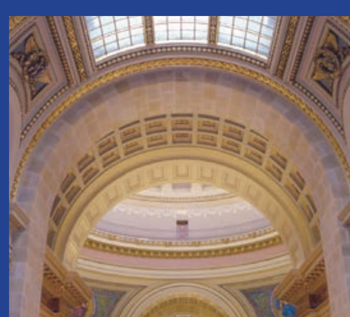
Report 20-14
September 2020

Wisconsin Retirement System

Calendar Year 2019

State of Wisconsin



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Report 20-14
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OPINION PUBLISHED SEPARATELY

The financial statements and our opinion on them are included in the Department of Employee Trust Funds' *Wisconsin Retirement System Financial Report.*

STATE OF WISCONSIN | Legislative Audit Bureau
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Joe Chrisman
State Auditor

September 30, 2020

Senator Robert Cowles and
Representative Samantha Kerkman, Co-chairpersons
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Cowles and Representative Kerkman:

As required by s. 13.94 (1) (dd), Wis. Stats., and as requested by the Department of Employee Trust Funds (ETF), we have completed an audit of ETF's financial statements of the Wisconsin Retirement System (WRS), as of and for the year ended December 31, 2019. ETF's Wisconsin Retirement System Financial Report, which can be found on its website, includes the statements and our unmodified opinion.

The WRS is the largest program administered by ETF. The WRS fiduciary net position, which represents resources available to pay pension benefits, increased from $96.7 billion as of December 31, 2018, to $112.1 billion as of December 31, 2019, or by 15.9 percent. This increase is primarily attributable to an increase in investment income from a loss of $4.1 billion in 2018 to a gain of $19.0 billion in 2019.

The fiduciary net position of the WRS primarily consists of three statutorily required reserves: the employee accumulation reserve, the employer accumulation reserve, and the annuity reserve. These reserves help to ensure the WRS is accumulating sufficient assets to meet future benefit obligations. We reviewed a statutory limitation for Core Fund annuities and recommend ETF continue to analyze and develop a written plan to address the risk of depleting the reserve for dividend adjustments.

ETF calculated a net pension asset of $3.2 billion as of December 31, 2019. This is a $6.8 billion change from the $3.6 billion net pension liability calculated as of December 31, 2018. Under accounting standards, each of the more than 1,500 employers participating in the WRS will be required to report its proportionate share of the net pension asset on its financial statements if prepared on the basis of generally accepted accounting principles. To assist employers with this reporting, ETF prepared employer schedules. We audited and provided unmodified opinions on these schedules in report 20-15.

We appreciate the courtesy and cooperation extended to us by ETF staff during the audit. A response from the Secretary of ETF follows the Appendix.

Respectfully submitted,

Joe Chrisman
State Auditor

JC/SH/ss

Introduction ▪

The WRS is a cost-sharing, multiple-employer, defined-benefit pension plan.

Created in January 1982, the Wisconsin Retirement System (WRS) is a cost-sharing, multiple-employer, defined-benefit pension plan that provides post-retirement financial benefits to participating employees, as well as disability and death benefits to participants and their beneficiaries. Further, the WRS is an irrevocable trust and all funds remain in the trust and can only be used to fund pension benefits.

As of December 31, 2019, 648,486 individuals participated in the WRS, including:

- 260,251 (40.1 percent) active participants who were making contributions;
- 215,070 (33.2 percent) retired participants or their beneficiaries who were receiving WRS benefits; and
- 173,165 (26.7 percent) inactive participants, such as former employees, who were not yet receiving benefits and who were not required to make contributions.

The WRS is one of the 10 largest public pension plans in the United States. As of December 31, 2019, the WRS had a fiduciary net position of $112.1 billion, which represents resources available to pay pension benefits. The Department of Employee Trust Funds (ETF) is responsible for managing the operations of the WRS that interact with employers and participants, including collecting contributions from and paying retirement benefits to WRS participants. ETF also uses an actuary to perform actuarial calculations such as projecting future benefit payments and establishing contribution rates.

ETF and SWIB work together to manage the WRS.

The State of Wisconsin Investment Board (SWIB) is responsible for managing the WRS investments. ETF and SWIB work closely together to ensure the solvency and long-term future of the WRS. We evaluate SWIB's management of investments on a biennial basis. Our most recent management audit report (report 18-19) was published in December 2018.

Organizational Structure

The ETF Board is responsible for the overall direction and oversight of ETF.

ETF was created to manage employee benefit programs for participating state and local government employees, including managing the WRS. Under s. 40.03, Wis. Stats., the 13-member ETF Board is responsible for the overall direction and oversight of ETF. The ETF Secretary and ETF Board oversee the administration of the WRS. Statutes specifically identify that, among other items, the ETF Board is responsible for:

- appointing the Secretary of ETF;
- selecting and retaining an actuary to perform all necessary actuarial services for benefit programs administered by ETF; and
- approving the contribution rates and actuarial assumptions determined by the actuary.

The 2020 ETF Board members are shown in the Appendix and include:

- the Governor, or the Governor's designee on the Group Insurance Board;
- the Administrator of the Division of Personnel Management in the Department of Administration (DOA), or designee;
- four members of the Teachers Retirement Board;
- four members of the Wisconsin Retirement Board;
- one member nominated by the Governor and appointed with the advice and consent of the Senate, as a public representative, who is not a

member of the WRS but has at least five years of actuarial, insurance, or employee benefits plan experience;

- one annuitant elected by retired WRS participants; and

- one active WRS participant who must be either a technical college or school district educational support personnel employee, elected by participating employees who meet the same employment criteria.

Although the ETF Board is the overall governing body for ETF, the 13-member Teachers Retirement Board and the 9-member Wisconsin Retirement Board each serve in an advisory role on issues related to the WRS. The members of the Teachers Retirement Board and the Wisconsin Retirement Board represent state and local government employers, employees, annuitants, and the general public.

WRS Participating Employers

Section 40.21, Wis. Stats., allows any Wisconsin public employer to participate in the WRS, but statutes require certain entities to participate, including state agencies and all counties except Milwaukee County, which maintains its own retirement system. In addition:

- second-, third-, and fourth-class cities must allow police officers and paid firefighters to participate if those employees were allowed to participate in Wisconsin's retirement system before March 31, 1978;

- villages with a population of 5,000 or more must allow police officers to participate, and villages with a population of 5,500 or more must also allow paid firefighters to participate, if those employees were allowed to participate in Wisconsin's retirement system before March 31, 1978; and

- school districts must allow employees in teaching positions to participate.

As of December 31, 2019, 1,516 employers were participating in the WRS.

