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JOINT COMMITTEE ON FINANCE

MEMORANDUM

To: Members
Joint Committee on Finance

From: Senator Howard Marklein
Representative Mark Born

Date: March 31, 2022

Re: SWIB Report to JFC

Attached is a report on goals, strategies and performance from the State of Wisconsin Investment Board, pursuant to s. 25.17(14m), Stats.

This report is being provided for your information only. No action by the Committee is required. Please feel free to contact us if you have any questions.

Attachments

HM:MB:jm

SWIB STATE OF WISCONSIN INVESTMENT BOARD

MAR 3 1 2022
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2022
Goals, Strategies & Performance Report

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SWIB STATE OF WISCONSIN INVESTMENT BOARD

MISSION

To be a trusted and skilled global investment organization contributing to a strong financial future for the beneficiaries of the funds entrusted to us.

VISION

SWIB will be an innovative, agile, integrated organization that optimizes investment returns while managing risk and cost over the long term.

VALUES

Values are the fundamental beliefs of our organization. They are guiding principles that explain our desired behaviors in the workplace and ensure we are on the right path. We believe in these values and will uphold them.

People - We believe people are the core of SWIB's mission. We value our people beyond their work, and encourage intellectual curiosity, transparency, candor, and respect. We're passionate about recruiting, developing, and retaining our talent. We respect, appreciate, and accept all SWIB employees and are committed to cultivating and preserving a diverse and inclusive workplace.

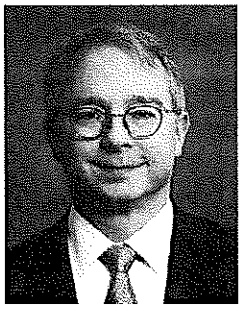
Excellence - We strive to exceed expectations and take pride in the quality of our work. We are motivated to continually improve and expand our viewpoints. We are results focused and process driven.

Integrity - We hold ourselves to the highest ethical standards in meeting our fiduciary duty. We maintain our internal and external relationships on a solid foundation of trust, dependability, accountability, and openness.

Innovation - We believe innovation is critical to SWIB's success and requires each person to have a genuine interest in creativity, prudently embrace change, and challenge the norm.

Collaboration - We operate as one team, seeking ways to contribute our individual talents toward achieving our shared mission. We value diverse ideas and recognize that thoughtful collaboration requires commitment, openness, preparation, and hard work.

Message from the Executive Director/CIO



In 2021, SWIB generated strong investment returns in a volatile market environment dominated by the ongoing effects of the coronavirus pandemic. The Wisconsin Retirement System (WRS) Core Trust Fund achieved a net return of 16.89%, representing outperformance of 65 basis points relative to its benchmark. The WRS Variable Trust Fund, an optional stock-only fund, ended 2021 with a net return of 19.95%.

This performance means WRS annuitants will soon see the highest Core Fund annuity increase in more than two decades. Actively employed WRS participants will enjoy double digit effective rates of interest applied to their retirement accounts. Contribution rates for WRS employers and employees alike are expected to remain stable.

SWIB's goals for 2022 remain very similar to the goals we set for 2021: increasing active return through improved investment strategies, enhancing and optimizing our operations and technology infrastructure, and continuing to improve our talent acquisition, retention, and management. A culture of continuous improvement keeps SWIB among the country's premier investment managers.

Our strategy for 2022 continues to focus on long-term results to help ensure the pension fund can meet its obligations to WRS participants. SWIB has implemented a robust and diversified asset allocation that can help us navigate changes in market conditions. Our sophisticated investment strategies, excellent investment management and services teams, and the improvements we have made in our infrastructure helped us successfully navigate 2021 and will lead us into 2022 and beyond.

About 652,000 current and former employees of Wisconsin state and local government count on the WRS to help provide their families with a more secure retirement. In uncertain and unpredictable times like these, the fully funded WRS is a steady economic pillar for the state of Wisconsin.

Edwin Denson

Edwin Denson
Executive Director/Chief Investment Officer

About the Investment Board

SWIB is a trusted and skilled investment organization contributing to the strong financial future of the beneficiaries of the funds entrusted to it. An independent state agency governed by Chapter 25 of state statutes, SWIB is responsible for managing the assets of the fully funded Wisconsin Retirement System (WRS), the State Investment Fund (SIF), and other separately managed funds. The SIF is a pool of invested cash balances of the WRS and various state and local government units. Other funds managed by SWIB include the State Life Insurance Fund, Historical Society Trust Fund, Injured Patients and Families Compensation Fund, and University of Wisconsin System Trust Funds.

As of Dec. 31, 2021, SWIB managed more than $165.6 billion in net assets. The Core Fund, the larger of the two WRS trust funds, had net assets of more than $136 billion, and the Variable Fund, an optional stock-only fund, ended 2021 with net assets of nearly $11 billion. The WRS consistently ranks among the 10 largest public pension funds in the U.S. About 652,000 current and former state and local government employees and their families count on the WRS for some portion of their retirement security.

