SWIB STATE OF WISCONSIN INVESTMENT BOARD

2017 Retirement Funds

ANNUAL REPORT

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INTRODUCTION

Message from the

Executive Director

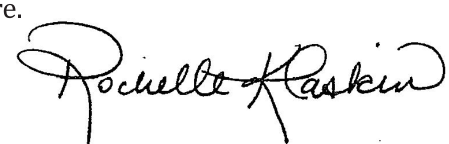
For public employees in Wisconsin, the State of Wisconsin Investment Board (SWIB) is a unique and valuable partner. Investing for the financial security of more than 622,000 individuals – and for the 1,500 Wisconsin employers who contribute on behalf of their employees – SWIB's strong management of the Wisconsin Retirement System (WRS) has helped fuel one of the best-funded public pensions in the country. Over the past ten years, approximately 70 percent of the revenues needed to fund the WRS have come from the investment earnings.

SWIB implements a disciplined, prudent, and innovative investment strategy to manage the WRS trust funds. Our portfolio of investments is highly diversified, carefully monitored, and designed to strike an appropriate balance between risk and returns. The investment strategy provides moderate downside protection from another dramatic downturn while still earning reasonable returns in other market conditions. In 2017, our investment management generated significant positive returns for the funds we manage. The Core Fund, the primary trust fund for the WRS, returned 16.2 percent gross of fees, which was ahead of its target benchmark of 15.7 percent. The Core Fund also exceeded its, five-, ten-, and twenty-year benchmarks. This return contributed to a positive annuity adjustment for WRS retirees for the fifth consecutive year and will help keep contribution rates for employees and employers stable. The Variable Fund returned 23.2 percent, which was ahead of its target benchmark of 23.1 percent. The Variable Fund also exceeded its five-, ten-, and twenty-year benchmarks.

A major reason for our success is because of our ability to manage more than 60 percent of the trust fund assets internally. We have been able to build a stronger internal management program because of our ability to attract and retain highly qualified professionals who are passionate about achieving superior investment returns on behalf the participants of the WRS. Because we can manage the funds internally for multiples less than what it costs to use external managers, we have been able to generate significant savings for the WRS. In 2017, we saved $110 million in costs compared to our peers. Our cost saving strategies combined with our investment strategy, have provided an additional $759 million to the Core Fund above what the markets earned over the past five years.

As proud as we are of our past performance, we continue to remain focused on the future and the challenges that lie ahead. We remain committed to investing in our people, processes and technology to keep us at the forefront of the investment industry.

It is an honor to work for the public employees, employers, and the entire State of Wisconsin. We will continue to do our best to ensure a strong and stable WRS for the future.



Rochelle Klaskin
Interim Executive Director

Agency Overview

The State of Wisconsin Investment Board (SWIB) is an independent agency of the State responsible for investing the assets of the Wisconsin Retirement System (WRS), the State Investment Fund (SIF), and six separately managed funds. Investments are made according to the purpose and risk profile of each fund. The WRS – the 9th largest U.S. public pension fund and the 25th largest pension fund in the world – includes the Core Retirement Investment Trust Fund (Core Fund) and the Variable Retirement Investment Trust Fund (Variable Fund).

SWIB was created under section 15.76 of the State statutes and its duties as manager of these funds are provided in Chapter 25 of the statutes. SWIB staff and Trustees are fiduciaries of the pension funds and are governed by the "prudent investor" standard, which requires them to use the diligence, skill, and care that a prudent person acting in a similar capacity and with the same resources would use in managing a large public pension fund. The law also requires SWIB to make investment decisions and conduct every aspect of its operations in the best financial interest of the funds.

Strong Governance

SWIB is directed by a nine-person, independent Board of Trustees. Trustees appoint the executive director and set the overall policy for SWIB. The executive director oversees the staff, develops and recommends agency and investment policies for Board adoption, and ensures adherence to state law and policies. The chief investment officer serves as chair of the Investment Committee. The Investment Committee provides oversight of SWIB's investments and reports to and makes recommendations to the Trustees.

Experienced Staff

SWIB's investments are managed by its own professional staff and by outside management firms. SWIB employs a staff of 161 professionals (as of 12/31/17), including portfolio managers, analysts, and traders who are responsible for daily investment decisions made within the parameters of the investment policy, as well as well-trained professionals with legal, technical, accounting, and operational expertise. SWIB adheres to Chartered Financial Analyst (CFA) ethical standards. About 64 percent of SWIB staff holds advanced degrees or professional certifications.

Internal Management

Having a strong internal management program provides a significant financial benefit to the WRS. SWIB's Board of Trustees has committed to this concept, growing the number of internal staff positions over the years and enabling SWIB to increase the share of WRS assets managed internally from 21 percent in 2007 to 62 percent in 2017. Managing a significant portion of assets internally helps keep SWIB's cost lower than its peers, according to CEM Benchmarking, an independent provider of objective benchmarking for public pension plans. SWIB's greater reliance on internal management saves about $72 million per year compared to what similar funds would pay to manage the same assets. Reducing costs has contributed to value added above market returns to the trust funds, which, after costs, has been significant, including $759 million generated for the Core Fund over the past five years ending December 31, 2017.

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, our strategic plan is designed to ensure that we, as an organization, are well positioned to effectively manage risk and achieve the target returns for our funds over the long term.

Our strategic plan outlines priorities that are oriented around a single focus: meeting the investment objectives of the funds we manage.

Although this strategic plan does not represent a significant change in our trajectory as an organization, it establishes the framework for meeting the challenges presented by the evolving investment landscape. In doing so, our strategic plan is designed to sustain us as an innovative, agile, integrated organization that optimizes investment returns while managing risk and cost over the long term.

Growing a Strong Future

SWIB has helped fuel one of the best-funded pension systems in the U.S. and works to help protect and grow the assets that more than 622,000 participants and 1,500 employers of the WRS count on for a more secure financial future. One reason the WRS is among the best-funded is the investment earnings that SWIB has generated. Over the past ten years, approximately 70 percent of revenues needed to fund the WRS have come from investment earnings.

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. However, it must also be responsible and committed to a well-thought-out plan that provides the best value to all WRS participants in the long run across all market environments, both strong and weak.

The shared risk and reward of the WRS creates some tension when market conditions result in significant losses because pension payments are impacted directly, both positively and negatively, by annual returns. It should be remembered that 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 the funds held in trust. This is achieved through policies, people, and processes for setting 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 provide moderate downside protection from another dramatic market downturn, while still earning reasonable returns in other market conditions. The strategy is slowly reducing the fund's reliance on the equity markets to achieve consistent performance across different economic environments. It also allows SWIB to meet one of its standards of responsibility that is outlined in state statutes. That statute, s.25.15 (2) (b), says SWIB should "diversify investments in order to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so."

The investment goal of the Core Fund is to earn an optimum rate of return while taking an acceptable level of risk, and to meet or exceed the actuarially-assumed rate of return of 7.2 percent (expected return over 20-30 years). The annualized 20-year return for the Core Fund, as of December 31, 2017, was 7.1 percent, which is ahead of its benchmark of 6.7 percent. This performance has resulted in the WRS generating approximately $37.3 billion more in gross returns over that of a passive 60 percent equities/40 percent fixed income global portfolio over the last 20 years.

The investment strategy for the Variable Fund is to achieve returns equal to or above that of similar stock portfolios over a market cycle. The 20-year return for the Variable Fund, as of December 31, 2017, was 7.2 percent, which is ahead of its benchmark of 6.7 percent. The Variable Fund ended 2017 with a return of 23.2 percent.

Board of Trustees

The Board of Trustees is responsible for setting long-term investment policies, asset allocation, benchmarks, and fund level risk and monitoring investment performance. The Board is comprised of the following:

- Six public members appointed by the Governor and confirmed by the state Senate including four with at least 10 years investment experience, and one with at least 10 years financial experience and who works for a local government in the Local Government Investment Pool.
- Educator participant in the Wisconsin Retirement System (WRS) appointed by the Teachers Retirement Board.
- Non-educator participant in the WRS appointed by the Wisconsin Retirement Board.
- Secretary of the Department of Administration or designee.

Public Members*

1. David Stein, Board Chair, Executive Vice President and Head of Retail Banking, Associated Banc-Corp, Madison
2. Norman Cummings, Board Vice Chair, Director of Administration, Waukesha County
3. Mark Doll, Retired Executive Vice President and Chief Investment Officer, Northwestern Mutual Life Insurance Co., Milwaukee
4. Barbara Nick, President and Chief Executive Officer, Dairyland Power Cooperative, La Crosse
5. Tim Sheehy, President, Metropolitan Milwaukee Association of Commerce, Milwaukee
6. Paul Stewart, Co-Founder, PS Capital Partners, Milwaukee

WRS Participant Members*

1. Sandra Claflin-Chalton, Educator, Retired Teacher, Menomonie
2. Robert Conlin, Board Secretary, Non-educator, Secretary of the Department of Employee Trust Funds

Department of Administration

1. Scott Neitzel, Department Secretary**

* Appointed Board members serve six-year terms.
** Scott Neitzel stepped down as secretary of the Department of Administration in March 2018 and Ellen Nowak was named DOA Secretary.


David Stein


Norman Cummings


Mark Doll


Barbara Nick


Tim Sheehy

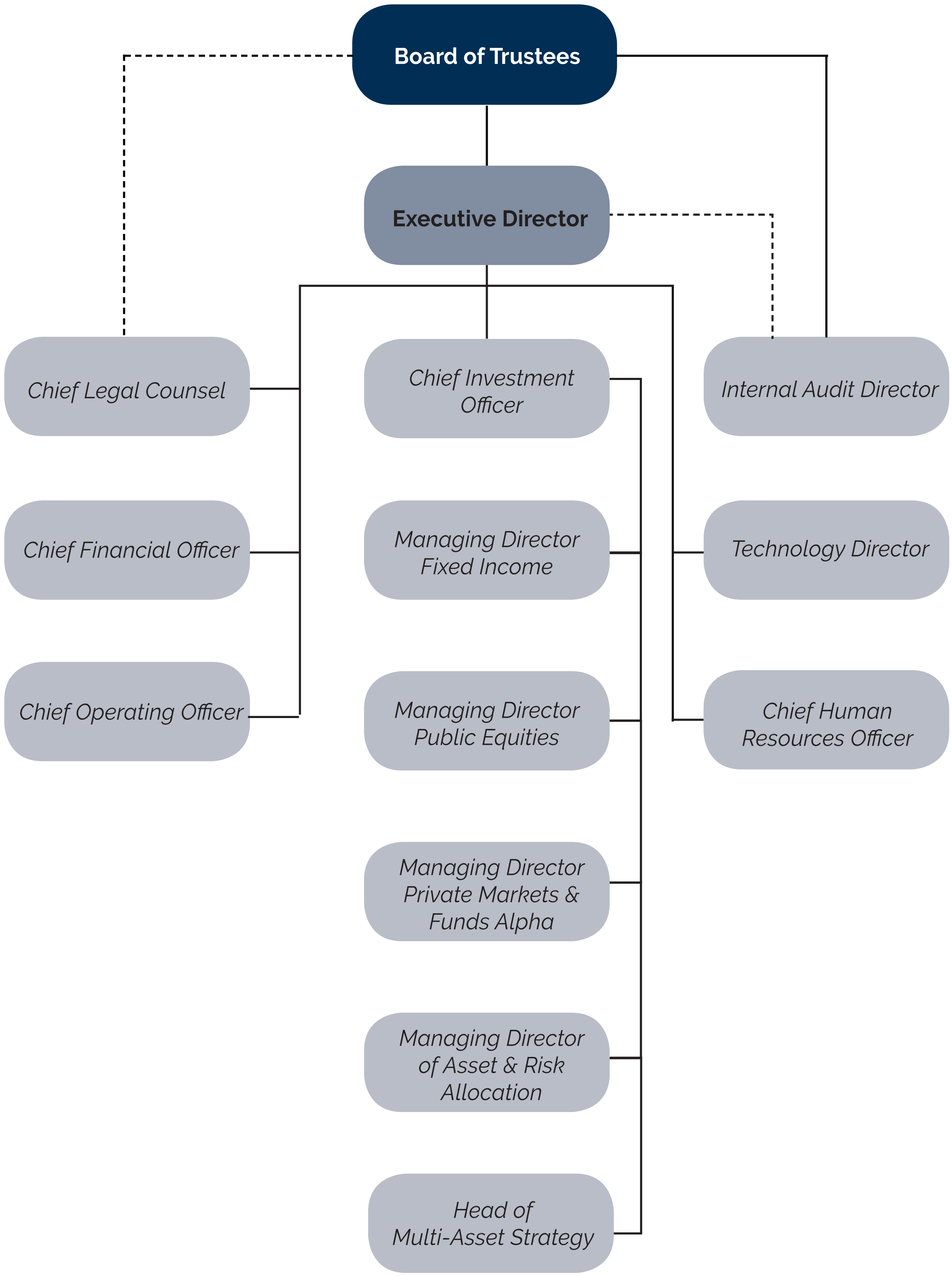

Paul Stewart


Sandra Claflin-Chalton


Robert Conlin


Scott Neitzel

Agency Management



FINANCIAL SECTION

STATE OF WISCONSIN | Legislative Audit Bureau
22 East Mifflin St., Suite 500 ▪ Madison, WI 53703 ▪ (608) 266-2818 ▪ Hotline: 1-877-FRAUD-17 ▪ www.legis.wisconsin.gov/lab

Joe Chrisman
State Auditor

Independent Auditor's Report on the Financial Statements and Other Reporting Required by *Government Auditing Standards*

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

Ms. Rochelle Klaskin, Interim Executive Director and
Members of the Audit and Finance Committee of the Board of Trustees
State of Wisconsin Investment Board

Report on the Financial Statements

We have audited the accompanying Statement of Net Investment Position and the Statement of Changes in Net Investment Position, and the related notes to the financial statements of the Core Retirement Investment Trust Fund and the Variable Retirement Investment Trust Fund (Retirement Funds) of the State of Wisconsin as of and for the year ended December 31, 2017.

