

2021
Goals, Strategies & Performance Report

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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.

FUTURE DIRECTION

Throughout our history, we have been committed to contributing to a strong financial future for the beneficiaries of the funds entrusted to us. We understand that carrying that commitment into the future demands more than maintaining the status quo.

As a global investment organization, our mission requires that we keep pace with ever-changing financial markets while remaining true to our values and operating principles. Accordingly, we continually seek to effectively manage risk and achieve the target returns for our funds over the long term.



Message from the Interim Executive Director

One can neither write a report about 2020 nor discuss plans for 2021 without acknowledging the impact COVID-19 has had on the world. The stock market plunged in February and March 2020. In just a matter of days, State of Wisconsin Investment Board (SWIB) staff swiftly pivoted to working remotely. It was not easy, but by staying the course SWIB was able to take advantage of market opportunities to generate returns and add tremendous value to the Wisconsin Retirement System (WRS).



In 2020, the WRS Core Fund achieved a net return of 15.21%, representing outperformance of 106 basis points relative to its benchmark. The WRS Variable Fund, an optional stock-only fund, ended 2020 with a net return of 17.51%. SWIB's robust and sophisticated investment strategy, strong investment management and services teams, and the investments we have made in our infrastructure helped us successfully navigate 2020.

The past year reminded everyone that it is very difficult to know what the future will look like. With that unpredictability in mind, SWIB has built an investment strategy to help the WRS weather many different market environments. SWIB remains committed to its active investment strategies, thoughtful asset allocation, significant portfolio diversification, and cost-effective internal management.

Our goals for 2021 remain consistent with the goals we had for 2020: 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.

Sadly, SWIB will have to pursue these goals without David Villa, SWIB's executive director & chief investment officer, who led the agency since 2018 and our investment strategy since 2006 and passed away on February 13, 2021. We will certainly miss David's innovative and capable leadership. Fortunately for SWIB, one of his many lasting legacies is that he assembled a very seasoned and capable management team who is supported by a talented professional staff committed to SWIB's mission and to keeping the WRS strong now and into the future.

This past year was not the first time we saw significant volatility in the markets, nor will it be the last. As we look ahead to 2021, uncertainty remains. But, because of the work we have done, and continue to do, one thing members of the WRS can be certain of is Wisconsin's pension system is well-positioned for whatever comes next.

A handwritten signature in black ink that reads "Rochelle Klaskin". The signature is fluid and cursive.

Rochelle Klaskin
Interim Executive Director

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, 2020, SWIB managed nearly \$144 billion in net assets. The Core Fund, the larger of the two WRS trust funds, had net assets of over \$120 billion, and the Variable Fund, an optional stock-only fund, ended 2020 with net assets of about \$9.6 billion. The WRS is the eighth largest public pension fund in the U.S. and 25th largest public or private pension fund in the world. More than 648,000 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 and to increase its internal management of assets in a cost-effective manner. Since SWIB's inception 70 years ago, 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



Rochelle Klaskin
Deputy Executive Director/
Chief Administrative Officer



Mike Jacobs
Agency Business
Director



Edwin Denson
Managing Director
Asset & Risk
Allocation



Brian Hellmer
Managing Director
Global Public Market
Strategies



Anne-Marie Fink
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Private Markets &
Funds Alpha

Performance

2020 Performance

Performance in 2020 was strong across the world, in both equity and government bond markets. The U.S. was no different, with the S&P 500 index finishing 2020 with a total return of about 18.4%, including dividends, and U.S. government bonds delivering a near 9% return. The year began with fears that the emerging global pandemic, with its effective shutdown of broad swaths of the economy to combat the spread of the virus, would prove too large a hurdle for policy makers to overcome. However, as the Federal Reserve and the U.S. federal government, along with their counterparts worldwide, provided unprecedented support for both the capital markets and the economy, global markets recovered. This overwhelming policy response, and expectations that both fiscal stimulus and monetary accommodation is expected to remain in place as long as needed, continue to bolster capital markets. However, the run-up in equities and the decline in bond yields is expected to make it harder to achieve return targets and expectations going forward. We expect to rely more than ever on SWIB's disciplined 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 \$120 billion in net assets, ended the year with a net return of 15.21% and five-, ten-, and 20-year returns net of external manager fees of 10.74%, 8.51%, and 6.94%, 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-, and ten-year returns for the Core Fund all exceed the long-term WRS investment target of 7.0%.
- The Variable Trust Fund (Variable Fund), an optional stock-only fund with about \$9.6 billion in assets, ended the year with a net return of 17.51% and five-, ten-, and 20-year returns net of external manager fees of 13.65%, 11.35%, and 7.08%, respectively.
- When looking over the last 20 years, SWIB's active management and its diversified holdings generated \$34.5 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 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 648,000 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 **2020 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, 2020 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 \$72 million over its peers in 2019 and \$1.3 billion over the last 10 years), and internally manages approximately 50% of WRS assets. This investment management strategy is designed to weather a variety of economic