As shown in Table 1 most of the 1,516 employers that participated in the WRS as of December 31, 2019, were local governments and school districts.

Table 1

Types of Employers Participating in the WRS
As of December 31, 2019

Type	Number
School Districts	421
Villages	274
Towns	272
Special Districts[1]	206
Cities	188
Counties	71
State Agencies, UW System, and Public Authorities	56
Wisconsin Technical College System Districts	16
Cooperative Educational Service Agencies	12
Total Employers	**1,516**

[1] Includes employers such as the Madison Metropolitan Sewerage District, the Oshkosh City Housing Authority, and the South Central Library System.

Under current law, any employee of a participating WRS employer is eligible to participate in the WRS if the expected duration of employment is one year or more and the employee is expected to be employed for at least two-thirds of what is considered full-time. Current statutes require five years of service before such an employee is considered vested.

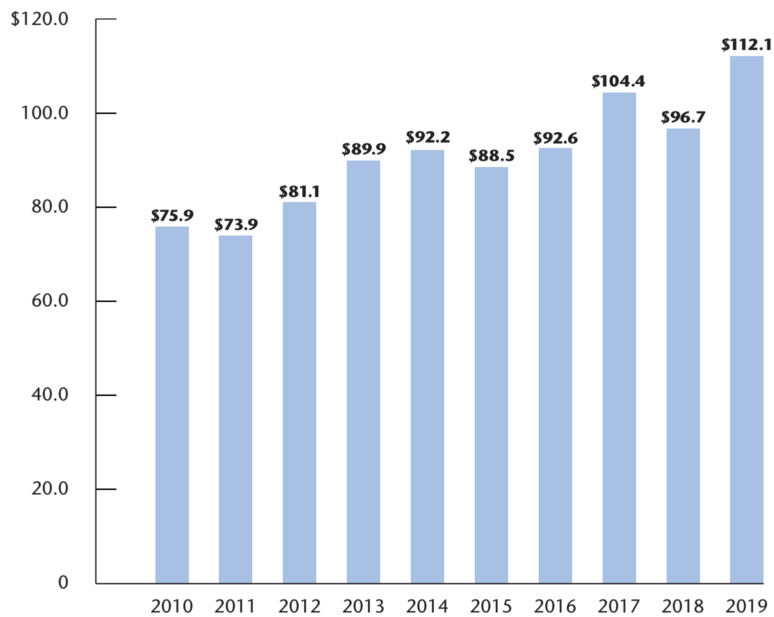
Financial Condition

As of December 31, 2019, the fiduciary net position of the WRS was $112.1 billion.

The Net Position Restricted for Pensions (fiduciary net position) of the WRS represents the value of the plan's assets that are available to meet benefit obligations as they become due. As of December 31, 2019, the WRS had a fiduciary net position of $112.1 billion, which was a 15.9 percent increase from the prior year. This increase is primarily attributed to an increase in the fair value of investments as of December 31, 2019. From December 31, 2010, through December 31, 2019, the fiduciary net position of the WRS increased by $36.2 billion, or by 47.7 percent, as shown in Figure 1.

Figure 1

Wisconsin Retirement System
Fiduciary Net Position[1]
As of December 31
(in billions)



[1] Shown as Net Position Restricted for Pensions on the financial statements.

Audit Results

As required by statutes, we have completed an audit of the financial statements and related notes of the WRS as of and for the year ended December 31, 2019. The WRS financial statements were prepared by ETF using generally accepted accounting principles (GAAP) prescribed by the Governmental Accounting Standards Board (GASB). To complete our audit of the financial statements of the WRS, we reviewed ETF's internal controls over financial reporting, tested financial transactions, and reviewed the financial statements, notes, and required supplementary information that were prepared by ETF management.

We provided an unmodified opinion on the financial statements of the WRS as of and for the year ended December 31, 2019.

In addition to providing an unmodified opinion on the financial statements and related notes of the WRS as of and for the year ended December 31, 2019, we have issued our Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters, which is required by *Government Auditing Standards*, and begins on page 33. During our audit we did not identify control or compliance concerns at ETF that were required to be reported by these standards. However, in our financial audit of the Retirement Funds Investment Activity (report 20-9), we identified a significant deficiency in internal control at SWIB. Because the amounts reported by SWIB are included in the WRS financial statements and notes, the internal control deficiency at SWIB is also included in this report.

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WRS Funding and Benefits ▪

The WRS is funded through a combination of employer and employee contributions and investment income.

The WRS is funded through annual employer and employee contributions and investment income. The ETF Board has established a WRS funding policy with three primary goals:

- ensure funds are adequate to pay benefits;
- maintain stable and predictable contribution rates for employers and employees; and
- maintain inter-generational equity to ensure the cost of the benefits is paid for by the generation that receives the benefits.

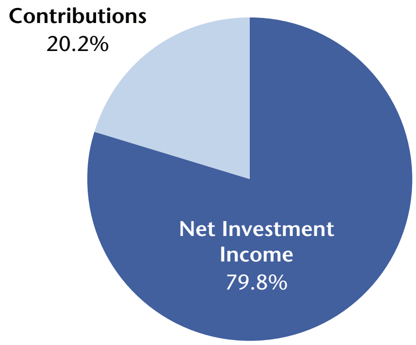
In 2019, net investment income for the WRS totaled $19.0 billion and contributions from WRS employers and employees totaled $2.0 billion. The average annual annuity payment to retired participants in 2019 was $25,645.

Investment Income

From 2010 through 2019, net investment income represented 79.8 percent of total funding for the WRS. Employer and employee contributions represented 20.2 percent of total funding for the WRS, as shown in Figure 2.

Figure 2

WRS Funding Sources
2010 through 2019



WRS assets are invested by SWIB in the Core Retirement Investment Trust Fund (Core Fund) and Variable Retirement Investment Trust Fund (Variable Fund), along with other benefit programs administered by ETF. The Core Fund is a fully diversified fund, or balanced fund, which provides less volatile investment returns and is invested for the long term in several types of investments. The Variable Fund is an equity fund, or stock fund, which provides returns that are typically more volatile than the Core Fund.

Net investment income increased from a loss of $4.1 billion in 2018 to a gain of $19.0 billion in 2019.

Net investment income, which is the sum of realized and unrealized gains and losses less SWIB's investment expenses and amounts distributed to other benefit programs, increased by $23.1 billion, from a loss of $4.1 billion in 2018 to a gain of $19.0 billion in 2019. The increase in net investment income reflects the increase in investment returns of the Core Fund and the Variable Fund. The gross investment return (gross of management fees) of the Core Fund increased from a negative 3.3 percent in 2018 to 19.9 percent in 2019, and the gross investment return of the Variable Fund increased from a negative 7.9 percent in 2018 to 28.6 percent in 2019.