Management's Responsibility for the Financial Statements

Management of the State of Wisconsin Investment Board (SWIB) is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America. This includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on these financial statements.

Opinions

In our opinion, the financial statements referred to in the first paragraph present fairly, in all material respects, the financial position of the Retirement Funds as of December 31, 2017, and the respective changes in financial position thereof for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

Emphases of Matter

As discussed in Note 1 to the financial statements, the financial statements referred to in the first paragraph present only the investment activity of the Retirement Funds attributable to SWIB and do not purport to, and do not, present fairly the financial position of SWIB or the State of Wisconsin as of December 31, 2017, or the changes in its financial position for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

As discussed in Note 2c to the financial statements, the financial statements include investments that do not have readily ascertainable market prices and are valued based on a variety of third-party pricing methods. However, because of the inherent uncertainty of valuation, those estimated values may differ from the values that would have been used had a ready market for the investments existed.

Our opinions are not modified with respect to these matters.

Other Matters

Required Supplementary Information—Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, which precedes the financial statements, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, which considers it to be essential for placing the financial statements in an appropriate operational, economic, or historical context. In accordance with auditing standards generally accepted in the United States of America, we have applied certain limited procedures to the required supplementary information that included inquiries of management about the methods of preparing the information. We further compared the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to do so.

Accompanying Information—Our audit was conducted for the purpose of forming opinions on the financial statements of the Retirement Funds. The introduction section on pages 3 through 10 of the annual report is presented for purposes of additional analysis and is not a required part of the financial statements. Such information has not been subjected to the auditing procedures applied in the audits of the financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report dated August 15, 2018, on our consideration of SWIB's internal control over financial reporting; our tests of its compliance with certain provisions of laws, regulations, and contracts; and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be used when considering SWIB's internal control over financial reporting and compliance.

LEGISLATIVE AUDIT BUREAU

Joe Chrisman
State Auditor

August 15, 2018

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Retirement Funds

Management Discussion & Analysis

The Retirement Funds' discussion and analysis of the financial activities for the calendar year ended December 31, 2017, is presented by management as an introduction to the financial statements. It is meant to assist the reader in understanding the financial statements by providing an overall review of the financial activities during the year as well as to provide a comparison of the prior year's activity and results.

Overview of Basic Financial Statements

The State of Wisconsin Investment Board (SWIB) is responsible for managing the assets of the Wisconsin Retirement System (WRS). The Core Retirement Investment Trust Fund (Core Fund) and Variable Retirement Investment Trust Fund (Variable Fund), collectively Retirement Funds, represent the assets of the WRS. Following this section are the financial statements and footnotes which reflect only the investment activity of the Retirement Funds. Retirement reserves, contribution revenue, and benefit expense are specifically excluded from presentation in these statements, although contribution revenue and benefit expenses are reflected in "Net Disbursements" in the Statement of Changes in Net Investment Position. The Wisconsin Department of Employee Trust Funds (ETF) prepares a Comprehensive Annual Financial Report, and it can be found on their website: www.etf.wi.gov.

The **Statement of Net Investment Position** provides information on the financial position of the Retirement Funds at December 31, 2017. It reflects the investment assets available for payment of future benefits and any liabilities related to the investments.

The **Statement of Changes in Net Investment Position** presents the results of the investing activities for the twelve months ending December 31, 2017.

The **Notes to the Financial Statements** provide additional information that is essential to a full understanding of the data presented in the financial statements. The notes provide more detail about accounting policies, significant account balances and activities, material risks, obligations, contingencies, and subsequent events, if any.

The financial statements and related notes are prepared in accordance with Governmental Accounting Standards Board (GASB) Pronouncements.

Retirement Funds

Approximately 622,000 people participate in the WRS, including current and former employees of Wisconsin's state agencies, most local governments, and school districts in Wisconsin. Contributions made to the WRS by these employees, and their employers, are invested by SWIB to finance retirement and other benefits. The Retirement Funds had a combined Net Investment Position of $108.4 billion as of December 31, 2017.

Core Retirement Investment Trust Fund

The larger of the two trust funds comprising the WRS is the Core Fund with a Net Investment Position of $100.3 billion at December 31, 2017. All WRS members have at least half, if not all, of their pension contributions invested in the Core Fund. It is a diversified, balanced fund invested for

Time-Weighted Annualized Returns
As of December 31, 2017

	1-Year Return %	5-Year Return %	10-Year Return %	20-Year Return %
Core Fund	16.2	8.6	5.9	7.1
Benchmark	15.7	8.2	5.5	6.7
Variable Fund	23.2	13.3	7.1	7.2
Benchmark	23.1	13.0	6.8	6.7

the long-term needs of the WRS. Diversification helps to stabilize the effects of market changes. The investment objective of this trust fund is to meet or exceed an average 7.2% annual nominal return over the long-term, which is set by ETF with input from outside consultants using a number of factors including market returns, estimated wage growth and other actuarial assumptions.

The financial statements reflect the investment activity of the Core Fund as well as changes in cash balances due to net disbursements related to ETF. Net disbursements include, but are not limited to, benefit payments, contribution receipts, transfers to/from the Variable Fund, and administrative expenses.

Condensed Core Fund financial information for the calendar years ending December 31, 2017 and December 31, 2016 is included in the table entitled **Core Fund Condensed Financial Information**.

Cash and Cash Equivalents decreased by $3.4 billion or 50% when comparing calendar year-end 2017 to 2016. The decrease in cash is attributed to a reduction in the use of equity futures to implement investment strategies in 2017. At the end of 2016, SWIB held equity futures positions to generate fund level leverage and to create synthetic positions. Cash was required to adjust SWIB's exposure to leverage and to meet margin requirements. Conversely, during 2017, SWIB increased its capacity to generate leverage by using

Core Fund Condensed Financial Information (In thousands)

	2017	2016	% Change
Cash and Cash Equivalents	$ 3,417,883	$ 6,817,787	(50)
Receivables	1,558,973	1,143,657	36
Invested Securities Lending Collateral	1,522,476	959,261	59
Prepaid Expenses	25,547	6,363	301
Investments	104,574,185	83,840,489	25
Total Investment Assets	111,099,064	92,767,557	20
Payables and Other Liabilities	468,710	229,645	104
Securities Lending Collateral Liability	1,522,476	959,261	59
Short Sales	2,722,194	327,879	730
Obligations Under Reverse Repurchase Agreements	6,114,256	1,831,169	234
Total Investment Liabilities	10,827,636	3,347,954	223
Net Investment Position Held in Trust	$ 100,271,428	$ 89,419,603	12
Investment Income	$ 14,328,623	$ 7,261,483	97
Investment Expense	(486,173)	(385,514)	26
Net Investment Income	13,842,450	6,875,969	101
Net Disbursements - Department of Employee Trust Funds	(2,990,625)	(2,874,604)	4
Net Increase in Net Investment Position Held in Trust	$ 10,851,825	$ 4,001,365	171

less expensive reverse repurchase agreement transactions. Obtaining leverage in this manner reduced the need for cash on hand. Additionally, due to the higher cost of implementing synthetic strategies relative to other sources for leverage, SWIB reduced synthetic positions and increased the use of physical securities when possible during 2017.

The balance in Receivables increased by $415.3 million or 36% when comparing year-end 2017 to 2016. A portion of this increase is due to SWIB's entry into the To Be Announced (TBA) securities market in 2017. TBA securities are derivative contracts that consist of mortgage-backed securities (MBS) issued by the Government National Mortgage Association, a government entity, and by government-sponsored enterprises such as, the Federal National Mortgage Association or the Federal Home Loan Mortgage Corp. The term TBA is derived from the fact that the actual MBS that will be delivered to fulfill a TBA trade is not designated at the time the trade is made. Instead, the specific pool of mortgages making up the MBS is announced 48 hours prior to the established trade settlement date. Eligibility rules and standards for MBS pools deliverable into TBA contracts ensure that delivered MBS pools are fungible. TBA securities sold create a receivable on the Statement of Net Investment Position because payment for TBA securities is not made until the settlement date.

Routine equity rebalancing activities, where equity positions were sold but pending settlement , also contributed to the increase in Receivables at December 31, 2017.

Invested Securities Lending Collateral and Securities Lending Collateral Liability increased by $563.2 million as of December 31, 2017, compared to December 31, 2016. Cash received as collateral for securities borrowed is utilized by SWIB's internally managed portfolios to back short positions. Due to an increase in the demand for internal shorting capacity, efforts were made to increase securities loans that were secured with cash collateral.

Investments increased by 25% over the prior year. Investment returns play a large role in this change and a more detailed discussion on performance is included in the Investment Income discussion which follows. In addition to positive investment returns, there are other factors which impacted the increase in Investments. As was indicated in the Cash and Cash Equivalents section, SWIB decreased synthetic equity exposure in 2017 and held more physical equity securities relative to the previous year-end. This transition from synthetics to physicals resulted in a larger balance in Investments and a corresponding smaller balance in Cash and Cash Equivalents. Investments were also positively impacted by an increase in U.S. Treasury Inflation Protected Security (TIPS) holdings, financed through additional reverse repurchase agreement transactions. Finally, an expansion in the use of market neutral strategies in 2017 contributed to the increase in Investments. Market neutral strategies involve taking long equity positions that are offset by corresponding short positions. This strategy caused an increase in both Investments and Short Sales. A more in-depth discussion relating to the increase in short sales is included later in this narrative.

Payables & Other Liabilities increased by $239.1 million as of December 31, 2017 versus the prior year-end balance. The majority of this increase is due to purchased TBA contracts held at December 31, 2017. SWIB began trading these derivative instruments in 2017. Purchased TBA securities create a payable on the Statement of Net Investment Position because payment for TBA securities is not made until the settlement date.

Short Sales increased by $2.4 billion, or 730%, when comparing calendar year 2017 to the prior year-end. A short sale transaction is created when a security not owned by the portfolio is sold in anticipation of purchasing the security at a lower price in the future. A large portion of the increase between 2017 and 2016 is attributed to an accounting change in 2017. In prior years, SWIB's financial statements reflected net short sales, and balances were adjusted to remove short positions that were otherwise held long in separately managed portfolios. Starting in 2017, SWIB discontinued the practice of netting long and short positions on the Statement of Net Investment Position. This new approach was adopted to provide more transparency by disclosing all short sale liabilities, irrespective of whether the Retirement Funds hold offsetting long positions. This change resulted in an increase in Investments and an offsetting increase in Short Sales as of December 31, 2017. When 2017 balances are compared to unadjusted 2016 balances, short sales increased to a lesser degree, with a total change of $1.9 billion, or 236%. More information about the short sale accounting change can be found in the Notes to Financial Statements section of the annual report.

After taking into consideration short sale accounting changes, larger balances in short sales can be primarily explained by an increased allocation to portfolios that utilize market-neutral strategies. These portfolios hold long positions that are explicitly offset by short positions within a strategy.

Obligations Under Reverse Repurchase Agreements increased by $4.3 billion, or 234%, when comparing calendar year-end 2017 to 2016. Reverse repurchase agreements involve the sale of assets with the simultaneous agreement to repurchase those assets for a pre-determined price, plus interest, at a future date. During 2017, SWIB increased its capacity to participate in reverse repurchase agreements, providing a low-cost way to obtain financing. The proceeds from these agreements are invested in TIPS.

Core Fund
Time Weighted Annualized Asset Class Returns

	2017 Return %	2016 Return %
Public Equities	24.0	9.3
Fixed Income	5.4	4.4
Inflation Sensitive	3.2	6.4
Real Estate	9.6	10.8
Private Equity/Debt	15.5	10.3
Multi Asset	14.5	5.9

Calendar year 2017 Investment Income increased by $7.1 billion to $14.3 billion, when compared to calendar year 2016. The increase in income in 2017 is attributable to a total Core Fund investment return of 16.2% as compared to 8.6% for the previous calendar year. Asset class returns for calendar year 2017 and 2016 are presented in the table entitled **Core Fund Time Weighted Annualized Asset Class Returns**.