SWIB and its governing body, the Board of Trustees, have a fiduciary responsibility to invest this money in the best interest of the trust funds as a prudent expert. To help it meet this responsibility, SWIB needs to attract and retain qualified investment professionals and to invest in its technology and systems. Over the years, the Legislature has helped ensure that SWIB can meet its fiduciary duty by providing SWIB flexibility, independence, and authority that are different from those of other state agencies, including investment, budget, position, and compensation setting authority.

SWIB's budget differs from that of other state agencies. SWIB receives no direct general purpose revenues from the state. All costs to manage assets in the trust funds are paid from those trust funds. 2011 Wisconsin Act 32 gave SWIB's independent Board of Trustees the authority to establish SWIB's operating budget and staffing level. This law change has given SWIB the flexibility to adapt to swiftly changing market conditions while increasing its internal management of assets in a cost-effective manner. Since SWIB's inception in 1951, forward-thinking state legislators and governors have given SWIB the tools to allow the agency to evolve into the premier money manager it is today.

Annually, SWIB is required to report its long-term strategies, investment goals, and the status of goals and investment performance for the previous year. This report is submitted to the Legislature pursuant to section 25.17(14m) of the Wisconsin State Statutes. More information about SWIB and the funds it manages can be found at **www.swib.state.wi.us**.

MANAGEMENT COUNCIL

Edwin Denson
Executive Director/
Chief Investment Officer

Rochelle Klaskin
Deputy Executive Director/
Chief Administrative Officer

Mike Jacobs
Agency Business Director

Brian Hellmer
Global Public Market
Strategies Chief
Investment Officer

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

Performance

Equity market performance was strong across the world in 2021, with the exception of emerging markets. The S&P 500 index returned 28.7% while non-US developed markets returned 12.6% and emerging markets experienced a modest 2.5% decline. Bond markets generally provided negative returns as interest rates rose, with only the high yield market providing a positive absolute return. The year began with continued positive momentum from the faster-than-expected development and rapid deployment of effective vaccines against the COVID-19 pandemic, which accelerated timelines for expected re-opening of economies. This, coupled with additional fiscal stimulus and continued highly accommodative monetary policy, provided a strong tailwind for most risk assets like equity and non-investment grade bonds.

Starting in the middle of the year, the economy had demonstrated enough resilience and momentum, with inflation spiking to rates not seen in three decades, to call into question the need for continued extremely easy monetary policy. Expectations for a reduction in monetary accommodation came into the market in full force as suggested by fixed income markets, yet the equity market continued to climb undeterred. However, the sustained run-up in most equity markets is expected to make it harder to achieve return targets and expectations going forward. Also, uncertainty surrounding the persistence of high inflation and the policy response is sure to cause volatility in markets. We will continue to rely on SWIB's disciplined, flexible, and innovative investment strategy to provide sufficient returns for the trust funds under management, including the WRS.

- The Core Trust Fund (Core Fund), the larger of the two WRS trust funds with more than $136 billion in net assets, ended the year with a net return of 16.89% and five-, ten-, and 20-year returns net of external manager fees of 12.47%, 10.10%, and 7.92%, respectively.
- SWIB's returns for the Core Fund exceeded its performance benchmarks for all these periods. Performance benchmarks are market references that the Board of Trustees uses to compare and evaluate SWIB's performance. Benchmarks are set by the Board of Trustees with the guidance of an independent benchmarking consultant.
- SWIB's one-, five-, ten-, and 20-year returns for the Core Fund all exceed the long-term WRS investment target of 6.8%.
- The Variable Trust Fund (Variable Fund), an optional stock-only fund with nearly $11 billion in assets, ended the year with a net return of 19.95% and five-, ten-, and 20-year returns net of external manager fees of 15.52%, 13.75%, and 8.54%, respectively.
- 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.

Wisconsin Retirement System

The WRS is a risk-sharing defined benefit plan. It is a hybrid model in that it contains elements of a defined benefit plan and a defined contribution plan, like a 401(k). SWIB works to protect and grow the assets of the WRS for the benefit of about 652,000 participants who count on the pension for a more secure financial future. Contributions made to the WRS by these employees, and their employers, are invested by SWIB to finance retirement benefits. SWIB has helped fuel one of the only fully funded pension systems in the U.S. during a time when many public pension plans are struggling with underfunding. Investment earnings generated by SWIB comprise about 80% of the revenues needed to fund the WRS, reducing the burden on public employers and employees.

