually in order to account for changing market conditions and other relevant factors.

SWIB should report to the Board of Trustees at least annually on its progress toward implementing its strategic plan and any changes it has made to the strategic plan. Doing so will provide the Board with an opportunity to monitor SWIB's progress, provide input, and assess more thoroughly SWIB's future requests for IT, staffing, and other significant expenditures SWIB believes are needed to achieve strategic plan goals.

☑ Recommendation

We recommend the State of Wisconsin Investment Board work with the Board of Trustees to:

- *develop a multi-year strategic plan that includes goals for the proportion of assets managed internally;*

- *report to the Board of Trustees at least annually on its progress toward implementing its strategic plan and any changes it has made to the strategic plan; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement these recommendations.*

▪ ▪ ▪ ▪

State Investment Fund

SWIB invests the excess operating cash balances of state and local governments in the SIF.

SWIB invests the excess operating cash balances of state and local governments in the SIF in order to provide safety, liquidity, and competitive rates of return. To meet these objectives, SWIB invests SIF assets primarily in short-term investments, such as U.S. Treasury securities. We examined participants in the SIF, the potential effects of certain participants transferring assets out of the SIF, and the types of assets in which SWIB invested SIF funds.

Participants

Section 25.14, Wis. Stats., created the SIF, in which SWIB invests the excess operating cash balances of state agencies, the Local Government Investment Pool, and the WRS. With some exceptions, statutes require state agencies to invest their operating cash in the SIF. The Local Government Investment Pool includes the assets of 1,369 local governments that choose to invest in the SIF, rather than in other options available for the investment of cash balances. In December 2021, 63 funds administered by state agencies were invested in the SIF, as listed in Appendix 10. Statutes require DOA to distribute SIF earnings, profits, and losses to each participating fund and maintain records for each fund.

On December 31, 2021, SIF assets totaled $20.3 billion, including $4.2 billion in excess operating cash from the WRS.

As shown in Table 10, SIF assets totaled $20.3 billion on December 31, 2021, including $4.2 billion in excess operating cash from the WRS. SWIB indicated that this excess operating cash includes funds ETF needs to pay WRS annuitants, as well as returns from the sale of WRS investments. SWIB places these returns in the SIF before reinvesting the funds in other assets.

Table 10

SIF Assets, by Participant Group
December 31, 2021

Participant Group	Amount (in billions)	Percentage of Total
State Agencies	$11.0	54.2%
Local Government Investment Pool	5.1	25.1
Wisconsin Retirement System (WRS)	4.2	20.7
Total	**$20.3**	**100.0%**

The $11.0 billion in state agency funds held in the SIF on December 31, 2021, included $1.8 billion from UW System. Statutes permit the Board of Regents to invest revenue from gifts, grants, and donations by employing a financial manager, contracting with SWIB, or selecting a private investment firm. In April 2018, SWIB agreed with UW System to manage trust fund assets in the UW System Long Term Fund, which is separate from the SIF. As shown in Appendix 1, UW System had $610.1 million in this fund on December 31, 2021.

In December 2021, SWIB executed an amended agreement with UW System to manage additional revenue from gifts, grants, and donations in the UW System Cash Management Account, which is a new fund separate from the SIF. In September 2021, SWIB's Board of Trustees adopted investment guidelines for this Cash Management Account, which will have an asset allocation that includes longer-term fixed income investments than those in the SIF, as well as public equity investments, which are not in the SIF. UW System indicated that having funds invested in this Cash Management Account will help meet the needs of its institutions by providing a combination of investment return, risk, and time horizon that is greater than that of the SIF but less than that of the UW System Long Term Fund. In April 2022, UW System transferred $500.0 million from the SIF into this new fund.

2021 Wisconsin Act 165, which was enacted in March 2022, permits UW System to invest any of its revenue separate from the SIF, instead of only revenues from gifts, grants, and donations. UW System can invest its revenues by employing a financial manager, contracting with SWIB, or selecting a private investment firm. UW System indicated that it plans in July 2022 to transfer an additional $175.0 million to $200.0 million out of the SIF and pursue having this revenue managed under SWIB's oversight.

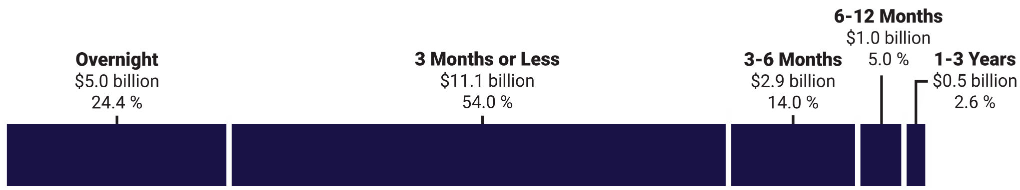
SWIB indicated that transferring a significant amount of funds out of the SIF would not negatively affect its ability to manage the SIF's liquidity or generate stable investment returns because of the low-risk and short-term nature of SIF investments. SIF investments are structured to reach maturity at time periods ranging from overnight to three years. Maturity is the agreed-upon date on which an asset, such as a fixed income investment or loan, ends and the principal is returned to the investor with interest.

On December 31, 2021, the average length of time for SIF investments to reach maturity was 61 days.

On December 31, 2021, the average length of time for SIF investments to reach maturity was 61 days. As shown in Figure 12, 24.4 percent of SIF investments, or $5.0 billion, matured overnight and could be reinvested or held as cash, if needed. An additional 54.0 percent of SIF investments, or $11.1 billion, reached maturity in three months or less.

Figure 12

SIF Assets, by Length of Maturity
December 31, 2021



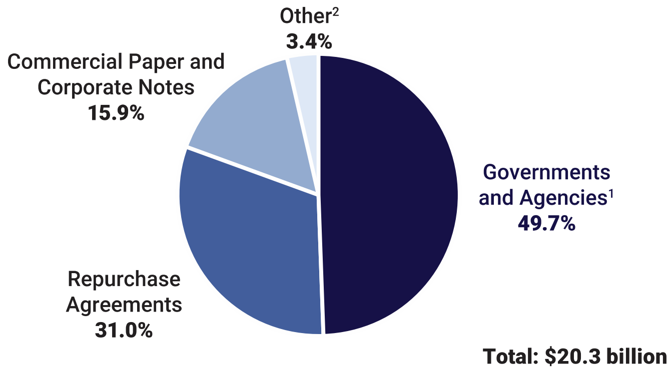
Investments

On December 31, 2021, 49.7 percent of SIF assets were investments guaranteed by the federal government.

Statutes restrict the types of assets in which the SIF can be invested, and SWIB established guidelines that define the investments appropriate to meet the SIF's investment objectives of safety, liquidity, and competitive rates of return. For example, SWIB can invest the SIF in assets guaranteed by the federal government, such as U.S. Treasury securities, corporations wholly owned by the federal government, and certificates of deposit issued by U.S. banks. As shown in Figure 13, 49.7 percent of SIF assets were investments guaranteed by the federal government on December 31, 2021.

Figure 13

SIF Assets, by Type
December 31, 2021



[1] Includes U.S. Treasury obligations and securities of federal agencies.