Investment Expense increased by $100.7 million over the prior calendar year. Over half of this change is due to an increase in fees paid to external managers. Core Fund assets that are externally managed are invested in strategies where SWIB seeks to capitalize on external managers' expertise or to invest in highly specialized markets or products. Fees paid to outside managers generally fall into two categories: base management fees and performance fees.

Base management fees increased by 9% over the prior year. In both years, SWIB managed over 60% of Core Fund assets internally. While the overall percentage of assets managed externally did not materially change, the actual amount of Core Fund assets managed externally grew by $5.93 billion in 2017 due in large part to increased positive investment performance. Because base management fees are calculated as a percentage of assets under management, asset growth translated into higher fees in 2017.

Performance fees increased by $31.9 million in 2017. Because performance fees are earned when returns exceed specified benchmarks, the increase in fees is explained by positive investment performance. In 2017, portfolios that were paid performance fees are estimated to have added $119.2 million in excess value as compared to the benchmark, after consideration of all fees and costs, inclusive of performance fees.

Dividend expense, interest expense, and securities borrowing fees account for most of the remaining increase in expenses in 2017. These added costs correlate with increased short sale activity and greater use of obligations under reverse repurchase agreements in 2017.

Variable Retirement Investment Trust Fund

The Variable Fund allows active employees participating in the WRS to put half of their pension fund contributions into this global stock fund. Approximately 15% of WRS members participate in the Variable Fund, with a Net Investment Position of $8.2 billion at December 31, 2017. By law, the Variable Fund invests primarily in stocks and provides participants the potential for higher returns in exchange for higher risk. Employees who choose this fund therefore accept a higher degree of market risk and greater volatility in investment returns. The investment objective of the Variable Fund is to meet or exceed broad equity market indices over a full market cycle.

The balance in Prepaid Expenses increased by $1.9 million in calendar year 2017. This change is not representative of a change in total expenses, but rather reflects a difference in timing for the billing and payment of the Variable Fund operating budget in 2017, as compared to the prior year.

Payables and Other Liabilities decreased by $4.9 million when compared with the prior calendar year. As with the change in Prepaid Expenses, almost half of this reduction in payables related to the reflection of SWIB's operating budget as a payable in 2016. The remaining decrease relates to fewer investment purchases pending settlement over 2017 year-end.

Condensed Variable Fund financial information for the calendar years ended December 31, 2017 and December 31, 2016 is included in the table entitled **Variable Fund Condensed Financial Information.**

Variable Fund Receivables increased by $23.7 million between calendar years. The change is explained by equity investment sales pending settlement at December 31, 2017. These investment sales were part of the fund's routine rebalancing activities which include raising cash to meet near-term benefit payments.

Invested Securities Lending Collateral and Securities Lending Collateral Liability represent cash collateral held for securities lending transactions. The $8.5 million change in these accounts was caused by an increase in Variable Fund equity loans collateralized with cash.

Variable Fund Condensed Financial Information (In thousands)

	2017	2016	% Change
Cash and Cash Equivalents	$ 98,379	$ 102,587	(4)
Receivables	37,517	13,818	172
Invested Securities Lending Collateral	54,186	45,679	19
Prepaid Expenses	1,878	5	37,460
Investments	8,042,006	6,912,810	16
Total Investment Assets	8,233,966	7,074,899	16
Payables and Other Liabilities	1,340	6,225	(78)
Securities Lending Collateral Liability	54,186	45,679	19
Short Sales	-	6,697	(100)
Total Investment Liabilities	55,526	58,601	(5)
Net Investment Position Held in Trust	$ 8,178,440	$ 7,016,298	17
Investment Income	$ 1,566,485	$ 687,524	128
Investment Expense	(9,552)	(8,887)	7
Net Investment Income	1,556,933	678,637	129
Net Disbursements - Department of Employee Trust Funds	(394,791)	(389,944)	1
Net Increase in Net Investment Position Held in Trust	$ 1,162,142	$ 288,693	303

Variable Fund Short Sales experienced a decrease of $6.7 million year-over-year. In December 2016, the Board adopted a lower active risk target for the Variable Fund, recognizing that domestic equity markets are very efficient and offer fewer active return opportunities than other asset classes. Subsequently, a larger portion of the assets in 2017 were managed passively, resulting in a reduction in short sales when compared to the prior year.

Calendar year 2017 Investment Income increased by $879.0 million to $1.6 billion, when compared with the prior calendar year. The increase in income was the result of a total fund investment return of 23.2%, as compared to 10.6% in 2016. The Variable Fund has an asset allocation target of 70% domestic and 30% international equities to satisfy its stock market mandate. Its performance is therefore largely dependent upon the equity market movements for the year. In 2017, the Variable Fund outperformed its one-year benchmark of 23.1%. As with the Core Fund, SWIB has implemented a long-term approach to investing Variable Fund assets. As of December 31, 2017, the Variable Fund's 20-year annualized return was 7.2%, outperforming the benchmark return of 6.7%.

Retirement Funds
Financial Statements

Statement of Net Investment Position
As of December 31, 2017
(In thousands)

	Core Retirement Investment Trust Fund	Variable Retirement Investment Trust Fund
Investment Assets		
Cash and Cash Equivalents	$ 3,417,883	$ 98,379
Due from Other Funds	634	-
Receivables:		
Interest & Dividends	297,393	16,718
Securities Lending Income	2,000	587
Investment Sales	1,258,946	20,212
Invested Securities Lending Collateral	1,522,476	54,186
Prepaid Expenses	25,547	1,878
Investments (at fair value):		
Equities	55,211,579	8,029,482
Fixed Income	30,709,368	-
Limited Partnerships	12,212,410	-
Multi Asset	4,701,121	-
Real Estate	1,368,583	-
Preferred Securities	229,559	12,115
Convertible Securities	196	-
To Be Announced Securities	95,489	-
Foreign Currency Contracts	(1,146)	15
Option Contracts	(3,830)	-
Futures Contracts	46,685	394
Swaps	4,171	-
Total Investment Assets	111,099,064	8,233,966
Investment Liabilities		
Payable for Investments Purchased	380,932	499
Obligations Under Reverse Repurchase Agreements	6,114,256	-
Short Sales	2,722,194	-
Collateral Due to Counterparty	2,860	-
Accounts Payable	75,225	739
Other Liabilities	9,693	102
Securities Lending Collateral Liability	1,522,476	54,186
Total Investment Liabilities	10,827,636	55,526
Net Investment Position Held in Trust	$ 100,271,428	$ 8,178,440

The accompanying notes are an integral part of this statement.

Statement of Changes in Net Investment Position
For the Calendar Year Ended December 31, 2017
(In thousands)

	Core Retirement Investment Trust Fund	Variable Retirement Investment Trust Fund
Additions		
Investment Income:		
Net Increase in the Fair Value of Investments	$ 12,427,469	$ 1,403,547
Interest	568,507	952
Dividends	1,088,223	155,293
Securities Lending Income	31,296	6,571
Securities Lending Rebates	-	122
Limited Partnership Income	147,358	-
Income from Real Estate	65,770	-
Less		
Investment Expense	478,382	9,001
Securities Lending Fees	7,791	551
Net Investment Income	13,842,450	1,556,933
Deductions		
Net Disbursements - Department of Employee Trust Funds	(2,990,625)	(394,791)
Net Increase in Net Investment Position Held in Trust	10,851,825	1,162,142
Net Investment Position Held in Trust:		
Beginning of the Year	89,419,603	7,016,298
End of the Year	$ 100,271,428	$ 8,178,440

The accompanying notes are an integral part of this statement.

Retirement Funds

Notes to Financial Statements

1. Description of Funds

The Wisconsin Legislature created the State of Wisconsin Investment Board (SWIB) for the sole purpose of providing professional investment management for the funds entrusted to it, including the assets of the Core Retirement Investment Trust Fund (Core Fund) and the Variable Retirement Investment Trust Fund (Variable Fund). The Board of Trustees for SWIB is responsible for the overall professional investment management of the assets of the Wisconsin Retirement System (WRS). The Core Fund and the Variable Fund, collectively Retirement Funds, represent the investment assets of the WRS.

The statements presented here reflect only the investment activity of these funds. Excluded from presentation in the statements are, for example, retirement reserves, contribution revenue, and benefit expense. The statements are not intended to present the financial activity for the State of Wisconsin as a whole.

All of the Retirement Funds' administrative expenses are funded through employer and employee contributions and investment earnings. Administrative expenses, in addition to various other expenses such as external management fees, legal fees, custodial bank fees, and investment consulting fees, are included in "Investment Expense" in the Statement of Changes in Net Investment Position.

A. Core Retirement Investment Trust Fund

The Core Fund is managed by SWIB with oversight by a Board of Trustees as authorized in section 25.15 and 25.17 of the Wisconsin Statutes. The Core Fund and SWIB are not registered with the Securities and Exchange Commission as an investment company. The investments of the Core Fund consist of a diversified portfolio of securities. SWIB is required to make investment management decisions for the Retirement Funds solely for the benefit of the members of the WRS. Section 25.182 of the Wisconsin Statutes authorizes SWIB to manage the Core Fund in accordance with the "prudent investor" standard of responsibility. This standard is described in section 25.15(2) of the Wisconsin Statutes, which requires that SWIB manage the Retirement Funds with the diligence, skill, and care that a prudent person acting in a similar capacity and with the same resources would use in managing a large public pension fund.

The Core Fund consists primarily of assets invested for the WRS, which is administered by the Department of Employee Trust Funds (ETF) in accordance with Chapter 40 of the Wisconsin Statutes. All WRS contributions are invested in this trust fund unless participants have elected to have one-half of their contributions invested in the Variable Fund. In addition to the retirement contributions, the assets of various other benefit programs are invested in the Core Fund. Information regarding the other programs invested in the Core Fund can be found in the Comprehensive Annual Financial Report, prepared by ETF and located on their website: www.etf.wi.gov.

B. Variable Retirement Investment Trust Fund

The Variable Fund is managed by SWIB with oversight by a Board of Trustees as authorized by section 25.15 and 25.17 of the Wisconsin Statutes. The Variable Fund and SWIB are not registered with the Securities and Exchange Commission as an investment company. Section 25.17(5) of the Wisconsin Statutes states that assets of the Variable Fund shall be invested primarily in equity securities that shall include common stocks, real estate, or other recognized forms of equities whether or not subject to indebtedness, including securities convertible into common stocks and securities of corporations in the venture capital stage. Subject to that requirement, SWIB may invest the Variable Fund in any manner consistent with the "prudent investor" standard of responsibility in section 25.15(2) of the Wisconsin Statutes, which requires that SWIB manage the trust funds with the diligence, skill, and care that a prudent person acting in a similar capacity and with the same resources would use in managing a large public pension fund.

The Variable Fund consists primarily of the assets invested for the WRS. In addition, there are two other retirement/benefit plans invested in the Variable Fund. Additional information regarding the Variable Fund can also be found in the Comprehensive Annual Financial Report, prepared by ETF.

Participation in the Variable Fund is at the option of the employee. Participants have elected to invest one-half of their retirement contributions and matching amounts of employer contributions to this fund, and have the remainder invested in the Core Fund. Individual participants in the Variable Fund have a one-time option to terminate their Variable Fund participation and transfer their account to the Core Fund.

2. Significant Accounting Policies

A. Basis of Presentation

The accompanying financial statements were prepared in conformity with generally accepted accounting principles (GAAP) for governments as prescribed by the Governmental Accounting Standards Board (GASB).

B. Measurement Focus and Basis of Accounting

The financial statements are prepared based upon the flow of economic resources measurement focus and the full accrual basis of accounting. Under the accrual basis of accounting, revenues are recognized in the accounting period in which they are earned and become measurable, and expenses are recognized in the period incurred, if measurable. Security transactions and the related gains and losses are recorded on a trade date basis. Dividend income is recorded on the ex-dividend date, and interest income is accrued as earned.

C. Valuation of Securities

The investments of the Retirement Funds are reported in the Statement of Net Investment Position at fair value as prescribed by GASB and per section 25.17(14) of the Wisconsin Statutes. Unrealized gains and losses are reflected in the Statement of Changes in Net Investment Position as "Net Increase (Decrease) in the Fair Value of Investments."

The fair value of the Retirement Funds' assets is obtained or estimated in accordance with a pricing hierarchy established with SWIB's custodian, Bank of New York Mellon (BNY Mellon). As prescribed by the hierarchy, a variety of independent pricing sources are used to price assets based on type, class, or issue.

When a portfolio includes securities or instruments for which the custodial bank does not receive fair value information from its vendor pricing sources, a variety of third-party pricing methods are used, including appraisals, pricing models, and other methods deemed acceptable by industry standards.

The Cash and Cash Equivalents category reported on the Statement of Net Investment Position consists of short-term investments which are used to meet the liquidity requirements of the Retirement Funds. Cash and Cash Equivalents held by the Retirement Funds can include cash on deposit, foreign currencies, cash posted as collateral to counterparties, repurchase agreements, certificates of deposit, U.S. Treasury Bills, short-term investment funds, and other U.S or foreign liquid financial instruments with maturities that are generally less than three months. Cash and Cash Equivalents are reported at fair value or cost, which approximates fair value.