The long-term expected rate of return assumption for the WRS is 7.0 percent.

SWIB has a fiduciary responsibility to prudently invest the pension assets in a diversified manner to meet WRS funding needs while minimizing the risk of large losses. SWIB's investment strategy is to meet the long-term expected rate of return assumption. From 2011 through 2018, the return assumption was 7.2 percent. The ETF Board approved a decrease in the long-term expected rate of return assumption to 7.0 percent in December 2018.

As of December 31, 2019, SWIB's 20-year return for the Core Fund, net of management fees was 6.1 percent, which is less than the long-term expected rate of return assumption of 7.0 percent. As of December 31, 2019, SWIB's 30-year return for the Core Fund, net of management fees, was 8.3 percent.

Contribution Rates

Contribution rates, which include both an employer and an employee share, are actuarially determined as a percentage of an employee's earnings and are approved annually by the ETF Board. Contributions to the WRS from employers and employees increased by $31.2 million, or 1.5 percent, to $2.0 billion in 2019. As shown in Table 2, total contribution rates for "general employees," which include teachers and most other employees, ranged from a low of 11.8 percent for 2012 to a high of 14.0 percent for 2014.

Table 2

Total Contribution Rates for General Employees in the WRS

Calendar Year	Total Contribution Rate[1]
2012	11.8%
2013	13.3
2014	14.0
2015	13.6
2016	13.2
2017	13.6
2018	13.4
2019	13.1
2020	13.5
2021	13.5

[1] Includes both the employer share and the employee share of contributions and benefit adjustment contributions, but does not include prior-service cost rates for specific employers.

The basic objective of the WRS is to invest contributions so that investment income and the contributions will be sufficient to pay projected future pension benefits.

The basic objective of the WRS is to invest contributions paid by employers and employees so that the investment income and the contributions will be sufficient to pay projected future pension benefits. Contribution rates are set to fund the benefits earned by employees during the year. In setting these rates, one of the most significant factors considered is investment performance.

In order to maintain steady contribution rates and comply with s. 40.04 (3) (am), Wis. Stats., the consulting actuary for the WRS uses the market recognition account (MRA) to smooth investment income or loss for the Core Fund investment activity over a five-year period. The MRA accumulates the difference between actual investment income or loss and expected investment income calculated at the long-term expected rate of return assumption of 7.0 percent. The difference is then distributed into the calculated plan net assets over a five-year period so that the expected investment income is affected by portions of the amounts included in the MRA in the prior four years. Use of the MRA results in less volatility in net assets and, thus, less volatility in the calculation of the contribution rates for employers and employees.

Investment income or loss used for purposes of determining contribution rates differs from the investment income or loss recognized on the financial statements due to the use of the MRA. For example, the net investment income of the Core Fund for 2019 for financial reporting was $17.8 billion based upon the fair value of the investments. Through the use of the MRA, the actuary recognized investment income of $7.1 billion, which was the amount used in determining the actuarial value of the WRS assets as of December 31, 2019, and determining contribution rates for 2021.

Benefit Payments

Benefit payments are determined either by a formula based on the participant's service or the value of contributions and investment income.

The WRS is a defined-benefit plan that provides participants with lifelong monthly retirement benefits and, depending upon the annuity type selected, may also provide benefits to a beneficiary after the participant's death. These benefits are initially determined by either:

- a formula, which is based on the participant's years of service and final average salary; or

- a money purchase benefit, which is based on the participant's contributions, an employer's matching contributions, and investment income.

The method that yields the largest benefit payment is used to calculate a participant's initial benefit. This benefit may be increased or decreased based on the investment performance of the retirement fund assets, in addition to other actuarial experience, but would generally not be adjusted below the initial benefit amount. A defined-benefit plan is in contrast to a defined-contribution plan, such as a 401(k) plan, in which benefits are based on the amounts contributed to a participant's account and investment gains or losses on those funds.

The average annual annuity paid decreased from $25,893 in 2018 to $25,645 in 2019, or by 1.0 percent.

Total WRS benefit payments provided to retired participants or their beneficiaries increased from $5.5 billion in 2018 to $5.6 billion in 2019, or by 1.8 percent. The number of retired participants increased from 209,059 as of December 31, 2018, to 215,070 as of December 31, 2019. The average annual annuity paid decreased from $25,893 in 2018 to $25,645 in 2019, or by 1.0 percent.

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WRS Reserves and Accounts ▪

The WRS is made up of three statutorily required reserves. The employer accumulation reserve (employer reserve) and the employee accumulation reserve (employee reserve) each include contributions and related investment income that accumulate over a participant's active service. The annuity reserve receives the amounts transferred from the employer and employee reserves when a participant retires. In the last ten years, the annuity reserve has increased by $22.6 billion, or 55.0 percent, due to a 38.1 percent increase in retired participants.

The WRS is a risk-sharing pension plan, where investment gains and losses are shared by employers, employees, and retired participants. In the WRS, retired participants do not receive automatic cost of living adjustments, rather they receive dividend adjustments based upon investment performance and receive a guarantee of a minimum payment under a statutory provision for Core Fund annuities. This statutory provision, under certain market conditions, may increase the risk of depleting the portion of the Core Fund annuity reserve that is used to fund dividend adjustments. In the years following the 2008 recession, ETF worked with the WRS actuary and the ETF Board to explore how future investment volatility impacts the WRS, including several options to address the risk of depleting the portion of the annuity reserve used to fund dividend adjustments. We recommend ETF continue their efforts to analyze the risk and develop a written plan to address it.

Reserve and Account Balances

The employer reserve consists of all employer-required contributions, amounts to amortize the employer's share of the unfunded accrued liabilities, and investment earnings. Unlike the employee reserve, the employer reserve is pooled into one account. Contribution rates are set to fund the benefits earned by employees during the year based, in part, on the balances of the employee and the employer reserve.

The employee reserve consists of employee required contributions, contributions paid by the employer on behalf of the employee, any voluntary additional contributions, and investment earnings. A separate account is maintained in this reserve for each WRS participant. If a participant leaves state service before being eligible to receive a retirement benefit, the participant can receive the balance of the contributions and earnings included in the account.

The annuity reserve was $63.7 billion as of December 31, 2019, and represented the largest share of the WRS fiduciary net position.