[2] Includes certificates of deposit, bankers' acceptances, and time deposits.

SWIB invests some SIF assets in repurchase agreements, which are a form of short-term lending whereby SWIB enters into contracts by which the SIF lends cash to counterparties in return for collateral such as U.S. Treasury securities. Upon settlement, the SIF returns the collateral, and a counterparty returns the cash plus interest. SWIB indicated that repurchase agreements allow the SIF to earn additional investment return while maintaining liquidity. SWIB indicated that the risk associated with repurchase agreements, which typically mature daily, is low because it can retain the collateral if a counterparty defaults.

On December 31, 2021, the SIF held repurchase agreements totaling $6.3 billion with six counterparties. One counterparty was the Core Fund, which had a $3.1 billion repurchase agreement, which was the SIF's largest such agreement on that date. SWIB indicated that the Core Fund, which poses a low risk of default, uses cash loaned by the SIF to fund its leverage investment strategy. To mitigate the risks of investing with a single counterparty, the SIF and Core Fund execute repurchase agreements with other counterparties, thereby providing multiple options for obtaining liquidity.

The SIF's investment return met or exceeded its 1-, 3-, 5-, and 10-year benchmarks in December 2020 and December 2021.

The SIF's investment return met or exceeded its 1-, 3-, 5-, and 10-year benchmarks in December 2020 and December 2021. The SIF's one-year investment return was 0.06 percent in December 2021, which exceeded its 0.04 percent benchmark. SWIB attributed low investment returns in 2020 and 2021 to a low interest rate environment and the economic effects of the public health emergency.

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Staff Compensation

The Board of Trustees approves compensation policies and annual bonuses for staff.

The Board of Trustees approves compensation policies and annual bonuses for staff. The Board established a comparison group that includes banks, insurance companies, and internally managed pension plans, and it targets overall staff compensation to approximate the median total compensation of this comparison group. In 2021, SWIB compensation to staff through salaries, bonuses, and fringe benefits totaled $72.5 million. For 2021 performance, 217 staff received a total of $24.0 million in bonuses, which was the highest amount awarded from 2017 through 2021. Overall compensation for investment staff in 2020 was 67.1 percent of the comparison group's median compensation. We recommend SWIB establish more-precise reasons for determining the amounts of salary increases, signing bonuses, and retention bonuses to award.

Compensation Structure

Section 25.16 (7), Wis. Stats., authorizes SWIB to compensate staff through salaries, bonuses, and fringe benefits. The executive director/chief investment officer establishes staff salaries and fringe benefits for all staff except for the internal audit director and internal audit staff, which are established by the Board of Trustees. The Board approves annual bonuses, which are based on qualitative and quantitative measures of performance and are intended to help attract and retain qualified staff.

To help determine compensation levels, SWIB hires a consultant to make comparisons to selected banks, insurance companies, and internally managed pension plans, excluding east and west coast financial centers. SWIB's compensation policies identify a goal for total compensation, including salaries and bonuses, to approximate the median total compensation of the comparison group.

In December 2021, the Board of Trustees approved policy changes that will affect compensation for certain staff in 2022. Public pension plans were added to the comparison group for investment management staff. SWIB indicated this addition reflects its recruitment efforts and will help its consultant collect reliable data. For executive staff as well as certain senior investment management and administrative staff, the total compensation goal was changed to approximate the 25th percentile of total compensation for the comparison group. SWIB indicated it decreased the goal based on the recommendation of its consultant to have a more realistic target for senior staff, which are often the highest paid staff. In March 2022, the Board was provided information on long-term bonuses that could be awarded in addition to the current annual bonuses in order to make compensation more competitive and encourage staff retention.

In 2021, the average salary and fringe benefits paid to 263 SWIB staff was $144,920.

The average salary and fringe benefits paid to 263 SWIB staff, excluding interns and limited-term equivalent staff, was $144,920 in 2021. The average salary and fringe benefits paid to senior management and investment management directors was $270,516, and the average paid to all other staff was $138,389. In total, staff were paid $51.0 million in salaries and fringe benefits.

In 2021, SWIB staff received $2.8 million in salary increases.

As shown in Table 11, SWIB staff received $2.4 million in salary increases in 2020 and $2.8 million in 2021. SWIB increases salaries based on job performance, market adjustments, and promotions. In both years, market adjustments intended to bring staff compensation closer to the comparison group median accounted for the largest amount of salary increases. Staff may receive multiple types of salary increases in a given year.

Table 11

Salary Increases for SWIB Staff, by Type

	2020		2021	
Type	Total Awarded	Number of Salary Increases[1]	Total Awarded	Number of Salary Increases[1]
Market Adjustment	$ 860,800	93	$1,196,100	96
Merit Increase	771,400	129	918,800	149
Promotion	796,400	32	664,600	28
Total	**$2,428,600**	**254**	**$2,779,500**	**273**

[1] Staff can receive multiple types of salary increases in a given year.

SWIB's compensation policies indicated that market compensation rates, job performance, internal equity, retention, experience, and the amount of available funding were factors to consider when increasing staff salaries. Our review of 20 staff who received salary increases in 2021 found that SWIB documented each type of salary increase for each staff member but did not document the precise reasons for awarding these salary increases. For example, the documentation did not specify the precise reasons that an individual's work performance merited a salary increase.

SWIB should document more-precise reasons for awarding salary increases.

SWIB should document more-precise reasons for awarding salary increases. Doing so will help provide assurance that SWIB fairly and equitably awards salary increases.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *document more-precise reasons for awarding salary increases; and*
- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement this recommendation.*

Annual Bonuses

Statutes permit SWIB, with approval from the Board of Trustees, to award bonuses to staff.

Statutes permit SWIB, with approval from the Board of Trustees, to award bonuses to staff. In determining annual bonuses, staff are assigned a "maximum incentive opportunity" that varies by position and determines the maximum amount a given staff member may receive. The executive director/chief investment officer recommends annual bonuses to the Board. The Board determines annual bonuses for the executive director/chief investment officer and the internal audit director, based on information provided by the deputy executive director/chief administrative officer and the compensation consultant.

Annual bonuses are based on quantitative and qualitative performance measures the Board of Trustees adopts for three staff groups:

- executive staff, including the executive director/chief investment officer, deputy executive director/chief administrative officer, agency business director, and head of risk management;
- investment management staff, who research, select, and trade investments; and
- administrative support staff, including accounting and operations, IT, and legal services staff.

Quantitative measures for determining annual bonuses are generally based on the Core Fund's one- and five-year performance, relevant asset classes, and relevant investment portfolios, compared to relevant benchmarks. Quantitative measures are weighted toward five-year investment performance.

Between 50.0 percent and 65.0 percent of annual bonuses for individual investment management staff are awarded based on qualitative performance, depending on a given position. A total of 50.0 percent of annual bonuses for individual executive staff and administrative support staff are awarded based on qualitative performance.