Privately-held debt, which is included in "Fixed Income" investments on the Statement of Net Investment Position, is priced using approaches that value each holding based on the best available information using the following hierarchy of pricing sources:

1. Custodian-supplied prices for assets that can be priced in accordance with the pricing hierarchy

established with SWIB's custodian
2. Prices provided by a third party with expertise in the bond market

For private market investments where no readily ascertainable market value exists, including limited partnerships and real estate pooled funds, fair value is estimated based on the net asset value as reported by the general partner. The capital account balance as stated in the most recent available quarterly reporting period is adjusted for subsequent cash flows to derive fair value. The financial statements of the limited partnerships and real estate pooled funds are audited by independent auditors annually.

Certain portfolios make investments in privately-held companies alongside a strategic partner, such as a limited partnership fund manager. These co-investments are valued by SWIB's strategic partner, using a variety of methodologies such as reviews of subsequent financing rounds, discounted cash flow analyses, cash flow multiples analyses, reviews of market comparable sales or metrics, and reviews of third-party appraisals.

Real estate properties wholly owned by SWIB are valued by independent appraisers every three years. In years when appraisals are not performed, properties are informally appraised by the asset advisor. Each year, audited financial statements are prepared for each property.

SWIB employs portfolio strategies which involve investments across multiple asset classes. The "Multi Asset" category on the Statement of Net Investment Position consists primarily of hedge funds. SWIB values hedge funds based on monthly statements or estimated returns received from each of the hedge fund's administrators. A third-party administrator's responsibility is to independently account for the hedge fund's activity and calculate the net asset value of the fund. Generally, hedge fund administrators price financial instruments traded in active markets based on quoted market prices or binding dealer quotations. For certain over-the-counter instruments, fair value is determined based on valuation models used by the administrator. Annually, the financial statements prepared by the administrator are audited by independent auditors.

Derivative financial instruments are marked to fair value daily, with valuation changes recognized in income during the period the instruments are held and when the instrument is sold or expires. The nature and use of derivative instruments is discussed in Note 5.

A limited number of securities are carried at cost. Certain non-public or closely-held investments are not reported at fair value, but are carried at cost since no independent quotation is available to estimate fair value for these securities.

D. Use of Estimates
The preparation of financial statements in accordance with GAAP requires management to make estimates that affect amounts reported herein. Due to the inherent uncertainty involved, actual results could differ from those estimates.

E. Accounting Changes
Effective December 31, 2017, Short Sales and Investments reported on the Statement of Net Investment Position reflect unadjusted gross positions. In previous reporting periods, SWIB's Statement of Net Position was adjusted to remove the impact of short sales where the same security was held long in another separately-managed Retirement Fund portfolio. Reporting unadjusted gross positions serves to provide more transparency by disclosing all short sale liabilities, irrespective of whether the Retirement Funds may otherwise hold offsetting long positions. This change results in an increase in "Equities" and "Preferred Securities" and an offsetting increase in "Short Sales" on the Statement of Net Investment Position as of December 31, 2017. Because the asset and liability amounts offset, there is no impact on the Retirement Funds' reported beginning or ending "Net Investment Position Held in Trust." Additional information on short sales can be found in Note 7.

3. Deposit and Investment Risk
A. 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. Information regarding SWIB's credit risk related to derivatives is found in Note 5.

The table entitled **Credit Quality Distribution** displays the lowest credit rating assigned by nationally recognized statistical rating organizations on debt securities held by the Retirement Funds as of December 31, 2017. Included in this table are fixed income securities, including certain short-term securities, classified as cash equivalents on the Statement of Net Investment Position. Also included are interest rate sensitive investments held in the Retirement Funds' securities lending collateral reinvestment pools, which are managed by SWIB's custodian. See Note 6 for additional information regarding the securities lending program.

The table also includes SWIB's investment in commingled fixed income funds which are not rated. Although the funds themselves are not assigned ratings, external management investment guidelines govern minimum credit quality standards for the investments within each portfolio. These standards are determined based on the investment objectives and risk parameters of each fund.

SWIB held $6.1 billion in reverse repurchase agreements at December 31, 2017. Investment guidelines permit certain portfolios to enter into reverse repurchase agreements, which are a sale of securities with a simultaneous agreement to repurchase the securities in the future at the same price plus a stated rate of interest. The market value of the securities underlying reverse repurchase agreements exceeds the cash received, providing the counterparty a margin against a decline in market value of the securities. If the counterparty defaults on their obligation to sell these securities back to SWIB or provide cash of

Credit Quality Distribution
As of December 31, 2017
(In thousands)

Rating	Fair Value	% of Total
AAA/Aaa	$ 259,854	1%
A-1/P-1	949	-
AA/Aa	17,397,466	51
A-2/P-2	328,588	1
A	1,872,727	6
BBB/Baa	2,089,975	6
BB/Ba	925,456	3
B	824,351	2
CCC/Caa or below	310,463	1
Not Rated	790,396	2
Commingled Fixed Income Funds	9,093,285	27
Total	$ 33,893,510	100%

equal value, SWIB could suffer an economic loss equal to the difference between the market value of the underlying securities plus accrued interest and the agreement obligation, including accrued interest.

SWIB enters into reverse repurchase agreements with various counterparties and such transactions are governed by Master Repurchase Agreements (MRA). MRAs are negotiated contracts and contain terms in which SWIB seeks to minimize counterparty credit risk. SWIB also controls credit exposures by limiting trades with any one counterparty to stipulated amounts. The counterparty credit exposure is managed through the transfer of margin, in the form of cash or securities, between SWIB and the counterparty. The Retirement Funds' counterparty credit exposure for reverse repurchase agreements at December 31, 2017, is summarized in the table entitled **Reverse Repurchase Agreements, Counterparty Credit Exposure.**

The cash proceeds from reverse repurchase agreements are reinvested by the Retirement Funds. The maturities of the purchases made with

Reverse Repurchase Agreements Counterparty Credit Exposure As of December 31, 2017 (In thousands)		
Fair Value of Collateral Held by Counterparty		$ 6,222,594
Less:		
Cash due to Counterparty	$6,114,256	
Collateral and Interest due to Counterparty	20,515	
Total due to Counterparty		6,134,771
Net Counterparty Credit Exposure		$ 87,823

the proceeds of reverse repurchase agreements are not necessarily matched to the maturities of the agreements. The agreed-upon yields earned by the counterparty for the reverse repurchase agreements held were between 1.18% and 1.82% at December 31, 2017. Portfolio guidelines require agreements to mature between one and 90 days.

The cash due to counterparties resulting from reverse repurchase agreements is reported as "Obligations Under Reverse Repurchase Agreements" and the interest due to counterparties is included in "Other Liabilities" on the Statement of Net Investment Position. The underlying assets, as well as the reinvested proceeds, are reported in the "Investments" section on the Statement of Net Investment Position.

B. Custodial Credit Risk

Deposits — Custodial credit risk related to deposits is the risk that, in the event of the failure of a depository financial institution, SWIB will not be able to recover deposits that are in possession of an outside party. Cash deposits totaled $1,900.1 million as of December 31, 2017. Of the total, $1,512.1 million was collateralized by securities borrowed. Depository insurance covered another $24.9 million of the total. The remaining deposits, totaling $363.1 million, were uninsured and uncollateralized. These uninsured deposits represented balances held in foreign currencies in SWIB's custodian's nominee name, cash posted as collateral for derivatives transactions, and cash collateral posted in excess of the market value of securities borrowed by SWIB for short sales. In addition to cash deposits, the Retirement Funds also held $57.8 million in certificates of deposit, all of which were covered by depository insurance as of December 31, 2017.

Investments — Custodial credit risk for investments is the risk that, in the event of failure of the counterparty to a transaction, SWIB will not be able to recover the value of investments that are in the possession of an outside party. The Retirement Funds held two repurchase agreements totaling $14.2 million as of December 31, 2017. These repurchase agreements were tri-party agreements held in a short-term cash management portfolio managed by SWIB's custodian. The underlying securities for these agreements were held by the tri-party agent, not in SWIB's name.

SWIB's custodial credit risk policy addresses the primary risks associated with safekeeping and custody. It requires that SWIB's custodial institution be selected through a competitive bid process and that the institution be designated a "Systemically Important Financial Institution" by the U.S. Federal Reserve. The policy also requires that SWIB be reflected as beneficial owner on all securities entrusted to the custodian and that SWIB have access to safekeeping and custody accounts. The custodian is also required to be insured for errors and omissions and must provide SWIB with an annual report on internal controls, prepared in accordance with the Statement on Standards for Attestation Engagements. Furthermore, SWIB management has established a system of controls for the oversight of services and related processes of the custodian. SWIB's current custodial bank was selected in accordance with these guidelines and meets all requirements stipulated in the custodial credit risk policy.

C. Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of an organization's investment in a single issuer. SWIB limits concentrations of credit risk by establishing investment guidelines for individual portfolios or groups of portfolios that generally restrict issuer concentrations in any one company or Rule 144A securities to less than 5% of the portfolio's market value. The Retirement Funds did not hold any investments with a single issuer, exclusive of investments issued or explicitly guaranteed by the U.S. government, representing 5% or more of the Retirement Funds' value at December 31, 2017.

D. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. SWIB uses a number of different methods to manage interest rate risk. Fixed income instruments held by the Retirement Funds include investments with variable rate securities, stepped rate securities, securities with no coupon, such as discount notes, and coupons that range between 0.0% and 22.75% at December 31, 2017.

Generally, SWIB analyzes long or intermediate term portfolios' interest rate risk using various duration calculations. Modified duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. The calculation is based on the weighted average of the present values for all cash flows. Some investments are analyzed using an option-adjusted duration calculation which is similar to the modified duration method. Option-adjusted duration incorporates the duration-shortening effect of any embedded call provisions in the securities. Duration statistics are weighted by the dollar value of the position to compute an average duration for each investment type.

Short-term portfolios' interest rate risk is analyzed using the weighted average maturity to next reset. Weighted average maturity is the maturity of each position in a portfolio weighted by the dollar value of the position to compute an average maturity for the portfolio as a whole. This measure indicates a portfolio's sensitivity to interest rate changes: a longer weighted average maturity implies greater volatility in response to interest rate changes.

SWIB's investment guidelines related to interest rate risk vary by portfolio. Some fixed income portfolios are required to be managed within a range of a targeted duration, while others are required to maintain a weighted average maturity at or below a specified number of days or years.

The table entitled **Interest Rate Sensitivity by Investment Type** presents the aggregated interest rate exposure for the Retirement Funds' assets at December 31, 2017. Weighted average maturity, where reset dates are assumed to be the effective maturity date for the security, is presented for repurchase agreements and short-term pooled investments. Longer-term instruments held by the Retirement Funds are presented using modified duration, as this measure more accurately states the interest rate sensitivity of these investments. The duration statistic is calculated utilizing reset dates for some floating rate instruments, such as term loans. Information about the interest rate sensitivity of derivative contracts can be found in Note 5.

SWIB invests in securities with contractual cash flows, such as asset-backed securities and U.S. government agencies. These types of structured product investments may be highly sensitive to interest rate changes in that they can be subject to early payment in a period of declining interest rates. The resulting changes in timing, or possible reduction in expected total cash flows, affect the fair value of these securities.

E. Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. It includes the risk that currencies in which a portfolio's investments are denominated, or currencies in which a portfolio has taken on a long/short active position, will decline in value relative to the U.S. dollar.

Foreign currency exchange rates may fluctuate significantly for a number of reasons, including the forces of supply and demand in the foreign exchange markets, actual or perceived changes in interest rates, intervention by U.S. or foreign governments or central banks, currency controls, or political developments in the U.S. or abroad.

SWIB's policies include foreign currency risk management objectives relating to each individual portfolio. These guidelines address the foreign currency management activities permitted for each portfolio based on the portfolios mandates, risk tolerances, and objectives. SWIB also employs discretionary currency overlay strategies at the total fund level when currency market conditions suggest such strategies are warranted. Additional information related to the management of foreign currencies through the use of derivatives is discussed in Note 5.

The table entitled **Currency Exposures by Investment Type** present the Retirement Fund investments which were exposed to foreign currency risk at December 31, 2017.

4. Fair Value of Investments

Fair value measurements of the investments held by the WRS are categorized by the hierarchy established by generally-accepted accounting principles. The hierarchy, which has three levels, is based on the valuation inputs used to measure the fair value of the asset.

Level 1 – Investments reflect unadjusted quoted prices in active markets for identical assets.

Level 2 – Investments reflect prices that are based on inputs that are either directly or indirectly observable for an asset (including quoted prices for similar assets), which may include inputs in markets that are not considered to be active.

Level 3 – Investments reflect prices based upon valuation techniques in which significant inputs or significant value drivers are unobservable.

The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3. When the inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to fair value. The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and does not represent the investment's overall risk.

Commingled investments are not categorized under the fair value hierarchy but are disclosed within this note as investments measured at net asset value (NAV).