The annuity reserve consists of the amounts transferred from the employer and employee reserve, as well as investment earnings, and are used to provide benefit payments to retired participants. As shown in Table 3, the $63.7 billion annuity reserve represented the largest share (56.8 percent) of the WRS fiduciary net position as of December 31, 2019.

Table 3

WRS Reserve and Account Balances
As of December 31, 2019
(in millions)

Reserve/Account	Balance	Percentage of Total
Employer Accumulation Reserve	$23,389.5	20.9%
Employee Accumulation Reserve	19,487.2	17.4
Annuity Reserve	63,658.1	56.8
Market Recognition Account[1]	5,516.2	4.9
Other[2]	41.8	<1
Total WRS Fiduciary Net Position	**$112,092.8**	

[1] The balance in this account will fluctuate based on investment performance. A positive balance represents investment gains that will be allocated in future years.

[2] Includes accounts that hold undistributed amounts for investments that have not yet been allocated and other administrative accounts.

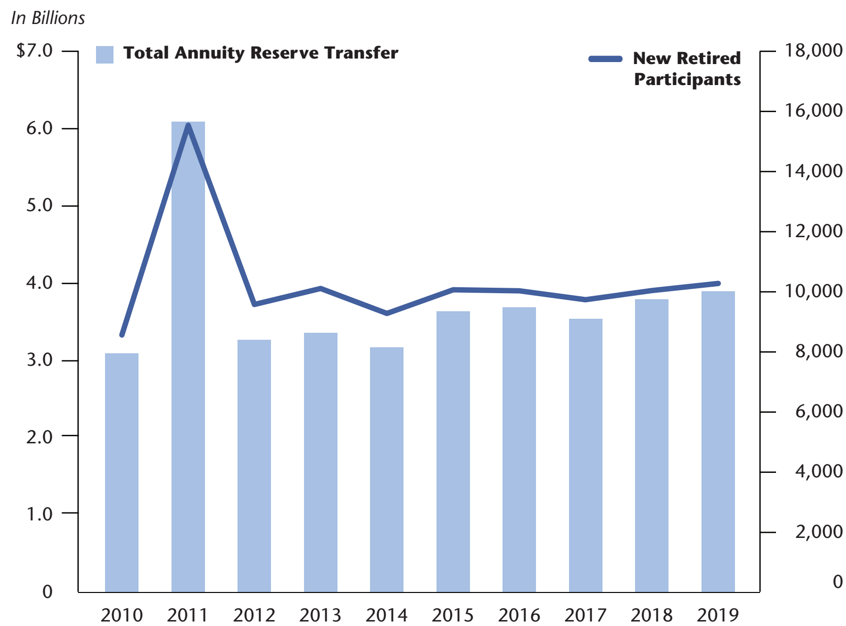
Transfers to the Annuity Reserve

Amounts are transferred into the annuity reserve to meet future benefit obligations.

Upon retirement, an amount is transferred from the employee reserve and the employer reserve. Annually, the actuary determines the amount to transfer to the annuity reserve based upon the participants and their beneficiaries that began to receive benefits in the past year. The total amount transferred into the annuity reserve will increase and decrease each year depending upon the number of participants that began receiving benefits during the year, as shown in Figure 3.

Figure 3

Wisconsin Retirement System Annuity Transfer Compared to New Retired Participants
2010 through 2019



The amount in a participant's employee reserve is transferred to the annuity reserve upon retirement. The remaining actuarially determined amount, which is based upon the present value of expected future benefit payments, is transferred to the annuity reserve from the employer reserve. Because the amount transferred from the employee reserve is a fixed amount, the remaining amount needed to be transferred must come from the employer reserve. This transfer occurs regardless of the amount that the employer contributed during a participant's years of service or any investment earnings that accumulated on those contributions.

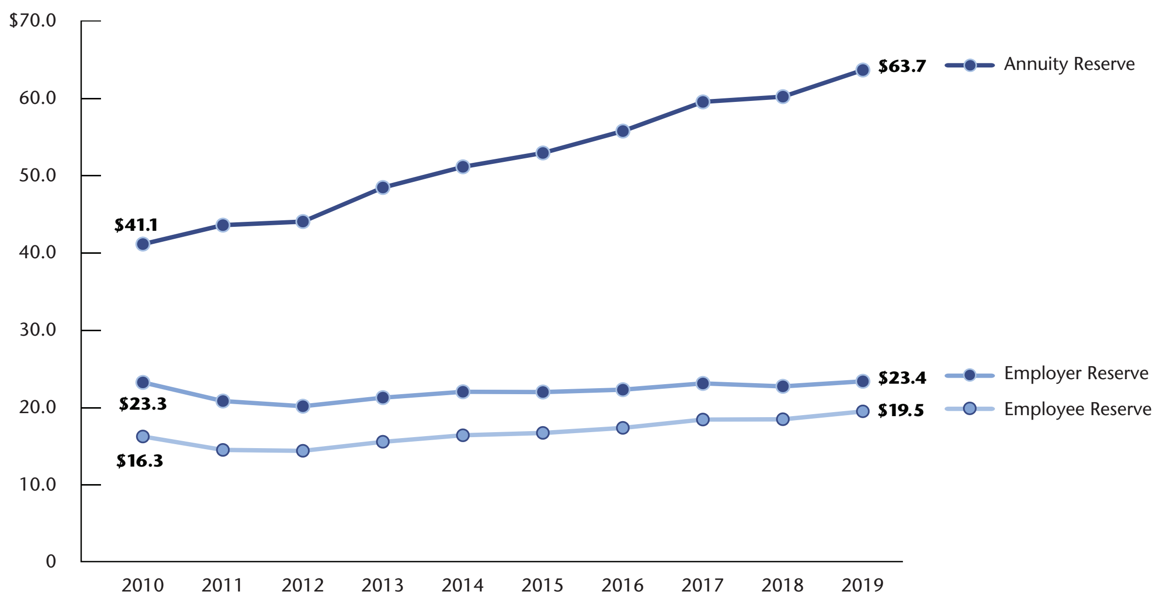
The employer reserve transfer amount may differ from the amounts that may have been accumulated because contribution rates were based upon actuarial estimates of the amounts needed to fund benefits earned by participants, which may differ from actual experience. As a result, the transfers from the employer reserve may be greater or less than the amounts accumulated because the WRS experiences may differ from actuarial estimates. In the long-term, the actuary considers these differences in developing future contribution rates.

As a result of a 38.1 percent increase in retired participants, the annuity reserve balance increased $22.6 billion between 2010 and 2019.