SWIB uses annual scorecards to assess the qualitative performance of investment management and administrative support staff. For each staff group, the Board of Trustees annually approves a scorecard that includes goals such as increasing the amount of investment return from active management and enhancing SWIB's operations and technology infrastructure. The executive director/chief investment officer determines performance relative to scorecard goals, which determines the total amount of qualitative bonus funding available for investment management and administrative support staff. For executive staff, qualitative factors are based on work performance, such as demonstrating leadership, teamwork, meeting goals, and positive behavior.

Policies allow the executive director/chief investment officer to award staff additional, discretionary bonuses as part of annual bonuses. SWIB indicated that doing so recognizes achievements that would not otherwise be reflected in the bonuses for high-performing staff. For 2020, the executive director/chief investment officer could award discretionary bonuses to investment management staff from an amount equal to 1.5 percent of bonus maximums for these staff. In March 2020, the Board of Trustees approved policy changes to allow the executive director/chief investment officer to award discretionary bonuses to administrative support staff for 2020 from an amount equal to 3.0 percent of bonus maximums for these staff, up to a maximum of $100,000. In December 2021, the Board approved policy changes to allow the executive director/chief investment officer to award discretionary bonuses for 2021 to investment management and administrative support staff from an amount equal to 5.0 percent of bonus maximums for these two staff groups combined.

For 2021 performance, 217 staff received a total of $24.0 million in bonuses, which was the highest amount awarded from 2017 through 2021.

Table 12 shows total bonuses paid to staff for performance from 2017 through 2021. For 2021 performance, 217 staff received a total of $24.0 million in bonuses, which was the highest amount awarded during this five-year period. For 2020 performance, 214 staff received a total of $21.5 million in bonuses, which was the second-highest amount during this five-year period. In each year, almost all or all eligible staff received bonuses.

Table 12

SWIB Staff Bonuses, by Performance Year[1]

Performance Year	Amount (in millions)	Number of Staff Who Received Bonuses				Percentage of Eligible Staff
		Investment Management	Administrative Support	Executive Staff[2]	Total	
2017	$11.5	67	83	n/a	150	97.4%
2018	9.8	71	92	n/a	163	98.2
2019	13.9	72	97	3	172	98.9
2020	21.5	87	124	3	214	100.0
2021	24.0	84	129	4	217	99.1

[1] Based on data provided by SWIB. Bonuses are paid in the following calendar year.

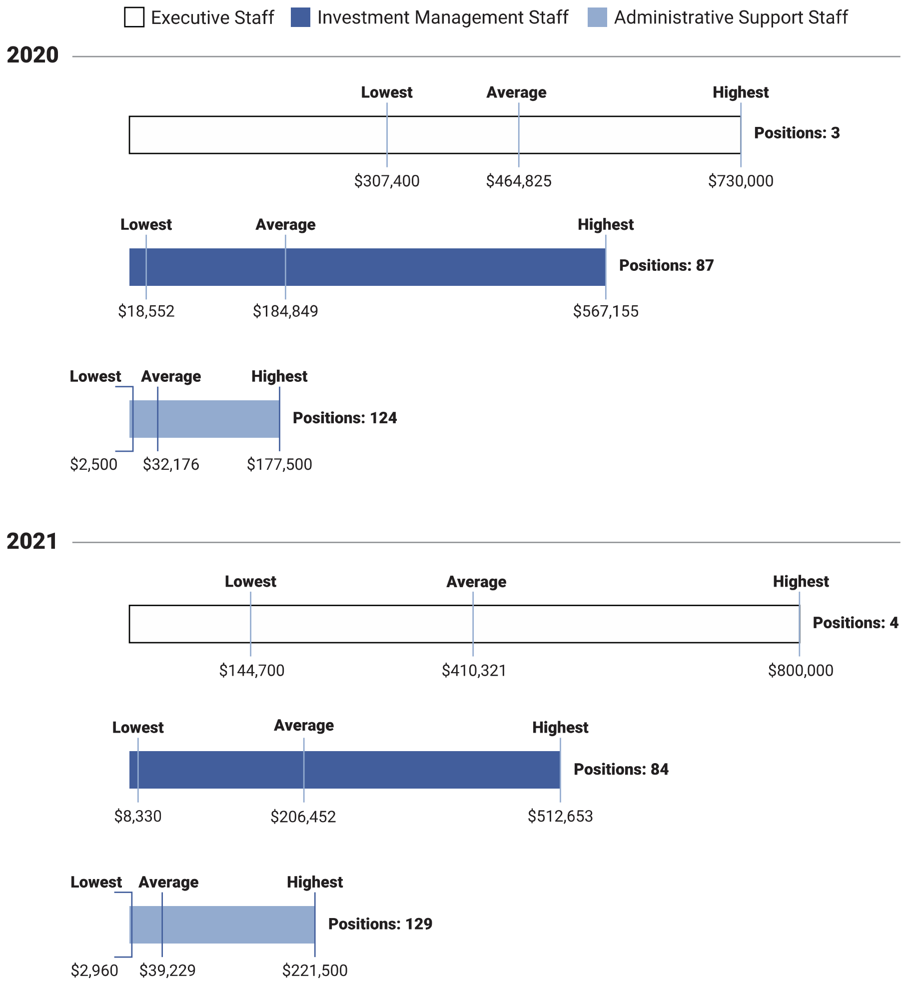
[2] In 2019, SWIB created a separate category for executive staff.

For 2021 performance, bonuses awarded to individual investment management staff ranged from $8,330 to $512,653.

As shown in Figure 14, bonuses awarded for 2021 performance to individual investment management staff ranged from $8,330 to $512,653, bonuses awarded to individual administrative support staff ranged from $2,960 to $221,500, and bonuses awarded to individual executive staff ranged from $144,700 to $800,000.

Figure 14

Range of Bonuses for Individual SWIB Staff, by Staff Type[1]



[1] Based on data provided by SWIB. Bonuses are paid in the following calendar year.

Investment management staff were awarded $17.3 million, which was 72.1 percent of the amount available for bonuses for 2021 performance.

As shown in Table 13, the amount of bonuses awarded to investment management staff as a proportion of available funds increased from 54.1 percent in 2017 to 72.1 percent in 2021. Investment management staff were awarded $17.3 million of the $24.0 million available for bonuses for 2021 performance.

Table 13

Bonuses for Investment Management Staff, by Performance Year[1, 2]
(in millions)

Performance Year	Amount Available	Amount Awarded	Percentage Awarded
2017	$18.3	$ 9.9	54.1%
2018	21.0	8.2	39.0
2019	22.5	11.4	50.7
2020	25.4	16.1	63.4
2021	24.0	17.3	72.1

[1] Based on data provided by SWIB. Bonuses are paid in the following calendar year.