Interest Rate Sensitivity by Investment Type*
As of December 31, 2017
(In thousands)

Investment Type	Fair Value	Weighted Average Duration (years)	Weighted Average Maturity (days)
Asset Backed Securities	$ 71,793	4.1	
Commercial Paper	397,860		15
Corporate Bonds & Private Placements	4,985,241	6.3	
Foreign Government/Agency Bonds	2,511,458	8.0	
Municipal Bonds	122,400	10.3	
Repurchase Agreements	14,157		2
U.S. Government Agencies	215,869	4.2	
U.S. Treasury Inflation Protected Securities	12,780,811	7.6	
U.S. Treasury Securities	3,700,636	5.0	
Commingled Funds			
Domestic Fixed Income	5,699,401	7.9	
Emerging Market Fixed Income	1,058,719	6.1	
Short Term Cash Management	2,335,165		45
Total	$33,893,510		

* Excludes derivatives. See note 5 for information about the interest rate sensitivity of derivative instruments.

Currency Exposures by Investment Type
As of December 31, 2017
Stated in U.S. Dollars (In thousands)

Currency	Cash & Cash Equivalents	Equities	Fixed Income	Limited Partnerships	Preferred Securities	Futures Contracts	Options	Short Sales	Total
Argentina Peso	$ -	$ -	$ 313	$ -	$ -	$ -	$ -	$ -	$ 313
Australia Dollar	11,115	1,173,681	34,940	-	-	(3)	-	(28,761)	1,190,972
Brazil Real	790	45,510	-	-	16,942	-	-	-	63,242
Canada Dollar	13,249	1,691,265	32,226	-	-	(52)	-	(44,521)	1,692,167
Chile Peso	27	2,440	-	-	-	-	-	-	2,467
Colombia Peso	1	460	-	-	-	-	-	-	461
Czech Republic Koruna	-	273	-	-	-	-	-	-	273
Denmark Krone	817	347,357	12,528	-	-	-	-	(12,781)	347,921
Euro Member Countries	36,908	5,754,549	958,011	851,568	114,104	(2,327)	(178)	(153,960)	7,558,675
Hong Kong Dollar	5,957	850,855	-	-	-	-	-	-	856,812
Hungary Forint	-	531	-	-	-	-	-	-	531
India Rupee	169	87,279	-	-	-	-	-	-	87,448
Indonesia Rupiah	617	25,223	95	-	-	-	-	-	25,935
Israel Shekel	601	37,744	-	-	-	-	-	(727)	37,618
Japan Yen	84,232	4,319,208	477,413	-	-	614	-	(174,098)	4,707,369
Korea (South) Won	222	217,292	-	-	-	-	-	-	217,514
Malaysia Ringgit	1,007	31,590	8,175	-	-	-	-	-	40,772
Mexico Peso	921	4,065	23,553	-	-	-	-	-	28,539
Morocco Dirham	9	-	-	-	-	-	-	-	9
New Zealand Dollar	478	33,731	2,637	-	-	-	-	-	36,846
Norway Krone	971	123,914	5,366	-	-	-	-	(5,400)	124,851
Philippines Peso	6	1,193	-	-	-	-	-	-	1,199
Poland Zloty	1,442	32,700	17,465	-	-	-	-	-	51,607
Russia Ruble	6	-	-	-	-	-	-	-	6
Singapore Dollar	2,119	243,946	6,914	-	-	3	-	(14,609)	238,373
South Africa Rand	982	56,334	20,039	-	43	-	-	-	77,398
Sweden Krona	5,051	447,213	8,505	6,942	-	-	-	(26,228)	441,483
Switzerland Franc	2,946	1,382,663	-	-	-	-	-	(12,412)	1,373,197
Taiwan New Dollar	-	93,856	-	-	-	-	-	-	93,856
Thailand Baht	167	71,127	-	-	-	-	-	-	71,294
Turkey Lira	253	69,044	-	-	-	-	-	-	69,297
United Kingdom Pound	29,895	3,122,718	161,998	150,661	-	977	-	(57,357)	3,408,892
Total	$ 200,958	$ 20,267,761	$ 1,770,178	$ 1,009,171	$ 131,089	$ (788)	$ (178)	$(530,854)	$ 22,847,337

1) Commingled funds (including limited partnerships and other pooled vehicles) represent investments where the Retirement Funds own only a portion of the overall fund. While the overall fund may be denominated in U.S. dollars, the underlying investments may be exposed to foreign currency risk in various currencies. Commingled funds are shown in the denomination used by the fund for financial reporting.
2) Short Sales are reported as liabilities on the Statement of Net Investment Position. They are included in the above table because they have exposure to foreign currency risk.
3) Investment types holding instruments denominated only in U. S. Dollars are not included in the above table. At calendar year-end, these include: Convertible Securities, Multi Asset, Real Estate, TBAs, Swaps and Obligations Under Reverse Repurchase Agreements.
4) Values may not add due to rounding.

A. Fair Value Measurements

The fair value measurements of investments as of December 31, 2017, are found in the table entitled **Investments by Fair Value Level**.

Securities classified as Level 1 are generally valued at the official closing price (usually the last trade price) or the last bid price on the security's primary exchange. Such investments generally include exchange-traded securities such as equities, preferred stock, certain derivatives, and exchange-traded funds. U.S. Treasury Bills and only the most recently-issued US Treasury Notes and Bonds are classified as level 1 because available pricing for these securities is similarly reliable to exchange-traded securities.

Securities classified as Level 2 are valued using observable inputs by third-party pricing services using either a bid evaluation or a matrix-pricing technique. Bid evaluations may include market quotations that are based on yields, maturities, call features, and ratings. Matrix-pricing is used to value securities based on their relationship to benchmark market prices for securities with similar interest rates, maturities, and credit ratings. Pricing in this level may also include market approaches that incorporate benchmark interest rates. Debt securities comprise the majority of the level 2 investments because they are generally traded using a dealer market, with lower trading volumes than level 1 securities. Over-the-counter derivatives, such as swaps, TBAs, and foreign exchange contracts, are also included in level 2 because they are priced using a market approach that considers benchmark interest rates and foreign exchange rates.

Level 3 investments are generally valued using significant inputs that are unobservable to the marketplace. This may occur if an investment is illiquid or its value is based on estimates. For the WRS, such investments primarily include directly-held real estate, valued using appraisals and, as such, rely on unobservable inputs. Foreign Government/Agency securities in level 3 are valued using proprietary valuation models. Asset Backed Securities included in level 3 represent private placements that are valued at purchase price because third-party valuations are unavailable. Equities, convertibles, and preferred securities included in the level 3 hierarchy are generally privately-held securities valued using valuation models such as price multiples incorporating public company comparables, discounted cash flows and milestone valuation models. In some instances of privately-held preferred securities, valuation is determined based on recent financing rounds. Bank loans, which represent the majority of corporate bonds and private placements in the level 3 category, are priced by vendors using proprietary models which may incorporate unobservable inputs. Cash and Cash Equivalents included in level 3 represent securities priced at cost. Typically, due to their short-term nature, cost approximates fair value for these investments. Other factors such as infrequent trading, inactive market, or adjusted quoted prices may also result in level 3 measurements.

B. Investments Measured at NAV

The fair value of investments in certain fixed income funds, private equity limited partnerships, stock funds, real estate limited partnerships, and hedge funds are based on the investments' net asset value (NAV) per share (or its equivalent), provided by the investee. The December 31, 2017 investments valued using NAV are shown in the table entitled **Investments Measured at NAV** and include commingled/pooled funds, private equity, and real estate limited partnerships.

C. Private Equity and Real Estate Limited Partnerships

In general, the Private Equity Limited Partnerships participated in the following investment strategies at December 31, 2017:

Buyout – This strategy acquires shares of a private company to gain a controlling interest.

Mezzanine – Provides mezzanine debt to finance leveraged buyouts, recapitalizations, and corporate acquisitions.

Special Situations – This strategy can invest in public and private companies undergoing financial

Investments by Fair Value Level
As of December 31, 2017
(In thousands)

Asset Type	Fair Value Level 1	Fair Value Level 2	Fair Value Level 3	Total
Cash Equivalents				
Certificates of Deposit	$ -	$ 4,373	$ 36,987	$ 41,360
Commercial Paper	-	-	397,860	397,860
U.S. Treasury Securities	104,900	-	-	104,900
Total Cash Equivalents	104,900	4,373	434,847	544,120
Equities				
Domestic	36,000,791	-	136,296	36,137,087
International	20,262,996	-	1,304	20,264,300
Total Equities	56,263,787	-	137,600	56,401,387
Fixed Income				
Asset Backed Securities	-	54,543	17,250	71,793
Corporates Bonds & Private Placements	-	4,621,721	104,772	4,726,493
Foreign Government/Agency Bonds	-	2,506,420	5,037	2,511,457
Municipal Bonds	-	122,400	-	122,400
U.S. Government Agencies	-	215,869	-	215,869
U.S. Treasury Inflation Protected Securities	-	12,780,811	-	12,780,811
U.S. Treasury Securities	115,658	3,480,078	-	3,595,736
Total Fixed Income	115,658	23,781,842	127,059	24,024,559
Real Estate	-	-	1,368,583	1,368,583
Preferred Securities				
Domestic	-	43,760	53,934	97,694
International	131,089	12,890	-	143,979
Total Preferred Securities	131,089	56,650	53,934	241,673
Convertibles	-	-	196	196
Derivatives				
Foreign Exchange Contracts	-	(1,131)	-	(1,131)
Futures	47,079	-	-	47,079
Options	(3,830)	-	-	(3,830)
Swaps	-	4,171	-	4,171
To Be Announced Securities	-	95,489	-	95,489
Total Derivatives	43,249	98,529	-	141,778
Equity Short Sales	(2,662,107)	(60,087)	-	(2,722,194)
Total	$ 53,996,576	$ 23,881,307	$ 2,122,219	$ 80,000,102

Investments Measured at NAV
As of December 31, 2017
(In Thousands)

Investments Measured at NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period (8)
Cash and Cash Equivalents (1)	$ 2,335,166	$ -	Daily	Same day
Fixed Income (2)	6,960,023	228,636	Daily, Quarterly, Monthly, N/A	2-90 days, N/A
Private Equity Limited Partnerships (3)	7,407,515	5,300,600	N/A	N/A
Equities (4)	6,839,675	-	Daily, Monthly	2-30 days
Real Estate Limited Partnerships (5)	4,804,895	1,287,600	Quarterly, N/A	N/A, 30-90 days
Hedge Funds (6)	4,701,121	91,144	Various (Note 4D)	Various (Note 4D)
Total (7)	$33,048,395	$ 6,907,980		

(1) This category consists of short-term cash funds with the investment objective of safety of principal and liquidity while earning a competitive money market rate of return. The short-term cash funds have daily liquidity with same day notice.

(2) Corporate and government bond index funds make up a significant portion of this category (82%) and have the investment objective of approximating as closely as practicable the return of a given segment of the markets for publicly-traded investments. The corporate and government index funds have daily liquidity with 2 days' notice. An additional 15% of this category represents long-only fixed income managers, which can invest across the credit quality spectrum, in varying geographies, and can include derivatives, high yield and structured securities. These long-only managers require a redemption notice period between one and two weeks and have daily or monthly liquidity. One of these funds also has an investor level gate, limiting daily withdrawals to $2 million per day or 5% of the portfolio's net asset value. The remaining 3% of this category includes LLCs which invest in private real estate debt. The majority of these LLC investments distribute earnings over the life of the investment and have an average remaining life of less than 5 years. The private real estate debt LLC's that do not distribute earnings over the life of the fund permit quarterly redemptions with 90 days' notice.

(3) Private Equity Limited Partnerships include direct, co-investments with existing SWIB general partners, direct secondary investments and fund of funds. These investments are illiquid and are generally not resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. The table entitled **Limited Partnerships - Estimated Remaining Life** provides an estimate of the period over which the underlying assets are expected to be liquidated.

(4) This category includes emerging markets equity index funds (54%) with an investment strategy designed to track the return of the given segment of the emerging equity markets. These investments can be redeemed daily with 2 days' notice. An additional 46% of this category represents long-only equity managers with various fundamental, quantitative and other approaches spanning various styles, geographies and market cap weights. These long-only manager investments can be redeemed monthly, with between 10 and 30 days' notice.

(5) This category includes funds that invest directly in real estate and real estate related assets. Approximately 68% of these investments are generally not resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. The table entitled **Limited Partnerships - Estimated Remaining Life** provides an estimate of the period over which the underlying assets are expected to be liquidated. The remaining 32% of this category consists of open-ended funds that invest directly in real estate and real estate related assets. Such investments can be redeemed quarterly with between 30 and 90 days' notice.

(6) Hedge Fund investments are private investment funds that seek to produce absolute returns using a broad range of strategies. In certain instances, Hedge Fund investments are structured as limited partnerships, whereby participants receive distributions over the life of the fund. Estimated remaining life of funds structured as limited partnerships is estimated to be between 5-10 years. Additional information relating to Hedge Funds can be found in Note 4(D).