From December 31, 2010, to December 31, 2019, the number of active and inactive participants increased from 416,444 to 433,416, or by 4.1 percent. As shown in Figure 4, both the employer and employee reserve have remained relatively stable since 2010. However, as a result of a 38.1 percent increase in the number of retired participants, the annuity reserve balance increased by $22.6 billion between 2010 and 2019, or by 55.0 percent.

Figure 4

Wisconsin Retirement System
Employer, Employee, and Annuity Reserve Balances
2010 through 2019
(in billions)



Core Annuity Payments and Adjustments

The annuity reserve dedicated to Core Fund annuities was $59.2 billion, or 92.9 percent of the annuity reserve as of December 31, 2019.

As noted, the annuity reserve is used to fund benefit payments, including amounts that have been provided in a dividend adjustment to retired participants. The annuity reserve is further separated into amounts for Core Fund and Variable Fund annuities. All retired participants receive a Core Fund annuity payment. However, those retired participants who had elected participation in the Variable Fund and who do not elect to terminate their Variable Fund participation also receive a separate Variable Fund annuity. As of December 31, 2019, $59.2 billion (92.9 percent) of the annuity reserve was invested in the Core Fund and used to fund Core Fund annuities. The remaining amount of the annuity reserve, or $4.5 billion, was invested in the Variable Fund and used to fund Variable Fund annuities.

Core Fund Dividend Adjustments

Annuity dividend adjustments are awarded each April. Under Wisconsin Statutes, positive or negative dividend adjustments are provided if the dividend increases or decreases annuities by at least 0.5 percent. The WRS actuary recommends and the ETF Board approves dividend adjustments for Core Fund annuities, which vary depending on:

- the investment income or loss from the prior calendar year;
- the recognized earnings, credited to the annuity reserve, which is referred to as the effective rate; and
- various other factors.

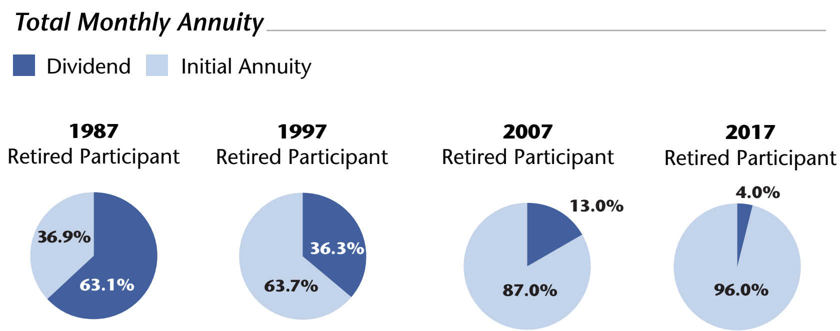
To ensure sufficient assets are available to fund the original annuity amounts, an assumed investment return of 5.0 percent is credited to the annuity reserve before Core Fund dividend adjustments are calculated. As a result, if the effective rate is below 5.0 percent, a negative dividend adjustment may be needed.

Participants who have been retired for a longer period are receiving a larger portion of their total annuity payment from dividend adjustments.

The annual Core Fund dividend adjustments are applied and compound each year. This results in dividend adjustments being applied to the total annuity payment, including dividend adjustments from prior years. As a result of positive dividend adjustments in years prior to 2008, participants who have been retired for a longer period are receiving a larger portion of their total annuity payment from dividend adjustments compared to those participants who retire in more recent years, as shown in Figure 5.

Figure 5

Dividend as a Percentage of Total Core Fund Annuity[1]
By Retirement Year



[1] Estimated based on historical dividend adjustments.

Statutes do not permit negative dividend adjustments to reduce Core Fund annuities below the original amount at retirement.

Core Fund dividend adjustments differ from the prior year's investment performance due to the use of the MRA to smooth the investment gains and losses to determine the effective earnings rate, as well as other factors. In addition, there is a statutory limitation on reducing Core Fund annuities below the original amount at retirement, which is referred to as the "floor." A unique feature of the WRS is that retired participants share in both the investment gains and losses and receive no automatic cost of living increases. Because of this risk-sharing provision, the statutory floor limitation provides a guarantee of a minimum payment for retired participants.

Participants with a larger accumulation of dividend adjustments are allocated a greater percentage of losses during an economic recession because of Core Fund annuities at the floor.

The result of the floor is that a Core Fund annuity is reduced when there are negative dividend adjustments, but only to the extent there is a sufficient accumulation of prior years' positive dividends. Any further reduction is not permitted if applying a negative dividend adjustment would reduce the annuity payment below the original annuity payment calculated at retirement. However, to ensure the annuity reserve maintains sufficient assets to fund the original annuity payments, the WRS actuary further adjusts the dividend percentage to accommodate for those participants whose Core Fund annuities are at the floor. As a result, other participants with more accumulation of dividend adjustments receive a larger percentage reduction. For example, in 2012, a negative dividend adjustment was reduced by an additional 6.6 percent to account for those participants whose Core Fund annuity was at the floor.

As of December 31, 2019, 31.8 percent of Core Fund annuities had 10 percent or less of their annuity payment from dividend adjustments.

The number of Core Fund annuities at the floor may increase during economic recessions. In December 2008, which was the first year the investment losses of the 2008 recession affected dividend adjustments, 5.5 percent of Core Fund annuities were at the floor. By December 2013, or five years after the 2008 recession, 62.7 percent of Core Fund annuities were at the floor. Due to positive dividend adjustments in recent years, the percentage of Core Fund annuities at the floor was 9.2 percent as of December 31, 2019. However, when also considering the effect of newly retired participants in recent years, 31.8 percent of Core Fund annuities as of December 31, 2019, had either 10 percent or less of the annuity funded by dividend adjustments or were already at the floor. This further increases the risk of the Core Fund annuities being reduced to the floor if there were to be an economic recession.

Future negative dividend adjustments could result in certain retired participants reaching their respective floors more quickly.

From 1986 through 2007, there were no negative annuity adjustments for the Core Fund. As shown in Table 5, from 2008 through 2012, the Core Fund experienced negative dividend adjustments, which were largely caused by the 2008 recession. These adjustments left many of the more recent retired participants with a lower accumulation of dividend adjustments. The number of participants who retired from 2008 through 2019 account for 54.5 percent of the total number of retired participants as of December 31, 2019. Because these retired participants have not had the opportunity to accumulate significant positive dividend adjustments, future negative dividend adjustments could result in these retired participants reaching their respective floors more quickly and also may result in larger reductions to participants that have been retired for longer.