WRS assets are divided into two funds: The Core Fund and the Variable Fund. Investment performance for both funds is included in the table entitled **2021 Investment Performance.**

The Core Fund includes diversified holdings in stocks, bonds, private equity, real estate, hedge funds, and other investments. SWIB has designed and built the Core Fund investment strategy to strike an efficient balance between protecting the WRS and growing its assets. Asset class returns as of Dec. 31, 2021 are presented in the table entitled **Core Fund Returns.**

SWIB diversifies its assets among many types of public and private investments, optimizes its costs (which saved $1.1 billion over its peers over the last 10 years), and internally manages about half of the WRS assets. This investment management strategy is designed to weather a variety of economic environments over the long term and help ensure the WRS can meet its obligations today and in the future. It also allows SWIB to meet its standards of responsibility outlined in state statutes. That statute, s. 25.15

WRS Annualized Returns
as of December 31, 2021*

	One Year	Five Years	Ten Years	Twenty Years
Core Fund	16.89%	12.47%	10.10%	7.92%
Core Fund Benchmark	16.25%	11.94%	9.66%	7.68%
Variable Fund	19.95%	15.52%	13.75%	8.54%
Variable Fund Benchmark	20.21%	15.58%	13.69%	8.68%

*One year returns presented net of all fees and costs. All other returns presented net of external manager fees.

Core Fund Returns*
As of December 31, 2021

Asset Class	Benchmark	One Year
Stocks	19.7%	19.0%
Fixed Income	-1.5%	-0.6%
Inflation Sensitive	6.0%	6.0%
Real Estate	13.6%	16.1%
Private Equity/Debt	41.9%	41.5%
Multi-Asset**	12.2%	16.3%
Alpha Pool Overlay	0.0%	6.0%
Total	**16.25%**	**16.89%**

*One year total returns presented net of all fees and costs, Asset Class returns presented net of external manager fee.
**Multi-Asset includes cross-asset class strategies.

(2), requires that SWIB manage the funds as a prudent expert, diversify investments in order to minimize the risk of large losses, and administer assets of each trust or fund solely for its purpose and at a reasonable cost. The investment goal of the Core Fund is to earn an optimal rate of return while taking an acceptable level of risk and meeting or exceeding the actuarially assumed rate of return of 6.8%. Previously, the assumed rate of return was 7.0%. In December 2021, the Employee Trust Funds Board reduced this rate after considering key economic and demographic assumptions used to value the liabilities of the WRS. The table entitled **Core Fund Asset Allocation Targets** shows policy targets for the Core Fund asset classes for each of the last three years. SWIB's actual asset allocation may vary up to +/-6% from the targets shown in the table.

Core Fund Asset Allocation Targets As of December 31, 2021			
Asset Class	**2019**	**2020**	**2021**
Stocks	49.0%	51.0%	52.0%
Fixed Income	24.5%	25.0%	25.0%
Inflation Sensitive	15.5%	16.0%	19.0%
Private Equity	9.0%	11.0%	12.0%
Real Estate	8.0%	8.0%	7.0%
Multi-Asset	4.0%	4.0%	0.0%
Cash & Overlays*	-10.0%	-15.0%	-15.0%
Total	**100%**	**100%**	**100%**

*Negative percentages reflect SWIB's leverage strategy.

WRS participants may elect to have 50% of their contributions invested in the all-stock Variable Fund instead of 100% in the Core Fund. The Variable Fund provides participants the potential for higher returns in exchange for higher investment risk. By choosing this option, participants also forego part of the formula benefit guarantee. The Variable Fund's gains and losses are not smoothed and are recognized in the year in which they occur. This results in greater volatility in investment gains or losses.

By law, the Variable Fund invests only in stocks, as shown in the chart entitled **Variable Fund Asset Allocation.** When setting the Variable Fund asset allocation, Trustees evaluate the risk/return tradeoff of U.S. and non-U.S. exposures. The benchmark is a weighted blend of U.S., international, and emerging market stock indices. The investment strategy for the Variable Fund is to achieve returns equal to or above that of similar stock portfolios over a market cycle.

Variable Fund Asset Allocation	
U.S. Stock	70%
International Stock	30%
Total	**100%**

Long-Term Strategies

SWIB has been, and continues to be, a long-term investor, which means it can be more patient than many other investors. Historically, markets tend to be cyclical and decline after a few years of strong performance. Success is measured by the overall long-term health of the system rather than individual peaks and valleys. For that reason, managing investment risk is a constant consideration for the trust funds.

SWIB's long-term goal is to provide prudent and cost-effective management of funds held in trust. This is achieved through people, policies, and processes for setting the asset allocation in a diversified portfolio, estimating expected investment returns and risk, and evaluating investment performance. SWIB has developed a disciplined, prudent, and innovative investment strategy designed to help keep contribution rates stable while generating reasonable returns to help the WRS remain fully funded. Asset allocation – the distribution of investments across stocks, bonds, and other assets to maximize

returns and minimize risk – is a primary driver of long-term investment returns and is approved by the Board of Trustees in consultation with SWIB's asset and risk allocation investment staff and an independent asset allocation consultant.

SWIB has continued to diversify its portfolio by investing in multi-asset strategies. These strategies are not constrained by asset class, but can hold securities of many different asset types in the same portfolio. These strategies take advantage of market opportunities that cannot be done through a single asset class.

SWIB uses investment performance targets that are tied to benchmarks – usually market indices against which portfolio and fund returns are evaluated. The Core Fund is measured against a blend of benchmarks representing broader markets for stocks, bonds, and other asset classes that reflect the blend of the Core Fund's individual portfolios.