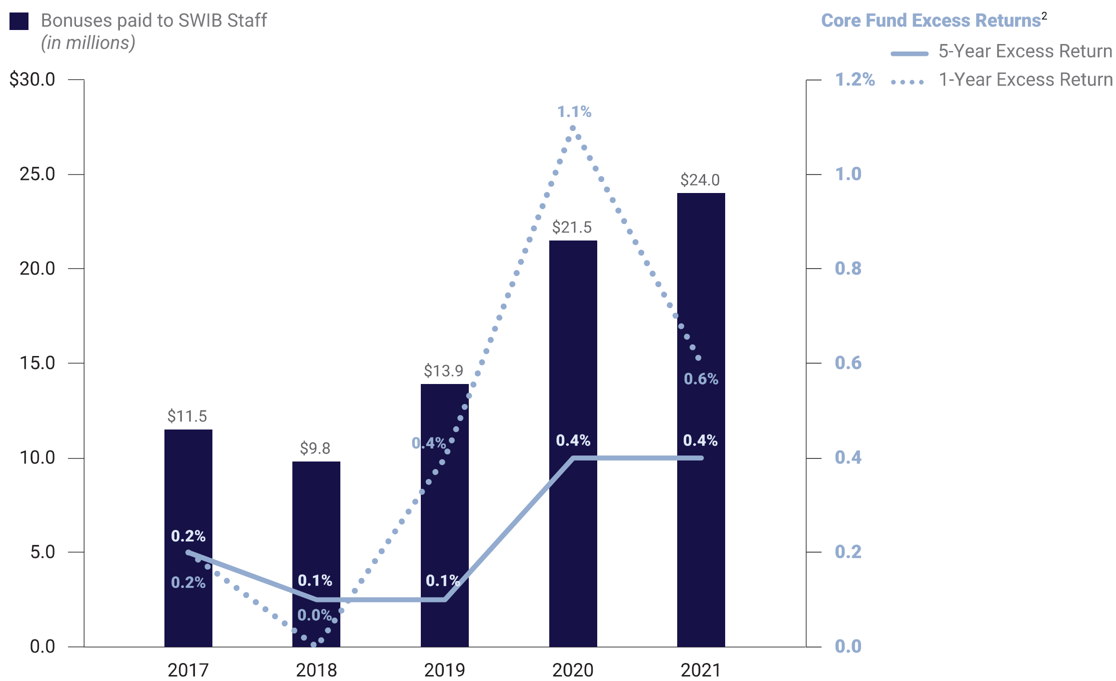
[2] Includes the executive director in 2017 and 2018 and the executive director/chief investment officer in 2019.

The amount of bonuses awarded for 2021 performance increased by $2.5 million from the prior year even though the five-year excess return increased from 0.38 percent to 0.43 percent and the one-year excess return declined.

One way to assess investment performance is by considering excess returns, which are the portion of investment returns that are greater than market-based benchmarks. As shown in Figure 15, the amount of bonuses awarded for 2021 performance increased by $2.5 million from the prior year even though the five-year excess return increased from 0.38 percent to 0.43 percent and the one-year excess return declined. SWIB indicated that bonuses increased in 2021 primarily because of high qualitative performance of staff and discretionary awards provided by the executive director/chief investment officer.

Figure 15

Total Bonuses Awarded Compared to Core Fund Excess Returns, by Performance Year[1]



[1] Based on data provided by SWIB. Bonuses are paid in the following calendar year.

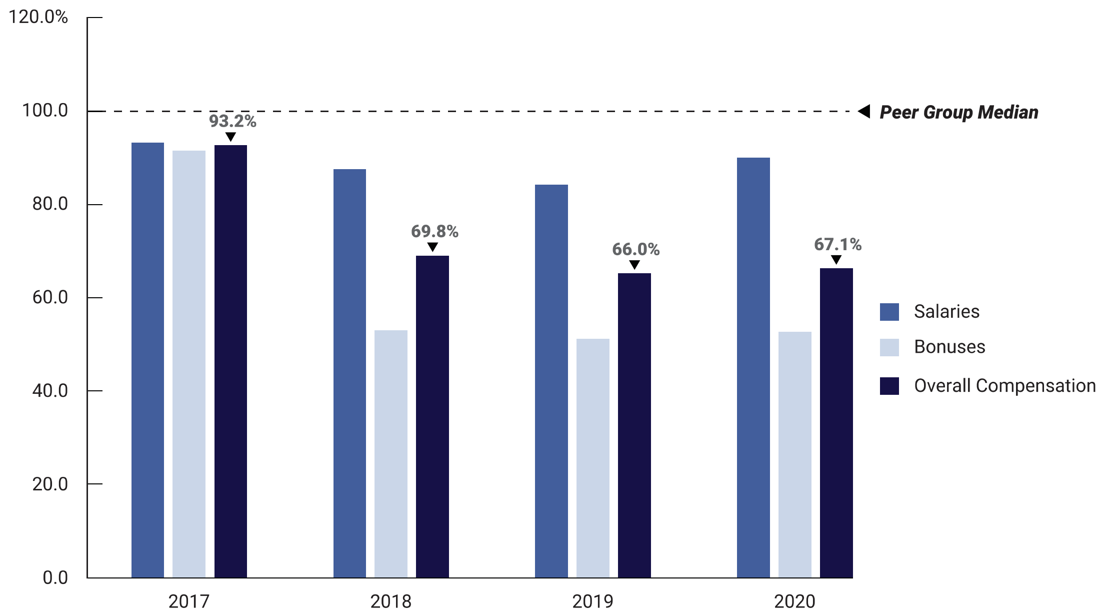
[2] Excess returns are the portion of investment returns that are greater than market-based benchmarks, based on returns net-of-all-costs.

Overall compensation for investment management staff was 67.1 percent of the comparison group median for 2020 performance.

As shown in Figure 16, overall compensation for investment management staff declined from 93.2 percent of the comparison group median for 2017 performance to 67.1 percent for 2020 performance. For 2020 performance, salaries were 90.7 percent of the comparison group median, and bonuses were 53.5 percent. Information for 2021 was not available at the time of our audit.

Figure 16

Investment Management Staff Compensation Relative to the Comparison Group Median, by Performance Year[1, 2]



[1] Based on data provided by SWIB. Bonuses are paid in the following calendar year. Excludes the executive director or the executive director/chief investment officer.

[2] Information for 2021 was not available at the time of our audit.

Bonus Errors

The Board of Trustees established a policy for retroactively adjusting bonuses if SWIB discovers that it had erroneously calculated prior bonuses. The policy is triggered when the correction of an error meets certain thresholds. For example, an adjustment must occur if a correction changes a given bonus by $5,000 or more.

In September 2021, SWIB notified the Board of Trustees that an error in calculating the investment return for one portfolio in 2020 caused an overstatement of Core Fund performance by approximately $18.0 million. As a result, the Board approved adjustments to decrease and recover 2020 bonus award payments totaling $35,700 for 13 staff. SWIB informed the Board that it planned to implement procedures to prevent this type of error in the future. We found that SWIB used these procedures for the last two quarters of 2021. It will be important for SWIB to continue to assess process improvements in order to avoid such errors in the future.

Other Bonuses

The executive director/chief investment officer may award signing and retention bonuses, as well as make severance payments.

Policies allow the executive director/chief investment officer to award signing and retention bonuses, as well as make severance payments. Board of Trustee approval is not required to award signing and retention bonuses, but the trustee who chairs the compensation committee must be notified before these bonuses are awarded. SWIB indicated that these bonuses are decided on a case-by-case basis and help recruit and retain staff.