2020 Investment Performance*				
Annualized for period ending December 31, 2020				
	One Year	Five Years	Ten Years	Twenty Years
Core Fund	15.21%	10.74%	8.51%	6.94%
Core Fund Benchmark	14.15%	10.27%	8.10%	6.62%
Variable Fund	17.51%	13.65%	11.35%	7.08%
Variable Fund Benchmark	17.90%	13.62%	11.22%	6.94%

*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, 2020		
Asset Class	Benchmark	One Year
Stocks	17.1%	16.4%
Fixed Income	8.7%	8.9%
Inflation Sensitive	11.0%	11.4%
Real Estate	0.5%	1.1%
Private Equity	11.6%	19.1%
Multi-Asset**	14.2%	14.9%
Alpha Pool Overlay	0.0%	9.0%
Total	14.2%	15.2%

*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.

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 (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 7.0% (expected return over 20-30 years). 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, 2020			
Asset Class	2018	2019	2020
Stocks	50.0%	49.0%	51.0%
Fixed Income	24.5%	24.5%	25.0%
Inflation Sensitive	15.5%	15.5%	16.0%
Real Estate	8.0%	8.0%	8.0%
Private Equity	8.0%	9.0%	11.0%
Multi-Asset	4.0%	4.0%	4.0%
Cash & Overlays*	-10.0%	-10.0%	-15.0%
Total	100%	100%	100%

*Negative percentages reflect SWIB's leverage strategy.

WRS participants may elect to have up to 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. Historically, markets tend to be cyclical and decline after a few years of strong performance. Because SWIB is a long-term investor, it can be more patient than many other investors. 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, and generate 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. An example is the Russell 3000 Index, which measures the performance of the largest 3,000 U.S. companies, or about 98% of the U.S. equity market. 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 (the average target is 7.2% compared to 7.0% for the WRS), and may need to have greater risk tolerances. In addition, because investment risks and rewards are shared with participants, SWIB has designed its plan to have a larger exposure to fixed income assets than other public pension funds.

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, 2020 performed in the top decile of a peer median group over the last one-, three- and five-year periods. While Callan’s comparisons are only shown gross of fees, Callan expressed that SWIB’s performance would likely rank even higher over these periods, if shown net of fees, because SWIB consistently has lower costs than its 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 better 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 discuss what is referred to as a “Goldilocks Zone”. This is an allocation in which the asset mix targeted is not “too hot” or “too cold” in terms of risk and expected returns but is appropriate for the Core Fund’s goals.

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.

More than **648,000** individuals participate in the WRS.

SWIB Manages Risk in Many Ways

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

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 Executive Director/Chief Investment Officer.

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

At the December 2020 SWIB Board meeting, Trustees voted to increase the Core Fund leverage target from 10% to 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

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

fixed income securities while targeting the same performance return. Leverage is achieved through 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.

To Be Announced Securities

To Be Announced (TBA) mortgage backed

SWIB manages about **\$130 billion** in WRS assets.

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, 2020, 50.7% of SWIB's nearly \$130 billion in WRS assets under management were managed internally.

CEM's most recent report found that for calendar year 2019, SWIB's investment cost of 43.6 basis points (bps) was below its benchmark cost of 44.4 bps and peer median cost of 50.4 bps. (One basis point is equal to 0.01%, 1/100th of a %, or 1 cent for each \$100.) This confirms SWIB's costs continue to be lower than its peers. SWIB's costs were lower because of more internal asset management and less investment in higher cost asset classes.