Table 5

Core Fund Annual Investment Performance and Dividend Adjustments

Year	Investment Income (Loss)	Effective Rate	Dividend Adjustment Increase (Decrease)	Effective Year Dividend Applied
2019	19.9%	7.7%	1.7%	2020
2018	(3.3)	5.0	0.0	2019
2017	16.2	8.5	2.4	2018
2016	8.6	7.9	2.0	2017
2015	(0.4)	6.4	0.5	2016
2014	5.7	8.7	2.9	2015
2013	13.6	10.9	4.7	2014
2012	13.7	2.2	(9.6)	2013
2011	1.4	1.5	(7.0)	2012
2010	12.3	4.8	(1.2)	2011
2009	22.4	4.2	(1.3)	2010
2008	(26.2)	3.3	(2.1)	2009

Trends in the Core Fund Dividend Reserve

The WRS actuary determines the liability for the dividend adjustments that have been provided to participants in prior years. Assets are accumulated in the annuity reserve to fund this liability, which is referred to as the dividend reserve. Positive dividend adjustments increase the dividend reserve, while negative dividend adjustments reduce the reserve. A dividend reserve of zero would reflect that all retired participants have reached their floor and are receiving their original annuity amount. Current statutes do not address a potential situation where negative dividend adjustments cannot be applied because all retired participants have reached their floor.

As of December 31, 2019, the Core Fund dividend reserve is $2.7 billion lower than it was before the 2008 recession.

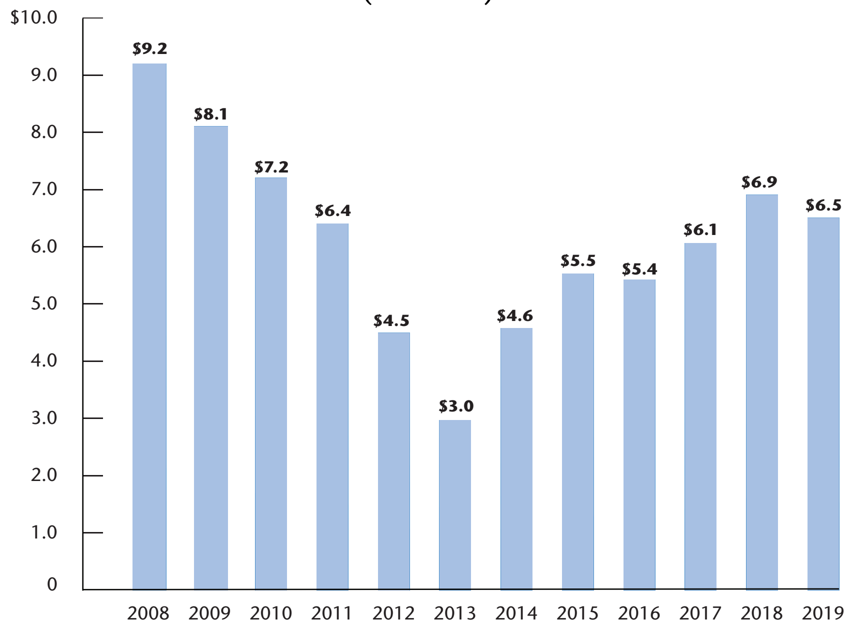
As shown in Figure 6, the negative dividend adjustments resulting from the 2008 recession reduced the Core Fund dividend reserve from $9.2 billion as of December 31, 2008 to $3.0 billion as of December 31, 2013, or by $6.2 billion. As of December 31, 2019, the Core Fund dividend reserve reported by the actuary has increased to $6.5 billion. However, the dividend reserve is lower than the reserve that existed prior to the 2008 recession. This increases the risk that certain market conditions that result in future investment losses could deplete the dividend reserve.

Among the different scenarios presented during a March 2020 ETF Board meeting, ETF estimated that if an investment loss of 12 percent occurred in 2020 and returns of 7.0 percent occurred in the subsequent three years, zero or negative dividend adjustments could occur in 2021 through 2023. As of July 31, 2020, the year-to-date Core Fund investment return reported by SWIB was 2.6 percent.

Subsequent to the 2008 recession, ETF and SWIB implemented changes to the Core Fund investment strategy and asset allocation in an effort to reduce investment volatility particularly in large market downturns, as discussed in our audit report of SWIB (report 18-19). These changes are also intended to reduce negative dividend adjustments and the risk of depleting the Core Fund dividend reserve at the rate experienced following 2008.

Figure 6

Core Fund Dividend Reserve[1]
As of December 31
(in billions)



[1] The dividend reserve is part of the WRS annuity reserve.

ETF also worked with the WRS actuary and the ETF Board to explore several options to address the potential for future investment volatility and negative dividend adjustments to deplete the Core Fund dividend reserve. For example, in December 2016, the WRS actuary presented the ETF Board two potential options to change the dividend adjustment process to reduce the risk of depleting the Core Fund dividend reserve. At that time, the actuary reported that based upon a series of simulations under the current dividend adjustment process, there was a 26 percent likelihood of depleting the Core Fund dividend reserve after 10 years, with the likelihood of depletion slowly declining in subsequent years.

ETF is working with the WRS actuary to assess the risk of depleting the Core Fund dividend reserve.

As described in the WRS funding policy, ETF works with the WRS actuary to periodically assess the risks and the potential effects on the WRS. For example, since 2012, at least annually, the WRS actuary has provided information on this component of the overall annuity reserve. In March 2020, the WRS actuary reiterated to the ETF Board that should an economic recession occur that is similar to the one in 2008, the Core Fund dividend reserve could be entirely depleted. As requested by ETF, the WRS actuary is evaluating the effect of different market conditions on the potential for the Core Fund dividend reserve to be depleted and its results are expected to be reported to the ETF Board in December 2020.

Although ETF has communicated to the ETF Board the risks that are present if future negative dividend adjustments occur, ETF should continue to analyze the risk, develop a written plan to address the level of risk identified, and seek statutory changes, if necessary.

☑ Recommendation

We recommend the Department of Employee Trust Funds work with the ETF Board to:

- *continue to analyze the risk of depleting the Core Fund dividend reserve, the effect on the annuity reserve, and the effect on dividend adjustments on individual retired participants;*

- *develop a written plan to address the level of risk identified;*

- *implement the written plan and seek statutory changes, if necessary; and*

- *report to the Joint Legislative Audit Committee by February 26, 2021, on its efforts to implement these recommendations.*

▪ ▪ ▪ ▪

Pension Accounting Standards ▪

Accounting standards for public pension plans establish accounting and financial reporting requirements for measuring the pension liability, as well as requirements for both the notes and required supplementary information to the WRS financial statements, and the GAAP-based financial statements of the 1,516 employers that participate in the plan. The accounting standards require ETF to calculate the total pension liability and the net pension liability or asset for the WRS. Each of the participating employers in the WRS reports its proportionate share of this net pension liability or asset in its own financial statements if prepared under GAAP.