Policies include factors to consider when awarding signing bonuses. For example, bonuses foregone at a previous employer as a result of accepting employment at SWIB may be considered. Policies limit signing bonuses to 50.0 percent of a prospective staff member's starting salary, but they provide no guidance on determining the specific proportion. Policies require staff who receive a signing bonus of $50,000 or more to repay some or all of it if they leave within two years after being hired, unless repayment is waived by the executive director/chief investment officer. The policies do not specify the circumstances for waiving repayment.

Policies include factors to consider when awarding retention bonuses, including the need for specialized knowledge or skills possessed by a staff member. Policies limit retention bonuses to 100.0 percent of a staff member's salary, but they provide no additional guidance on determining the specific proportion. Policies require staff who receive a retention bonus to repay some or all of it if they leave during a retention period that may last up to three years.

Policies allow for severance payments to be made as part of a negotiated termination or resignation, as long as the Board of Trustees approves such payments. SWIB indicated that severance payments mitigate risks associated with employee separations.

A total of $421,000 in signing and retention bonuses were awarded to 13 staff in 2020 and 2021.

As indicated in Table 14, a total of $421,000 in signing and retention bonuses were awarded to 13 staff in 2020 and 2021. Signing bonuses ranged from $8,500 (5.7 percent of the staff member's starting salary) to $150,000 (47.6 percent). We found that all signing bonuses and retention bonuses were awarded in accordance with policies. A $180,000 severance payment was made to an individual who left SWIB in March 2020, and the executive director/chief investment officer waived repayment of a $180,000 signing bonus this individual was awarded in 2019.

Table 14

Other Bonuses and Payments to SWIB Staff[1]

	2020		2021	
	Total Awarded	Number of Staff	Total Awarded	Number of Staff
Type of Bonus				
Signing	$233,500	5	$175,000	6
Retention	2,500	1	10,000	1
Severance Payment	180,000	1	–	–
Total	**$416,000**	**7**	**$185,000**	**7**

[1] Based on data provided by SWIB.

SWIB should modify its policies for awarding signing and retention bonuses by establishing more-precise criteria for determining the amounts to award.

SWIB should modify its policies for awarding signing and retention bonuses by establishing more-precise criteria for determining the amounts to award. For example, the policies could specify a target percentage range of amounts to award if an individual were forgoing a bonus by accepting an employment offer at SWIB. The policies could specify how far in the future, such as six months, that SWIB would consider a foregone bonus when determining a signing bonus. The policies could also specify the amounts SWIB would pay to help cover relocation costs. The policies could similarly provide additional information about determining the amounts of retention bonuses to award. In addition, SWIB should modify it policies by indicating the circumstances when repayment of a signing bonus may be waived. Modifying the policies will help provide assurance that SWIB fairly and equitably awards signing and retention bonuses.

☑ Recommendation

We recommend the State of Wisconsin Investment Board:

- *modify its policies for awarding signing bonuses and retention bonuses by establishing more-precise criteria for determining the amounts to award;*

- *modify its policies by indicating the circumstances when repayment of a signing bonus may be waived; and*

- *report to the Joint Legislative Audit Committee by November 30, 2022, on the status of its efforts to implement these recommendations.*

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Appendices

Appendix 1

Funds Managed by SWIB

As of December 31, 2021

Fund	State Agency	Investment Manager[1]	Market Value (in millions)	One-Year Benchmark	One-Year Investment Return[2]
Wisconsin Retirement System Core Fund	Employee Trust Funds	SWIB and various external managers	$136,290.2	16.3%	17.0%
Wisconsin Retirement System Variable Fund	Employee Trust Funds	SWIB and various external managers	10,926.4	20.2	20.0
State Investment Fund	Administration	SWIB	16,051.0[3]	0.04	0.06
Injured Patients and Families Compensation Fund	Commissioner of Insurance	External managers: BlackRock, Inc., and Dodge & Cox	1,638.0	1.8	2.7
State Life Insurance Fund	Commissioner of Insurance	SWIB and external manager: BlackRock, Inc.	124.5	--[4]	(1.3)
Historical Society Trust Fund	Wisconsin Historical Society	External manager: BlackRock, Inc.	26.2	18.4	19.6
UW System Long Term Fund	UW System	External manager: BlackRock, Inc.	610.1	17.1	17.2

[1] SWIB hires external managers.

[2] Includes management fees but excludes other costs, such as internal operating expenses.

[3] Excludes $4.2 billion in excess operating cash of the WRS that was invested in the SIF as of December 31, 2021.

[4] In September 2019, the Board of Trustees approved investment guidelines that removed the State Life Insurance Fund's benchmark. It did so after the Office of the Commissioner of Insurance asked SWIB to hold investments for as long as possible and avoid selling investments in order to minimize taxes associated with those transactions.

Appendix 2

Members of the Board of Trustees

May 2022

Appendix 3

Members of SWIB's Management Council

May 2022

Executive Director/Chief Investment Officer

Edwin Denson

SWIB Management Staff

Rochelle Klaskin
Deputy Executive Director/Chief Administrative Officer

Mike Jacobs
Agency Business Director

Vacant

Anne-Marie Fink
Private Markets & Funds Alpha Chief Investment Officer

Appendix 4

Wisconsin Retirement System
One-Year Investment Performance

As of December 31

Year	Core Fund		Variable Fund	
	Investment Benchmark	Investment Return[1]	Investment Benchmark	Investment Return[1]
1982[2, 3]	27.7%	27.3%	–	22.2%
1983	13.3	12.5	23.1%	24.7
1984	12.3	12.8	6.3	5.8
1985	23.8	27.5	30.9	32.7
1986	14.0	14.5	17.1	11.5
1987	3.0	2.2	3.0	(1.1)
1988	13.6	14.4	18.4	21.7
1989	19.9	19.2	27.0	22.6
1990	(1.7)	(1.5)	(8.6)	(11.3)
1991	22.8	20.5	31.9	27.1
1992	5.9	9.7	7.1	10.7
1993	12.2	15.0	14.7	16.5
1994	(0.1)	(0.6)	1.7	0.8
1995	24.4	23.1	29.2	25.6
1996	12.7	14.4	18.6	19.8
1997	17.4	17.2	22.8	21.6
1998	15.5	14.6	17.4	17.5
1999	13.9	15.7	23.2	27.8
2000	(1.4)	(0.8)	(8.8)	(7.2)
2001	(4.5)	(2.3)	(12.9)	(8.3)
2002	(8.2)	(8.8)	(19.9)	(21.9)
2003	24.0	24.2	32.1	32.7
2004	12.1	12.8	13.4	12.7
2005	8.0	8.6	8.0	8.3
2006	14.6	15.8	17.6	17.6
2007	9.6	8.7	7.3	5.6
2008	(24.8)	(26.2)	(39.0)	(39.0)
2009	19.9	22.4	32.0	33.7

Year	Core Fund		Variable Fund	
	Investment Benchmark	Investment Return[1]	Investment Benchmark	Investment Return[1]
2010	12.2%	12.4%	15.3%	15.6%
2011	0.9	1.4	(3.6)	(3.0)
2012	12.8	13.7	16.7	16.9
2013	12.9	13.6	28.0	29.0
2014	5.6	5.7	7.5	7.3
2015	(0.3)	(0.4)	(1.3)	(1.2)
2016	7.9	8.6	10.4	10.6
2017	15.7	16.2	23.1	23.2
2018	(3.5)	(3.3)	(7.8)	(7.9)
2019	19.2	19.9	28.3	28.6
2020	14.2	15.8	17.9	17.6
2021	16.3	17.1	20.2	20.1

[1] Excludes management fees and other investment expenses.
Returns that did not meet benchmarks are in shaded cells.