Peer Comparison

Numerous differences in plan structure should be considered when reviewing peer comparisons including asset allocation, cash flow needs, investment styles, funding levels, return assumptions, risk tolerance levels, and statutory or other restrictions on allowable investments. In short, differences in plan structure often result in different goals, which result in different asset allocations that then drive overall returns. When a plan is not fully funded, its effective rate of return will decrease because a portion of the assets are not available to earn investment returns. Given the WRS's fully funded status and unique risk-sharing design, SWIB invests differently than its peers, who are often underfunded, generally have higher investment targets and may need to have greater risk tolerances.

According to Callan Associates, Inc., a firm that provides independent research, education, decision support, and advice to public pension plans and other institutional investors, 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."

Callan comparison peer data is reviewed by the Board of Trustees every quarter. Reports are available on SWIB's website.

Diversification Reduces Risk

Diversification of assets at the fund level is the primary tool for managing risk; because in a more diversified fund risks are often offset by one another. This is because generally market conditions affect different asset classes differently, so returns in one asset class may be positive while another asset class may be negative in the same market environment. SWIB continues to find ways to further diversify the Core Fund as a way to address market volatility. Every year, as part of the process in developing the Core Fund's asset allocation, SWIB and its asset allocation consultant work together to target an asset mix that is appropriate for the Core Fund's goals, with a focus on both the expected return of the asset allocation and its overall risk profile.

Managing risk becomes even more important in the WRS since its retirees' annuity payments are directly impacted by returns because of the shared risks and rewards design. Lowering volatility helps stabilize contribution rates and benefit adjustments.

SWIB Manages Risk in Many Ways

In addition to diversification, SWIB monitors and manages risk through an enterprise-wide process.

About 652,000 individuals participate in the WRS.

Each portfolio follows guidelines that specify the types of allowable investments and other requirements consistent with policies established by the Board of Trustees. Portfolio managers are responsible for complying with these guidelines, as well as Wisconsin Statutes and Administrative Code. In 2021, SWIB built out a new standalone Risk Management Division that reports directly to the ED/CIO. This new division assesses, evaluates, and monitors both investment risk and enterprise risk for a holistic and comprehensive approach to risk management.

As part of its risk management, SWIB has conducted robust investment stress testing since 2013 to evaluate and strengthen its investment strategy and make it more risk aware. The stress testing evaluates market downturns, liquidity risks, and multiple return environments. Routine testing and modeling is reviewed regularly by SWIB's Investment Committee, and bi-annually, in-depth stress testing is conducted with the WRS's actuaries and presented to the Board of Trustees. This information is publicly available at **www.swib.state.wi.us/stresstesting**.

SWIB's compliance staff continuously monitors investments and reports any exceptions and their resolution. Many monitoring tools are used to detect, and in some cases prevent, investment activities that would violate the investment guidelines. Portfolios out of compliance with guidelines will be brought into compliance immediately, or a plan for doing so or a waiver must be approved by the ED/CIO.

SWIB's Internal Audit Group enhances and protects organizational value by providing risk-based and objective assurance, advice, and insight through regular audits, consulting, and other activities.

SWIB Optimizes Strategy Implementation

Staff is responsible for making investment decisions subject to its fiduciary duty, Board-approved asset allocation, and other restrictions. Assets can be managed passively as an index, which seeks to replicate the returns of the market or benchmark, or with active management, which attempts to exceed the performance of a particular market index using independent decisions. Active strategies are expected to produce higher returns than passive strategies over time; however, additional costs and risk associated with active management are considered when determining implementation strategies.

Hedge Funds

SWIB's investment strategy includes investments in hedge funds. SWIB's use of hedge funds is different from many other public pension funds that have decreased or eliminated their hedge fund portfolios. Many of those plans seek hedge fund returns similar to the stock market and are paying hedge fund managers for both stock market performance and additional returns from active management. SWIB looks to access general market returns in the lowest cost and most efficient manner possible, preferring to replicate market exposures internally. SWIB's hedge fund portfolio, which is generally designed to have minimal correlation with the stock market, is then combined with this exposure for a more efficient and cost-effective approach.

Leverage

The SWIB Board's recommended 2022 policy target for Core Fund leverage remains at 15%. While the word "leverage" might imply additional risk, SWIB actually employs leverage to help reduce risk by enabling a higher allocation to lower-risk, fixed income securities while targeting the same performance return. Even with the

Investments account for about 80% of the income needed to fund the WRS.

use of leverage, the total risk of SWIB's policy portfolio remains at the median of the Callan peer group. Leverage is achieved through many passively implemented arrangements including reverse repurchase agreements and derivatives exposures.

Derivatives

All derivative instruments are subjected to risk analysis and monitoring processes at the portfolio, asset class, and fund levels. Investment guidelines define allowable derivative activity for each portfolio and are based on the investment policy objectives which have been approved by the Board of Trustees. The following are the types of derivatives that SWIB uses in its portfolios. SWIB also invests in derivative instruments indirectly through several commingled funds, which have not been included in the following narrative.