(7) SWIB had additional unfunded commitments of approximately $10.2 million, relating to assets not valued using NAV.

(8) Redemption terms described for NAV investments reflect contractual agreements and assume withdrawals are made without adverse market impact and under normal market conditions.

distress, a turnaround in business operations, or which are believed to be undervalued because of a discrete extraordinary event.

Venture Capital – This strategy invests in companies with potential for significant growth (generally small to early stage emerging firms).

The Real Estate Limited Partnerships generally consisted of the following investment strategies at December 31, 2017:

Core – Core investments are expected to deliver a significant percentage of their return from income and should demonstrate lower volatility than Opportunistic and Value investments due to lower leverage, higher occupancy, and asset location.

Value – Value investments typically have significant near-term leasing, repositioning, and/or renovation risk. This strategy is expected to have modest initial operating revenues with potential for substantial income growth and will likely encounter greater volatility than Core strategies, but lower volatility than Opportunistic strategies.

Opportunistic – Opportunistic investments usually have significant development, lease-up, financial restructuring, and/or liquidity risk with little or no initial operating income. This strategy typically uses the highest leverage, is expected to achieve most of its return from future capital gains, and is likely to encounter greater volatility than Core and Value strategies.

Limited partnerships are generally structured to provide distributions to participants of the fund as the holdings of the partnership are liquidated over time. The table entitled **Limited Partnerships - Estimated Remaining Life** illustrates the distribution of estimated remaining liquidation periods for the WRS' private equity and real estate limited partnership holdings as of December 31, 2017.

D. Hedge Funds

Hedge Fund investments are private investment funds that seek to produce absolute returns using a broad range of strategies. The Retirement Funds participated in the following Hedge Fund strategies at December 31, 2017:

Equity Long-Short – This strategy invests both long and short in publicly-traded stocks. These managers vary in their use of short selling and leverage.

Event-Driven – The funds in this strategy seek to gain an advantage from pricing inefficiencies that may occur before or after a corporate action or related event, such as a merger, spinoff, earnings call, bankruptcy, or restructuring.

Global Macro – The funds in this category invest their holdings in indexes, commodities, interest rate instruments, and currencies as a result of relative value or directional forecasts from a systematic or discretionary approach.

Market Neutral/Arbitrage – This strategy uses a range of fixed income, convertible instruments,

Limited Partnerships - Estimated Remaining Life
As of December 31, 2017
(In thousands)

	Estimated Remaining Life*				
Limited Partnership Type	**<5 Years**	**5-10 Years**	**>10 Years**	**N/A**	**Total**
Private Equity	$ 2,011,070	$ 3,776,775	$ 1,619,670	$ -	$ 7,407,515
Real Estate	309,418	2,875,402	92,796	1,527,279	4,804,895
Total	$ 2,320,488	$ 6,652,177	$ 1,712,466	$ 1,527,279	$ 12,212,410

*Estimated remaining life represents subjective estimates, assuming normal market conditions.
N/A investments represent open-ended funds that can be redeemed.

and/or statistical arbitrage strategies that seek to hedge market-related risks to earn consistent returns.

Multistrategy – The funds in this category employ a wide range of strategies and instruments in managing assets.

When redeeming Hedge Fund investments, the agreements governing the investment vehicle oftentimes require advanced notice and may restrict the timing of withdrawals. The table entitled **Hedge Fund Redemption Timing** depicts redemption terms, irrespective of other contractual restrictions, for SWIB's Hedge Fund investments at December 31, 2017.

Hedge Fund agreements can also include "lock-up" periods, which restrict investors from redeeming their investment during a specified time frame. The lock-up period helps portfolio managers avoid liquidity problems. Lock-ups can be "hard," where redemptions are not permitted for a specified time period, or "soft," where redemptions are permitted provided the investor pays a penalty. In certain instances, a fund may have both hard and soft lock-up restrictions in place. In addition, hedge fund managers can also institute a "rolling" lock-up. A fund with a rolling lock-up period requires investors to commit to an initial lock-up period, and, if the investor does not submit a redemption notice within a set time prior to expiration of the lock-up, the lock-up is reset.

The table entitled **Hedge Fund Lock-ups** reflects the lock-up terms for the Hedge Fund investments held at December 31, 2017.

Similar to lock-ups, hedge fund agreements also commonly incorporate "gate" restrictions. An investor-level gate limits redemption on a particular redemption date to a specified percentage of the investor's account value, while a fund-level gate may limit total investor withdrawals on a particular redemption date to a percentage of aggregated fund-level (or master fund-level) net asset value. In certain instances, funds can have both investor- and fund-level gates in place. Such funds are reflected in the "Investor Level" category. The table entitled **Hedge Fund Gates** summarizes the Hedge Fund gates in place at December 31, 2017.

Hedge Fund Redemption Timing
As of December 31, 2017
(In thousands)

Redemption Frequency	Redemption Notice Period (days)	Fair Value
Weekly	7	$ 217,776
Monthly	4 - 75	1,656,186
Quarterly	30 - 90	2,024,929
Other (1)	65 - 90, N/A	802,230
Total		$ 4,701,121

(1) This category includes funds that are subject to rolling locks, whereby the fund automatically re-locks unless a withdrawal request is submitted. In addition, this category includes funds that are in the process of being fully redeemed, with final distribution expected in 2018. This category also includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

Hedge Fund Lock-ups
As of December 31, 2017
(In thousands)

Hedge Fund Lock Type	Initial Duration of Lock (Years)	Year of Lock Expiration	Fair Value
None	N/A	N/A	$2,836,753
Rolling Lock	2 - 3	2018 - 2020	765,866
Hard Lock	1 - 3	2018 - 2020	546,030
Soft Lock	1 - 1.5	2018	485,944
Hard & Soft	1	2018	30,165
Other (1)	N/A	N/A	36,363
Total			$4,701,121

(1) This category includes funds that are in the process of being fully redeemed, with final distribution expected in 2018. This category also includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

Hedge Fund Gates
As of December 31, 2017
(In thousands)

Hedge Fund Gate Type	Gate Range	Fair Value
None	N/A	$ 2,060,056
Fund Level	8.33% - 25%	1,504,798
Investor Level	25% - 33%	1,099,904
Other (1)	N/A	36,363
Total		$ 4,701,121

(1) This category includes funds that are in the process of being fully redeemed, with final distribution expected in 2018. This category also includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

5. Derivatives

A derivative instrument, as defined by GASB Statement No. 53, is a financial instrument or other contract that has all of the following characteristics:

- Settlement factors. It has (1) one or more reference rates and (2) one or more notional amounts or payment provisions or both. Those terms determine the amount of the settlement or settlements and, in some cases, whether or not a settlement is required.
- Leverage. It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- Net settlement. Its terms require or permit net settlement, it can readily be settled net by a means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

Derivatives may be used to implement investment strategies for the Retirement Funds. 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 objectives which have been approved by the Board. Where derivatives are permitted, guidelines stipulate allowable instruments and the manner and degree to which they are to be used.

Gains and losses for all derivative instruments are reported in the Statement of Changes in Net Investment Position as "Net Increase (Decrease) in the Fair Value of Investments."

SWIB invests in derivative investments directly as well as indirectly through commingled or pooled investments. Information relating to investments held in commingled funds has not been separately disclosed in the financial statements or the accompanying footnotes, consistent with GASB reporting requirements.

A derivative can take the form of an individually-negotiated contract between the Retirement Funds and a specific counterparty. These types of negotiated positions are known as over-the-counter (OTC) contracts. OTC contracts can be structured as either "uncleared" or "cleared."

Uncleared OTC contracts are non-standardized bilateral contracts between counterparties and do not include the use of a centralized intermediary, such as a clearinghouse. Uncleared OTC transactions are subject to regulatory requirements with respect to data reporting and recordkeeping, trading relationship documentation, business conduct standards, portfolio reconciliation, and margin collection and posting. For these transactions, master netting agreements and credit support annexes governing the credit relationship and collateral exchange between two counterparties are put in place to mitigate counterparty credit risk.

Cleared OTC contracts offer additional protections to trade participants. These types of transactions employ the use of an intermediary between counterparties. The intermediary, known as a clearinghouse, serves to facilitate trading and mitigate risks. While not completely standardized, these contracts involve a high degree of standardization. Once cleared, the clearinghouse steps in as the counterparty to all trades. Regulatory bodies govern the tools and procedures for risk mitigation such as margin requirements and daily mark-to-market.

In addition to trading OTC, derivative contracts can also be transacted on established exchanges. These types of contracts are called "exchange-traded" and are completely standardized. Like cleared OTC contracts, the clearinghouse is an intermediary to the trade, reducing risks and standardizing the exchange of margin. The table entitled **Derivative Contract Types** summarizes the differences between OTC and exchange-traded contracts.

Collateral postings are commonplace for derivative contracts and vary based on the type of contract traded. SWIB posted $171.8 million in cash and $361.9 million in securities as collateral for derivatives positions as of December 31, 2017. More information regarding collateral requirements is included within the narrative that follows.

A. Uncleared OTC Derivatives
Inherent in the use of uncleared OTC derivatives, the Retirement Funds may be exposed to counterparty credit risk. Counterparty credit risk is the risk that a derivative counterparty may fail to meet its payment obligations under the terms of the derivative contract. SWIB seeks to mitigate this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. Additionally, policies have been established which seek to implement master netting arrangements (MNA) with counterparties that permit the closeout and netting of transactions with the same counterparty upon the occurrence of certain events, such as payment default, rating downgrade, bankruptcy, illegality, or force majeure. Agreements may also require daily collateral postings to further mitigate credit risk.

The table entitled **OTC Derivatives Subject to Counterparty Credit Risk**, summarizes, by credit rating, the Retirement Funds' exposure to counterparty credit risk relating to uncleared OTC contracts as of December 31, 2017. The number of uncleared OTC counterparties with credit exposure at year-end was 12.

B. Cleared OTC and Exchange-Traded Derivatives
Counterparty credit risk is mitigated by an intermediary for cleared OTC and exchange-traded derivative contracts. For these types of derivative investments, a clearinghouse interposes itself as

Derivative Contract Types

Uncleared (OTC)	Cleared (OTC)	Exchange-traded
Trades negotiated over-the-counter	Trades negotiated over-the-counter	Trades executed on organized exchanges
Customized trade terms are agreed upon by counterparties	Trades limited to standardized terms	Trades limited to standardized terms
Traded bilaterally between counterparties	Trades are submitted through a clearinghouse, which is counterparty	Trades are booked with exchange's clearinghouse, which is counterparty
Margin (collateral) often exchanged but subject to negotiation between counterparties	Mandatory margin requirements	Mandatory margin requirements
Common example: Forward Contracts	Common example: Credit Default Swaps	Common example: Futures Contracts

OTC Derivative Investments Subject to Counterparty Credit Risk
As of December 31, 2017
(In thousands)

Counterparty Credit Rating	FX Receivables	To Be Announced Securities[1]	Warrants[1,2]	Total
AA	$ 735	$ -	$ -	$ 735
A	2,002,488	169	-	2,002,657
BBB	479,607	-	-	479,607
Not Rated	-	-	3,928	3,928
				2,486,927
			Less Collateral and MNA offsets[3]	2,482,758
			Total OTC Counterparty Credit Risk	$ 4,169

[1]Exposure to counterparty credit risk for To Be Announced Securities and Warrants is limited to unrealized gains on open positions.

[2]Warrants issued by privately held company that is not rated by statistical credit rating organization.

[3]Includes net collateral positions and liabilities with counterparties that have master netting arrangements (MNA).

counterparty to all trades and extends a guarantee that trades will be settled as originally intended. To ensure performance, margin requirements are imposed. The requirements are established with the intent to cover nearly all expected price changes based on market risk. Margin payments are settled daily based upon the price movements of the contracts, thereby significantly reducing counterparty credit risk.

C. Foreign Currency Spot and Forward Contracts
Foreign Currency Spot and Forward contracts are uncleared OTC agreements between two counterparties to exchange designated currencies at a specific time in the future. No cash is exchanged when a foreign exchange spot or forward contract is initiated. Depending upon market movements, forward contracts may require collateral postings either to SWIB or to counterparties. Spot contracts are exempt from collateralization. For deliverable contracts, amounts due are paid or received on the contracted settle date. In other instances (most often in emerging markets), contracts are established as non-deliverable forwards (NDFs). Unlike deliverable contracts, NDFs are only settled in U.S. dollars.

Currency exposure management is permitted through the use of currency derivative instruments. Direct hedging of currency exposure back to the U.S. dollar is permitted when consistent with the strategy of the portfolio. Cross-currency exposure management to transfer out of an exposed currency and into a benchmark currency is permitted. In some portfolios, currencies of non-benchmark countries may be held through the use of forward contracts, provided that the notional value of any single non-benchmark currency does not exceed 5% of the market value of the portfolio. SWIB may employ discretionary currency overlay strategies at the total fund and asset class level when currency market conditions suggest such strategies are warranted.