[2] The WRS was established in its current form on January 1, 1982.

[3] Benchmark returns for the Variable Fund are unavailable for 1982.

Appendix 5

Wisconsin Retirement System
Performance of Individual Asset Classes

As of December 31, 2021

Asset Class	Investment Benchmark	Average Annual Investment Return[1]
Public Equities		
One-Year	19.8%	19.2%
Three-Year	21.5	21.2
Five-Year	15.2	14.9
Ten-Year	12.8	12.6
Fixed Income		
One-Year	(1.5)%	(0.6)%
Three-Year	5.6	6.1
Five-Year	4.2	4.6
Ten-Year	3.1	3.5
Inflation Protection		
One-Year	6.0%	6.0%
Three-Year	8.4	8.6
Five-Year	5.5	5.6
Ten-Year	2.6	2.7
Real Estate		
One-Year	13.6%	16.1%
Three-Year	6.1	7.5
Five-Year	6.6	7.9
Ten-Year	8.8	10.7
Private Equity and Debt		
One-Year	41.9%	41.5%
Three-Year	19.9	22.9
Five-Year	16.9	19.9
Ten-Year	14.0	16.1
Multi-Asset		
One-Year	12.2%	16.3%
Three-Year	15.7	17.3
Five-Year	11.4	11.5
Ten-Year[2]	9.1	8.1

Asset Class	Investment Benchmark	Average Annual Investment Return[1]
Hedge Fund Strategy[3, 4]		
One-Year	n/a	6.0%
Three-Year	n/a	5.4
Five-Year	0.8%	3.3

[1] Returns that did not meet benchmarks are in shaded cells. Returns are net of management fees but exclude internal operating and other expenses

[2] Includes the hedge fund strategy.

[3] Performance of this strategy was reported separately beginning in April 2015.

[4] Based on the recommendation of its benchmark consultant, the Board of Trustees approved eliminating a benchmark for the hedge fund strategy, beginning in 2019.

As of December 31, 2020

Asset Class	Investment Benchmark	Average Annual Investment Return[1]
Public Equity Securities		
One-Year	17.2%	16.7%
Three-Year	10.9	10.8
Five-Year	13.1	13.0
Ten-Year	10.1	10.2
Fixed Income		
One-Year	8.7%	8.9%
Three-Year	5.9	6.1
Five-Year	5.3	5.6
Ten-Year	4.1	4.3
Inflation Protection		
One-Year	11.0%	11.4%
Three-Year	6.1	6.3
Five-Year	5.5	5.7
Ten-Year	3.3	3.5
Real Estate		
One-Year	0.5%	1.1%
Three-Year	4.3	5.0
Five-Year	5.7	6.7
Ten-Year	9.0	11.1
Private Equity and Debt		
One-Year	11.6%	19.1%
Three-Year	10.5	15.0
Five-Year	10.7	14.0
Ten-Year	11.1	13.4
Multi-Asset		
One-Year	14.2%	14.9%
Three-Year	9.5	9.0
Five-Year	10.6	9.4
Ten-Year[2]	7.7	7.0
Hedge Fund Strategy[3, 4]		
One-Year	0.0%	9.0%
Three-Year	0.9	3.3
Five-Year	1.0	2.2

[1] Returns that did not meet benchmarks are in shaded cells. Returns are net of management fees but exclude internal operating and other expenses.

[2] Includes hedge fund strategy.

[3] Performance of this strategy was reported separately beginning April 2015.

[4] Based on the recommendation of its benchmark consultant, the Board approved the elimination of a benchmark for SWIB's hedge fund investment strategy beginning in 2019.

Appendix 6

Wisconsin Retirement System
Effective Rates and Annuity Adjustments[1]

As of December 31

Year	Core Fund			Variable Fund		
	Investment Returns	Effective Rate	Annuity Adjustment[2]	Investment Returns	Effective Rate	Annuity Adjustment
2007	8.8%	13.1%	6.6%	5.6%	6.0%	0.0%
2008	(26.2)	3.3	(2.1)	(39.0)	(40.0)	(42.0)
2009	22.4	4.2	(1.3)	33.7	33.0	22.0
2010	12.3	4.8	(1.2)	15.6	16.0	11.0
2011	1.4	1.5	(7.0)	(3.0)	(3.0)	(7.0)
2012	13.7	2.2	(9.6)	16.9	17.0	9.0
2013	13.6	10.9	4.7	29.0	31.0	25.0
2014	5.7	8.7	2.9	7.3	7.0	2.0
2015	(0.4)	6.4	0.5	(1.2)	0.0	(5.0)
2016	8.6	7.9	2.0	10.6	10.0	4.0
2017	16.2	8.5	2.4	23.2	24.0	17.0
2018	(3.3)	5.0	0.0	(7.9)	(7.0)	(10.0)
2019	19.9	7.7	1.7	28.6	29.0	21.0
2020	15.2	10.9	5.1	17.5	18.0	13.0
2021	16.9	12.9	7.4	20.0	20.0	15.0
10-Year Compounded Average	10.4	8.1	1.6	13.8	14.3	8.6
15-Year Compounded Average	7.6	7.1	0.7	8.7	8.9	3.4

[1] The effective rate and annuity adjustments for the Core Fund are initially based on the actuarial assumed rate, although there is either an increase or decrease to this rate based on the actual investment returns earned during the prior five years. The increase or decrease to the actuarial adjustment rate is used to smooth out large fluctuations in actual investments returns. Annuity adjustments take effect with the April annuities that are paid on May 1, based on the previous year's performance. Adjustments occur only if the amount changes the Core Fund annuity by at least 0.5 percent or the Variable Fund annuity by at least 2.0 percent. Annuity adjustments are generally 4.0 percent to 6.0 percent less than effective rate adjustments to account for the 5.0 percent investment return assumption factored into the annuities and other actuarial adjustments.

[2] The annuity adjustment is the maximum adjustment that may be applied to a retired participant's benefit payment. Adjustments that would reduce a benefit payment are limited to increases a retired participant received in prior years because post-retirement adjustments may not result in benefit payments that are lower than the base benefit payment at the time of retirement. Consequently, not all retired participants experience the full amount of reductions determined for years with negative adjustments.