Foreign Currency Spot and Forward Contracts

Foreign currency spot and forward contracts are uncleared over-the-counter agreements between two counterparties to exchange designated currencies at a specific time in the future. No cash is exchanged when a foreign currency exchange spot or forward contract is initiated. SWIB may employ discretionary currency overlay strategies at the total fund and asset class level when currency market conditions suggest such strategies are warranted. Only the currencies of developed market countries in the MSCI World Index may be used to implement a currency overlay. SWIB executes spot and forward contracts with various counterparties. Guidelines have been established which provide minimum credit ratings for counterparties. Additionally, policies have been established which seek to implement master netting arrangements with counterparties to over-the-counter derivative transactions.

Futures Contracts

A futures contract is an exchange traded agreement to buy or sell a financial instrument at an agreed upon price and time in the future. Upon entering into a futures contract, collateral is deposited with the broker, in SWIB's name, in accordance with the agreement. Collateral for futures contracts can be in the form of cash, U.S. Treasuries, and equity securities. Futures contracts are marked to market daily, based upon the closing market price of the contract at the board of trade or exchange on which they are traded. The resulting gain/loss is typically received/paid the following day until the contract expires. Futures contracts involve, to varying degrees, risk of loss in excess of the collateral deposited with the broker. Losses may arise from future changes in the value of the underlying instrument.

Options

An option contract gives the purchaser of the contract the right, but not the obligation, to buy (call) or sell (put) the security or index underlying the contract at an agreed upon price on or before the expiration of the option contract. The seller of the contract is subject to market risk, while the purchaser is subject to credit risk and market risk, to the extent of the premium paid to enter into the contract.

Swaps

A swap is a negotiated contractual agreement in which counterparties exchange cash flows of one party's financial instrument for those of the other party's financial instrument. Both parties to the swap contract are subject to market and credit risk of the underlying contract payments. Market risk results from the variability of payments and credit risk results from the parties' obligations to make payments. Collateralization of payments and market value variations mitigates the credit risk.

SWIB manages more than $147 billion in WRS assets.

To Be Announced Securities

To Be Announced (TBA) mortgage backed securities (MBS) are over-the-counter forward contracts on mortgage-backed securities issued by Fannie Mae, Freddie Mac, and Ginnie Mae where the seller agrees to deliver the MBS for an agreed upon price on an agreed upon date. The TBA market provides mortgage lenders with a means of hedging interest rate risk between the time a loan rate is locked by a borrower and when the loan is funded. At settlement, TBA securities are exchanged for mortgage pools. However, SWIB's strategy is not typically expected to take in a mortgage pool. Instead, those TBA securities will usually be sold prior to that exchange occurring.

Internal Management Is Cost Effective

SWIB optimizes its costs, invests in its infrastructure, and spends less than its peers, according to CEM Benchmarking, an independent provider of objective cost benchmarking for public pensions plans. As of Dec. 31, 2021, about half of SWIB's more than $147 billion in WRS assets under management were managed internally.

CEM's most recent report found that for calendar year 2020, SWIB's investment cost of 52.4 basis points (bps) was 9.3 bps, or about $103 million, lower than the U.S. public fund average and 1.4 bps, or about $15 million lower than the CEM Peer Benchmark, which is adjusted for investing style. (One basis point is equal to 0.01%, 1/100th of a %, or 1 cent for each $100.)

Compared to its peers, SWIB saved about $1.1 billion in costs from 2011-2020. SWIB's cost savings advantage has narrowed in recent years as SWIB has made additional investments in infrastructure required by more complex internal management and peers have followed SWIB's lead in shifting to more internal management.

Qualified Staff and Systems Are Critical

SWIB competes for staff with investment firms in the private sector throughout the country. A successful internal management program requires experienced and qualified staff. Because SWIB manages so many assets internally, it must also invest in its people. With assistance from an independent compensation consultant, SWIB annually reviews the investment industry employment market to set compensation at appropriate levels. In addition to hiring and retaining qualified staff, SWIB seeks to develop the information technology, trading, accounting, and monitoring systems needed to accommodate its complex investment strategies. When considering whether to gain access to an investment strategy through internal or external management, SWIB considers many factors including the cost and return expectations associated with each option.

Maintaining a lower-cost internal management program requires the ability to attract, hire, and retain qualified staff. Over the past few years, the Board of Trustees has worked with its compensation consultant to maintain an incentive compensation program that motivates staff to earn the highest possible returns at reasonable costs and controlled levels of risk, aligning their interests with those of the WRS over the long term. SWIB's incentive compensation plan is explicitly authorized by section 25.16 of the Wisconsin Statutes. This statute was created in the 1987 session of the Legislature, after SWIB reported it was unable to attract and retain investment staff needed to manage the trust funds in a cost-effective manner. SWIB's compensation plan focuses on paying for performance and five-year returns. A competitive compensation plan is critical to SWIB's ability to attract and retain a talented and skilled workforce.