Losses may arise from future changes in the value of the underlying currency, or if the counterparties do not perform under the terms of the contract. Spot and forward contracts are valued daily with the changes in fair value included in "Net Increase

(Decrease) in Fair Value of Investments" on the Statement of Changes in Net Investment Position. The net receivable or payable for spot and forward contracts is reflected as "Foreign Currency Contracts" on the Statement of Net Investment Position. The table entitled **Foreign Currency Spot and Forward Contracts** presents the fair value of foreign currency spot and forward contract assets and liabilities held by the Retirement Funds as of December 31, 2017.

D. Futures Contracts

A futures contract is an exchange-traded agreement to buy or sell a financial instrument, index, or commodity at an agreed upon price and time in the future.

The fair value of futures contracts represents the unrealized gain/(loss) on the contracts since trade inception and is reflected as "Futures Contracts" on the Statement of Net Investment Position. 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. Gains and losses resulting from investments in futures contracts are included in the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position.

Futures contracts involve, to varying degrees, risk of loss in excess of the margin deposited with the clearinghouse. Losses may arise from future changes in the value of the underlying instrument.

Futures contracts may be entered into for purposes such as the following:

- To efficiently gain or adjust market exposures for trust fund rebalancing,
- To adjust sector, interest rate, or duration exposures, and
- To securitize cash or as act a substitute for cash market transactions.

The table entitled **Futures Contracts** presents the Retirement Funds investments in futures contracts as of December 31, 2017.

The table entitled **Futures Contracts with Interest Rate Sensitivity** presents the interest rate sensitivity of fixed income futures contracts as of December 31, 2017. Duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. Duration statistics presented in this table are weighted by the notional value of each position to compute an average duration for the contract types held.

E. 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.

Futures Contracts
As of December 31, 2017
(In thousands)

Futures Contract Description	Position	Expiration	Notional Amount	Fair Value*
Commodity	Long	Jan 18 - Dec 18	$ 2,045,215	$ 67,949
	Short	Jan 18 - Mar 18	(44,286)	348
Currency	Long	Mar 18	13,557	149
	Short	Jan 18 - Mar 18	(96,012)	(1,202)
Equity	Long	Jan 18 - Mar 18	1,374,241	7,745
	Short	Mar 18	(752,448)	(8,883)
Fixed Income	Long	Mar 18	9,561,229	(19,236)
	Short	Mar 18	(147,471)	209
Total			$ 11,954,025	$ 47,079

*Fair Value includes foreign currency gains/(losses).

**Foreign Currency Spot and Forward Contracts
As of December 31, 2017
(In thousands)**

Currency	Notional (local currency)	Fair Value ($US)	Unrealized Gain/(Loss) ($US)
Foreign Currency Contract Receivables			
Argentina Peso	57,873	$ 3,058	$ (171)
Australia Dollar	95,072	74,362	475
Brazil Real	78,169	23,483	(201)
Canada Dollar	93,835	74,921	631
Chile Peso	3,184,433	5,178	140
China Yuan Renminbi	33,651	5,163	58
Colombia Peso	14,407,847	4,798	(14)
Czech Republic Koruna	149,293	7,024	188
Denmark Krone	148,850	24,046	170
Euro Member Countries	113,086	136,003	1,194
Hong Kong Dollar	67,014	8,578	(5)
Hungary Forint	1,549,573	6,005	55
India Rupee	2,554,916	39,959	928
Indonesia Rupiah	328,435,886	24,171	150
Israel Shekel	27,329	7,879	17
Japan Yen	15,039,320	133,672	421
Korea (South) Won	12,183,167	11,400	206
Malaysia Ringgit	5,331	1,315	11
Mexico Peso	527,348	26,817	(817)
New Zealand Dollar	6,674	4,745	34
Norway Krone	338,609	41,430	197
Peru Sol	21,887	6,751	15
Philippines Peso	352,332	7,057	130
Poland Zloty	35,762	10,292	225
Russia Ruble	2,143,804	37,099	810
Singapore Dollar	33,678	25,211	48
South Africa Rand	77,830	6,280	720
Sweden Krona	541,974	66,303	955
Switzerland Franc	56,782	58,381	661
Taiwan New Dollar	89,313	3,025	40
Thailand Baht	149,974	4,606	50
Turkey Lira	95,538	24,961	629
United Kingdom Pound	73,462	99,466	830
United States Dollar	1,469,392	1,469,392	-
Total Receivables		$ 2,482,831	$ 8,780

Foreign Currency Spot and Forward Contracts
As of December 31, 2017
(In thousands)

Currency	Notional (local currency)	Fair Value ($US)	Unrealized Gain/(Loss) ($US)
Foreign Currency Contract Payables			
Australia Dollar	(92,508)	$ (72,357)	$ (218)
Canada Dollar	(138,424)	(110,508)	(627)
Chile Peso	(1,994,357)	(3,243)	(78)
China Yuan Renminbi	(21,163)	(3,247)	(80)
Colombia Peso	(13,281,104)	(4,422)	(74)
Czech Republic Koruna	(91,007)	(4,282)	(115)
Denmark Krone	(167,836)	(27,105)	(149)
Euro Member Countries	(414,101)	(498,130)	(3,764)
Hong Kong Dollar	(321,916)	(41,198)	16
Hungary Forint	(501,941)	(1,945)	(73)
Indonesia Rupiah	(92,928,451)	(6,854)	(15)
Israel Shekel	(34,208)	(9,862)	(116)
Japan Yen	(34,374,289)	(305,449)	(652)
Korea (South) Won	(2,988,174)	(2,796)	(63)
Malaysia Ringgit	(4)	(1)	-
Mexico Peso	(143,032)	(7,273)	107
New Zealand Dollar	(6,615)	(4,704)	(88)
Norway Krone	(213,250)	(26,091)	(253)
Peru Sol	(19,179)	(5,916)	(76)
Philippines Peso	(492,318)	(9,853)	(68)
Poland Zloty	(41,561)	(11,961)	(455)
Russia Ruble	(583,499)	(10,123)	(255)
Singapore Dollar	(21,753)	(16,283)	(123)
South Africa Rand	(112,507)	(9,004)	(229)
Sweden Krona	(310,515)	(37,974)	(266)
Switzerland Franc	(72,929)	(74,932)	(549)
Taiwan New Dollar	(675,213)	(22,867)	(314)
Thailand Baht	(196,709)	(6,042)	(61)
United Kingdom Pound	(109,808)	(148,630)	(1,117)
United States Dollar	(1,000,910)	(1,000,910)	-
Total Payables		(2,483,962)	(9,755)
Net		$ (1,131)	$ (975)

Trust fund rebalancing policies and certain portfolio investment guidelines permit the use of exchange-traded and OTC options. Investment guidelines allow options to be used to improve market exposure efficiency, enhance expected returns, or provide market exposure hedges. Exchange rules require that the seller of short exchange-traded option contracts cover these positions either by collateral deposits in the form of cash or by pledging, in escrow, the actual securities that would be transferred to the option purchaser in the event the option contract were exercised. In the case of OTC options, investment guidelines mitigate counterparty credit risk by establishing minimum credit ratings and requiring master netting agreements with provisions for collateral exchanges.

Futures Contracts with Interest Rate Sensitivity
As of December 31, 2017
(In thousands)

Contract Type	Position	Notional Amount	Fair Value	Weighted Average Duration (Years)
U.S. Treasury Notes	Long	$ 7,617,848	$ (26,189)	3.7
U.S. Treasury Notes	Short	(144,667)	216	3.9
U.S. Treasury Bonds	Long	1,783,687	7,974	16.8
Foreign Government Bonds	Long	159,695	(1,021)	7.7
Foreign Government Bonds	Short	(2,805)	(7)	1.7
Total		$ 9,413,758	$ (19,027)	

The fair value of option contracts is based upon the closing market price of the contract and is reflected as "Option Contracts" on the Statement of Net Investment Position. Gains and losses as a result of investments in option contracts are included in the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position. The table entitled **Option Contracts** presents the fair value of option contracts as of December 31, 2017.

Option Contracts
As of December 31, 2017
(In thousands)

Description	Contract Type	Position	Exchange-Traded (EXCH) vs. OTC	Expiration	Notional	Fair Value	Unrealized Gain (loss)
Currency	CALL	Short	EXCH	Jan 18	$ (262)	$ (1)	$ (1)
Equity	CALL	Long	EXCH	Mar 18 - Apr 18	2,736	107	(179)
Equity	CALL	Short	EXCH	Jan 18 - Mar 18	(71,854)	(2,576)	(1,202)
Equity	CALL	Short	OTC	Jan 18	(3,883)	(7)	34
Equity	PUT	Long	EXCH	Jan 18 - Sep 18	16,844	255	(239)
Equity	PUT	Short	EXCH	Jan 18 - Sep 18	(146,628)	(1,443)	438
Equity	PUT	Short	OTC	Jan 18	(6,391)	(171)	(44)
Volatility	CALL	Long	EXCH	Feb 18	828	83	4
Volatility	CALL	Short	EXCH	Feb 18	(828)	(45)	-
Volatility	PUT	Short	EXCH	Feb 18	(828)	(32)	1
Total					$ (210,266)	$ (3,830)	$ (1,188)

F. Swaps

Swaps are negotiated contractual agreements between two counterparties which can be cleared or uncleared OTC investments. As is specified in SWIB's investment guidelines, swaps may be used as an alternative to physical securities when it is deemed advantageous for portfolio construction. In addition, swaps may be used to adjust asset class exposures for the Retirement Funds. Guideline limits and soft risk parameters for each portfolio are applied to the aggregate exposures which includes both physical and synthetic securities. A synthetic security is created by combining securities to mirror the properties of another security.

Throughout the calendar year, the Retirement Funds held positions in Total Return Swaps and Credit Default Swaps (CDS). The table entitled **Open Swap Positions** lists the open swap contracts held at December 31, 2017.

The open CDS contracts at December 31, 2017 represent cleared OTC positions where SWIB sold credit protection. Under the terms of the contracts, SWIB receives periodic payments and, in exchange, agrees to pay a formula-determined amount to counterparties for losses incurred if stipulated credit events occur. CDS spreads are sensitive to credit spread and interest rate changes.

The fair value of CDS is reflected as "Swaps" on the Statement of Net Investment Position. Gains and losses resulting from investments in swap contracts are included in the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position.

G. To Be Announced Securities

In 2017, SWIB began trading to be announced mortgage-backed (TBA) securities. These commitments are uncleared OTC forward contracts consisting of mortgage-backed securities (MBS) issued by Government National Mortgage Association, a government entity, and by government-sponsored enterprises such as, the Federal National Mortgage Association or the Federal Home Loan Mortgage Corp. The term TBA is derived from the fact that the actual MBS that will be delivered to fulfill a TBA trade is not designated at the time the trade is made. Instead, the specific pool of mortgages making up the MBS is announced 48 hours prior to the established trade settlement date. Eligibility rules and standards for MBS pools deliverable into TBA contracts ensure that delivered MBS pools are fungible. Payment for TBA securities is not made until the settlement date.

Certain portfolio investment guidelines allow for both long and short TBA positions. To mitigate counterparty credit risk, guidelines establish minimum credit ratings and require master netting agreements which include provisions for collateral exchanges.

TBAs, much like their underlying MBS securities, may be highly sensitive to interest rate changes. This is because the MBS pool on which these forward contracts are based can be subject to early payment in a period of declining interest rates. The price of TBAs can fluctuate as the marketplace predicts changes in timing, or possible reductions in expected cash flows, associated with a change in interest rates. The table entitled **TBA Contracts**

Open Swap Positions
As of December 31, 2017
(In thousands)

Type	Description	Position	Maturity Date	Notional Amount	Fair Value	Unrealized Gain/Loss
Credit Default	Bond Index	Short	Dec 22	$ 175,000	$ 4,171	$ (3)
Total				$ 175,000	$ 4,171	$ (3)

includes the interest rate sensitivity of TBA contracts as of December 31, 2017. Duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. Duration statistics presented in this table are weighted by the fair value of each position to compute an average duration for the contracts held.

**TBA Contracts
As of December 31, 2017
(In thousands)**

Position	Contract Maturity	Fair Value	Unrealized Gain/Loss	Weighted Average Duration (Years)
Long	Jan 18	$ 239,230	$ 16	4.8
Short	Jan 18	(143,741)	(177)	3.6
Total		$ 95,489	$ (161)	

The fair value of TBAs is reflected in "To Be Announced Securities" on the Statement of Net Investment Position. The unrealized gain/loss associated with these contracts is included within the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position.

H. Warrants

A warrant is a contract that entitles the holder to buy the underlying stock of the issuing company at a specified price. Warrants and options are similar in that the two instruments allow the holder special rights to buy securities. However, warrants differ from options in that they provide additional financing to the issuing company when exercised.

As of December 31, 2017, SWIB held warrant contracts giving SWIB the right to purchase 190,780 shares of preferred stock at a price of 1 Euro per share. SWIB was issued these warrants in 2017 in conjunction with an investment in a privately held company. The $4.2 million fair value of these warrants is based upon third-party valuations and is included in the "Equities" section on the Statement of Net Investment Position. The associated unrealized gain of $3.9 million is included in the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position.