Appendix 7

Comparison of Plan Structure for Selected Public Pension Plans[1]

	Assets Managed (in billions)	Return Assumption	Funded Rate
California Public Employees Retirement System	$392.5	7.0%	70.6%
Florida State Board	162.2	6.8	78.9
Minnesota State Board	71.2	7.5	82.2
New Jersey Division of Investments	84.8	7.3	58.0
Ohio Public Employees Retirement System	114.3	7.2	82.9
Pennsylvania Public School Employees' Retirement System	59.0	7.25	59.2
Teachers Retirement System of Texas	165.4	7.25	76.8
Virginia Retirement System	82.1	6.75	75.0
Washington State Investment Board	114.5	7.5	95.0
Wisconsin Retirement System Core Fund	120.2	7.0	105.3

[1] As of June 30, 2020, for California, Florida, Minnesota, Pennsylvania, Virginia, and Washington. As of July 1, 2020, for New Jersey. As of August 31, 2020, for Texas. As of December 31, 2020, for Ohio and Wisconsin.

Appendix 8

External Investment Managers

2021

External Investment Manager	Investment Strategies Managed	Expenses[1] (in millions)	WRS Assets Managed (in millions)
Marshall Wace, LL.P.	Hedge Funds and Public Markets	$ 42.8	$ 1,408.5
D.E. Shaw & Co., L.P.	Hedge Funds and Public Markets	38.9	4,777.7
Silver Point Capital, L.P.	Hedge Funds	18.4	215.7
Two Sigma Investments, L.P	Hedge Funds and Public Markets	14.8	1,266.5
Wellington Trust Company, NA	Public Markets	13.3	6,128.6
PIMCO	Hedge Funds	13.0	246.6
The Blackstone Group, L.P.	Private Equity and Real Estate	12.8	1,099.5
Holocene Advisors, L.P.	Hedge Funds	9.9	327.0
AllianceBernstein	Public Markets	9.8	5,676.9
Davidson Kempner Capital Management, L.P.	Hedge Funds	9.8	238.4
Avidity Partners	Hedge Funds	8.3	183.1
Dorsal Capital Partners, Ltd.	Hedge Funds	7.5	301.4
Graticule Asset Management Asia	Hedge Funds	7.0	212.6
TSG Consumer Partners, LLC	Private Equity	6.9	357.9
Elliott Management Corporation	Hedge Funds	6.4	277.6
Clearlake Capital Partners	Private Equity	6.1	469.8
Voleon Capital Management	Hedge Funds	6.0	162.1
Acadian Asset Management	Public Markets	5.9	1,698.8
Fidelity Investments	Public Markets	5.7	3,177.8
Vista Equity Partners, LLC	Private Equity	5.5	478.1
All Others	Various	323.9	46,346.3
Total		**$572.6**	**$75,051.0**

[1] Excludes some performance management fees for private equity and real estate investments known as carried interest.

Appendix 9

Top Ten External Support Services Vendors[1]

2021

External Support Services Vendor	Services Provided	Expenses (in millions)
Bank of New York Mellon Corporation	Asset Custody and Investment Operations Services	$10.9
SimCorp USA, Inc.	Investment Information Technology System	6.1
Bloomberg Finance, L.P.	Benchmark, Company, and Market Information	3.9
FactSet Research Systems, Inc.	Financial and Economic Database	3.8
MSCI Inc.	Research and Data Services	1.5
Charles River Systems, Inc.	Portfolio Management Trading Software	1.4
StepStone Group, LLC	Private Equity and Real Estate Consulting	1.3
Evercore Group, LLC	Investment Research	1.3
Keystone Consulting, Inc.	Investment Information Technology Consulting	1.1
eFront Financial Solutions, Inc.	Portfolio Management Services	1.1

[1] Includes fees for all services other than investment management, including asset custody, investment and operations consulting, and legal services.

Appendix 10

Participants in the State Investment Fund[1]

As of December 31, 2021

Fund	State Agency	Participant Shares
STATE OF WISCONSIN AGENCIES		
General Fund	Administration	$ 6,653,973,000
Budget Stabilization Fund	Administration	1,730,229,000
Transportation Fund	Transportation	825,728,000
Capital Improvement Fund	Building Commission	281,721,000
State Building Trust Fund	Building Commission	254,605,000
Lottery Fund	Revenue	241,250,000
University Trust Fund—Income	UW System	143,878,000
Conservation Fund	Natural Resources	138,350,000
Hospital Assessment Fund	Health Services	100,341,000
Medical Assistance Trust Fund	Health Services	95,345,000
Common School Fund	Board of Commissioners of Public Lands	73,051,000
Injured Patients & Family Comp	Commissioner of Insurance	68,202,000
Universal Service Fund	Public Service Commission	60,239,000
Environmental Fund	Natural Resources	54,485,000
Uninsured Employers Fund	Workforce Development	34,110,000
Work Injury Supplemental Benefit Fund	Workforce Development	32,327,000
Utility Public Benefits Fund	Administration	24,666,000
Waste Management Fund	Natural Resources	23,671,000
Common School Fund Income	Board of Commissioners of Public Lands	22,648,000
Support Collections Trust Fund	Children and Families	21,557,000
College Savings Program Trust Fund	Financial Institutions	20,352,000
Unemployment Program Integrity Fund	Workforce Development	20,046,000
Public Employee Trust Fund	Employee Trust Funds	16,319,000
Petroleum Inspection Fund	Natural Resources	14,991,000
Agricultural Producer Security Fund	Agriculture, Trade and Consumer Protection	12,321,000
Agrichemical Management Fund	Agriculture, Trade and Consumer Protection	11,823,000
Election Administration Fund	Wisconsin Elections Commission	9,330,000
Environmental Improvement Fund	Administration	8,182,000
Land Information Fund	Administration	7,154,000
Economic Development Fund	Wisconsin Economic Development Corporation	6,107,000
Worker's Compensation Benefit Fund	Workforce Development	5,663,000

Fund	State Agency	Participant Shares
STATE OF WISCONSIN AGENCIES *(continued)*		
University Trust Fund—Principal	UW System	$ 4,821,000
Normal School Fund	Board of Commissioners of Public Lands	4,091,000
Agricultural Chemical Cleanup Fund	Agriculture, Trade and Consumer Protection	3,822,000
State Life Insurance	Commissioner of Insurance	3,669,000
History Preservation Partnership Trust Fund	Wisconsin Historical Society	2,912,000
Critical Access Hospital Assessment Fund	Health Services	2,507,000
Veterans Trust Fund	Veterans Affairs	2,246,000
Heritage State Parks and Forests Trust Fund	Natural Resources	1,238,000
Tuition Trust Fund	Financial Institutions	1,008,000
Transportation Infrastructure Loan Fund	Transportation	656,000
Military Family Relief Fund	Revenue	484,000
Self-Insured Employers Liability Fund	Workforce Development	414,000
Dry Cleaner Environmental Response Fund	Revenue	224,000
State Capitol Restoration Fund	State Capitol and Executive Residence Board	195,000
Mediation Fund	Director of State Courts	165,000
Historical Society Trust Fund	Wisconsin Historical Society	159,000
Working Lands Fund	Agriculture, Trade and Consumer Protection	102,000
Investment and Local Impact Fund	Investment and Local Impact Fund Board	82,000
Historical Legacy Trust Fund	Wisconsin Sesquicentennial Commission	77,000
University Fund	Board of Commissioners of Public Lands	76,000
Unemployment Interest Payment Fund	Workforce Development	51,000
Bond Security and Redemption Fund	Building Commission	45,000
Agricultural College Fund	Natural Resources	35,000
Governor's Read to Lead Development Fund	Governor's Office	27,000
Permanent Endowment Fund	Administration	14,000
Children's Trust Fund	Child Abuse and Neglect Prevention Board	14,000
Benevolent Fund	Administration	14,000
Farms for the Future Fund	Agriculture, Trade and Consumer Protection	–
Vendornet Fund	Administration	–
Industrial Building Construction Loan Fund[2]	Wisconsin Economic Development Corporation	(1,000)
Local Government Property Insurance Fund[2]	Commissioner of Insurance	(1,000)
Police and Fire Protection Fund[2]	Public Service Commission	(20,907,000)
STATE OF WISCONSIN AGENCIES SUBTOTAL		$ 11,020,903,000