To adequately and efficiently process trades, measure risk, and manage investments, SWIB must continually enhance its systems and processes. Over the past several years, SWIB's team has worked diligently to implement new technology platforms to improve accounting, trading, risk management, and portfolio management activities. Investments in SWIB's

technology are ongoing, and these improvements will continue to provide staff better access to high quality and timely data while improving SWIB's ability to monitor and manage risk.

Staff Qualifications (as of December 31, 2021)	
Total SWIB Staff*	**232**
Masters of Business Administration (MBA)	67
Masters Degree other than MBA	52
Juris Doctor Degree (JD)	10
Doctorate (PhD)	12
Chartered Financial Analyst (CFA)	63
Certified Public Accountant (CPA)	24

*Some SWIB Staff have more than one advanced degree or credential.

Goals & Strategies

To achieve continued success in the future, SWIB works to stay at the forefront of continually evolving institutional investment practices. SWIB staff, along with the Board of Trustees, regularly assesses strengths and opportunities to improve and uses these assessments to chart a course for the future.

2021 Goals Achieved

Goal: Increase Active Return Through Improved Investment Strategies

In 2021, SWIB enhanced its existing investment capabilities and access to new markets with the implementation and support of several new instruments while also enhancing its collateral management through a new liquidity strategy. In 2021, the Core Fund performed 65 basis points ahead of its benchmark.

Goal: Enhance and Optimize SWIB's Operations and Technology Infrastructure

In 2021, SWIB continued to mature and strengthen its data management and information security programs while also advancing the implementation of a new portfolio management system. SWIB's ongoing commitment to investing in its platforms is a key component to better supporting cost-efficient internal investment strategies.

Goal: Enhance Talent Acquisition, Retention, and Management

In 2021, SWIB made continued progress on recruitment and retention, hiring 46 new employees, and continued engagement with staff on culture and values enrichment. SWIB also established and built out its Risk Management Division and continued with planning and preparation for its move to a new office that will accommodate SWIB's current and expected future staffing needs.

2022 Goals Set

Goal: Increase Active Return Through Improved Investment Strategies

In 2022, SWIB will launch new portfolio strategies and grow or restructure existing strategies to enhance opportunities for alpha generation and reflect the new asset allocation policy. SWIB will work to further diversify its sources of liquidity. Staff also plans to implement new instruments for investment staff to enhance their ability to optimize SWIB's active risk and direct access to new markets.

Goal: Enhance and Optimize SWIB's Operations and Technology Infrastructure

In 2022, SWIB plans to make continued progress toward implementing its new portfolio management system and enabling the insourcing of its middle office. SWIB will also address infrastructure work that is necessary to keep its current infrastructure up to date. Building on the progress made in 2021, SWIB staff will ensure readiness to comply with various regulatory changes, including the CFTC's uncleared margin rules.

Goal: Enhance Talent Acquisition, Retention, and Management

In 2022, SWIB will work to continue its recent successes in recruiting and retention. SWIB will support these efforts through continued focus on enhancing organizational culture. Staff will also continue planning for the move to new office space in early 2023.

State Investment Fund

SWIB also manages the State Investment Fund (SIF), which consists of commingled cash balances of the state and its agencies, local governments, and the WRS. The SIF investment goals are safety of principal, liquidity, and competitive rates of return. The fund's shorter-term cash management objectives reflect these goals.

State agencies deposit tax revenues, fees, federal funds, and other revenues from over 50 state funds with the SIF until needed for state operating expenditures. WRS cash assets are invested in the SIF for transition and cash flow purposes, and in some cases, until longer-term investment opportunities with more favorable rates of return become available. Over 1,300 local government units deposit funds in the commingled Local Government Investment Pool until needed for operating expenditures. SIF earnings are calculated and distributed monthly based on the participant's average daily balance as a percent of the fund. Participants may deposit and withdraw funds daily. SIF assets were valued at over $20 billion on Dec. 31, 2021.

Investment Strategy

To effectively achieve its objectives for safety of principal, liquidity, and then competitive money market returns, the investment strategy of the SIF positions the portfolio to earn additional returns by monitoring and analyzing market and economic expectations and the market return of short-term government securities. Investment staff constantly monitor global market and economic events and position the fund accordingly. The SIF ended 2021 with a one-year return of 0.06%, beating its benchmark of 0.04%, and has also outperformed its five- and ten-year benchmarks.

Investments in Wisconsin

SWIB's fundamental responsibility is to generate strong investment returns and maintain the fiduciary duty it owes to the trust funds under management. However, SWIB welcomes opportunities that have the double benefit of being both a good investment for the trust funds and good for Wisconsin's economy. For decades, SWIB has been making investments in Wisconsin and will continue to try and do so in the future. As of June 30, 2021, SWIB had invested $746 million in companies either headquartered in Wisconsin or with 30% or more of their operations based in Wisconsin.

SWIB has two dedicated portfolios that focus on Wisconsin. The Wisconsin Private Debt Portfolio dates back to the 1960s. Over 80% of the loans in this portfolio have been to companies that are headquartered in, have operations in, or intend to invest proceeds in Wisconsin. The Wisconsin Venture Capital Portfolio launched in 1999.