6. Securities Lending Transactions

State statutes and Board policies permit SWIB to use investments of the Retirement Funds to enter into securities lending transactions. These transactions involve the lending of securities to broker-dealers and other entities in exchange for collateral, in the form of cash or securities, with the simultaneous agreement to return the collateral for identical securities in the future. SWIB's custodian is an agent in lending the Retirement Funds' directly-held domestic and international securities. When the Retirement Funds' securities are delivered to a borrower as part of a securities lending agreement, the borrower is required to place collateral with the lending agent equal to at least 102% of the loaned securities' fair value, including interest accrued, as of the delivery date, so long as the securities and the collateral are denominated in the same currency. In the event that securities are loaned against collateral denominated in a different currency, the borrower is required to place collateral with the lending agent totaling at least 105% of the loaned securities' fair value, including interest accrued, as of the delivery date. Collateral is marked to market daily and adjusted as needed to maintain the required minimum level. Pledging or selling non-cash collateral securities cannot be done without a borrower default. On December 31, 2017, the fair value of the securities on loan to counterparties was approximately $10.8 billion.

Cash collateral is reinvested by the lending agent in two separate pools, a U.S. dollar cash collateral pool and a pool denominated in Euros. These pools are administered in accordance with contractual investment guidelines which are designed to minimize the risk of principal loss and provide a modest rate of return. Investment guidelines limit credit and liquidity risk by restricting new investments to overnight repurchase agreements collateralized with high quality U.S. government, U.S. government agencies, and sovereign debt securities. To further reduce credit risk, SWIB's custodian provides indemnification to SWIB against counterparty default. The earnings generated from the collateral investments, plus or minus the rebates received from or paid to the dealers and less fees paid to agents, results in the net earnings from lending activities, which are then split on a percentage basis with the lending agent. Cash from the U.S. dollar pool may be posted as collateral relating to short sale transactions and earns the Overnight Bank Funding rate plus 10 basis points. See Note 7 for additional information relating to short sales.

At December 31, 2017, the Retirement Funds had minimal credit risk exposure to borrowers because loans are collateralized in excess of 100%. In addition to the cash collateral reinvestment indemnification, the contract with the lending agent requires it to indemnify the Retirement Funds if the borrowers fail to return the loaned securities and the collateral is inadequate to replace the securities lent. The Retirement Funds are also indemnified against losses resulting from violations of investment guidelines.

The majority of security loans are open-ended and can be terminated on demand by the Retirement Funds or the borrower. Maturities of investments made with cash collateral are not necessarily matched to the maturities of the securities loaned because most loans do not have a fixed maturity date. The risk that SWIB would be unable to return collateral to securities borrowers upon termination of the loan is mitigated by the highly liquid nature of investments held in the collateral reinvestment pools. The average maturities of the loans and the average maturities of the assets held in the collateral reinvestment pools were similar at December 31, 2017.

Securities lending is allowed in certain commingled fund investments. As an investor in such funds, SWIB does not own the underlying securities and does not separately report on securities lending activity. All earnings of these funds are reported in the Statement of Changes in Net Investment Position as "Net Increase (Decrease) in the Fair Value of Investments."

7. Short Sales

The Retirement Funds may sell a security it does not own in anticipation of purchasing the security later at a lower price. This is known as a short sale transaction. For the duration of the short sale transaction, a liability is recorded under "Short Sales" on the Statement of Net Investment Position. The liability presented on the Statement of Net Investment Position represents the fair value of the shorted securities necessary for delivery to the purchaser and is marked-to-market daily. Realized and unrealized gains and losses associated with short sales are recorded on the Statement of Changes in Net Investment Position, within in the "Net Increase (Decrease) in Fair Value of Investments" category. Prior to executing a short sale, SWIB will borrow the security from a party currently holding it. While the transaction is open, the Retirement Funds incur expenses for securities borrowing costs. In addition, as a security borrower, the Retirement Funds may incur dividend and interest expense as such payments must be remitted to the security lender during the course of the loan. During the duration of the borrow, there may be corporate action elections requiring the borrower to deliver items such as cash or securities to the lender. Expenses resulting from short sales are included in "Investment Expense" on the Statement of Changes in Net Investment Position.

Risks arise from short sales due to the possible illiquidity of the securities markets and from potential adverse movements in security values. The cost to acquire the securities sold short may exceed the amount of proceeds initially received, as well as the amount of the liability recorded as "Short Sales" in the Statement of Net Investment Position. Short sales expose the short seller to potentially unlimited liability because there is no upward limit on the price a shorted security could attain. Certain portfolio guidelines permit short sales and mitigate risks in various ways, such as: limiting the total value of short sales as a percentage of portfolio value, establishing portfolio vs. benchmark tracking error limits, and monitoring other statistical and economic risk measures of the portfolio. Investment performance and risk associated with each portfolio is measured against benchmarks and monitored by management.

When a short sale occurs, the shorting portfolio must borrow the security and deliver it to the buyer. If the shorted security is owned by another Retirement Fund portfolio, investment policies allow the borrowing of the shorted securities from other Retirement Fund portfolios, including inter-fund borrowings. In addition to borrowing securities from existing Retirement Fund portfolios, SWIB may borrow securities from external sources. These borrowings are facilitated by SWIB's custodian.

Except in the case of borrowings within the same trust fund, the Retirement Funds are required to post collateral to the lender, at the required rate of 102% for in-currency loans and 105% for cross-currency loans. The Retirement Funds posted $1,560.9 million in cash and $411.2 million in securities as collateral to security lenders representing $64.9 million in excess of the fair market value of the securities borrowed as of December 31, 2017. If the security lender recalled the security and SWIB was not able to supply the lender with the security, the lender would be permitted to use SWIB's collateral to fund the purchase of the security.

8. Investment Policy and Asset Allocation

As part of SWIB's fiduciary responsibilities, SWIB is required by section 25.15(2)(b) of the Wisconsin Statutes "To diversify investments in order to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so, considering each trust's or fund's portfolio as a whole at any point in time." SWIB exercises this duty in part by establishing its investment policy and by setting the asset allocation.

SWIB's Board of Trustees has established the asset allocation pursuant to a comprehensive and ongoing evaluation of the appropriate risk and return standards for each fund under management. The Board of Trustees consists of nine members meeting specific requirements as follows:

- Six Governor-appointed and State Senate-approved members, including:
    - Four with at least ten years investment experience
    - One with at least ten years financial experience and who works for a local government participant in the Local Government Investment Pool
    - One additional member
- Educator participant in the WRS appointed by the Teachers Retirement Board
- Non-educator participant in the WRS appointed by the Wisconsin Retirement Board
- Secretary of the Department of Administration or designee

The Board-approved investment policy for the WRS is intended to assist in development of a diversified portfolio of investments within acceptable risk parameters. The policy represents a delegation of standing authority to the Executive Director and investment managers within the organization to make prudent investments within the investment guidelines, pursuant to sections 15.02(4) and 25.15(2) of the Wisconsin Statutes and section IB 2.02 of the Wisconsin Administrative Code.

Additionally, the Investment Committee (IC) was created to provide oversight of SWIB investments within the parameters established by the Board of Trustees. Oversight includes analysis of risk and return of the portfolio, asset class, and Core and Variable Funds. The IC is responsible for proposing to the Board of Trustees changes to the WRS investment policy, approving investment guidelines or strategies for internally-managed portfolios, approving the general strategies for each asset class, and for approving new investment instruments and derivatives strategies. Effective June 2017, the IC became responsible for approving and maintaining guidelines for internally-managed portfolios pursuant of the Board's investment policy. Previously, the internally-managed portfolio guidelines were approved by the Board of Trustees with recommendations coming from the IC. The change in oversight for internally-managed portfolios provides SWIB staff with the ability to more quickly respond to changing investment conditions and is more consistent with the Board's delegation of investment authority to internal investment management staff. The Board of Trustees reserves all rights to modify and amend IC guidelines at any time at its discretion.

In 2017, the IC included, and the Board of Trustees approved, within the WRS Investment Guidelines a derivatives use policy, rebalancing procedures, and a leverage use policy. The derivatives use policy sets forth the objectives, monitoring, and reporting guidelines relating to derivative investments. The rebalancing procedures used in both mandatory and discretionary asset class rebalancing are now described more fully in the Investment Guidelines, and the leverage use policy describes SWIB's leverage philosophy. The total amount of financial leverage is approved by the Board of Trustees through the WRS asset allocation process.

The Board adopts the Retirement Funds' asset allocation policy, based on recommendations by the IC, the Board's asset allocation consultant, Chief Investment Officer, and Managing Director of Asset and Risk Allocation. SWIB undertakes a comprehensive review of its strategic asset allocation plan every other year, including asset/liability modeling, to determine a suitable target allocation for each asset class included in the Core and Variable Funds, and an annual review to assess whether any interim adjustments should be made. The strategic nature of these reviews contemplates a long-term time horizon over which potential results are evaluated. This exercise is not an attempt to predict short-term market movements, but an effort to understand the long-term impacts of poor, normal, and above average market results.

In addition to potential future market impact, SWIB also contemplates the objectives of the funds, the impact of actuarial analysis, and the soundness of investment return and risk expectations. SWIB's asset allocation policies reflect the Board's program of risk allocation that involves reducing equity exposure by leveraging low-volatility assets, such as "fixed income" securities. This investment strategy results in Core Fund strategic targets which exceed 100% of invested assets. Currently, the Core Fund has adopted an asset allocation target of 10% financial leverage; however, over time, it is anticipated that SWIB may move toward an asset allocation that includes 20% leverage. Before implementing leverage beyond 10%, the Board, SWIB's asset allocation consultant, and staff will engage in additional focused asset allocation discussion and the Board will approve any additional financial leverage.

SWIB's asset allocation review process also includes assumptions regarding expected rates of return. Long-term (e.g. 30-year) expected real rates of return on pension plan investments are determined using a building block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The table entitled **Asset Allocation Targets and Expected Returns** presents the policy asset allocation targets and the best estimates of expected geometric rates of return for each major asset class as of December 31, 2017.

For purposes of determining asset allocation targets, investments may be categorized differently than they are within the financial statements. For example, SWIB's management considers inflation-sensitive assets separately from other "fixed income" investments for asset allocation purposes.

9. Loss Contingency

On September 5, 2008, the Internal Revenue Service (IRS) provided SWIB with a "Notice of Transferee Liability". This claim seeks taxes, penalties, and interest relating to the sale of Shockley Communications Corporation (SCC) stock in 2001.

SWIB is classified as a tax-exempt entity by the IRS. However, the IRS asserts that the shareholders' sale of SCC stock in 2001 should have been characterized as a sale of assets by SCC, on which SCC should have paid income taxes. Based on the theory of transferee liability, the IRS asserts that the former SCC shareholders, including SWIB, are liable for SCC's unpaid taxes, penalties, and interest.

SWIB has filed a petition in the United States Tax Court contesting the proposed IRS assessment. In April 2014, SWIB and the IRS agreed to stay the Tax Court proceeding pending the resolution of the tax case initiated by the principal shareholders of SCC challenging the IRS' characterization of the SCC sale. In 2015, the Tax Court found that the principal shareholders of SCC were liable as putative transferees for the tax, penalties, and interest owed by SCC related to its sale. In October 2017, the 11th Circuit Court of Appeals upheld the 2015 Tax Court opinion. Although SWIB plans to continue to aggressively contest the IRS' assertions of SWIB's tax liability, and SWIB has separate and distinct arguments from the principal shareholders of SCC, at the end of 2015, SWIB determined it was prudent to accrue a potential loss from the SCC transaction based on the Tax Court's adverse opinion. SWIB's potential liability, as a putative transferee of SCC assets, is reasonably estimated to be between $16.6 million and $53.8 million as of December 31, 2017. Although results may differ, this estimated range of loss is based on a possible settlement strategy with the IRS and the maximum potential liability to the IRS for the taxes, interest, and potential penalties of SCC based on the Tax Court's decision against the principal shareholders. Accordingly, in calendar year 2015, SWIB accrued a loss of $16.6 million, which represents the estimated minimum amount of the possible loss to which SWIB believes it may be exposed.

Asset Allocation Targets and Expected Returns
As of December 31, 2017

Core Fund Asset Class	Asset Allocation %	Long-Term Expected Nominal Rate of Return %	Long-Term Expected Real Rate of Return %
Global Equities	50	8.2	5.3
Fixed Income	24.5	4.2	1.4
Inflation Sensitive Assets	15.5	3.8	1.0
Real Estate	8	6.5	3.6
Private Equity/Debt	8	9.4	6.5
Multi Asset	4	6.5	3.6
Total Core Fund	**110**	**7.3**	**4.4**
Variable Fund Asset Class			
U.S. Equities	70	7.5	4.6
International Equities	30	7.8	4.9
Total Variable Fund	**100**	**7.9**	**5.0**

New England Pension Consultants Long Term US CPI (Inflation) Forecast: 2.75%

Asset Allocations are managed within established ranges; target percentages may differ from actual monthly allocations

SWIB

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