Fund	State Agency	Participant Shares
WISCONSIN RETIREMENT SYSTEM		
Core Retirement Investment Trust		$ 3,722,674,000
Variable Retirement Investment Trust		498,777,000
WISCONSIN RETIREMENT SYSTEM SUBTOTAL		$ 4,221,451,000
LOCAL GOVERNMENT INVESTMENT POOL		$ 5,029,781,000
TOTAL		**$20,272,135,000**

[1] Includes fund names and participant shares, as reported by the Department of Administration in the December 2021 *Monthly Statement of Receipts and Disbursements by Fund* report.

[2] Negative values represent short-term inter-fund loans, as permitted by s. 20.002 (11), Wis. Stats.

Response

June 27, 2022

Mr. Joe Chrisman
State Auditor
Legislative Audit Bureau
22 East Mifflin, Suite 500
Madison, WI 53703

Dear Mr. Chrisman,

Thank you for the opportunity to comment on the management audit of the State of Wisconsin Investment Board (SWIB). SWIB is pleased that no significant concerns were identified during the audit, and we would like to thank the LAB staff for their hard work. SWIB will work to ensure the recommendations made in the report are evaluated and addressed.

SWIB invests the assets of the Wisconsin Retirement System (WRS), one of the only fully funded public pension plans in the United States, as well as the State Investment Fund and other, smaller trust funds. Over the long term, SWIB has consistently exceeded the actuarial assumed rate for the WRS, beaten its benchmarks, and provided real value to the state, all at a cost that is less than our peers. There are several ways to measure SWIB's success:

Exceeding the Target Rate of Return
In December 2021, the Department of Employee Trust Funds Board reduced the actuarial assumed rate for the WRS from 7.0% to 6.8%. The WRS's Core Fund has cleared that hurdle. As of December 31, 2021, the Core Fund had 5-, 10-, 20-, and 30-year net returns of 12.47%, 10.10%, 7.92%, and 8.70%, respectively. These consistently strong returns help drive the fully funded WRS. Further, strong performance has generated three straight years of positive annuity adjustments, including a 7.4% increase in 2022, the largest in over two decades.

Returns Far Above Traditional "60/40" Passive Index Portfolio
When looking over the last 20 years, SWIB's active management and diversified holdings generated $34.3 billion for the Core Fund above what SWIB would have earned by simply investing in a low-cost passive portfolio consisting of 60% global equities and 40% domestic bonds. That outperformance represents the benefit offered by employing a highly qualified staff.

Beating Benchmarks
SWIB evaluates its performance against industry benchmarks adopted by its Board of Trustees based on recommendations from an independent benchmark consultant. During the five years ended Dec. 31, 2021, after consideration of all expenses, costs, and fees, SWIB generated more than $2.3 billion in additional profits beyond what would have been generated by the benchmark portfolio SWIB is measured against. These profits all go directly into the WRS for the benefit of its participants.

Favorable Performance Compared to Peers
According to Callan Associates, Inc., the Core Fund's gross investment returns as of Dec. 31, 2021 performed at or above the top quartile of peer U.S. pension plans over the last three-, five-, and ten-year periods, with median performance in 2021. In addition, Callan states "SWIB maintains a cost-effective mix of internal and external investment management that provides a material total fund cost advantage vs. peers."

Cost Optimization and Internal Management
SWIB's costs are lower than our peers in part because SWIB attracts and retains a highly qualified professional staff to manage the assets of the WRS. SWIB currently manages about 50% of WRS and other trust fund assets internally, for multiples less than what it would cost to pay external managers. Based on data from CEM Benchmarking, an independent cost consultant, SWIB's internal management well exceeds the US public fund average of 13% as well as the 35% average among a select CEM peer group of 15 large, sophisticated public plans. In addition to its skilled staff, SWIB makes necessary investments in technology and infrastructure to support this internal management. Relative to its peers, SWIB saved about $1.1 billion in costs from 2011-2020.

As the report mentions, CEM analyzes SWIB's investment costs compared to other public pension plans. CEM found that in 2020 (the most recent available report) SWIB's costs were lower than the average of 49 large U.S. public funds in the CEM universe by $0.093 per $100 of assets managed. This translates to a one-year cost savings of $103 million.

SWIB-Earned Returns Power the WRS
According to the National Association of State Retirement Administrators (NASRA), from 1991 through 2020, net investment income earned by SWIB represented 74% of the income needed to fund the WRS. The U.S. public pension average during that time was only 60%, meaning that taxpayers, public employers, and employees in Wisconsin bear less of the funding burden than those in most other states.

Public Spending on Pensions Is Much Less in Wisconsin Than Elsewhere
Another way to measure costs for taxpayers is to compare state and local spending on public pensions as a percentage of total government direct general spending. Per NASRA, average state and local government spending on pensions is 5% nationally. In Wisconsin, that figure is less than half, at 2.1%, and it has declined in the last decade.

SWIB Benefits the State as a Whole, Not Just WRS Participants
One in five Wisconsin residents (or an immediate family member) is a member of the WRS. Approximately one third of the WRS's 652,000 participants are annuitants whose modest pension payments help them retire with dignity. The WRS paid $6.3 billion in benefits in 2021. More than 85% of WRS pensions go to retirees living in Wisconsin, who purchase goods and services and pay taxes here. Also, SWIB has billions of dollars invested in companies based in Wisconsin or with some level of employment or operations in the state.

Skillfully Navigating Volatile Markets Aggravated By COVID-19
The years 2020 and 2021 were particularly volatile for financial markets due to the COVID-19 pandemic and the accompanying economic fallout. SWIB's talented staff deftly navigated this difficult environment. The Core Fund achieved net returns of 15.21% in 2020, and 16.89% in 2021, delivering significant outperformance relative to its benchmark. 2020 marked the highest outperformance in more than a decade. In 2021, SWIB was named Team of the Year by Institutional

Investor, a leading international financial publication, in recognition of the dedication, diligence, and fortitude exhibited by staff during 2020.

Thank you again for your time and consideration in completing this report. This audit and the LAB's recommendations are valuable to our continued efforts to serve the WRS and its beneficiaries.

Sincerely,

Edwin Denson

Edwin Denson
Executive Director/Chief Investment Officer