Wisconsin Private Debt Portfolio

Over 80% of SWIB's Private Debt Portfolio is invested in Wisconsin opportunities. As of June 30, 2021, the portfolio held loans to 37 borrowers headquartered or having operations in Wisconsin totaling approximately $400 million. The average outstanding balance for borrowers was about $11 million.

SWIB can be a good partner with a company's banks, providing long-term loans that complement the banks' short-term financing while not competing with the banks to provide other financial services. The program offers flexibility with loans that mature in five to fifteen years and feature a fixed interest rate for the life of the loan.

Wisconsin Venture Capital Portfolio

SWIB's primary objective for investing in early stage start-up companies through its Wisconsin Venture Capital Portfolio is to generate reasonable investment returns for the beneficiaries of the WRS on a risk-adjusted basis. A secondary benefit, many times, comes from potential jobs these investments can create.

Private equity consists of equity securities in companies not publicly traded on a stock exchange. These investments carry higher risks than publicly traded investments but offer the potential for higher rates of return. Venture capital is one form of private equity investment.

Active funds allocated to the Wisconsin Venture Capital Portfolio were committed to 10 venture capital funds as of June 30, 2021. The portfolio also has active direct investments in nine Wisconsin venture stage companies. As of June 30, 2021, the Wisconsin Venture Capital Portfolio had approximately $300 million committed/ invested in funds and directly into companies.

The portfolio capitalizes on the imbalance between the high amount of research and development in the Wisconsin region, entrepreneurial talent, low cost to operate a business within the state, and relatively low amount of venture capital dollars seeking investments here.

SWIB believes it can make money on this imbalance because venture capital investing requires time-intensive and hands-on attention to each company. The high costs can be prohibitive for long-distance investments giving an advantage both to local investors with established

connections to the research conducted here and to business leaders with skills to build companies that can commercialize this research. The relative lack of competition gives local investors the opportunity to invest at attractive valuations and select the best opportunities.

SWIB is required by state statutes to report biennially to the Governor and the Legislature on its plans for making investments in Wisconsin. The Goals for Investing in Wisconsin Report for fiscal years 2021-2025 can be found on SWIB's website **www.swib.state.wi.us** under the Investing in Wisconsin tab.

Total Wisconsin Investments by Asset Class
June 30, 2021

Asset Class		Headquartered or Significant Presence[1] in WI
Public Equities[2]	$	383,396,946
Private Equity/Private Debt		296,631,536
Fixed Income		31,863,926
Multi Asset		24,016,422
Real Estate		10,234,549
Short-Term Funds[3]		-
Total	**$**	**746,143,379**

[1] "Significant Presence" is defined as a company with 30% or more of their operation in Wisconsin.
[2] Does not include liability exposure due to shorting.
[3] Includes commercial paper, certificates of deposit, and bankers' acceptances valued at par. Reflects value as of June 30, 2021.

CORE and VARIABLE FUND HOLDINGS BY ASSET CLASS

The following tables compare how the various categories of investments for the Core and Variable Funds were managed within each asset class as of December 31, 2020 and 2021. Totals include exposure to futures and may not add correctly due to rounding.

Core Trust Fund Exposures by Sub Asset Class	12/31/2020		12/31/2021	
	$ in Millions	% of Total	$ in Millions	% of Total
Equities				
Developed Global*	$ 48,898	41%	$ 56,176	41%
Emerging Market Equity*	3,556	3	4,125	3
U.S. Small Cap	3,547	3	4,069	3
International Small Cap	2,566	2	3,005	2
Total Equities	$ 58,566	49%	$ 67,374	49%
Fixed Income				
U.S. Investment Grade	$ 25,754	21%	$ 30,085	22%
High Yield	2,292	2	2,715	2
Emerging Market Debt	2,261	2	2,469	2
Global	0	0	0	0
Total Fixed Income	$ 30,308	25%	$ 35,270	26%
Inflation Sensitive				
TIPS	$ 18,560	15%	$ 21,078	16%
Commodities	0	0	0	0
Total Inflation Sensitive	$ 18,560	15%	$ 21,078	16%
Private Markets				
Private Equity	$ 7,253	6	$ 11,254	8
Real Estate	8,030	7	9,548	7
Venture Capital	1,656	1	2,492	2
Current Return	1,511	1	2,137	2
Private Equity Co-Invest	1,046	1	1,825	1
Private Debt	621	1	642	1
Private Equity Legacy	(16)	0	30	0
Total Private Markets	$ 20,102	17%	$ 27,928	21%
Multi-Asset	$ 4,079	3%	$ 4,617	3%
Cash/Leverage/Overlays	$ (11,428)	(10%)	$ (19,955)	(15%)
Total	$ 120,188	100%	$ 136,312	100%

*Developed global equity allocations differentiated between US and Int'l using MSCI World split and MW TOPS split between MW TOPS split between US, Int'l, and EM using ACWI split.