SWIB's total costs have increased in recent years as the assets it manages continue to grow, but they have remained consistently and materially lower than its peers. Compared to peers, SWIB saved approximately \$72 million in 2019 and \$1.3 billion from 2010 to 2019. SWIB will continue to invest in its people, processes, and technology because those investments provide the greatest edge in achieving long-term goals and delivering added returns. In 2021, SWIB will be planning for its 2022 move to the Madison Yards development. The new facility will provide SWIB with the space

needed to house its award-winning staff and to increase its ability to manage assets internally.

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 information technology, trading, accounting, and monitoring systems adequate to accommodate new and more complex investment strategies. When considering an investment strategy, SWIB compares the cost and return potential associated with internal or external management.

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 a 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. 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 pay 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, 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 and improve SWIB's ability to monitor and manage risk.

Staff Qualifications (as of December 31, 2020)

Total SWIB Staff*	205
Masters of Business Administration (MBA)	66
Masters Degree other than MBA	39
Juris Doctor Degree (JD)	8
Doctorate (PhD)	6
Chartered Financial Analyst (CFA)	63
Certified Public Accountant (CPA)	22
*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 institutional investment practices that are continually evolving. SWIB staff, along with the Board of Trustees, regularly assesses strengths and opportunities to improve, and then chart a course for the future.

2020 Goals Achieved

Goal: Increase Active Return Through Improved Investment Strategies

In 2020, SWIB launched two new portfolio strategies, mortgage backed securities and high yield bonds, and enhanced existing strategies to improve collaboration across teams and create additional alpha, or returns above market benchmarks. In 2020, the Core Fund performed 106 basis points ahead of its benchmark.

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

In 2020, SWIB built on the significant progress made in 2019 by investing in platforms to enable SWIB to better support its investment strategies. Continuing to upgrade technology and information infrastructure is a key component in bringing more asset management in-house.

Goal: Enhance Talent Acquisition, Retention and Management

In 2020, SWIB made continued progress on the organization's efforts to recruit and retain talent, hiring over 50 new employees and lowering its vacancy rate. SWIB also created a Culture Champions group, which was charged with refreshing SWIB's values to enhance employee engagement.

2021 Goals Set

Goal: Increase Active Return Through Improved Investment Strategies

In 2021, SWIB will consider new portfolio strategies and enhance existing strategies to improve collaboration across teams and create additional investment opportunities. SWIB will work to enhance its collateral management and onboard its first prime broker relationships. Staff also plans to implement new instruments for investment staff to enhance their ability to optimize SWIB's active risk and access new markets.

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

In 2021, SWIB plans to build on the progress made in 2020 by investing in platforms and initiatives that will enable SWIB to better support its investment strategies and adapt to new regulatory requirements. SWIB will continue to mature and strengthen its data management, enhance its information security program, and implement a new portfolio management system. In preparation for 2022, SWIB will begin planning for compliance with the CFTC's uncleared margin rules.

Goal: Enhance Talent Acquisition, Retention and Management

In 2021, SWIB will work to make continued progress on the organization's efforts to recruit and retain talent. SWIB will support these efforts by engaging staff by focusing on SWIB's recently refreshed values and building on SWIB's new Workforce Equity and Inclusion Philosophy. SWIB will also stand up a new Risk Management Division to cover both investment and enterprise risk and continue planning for the move to new office space in 2022.

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 (LGIP) 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 about \$16 billion on Dec. 31, 2020.

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 2020 with a one-year return of 0.50%, beating its benchmark of 0.38%, 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, 2020, SWIB had investments of nearly \$25 billion in companies with at least 20 employees located in the state. Of that amount, approximately \$722 million is invested 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. About 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. SWIB's annual Wisconsin investments average approximately 10% of the institutional opportunities in the state. For more information about these two portfolios, please listen to SWIB's Nov. 21, 2020 podcast at www.swib.state.wi.us/podcasts.

Wisconsin Private Debt Portfolio

Approximately 80% of SWIB's Private Debt Portfolio is invested in Wisconsin opportunities. As of June 30, 2020, the portfolio held loans to 39 borrowers headquartered or having operations in Wisconsin totaling over \$400 million. The average outstanding balance for borrowers was about \$10 million. SWIB entered into eight new transactions

in each of Fiscal Years 2019 and 2020.