Calculating the Total Pension Liability

The total pension liability is the sum of the amounts needed to pay for the pension benefits earned by each participant.

The total pension liability for the WRS is the sum of the amounts needed to pay for the pension benefits earned by each participant based on service provided as of the date the actuarial valuation is performed. A total pension liability exists because the employers participating in the WRS have committed to provide benefits to their employees in the future when those employees retire. That commitment is part of employee compensation and constitutes a liability.

The calculation of the total pension liability is complex and includes various actuarial assumptions and calculations, such as:

- a projection of future benefit payments for current and former participants and their beneficiaries based upon the current terms of the WRS;

- a discount of those payments to their present value, or the amount of funds currently needed to provide the projected payments in the future; and

- an allocation of the present value of benefit payments over past, present, and future periods of employee service.

The total pension liability for the WRS was $108.9 billion as of December 31, 2019.

To determine the total pension liability for the WRS as of December 31, 2019, ETF's actuary performed an actuarial valuation as of December 31, 2018, and adjusted for changes in assumptions, interest earned, contributions paid, benefits paid, and dividend adjustments during 2019. The total pension liability for the WRS was $108.9 billion as of December 31, 2019.

The discount rate can have a significant effect on the amount of the total pension liability.

The discount rate is a critical factor in calculating a pension plan liability, and it can have a significant effect on the amount of the total pension liability. The discount rate, or interest rate, is used to calculate the present value of projected benefit payments and is specifically defined under the accounting standards. ETF used the long-term expected rate of return assumption for the WRS, which is 7.0 percent, as the discount rate because current and projected future plan assets are expected to cover the projected benefit payments for the WRS. Increasing or decreasing the discount rate can have a significant effect on the total pension liability. For instance, a one percentage point decrease in the discount rate (6.0 percent) would increase the total pension liability to $120.4 billion.

Calculating a Net Pension Liability or Asset

To determine the net pension liability or asset, the accounting standards require the total pension liability to be subtracted from the pension plan's fiduciary net position. When the total pension liability is greater than the fiduciary net position, the pension plan will disclose a net pension liability in its notes. When the fiduciary net position is greater than the total pension liability, the pension plan will disclose a net pension asset in its notes.

ETF reported a net pension asset of $3.2 billion for the WRS as of December 31, 2019.

As of December 31, 2019, the WRS had a fiduciary net position of $112.1 billion and a total pension liability of $108.9 billion, which resulted in a net pension asset of $3.2 billion. A net pension asset indicates that, as of December 31, 2019, the assets of the WRS were sufficient to cover the projected liability for benefit payments to employees under the financial reporting standards. This represents an improvement from the net pension liability of $3.6 billion, reported as of December 31, 2018. An increase in the value of the investments of the Core Fund and the Variable Fund from

December 31, 2018, to December 31, 2019, was the primary cause of the $15.4 billion increase in the fiduciary net position and resulted in the reporting of a net pension asset as of December 31, 2019. We report on the investment activity of the Core Fund and Variable Fund in report 20-9.

As shown in Table 6, the WRS has reported a net pension asset in two of the past five years. The fluctuation between a net pension liability and a net pension asset is largely associated with the change in fair value of the investments as of the end of each calendar year. Under the accounting standards, pension plan assets are valued at fair value as of the reporting period end date, which is December 31 for the WRS. The use of the fair value of the plan assets in the calculation will cause a large degree of volatility in the reported net pension liability or asset, depending upon investment performance and fluctuations in the investment market.

Table 6

WRS Net Pension Asset (Liability)
As of December 31
(in billions)

	2015	2016	2017	2018	2019
Fiduciary Net Position	$88.5	$92.6	$104.4	$ 96.7	$ 112.1
Total Pension Liability	(90.1)	(93.4)	(101.4)	(100.3)	(108.9)
Net Pension Asset (Liability)	**$ (1.6)**	**$ (0.8)**	**$ 3.0**	**$ (3.6)**	**$ 3.2**

Employer Reporting

Employers participating in the WRS have made a commitment to provide pension benefits and have an obligation to make contributions to fund those benefits.

As noted, the WRS is a cost-sharing, multiple-employer, defined-benefit pension plan with 1,516 participating employers. In this type of pension plan, the contributions are combined and the benefits are paid out of a common pool of assets. By participating in the WRS, employers have made a commitment to provide pension benefits to employees, and they are obligated to make contributions into the future to ensure that sufficient resources are available to make the benefit payments. Therefore, because the employers participating in the WRS have ultimate responsibility for the resulting pension obligations, each participating employer is required to report its proportionate share of the net pension liability or asset in its GAAP-based financial statements.

Each employer participating in the WRS must report its proportionate share of the net pension asset in its GAAP-based financial statements.

To assist employers participating in the WRS in determining the employer's proportionate share of these amounts, ETF has prepared a Schedule of Employer Allocations and a Schedule of Collective Pension Amounts as of and for the year ended December 31, 2019. We audited these schedules and provided unmodified opinions on them in report 20-15. Because the WRS has calculated a net pension asset for the year ended December 31, 2019, each employer participating in the WRS must report its proportionate share of the net pension asset in its GAAP-based financial statements.

The proportionate share of the net pension asset for State of Wisconsin agencies as of December 31, 2019, was $896.0 million, of which $430.5 million related to UW System. The net pension asset for the state agencies will be included in the State's GAAP-based financial statements, which will be published in the State of Wisconsin's Comprehensive Annual Financial Report (CAFR) as of and for the year ended June 30, 2020.

Comparison to Other Pension Plans

Differences in the structure of pension plans and timing of pension plan reporting will affect the comparability across pension plans.

Comparability of the pension liability across public pension plans has increased with the use of accounting standards for pension plans that prescribe how the liability is calculated. However, because pension plans have different plan structures, planned asset allocations, and investment strategies, the comparability of pension plans is affected. In addition, because pension plans have varying fiscal-year ends, changes in the condition of investment markets at different points in time during a year will also affect comparability.

We collected information from other cost-sharing, multiple-employer, defined-benefit plans that were part of the WRS peer group defined by an annual study performed by a private firm. At 103.0 percent, the WRS had the highest funded ratio in comparison to these plans, as shown in Table 7.