Variable Trust Fund Exposures by Sub Asset Class	12/31/2020		12/31/2021	
	$ in Millions	% of Total	$ in Millions	% of Total
Equities				
Domestic Equity*	$ 6,692	70%	$ 7,579	69%
International Equity*	1,950	20	2,330	21
Emerging Market Equity*	907	10	943	9
Total Equities	$ 9,549	100%	$ 10,853	99%
Multi-Asset	$ 0	0%	$ 0	0%
Cash	$ 21	0%	$ 75	1%
Total	$ 9,570	100%	$ 10,927	100%

*Developed global equity allocations differentiated between US and Int'l using MSCI World split and MW TOPS split between MW TOPS split between US, Int'l, and EM using ACWI split.

Appendix B

RISK MANAGEMENT

As part of SWIB's ongoing risk management activities, SWIB routinely monitors risk within the areas outlined below.

Funding WRS Liabilities: The most basic measure of risk for WRS trust funds under management is the ability to pay promised benefits. The WRS actuary and SWIB's asset allocation consultant both agree that the WRS is well-positioned to meet its current and future obligations.

Volatility: Minimizing year-to-year fluctuation in the Core Fund's returns helps to stabilize required contributions to the WRS and dividends paid to retirees. This is partly achieved through the smoothing mechanism in the Core Fund, whereby returns are smoothed over a five-year period, as well as investment strategies that temper the volatility of returns and take advantage of short-term displacements in prices.

Interest Rate Risk: Risk that changes in interest rates affect the value of a bond SWIB holds. SWIB uses multiple methods to monitor and mitigate interest rate risk. One example is an investment in Treasury Inflation Protected Securities (TIPS).

Currency Risk: Currency risk is the potential risk of loss from fluctuating foreign exchange rates. Foreign currency exposure in the trust funds occurs primarily in the international stock and bond holdings and, to a lesser extent, from private markets. International and global portfolio managers make currency hedging decisions. International currency risk is further managed by diversifying across international regions, economies, sectors and individual investments.

Tracking Error/Active Risk: Tracking error measures the volatility of excess return versus the benchmark. It is an indication of how the fund or portfolio is positioned relative to the benchmark. This also helps measure the extent to which the performance of any one portfolio within the trust fund could affect the performance of the entire fund. The Trustees have adopted an active risk objective of 120 basis points, plus or minus 60 basis points, for the Core Fund. The active risk target for the Variable Fund is 60 basis points, plus or minus 30 basis points. SWIB staff monitor tracking error on an ongoing basis and perform attribution analysis to understand in detail where deviations from the benchmark are occurring.

Soft Risk Parameters: Investment guidelines include "soft risk parameters," supplementary guidelines within which a portfolio is expected to operate over time. The Investment Committee, composed of SWIB executive and investment staff, monitors portfolios on a regular basis for compliance with parameters. The Investment Committee discusses the rationale and outlook for any exceptions.

Credit Risk: Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations to SWIB. Fixed income credit risk investment guidelines outline the minimum ratings required at the time of purchase by individual portfolios, or groups of portfolios, based on the portfolios' investment objectives. In addition, some fixed income portfolios are required to carry a minimum weighted average rating at all times. SWIB's Credit Team reviews overall credit risks.

Appendix C

SEPARATELY MANAGED FUNDS

Goals and strategies for the following funds are set by the various fund administrators. SWIB takes guidance from the administrators of the funds on how the assets should be managed, and SWIB executes the investment strategies.

Injured Patients and Families Compensation Fund: The Injured Patients and Families Compensation Fund provides excess medical malpractice coverage for Wisconsin health care providers and to compensate injured claimants. SWIB is responsible for managing the fund's assets to meet the maturity and liquidity needs established by the Board of Governors. The investment objective of the fund includes a balance between capital appreciation, preservation of capital, and current income.

UW System Trust Funds: The University of Wisconsin System trust funds consist primarily of monies that have been gifted directly to a UW institution, rather than one of the separate, supporting foundations. The Trust Funds Office works externally with donors and other related parties, and internally with the benefiting campuses and colleges, to facilitate the receipt and proper use (compliant with donor terms and conditions) of all gifts and bequests. The majority of the trust funds are invested by SWIB. The system's spending policy targets annual expenditures of 4 percent of the market value of the assets (calculated using a three-year rolling average) for payments to beneficiaries. The investment objective is to achieve, net of administrative and investment expenses, reasonable, attainable, and sustainable returns over and above the rate of inflation. SWIB seeks to achieve this objective through use of passive, externally-managed, public markets funds.

State Life Insurance Fund: The State Life Insurance Fund offers low cost life insurance to Wisconsin residents. The investment objective of the fund is to maintain a diversified portfolio of high quality public bonds which will preserve principal, maximize investment income, and minimize costs to policyholders. Liabilities from the fund's insurance contracts are factored into investment decisions.

Historical Society Trust Fund: The Historical Society Trust Fund supports current and anticipated initiatives and operations of the Wisconsin Historical Society. The investment objective of the Historical Society Trust Fund is to maintain a mix of equities and fixed income providing long-term growth in capital and income generation.

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