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 12 venture capital funds as of June 30, 2020. The portfolio also has active direct investments in nine Wisconsin venture stage companies. As of June 30, 2020, the Wisconsin Venture Capital Portfolio had over \$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.

Total Wisconsin Investments by Asset Class June 30, 2020

Asset Class	Headquartered or Significant Presence ¹ in WI	Not Headquartered in WI - But 20+ WI Employees	Total Investment in WI
Private Equity/Private Debt	\$ 280,733,314	\$ 294,057,813	\$ 574,791,127
Fixed Income	34,091,958	4,653,187,492	4,687,279,450
Public Equities ²	352,621,574	16,595,666,728	16,948,288,302
Real Estate	12,419,938	61,372,834	73,792,772
Multi Asset	23,029,843	1,379,393,320	1,402,423,163
Short-Term Funds ³	<u>19,445,000</u>	<u>1,051,901,857</u>	<u>1,071,346,857</u>
Total	\$ <u>722,341,627</u>	\$ <u>24,035,580,044</u>	\$ <u>24,757,921,671</u>

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.

Goals for Investing in Wisconsin

SWIB is required by state statutes to report biennially to the Governor and the Legislature on a five-year plan 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.



Appendix A

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, 2019 and 2020. Totals include exposure to futures and may not add correctly due to rounding.

Core Trust Fund					
Exposures by Sub Asset Class					
	12/31/2019		12/31/2020		
	\$ in Millions	% of Total	\$ in Millions	% of Total	
<u>Equities</u>					
Developed Global	\$ 46,481	43%	\$ 48,898	41%	
U.S. Small Cap	3,238	3	3,547	3	
International Small Cap	0	0	2,566	2	
Emerging Market Equity	3,239	3	3,556	3	
Total Equities	\$ 52,957	49%	\$ 58,566	49%	
<u>Fixed Income</u>					
Investment Grade	22,889	21%	25,754	21%	
High Yield	2,127	2	2,292	2	
Global	0	0	0	0	
Emerging Market Debt	2,025	2	2,261	2	
Total Fixed Income	\$ 27,041	25%	\$ 30,308	25%	
<u>Inflation Sensitive</u>					
TIPS	16,640	15%	18,560	15%	
Commodities	0	0	0	0	
Total Inflation Sensitive	\$ 16,640	15%	\$ 18,560	15%	
<u>Private Markets</u>					
Real Estate Equity	7,585	7%	8,030	7%	
Private Equity	6,551	6	7,253	6	
Private Equity Co-Invest	678	1	1,046	1	
Venture Capital	1,126	1	1,656	1	
Private Equity Legacy	0	0	(16)	0	
Current Return	1,163	1	1,511	1	
Private Debt	553	1	621	1	
Total Private Markets	\$ 17,657	16%	\$ 20,102	17%	
Multi-Asset	\$ 3,644	3%	\$ 4,079	3%	
Cash/Leverage/Overlays ¹	\$ (10,104)	(9%)	\$ (11,428)	(10%)	
<u>Total</u>	\$ 107,836	100%	\$ 120,188	100%	
¹ Reported utilizing Rebalancing methodology					

Variable Trust Fund

Exposures by Sub Asset Class

	12/31/2019		12/31/2020	
	<u>\$ in Millions</u>	<u>% of Total</u>	<u>\$ in Millions</u>	<u>% of Total</u>
<u>Equities</u>				
Domestic	\$ 6,069	70%	\$ 6,692	70%
International	1,877	22	1,950	20
Emerging Markets	720	8	907	10
Total Equities	\$ <u>8,666</u>	100%	\$ <u>9,549</u>	100%
<u>Multi-Asset</u>	\$ <u>0</u>	<u>0%</u>	\$ <u>0</u>	<u>0%</u>
<u>Cash</u>	\$ <u>22</u>	<u>0%</u>	\$ <u>21</u>	<u>0%</u>
<u>Total</u>	\$ <u>8,687</u>	100%	\$ <u>9,570</u>	100%

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 affects 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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