Table 7

Comparison of Selected Pension Plans Based on Financial Reporting Methodology[1, 2]
(in billions)

Pension Plan	Total Pension Liability	Fiduciary Net Position	Net Pension Asset	Net Pension Liability	Funded Ratio
Wisconsin Retirement System[4]	$108.9	$112.1	$3.2	n/a	103.0%
New York State and Local Employees' Retirement System[3]	223.9	215.2	n/a	8.8	96.1%
Iowa Public Employees Retirement System	39.8	34.0	n/a	5.8	85.5
Ohio Public Employees Retirement System[4]	111.4	91.8	n/a	19.6	82.4
Oregon Public Employees Retirement System	87.5	70.2	n/a	17.3	80.2
Indiana Public Retirement System—Public Employees Retirement Fund	16.6	13.3	n/a	3.3	80.1
State Teachers Retirement System of Ohio	97.8	75.7	n/a	22.1	77.4
Virginia Retirement System—Teachers Retirement System	49.7	36.5	n/a	13.2	73.5
Arizona State Retirement System	54.4	39.8	n/a	14.6	73.2
California State Teachers' Retirement System	329.2	238.9	n/a	90.3	72.6

[1] Based on information from other cost-sharing, multiple-employer, defined-benefit pension plans that were part of the WRS peer group as defined by an annual study performed by a private firm.

[2] Unless otherwise noted, for the plan year ended June 30, 2019.

[3] For the plan year ended March 31, 2019.

[4] For the plan year ended December 31, 2019.

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Auditor's Report ■

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Joe Chrisman
State Auditor

Report 20-14

Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters

Senator Robert Cowles and
Representative Samantha Kerkman, Co-Chairpersons
Joint Legislative Audit Committee

Members of the Employee Trust Funds Board and
Mr. Robert J. Conlin, Secretary
Department of Employee Trust Funds

We have audited the financial statements and related notes of the Wisconsin Retirement System administered by the State of Wisconsin Department of Employee Trust Funds (ETF) as of and for the year ended December 31, 2019, and have issued our report thereon dated September 28, 2020. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, which is issued by the Comptroller General of the United States. The financial statements and related auditor's report have been included in ETF's *Wisconsin Retirement System Financial Report.*

Internal Control over Financial Reporting

Management of ETF is responsible for establishing and maintaining effective internal control over financial reporting (internal control). In planning and performing our audit of the financial statements, we considered ETF's internal control to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of ETF's internal control. Accordingly, we do not express an opinion on the effectiveness of ETF's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent misstatements, or to detect and correct misstatements on a timely basis. A *material weakness* is a deficiency or a combination of deficiencies in internal control such that there is a reasonable possibility that a material misstatement of ETF's financial statements will not be prevented, or that a material misstatement will not be detected and corrected on a timely basis. A *significant deficiency* is a deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify a deficiency in internal control that we considered to be a significant deficiency related to information provided by the State of Wisconsin Investment Board (SWIB) to support note disclosures for unfunded commitments. These disclosures are provided to ETF for preparation of the Wisconsin Retirement System financial statements. The note disclosures were corrected. This deficiency was communicated to SWIB in our report dated September 1, 2020 (report 20-9). We did not request a response from the management of ETF since SWIB is responsible for corrective action.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether ETF's financial statements are free from material misstatement, we performed tests of compliance with certain provisions of laws, regulations, and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

Purpose of This Report

This report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be used when considering ETF's internal control and compliance. The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of ETF's internal control or on compliance. Accordingly, this report is not suitable for any other purpose.

LEGISLATIVE AUDIT BUREAU

Joe Chrisman
State Auditor

September 28, 2020

Appendix

Appendix

Employee Trust Funds Board Membership
2020

Name	Affiliation	Board Member Since
Wayne Koessl, Chair	Appointed by the Wisconsin Retirement Board	1996
John David, Vice Chair	Appointed by the Wisconsin Retirement Board	2008
Robert Niendorf, Secretary	Appointed by the Teachers Retirement Board	1992
Stephen Arnold	Appointee of the Governor, with advice and consent of Senate, representing the public	2019
Malika Evanco	Designee of the Administrator, Division of Personnel Management, Department of Administration	2019
William Ford	Elected by retired Wisconsin Retirement System (WRS) participants, and is a WRS annuitant	2011
Chris Heller	Appointed by Teachers Retirement Board	2019
Michael Langyel	Appointed by Teachers Retirement Board	2009
Katy Lounsbury	Designee of the Governor	2020
Leilani Paul	Elected by participating employees of either technical college or school district educational support personnel, and is an active WRS participant	2015
Roberta Rasmus	Appointed by the Teachers Retirement Board	2012
Steven Wilding	Appointed by the Wisconsin Retirement Board	2019
Vacant	Appointed by the Wisconsin Retirement Board	

Response ■

STATE OF WISCONSIN
Department of Employee Trust Funds
Robert J. Conlin
SECRETARY

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September 28, 2020

JOE CHRISMAN, STATE AUDITOR
LEGISLATIVE AUDIT BUREAU
22 E MIFFLIN ST SUITE 500
MADISON WI 53703

Dear Mr. Chrisman,

Thank you for the opportunity to review and comment on the audit of the Wisconsin Retirement System (WRS) for the year ended December 31, 2019. The unmodified opinion combined with the fact that no internal control deficiencies were identified validates our continual efforts to assess risks and establish a strong internal control environment.

As noted in the report, the Wisconsin Retirement System (WRS) continues to be in a strong financial position with a funding ratio of 103 percent calculated using the methodology prescribed by the Governmental Accounting Standards Board (GASB). This was an increase from 96.5 percent as of December 31, 2018. Strong investment performance in 2019 is the primary reason for the increase. The funding ratio continues to be approximately 100 percent under the funding methodology, which is calculated by the WRS actuary and used to set contribution rates.

The strong funding position of the WRS can be in large part attributed to the risk sharing features included in the plan design. The risk sharing features include the absence of a guaranteed cost of living adjustment and the ability to increase annuities (or decrease annuities up to an amount of previously granted increases) depending on investment performance. As a result, one of the inherent risks in this plan design is all previously granted post-retirement Core Fund adjustments (commonly referred to as dividends) can be revoked if investment losses are significant enough. The report discusses this risk and recommends further assessment. As noted, the Board has been monitoring and periodically discussing the health of the 'dividend reserve', which is now over $7 billion, since 2012 and is planning further discussions with staff and its consulting actuary in December and beyond. We will continue to monitor this matter and will provide an update to the Joint Legislative Audit Committee as recommended in the report by February 26, 2021.

We appreciate the efforts of your staff in conducting the financial audit of the WRS.

Sincerely,

Robert J. Conlin
Secretary